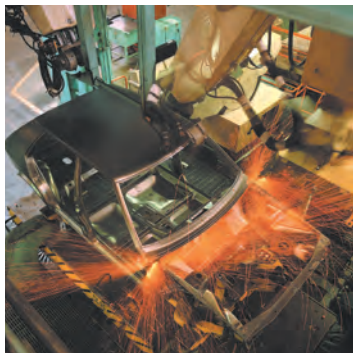


Pneumatic Valve Products

Air Control Valves, Flow Controls & Accessories

Catalog 0600P-13

Parker

ENGINEERING YOUR SUCCESS.

DISTRIBUTION NETWORK

At Parker, we have the largest global distribution network in motion and control, with over 7,500 distributors serving more than 422,000 customers.

To find the distributor nearest you, please visit our DISTRIBUTOR LOCATOR at http://www.parker.com/pneu/distributor

ENGINEERING YOUR SUCCESS.

⚠ WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users h aving technical expertise. It is important that you analyze all aspects of your application including consequences of any failure, and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

Offer of Sale

The items described in this document are hereby offered for sale by Parker Hannifin Corporation, its subsidiaries or its authorized distributors. This offer and its acceptance are governed by the provisions stated on the separate page of this document entitled “Offer of Sale”.

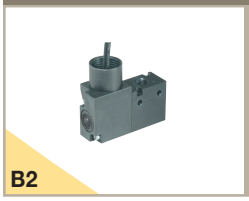
© Copyright 2023-2005 Parker Hannifin Corporation. All Rights Reserved

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Product Index, Engineering Data		A Product Index Engineering Data
Direct Acting Valves	***XM Series, 15mm Solenoid Valve, A00 Solenoid Valve***	B Direct Acting Valves
Inline Valves	***Viking Lite Series, Viking Xtreme Series, "B3, B5, B6" Series, "B7 & B8" Series, Air Saver Unit, "N" Series***	C Inline Valves
Subbase & Manifolds Valves	***H Series Micro, Moduflex Series, H Series ISO, Network Connectivity, "DX" ISOMAX Series, Valvair II Series***	D Subbase & Manifold Valves
Manual Mechanical Valves	***Directair 2 & 4 Series, Viking Xtreme Manual Series, "42" Lever / Pedal Series, "MO" Series, Safety, Brass Poppet / Sliding Seal / "PL" / "VL" / "HV" Series, Control Panel Products, Sensing Products***	E Manual / Mechanical Valves
Accessories	***Flow Controls, Check Valves, Mufflers, Quick Exhaust & Shuttle Valves, Tank Valves, Breather Vents, Silencers, Blocking Valves, Blow Guns, Integrated Fittings***	F Accessories
Part Number Index, Safety Guide, Offer of Sale		G Page Number Index, Safety Guide, Offer of Sale

Direct Acting Valves

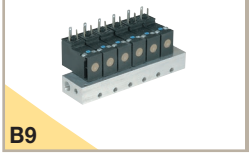
XM Series - Direct Acting



- Inline or stacking
- 1/8 inch ports
- Pressures 0 to 125 PSIG
- Temperatures 32°F to 125°F
- Flow - .15 Cv

B2

15mm Series - Direct Acting



- Subbase or manifold
- 1/8 inch ports
- Pressures VAC to 145 PSIG
- Temperatures 5°F to 140°F
- Flow - .033 to .05 Cv

B9

Inline Valves

Viking Lite Series Valves

- Inline or bar manifold
- 1/8 through 3/8 inch ports
- Pressures 22 to 145 PSIG
- Temperatures 14°F to 122°F
- Flow - .6 to 2.5 Cv

C2

Viking Xtreme Series Valves

- Inline or bar manifold
- 1/8 through 1/2 inch ports
- Pressures VAC to 232 PSIG
- Temperatures -40°F to 140°F
- Flow - .7 to 2.7 Cv

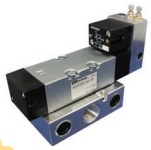
C11

B Series Valves

- Inline, subbase or bar manifold
- 1/8 through 3/4 inch ports
- Pressures VAC to 145 PSIG
- Temperatures 5°F to 120°F
- Flow - .75 to 7.0 Cv

C41

Air Saver Valve Units



- Large reduction in air consumption
- Savings in compressor power consumption
- Reduction in plant CO^2 emissions
- Big contribution to energy-saving activities
- Improved efficiency

C74

ADEX Series Valves

- Inline, subbase or bar manifold
- M3, M5, 1/8 inch ports
- Pressures VAC to 100 PSIG
- Temperatures 32°F to 122°F
- Flow - .1 to .47 Cv

C83

N Series - Inline Poppet Valves

- Inline mounted
- 3/8 through 1-1/2 inch ports
- Pressures 30 to 250 PSIG
- Temperatures 0°F to 200°F
- Flow - 3.6 to 29.9 Cv

C96

Subbase & Manifold Valves

H Series Micro Valve

- Subbase or manifold
- 4mm through 1/4 tube
- Pressures VAC to 145 PSIG
- Temperatures 5°F to 120°F
- Flow - .35 Cv

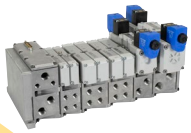
D2

Moduflex Series Valves

- Inline or stacking
- 4mm tube, 1/4, 3/8 inch ports
- Pressures VAC to 120 PSIG
- Temperatures 5°F to 140°F
- Flow - .18 to .80 Cv

D28

H Series ISO Valve



- Subbase or manifold
- 1/8 through 3/4 inch ports
- Pressures VAC to 145 PSIG
- Temperatures 5°F to 120°F
- Flow - .55 to 6.0 Cv

D71

Network Connectivity

- Network connectivity for H Series and Moduflex valves
- Up to 256 inputs
- Up to 256 outputs
- Digital or analog

D145

DX ISOMAX Series

- Subbase or manifold
- 1/8 through 3/4 inch ports
- Pressures VAC to 145 PSIG
- Temperatures 14°F to 140°F
- Flow - .55 to 4.15 Cv

D213

Valvair II Series

- Subbase or manifold
- 3/8 through 1-1/2 inch ports
- Pressures VAC to 225 PSIG
- Temperatures 0°F to 200°F
- Flow - 1.9 to 12.0 Cv

D257

Manual / Mechanical Valves

Directair 2 & 4

- Manual / mechanical
- 1/8 and 1/4 inch ports
- Pressures VAC to 150 PSIG
- Temperatures 32°F to 175°F
- Flow - .20 to .84 Cv

E2

Viking Xtreme Lever Series

- Manual / mechanical
- 1/8, 1/4 and 3/8 inch ports
- Pressures:
  Type A & B - VAC to 232 PSIG
  Type C & D - VAC to 174 PSIG
- Temperatures -40°F to 140°F
- Flow - .5 to 2.7 Cv

E14

42 Lever / Pedal Series

- Manual / mechanical
- 1/4 and 3/8 inch ports
- Pressures VAC to 150 PSIG
- Temperatures 0°F to 140°F
- Flow - 1.3 to 2.9 Cv

E21

MO Series

- Air Pilot, Manual / mechanical
- 1/4 and 1 inch ports
- Pressures VAC to 225 PSIG
- Temperatures -15°F to 200°F
- Flow - .5 to 1.25 Cv

E24

Safety

- LV/EZ shut off valves
- Port sizes 3/8 through 1-1/4 inch
- Max. supply pressure 300 PSIG
- Max. operating temperature 175°F
- Cv from 3.7 to 14
- Two hand tiedown controls

E52

Brass Poppet, Sliding Seal

- 4-way, 3-position rotary disc, direct air operated valves
- Pressures 0 to 150 PSIG
- Temperatures 18°F to 200°F
- Flow - 2.5 to 6.2 Cv

E62

Manual / Mechanical Valves

Control Panel Products

- A wide variety of push buttons and selector switches
- Visual indicators
- Foot pedal switches
- Modular pneumatic / electric push buttons

E67

Sensing / Limit Switches

- Limit switches in a variety of sizes and configurations
- Pressure switches with many adjustable ranges
- Components designed specifically for pneumatic technology using pressure variation, air bleed or blocking for detection

E77

Accessories

Flow Control & Check Valves

- Flow controls
  - 1/8 to 1-1/2 inch ports
- Check valves
  - 1/8 to 3/4 inch ports

F2

Misc Accessories

- Exhaust mufflers
- Quick exhaust & shuttle valves
- Threshold valves
- Tank valves
- Blow guns

F14

Integrated Fittings

- Flow controls
- Check valves
- Blocking valves

F25

Part Number Index, Safety Guides, Offer of Sale

- Part Number to Page Number Index
- Safety Guide
- Offer of Sale

G2

PNEUMATIC DIVISION E-TOOLS

Pneumatic Division Part Lookup Tool

Part Lookup Tool Overview

The purpose of this application is to provide users with more in depth detail, such as replacement kits or current inventory for specific pneumatic part numbers. The tool also provides cross reference information for products that have been previously obsoleted. Searches can be made by searching a portion or all of a part number. Use the drop down options available to narrow your search.

Part Lookup Tool Contents

- Replacement KITs by part number
- Obsolete cross reference
- Inventory/stock levels
- Pricing (with distributor login only)
- Bulk part search
- Shipping location
- Lead time

How to access the Tool

U.S. Parker Pneumatic Distributors

- **www.pdnpartlookup.com**
- **Or download the “Distributor Toolbox” app**

Guest Users

- **www.pdnplu.com**

Pneumatic Division Size & Selection Calculators

Size, Selection and Cost of Air Calculators Overview

The purpose of this application is to provide users and designers of pneumatic systems with a handy collection of compressed air cost calculators, conversion tools and air valve (Cv) and flow (SCFM) calculations for air cylinder actuation. The size and select calculators are available to anyone for use. See details below.

How to access the Tool

- **www.parkerpdncalc.com**
- **Or download the “Pneumatics” calculator app**

Calculator Contents

- Cost calculator for leaks
- Cost calculator for compressors
- Cost calculator for reverse flow regulators
- Vacuum flow through an orifice
- Air flow through an orifice
- Annual cost of air cylinder operation
- Valve/FRL sizing for cylinder actuation
- And more!

The Parker 5-Year Extended Warranty

Parker Hannifin Corporation will extend its warranty on all pneumatic components to sixty (60) months providing they are correctly installed and protected by Parker pneumatic filters which are properly maintained. Components covered by this warranty include all cylinders, valves, and pneumatic automation components manufactured by Parker in any of our global facilities. This warranty covers our components anywhere in the world you may ship your equipment.

Parker's obligation under this warranty is limited to the replacement or repair of any failed components. The buyer understands that the seller will not be liable for any other costs or damages.

The buyers of quality Parker components and filters benefit by having ONE source for all pneumatic needs - **Parker.**

Jennifer Parmentier
President
Motion Systems Group

Parker

Application Engineering Data

Engineering Data

Selection Guide	A2
Fluid Power Graphic Symbols	A3
Direct Acting Solenoid Valves	A4
Solenoid Air Pilot Valves	A5-A7
Manual Valves	A8
IP Ratings, Symbols	A9
ISO Mounting Information	A10

Saving Money and Space by Sizing Your Valves Properly

This catalog gives you a flow rating (Cv) for each valve in the Parker Hannifin line. You can "plug" your requirements into the following simple formula, and determine the Cv needed to do the job. By not oversizing, you'll save space and money, and you'll ensure the valve you select will do the job.

Converting the Job Requirements Into Cv (Capacity Co-efficient).

$$Cv = \frac{\text{Cylinder Area (Sq. In.) (See Table 1)} \times \text{Cylinder Stroke (In.)} \times \text{Compression Factor (Table 2)} \times \text{"A" (Table 2)}}{\text{Stroke Time (sec.)} \times 28.8}$$

Let's work through an example:

We want to extend a $3\frac{1}{4}$" bore cylinder which has a 12" stroke in one second, and we have a supply pressure of 80 PSI to do the work. Here's what we know:

Cylinder Area for a 3-1/4" Bore, from Table 1 .....8.30 sq. in.

Cylinder Stroke ..... 12 in.

Stroke Time Required in Seconds.....1 sec.

Compression Factor at 80 PSI, from Table 2 ..... 6.4

"A" Constant for 80 PSI, from Table 2 ..... .048

Substituting in the formula, we have:

$$C_V = \frac{8.30 \times 12 \times 6.4 \times .048}{1 \times 28.8} = 1.06$$

Any valve, therefore, which has a Cv of at least 1.06, will extend our cylinder the specified distance in the required time.

Choosing the Valve "Series"

Your next step is to choose a basic valve design to do the job. For a quick guide to valve designs, see Table 3.

Having selected the basic valve design, consult the Capacity Co-efficient (Cv) tables which describe the individual valve capacities.

Selecting the Valve Model, Options and Accessories

Having determined Cv, series, port size, flow-path configuration (pre-determined by circuit design), and actuation method, you're ready to choose the exact valve model number.

Read the pertinent catalog pages; note the exact model numbers, options and accessories you want. Then phone or write your Parker Hannifin air valve distributor. They will give you prompt, accurate service.

Note: Need circuit design help? Contact your local Parker Hannifin distributor. They are backed up by our regional Sales Engineers and offices. Between them, you'll find answers to all of your questions.

Table 1

Effective Square-Inch Areas for Standard-Bore-Size Cylinders

Bore Size	Cylinder Area (Sq. In.)	Bore Size	Cylinder Area (Sq. In.)
3/4"	.44	4"	12.57
1"	.79	4-1/2"	15.90
1-1/8"	.99	5"	19.64
1-1/4"	1.23	6"	28.27
1-1/2"	1.77	7"	38.48
1-3/4"	2.41	8"	50.27
2"	3.14	10"	78.54
2-1/2"	4.91	12"	113.10
3-1/4"	8.30	14"	153.94
3-5/8"	10.32		

Table 2

Compression Factors and "A" Constants

Inlet Pressure (PSIG)	Compression Factor	"A" Constants for Various Pressure Drop*		
		2 PSI △P	5 PSI △P	10 PSI △P
10	1.6	.152	.103	
20	2.3	.126	.084	.065
30	3.0	.111	.073	.055
40	3.7	.100	.065	.048
50	4.4	.091	.059	.044
60	5.1	.085	.055	.040
70	5.7	.079	.051	.037
80	6.4	.075	.048	.035
90	7.1	.071	.046	.033
100	7.8	.068	.044	.032
110	8.5	.065	.042	.030
120	9.2	.063	.040	.029
130	9.9	.061	.039	.028
140	10.6	.058	.037	.027
150	11.2	.057	.036	.026
160	11.9	.055	.035	.025
170	12.6	.053	.034	.024
180	13.3	.052	.033	.024
190	14.0	.051	.032	.023
200	14.7	.050	.032	.023

Note: Use "A" constant at 5 PSI △P for most applications. On very critical applications, use "A" at 2 PSI △P. You will find in many cases, a 10 PSI △P is not detrimental, and can save money and mounting space.

* Tabulated values are the solution of $\frac{1}{22.48}\sqrt{\frac{GT}{(P_1 - P_2)\,P_2}}$ where T is for 68°F and G =1 for Air.

Table 3

Characteristics of the Major Valve Designs

A. Poppet 3-Way and 4-Way	1. High flow capacities 2. Minimum lubrication requirements 3. Fast response 4. Self-cleaning poppet seats 5. Pressures of 15 to 150 PSIG (modifications for vacuum to 250 PSIG)
B. Spool Valves (WCS) 3-Way and 4-Way	1. Low friction 2. Lower operating pressures 3. Fast response 4. Less wear 5. Long Cycle Life - Under pressure, radial expansion of the seal occurs to maintain sealing contact with the valve bore 6. Non-Lube Service - No lubrication required for continuous valve shifting 7. Bi-Directional Spool Seals - Common spool used for any pressure, including vacuum
C. Packed Bore 4-Way	1. Wide range of flow capacities 2. Wide range of flow-path configurations 3. Pilot-operated models available 4. Pressures of vacuum to 150 PSIG
D. Rotary Or Reciprocating Disc 4-Way, manually operated	1. Inexpensive 2. Versatility in manual actuation

Cv – Capacity Co-efficients (sometimes called Flow Factors). Each flow path through the valve has its own Cv value. All Cv ratings for each valve cataloged on this page are listed on the front side of this sheet.

$$Cv = \frac{Q}{22.48}\sqrt{\frac{GT}{(P_1 - P_2)\,P_2}}$$

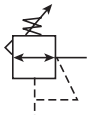
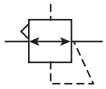
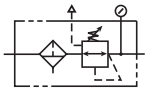
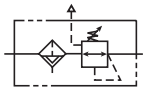
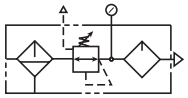
Q = Flow in Standard Cubic Feet per minute (14.7 PSIA at 60°F)
P_1 = Inlet Absolute Pressure (gauge pressure + 14.7)
P_2 = Outlet Absolute Pressure (gauge pressure + 14.7)
Note: P_2 must be greater than .53 x P_1
G = Specific Gravity of flowing medium (Air, G =1)
T = Absolute Temperature of Air (460 + °F.)

Cv = Q x "A" (Table 2)

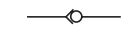
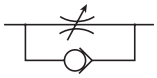
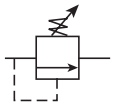
For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

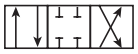
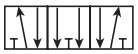
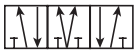
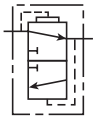
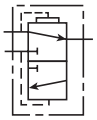
Air Preparation Units

Symbol	Description
	Filter / Separator with manual drain
	Filter / Separator with automatic drain
	Oil Removal Filter
	Automatic Drain
	Lubricator less drain
	Lubricator with manual drain
	Lubricator with automatic filling
	**Air Line Pressure Regulator** adjustable, relieving
	**Air Line Pressure Regulator** pilot controlled, relieving
	**Filter / Regulator** (piggyback) manual drain relieving (with gauge)
	**Filter / Regulator** (piggyback) auto drain relieving
	**Air Line Combo F-R-L** simplified

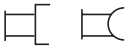
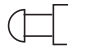
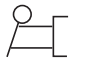
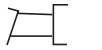
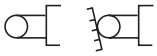
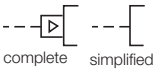
Pneumatic Valves

Symbol	Description
	**Check**
	**Flow Control**
	**Relief Valve**
	2-Position, 2-Way
	2-Position, 3-Way
	2-Position, 4-Way
	2-Position, 4-Way 5-Ported

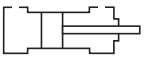
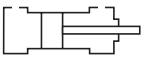
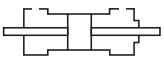
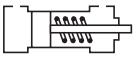
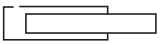
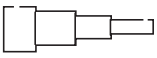
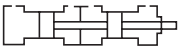
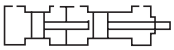
Pneumatic Valves

Symbol	Description
	**3-Position, 4-Way, APB** ports closed, center pos.
	**3-Position, 4-Way, CE 5-Ported** cylinder ports open to exhaust in center position
	**3-Position, 4-Way, PC 5-Ported** pressure port open to cylinder ports in center position
	**Quick Exhaust**
	**Shuttle**

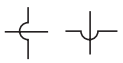
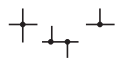
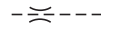
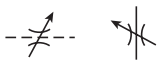
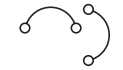
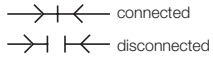
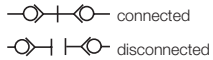
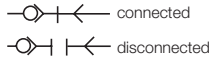
Valve Actuators

Symbol	Description
	**Manual** general symbol
	**Push Button**
	**Lever**
	**Pedal or Treadle**
	**Mechanical** cam, toggle, etc.
	Spring
	Detent line indicates which detent is in use
	Piezo
	Solenoid
	Internal Pilot Supply
	**Remote Pilot Supply** complete / simplified
	And / Or Composite solenoid and pilot or manual override
	And / Or Composite solenoid and pilot or manual override and pilot

Cylinders

Symbol	Description
	**Standard** double acting
	**Single Acting**
	**Double Rod**
	**Spring Return**
	**Ram Type**
	**Telescope**
	**Tandum**
	**Duplex**

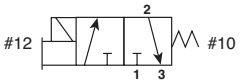
Lines and Functions

Symbol	Description
	Solid Line – Main Line
	Dashed Line – Pilot Line
	Dotted Line – Exhaust or Drain Line
	Center Line – Enclosure Outline
	**Lines Crossing** (90° intersection not necessary)
	**Lines Joining** (90° intersection not necessary)
	Lines Joining
	Flow Direction hydraulic medium
	Flow Direction gaseous medium
	Energy Source
	**Line with Fixed Restriction**
	**Line with Adjustable Restriction**
	**Flexible Line**
	Plugged Port, Test Station, Power Take-off
	connected / disconnected — **Quick Disconnect Without Checks**
	connected / disconnected — **Quick Disconnect With Checks**
	connected / disconnected — **Quick Disconnect With One Check**

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

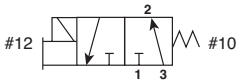
3-Way, 2-Position, Normally Closed



De-energized position – Solenoid #12 de-energized. Pressure at inlet port 1 blocked, outlet port 2 connected to exhaust port 3.

Energized position – Solenoid #12 energized. Pressure at inlet port 1 is connected to outlet port 2, exhaust port 3 is blocked.

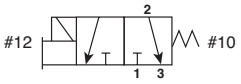
3-Way, 2-Position, Normally Open



De-energized position – Solenoid #12 de-energized. Pressure at inlet port 3 connected to outlet port 2, exhaust port 1 is blocked.

Energized position – Solenoid #12 energized. Pressure at inlet port 3 blocked, outlet port 2 connected to exhaust port 1.

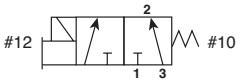
3-Way, 2-Position, Diverter



De-energized position – Solenoid #12 de-energized. Pressure at inlet port 2 connected to outlet port 3. Port 1 is blocked.

Energized position – Solenoid #12 energized. Pressure at inlet port 2 is connected to outlet port 1. Port 3 is blocked.

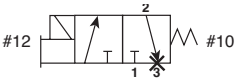
3-Way, 2-Position, Selector



De-energized position – Solenoid #12 de-energized. Pressure at inlet port 1 is blocked. Pressure at inlet port 3 is connected to outlet port 2.

Energized position – Solenoid #12 energized. Pressure at inlet port 1 is connected to outlet port 2. Pressure at port 3 is blocked.

2-Way, 2-Position, Normally Closed

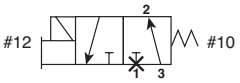


De-energized position – Solenoid #12 de-energized. Pressure at inlet port 1 blocked, port 2 is connected to port 3, which is plugged.

Energized position – Solenoid #12 energized. Pressure at inlet port 1 is connected to outlet port 2. Port 3 is blocked.

[x] Plug port 3.

2-Way, 2-Position, Normally Open

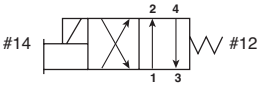


De-energized position – Solenoid #12 de-energized. Pressure at inlet port 3 is connected to outlet port 2. Port 1 is blocked.

Energized position – Solenoid #12 energized. Pressure at inlet port 3 is blocked. Port 2 is connected to port 1, which is plugged.

[x] Plug port 1.

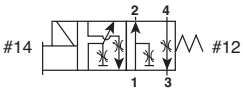
4-Way, 2-Position



De-energized position **– Solenoid #14 de-energized. Pressure at inlet port 1 connected outlet port 2. Outlet port 4 connected to exhaust port 3.**

Energized position – Solenoid #14 energized. Pressure at inlet port 1 is connected to outlet port 4. Outlet port 2 connected to exhaust port 3.

4-Way, 2-Position with Flow Controls

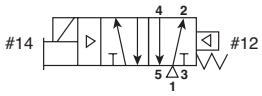


De-energized position **– Solenoid #14 de-energized. Pressure at inlet port 1 connected outlet port 2. Outlet port 4 connected to exhaust port 3.**

Energized position – Solenoid #14 energized. Pressure at inlet port 1 is connected to outlet port 4. Outlet port 2 connected to exhaust port 3.

Flow Controls meter exhaust from ports 2 and 4 separately into port 3.

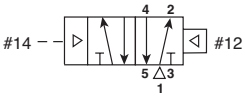
Single Solenoid 4-Way, 2-Position



De-energized position – Solenoid operator #14 de-energized. Pressure at inlet port 1 connected to outlet port 2. Outlet port 4 connected to exhaust port 5.

Energized position – Solenoid operator #14 energized. Pressure at inlet port 1 connected to outlet port 4. Outlet port 2 connected to exhaust port 3.

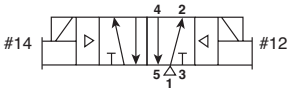
Single Remote Pilot 4-Way, 2-Position



Normal position – Pressure at inlet port 1 connected to outlet port 2. Outlet port 4 connected to exhaust port 5.

Operated position – Maintained air signal at port 14. Pressure at inlet port 1 connected to outlet port 4. Outlet port 2 connected to exhaust port 3.

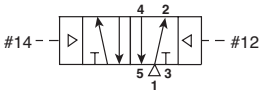
Double Solenoid 4-Way, 2-Position



Solenoid operator #14 energized last. Pressure at inlet port 1 connected to outlet port 4. Outlet port 2 connected to exhaust port 3.

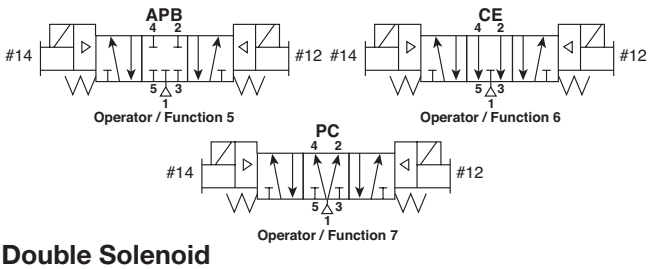
Solenoid operator #12 energized last. Pressure at inlet port 1 connected to outlet port 2. Outlet port 4 connected to exhaust port 5.

Double Remote Pilot 4-Way, 2-Position



Momentary air signal at port 14 last. Pressure at inlet port 1 connected to outlet port 4. Outlet port 2 connected to exhaust port 3.

Momentary air signal at port 12 last. Pressure at inlet port 1 connected to outlet port 2. Outlet port 4 connected to exhaust port 5.



Double Solenoid 4-Way, 3-Position

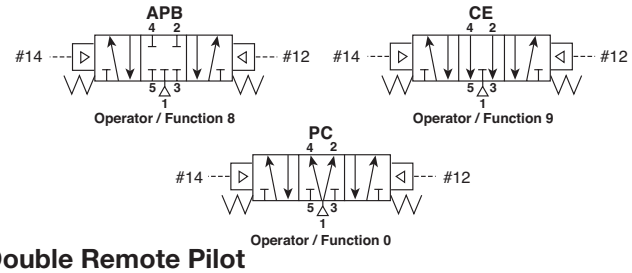
With #12 operator energized – inlet port 1 connected to cylinder port 2, cylinder port 4 connected to exhaust port 5.

With #14 operator energized – inlet port 1 connected to cylinder port 4, cylinder port 2 connected to exhaust port 3.

Function 5: All Ports Blocked
All ports blocked in the center position.

Function 6: Center Exhaust
Cylinder ports 2 and 4 connected to exhaust ports 3 and 5 in center position. Port 1 is blocked.

Function 7: Pressure Center
Pressure port 1 connected to cylinder ports 2 and 4, and exhaust ports 3 and 5 blocked in center position.



Double Remote Pilot 4-Way, 3-Position

With #12 operator signaled – inlet port 1 connected to cylinder port 2, cylinder port 4 connected to exhaust port 5.

With #14 operator signaled – inlet port 1 connected to cylinder port 4, cylinder port 2 connected to exhaust port 3.

Function 8: All Ports Blocked
All ports blocked in the center position.

Function 9: Center Exhaust
Cylinder ports 2 and 4 connected to exhaust ports 3 and 5 in center position. Port 1 is blocked.

Function 0: Pressure Center
Pressure port 1 connected to cylinder ports 2 and 4, and exhaust ports 3 and 5 blocked in center position.

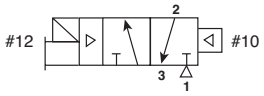
Dual Pressure:
May be used for dual pressure service with pressure at ports 3 & 5. (Use either external pilot source option “K”, “W” or “X”, or dual pressure pilot source option “D” or “E”.) If pilot source “D” or “E” is selected, the high pressure must be at port #3. If pilot source “K”, “W” or “X” is selected, the external pilot must be plumbed to port #14 or “X” respectively. Note: The “B6” valve is also available with dual pressure using Port 5 for high pressure (Option “G” & “H”). This is only to be used if converting from a “42” (“CM”) Series traditional valve.

In the 3-Position valve, the effect of dual pressure is extremely important when the valve is in the center position, as the CE and PC functions are reversed. Therefore, care should be used when selecting a 3-Position valve.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Single Solenoid 3-Way, 2-Position, NC (NNP)

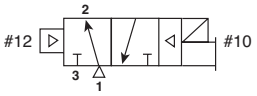


Normally Closed:

De-energized position – Solenoid #12 de-energized. Pressure at inlet port 1 blocked, outlet port 2 connected to exhaust port 3.

Energized position – Solenoid #12 energized. Pressure at inlet port 1 connected to outlet port 2, exhaust port 3 is blocked.

Single Solenoid 3-Way, 2-Position, NO (NP)

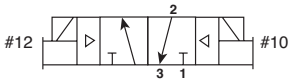


Normally Open:

De-energized position – Solenoid #10 de-energized. Pressure at inlet port 1 connected to outlet port 2, exhaust port 3 is blocked.

Energized position – Solenoid #10 energized. Pressure at inlet port 1 blocked, outlet port 2 connected to exhaust port 3.

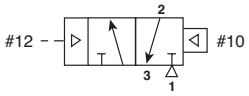
Double Solenoid 3-Way, 2-Position



Solenoid operator #12 energized last. Pressure at inlet port 1 connected to outlet port 2, exhaust port 3 is blocked.

Solenoid operator #10 energized last. Pressure at inlet port 1 blocked, outlet port 2 connected to exhaust port 3.

Single Remote Pilot 3-Way, 2-Position, NC (NNP)

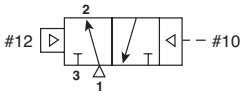


Normally Closed:

Normal position – Pressure at inlet port 1 blocked, outlet port 2 connected to exhaust port 3.

Operated position – Maintained air signal at port 12. Pressure at inlet port 1 connected to outlet port 2, exhaust port 3 is blocked.

Single Remote Pilot 3-Way, 2-Position, NO (NP)

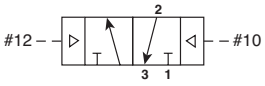


Normally Open:

Normal position – Pressure at inlet port 1 connected to outlet port 2, exhaust port 3 is blocked.

Operated position – Maintained air signal at port 10. Pressure at inlet port 1 blocked, outlet port 2 connected to exhaust port 3.

Double Remote Pilot 3-Way, 2-Position



Momentary air signal at port 12 last. Pressure at inlet port 1 connected to outlet port 2, exhaust port 3 is blocked.

Momentary air signal at port 10 last. Pressure at inlet port 1 blocked, outlet port 2 connected to exhaust port 3.

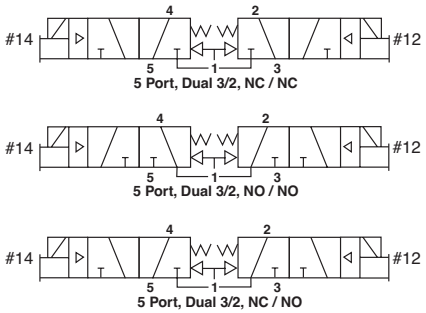
Double Solenoid / Remote Pilot Dual 3-Way, 2-Position NC / NC (NNP)

With #14 & #12 operators both de-energized – pressure at inlet port 1 blocked, outlet port 4 connected to exhaust port 5, outlet port 2 connected to exhaust port 3.

With #14 operator energized – pressure at inlet port 1 connected to outlet port 4, exhaust port 5 blocked, outlet port 2 connected to exhaust port 3.

With #12 operator energized – pressure at inlet port 1 connected to outlet port 2, exhaust port 3 blocked, outlet port 4 connected to exhaust port 5.

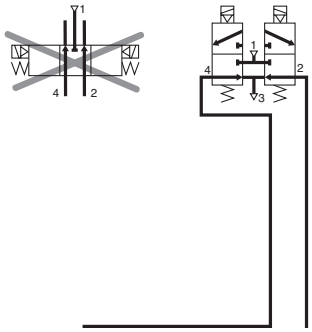
With #14 & #12 operators both energized – pressure at inlet port 1 connected to outlet ports 4 & 2, exhaust ports 3 & 5 blocked.



Dual 3/2 valves replace 3-position valves for better performance

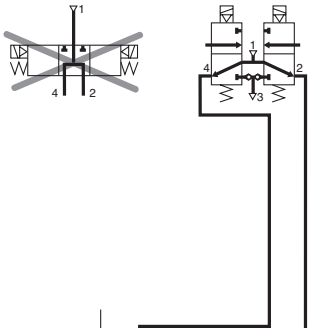
3-position center exhaust

A traditional 5/3 center exhaust valve is now replaced by a double 3/2 NC+NC valve module. Both cylinder chambers are exhausted and rod and piston are free to move.



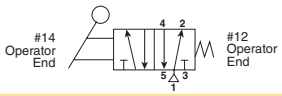
3-position pressure center

A traditional 5/3 pressure center valve is now replaced by a double 3/2 NO+NO valve module. The function is identical.



Lever Valves – Parallel & Perpendicular Operated

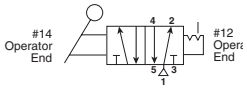
2-Position, Spring Return



Single Pressure at Port #1 – The Hand Lever alternately pressurizes port 2 or 4 while exhausting at port 3 or 5. When actuating Hand Lever, port 4 is pressurized; when releasing Hand Lever, spring returns the spool, pressurizing port 2.

Dual Pressure – Pressure at port 3 & 5 alternately pressurizes port 2 or 4 while exhausting at port 1. When actuating Hand Lever, port 2 is pressurized; when releasing Hand Lever, spring returns the spool, pressurizing port 4. (Must be ordered as dual pressure)

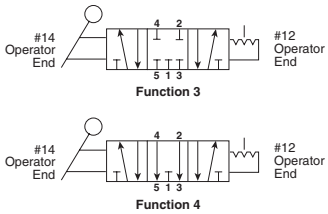
2-Position, Detent



Single Pressure at Port #1 – The Hand Lever alternately pressurizes port 2 or 4 while exhausting at port 3 or 5. When pulling Hand Lever, port 4 is pressurized; when pushing Hand Lever, port 2 is pressurized. Spool stays in last actuated position.

Dual Pressure – Pressure at port 3 & 5 alternately pressurizes port 2 or 4 while exhausting at port 1. When pulling Hand Lever, port 2 is pressurized; when pushing Hand Lever, port 4 is pressurized. Spool stays in last actuated position. (Must be ordered as dual pressure.)

3-Position, Detent



Single Pressure at Port #1 – The Hand Lever alternately pressurizes port 2 or 4 while exhausting at port 3 or 5. When pulling Hand Lever, port 4 is pressurized; when pushing Hand Lever, port 2 is pressurized. When Hand Lever is vertical, it is in the center position - either APB or CE. Spool stays in last actuated position.

Center Functions

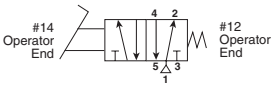
All Ports Blocked – Function 3

Center Exhaust – Function 4

⚠ **CAUTION:**
For 3-Position lever function, do not restrict exhaust ports with speed controls.

Foot Pedal Operated

2-Position, Spring Return



⚠ **CAUTION:**
This valve shall not be used to actuate a punch press. Do not use this valve on punch presses or press brakes. See OSHA 1910.217.

See Dimension page for Pedal Guard Kit.

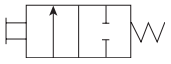
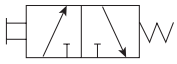
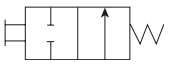
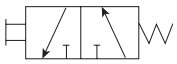
Single Pressure at Port #1 – The Foot Pedal alternately pressurizes port 2 or 4 while exhausting at port 3 or 5. When pressing Foot Pedal down, port 4 is pressurized; when releasing Foot Pedal, spring returns the spool, pressurizing port 2.

Dual Pressure – Pressure at port 3 & 5 alternately pressurizes port 2 or 4 while exhausting at port 1. When pressing Foot Pedal down, port 2 is pressurized; when releasing Foot Pedal, spring returns the spool, pressurizing port 4. (Must be ordered as dual pressure)

Electrical Enclosure IP Ratings

1st Numeral: Degree of Protection with respect to persons and solid objects		2nd Numeral: Degree of protection with respect to harmful ingress of water								
		0	1	2	3	4	5	6	7	8
		Non Protected	Protected against dripping water	Protected against dripping water of ±15° angle	Protected against spraying water of ±60° angle	Protected against splashing water	Protected against water jets	Protected against heavy seas	Protected against immersion	Protected against submersion
Non-Protected	0	IP00	IP01	IP02						
Protected against solid objects greater than Ø50mm	1	IP10	IP11	IP12	IP13					
Protected against solid objects greater than Ø12mm	2	IP20	IP21	IP22	IP23					
Protected against solid objects greater than Ø2.5mm	3	IP30	IP31	IP32	IP33	IP34				
Protected against solid objects greater than Ø1.0mm	4	IP40	IP41	IP42	IP43	IP44	IP45	IP46		
Dust protected Depression 200mm water column, air flow 80 x volume of enclosure	5					IP54	IP55	IP56		
Dust-tight Same test procedure	6						IP65	IP66	IP67	IP68

Functionality Explanation

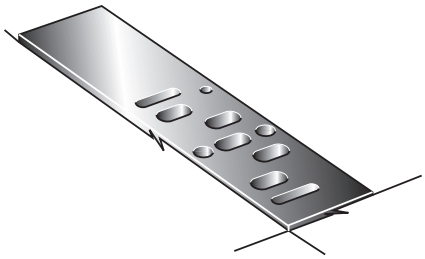
Fluid Power			Universal Description	Electrical	
Function	**Symbol**			**Function**	**Symbol**
Normally Closed (N.C.)	**2-Way** 	**3-Way** 	Normally Non-Passing (NNP)	**Normally Open (N.O.)**	
Normally Open (N.O.)	**2-Way** 	**3-Way** 	Normally Passing (NP)	**Normally Closed (N.C.)**	

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

International Standards Organization
Crafted a set of rules you must follow to call your product an “ISO valve”.
In valves ISO standard Identifies the pneumatic interface between valve and the base.
Defines pattern of mounting screws.
Allows products to be interchangeable between manufacturers.

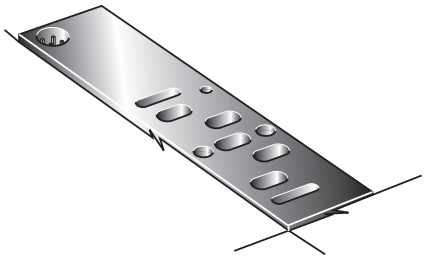
15407-1



External Electrical Connection Subbase Valves

The ISO Standard 15407-1 specifies an interface pattern for a common subbase valve consisting of pressure passages 1, 3, 5, 2, & 4, pilot passages 12 & 14. The width of the pattern and location of the 2-bolt holes are also specified. This ISO standard specifies 2 different sizes – 18mm as the smallest and 26mm as the largest.

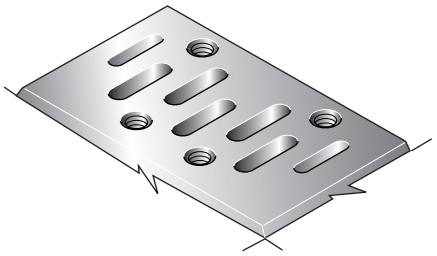
15407-2



Body-to-Base Plug-In Subbase Valves

The ISO Standard 15407-2 specifies an interface pattern for a common subbase valve consisting of pressure passages 1, 3, 5, 2, & 4, pilot passages 12 & 14, and a plug-in electrical connector. The width of the pattern and location of the 2-bolt holes are also specified. This ISO standard specifies 2 different sizes – 18mm as the smallest and 26mm as the largest.

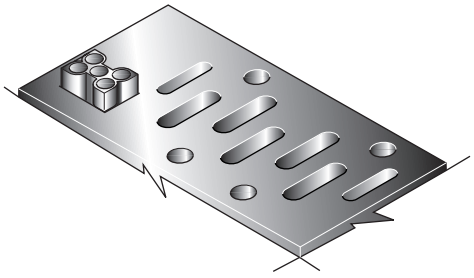
5599-1



External Electrical Connection Subbase Valves

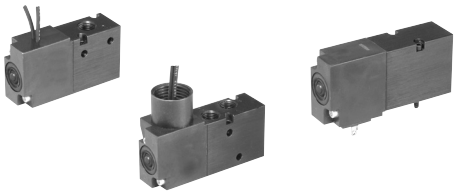
The ISO Standard 5599-1 specifies an interface pattern for a common subbase valve consisting of pressure passages 1, 3, 5, 2, & 4, and pilot passages 12 & 14. The width of the pattern and location of the 4 bolt holes are also specified. There are no specifications for the type of external electrical connection used to control the valve.

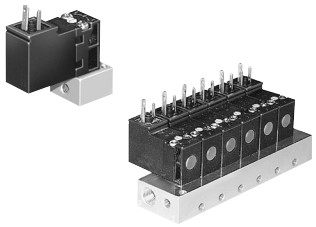
5599-2



Body-to-Base Plug-In Subbase Valves

The ISO Standard 5599-2 specifies an interface pattern for a common subbase valve consisting of pressure passages 1, 3, 5, 2, & 4, pilot passages 12 & 14, and a plug-in electrical connector. The width of the pattern and location of the 4-bolt holes are also specified. This ISO standard specifies 6 different sizes – 1 as the smallest up to 6 as the largest. Manufacturers who produce ISO 5599-2 valves typically offer sizes 1, 2 & 3.





Pneumatic Valve Products
Direct Acting Valve Series

XM Series

Features	B1
Common Part Number / Ordering Information	B3-B5
Accessories	B6
Technical Data	B7
Dimensional Data	B8

15mm Solenoid Valve

Features	B9
Ordering Information	B10-B11
Dimensional Data	B11

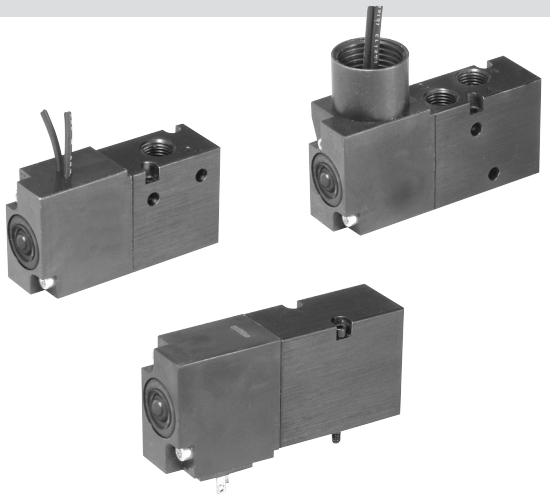
A00 Solenoid Valve

Features	B12
Common Part Numbers / Ordering Information	B13
Accessories	B13
Technical Data	B14
Dimensional Data	B15

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

XM Valve Series

XM series is a 1/8 inch ported, 3-way and 4-way, 2-position, spring return, normally open or normally closed, general purpose air valve.



Ports
- 1/8" NPT

Mounting
- Inline
- IEM bar manifold
- Subbase valve manifold

Solenoids
- Continuous duty rated
- 24" grommet
- 15mm 3-pin (9.4mm pin spacing)
- 1/2" conduit
- 12VDC to 240VAC

Balanced poppet
- 3-way N.O. & N.C.
- Diverter
- Selector
- Vacuum option

ROHS compliant

Operating information

3-way, N operating pressure:	0 to 125 PSIG
3-way, V* operating pressure:	28" Hg to 25 PSIG
4-way, N operating pressure:	28" Hg to 125 PSIG
Temperature range:	32°F to 125°F (0°C to 50°C)

* For vacuum service

Material specifications

Body	Aluminum
Center post and armature	Stainless steel
Stem	Brass
Spring	Stainless steel
Seals	Buna N
Center post sleeve	Acetal
Coil	General purpose Class B, encapsulated

Performance information

Electrical						Flow	
	Voltage			Power	Holding	Cv Chart	
Code	AC		DC	Consumption	Current		
	60Hz	50Hz		(W / VA)	(Amps)	3-Way	4-Way
42	24	22	—	4.8VA	.200	.15	.15
45*	—	—	12	4.5W	.375	.15	.15
49	—	—	24	4.5W	.188	.15	.15
53	120	110	—	4.32VA	.036	.15	.15
57	240	220	—	4.32VA	.018	.15	.15

* Mobile voltage, +25/-30%
Note: Voltage tolerance: +10 / -15%
Cv tested per ANSI / (NFPA) T3.21.3

Response time

		0 Cu. In. Test Chamber		12 Cu. In. Test Chamber	
Code	Voltage	Fill	Exhaust	Fill	Exhaust
49	24VDC	.011	.007	.240	.384
53	120VAC	.011	.020	.240	.384

Average Fill Time (Seconds): With 100 PSIG supply, time required to fill from 0-90 PSIG and exhaust from 100 PSIG to 10 PSIG is measured from instant of energizing, or de-energizing solenoid. Times shown are average.
Tested per ANSI / (NFPA) T3.21.8.

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

3-way Inline Valves

	Symbol	Port Size	Cv	Voltage	Valve Type	Weight	Part Number
		1/8"	.15	24" Grommet, 24VDC	Inline	4 oz (.11 Kg)	**XM30NBG49A**
		1/8"	.15	24" Grommet, 120VAC	Inline		**XM30NBG53A**
		1/8"	.15	3-Pin, 15mm, DIN 9.4mm, 24VDC	Inline	4 oz (.11 Kg)	**XM30NB549A**
		1/8"	.15	3-Pin, 15mm, DIN 9.4mm, 120VAC	Inline		**XM30NB553A**
		1/8"	.15	1/2" Conduit / 24" leads, 24VDC	Inline	5 oz (.14 Kg)	**XM30NBH49A**
		1/8"	.15	1/2" Conduit / 24" leads, 120VAC	Inline		**XM30NBH53A**

Note: All units with non-locking flush override. Can be used as N.O / N.C. / Diverter / Selector function.

4-way Inline Valves

	Symbol	Port Size	Cv	Voltage	Valve Type	Weight	Part Number
		1/8"	.15	24" Grommet, 24VDC	Inline	4.3 oz (.12 Kg)	**XM40NBG49A**
		1/8"	.15	24" Grommet, 120VAC	Inline		**XM40NBG53A**
		1/8"	.15	3-Pin, 15mm, DIN 9.4mm, 24VDC	Inline	4.3 oz (.12 Kg)	**XM40NB549A**
		1/8"	.15	3-Pin, 15mm, DIN 9.4mm, 120VAC	Inline		**XM40NB553A**
		1/8"	.15	1/2" Conduit / 24" leads, 24VDC	Inline	5.3 oz (.15 Kg)	**XM40NBH49A**
		1/8"	.15	1/2" Conduit / 24" leads, 120VAC	Inline		**XM40NBH53A**

Note: All units with non-locking flush override.

3-way Subbase Mount Valves

	Symbol	Port Size	Cv	Voltage	Valve Type	Weight	Part Number
		1/8"	.15	24" Grommet, 24VDC	Subbase mount	4 oz (.11 Kg)	**XM3VNBG49A**
		1/8"	.15	24" Grommet, 120VAC	Subbase mount		**XM3VNBG53A**
		1/8"	.15	3-Pin, 15mm, DIN 9.4mm, 24VDC	Subbase mount	4 oz (.11 Kg)	**XM3VNB549A**
		1/8"	.15	3-Pin, 15mm, DIN 9.4mm, 120VAC	Subbase mount		**XM3VNB553A**

Note: All units with non-locking flush override. Can be used as N.O / N.C. / Diverter / Selector function.

4-way Subbase Mount Valves

	Symbol	Port Size	Cv	Voltage	Valve Type	Weight	Part Number
		1/8"	.15	24" Grommet, 24VDC	Subbase mount	4.3 oz (.12 Kg)	**XM4VNBG49A**
		1/8"	.15	24" Grommet, 120VAC	Subbase mount		**XM4VNBG53A**
		1/8"	.15	3-Pin, 15mm, DIN 9.4mm, 24VDC	Subbase mount	4.3 oz (.12 Kg)	**XM4VNB549A**
		1/8"	.15	3-Pin, 15mm, DIN 9.4mm, 120VAC	Subbase mount		**XM4VNB553A**

Note: All units with non-locking flush override.

☐ Most popular.

Model Number Index

XM	4	0	N	B	G49	—	A

Operator / Function

3-Way, Direct Operated, Single Solenoid, Spring Return	3
4-Way, Direct Operated, Single Solenoid, Spring Return	4

Port Size / Thread Type

1/8" NPT Inline	0*
Subbase Valve Less Base	V

* Available on IEM manifolds.

Pilot Source / Exhaust

Direct Operated / Standard Pressure	N*
Direct Operated / Vacuum Service	V**

* 3-Way Valve Positive Pressure, 4-Way Valve Vacuum or Positive Pressure

** 3-Way Valve Vacuum Pressure.

Overrides

Flush - Non-Locking	B

Options

Blank	None
F0*	Flow Control

* 4-Way Valves Only.

Engineering Level

A	Current

Enclosures / Lead Length

		Voltage		
		AC		DC
		60Hz	50Hz	
542	15mm 3-Pin DIN 9.4mm	24	22	
545*	15mm 3-Pin DIN 9.4mm			12
549	**15mm 3-Pin DIN 9.4mm**			**24**
553	**15mm 3-Pin DIN 9.4mm**	**120**	**110**	
G42	Grommet / Flying Leads 24"	24	22	
G45*	**Grommet / Flying Leads 24"**			**12**
G49	**Grommet / Flying Leads 24"**			**24**
G53	**Grommet / Flying Leads 24"**	**120**	**110**	
G57	Grommet / Flying Leads 24"	240	220	
H42†	1/2" Conduit / Flying Leads 24"	24	22	
H45*†	1/2" Conduit / Flying Leads 24"			12
H49†	**1/2" Conduit / Flying Leads 24"**			**24**
H53†	**1/2" Conduit / Flying Leads 24"**	**120**	**110**	

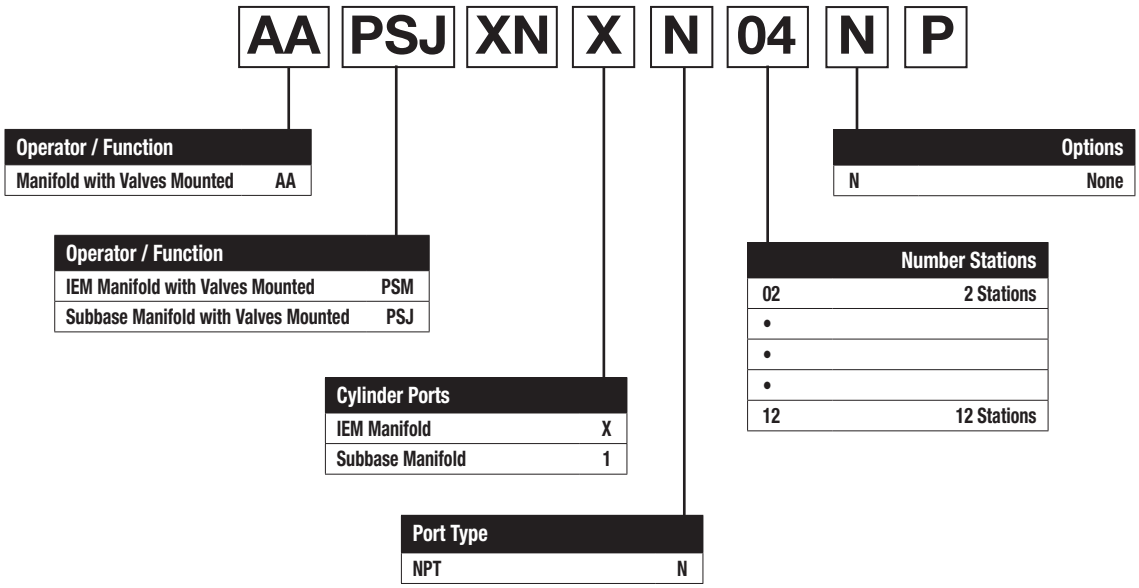
* Mobile Voltage Rated.

† Inline Version Only.

Notes:

Inline Valves
Conduit Inline valves cannot be mounted to IEM or Sub-base Manifolds.

How to Order Manifold Assemblies



IEM Bar Manifold Assembly

First line item describes IEM Assembly. Subsequent line items listed identify each station in the Manifold starting with Station Number 1.

Ordering Example

Item	Qty	Part Number
001	1	AAPSMXNXN04NP
002	2	XM30NBG49A **- Station 1, 2 - Normally Closed**
003	1	XM40NBG49A **- Station 3**
004	1	XM40NBG49F0A **- Station 4**

Notes: When ordering Add-A-Folds, list valves left to right when looking at the Port 1/3 side of the manifold. All 3-Way valves will be assembled as 3-Way N.C. valves.

Component Ordering Example

Item	Qty	Part Number
001	1	PSMXNXN04NP (IEM Kit)
002	2	XM30NBG49A (Valve)
003	1	XM40NBG49A (Valve)
004	1	XM40NBG49F0A (Valve)

Subbase Manifold Assembly

First line item describes Subbase Assembly. Subsequent line items listed identify each station in the Manifold starting with Station Number 1.

Ordering Example

Item	Qty	Part Number
001	1	AAPSJXN1N04NP
002	2	XM3VNBG49A **- Station 1, 2 - Normally Closed**
003	1	XM4VNBG49A **- Station 3**
004	1	XM4VNBG49F0A **- Station 4**

Notes: When ordering Add-A-Folds, list valves left to right when looking at the Port 2/4 side of the manifold. All 3-Way valves will be assembled as 3-Way N.C. valves. Isolator Discs are required for N.O. functions.

Component Ordering Example

Item	Qty	Part Number
001	1	PSXM31010P (End Plate Kit)
002	4	PSXM530CP (Subbase Kit)
003	2	XM3VNBG49A (Valve)
004	1	XM4VNBG49A (Valve)
005	1	XM4VNBG49F0A (Valve)

Manifold

Description	Part Number
IEM bar manifold (NPT)	**PSMXNXN##NP**

– stations 02 to 12 (04 Shown)

Subbase

Description	Part Number
Manifold subbase kit (NPT)	**PSXM530CP**

Plug-in Electrical Connectors - 9.4mm

Description	Indication	Voltage	Part Number
Unwired Plug	None	N/A	**PESC10**
	LED & Suppression	12/24V	**PESC2020B**
		120VAC	**PESC2001F**

Accessories

Description	Part Number
End plate kit (NPT)	**PSXM31010P**

Blanking plate kit Subbase Kit includes: (1) Plate, (3) Screws, (4) Gaskets Fits subbase or IEM type manifold.	**PSXM8310P**

Mounting Bracket - Inline valve	**PSXM8288P**

Isolator plugs - Subbase manifold	**PSXM40900P**

IEM valve / manifold o-ring kit	**PSXM2186P**

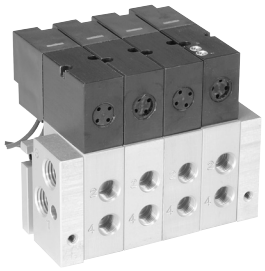
Subbase valve / manifold bolt kit	**PSXM8100P**

IEM Bar Manifold Assembly

IEM Bar Manifold allows for mounting of 3-Way and 4-Way Inline valves on the same manifold. 3-Way Valves can be mounted on the same manifold to provide a Normally Closed or Normally Open function by rotating the valves 180°. 4-Way valves can be mounted with or without Flow Controls.

IEM Bar Manifold Assemblies consist of valves and an IEM Manifold. Valves and IEM Manifold can be ordered separately.

Subbase Manifold Assembly

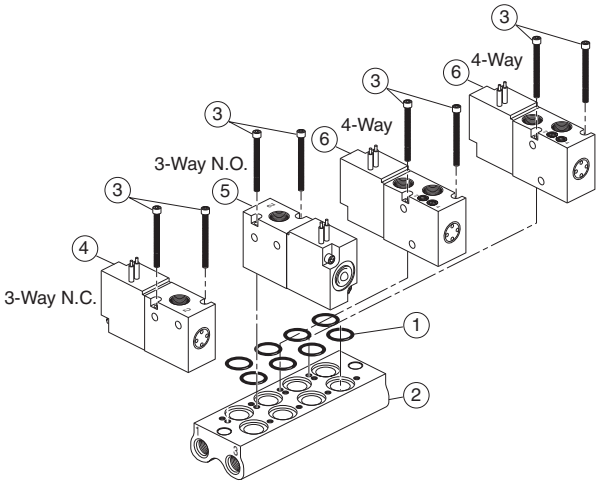


Subbase Manifold allows for mounting of 3-Way and 4-Way Subbase Valves can be mounted on the same manifold. 3-Way Valves can be mounted on the same manifold to provide a Normally Closed or Normally Open function through the use of port isolation kits. 4-Way valves can be mounted with or without Flow Controls.

Subbase Manifold Assemblies consist of Valves, End Plate Kit and Manifold Subbase Kits. Valves, End Plate Kit and Manifold Subbase Kits can be ordered separately.

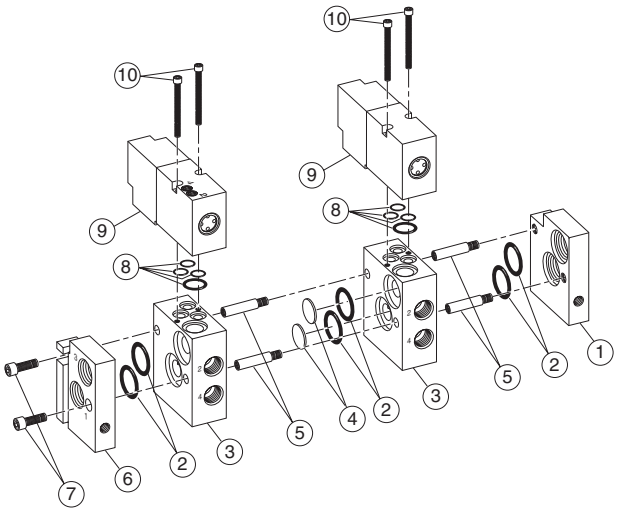
Inline Valve on IEM Bar Manifold Assembly

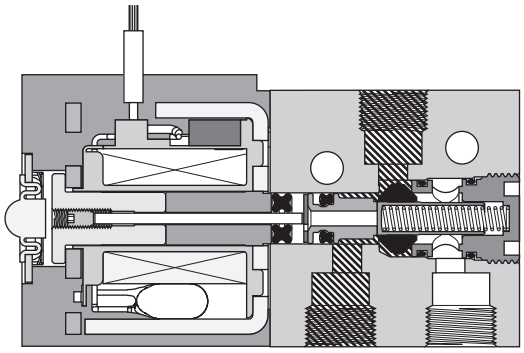
IEM Bar Manifold Assembly's are assembled by adding Inline Valves to an IEM Bar Manifold. O-rings are installed at each valve station in the counterbore on the top of the manifold. Valves are installed with 2 mounting screws. For 3-Way N.C. valve operation, line up the solenoid end of the Valve with Port 1 on the Manifold. For 3-Way N.O. operation, line up the solenoid end of the valve with Port 3 on the manifold. For 4-Way valve operation, line up the Solenoid end of the valve with Port 1 on the manifold. If manifolds are factory assembled, all 3-Way valves are N.C. To convert from N.C. to N.O. operation, remove valve from the base and place valve 180° from the original position with the solenoid end lined up with the 3-Port on the manifold.



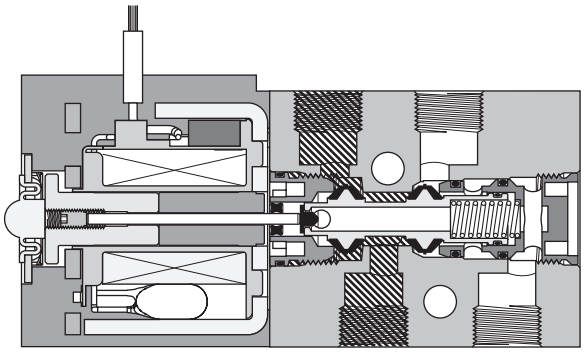
Subbase Valve and Manifold Assembly

Subbase Manifold Assembly's are assembled by adding tie rods and manifold bases to the end plate kit of the subbase end plate kit as shown below. Valves are added to each subbase per manifold design. 4-Way and 3-Way valves are mounted with Solenoids Coils facing away from subbase delivery ports 2 and 4. For 3-Way N.O. Functions, valves must be isolated from the other 3-Way N.C. and 4-Way valves on the manifold. This is achieved by placing port isolator discs in between the subbase of the first 3-Way N.O. Valve and the subbase of the last 3-Way N.C. or 4-Way valve in the Subbase Manifold. Inlet pressure is connected to Port 3 of the manifold for the 3-Way N.O. valves. Inlet pressure is connected to the Port 1 of the manifold for the 3-Way N.C. and 4-Way valves. Separate Inlet Pressure Ports and Exhaust Ports are required for N.O. and N.C. 3-way function valves.





3-Way Inline Valve
Shown Energized



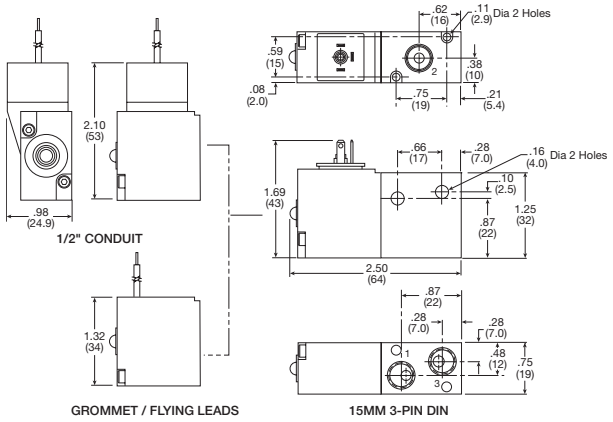
4-Way Inline Valve
Shown De-Energized

Pressure **Exhaust**

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

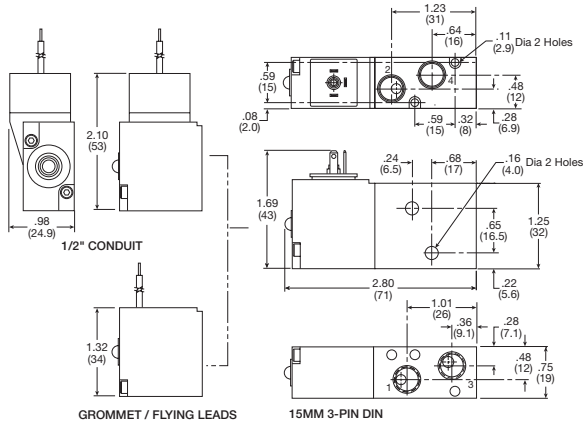
XM 3-way Inline



Inches (mm)

Note: 22 AWG black cross linked polyethylene insulated lead wire.

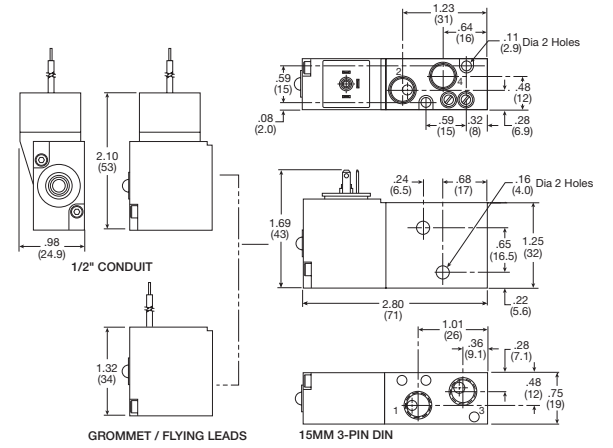
XM 4-way Inline



Inches (mm)

Note: 22 AWG black cross linked polyethylene insulated lead wire.

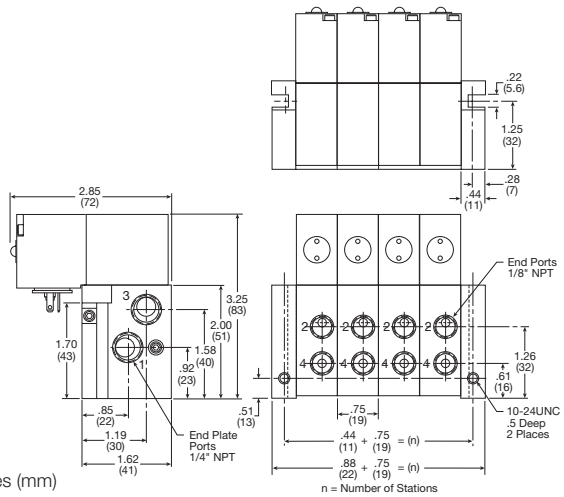
XM 4-way Inline with Flow Controls



Inches (mm)

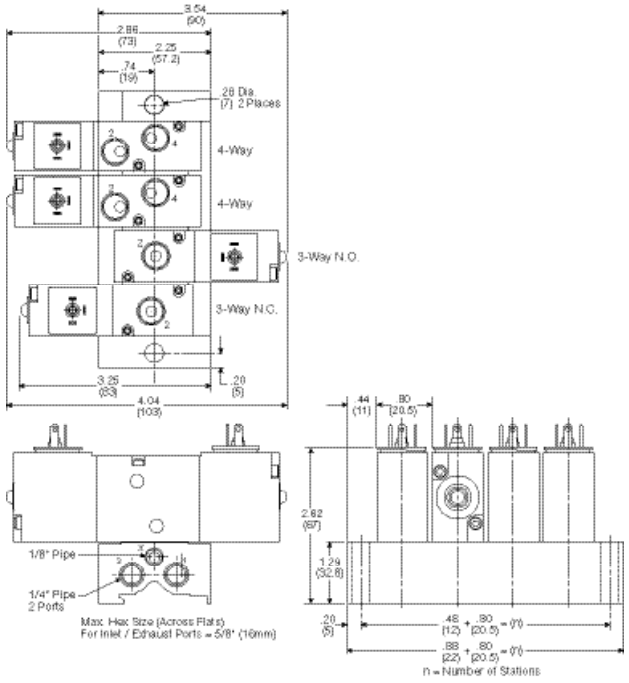
Note: 22 AWG black cross linked polyethylene insulated lead wire.

XM IEM Subbase

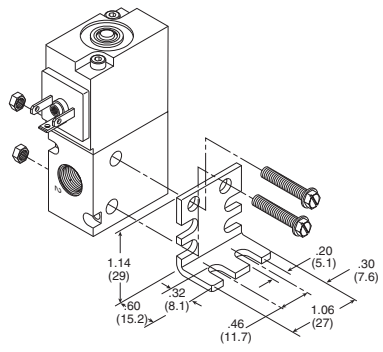


Inches (mm)

XM IEM Manifold



Mounting Bracket Dimensions

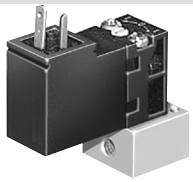


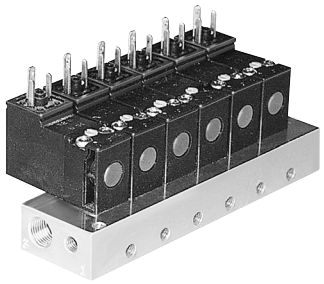
For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

15mm Solenoid Valve

A compact 15mm, 3-way subbase or manifold mounted valve. Ideally suited for use in stationary or mobile equipment applications, where flow rates and low temperatures are a key consideration.





Features

- Compact and simple design
- Utilizes 15mm solenoid operators
- Manifold allows mounting of normally open and normally closed operators simultaneously
- Up to 20 stations available

Solenoids

- 15mm low watt solenoids are UL certified and approved to be CE marked
- Wide range of voltages available

Applications

- Piloting for process control valves
  - pharmaceutical equipment
  - waste water treatment systems
  - food processing
  - chemical batching
- Industrial laundry equipment
- Paint spray & dyeing equipment
- Textile winding applications
- Vacuum and conveyor applications

Operating information

Operating pressure:	Vacuum to 145 PSIG (Vacuum to 10 bar)
Operating temperature:	
Standard Flow:	5°F to 140°F (-15°C to 60°C)
High Flow:	5°F to 122°F (-15°C to 50°C)
Mobile Applications (47 & 48 Voltage Options):	-40°F to 158°F (-40°C to 70°C)
Storage temperature:	
All applications:	-40°F to 158°F (-40°C to 70°C)

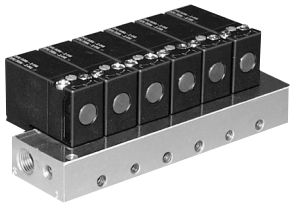
Material specifications

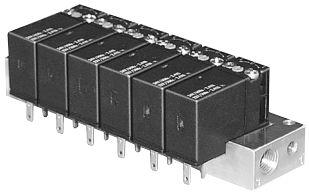
Body	Glass filled polyamide
Internal metal parts	Steel
Screws	Steel
Bottom plug	Thermoplastic
Poppet seals	Nitrile for standard, fluorocarbon for mobile

Technical data

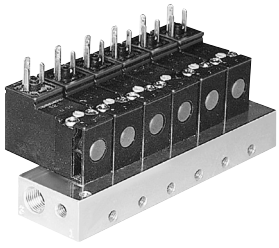
Electrical interface per:	DIN 43650 Form C (EN175301-803C) 8mm pin spacing
Pneumatic interface per:	AFNOR E 0652 110 N
Protection:	IP65 (Washdown)
Air flow:	Standard flow 0.033 Cv (33 Lpm) (1.2W) (1.6VA)
Voltage tolerance:	All voltages except 47 & 48: Rated voltage +10% / -15% options 47 & 48: Rated voltage +25% / -30%

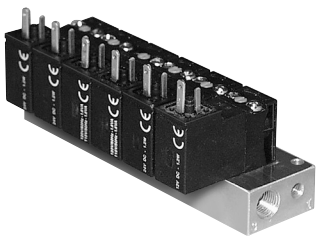
Manifold - Pins Down





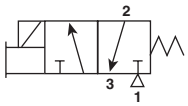
Manifold - Pins Up



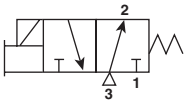


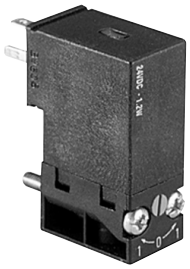
15mm Solenoid Kit Information

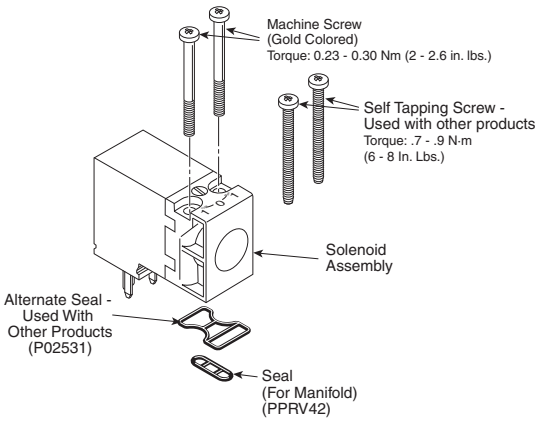
3/2 Normally Non-passing (NNP) / Normally Closed (NC) Valves



3/2 Normally Passing (NP) / Normally Open (NO) Valves







NC (NNP) Solenoids / Kits

	## Voltage (S = Standard, O = Optional, — = N/A)					
* Override	42 (24VAC)	45 (12VDC)	49 (24VDC)	53 (120VAC)	57 (230VAC)	Kit No.
B (Non-lock, Flush)	O	O	S	S	O	**PS2982*##P Pins: UP NC / NNP 1.2W / 1.6VA**
C (Lock, Flush)	O	O	S	S	O	
D (Non-lock, Ext)	—	—	O	O	—	
B (Non-lock, Flush)	O	O	S	S	—	**PS3541*##P Pins: DOWN NC / NNP 1.8W / 2.4VA**
C (Lock, Flush)	O	O	S	S	—	
D (Non-lock, Ext)	—	—	O	O	—	
E (Lock, Ext)	—	—	O	O	—	
B (Non-lock, Flush)	O	O	O	O	O	**PS3441*##P Pins: DOWN NC / NNP 1.2W / 1.6VA**
C (Lock, Flush)	O	O	O	O	O	
B (Non-lock, Flush)	—	O	S	S	—	**PS3202*##P Pins: UP NO / NP 1.2W / 1.6VA**

* Override, ## Voltage

Female Electrical Connectors

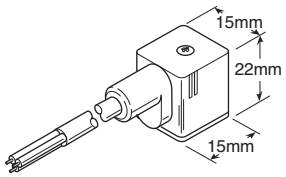
15mm 3-Pin DIN 43650C (Use with enclosure "5")

Description		Connector	Connector with Cord
Unlighted	18 Inches	**PS2932BP**	**PS2932HBP**
Unlighted	6 Feet	**PS2932BP**	**PS2932JBP**
Light – 12VAC or DC	6 Feet	**PS294675BP**	**PS2946J75BP***
Light – 24VAC or DC	6 Feet	**PS294679BP**	**PS2946J79BP***
Light – 110/120VAC	6 Feet	**PS294683BP**	**PS2946J83BP***
Light – 240/230VAC		**PS294687BP**	N/A

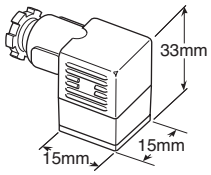
* LED with surge suppression.

Note: Max ø6.5mm cable size required for connector w/o 6' (2m) cord.
IP65 rated when properly installed.

Engineering Data:
Conductors: 2 poles plus ground
Cable range (Connector only): 4 to 6mm (0.16 to 0.24 Inch)
Contact spacing: 8mm



Connector with cord



Connector only

☐ Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Model Number Index

PSF T N 0 N 02 N P

Basic Series	
Subbase 3/2 Bottom Port	PSE
Subbase 3/2 End Port	**PSF**

Manifold Type	
15mm Solenoid Valve Manifold (machined to accept NC/ NO on same bar)	S
15mm Solenoid Valve Manifold (machined to accept all NC or all NO)	**T**
15mm Solenoid Valve Subbase	R

* Pins up only.
** End ported only.

Pilot Source	
Direct	**N**

Cylinder Port Size	
M5	**0**

Port Type	
0*	M5
N**	**NPT**

* Use for valve manifold R only - single subbase
** Use for valve manifold S & T only - manifold

Number of Stations	
02	**2 Stations**
03	**3 Stations**
20	**20 Stations**
XX	**Single***

* Use for "R" manifold type only

Options	
N**	**Standard - Cylinder Port on Non-Electrical Side (port 1 side)**
E*	Cylinder port on electrical side (port 3 side)

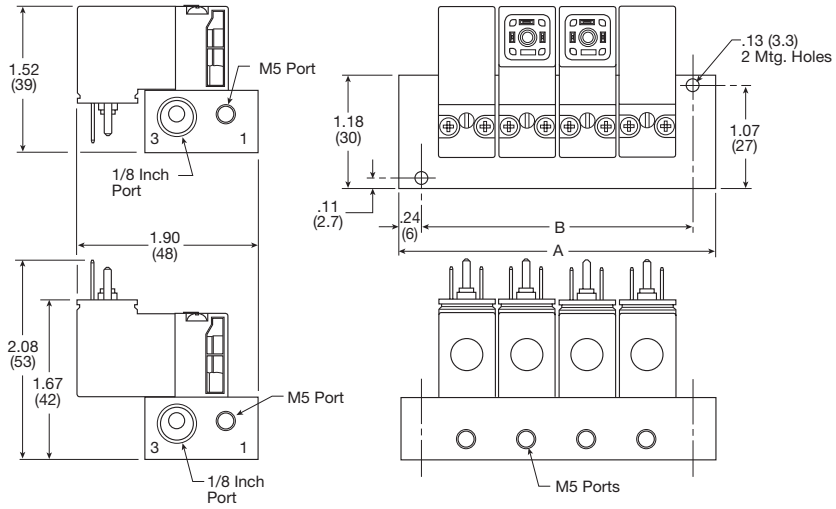
* N/A with valve series "S"
* N/A with manifold "PSE"
** Use for bottom ported manifold type

Brand Label	
P	**Parker**

Examples:
PSFTN0N16EP - End port manifold - Cyl ports and electrical on same side
PSESN0N10NP - Bottom port manifold - N/C and N/O can be interchanged
PSFTN0N10NP - End port manifold - Cyl ports and electrical are opposite

Manifold Dimensions

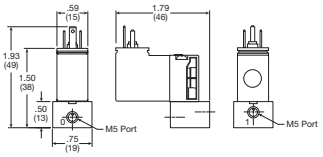
Special mounting considerations must be made for connector assembly clearance when mounting solenoid valves with pins down.



Number of Stations	Dim. A	Dim. B
2	2.04 (52)	1.57 (40)
3	2.68 (68)	2.20 (56)
4	3.31 (84)	2.83 (72)
5	3.94 (100)	3.46 (88)
6	4.57 (116)	4.09 (104)
7	5.20 (132)	4.72 (120)
8	5.83 (148)	5.35 (136)
9	6.46 (164)	5.98 (152)
10	7.09 (180)	6.61 (168)
11	7.72 (196)	7.24 (184)
12	8.35 (212)	7.87 (200)
13	8.98 (228)	8.50 (216)
14	9.61 (244)	9.13 (232)
15	10.23 (260)	9.76 (248)
16	10.87 (276)	10.39 (264)
17	11.50 (292)	11.02 (280)
18	12.13 (308)	11.65 (296)
19	12.76 (324)	12.28 (312)
20	13.39 (340)	12.91 (328)

Subbase Dimensions

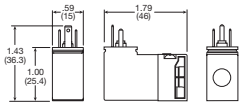
Pins up only.



Most popular.

15mm Solenoid Dimensions

Pins up only.

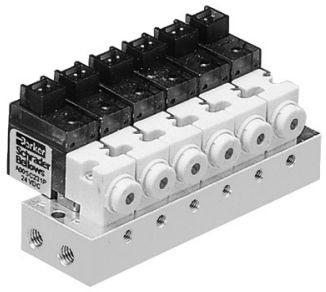


For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

ADEX Solenoid Valve

ADEX A00 Valve is miniature low power direct acting 3-way solenoid valve. A00 can be used in piloting or low flow vacuum applications.



Features
- Fast response < 10ms

Ports
- A00: M3 – .01 Cv

Mounting
- Subbase mount

Solenoids
- 0.6 W
- 12VDC and 24VDC
- LED and surge suppression

Operating information

Maximum operating pressure*:
- A00 (NC) Vacuum to 100 PSIG (Vacuum to 6.8 bar)
- A00 (NO) Vacuum to 70 PSIG (Vacuum to 4.8 bar)

Minimum operating pressure: See chart below

Operating temperature:
- Intermittent Duty (AC & DC Voltage): 32°F to 122°F (0°C to 50°C) Voltage Rated +10 / –10%
- Continuous Duty (DC Voltage Only): 32°F to 104°F (0°C to 40°C) Voltage Rated +0 / –10%

* When using vacuum and pressure simultaneously on ports 1 & 3, normally closed valve, the maximum pressure is 85 PSIG (586 kPa).
When using vacuum and pressure simultaneously on ports 1 & 3, normally open valve, the maximum pressure is 58 PSIG (400 kPa).

Material specifications

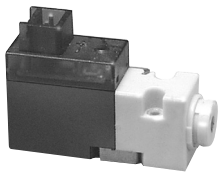
Body	Anodized aluminum
End caps	Anodized aluminum
Coils	Thermoplastic
Fasteners	Stainless steel
Spool	Aluminum and nitrile rubber

Minimum operating pressure

Description		Internal Pilot	
		PSIG	Bar
3-way	A00 Series	Vacuum	

* When using vacuum and pressure on ports 1 & 3 – 85 PSIG (586 kPa) NC; 58 PSIG (400 kPa) NO.

A00 Valve Only – Single Solenoid, 3-way, 2-position*



A00SC23-1P Shown
* Screwdriver-Operated, Locking Manual Override (LMOR).

A00S | C23 | — | 1 | P

Function	
Single Solenoid Normally Open	023
Single Solenoid Normally Closed	**C23**

Flow	
Standard Type	**-**

	Voltage
1	**24VDC**
2	12VDC

Connector Position	
P	**With Indicator Light & Surge Suppression**

A00 Valve Subbase, M3 ports

Valve type	All Ports	Part number
A00	M3	**A00S-B-M3**

Mounting screws and gaskets included with valve.

A00 Valve Manifold*, M5 ports

MMFS6A00M5 Shown

* Normally closed valves (A00SC23•P) and Normally open valves (A00S023•P) cannot be mounted on the same manifold simultaneously.

Mounting screws and gaskets included with valve.

MMFS | 2 | A00 | M5

Number of Stations	
2 Stations	**2**
3 Stations	**3**
4 Stations	**4**
•	•
•	•
20 Stations	**20**

Port Size
M5

Individual Wired Connectors P / R Type

Size	Voltage	Length	Part Number
		.5 meter	**A05P-DC-CL5**
A00	DC	1 meter	**A05P-DC-CL10**
		3 meter	**A05P-DC-CL30**

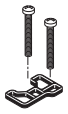
DC Voltage: Positive "+" (Red Wire)
Negative "–" (Black Wire)

Exhaust Mufflers

Pipe Thread	Part Number
M5	**P6M-PAC5**

P6M - Plastic; EM - Sintered Bronze

Replacement Base Gasket Kits



A00S-SG

Size	Type	Gasket & Screw Kit
A00	Subbase	**A00S-SG**

These are spare parts, mounting screws and gaskets included with valves.

Most popular.

Flow Rating (Cv)

Size	Port Size	Mounting Style	ANSI / (NFPA) 2-Position
A00	M3	Subbase	.010

ANSI / (NFPA) T3.21.3-1990 standard for Cv measurement.

Response Time

Valve Size	Port Size	0 Cu. In. Test Chamber Fill	Exhaust
2-Position Single Solenoid / Air Return			
A00	M3	.004	.006

Average Fill Time (Seconds): With 100 PSIG supply, time required to fill from 0-90 PSIG and exhaust from 100 PSIG to 10 PSIG is measured from instant of energizing, or de-energizing 24VDC solenoid. Times shown are average.

Tested per ANSI / (NFPA) T3.21.8.

Solenoid Information

	Standard		
Power Consumption			With Indicator Light & Surge Suppressor
	DC	W	0.6

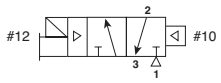
ANSI Cv vs. JIS Cv

*For Pneumatic Valve flow, the measurement **Cv** – Coefficient of Flow – is used to convey to the user how much air can flow through a given valve. Most valve manufactures publish this information in their catalogs to assist the user in choosing the proper valve for their application. In publishing this data however, there are discrepancies in how the **Cv** is calculated, resulting in some **Cv**'s being OVERSTATED by **20 to 40%**. This can adversely affect the user's application because the valve flows LESS than the published **Cv**.*

The reason for the large discrepancy is in the method of calculation - the ANSI (NFPA) or the JIS standard.

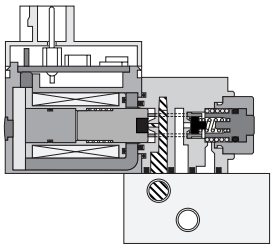
*Parker's **Cv** valve is calculated using the ANSI (NFPA) T3.21.3-1990 standard. The ANSI (NFPA) method is a structured test using very specific tube sizes and lengths, inlet pressures and pressure drops, and volume chambers.*

Single Solenoid 3-Way, 2-Position NC



Vacuum Applications (Device becomes NO):
- *'1' port is connected to atmosphere or compressed air † when required.*
- *'2' port is outlet*
- *'3' port is connected to vacuum*

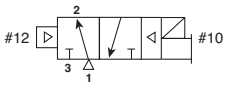
† When both vacuum and compressed air are required, maximum pressure is 85 PSIG (586 kPa).



A00S Single Solenoid Normally Closed (NC)

Pressure **Exhaust**

Single Solenoid 3-Way, 2-Position NO*



* To obtain NO function, ports 1 & 3 are reversed (1 becomes exhaust and 3 becomes supply).

Vacuum Applications (Device becomes NC):
- *'1' port is connected to vacuum*
- *'2' port is outlet*
- *'3' port is connected to atmosphere or compressed air † when required.*

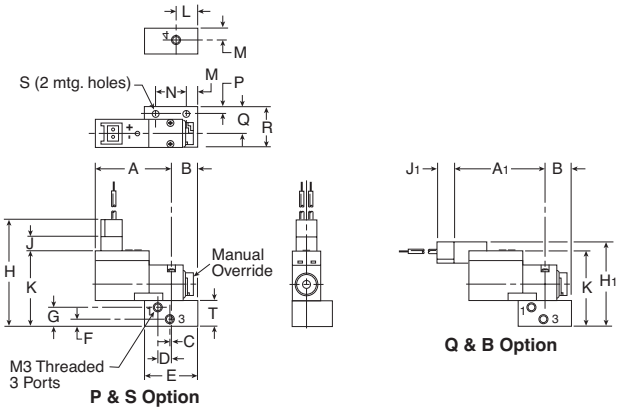
† When both vacuum and compressed air are required, maximum pressure is 58 PSIG (400 kPa).

***Caution:** Normally Open and Normally Closed 3-Way valve cannot be mixed on the same manifold.*

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

A00 Subbase

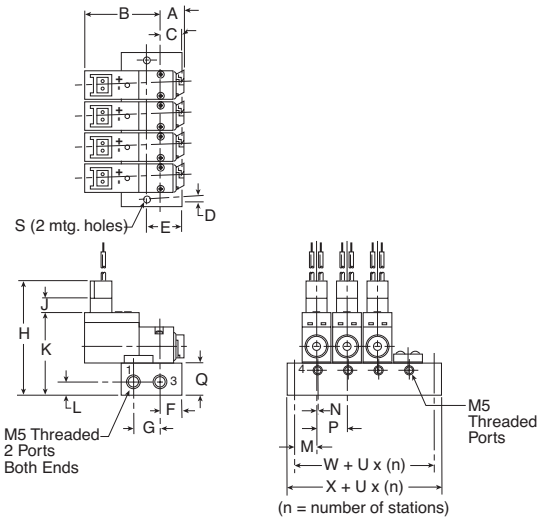


A00 - Subbase

A	A1	B	C	D
1.00	1.18	.41	.015	.17
(25)	(30)	(11)	(.4)	(4)
E	**F**	**G**	**H**	**H1**
.79	.12	.28	1.54	1.38
(20)	(3)	(7)	(39)	(34)
J	**J1**	**K**	**L**	**M**
.24	.20	1.11	.32	.18
(6)	(5)	(28)	(8)	(5)
N	**P**	**Q**	**R**	**S**
.47	.10	.39	.59	.106
(12)	(3)	(10)	(15)	(2.7)
T				
.38				
(10)				

Inches (mm)

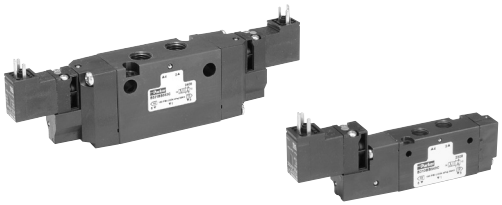
A00 Manifold

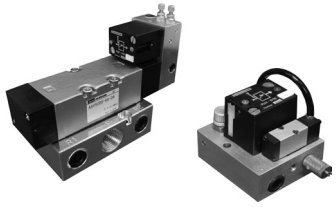


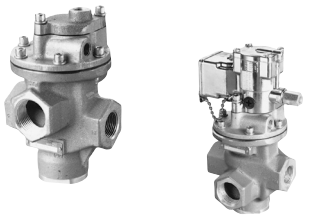
A00 - Manifold

A	B	C	D	E
.36	1.00	.31	.10	.51
(9)	(25)	(8)	(3)	(13)
F	**G**	**H**	**J**	**K**
.31	.39	1.63	.20	1.22
(8)	(10)	(42)	(5)	(31)
L	**M**	**N**	**P**	**Q**
.20	.33	.02	.41	.47
(5)	(9)	(.6)	(10.5)	(12)
S	**U**	**X**	**W**	
.125	.41	.45	.26	
(3.2)	(10.5)	(11.5)	(6.5)	

Inches (mm)







Pneumatic Valve Products
Inline Valve Series

Viking Lite Series

Features	C2
Common Part Numbers / Ordering Information	C3-C5
Accessories	C6
Dimensional Data	C7-C10

Viking Xtreme Series

Features	C11
Common Part Numbers / Ordering Information	C12-C19
Accessories	C20-C23, C28-C30
Technical Data	C24-C27, C29
Dimensional Data	C30-C38

B3, B5 & B6 Series

Features	C39
Common Part Numbers / Ordering Information	C40-C45
Accessories	C46-C48
Technical Data	C49-C54
Dimensional Data	C55-C58

B7 & B8 Series

Features	C59
Common Part Numbers / Ordering Information	C60-C63
Accessories	C64-C66
Technical Data	C67-C69
Dimensional Data	C70-C73

Air Saver Series

Features	C72-C73
Specifications	C74
Ordering Information / Dimensional Data	C75-C80

N Series

Features	C81
Common Part Numbers / Ordering Information	C82-C85
Technical Data	C86-C91
Dimensional Data	C92-C99

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Viking Lite Series

The Viking Lite valve range is robust, versatile and combines a large flow capacity with short change-over times, designer may choose 1/8, 1/4 or 3/8 port sizes along with 24VDC and 120VAC voltage options. Viking Lite valves are fitted with dynamic bi-directional spool seals suitable for pressures up to 10 bar and ambient temperatures between -10°C to + 50°C. When in service, radial expansion of the spool seal occurs to maintain sealing contact with the valve bore. This sealing method reduces friction and produces a lower required pilot pressure. Valves do not require lubrication in operation but they can also be installed in systems that are lubricated.

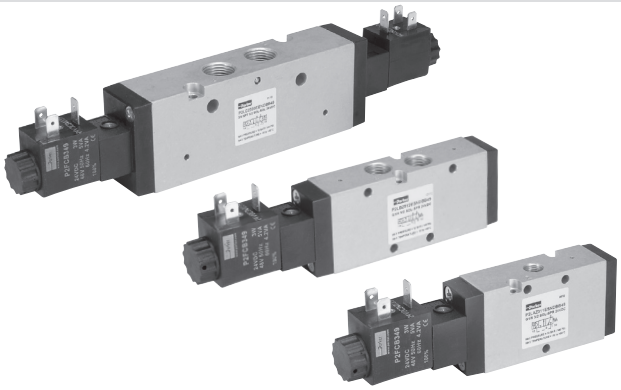
Ports
- P2LAZ: 1/8 inch NPT & BSPP, Cv = 0.6
- P2LBZ: 1/4 inch NPT & BSPP, Cv = 1.5
- P2LCZ: 3/8 inch NPT & BSPP, Cv = 2.5

Mounting
- Inline
- IEM aluminum bar

Solenoids
2.5 watts
- 22mm, 3-pin (DIN 43650)

24VDC and 120VAC

- **Certification / approval**
  - IP65 Rated, RoHS, CE



Operating information

Operating pressure:	145 PSIG (10 bar)
Minimum:	See chart
Operating temperature:	14°F to 122°F (-10°C to 50°C)

Minimum operating pressure, PSIG (bar)

Valve type - Internal pilot	P2LAZ	P2LBZ	P2LCZ
Single solenoid - spring return	43.5 (3.0)	43.5 (3.0)	43.5 (3.0)
Single remote pilot - spring return	43.5 (3.0)	43.5 (3.0)	43.5 (3.0)
Double solenoid - 2-position	22 (1.5)	22 (1.5)	22 (1.5)
Double remote pilot - 2-position	22 (1.5)	22 (1.5)	22 (1.5)
Double solenoid - 3-position (APB, PC, CE)	43.5 (3.0)	43.5 (3.0)	43.5 (3.0)
Double remote pilot - 3-position (APB, PC, CE)	43.5 (3.0)	43.5 (3.0)	43.5 (3.0)

Materials

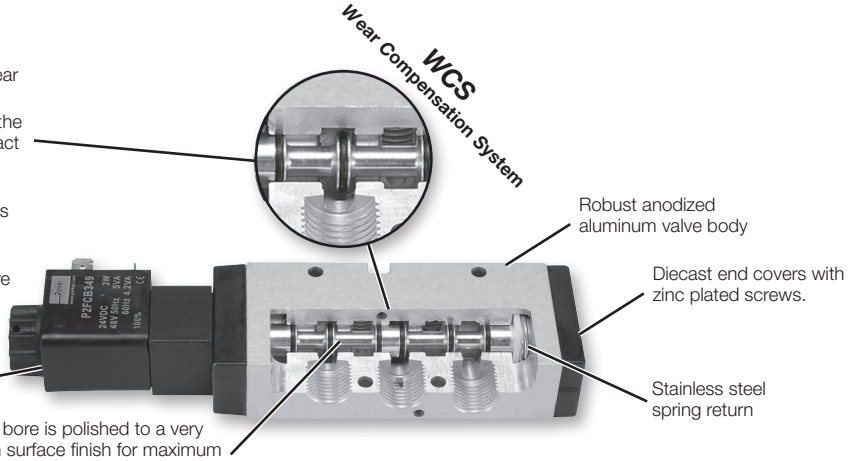
Valve body	Anodized aluminium
End covers	Anodized aluminium
Spool	Aluminium
Piston	Acetal plastic / Anodized aluminium
End cover seals	Nitrile rubber
End cover screws	Zinc plated steel
Springs	Stainless steel
Mounting screws for solenoid	Stainless steel
Spool seals	Nitrile

Recommended air quality for valves

For best possible service life and trouble free operation, ISO 8573-1 quality class 3.4.3 should be used. This means 5µm filter (standard filter) dew point +3°C for indoor operation (a lower dew point should be selected for outdoor operation) and oil concentration 1.0 mg oil/m³, which is what a standard compressor with a standard filter gives.

Features

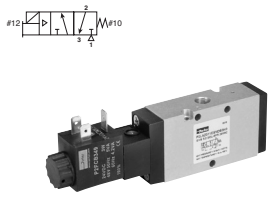
WCS
- Maximum Performance
  - Low friction - fast response - less wear
- Long Cycle Life
  - Under pressure, radial expansion of the seal occurs to maintain sealing contact with the valve bore
- Non-Lube Service
  - No lubrication required for continuous valve shifting
- Bi-Directional Spool Seals
  - Common spool used for any pressure



For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

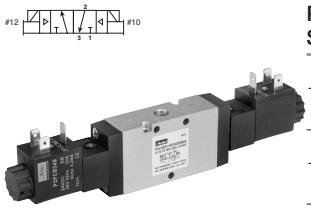
3/2 - 2-Position Single Solenoid, Non-locking Manual Override



P2LAZ Shown

Port size	Cv	Response Time (msec)	Weight lb (kg)	Voltage	Part Number (NPT)	Part Number (BSPP)
1/8	0.6	15 / 35	0.35 (0.16)	24VDC	**P2LAZ391ESNDBB49**	**P2LAZ311ESNDBB49**
				120VAC	**P2LAZ391ESNDBB53**	**P2LAZ311ESNDBB53**
1/4	1.5	18 / 45	0.35 (0.16)	24VDC	**P2LBZ392ESNDBB49**	**P2LBZ312ESNDBB49**
				120VAC	**P2LBZ392ESNDBB53**	**P2LBZ312ESNDBB53**
3/8	2.5	27 / 45	0.77 (0.35)	24VDC	**P2LCZ393ESNDBB49**	**P2LCZ313ESNDBB49**
				120VAC	**P2LCZ393ESNDBB53**	**P2LCZ313ESNDBB53**

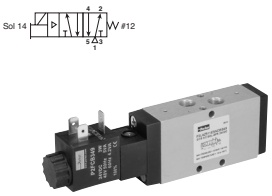
3/2 - 2-Position Double Solenoid, Non-locking Manual Override



P2LAZ Shown

Port Size	Cv	Response Time (msec)	Weight lb (kg)	Voltage	Part Number (NPT)	Part Number (BSPP)
1/8	0.6	10 / 10	0.40 (0.18)	24VDC	**P2LAZ391EENDBB49**	**P2LAZ311EENDBB49**
				120VAC	**P2LAZ391EENDBB53**	**P2LAZ311EENDBB53**
1/4	1.5	12 / 12	0.40 (0.18)	24VDC	**P2LBZ392EENDBB49**	**P2LBZ312EENDBB49**
				120VAC	**P2LBZ392EENDBB53**	**P2LBZ312EENDBB53**
3/8	2.5	17 / 17	0.80 (0.36)	24VDC	**P2LCZ393EENDBB49**	**P2LCZ313EENDBB49**
				120VAC	**P2LCZ393EENDBB53**	**P2LCZ313EENDBB53**

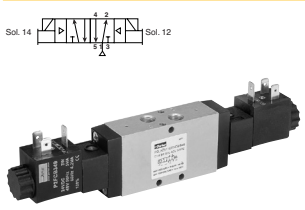
5/2 - 2-Position Single Solenoid, Non-locking Manual Override



P2LAZ Shown

Port Size	Cv	Response Time (msec)	Weight lb (kg)	Voltage	Part Number (NPT)	Part Number (BSPP)
1/8	0.6	15 / 35	.037 (0.17)	24VDC	**P2LAZ591ESNDBB49**	**P2LAZ511ESNDBB49**
				120VAC	**P2LAZ591ESNDBB53**	**P2LAZ511ESNDBB53**
1/4	1.5	18 / 45	0.44 (0.20)	24VDC	**P2LBZ592ESNDBB49**	**P2LBZ512ESNDBB49**
				120VAC	**P2LBZ592ESNDBB53**	**P2LBZ512ESNDBB53**
3/8	2.5	27 / 45	0.95 (0.43)	24VDC	**P2LCZ593ESNDBB49**	**P2LCZ513ESNDBB49**
				120VAC	**P2LCZ593ESNDBB53**	**P2LCZ513ESNDBB53**

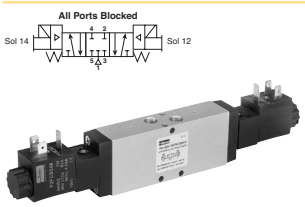
5/2 - 2-Position Double Solenoid, Non-locking Manual Override



P2LAZ Shown

Port Size	Cv	Response Time (msec)	Weight lb (kg)	Voltage	Part Number (NPT)	Part Number (BSPP)
1/8	0.6	10 / 10	.042 (0.19)	24VDC	**P2LAZ591EENDBB49**	**P2LAZ511EENDBB49**
				120VAC	**P2LAZ591EENDBB53**	**P2LAZ511EENDBB53**
1/4	1.5	12 / 12	0.46 (0.21)	24VDC	**P2LBZ592EENDBB49**	**P2LBZ512EENDBB49**
				120VAC	**P2LBZ592EENDBB53**	**P2LBZ512EENDBB53**
3/8	2.5	17 / 17	0.97 (0.44)	24VDC	**P2LCZ593EENDBB49**	**P2LCZ513EENDBB49**
				120VAC	**P2LCZ593EENDBB53**	**P2LCZ513EENDBB53**

5/3 - 3-Position, All Ports Blocked, Non-locking Manual Override



P2LAZ Shown

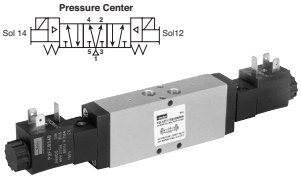
Port Size	Cv	Response Time (msec)	Weight lb (kg)	Voltage	Part Number (NPT)	Part Number (BSPP)
1/8	0.6	18 / 40	0.57 (0.26)	24VDC	**P2LAZ691EENDBB49**	**P2LAZ611EENDBB49**
				120VAC	**P2LAZ691EENDBB53**	**P2LAZ611EENDBB53**
1/4	1.5	22 / 55	0.62 (0.28)	24VDC	**P2LBZ692EENDBB49**	**P2LBZ612EENDBB49**
				120VAC	**P2LBZ692EENDBB53**	**P2LBZ612EENDBB53**
3/8	2.5	30 / 90	1.32 (0.60)	24VDC	**P2LCZ693EENDBB49**	**P2LCZ613EENDBB49**
				120VAC	**P2LCZ693EENDBB53**	**P2LCZ613EENDBB53**

Most popular. **Notes:** Response time: Actuate to 90% pressure / return to exhaust to 10% of supply pressure. 93 PSIG (6.3 bar) / temperature 68°F (20°C)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

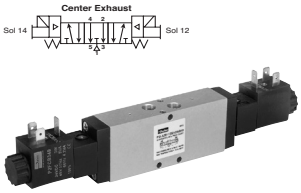
5/3 - 3-Position, Pressure Center, Non-locking Manual Override



P2LAZ Shown

Port Size	Cv	Response Time (msec)	Weight lb (kg)	Voltage	Part Number (NPT)	Part Number (BSPP)
1/8	0.6	18 / 40	0.57 (0.26)	24VDC	**P2LAZ791EENDBB49**	**P2LAZ711EENDBB49**
				120VAC	**P2LAZ791EENDBB53**	**P2LAZ711EENDBB53**
1/4	1.5	22 / 55	0.62 (0.28)	24VDC	**P2LBZ792EENDBB49**	**P2LBZ712EENDBB49**
				120VAC	**P2LBZ792EENDBB53**	**P2LBZ712EENDBB53**
3/8	2.5	30 / 90	1.32 (0.60)	24VDC	**P2LCZ793EENDBB49**	**P2LCZ713EENDBB49**
				120VAC	**P2LCZ793EENDCB53**	**P2LCZ713EENDBB53**

5/3 - 3-Position, Center Exhaust



P2LAZ Shown

Port Size	Cv	Response time (msec)	Weight lb (kg)	Voltage	Part Number (NPT)	Part Number (BSPP)
1/8	0.6	18 / 40	0.57 (0.26)	24VDC	**P2LAZ891EENDBB49**	**P2LAZ811EENDBB49**
				120VAC	**P2LAZ891EENDBB53**	**P2LAZ811EENDBB53**
1/4	1.5	22 / 55	0.62 (0.28)	24VDC	**P2LBZ892EENDBB49**	**P2LBZ812EENDBB49**
				120VAC	**P2LBZ892EENDBB53**	**P2LBZ812EENDBB53**
3/8	2.5	30 / 90	1.32 (0.60)	24VDC	**P2LCZ893EENDBB49**	**P2LCZ813EENDBB49**
				120VAC	**P2LCZ893EENDBB53**	**P2LCZ813EENDBB53**

Notes: Response time: Actuate to 90% pressure / return to exhaust to 10% of supply pressure. 93 PSIG (6.3 bar) / temperature 68°F (20°C)

Viking Lite Single & Double Solenoid Operated Valves

P2L A Z 5 91 ES N D C B 49

Valve Size

1/8"	A
1/4"	B
3/8"	C

Series

Viking Lite	Z

Valve Type / Function

Internal pilot supply to solenoid	
3/2 NC - 2-Position	3
5/2 2-Position	5
5/3 3-Position, APB	6
5/3 3-Position, PC	7
5/3 3-Position, CE	8

Main port thread

G1/8 (P2LA)	11
G1/4 (P2LB)	12
G3/8 (P2LC)	13
1/8" NPT (P2LA)	91
1/4" NPT (P2LB)	92
3/8" NPT (P2LC)	93

12 End Operator

EE	Double Solenoid
ES*	Single Solenoid, Spring Return

* Not available with 3-position valves.

Valve Type

N	14°F to 122°F (-10°C to 50°C)

Solenoid Pilot Type

D	Pilot Exhaust Vented

Overrides

C	Extended - Locking
B	Flush - Non-Locking

Enclosures / Lead Length

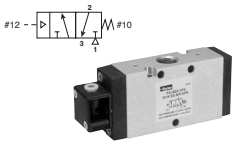
B	22mm Rectangular 3-Pin – Type B Industrial (Male Only)
N	Valve Less Coil

Voltage / Frequency

49	24VDC
53	120VAC
Blank	Valve Less Coil

☐ Most popular.

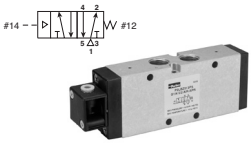
Single Remote Air Pilot, 3-way, 2-position



P2LBZ Shown

Port Size (NPT)	Cv	Response Time (msec)	Weight lb (kg)	Valve Type	Part Number
1/8"	0.7	15 / 45	0.25 (0.11)	P2LAX	**P2LAZ391PS**
1/4"	1.3	25 / 65	0.25 (0.11)	P2LBX	**P2LBZ392PS**
3/8"	2.5	25 / 65	0.67 (0.30)	P2LCX	**P2LCZ393PS**

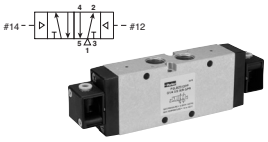
Single Remote Air Pilot, 4-way, 2-position



P2LBZ Shown

Port Size (NPT)	Cv	Response Time (msec)	Weight lb (kg)	Valve Type	Part Number
1/8"	0.7	15 / 45	0.27 (0.12)	P2LAX	**P2LAZ591PS**
1/4"	1.3	20 / 55	0.27 (0.12)	P2LBX	**P2LBZ592PS**
3/8"	2.5	25 / 85	0.85 (0.35)	P2LCX	**P2LCZ593PS**

Double Remote Air Pilot, 4-way, 2-position



P2LBZ Shown

Port Size (NPT)	Cv	Response Time (msec)	Weight lb (kg)	Valve Type	Part Number
1/8"	0.7	11 / 11	0.22 (0.10)	P2LAX	**P2LAZ591PP**
1/4"	1.3	13 / 13	0.26 (0.12)	P2LBX	**P2LBZ592PP**
3/8"	2.5	18 / 18	0.77 (0.35)	P2LCX	**P2LCZ593PP**

Notes: Response time: Actuate to 90% pressure / return to exhaust to 10% of supply pressure. 93 PSIG (6.3 bar) / temperature 68°F (20°C).

Viking Lite Remote Air Pilot Operated Valves

P2L A Z 5 91 PS

Valve Size	
1/8"	A
1/4"	B
3/8"	C

Valve Type / Function	
Internal Pilot Supply To Solenoid	
3/2 NC - 2-Position	3
5/2 2-Position	5
5/3 3-Position, APB	6
5/3 3-Position, PC	7
5/3 3-Position, CE	8

Main Port Thread	
11	G1/8 (P2LA)
12	G1/4 (P2LB)
13	G3/8 (P2LC)
91	1/8" NPT (P2LA)
92	1/4" NPT (P2LB)
93	3/8" NPT (P2LC)

Operators / Return	
PP	Double Remote Pilot, 5/32" (4mm) tube
PS*	Single Remote Pilot, Spring Return, 5/32" (4mm) Tube

* Not available with 3-position valves.

Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

IEM Bar Manifold, Inline Valve Only*

Valve Series	Valve Function	# of Stations	Weight lb (kg)	Manifold Only (NPT)	Manifold Only (BSPP)
P2LAZ / P2LBZ	3-way	2	0.84 (0.38)	**91213202SXZN**	**91213202SXZ**
P2LAZ / P2LBZ	3-way	4	1.41 (0.64)	**91213204SXZN**	**91213204SXZ**
P2LAZ / P2LBZ	3-way	6	1.96 (0.89)	**91213206SXZN**	**91213206SXZ**
P2LAZ / P2LBZ	3-way	8	2.54 (1.15)	**91213208SXZN**	**91213208SXZ**
P2LAZ / P2LBZ	3-way	10	3.09 (1.40)	**91213210SXZN**	**91213210SXZ**

Kits include: Manifold, valve hold down bolts, gaskets.

Valve Series	Valve Function	# of Stations	Weight lb (kg)	Manifold Only (NPT)	Manifold Only (BSPP)
P2LAZ	4-way	2	0.68 (0.31)	**9121658068N**	**9121658068**
P2LAZ	4-way	4	1.06 (0.48)	**9121658075N**	**9121658075**
P2LAZ	4-way	6	1.39 (0.63)	**9121658076N**	**9121658076**
P2LAZ	4-way	8	1.76 (0.80)	**9121658077N**	**9121658077**
P2LAZ	4-way	10	2.16 (0.98)	**9121658078N**	**9121658078**

Kits include: Manifold, valve hold down bolts, gaskets.

Valve Series	Valve Function	# of Stations	Weight lb (kg)	Manifold Only (NPT)	Manifold Only (BSPP)
P2LBZ	4-way	2	1.53 (0.69)	**9121594805XN**	**9121594805X**
P2LBZ	4-way	4	2.49 (1.13)	**9121594806XN**	**9121594806X**
P2LBZ	4-way	6	3.44 (1.56)	**9121594807XN**	**9121594807X**
P2LBZ	4-way	8	4.41 (2.00)	**9121594808XN**	**9121594808X**
P2LBZ	4-way	10	5.40 (2.45)	**9121594812XN**	**9121594812X**

Kits include: Manifold, valve hold down bolts, gaskets.
* For odd number of stations, consider Viking Xtreme bar manifold.

IEM Bar Manifold, Inline Valve Only

Valve Series	Valve Function	# of Stations	Manifold Only (NPT & BSPP)
P2LCZ	4-way	Use Viking Xtreme IEM bar manifold	

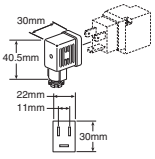
Note: Only 4-way Viking Lite will mount on Viking Xtreme manifold. If 3-way desired, use 4-way and plug part #2 for N.C. valve function.

Manifold Accessories / Parts

Valve Series	Description	Weight lb (kg)	Kit Number
P2LAZ / P2LBZ *	3-way: Blanking kit with mounting screws (2)	0.22 (0.10)	**912132BPSXZ**
P2LAZ *	4-way: Blanking kit with mounting screws (2)	0.11 (0.05)	**9121658063**
P2LBZ *	4-way: Blanking kit with mounting screws (2)	0.04 (0.02)	**9121594809X**

***Note:** O-ring for blanking kit included with manifold. For replacement o-rings or fastener bolts, use Viking Xtreme Kits.

22mm Rectangular 3-Pin – Type B Industrial
(Use with Enclosure "B")



Description	Connector with 6' (2m) Cord	Connector
Unlighted	**PS2429JBP**	**PS2429BP**
Light – 24VDC	**PS2430J79BP***	**PS243079BP**
Light – 120V/60Hz	**PS2430J83BP***	**PS243083BP**

* LED with surge suppression.
Note: Max ø6.5mm cable size required for connector w/o 6' (2m) cord. IP65 rated when properly installed.

Engineering data:
conductors: 2 poles plus ground; cable range (connector only): 6 to 8mm (0.24 To 0.31 Inch); contact spacing: 11mm

Most popular.

Replacement Parts

Description	Part Number
24VDC solenoid coil kit	**P2FCB449**
110VAC solenoid coil kit	**P2FCB453**

Description	Part Number
Remote pilot kit	**P2FP1P**

*Includes adaptor, gasket, screws

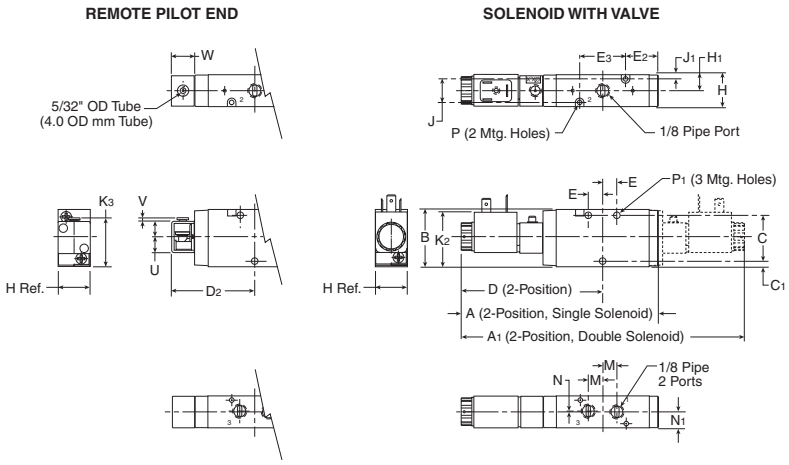
Description	Part Number
Solenoid nut, diffuser	**PS1556**

Description	Part Number
Solenoid nut, vented	**PS2892P**

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

P2LAZ 3/2 Single & Double Operators – Solenoid & Remote Air Pilot

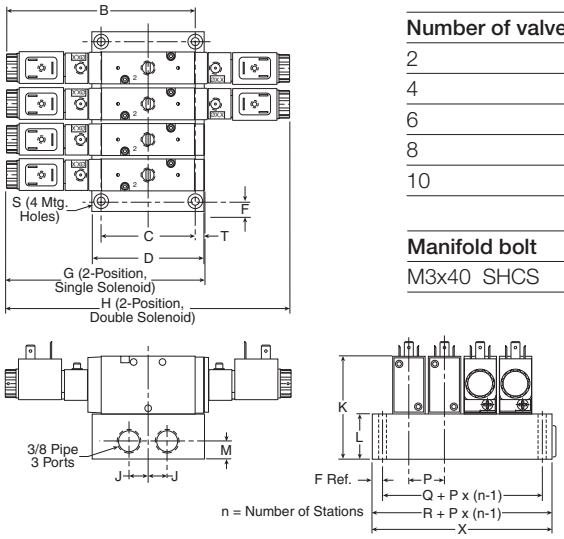


P2LAZ 3/2
Solenoid & Remote Air Pilot

A	A1	B	C	C1	D
5.35 (136)	7.68 (195)	1.57 (40)	1.26 (32)	.16 (4)	3.84 (97.5)
D2	**E**	**E2**	**E3**	**H**	**H1**
2.28 (58)	.39 (10)	.91 (23)	1.26 (32)	.87 (22)	.43 (11)
J	**J1**	**K2**	**K3**	**M**	**N**
.65 (16.5)	.11 (2.75)	1.50 (38)	1.31 (33.2)	.39 (10)	.02 (.5)
N1	**P**	**P1**	**U**	**V**	**W**
.43 (11)	Ø .12 Ø (3.1)	Ø .17 Ø (4.3)	0.43 (11)	0.087 (2.2)	0.59 (15.2)

Inches (mm)

P2LAZ 3/2 Single & Double Operators – IEM Aluminum Bar Manifold



Number of valves	X
2	2.91 (74)
4	4.80 (122)
6	6.69 (170)
8	8.58 (218)
10	10.47 (266)

Inches (mm)

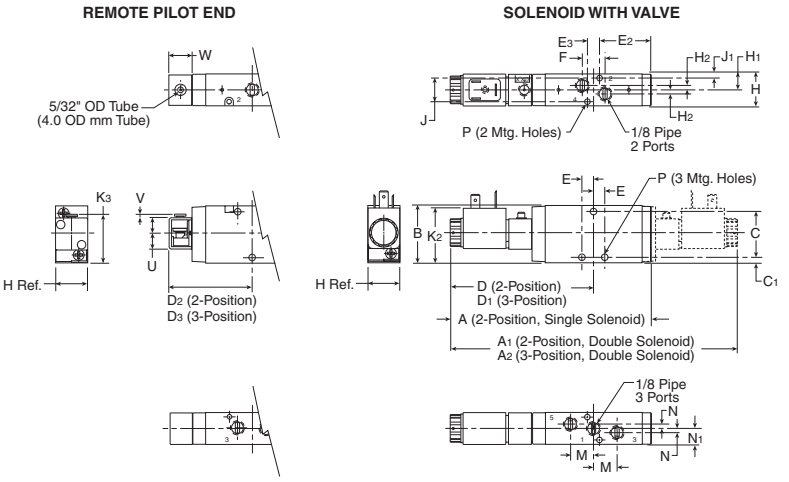
Manifold bolt	Torque value
M3x40 SHCS	4 in.lb (0.45 Nm)

P2LAZ 3/2
IEM Aluminum Bar Manifold

B	C	D	F	G
5.06 (128.5)	2.44 (62)	2.99 (76)	.28 (7)	5.35 (136)
H	**J**	**K**	**L**	**M**
7.68 (195)	.51 (13)	2.78 (70.5)	1.20 (30.5)	.47 (12)
P	**Q**	**R**	**S**	**T**
.94 (24)	1.42 (36)	1.97 (50)	Ø .22 Ø (5.5)	.88 (7)

Inches (mm)

P2LAZ 5/2 & 5/3 Single & Double Operators – Solenoid & Remote Air Pilot



P2LAZ 5/2 & 5/3
Solenoid & Remote Air Pilot

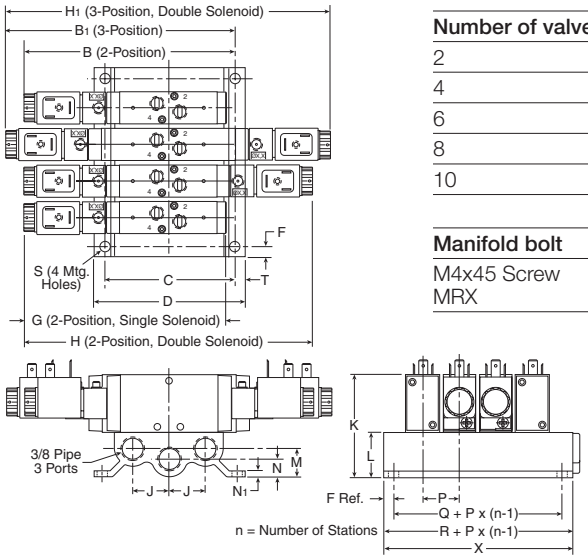
A	A1	A2	B	C	C1
5.47 (139)	7.76 (197)	8.70 (221)	1.57 (40)	1.30 (33)	.14 (3.5)
D	**D1**	**D2**	**D3**	**E**	**E2**
3.88 (98.5)	4.35 (110.5)	2.33 (59.3)	2.80 (71)	.31 (8)	1.86 (47.3)
E3	**F**	**H**	**H1**	**H2**	**J**
.33 (8.5)	.63 (16)	.87 (22)	.43 (11)	.12 (3)	.63 (16)
J1	**K2**	**K3**	**M**	**N**	**N1**
.12 (3)	1.50 (38)	1.31 (33.2)	.63 (16)	.12 (3)	.43 (11)
P	**U**	**V**	**W**		
Ø .16 Ø (4.1)	0.43 (11)	0.087 (2.2)	0.59 (15.2)		

Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

P2LAZ 5/2 & 5/3 Single & Double Operators – IEM Aluminum Bar Manifold



Number of valves	X
2	3.07 (78)
4	4.96 (126)
6	6.85 (174)
8	8.74 (222)
10	10.63 (270)

Inches (mm)

Manifold bolt	Torque value
M4x45 Screw MRX	9 in.lb (0.75 Nm)

P2LAZ 5/2 & 5/3
IEM Aluminum Bar Manifold

B	B1	C	D	F
5.10 (149.5)	6.36 (161.5)	3.46 (88)	4.02 (102)	.28 (7)

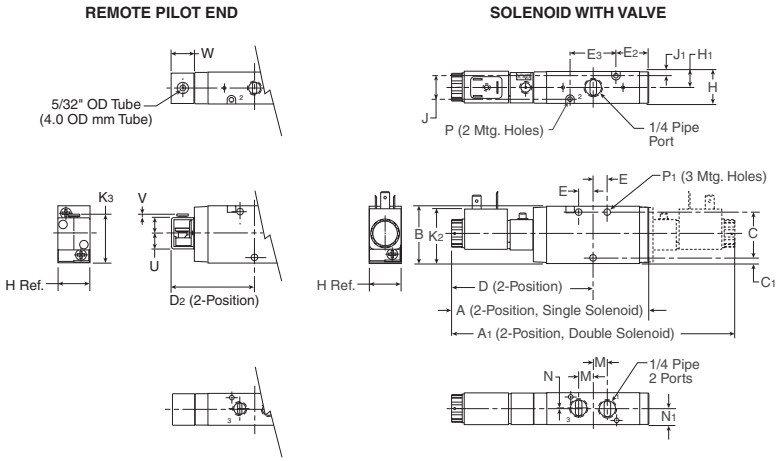
G	H	H1	J	K
5.47 (139)	7.76 (197)	8.70 (221)	.96 (24.5)	2.76 (70)

L	M	N	N1	P
1.18 (30)	.75 (19)	.47 (12)	.16 (4)	.94 (24)

Q	R	S	T
1.57 (40)	2.13 (54)	Ø .28 Ø (7)	.28 (7)

Inches (mm)

P2LBZ 3/2 Single & Double Operators – Solenoid & Remote Air Pilot



P2LBZ 3/2
Solenoid & Remote Air Pilot

A	A1	B	C	C1	D
5.35 (136)	7.68 (195)	1.57 (40)	1.26 (32)	.16 (4)	3.84 (97.5)

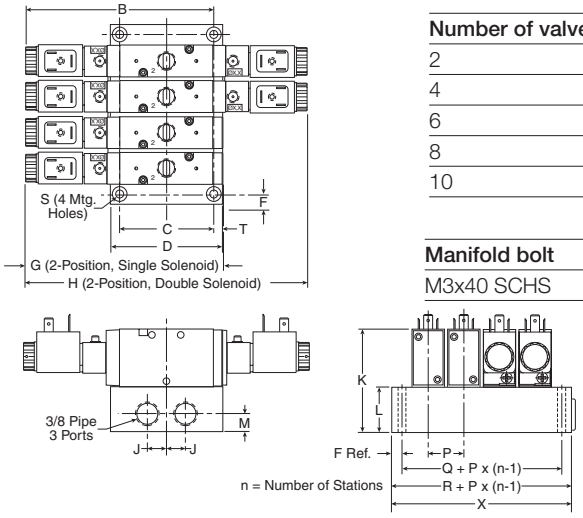
D2	E	E2	E3	H	H1
2.28 (58)	.39 (10)	.91 (23)	1.26 (32)	.87 (22)	.43 (11)

J	J1	K2	K3	M	N
.65 (16.5)	.11 (2.75)	1.50 (38)	1.31 (33.2)	.39 (10)	.02 (.5)

N1	P	P1	U	V	W
.43 (11)	Ø .12 Ø (3.1)	Ø .17 Ø (4.3)	0.43 (11)	0.087 (2.2)	0.59 (15.2)

Inches (mm)

P2LBZ 3/2 Single & Double Operators – IEM Aluminum Bar Manifold



Number of valves	X
2	2.91 (74)
4	4.80 (122)
6	6.69 (170)
8	8.58 (218)
10	10.47 (266)

Inches (mm)

Manifold bolt	Torque value
M3x40 SCHS	4 in.lb (0.45 Nm)

P2LBZ 3/2
IEM Aluminum Bar Manifold

B	C	D	F	G
5.06 (128.5)	2.44 (62)	2.99 (76)	.28 (7)	5.35 (136)

H	J	K	L	M
7.68 (195)	.51 (13)	2.78 (70.5)	1.20 (30.5)	.47 (12)

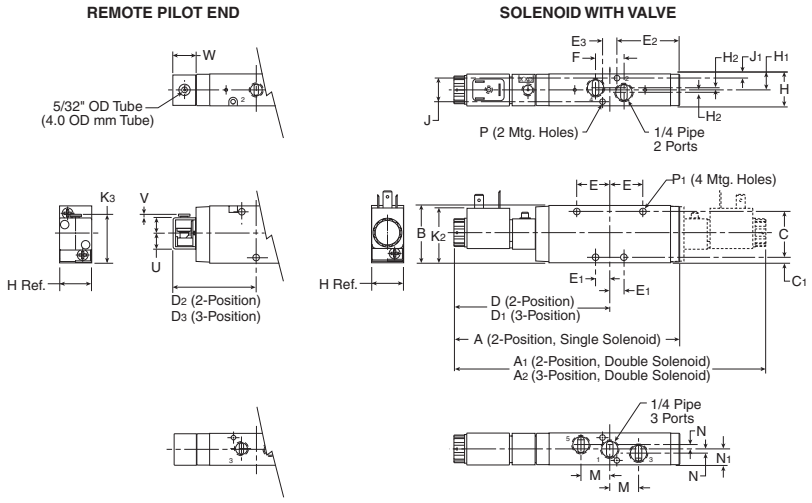
P	Q	R	S	T
.94 (24)	1.42 (36)	1.97 (50)	Ø .22 Ø (5.5)	.88 (7)

Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

P2LBZ 5/2 & 5/3 Single & Double Operators – Solenoid & Remote Air Pilot



P2LBZ 5/2 & 5/3
Solenoid & Remote Air Pilot

A	A1	A2	B	C	C1
6.14 (156)	8.46 (215)	9.29 (236)	1.57 (40)	1.26 (32)	.16 (4)

D	D1	D2	D3	E	E1
4.23 (107.5)	4.65 (118)	2.68 (68)	3.09 (78.5)	.91 (23)	.39 (10)

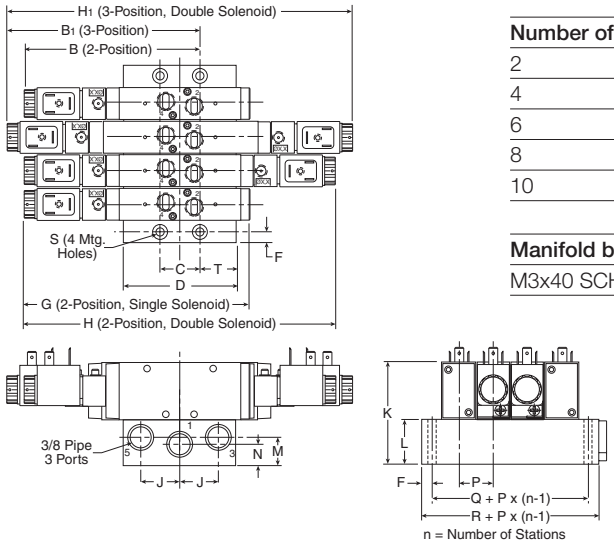
E2	E3	F	H	H1	H2
1.14 (29)	.39 (10)	.79 (20)	.87 (22)	.43 (11)	.06 (1.5)

J	J 1	K2	K3	M	N
.65 (16.5)	.11 (2.8)	1.50 (38)	1.31 (33.2)	.79 (20)	.08 (2)

N1	P	P1	U	V	W
.43 (11)	Ø .12 Ø (3.1)	Ø .17 Ø (4.3)	0.43 (11)	0.087 (2.2)	0.59 (15.2)

Inches (mm)

P2LBZ 5/2 & 5/3 Single & Double Operators – IEM Aluminum Bar Manifold



Number of valves	X
2	2.91 (74)
4	4.80 (122)
6	6.69 (170)
8	8.58 (218)
10	10.47 (266)

Inches (mm)

Manifold bolt	Torque value
M3x40 SCHS	9 in.lb (0.75 Nm)

P2LBZ 5/2 & 5/3
IEM Aluminum Bar Manifold

B	B1	C	D	F
4.43 (112.5)	4.84 (123)	1.04 (26.5)	2.99 (76)	.28 (7)

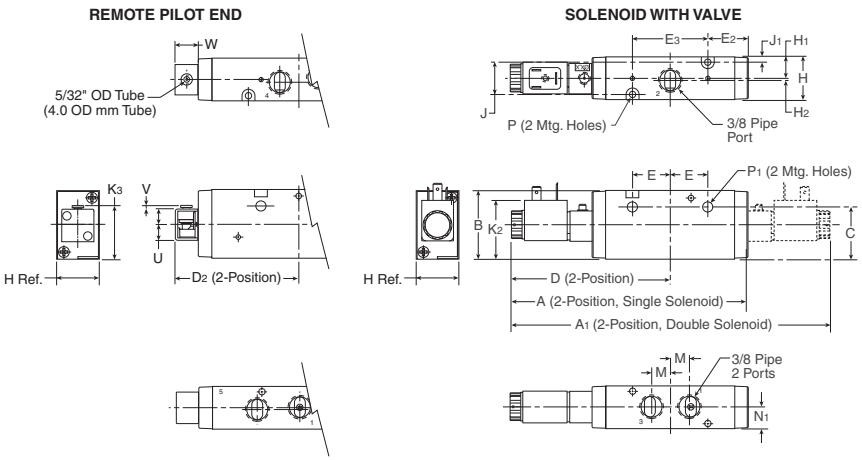
G	H	H1	J	K
6.14 (156)	8.46 (215)	9.29 (236)	1.02 (26)	2.781 (70.5)

L	M	N	P	Q
1.20 (30.5)	.75 (19)	.57 (14.5)	.94 (24)	1.42 (36)

R	S	T
1.97 (50)	Ø .22 Ø (5.5)	.97 (25)

Inches (mm)

P2LCZ 3/2 Single & Double Operators – Solenoid & Remote Pilot



P2LCZ 3/2
Solenoid & remote Air Pilot

A	A1	B	C	D	D2
6.50 (165)	8.66 (220)	1.89 (48)	1.46 (37)	4.33 (110)	2.78 (70.5)

E	E2	E3	H	H1	H2
1.04 (26.5)	1.10 (28)	2.09 (53)	1.18 (30)	.59 (15)	.06 (1.55)

J	J1	K2	K3	M	N1
.91 (23)	.14 (3.5)	1.50 (38)	1.46 (37.2)	.53 (13.5)	.59 (15)

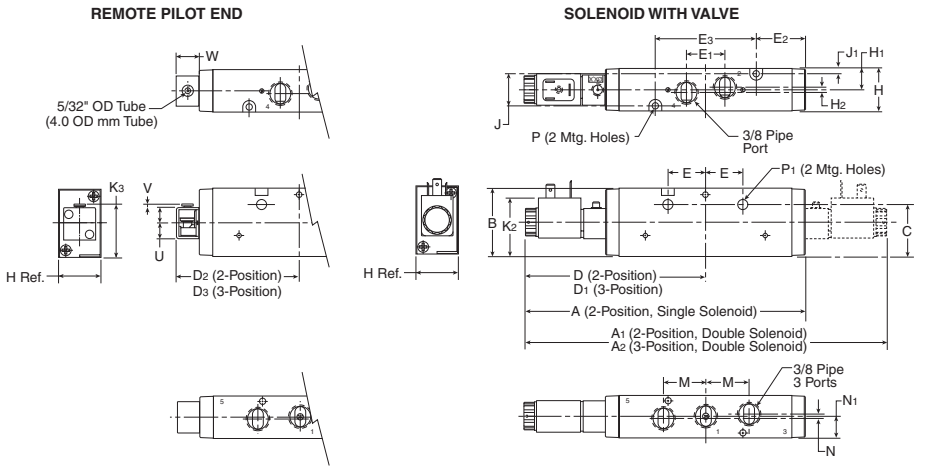
P	P1	U	V	W
Ø .17 Ø (4.4)	Ø .27 Ø (6.9)	0.43 (11)	0.087 (2.2)	0.59 (15.2)

Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

P2LCZ 5/2 & 5/3 Single & Double Operators – Solenoid & Remote Air Pilot

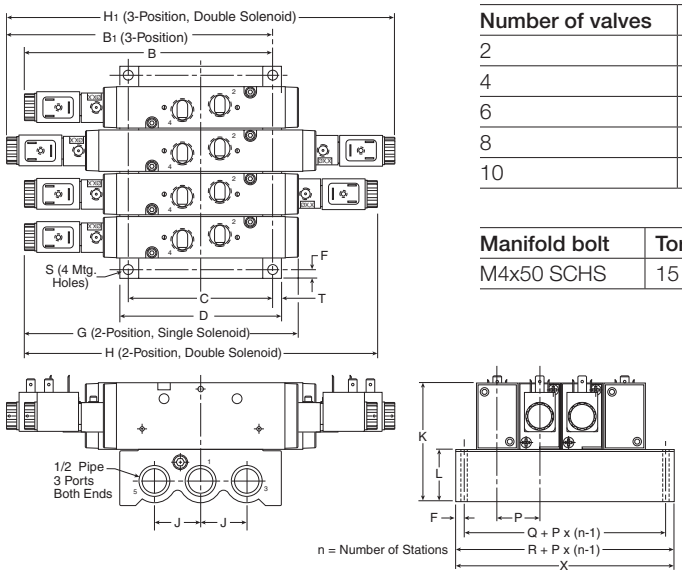


P2LBZ 5/2 & 5/3 Solenoid & Remote Air Pilot

A	A1	A2	B	C
7.68	9.88	10.70	1.89	1.46
(195)	(251)	(272)	(48)	(37)
D	**D1**	**D2**	**D3**	**E**
4.94	5.35	3.39	3.80	1.04
(125.5)	(136)	(86)	(96.5)	(26.5)
E1	**E2**	**E3**	**H**	**H1**
1.06	1.71	2.80	1.18	.59
(27)	(43.5)	(71)	(30)	(15)
H2	**J**	**J1**	**K2**	**K3**
.12	.91	.14	1.50	1.48
(.3)	(23)	(3.5)	(38)	(37.5)
M	**N**	**N1**	**P**	**P1**
1.18	.08	.59	Ø .17	Ø .27
(30)	(2)	(15)	Ø (4.4)	Ø (6.9)
U	**V**	**W**		
0.43	0.087	0.59		
(11)	(2.2)	(15.2)		

Inches (mm)

P2LCZ 5/2 & 5/3 Single & Double Operators – IEM Aluminum Bar Manifold



Number of valves	X
2	3.29 (84)
4	5.96 (152)
6	8.44 (215)
8	10.93 (278)
10	13.41 (341)

Inches (mm)

Manifold bolt	Torque value
M4x50 SCHS	15 in.lb (2.0 Nm)

P2LCZ 5/2 & 5/3 IEM Aluminum Bar Manifold

C	D	F	G	H
3.97	4.41	.24	7.68	9.88
(101)	(112)	(6)	(195)	(251)
H1	**J**	**K**	**L**	**P**
10.70	1.26	3.43	1.54	1.24
(272)	(32)	(87)	(39)	(31.5)
Q	**R**	**S**	**T**	
1.77	2.24	Ø .26	.24	
(45)	(57)	Ø (6.5)	(6)	

Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Viking Extreme Series

The Viking Xtreme valve range is robust, versatile and combines high performance with compact installation dimensions. Large flow capacity, short change-over times and low change-over pressure are important characteristics of this valve range.

Ports
- P2LAX: 1/8 inch NPT & BSPP
- P2LBX: 1/4 inch NPT & BSPP
- P2LCX: 3/8 inch NPT & BSPP
- P2LDX: 1/2 inch NPT & BSPP

Mounting
- Inline
- IEM aluminum bar

Solenoids

1.2 watts to 7.3 watts
- 22mm (Type B) & 30mm 3-pin (DIN 43650)
- 15mm 3-pin (EN 17530-803)
- M12, 4-pin, surge suppression
- Grommet, surge suppression
- Conduit
- Deutsche Connectors, surge suppression

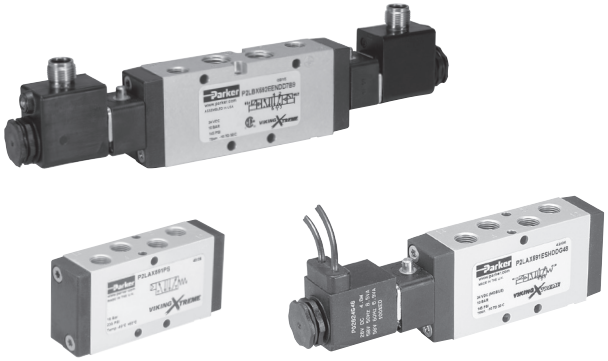
12VDC to 240VAC

Certification / approval
- IP65 Rated, RoHS, CE
- cCSAus Approved to 145 PSIG (10 bar)
- Canada Registration Number available (CRN)
- ATEX option available

Mobile applications
- Viking Xtreme tested to +5g shock and vibration
- Solenoids operate with wide voltage tolerance bands
- Corrosion resistant design
- Passed 500 hour salt spray test

Material specifications

Body	Anodized aluminum
End caps	Anodized aluminum
Coils	Thermoplastic
Fasteners	Stainless steel
Spool	Aluminum and nitrile rubber
Springs	Stainless steel



Operating information

Operating pressure:
- Normal: Vacuum to 145 PSIG (Vacuum to 10 bar)
- Xtreme: (P2LAX & P2LBX) Vacuum to 232 PSIG (Vacuum to 16 bar)
- (P2LCX & P2LDX) Vacuum to 174 PSIG (Vacuum to 12 bar)
- Minimum: See chart

Operating temperature:
- Normal: 14°F to 122°F (-10°C to 50°C)
- Xtreme: -40°F to 158°F (-40°C to 70°C)

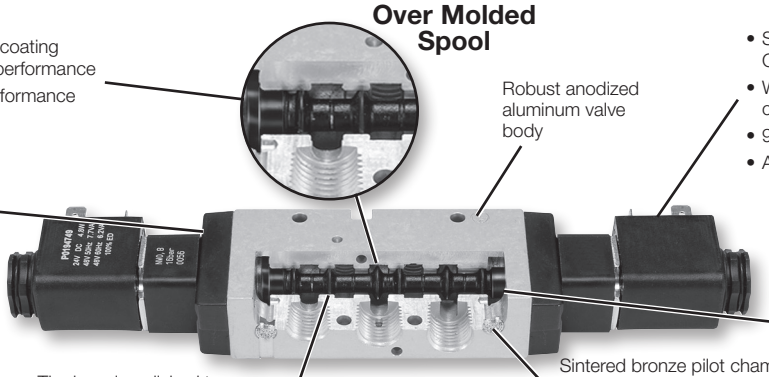
Minimum operating pressure, PSIG (bar)

Valve Type - Internal Pilot	P2LAX	P2LBX	P2LCX	P2LDX
Single solenoid - spring return	46 (3.2)	51 (3.5)	51 (3.5)	51 (3.5)
Single remote pilot - spring return	46 (3.2)	51 (3.5)	51 (3.5)	51 (3.5)
Double solenoid - 2-position	22 (1.5)	22 (1.5)	22 (1.5)	22 (1.5)
Double remote pilot - 2-position	22 (1.5)	22 (1.5)	22 (1.5)	22 (1.5)
Double solenoid - 3-position (APB, PC, CE)	51 (3.5)	51 (3.5)	51 (3.5)	51 (3.5)
Double remote pilot - 3-position (APB, PC, CE)	51 (3.5)	51 (3.5)	51 (3.5)	51 (3.5)

Features

Over Molded Spool
- Aluminum spool with nitrile rubber coating ground to exact size for optimum performance
- Precision ground for maximum performance
- Wide operating temperature range - Low temperature to -40°

Diecast end covers with stainless steel screws to resist aggressive environments.

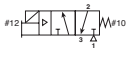


- Solenoid operated, IP65, RoHS, CE, CSA
- Wide variety of electrical connections
- 90° rotation
- Air pilot available

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Single Solenoid, 3-way, 2-position, Normal Operating Pressure / Temperature, Non-locking Manual Override



P2LAX 22mm DIN Shown

P2LAX 18" Grommet Shown

P2LAX M12 Coil Shown

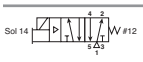
P2LAX 15mm DIN Shown

Solenoid	Port Size (NPT)	Cv	Valve Type	Response Time (msec)	Weight lb (kg)	Voltage	Part Number
22mm DIN	1/8"	0.7	P2LAX	18 / 40	0.84 (0.38)	24VDC	**P2LAX391ESNDDB49**
						120VAC	**P2LAX391ESNDDB53**
	1/4"	1.3	P2LBX	18 / 45	0.84 (0.38)	24VDC	**P2LBX392ESNDDB49**
						120VAC	**P2LBX392ESNDDB53**
	3/8"	2.5	P2LCX	25 / 75	1.72 (0.78)	24VDC	**P2LCX393ESNDDB49**
						120VAC	**P2LCX393ESNDDB53**
	1/2"	2.7	P2LDX	25 / 75	1.72 (0.78)	24VDC	**P2LDX394ESNDDB49**
						120VAC	**P2LDX394ESNDDB53**
18" Grommet	1/8"	0.7	P2LAX	18 / 40	0.84 (0.38)	24VDC	**P2LAX391ESNDDG49**
						120VAC	**P2LAX391ESNDDG53**
	1/4"	1.3	P2LBX	18 / 45	0.84 (0.38)	24VDC	**P2LBX392ESNDDG49**
						120VAC	**P2LBX392ESNDDG53**
	3/8"	2.5	P2LCX	25 / 75	1.72 (0.78)	24VDC	**P2LCX393ESNDDG49**
						120VAC	**P2LCX393ESNDDG53**
	1/2"	2.7	P2LDX	25 / 75	1.72 (0.78)	24VDC	**P2LDX394ESNDDG49**
						120VAC	**P2LDX394ESNDDG53**
M12 Coil with LED	1/8"	0.7	P2LAX	18 / 40	0.84 (0.38)	24VDC	**P2LAX391ESNDD7B9**
	1/4"	1.3	P2LBX	18 / 45	0.84 (0.38)	24VDC	**P2LBX392ESNDD7B9**
	3/8"	2.5	P2LCX	25 / 75	1.72 (0.78)	24VDC	**P2LCX393ESNDD7B9**
	1/2"	2.7	P2LDX	25 / 75	1.72 (0.78)	24VDC	**P2LDX394ESNDD7B9**
15mm DIN	1/8"	0.7	P2LAX	18 / 40	0.84 (0.38)	24VDC	**P2LAX391ESNXB549**
						120VAC	**P2LAX391ESNXB553**
	1/4"	1.3	P2LBX	18 / 45	0.84 (0.38)	24VDC	**P2LBX392ESNXB549**
						120VAC	**P2LBX392ESNXB553**
	3/8"	2.5	P2LCX	25 / 75	1.72 (0.78)	24VDC	**P2LCX393ESNXB549**
						120VAC	**P2LCX393ESNXB553**
	1/2"	2.7	P2LDX	25 / 75	1.72 (0.78)	24VDC	**P2LDX394ESNXB549**
						120VAC	**P2LDX394ESNXB553**

Notes: Above valves are rated for an operating temperature from 14°F to 122°F (-10°C to 50°C). See model code matrix for additional options.
Response time: Actuate to 90% pressure / return to exhaust to 10% of supply pressure. 93 PSIG (6.3 bar) / temperature 68°F (20°C).

☐ Most popular.

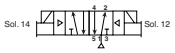
Single Solenoid, 4-way, 2-position, Normal Operating Pressure / Temperature, Non-locking Manual Override

	Solenoid	Port Size (NPT)	Cv	Valve Type	Response Time (msec)	Weight lb (kg)	Voltage	Part Number
	22mm DIN	1/8"	0.7	P2LAX	15 / 35	0.49 (0.22)	24VDC	**P2LAX591ESNDDB49**
							120VAC	**P2LAX591ESNDDB53**
		1/4"	1.3	P2LBX	18 / 45	0.84 (0.38)	24VDC	**P2LBX592ESNDDB49**
							120VAC	**P2LBX592ESNDDB53**
		3/8"	2.5	P2LCX	27 / 75	1.68 (0.76)	24VDC	**P2LCX593ESNDDB49**
							120VAC	**P2LCX593ESNDDB53**
		1/2"	2.7	P2LDX	25 / 75	1.68 (0.76)	24VDC	**P2LDX594ESNDDB49**
P2LBX 22mm DIN Shown							120VAC	**P2LDX594ESNDDB53**
	18" Grommet	1/8"	0.7	P2LAX	15 / 35	0.49 (0.22)	24VDC	**P2LAX591ESNDDG49**
							120VAC	**P2LAX591ESNDDG53**
		1/4"	1.3	P2LBX	18 / 45	0.84 (0.38)	24VDC	**P2LBX592ESNDDG49**
							120VAC	**P2LBX592ESNDDG53**
		3/8"	2.5	P2LCX	27 / 75	1.68 (0.76)	24VDC	**P2LCX593ESNDDG49**
							120VAC	**P2LCX593ESNDDG53**
		1/2"	2.7	P2LDX	25 / 75	1.68 (0.76)	24VDC	**P2LDX594ESNDDG49**
P2LAX 18" Grommet Shown							120VAC	**P2LDX594ESNDDG53**
	M12 Coil with LED	1/8"	0.7	P2LAX	15 / 35	0.49 (0.22)	24VDC	**P2LAX591ESNDD7B9**
		1/4"	1.3	P2LBX	18 / 45	0.84 (0.38)	24VDC	**P2LBX592ESNDD7B9**
		3/8"	2.5	P2LCX	27 / 75	1.68 (0.76)	24VDC	**P2LCX593ESNDD7B9**
		1/2"	2.7	P2LDX	25 / 75	1.68 (0.76)	24VDC	**P2LDX594ESNDD7B9**
P2LAX M12 Coil Shown								
	15mm DIN	1/8"	0.7	P2LAX	15 / 35	0.49 (0.22)	24VDC	**P2LAX591ESNXB549**
							120VAC	**P2LAX591ESNXB553**
		1/4"	1.3	P2LBX	18 / 45	0.84 (0.38)	24VDC	**P2LBX592ESNXB549**
							120VAC	**P2LBX592ESNXB553**
		3/8"	2.5	P2LCX	27 / 75	1.68 (0.76)	24VDC	**P2LCX593ESNXB549**
							120VAC	**P2LCX593ESNXB553**
		1/2"	2.7	P2LDX	25 / 75	1.68 (0.76)	24VDC	**P2LDX594ESNXB549**
P2LAX 15mm DIN Shown							120VAC	**P2LDX594ESNXB553**

Notes: Above valves are rated for an operating temperature from 14°F to 122°F (-10°C to 50°C). See model code matrix for additional options.
Response time: Actuate to 90% pressure / return to exhaust to 10% of supply pressure. 93 PSIG (6.3 bar) / temperature 68°F (20°C).

☐ Most popular.

Double Solenoid, 4-way, 2-position, Normal Operating Pressure / Temperature, Non-locking Manual Override

	Solenoid	Port Size (NPT)	Cv	Valve Type	Response Time (msec)	Weight lb (kg)	Voltage	Part Number
 P2LBX 22mm DIN Shown	22mm DIN	1/8"	0.7	P2LAX	10 / 10	0.60 (0.27)	24VDC	**P2LAX591EENDDB49**
							120VAC	**P2LAX591EENDDB53**
		1/4"	1.3	P2LBX	12 / 12	0.93 (0.42)	24VDC	**P2LBX592EENDDB49**
							120VAC	**P2LBX592EENDDB53**
		3/8"	2.5	P2LCX	17 / 17	1.78 (0.81)	24VDC	**P2LCX593EENDDB49**
							120VAC	**P2LCX593EENDDB53**
		1/2"	2.7	P2LDX	17 / 17	1.78 (0.81)	24VDC	**P2LDX594EENDDB49**
							120VAC	**P2LDX594EENDDB53**
P2LAX 18" Grommet Shown	18" Grommet	1/8"	0.7	P2LAX	10 / 10	0.60 (0.27)	24VDC	**P2LAX591EENDDG49**
							120VAC	**P2LAX591EENDDG53**
		1/4"	1.3	P2LBX	12 / 12	0.93 (0.42)	24VDC	**P2LBX592EENDDG49**
							120VAC	**P2LBX592EENDDG53**
		3/8"	2.5	P2LCX	17 / 17	1.78 (0.81)	24VDC	**P2LCX593EENDDG49**
							120VAC	**P2LCX593EENDDG53**
		1/2"	2.7	P2LDX	17 / 17	1.78 (0.81)	24VDC	**P2LDX594EENDDG49**
							120VAC	**P2LDX594EENDDG53**
P2LBX M12 Coil Shown	M12 Coil with LED	1/8"	0.7	P2LAX	10 / 10	0.60 (0.27)	24VDC	**P2LAX591EENDD7B9**
		1/4"	1.3	P2LBX	12 / 12	0.93 (0.42)	24VDC	**P2LBX592EENDD7B9**
		3/8"	2.5	P2LCX	17 / 17	1.78 (0.81)	24VDC	**P2LCX593EENDD7B9**
		1/2"	2.7	P2LDX	17 / 17	1.78 (0.81)	24VDC	**P2LDX594EENDD7B9**
P2LAX 15mm DIN Shown	15mm DIN	1/8"	0.7	P2LAX	10 / 10	0.60 (0.27)	24VDC	**P2LAX591EENXB549**
							120VAC	**P2LAX591EENXB553**
		1/4"	1.3	P2LBX	12 / 12	0.93 (0.42)	24VDC	**P2LBX592EENXB549**
							120VAC	**P2LBX592EENXB553**
		3/8"	2.5	P2LCX	17 / 17	1.78 (0.81)	24VDC	**P2LCX593EENXB549**
							120VAC	**P2LCX593EENXB553**
		1/2"	2.7	P2LDX	17 / 17	1.78 (0.81)	24VDC	**P2LDX594EENXB549**
							120VAC	**P2LDX594EENXB553**

Notes: Above valves are rated for an operating temperature from 14°F to 122°F (-10°C to 50°C). See model code matrix for additional options.
Response time: Actuate to 90% pressure / return to exhaust to 10% of supply pressure. 93 PSIG (6.3 bar) / temperature 68°F (20°C).

☐ Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

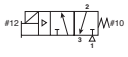
Double Solenoid, 4-way, 3-position All Ports Blocked, 3-position Center Exhaust, Normal Operating Pressure / Temperature, Non-locking Manual Override

	Solenoid	Port Size (NPT)	Cv	Valve Type	Response Time (msec)	Weight lb (kg)	Voltage	Part number: All Ports Blocked	Part number: Center Exhaust
P2LBX 22mm DIN Shown	22mm DIN	1/8"	0.5	P2LAX	18 / 40	0.62 (0.28)	24VDC	**P2LAX691EENDDB49**	**P2LAX891EENDDB49**
							120VAC	**P2LAX691EENDDB53**	**P2LAX891EENDDB53**
		1/4"	0.9	P2LBX	22 / 55	0.97 (0.44)	24VDC	**P2LBX692EENDDB49**	**P2LBX892EENDDB49**
							120VAC	**P2LBX692EENDDB53**	**P2LBX892EENDDB53**
		3/8"	1.8	P2LCX	30 / 90	2.45 (1.11)	24VDC	**P2LCX693EENDDB49**	**P2LCX893EENDDB49**
							120VAC	**P2LCX693EENDDB53**	**P2LCX893EENDDB53**
		1/2"	1.9	P2LDX	30 / 90	2.45 (1.11)	24VDC	**P2LDX694EENDDB49**	**P2LDX894EENDDB49**
							120VAC	**P2LDX694EENDDB53**	**P2LDX894EENDDB53**
P2LBX 18" Grommet Shown	18" Grommet	1/8"	0.5	P2LAX	18 / 40	0.62 (0.28)	24VDC	**P2LAX691EENDDG49**	**P2LAX891EENDDG49**
							120VAC	**P2LAX691EENDDG53**	**P2LAX891EENDDG53**
		1/4"	0.9	P2LBX	22 / 55	0.97 (0.44)	24VDC	**P2LBX692EENDDG49**	**P2LBX892EENDDG49**
							120VAC	**P2LBX692EENDDG53**	**P2LBX892EENDDG53**
		3/8"	1.8	P2LCX	30 / 90	2.45 (1.11)	24VDC	**P2LCX693EENDDG49**	**P2LCX893EENDDG49**
							120VAC	**P2LCX693EENDDG53**	**P2LCX893EENDDG53**
		1/2"	1.9	P2LDX	30 / 90	2.45 (1.11)	24VDC	**P2LDX694EENDDG49**	**P2LDX894EENDDG49**
							120VAC	**P2LDX694EENDDG53**	**P2LDX894EENDDG53**
P2LBX M12 Coil Shown	M12 Coil with LED	1/8"	0.5	P2LAX	18 / 40	0.62 (0.28)	24VDC	**P2LAX691EENDD7B9**	**P2LAX891EENDD7B9**
		1/4"	0.9	P2LBX	22 / 55	0.97 (0.44)	24VDC	**P2LBX692EENDD7B9**	**P2LBX892EENDD7B9**
		3/8"	1.8	P2LCX	30 / 90	2.45 (1.11)	24VDC	**P2LCX693EENDD7B9**	**P2LCX893EENDD7B9**
		1/2"	1.9	P2LDX	30 / 90	2.45 (1.11)	24VDC	**P2LDX694EENDD7B9**	**P2LDX894EENDD7B9**
P2LBX 15mm DIN Shown	15mm DIN	1/8"	0.5	P2LAX	18 / 40	0.62 (0.28)	24VDC	**P2LAX691EENXB549**	**P2LAX891EENXB549**
							120VAC	**P2LAX691EENXB553**	**P2LAX891EENXB553**
		1/4"	0.9	P2LBX	22 / 55	0.97 (0.44)	24VDC	**P2LBX692EENXB549**	**P2LBX892EENXB549**
							120VAC	**P2LBX692EENXB553**	**P2LBX892EENXB553**
		3/8"	1.8	P2LCX	30 / 90	2.45 (1.11)	24VDC	**P2LCX693EENXB549**	**P2LCX893EENXB549**
							120VAC	**P2LCX693EENXB553**	**P2LCX893EENXB553**
		1/2"	1.9	P2LDX	30 / 90	2.45 (1.11)	24VDC	**P2LDX694EENXB549**	**P2LDX894EENXB549**
							120VAC	**P2LDX694EENXB553**	**P2LDX894EENXB553**

Notes: Above valves are rated for an operating temperature from 14°F to 122°F (-10°C to 50°C). See model code matrix for additional options.
Response time: Actuate to 90% pressure / return to exhaust to 10% of supply pressure. 93 PSIG (6.3 bar) / temperature 68°F (20°C).

Most popular.

Single Solenoid, 3-way, 2-position, Xtreme Operating Pressure / Temperature, Non-locking Manual Override



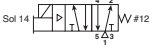
P2LBX 22mm DIN Shown

P2LBX 18" Grommet Shown

Solenoid	Port Size (NPT)	Cv	Valve Type	Response Time (msec)	Weight lb (kg)	Voltage	Part Number
22mm DIN	1/8"	0.7	P2LAX	15 / 45	0.84 (0.38)	12VDC	**P2LAX391ESHDDB47**
						24VDC	**P2LAX391ESHDDB48**
	1/4"	1.3	P2LBX	25 / 65	0.84 (0.38)	12VDC	**P2LBX392ESHDDB47**
						24VDC	**P2LBX392ESHDDB48**
	3/8"	2.5	P2LCX	25 / 85	1.01 (0.46)	12VDC	**P2LCX393ESHDDB47**
						24VDC	**P2LCX393ESHDDB48**
	1/2"	2.7	P2LDX	25 / 85	1.01 (0.46)	12VDC	**P2LDX394ESHDDB47**
						24VDC	**P2LDX394ESHDDB48**
18" Grommet	1/8"	0.7	P2LAX	15 / 45	0.84 (0.38)	12VDC	**P2LAX391ESHDDG47**
						24VDC	**P2LAX391ESHDDG48**
	1/4"	1.3	P2LBX	25 / 65	0.84 (0.38)	12VDC	**P2LBX392ESHDDG47**
						24VDC	**P2LBX392ESHDDG48**
	3/8"	2.5	P2LCX	25 / 85	1.01 (0.46)	12VDC	**P2LCX393ESHDDG47**
						24VDC	**P2LCX393ESHDDG48**
	1/2"	2.7	P2LDX	25 / 85	1.01 (0.46)	12VDC	**P2LDX394ESHDDG47**
						24VDC	**P2LDX394ESHDDG48**

Notes: Above valves have Mobile Rated Coils and are rated for an operating temperature from -40°F to 158°F (-40°C to 70°C).
See model code matrix for additional options.
Response time: Actuate to 90% pressure / return to exhaust to 10% of supply pressure. 93 PSIG (6.3 bar) / temperature 68°F (20°C).

Single Solenoid, 4-way, 2-position, Xtreme Operating Pressure / Temperature Non-locking Manual Override



P2LBX 22mm DIN Shown

P2LAX 18" Grommet Shown

Solenoid	Port Size (NPT)	Cv	Valve Type	Response Time (msec)	Weight lb (kg)	Voltage	Part Number
22mm DIN	1/8"	0.7	P2LAX	15 / 45	0.84 (0.38)	12VDC	**P2LAX591ESHDDB47**
						24VDC	**P2LAX591ESHDDB48**
	1/4"	1.3	P2LBX	20 / 55	0.84 (0.38)	12VDC	**P2LBX592ESHDDB47**
						24VDC	**P2LBX592ESHDDB48**
	3/8"	2.5	P2LCX	25 / 85	1.01 (0.46)	12VDC	**P2LCX593ESHDDB47**
						24VDC	**P2LCX593ESHDDB48**
	1/2"	2.7	P2LDX	25 / 85	1.01 (0.46)	12VDC	**P2LDX594ESHDDB47**
						24VDC	**P2LDX594ESHDDB48**
18" Grommet	1/8"	0.7	P2LAX	15 / 45	0.84 (0.38)	12VDC	**P2LAX591ESHDDG47**
						24VDC	**P2LAX591ESHDDG48**
	1/4"	1.3	P2LBX	25 / 65	0.84 (0.38)	12VDC	**P2LBX592ESHDDG47**
						24VDC	**P2LBX592ESHDDG48**
	3/8"	2.5	P2LCX	28 / 85	1.01 (0.46)	12VDC	**P2LCX593ESHDDG47**
						24VDC	**P2LCX593ESHDDG48**
	1/2"	2.7	P2LDX	25 / 85	1.01 (0.46)	12VDC	**P2LDX594ESHDDG47**
						24VDC	**P2LDX594ESHDDG48**

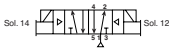
Notes: Above valves have Mobile Rated Coils and are rated for an operating temperature from -40°F to 158°F (-40°C to 70°C).
See model code matrix for additional options.
Response time: Actuate to 90% pressure / return to exhaust to 10% of supply pressure. 93 PSIG (6.3 bar) / temperature 68°F (20°C).

Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Double Solenoid, 4-way, 2-position, Xtreme Operating Pressure / Temperature, Non-locking Manual Override



22mm DIN

P2LBX 22mm DIN Shown

18" Grommet

P2LAX 18" Grommet Shown

Solenoid	Port Size (NPT)	Cv	Valve Type	Response Time (msec)	Weight lb (kg)	Voltage	Part Number
22mm DIN	1/8"	0.7	P2LAX	11 / 11	0.60 (0.27)	12VDC	**P2LAX591EEHDDB47**
						24VDC	**P2LAX591EEHDDB48**
	1/4"	1.3	P2LBX	13 / 13	0.93 (0.42)	12VDC	**P2LBX592EEHDDB47**
						24VDC	**P2LBX592EEHDDB48**
	3/8"	2.5	P2LCX	18 / 18	1.06 (0.48)	12VDC	**P2LCX593EEHDDB47**
						24VDC	**P2LCX593EEHDDB48**
	1/2"	2.7	P2LDX	18 / 18	1.06 (0.48)	12VDC	**P2LDX594EEHDDB47**
						24VDC	**P2LDX594EEHDDB48**
18" Grommet	1/8"	0.7	P2LAX	11 / 11	0.60 (0.27)	12VDC	**P2LAX591EEHDDG47**
						24VDC	**P2LAX591EEHDDG48**
	1/4"	1.3	P2LBX	13 / 13	0.93 (0.42)	12VDC	**P2LBX592EEHDDG47**
						24VDC	**P2LBX592EEHDDG48**
	3/8"	2.5	P2LCX	18 / 18	1.06 (0.48)	12VDC	**P2LCX593EEHDDG47**
						24VDC	**P2LCX593EEHDDG48**
	1/2"	2.7	P2LDX	18 / 18	1.06 (0.48)	12VDC	**P2LDX594EEHDDG47**
						24VDC	**P2LDX594EEHDDG48**

Notes: Above valves have Mobile Rated Coils and are rated for an operating temperature from -40°F to 158°F (-40°C to 70°C).
See model code matrix for additional options.
Response time: Actuate to 90% pressure / return to exhaust to 10% of supply pressure. 93 PSIG (6.3 bar) / temperature 68°F (20°C).

Double Solenoid, 4-way, 3-position All Ports Blocked, 3-position Center Exhaust, Xtreme Operating Pressure / Temperature Non-locking Manual Override

22mm DIN

P2LBX 22mm DIN Shown

18" Grommet

P2LBX 18" Grommet Shown

Solenoid	Port Size	Cv	Valve Type (NPT)	Response Time (msec)	Weight lb (kg)	Voltage	Part number: All Ports Blocked	Part number: Center Exhaust
22mm DIN	1/8"	0.5	P2LAX	18 / 40	0.62 (0.28)	12VDC	**P2LAX691EEHDDB47**	**P2LAX891EEHDDB47**
						24VDC	**P2LAX691EEHDDB48**	**P2LAX891EEHDDB48**
	1/4"	0.9	P2LBX	22 / 55	0.97 (0.44)	12VDC	**P2LBX692EEHDDB47**	**P2LBX892EEHDDB47**
						24VDC	**P2LBX692EEHDDB48**	**P2LBX892EEHDDB48**
	3/8"	1.8	P2LCX	30 / 90	2.45 (1.11)	12VDC	**P2LCX693EEHDDB47**	**P2LCX893EEHDDB47**
						24VDC	**P2LCX693EEHDDB48**	**P2LCX893EEHDDB48**
	1/2"	1.9	P2LDX	30 / 90	2.45 (1.11)	12VDC	**P2LDX694EEHDDB47**	**P2LDX894EEHDDB47**
						24VDC	**P2LDX694EEHDDB48**	**P2LDX894EEHDDB48**
18" Grommet	1/8"	0.5	P2LAX	18 / 40	0.62 (0.28)	12VDC	**P2LAX691EEHDDG47**	**P2LAX891EEHDDG47**
						24VDC	**P2LAX691EEHDDG48**	**P2LAX891EEHDDG48**
	1/4"	0.9	P2LBX	22 / 55	0.97 (0.44)	12VDC	**P2LBX692EEHDDG47**	**P2LBX892EEHDDG47**
						24VDC	**P2LBX692EEHDDG48**	**P2LBX892EEHDDG48**
	3/8"	1.8	P2LCX	30 / 90	2.45 (1.11)	12VDC	**P2LCX693EEHDDG47**	**P2LCX893EEHDDG47**
						24VDC	**P2LCX693EEHDDG48**	**P2LCX893EEHDDG48**
	1/2"	1.9	P2LDX	30 / 90	2.45 (1.11)	12VDC	**P2LDX694EEHDDG47**	**P2LDX894EEHDDG47**
						24VDC	**P2LDX694EEHDDG48**	**P2LDX894EEHDDG48**

Notes: Above valves have Mobile Rated Coils and are rated for an operating temperature from -40°F to 158°F (-40°C to 70°C).
See model code matrix for additional options.
Response time: Actuate to 90% pressure / return to exhaust to 10% of supply pressure. 93 PSIG (6.3 bar) / temperature 68°F (20°C).

Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Viking Xtreme Single & Double Solenoid Operated Valves

P2L	A	X	5	91	ES	H	D	D	G	49

Valve Size	
1/8"	A
1/4"	B
3/8"	C
1/2"	D

Series	
Viking Xtreme	X

Valve Type / Function	
Internal Pilot Supply to Solenoid*	
3/2 NC - 2-Position	**3**
5/2 2-Position	**5**
5/3 3-Position, APB	**6**
5/3 3-Position, PC	**7**
5/3 3-Position, CE	**8**
External Pilot Supply to the Solenoids Through Ports #12 & #14	
3/2 NC - 2-Position	L
5/2 2-Position	N
5/3 3-Position, APB	P
5/3 3-Position, PC	Q
5/3 3-Position, CE	R

* Size A & B solenoid valves can be field converted from internal to external pilot. See page C25 for details.

Main Port Thread	
G1/8 (P2LA)	11
G1/4 (P2LB)	12
G1/4 (P2LB) NAMUR Mount	1N*
G3/8 (P2LC)	13
G1/2 (P2LD)	14
1/8" NPT (P2LA)	**91**
1/4" NPT (P2LB)	**92**
1/4" NPT (P2LB) NAMUR Mount	**9N***
3/8" NPT (P2LC)	**93**
1/2" NPT (P2LD)	**94**

* NAMUR mount available for 5/2, 2-position only.

Operator Return	
Double Solenoid	**EE**
Single Solenoid, Spring Return	**ES***

* Not available with 3-position valves.

Operator Type / Operating Pressure and Temperature	
Normal, Vacuum to 145 PSIG (10 bar), 14°F to 122°F (-10°C to 50°C), CSA Approved	**N**
Xtreme, Vacuum to 145 PSIG (10 bar), -40°F to 140° F (-40°C to 70°C), CSA Approved	**K**
Xtreme, Vacuum to 232 PSIG (16 bar), -40°F to 140° F (-40°C to 70°C)	**H***

* P2LC and P2LD solenoid operated valves have a maximum pressure rating of 175 PSIG (12 bar)

Solenoid Pilot Type	
D**	**Vented Pilot Exhaust**
N**	Tapped Pilot Exhaust
X*	15mm Solenoid Vented Pilot Exhaust

* Available enclosure "5", "X" and operator type "N" only.
** Not available on enclosure "5" & "X".

Overrides	
A**	No Override
B†	**Flush - Non-Locking**
C*	**Flush - Locking**
D	**Extended Non-Locking**
E*†	**Extended - Locking**
X†	Valve Less 15mm Solenoid

* Override for valve type "N" only.
** Not available on enclosure "5", 15mm solenoid. Available solenoid pilot type "D" & "N" only.
† Available solenoid pilot type "X" only.

Enclosures / Lead Length	
5†	**15mm, 3-Pin DIN 43650C, 8mm Pin Spacing**
7§	**M12 4-Pin Coil with Surge Suppression & LED**
A	30mm Square 3-Pin – ISO 4400 Form A (male only)
B	**22mm Rectangular 3-Pin – Type B Industrial (male only)**
E*	Intrinsically Safe, FM / CSA
F‡	Hazardous Duty 1/2" NPT, FM / CSA
G	**Grommet - 18" Leads**
H	1/2" NPT Conduit - 18" Leads
N**	Valve Less "A - V, 7" Enclosure
T#	**Grommet, Single Solenoid, 2-Pin Deutsche Connector, Surge Suppression**
V#	**Grommet, Double Solenoid, 4-Pin Deutsche Connector, Surge Suppression**
X†	Valve Less 15mm Solenoid

* Only available with voltage code "49" & override option "A", valve type "N" Only. Solenoid coil only CSA approved.
** Solenoid pilot type "D" & "N" only.
# Voltage code "46" only.
‡ Valve type "N" Only. Solenoid coil only CSA approved.
† Solenoid pilot type "X" only.
§ Voltage code "B9" only. Valve type "N" only.

Voltage	
B9‡	**24 VDC w/ Surge Suppression & LED**
42	24VAC
45	12VDC
46†	**12VDC Mobile with Surge Suppression**
47*	**12 VDC Mobile**
48*	**24 VDC Mobile**
49	**24VDC**
53	**120VAC**
57	240VAC
Blank	Valve Less Coil

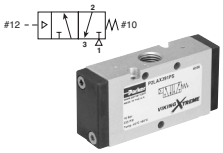
* Only available with enclosures "A", "B", "G" & "5".
‡ Enclosure "7" only
† Enclosure "G", "T", "V" only.

Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

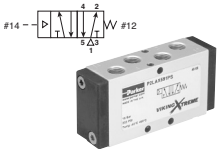
Single Remote Pilot, 3-way, 2-position, Xtreme Operating Pressure / Temperature



P2LAX Shown

Port Size (NPT)	Cv	Response Time (msec)	Weight lb (kg)	Valve Type	Part Number
1/8"	0.7	15 / 45	0.68 (0.31)	P2LAX	**P2LAX391PS**
1/4"	1.3	25 / 65	0.68 (0.31)	P2LBX	**P2LBX392PS**
3/8"	2.5	25 / 65	0.88 (0.40)	P2LCX	**P2LCX393PS**
1/2"	2.7	25 / 65	0.88 (0.40)	P2LDX	**P2LDX394PS**

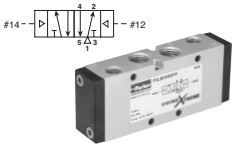
Single Remote Pilot, 4-way, 2-position, Xtreme Operating Pressure / Temperature



P2LAX Shown

Port Size (NPT)	Cv	Response Time (msec)	Weight lb (kg)	Valve Type	Part Number
1/8"	0.7	15 / 45	0.33 (0.15)	P2LAX	**P2LAX591PS**
1/4"	1.3	20 / 55	0.68 (0.31)	P2LBX	**P2LBX592PS**
3/8"	2.5	25 / 85	0.90 (0.41)	P2LCX	**P2LCX593PS**
1/2"	2.7	25 / 85	0.90 (0.41)	P2LDX	**P2LDX594PS**

Double Remote Pilot, 4-way, 2-position, Xtreme Operating Pressure / Temperature



P2LBX Shown

Port Size (NPT)	Cv	Response Time (msec)	Weight lb (kg)	Valve Type	Part Number
1/8"	0.7	11 / 11	0.33 (0.15)	P2LAX	**P2LAX591PP**
1/4"	1.3	13 / 13	0.68 (0.31)	P2LBX	**P2LBX592PP**
3/8"	2.5	18 / 18	0.90 (0.41)	P2LCX	**P2LCX593PP**
1/2"	2.7	18 / 18	0.90 (0.41)	P2LDX	**P2LDX594PP**

Double Remote Pilot, 4-way, 3-position All Ports Blocked, 3-position Center Exhaust, Xtreme Operating Pressure / Temperature

P2LBX Shown

Port Size (NPT)	Cv	Response Time (msec)	Weight lb (kg)	Valve Type	Part Number: All Ports Blocked	Part Number: Center Exhaust
1/8"	0.5	18 / 50	0.31 (0.14)	P2LAX	**P2LAX691PP**	**P2LAX891PP**
1/4"	0.9	25 / 65	0.73 (0.33)	P2LBX	**P2LBX692PP**	**P2LBX892PP**
3/8"	1.8	30 / 90	0.93 (0.42)	P2LCX	**P2LCX693PP**	**P2LCX893PP**
1/2"	1.9	30 / 90	0.93 (0.42)	P2LDX	**P2LDX694PP**	**P2LDX894PP**

Notes: Above valves are rated for an operating temperature from -40°F to 158°F (-40°C to 70°C). See model code matrix for additional options.
Response time: Actuate to 90% pressure / return to exhaust to 10% of supply pressure. 93 PSIG (6.3 bar) / temperature 68°F (20°C).

Viking Xtreme Remote Air Pilot Operated Valves

Operating information

Operating pressure:
(P2LAX & P2LBX)
Vacuum to 232 PSIG (Vacuum to 16 bar)
(P2LCX & P2LDX)
Vacuum to 174 PSIG (Vacuum to 12 bar)

Operating temperature:
-40°F to 158°F (-40°C to 70°C)

P2L | A | X | 5 | 91 | PS

Valve Size	
1/8"	A
1/4"	B
3/8"	C*
1/2"	D*

* P2LCX and P2LDX manual & remote air pilot valves have a maximum pressure rating of 175 PSIG (12 bar).

Valve Type / Function	
3/2 NC - 2-Position	3
5/2 2-Position	5
5/3 3-Position, APB	6
5/3 3-Position, PC	7
5/3 3-Position, CE	8

Operators / Return	
PP	Double Remote Pilot
PS*	Single Remote Pilot, Spring Return

* Not available with 3-position valves.

Main Port Thread	
11	G1/8 (P2LA)
12	G1/4 (P2LB)
1N*	G1/4 NPT (P2LB) NAMUR Mount
13	G3/8 (P2LC)
14	G1/2 (P2LD)
91	1/8" NPT (P2LA)
92	1/4" NPT (P2LB)
9N*	1/4 NPT (P2LB) NAMUR Mount
93	3/8" NPT (P2LC)
94	1/2" NPT (P2LD)

* 5/2, 2-position valve only.

☐ Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

ATEX Certified Single & Double Solenoid Operated Valves

Viking ATEX valves meet ATEX directive 94/9/EC with the following classification : CE Ex II 2GD c 135oc. This directive lays down minimum safety requirements for products intended for use in potentially explosive atmospheres. The Directive is commonly referred to as the 'ATEX' Directive ('ATmospheres EXplosibles'), but may also be called the ATEX Equipment Directive or ATEX 95. Both ATEX certified solenoid, remote pilot and manual operated valves, as well as complete solenoid pilot assemblies are available.

ATEX classification details:

CE Ex: fulfils the ATEX directive
II : Group II Equipment Area
2GD : Equipment Category 2. Gas Zone 1,2 and Dust Zone 21,22
c : Safe Design (EN13463-5)
135°C : Real temperature of the surface of product for test

Temperature Class of Solenoid : T4 135°C, ATEX 8-22T

Operating information

Operating pressure:	Vacuum to 145 PSIG (vacuum to 10 bar)
Operating temperature:	14°F to 122°F (-10°C to 50°C)

P2L A X 5 91 ES A D D M 49

Valve Size	
1/8"	A
1/4"	B
3/8"	C
1/2"	D

Valve Type / Function	
Internal Pilot Supply To Solenoid	
2-Position Valve	5
3-Position Valve APB	6
3-Position Valve PC	7
3-Position Valve CE	8
External Pilot Supply to Solenoids Through Ports #12 & #14	
2-Position Valve	N
3-Position Valve APB	P
3-Position Valve PC	Q
3-Position Valve CE	R

Main Port Thread	
G1/8 (P2LA)	11
G1/4 (P2LB)	12
G3/8 (P2LC)	13
G1/2 (P2LD)	14
1/8" NPT (P2LA)	91
1/4" NPT (P2LB)	92
3/8" NPT (P2LC)	93
1/2" NPT (P2LD)	94

Operator Return	
EE	Double Solenoid
ES*	Single Solenoid, Spring Return

* Not available with 3-position valves.

Solenoid Pilot Type	
D	Vented Pilot Exhaust
N	Tapped Pilot Exhaust (M5)

Overrides	
D	Extended Non-Locking

Enclosures	
M	ATEX 8-22T EExm T4 135°C

Voltage	
49	24VDC

NOTE:
1. ATEX Valve includes a coil with sealed 3 meter cable.
2. Replacement solenoid kit P2FS13A3DM49 includes coil with sealed 3 meter cable, valve armature, solenoid, solenoid nut, screws and o-rings.
3. Can be mounted to size A, B or C IEM Bar Manifolds.

These products are designed for utilization in applications falling under the scope of ATEX Directive 94/9/EC. This coverage could only be referred to as long as operations required for the installation and the maintenance of these products are complying with related standards.

IEM Bar Manifold, Viking Xtreme Solenoid / Remote Pilot Valves †

Valve Series	Valve Function	## - Stations	Manifold Only (NPT)	Manifold Only (BSPP)
P2LAX*	3-way	02 - 12	**P2LAXGAXN##NP**	**P2LAXGAXG##NP**
P2LAX*	4-way	02 - 12	**P2LAXMAXN##NP**	**P2LAXMAXG##NP**
P2LBX*	3-way	02 - 12	**P2LBXGAXN##NP**	**P2LBXGAXG##NP**
P2LBX*	4-way	02 - 12	**P2LBXMAXN##NP**	**P2LBXMAXG##NP**
P2LCX*	3-way / 4-way	02 - 12	**P2LCXMAXN##NP**	**P2LCXMAXG##NP**

Kits include: (1) manifold, valve hold down bolts and o-rings. Replace ## with number of valve stations.
Valve size A, B, C only.

* Enclosure option A,E & F can not be mounted on size A & B manifolds and enclosure F can not be mounted on size C manifolds due to width of solenoid,
Enclosure option A & E can be mounted on size A & B manifolds if valve is a single solenoid valve and if every other valve is mounted in reverse (staggered).

† Consider Viking Lite manifolds for alternative solutions.

IEM Bar Manifold Add-A-Fold Assembly (Viking Xtreme Solenoid / Remote Air Pilot Valves Only)

Valve Series	Valve Function	## - Stations	Manifold Only (NPT)	Manifold Only (BSPP)
P2LAX*	3-way	02 - 12	**AAP2LAXGAXN##NP**	**AAP2LAXGAXG##NP**
P2LAX*	4-way	02 - 12	**AAP2LAXMAXN##NP**	**AAP2LAXMAXG##NP**
P2LBX*	3-way	02 - 12	**AAP2LBXGAXN##NP**	**AAP2LBXGAXG##NP**
P2LBX*	4-way	02 - 12	**AAP2LBXMAXN##NP**	**AAP2LBXMAXG##NP**
P2LCX*	3-way / 4-way	02 - 12	**AAP2LCXMAXN##NP**	**AAP2LCXMAXG##NP**

Kits include: (1) manifold, valve hold down bolts, o-rings and assembly. Replace ## with number of valve stations.
Valve size A, B, C only.

* Enclosure option A,E & F can not be mounted on size A & B manifolds and enclosure F can not be mounted on size C manifolds due to width of solenoid,

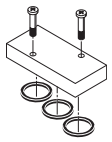
How to Order: 1. List Add-A-Fold assembly part number as line item 1

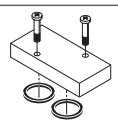
2. List the desired valves series part number in subsequent line items after the Add-A-Fold Assembly part number to complete the ordering code. Include all valves and blanking kits required. The left most station is station # 1 looking at the #12 end of the manifold.

Example: Viking Size B, 2 Station manifold, with 2, 4-way single solenoid valves

Line	Qty	Part number	Comment
1	1	AAP2LBXMAXN02NP	Add-A-Fold Assembly, 2-station IEM bar manifold
2	2	P2LBX592ESHDDB49	4-way, Station 1, 2

Blanking Plate





Type		Kit Number
P2LAX	4-way	**9121658063**
P2LBX	4-way	**9121594809X**
P2LCX	3 & 4 way	**P2LCXK20P**
P2LAX	3-way	**912132BPSXZ**
P2LBX	3-way	**912132BPSXZ**

Kit includes: plate, screws, o-rings

Manifold Bolts

Type	Qty.	Kit Number
P2LAX	12	**P2LAXK87P**
P2LBX	12	**P2LBXK87P**
P2LCX	12	**P2LCXK87P**

Manifold O-rings

Type	Qty.	Kit Number
P2LAX	30	**P2LAXK84P**
P2LBX	18	**P2LBXK84P**
P2LCX	12	**P2LCXK84P**

☐ Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Solenoids with Deutsche Connections : Environmentally-Sealed Transportation Connectors

Viking valves with solenoid options “T” & “V” include a grommet lead wire solenoid with internal surge suppression connected to Deutsche DTP Series male connectors. Heat shrunk cover holds the grommet lead wires together between the solenoid and deutsche connector. An environmentally-sealed connector designed specifically for cable to cable applications in harsh environments such as on the engine or transmission, under the hood, on the chassis or in the cab applications. On signal level circuits where even a small degradation in connection may be critical, these connectors will provide the reliability and performance when properly connected to DTP female connector assemblies. Thermoplastic housings with silicone seals are used to allow the connector to withstand conditions of extreme temperature and moisture. Properly wired and mated connection will withstand immersion under three feet of water without loss of electronic qualities or leakage.

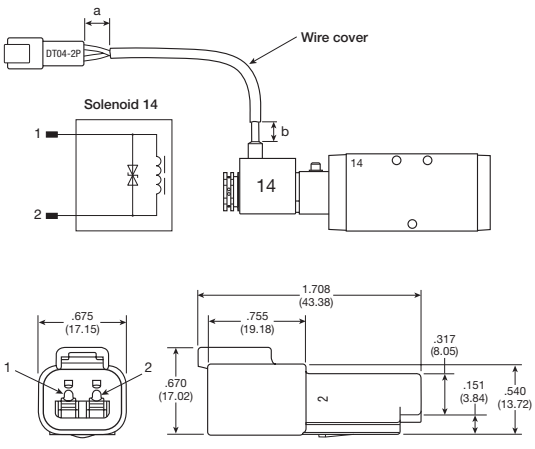
Deutsche Connector & Solenoid Information

		“T” Single Solenoid Option	“V” Double Solenoid Option
Solenoid Kit		**P2FCT446**	**P2FCV446**
Connector Information	Housing material	Thermoplastic	Thermoplastic
	Grommet seal material	Silicone	Silicone
	Connector housing / seal number	DT04-2P*	DT04-4P*
	Contact material	Copper alloy	Copper alloy
	Contact number	0460-202-16141*	0460-202-16141*
	Sealing plug (Wedge) material	Thermoplastic	Thermoplastic
	Wedge number	W2P*	W4P*
	Temperature rating of connector	-67°F (-55°C) to +257°F (+125°C)	-67°F (-55°C) to +257°F (+125°C)
Solenoid	Voltage	12VDC +10%, -30% mobile with bi-directional surge suppression	12VDC +10%, -30% mobile with bi-directional surge suppression
	Number of solenoids	1	2
	Connector pin out	pin 1 & 2	12 solenoid : pin 1 & 2 14 solenoid : pin 3 & 4
	Wire length (Connector to solenoid)	19" (483mm)	12 Solenoid : 19" (482mm) 14 Solenoid : 7.75" (196.5mm)
	Exposed insulated wire (a)	0.25" (6.4mm) - 0.5" (12.7mm)	0.25" (6.4mm) - 0.5" (12.7mm)
	Exposed insulated wire (b)	0.75" (19.1mm) - 1.5" (38.1mm)	0.75" (19.1mm) - 1.5" (38.1mm)
	Wire cover material	Heat shrunk PVC	Heat shrunk PVC

* Deutsche Industrial reference numbers. Male connections provided, mating female components and assemblies can be sourced from qualified Deutsche connector distributors.

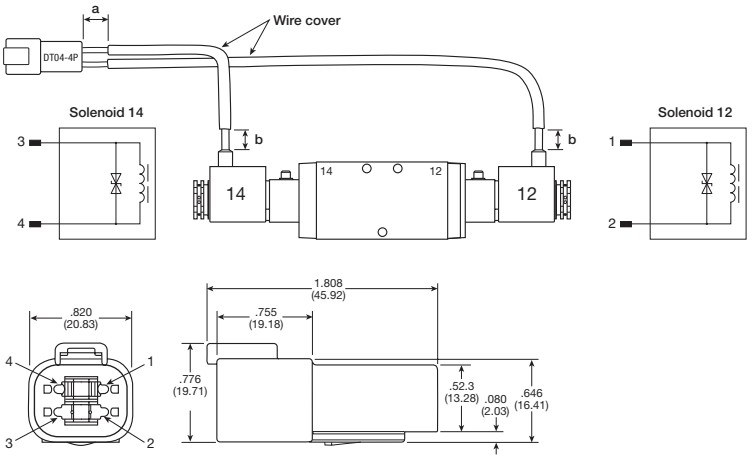
Enclosure / Lead Length - Option “T”

Solenoid Kit P2FCT446 shown



Enclosure / Lead Length - Option “V”

Solenoid Kit P2FCV446 shown



For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Pilot Operator Kits

P2FP13 | N | 4 | C

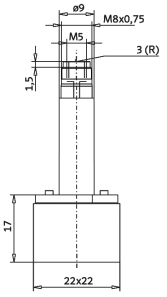
Type	
Pilot Operator Kit	P2FP13

Pressure / Temperature	
145 PSIG (10 bar) 14°F to 122°F (-10°C to 50°C)	N
232 PSIG (16 bar) -40°F to 158°F (-40°C to 70°C)	H

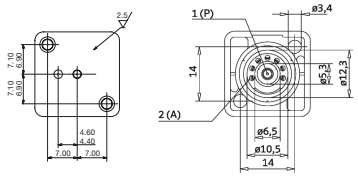
Overrides	
A	No override
C*	Locking (bistable) Flush - Plastic
D	Non-Locking (monostable) Extended - Brass

* Only available with "N" Pressure / Temperature option.

Kit includes:
Armature valve (1), solenoid nuts (2), screws (2), o-rings (3)



Operator mounting pattern (mm)



Solenoid Pilot Operators & Coils

Solenoid pilot options

The P2FP13*4* (NC) 3/2 solenoid pilot operators are designed for piloting pneumatic control valves with compressed air or other inert gases.

The P2FP operator is available for Normal operating pressures up to 10 bar or the Xtreme maximum operating pressure of 16 bar and wide band voltage tolerances required for mobile applications.

Corrosion resistant design

The pilot valve body is manufactured in thermoplastic PA6 material and the core tube brass / stainless steel. The plunger / core is made from stainless steel and the valve seats from FKM.

Solenoid pilot exhaust

These operators all exhaust out of the top of the core tube which is tapped M5. The standard solenoid nut (Solenoid pilot type "D") fitted to the core tube is a diffuser nut which allows the exhaust to escape to atmosphere. This nut also minimizes ingress of dirt into the valve through this port. The alternative plastic knurled nut (Solenoid pilot type "N") can be specified (refer to part number system) if the exhaust air needs captured and piped away using the M5 tapped port.

Mobile applications

Viking Xtreme valves are tested to +5g shock and vibration. Solenoid operated valves are designed to operate with wide voltage tolerance bands within the ambient temperature ranges stated in the technical section.

Coils

Coils are wound with enameled copper wire, having a temperature index of 180°C with class F insulation (155°C) and are encapsulated in Thermoplastic resin. When fitted with suitable connector and correct gasket, they give protection to IP65.

☐ Most popular.

Manual override options

The pilot operators can be supplied with locking or non-locking manual override. The standard manual override is the monostable (spring return) extended brass override. Alternatively the bistable (locking) override can be specified as an alternative for the Normal duty 10 bar option.

Spares

Solenoid operators are available as spares complete with mounting screws and seals. Coils and connectors should be ordered separately unless ATEX certified and intrinsically safe is needed. ATEX certified operators and coils must be ordered together.

Transients

Interrupting the current through the solenoid coil produces momentary voltage peaks which, under unfavorable conditions, can amount to several hundred times the rated operating voltage. Normally, these transients do not cause problems, but to achieve the maximum life of relays in the circuit (and particularly of transistors, thyristors and integrated circuits) it is desirable to provide protection by means of voltage-dependent resistors (varistors). All connectors / cable plugs with LEDs include this type of circuit protection.

Materials

Pilot Valve

Body ..... Polyamide

Armature tube:
Normal pilot operator ..... Brass
Xtreme pilot operator ..... Stainless steel

Plunger & core ..... Corrosion resistant CR-NI steel

Seals ..... FKM

Screws ..... Stainless steel

Coil

Encapsulation material ..... Thermoplastic

Solenoid Kits

P2FC B 4 49

Type	
Solenoid Kit	C

Enclosures / Lead Length	
M12 4-Pin Coil With Surge Suppression & LED	**7§**
30mm Square 3-Pin – ISO 4400 Form A (male only)	**A**
22mm Rectangular 3-Pin – Type B Industrial (male only)	**B**
Hazardous duty, FM / CSA	F*
Grommet - 18" Leads	**G**
1/2" NPT Conduit - 18" Leads	**H**
Grommet, Single Solenoid, 2-Pin Deutsche Connector, Surge Suppression	**T#**
Grommet, Double Solenoid, 4-Pin Deutsche Connector, Surge Suppression	**V#**
Grommet 72" Leads	Q
1/2" Conduit 72" Leads	R

* Only available with voltage codes "45", "49", "53" & "57". Not for use with the Xtreme version (-40°C to 70°C).
# Voltage code 46 only.
§ Voltage code B9 only.

Voltage	
B9‡	**24 VDC w/ Surge Suppression & LED**
42	24VAC
45	12VDC
46†	**12 VDC Mobile w/ surge Suppression**
47*	**12 VDC Mobile**
48*	**24 VDC Mobile**
49	**24VDC**
53	**120VAC**
57	240VAC

* Only available with enclosures "A", "B" & "G". Additional voltages are available upon request. Contact customer support for more information.
‡ Enclosure 7 only
† Enclosure G, T, V only.

Solenoid Enclosures

Option 7
M12, 4-Pin Coil with Surge Suppression

Option A
30mm Square, 3-Pin ISO 4400, DIN 43650A

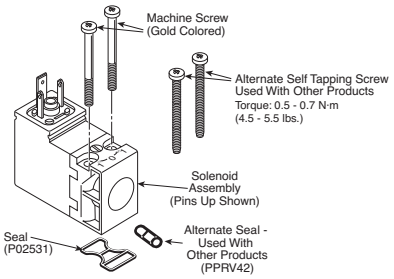
Option B
22mm Rectangular, 3-Pin DIN, Type B Industrial

Option G & Q
Grommet, 18" or 72" Leads

Option H & R
1/2" Conduit, 18" or 72" Leads

Solenoid Kits – 3-Pin, EN175301-803 (Former DIN 43650C), 15mm, 8mm

Standard



PS2982*##P – Enclosure '5'

*	## Voltage						
Override	42	45	47†	48†	49	53	57
B	O	O	S	S	S	S	O
C	O	O	S	S	S	S	O
D	O	O	O	O	O	O	O
E	O	O	O	O	O	O	O

S - Standard; O - Option
† Mobile voltage
Kit includes: Solenoid, (2) machine screws, (2) self threading screws, (1) gasket, (1) 3-cell gasket.

Solenoid Information (Solenoids are rated for continuous duty.)

Voltage				Enclosure "5"		Enclosure "A"		Enclosure "7", "B" to "R"	
	AC								
Code	60Hz	50Hz	DC	Power Consumption	Holding (Amps)	Power Consumption	Holding (amps)	Power Consumption	Holding (amps)
B9†	w	—	24	—	—	—	—	4.8W	.20
42	24	22		1.6VA	.065	3.9VA	.14	7.3VA	.31
45	—	—	12	1.2W	.098	2.6W	.21	4.6W	.37
46*†	—	—	12	—	—	—	—	5.5W	.46
47*	—	—	12	0.91W	.074	6.2W	.52	5.5W	.46
48*	—	—	24	0.91W	.033	6.8W	.29	6.0W	.25
49	—	—	24	1.2W	.049	2.7W	.11	4.8W	.20
53	120	110	—	1.6W	.013	4.1VA	.04	6.3VA	.05
57	240	230	—	1.6W	.007	3.7VA	.02	6.4VA	.03

* Mobile voltages. † Surge suppression.

Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Intrinsically safe solenoid valves ("E" option)

Hazardous location class:

Class I; Groups A, B, C & D

Class II; Groups E, F, & G

Class III; Div. I

For use in low voltage (24VDC) Intrinsically Safe applications. NO OTHER VOLTAGE IS APPROVED.

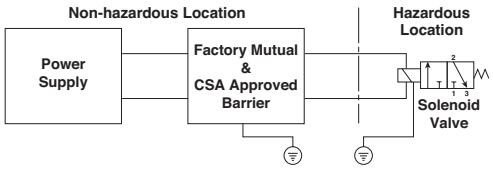
Comes standard with non-lighted solenoid connector.

Coil width: 30mm

Must be connected to an FM approved Barrier.

For dimensions, reference standard solenoid models. Maximum internally piloted valve pressure is 115 PSIG. Pressures to 145 PSIG can be used when external pilot is utilized and pilot pressure is limited to 115 PSIG.

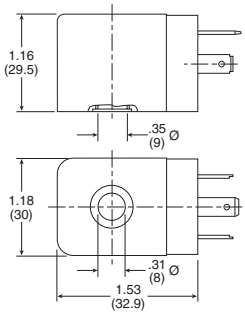
The intrinsically safe coil width (30mm) is wider than the body width of valve type A & B valves. If mounted on a manifold, the valves need to be staggered to fit and must be single solenoid valves only.



Intrinsically safe solenoid pilot assembly kits

Description	Part number
24VDC	**P2FS13N1AE49**

Kit includes: coil, armature, connector, o-ring & screws



Hazardous duty solenoid valves ("F" option)

Hazardous location class:

Class I; Zone I EX, M, II & T4

Class I; Div. I, Groups A, B, C, & D

Class II & III; Div. I, Groups E, F, & G

Comes standard with 1/2" conduit connection.

Coil width: 36mm

Voltage range = ±10%

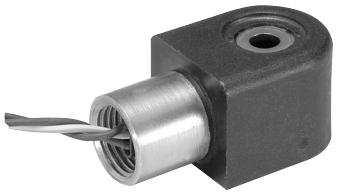
Ambient temperature range = -20°C (-4°F) to 60°C (140°F)

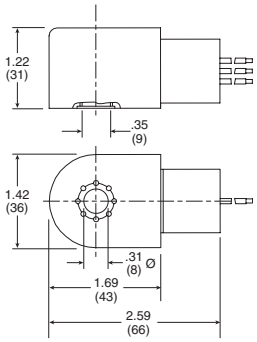
Duty factor = 100%

IP65 Rated (with connected conduit connector)

Notes:

1. Maximum non-hazardous location voltage not to exceed 250V RMS.
2. Factory Mutual requires connections per ISA RP 12.6 instructions.
3. CSA requires "Installation to be in accordance with the Canadian Electrical Code. Part I."
4. The hazardous duty coil width (36mm) is wider than the body width of valve type A, B, C & D valves. Valves can not be mounted to IEM manifolds without installing a blanking plate between valves.

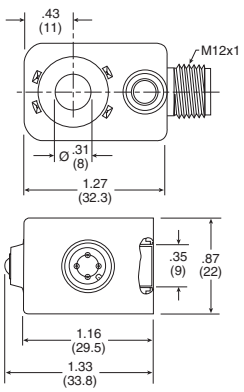


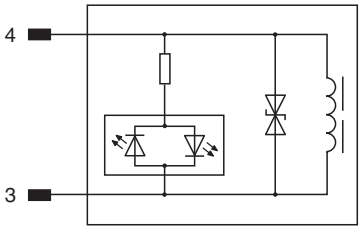


Option F
Hazardous Duty FM / CSA

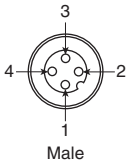
M12, 24VDC solenoid coil ("7" option)

Connection type: M12, metal thread, M12 x 1
DIN EN 60947-5-2 appendix D
LED color: yellow
Bi-directional surge suppression





1. Not Used
2. Not Used
3. +/– (blue)
4. +/– (black)



Male

4-Pin Female Wiring Diagram
(only Pins 4 & 3 are used)
Per ISO 20401

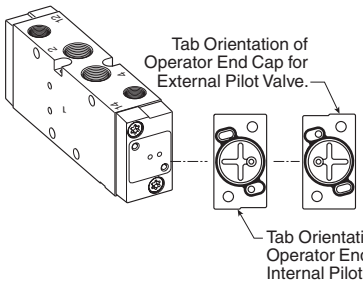
For inventory, lead times, and kit lookup, visit www.pdnplu.com

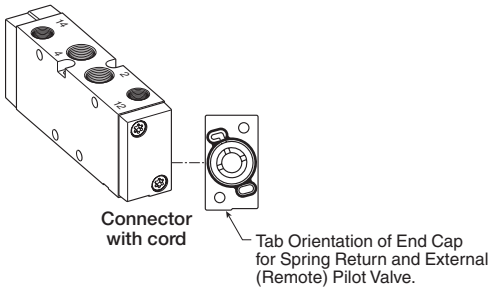
Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Internal to external pilot conversion (size A & B only)

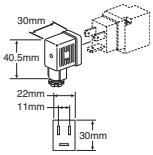
To convert from Internal to External Pilot Valve, simply remove the (2) fasteners that attach the end cap to the valve body. Rotate the end cap 180° and attach back to the valve body. For single solenoid valves, only the 14-End needs to be rotated. For double solenoid valves, both ends must be converted for proper function.

The 12 & 14-Ports are always tapped no matter what Valve Type / Function is selected. For Internal Pilot Function, ports do NOT need to be plugged.





22mm Rectangular 3-Pin – Type B Industrial
(Use with Enclosure "B")



Description	Connector with 6' (2m) Cord	Connector
Unlighted	**PS2429JBP**	**PS2429BP**
Light – 24V60Hz. 24VDC	**PS2430J79BP***	**PS243079BP**
Light – 120V/60Hz	**PS2430J83BP***	**PS243083BP**
Light – 240V/60Hz	N/A	**PS243087BP**

* LED with surge suppression.

Note: Max ø6.5mm cable size required for connector w/o 6' (2m) cord. IP65 rated when properly installed.

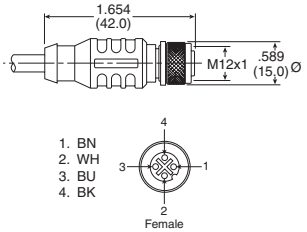
Engineering Data:
Conductors: 2 Poles Plus Ground; Cable Range (Connector Only): 6 to 8mm (0.24 to 0.31 Inch); Contact Spacing: 11mm

M12 A-code Cables

Description	Part Number
4-Pin female to flying lead cable, PVC, 2m	**RKC 4.4T-2**

RKC Female Sockets

* Only pins 3 and 4 are used with solenoids Option "7".



4-Pin Female Wiring Diagram

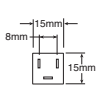
15mm Solenoid Mount

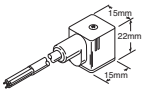
Description	Part Number
15mm solenoid mount	**P2FA22-15**

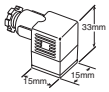
Kit includes: adapter (1), O-rings (2), gasket (1), screws (4)

Most popular.

15mm 3-Pin DIN 43650C
(Use with Enclosure "5")







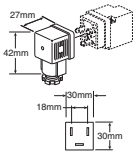
	Cord Length	Connector	Connector only Connector with Cord
Unlighted	18 Inches	**PS2932BP**	**PS2932HBP**
Unlighted	6 Feet	**PS2932BP**	**PS2932JBP**
Light – 12VAC or DC	6 Feet	**PS294675BP**	**PS2946J75BP***
Light – 24VAC or DC	6 Feet	**PS294679BP**	**PS2946J79BP***
Light – 110/120VAC	6 Feet	**PS294683BP**	**PS2946J83BP***
Light – 240/230VAC		**PS294687BP**	N/A

* LED with surge suppression.

Note: Max ø6.5mm cable size required for connector w/o 6' (2m) cord. IP65 rated when properly installed.

Engineering data:
Conductors: 2 poles plus ground Cable range (connector only): 4 to 6mm (0.16 to 0.24 Inch) Contact spacing: 8mm

30mm Square 3-Pin – ISO 4400, DIN 43650A
(Use with Enclosure "A")



Description	Connector with 6' (2m) Cord	Connector
Unlighted	**PS2028JCP**	**PS2028BP**
Light – 6-48V. 50/60Hz. 6-48VDC	**PS2032J79CP***	**PS203279BP**
Light – 120V/60Hz	**PS2032J83CP***	**PS203283BP**

* LED with surge suppression.

Note: Max ø6.5mm cable size required for connector w/o 6' (2m) cord. IP65 rated when properly installed.

Engineering data:
Conductors: 2 poles plus ground; cable range (connector only): 8 to 10mm (0.31 To 0.39 Inch); contact spacing: 18mm

Replacement Solenoid Nut

Description	Part Number
Solenoid diffuser nut	**PS1556**

Description	Part Number
Solenoid vented nut	**PS2892P**

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

It is the users responsibility to verify product performance when applied at maximum tolerance ranges of multiple technical specifications simultaneously.

Operating temperature

- **Normal**.....14°F to 122°F (-10°C to 50°C)
- **Xtreme**..... -40°F to 158°F (-40°C to 70°C)

Flow Rating

Valve Size	Port Size	2-Position	3-Position
P2LAX	1/8"	0.7	0.5
P2LBX	1/4"	1.3	0.9
P2LCX	3/8"	2.5	1.8
P2LDX	1/2"	2.7	1.9

Operating pressure*

Maximum: Normal.....145 PSIG (10 bar)
Xtreme.....232 PSIG (16 bar)
Minimum:

	Minimum PSIG (bar)			
Valve Type - Internal Pilot	**P2LAX**	**P2LBX**	**P2LCX**	**P2LDX**
Single solenoid - spring return	46 (3.2)	51 (3.5)	51 (3.5)	51 (3.5)
Single remote pilot - spring return	46 (3.2)	51 (3.5)	51 (3.5)	51 (3.5)
Double solenoid - 2-position	22 (1.5)	22 (1.5)	22 (1.5)	22 (1.5)
Double remote pilot - 2-position	22 (1.5)	22 (1.5)	22 (1.5)	22 (1.5)
Double solenoid - 3-position (APB, PC, CE)	51 (3.5)	51 (3.5)	51 (3.5)	51 (3.5)
Double remote pilot - 3-position (APB, PC, CE)	51 (3.5)	51 (3.5)	51 (3.5)	51 (3.5)

Valve Type - External Pilot	**P2LAX**	**P2LBX**	**P2LCX**	**P2LDX**
All Viking series	Vacuum			

* P2LC and P2LD solenoid operated valves have a maximum pressure rating of 175 PSIG (12 bar).

Size A and B solenoid valves can be field converted from internal pilot to external pilot and visa versa. See previous page for information.

Solenoid voltage characteristics

Non-Mobile Coil -

Voltage Code 42, 45, 49, 53, 57

15mm, DIN 43650C (Enclosure: 5)
+10%, -15%

Mobile Coil -

Voltage Code 47, 48

15mm, Din 43650C (Enclosure: 5)
+25%, -30%

Voltage Code 46

(Enclosure G,T,V)
+10%, -30%

Solenoid voltage characteristics

Non-mobile coils -

Voltage code B9, 42, 45, 49, 53, 57

Enclosure (7, A, B, E, F, G, H)
+10%, -10%

Mobile coils - (valve type N)

22mm 12 & 24VDC - Mobile (47 & 48 voltage code)

Minimum inlet pressure (bar)	Operating Temperature		
	-10°C	**+10°C**	**+50°C**
3	+30 / -25% VDC	+30 / -20% VDC	+25 / -15% VDC
6	+30 / -30% VDC	+30 / -25% VDC	+25 / -20% VDC
8	+30 / -30% VDC	+30 / -30% VDC	+25 / -25% VDC
10	+30 / -30% VDC	+30 / -30% VDC	+25 / -30% VDC

30mm 12 & 24VDC - Mobile (47 & 48 voltage code)

Minimum inlet pressure (bar)	Operating Temperature		
	-10°C	**+10°C**	**+50°C**
3	+30 / -30% VDC	+30 / -30% VDC	+25 / -30% VDC
6	+30 / -30% VDC	+30 / -30% VDC	+25 / -30% VDC
8	+30 / -30% VDC	+30 / -30% VDC	+25 / -30% VDC
10	+30 / -30% VDC	+30 / -30% VDC	+25 / -30% VDC

Mobile coils - (valve type K & H)

22mm 12 & 24VDC - Mobile (47 & 48 voltage code)

Minimum inlet pressure (bar)	Operating Temperature			
	-40°C	**+10°C**	**+50°C**	**+70°C**
4	+30 / -25% VDC	+30 / -25% VDC	+30 / -10% VDC	+20 / -10% VDC
8	+30 / -30% VDC	+30 / -25% VDC	+30 / -15% VDC	+20 / -15% VDC
12	+30 / -30% VDC	+30 / -30% VDC	+30 / -15% VDC	+20 / -15% VDC
16	+30 / -30% VDC	+30 / -30% VDC	+30 / -20% VDC	+20 / -20% VDC

30mm 12 & 24VDC - Mobile (47 & 48 voltage code)

Minimum inlet pressure (bar)	Operating Temperature			
	-40°C	**+10°C**	**+50°C**	**+70°C**
4	+30 / -30% VDC	+30 / -30% VDC	+25 / -30% VDC	+15 / -30% VDC
8	+30 / -30% VDC	+30 / -30% VDC	+25 / -30% VDC	+15 / -30% VDC
12	+30 / -30% VDC	+30 / -30% VDC	+25 / -30% VDC	+15 / -30% VDC
16	+30 / -30% VDC	+30 / -30% VDC	+25 / -30% VDC	+15 / -30% VDC

Note: All table ratings are based on 100% continuous duty and 5G shock vibration. At 50% continuous duty all ratings are +30% / -30% for all Temperatures and Pressures.

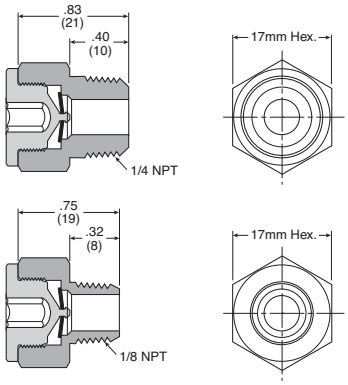
For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Exhaust Protector

Features

- 1/8 and 1/4 NPT male sizes
- Fitted with a brass pipe adapter and a fluorocarbon membrane
- Resistant to rust, clog, wash down and contamination



Applications

These protectors are intended for mobile applications, quick venting applications and alternative exhaust port breathers that require protection against clogging.

Ideal for valves exposed to harsh environmental conditions (which can cause a "caking up" in the exhaust pipe ports where the bronze mufflers or breather vents are installed).

Particularly suitable for time-sensitive applications such as axle-lift suspensions or pushers or tag axles.

Operating information

Operating pressure:	0 to 150 PSIG (0 to 10 bar)
Operating temperature:	-40°F to 140°F (-40°C to 60°C)

Flow data (SCFM)

Size	60 PSIG Inlet	90 PSIG Inlet	125 PSIG Inlet	Part Number
1/8"	40.1	56.5	75.5	**E90016**
1/4"	44.6	62.7	83.5	**E90017**

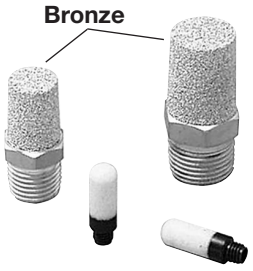
Material specifications

Body & pipe adapter	Brass
Membrane	Fluorocarbon

Exhaust Mufflers

Pipe Thread	Part Number
M5	**P6M-PAC5**
1/8" NPT	**EM12**
1/4" NPT	**EM25**
3/8" NPT	**EM37**
1/2" NPT	**EM50**

P6M - Plastic; EM - Sintered bronze

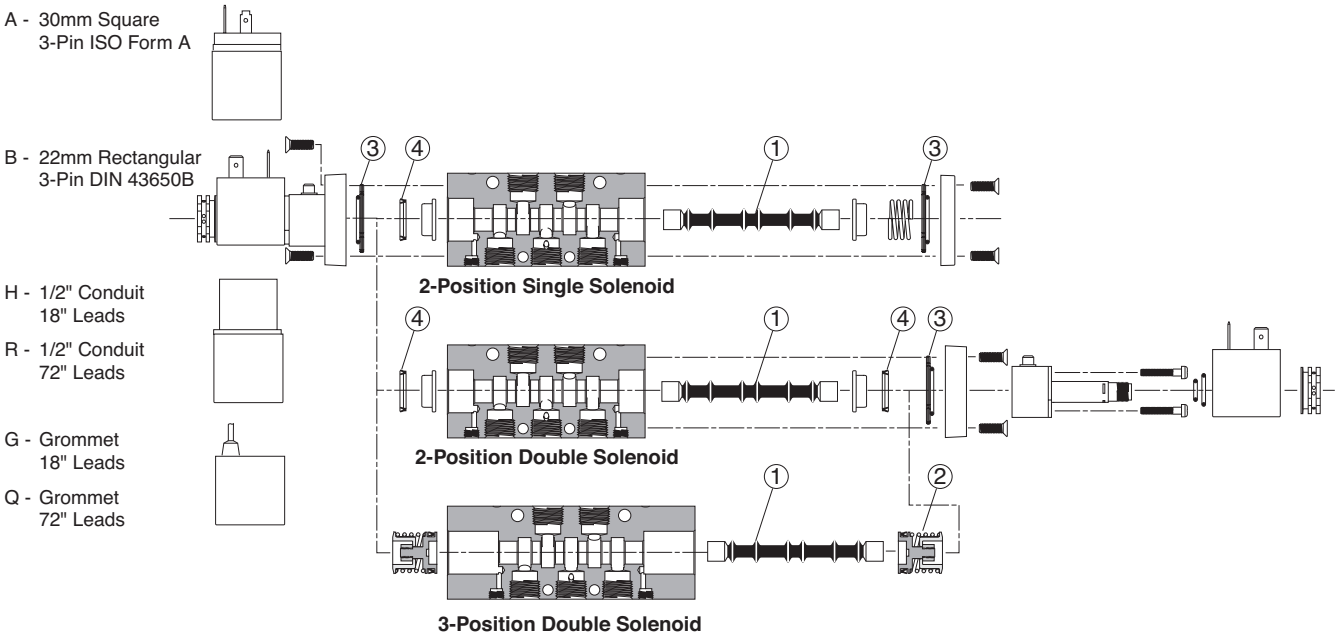


Plastic Silencers

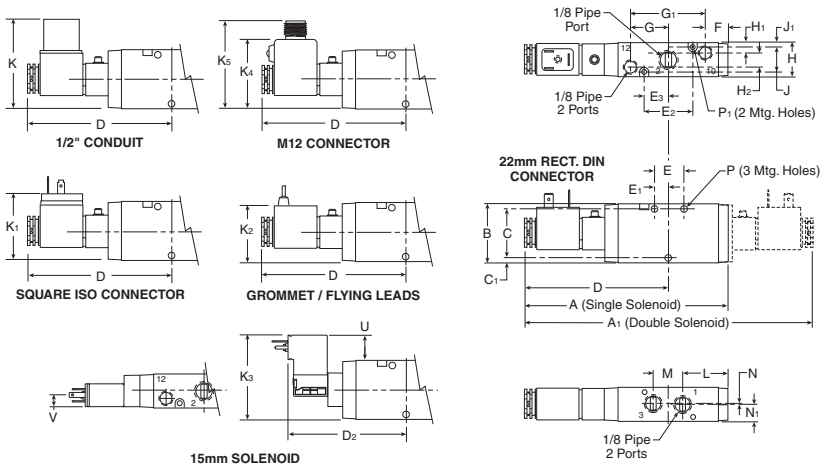
Thread Size	A (mm)	B (mm)	Part Number NPT	BSPT	Metric
M5	.43 (11)	.32 (8)	–	–	**AS-5**
1/8"	1.57 (40)	.63 (16)	**ASN-6**	**AS-6**	–
1/4"	2.56 (65)	.83 (21)	**ASN-8**	**AS-8**	–
3/8"	3.35 (85)	.98 (25)	**ASN-10**	**AS-10**	–
1/2"	3.74 (95)	1.18 (30)	**ASN-15**	**AS-15**	–

Spool Service Kits

Description	Includes Items (qty.)	Part Number
Size A, 4-way, 2-position, solenoid & air pilot valves	1 (1), 3 (2), 4 (2)	**P2LAXSK1**
Size A, 4-way, 3-position, solenoid & air pilot valves	1 (1), 2 (2), 3 (2), 4 (2)	**P2LAXSK2**
Size A & Size B, 3-way, 2-position, solenoid & air pilot valves	1 (1), 3 (2), 4 (2)	**P2LAXBXSK1**
Size B, 4-way, 2 & 3-position valves	1 (1), 3 (2), 4 (2)	**P2LBXSK1**
Size C & Size D, 3-way, 2-position valves	1 (1), 3 (2), 4 (2)	**P2LCXDXSK1**
Size C & Size D, 4-way, 2 & 3-position valves	1 (1), 3 (2), 4 (2)	**P2LCXDXSK1**



P2LAX 3/2 Single & Double Operators – Solenoid

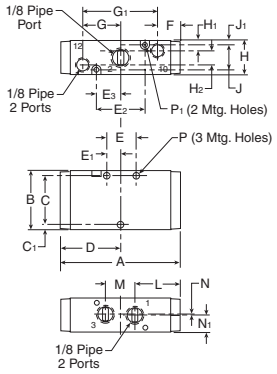


P2LAX 3/2 (solenoid)

A	A1	B	C	C1	D
5.35	7.60	1.57	1.26	.16	3.80
(136)	(193)	(40)	(32)	(4)	(97)
D2	**E**	**E1**	**E2**	**E3**	**F**
3.00	.79	.39	1.26	.63	.55
(76.8)	(20)	(10)	(32)	(16)	(14)
G	**G1**	**H**	**H1**	**H2**	**J**
.98	1.97	.87	.26	.35	.65
(25)	(50)	(22)	(6.6)	(9)	(16.5)
J1	**K**	**K1**	**K2**	**K3**	**K4**
.11	2.36	1.61	1.50	2.24	1.70
(2.9)	(60)	(41)	(38)	(57)	(43.3)
K5	**L**	**M**	**N**	**N1**	**P**
2.10	1.14	.79	.02	.42	Ø .17
(53.3)	(29)	(20)	(0.5)	(11)	Ø (4.3)
P1	**U**	**V**			
Ø .12	0.81	0.29			
Ø (3.1)	(20.5)	(7.5)			

Inches (mm)

P2LAX 3/2 Single & Double Operators – Remote Air Pilot

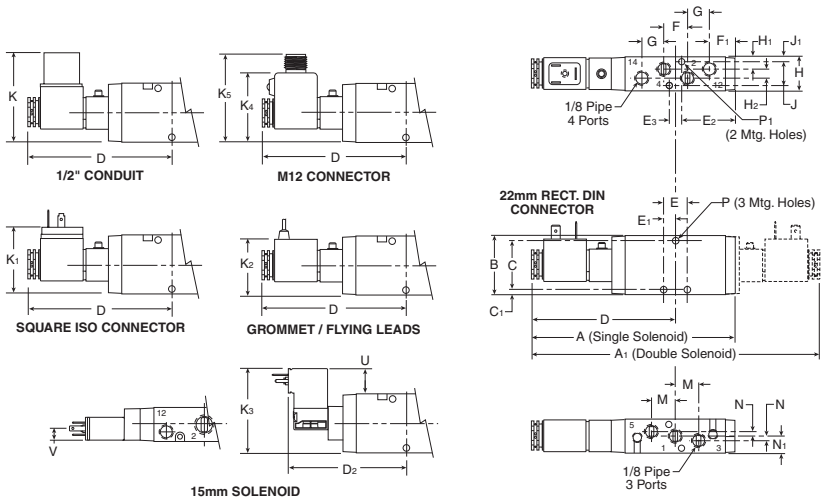


P2LAX 3/2 (remote air pilot)

A	B	C	C1	D	E
3.07	1.57	1.26	.16	1.54	.79
(78)	(40)	(32)	(4)	(39)	(20)
E1	**E2**	**E3**	**F**	**G**	**G1**
.39	1.26	.63	.55	.98	1.97
(10)	(32)	(16)	(14)	(25)	(50)
H	**H1**	**H2**	**J**	**J1**	**L**
.87	.26	.35	.65	.11	1.14
(22)	(6.6)	(9)	(16.5)	(2.9)	(29)
M	**N**	**N1**	**P**	**P1**	
.79	.02	.42	Ø .17	Ø .12	
(20)	(0.5)	(11)	Ø (4.3)	Ø (3.1)	

Inches (mm)

P2LAX 5/2 & 5/3 Single & Double Operators, 4-way



P2LAX 5/2 & 5/3 (solenoid)

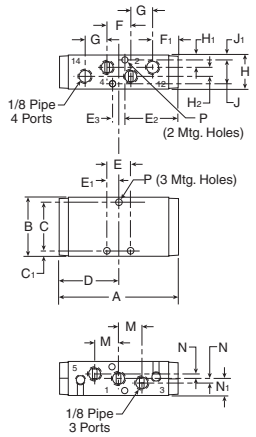
A	A1	B	C	C1	D
5.47	7.72	1.57	1.30	.14	3.86
(139)	(196)	(40)	(33)	(3.5)	(98)
D2	**E**	**E1**	**E2**	**E3**	**F**
3.48	.63	.31	1.42	.33	.63
(88.3)	(16)	(8)	(36)	(8.5)	(16)
F1	**G**	**H**	**H1**	**H2**	**J**
.67	.59	.87	.31	.24	.63
(17)	(15)	(22)	(8)	(6)	(16)
J1	**K**	**K1**	**K2**	**K3**	**K4**
.12	2.36	1.61	1.50	2.24	1.63
(39)	(60)	(41)	(38)	(57)	(41.3)
K5	**M**	**N**	**N1**	**P**	**P1**
2.10	.63	.12	.43	Ø .17	Ø .12
(53.3)	(16)	(3)	(11)	Ø (4.3)	Ø (3.1)
U	**V**				
0.81	0.29				
(20.5)	(7.5)				

Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

P2LAX 5/2 & 5/3 Single & Double Operators – Remote Pilot

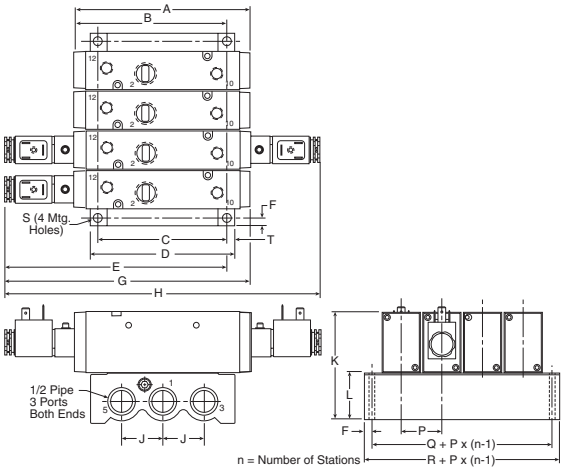


P2LAX 5/2 & 5/3 (remote)

A	B	C	C1	D
3.19	1.57	1.30	.14	1.59
(81)	(40)	(33)	(3.5)	(40.5)
E	**E1**	**E2**	**E3**	**F**
1.47	.31	1.42	.33	.63
(16)	(8)	(36)	(8.5)	(16)
F1	**G**	**H**	**H1**	**H2**
.67	.59	.87	.31	.24
(17)	(15)	(22)	(8)	(6)
J	**J1**	**M**	**N**	**N1**
.63	.12	.63	.12	.43
(16)	(3)	(16)	(3)	(11)
P	**P1**			
Ø .17	Ø .12			
Ø (4.3)	Ø (3.1)			

Inches (mm)

P2LAX 3/2 Single & Double Operators – IEM Aluminum Bar Manifold

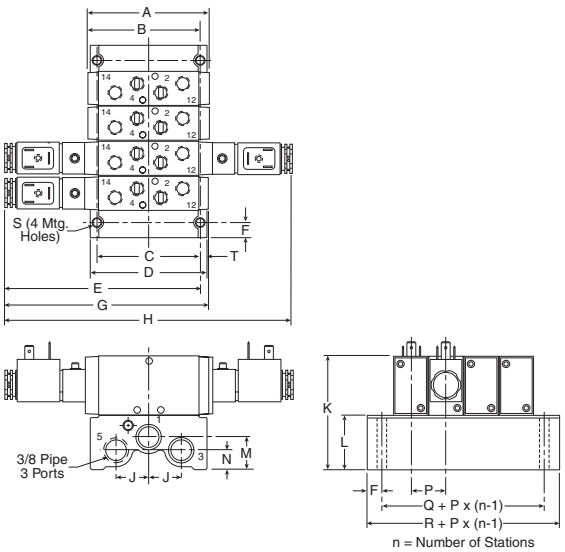


P2LAX 3/2
IEM Aluminum bar manifold

A	B	C	D	E
3.07	2.83	2.76	3.12	5.18
(78)	(72)	(70)	(79)	(132)
F	**G**	**H**	**J**	**K**
41	5.35	7.72	.87	3.11
(10.5)	(136)	(193)	(22)	(79)
L	**M**	**N**	**P**	**Q**
1.54	.87	.52	.93	1.56
(39)	(22)	(13.2)	(23.5)	(39.5)
R	**S**	**T**		
2.36	Ø .22	.18		
(60)	Ø (5.5)	(4.5)		

Inches (mm)

P2LAX 5/2 & 5/3 Single & Double Operators – IEM Aluminum Bar Manifold



P2LAX 5/2 & 5/3
IEM Aluminum bar manifold

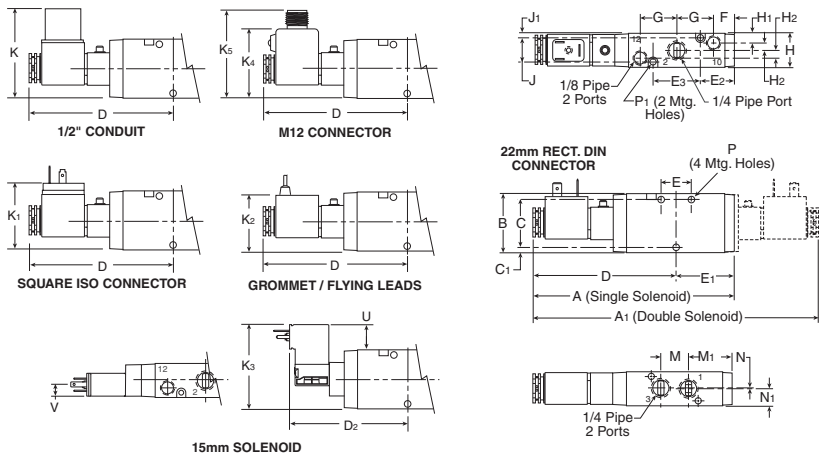
A	B	C	D	E
3.19	2.97	2.76	3.12	5.26
(81)	(76)	(70)	(79)	(134)
F	**G**	**H**	**J**	**K**
41	5.47	7.72	.87	3.11
(10.5)	(139)	(196)	(22)	(79)
L	**M**	**N**	**P**	**Q**
1.54	.87	.52	.93	1.56
(39)	(22)	(13.2)	(23.5)	(39.5)
R	**S**	**T**		
2.36	Ø .22	.18		
(60)	Ø (5.5)	(4.5)		

Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

P2LBX 3/2 Single & Double Operators – Solenoid

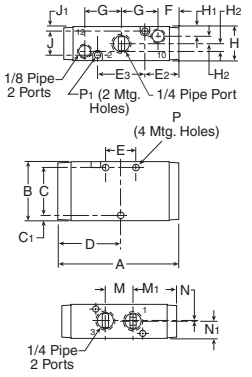


P2LBX 3/2 (solenoid)

A	A1	B	C	C1	D
5.35 (136)	7.60 (193)	1.57 (40)	1.26 (32)	.16 (4)	3.80 (96.5)
D2	**E**	**E1**	**E2**	**E3**	**F**
3.02 (76.8)	.79 (20)	1.54 (39)	.51 (13)	1.26 (32)	.55 (14)
G	**H**	**H1**	**H2**	**J**	**J1**
.98 (25)	.87 (22)	.26 (6.6)	.18 (4.5)	.65 (16.5)	.11 (2.9)
K	**K1**	**K2**	**K3**	**K4**	**K5**
2.36 (60)	1.61 (41)	1.50 (38)	2.24 (57)	1.63 (41.3)	2.10 (53.3)
M	**M1**	**N**	**N1**	**P**	**P1**
.79 (20)	1.14 (29)	.02 (0.5)	.42 (11)	Ø .17 Ø (4.3)	Ø .12 Ø (3.1)
U	**V**				
0.81 (20.5)	0.29 (7.5)				

Inches (mm)

P2LBX 3/2 Single & Double Operators – Remote Air Pilot

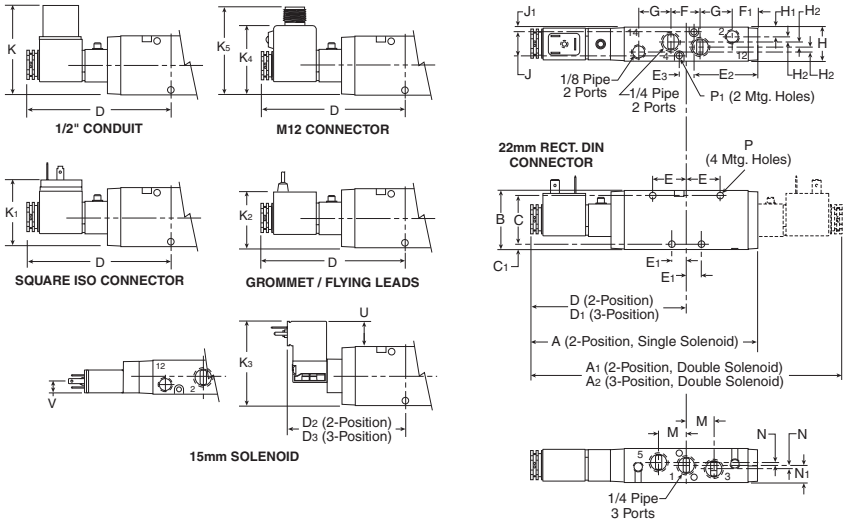


P2LBX 3/2 (remote air pilot)

A	B	C	C1	D	E
3.08 (78)	1.57 (40)	1.26 (32)	.16 (4)	1.54 (39)	.79 (20)
E2	**E3**	**F**	**G**	**H**	**H1**
.51 (13)	1.26 (32)	.55 (14)	.98 (25)	.87 (22)	.26 (6.6)
H2	**J**	**J1**	**M**	**M1**	**N**
.18 (4.5)	.65 (16.5)	.11 (2.9)	.79 (20)	1.14 (29)	.02 (0.5)
N1	**P**	**P1**			
.42 (11)	Ø .17 Ø (4.3)	Ø .12 Ø (3.1)			

Inches (mm)

P2LBX 5/2 & 5/3 Single & Double Operators – Solenoid



P2LBX 5/2 & 5/3 (solenoid)

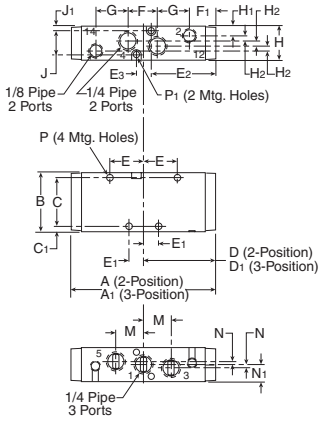
A	A1	A2	B	C	C1
6.14 (156)	8.39 (213)	9.23 (235)	1.57 (40)	1.26 (32)	.16 (4)
D	**D1**	**D2**	**D3**	**E**	**E1**
4.21 (107)	4.64 (118)	3.48 (88.3)	3.92 (99.6)	.91 (23)	.39 (10)
E2	**E3**	**F**	**F1**	**G**	**H**
1.73 (44)	.39 (10)	.79 (20)	.67 (17)	.87 (22)	.87 (22)
H1	**H2**	**J**	**J1**	**K**	**K1**
.26 (6.6)	.12 (3)	.65 (16.5)	.12 (3)	2.36 (60)	1.61 (41)
K2	**K3**	**K4**	**K5**	**M**	**N**
1.50 (38)	2.24 (57)	1.70 (43.3)	2.10 (53.3)	.79 (20)	.08 (2)
N1	**P**	**P1**	**U**	**V**	
.43 (11)	Ø .17 Ø (4.3)	Ø .12 Ø (3.1)	0.81 (20.5)	0.29 (7.5)	

Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

P2LBX 5/2 & 5/3 Single & Double Operators – Remote Air Pilot

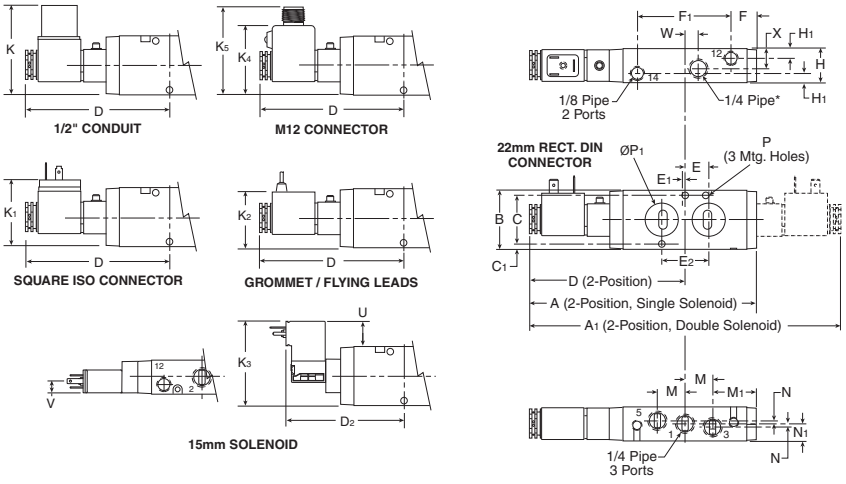


P2LBX 5/2 & 5/3 (remote air pilot)

A	A1	B	C	C1	D
3.95 (100)	4.61 (117)	1.57 (40)	1.26 (32)	.16 (4)	1.93 (49)
D1	**E**	**E1**	**E2**	**E3**	**F**
2.28 (58)	91 (23)	.39 (10)	1.73 (44)	.39 (10)	.79 (20)
F1	**G**	**H**	**H1**	**H2**	**J**
.67 (17)	.87 (22)	.8 (22)	.26 (6.6)	.12 (3)	.65 (16.5)
J1	**K**	**M**	**N**	**N1**	**P**
.11 (2.8)	2.90 (74)	.79 (20)	.08 (2)	.43 (11)	Ø .17 Ø (4.3)
P1					
Ø .12 Ø (3.1)					

Inches (mm)

P2LBX 5/2 Single & Double Operators – Solenoid NAMUR



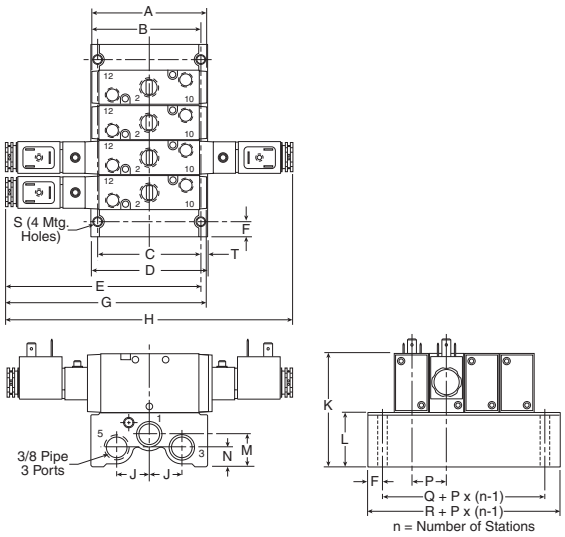
P2LBX 5/2 (NAMUR)

A	A1	B	C	C1	D
6.15 (156)	8.39 (213)	1.57 (40)	1.26 (32)	.16 (4)	4.21 (107)
D2	**E**	**E1**	**E2**	**F**	**F1**
3.48 (88.3)	.47 (12)	.08 (2)	.94 (24)	.67 (17)	2.52 (64)
K	**K1**	**K2**	**K3**	**K4**	**K5**
2.36 (60)	1.61 (41)	1.50 (38)	2.24 (57)	1.70 (43.3)	2.10 (53.3)
H	**H1**	**M**	**M1**	**N**	**N1**
.87 (22)	.26 (6.6)	.79 (20)	1.14 (29)	.08 (2)	.43 (11)
P	**P1**	**U**	**V**	**W**	**X**
Ø .22 (Ø 5.5)	Ø .76 (Ø 19.4)	0.81 (20.5)	0.29 (7.5)	0.39 (10)	0.50 (12.6)

Inches (mm)

* Valve includes 1/4 pipe plug, o-rings and mounting bolts.

P2LBX 3/2 Single & Double Operators – IEM Aluminum Bar Manifold

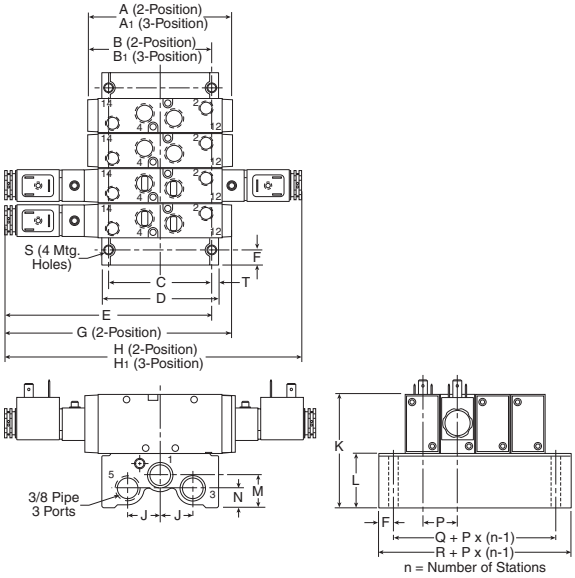


P2LBX 3/2
IEM Aluminum bar manifold

A	B	C	D	E
3.86 (78)	2.91 (74)	2.76 (70)	3.12 (79)	5.17 (131)
F	**G**	**H**	**J**	***K***
.40 (10.2)	5.33 (136)	7.6 (193)	.87 (22)	3.11 (79)
L	**M**	**N**	**P**	**Q**
1.47 (37)	.87 (22)	.52 (13.2)	.93 (23.5)	1.56 (39.6)
R	**S**	**T**		
2.36 (60)	Ø .22 Ø (5.5)	.18 (4.6)		

Inches (mm)

P2LBX 5/2 & 5/3 Single & Double Operators – IEM Aluminum Bar Manifold



P2LBX 5/2 & 5/3
IEM Aluminum bar manifold

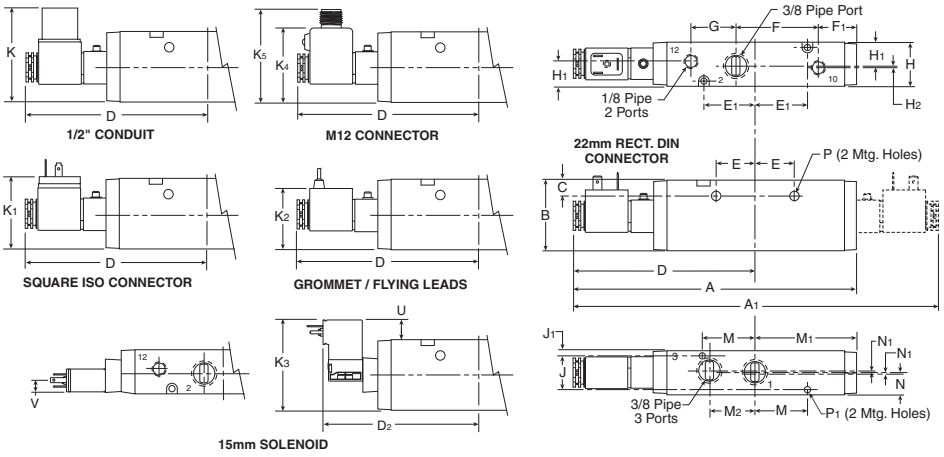
A	A1	B	B1	C
3.86 (98)	4.70 (120)	3.42 (84)	3.73 (95)	2.76 (70)
D	**E**	**F**	**G**	**H**
3.12 (79)	5.59 (142)	.40 (10.2)	6.14 (156)	8.39 (213)
H1	**J**	**K**	**L**	**M**
9.23 (235)	.87 (22)	3.11 (79)	1.47 (37)	.87 (22)
N	**P**	**Q**	**R**	**S**
.52 (13.2)	.93 (23.5)	1.56 (39.6)	2.36 (60)	Ø .22 Ø (5.5)
T				
.18 (4.6)				

Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

P2LCX 3/2 Single & Double Operators – Solenoid

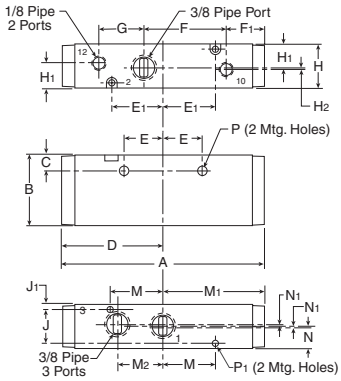


P2LCX 3/2 (solenoid)

A	A1	B	C	D
7.66 (194.5)	9.80 (249)	1.89 (48)	.43 (11)	4.90 (124.5)
D2	**E**	**E1**	**F**	**F1**
4.17 (105.8)	1.04 (26.5)	1.40 (35.5)	2.24 (57)	1.02 (26)
G	**H**	**H1**	**H2**	**J**
1.22 (31)	1.18 (30)	.67 (17)	.02 (0.5)	.91 (23)
J1	**K**	**K1**	**K2**	**K3**
.14 (3.5)	2.52 (64)	1.77 (45)	1.65 (42)	2.41 (61.3)
K4	**K5**	**M**	**M1**	**M2**
1.78 (45.3)	2.26 (57.3)	1.40 (35.5)	2.76 (70)	1.18 (30)
N	**N1**	**P**	**P1**	**U**
.55 (14)	.04 (1)	Ø .27 Ø (6.9)	Ø .17 Ø (4.4)	0.52 (13.3)
V				
0.65 (7.5)				

Inches (mm)

P2LCX 3/2 Single & Double Operators – Remote Air Pilot



P2LCX 3/2 (remote air pilot)

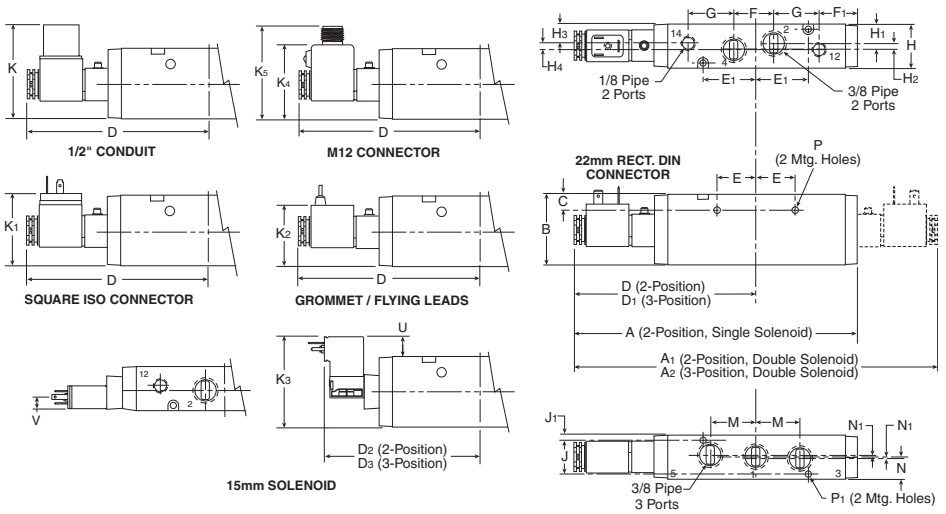
A	B	C	D	E
5.51 (140)	1.89 (48)	.43 (11)	2.76 (70)	1.04 (26.5)
E1	**F**	**F1**	**G**	**H**
1.40 (35.5)	2.24 (57)	1.02 (26)	1.22 (31)	1.18 (30)
H1	**H2**	**J**	**J1**	**M**
.67 (17)	.02 (0.5)	.91 (23)	.14 (3.5)	1.40 (35.5)
M1	**M2**	**N**	**N1**	**P**
2.76 (70)	1.18 (30)	.55 (14)	.04 (1)	Ø .27 Ø (6.9)
P1				
Ø .17 Ø (4.4)				

Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

P2LCX 5/2 & 5/3 Single & Double Operators – Solenoid



P2LCX 5/2 & 5/3 (solenoid)

A	A1	A2	B	C
7.68 (195)	9.84 (250)	10.71 (272)	1.89 (48)	.43 (11)

D	D1	D2	D3	E
4.92 (125)	5.35 (136)	4.17 (105.8)	4.61 (117.2)	1.04 (26.5)

E1	F	F1	G	H
1.40 (35.5)	1.06 (27)	1.02 (26)	1.22 (31)	1.18 (30)

H1	H2	H3	H4	J
.53 (13.5)	.12 (3)	.51 (13)	.16 (4)	.91 (23)

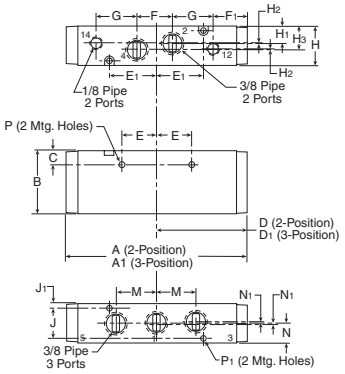
J1	K	K1	K2	K3
.14 (3.5)	2.52 (64)	1.77 (45)	1.65 (42)	2.41 (61.3)

K4	K5	M	N	N1
1.78 (45.3)	2.26 (57.3)	1.18 (30)	.55 (14)	.04 (1)

P	P1	U	V
Ø .27 Ø (6.9)	Ø .17 Ø (4.4)	0.52 (13.3)	0.29 (7.5)

Inches (mm)

P2LCX 5/2 & 5/3 Single & Double Operators – Remote Air Pilot



P2LCX 5/2 & 5/3 (remote air pilot)

A	A1	B	C	D	D1
5.51 (140)	6.38 (162)	1.89 (48)	.43 (11)	2.76 (70)	3.18 (81)

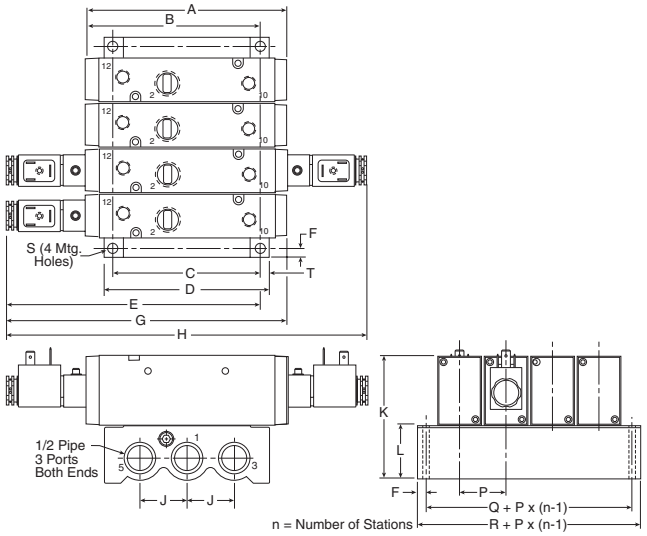
E	E1	F	F1	G	H
1.04 (26.5)	1.40 (35.5)	1.06 (27)	1.02 (26)	1.22 (31)	1.18 (30)

H1	H2	H3	J	J1	M
.51 (13)	.02 (0.5)	.12 (3)	.91 (23)	.14 (3.5)	1.18 (30)

N	N1	P	P1
.55 (14)	.04 (1)	Ø .27 Ø (6.9)	Ø .17 Ø (4.4)

Inches (mm)

P2LCX 3/2 Single & Double Operators – IEM Aluminum Bar Manifold



P2LCX 3/2
IEM Aluminum bar manifold

A	B	C	D	E	F
5.51 (140)	4.96 (126)	3.94 (100)	4.41 (112)	7.11 (180.5)	.24 (6)

G	H	J	K	L	P
7.66 (194.5)	9.80 (249)	1.26 (32)	3.43 (87)	1.54 (39)	1.24 (31.5)

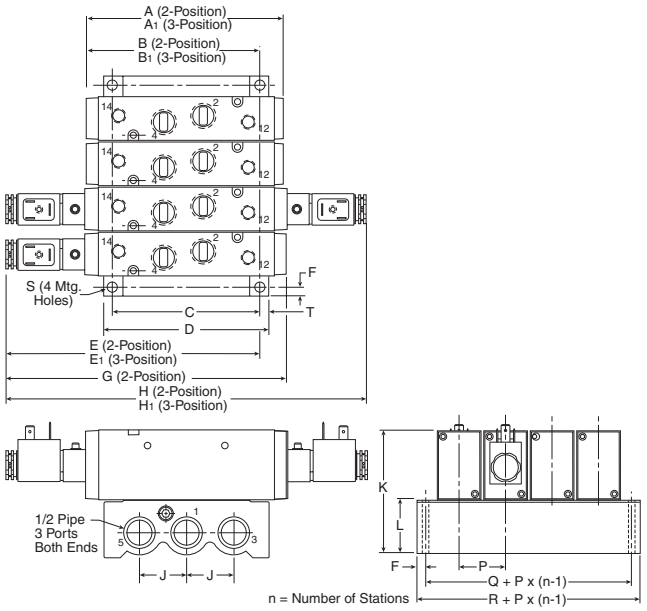
Q	R	S	T
1.77 (45)	2.24 (57)	Ø .26 Ø (6.5)	.24 (6)

Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

P2LCX 5/2 & 5/3 Single & Double Operators – IEM Aluminum Bar Manifold

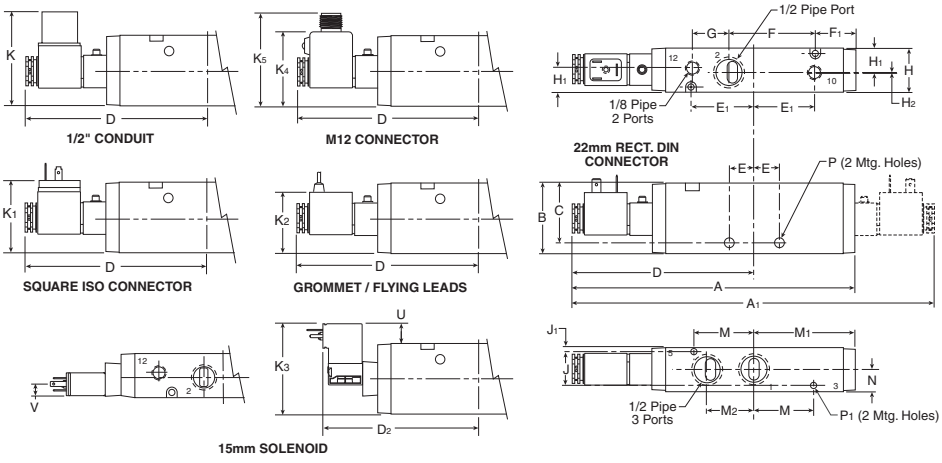


P2PCX 5/2 & 5/3
IEM Aluminum bar manifold

A	A1	B	B1	C
5.51 (140)	6.38 (162)	4.72 (120)	5.16 (131)	3.94 (100)
D	**E**	**E1**	**F**	**G**
4.41 (112)	6.89 (170)	7.13 (181)	.24 (6)	7.68 (195)
H	**H1**	**J**	**K**	**L**
9.84 (250)	10.71 (272)	1.26 (32)	3.43 (87)	1.54 (39)
P	**Q**	**R**	**S**	**T**
1.24 (31.5)	1.77 (45)	2.24 (57)	Ø .26 Ø (6.5)	.24 (6)

Inches (mm)

P2LDX 3/2 Single & Double Operators – Solenoid



P2LDX 3/2 (solenoid)

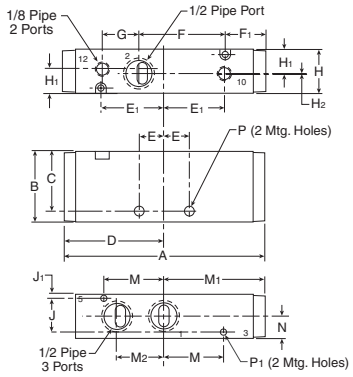
A	A1	B	C	D
7.66 (194.5)	9.80 (249)	1.89 (48)	1.59 (40.5)	4.90 (124.5)
D2	**E**	**E1**	**F**	**F1**
4.17 (105.8)	.67 (17)	1.65 (42)	2.36 (60)	1.08 (27.5)
G	**H**	**H1**	**H2**	**J**
.98 (25)	1.18 (30)	.67 (17)	.02 (0.5)	.91 (23)
J1	**K**	**K1**	**K2**	**K3**
.14 (3.5)	2.52 (64)	1.77 (45)	1.65 (42)	2.41 (61.3)
K4	**K5**	**M**	**M1**	**M2**
1.78 (45.3)	2.26 (57.3)	1.65 (42)	2.76 (70)	1.30 (33)
N	**P**	**P1**	**U**	**V**
.59 (15)	Ø .26 Ø (6.6)	Ø .17 Ø (4.4)	0.65 (16.5)	0.29 (7.5)

Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

P2LDX 3/2 Single & Double Operators – Remote Air Pilot

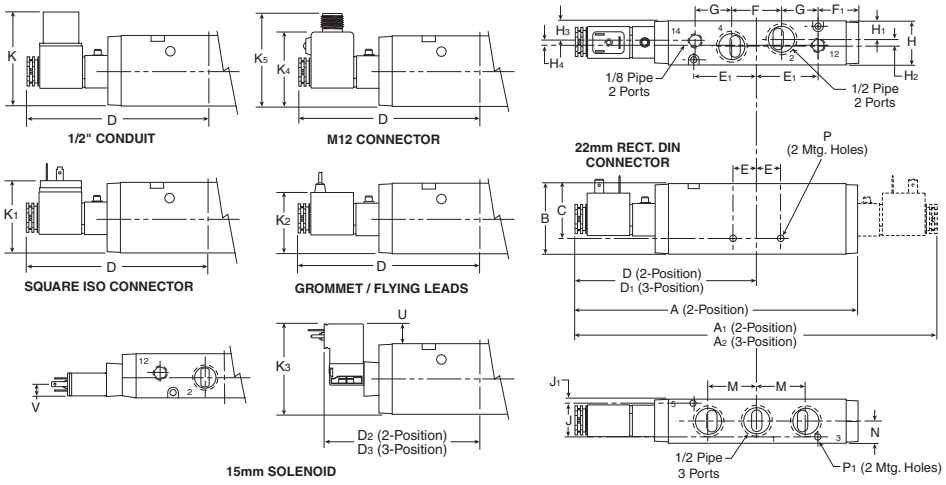


P2LDX 3/2 (remote air pilot)

A	B	C	D	E
5.51 (140)	1.89 (48)	1.59 (40.5)	2.76 (70)	.67 (17)
E1	**F**	**F1**	**G**	**H**
1.65 (42)	2.36 (60)	1.08 (27.5)	.98 (25)	1.18 (30)
H1	**H2**	**J**	**J1**	**M**
.67 (17)	.02 (0.5)	.91 (23)	.14 (3.5)	1.65 (42)
M1	**M2**	**N**	**P**	**P1**
2.76 (70)	1.30 (33)	.59 (15)	Ø .26 Ø (6.6)	Ø .17 Ø (4.4)

Inches (mm)

P2LDX 5/2 & 5/3 Single & Double Operators – Solenoid

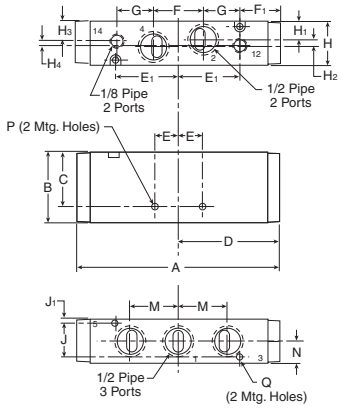


P2LDX 5/2 & 5/3 (solenoid)

A	A1	A2	B	C
7.67 (195)	9.84 (250)	10.7 (272)	1.89 (48)	1.59 (40.5)
D	**D1**	**D2**	**D3**	**E**
4.92 (125)	5.79 (147)	4.17 (105.3)	4.61 (117.2)	.67 (17)
E1	**F**	**F1**	**G**	**H**
1.65 (42)	1.34 (34)	1.10 (28)	.98 (25)	1.18 (30)
H1	**H2**	**H3**	**H4**	**J**
.49 (12.5)	.20 (5)	.51 (13)	.16 (4)	.91 (23)
J1	**K**	**K1**	**K2**	**K3**
.14 (3.5)	2.52 (64)	1.77 (45)	1.65 (42)	2.41 (61.3)
K4	**K5**	**M**	**N**	**P**
1.78 (45.3)	2.26 (57.3)	1.30 (33)	.59 (15)	Ø .26 Ø (6.6)
P1	**U**	**V**		
Ø .17 Ø (4.4)	0.52 (13.3)	0.29 (7.5)		

Inches (mm)

P2LDX 5/2 & 5/3 Single & Double Operators – Remote Pilot



P2LDX 5/2 & 5/3 (remote)

A	B	C	D	E
5.47 (139)	1.89 (48)	1.59 (40.5)	2.63 (67)	.67 (17)
E1	**F**	**F1**	**G**	**H**
1.65 (42)	1.34 (34)	1.08 (27.5)	.98 (25)	1.18 (30)
H1	**H2**	**H3**	**H4**	**J**
.49 (12.5)	.20 (5)	.51 (13)	.16 (4)	.91 (23)
J1	**P**	**M**	**N**	**Q**
.14 (3.5)	Ø .26 Ø (6.6)	1.29 (32.7)	.59 (15)	Ø .17 Ø (4.4)

Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

B3, B5 & B6 Series

B Series, an exceptional performing industrial valve in a compact size with an enhanced flow range.

Available in solenoid pilot operated and remote air pilot models. The B series features Parker's proven WCS (Wear Compensating Seal) system ensuring long life and fast response.

Ports
- B3: 1/8 NPT – 0.75 Cv
- B5: 1/4 & 3/8 NPT – 1.40 Cv
- B6: 3/8 NPT – 2.50 Cv

Mounting
- Inline
- IEM stackable base
- IEM aluminum bar

Solenoids
- 1.2 W – 15mm, 3-pin EN175301-803
- 24VDC, 120VAC
- Female DIN electrical connectors

Certification / Approval
- Approved to be CE marked
- IP65 rated

Operating information

Operating pressure:	Vacuum to 145 PSIG (Vacuum to 10 bar)
Minimum:	See chart below
CSA-NRTL/C:	See chart below
Operating temperature:	5°F to 120°F (-15°C to 49°C)

Material specifications

Body	Anodized aluminum
End caps	Nylon polymer - 33% glass filled
Seals	Nitrile
Solenoid	Polyamide
Spool	Aluminum

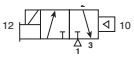
Minimum operating pressure

Operator / Function	Internal Pilot	Minimum PSIG (kPa) B3	B5	B6
1, G, H	Single solenoid - air return			
2, A, J, S	Double solenoid	20 (138)	20 (138)	20 (138)
3*	Single remote pilot - air return			
4, M*	Double remote pilot	Vacuum	Vacuum	Vacuum
5, 6, 7	Double solenoid - APB, CE, PC	30 (207)	30 (207)	30 (207)
8, 9, 0*	Double remote pilot - APB, CE, PC	Vacuum	Vacuum	Vacuum
X, Y*	Single remote pilot - air return / spring assist*	35 (241)	35 (241)	35 (241)

* Remote Pilot Signal 35-145 PSIG (241-1000 kPa).

Single Solenoid, 3-way, 2-position, NC

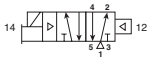
B3 shown, 3-Pin DIN 43650C electrical connection. Non-locking flush override.



Port Size	Cv	Voltage	Valve Type	Part Number
1/8"	0.75 Cv	120VAC 24VDC	B3 Inline	**B3G0BB553C B3G0BB549C**
1/4"	1.4 Cv	120VAC 24VDC	B5 Inline	**B5G1BB553C B5G1BB549C**
3/8"	1.4 Cv	120VAC 24VDC	B5 Inline	**B5G2BB553C B5G2BB549C**

Single Solenoid, 4-way, 2-position

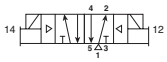
B3 shown, 3-Pin DIN 43650C electrical connection. Non-locking flush override.



Port Size	Cv	Voltage	Valve Type	Part Number
1/8"	0.75 Cv	120VAC 24VDC	B3 Inline	**B310BB553C B310BB549C**
1/4"	1.4 Cv	120VAC 24VDC	B5 Inline	**B511BB553C B511BB549C**
3/8"	1.4 Cv	120VAC 24VDC	B5 Inline	**B512BB553C B512BB549C**
3/8"	2.7 Cv	120VAC 24VDC	B6 Inline	**B612BB553A B612BB549A**

Double Solenoid, 4-way, 2-position

B5 shown, 3-Pin DIN 43650C electrical connection. Non-locking flush override.

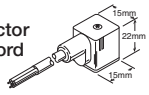


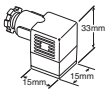
Port Size	Cv	Voltage	Valve Type	Part Number
1/8"	0.75 Cv	120VAC 24VDC	B3 Inline	**B320BB553C B320BB549C**
1/4"	1.4 Cv	120VAC 24VDC	B5 Inline	**B521BB553C B521BB549C**
3/8"	1.4 Cv	120VAC 24VDC	B5 Inline	**B522BB553C B522BB549C**
3/8"	2.7 Cv	120VAC 24VDC	B6 Inline	**B622BB553A B622BB549A**

ANSI / (NFPA) T3.21.3-1990 standard for Cv measurement.

15mm 3-Pin DIN 43650C, 8mm Pin Spacing

Connector with cord





Connector only

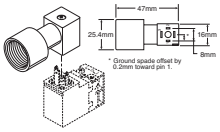
	Cord Length	Connector	Connector with Cord
Unlighted	18 Inches	**PS2932BP**	**PS2932HBP**
Unlighted	6 Feet	**PS2932BP**	**PS2932JBP**
Light – 12VAC or DC	6 Feet	**PS294675BP**	**PS2946J75BP ***
Light – 24VAC or DC	6 Feet	**PS294679BP**	**PS2946J79BP ***
Light – 110/120VAC	6 Feet	**PS294683BP**	**PS2946J83BP ***
Light – 240/230VAC		**PS294687BP**	N/A

* LED with surge suppression.

Note: Max ø6.5mm cable size required for connector w/o 6' (2m) cord.
IP65 rated when properly installed.

Engineering data:
Conductors: 2 poles plus ground, polarity insensitive
Cable range (connector only): 4 to 6mm (0.16 To 0.24 Inch)
Contact spacing: 8mm

15mm 3-Pin DIN 43650C to 1/2" Conduit



Description	Connector
1/2" NPTF conduit – Unlighted with 3' (1m) leads 20 AWG wire	**PS2998P**

Note: Rated up to 250VAC or VDC; 6 amps
IP65 rated when properly installed.

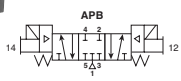
Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Double Solenoid, 4-way, 3-position, APB

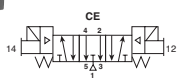
B5 shown, 3-Pin DIN 43650C electrical connection. Non-locking flush override.



Symbol	Port Size	Cv	Voltage	Valve Type	Part Number
	1/8"	0.60 Cv	120VAC 24VDC	B3 Inline	**B350BB553C B350BB549C**
	1/4"	1.1 Cv	120VAC 24VDC	B5 Inline	**B551BB553C B551BB549C**
	3/8"	1.1 Cv	120VAC 24VDC	B5 Inline	**B552BB553C B552BB549C**
	3/8"	2.1 Cv	120VAC 24VDC	B6 Inline	**B652BB553A B652BB549A**

Double Solenoid, 4-way, 3-position, CE

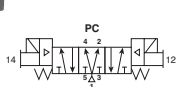
B5 shown, 3-Pin DIN 43650C electrical connection. Non-locking flush override.



Symbol	Port Size	Cv	Voltage	Valve Type	Part Number
	1/8"	0.60 Cv	120VAC 24VDC	B3 Inline	**B360BB553C B360BB549C**
	1/4"	1.1 Cv	120VAC 24VDC	B5 Inline	**B561BB553C B561BB549C**
	3/8"	1.1 Cv	120VAC 24VDC	B5 Inline	**B562BB553C B562BB549C**
	3/8"	2.1 Cv	120VAC 24VDC	B6 Inline	**B662BB553A B662BB549A**

Double Solenoid, 4-way, 3-position, PC

B5 shown, 3-Pin DIN 43650C electrical connection. Non-locking flush override.

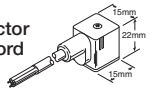


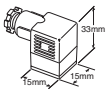
Symbol	Port Size	Cv	Voltage	Valve Type	Part Number
	1/8"	0.60 Cv	120VAC 24VDC	B3 Inline	**B370BB553C B370BB549C**
	1/4"	1.1 Cv	120VAC 24VDC	B5 Inline	**B571BB553C B571BB549C**
	3/8"	1.1 Cv	120VAC 24VDC	B5 Inline	**B572BB553C B572BB549C**
	3/8"	2.1 Cv	120VAC 24VDC	B6 Inline	**B672BB553A B672BB549A**

ANSI / (NFPA) T3.21.3-1990 standard for Cv measurement.

15mm 3-Pin DIN 43650C, 8mm Pin Spacing

Connector with cord





Connector only

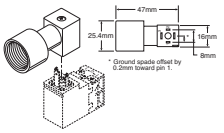
	Cord Length	Connector	Connector with Cord
Unlighted	18 Inches	**PS2932BP**	**PS2932HBP**
Unlighted	6 Feet	**PS2932BP**	**PS2932JBP**
Light – 12VAC or DC	6 Feet	**PS294675BP**	**PS2946J75BP ***
Light – 24VAC or DC	6 Feet	**PS294679BP**	**PS2946J79BP ***
Light – 110/120VAC	6 Feet	**PS294683BP**	**PS2946J83BP ***
Light – 240/230VAC		**PS294687BP**	N/A

* LED with surge suppression.

Note: Max ø6.5mm cable size required for connector w/o 6' (2m) cord.
IP65 rated when properly installed.

Engineering data:
Conductors: 2 poles plus ground, polarity insensitive
Cable range (connector only): 4 to 6mm (0.16 To 0.24 Inch)
Contact spacing: 8mm

15mm 3-Pin DIN 43650C to 1/2" Conduit



Description	Connector
1/2" NPTF conduit – Unlighted with 3' (1m) leads 20 AWG wire	**PS2998P**

Note: Rated up to 250VAC or VDC; 6 amps
IP65 rated when properly installed.

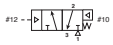
Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Single Remote Pilot, 3-way, 2-position, NC

B3 Shown, M5 Remote Pilot Ports



Symbol	Port Size	Cv	Valve Type	Part Number
	1/8"	0.75 Cv	B3 Inline, remote pilot	**B3X0000XXC**
	1/4"	2.7 Cv	B5 Inline, remote pilot	**B5X1000XXC**
	3/8"	1.4 Cv	B5 Inline, remote pilot	**B5X2000XXC**

Single Remote Pilot, 4-way, 2-position

B5 Shown, M5 Remote Pilot Ports

Symbol	Port Size	Cv	Valve Type	Part Number
	1/8"	0.75 Cv	B3 Inline, remote pilot	**B330000XXC**
	1/4"	1.4 Cv	B5 Inline, remote pilot	**B531000XXC**
	3/8"	1.4 Cv	B5 Inline, remote pilot	**B532000XXC**
	3/8"	2.7 Cv	B6 Inline, remote pilot	**B632000XXA**

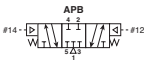
Double Remote Pilot, 4-way, 2-position

B5 Shown, M5 Remote Pilot Ports

Symbol	Port Size	Cv	Valve Type	Part Number
	1/8"	0.75 Cv	B3 Inline, remote pilot	**B340000XXC**
	1/4"	1.4 Cv	B5 Inline, remote pilot	**B541000XXC**
	3/8"	1.4 Cv	B5 Inline, remote pilot	**B542000XXC**
	3/8"	2.7 Cv	B6 Inline, remote pilot	**B642000XXA**

Double Remote Pilot, 4-way, 3-position, APB

B5 Shown, M5 Remote Pilot Ports



Symbol	Port Size	Cv	Valve Type	Part Number
	1/8"	0.60 Cv	B3 Inline, remote pilot	**B380000XXC**
	1/4"	1.1 Cv	B5 Inline, remote pilot	**B581000XXC**
	3/8"	1.1 Cv	B5 Inline, remote pilot	**B582000XXC**
	3/8"	2.1 Cv	B6 Inline, remote pilot	**B682000XXA**

ANSI / (NFPA) T3.21.3-1990 standard for Cv measurement.

Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

B3 Series

B3 1 0 B B 5 49 – C

Basic Series	
B3 Series	B3

Engineering Level	
C	Current

Operator Function	
3-way	
Single Solenoid, 2-Position Nc - Air Return	**G**
Single Solenoid, 2-Position No - Air Return	H
Double Solenoid, 2-Position	J
Double Remote Pilot, 2-Position	M
Single Remote Pilot, 2-Position Nc - Air Return / Spring Assist	X
Single Remote Pilot, 2-Position No - Air Return / Spring Assist	Y
4-Way	
Single Solenoid, 2-Position - Air Return	**1**
Double Solenoid, 2-Position	**2**
Single Remote Pilot, 2-Position - Air Return	**3**
Double Remote Pilot, 2-Position	**4**
Double Solenoid, 3-Position - APB	**5**
Double Solenoid, 3-Position - CE	6
Double Solenoid, 3-Position - PC	7
Double Remote Pilot, 3-Position - APB	**8**
Double Remote Pilot, 3-Position - CE	9
Double Remote Pilot, 3-Position - PC	0

Options	
Blank	None

Voltage	AC 60Hz	AC 50Hz	DC
49			24
53	120	110	
XX	Remote Pilot - M5 or Valve Less 15mm Solenoid		

Enclosure / Lead Length	
0	None, Remote Pilot Valve
5	**15mm 3-Pin Din 43650c (Male Only)**

Overrides	
0	**Remote Pilot Valve**
B	**Flush - Non-Locking**
C	**Flush - Locking**
X	Valve Less 15mm Solenoid

Port Size / Thread Type	3-way, 4-way *
1/8" NPT Inline	**0**

* Available for use on IEM Manifolds.

Pilot Source / Pilot Exhaust	
0	**Remote Pilot Valve**
B†	**Internal - Port #1 / Vented**

† Not available for Remote Pilot Valves.

Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

B5 Series

B5 1 1 B B 5 49 – C

Basic Series	
B5 Series	B5

Operator Function	
3-Way	
Single Solenoid, 2-Position Nc - Air Return	**G**
Single Solenoid, 2-Position No - Air Return	H
Double Solenoid, 2-Position	J
Double Remote Pilot, 2-Position	M*
Single Remote Pilot, 2-Position Nc - Air Return / Spring Assist	X*
Single Remote Pilot, 2-Position No - Air Return / Spring Assist	Y*
4-Way	
Single Solenoid, 2-Position - Air Return	**1**
Double Solenoid, 2-Position	**2**
Single Remote Pilot, 2-Position - Air Return	**3***
Double Remote Pilot, 2-Position	**4***
Double Solenoid, 3-Position - APB	**5**
Double Solenoid, 3-Position - CE	6
Double Solenoid, 3-Position - PC	7
Double Remote Pilot, 3-Position - APB	**8***
Double Remote Pilot, 3-Position - CE	9*
Double Remote Pilot, 3-Position - PC	0*

* Pilot source/pilot exhaust, override, and enclosure must be "0".

Port Size / Thread Type	
3-way, 4-way *	
1/4" NPT Inline	**1**
3/8" NPT Inline	**2**

* 4-way available for use on IEM manifolds

Pilot Source / Pilot Exhaust	
Remote Pilot Valve	0
Internal - Port #1 / Vented	**B †**

† Not available for remote pilot valves.

Overrides	
0	Remote Pilot Valve
B *	**Flush - Non-Locking**
C *	**Flush - Locking**

* Only available with encl. "5".

Enclosure / Lead Length	
0	Remote Pilot Valve
5	**15mm 3-Pin DIN 43650C (male only)**
X	Valve Less 15mm Solenoid

Voltage	AC		DC
	60Hz	50Hz	
49			24
53	120	110	
XX	Remote Pilot - M5 or Valve Less Solenoid		

Options	
Blank	None

Engineering Level	
C	Current

☐ Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

B6 Series

B6	1	2	B	B	5	49	–	A

Basic Series	
B6 Series	B6

Operator function	
4-way	
Single Solenoid, 2-Position - Air Return	1
Double Solenoid, 2-Position	2
Single Remote Pilot, 2-Position - Air Return	3
Double Remote Pilot, 2-Position	4
Double Solenoid, 3-Position - APB	5
Double Solenoid, 3-Position - CE	6
Double Solenoid, 3-Position - PC	7
Double Remote Pilot, 3-Position - APB	8
Double Remote Pilot, 3-Position - CE	9
Double Remote Pilot, 3-Position - PC	0

Port Size / Thread Type	
4-way	
3/8" NPT Inline	2*

* Available for use on IEM manifolds.

Pilot Source / Pilot Exhaust	
None. Remote Pilot Valve	0
Internal - Port #1 / Vented	B†

† Not available for remote pilot valves.

Overrides§	
Remote Pilot Valve	0
Flush - Non-Locking	B *
Flush - Locking	C *
Valve Less 15mm Solenoid	X

* Available for use on IEM manifolds.

Voltage			
	AC		DC
	60Hz	50Hz	
49			24
53	120	110	
XX	Remote Pilot - M5 or Valve Less 15mm Solenoid		

Enclosure / Lead Length	
0	Remote Pilot Valve
5	15mm 3-Pin DIN 43650C (male only)
X	Valve Less 15mm Solenoid

Options	
Blank	None

Engineering Level	
C	Current

☐ Most popular.

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

B3 B5 B6 IEM Manifold, Inline Valves Only

Valve Series	Valve Function	## – Stations	Manifold Kit Only (NPT)
B3	4-way	2	**PSM3BXN02NP**
		4	**PSM3BXN04NP**
		6	**PSM3BXN06NP**
		8	**PSM3BXN08NP**
B5	4-way	2	**PSM5BXN02NP**
		4	**PSM5BXN04NP**
		6	**PSM5BXN06NP**
		8	**PSM5BXN08NP**
B6	4-way	2	**PSM6BXN02NP**
		4	**PSM6BXN04NP**
		6	**PSM6BXN06NP**
		8	**PSM6BXN08NP**

Kits include: (1) manifold, valve hold down bolts, O-rings.

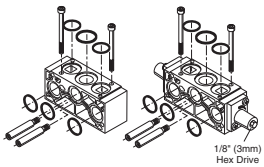
Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

IEM Stackable Manifolds

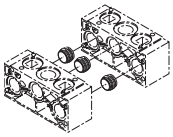
- Individual Manifold Bases stack together to form lightweight custom length manifold system.
- Easy-to-connect male / female tie rods for modular assembly.
- Utilizes B3 and B5 4-way Inline Valves.
- Low-cost built-in Flow Controls with heavy-duty brass adjusting needles to control meter-out exhaust flow.
- Accessories include Isolator Plugs for pressure isolation and Universal Blanking Plates for auxiliary inlet and exhaust supply and future valve additions.



Series	Type	Kit Number	
		Standard	Flow Control
B3	4-way	**PS2917P**	**PS2918P**
B5	4-way	**PS2817P**	**PS2818P**

Kit includes: (1) manifold base, (2) hold-down bolts, tie-rods, gaskets and o-rings.

Isolator Plugs

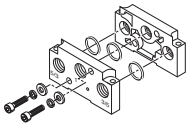


Series	Description	Kit Number
B3	4-way, IEM stackable	**PS2919P**
B5	4-way, IEM stackable	**PS2819P**

Used to isolate the #1, #3 or #5 gallery between two manifold bases. (IEM stackable only)

Kit includes: (3) plugs and (6) o-rings

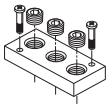
End Plate Kits



Series	Type	Port Type	Kit Number
B3	4-way, NPT	1/4	**PS2915P**
B5	4-way, NPT	3/8	**PS2815P**

Kit includes: right and left end plate, o-rings, socket head cap screws, flat washers and lockwashers.

Blanking Plate



		IEM Universal	IEM
		NPT	Blank
B3	4-way	**PS2920P**	**PS2969P**
B5	4-way	**PS2820P**	**PS2869P**
B6	4-way	**PS2620P**	—

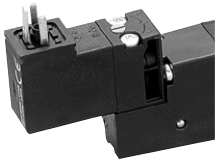
Kit includes: (1) plate, (2) screws, seal / gaskets

Most popular.

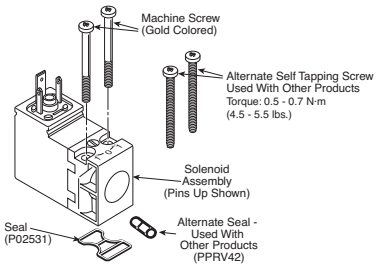
For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Solenoid Kits – B3 'C', B5 'C', B6 'A', 3-Pin, EN175301-803 (Former DIN 43650C), 15mm



Standard



PS2982*##P – Enclosure '5'

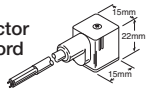
	## Voltage	
Override *	49	53
B	S	S
C	S	S

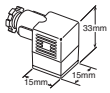
S - Standard;

Kit includes: Solenoid, (2) machine screws, (2) self threading screws, (1) gasket, (1) 3-cell gasket.

15mm 3-Pin DIN 43650C, 8mm Pin Spacing

Connector with cord





Connector only

	Cord Length	Connector	Connector with Cord
Unlighted	18 Inches	**PS2932BP**	**PS2932HBP**
Unlighted	6 Feet	**PS2932BP**	**PS2932JBP**
Light – 12VAC or DC	6 Feet	**PS294675BP**	**PS2946J75BP ***
Light – 24VAC or DC	6 Feet	**PS294679BP**	**PS2946J79BP ***
Light – 110/120VAC	6 Feet	**PS294683BP**	**PS2946J83BP ***
Light – 240/230VAC		**PS294687BP**	N/A

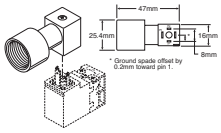
* LED with surge suppression.

Note: Max ø6.5mm cable size required for connector w/o 6' (2m) cord.
IP65 rated when properly installed.

Engineering data:

Conductors: 2 poles plus ground, polarity insensitive
Cable range (connector only): 4 to 6mm (0.16 To 0.24 Inch)
Contact spacing: 8mm

15mm 3-Pin DIN 43650C to 1/2" Conduit



Description	Connector
1/2" NPTF conduit – Unlighted with 3' (1m) leads 20 AWG wire	**PS2998P**

Note: Rated up to 250VAC or VDC; 6 amps
IP65 rated when properly installed.

Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Solenoid Information (Solenoids are rated for continuous duty.)

Voltage			
	AC		
Code	60Hz	50Hz	DC
49			24
53	120	110	

Enclosure "5"	
Power Consumption	Holding (Amps)
1.2W	.049
1.6W	.013

Response Time (Sec)

		Enclosure "5"			
		0 Cu. In. Test Chamber		25 * Cu. In. Test Chamber	
Valve Size	Port Size	Fill	Exhaust	Fill	Exhaust
2-Position Single Solenoid / Internal Air Return					
B3	1/8"	.024	.026	.149	.242
B5	1/4"	.038	.040	.106	.156
B5 *	3/8"	.039	.041	.150	.245
B6 *	3/8"	.037	.038	.096	.132
2-Position Double Solenoid					
B3	1/8"	.013	.015	.122	.213
B5	1/4"	.016	.018	.082	.132
B5 *	3/8"	.016	.018	.129	.222
B6 *	3/8"	.016	.017	.074	.110
3-Position Double Solenoid					
B3	1/8"	.021	.023	.091	.141
B5	1/4"	.022	.023	.091	.141
B5 *	3/8"	.022	.024	.135	.229
B6 *	3/8"	.024	.026	.094	.139

Average Fill Time (Seconds): With 100 PSIG supply, time required to fill from 0-90 PSIG and exhaust from 100 PSIG to 10 PSIG is measured from instant of energizing, or de-energizing 120V/60Hz solenoid. Times shown are average.

* For 3/8" ported, 50 cu. in. test chamber is used. For 1/2" & 3/4", a 200 cu. in. test chamber is used.

Most popular.

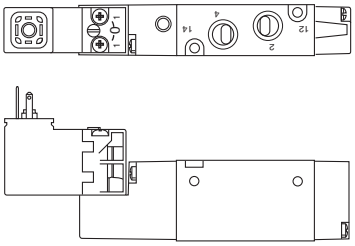
For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

B3C Series

Spool / Body Service Kits

		Kit Includes:
PS2901CP	4-Way, 2-Pos	Item 15, 21 (2), 24, 25, 31 (2), grease packet
PS2902CP	4-Way, 3-Pos APB	Item 16, 21 (2), 31 (2), grease packet
PS2903CP	4-Way, 3-Pos CE	Item 16, 21 (2), 31 (2), grease packet
PS2904CP	4-Way, 3-Pos PC	Item 16, 21 (2), 31 (2), grease packet
PS2971CP	3-Way, 2-Pos	Item 15, 21 (2), 24, 25, 31 (2), grease packet



Valve to Manifold Kits

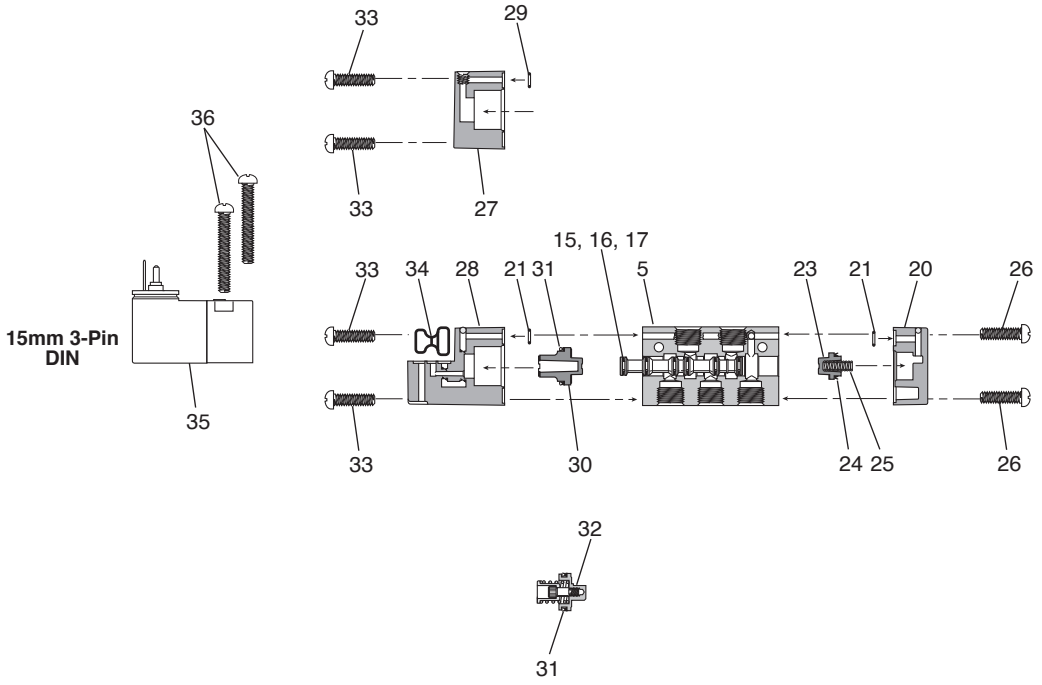
PS2980P	Gasket (10) - Inline 3-Way Valve to Segmented Manifold
PS2981P	Gasket (10) - Inline 4-Way Valve to Segmented Manifold
PS2984P	O-ring (10) - Inline Valve to IEM Bar Manifold
PS2987P	Mounting Bolts (10) - Inline Valve / Subbase Valve

Manifold to Manifold Kit

PS2996P	Gasket (10), Tie Rods (10) - 4-Way Manifold

Solenoid Kit **Kit Includes: 35, 36, 34**

PS2982*##P	3-Pin, EN175301-803, 15mm



Item List – Parts not sold separately.

Item	Description	Item	Description	Item	Description
5	Inline Body - Tapped Ports	25*	Spring, Return Assist	33	Screws - Operator Adapter
15*	Spool - 2-Position (Seals Assembled)	26	Screws - Return Operator	34*	Gasket - Solenoid to Adapter
16*	Spool - 3-Position (Seals Assembled)	27	Remote Pilot Operator	35*	15mm Solenoid
17*	Spool Seal	28a	Solenoid Adapter - Vent Exhaust	36*	Self Tapping Screw - Solenoid (Effective May 99)
20	Return Operator	29	O-ring - Remote Pilot	36*	Machine Screw - Solenoid (Jan 96 - May 99)
21*	Gasket - Body to Operator	30	Operator Piston - 2-Position		
23	Return Piston	31*	Lip Seal - Operator Piston		
24*	Lip Seal - Return Piston	32	Operator Piston Mechanism - 3-Position		

Note: * Parts are available in kits shown.

B5C Series

Spool / Body Service Kits

		Kit Includes:
PS2801*P	4-Way, 2-Pos	Item 2, 10 (2), 14, 15, 116, 6 (2), grease packet
PS2802*P	4-Way, 3-Pos APB	Item 3, 6 (2), 10 (2), 13 (2), grease packet
PS2803*P	4-Way, 3-Pos CE	Item 3, 6 (2), 10 (2), 13 (2), grease packet
PS2804*P	4-Way, 3-Pos PC	Item 3, 6 (2), 10 (2), 13 (2), grease packet
PS2871*P	3-Way, 2-Pos NC	Item 2, 10 (2), 14, 15, 116, 6 (2), grease packet

* Fluorocarbon Seal Kit (i.e. PS2801VP)

Valve to Manifold Kits

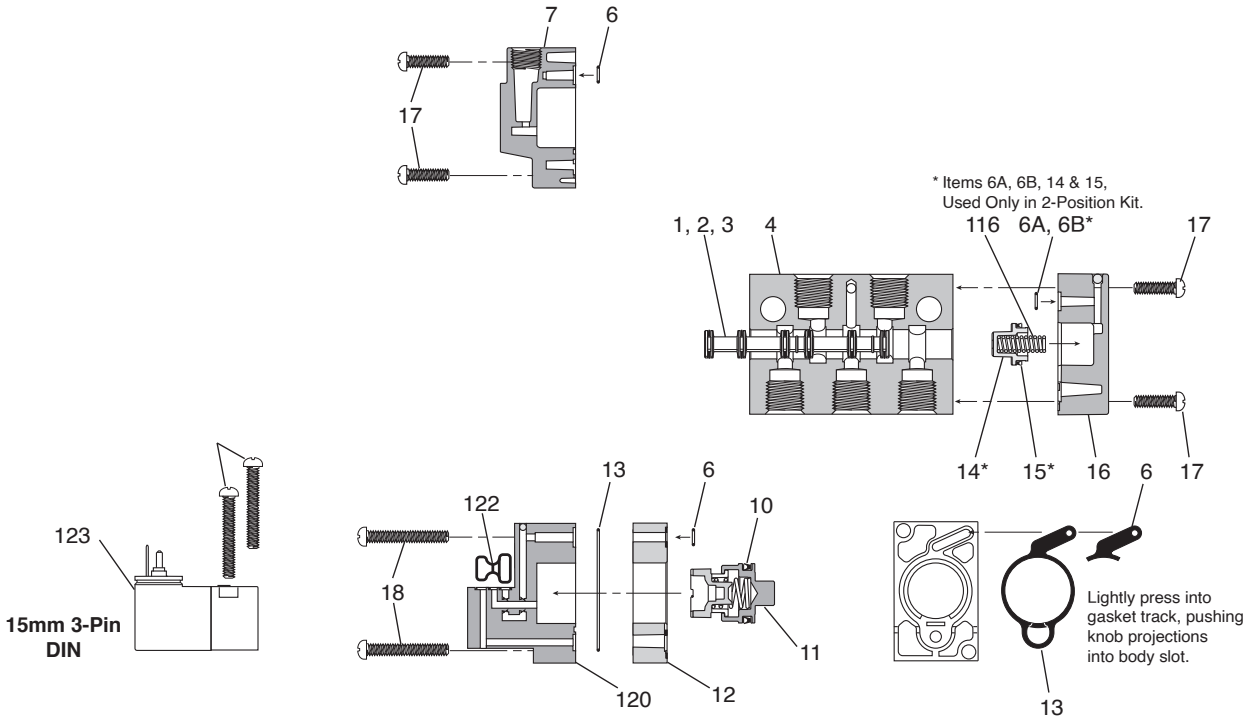
PS2884P O-ring (10) - Inline Valve to IEM Manifold (All)
PS2887P Mounting Bolts (10) - Inline & Subbase Valve

Manifold to Manifold Kit

PS2896P Gasket (10), Tie Rods (10) - 4-Way Manifold

Solenoid Kit *Kit Includes: 25, 122, 123*

PS2982*##P 3-Pin, EN175301-803, 15mm



Item List – Parts not sold separately.

Item	Description	Item	Description	Item	Description
1*	Spool Seal	10*	Lip Seal - Operator Piston	18*	Screws - Operator Adapter - 3-Position
2*	Spool - 2-Position (Seals Assembled)	11	Operator Piston Mechanism - 3-Position	25a*	Self Tapping Screw - Solenoid (Effective May 99)
3*	Spool - 3-Position (Seals Assembled)	12	Adapter - 3-Position	25b*	Machine Screw - Solenoid (Jan 96 - May 99)
4	Inline Body	13*	Gasket - 3-Position Adapter to Body	116*	Spring, Return Assist
6A*	Gasket - Body to Operator	14	Return Piston	120a	Solenoid Adapter - Vent Exhaust
6B	O-ring - Body to Operator (Effective July 2007)	15*	Lip Seal - Return Piston	122*	Gasket - Solenoid to Adapter
7	Remote Pilot Operator	16	Return Operator	123*	15mm Solenoid
		17*	Screws - Operator Adapter - 2-Position		

Note: * Parts are available in kits shown.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

B6A Series

Spool / Body Service Kits

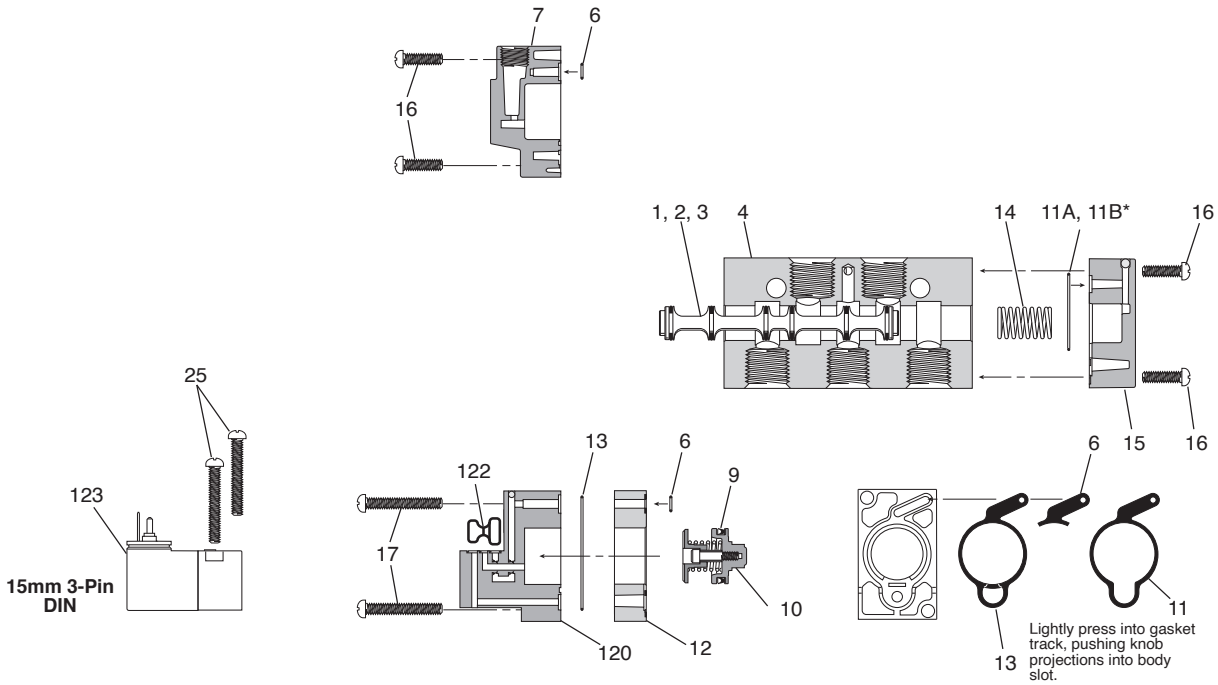
		Kit Includes:
PS2601P	4-Way, 2-Pos	Item 2, 6 (2), 9 (2), 11, 14, grease packet
PS2602P	4-Way, 3-Pos APB	Item 3, 6 (2), 9 (2), 13 (2), grease packet
PS2603P	4-Way, 3-Pos CE	Item 3, 6 (2), 9 (2), 13 (2), grease packet
PS2604P	4-Way, 3-Pos PC	Item 3, 6 (2), 9 (2), 13 (2), grease packet

Valve to Manifold Kits

PS2684P O-ring (10) - Inline Valve to IEM Manifold
PS2887P Mounting Bolts (10) - Inline Valve

Solenoid Kit *Kit Includes: 25, 122, 123*

PS2982*##P 3-Pin, EN175301-803, 15mm

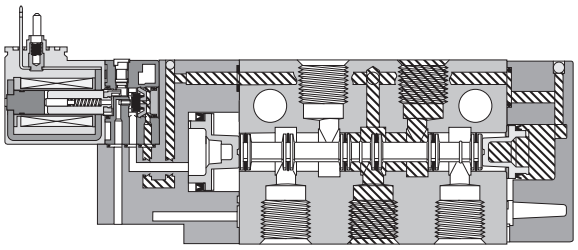


* Item 11A & 11B used in 2-Position Kit Only

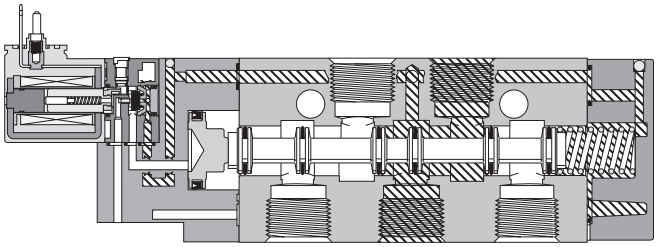
Item List – Parts not sold separately.

Item	Description	Item	Description	Item	Description
1*	Spool Seal	10	Operator Piston Mechanism - 3-Position	15a	Return Operator
2*	Spool - 2-Position (Seals Assembled)	11A*	Gasket - Body to Return Cap	16*	Screws - Operator Adapter - 2-Position
3*	Spool - 3-Position (Seals Assembled)	11B*	O-ring - Body to Operator (Effective Feb. 2008)	17*	Screws - Operator Adapter - 3-Position
4	Inline Body - 4-Way	12	Adapter - 3-Position	120a	Solenoid Adapter - Vent Exhaust
6*	Gasket - Body to Operator	13	Gasket - 3-Position Adapter to Body	122*	Gasket - Solenoid to Adapter
7	Remote Pilot Operator	14*	Spring, Return Assist	123*	15mm Solenoid
9*	Lip Seal - Operator Piston				

Note: * Parts are available in kits shown. For kit components, order VALVE LESS SOLENOID for assembled and tested repair valve.



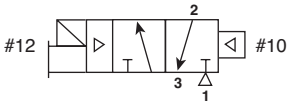
B5 Single Solenoid Inline - Air Return
Shown De-Energized



B6 Single Solenoid Inline - Spring / Air Return
Shown De-Energized

Pressure **Exhaust**

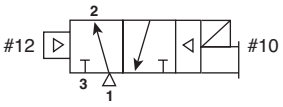
Single Solenoid 3-Way, 2-Position NC (NNP)



Normally Closed:
De-energized position – Solenoid #12 de-energized. Pressure at inlet port 1 blocked, outlet port 2 connected to exhaust port 3.

Energized position – Solenoid #12 energized. Pressure at inlet port 1 connected to outlet port 2, exhaust port 3 is blocked.

Single Solenoid 3-Way, 2-Position NO (NP)



Normally Open:
De-energized position – Solenoid #10 de-energized. Pressure at inlet port 1 connected to outlet port 2, exhaust port 3 is blocked.

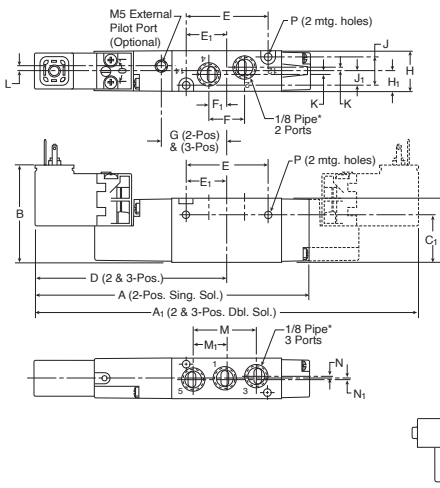
Energized position – Solenoid #10 energized. Pressure at inlet port 1 blocked, outlet port 2 connected to exhaust port 3.

3-Way Configuration

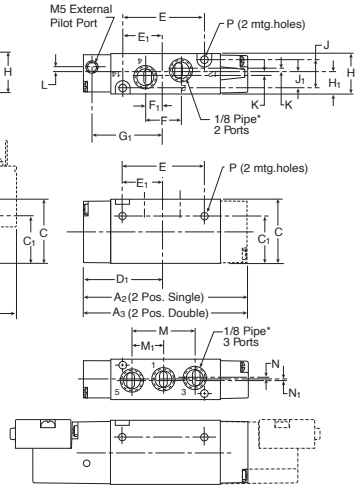
B3, B5:
Looking at the #1 and #3 ports, the solenoid (or remote operator) is on the #3 port end for NC and the #1 port end for NO. The same spool is used for both.

B3 Single & Double Operators – 4-way Inline

Solenoid



Remote Pilot



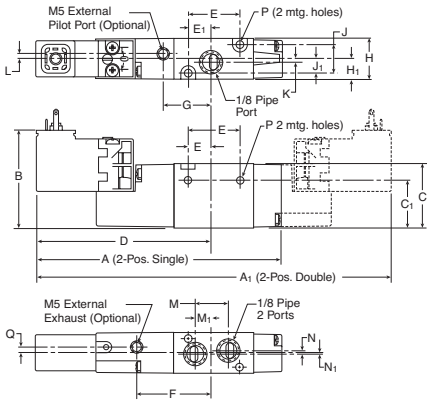
B3 4-Way Inline

A	A1	A2	A3	B
4.67 (119)	6.44 (164)	3.12 (79)	3.33 (85)	1.66 (42)
C	**C1**	**D**	**D1**	**E**
1.13 (39)	.84 (21)	3.22 (82)	1.66 (42)	1.47 (37)
E1	**F**	**F1**	**G**	**G1**
.74 (19)	.63 (16)	.32 (8)	1.13 (29)	1.50 (38)
H	**H1**	**J**	**J1**	**K**
.71 (18)	.36 (9)	.51 (13)	.26 (7)	.06 (2)
L	**M**	**M1**	**N**	**N1**
.11 (3)	1.12 (28)	.56 (14)	.05 (1)	.05 (1)
P				
Ø .13 Ø (3.3)				

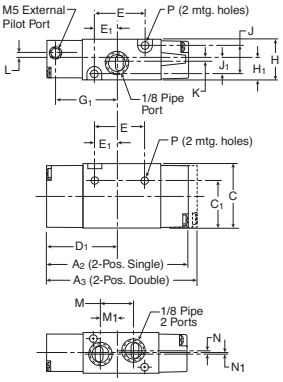
Inches (mm)

B3 Single & Double Operators – 3-way Inline

Solenoid



Remote Pilot



B3 3-Way Inline

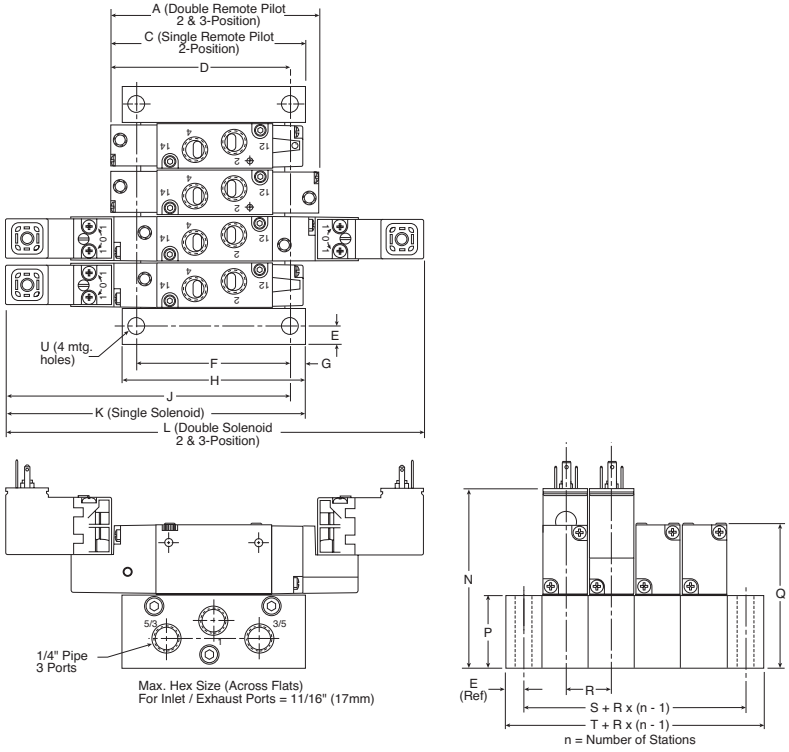
A	A1	A2	A3	B
4.20 (107)	5.96 (151)	2.65 (67)	2.86 (73)	1.66 (42)
C	**C1**	**D**	**D1**	**E**
1.13 (39)	.84 (21)	2.93 (74)	1.38 (35)	.98 (25)
E1	**F**	**G**	**G1**	**H**
.44 (11)	1.32 (34)	.85 (22)	1.22 (31)	.71 (18)
H1	**J**	**J1**	**K**	**L**
.36 (9)	.51 (13)	.26 (7)	.06 (2)	.11 (3)
M	**M1**	**N**	**N1**	**P**
.63 (16)	.27 (7)	.12 (3)	.06 (2)	Ø .13 Ø (3.3)
Q				
.08 (2)				

Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

B3 Single & Double Operators – 4-way IEM Stackable

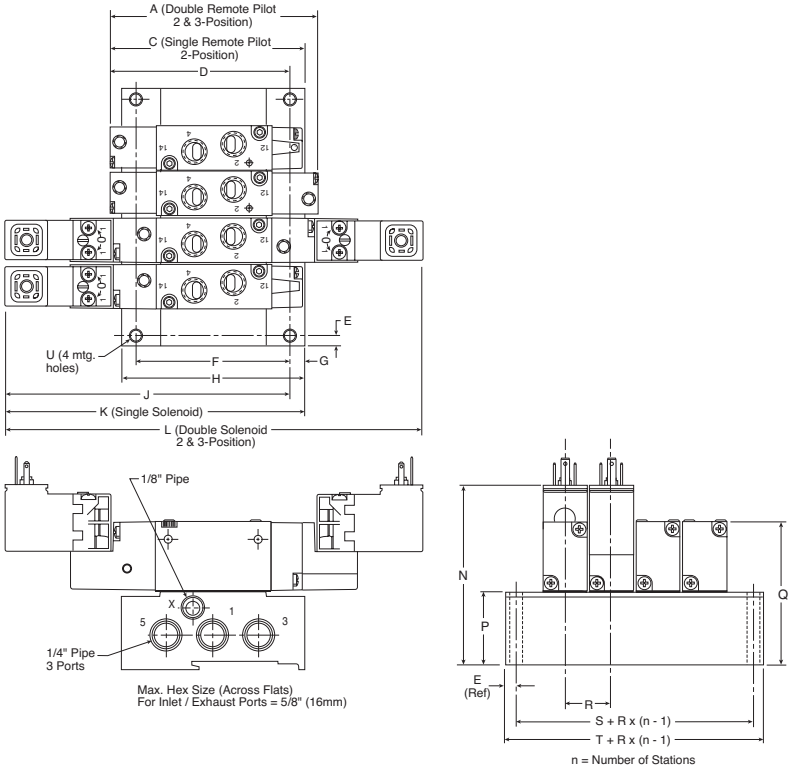


B3 4-Way IEM Stackable

A	C	D	E	F
3.33 (84.6)	3.12 (79.2)	2.91 (73.9)	.30 (7.6)	2.49 (63.3)
G	**H**	**J**	**K**	**L**
.25 (6.4)	3.00 (76.2)	4.46 (113.3)	4.67 (118.6)	6.43 (163.3)
N	**P**	**Q**	**R**	
2.91 (73.9)	1.25 (31.8)	2.38 (60.5)	.74 ±.01 (18.8) ± .3	
S	**T**	**U**		
1.34 (34.0)	1.94 (49.3)	Ø .28 Ø (7.1)		

Inches (mm)

B3 Single & Double Operators – 4-way IEM Aluminum Bar



B3 4-Way IEM Aluminum Bar Manifold

A	C	D	E	F
3.33 (84.6)	3.17 (80.5)	2.94 (74.7)	.25 (6.4)	2.54 (64.5)
G	**H**	**J**	**K**	**L**
.23 (5.9)	3.00 (76.2)	4.50 (114.2)	4.73 (120.1)	6.43 (163.3)
N	**P**	**Q**	**R**	**S**
2.94 (74.7)	1.28 (32.5)	2.41 (61.2)	.81 (20.5)	1.13 (28.8)
T	**U**			
1.64 (41.6)	Ø .23 Ø (5.8)			

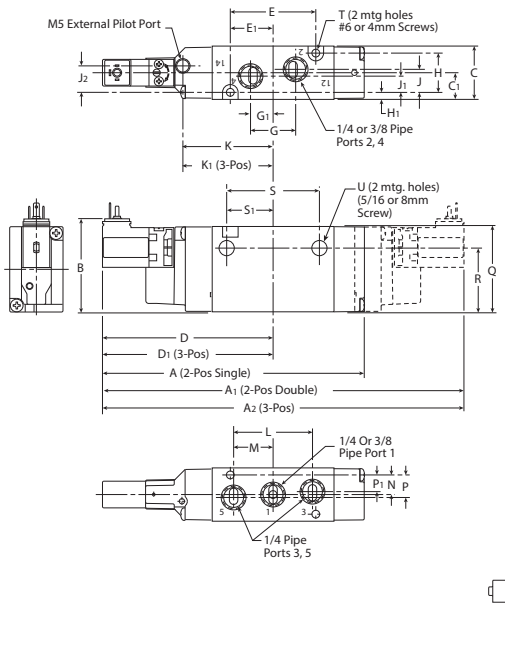
Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

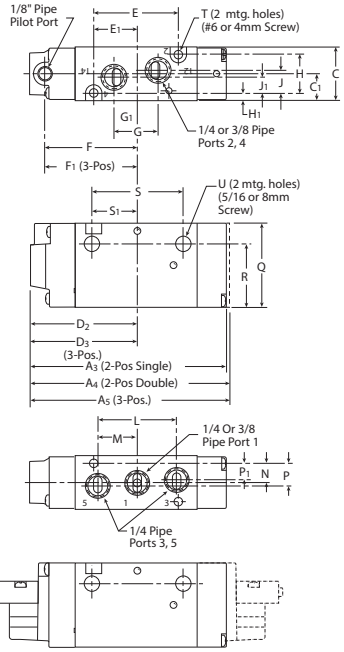
Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

B5 Single & Double Operators – 4-way Inline

Solenoid



Remote pilot



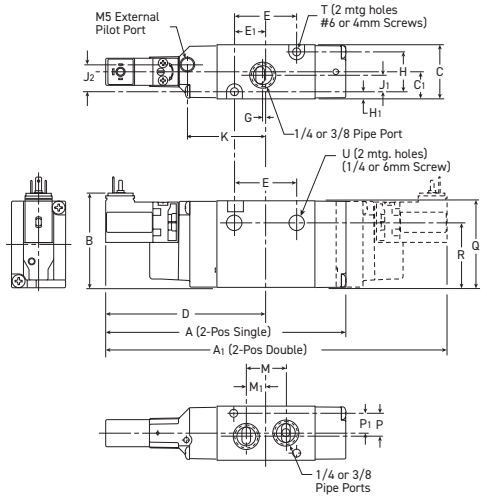
B5 4-Way Inline

A	A1	A2	A3	A4
5.78	7.51	8.45	4.37	4.70
(147)	(191)	(215)	(110)	(119)
A5	**B**	**C**	**C1**	**D**
5.64	2.06	1.18	.59	3.76
(143)	(52)	(30)	(15)	(96)
D1	**D2**	**D3**	**E**	**E1**
4.23	2.35	2.82	1.89	.95
(107)	(60)	(72)	(48)	(24)
F	**F1**	**G**	**G1**	**H**
2.01	2.47	1.00	.50	.87
(51)	(63)	(25)	(13)	(22)
H1	**J**	**J1**	**J**	**K**
.16	.51	.36	.58	2.00
(4)	(13)	(9)	(15)	(51)
K1	**L**	**M**	**N**	**P**
2.47	1.75	.88	.43	.50
(63)	(44)	(22)	(48)	(13)
P1	**Q**	**R**	**S**	**S1**
.37	1.89	1.41	2.05	1.03
(92)	(48)	(36)	(52)	(26)
T	**U**			
Ø .177	Ø .34			
Ø (4.5)	Ø (9)			

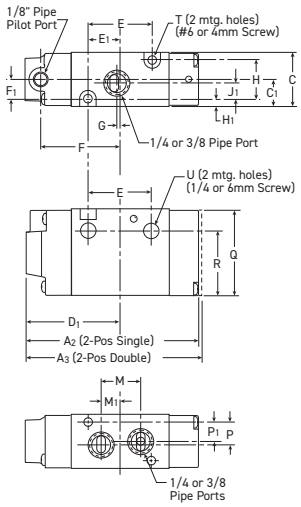
Inches (mm)

B5 Single & Double Operators – 3-way Inline

Solenoid



Remote pilot



B5 3-Way Inline

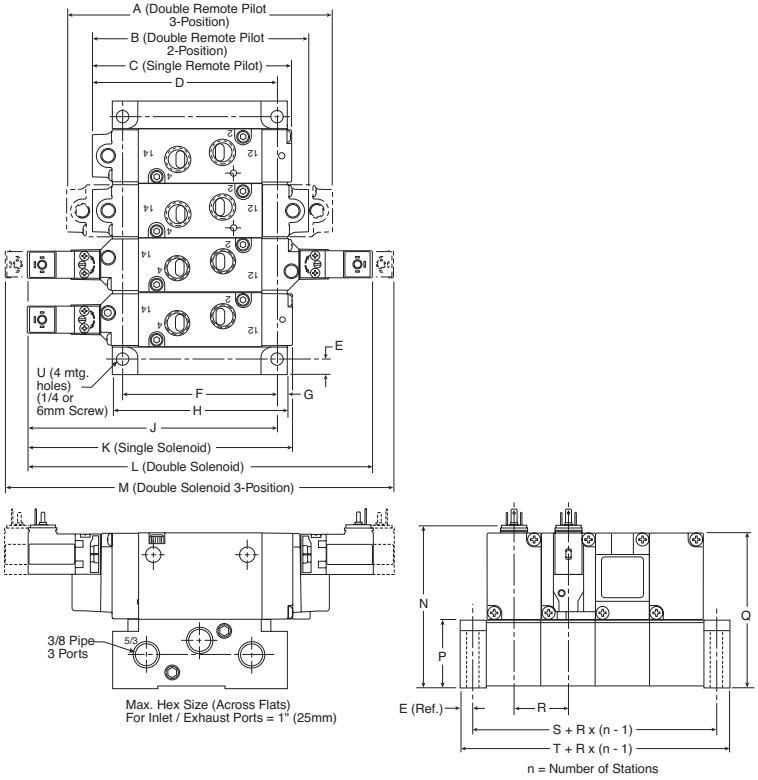
A	A1	A2	A3	B
5.29	7.03	3.88	4.21	2.06
(134)	(179)	(99)	(107)	(52)
C	**C1**	**D**	**D1**	**E**
1.18	.59	3.43	2.11	1.40
(30)	(15)	(87)	(54)	(36)
E1	**F**	**F1**	**G**	**H**
.70	1.77	.43	.06	.87
(18)	(45)	(11)	(2)	(22)
H1	**J1**	**J2**	**K**	**M**
.16	.36	.58	1.67	.88
(4)	(9)	(15)	(42)	(22)
M1	**P**	**P1**	**Q**	**R**
.44	.50	.37	1.89	1.41
(11)	(13)	(9)	(48)	(36)
T	**U**			
Ø .177	Ø .26			
Ø (4.5)	Ø (6.6)			

Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

B5 Single & Double Operators – 4-way IEM Stackable

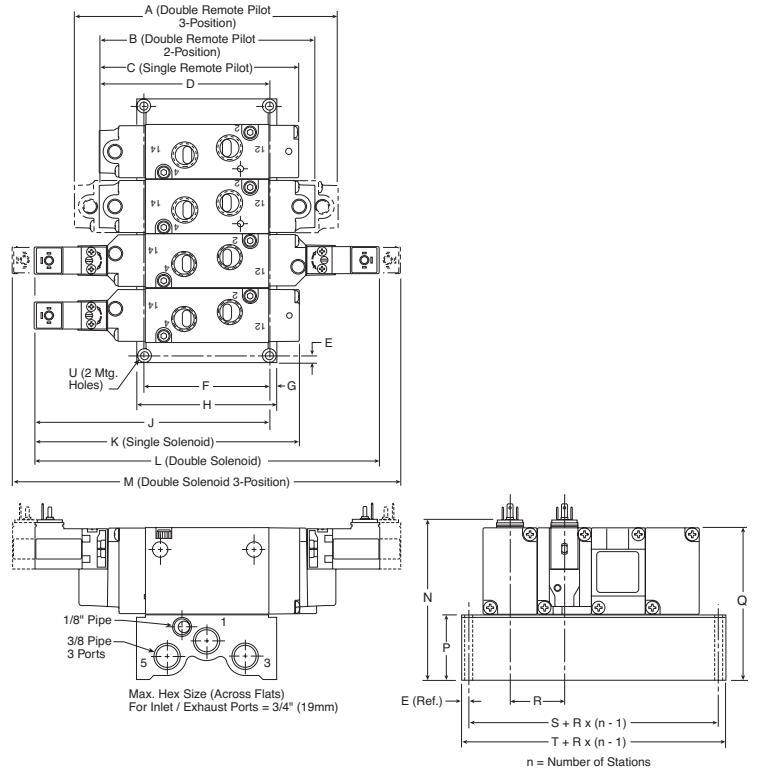


B5 4-Way IEM Stackable

A	B	C	D	E
5.64 (143.3)	4.70 (119.4)	4.37 (110.0)	4.29 (109.0)	.29 (7.4)
F	**G**	**H**	**J**	**K**
3.44 (87.4)	.24 (6.1)	3.92 (99.6)	5.48 (139.2)	5.78 (146.8)
L	**M**	**N**	**P**	**Q**
7.52 (191.0)	8.46 (214.9)	3.56 (90.4)	1.50 (38.1)	3.42 (86.9)
R		**S**	**T**	**U**
1.21 ± .01 (30.7) ± (.3)		1.79 (45.5)	2.37 (60.2)	Ø .28 Ø (7.1)

Inches (mm)

B5 Single & Double Operators – 4-way IEM Aluminum Bar



B5 4-Way IEM Aluminum Bar Manifold

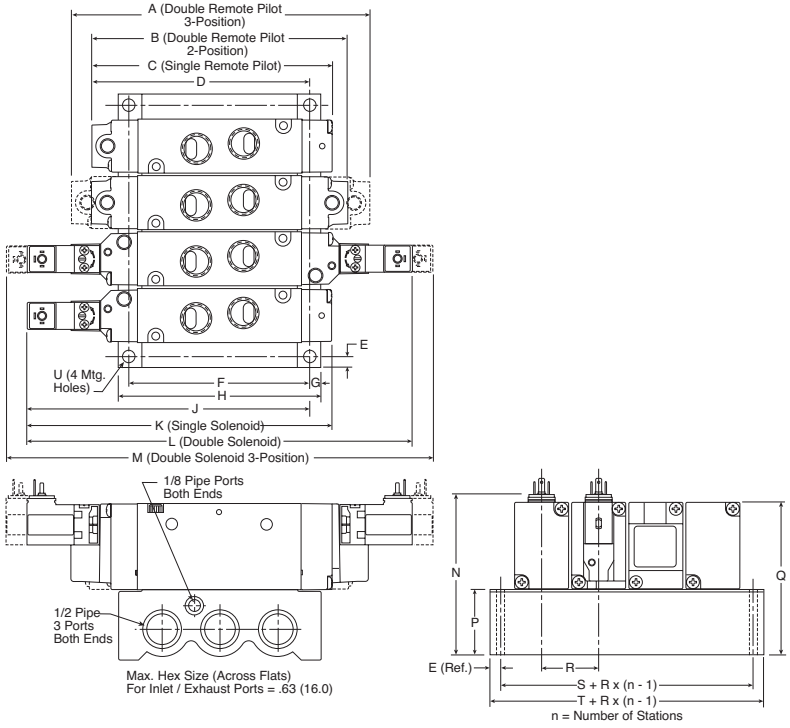
A	B	C	D	E
5.64 (143.3)	4.70 (119.4)	4.37 (110.0)	3.74 (95.0)	.18 (4.6)
F	**G**	**H**	**J**	**K**
2.78 (70.6)	.17 (4.3)	3.12 (79.2)	5.15 (130.8)	5.78 (146.8)
L	**M**	**N**	**P**	**Q**
7.52 (191.0)	8.46 (214.9)	3.50 (89.0)	1.44 (36.6)	3.36 (85.3)
R	**S**	**T**	**U**	
1.26 (32.0)	1.78 (45.2)	2.14 (54.4)	Ø .22 Ø (5.5)	

Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

B6 Single & Double Operators – 4-way IEM Aluminum Bar



B6 4-Way IEM Aluminum Bar Manifold

A	B	C	D	E
6.54 (166.0)	5.59 (142.1)	5.26 (133.7)	4.76 (121.0)	.24 (6.0)
F	**G**	**H**	**J**	**K**
3.94 (100.0)	.24 (6.0)	4.41 (112.0)	6.17 (156.8)	6.67 (169.5)
L	**M**	**N**	**P**	**Q**
8.41 (213.7)	9.35 (237.6)	3.60 (91.3)	1.54 (39.0)	3.43 (87.0)
R	**S**	**T**	**U**	
1.24 (31.5)	1.77 (45.0)	2.24 (57.0)	ø .26 ø (6.5)	

Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

B7 and B8 High Flow Inline

B7 and B8 Size valves are an exceptional performing industrial valve with a high flow range up to 7.00 Cv.

Available in solenoid pilot operated and remote air pilot models. The B series features Parker's proven WCS (Wear Compensating Seal) system ensuring long life and fast response.

Ports
- B7: 1/2 inch – 5.90 Cv
- B8: 3/4 inch – 7.00 Cv

Mounting
- Inline
- IEM aluminum bar

Solenoids
- 1.2 W – 15mm, 3-pin EN175301-803
- 2.5 to 7.3 watt - conduit, grommet, 22mm & 30mm, 3-pin DIN (433650)
- 24VDC, 120VAC
- Female DIN electrical connectors

Certification / Approval
- Approved to be CE marked
- IP65 rated
- cCSAus ‡

Operating information

Operating pressure:	Vacuum to 145 PSIG (Vacuum to 10 bar)
Minimum:	See chart below
CSA-NRTL/C:	See chart below
Operating temperature:	5°F to 120°F (-15°C to 49°C)

Material specifications

Body	Anodized aluminum
End caps	Nylon polymer - 33% glass filled
Seals	Nitrile
Solenoid	Polyamide
Spool	Aluminum

Minimum operating pressure

Operator / Function	Internal Pilot	Minimum PSIG (kPa) B7	B8
1, G, H	Single solenoid - air return	35 (241)	35 (241)
2, A, J, S	Double solenoid	35 (241)	35 (241)
3*	Single remote pilot - air return	35 (241)	35 (241)
5, 6, 7	Double solenoid - APB, CE, PC	45 (310)	45 (310)
8, 9, 0*	Double remote pilot - APB, CE, PC	Vacuum	Vacuum
V, W, X, Y*	Single remote pilot - air return / spring assist	35 (241)	35 (241)
	External pilot *		
All	"B" series	Vacuum	Vacuum

* External Pilot Pressure / Remote Pilot Signal 35-145 PSIG (241-1000 kPa).

‡ CSA-NRTL/C operating pressure

Note: For CSA-NRTL/C approved solenoid valves – insert an 'L' at the end of the valve part number.

Valve	Maximum PSIG (kPa)
B7 & B8	145 (1000) *†

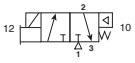
* Enclosure Option E is CSA / FM approved at source. For certification of valve / solenoid assembly, consult factory.
† Not Available with Enclosure 5

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

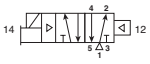
Single Solenoid, 3-way, 2-position, NC

B7 shown, 3-Pin DIN 43650C electrical connection. Non-locking flush override.

Symbol	Port Size	Cv	Voltage	Valve Type	Part Number
	1/2"	5.9 Cv	120VAC 24VDC	B7 Inline	**B7V3BB553A** **B7V3BB549A**
	3/4"	7.0 Cv	120VAC 24VDC	B8 Inline	**B8V4BB553A** **B8V4BB549A**

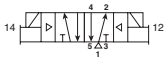
Single Solenoid, 4-way, 2-position

B7 shown, 3-Pin DIN 43650C electrical connection. Non-locking flush override.

Symbol	Port Size	Cv	Voltage	Valve Type	Part Number
	1/2"	5.9 Cv	120VAC 24VDC	B7 Inline	**B713BB553A** **B713BB549A**
	3/4"	7.0 Cv	120VAC 24VDC	B8 Inline	**B814BB553A** **B814BB549A**

Double Solenoid, 4-way, 2-position

B7 shown, 3-Pin DIN 43650C electrical connection. Non-locking flush override.

Symbol	Port Size	Cv	Voltage	Valve Type	Part Number
	1/2"	5.9 Cv	120VAC 24VDC	B7 Inline	**B723BB553A** **B723BB549A**
	3/4"	7.0 Cv	120VAC 24VDC	B8 Inline	**B824BB553A** **B824BB549A**

ANSI / (NFPA) T3.21.3-1990 standard for Cv measurement.

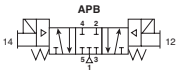
PS2982*##P – Enclosure '5'

	## Voltage	
Override *	49	53
B	S	S
C	S	S

Kit includes: Solenoid, (2) machine screws, (2) self threading screws, (1) gasket, (1) 3-cell gasket.

Double Solenoid, 4-way, 3-position, APB

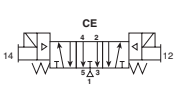
Symbol



Port Size	Cv	Voltage	Valve Type	Part Number
1/2"	5.7 Cv	120VAC 24VDC	B7 Inline	**B753BB553A B753BB549A**
3/4"	6.6 Cv	120VAC 24VDC	B8 Inline	**B854BB553A B854BB549A**

Double Solenoid, 4-way, 3-position, CE

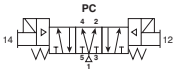
Symbol



Port Size	Cv	Voltage	Valve Type	Part Number
1/2"	5.7 Cv	120VAC 24VDC	B7 Inline	**B763BB553A B763BB549A**
3/4"	6.6 Cv	120VAC 24VDC	B8 Inline	**B864BB553A B864BB549A**

Double Solenoid, 4-way, 3-position, PC

Symbol



Port Size	Cv	Voltage	Valve Type	Part Number
1/2"	5.7 Cv	120VAC 24VDC	B7 Inline	**B773BB553A B773BB549A**
3/4"	6.6 Cv	120VAC 24VDC	B8 Inline	**B874BB553A B874BB549A**

ANSI / (NFPA) T3.21.3-1990 standard for Cv measurement.

PS2982*##P – Enclosure '5'

	## Voltage	
Override *	49	53
B	S	S
C	S	S

Kit includes: Solenoid, (2) machine screws, (2) self threading screws, (1) gasket, (1) 3-cell gasket.

B7 & B8 Series

B7	1	3	A	B	G	53	–	A

Basic Series	
B7 Series	**B7**
B8 Series	**B8**

Operator Function	
3-way	
Single Solenoid, 2-Position Nc - Air Return / Spring Assist	**V**
Single Solenoid, 2-Position No - Air Return / Spring Assist	W
Single Remote Pilot, 2-Position Nc - Air Return / Spring Assist	X
Single Remote Pilot, 2-Position No - Air Return / Spring Assist	Y
4-way	
Single Solenoid, 2-Position - Air Return	**1**
Double Solenoid, 2-Position	**2**
Single Remote Pilot, 2-Position - Air Return	3
Double Remote Pilot, 2-Position	4
Double Solenoid, 3-Position - APB	5
Double Solenoid, 3-Position - CE	6
Double Solenoid, 3-Position - PC	7
Double Remote Pilot, 3-Position - APB	8
Double Remote Pilot, 3-Position - CE	9
Double Remote Pilot, 3-Position - PC	0

Port Size / Thread Type	
B7 Series	
1/2" NPT Inline	**3***
1/2" BSPP "G" Inline	8*
B8 Series	
3/4" NPT Inline	**4***
3/4" BSPP "G" Inline	9*

* Available for use on IEM manifolds.

Pilot Source / Pilot Exhaust	
Enclosures "0, 5 & X"	
None. Remote Pilot Valve	0
Internal - Port #1 / Vented	**B†**
External - Body / Tapped M5	K†
Enclosures "A, B, E, F, G, H & N"	
Internal - Port #1 / Vented	**B†**
External - Body / Tapped 1/8"	K†

† Not available for remote pilot valves.

Overrides§	
None, Remote Pilot Valve	**0**
No Override	A†
Flush - Non-Locking	**B***
Flush - Locking	**C**
Valve Less 15mm Solenoid	X

* Only available with encl. "5".
† Only available with encl. "E".

Enclosure / Lead Length	
0	**None, Remote Pilot Valve**
5	**15mm 3-Pin DIN 43650C (male only)**
A	30mm Square 3-Pin – ISO 4400 Form A (male only)
B	22mm Rectangular 3-Pin – Type B Industrial (male only)
E*	Intrinsically Safe - 30mm 3-Pin
F**	Hazardous Duty 1/2" NPT Conduit - 18" Leads
G	Grommet - 18" Leads
H	1/2" NPT Conduit - 18" Leads
N	Valve Less "A - R" Coil
X	Valve Less 15mm Solenoid

* 24 VDC & Override "A" only.
** 24 VDC or 120 VAC.

Voltage§			
	AC		DC
	60Hz	50Hz	
49			**24**
53	**120**	**110**	

Options	
Blank	**None**

Engineering Level	
A	**Current**
AL	CSA Current

Alternative Voltages –
Contact Parker for voltages other than 24VDC and 120VAC

INLINE Valves –
Only used IF an IEM Aluminum Bar Manifold requires a common external pilot signal through the manifold for low pressure / vacuum applications.

§ Enclosure '5' – Override / Voltage Availability
S - Standard
O - Option

Voltage Code	Override Code Standard	
	B	**C**
49	**S**	**S**
53	**S**	**S**

Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

IEM Bar Manifold, Inline Valves Only

Valve Series	Valve Function	## – Stations	Manifold Only (NPT)	Manifold Only (BSPP)
B7, B8	4-way / 3-way	2	**P2M7BXN02NP**	**P2M7BXG02NP**
B7, B8	4-way / 3-way	4	**P2M7BXN04NP**	**P2M7BXG04NP**
B7, B8	4-way / 3-way	6	**P2M7BXN06NP**	**P2M7BXG06NP**
B7, B8	4-way / 3-way	8	**P2M7BXN08NP**	**P2M7BXG08NP**

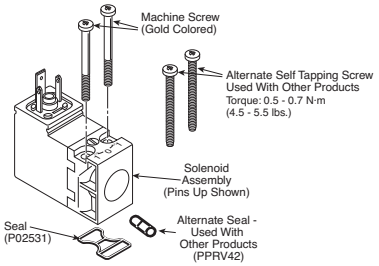
Kits include: (1) manifold, valve hold down bolts, gaskets. For external pilot valve option "X", external manifold galley must be pressurized.
4-Way or 3-Way valves can mount to same IEM Bar Manifold.

Most popular.

Inline Valve Products - B7 & B8 Series
Solenoid Kit Options

Solenoid Kits – B7 'A', B8 'A' 3-Pin, EN175301-803 (Former DIN 43650C), 15mm

Standard



PS2982*##P – Enclosure '5'

Override *	## Voltage	
	49	53
B	S	S
C	S	S

S - Standard;
Kit includes: Solenoid, (2) machine screws, (2) self threading screws, (1) gasket, (1) 3-cell gasket.

Solenoid Kits Alternate Enclosures

P2FC | A | 4 | 49

Enclosures / Lead Length	
30mm Square 3-Pin – ISO 4400 Form A (male only)	A
22mm Rectangular 3-Pin – Type B Industrial (male only)	B
Hazardous Duty, FM / CSA	F*
Grommet - 18" Leads	G
1/2" NPT Conduit - 18" Leads	H

Voltage / Frequency	
49	24VDC
53	120VAC

* Only available with voltage codes "45", "49", "53" & "57".

Option A & E
30mm Square
3-pin ISO 4400, DIN 43650A

Option B
22mm Rectangular
3-pin DIN, Type B Industrial

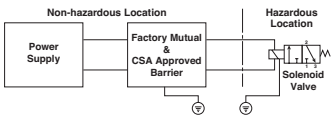
Option G
Grommet, 18"

Option F, H & R
1/2" Conduit, 18"

☐ Most popular.

Intrinsically Safe Solenoid Valves ("E" Option)

Hazardous Location Class:
Class I; Groups A, B, C & D
Class II; Groups E, F, & G
Class III; Div. I



For use in low voltage (24VDC) Intrinsically Safe applications.
NO OTHER VOLTAGE IS APPROVED. 1.6W coil.
36mm coil width.
Comes standard with non-lighted solenoid connector.
Must be connected to an FM approved Barrier.
For dimensions, reference standard solenoid models.
Maximum internally piloted valve pressure is 115 PSIG.
Pressures to 145 PSIG can be used when external pilot is utilized and pilot pressure is limited to 115 PSIG.

Intrinsically Safe Solenoid Pilot Assembly Kits

Description	Part Number
24VDC	**P2FS13N1AE49**

Kit includes: coil, armature, connector, o-ring and screws.

Hazardous Duty Solenoid Valves ("F" Option)

Hazardous Location Class:
Class I; Zone I EX, M, II & T4
Class I; Div. I. Groups A, B, C, & D
Class II & III; Div. I. Groups E, F, & G

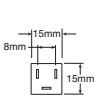
Comes standard with 1/2" conduit connection.
Voltage range = ± 10%, 4.6W
Ambient temperature range = -20°C (-4°F) to 60°C (140°F)
Duty factor = 100%
IP65 rated (with connected conduit connector)

Notes:
1. Maximum non-hazardous location voltage not to exceed 250V RMS.
2. Factory Mutual requires connections per ISA RP 12.6 instructions.
3. CSA requires "Installation to be in accordance with the Canadian Electrical Code. Part I."
4. The hazardous duty coils are wider in size than both the B5 and the B6 valve. If mounted on a manifold, the valves need to be staggered to fit.

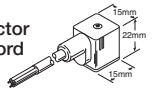
For inventory, lead times, and kit lookup, visit www.pdnplu.com

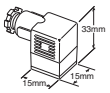
Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

15mm 3-Pin DIN 43650C, 8mm Pin Spacing



Connector with cord





Connector only

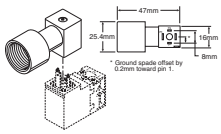
	Cord Length	Connector	Connector with Cord
Unlighted	18 Inches	**PS2932BP**	**PS2932HBP**
Unlighted	6 Feet	**PS2932BP**	**PS2932JBP**
Light – 12VAC or DC	6 Feet	**PS294675BP**	**PS2946J75BP ***
Light – 24VAC or DC	6 Feet	**PS294679BP**	**PS2946J79BP ***
Light – 110/120VAC	6 Feet	**PS294683BP**	**PS2946J83BP ***
Light – 240/230VAC		**PS294687BP**	N/A

* LED with surge suppression.

Note: Max ø6.5mm cable size required for connector w/o 6' (2m) cord. IP65 rated when properly installed.

Engineering data:
Conductors: 2 poles plus ground, polarity insensitive
Cable range (connector only): 4 to 6mm (0.16 To 0.24 Inch)
Contact spacing: 8mm

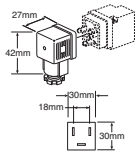
15mm 3-Pin DIN 43650C to 1/2" Conduit



Description	Connector
1/2" NPTF conduit – Unlighted with 3' (1m) leads 20 AWG wire	**PS2998P**

Note: Rated up to 250VAC or VDC; 6 amps
IP65 rated when properly installed.

30mm Square 3-Pin – ISO 4400, DIN 43650A
(Use with Enclosure "A")



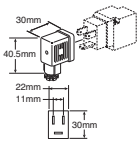
Description	Connector with 6' (2m) Cord	Connector
Unlighted	**PS2028JCP**	**PS2028BP**
Light – 6-48V. 50/60Hz. 6-48VDC	**PS2032J79CP ***	**PS203279BP**
Light – 120V/60Hz	**PS2032J83CP ***	**PS203283BP**
Light – 240V/60Hz	N/A	**PS203283BP**

* LED with surge suppression.

Note: Max ø6.5mm cable size required for connector w/o 6' (2m) cord. IP65 rated when properly installed.

Engineering data:
Conductors: 2 poles plus ground; cable range (connector only): 8 to 10mm (0.31 To 0.39 Inch); contact spacing: 18mm

22mm Rectangular 3-Pin – Type B Industrial
(Use with Enclosure "B")



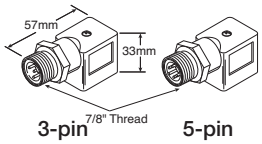
Description	Connector with 6' (2m) Cord	Connector
Unlighted	**PS2429JBP**	**PS2429BP**
Light – 24V60Hz. 24VDC	**PS2430J79BP ***	**PS243079BP**
Light – 120V/60Hz	**PS2430J83BP ***	**PS243083BP**
Light – 240V/60Hz	N/A	**PS243087BP**

* LED with surge suppression.

Note: Max ø6.5mm cable size required for connector w/o 6' (2m) cord. IP65 rated when properly installed.

Engineering Data:
Conductors: 2 Poles Plus Ground; Cable Range (Connector Only): 6 to 8mm (0.24 to 0.31 Inch); Contact Spacing: 11mm

3-Pin / 5-Pin Male Automotive Connectors
(Use on 22mm Rectangular 3-Pin Solenoid)



Description	3-pin	5-pin
Unlighted	**PS2893CP**	**PS2893DP**
Lighted - Voltage	**PS2893C##P**	**PS2893D##P**

— 79 = 6 to 48VAC/VDC
83 = 100 to 240VAC/48 to 120 VDC

Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Solenoid Information (Solenoids are rated for continuous duty.)

Voltage				Enclosure "5"		Voltage				B7, B8 Enclosure "A"		B7, B8 Enclosure "B" to "H"	
	AC			Power	Holding		AC			Power	Holding	Power	Holding
Code	60Hz	50Hz	DC	Consumption	(Amps)	Code	60Hz	50Hz	DC	Consumption	(Amps)	Consumption	(Amps)
49			24	1.2W	.049	49			24	2.7W	.112	4.8W	.200
53	120	110		1.6W	.013	53	120	110		4.1VA	.033	6.3VA	.047

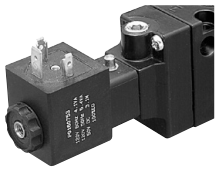
Response Time (Sec)

Valve Size	Port Size	Enclosure "5" 0 Cu. In. Test Chamber Fill	Enclosure "5" 0 Cu. In. Test Chamber Exhaust	Enclosure "5" 25 * Cu. In. Test Chamber Fill	Enclosure "5" 25 * Cu. In. Test Chamber Exhaust	Enclosure "A, B, C, D, G, H" 0 Cu. In. Test Chamber Fill	Enclosure "A, B, C, D, G, H" 0 Cu. In. Test Chamber Exhaust	Enclosure "A, B, C, D, G, H" 25 * Cu. In. Test Chamber Fill	Enclosure "A, B, C, D, G, H" 25 * Cu. In. Test Chamber Exhaust
2-Position Single Solenoid / Internal Air Return									
B7	1/2"	.073	.075	.195	.275	.049	.051	.167	.249
B8	3/4"	.072	.074	.166	.226	.049	.051	.142	.206
2-Position Single Solenoid Spring / Air Return									
B7	1/2"	.071	.074	.194	.275	.049	.051	.167	.249
B8	3/4"	.072	.074	.176	.239	.046	.048	.142	.204
2-Position Double Solenoid									
B7	1/2"	.026	.028	.145	.228	.022	.024	.138	.225
B8	3/4"	.026	.028	.123	.185	.022	.024	.115	.178
3-Position Double Solenoid									
B7	1/2"	.049	.051	.167	.257	.028	.030	.148	.238
B8	3/4"	.035	.037	.136	.206	.028	.030	.130	.195

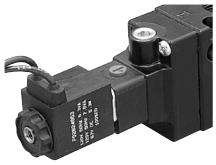
Average Fill Time (Seconds): With 100 PSIG supply, time required to fill from 0-90 PSIG and exhaust from 100 PSIG to 10 PSIG is measured from instant of energizing, or de-energizing 120V/60Hz solenoid. Times shown are average.

Alternate Solenoid Enclosures

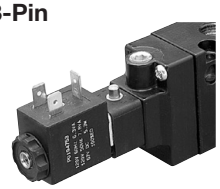
- Enclosure “A”: 2.6W - 4.1VA (Coil rotates in 45° increments)
- Enclosure “B” - “H”: 4.6W - 7.3VA (Coil rotates in 90° increments)



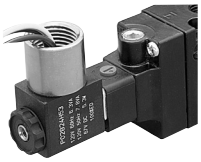
“A” 30mm 3-Pin



“G” Grommet



“B” 22mm 3-Pin



“F”. “H”. 1/2" Conduit

B7A / B8A Series

Spool / Body Service Kits

		Kit Includes:
PS2501P	4-Way, 2-Pos	Item 2, 6 (2), 9 (2), 11, grease packet
PS2502P	4-Way, 3-Pos APB	Item 3, 6 (2), 9 (2), 13 (2), grease packet
PS2503P	4-Way, 3-Pos CE	Item 3, 6 (2), 9 (2), 13 (2), grease packet
PS2504P	4-Way, 3-Pos PC	Item 3, 6 (2), 9 (2), 13 (2), grease packet
PS257101P	3-Way, 2-Pos. NC	Item 2, 6, 9, grease packet
PS257102P	3-Way, 2-Pos. NO	Item 2, 6, 9, grease packet

Valve to Manifold Kits

PS2584P	O-ring (10) - Inline Valve to IEM Manifold
PS2587P	Mounting Bolts (10) - Inline Valve

Pilot Replacement Kit – Alternate Enclosure

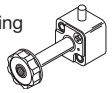
Kit Includes: Item 6, 8, 9, 10, 16 (4), 18, 20, 22, 23, 24 (2), 57, 58 Assembled

PS2597GBP	Non-Locking, BSPP
PS2597GCP	Locking, BSPP
PS2597NBP	Non-Locking, NPT
PS2597NCP	Locking, NPT

Armature / Override Kit –

Kit Includes: Item 22, 23, 24 (2), 57, 58 Assembled

P2FP13N4D* Non-Locking

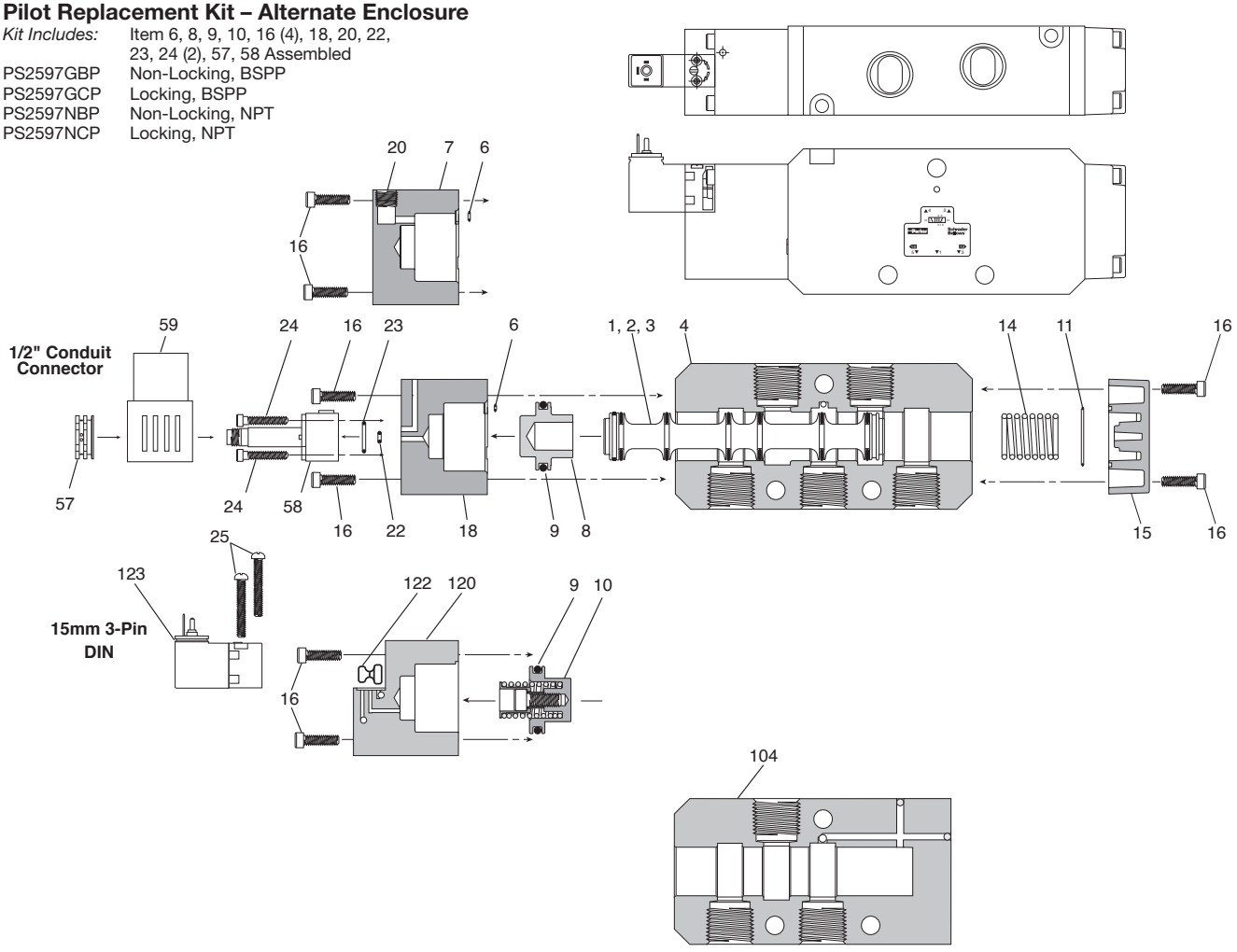


P2FP13N4C* Locking

* Comes with a Thru Nut and A Diffuser Nut.

Solenoid Kit *Kit Includes: 25, 122, 123*

PS2982*##P	3-Pin, EN175301-803, 15mm
PS3541*##P	3-Pin, EN175301-803, 15mm Option 2



Item List – Parts not sold separately.

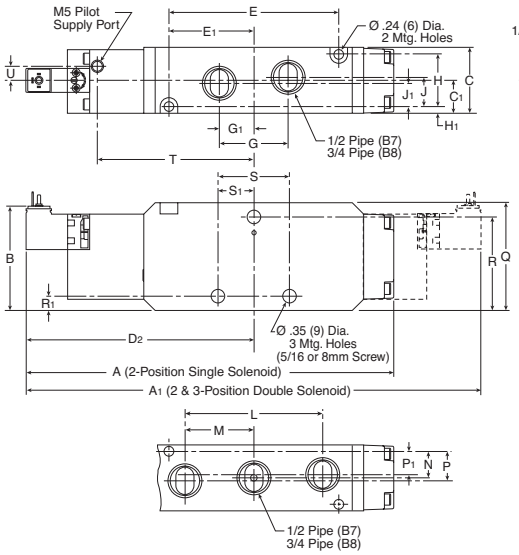
Item	Description	Item	Description	Item	Description
1*	Spool Seal	15a	Return Operator	58b*	Solenoid Base Assembly - Non Locking
2*	Spool - 2-Position (Seals Assembled)	16*	Screws - Operator Adapter	59*	Coil - Alternate Enclosure (see Page C51)
3*	Spool - 3-Position (Seals Assembled)	8*	Operator Adapter - Alt Enclosure	104	Inline Body - 3-Way
4	Inline Body - 4-Way	20*	1/8" NPT Pipe Plug	120a	Solenoid Adapter - Vent Exhaust
6*	Gasket - Body to Operator	22*	O-ring - Small - Solenoid Base	120b	Solenoid Adapter - Tapped Exhaust
7	Remote Pilot Operator	23*	O-ring - Large - Solenoid Base	120c	Solenoid Adapter - Ext Pilot. Vent Exhaust
8	Operator Piston - 2-Position	24*	Bolts - Solenoid Base	120d	Solenoid Adapter - Ext Pilot. Tapped Exhaust
9*	Lip Seal - Operator Piston	25*	Self Tapping Screw - Solenoid (Effective Jan 00)	122*	Gasket - Solenoid to Adapter
10	Operator Piston Mechanism - 3-Position	57*	Solenoid Nut	123*	15mm Solenoid
11*	Gasket - Body to Return Cap	58a*	Solenoid Base Assembly - Locking		
14*	Spring, Return Assist				

Note: * Parts are available in kits shown. For kit components, order VALVE LESS SOLENOID for assembled and tested repair valve.

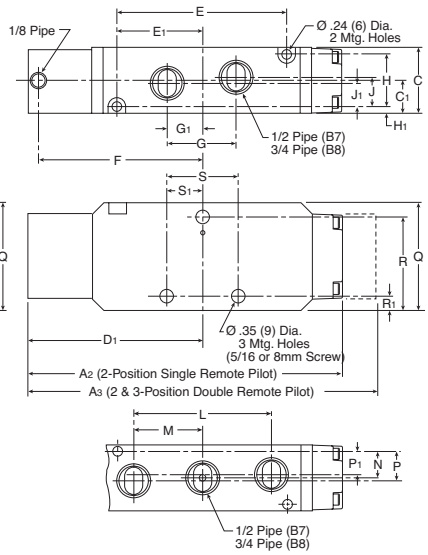
Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

B7& B8 Single & Double Operators – 4-way Inline

Solenoid



Remote pilot

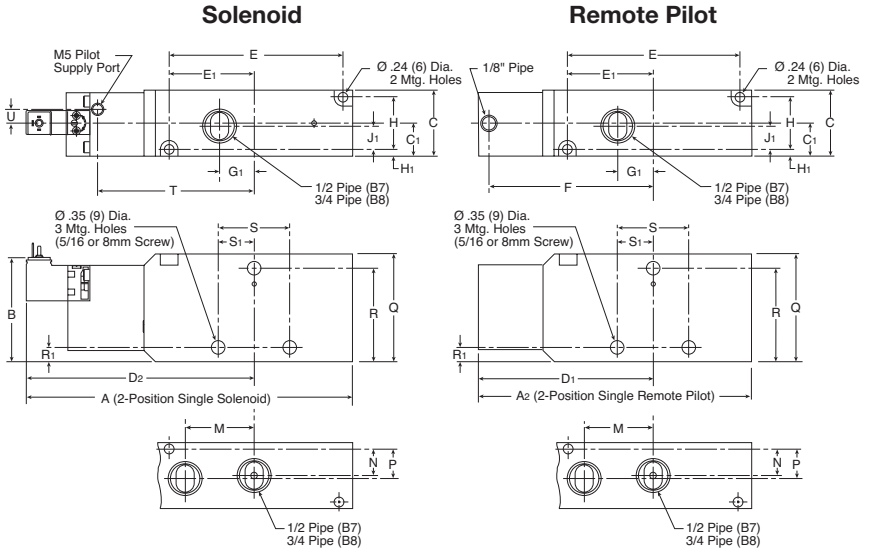


B7 & B8 4-Way Inline

A	A1	A2	A3	B
9.13 (232)	11.29 (287)	7.79 (198)	8.62 (219)	2.59 (66)
C	**C1**	**D1**	**D2**	**E**
1.65 (42)	.83 (21)	4.29 (109)	5.63 (143)	4.21 (107)
E1	**F**	**G**	**G1**	**H**
2.13 (54)	4.06 (103)	1.73 (44)	.87 (22)	1.29 (33)
H1	**J**	**J1**	**L**	**M**
.16 (4)	.75 (19)	.59 (15)	3.39 (86)	1.69 (43)
N	**P**	**P1**	**Q**	**R**
.67 (17)	.75 (19)	.59 (15)	2.68 (68)	2.32 (59)
R1	**S**	**S1**	**T**	**U**
.35 (9)	1.81 (46)	.90 (23)	3.94 (100)	.35 (9)

Inches (mm)

B7 & B8 Single Operators – 3-way Inline

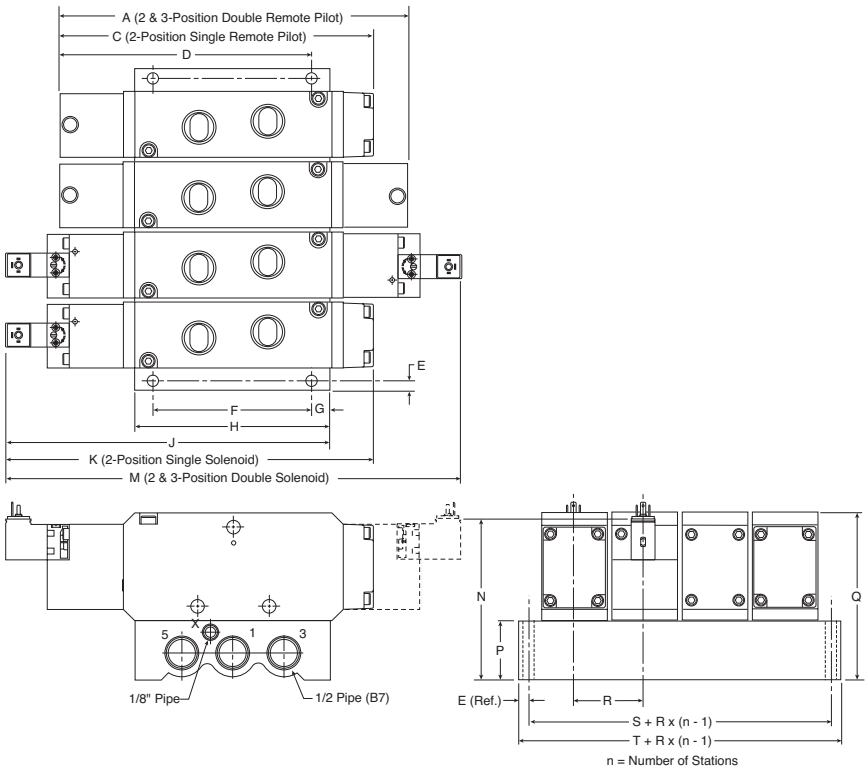


B7 & B8 3-Way Inline

A	A2	B	C	C1
7.99 (203)	6.65 (169)	2.59 (66	1.65 (42)	.83 (21)
D1	**D2**	**E**	**E1**	**F**
4.29 (109)	5.63 (143)	4.21 (107)	2.13 (54)	4.06 (103)
G1	**H**	**H1**	**J1**	**M**
.86 (22)	1.29 (33)	.16 (4)	.59 (15)	1.69 (43)
N	**P**	**Q**	**R**	**R1**
.67 (17)	.75 (19)	2.68 (68)	2.32 (59)	.35 (9)
S	**S1**	**T**	**U**	
1.81 (46)	.90 (23)	3.94 (100)	.35 (9)	

Inches (mm)

B7 & B8 Single & Double Operators – 4-way IEM Aluminum Bar



B7 & B8 4-Way IEM Aluminum Bar Manifold

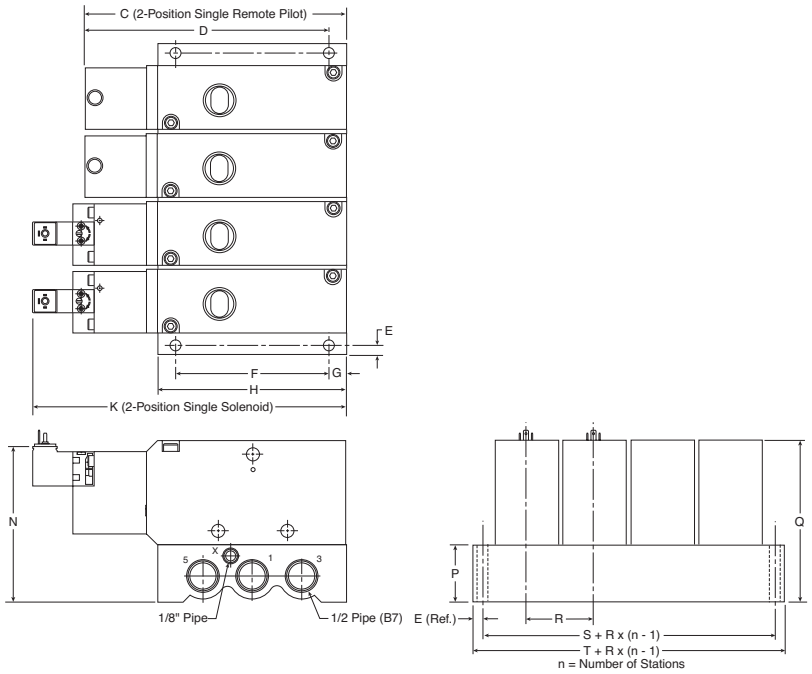
A	C	D	E	F
7.79 (198)	8.62 (219)	6.26 (159)	.24 (6)	3.94 (100)
G	**H**	**J**	**K**	**M**
.45 (11.5)	4.84 (123)	8.07 (205)	9.13 (232)	11.29 (287)
N	**P**	**Q**	**R**	**S**
4.00 (101.5)	1.48 (37.5)	4.15 (105.5)	1.77 (45)	2.24 (57)
T				
2.72 (69)				

Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

B7 & B8 Single Operators – 3-way IEM Aluminum Bar

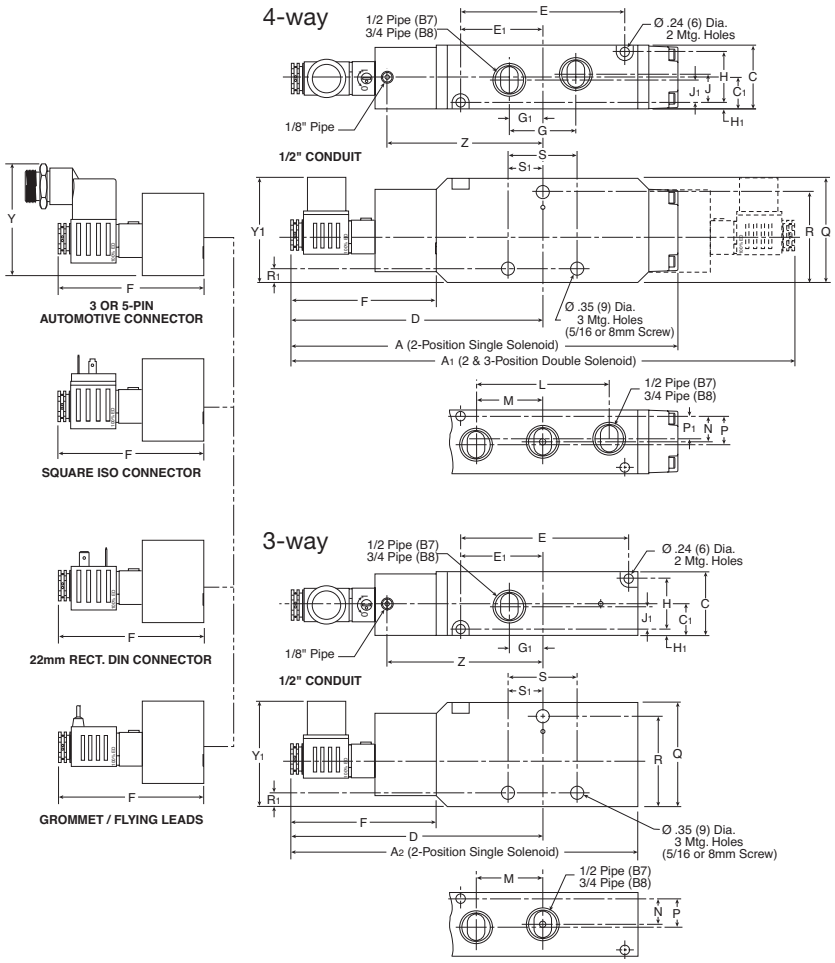


B7 & B8 3-Way IEM Aluminum Bar Manifold

C	D	E	F	G
6.65 (169)	4.92 (124.9)	.24 (6)	3.94 (100)	.45 (11.5)
H	**K**	**N**	**P**	**Q**
4.84 (123)	7.99 (203)	4.00 (101.5)	1.48 (37.5)	4.15 (105.5)
R	**S**	**T**		
1.77 (45)	2.24 (57)	2.72 (69)		

Inches (mm)

B7 & B8 3 & 4-way Alternative Electrical Enclosures



B7 & B8 3 & 4-Way Alternative Electrical Enclosures

A	A1	A2	C	C1
9.92 (252)	12.91 (328)	8.78 (223)	1.65 (42)	.83 (21)
D	**E**	**E1**	**F**	**G**
6.46 (164)	4.21 (107)	2.13 (54)	3.74 (95)	1.73 (44)
G1	**H**	**H1**	**J**	**J1**
.86 (22)	1.29 (33)	.16 (4)	.75 (19)	.59 (15)
L	**M**	**N**	**P**	**P1**
3.39 (86)	1.69 (43)	.67 (17)	.75 (19)	.59 (15)
Q	**R**	**R1**	**S**	**S1**
2.68 (68)	2.32 (59)	.35 (9)	1.81 (46)	.90 (23)
Y	**Y1**	**Z**		
2.87 (73)	2.71 (69)	3.98 (101)		

Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

An easy solution to your environmental protection efforts!
The Air Saver Unit contributes to power savings and CO^2 reduction.

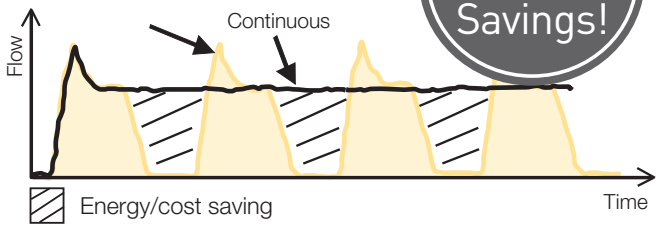
Parker Air Saver Unit

Pulsing air technology reduces consumption.

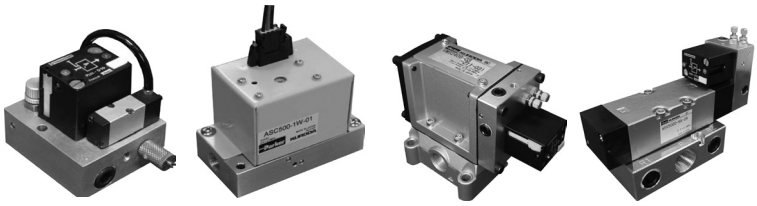
The Air Saver Unit is a valve that converts a continuous air blow to a pulsed air blow without the need for any other external control. Air is blown with a series of ON and OFF pulses. When the blow is OFF, there is no air consumption.

When using an Air Saver Unit several significant benefits can be achieved. Air blowing accounts for almost 50% of all compressed air used in plants. By using switching valve technology the Air Saver Unit can reduce air consumption by up to 50%!

- Large reductions in air consumption.
- Savings in compressor power consumption.
- Reduction in plant CO^2 emissions.
- Big contribution to energy-saving activities.
- Improved efficiency.



✶ To achieve the benefits of pulsed air, the Air Saver Unit should be installed no more than 3 meters away from the air blow orifice. For optimal results install within 1 meter.



ASV200 Series | ASC/ASO500 Series | ASV2000 Series | ASV5000 Series

Try our fast and easy online savings calculator! www.linktovms.com/airsaver

Sample Application → 4 nozzles 6mm dia. + $0.10 / kWh + 1 min blow per 4 min cycle + 3 shifts 5 days / week =

Parker

ENGINEERING YOUR SUCCESS.

Prepared for Prepared by

Air Saver Unit Valve Calculator
Summary Sheet

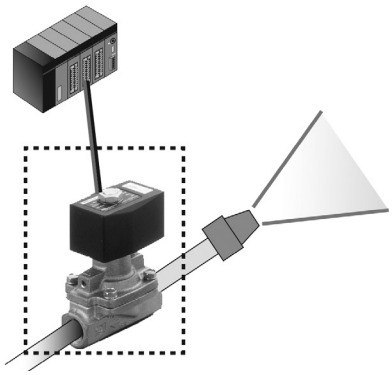
VALUE IMPACT SUMMARY

Reduced Total Annual Air Discharge Per Blowing Nozzle (cfm) by:	3,232,005
Reduced Annual CO^2 Emissions Generated (Per Blowing Nozzle - in Tons) by:	5.77 tons
Reduced Annual Air Generating Costs Per Blowing Nozzle by:	$ 892.03
Quantity of Air Blowing Nozzles With Same Application Specifications	4
Reduced Annual Air Generating Costs For All Nozzles by:	$ 3,568.13
Reduced Annual CO^2 Emissions Generated (For All Blowing Nozzles) by:	23.07

Installation is simple and reduction in air consumption can be realized immediately.

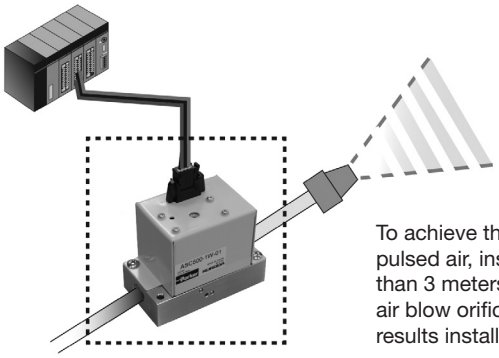
- When using an electrically operated solenoid valve to control the air blow, an Air Saver Unit can quickly and easily be retrofitted providing an immediate reduction in air consumption with no changes to the PLC program.

Before introduction of the unit



After introduction of the unit

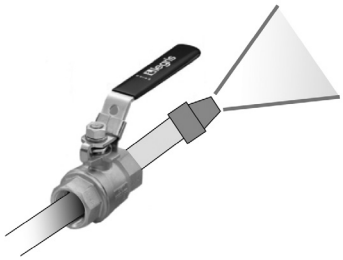
- Easy to install. Change the current solenoid valve to Air Saver Unit. (ASC500 or ASO500)
- Program change of controller is not necessary.



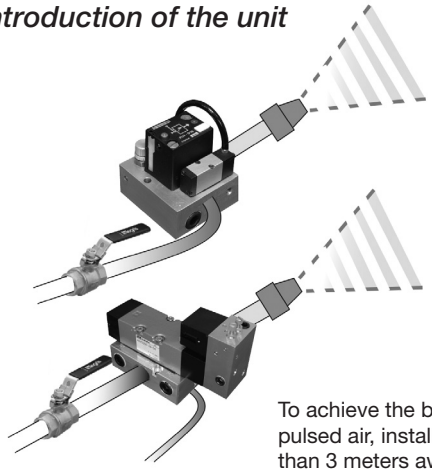
To achieve the benefits of pulsed air, install no more than 3 meters away from the air blow orifice. For optimal results install within 1 meter.

- When using manual valves such as ball valves, simply install either ASV200, ASV500 or ASV2000 units which do not need electrical power. Installing the unit brings immediate reduction in air consumption and improved compressor efficiency.

Before introduction of the unit



After introduction of the unit



To achieve the benefits of pulsed air, install no more than 3 meters away from the air blow orifice. For optimal results install within 1 meter.

[Company A] Food & Beverage manufacturer
"When we tested ASV5000, we achieved about 55% reduction of our air consumption. Because air blow efficiency was improved, we plan to use more Air Saver Units in other areas in the plant".

[Company B] Manufacturer of office document machines
"We are working on energy-saving activities. In those activities, we decided to use an Air Saver Unit. We have more than 100 points of air blow and we reduced our air consumption by 42% using this unit".

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Specifications

	ASV200	**ASV2000**	**ASV5000**	**ASV13000**	**ASV15000**	**ASC500**	**ASO500**	**Unit**
Function	Normally closed						Normally open	— —
Fluid	Non lubricated air							— —
Flow (at 72.5 psi)	5.3	70.6	176.6	459.1	529.7	15.9	15.9	scfm
Adjustable Pulse Frequency	Up to 5	Up to 5	Up to 5	Up to 1	Up to 1	2-22	2-22	Hz
Port Size	M5	3/8"	1/2"	1"	1-1/4"	1/8"	1/8"	NPT (BSPP)
Operating Temperature	23 to 122							° F
Pressure Range	43.5 - 116	0 - 116				29 - 101.5	29 - 72.5	PSI
Pilot Air Supply	Internal pilot	43.5 - 116 *				Internal pilot		PSI
Blow	Pulse blow					Pulse/Continuous blow		— —
Rated Voltage	Electrical power is not necessary					DC 24 V		V
Power Consumption	–					1.2 W		W
Grade Of Insulation	–					NEMA 1		— —
Permissible Voltage Fluctuation	–					+ or - 10		%
Wiring	–					e-CON standard 4 pole sockets		— —
Filtration	Dry w/ 40 µm filtration †							— —

Notes:

* External pilot of 43.5 - 116 is required, to ensure proper operation.

† For maximum life of the unit we recommend 5 micron, but 40 micron filtration is acceptable and will not void warranty.

To achieve the benefits of pulsed air, the Air Saver Unit should be installed no more than 3 meters away from the air blow orifice. For optimal results install within 1 meter.

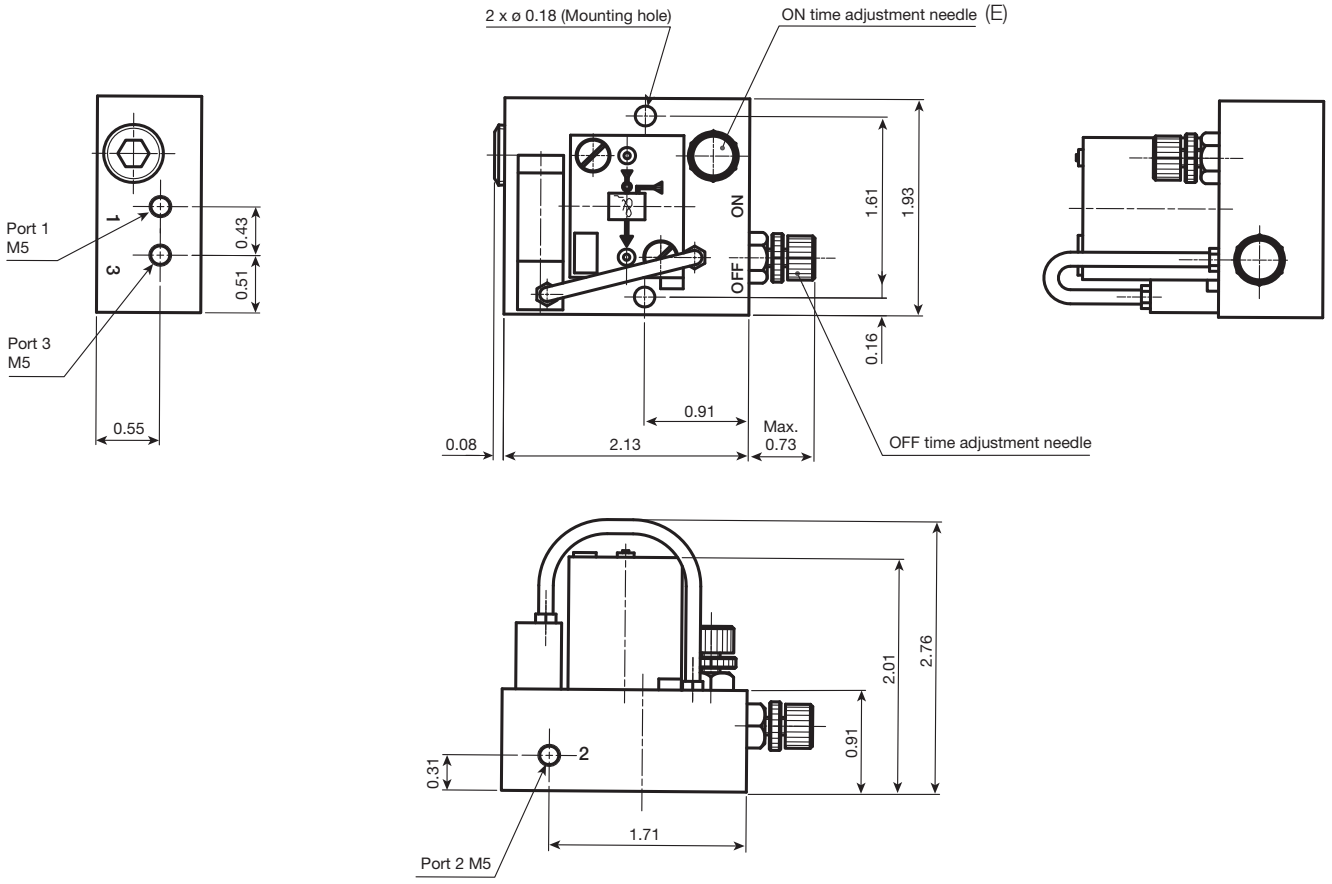
For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Ordering Information ASV200-AA-M5

Function	Fluid	Flow @ 72.5 psi	Port Size	Operating Temperature	Pressure Range, psi	Pilot air Supply, psi	Blow Type	Grease	Part Number
Normally closed	Dry air	5.3 scfm	M5	23-122°F (A)	43.5-116	Internal pilot	Pulse	Food grade	**ASV200-AA-M5**
								Petrolatum (for painting applications) (B), (C), (D)	**WPASV200-AA-M5**

Dimensions: ASV200-AA-M5



Piping

Port 1: Supply port (Compressor side)
Port 2: Output port (Blow nozzle side)
Port 3: Exhaust port*

* In order to keep out dust, the air muffler is recommended for exhaust port.

Notes:

A. When temperature of valve goes below 5°C (41°F), complete dry air shall be supplied to prevent from freezing.

B. Air Saver Units with WP prefix are suitable for most painting applications. Test before use if in direct contact with painted surface.

C. If test in painting application fails, try cycling Air Saver Unit for 48 hours and repeat test.

D. DO NOT use "WP" Air Saver Unit in 'clear coat' applications.

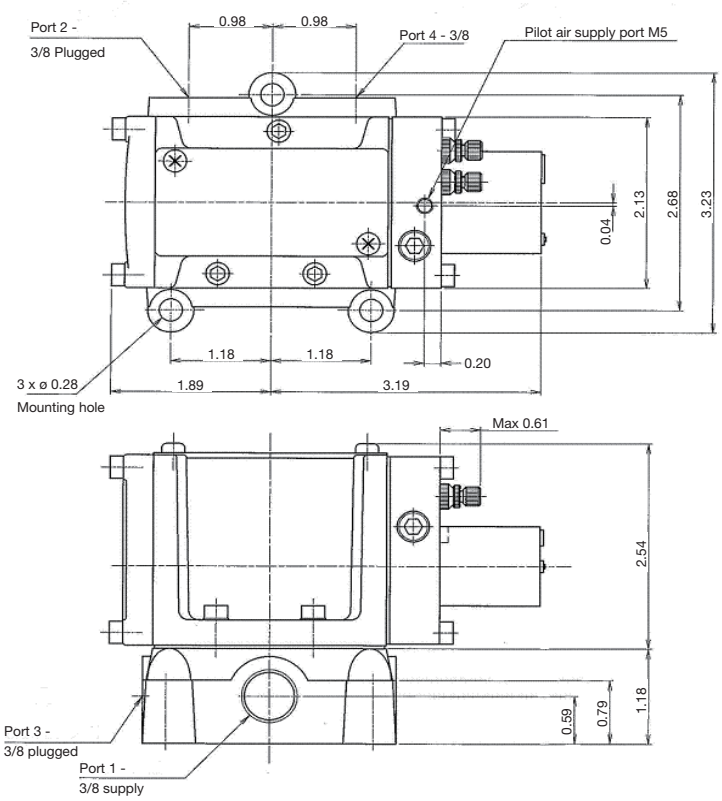
E. Adjustable to maximum frequency of 5Hz.

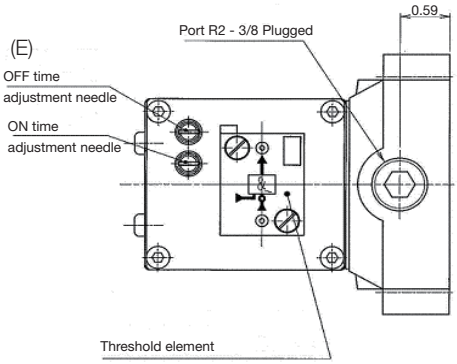
Most popular.

Ordering Information ASV2000-AA-xx

Function	Fluid	Flow @ 72.5 psi	Port Size	Operating Temperature	Pressure Range, psi	Pilot air Supply, psi	Blow Type	Grease	Port Type	Part Number
Normally closed	Dry air	70.6 scfm	3/8"	23-122°F (A)	0-116	43.5-116	Pulse	Standard	NPT	**ASV2000-AA-97**
									BSPP	**ASV2000-AA-17**
								Petrolatum (B), (for painting (C), applications) (D)	NPT	**WPASV2000-AA-97**
									BSPP	**WPASV2000-AA-17**

Dimensions: ASV2000-AA-97 (NPT model)





Piping

Port 1: Supply port (Compressor side)
Port 2: Plugged
Port 3: Plugged
Port 4: Output port (Blow nozzle side)
Port R2: Plugged
Port X: M5 pilot air supply
>43.5 psi is required

Notes:

A. When temperature of valve goes below 5°C (41°F), complete dry air shall be supplied to prevent from freezing.

B. Air Saver Units with WP prefix are suitable for most painting applications. Test before use if in direct contact with painted surface.

C. If test in painting application fails, try cycling Air Saver Unit for 48 hours and repeat test.

D. DO NOT use "WP" Air Saver Unit in 'clear coat' applications.

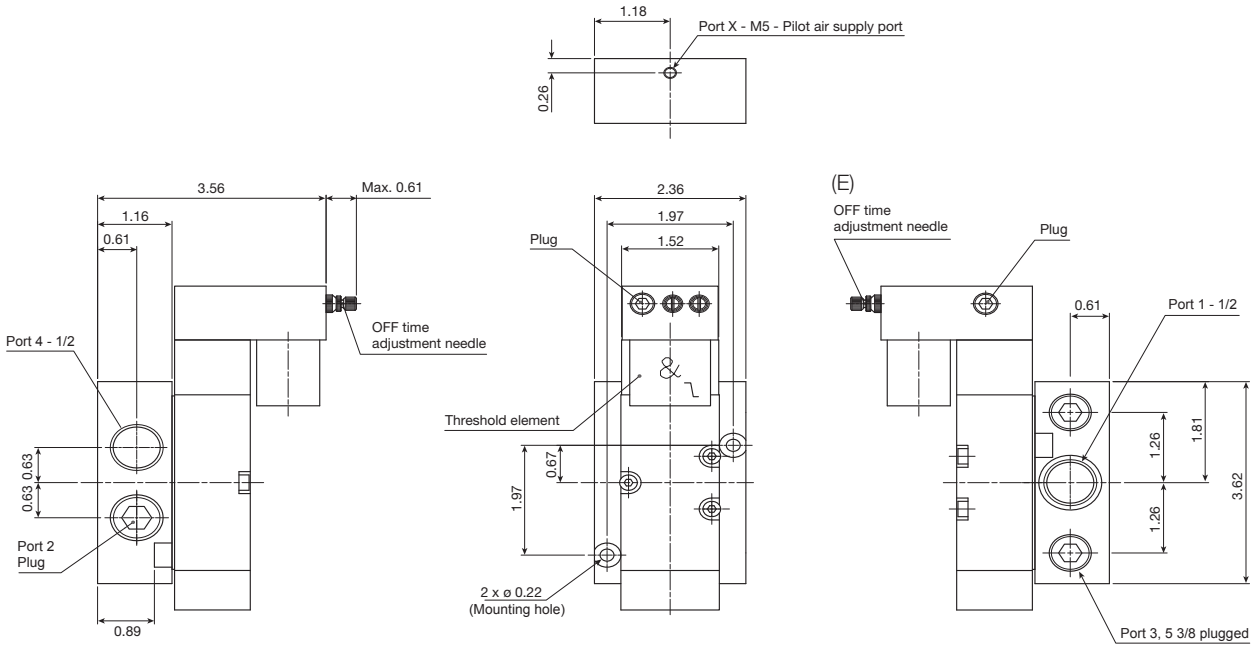
E. Adjustable to maximum frequency of 5Hz.

☐ Most popular.

Ordering Information ASV5000-AA-xx

Function	Fluid	Flow @ 72.5 psi	Port Size	Operating Temperature	Pressure Range, psi	Pilot air Supply, psi	Blow Type	Grease	Port Type	Part Number
Normally closed	Dry air	176.6 scfm	1/2"	23-122°F (A)	0-116	43.5-116	Pulse	Food grade	NPT	**ASV5000-AA-91**
									BSPP	**ASV5000-AA-21**
								Petrolatum (for painting applications) (B), (C), (D)	NPT	**WPASV5000-AA-91**
									BSPP	**WPASV5000-AA-21**

Dimensions: ASV5000-AA-91 (NPT model)



Piping

Port 1: Supply port (Compressor side)
Port 2: Plugged
Port 3: Plugged
Port 4: Output port (Blow nozzle side)
Port 5: Plugged
Port X: M5 pilot air supply >43.5 psi is required

Notes:

A. When temperature of valve goes below 5°C (41°F), complete dry air shall be supplied to prevent from freezing.

B. Air Saver Units with WP prefix are suitable for most painting applications. Test before use if in direct contact with painted surface.

C. If test in painting application fails, try cycling Air Saver Unit for 48 hours and repeat test.

D. DO NOT use “WP” Air Saver Unit in ‘clear coat’ applications.

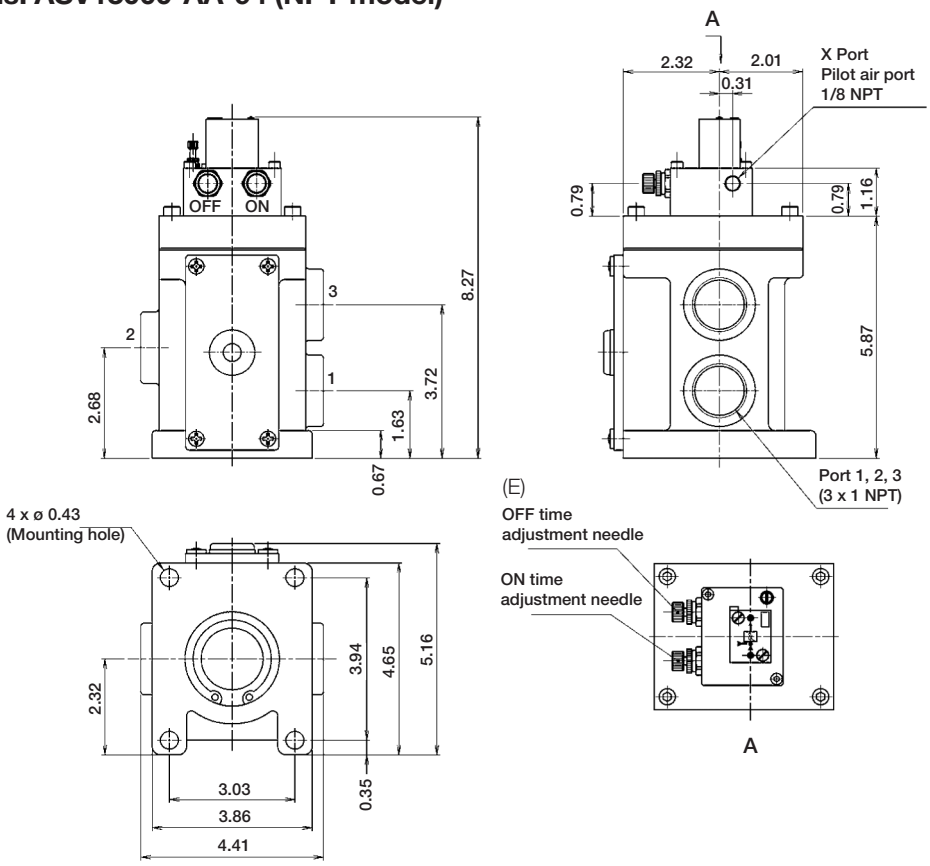
E. Adjustable to maximum frequency of 5Hz.

Most popular.

Ordering Information ASV13000-AA-xx

Function	Fluid	Flow @ 72.5 psi	Port Size	Operating Temperature	Pressure Range, psi	Pilot air Supply, psi	Blow Type	Grease		Port Type	Part Number
Normally closed	Dry air	459.1 scfm	1"	23-122°F (A)	0-116	43.5-116	Pulse	Petrolatum (for painting applications)	(B), (C), (D)	NPT	**WPASV13000-AA-94**
										BSPP	**WPASV13000-AA-34**

Dimensions: ASV13000-AA-94 (NPT model)



Piping

Port 1: Supply port (Compressor side)
Port 2: Output port (Blow nozzle side)
Port 3: Plugged

Port X: 1/8 NPT pilot air supply
>43.5 psi is required

Notes:

A. When temperature of valve goes below 5°C (41°F), complete dry air shall be supplied to prevent from freezing.

B. Air Saver Units with WP prefix are suitable for most painting applications. Test before use if in direct contact with painted surface.

C. If test in painting application fails, try cycling Air Saver Unit for 48 hours and repeat test.

D. DO NOT use "WP" Air Saver Unit in 'clear coat' applications

E. Adjustable to maximum frequency of 1Hz.

Most popular.

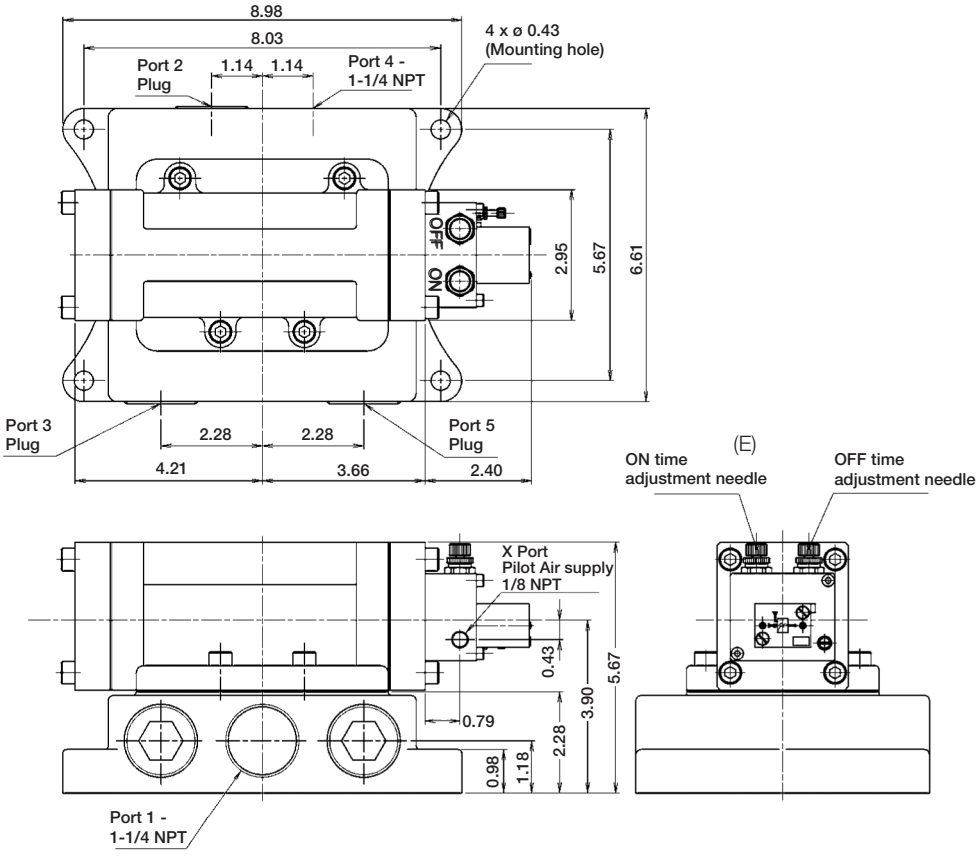
For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Ordering Information ASV15000-AA-xx

Function	Fluid	Flow @ 72.5 psi	Port Size	Operating Temperature	Pressure Range, psi	Pilot air Supply, psi	Blow Type	Grease	Port Type	Part Number
Normally closed	Dry air	529.7 scfm	1-1/4"	23-122°F (A)	0-116	43.5-116	Pulse	Petrolatum (B), (for painting (C), applications) (D)	NPT	**WPASV15000-AA-92**
									BSPP	**WPASV15000-AA-42**

Dimensions: ASV15000-AA-92 (NPT model)



Piping

Port 1: Supply port (Compressor side)
Port 2: Plug (1-1/4)
Port 3: Plug (1-1/4)
Port 4: Output port (Blow nozzle side)
Port 5: Plug (1-1/4)
Port X: 1/8 NPT pilot air supply
>43.5 psi is required

Notes:

A. When temperature of valve goes below 5°C (41°F), complete dry air shall be supplied to prevent from freezing.

B. Air Saver Units with WP prefix are suitable for most painting applications. Test before use if in direct contact with painted surface.

C. If test in painting application fails, try cycling Air Saver Unit for 48 hours and repeat test.

D. DO NOT use “WP” Air Saver Unit in ‘clear coat’ applications.

E. Adjustable to maximum frequency of 1Hz.

Most popular.

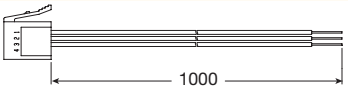
For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

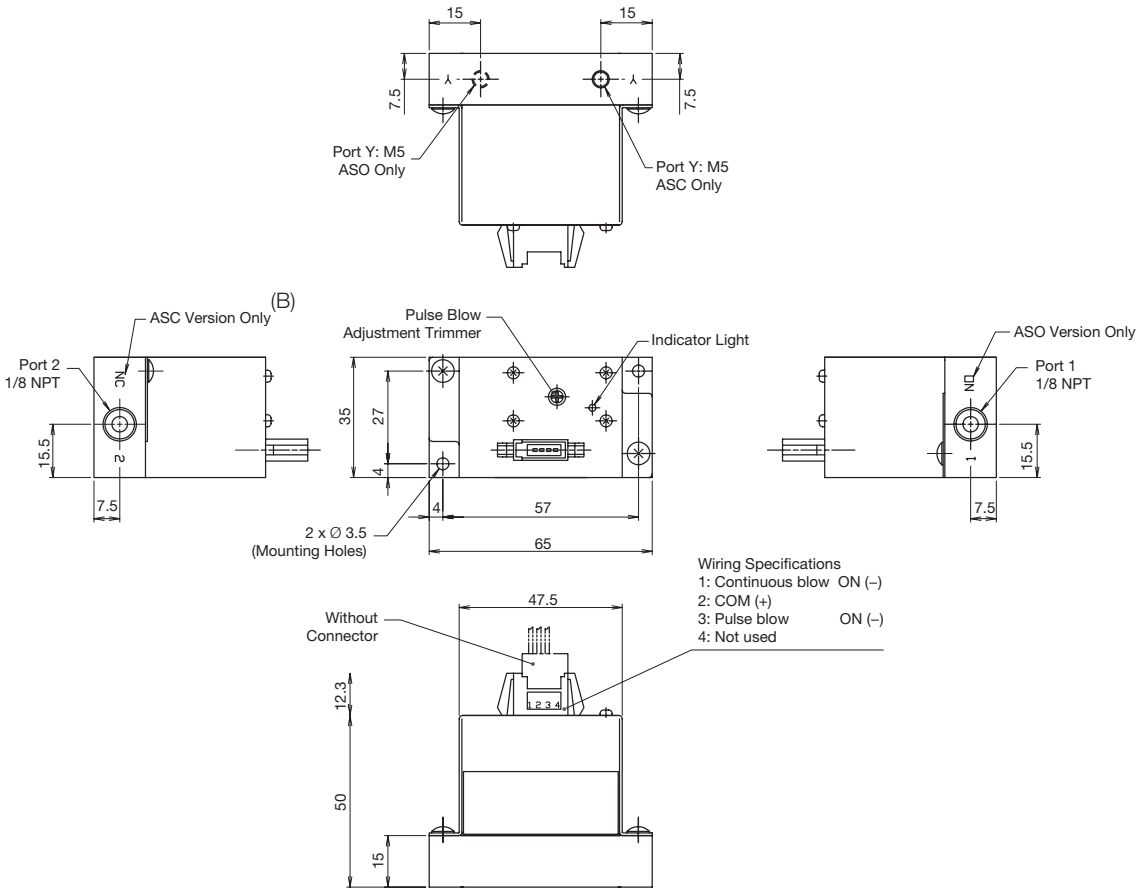
Ordering Information ASC500-1W / ASO500-1W

Function	Fluid	Flow @ 72.5 psi	Port Size	Operating Temperature	Pressure Range, psi	Pilot air Supply, psi	Blow Type	Port Type	Part Number
Normally closed	Dry air	15.9 scfm	1/8"	23-122°F	29-72.5	Internal pilot	Pulse/ continuous	NPT	**ASC500-1W-90**
								BSPP	**ASC500-1W-10**
Normally open	Dry air	15.9 scfm	1/8"	23-122°F (A)	29-72.5	Internal pilot	Pulse/ continuous	NPT	**ASO500-1W-90**
								BSPP	**ASO500-1W-10**

Cable

Cable with specific connector (AWG26 ASC/ASO in common)		**ASC-D24-CL10**

Dimensions: ASC500-1W-90 / ASO500-1W-90 (NPT model)



Piping

Port 1: Supply port (Compressor side)
Port 2: Output port (Blow nozzle side)
Y port: Pilot exhaust port*
* In order to avoid dust, it is recommended to attach an air muffler.

Notes:

A. When temperature of valve goes below 5°C (41°F), complete dry air shall be supplied to prevent from freezing.

B. Adjustable to maximum frequency of 22Hz.

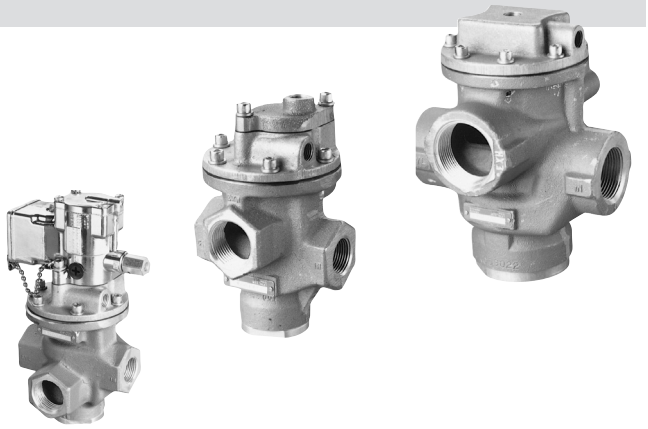
Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

N Series

For decades Parker Pneumatics and Heavy Industrial have been synonymous with durability and long life. High flow-speed N Series poppet valves have been operating in foundries, steel mills, and automotive casting & stamping plants without fail.



Features
- Continuous duty rated option
- Non-lube service
- Hi-flow, short stroke poppet
- Indicator lights available

Specifications
- 2-way NC
- 3-way NO & NC
- Selector function

Ports
- 3/8" Body – 3/8", 1/2" NPT; 3.0 to 4.4 Cv
- 3/4" Body – 3/4", 1" NPT; 9.0 to 11.0 Cv
- 1-1/4" Body – 1", 1-1/2" NPT; 20.0 to 30.0 Cv
- BSPP "G" threads available

Certification / approval
- Approved to be CE marked (Standard L-Pilot & P-Pilot)
- NEMA 4 Option
- Hazardous Duty Option IP65 Rating / NEMA 4

Material specifications

Valve body	Cast aluminum
Poppet assembly	Aluminum and stainless steel
Pilot Valve	Zinc, stainless steel, brass, copper, zinc plated steel
Seals	Nitrile

Lubrication

The high speed poppet valves are pre-lubricated to permit use with non-lubricated air. However, air should be lubricated to assure maximum seal life.

F442 lubricating oil is recommended. This oil is specially formulated to provide peak performance and maximum service life from air-operated equipment.

Installation

CAUTION: **DO NOT RESTRICT THE INLET TO POPPET VALVES**

Restriction of the inlet can starve the air supply to the pilot section of internally piloted poppet valves and result in slow shifting or failure of the valve to shift properly. Always connect the supply line directly to the inlet of the valve using the full pipe size of the valve inlet. Never use a quick coupling to connect a poppet valve to the air supply. On valves with a small inlet port, use of an upstream surge tank may be required at lower operating pressures to insure an adequate air supply and proper operation.

Operating information

Operating pressure:

Solenoid valves - internal pilot supply

3/8" Basic	3/4" Basic	1-1/4" Basic
20 to 140 PSIG (standard)	25 to 140 PSIG (200 PSIG option available)	25 to 140 PSIG (200 PSIG option available)

Solenoid valves - external pilot supply

Air pressure thru valve (PSI)	External pilot pressure required (PSI) *	
	3/8" Basic	3/4" Basic
25 PSI	35-200	35-200
50 PSI	45-200	40-200
75 PSI	55-200	50-200
100 PSI	65-200	65-200

Vacuum up to 1" HG, less than a perfect vacuum.
* With 200 PSI option. Do not exceed 140 PSI with standard pilots.

Internal pilot - remote pilot valve

Air pressure thru valve (PSI)	Remote pilot pressure (PSI)		
	3/8" Basic	3/4" Basic	1-1/4" Basic
25 PSI	30-250	30-250	30-250
50 PSI	50-250	50-250	50-250
75 PSI	70-250	75-250	70-250
100 PSI	95-250	95-250	90-250
150 PSI	140-250	145-250	130-250
200 PSI	175-250	185-250	175-250
250 PSI	215-250	230-250	205-250

Operating temperature:

Operator type	Duty cycle *	Minimum ambient temperature	Maximum ambient temperature
Standard service	Intermittent	0°F (-18°C)	125°F (52°C)
Solenoid	Continuous	0°F (-18°C)	100°F (38°C)
Special service	Intermittent	0°F (-18°C)	125°F (52°C)
Solenoid	Continuous	0°F (-18°C)	125°F (52°C)
Remote pilot	Not applicable	0°F (-18°C)	200°F (93°C)

* Applications with pilot valves energized for ten (10) minutes or longer with a duty cycle greater than 70% are considered to be continuously energized.

$$\text{Duty cycle} = \frac{\text{Time energized}}{\text{Time energized + time off}} \times 100\% = \%\ \text{Duty Cycle}$$

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Single Solenoid, Non-locking manual override, internal "L" pilot 140 PSI, standard service, junction box w/ light.

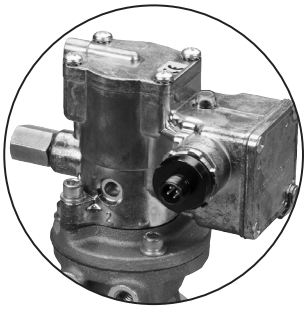
Normally Closed Normally Open

Body Size	Cv	In / cyl Ports	Exhaust Port	Voltage	2-way, 2-position normally closed	3-way, 2-position normally closed	3-way, 2-position normally open
3/8"	3.6 to 3.9	3/8"	1/2"	120VAC	**N3153904553**	**N3553904553**	**N3753904553**
				24VDC	**N3153904549**	**N3553904549**	**N3753904549**
		1/2"	1/2"	120VAC	**N3154904553**	**N3554904553**	**N3754904553**
				24VDC	**N3154904549**	**N3554904549**	**N3754904549**
3/4"	7.7 to 9.6	3/4"	1"	120VAC	**N3156904553**	**N3556904553**	**N3756904553**
				24VDC	**N3156904549**	**N3556904549**	**N3756904549**
		1"	1"	120VAC	**N3157904553**	**N3557904553**	**N3757904553**
				24VDC	**N3157904549**	**N3557904549**	**N3757904549**

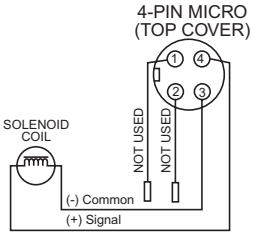
Single Solenoid, Non-locking manual override, internal "L" pilot 140 PSI, standard service, junction box w/ light, 4-pin M12.

Normally Closed

Body Size	Cv	In / cyl Ports	Exhaust Port	Voltage	2-way, 2-position normally closed	3-way, 2-position normally closed	3-way, 2-position normally open
3/8"	3.6 to 3.9	3/8"	1/2"	24VDC	**N3153J04579F**	**N3553J04579F**	**N3753J04579F**
		1/2"	1/2"	24VDC	**N3154J04579F**	**N3554J04579F**	**N3754J04579F**
3/4"	7.7 to 9.6	3/4"	1"	24VDC	**N3156J04579F**	**N3556J04579F**	**N3756J04579F**
		1"	1"	24VDC	**N3157J04579F**	**N3557J04579F**	**N3757J04579F**



4-Pin Male/Single Solenoid
(Encl. Option J, Wiring Option F)
(Per ISO 202/01)



Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

"N" Series 3/8", 3/4" & 1-1/4" Body Sizes - Solenoid 'L' Pilot

N	315	3	9	0	45	53	

Valve Function - Solenoid	
3/8" & 3/4" Body	
2-Way, Normally Closed	**315**
3-Way, Normally Closed	**355**
3-Way, Normally Open	**375**
1-1/4" Body	
2-Way, Normally Closed	**325**
3-Way, Normally Closed	**365**
3-Way, Normally Open	**385**

Port Size / Thread Type	
3/8" Body Size	
3/8" Inlet & Cyl - 1/2" Exhaust - NPT	3
1/2" Inlet & Cyl - 1/2" Exhaust - NPT	**4**
1/2" Inlet & Cyl - 1/2" Exhaust - BSPP	N
3/4" Body Size	
3/4" Inlet & Cyl - 1" Exhaust - NPT	**6**
3/4" Inlet & Cyl - 1" Exhaust - BSPP	Q *
1" Inlet & Cyl - 1" Exhaust - NPT	7
1-1/4" Body Size	
1" Inlet & Cyl - 1 1/4" Exhaust - NPT	7
1-1/4" Inlet & Cyl – 1-1/2" Exhaust - NPT	**8**
1-1/2" Inlet & Cyl – 1-1/2" Exhaust - NPT	**9**
1-1/2" Inlet & Cyl – 1-1/2" Exhaust - BSPP	T *

* Not available with valve function 325.

** Available Solenoid Enclosure J only.

Note: BSPP is to the ISO 228 standard, and requires an R-BSPT male fitting.

Solenoid Enclosure / Override	
Basic Pilot	**1**
Basic Pilot NLMO	2
Basic Pilot LMO	3
Junction Box NLMO	5
Junction Box LMO	6
Junction Box NLMO w/ Light	**8**
Junction Box LMO w/ Light	**9**
Basic Pilot ext. LMO	W
JIC NLMO w/ Light - 3-Pin Automotive	E
JIC NLMO w/ Light - 4-Pin M12	**J**
JIC NLMO w/ Light - 5-Pin Automotive	N

Solenoid Type	
0	**Standard**
5 *	Hazardous Duty
8 *	NEMA 4 Solenoid

* Available with enclosure 2 & 3, 'L', pilot configuration 04 & 48, and voltage 49 & 53 ONLY.

"L" Pilot Configuration	
Blank	**None**
C	Chrysler Wiring - Enclosure 'J' & 'N'
F	**Ford Wiring - Enclosure 'E', 'J' & 'N'**
G	GM Wiring - Enclosure 'J' & 'N'

"L" Pilot Code						
	Voltage			Solenoid Enclosure Options		
Code	AC 60hz	AC 50hz	DC	Standard Duty (01, 45)	Cont. Duty (04, 48)	200 PSI (46)
42	24	24	6	5, 6	6	
45			12	1, 5, 6		
49			**24**	**1, 2, 3, 5, 6, 8, 9, W**	**6, 8, 9**	**9**
51			48	1		
53	**120**	**110**		**1, 2, 3, 5, 6, 8, 9, E, N, W**	**1, 6, 8, 9, N**	**8, 9, E**
57	240	220		1, 3, W		
61			120	5, 6		
79			**24**	**E, J**	**E, J**	**E, J**

"L" Pilot Configuration	
01 *	External Pilot, Std Service, 140 PSI
04 *	External Pilot, Cont Duty, 140 PSI
45	**Internal Pilot, Std Service, 140 PSI**
46	Internal Pilot, Std Service, 200 PSI
48	**Internal Pilot, Cont Duty, 140 PSI**

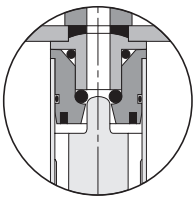
* Not available with valve function 325, 365, and 385 (1-1/4" body).

Continuous Duty Pilots

Continuous duty pilots are designed for applications where cycling is infrequent and the pilot is to be energized for indefinite periods of time . . . hours, days or weeks. Typical uses include fail-safe or emergency shutdown circuits where the pilot is to be energized and the valve open as long as the main control is "live" in order to shut off air to equipment in the event of power failure.

The Continuous duty pilot operates satisfactorily in ambient temperatures up to 125°F, even when continuously energized and without the benefit of the cooling air which normally flows through the pilot during frequent cycling. Under certain conditions, satisfactory operation may be obtained at ambient temperatures above 125°F. CONSULT FACTORY.

Incorporating the performance-proven design features of the standard L-Pilot, the continuous duty pilot utilizes a bullet-shaped stem on the upper end of the plunger. This bullet-shaped stem, seating in a high-temperature rubber o-ring, provides both a bubble-tight seal and positive release.



Continuous Duty Pilot

☐ Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Single Solenoid, Non-locking manual override, internal "P" pilot 125 PSI, standard service, P-pilot junction box w/ light.

Normally Closed

Normally Open

Body size	Cv	In / cyl ports	Exhaust port	Voltage	2-way, 2-position normally closed	3-way, 2-position normally closed	3-way, 2-position normally open
1-1/4"	19.5 to 26.7	1"	1-1/4"	120VAC	**N3257904753**	**N3657904753**	**N3857904753**
		1-1/4"	1-1/2"	120VAC	**N3258904753**	**N3658904753**	**N3858904753**
		1-1/2"	1-1/2"	120VAC	**N3259904753**	**N3659904753**	**N3859904753**

"N" Series 1-1/4" Body Sizes - Solenoid Hi-Flow 'P' Pilot

N 365 8 9 0 47 53

Valve Function - Solenoid	
1-1/4" Body	
2-Way, Normally Closed	325
3-Way, Normally Closed	365
3-Way, Normally Open	385

Port Size / Thread Type	
1-1/4" Body Size	
1" Inlet & Cyl - 1 1/4" Exhaust - NPT	7
1-1/4" Inlet & Cyl – 1-1/2" Exhaust - NPT	8
1-1/2" Inlet & Cyl – 1-1/2" Exhaust - NPT	9
1-1/2" Inlet & Cyl – 1-1/2" Exhaust - BSPP	T

Note: BSPP is to the ISO 228 standard, and requires an R-BSPT male fitting.

Solenoid Enclosure / Override	
5	Junction Box NLMO
6	Junction Box LMO
8	Junction Box NLMO w/ Light
9	Junction Box LMO w/ Light

Solenoid Type	
0	Standard

"P" Pilot Configuration	
02	External Pilot, Std Service, 125 PSI
47	Internal Pilot, Std Service, 125 PSI

"P" Pilot Code				
	Voltage			Enclosure Options
Code	AC 60hz	AC 50hz	DC	Standard Duty
49			24	5, 6
53	120	110		5, 6, 8, 9

☐ Most popular.

Single Remote Pilot, 1/4" NPT remote pilot port with internal pilot return.

Normally Closed

Normally Open

Body size	Cv	In / cyl ports	Exhaust port	2-way, 2-position normally closed	3-way, 2-position normally closed	3-way, 2-position normally open
3/8"	3.6 to 3.9	3/8"	1/2"	**N31431091**	**N35431091**	**N37431091**
		1/2"	1/2"	**N31441091**	**N35441091**	**N37441091**
3/4"	7.7 to 9.6	3/4"	1"	**N31461091**	**N35461091**	**N37461091**
		1"	1"	**N31471091**	**N35471091**	**N37471091**

Single Remote Pilot, 1/4" NPT remote pilot port with internal pilot return.

Normally Closed

Normally Open

Body size	Cv	In / cyl ports	Exhaust port	2-way, 2-position normally closed	3-way, 2-position normally closed	3-way, 2-position normally open
1-1/4"	19.5 to 26.7	1"	1-1/4"	**N32471091**	**N36471091**	**N38471091**
		1-1/4"	1-1/2"	**N32481091**	**N36481091**	**N38481091**
		1-1/2"	1-1/2"	**N32491091**	**N36491091**	**N38491091**

"N" Series 3/8", 3/4" & 1-1/4" Body Sizes - Remote Pilot

N 314 3 1 091

Valve Function - Solenoid	
3/8" & 3/4" Body	
2-Way, Normally Closed	**314**
3-Way, Normally Closed	**354**
3-Way, Normally Open	**374**
1-1/4" Body	
2-Way, Normally Closed	**324**
3-Way, Normally Closed	**364**
3-Way, Normally Open	**384**

Port Size / Thread Type	
3/8" Body Size	
3/8" Inlet & Cyl - 1/2" Exhaust - NPT	3
1/2" Inlet & Cyl - 1/2" Exhaust - NPT	**4**
1/2" Inlet & Cyl - 1/2" Exhaust - BSPP	N
3/4" Body Size	
1/2" Inlet & Cyl - 3/4" Exhaust - BSPP	P
3/4" Inlet & Cyl - 1" Exhaust - NPT	**6**
3/4" Inlet & Cyl - 1" Exhaust - BSPP	Q
1" Inlet & Cyl - 1" Exhaust - NPT	7
1-1/4" Body Size	
1" Inlet & Cyl - 1 1/4"Exhaust - NPT	**7**
1-1/4" Inlet & Cyl – 1-1/2" Exhaust - NPT	**8**
1-1/2" Inlet & Cyl – 1-1/2" Exhaust - NPT	**9**
1-1/2" Inlet & Cyl – 1-1/2" Exhaust - BSPP	T*

Note: BSPP is to the ISO 228 Standard, and requires an R-BSPT male fitting.

	Pilot Configuration
089 *†	External Pilot Return
091	**Internal Pilot Return**

* Not available with 1-1/4" body size with Port Size option T

† Not available with 3/8" body size with Port Size option 3

☐ Most popular.

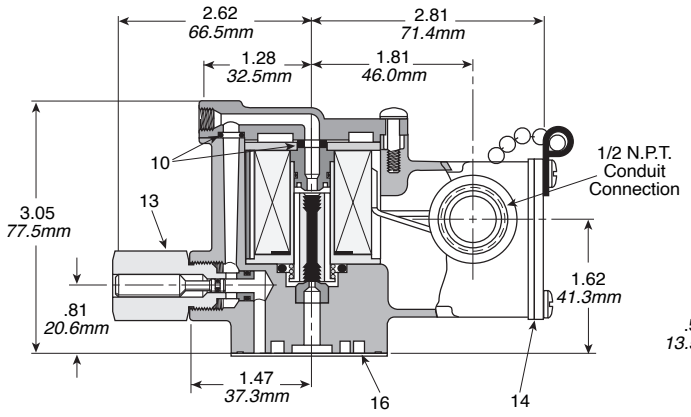
For inventory, lead times, and kit lookup, visit www.pdnplu.com

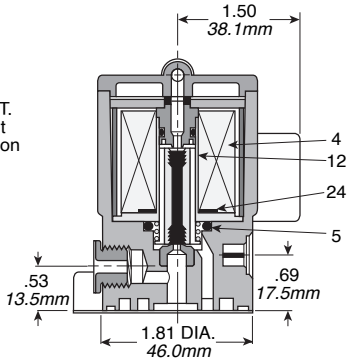
Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

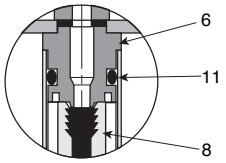
Replacement Pilots

Description	Standard L-Pilot		Continuous Duty L-Pilot	
Override Type	**Locking**	**Non-locking**	**Locking**	**Non-locking**
Basic with override	**K0653035****	**K0652035****	**K0853025****	**K0852025****
JIC with junction box & override	**K0656035****	**K0655035****	**K0856025****	**K0855025****
JIC pilot with junction box & override & indicator lights (120VAC only)	**K0659035****	**K0658035****	**K0859025****	**K0858025****

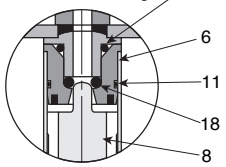
** Voltage code - (reference model index for availability)







Standard Duty Pilot Only



Continuous Duty Pilot Only

Parts List

Item no.	Part Number	Description
4	**K593025**	Coil 120V 60Hz / 110V 50Hz
	K593035	Coil 240V 60Hz / 220V 50Hz
	K593003	Coil 6VDC / 24V 60Hz
	K593010	Coil 12VDC
	K593014	Coil 24VDC
	K593041	Coil 120VDC
5	**H14213**	Seal
6	**K423006**	Top Seat
	K423010	Top Seat (Continuous Duty)
8	**K343002**	Plunger (STD. Service)
	K343001	Plunger (Continuous Duty)
10*	**H14201**	Seal
11*	**K41RB72011**	O-Ring (STD. Service)
	H24969	O-Ring (Continuous Duty)

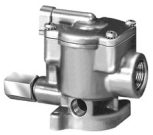
Item no.	Part Number	Description
12	**K272004**	Plunger Guide
13	**K152003**	Override Assembly
14	**K183047**	Cover Gasket
16*	**K183001**	Gasket
18*	**H13473**	O-Ring
20*	**H13413**	O-Ring
22	**H19102**	120 AC Only – Indicator Light
24	**K183108**	Gasket

Coil leads are 19" long.
* Parts included in Service Kit.
Continuous Duty Kit K352366
Standard Service Kit K352166

For inventory, lead times, and kit lookup, visit www.pdnplu.com

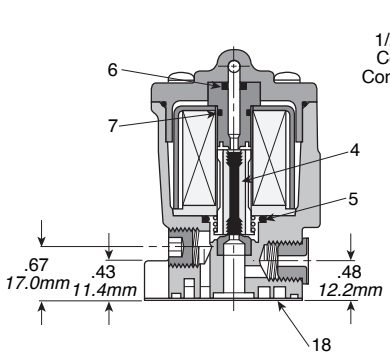
Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

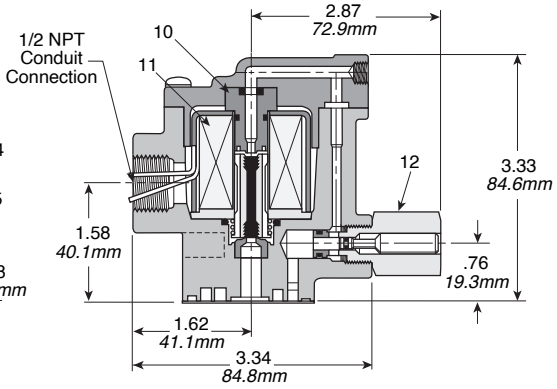
Replacement Pilots

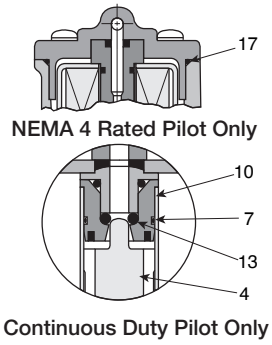


Description	Hazardous Duty L-Pilot		NEMA 4 L-Pilot	
Hazardous duty L-pilot - UL & CSA	**K0451025****	N/A		
Override Type	**Locking**	**Non-Locking**	**Locking**	**Non-Locking**
Hazardous duty with override	**K0453025****	**K0452025****		
NEMA 4 with override			**K2553025****	**K255202549**

** Voltage code - 49 & 53







Parts List

Item no.	Part Number	Description
4*	**K343002**	Plunger (STD. Service)
	K343001	Plunger (Continuous Duty)
5*	**K14213**	Seal
6*	**K41RB72009**	O-Ring
	K41RB72008	O-Ring (STD. Service)
7*	**K41RB72011**	O-Ring (STD. Service)
	H24969	O-Ring (Continuous Duty)
10	**K423001**	Top Seat
	K423002	Top Seat (Continuous Duty)
11	**K593025**	Coil 120V 60Hz / 110V 50Hz
	K593035	Coil 240V 60Hz / 220V 50Hz
	K593003	Coil 6VDC / 24V 60Hz
	K593010	Coil 12VDC
	K593014	Coil 24VDC
	K593041	Coil 120VDC

Item no.	Part Number	Description
12	**K152003**	Override Assembly
13*	**H13473**	O-Ring
17*	**H13716**	Gasket (NEMA 4 Rated Pilot Only)
18*	**K183001**	Gasket

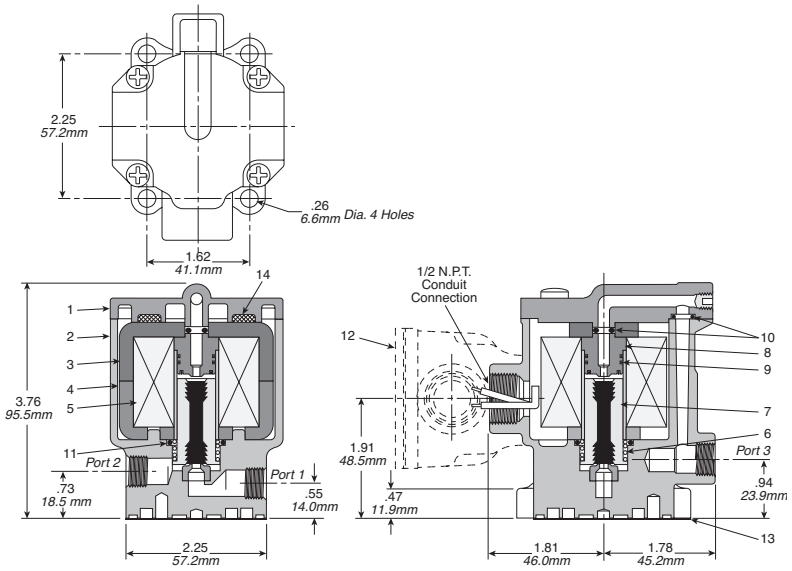
Coil leads are 19" long.

* Parts included in Service Kit.
Continuous Duty Kit **K352366**
Standard Service Kit **K352166**

Replacement Pilots

Description	Heavy Duty P-Pilot		
Override Type	**No Override**	**Non-Locking**	**Locking**
Basic with override	**K1351045****	N/A	N/A
JIC with junction box & override	N/A	**K1355045****	**K1356045****
JIC Pilot with junction box & override & indicator lights (120VAC only)	N/A	**K135804553**	**K135904553**

** Voltage code - 49 & 53



Parts List

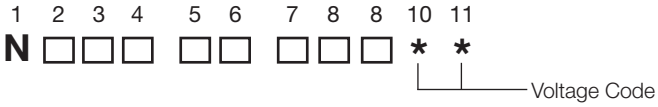
Item no.	Part Number	Description
1	**K062005**	Cover Assy
2	**K112045**	Body, Man. Mtd. (1/8" Bottom Seal)
	K112046	Body, Man. Mtd. (3/16" Bottom Seal)
3	**K013001**	Magnet Bar
4	**K272002**	Sleeve Sub Assy
5*	**K593108**	Coil (115V 60Hz)
	K593112	Coil (230V 60Hz)
	K593097	Coil 24VDC
	K593107	Coil 115VDC

Item no.	Part Number	Description
6	**K473010**	Spring N.O. Valve
	K473011	Spring N.C. Valve
7 •	**K343042**	Plunger
8	**K423020**	Top Seat (1/8" Orifice)
	K423022	Top Seat (3/16" Orifice)
9 •	**H13436**	Seal
10 •	**H14202**	Seal
11 •	**H14215**	Seal
12	**K322004**	Junction Box Kit
13 •	**K183012**	Gasket

* Coil leads are 19" long.
• Parts included in Seal Kit K352064.

Coils for Pilot Operated Valves

The voltage code of the valve can be identified in the 10th and 11th digit of the valve part number.



L-Pilot Valves

Voltage Code **	Voltage			Coil	
	60Hz	50Hz	DC	19" Leads	72" Leads
40	12	—	—	**K593007**	—
41,42	24	—	6	**K593003**	—
45*	—	—	12	**K593010**	—
49*	—	—	24 (Standard)	**K593014**	—
79	—	—	24 (Arc Suppressed)	**K593271**	—
51*	—	—	48	—	**K593185**
53*	120	110	—	**K593025**	—
57*	240	240	—	**K593035**	—
60	240	220	—	**K593035**	—
61	—	—	120	**K593041**	—

* Indicates voltages approved for solenoid operators designed for use in hazardous locations.

P-Pilot Valves

Voltage Code **	Voltage			Coil	
	60Hz	50Hz	DC	19" Leads	72" Leads
43	—	24	—	**K593098**	—
45	—	—	12	**K593094**	—
49	—	—	24	**K593097**	—
51	—	—	48	—	**K593254**
53	115	—	—	**K593108**	—
58	—	230	—	**K593111**	—

Solenoid Characteristics Chart

Voltage Range +10/-15% of Nominal

3/8" & 3/4" Basic – L-Pilot

Voltage/ Cycles	Amps Inrush	Amps Holding	Resistance Ohms	Watts	Insulation Class
120/60VAC	.29	.18	122	12	B
110/50VAC	.21	.14	122	12	B
240/60VAC	.18	.12	610	12	B
24/50VAC	1.2	.75	6.4	9.5	B
6VDC	–	1.4	4.5	7.6	B
12VDC	–	.66	17.7	9	B
24VDC	–	.32	71	9	B
48VDC	–	.22	216	11	B

NOTE: Continuous duty type service is for applications where pilot valve is energized more than ten (10) minutes.

Solenoid Characteristics Chart

Voltage Range +10/-15% of Nominal

1-1/4" Basic – P-Pilot

Voltage/ Cycles	Amps Inrush	Amps Holding	Resistance Ohms	Watts	Insulation Class
120/60VAC	.46	.25	35	18.5	B
110/50VAC	.36	.19	48	12	B
230/60VAC	.26	.15	125	19.5	B
220/50VAC	.20	.11	191	15	B
24/60VAC	2.3	1.4	1.3	20	B
24/50VAC	1.6	.9	2.1	12	B
12VDC	–	.7	17	8	B
24VDC	–	.33	68	8	B
48VDC	–	.16	275	7.5	B

NOTE: Continuous duty type service is for applications where pilot valve is energized more than ten (10) minutes.

Hazardous Duty Solenoid Listing

Valves with solenoid operators designed for hazardous locations are UL & CSA Approved as follows:

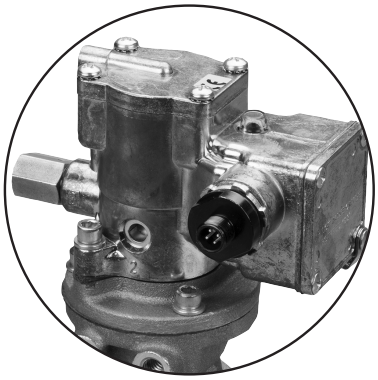
National Electric Code	Ambient Conditions	NEMA Classification
Class I Div. 1, Group C	Ethyl, Ether, Etc. Gases & Vapors	VII (7)
Class I Div. 1, Group D	Gasoline, Etc. Gases & Vapors	VII (7)
Class I Div. 2, Group B	Butadiene, Etc., Liquid, Fluid or Vapor Normally Contained, or Atmosphere Ventilated	VII (7)
Class II Div. 1, Group E	Metal Dust	IX (9)
Class II Div. 1, Group F	Coal, Coke, Carbon Black Dust	IX (9)
Class II Div. 1, Group G	Flour, Starch, Grain Dust	IX (9)

See Article 500 – Hazardous (Classified) Locations, National Electric Code.

Flow

Basic Valve Size	Inlet Port Size	Exhaust Port Size	Cv Inlet to Cylinder	Cv Cylinder to Exhaust
3/8" 3-Way, Normally Closed	3/8" Pipe	1/2" Pipe	3.6	4.2
	1/2" Pipe	1/2" Pipe	3.8	4.3
3/8" 3-Way, Normally Open	3/8" Pipe	1/2" Pipe	3.6	4.1
	1/2" Pipe	1/2" Pipe	3.9	4.5
3/4" 3-Way, Normally Closed	1/2" Pipe	3/4" Pipe	8.2	9.2
	3/4" Pipe	1" Pipe	9.3	10.8
3/4" 3-Way, Normally Open	1/2" Pipe	3/4" Pipe	7.7	6.6
	3/4" Pipe	1" Pipe	9.6	11.4
1-1/4" 3-Way, Normally Closed	1" Pipe	1-1/4" Pipe	19.5	23.5
	1-1/4" Pipe	1-1/2" Pipe	23.3	26.9
	1-1/2" Pipe	1-1/2" Pipe	23.3	26.9
1-1/4" 3-Way, Normally Open	1" Pipe	1-1/4" Pipe	20.4	24.8
	1-1/4" Pipe	1-1/2" Pipe	25.0	29.1
	1-1/2" Pipe	1-1/2" Pipe	26.7	29.9

Wiring Connections

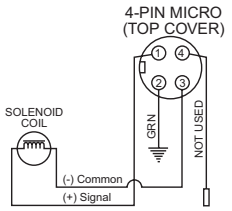


Automotive Connections
- 3-Pin & 5-Pin “Mini” (7/8 UNF Thread)
- 4-Pin “Micro” (M12 Thread)

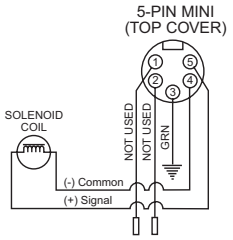
Solenoid Configurations
“E”, “J”, “N”

Chrysler Connection

4-Pin Male/Single Solenoid
(Encl. Option J, Wiring Option C)

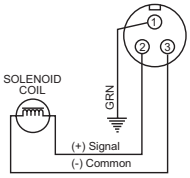


5-Pin Male/Single Solenoid
(Encl. Option N, Wiring Option C)

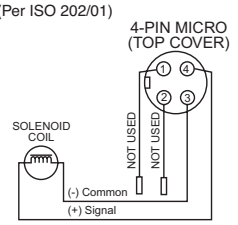


Ford Connection

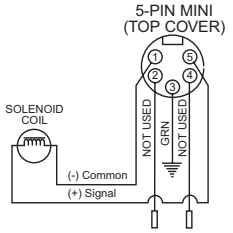
3-Pin Male/Single Solenoid
(Encl. Option E, Wiring Option F)



4-Pin Male/Single Solenoid
(Encl. Option J, Wiring Option F)
(Per ISO 202/01)

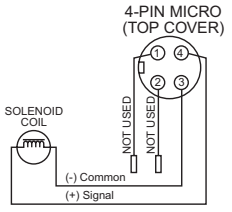


5-Pin Male/Single Solenoid
(Encl. Option N, Wiring Option F)

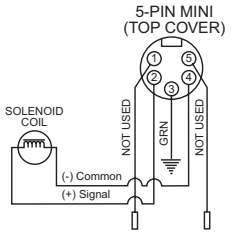


GM Connection

4-Pin Male/Single Solenoid
(Encl. Option J, Wiring Option G)



5-Pin Male/Single Solenoid
(Encl. Option N, Wiring Option G)



Selection
Although reasonable safety factors are designed into each speed poppet valve, it is important that application requirements do not exceed the rated limitation of the valve. This precaution insures a sufficient safety factor.

Life Expectancy
Normal multimillion cycle life expectancy of high speed poppet series valves is based on the use of properly filtered and lubricated air at room temperature. In actual laboratory tests, the high speed poppet valves provide maintenance-free service life in excess of 20,000,000 cycles.

Lubrication
The high speed poppet valves are pre-lubricated to permit use with non-lubricated air. However, air should be lubricated to assure maximum seal life.

F442 lubricating oil is recommended. This oil is specially formulated to provide peak performance and maximum service life from air-operated equipment.

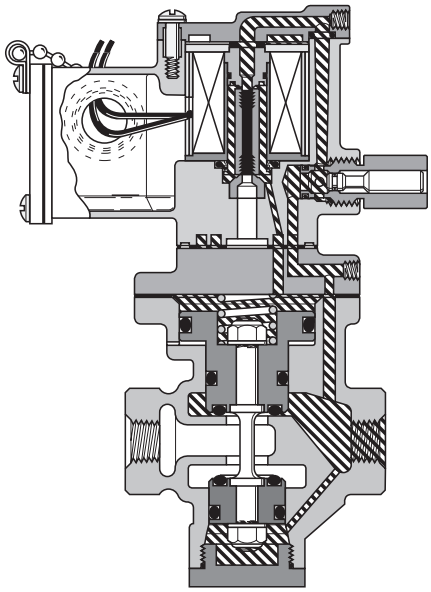
Other good air line lubricating oils may be used provided they atomize readily and are of the medium aniline type. Aniline point range must be between 180°F - 220°F. Viscosity SUS @ 100°F of 140-170. High aniline oils will shrink seals; low aniline oils will swell seals, reducing operating life and expectancy.

Installation
Valves should be installed with reasonable accessibility for service whenever possible. Care should be taken to hold piping length to a minimum and to protect valves from exposure to extreme heat, dirt and moisture. Piping should be clean and clear of dirt and chips. Threads should be the correct size and undamaged. Pipe joint compound should be used sparingly and only on pipe threads, never in the valve body. Care should be taken in installation to avoid undue strain on valve.

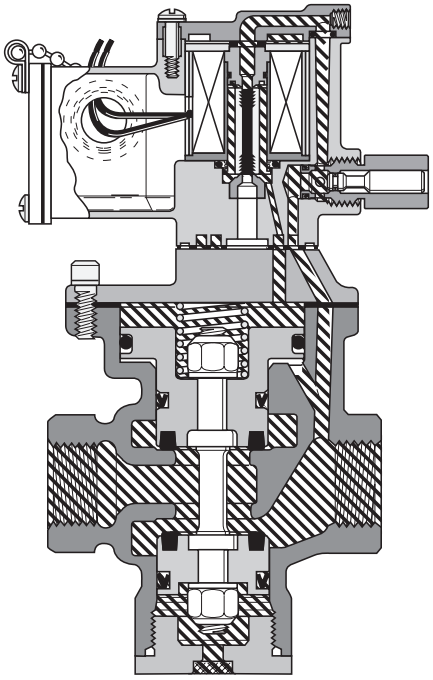
For the small port size options, it is recommended that an air reservoir is located close to the valve inlet as to not starve the valve of air pressure.

⚠ ***CAUTION:*** **DO NOT RESTRICT THE INLET TO POPPET VALVES**

Restriction of the inlet can starve the air supply to the pilot section of internally piloted poppet valves and result in slow shifting or failure of the valve to shift properly. Always connect the supply line directly to the inlet of the valve using the full pipe size of the valve inlet. Never use a quick coupling to connect a poppet valve to the air supply. On valves with a small inlet port, use of an upstream surge tank may be required at lower operating pressures to insure an adequate air supply and proper operation.



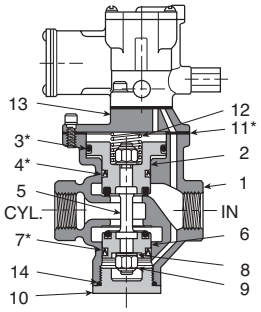
3/8" Solenoid Pilot De-Energized
Normally Closed

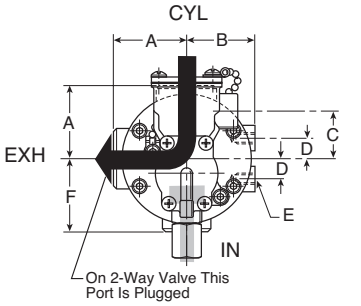


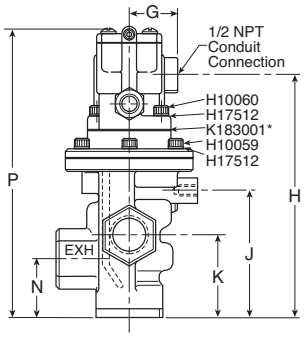
1-1/4" Solenoid Pilot De-Energized
Normally Open

Internal Pilot - 3/8" & 3/4" Basic Body

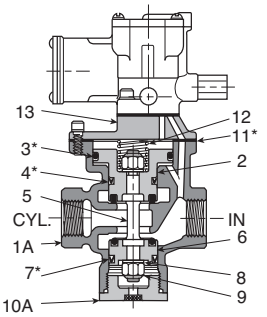
Normally Closed

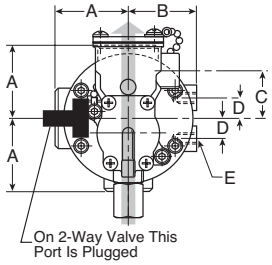


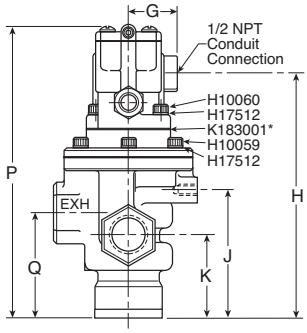




Normally Open







Exhaust
Pressure

Top view indicates flow through 3-Way valve with coil de-energized.

NOTE: For normal valve operation, override must be in "out" position.

Internal Pilot - 3/8" & 3/4" Basic Body

	3/8" Body		3/4" Body	
Key	Inch	mm	Inch	mm
A	1.56	40	2.13	54
B	1.50	38	1.94	49
C	1.81	46	1.34	34
D	.56	14	.56	14
E	3/8-16UNC 7/16" deep		3/8-16UNC 9/16" deep	
F	1.75	44	2.25	57
G	1.50	38	1.50	38
H	5.92	150	7.14	181
J	3.19	81	3.75	95
K	1.88	47	2.44	62
N	1.44	37	1.78	45
P	7.36	196	8.58	218
Q	2.31	59	3.09	84

Service Kits

Include all parts normally required for in-service maintenance:

3/8" Basic valve with standard service L-Pilots.....**K352076**

3/8" Basic valve with continuous duty L-Pilots.....**K352276**

3/4" Basic valve with standard service L-Pilots.....**K352077**

3/4" Basic valve with continuous duty L-Pilots.....**K352277**

Key	3/8" Valve	3/4" Valve	Description
1	—	1/2" Tap **K053075**	Body (N.C.)
	3/8" Tap **K053022**	3/4" Tap **K053076**	
	—	1" Tap **K053220**	
1A	—	3/4" Tap **K053077**	Body (N.O.)
	3/8" Tap **K053025**	3/4" Tap **K053078**	
	1/2" Tap **K053026**	1" Tap **K053218**	
2	**K212001**	**K212002**	Upper piston assy
3*	**H13648**	**H13728**	Seal

Key	3/8" Valve	3/4" Valve	Description
4*	**H14510**	**H13676**	U-cup (3/8), o-ring (3/4)
5	**K493002**	**K493009**	Stem
6	**K202001**	**K202002**	Lower piston assy.
7*	**H14509**	**H13676**	U-cup (3/8), o-ring (3/4)
8	**H17811**	**H17813**	Washer (2)
9	**H06326**	**H06332**	Stop nut (2)
10	**K103035**	**K103053**	Bottom cap (N.C.)
10A	**K092020**	**K092034**	Bottom cap assy. (N.O.)
11*	**K183049**	**K183057**	Gasket
12	**K473014**	**K473015**	Spring
13	**K563015**	**K563017**	Adapter
14*	**K41RB72121**	**K41RB72221**	O-ring

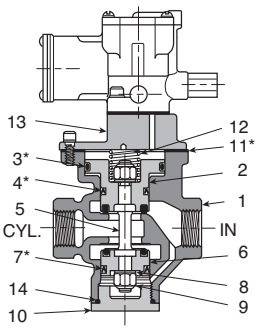
*** Parts included in seal kit**

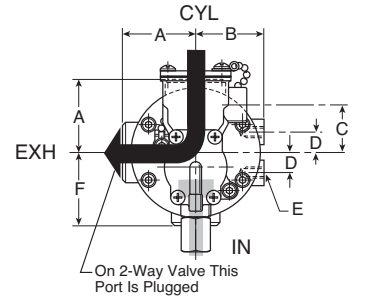
For inventory, lead times, and kit lookup, visit www.pdnplu.com

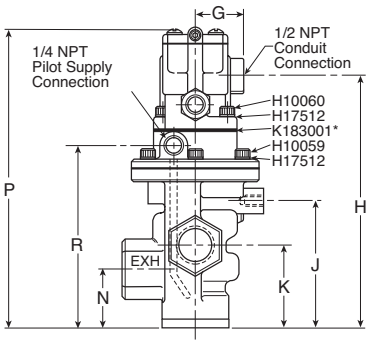
Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

External Pilot - 3/8" & 3/4" Basic Body

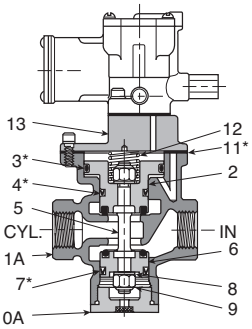
Normally Closed

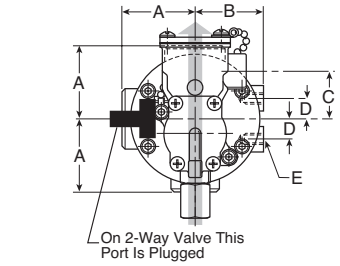


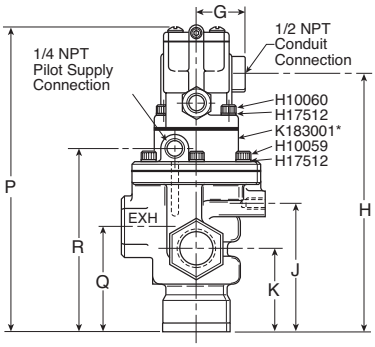




Normally Open







Exhaust
Pressure

Top view indicates flow through 3-Way valve with coil de-energized.

NOTE: For normal valve operation, override must be in "out" position.

External Pilot - 3/8" & 3/4" Basic Body

Key	3/8" Body		3/4" Body	
	Inch	mm	Inch	mm
A	1.56	40	2.13	54
B	1.50	38	1.94	49
C	1.81	46	1.34	34
D	.56	14	.56	14
E	3/8-16UNC 7/16" deep		3/8-16UNC 9/16" deep	
F	1.75	44	2.25	57
G	1.50	38	1.50	38
H	6.42	163	7.45	189
J	3.19	81	3.75	95
K	1.88	47	2.44	62
N	1.44	37	1.78	45
P	7.86	200	8.89	226
Q	2.31	59	3.09	84
R	4.34	110	5.38	137

Service Kits

Include all parts normally required for in-service maintenance:

3/8" Basic valve with standard service L-Pilots.....**K352076**

3/8" Basic valve with continuous duty L-Pilots.....**K352276**

3/4" Basic valve with standard service L-Pilots.....**K352077**

3/4" Basic valve with continuous duty L-Pilots.....**K352277**

Key	3/8" Valve	3/4" Valve	Description
1	—	1/2" Tap **K053067**	Body (N.C.)
	3/8" Tap **K053019**	3/4" Tap **K053069**	
	—	1" Tap **K053221**	
1A	—	3/4" Tap **K053065**	Body (N.O.)
	3/8" Tap **K053018**	3/4" Tap **K053070**	
	1/2" Tap **K053064**	1" Tap **K053219**	
2	**K212001**	**K212002**	Upper piston assy
3*	**H13648**	**H13728**	Seal

Key	3/8" Valve	3/4" Valve	Description
4*	**K41RB72211**	**H13676**	O-ring
5	**K493002**	**K493009**	Stem
6	**K202001**	**K202002**	Lower piston assy.
7*	**K41RB72210**	**H13676**	O-ring
8	**H17811**	**H17813**	Washer (2)
9	**H06326**	**H06332**	Stop nut (2)
10	**K103035**	**K103053**	Bottom cap (N.C.)
10A	**K092020**	**K092034**	Bottom cap assy. (N.O.)
11	**K473014**	**K473015**	Spring
12*	**K183049**	**K183057**	Gasket
13	**K563016**	**K563021**	Adapter
14*	**K41RB72121**	**K41RB72221**	O-ring

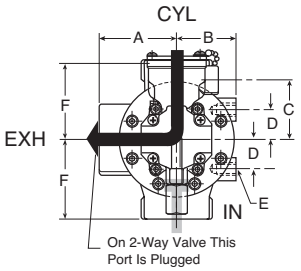
*** Parts included in seal kit**

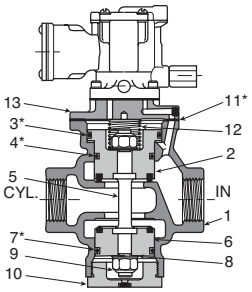
For inventory, lead times, and kit lookup, visit www.pdnplu.com

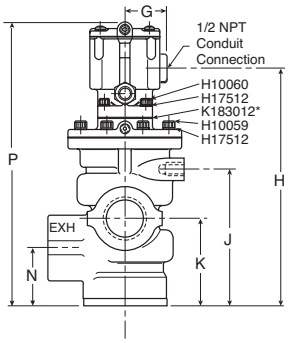
Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Internal Pilot - 1-1/4" Basic Body

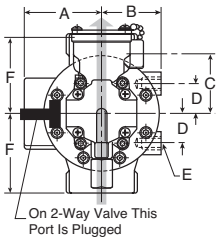
Normally Closed

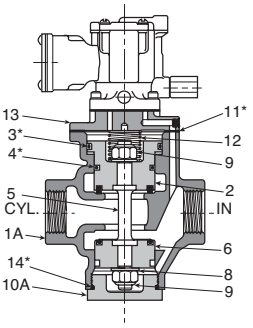


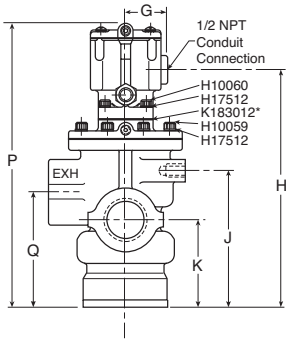




Normally Open







Exhaust
Pressure

Top view indicates flow through 3-Way valve with coil de-energized.

NOTE: For normal valve operation, override must be in "out" position.

Internal Pilot - 1-1/4" Basic Body

	1-14" Body	
Key	**Inch**	**mm**
A	3.00	76
B	2.25	57
C	1.34	34
D	1.19	30
E	1/2-13 UNC	3/4 Deep
F	3.13	80
G	1.50	38
H	9.30	236
J	5.34	136
K	3.44	87
N	2.31	59
P	11.14	283
Q	4.56	116

Service Kits

Include all parts normally required for in-service maintenance:

1-1/4" Basic valve with standard service P-Pilots **K352078**

Key	1-1/4" Valve	Description
1	1" Tap **K053111** 1-1/2" Tap **K053113**	Body (N.C.)
1A	1" Tap **K053114** 1-1/4" Tap **K053115** 1-1/2" Tap **K053116**	Body (N.O.)
2	**K313029**	Upper piston assy
3*	**H13752**	O-ring

Key	1-1/4" Valve	Description
4*	**H13728**	Seal
5	**K493016**	Stem
6	**K313028**	Lower piston
7*	**H13728**	Seal
8	**H17817**	Washer
9	**H06338**	Stop nut
10	**K092046**	Bottom cap (N.C.)
10A	**K103061**	Bottom cap (N.O.)
11*	**K183058**	Gasket
12	**K473016**	Spring
13	**K012003**	Adapter
14*	**K41RB72143**	O-ring

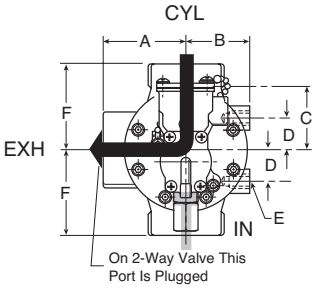
*** Parts included in seal kit**

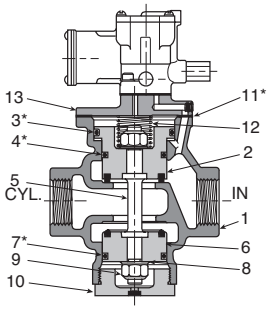
For inventory, lead times, and kit lookup, visit www.pdnplu.com

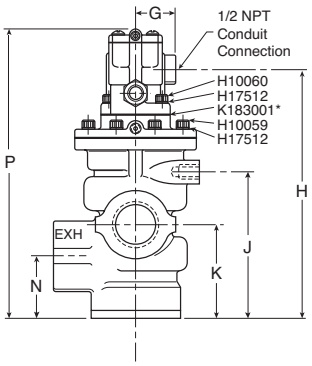
Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Continuous Duty Pilot - 1-1/4" Basic Body

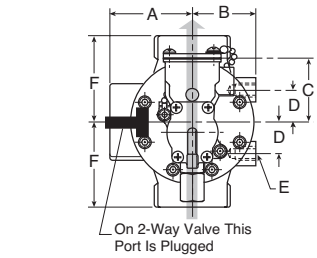
Normally Closed

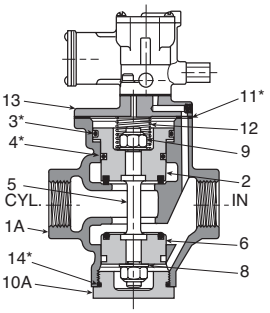


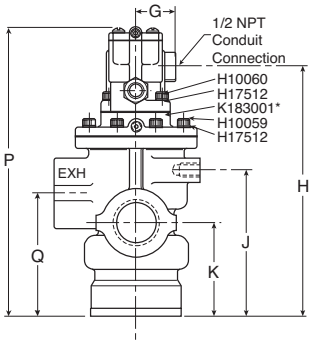




Normally Open







Exhaust
Pressure

Top view indicates flow through 3-Way valve with coil de-energized.

NOTE: For normal valve operation, override must be in "out" position.

Continuous Duty Pilot - 1-1/4" Basic Body

	1-1/4" Body	
Key	**Inch**	**mm**
A	3.00	76
B	2.25	57
C	1.34	34
D	1.19	30
E	1/2-13 UNC	3/4 Deep
F	3.13	80
G	1.50	38
H	9.02	229
J	5.34	136
K	3.44	87
N	2.31	59
P	10.45	265
Q	4.56	116

Service Kits

Include all parts normally required for in-service maintenance:

1-1/4" Basic valve with continuous duty L-Pilot.....**K352080**

Key	1-1/4" Valve	Description
1	1" Tap **K053111** 1-1/2" Tap **K053113**	Body (N.C.)
1A	1" Tap **K053114** 1-1/4" Tap **K053115** 1-1/2" Tap **K053116**	Body (N.O.)
2	**K313029**	Upper piston assy
3*	**H13752**	O-Ring

Key	1-1/4" Valve	Description
4*	**H13728**	Seal
5	**K493016**	Stem
6	**K313028**	Lower piston
7*	**H13728**	Seal
8	**H17817**	Washer
9	**H06338**	Stop nut
10	**K092046**	Bottom cap (N.C.)
10A	**K103061**	Bottom cap (N.O.)
11*	**K183058**	Gasket
12	**K473016**	Spring
13	**K012003**	Adapter
14*	**K41RB72143**	O-ring

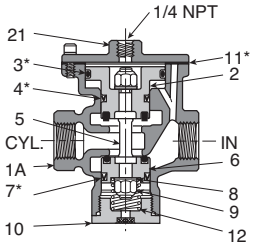
*** Parts included in seal kit**

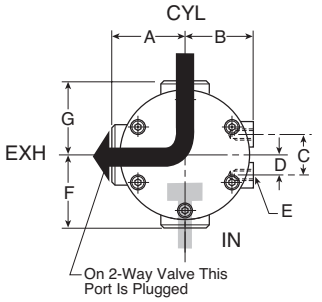
For inventory, lead times, and kit lookup, visit www.pdnplu.com

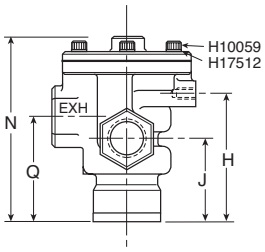
Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Internal Return - 3/8", 3/4", 1-1/4" Basic Body

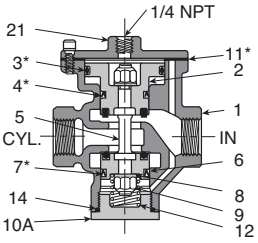
Normally Closed

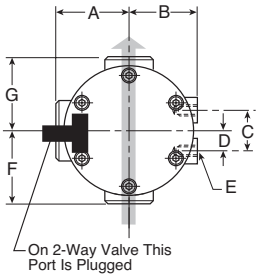


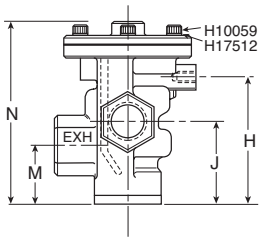




Normally Open







Exhaust
Pressure

Top view indicates flow through 3-Way valve.

NOTE: For normal valve operation, override must be in "out" position.

Internal Return - 3/8", 3/4", 1-1/4" Basic Body

Key	3/8" Body		3/4" Body		1-1/4" Body	
	Inch	mm	Inch	mm	Inch	mm
A	1.56	40	2.13	54	3.00	76
B	1.50	38	1.94	49	2.25	57
C	1.13	29	1.13	29	2.38	60
D	.56	14	.56	14	1.19	30
E	3/8–16UNC 7/16" deep		3/8–16UNC 9/16" deep		1/2–13UNC 3/4" deep	
F	1.75	44	2.25	57	3.13	79
G	1.56	40	2.13	54	3.13	79
H	3.19	81	3.75	95	5.34	136
J	1.88	48	2.44	62	3.44	87
M	1.44	37	1.78	45	2.66	67
N	4.22	107	5.31	135	7.19	183
Q	2.31	59	3.09	78	4.56	116

Service Kits

Include all parts normally required for in-service maintenance:

3/8" Basic valve.....**K352073**
3/4" Basic valve.....**K352074**
1-1/4" Basic valve **K352075**

Key	3/8" Valve	3/4" Valve	1-1/4" Valve	Description
1	—	1/2" Tap **K053075**	1" Tap **K053111**	Body (N.O.)
	3/8" Tap **K053022**	3/4" Tap **K053076**	—	
	1/2" Tap **K053023**	1" Tap **K053220**	1-1/2" Tap **K053113**	
1A	—	1/2" Tap **K053077**	1" Tap **K053114**	Body (N.C.)
	3/8" Tap **K053025**	3/4" Tap **K053078**	—	
	1/2" Tap **K053026**	1" Tap **K053218**	1-1/2" Tap **K053116**	
2	**K212001**	**K212002**	**K313029**	Upper piston assy
3*	**H13648**	**H13728**	**H13752**	Seal
4*	**H14510**	**H13676**	**H13728**	Seal

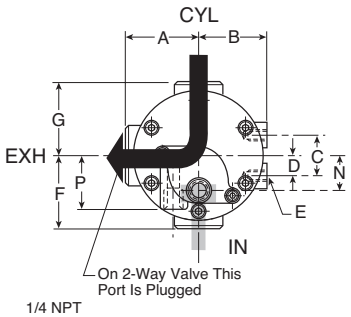
Key	3/8" Valve	3/4" Valve	1-1/4" Valve	Description
5	**K493002**	**K493009**	**K493016**	Stem
6	**K202001**	**K202002**	**K313028**	Lower piston assy.
7*	**H13499**	**H13676**	**H13728**	Seal
8	**H17811**	**H17813**	**H17817**	Washer (2)
9	**H06326**	**H06332**	**H06338**	Stop nut (2)
10	**K092020**	**K092034**	**K092046**	Bottom cap (N.C.)
10A	**K103035**	**K103053**	**K103061**	Bottom cap (N.O.)
11*	**K183049**	**K183057**	**K183058**	Gasket
12	**K473014**	**K473015**	**K473016**	Spring
14*	**K41RB72121**	**K41RB72221**	**K41RB72143**	O-ring
21	**K123018**	**K123021**	**K123024**	Cover

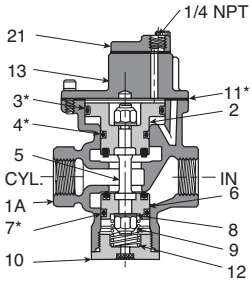
*** Parts included in seal kit**

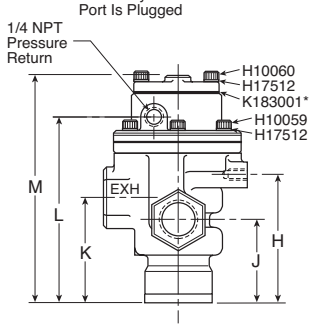
Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

External Return - 3/8", 3/4", 1-1/4" Basic Body

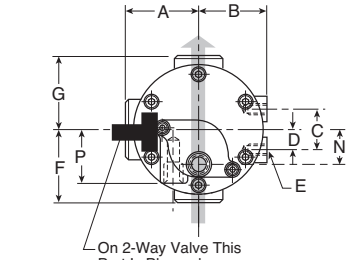
Normally Closed

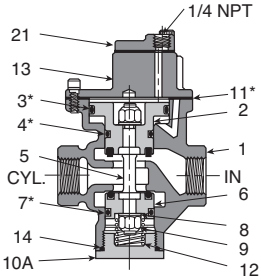


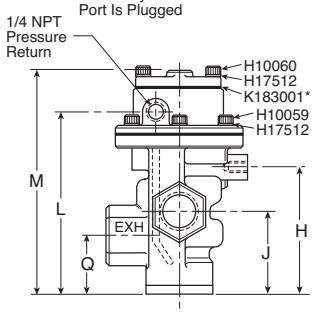




Normally Open







Exhaust
Pressure

Top view indicates flow through 3-Way valve.

NOTE: For normal valve operation, override must be in "out" position.

Internal Return - 3/8", 3/4", 1-1/4" Basic Body

Key	3/8" Body		3/4" Body		1-1/4" Body	
	Inch	mm	Inch	mm	Inch	mm
A	1.56	40	2.13	54	3.00	76
B	1.50	38	1.94	49	2.25	57
C	1.13	29	1.13	29	2.38	60
D	.56	14	.56	14	1.19	30
E	3/8–16UNC 7/16" deep		3/8– 16UNC 9/16" deep		1/2–13UNC 3/4" deep	
F	1.75	44	2.25	57	3.13	79
G	1.56	40	2.13	54	3.13	79
H	3.19	81	3.75	95	5.34	136
J	1.88	48	2.44	62	3.44	87
K	2.31	59	3.09	78	4.56	116
L	4.34	110	5.38	137	7.31	186
M	5.31	135	6.34	161	7.88	200
N	Left of center				On center	
	.53	13	1.00	25		
Q	1.44	37	1.78	45	2.31	59

Service Kits

Include all parts normally required for in-service maintenance:

3/4" Basic valve.....**K352056**

1-1/4" Basic valve **K352083**

Key	3/8" Valve	3/4" Valve	1-1/4" Valve	Description
1	1/4" Tap **K053011**	1/2" Tap **K053067**	1" Tap **K053143**	Body (N.O.)
	—	3/4" Tap **K053069**	—	
	1/2" Tap **K053157**	1" Tap **K053221**	1-1/2" Tap **K053146**	
1A	1/4" Tap **K053010**	1/2" Tap **K053065**	1" Tap **K053159**	Body (N.C.)
	—	3/4" Tap **K053070**	—	
	1/2" Tap **K053064**	1" Tap **K053219**	1-1/2" Tap **K053145**	
2	**K212001**	**K212002**	**K313029**	Upper piston assy
3*	**H13648**	**H13728**	**H13752**	Seal
4*	**H13529**	**H13676**	**H13728**	Seal

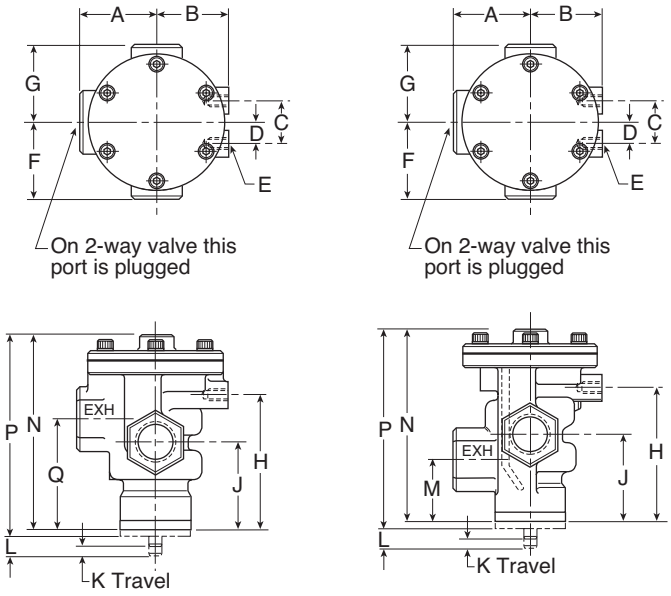
Key	3/8" Valve	3/4" Valve	1-1/4" Valve	Description
5	**K493002**	**K493009**	**K493016**	Stem
6	**K202001**	**K202002**	**K313028**	Lower piston assy.
7*	**H13499**	**H13676**	**H13728**	Seal
8	**H17811**	**H17813**	**H17817**	Washer (2)
9	**H06326**	**H06332**	**H06338**	Stop nut (2)
10	**K092020**	**K092034**	**K092046**	Bottom cap assy. (N.C.)
10A	**K103035**	**K103053**	**K103061**	Bottom cap (N.O.)
11*	**K183049**	**K183057**	**K183058**	Gasket
12	**K473014**	**K473015**	**K473016**	Spring
13	**K563016**	**K563021**	**K563027**	Adapter
14*	**K41RB72121**	**K41RB72221**	**K41RB72143**	O-ring
21	**K323027**	**K323027**	Not used	Cover

*** Parts included in seal kit**

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

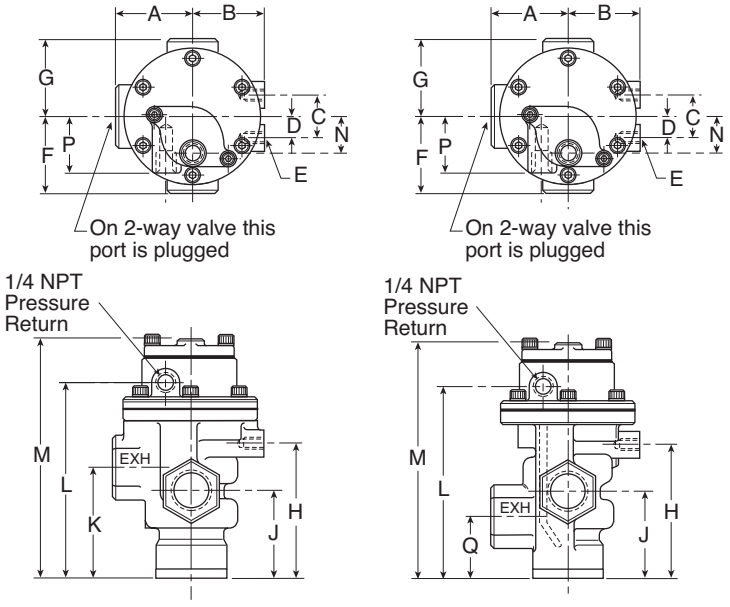
Internal Return - 3/8", 3/4" & 1-1/4" Basic Body



Internal Return - 3/8", 3/4" & 1-1/4" Basic Body

Key	3/8" Body		3/4" Body		1-1/4" Body	
	Inch	mm	Inch	mm	Inch	mm
A	1.56	40	2.13	54	3.00	76
B	1.50	38	1.94	49	2.25	57
C	1.13	29	1.13	29	2.38	60
D	.56	14	.56	14	1.19	30
E	3/8–16UNC 7/16" deep		3/8–16UNC 9/16" deep		1/2–13UNC 3/4" deep	
F	1.75	44	2.25	57	3.13	79
G	1.56	40	2.13	54	3.13	79
H	3.19	81	3.75	95	5.34	136
J	1.88	48	2.44	62	3.44	87
K	.50	13	.50	13	.50	13
L	.11	3	.16	4	.25	6
M	1.44	37	1.78	45	2.66	67
N	4.22	107	5.31	135	7.19	183
P	4.78	121	5.56	141	7.53	191
Q	2.31	59	3.09	78	4.56	116

External Return - 3/8", 3/4" & 1-1/4" Basic Body



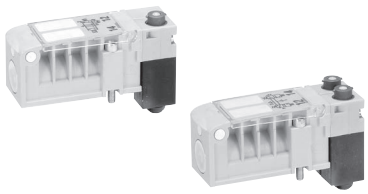
External Return - 3/8", 3/4" & 1-1/4" Basic Body

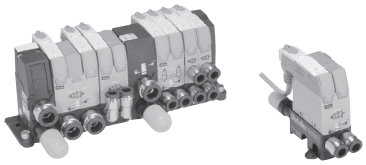
	3/8" Body		3/4" Body		1-1/4" Body	
Key	Inch	mm	Inch	mm	Inch	mm
A	1.56	40	2.13	54	3.00	76
B	1.50	38	1.94	49	2.25	57
C	1.13	29	1.13	29	2.38	60
D	.56	14	.56	14	1.19	30
E	3/8–16UNC 7/16" deep		3/8–16UNC 9/16" deep		1/2–13UNC 3/4" deep	
F	1.75	44	2.25	57	3.13	79
G	1.56	40	2.13	54	3.13	79
H	3.19	81	3.75	95	5.34	136
J	1.88	48	2.44	62	3.44	87
K	2.31	59	3.09	78	4.56	116
L	4.34	110	5.38	137	7.31	186
M	5.31	135	6.34	161	7.88	200
N	Left of center				On center	
	.53	13	1.00	25		
Q	1.44	37	1.78	45	2.31	59

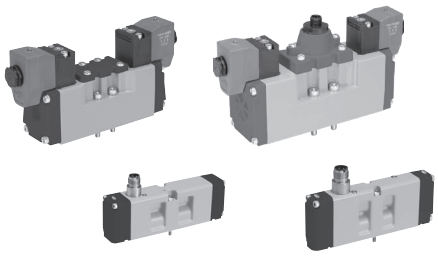
For inventory, lead times, and kit lookup, visit www.pdnplu.com

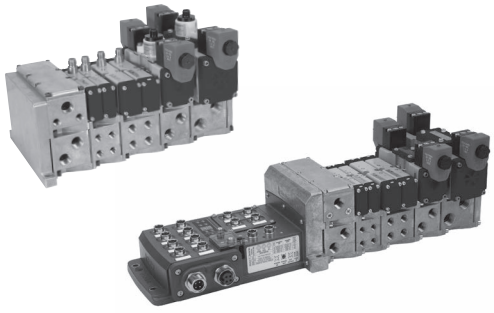
Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

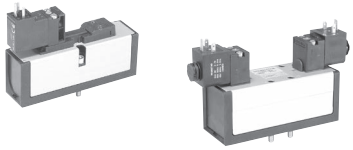
Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

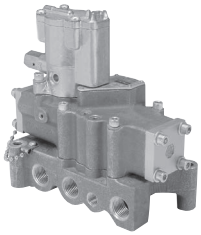












Pneumatic Valve Products
Subbase and Manifold Valve Series

H Series Micro

Features	D2-D3
Common Part Numbers	D4-D5
Ordering Information	D6-D9
Technical / Dimensional Data	D10-D26
Accessories	D12

Moduflex Series

Features	D27-D31
Common Part Numbers / Ordering Information	D32-D46
P2M Network Nodes	D47-D54
Technical Data / Accessories	D55-D65
Dimensional Data	D66-D71

H Series ISO

Features	D72-D75
Plug-In	
15407-2 - Size 02, 01 / 5599-2, Size 1, 2	D76-D92
5599-2 - Size 3	D93-D100
Non Plug-In	
15407-1 - Size 02, 01 / 5599-1 - Size 1, 2	D101-D115
5599-1 Size 3	D116-D122
Technical Data / Accessories	D123-D137
Dimensional Data	D138-D149

Network Connectivity

Features	D150-D159
P2M Network Nodes	D160-D169
P2H Network Nodes	D170-D189
PCH Network Portal	D190-D206
Turck Network Portal	D207-D226
Accessories / Cables	D227-D229
Technical / Dimensional Data	D230

DX Series

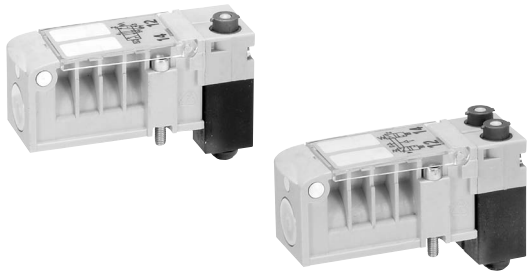
Features	D231
Common Part Numbers / Ordering Information	D232-D238
Non Plug-In	
15407-1, Size 02 & 01	D239-D247
5599-1, Size 1, 2, 3	D248-D249
Technical Data / Accessories	D250-D262
Dimensional Data	D263-D269

Valvair II Series

Features	D270
Common Part Numbers / Ordering Information	D271-D276
Technical Data / Accessories	D277-D287
Dimensional Data	D288-D295

H Series Micro

The H Series Micro Valve System incorporates a space saving back to back valve mounting design, and achieves flow rates of 0.35 Cv per valve with 4 valves having a combined width of 42mm. This plug-in valve solution simplifies wiring with the use of 25 pin connectors or fieldbus systems.



Ports
- M7 on manifolds
- 3/8 Inch on end plates

Mounting
- Manifold

Solenoids
- 24 VDC, 1.0 watt

Certification / approval
- IP65 rated
- EMC / CE Mark: According to EN 61 000-6-2

Material Specifications

Body	Polyamide reinforced fiberglass
End plates	Aluminum
Fasteners	Zinc plated steel
Manifolds	Aluminum
Spool	Brass and nitrile rubber
Spool enclosure	Brass

Operating Information

Operating pressure: Vacuum to 120 PSIG (Vacuum to 8.2 bar)

Temperature range: 5°F to 120°F (-15°C to 49°C)

2-Position & Dual 3/2
0.35 Cv
C = 1.2 Nl/s x bar, b = 0.13
Qn = 282 Nl/min
Qmax = 510 Nl/min

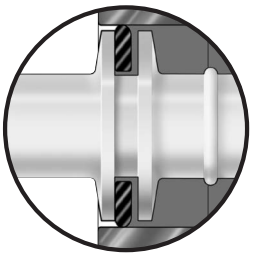
3-Position
0.30 Cv
C = 1 Nl/s x bar, b = 0.13
Qn = 228 Nl/min
Qmax = 402 Nl/min

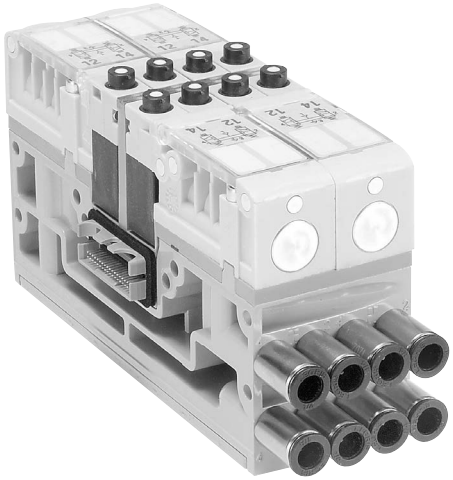
Pilot pressure requirements:

Valve number	Minimum pilot pressure	Maximum pilot pressure
HMEVX2049A	40 PSI	120 PSI
HM2VX2049A	25 PSI	120 PSI
HM5VX2049A	45 PSI	120 PSI
HMNVX2049A	40 PSI	120 PSI
HMPVX2049A	40 PSI	120 PSI
HMQVX2049A	40 PSI	120 PSI

Wear Compensation System

- Maximum Performance
  - Low Friction
  - Fast Response
  - Lower Operating Pressures
  - Less Wear
- Long Cycle Life - Under pressure, radial expansion of the seal occurs to maintain sealing contact with the valve bore.
- Non-Lube Service - No lubrication required for continuous valve shifting.
- Bi-Directional Spool Seals - Common spool used for any pressure, including vacuum.





Innovative Product Design

- Back to back valve mounting design centralizes wiring in the manifold
- 4 valves on a 42mm wide manifold provides a 10.5mm wide valve solution with a reduced cost
- High flow of 0.35 Cv allows for broad application use
- Plug-in valve electronics reduce and eliminate wiring system costs
- Multiple pressure zones for many applications on the same manifold

Standard Features

- Integrated LED's identify when solenoids are active
- Side and bottom porting options on manifolds and end plates for versatile mounting
- All valve functions available for complete product offering
- Valves can be arranged in any combination for maximum flexibility
- Internal and external pilot options available for vacuum to 145 PSI applications
- IP65 protection enables direct machine mounting
- Product identification, valve function, and port description tags are standard on every manifold and are clearly visible thru a protective cover
- User configurable overrides for non-locking, locking, or no override options

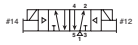
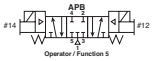
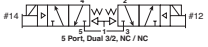
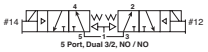
Manifold Platforms

- 25 pin D-sub manifolds for control systems with discrete Outputs
- IO-Link Type A & Type B communication modules
- Cost effective moduflex fieldbus manifolds with with Ethernet protocals Ethernet IP, Profinet, Ethercat and Modbus TCP

Complete Assemblies

- All products offered as component level parts for individual assembly
- Simple manifolds offer sub-assembly level products with valves and fittings attached to manifold bases in a single part number
- Add-a-fold systems offer complete assemblies; including valves, manifolds, end plates, fittings, and mufflers in as few as 2 part numbers

H Series Micro Valves

	Symbol	Type	Cv	Operator	Part Number
		4-way, 2-position	0.35	Single solenoid	**HMEVX2049A**
		4-way, 2-position	0.35	Double solenoid	**HM2VX2049A**
		4-way, 3-position, all ports blocked	0.3	Double solenoid	**HM5VX2049A**
		3-way, 2-position, dual valve, NC/NC	0.35	Double solenoid	**HMNVX2049A**
		3-way, 2-position, dual valve, NO/NO	0.35	Double solenoid	**HMPVX2049A**
		3-way, 2-position, dual valve, NO/NC	0.35	Double solenoid	**HMQVX2049A**
		Blanking plate	N/A	N/A	**HMBVX00XXA**
		Intermediate air supply	N/A	N/A	**HMCVX00XXA**

- All valves, except double solenoid 2-position, ship with multi functional overrides. Standard valve configuration is non-locking manual override. Each solenoid can be configured for locking override or no override with the included manual override caps.
- All valve options include an LED, which is built into the manifold.
- All valve options pull pilot pressure from the manifold. The manifold assembly can be configured for internal or external pilot on the end plate.

Manifold Bases

		Part Numbers		
Plug-In Valve Manifolds		**Side Port**		**Bottom Port**
Single solenoid outputs only		**PSM21JAP**		**PSM22JAP**
Double or single solenoid outputs		**PSM21MAP**		**PSM22MAP**

Each manifold holds 4 H Series Micro Valves. Double address circuit boards contain outputs for 8 solenoids, and can be used with any valve. When a single solenoid valve is used, one address is not used but is still present on the manifold. Single address circuit boards contain outputs for 4 solenoids. Only single solenoid valves can be used.

Most popular.

Internal Pilot End Plate Kits

	Electrical Option	Porting	Side Port	Bottom Port
	25-pin, D-sub	NPT	**PSML25AP**	**PSML26AP**
		BSPP	**PSML21AP**	**PSML22AP**
	Turck fieldbus with valve driver module - 16 outputs	NPT	**PSMT15AP**	**PSMT16AP**
		BSPP	**PSMT11AP**	**PSMT12AP**
	Turck fieldbus with valve driver module - 32 outputs	NPT	**PSMT25AP**	**PSMT26AP**
		BSPP	**PSMT21AP**	**PSMT22AP**
	Moduflex up to 24 outputs	NPT	**PSMM45AP**	**PSMM46AP**
		BSPP	**PSMM41AP**	**PSMM42AP**

Most popular.

Simple Manifold Assemblies

Includes a valve manifold with 4 valves and fittings installed. End Plates must be ordered separately.

					A		B		C		D	
					9	10	11	12	13	14	15	16
PSM3	1	M	A	P	N	7	N	7	N	7	N	7

Base Style	
4-Station Manifold with Valve and / or Fitting	PSM3

Mounting Style	
Side Ported	1
Bottom Ported	2

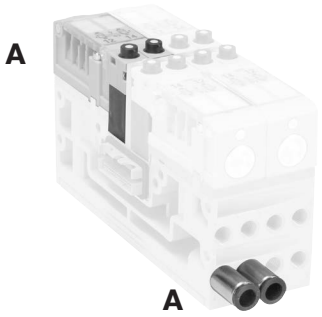
Enclosure / Lead length	
Single Address Circuit Board	J
Double Address Circuit Board	M

Engineering Level	
Current	A

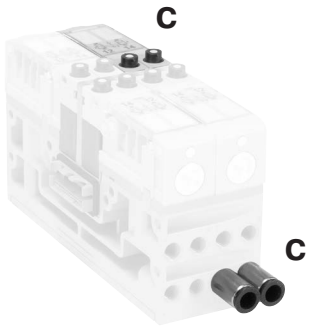
10, 12, 14, 16	Fitting
0	Without Fitting
4	Straight Fitting for 5/32 Inch or 4mm OD Tube
6	Straight Fitting for 6mm OD Tube
7	Straight Fitting for 1/4 inch OD Tube
P	Plug for Blanking Module

9, 11, 13, 15	Valve Type
N*	Double Solenoid, Dual 3/2, NC/NC
P*	Double Solenoid, Dual 3/2, NO/NO
Q*	Double Solenoid, Dual 3/2, 14 End NO - 12 End NC
E	Single Solenoid, 2-Position - Air Return, Spring Assist
2*	Double Solenoid, 2-Position
5*	Double Solenoid, 3-Position - APB
B**	Blanking Module
C	Intermediate Air Supply Module

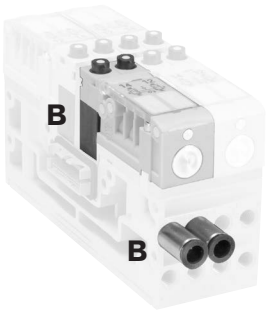
* Requires double address circuit board, enclosure "M".
** Requires fitting "P".



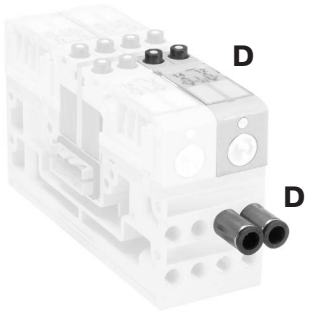
Valve Position A - Character 9
Fitting Position A - Character 10



Valve Position C - Character 13
Fitting Position C - Character 14



Valve Position B - Character 11
Fitting Position B - Character 12



Valve Position D - Character 15
Fitting Position D - Character 16

☐ Most popular.

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Plug-in End Plate Kits

BOLD OPTIONS ARE MOST POPULAR.

PSM L2 1 A P

Basic Series	
H Series Micro End Plate Kits	PSM

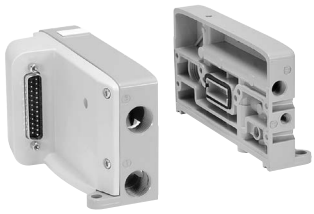
End Plate Options	
25-Pin, D-Sub	L2
Moduflex up to 24 outputs	M4
Turck Fieldbus with Valve Driver Module - 16 outputs	T1
Turck Fieldbus with Valve Driver Module - 32 outputs	T2

Turck and Moduflex communication modules must be ordered separately.
See Fieldbus Section for more information.

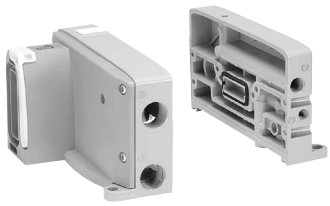
Port Size / Thread Type, Base Style	
1	BSPP, Side Port, Internal Pilot
2	BSPP, Bottom Port, Internal Pilot
5	NPT, Side Port, Internal Pilot
6	NPT, Bottom Port, Internal Pilot

All End Plate Options can be converted to external pilot.
See Technical Section.

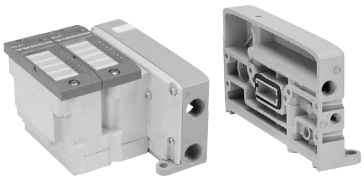
Engineering Level	
A	Current



L2: 25-Pin, D-Sub End Plates



M4: Moduflex Fieldbus End Plates



T1, T2: H Series Micro Turck End Plates

How To Order Plug-in Add-A-Fold Assemblies

1. List Add-A-Fold Assembly call out. This automatically includes the end plate kit assembly.
2. List Simple Manifold Assemblies. List left to right, LOOKING AT THE CYLINDER PORTS on the manifold.

Maximum Number of Solenoids
(Maximum Energized Simultaneously)

			Turck	
	25-pin D-sub	Moduflex	16 Outputs	32 Outputs
24VDC	24 (24)	24 (24)	16 (16)	32 (32)

Add-A-Fold Assembly Model Number

AAHM D 3 24 0 0 0 0

Valve Series	
H Series Micro Add-A-Fold	AAHM

End Plate Option	
Turck Fieldbus with Valve Driver Module - 16 Outputs	A
Turck Fieldbus with Valve Driver Module - 32 Outputs	B
25-Pin, D-Sub - 24 Outputs	D
Moduflex - Up to 24 Outputs	T

Turck Fieldbus and Moduflex communication modules must be ordered separately.

	End Plate Type	
BSPP Threads	Bspp Side Port, Internal Pilot	1
	Bspp Bottom Port, Internal Pilot	2
	Bspp Side Port, External Pilot	3
	Bspp Bottom Port, External Pilot	4
NPT Threads	Npt Side Port, Internal Pilot	5
	Npt Bottom Port, Internal Pilot	6
	Npt Side Port, External Pilot	7
	Npt Bottom Port, External Pilot	8

Number of Stations*	
4 Valve Manifold	04
8 Valve Manifold	08
12 Valve Manifold	12
16 Valve Manifold	16
20 Valve Manifold	20
24 Valve Manifold	24
28 Valve Manifold	28
32 Valve Manifold	32

* For an Add-A-Fold part number to be valid, all segments must have a corresponding electrical connection at the end plate. See Maximum Number of Solenoids chart.

3/8" Inlet Port on End Plate		
0	Without Fitting	
8	Straight Fitting for 8mm OD Tube	*BSPP Threads*
A	Straight Fitting for 10mm OD Tube	
7	Straight Fitting for 1/4 inch OD Tube	*NPT Threads*
9	Straight Fitting for 3/8 inch OD Tube	

3/8" Exhaust on End Plate		
0	Without Fitting	
M	Muffler	
8	Straight Fitting for 8mm OD Tube	*BSPP Threads*
A	Straight Fitting for 10mm OD Tube	
7	Straight Fitting for 1/4 inch OD Tube	*NPT Threads*
9	Straight Fitting for 3/8 inch OD Tube	

M7 Pilot Port on End Plate		
Internal Pilot End Plate		
0	With Standard Plug	
External Pilot End Plate		
0	Without Fitting	
4	Straight Fitting for 4mm OD Tube	*BSPP Threads*
6	Straight Fitting for 6mm OD Tube	
4	Straight Fitting for 5/32 inch OD Tube	*NPT Threads*
7	Straight Fitting for 1/4 inch OD Tube	

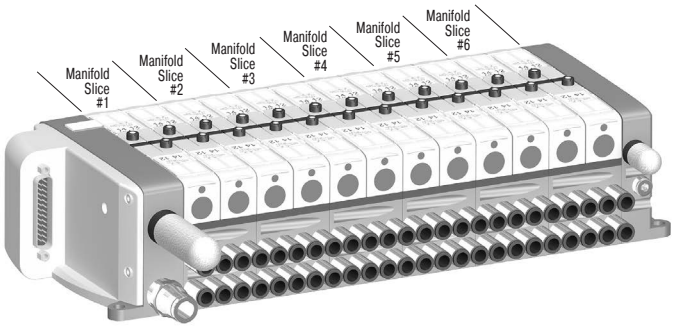
Pilot Exhaust on End Plate		
0	Without Fitting	
M	Muffler	
4	Straight Fitting for 4mm OD Tube	*BSPP Threads*
6	Straight Fitting for 6mm OD Tube	
4	Straight Fitting for 5/32 inch OD Tube	*NPT Threads*
7	Straight Fitting for 1/4 inch OD Tube	

Note:
BSPP fittings can only be used with BSPP Manifolds.
NPT fittings can only be used with NPT Manifolds.

☐ Most popular.

25-pin, D-Sub Manifolds

24 Single Solenoid Valves



Add-A-Fold

Manifold is factory assembled and tested for pneumatic leaks and electrical continuity.

Item	Qty	Description	Part Number
01	1	24 valve Add-A-Fold with end plates	**AAHMD5249M0M**
02	6	4 valve simple manifold slices #1-6	**PSM31JAPE7E7E7E7**

Component Level

Item	Qty	Description	Part Number
01	1	25-pin, D-sub, end plate	**PSML25AP**
02	24	Single solenoid valve	**HMEVX2049A**
03	6	Manifold, side ported, single address	**PSM21JAP**
04	50	1/4" Tube fittings (in box quantity)	**PS567925**
05	10	3/8" Tube fittings (in box quantity)	**PS568338**
06	1	3/8" Exhaust muffler	**P6M-PAB3**
07	1	1/8" Exhaust muffler	**P6M-PAB1**

Sandwich Regulator

	Description	Kit Number
	Common port regulator, 5 to 125 PSI with gauge	**PSMRAX6AP**

Notes: Cv values are reduced when using a sandwich regulator to 0.20 for 2-position and Dual 3/2 valves, and 0.17 for 3-position APB valves.

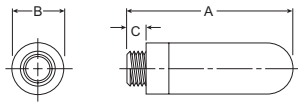
The sandwich regulator passes full pilot pressure from the manifold, allowing the regulated pressure to adjusted down to 5 PSI without affecting valve functionality.

Flow Controls

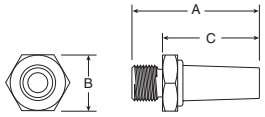
	Description	Kit Number
	4mm to 4mm or 5/32" to 5/32" OD tube	**FC832-5/32**
	1/4" to 1/4" O.D. tube	**FC832-4**

Most popular.

Mufflers



P6M-PAB1 & P6M-PAB3



P0568800

	Port Thread	A	Ø B	C	Weight (grams)	Part Number
	1/8 pilot exhaust – BSPP or NPT	1.36 (34.5)	0.50 (12.7)	0.26 (6.7)	0.02	**P6M-PAB1**
	3/8 main exhaust – BSPP or NPT	2.64 (67)	0.79 (20)	0.43 (11)	0.06	**P6M-PAB3**
	M7 x 1 bottom port pilot exhaust *	0.98 (25)	0.43 (11)	0.75 (19)	5	**P0568800**

Note: Recommended tube durometer of 95 or higher. A tube support may be required if tube durometer is less than 95.

* Must be order in multiples of 10.

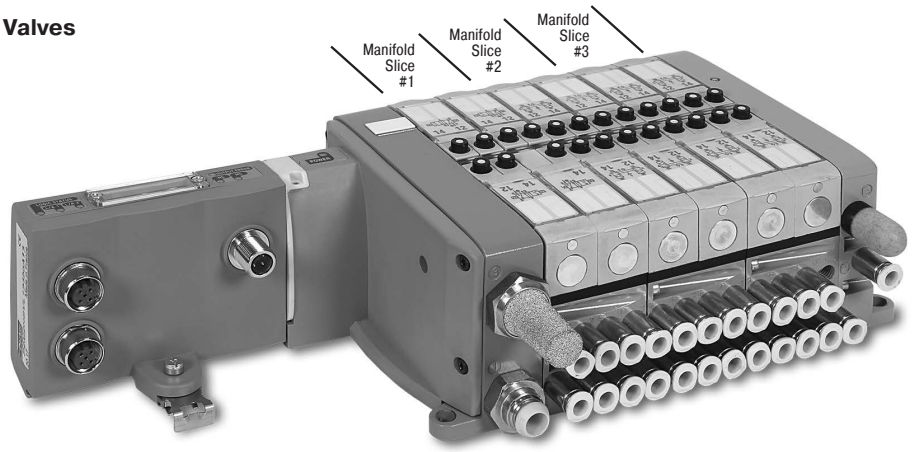
Fittings – Must be ordered in multiples of 10

	Thread	Tube O.D.	Part Number
Manifold or pilot supply ports – straight			
	M7	4mm or 5/32"	**PS567904**
	M7	6mm	**PS567906**
	M7	1/4"	**PS567925**
Main inlet or exhaust ports			
	3/8" NPT	1/4"	**PS568325**
	3/8" NPT	3/8"	**PS568338**
	3/8" BSPP	8mm	**PS568308**
	3/8" BSPP	10mm	**PS568310**
Pilot exhaust ports			
	1/8" NPT	5/32"	**PS568215**
	1/8" NPT	1/4"	**PS568225**
	1/8" BSPP	4mm	**PS568204**
	1/8" BSPP	6mm	**PS568206**

Moduflex Fieldbus Manifold

4 Double Solenoid Valves,

8 Single Solenoid Valves



Add-A-Fold

Manifold is factory assembled and tested for pneumatic leaks and electrical continuity. P2M IO-Link Module ordered separately.

Item	Qty	Description	Part Number
01	1	12 valve add-a-fold with end plates	**AAHMT5129M0M**
02	1	4 valve simple manifold slice #1	**PSM31MAPN7N7N7N7**
03	2	4 valve simple manifold slice #2-3	**PSM31JAPE7E7E7E7**

Component Level

Item	Qty	Description	Part Number
01	1	Moduflex fieldbus, end plate	**PSMM45AP**
02	4	Double solenoid, dual 3/2, NC/NC	**HMNVX2049A**
03	1	Manifold, side ported, double address	**PSM21MAP**
04	8	Single solenoid valve	**HMEVX2049A**
05	2	Manifold, side ported, single address	**PSM21JAP**
06	30	1/4" tube fittings (in box quantity)	**PS567925**
05	10	3/8" tube fittings (in box quantity)	**PS568338**
06	1	3/8" exhaust muffler	**P6M-PAB3**
07	1	1/8" exhaust muffler	**P6M-PAB1**

Additional Components

Moduflex Communication Modules Industrial Ethernet – IP65

Industrial Ethernet Protocol	Maxiumum Addresses †	Part Number
EtherNet/IP *(Safe Power Capable)*	24 †	**P2M2HBVE12400**
PROFINET *(Safe Power Capable)*	24 †	**P2M2HBVN12400**
EtherCAT *(Safe Power Capable)*	24 †	**P2M2HBVT12400**
Modbus/TCP *(Safe Power Capable)*	24 †	**P2M2HBVM12400**
PowerLink *(Safe Power Capable)*	24 †	**P2M2HBVW12400**

Industrial Ethernet – IP20

Industrial Ethernet Protocol	Maxiumum Addresses †	Part Number
Profinet IO	24 †	**P2M2HBVE12400RJ**
EtherNet/IP	24 †	**P2M2HBVN12400RJ**
EtherCAT	24 †	**P2M2HBVT12400RJ**

† 24 addresses capable when used with H Micro and H ISO only

Most popular.

IO-Link

IO-Link - 24 outputs		Part Number
Class A	3-Pin, Aux power 1 & 3	**P2M2HBVL12400A13**
	3-Pin, Aux power 4 & 3	**P2M2HBVL12400A43**
	3-Pin, Aux power 4 & 2	**P2M2HBVL12400A42**
Class B	5-Pin, Aux power 2 & 5	**P2M2HBVL12400B25**

Note: For Safe Power Capable version, add "-SPC" to end of part number

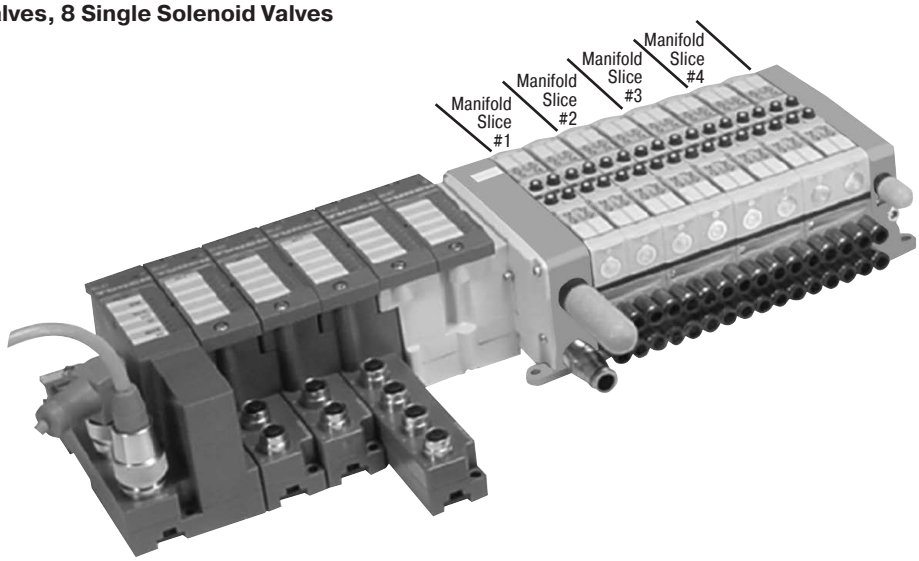
IO-Link

	Bus Protocol	Connector Type	Part Number
Power & Communi-cation Cable	IO-Link	5-pin male to female cable, TPE	**RKC 4.5T-*-RSC 4.5T/S1587**

Where * = 1, 2, 3, 4, 5, 10, 20 meter standard lengths

Turck Fieldbus Manifold

12 Double Solenoid Valves, 8 Single Solenoid Valves



Add-A-Fold

Manifold is factory assembled and tested for pneumatic leaks and electrical continuity.

Item	Qty	Description	Part Number
01	1	16 valve add-a-fold with end plates	**AAHMB4169M0M**
02	2	4 valve simple manifold slices #1-3	**PSM31MAPN7N7N7N7**
03	2	4 valve simple manifold slices #4-5	**PSM31JAPE7E7E7E7**

Component Level

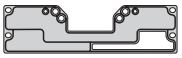
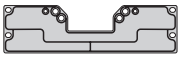
Item	Qty	Description	Part Number
01	1	Turck Communications with 32 output	**PSMT25AP**
02	12	Double solenoid, dual 3/2, NC/NC	**HMNVX2049A**
03	3	Manifold, side ported, double address	**PSM21MAP**
04	4	Single solenoid, 2-position, air return, spring assist	**HMEVX2049A**
05	1	Manifold, side ported, single address	**PSM21JAP**
06	40	1/4" tube fittings (in box quantity)	**PS567925**
07	10	3/8" tube fittings (in box quantity)	**PS568338**
08	1	3/8" exhaust muffler	**P6M-PAB3**
09	1	1/8" exhaust muffler	**P6M-PAB1**

Additional Components

Description	Part Number
Turck Ethernet IP Communications	**PSSCDM12A**

Most popular.

Manifold to Manifold Gaskets*

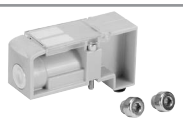
	Description	Part Number
	All galleys passing	**PSM0001**
	Main pressure to rear or front valves blocked, exhaust passing	**PSM0002**
	Main pressure to rear or front valves blocked, exhaust blocked	**PSM0003**
	All galleys blocked	**PSM0004**

* Includes 1 Gasket

Solenoid Kit

	Description	Part Number
	24VDC solenoid kit with screws	**PSM0010**

Blanking Plate Kits

	Description	Part Number
	Blanking plugs, gasket, and mounting screws.	**HMBVX00XXA**

Blanking plugs must be inserted into the 2 and 4 ports of the manifold corresponding to the blanking plate.

Intermediate Air Supply Base

	Description	Part Number
	Gasket and mounting screws.	**HMCVX00XXA**

Fittings (not included) must be inserted into the 2 and 4 ports of the manifold corresponding to the intermediate air supply. Auxiliary pressure should be supplied through these fittings, which will directly feed the #1 pressure galley.

Override Caps

	Description	Part Number
	Set of 10 manual override caps	**PSM0011**

Gaskets and Valve Screws

	Description	Part Number
	Set of 5 valve to manifold gaskets and 10 screws	**PSM0012**

Regulator Gauge

	Description	Part Number
	5 to 125 PSI gauge	**P0566202**

Plugs

	Description	Part Number
	Set of 10 M7 plugs (Part No. PS567900) for auxiliary and pilot pressure ports	**PSM0013**

Screws

	Description	Part Number
	Set of 10 manifold to manifold M3 screws	**PSM0014**

Valve Labels*

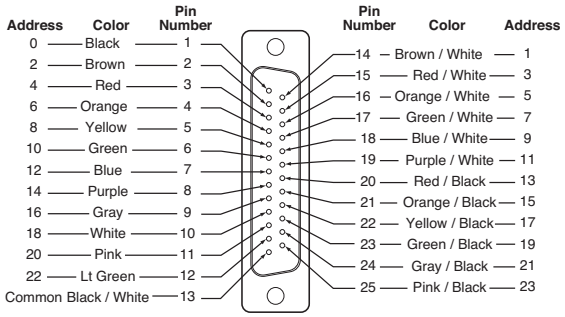
Description	Part Number
Single solenoid diagram	**PSM002E**
Double solenoid diagram	**PSM0022**
Double solenoid diagram – APB	**PSM0025**
Double solenoid diagram – Dual 3/2 NC/NC	**PSM002N**
Double solenoid diagram – Dual 3/2 NO/NO	**PSM002P**
Double solenoid diagram – Dual 3/2, 14 end NO, 12 end NC	**PSM002Q**

*Includes 10 Labels.

Protective Cover

	Description	Part Number
	Protective polyester cover Set of 10	**PS5706**

25-Pin, D-Sub Cable (Female)

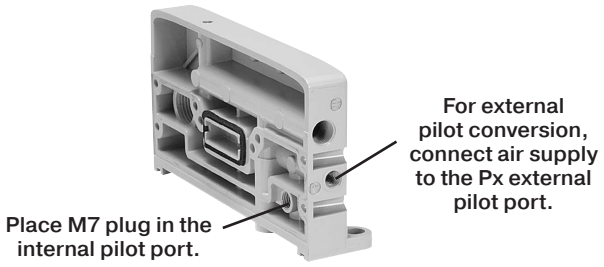


	Description	Length	Part Number
	25-pin, D-sub cable, IP20	3 meters	**P8LMH25M3A**
	25-pin, D-sub cable, IP20	9 meters	**SCD259D**
	25-pin, D-sub cable, IP65	3 meters	**SCD253W**
	25-pin, D-sub cable, IP65	9 meters	**SCD259WE**

Pilot Configuration

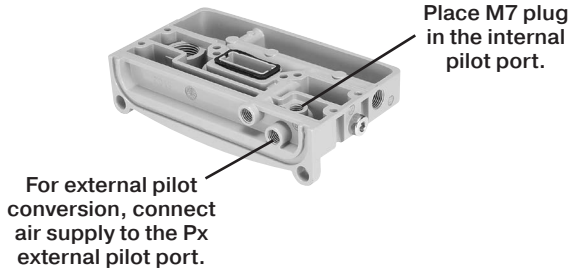
Side Ported

Manifolds can be configured for either internal or external pilot in the field. Side ported manifolds are configured for internal pilot when the M7 plug is located in the Px port on the front of the right hand end plate. Moving this plug to the internal pilot port of the right hand end plate and replacing it with a fitting allows an external pilot to be used.



Bottom Ported

Bottom ported manifolds are configured for internal pilot when the M7 plug is located in the Px port on the bottom of the right hand end plate. Moving this plug to the internal pilot port of the right hand end plate and replacing it with a fitting allows an external pilot to be used.

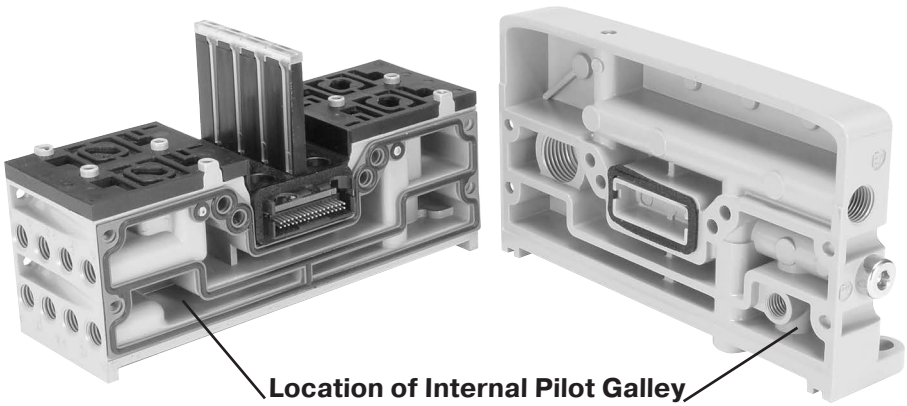


Pilot Pressure Requirements

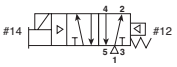
Internal pilot pressure is supplied to the entire manifold from the right hand end plate, where the main pressure for the front row of valves is connected to the pilot pressure galley.

Maximum pilot pressure is 120 PSI. For applications requiring working pressures from 120 to 145 PSI, an external pilot supply less than 120 PSI is required.

Valve Number	Minimum Pilot Pressure	Maximum Pilot Pressure
HMEVX2049A	40 PSI	120 PSI
HM2VX2049A	25 PSI	120 PSI
HM5VX2049A	45 PSI	120 PSI
HMNVX2049A	40 PSI	120 PSI
HMPVX2049A	40 PSI	120 PSI
HMQVX2049A	40 PSI	120 PSI



Single Solenoid - Single Address Manifolds



Single Pressure At Inlet Port 1:

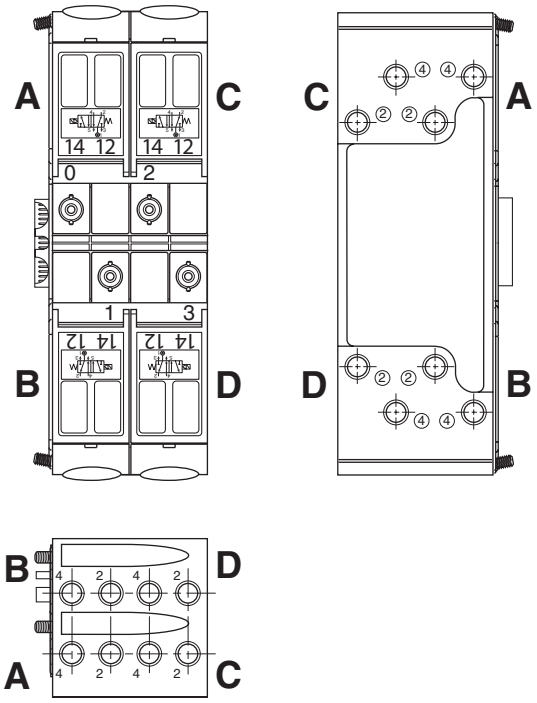
De-energized position – Solenoid operator #14 de-energized. Pressure at inlet port 1 connected to outlet port 2. Outlet port 4 connected to exhaust port 5.

Energized position – Solenoid operator #14 energized. Pressure at inlet port 1 connected to outlet port 4. Outlet port 2 connected to exhaust port 3.

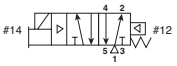
HMEVX2049A - Single Address Manifolds

Valve Position A		Valve Position C	
Output 0		Output 2	
On	Off	On	Off
1→4 3←2	1→2 5←4	1→4 3←2	1→2 5←4

Valve Position B		Valve Position D	
Output 1		Output 3	
On	Off	On	Off
1→4 3←2	1→2 5←4	1→4 3←2	1→2 5←4



Single Solenoid - Double Address Manifolds



Single Pressure At Inlet Port 1:

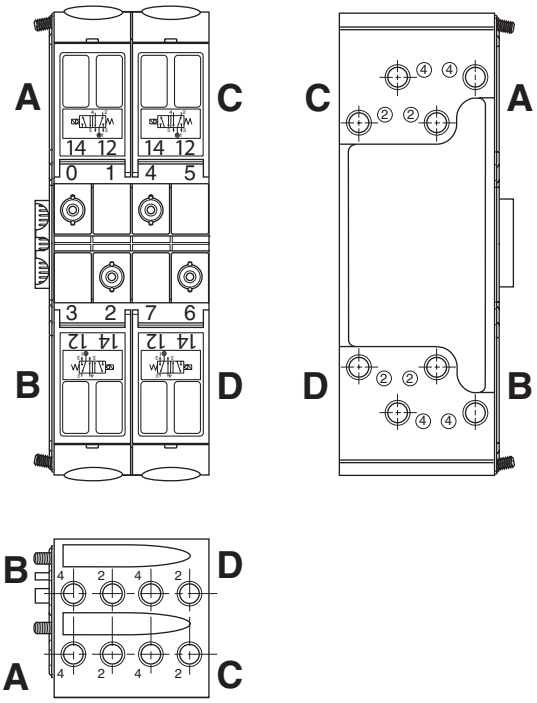
De-energized position – Solenoid operator #14 de-energized. Pressure at inlet port 1 connected to outlet port 2. Outlet port 4 connected to exhaust port 5.

Energized position – Solenoid operator #14 energized. Pressure at inlet port 1 connected to outlet port 4. Outlet port 2 connected to exhaust port 3.

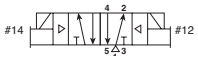
HMEVX2049A - Double Address Manifolds

Valve Position A				Valve Position C			
Output 0		Output 1		Output 4		Output 5	
On	Off	On	Off	On	Off	On	Off
1→4 3←2	1→2 5←4	Output Lost 1→2 5←4	1→2 5←4	1→4 3←2	1→2 5←4	Output Lost 1→2 5←4	1→2 5←4

Valve Position B				Valve Position D			
Output 3		Output 2		Output 7		Output 6	
On	Off	On	Off	On	Off	On	Off
Output Lost 1→2 5←4	1→2 5←4	1→4 3←2	1→2 5←4	Output Lost 1→2 5←4	1→2 5←4	1→4 3←2	1→2 5←4



Double Solenoid - Double Address Manifolds, Last state #12 Energized or #14 Energized

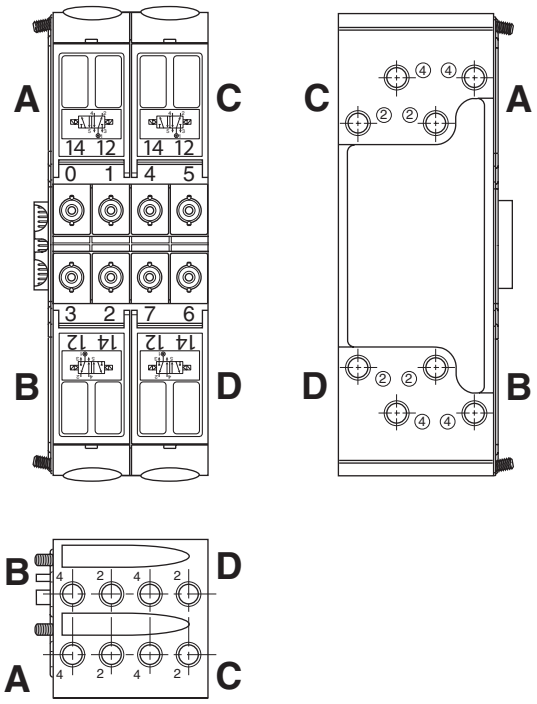


Single Pressure At Inlet Port 1:

Solenoid operator #14 energized last. Pressure at inlet port 1 connected to outlet port 4. Outlet port 2 connected to exhaust port 3.

Solenoid operator #12 energized last. Pressure at inlet port 1 connected to outlet port 2. Outlet port 4 connected to exhaust port 5.

A 2-Position, Double Solenoid Valve is a detented valve. When the output is removed, the spool remains in its position.



HM2VX2049A - Double Address Manifolds - Last state #12 Energized

Valve Position A				Valve Position C			
Output 0		Output 1		Output 4		Output 5	
On	Off	On	Off	On	Off	On	Off
1→4 3←2	1→2 5←4	1→2 5←4	1→2 5←4	1→4 3←2	1→2 5←4	1→2 5←4	1→2 5←4

Valve Position B				Valve Position D			
Output 3		Output 2		Output 7		Output 6	
On	Off	On	Off	On	Off	On	Off
1→2 5←4	1→2 5←4	1→4 3←2	1→2 5←4	1→2 5←4	1→2 5←4	1→4 3←2	1→2 5←4

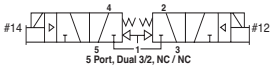
HM2VX2049A - Double Address Manifolds - Last state #14 Energized

Valve Position A				Valve Position C			
Output 0		Output 1		Output 4		Output 5	
On	Off	On	Off	On	Off	On	Off
1→4 3←2	1→4 3←2	1→2 5←4	1→4 3←2	1→4 3←2	1→4 3←2	1→2 5←4	1→4 3←2

Valve Position B				Valve Position D			
Output 3		Output 2		Output 7		Output 6	
On	Off	On	Off	On	Off	On	Off
1→2 5←4	1→4 3←2	1→4 3←2	1→4 3←2	1→2 5←4	1→4 3←2	1→4 3←2	1→4 3←2

Double Solenoid - Double Address Manifolds

Dual 3-Way, 2-Position NC / NC (NNP)

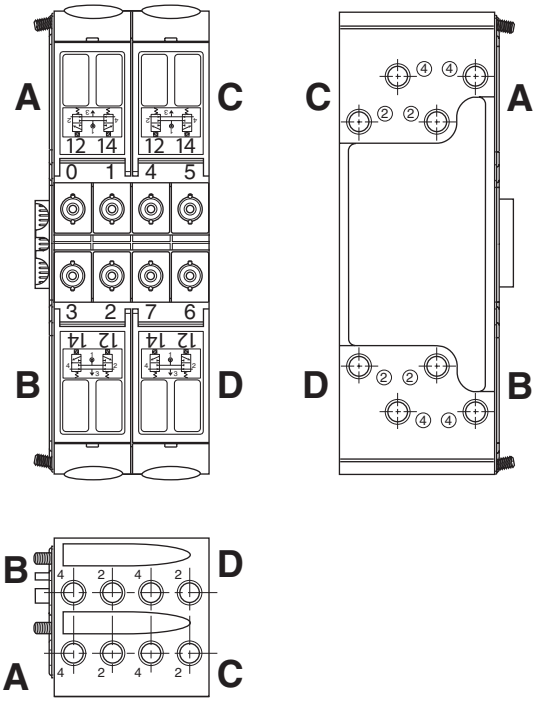


With #14 & #12 operators both de-energized – pressure at inlet port 1 blocked, outlet port 4 connected to exhaust port 5, outlet port 2 connected to exhaust port 3.

With #14 operator energized – pressure at inlet port 1 connected to outlet port 4, exhaust port 5 blocked, outlet port 2 connected to exhaust port 3.

With #12 operator energized – pressure at inlet port 1 connected to outlet port 2, exhaust port 3 blocked, outlet port 4 connected to exhaust port 5.

With #14 & #12 operators both energized – pressure at inlet port 1 connected to outlet ports 4 & 2, exhaust ports 3 & 5 blocked.



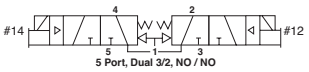
HMNVX2049A - Double Address Manifolds

Valve Position A				Valve Position C			
Output 0		Output 1		Output 4		Output 5	
On	Off	On	Off	On	Off	On	Off
1→2 3⊣	1⊣ 3←2	1→4 5⊣	1⊣ 5←4	1→2 3⊣	1⊣ 3←2	1→4 5⊣	1⊣ 5←4

Valve Position B				Valve Position D			
Output 3		Output 2		Output 7		Output 6	
On	Off	On	Off	On	Off	On	Off
1→4 5⊣	1⊣ 5←4	1→2 3⊣	1⊣ 3←2	1→4 5⊣	1⊣ 5←4	1→2 3⊣	1⊣ 3←2

Double Solenoid - Double Address Manifolds

Dual 3-Way, 2-Position NO / NO (NP)



With #14 & #12 operators both de-energized – pressure at inlet port 1 connected to outlet ports 4 & 2, exhaust ports 3 & 5 blocked.

With #14 operator energized – pressure at inlet port 1 connected to outlet port 2, exhaust port 3 blocked, outlet port 4 connected to exhaust port 5.

With #12 operator energized – pressure at inlet port 1 connected to outlet port 4, exhaust port 5 blocked, outlet port 2 connected to exhaust port 3.

With #14 & #12 operators both energized – pressure at inlet port 1 blocked, outlet port 4 connected to exhaust port 5, outlet port 2 connected to exhaust port 3.

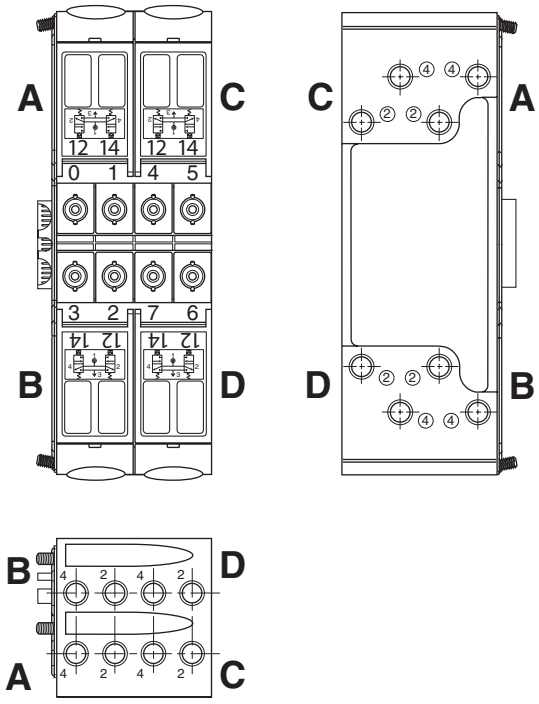
HMPVX2049A - Double Address Manifolds

Valve Position A			
Output 0		Output 1	
On	Off	On	Off
1⊣ 3←2	1→2 3⊣	1⊣ 5←4	1→4 5⊣

Valve Position C			
Output 4		Output 5	
On	Off	On	Off
1⊣ 3←2	1→2 3⊣	1⊣ 5←4	1→4 5⊣

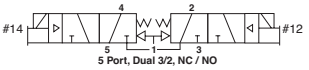
Valve Position B			
Output 3		Output 2	
On	Off	On	Off
1⊣ 5←4	1→4 5⊣	1⊣ 3←2	1→2 3⊣

Valve Position D			
Output 7		Output 6	
On	Off	On	Off
1⊣ 5←4	1→4 5⊣	1⊣ 3←2	1→2 3⊣



Double Solenoid - Double Address Manifolds

Dual 3-Way, 2-Position 14 End NO / 12 End NC (NP / NNP)



With #14 & #12 operators both de-energized – pressure at inlet port 1 connected to outlet port 4, exhaust port 5 blocked, outlet port 2 connected to exhaust port 3.

With #14 operator energized – pressure at inlet port 1 blocked, outlet port 4 connected to exhaust port 5, outlet port 2 connected to exhaust port 3.

With #12 operator energized – pressure at inlet port 1 connected to outlet ports 4 & 2, exhaust ports 3 & 5 blocked.

With #14 & #12 operators both energized – pressure at inlet port 1 connected to outlet port 2, exhaust port 3 blocked, outlet port 4 connected to exhaust port 5.

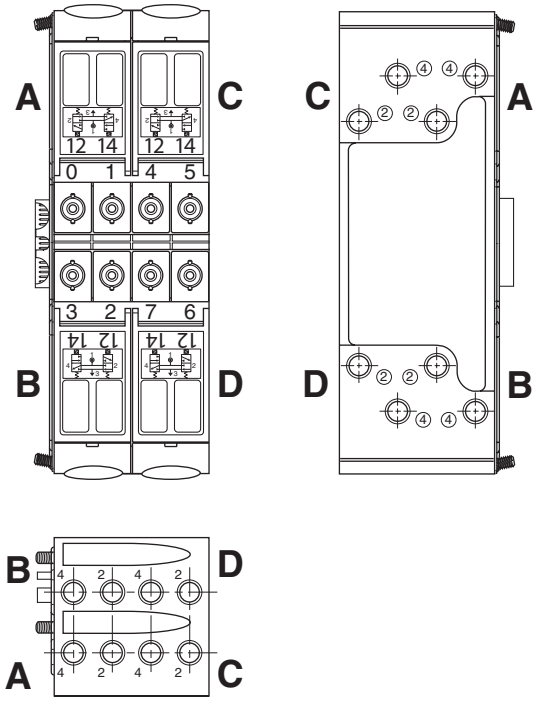
HMQVX2049A - Double Address Manifolds

Valve Position A			
Output 0		Output 1	
On	Off	On	Off
1→2 3⊣	1⊣ 3←2	1⊣ 5←4	1→4 5⊣

Valve Position C			
Output 4		Output 5	
On	Off	On	Off
1→2 3⊣	1⊣ 3←2	1⊣ 5←4	1→4 5⊣

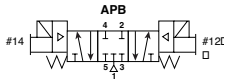
Valve Position B			
Output 3		Output 2	
On	Off	On	Off
1⊣ 5←4	1→4 5⊣	1→2 3⊣	1⊣ 3←2

Valve Position D			
Output 7		Output 6	
On	Off	On	Off
1⊣ 5←4	1→4 5⊣	1→2 3⊣	1⊣ 3←2



Double Solenoid - Double Address Manifolds

3-Position



Function 5: All Ports Blocked

With #12 operator energized – inlet port 1 connected to cylinder port 2, cylinder port 4 connected to exhaust port 5.

With #14 operator energized – inlet port 1 connected to cylinder port 4, cylinder port 2 connected to exhaust port 3.

All ports blocked in the center position.

HM5VX2049A - Double Address Manifolds

Valve Position A

Output 0 On Output 1 Off	Output 0 Off Output 1 On	Output 0 Off Output 1 Off
5⊣ 1→4 3←2	5←4 1→2 3⊣	3⊣ ⊢ 4 1⊣ ⊢ 2 5⊣

Valve Position B

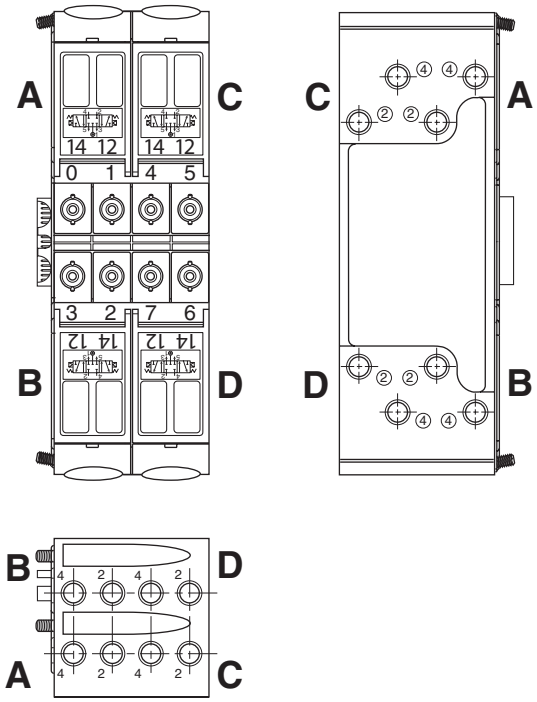
Output 2 On Output 3 Off	Output 2 Off Output 3 On	Output 2 Off Output 3 Off
5⊣ 1→4 3←2	5←4 1→2 3⊣	3⊣ ⊢ 4 1⊣ ⊢ 2 5⊣

Valve Position C

Output 4 On Output 5 Off	Output 4 Off Output 5 On	Output 4 Off Output 5 Off
5⊣ 1→4 3←2	5←4 1→2 3⊣	3⊣ ⊢ 4 1⊣ ⊢ 2 5⊣

Valve Position D

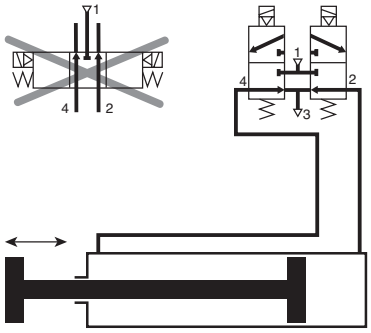
Output 6 On Output 7 Off	Output 6 Off Output 7 On	Output 6 Off Output 7 Off
5⊣ 1→4 3←2	5←4 1→2 3⊣	3⊣ ⊢ 4 1⊣ ⊢ 2 5⊣



Dual 3/2 valves replace 3-position valves for better performance

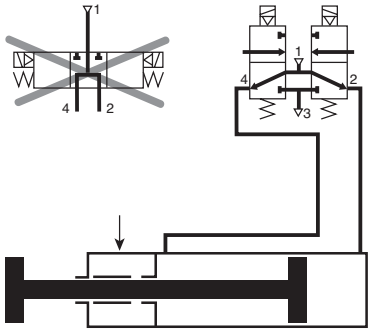
3-position center exhaust

A traditional 5/3 center exhaust valve is now replaced by a double 3/2 NC+NC valve module. Both cylinder chambers are exhausted and rod and piston are free to move.



3-position pressure center

A traditional 5/3 pressure center valve is now replaced by a double 3/2 NO+NO valve module. The function is identical.



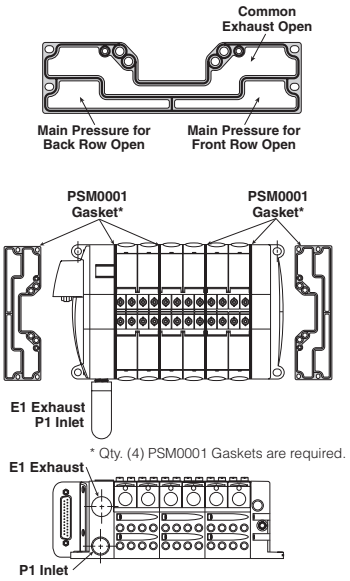
Multiple Pressure Zones

PSM0001 –

All ports open. Common pressure for front and rear manifold.

Common exhausts.

Standard gasket included with each manifold and end plate.

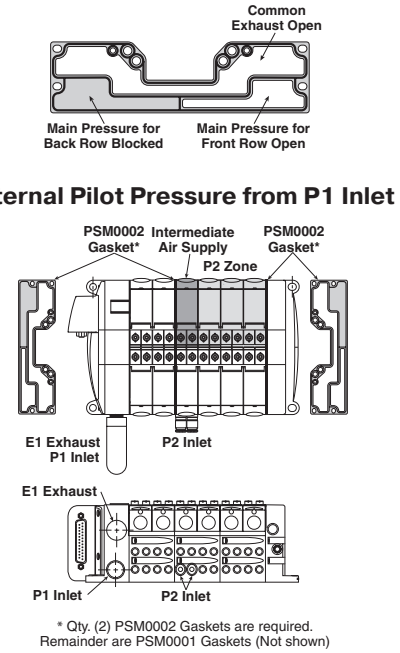


PSM0002 –

Rear manifold blocked for separate pressure supply.

Common exhausts.

Flip gasket to block front of manifold.



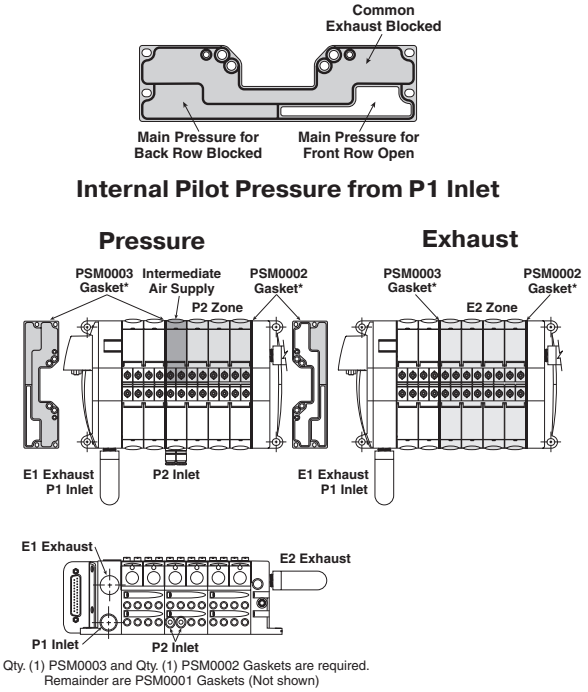
PSM0003 –

Rear manifold blocked for separate pressure supply.

Exhaust blocked also.

Flip gasket to block front of manifold.

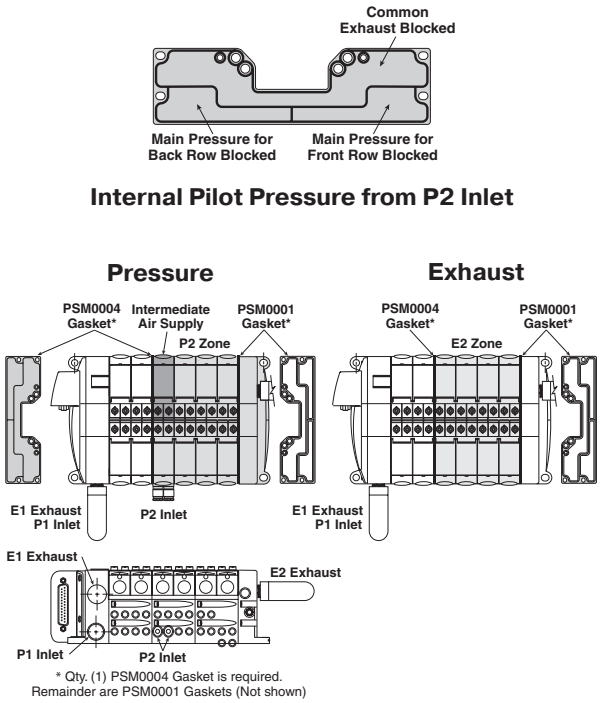
If used with bottom ported end plates, second exhaust must be piped from the side of the right end plate.



PSM0004 –

All galleys blocked.

Two pressure zones and two exhaust zones. If used with bottom ported end plates, second exhaust must be piped from the side of the right end plate.



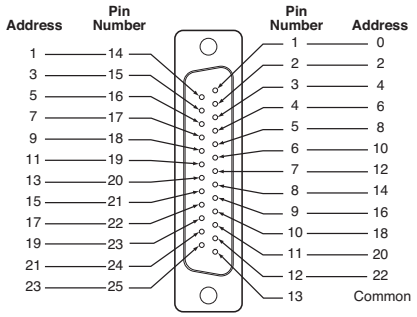
Maximum Number of Solenoids

(Maximum Energized Simultaneously)

	25-Pin D-Sub	Moduflex	H Series Fieldbus*
24VDC	24 (24)	24 (24)	32 (32)

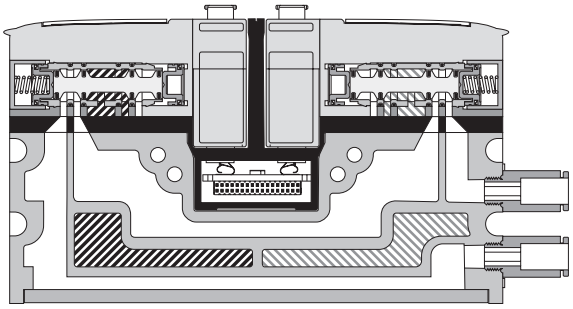
* Maximum of 32 solenoids per manifold. With Bus Extension functionality, 4 manifolds with up to 32 solenoids each can be connected on the same network.

25-Pin, D-Sub Connector (Male)

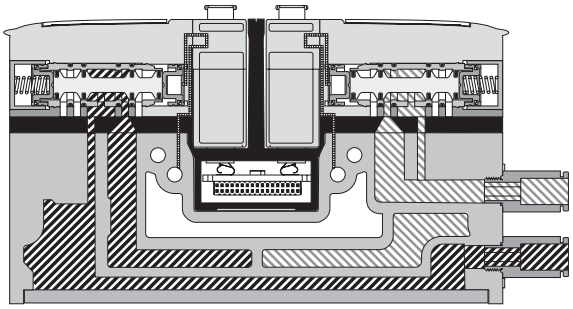


View into End Plate Connector - Male D-Sub, 25-Pin

Single Solenoid Valves Shown
Solenoid is De-energized



Side Exhaust
4 Ports Connected to Exhaust Port
(5 & 3 Common)



Side Pressure
2 Ports Connected to Inlet Port 1

Pressure **Exhaust**

Cv Values - H Series Micro

The charts below represent the minimum required Cv values for pneumatic systems operating at 80 PSI with a 5 PSI pressure drop.

To use the chart, locate the diameter of the cylinder across the horizontal axis, then the average required rod speed of the cycle. The intersection point is Cv value needed.

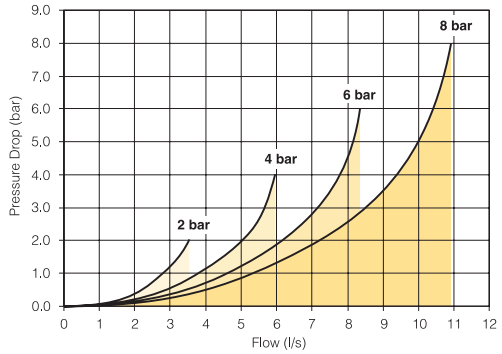
Grayed out values are not attainable with H Series Micro. Please select a larger Parker valve.

Average Rod Speed (mm/s)	Cylinder Diameter (mm)												
	6	8	10	12	16	20	25	32	40	50	63	80	100
25	0.000	0.001	0.001	0.002	0.003	0.005	0.008	0.013	0.021	0.032	0.051	0.083	0.129
50	0.001	0.002	0.003	0.004	0.007	0.010	0.016	0.026	0.041	0.065	0.103	0.166	0.259
75	0.001	0.002	0.004	0.006	0.010	0.016	0.024	0.040	0.062	0.097	0.154	0.248	0.388
100	0.002	0.003	0.005	0.007	0.013	0.021	0.032	0.053	0.083	0.129	0.205	0.331	0.517
125	0.002	0.004	0.006	0.009	0.017	0.026	0.040	0.066	0.103	0.162	0.257	0.414	0.647
150	0.003	0.005	0.008	0.011	0.020	0.031	0.049	0.079	0.124	0.194	0.308	0.497	0.776
175	0.003	0.006	0.009	0.013	0.023	0.036	0.057	0.093	0.145	0.226	0.359	0.580	0.906
200	0.004	0.007	0.010	0.015	0.026	0.041	0.065	0.106	0.166	0.259	0.411	0.662	1.035
225	0.004	0.007	0.012	0.017	0.030	0.047	0.073	0.119	0.186	0.291	0.462	0.745	1.164
250	0.005	0.008	0.013	0.019	0.033	0.052	0.081	0.132	0.207	0.323	0.513	0.828	1.294
275	0.005	0.009	0.014	0.020	0.036	0.057	0.089	0.146	0.228	0.356	0.565	0.911	1.423
300	0.006	0.010	0.016	0.022	0.040	0.062	0.097	0.159	0.248	0.388	0.616	0.994	1.552
350	0.007	0.012	0.018	0.026	0.046	0.072	0.113	0.185	0.290	0.453	0.719	1.159	1.811
400	0.007	0.013	0.021	0.030	0.053	0.083	0.129	0.212	0.331	0.517	0.822	1.325	2.070
450	0.008	0.015	0.023	0.034	0.060	0.093	0.146	0.238	0.373	0.582	0.924	1.490	2.329
500	0.009	0.017	0.026	0.037	0.066	0.103	0.162	0.265	0.414	0.647	1.027	1.656	2.587

Average Rod Speed (in/s)	Cylinder Diameter (in)																
	5/16"	7/16"	9/16"	3/4"	7/8"	1"	1-1/16"	1-1/8"	1-1/4"	1-1/2"	1-3/4"	2"	2-1/2"	3"	3-1/4"	3-5/8"	4"
1	0.001	0.002	0.003	0.005	0.006	0.008	0.010	0.011	0.013	0.019	0.026	0.034	0.053	0.076	0.090	0.111	0.136
2	0.002	0.003	0.005	0.010	0.013	0.017	0.019	0.021	0.026	0.038	0.052	0.068	0.106	0.153	0.179	0.223	0.271
3	0.002	0.005	0.008	0.014	0.019	0.025	0.029	0.032	0.040	0.057	0.078	0.102	0.159	0.229	0.269	0.334	0.407
4	0.003	0.006	0.011	0.019	0.026	0.034	0.038	0.043	0.053	0.076	0.104	0.136	0.212	0.305	0.358	0.446	0.543
5	0.004	0.008	0.013	0.024	0.032	0.042	0.048	0.054	0.066	0.095	0.130	0.170	0.265	0.382	0.448	0.557	0.678
6	0.005	0.010	0.016	0.029	0.039	0.051	0.057	0.064	0.079	0.114	0.156	0.204	0.318	0.458	0.537	0.669	0.814
7	0.006	0.011	0.019	0.033	0.045	0.059	0.067	0.075	0.093	0.134	0.182	0.237	0.371	0.534	0.627	0.780	0.950
8	0.007	0.013	0.021	0.038	0.052	0.068	0.077	0.086	0.106	0.153	0.208	0.271	0.424	0.611	0.717	0.891	1.085
9	0.007	0.015	0.024	0.043	0.058	0.076	0.086	0.097	0.119	0.172	0.234	0.305	0.477	0.687	0.806	1.003	1.221
10	0.008	0.016	0.027	0.048	0.065	0.085	0.096	0.107	0.132	0.191	0.260	0.339	0.530	0.763	0.896	1.114	1.357
11	0.009	0.018	0.030	0.052	0.071	0.093	0.105	0.118	0.146	0.210	0.286	0.373	0.583	0.839	0.985	1.226	1.492
12	0.010	0.019	0.032	0.057	0.078	0.102	0.115	0.129	0.159	0.229	0.312	0.407	0.636	0.916	1.075	1.337	1.628
14	0.012	0.023	0.038	0.067	0.091	0.119	0.134	0.150	0.185	0.267	0.364	0.475	0.742	1.068	1.254	1.560	1.899
16	0.013	0.026	0.043	0.076	0.104	0.136	0.153	0.172	0.212	0.305	0.415	0.543	0.848	1.221	1.433	1.783	2.171
18	0.015	0.029	0.048	0.086	0.117	0.153	0.172	0.193	0.238	0.343	0.467	0.611	0.954	1.374	1.612	2.006	2.442
20	0.017	0.032	0.054	0.095	0.130	0.170	0.191	0.215	0.265	0.382	0.519	0.678	1.060	1.526	1.791	2.229	2.713

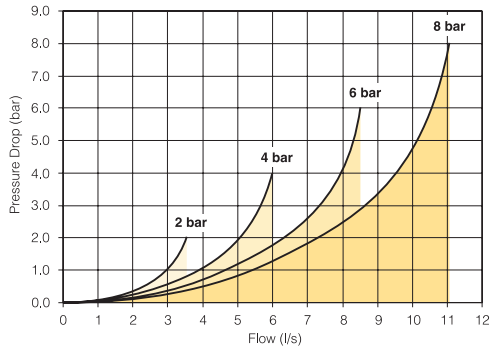
Flow Characteristics

Dual 3/2



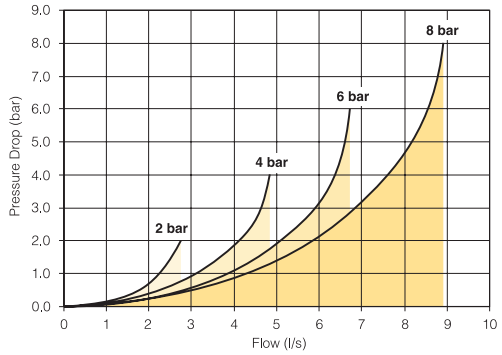
Operating pressure:	39 to 120.3 PSI (2.7 to 8.3 bar)
Change-over time (side 14):	Actuation 15 ms Return 20 ms P = 6b
Change-over time (side 12):	15 ms / 25 ms P = 6b
Flow (acc. to ISO 6358):	c = 1.2 Nl/s x bar b = 0.13 Qn = 4.6 Nl/s Qmax = 8.4 Nl/s

5/2 single and double solenoid



Operating pressure:	
Single solenoid	39 to 120.3 PSI (2.7 to 8.3 bar)
Double solenoid	24.6 to 120.3 PSI (1.7 to 8.3 bar)
Change-over time:	
Single solenoid	Actuation 15 ms Return 20 ms P = 6b
Double solenoid	13 ms / 13 ms P = 6b
Flow (acc. to ISO 6358):	c = 1.2 Nl/s x bar b = 0.13 Qn = 4.7 Nl/s Qmax = 8.5 Nl/s

5/3 all ports blocked



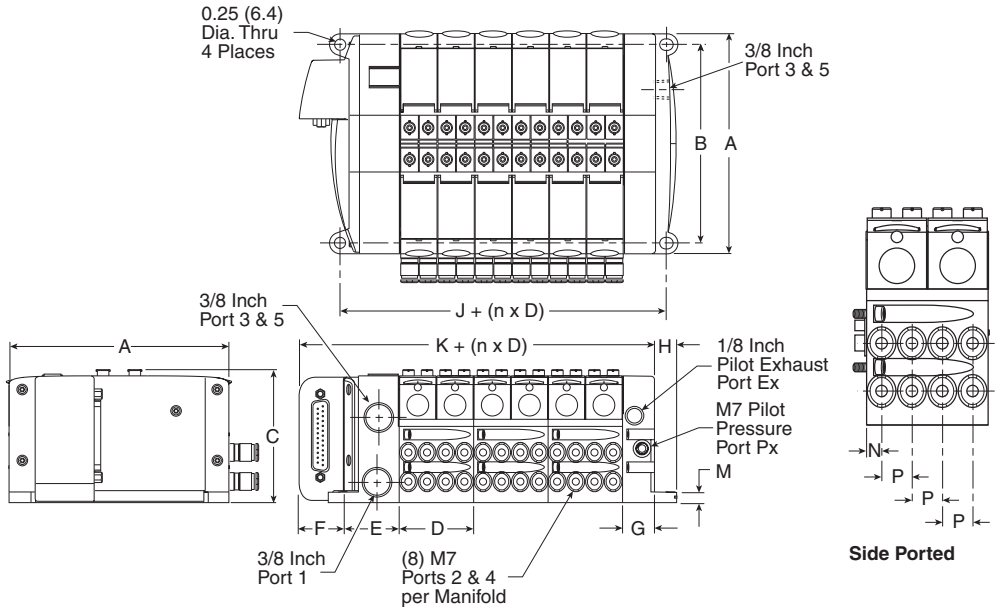
Operating pressure:	39 to 120.3 PSI (2.7 to 8.3 bar)
Change-over time:	Actuation 20 ms Return 20 ms P = 6b
Flow (acc. to ISO 6358):	c = 1 Nl/s x bar b = 0.14 Qn = 3.8 Nl/s Qmax = 6.7 Nl/s

Characteristics

Fluid:	Air or inert gas Filtered 40 µ Class 5 (according to ISO 8573-1) Dry class 4 (according to ISO 8573-1) Non-lubricated or lubricated
Storage temperature:	104°F to 158°F (-40°C to 70°C)
Working temperature:	5°F to 122°F (-15°C to 50°C)
Vibration:	according to IEC 68-2-6 2G to 150 Hz
Shock:	according to IEC 68-2-27 15G 11 ms

Operating pressure:	-13 to 120.3 PSI (-0.9 to 8,3 bar) with external pressure 87 PSI (6 bar)
Piloting pressure:	37 to 120.3 PSI (2.7 to 8.3 bar)
Exhaust collection:	Independent exhaust collection
Rated coil voltage:	24 VDC -15 % / +10 %
Electrical connection:	Not polarized
Coil insulation:	Class B
Power consumption:	1 W (42 mA) with LED
Duty factor:	100 % at 68°F (20°C)

25-pin, D-Sub with H Series Micro Valves, Side Ported



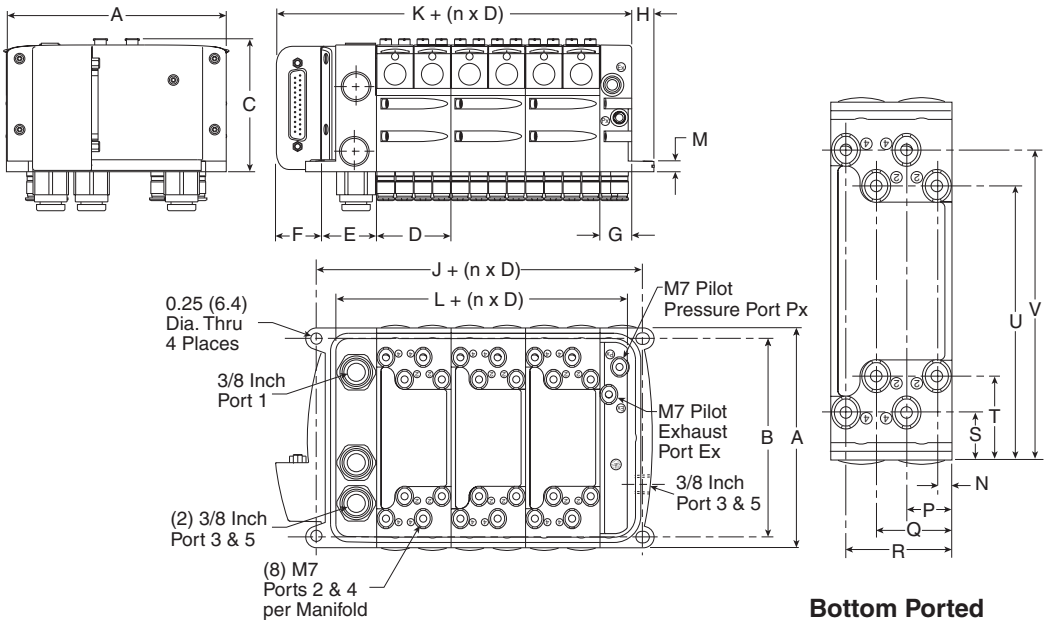
Side Ported

Dimensions

A	B	C	D
4.88 (124.0)	4.41 (112.0)	2.95 (75.0)	1.65 (42.0)
E	**F**	**G**	**H**
1.22 (31.0)	1.02 (26.0)	0.71 (18.0)	0.49 (12.5)
J	**K**	**M**	**N**
2.28 (58.0)	3.44 (87.5)	0.24 (6.1)	0.21 (5.2)
P			
0.41 (10.5)			

Inches (mm)
n = Number of manifolds

25-pin, D-Sub with H Series Micro Valves, Bottom Ported



Bottom Ported Detail

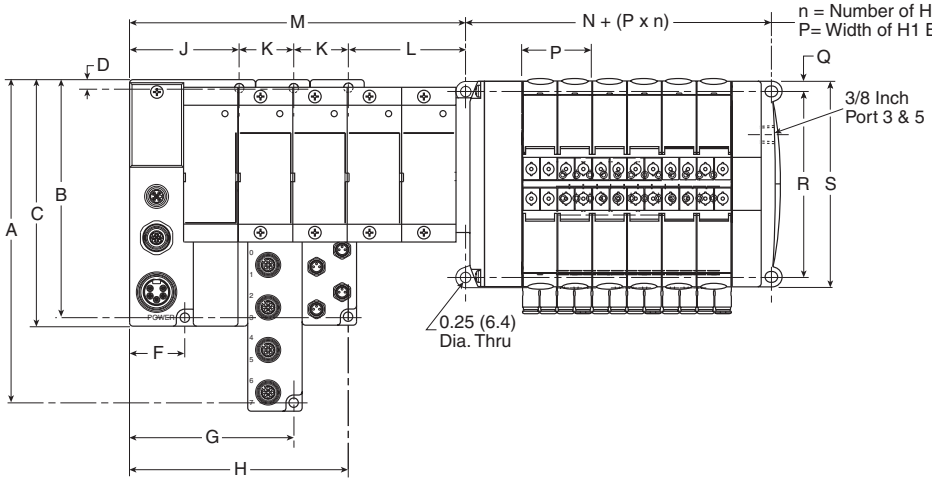
Dimensions

A	B	C	D
4.88 (124.0)	4.41 (112.0)	2.95 (75.0)	1.65 (42.0)
E	**F**	**G**	**H**
1.22 (31.0)	1.02 (26.0)	0.71 (18.0)	0.49 (12.5)
J	**K**	**L**	**M**
2.28 (58.0)	3.44 (87.5)	1.69 (43.0)	0.24 (6.1)
N	**P**	**Q**	**R**
0.21 (5.3)	0.62 (15.8)	1.03 (26.3)	1.45 (36.8)
S	**T**	**U**	**V**
0.64 (16.40)	1.14 (29.0)	3.73 (94.9)	4.23 (107.4)

Inches (mm)
n = Number of manifolds

Note:
See Fieldbus Section for the dimensions of manifolds utilizing the H Series Fieldbus, Turck, or Moduflex end plate type.

Turck with H Series Micro Valves, Side Ported

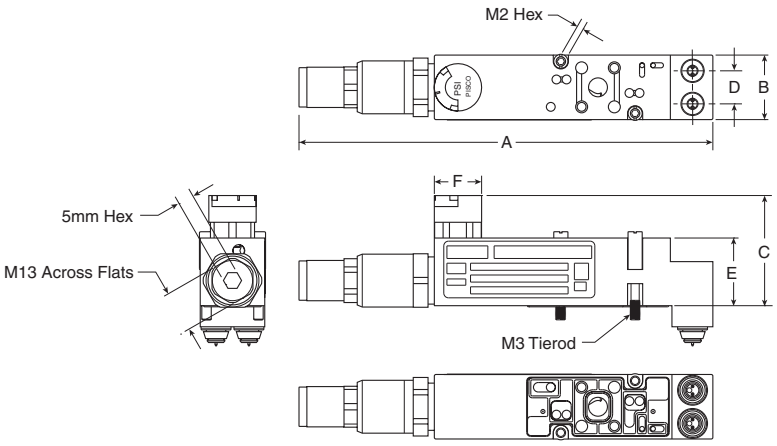


Dimensions

A	B	C	D
7.48 (190)	5.51 (140)	5.71 (145)	0.20 (5)
F	**G**	**H**	**J**
1.28 (32.5)	3.79 (96.5)	5.06 (128.5)	2.53 (64.5)
K	**L**	**M**	**N**
1.26 (32)	2.54 (64)	See note 1	2.28 (58)
P	**Q**	**R**	**S**
1.65 (42)	.19 (4.9)	4.41 (112)	4.88 (124)

Note 1: M =J+L+n_2xK, where n_2 = Number of Turck input / output modules
Inches (mm)

Sandwich Regulator



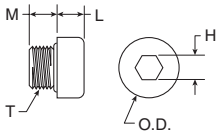
Dimensions

A	B	C	D
5.20 (132)	0.81 (20.5)	1.38 (35)	0.41 (10.5)
E	**F**		
0.85 (21.5)	0.59Ø (15Ø)		

Inches (mm)

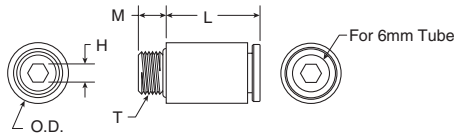
M7 Fittings

PS567900 – Kit PSM0013



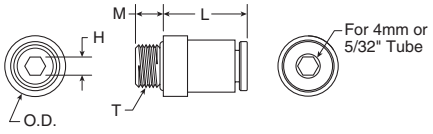
Part no.	L	M	H hex	T thread	O.D.
PS567900	0.18 (4.5)	0.20 (5)	0.16 (4)	M7 x 1	0.39 (10)

PS567906



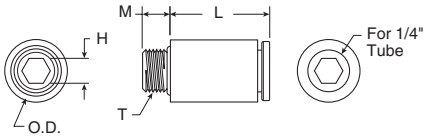
Part no.	Tube size	L	M	H Hex	T thread	O.D.
PS567906	6mm	0.63 (16)	0.20 (5)	0.12 (3)	M7 x 1	0.39 (10)

PS567904



Part no.	Tube size	L	M	H Hex	T thread	O.D.
PS567904	4mm or 5/32"	0.55 (14)	0.20 (5)	0.12 (3)	M7 x 1	0.39 (10)

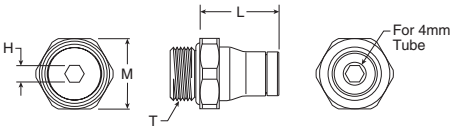
PS567925



Part no.	Tube size	L	M	H Hex	T thread	O.D.
PS567925	1/4"	0.65 (16.5)	0.18 (4.6)	0.16 (4)	M7 x 1	0.41 (10.3)

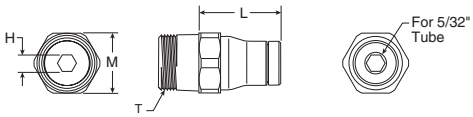
1/8 Inch Fittings

PS568204



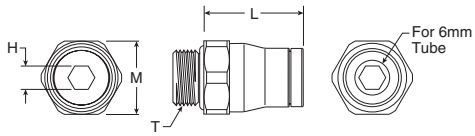
Part No.	Tube Size	L	M Hex	H Hex	T Thread
PS568204	4mm	0.57 (14.5)	0.51 (13)	0.12 (3)	G1 /8

PS568215



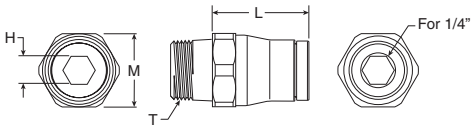
Part No.	Tube Size	L	M Hex	H Hex	T Thread
PS568215	5/32"	0.59 (15)	0.43 (11)	0.12 (3)	1/8 NPT

PS568206



Part no.	Tube size	L	M Hex	H Hex	T thread
PS568206	6mm	0.69 (17.5)	0.51 (13)	0.16 (4)	G1/8

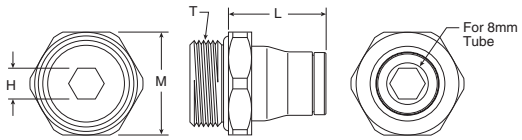
PS568225



Part no.	Tube size	L	M Hex	H Hex	T thread
PS568225	1/4"	0.67 (17)	0.51 (13)	0.20 (5)	1/8 NPT

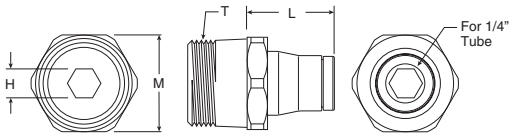
3/8 Inch Fittings

PS568308



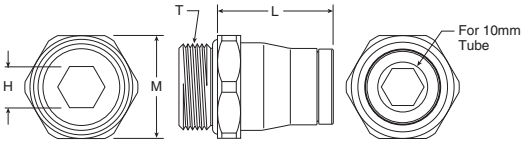
Part no.	Tube size	L	M Hex	H Hex	T thread
PS568308	8mm	0.75 (19)	0.79 (20)	0.24 (6)	G3/8

PS568325



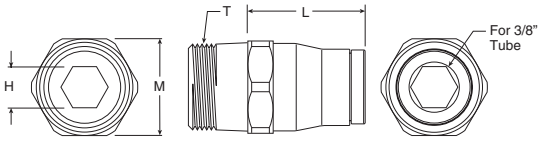
Part no.	Tube size	L	M Hex	H Hex	T thread
PS568325	1/4"	0.67 (17)	0.71 (18)	0.20 (5)	3/8 NPT

PS568310



Part no.	Tube size	L	M Hex	H Hex	T thread
PS568310	10mm	0.89 (22.5)	0.79 (20)	0.31 (8)	G3/8

PS568338



Part no.	Tube size	L	M Hex	H Hex	T thread
PS568338	3/8"	0.91 (23)	0.71 (18)	0.31 (8)	3/8 NPT

Moduflex Series

The Moduflex Valve System redefines flexibility for pneumatic users. Whether configured from basic components or ordered as a pre-assembled and tested valve manifold, Moduflex flexibility is unmatched in the market place.

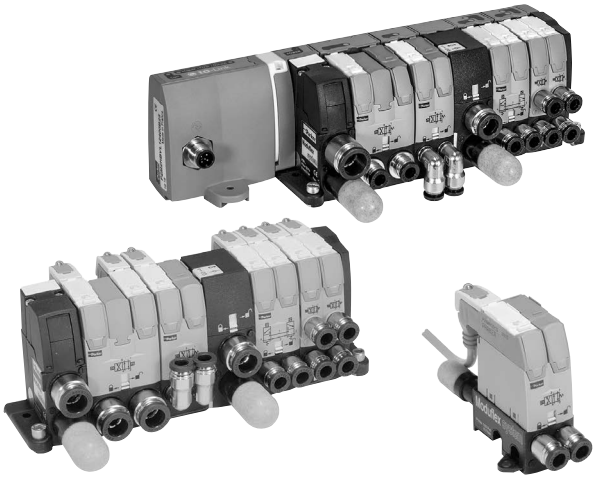
Ports
- Size 1: Push-in connectors for 5/32, 1/4 inch, 4, 6mm OD tube
- Size 2: Push-in connectors for 1/4, 3/8, 1/2 inch, 6, 8, 10 OD tube

Mounting
- S Series – Individual subbase
- T Series – Manifold mount with individual connectors
- V Series – Manifold mount with collective wiring or fieldbus

Network Connectivity Options
- Indusrial Ethernet – EtherNet/IP, PROFINET, Modbus TCP, PowerLink, EtherCAT
- IO-Link – Class A & Class B

Solenoids
- 1.0 Watt
- 24 VDC
- Compatible with PNP or NPN outputs

Certification / approval
- IP65 rated
- CE, as marked



Operating Information

Operating pressure:	Vacuum to 123 PSIG (Vacuum to 8.3 bar)
Operating temperature:	5°F to 140°F (-15°C to 60°C)
Fieldbus operating temperature:	32°F to 130°F (0°C to 55°C)

Material specifications

End plates (T and V series)	Plastic
Fasteners	Nickel plated steel
Spool	Aluminum and nitrile rubber or ceramic plate
Subbase or manifold	Plastic
Valve body	Plastic

Most popular.

Module Series Selection and Assembly Procedures

Moduflex system provides a complete choice of either stand-alone valves, short-build valve islands, or large valve island configurations. Electrical control connections may be individual or island integrated. Peripheral modules add complementary functions — flow control, pressure regulation, P.O. check valves and vacuum generators can be added directly to the valve or used as a stand alone product.

Moduflex gives machine builders maximum flexibility to assemble each automation system step by step using basic modules.

Valve islands can be easily assembled using the following procedure.

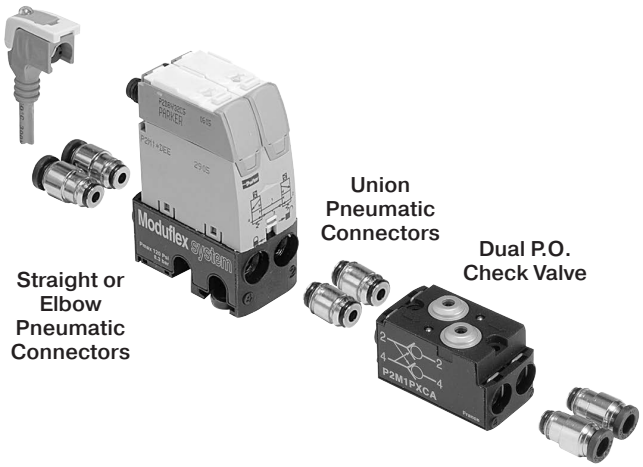
1. Assemble the required valve island with the basic modules.
2. Mount the valve island on the machine together with any stand-alone valves and peripheral modules.
3. Select and install the required clip-on pneumatic and electrical connectors.

“S” Series Stand Alone Valves

For isolated cylinders on a machine, it is preferable to locate the valve close by. Therefore a stand-alone module is ideal. Response time and air consumption are then reduced to a minimum. Peripheral modules can be installed directly into the valve.

“S” Series Size 1 Single Solenoid

“S” Series Size 1 Single Air Pilot

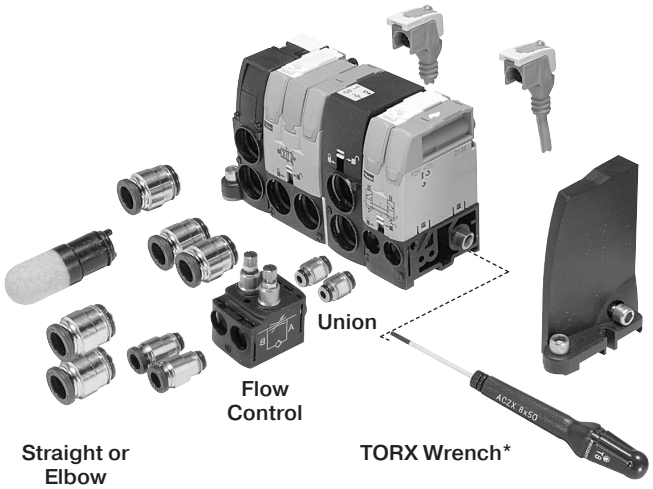


“T” Series Valve Island Modules with Individual Connectors

For small groups of cylinders requiring short localized valve islands, it is convenient to use individual electrical connector islands.

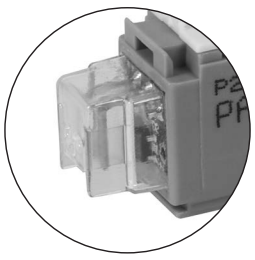
“T” Series Island Modules

“T” Series modules are easily assembled to form a complete manifold. All electrical connectors are individual and pneumatic connectors are of the push-in tube type. Modules with different functions and flow passages may be combined in the same island manifold, giving total flexibility to adapt to all machine requirements.



*** Maximum torque rating 10.6 in. lbs. (1.2 Nm).**

M8 2-pin, male connector

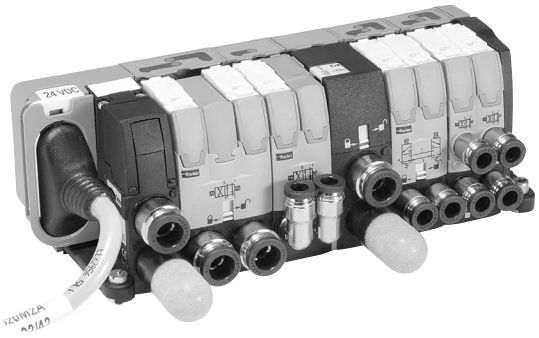


Clip Connector with LED & surge protection

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

“V” Series Valve Island Modules with Integrated Connections

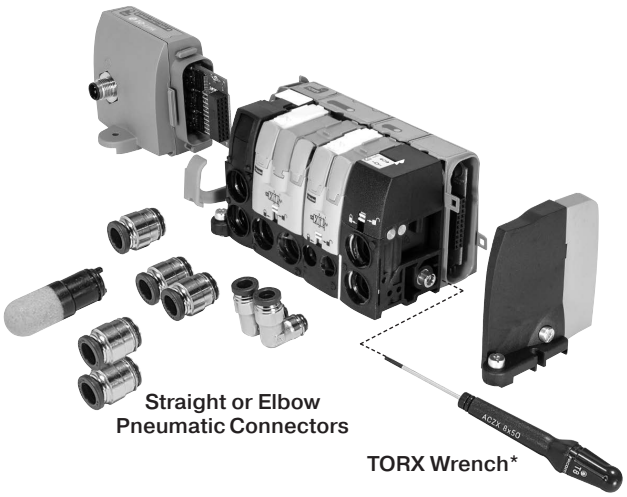
When the number of valves is larger, modular islands are easily assembled using the integrated electrical connection series. These islands are then connected to the control PLC, with a multi-connector cable or with a fieldbus connection.



“V” Series with 20-Pin Connector

“V” Series with Field Bus Connection

“V” Series modules are easily assembled to form a complete manifold. All pneumatic connectors are of the push-in tube type. When the valve island has been installed, it is a simple operation to separate the field bus module from the valve island using the quick release lever. Modules with different functions and flow passages may be combined in the same island manifold, giving total flexibility to adapt to all machine requirements.



Straight or Elbow Pneumatic Connectors

TORX Wrench*

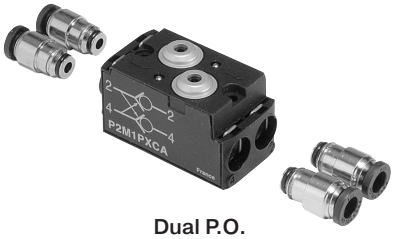
*** Maximum torque rating 10.6 in. lbs. (1.2 Nm).**

“P” Series Peripheral Modules

Peripheral Modules are available and can be mounted directly to valves or used as a stand alone product. These modules answer the complementary needs of the cylinders, flow controls, pressure regulation or positioning.

Flow Control

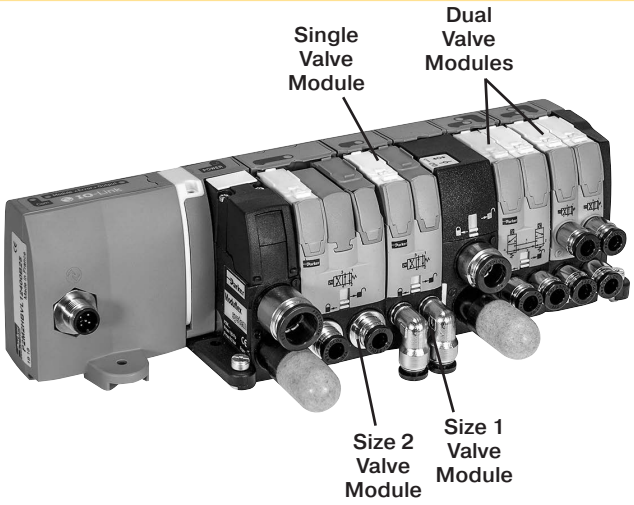
Pressure Regulator



Dual P.O. Check Valve

Vacuum Generator

Valve Function



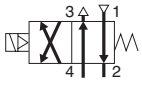
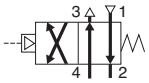
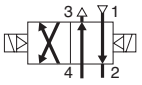
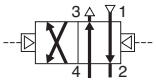
Moduflex Valve Islands offer the greatest flexibility for your design requirements.

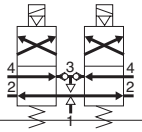
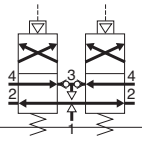
Valve Modules are available as 4-Way or 3-Way valves and can be ordered as single or dual valves. A Single Valve Module has one valve in one valve body. A Dual Valve Module will have 2 valves in one valve body. Each Valve in the Dual Valve Body is controlled by a solenoid or air pilot and can be operated independently from the other valve in the same body. There are no dimensional difference between a single and a dual valve. Flow Rates are reduced on the dual valves.

Single valve modules offer Ceramic Slide Valve Technology while dual valve modules offer WCS – Wear Compensation System Technology. Both offer low friction shift forces, fast response and less spool wear.

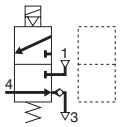
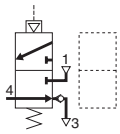
Valve Modules are available in two different valve body sizes. Size 1 and Size 2 Valve Modules can be combined in both "T" and "V" Series Valve Islands without transition kits.

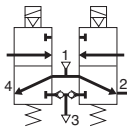
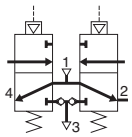
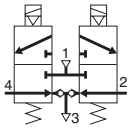
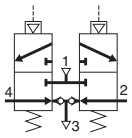
4/2, 4-Way, 2-Position Valves

Single Valves		ANSI Symbol	Description	Size 1 Body	Size 2 Body
			Single Solenoid, Spring Return Valve	Cv = .32	Cv = .80
			Single Air Pilot, Spring Return Valve		
			Double Solenoid Valve	Cv = .32	Cv = .80
			Double Air Pilot Valve		

Dual Valves		ANSI Symbol	Description	Size 1 Body	Size 2 Body
			(2) Single Solenoid, Spring Return Valve with Exhaust Check. Double Solenoid Valve Body	Cv = .18	N/A
			(2) Single Air Pilot, Spring Return Valve with Exhaust Check. Double Air Pilot Valve Body		

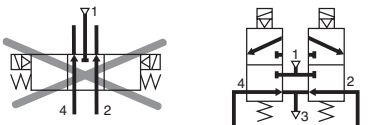
3/2, 3-Way, 2-Position Valves

Single Valves	ANSI Symbol	Description	Size 1 Body	Size 2 Body
		Single Solenoid, NC, Spring Return Valve with Exhaust Check.	Cv = .22	Cv = .44
		Single Air Pilot, NC, Spring Return Valve with Exhaust Check.		

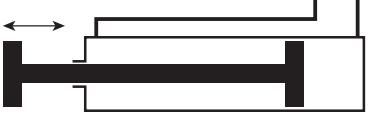
Dual Valves	ANSI Symbol	Description	Size 1 Body	Size 2 Body
		(2) Single Solenoid, NO, Spring Return Valve with Exhaust Check. Double Solenoid Valve Body	Cv = .22	Cv = .44
		(2) Single Air Pilot, NO, Spring Return Valve with Exhaust Check. Double Air Pilot Valve Body		
		(2) Single Solenoid, NC, Spring Return Valve with Exhaust Check. Double Solenoid Valve Body	Cv = .22	Cv = .44
		(2) Single Air Pilot, NC, Spring Return Valve with Exhaust Check. Double Air Pilot Valve Body		

Dual 3/2 Valves Replace All 3-Position Valves for a Better Performance

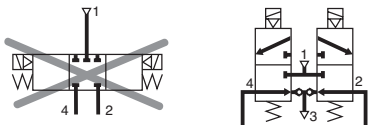
3-Position Center Exhaust



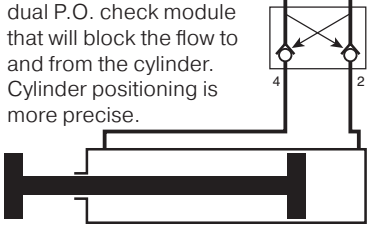
A traditional 5/3 center exhaust valve is now replaced by a double 3/2 NC+NC valve module (version with no exhaust check valves). Both cylinder chambers are exhausted and rod and piston are free to move.



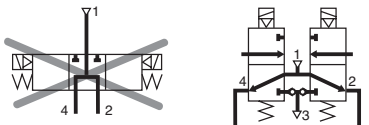
3-Position All Ports Blocked



A traditional 5/3 all ports blocked valve is now replaced by a double 3/2 NC+NC valve module and a dual P.O. check module that will block the flow to and from the cylinder. Cylinder positioning is more precise.



3-Position Pressure Center



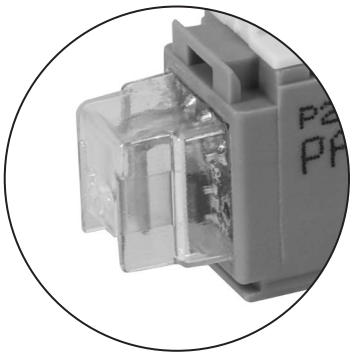
A traditional 5/3 pressure center valve is now replaced by a double 3/2 NO+NO valve module. The function is identical.

"S" Series Individual Subbase Valves (Valve & Base without Pneumatic Connectors)

	Symbol	Type	Operator	Pilot Connector	Cv	Part Number Size 1	Cv	Part Number Size 2
Single Solenoid		4-way, 2-position	Single solenoid	M8 Lockable		**P2M1S4ES2C**		**P2M2S4ES2C**
				Clip	0.32	**P2M1S4ES2CW**	0.8	**P2M2S4ES2CW**
			Single air pilot			**P2M1S4PS**		**P2M2S4PS**
		4-way, 2-position	Double solenoid	M8 Lockable		**P2M1S4EE2C**		**P2M2S4EE2C**
				Clip	0.32	**P2M1S4EE2CW**	0.8	**P2M2S4EE2CW**
			Double air pilot			**P2M1S4PP**		**P2M2S4PP**
Double Solenoid		3-way, 2-position, dual valve, NC/NC w/ exhaust check	Double solenoid	M8 Lockable		**P2M1SDEE2C**		**P2M2SDEE2C**
				Clip	0.22	**P2M1SDEE2CW**	0.44	**P2M2SDEE2CW**
			Double air pilot			**P2M1SDPP**		**P2M2SDPP**
		3-way, 2-position, dual valve, NO/NO w/ exhaust check	Double solenoid	M8 Lockable		**P2M1SCEE2C**		**P2M2SCEE2C**
				Clip	0.22	**P2M1SCEE2CW**	0.44	**P2M2SCEE2CW**
			Double air pilot			**P2M1SCPP**		**P2M2SCPP**
Single Air Pilot		3-way, 2-position, dual valve, NC/NO w/ exhaust check	Double solenoid	M8 Lockable		**P2M1SEEE2C**		**P2M2SEEE2C**
				Clip	0.22	**P2M1SEEE2CW**	0.44	**P2M2SEEE2CW**
		3-way, 2-position, NC w/ exhaust check	Single solenoid	M8 Lockable		**P2M1S3ES2C**		**P2M2S3ES2C**
				Clip	0.22	**P2M1S3ES2CW**	0.44	**P2M2S3ES2CW**
			Single air pilot			**P2M1S3PS**		**P2M2S3PS**
		3-way, 2-position, dual valve, NC/NC	Double solenoid	M8 Lockable		**P2M1SGEE2C**		**P2M2SGEE2C**
				Clip	0.22	**P2M1SGEE2CW**	0.44	**P2M2SGEE2CW**

Note: Includes 5/32" (4mm) Air Pilot Connectors.

M8 2-pin, male connector



Clip Connector with LED & surge protection

☐ Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

"S" Series Accessories

	Description	Tube Size (OD)	Option	Part Number Size 1	Part Number Size 2
	Push to connect fitting	5/32"	Elbow	**CMD04-1**	--
			Straight	**FMD04-1**	--
		1/4"	Elbow	**CMD07-1B**	**CMD07-2B**
			Straight	**FMD07-1B**	**FMD07-2B**
		3/8"	Elbow	--	**CMD09-2B**
			Straight	--	**FMD09-2B**
		1/2"	Straight	--	**FMD13-2B**
		6mm	Elbow	**CMD06-1**	**CMD06-2**
			Straight	**FMD06-1**	**FMD06-2**
		8mm	Elbow	--	**CMD08-2**
			Straight	--	**FMD08-2**
		10mm	Elbow	--	**CMD10-2**
			Straight	--	**FMD10-2**
	Muffler for exhaust port			**MMDVA1**	**MMDVA2**
	Plug			--	**PMDYY2**
	Double male union		Connecting peripheral modules	**HMDXX1**	**HMDXX2**
	M8 female connector to flying lead - IP67 LED and surge protection		2m Cable	**P8LS08L226C**	**P8LS08L226C**
			5m Cable	**P8LS08L526C**	**P8LS08L526C**
			9m Cable	**P8LS08L926C**	**P8LS08L926C**
	Clip connector – IP40	1 x Clip connector	1 meter	**P8LW021C**	**P8LW021C**
	Individual: including 2 flying leads	2 x Clip connector	1 meter	**P8LW021C02**	**P8LW021C02**
	Multiple: 1 common (0 VDC)	4 x Clip connector	1 meter	**P8LW021C04**	**P8LW021C04**
	and 1 flying lead per connector	8 x Clip connector	1 meter	**P8LW021C08**	**P8LW021C08**
	Field wireable connector		M8 Connector	**P8CS0803J**	**P8CS0803J**
			M12 Connector	**P8CS1204J**	**P8CS1204J**

Note: 85 Durometer minimum for pneumatic connectors.

☐ Most popular.

"S" Series Individual Subbase Valve (Complete with Pneumatic and Electrical Connectors)

P2M 1 S 4ES 2C 00 A F4

Basic Series	
Moduflex	P2M

Size	
Size 1	1
Size 2	2

Valve Series	
Individual Subbase	S

Valve Type / Function	
3-Way / 2-Position	
Single Solenoid, Nc Spring Return	**3ES**
Single Air Pilot, Nc Spring Return	3PS
4-Way / 2-Position	
Single Solenoid, Spring Return	**4ES**
Single Air Pilot, Spring Return	4PS
Double Solenoid	4EE
Double Air Pilot	4PP
Dual 3-Way, 2-Position, Spring Return	
Solenoid, NC / NC + PO Check (4/3 APB)	BEE*
Air Pilot, NC / NC + PO Check (4/3 APB)	BPP*
Solenoid, NO / NO (4/3 Pressure Ctr.)	CEE
Air pilot NO / NO (4/3 Pressure Ctr.)	CPP
Solenoid, NC / NC with Exhaust Check	**DEE**
Air Pilot, NC / NC with Exhaust Check	DPP
Solenoid, NO / NC with Exhaust Check	EEE
Solenoid, NC / NC without Check (4/3 Exh. Ctr.)	GEE

* Valve includes peripheral P. O. Check Valve and union fittings.

Operator Voltage	
24VDC	**2C**
Remote Pilot - 5/32" (4mm) Tube	00

Ports (all ports)	
C0*	10mm Elbow Fitting
C4	**5/32" (4mm) Elbow Fitting**
C6	6mm Elbow Fitting
C7	**1/4" Elbow Fitting**
C8*	8mm Elbow Fitting
C9*	**3/8" Elbow Fitting**
F0*	10mm Straight Fitting
F3*	**1/2" Straight Fitting**
F4	**5/32" (4mm) Straight Fitting**
F6	6mm Straight Fitting
F7	**1/4" Straight Fitting**
F8*	8mm Straight Fitting
F9*	**3/8" Straight Fitting**

* Only available with size 2 valves.

Fitting Configuration	
A*	**Straight Fittings**
B*	**Elbow Fittings**
C*†	**Straight Fitting & Muffler**
D*†	**Elbow Fitting & Muffler**

* Ports 1 & 3 fittings sizes are same as ports 2 & 4 (see example at left.)
† Fitting in port 1, muffler in port 3.

LED / Cable	
00	**No Cable, No LED, No Surge Suppression**
V2	**2 Meter Cable with LED and Surge Suppression**
V5	5 Meter Cable with LED and Surge Suppression
V9	9 Meter Cable with LED and Surge Suppression
W0	No Cable / Clip Ready
W1	1 Meter Cable, Clip Connector

Example for fitting configuration:

Size 1

CF7 Ports 1 & 3
1/4" straight fitting
& muffler
Ports 2 & 4
1/4" straight fittings

Size 2

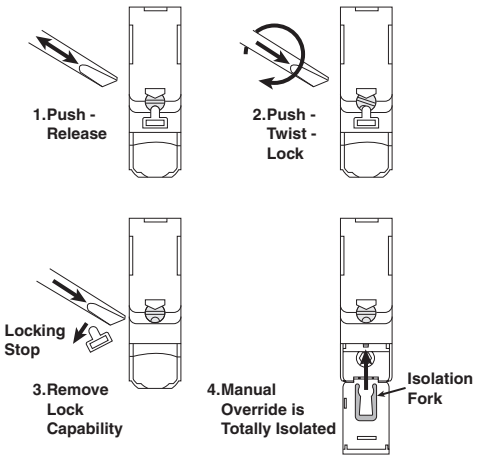
AC0 Ports 1 & 3
10mm elbow fittings
Ports 2 & 4
10mm elbow fittings

With only one universal solenoid pilot for all configurations

24VDC is now a global standard for all machines.

The Moduflex 24VDC unique solenoid pilot is supplied with the multi-function manual override that can be adapted to all requirements, as explained by the drawings.

Multi-function adaptable manual override



Most popular.

"S" Series Single Solenoid

Example:

Size 1, 4-Way Single Solenoid valve with 1/4" Straight Connectors in Ports 1, 2 and 4. Exhaust Muffler in Port 3. Valve to include 2m cable with LED and surge suppression.

How to Order Complete Valve Assembly

Line Item	Quantity	Part Number	Description
1	1	**P2M1S4ES2CV2CF7**	Size 1, Individual Subbase Valve, 4 Way, Single Solenoid, 2m Cable with LED / Surge Suppression, Exhaust Muffler with 1/4" OD Straight Port Fittings

Notes:
1. Cables supplied loose with valve.
2. For LED and Surge Suppressor, cable must be supplied with valve.

How to Order Components

Line Item	Quantity	Part Number	Description
1	1	**P2M1S4ES2C**	Size 1, Individual Subbase Valve, Single Solenoid, 4 Way
2	1	**P8LS08L226C**	2m Cable with LED / Surge Suppression
3	3	**FMD07-1B**	Size 1, 1/4" OD Tube Push In Connector
4	1	**MMDVA1**	Size 1, Muffler for Exhaust Port

"T" Series Manifold Valves with Individual Connectors

	Symbol	Type	Operator	Pilot Connector	Cv	Part Number Size 1	Cv	Part Number Size 2
Single Solenoid		4-way, 2-position	Single solenoid	M8 Lockable	0.32	**P2M1T4ES2C**	0.8	**P2M2T4ES2C**
				Clip		**P2M1T4ES2CW**		**P2M2T4ES2CW**
			Single air pilot			**P2M1T4PS**		**P2M2T4PS**
		4-way, 2-position	Double solenoid	M8 Lockable	0.32	**P2M1T4EE2C**	0.8	**P2M2T4EE2C**
				Clip		**P2M1T4EE2CW**		**P2M2T4EE2CW**
			Double air pilot			**P2M1T4PP**		**P2M2T4PP**
Double Solenoid		4-way, 2-position, dual valve w/ exhaust check	Double solenoid	M8 Lockable	0.18	**P2M1TJEE2C**		––
				Clip		**P2M1TJEE2CW**		––
			Double air pilot			**P2M1TJPP**		––
		3-way, 2-position, dual valve, NC/NC w/ exhaust check	Double solenoid	M8 Lockable	0.22	**P2M1TDEE2C**	0.44	**P2M2TDEE2C**
				Clip		**P2M1TDEE2CW**		**P2M2TDEE2CW**
			Double air pilot			**P2M1TDPP**		**P2M2TDPP**
		3-way, 2-position, dual valve, NO/NO w/ exhaust check	Double solenoid	M8 Lockable	0.22	**P2M1TCEE2C**	0.44	**P2M2TCEE2C**
				Clip		**P2M1TCEE2CW**		**P2M2TCEE2CW**
			Double air pilot			**P2M1TCPP**		**P2M2TCPP**
Single Air Pilot		3-way, 2-position, dual valve, NC/NO w/ exhaust check	Double solenoid	M8 Lockable	0.22	**P2M1TEEE2C**	0.44	**P2M2TEEE2C**
				Clip		**P2M1TEEE2CW**		**P2M2TEEE2CW**
		3-way, 2-position, NC w/ exhaust check	Single solenoid	M8 Lockable	0.22	**P2M1T3ES2C**	0.44	**P2M2T3ES2C**
				Clip		**P2M1T3ES2CW**		**P2M2T3ES2CW**
			Single air pilot			**P2M1T3PS**		**P2M2T3PS**
		3-way, 2-position, dual valve, NC/NC	Double solenoid	M8 Lockable	0.22	**P2M1TGEE2C**	0.44	**P2M2TGEE2C**
				Clip		**P2M1TGEE2CW**		**P2M2TGEE2CW**

Note: Includes 5/32" (4mm) Air Pilot Connectors.

Manifold Options

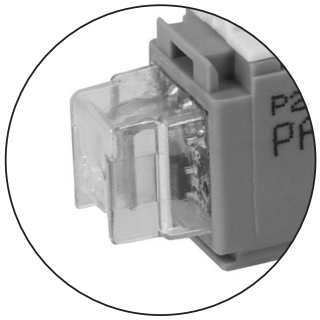
Module	Part Number
Pneumatic end plate kit	**P2M2HXT01***
Pneumatic end plate kit with torx screwdriver	**P2M2HXT0T***
Intermediate supply module (Includes 4 configuration plates)	**P2M2BXT0A***

* Use Fittings for Size 2 Modules Only

P2M2HXT01

P2M2BXT0A

M8 2-pin, male connector


Clip Connector with LED & surge protection

☐ Most popular.

"T" Series Size Accessories

	Description	Tube Size OD	Option	Part Number Size 1	Part Number Size 2
	Push to connect fitting	5/32" or 4mm	Elbow	**CMD04-1**	--
			Straight	**FMD04-1**	--
		1/4"	Elbow	**CMD07-1B**	**CMD07-2B**
			Straight	**FMD07-1B**	**FMD07-2B**
		3/8"	Elbow	--	**CMD09-2B**
			Straight	--	**FMD09-2B**
		1/2"	Straight	--	**FMD13-2B**
		6mm	Elbow	**CMD06-1**	**CMD06-2**
			Straight	**FMD06-1**	**FMD06-2**
		8mm	Elbow	--	**CMD08-2**
			Straight	**--**	**FMD08-2**
		10mm	Elbow	--	**CMD10-2**
			Straight	**--**	**FMD10-2**
		12mm	Elbow	--	**CMD12-2 ****
			Straight	--	**FMD12-2 ****
	Muffler for exhaust port			**MMDVA1**	**MMDVA2**
	Plug			**PMDYY1**	**PMDYY2**
	Double male union		Connecting peripheral modules	**HMDXX1**	**HMDXX2**
	M8 female connector to flying lead - IP67 LED and surge protection		2M cable	**P8LS08L226C**	**P8LS08L226C**
			5M cable	**P8LS08L526C**	**P8LS08L526C**
			9M cable	**P8LS08L926C**	**P8LS08L926C**
	Clip connector – IP40	1 x Clip connector	1 meter	**P8LW021C**	**P8LW021C**
	Individual: including 2 flying leads	2 x Clip connector	1 meter	**P8LW021C02**	**P8LW021C02**
	Multiple: 1 common (0 VDC)	4 x Clip connector	1 meter	**P8LW021C04**	**P8LW021C04**
	and 1 flying lead per connector	8 x Clip connector	1 meter	**P8LW021C08**	**P8LW021C08**
	Field wireable connector		M8 connector	**P8CS0803J**	**P8CS0803J**
			M12 connector	**P8CS1204J**	**P8CS1204J**
	Torx screwdriver			**P2M1K0TASD**	**P2M1K0TASD**

Note: 85 Durometer minimum for pneumatic connectors.

** 12mm OD fittings can not be used with valves. 12mm OD fittings can only be used in pneumatic end plate kit and intermediate air supply module.

☐ Most popular.

"T" Series Valve Manifold with Individual Connectors

(Complete with Pneumatic and Electrical Connectors)

P2M 1 T 4ES 2C 00 0 F4

Basic Series	
Valvetronic Modules	P2M

Size	
Size 1	1
Size 2	2

Valve Series	
Individual Wire	T

Valve Type / Function	
3-Way / 2-Position	
Single Solenoid, NC Spring Return	**3ES**
Single Air Pilot, NC Spring Return	**3PS**
4-Way / 2-Position	
Single Solenoid, Spring Return	**4es**
Single Air Pilot, Spring Return	**4ps**
Double Solenoid	**4ee**
Double Air Pilot	**4pp**
Dual 3-Way, 2-Position, Spring Return	
Solenoid, NC / NC + PO Check (4/3 APB)	**BEE***
Air Pilot, NC / NC + PO Check (4/3 APB)	BPP*
Solenoid, NO / NO (4/3 Pressure Ctr.)	CEE
Air Pilot NO / NO (4/3 Pressure Ctr.)	CPP
Solenoid, NC / NC with Exhaust Check	DEE
Air Pilot, NC / NC with Exhaust Check	DPP
Solenoid, NO / NC with Exhaust Check	**EEE**
Solenoid, NC / NC without Check (4/3 Exh. Ctr.)	**GEE**
Dual 4-Way, 2-Position, Spring Return	
Solenoid	**JEE****
Air Pilot	**JPP****

* Valve includes peripheral P. O. check valve and union fittings.
** Size 1 only.

Operator Voltage	
2C	**24VDC**
00	Remote Pilot - 5/32" (4mm) Tube

LED / Cable	
00	**No Cable, no LED, no Surge Suppression**
V2	**2 Meter Cable with LED and Surge Suppression**
V5	5 Meter Cable with LED and Surge Suppression
V9	9 Meter Cable with LED and Surge Suppression
W0	No Cable / Clip Ready
W1	1 Meter Cable, Clip Connector

Ports 1 & 3	
0	**None**

Ports 2 & 4	
C0*	10mm Elbow Fitting
C4	**5/32" (4mm) Elbow Fitting**
C6	6mm Elbow Fitting
C7	**1/4" Elbow Fitting**
C8*	8mm Elbow Fitting
C9*	**3/8" Elbow Fitting**
F0*	10mm Straight Fitting
F3*	**1/2" Straight Fitting**
F4	**5/32" (4mm) Straight Fitting**
F6	6mm Straight Fitting
F7	**1/4" Straight Fitting**
F8*	8mm Straight Fitting
F9*	**3/8" Straight Fitting**

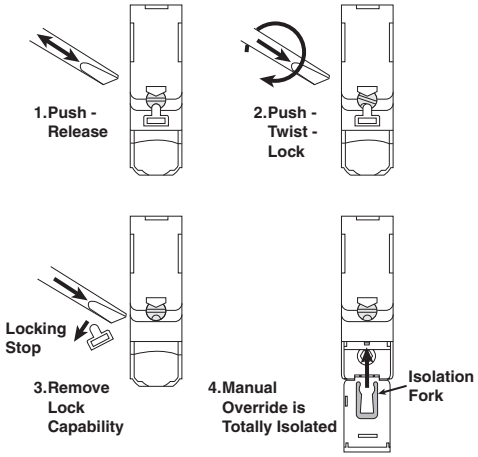
* Only available with size 2 valves.

With only one universal solenoid pilot for all configurations

24VDC is now a global standard for all machines.

The Moduflex 24VDC unique solenoid pilot is supplied with the multi-function manual override that can be adapted to all requirements, as explained by the drawings.

Multi-function adaptable manual override



Most popular.

"T" Series Single Solenoid

Example:

Size 1, 4-Way Single Solenoid valve with 1/4" Straight Connectors in Ports 2 and 4. Valve to include 2m cable with LED and surge suppression.

How to Order Complete Valve Assembly

Line Item	Quantity	Part Number	Description
1	1	**P2M1T4ES2CV20F7**	Size 1, T Series Manifold Valves, 4 Way, Single Solenoid, 2m Cable with LED / Surge Suppression, 1/4" OD Straight Port Fittings

Notes:
1. Cables supplied loose with valve.
2. For LED and Surge Suppressor, cable must be supplied with valve.
3. To assemble into a manifold, Pneumatic Head and Tail Set must be ordered separately.

How to Order Components

Line Item	Quantity	Part Number	Description
1	1	**P2M1T4ES2C**	Size 1, T Series Manifold Valves, Single Solenoid, 4 Way
2	1	**P8LS08L226C**	2m Cable with LED / Surge Suppression
3	2	**FMD07-1B**	Size 1, 1/4" OD Tube Push In Connector

"V" Series Manifold Valves with Collective Wiring

Single Solenoid

Double Solenoid

Symbol	Type	Operator	Cv	Part Number Size 1	Cv	Part Number Size 2
	4-way, 2-position	Single solenoid	0.32	**P2M1V4ES2CV**	0.8	**P2M2V4ES2CV**
	4-way, 2-position	Double solenoid	0.32	**P2M1V4EE2CV**	0.8	**P2M2V4EE2CV**
	4-way, 2-position, dual valve, w/ exhaust check	Double solenoid	0.18	**P2M1VJEE2CV**		
	3-way, 2-position, dual valve, NC/NC w/ exhaust check	Double solenoid	0.22	**P2M1VDEE2CV**	0.44	**P2M2VDEE2CV**
	3-way, 2-position, dual valve, NO/NO w/ exhaust check	Double solenoid	0.22	**P2M1VCEE2CV**	0.44	**P2M2VCEE2CV**
	3-way, 2-position, dual valve, NC/NO w/ exhaust check	Double solenoid	0.22	**P2M1VEEE2CV**	0.44	**P2M2VEEE2CV**
	3-way, 2-position, NC w/ exhaust check	Single solenoid	0.22	**P2M1V3ES2CV**	0.44	**P2M2V3ES2CV**
	3-way, 2-position, dual valve, NC/NC	Double solenoid	0.22	**P2M1VGEE2CV**	0.44	**P2M2VGEE2CV**

Most popular.

"V" Series Accessories

	Description	Tube size OD	Option	Part Number Size 1	Part Number Size 2
	Push to connect fitting	5/32"	Elbow	**CMD04-1**	–
			Straight	**FMD04-1**	–
		1/4"	Elbow	**CMD07-1B**	**CMD07-2B**
			Straight	**FMD07-1B**	**FMD07-2B**
		3/8"	Elbow	–	**CMD09-2B**
			Straight	–	**FMD09-2B**
		1/2"	Straight	–	**FMD13-2B**
		6mm	Elbow	**CMD06-1**	**CMD06-2**
			Straight	**FMD06-1**	**FMD06-2**
		8mm	Elbow	–	**CMD08-2**
			Straight	–	**FMD08-2**
		10mm	Elbow	–	**CMD10-2**
			Straight	–	**FMD10-2**
		12mm	Elbow	–	**CMD12-2 ****
			Straight	–	**FMD12-2 ****
	Muffler for exhaust port		--	**MMDVA1**	**MMDVA2**
	Plug		--	**PMDYY1**	**PMDYY2**
	Double male union		Connecting peripheral modules	**HMDXX1**	**HMDXX2**
	Electrical 20-pin multi-connector cable with flying leads	IP65 rated	2M cable	**P8LMH20M2A**	**P8LMH20M2A**
			5M cable	**P8LMH20M5A**	**P8LMH20M5A**
			9M cable	**P8LMH20M9A**	**P8LMH20M9A**
	Electrical 25-pin D-sub cable	IP20 rated	3M cable	**P8LMH25M3A**	**P8LMH25M3A**
			9M cable	**SCD259D**	**SCD259D**
		IP65 rated	3M cable	**SCD253W**	**SCD253W**
			9M cable	**SCD259WE**	**SCD259WE**
	Field wireable connector for power supply	Female	M12 - A code	**P8CS1205AA**	
	Power & Communication Cable	IO-Link	5-pin male to female cable, TPE	**RKC 4.5T-*-RSC 4.5T/S1587**	
	Torx screwdriver		--	**P2M1K0TASD**	**P2M1K0TASD**

Where * = 1, 2, 3, 4, 5, 10, 20 meter standard lengths

Note: 85 Durometer minimum for pneumatic connectors.

** 12mm OD fittings can not be used with valves. 12mm OD fittings can only be used in pneumatic end plate kit and intermediate air supply module.

Electrical Connections

Description	Part Number
20-pin, Multi-connector electrical head module	**P2M2HEV0A**
25-pin, D-sub, electrical head module	**P2M2HEV0D**

P2M2HEV0A

P2M2HEV0D

Network Connectivity Connections

Description		Part Number
EtherNet I/P		**P2M2HBVE12400**
PROFINET		**P2M2HBVN12400**
EtherCAT		**P2M2HBVT12400**
Modbus TCP		**P2M2HBVM12400**
PowerLink		**P2M2HBVW12400**
IO-Link Class A	3-Pin, Aux power 1 & 3	**P2M2HBVL12400A13**
IO-Link Class A	3-Pin, Aux power 4 & 3	**P2M2HBVL12400A43**
IO-Link Class A	3-Pin, Aux power 4 & 2	**P2M2HBVL12400A42**
IO-Link Class B	5-Pin, Aux power 2 & 5	**P2M2HBVL12400B25**

Manifold Options

Module	Part Number
Pneumatic end plate kit	**P2M2HXT01***
Pneumatic end plate kit with torx screwdriver	**P2M2HXT0T***
Intermediate supply module (Includes 4 configuration plates)	**P2M2BXV0A***

* Use Fittings for Size 2 Modules Only

P2M2HXT01

P2M2BXV0A

☐ Most popular.

"V" Series Valve Manifold with Collective Wiring

(Complete with Pneumatic Connectors)

P2M 1 V 4ES 2C V0 0 F4

Basic Series	
Valvetronic Modules	P2M

Size	
Size 1	1
Size 2	2

Valve Series	
Collective Wiring	V

Valve Type / Function	
3-Way / 2-Position	
Single Solenoid, NC Spring Return	3ES
4-Way / 2-Position	
Single Solenoid, Spring Return	4es
Double Solenoid	4ee
Dual 3-Way, 2-Position, Spring Return	
Solenoid, NC / NC + PO Check (4/3 APB)	BEE*
Solenoid, NO / NO (4/3 Pressure Ctr.)	CEE
Solenoid, NC / NC with Exhaust Check	DEE
Solenoid, NO / NC with Exhaust Check	EEE
Solenoid, NC / NC without Check (4/3 Exh. Ctr.)	GEE
Dual 4-Way, 2-Position, Spring Return	
Solenoid	JEE**

* Valve includes peripheral P. O. Check valve and union fittings.
** Size 1 Only.

Operator Voltage	
2C	24VDC

LED / Cable	
V0	No Cable with LED and Surge Suppression

Ports 1 & 3	
0	None

Ports 2 & 4	
C0*	10mm Elbow Fitting
C4	**5/32" (4mm) Elbow Fitting**
C6	6mm Elbow Fitting
C7	**1/4" Elbow Fitting**
C8*	8mm Elbow Fitting
C9*	**3/8" Elbow Fitting**
F0*	10mm Straight Fitting
F3*	**1/2" Straight Fitting**
F4	**5/32" (4mm) Straight Fitting**
F6	6mm Straight Fitting
F7	**1/4" Straight Fitting**
F8*	8mm Straight Fitting
F9*	**3/8" Straight Fitting**

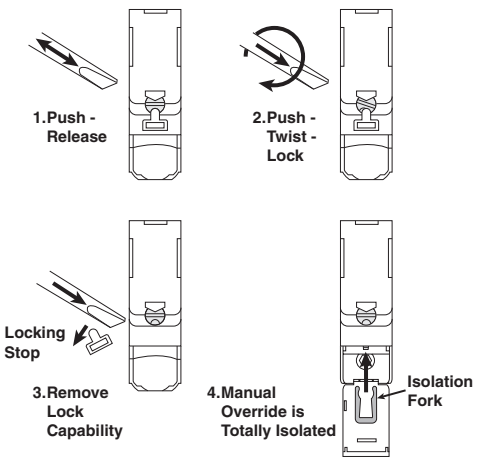
* Only available with size 2 valves.

With only one universal solenoid pilot for all configurations

24VDC is now a global standard for all machines.

The Moduflex 24VDC unique solenoid pilot is supplied with the multi-function manual override that can be adapted to all requirements, as explained by the drawings.

Multi-function adaptable manual override



☐ Most popular.

"V" Series Single Solenoid

How to Order -

Example: Size 1, 4-Way Single Solenoid valve with 1/4" Straight Connectors in Ports 2 and 4. Valve to include LED and surge suppression.

Line Item	Quantity	Part Number	Description
Complete Peripheral Module			
1	1	**P2M2V4ES2CV00F7**	Size 1, V Series Manifold Valves, 4 Way, Single Solenoid, LED / Surge Suppression, 1/4" OD Straight Port Fittings
Components			
1	1	**P2M1V4ES2CV**	Size 1, V Series Manifold Valves, Single Solenoid, 4 Way
2	2	**FMD07-1B**	Size 1, 1/4" OD Tube Push In Connector

"V" Series 25-Pin, D-Sub Addressing

Valve Island Head 25-Pin, Multi-Connector

On the island head module, the multi-connector integrates the HE10 connector standard in its 25-Pin version.

Its plug-in function is secured in position with a guillotine lock with easy access from the front of the island.

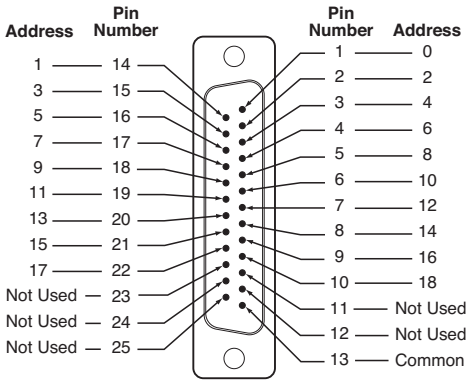
The 25-Pin, D-Sub multi-connector is rated for IP40.

25-Pin, Multi-Connector Addressing

When assembling a **V Series** island, modules are automatically connected to the head module through the modular principle of the integrated electrical connections.

Each wire color code corresponds a solenoid pilot position in the island.

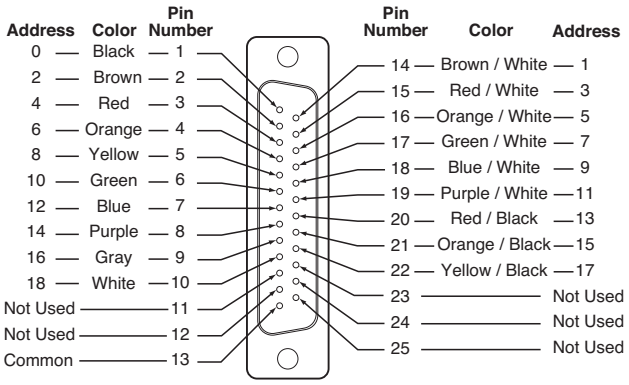
P8LMH25M3A - Cable



Face View - Male D-Sub, 25-Pin Head Module Connector

Electrical 25-Pin D-Sub Cable

Length (meters)	Weight (oz)	IP	Part Number
3	14.3	20	**P8LMH25M3A**
3	14.3	65	**SCD253W**
9	55.8	20	**SCD259D**
9	55.8	65	**SCD259WE**

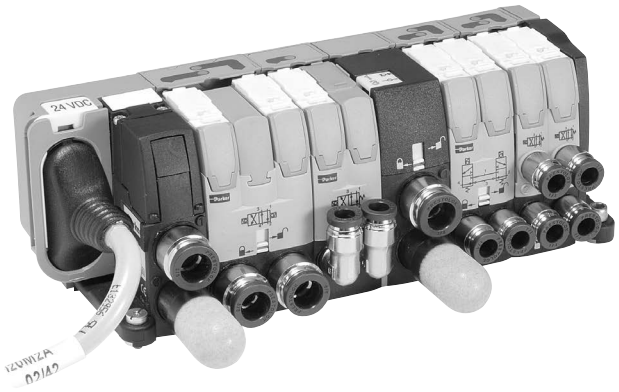


Face View - Female D-Sub, 25-Pin Cable Connector

Electrical Specifications

Rated voltage	24VDC
Maximum addresses	19
Maximum energized simultaneously	19
Electrical connection	25-Pin, D-Sub DIN41652, MIL-C-24308, NFC93425 Type HE5
Polarity	Insensitive: PNP and NPN compatible
Dust and water protection	IP40 / IP65

"V" Series 20-Pin, Multi-Connector and Addressing



Valve Island Head 20-Pin, Multi-Connector

On the island head module, the multi-connector integrates the HE10 connector standard in its 20-Pin version.

Its plug-in function is secured in position with a guillotine lock with easy access from the front of the island.

Just like the whole island, the multi-connector follows the IP65 protection standard.

Cable Specification:

8.6 mm dia., UL, 20 wires, 0.22mm^2, AWG 24

Minimum Static Radius: 6.5 mm (.255")

Available with 6.56 ft. (2 m), 16.4 ft. (5 m) and 29.5 ft. (9 m) lengths.

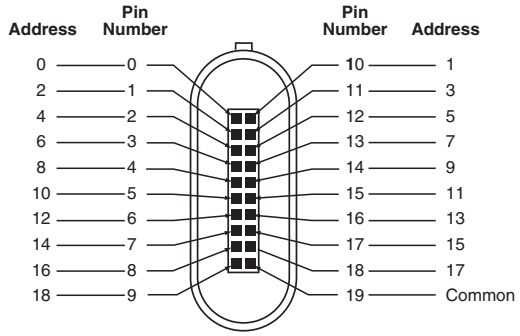
P8LMH20M2A - Cable

20-Pin, Multi-Connector Addressing

When assembling a **V Series** island, modules are automatically connected to the head module through the modular principle of the integrated electrical connections.

The color code addressing given below conforms to the DIN 47100 standard.

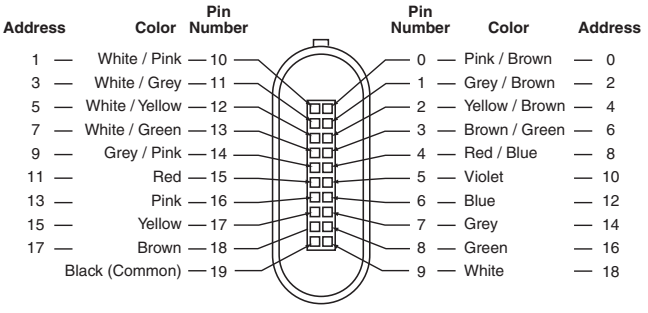
Each wire color code corresponds a solenoid pilot position in the island.



Face View - Male 20-Pin Head Module Connector

Electrical 20-Pin Multi-Connector with Flying Lead Cable

Cable Length	Weight (oz)	IP	Part Number
2 m	10.97	65	**P8LMH20M2A**
5 m	27.41	65	**P8LMH20M5A**
9 m	49.38	65	**P8LMH20M9A**



Face View - Female 20-Pin Cable Connector

Electrical Specifications

Rated Voltage	24VDC
Maximum Addresses	19
Maximum Energized Simultaneously	19
Electrical Connection	Type HE10
Polarity	Insensitive: PNP and NPN compatable
Dust and Water Protection	IP65

P2M Network Nodes

P2M communication modules directly attach to the Moduflex valve series as well as the P2M endplates of the H Series Micro and H Series ISO valve products. It offers a compact and low cost network solution.

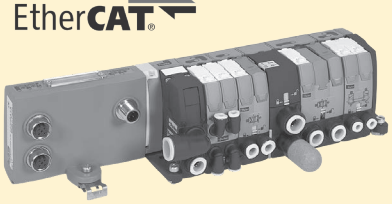
Features

- Small, compact product design
- IO-Link Class A & Class B nodes
- Broad protocol offering
- Channel-level diagnostics (LED and Electronic)
- Horizontal and vertical mounting without derating
- 5g vibration
- Quick-disconnects for I/O and network connectivity
- Built-in panel grounding
- CE certification

P2M Industrial Ethernet Node

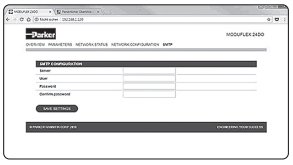
The P2M Industrial Ethernet 24 DO node allows a very simple and cost efficient connection to the most popular Industrial Ethernet networks.

Designed with isolated auxiliary power, it can easily be adapted to all power supply architectures and follow any required machine directives as Safe Power Capable.



Industrial Ethernet Protocol	Part Number
EtherNet/IP *(Safe Power Capable)*	**P2M2HBVE12400**
PROFINET *(Safe Power Capable)*	**P2M2HBVN12400**
EtherCAT *(Safe Power Capable)*	**P2M2HBVT12400**
Modbus/TCP *(Safe Power Capable)*	**P2M2HBVM12400**
PowerLink *(Safe Power Capable)*	**P2M2HBVW12400**

Simple Product Set-Up



The P2M Industrial Ethernet node offers IP addressing through 3 rotary switches located on the top side.

The 3 rotary switches also allow for Factory Reset, IP address storage, and DHCP addressing.

If supported by the protocol used, the IP address can be modified through the embedded web page.

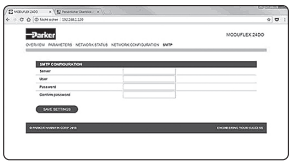
For an application requiring a regular disconnection / reconnection of communication & power, PROFINET and EtherNet/IP protocols allow respectively a Fast Start-Up (FSU) and Quick Connect mode. This mode can be enabled or disabled.

Topology / Integrated Ethernet Switch

The P2M Industrial Ethernet 24 DO node offers 2 Ethernet ports allowing a line topology without external switch. The Ring topology can also be supported (enable/disable) for PROFINET, EtherNet/IP and Modbus TCP/IP.

The integrated Ethernet switch supports Class C services allowing use in an isochronous real time (IRT) structure.

Easy Diagnostics – Local LEDs, Process (cyclic) data, Parameter (acyclic) data



The P2M Industrial Ethernet 24 DO node offers local diagnostics through 7 LED's located on the visible top side, showing:

- Logic status
- Ethernet activity on both ports
- Standard Status due to protocol
- Output error / Auxiliary power

This local information as well as configuration and predictive maintenance diagnostics (Power monitoring, Solenoid cycle counting, etc) are available via both Process Data (cyclic) and Parameter Data (acyclic) via the PLC through the network and also easily viewable from the embedded web page.

When the PLC is NOT in control, the web page allows the user to force ON/OFF the solenoids state. This function has password protection.

P2M Industrial Ethernet Connections & Configuration

Ethernet ports and Auxiliary power connection

Ethernet ports: 2 x Standard Female M12 D-Coded – 5 pins

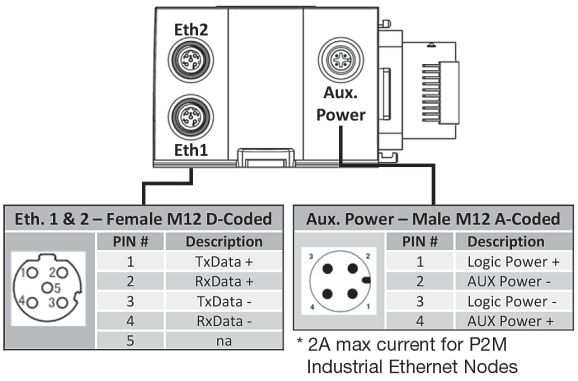
Auxiliary Power: Standard Male M12 A-Coded – 4 pins

Configuration file

The configuration files (.EDS, .GDS, etc) can be download from the product web page.

Add on Instructions & Function Blocks

Add on Instructions & Function Blocks to assist in the configuration and programming of the P2M Node are available on the product web page – www.parker.com/pdn/P2M_IE



Eth. 1 & 2 – Female M12 D-Coded

PIN #	Description
1	TxData +
2	RxData +
3	TxData -
4	RxData -
5	na

Aux. Power – Male M12 A-Coded

PIN #	Description
1	Logic Power +
2	AUX Power -
3	Logic Power -
4	AUX Power +

* 2A max current for P2M Industrial Ethernet Nodes

Safe Power Capable

Auxiliary power of P2M Industrial Ethernet 24 DO node can be supplied from a safe output device following machinery directives. This includes:

- Output Signal Switch Device (OSSD) test pulse compatible
- Galvanic isolation between 0 Vdc Logic and Auxiliary power
- PP or PM cabling modes

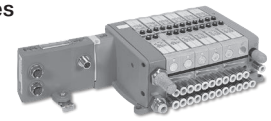
For more details, refer to the user manuals located at www.parker.com/pdn/P2M_IE

P2M Industrial Ethernet Valve Control

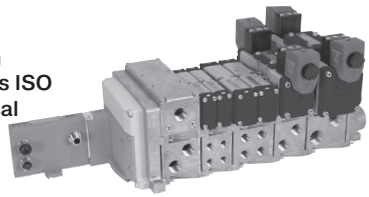
All P2M Industrial Ethernet Nodes can easily connect to and control pneumatic valves sizes ranging from 0.18 Cv to 6.0 Cv utilizing the Moduflex, H Micro, or H ISO valve series including the new H ISO Universal manifold which can mix ISO sizes 15407 (sizes 02 & 01) and 5599 (sizes 1 & 2) without transition plates.

P2M on Moduflex

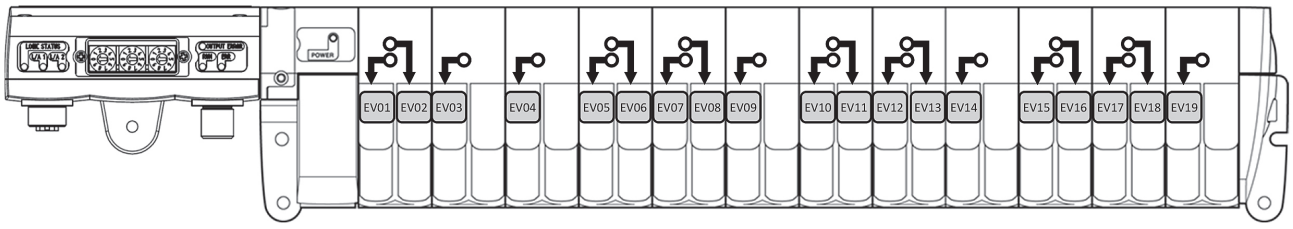
P2M on H Series Micro



P2M on H Series ISO Universal



P2M Industrial Ethernet Node Output (Solenoid) data mapping - shown on Moduflex valve series



	7 3	2 0
Byte 0	EV08	. . EV01
Byte 1	EV16	. . EV09
Byte 2*	EV24 . . . . . EV20	EV19 . . . . . EV17

* Byte 2 / Bits 3 to 7 are only available when connected to H Series Micro or H Series ISO valve manifolds. The Moduflex valve series is limited to 19.

Process (Cyclic) Diagnostic through network via ADI #9 – "Module Error Input"

Easy to access diagnostic data transmitted to the PLC as Application Device Instance (ADI) #9

- Voltage warning, short circuit condition, module error, etc
- For more details refer to user manual on product web page www.parker.com/pdn/P2M_IE

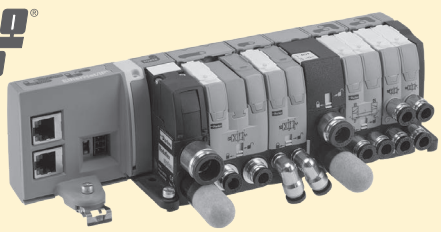
ADI	Instance name	Data type	Access
#9	Module error input	Unit 16	Read

Byte 0	Diag 7 . . . . . Diag 0
Byte 1	Reserved

Valve Island V Series with Industrial Ethernet connection

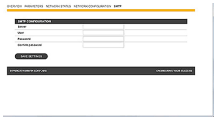
The P2M Industrial Ethernet Lite node 24DO allows a very simple and cost efficient connection to the most popular Industrial Ethernet networks.

In its compact IP40 version equiped with two RJ45 Ethernet ports, it saves size in cabinet applications and offers an easy connection to the network in a line topology.



Industrial Ethernet Protocol	Part Number
Profinet IO	**P2M2HBVN12400RJ**
EtherNet/IP	**P2M2HBVE12400RJ**
EtherCAT	**P2M2HBVT12400RJ**

Product Set-Up



The P2M Lite Node 24DO is by default in DHCP mode. The module must be assigned to a static IP-Address in order be controlled via the network.

The Network Configuration settings can be done throuhg the embedded web server of the node as well as "IPconfig", "TIA Portal" or similar methods.

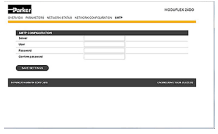
For an application requiring a regular disconnection / reconnection of the node, Profinet and EtherNet/IP protocols allow respectively a Fast Start- Up (FSU) and Quick Connect mode. This mode can be enable or disable .

Technology / Integrated Ethernet Switch

The P2M Industrial Ethernet Lite node 24DO offers 2 RJ45 ports allowing a line topology without external switch. The Ring topology can also be supported (enable/disable) for Profinet and EtherNet/IP.

The integrated Ethernet switch support Class C Services allowing used in an isochronous real time (IRT) structure.

Diagnostic



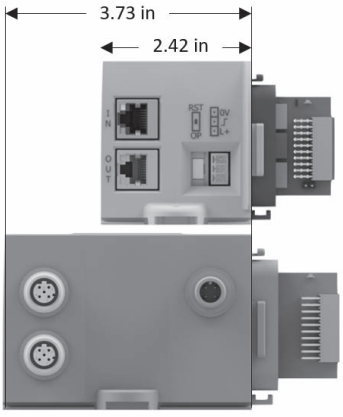
The P2M Industrial Ethernet Lite node 24DO offers a local diagnostic through 5 LED's located on the visible top side and 4 additionals on both Ethernet connectors showing:

- Logic status
- Ethernet activity on both ports
- Standard Status due to protocol
- Output error / Power Supply

This local information as well as trouble shooting and predictive maintenance diagnostics (Power monitoring, Life cycle counting, ...) are available in PLC through the network and reported on imbedded web page.

When PLC is in "STOP", the web page allows to force ON/OFF solenoids state. This function has a password protection.

Save 1.31 inches with P2M Lite Node compared to P2M Ethernet Node



Industrial Ethernet Lite Node Connections and Diagnostic Functions

Ethernet and Power Connections

Network Communication Ports:

2 x Standard RJ45 Female connectors

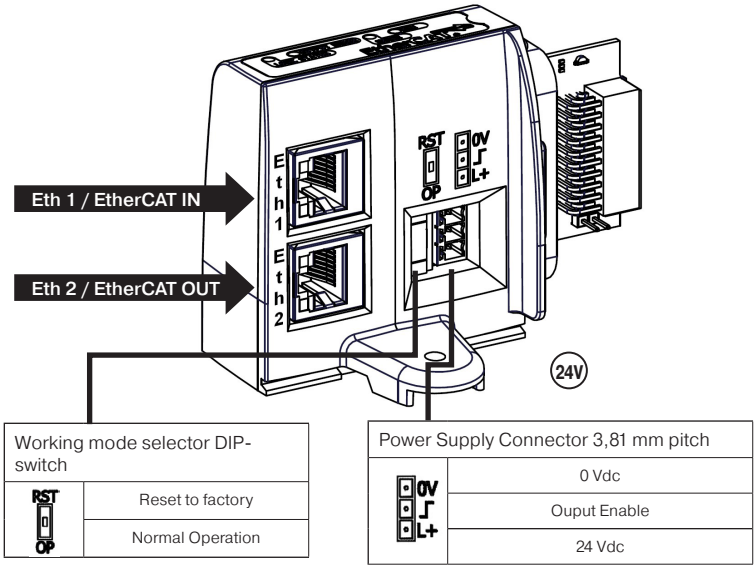
Usage of standard manufactured cables available from your usual electrical supplier is recommended.

Power Supply:

Standard 3-Pin' Male Connector - 3,81 mm pitch

Working mode selector:

DIP-switch



Working mode selector DIP-switch	
RST OP	Reset to factory
	Normal Operation

Power Supply Connector 3,81 mm pitch	
0V L+	0 Vdc
	Ouput Enable
	24 Vdc

Configuration Files

The configuration files can be download from the product web page: www.parker.com/pde/P2M_IE

IP Address Setting

For both Profinet IO and EtherNet/IP protocols, the P2M Lite 24DO Node is by default in DHCP mode. The module must be assigned to a static IP-Address in order to be controlled via network. Please, refer to the user manual for IP-Address assignment process.

Local and Network Diagnostic Functions

Local Diagnostic

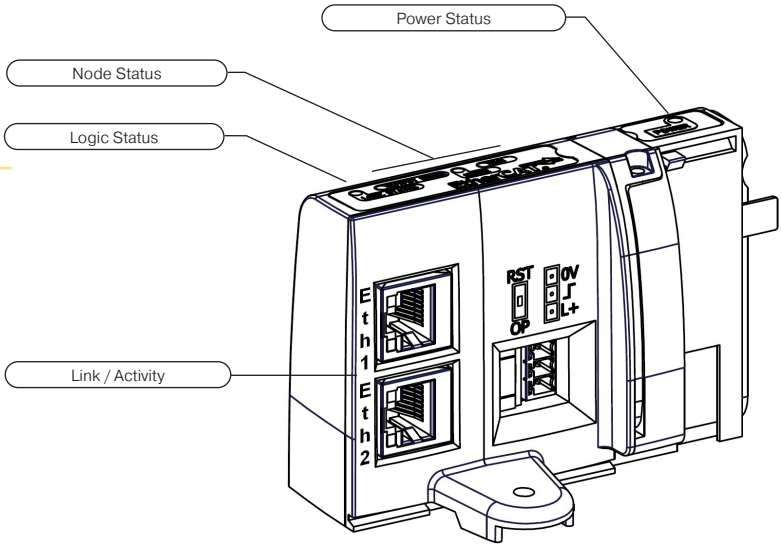
The P2M Lite 24DO node offers a local diagnostic via 9 LED's. Please refer to user manual with interpretation table.

Network Diagnostic

The P2M Lite 24DO Node offers additional useful module status information:

- Pilot overload or short circuit
- Power Voltage out of tolerance
- Cycle counter for every pilot
- Module temperature

For detailed technical information on the P2M Lite 24DO Node and a complete interpretation of node's diagnostic functionalities, please refer to the User Manual available from the product web page: www.parker.com/pde/P2M_IE



EtherNet/IP™

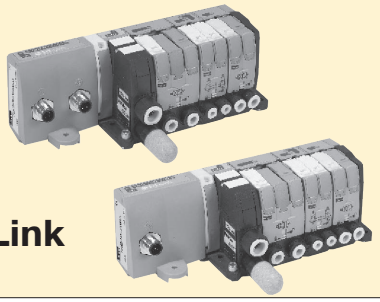
EtherCAT®

PROFINET INDUSTRIAL ETHERNET

Valve Island V Series with IO-Link connection

The P2M Moduflex **IO-Link** 24 DO node allows a very simple and cost efficient connection to any IO-Link master, centralised into the PLC or decentralised through an industrial Ethernet network.

Designed in both Class A and Class B versions with an isolated auxiliary power, it can easily be adapted to all power supply architectures and follow machine directives.



IO-Link

"V" Series Valve Island - P2M head module for IO-Link

Electrical Module for 24 outputs (The last 5 outputs of this 24 DO module can not be used with Moduflex Valve)

IO-Link

M12 A coded Connector connection

Class A

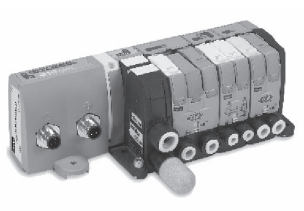
Class B

Description	IO-Link class	IO-Link	Aux. power	Aux. power pinout	Weight (g)	Part Number Standard	Part Number Safe Power Capable
P2M IO-Link communication module	Class A	3 Pin's	3 Pin's	1 & 3	160	**P2M2HBVL12400A13**	**P2M2HBVL12400A13-SPC**
		3 Pin's	3 Pin's	4 & 3	160	**P2M2HBVL12400A43**	**P2M2HBVL12400A43-SPC**
		3 Pin's	5 Pin's	4 & 2	160	**P2M2HBVL12400A42**	**P2M2HBVL12400A42-SPC**
	Class B	5 Pin's		2 & 5	140	**P2M2HBVL12400B25**	**P2M2HBVL12400B25-SPC**
Power & communication cable						**RKC 4.5T-*-RSC 4.5T/S1587**	

IODD file can be downloaded from IODD Finder or the Moduflex web site:
https://ioddfinder.io-link.com or www.parker.com/pdn/io-link

Where * = 1, 2, 3, 4, 5, 10, 20 meter standard lengths

P2M Class A Module with Independent Auxiliary Power Supply



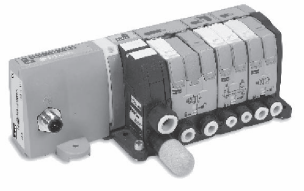
The P2M **IO-Link** Class A module can handle a Moduflex valve manifold having up to 19 solenoid outputs, or H Series Micro / ISO up to 24 solenoid outputs.

Thanks to its 2 x M12 A coded male connectors, the P2M node can be connected to any IO-Link Class A master and separately receive its auxiliary power supply for valves from an independent source.

The P2M **IO-Link** Class A module exists in 3 versions with the auxiliary power M12 connector pin out adapted to any sourcing through a standard M12 cable:

- P2M2HBVL12400A13 version: 24Vdc / 0Vdc on pins 1 & 3 – Standard version
- P2M2HBVL12400A43 version: 24Vdc / 0Vdc on pins 4 & 3 – Compatible with Siemens wiring
- P2M2HBVL12400A42 version: 24Vdc / 0Vdc on pins 4 & 2 – Compatible with Rockwell wiring and Turck wiring

P2M Class B Module



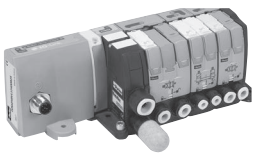
The P2M **IO-Link** Class B module can handle a Moduflex valve manifold having up to 19 solenoid outputs, or H Series Micro / ISO up to 24 solenoid outputs.

Thanks to its single M12 A coded male connectors, P2M node can be connected to any IO-Link Class B master receiving its auxiliary power supply for valves on pins 2 & 5 from the only cable simplifying the connection.

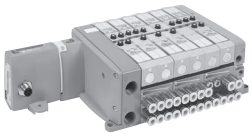
- P2M2HBVL12400B25 version: 24VDC / 0VDC on pins 2 & 5

Valve Series

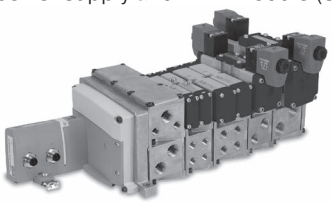
Check the total maximum solenoid current consumption against the limit of the power supply and P2M module (standard version 4A, SPC version 2A).



Moduflex Valve
Cv: .18 - 0.80
19 Solenoids
42mA per Sol.



H Micro
Cv: 0.35
24 Solenoids
42mA per Sol.



H ISO 15407-2 & 5599-2
Cv: 0.55 - 6.0
24 Solenoids
42mA (15407) / 133mA (5599) per Sol.

IO-Link Module Connection and Diagnostic Functions

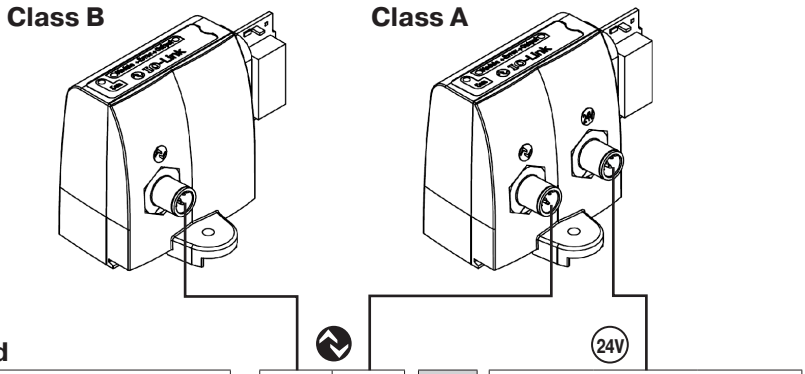
IO-Link

IO-Link Module Connection

Standard male M12 – type A

Usage of standard manufactured cables available from your usual electrical supplier is recommended.

Note: Auxiliary power for solenoids can be wired allowing the user to turn outputs off while the communications remains on.



Legend

Symbol	Description
L+	IO-Link power supply "+"
L-	IO-Link power supply "-"
C/Q	IO-Link communication
Aux +	Auxiliary power supply 24 VDC
Aux -	Auxiliary power supply 0 VDC

Class B 5 pin's P2M...B..	Class A 3 pin's P2M...A..	M12 pin's	Class A 3 pin's P2M...A13	Class A 3 pin's P2M...A43	Class A 5 pin's P2M...A42
L+	L+	1	Aux +	Not used	Not used
Aux +	-	2	-	-	Aux -
L-	L-	3	Aux -	Aux -	Not used
C/Q	C/Q	4	n.c.	Aux +	Aux +
Aux -	-	5	-	-	Not used

Configuration

IODD file can be downloaded from IODD Finder or the P2M web site:

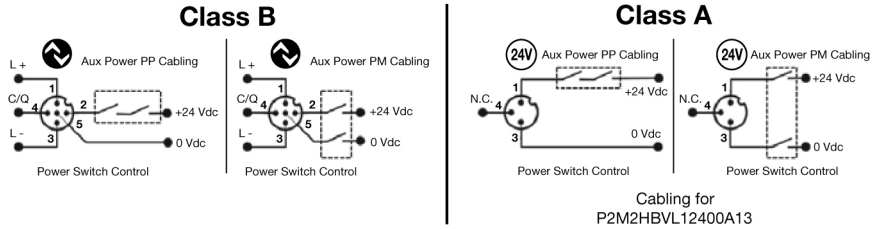
https://ioddfinder.io-link.com

www.parker.com/pdn/P2M_IOL

Auxiliary Power Supply Compatibility

The P2M IO-Link Node can be powered from a 24VDC auxiliary source in PP or PM mode as grounds are isolated.

The P2M Safe Power Capable (-SPC) versions can be connected from a SAFE OSSD test pulsed power source.



IO-Link Module Diagnostic Functions

The P2M IO-Link module offers additional useful module status information:

- Solenoid overload or short circuit
- Auxiliary voltage out of tolerance
- Cycle counter for each solenoid
- Module temperature

For more information on product technical information and module diagnostic functionalities, please refer to the user manual available from the product web page:

www.parker.com/pdn/P2M_IOL

COM. Green LED

LED Status	Description	Solving
OFF	IO-Link L+ / L- not powered	Check connection
ON	IOL L+ / L- powered IO mode	Set IO-Link mode in IO-Link master
Blinking	IO-Link communication active	NA

Module — Error Red LED

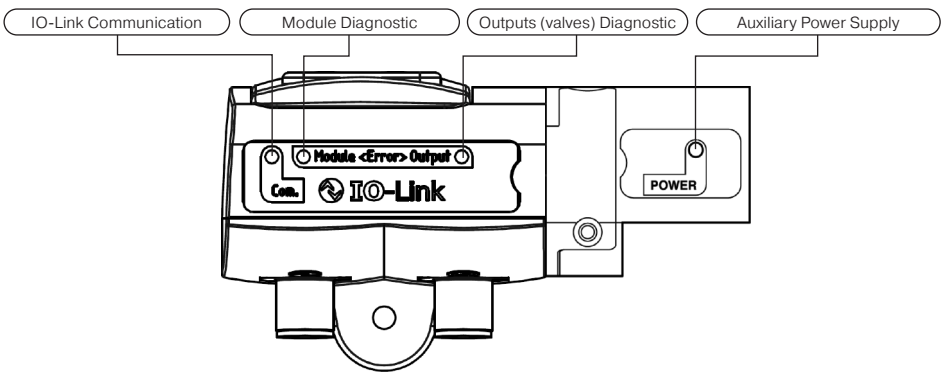
LED Status	Description	Solving
OFF	Standard mode	NA
ON	24 VDC AUX power missing or any active malfunction	Check power supply or change module

Error — Output Red LED

LED Status	Description	Solving
OFF	Standard mode	NA
ON	Any driver error (overload, over temperature, etc.)	Fix solenoid issue then acknowledge error

POWER Green LED

LED Status	Description	Solving
OFF	AUX power failure	Check Auxiliary Power Supply
ON	Standard	NA
Blinking	Aux Power is out of range, alarm level	Check Auxiliary Power Supply



Input Data
One byte of diagnostic input data is transferred from P2M IO-Link to the IO-Link Master.

Process input data

7	6	5	4	3	2	1	0
Output driver SPI error	Output driver channel error	Polyfuse tripped	Temperature warning	SPI error	AUX voltage error	AUX voltage warning	Acknowledge Required

Output Data
Three bytes of process data are received by P2M IO-Link from the IO-Link Master for control of solenoids.

Process output data (Byte 0)

7	6	5	4	3	2	1	0
EV8	EV7	EV6	EV5	EV4	EV3	EV2	EV1

Process output data (Byte 1)

7	6	5	4	3	2	1	0
EV16	EV15	EV14	EV13	EV12	EV11	EV10	EV9

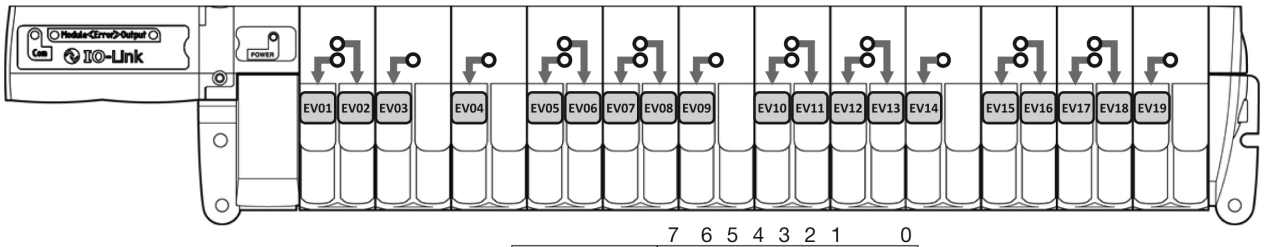
Process output data (Byte 2)

7	6	5	4	3	2	1	0
EV24	EV23	EV22	EV21	EV20	EV19	EV18	EV17

Solenoid Pilots Addressing and Process Mapping

P2M IO-Link node addressing used with Moduflex Valve System

The P2M IO-Link node, when used with Moduflex Valve System can handle up to 19 pilot solenoid valves. Addressing will be done as shown below.



PLC mapping Process output	7 6 5 4 3 2 1 0
Byte 0	EV08 ..... EV01
Byte 1	EV16 ..... EV09
Byte 2	EV24 ..... EV17

P2M IO-Link Module Electrical Specifications

IO-Link power supply	According to IO-Link standard V1.1.2
Speed communication	Com 2 – 38 kBd
Auxiliary power supply	20.4 VDC to 26.4 VDC
Current limit per channel	150 mA
Max current limit	4 A
Polarity inversion	YES
Short circuit protection	YES
Operating temperature	0°C to 55°C
Storage temperature	-25°C to 70°C
Shock according to IEC	60068-2-27:2008
Vibration according to IEC	60068-2-6:2007
EMC according to IEC	61000-4-2 up to -4-6

Network Diagnostic Through Process Mapping:

The P2M IO-Link module offers diagnostic data transmitted to the PLC through the master:

PLC mapping Process input	7 6 5 4 3 2 1 0
Byte 0	Diag 7 . . . . . Diag 0

Diag bit	Error message	Detail
Diag 0	Fail-safe status	Acknowledgement required
Diag 1	Auxiliary voltage warning	Check auxiliary power
Diag 2	Auxiliary voltage failure	Check auxiliary power
Diag 3	Module failure	Module HS. must be replaced
Diag 4	Module over-temperature	
Diag 5	Module over-load	
Diag 6	Pilot solenoid(s) short circuit	Solenoid must be replaced
Diag 7	Outputs stage failure	

For further details, refer to the user manual: can be downloaded from www.parker.com/pdn/P2M_IOL

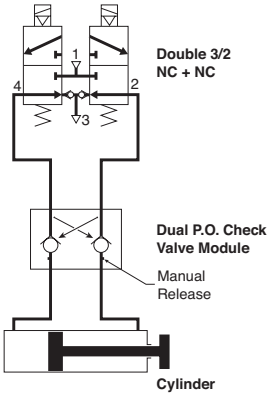
Peripheral Modules

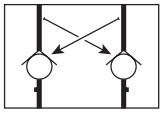
	Acessories	Description	Option	Part Number	Part Number
				Size 1	Size 2
	Pressure regulator without gauge		0 to 30 PSI	**P2M1PXST**	**P2M2PXST**
			0 to 60 PSI	**P2M1PXSL**	**P2M2PXSL**
			0 to 120 PSI	**P2M1PXSN**	**P2M2PXSN**
	Pressure regulator with gauge		0 to 30 PSI	**P2M1PXSR**	**P2M2PXSR**
			0 to 60 PSI	**P2M1PXSM**	**P2M2PXSM**
			0 to 120 PSI	**P2M1PXSG**	**P2M2PXSG**
	Gauge		0 to 30 PSI	**P2M1K0GT**	**P2M1K0GT**
			0 to 60 PSI	**P2M1K0GL**	**P2M1K0GL**
			0 to 120 PSI	**P2M1K0GN**	**P2M1K0GN**
	Push to connect fitting	5/32" or 4mm OD tube	Elbow	**CMD04-1**	
			Straight	**FMD04-1**	
		1/4" OD tube	Elbow	**CMD07-1B**	**CMD07-2B**
			Straight	**FMD07-1B**	**FMD07-2B**
		3/8" OD tube	Elbow		**CMD09-2B**
			Straight		**FMD09-2B**
		1/2" OD tube	Straight		**FMD13-2B**
		6mm OD tube	Elbow	**CMD06-1**	**CMD06-2**
			Straight	**FMD06-1**	**FMD06-2**
		8mm OD tube	Elbow		**CMD08-2**
			Straight		**FMD08-2**
		10mm OD tube	Elbow		**CMD10-2**
			Straight		**FMD10-2**
	Double male union	Connecting peripheral modules		**HMDXX1**	**HMDXX2**
	Muffler for vacuum exhaust port			**MMDVA1**	**MMDVA2**
	Plug			**PMDYY1**	**PMDYY2**

Note: 85 Durometer minimum for pneumatic connectors.

Dual P.O. Check Valve

Combined with a double 3/2 NC + NC valve, this module will block both flows and stop cylinder movement as soon as the valve's outputs are both exhausted. Better than a 3-Position valve, it provides more precise positioning when fitted close to the cylinder. Standard with manual release buttons.





P2M1PXCA

Application

At the outputs of a double 3/2 NC + NC valve, the dual P.O. check valve module achieves efficient and stable cylinder positioning. As soon as both lines are exhausted by the main control valve, the two internally piloted check valves close tight. The cylinder is then stabilized.

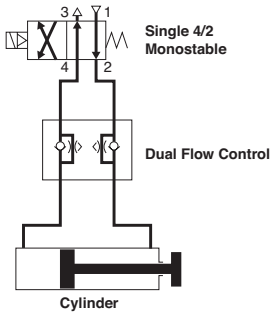
The manual pressure releases may then eventually be used for an adequate machine positioning.

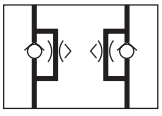
Dual P.O. Check Valve

	Part Number
Size 1	**P2M1PXCA**
Size 2	**P2M2PXCA**

Dual Flow Control

By controlling the exhaust flows of a double-acting cylinder, this module can adjust both speeds — extend and retract. It may be plugged into the valve module output ports or mounted close to the cylinder in its in-line version.





P2M1PXFA

Application

On a double-acting cylinder, extend and retract speeds are adjusted separately by control of air flow exhaust. The control becomes more precise when the flow adjustment is close to the cylinder. The examples show different solutions which are dependent upon the valve-to-cylinder distance and accessibility to the cylinder

Dual Flow Control Module

	Weight	Part Number
Size 1	1.06 oz	**P2M1PXFA**
Size 2	1.59 oz	**P2M2PXFA**

"P" Series Peripheral Modules Model Number Index

(Complete with Pneumatic Connectors)

P2M 1 PX S L F4 F4

Basic Series	
Electro-Pneumatic Valve Modules	P2M

Size	
Size 1	1
Size 2	2

Style / Function	
Peripheral	PX

Accessory Type	
Dual Pilot Operated Check	C
Dual Flow Control	F
Single Pressure Regulator	S

Accessory Option	
Flow Control or Pilot Operated Check	A*
0 - 120 PSI - Gauge	G
0 - 60 PSI - No gauge	L
0 - 60 PSI - Gauge	M
0 - 120 PSI - No gauge	N
0 - 30 PSI - Gauge	R
0 - 30 PSI - No gauge	T

* Must be used with accessory type "C" or "F".

Ports 1 & 3 (Supply / Exhaust)	
C0*	10mm Elbow Fitting
C4	**5/32" (4mm) Elbow Fitting**
C6	6mm Elbow Fitting
C7	**1/4" Elbow Fitting**
C8*	8mm Elbow Fitting
C9*	**3/8" Elbow Fitting**
F0*	10mm Straight Fitting
F3*	**1/2" Straight Fitting**
F4	**5/32" (4mm) Straight Fitting**
F6	6mm Straight Fitting
F7	**1/4" Straight Fitting**
F8*	8mm Straight Fitting
F9*	**3/8" Straight Fitting**
JJ	**Double Male Union**
XX	**No Fittings**

* Only available with size 2 valves.

Ports 2 & 4 (S, T & V Series)	
C0*	10mm Elbow Fitting
C4	**5/32" (4mm) Elbow Fitting**
C6	6mm Elbow Fitting
C7	**1/4" Elbow Fitting**
C8*	8mm Elbow Fitting
C9*	**3/8" Elbow Fitting**
F0*	10mm Straight Fitting
F3*	**1/2" Straight Fitting**
F4	**5/32" (4mm) Straight Fitting**
F6	6mm Straight Fitting
F7	**1/4" Straight Fitting**
F8*	8mm Straight Fitting
F9*	**3/8" Straight Fitting**
JJ	**Double Male Union**
PP	**Clip-in Plug**

* Only available with size 2 valves.

Regulator with Gauge

How to Order - Example: Size 1, Regulator with gauge, 1/4" OD straight fittings.

Line item	Quantity	Part Number	Description
Complete Peripheral Module			
1	1	**P2M1PXSGF7F7**	Size 1, Regulator with 0-160 PSI Gauge, 1/4" OD Straight Port Fittings in port 1, 2, 3, 4
Components			
1	1	**P2M1PXSG**	Size 1, Regulator with 0-160 PSI Gauge
2	4	**FMD07-1B**	Size 1-1/4" OD Tube Push-In Connector

Flow Control with Fittings

How to Order - Example: Size 1, Dual Flow Control, 1/4" OD straight fittings.

Line item	Quantity	Part Number	Description
Complete Peripheral Module			
1	1	**P2M1PXFAF7F7**	Size 1, Dual Flow Control, 1/4" OD Straight Port Fittings in Port 1, 2, 3, 4
Components			
1	1	**P2M1PXFA**	Size 1, Dual Flow Control
2	4	**FMD07-1B**	Size 1-1/4" OD Tube Push-In Connector

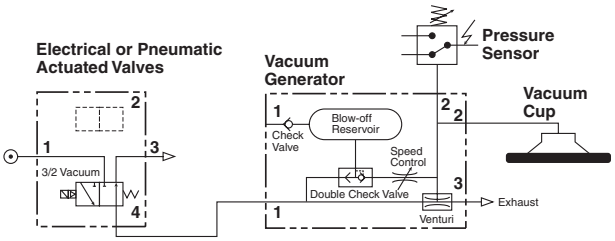
Vacuum Generator Applications

Depending on the application requirements, this vacuum generator may be controlled by single or by a dual 3/2 Moduflex valve. The Vacuum Generator has an integrated blow-off chamber that helps destroy the degree of vacuum. Blow-off can be increased with the addition of a control air input to the blow-off port on the vacuum module. A Ø6 mm port is available for an optional plug-in vacuum sensor for delivering a vacuum feedback signal.

Description	Weight	Size 1
Vacuum Generator	.88 oz	**P2M1PXVA**

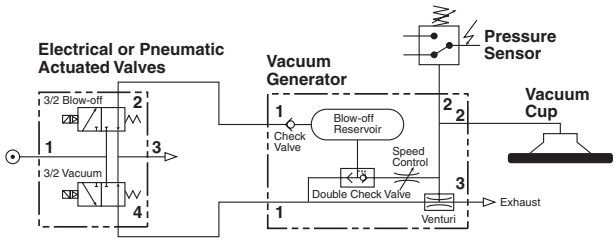
Single 3/2 NC Air Control Valve

The 3/2 valve delivers the air supply to generate vacuum through the venturi. It also pressurizes the integrated blow-off chamber. When the 3/2 valve cuts-off the air supply, this chamber is automatically exhausted into the vacuum channel in order to speed-up the part release. In this type of application, it is preferred to have the vacuum generator mounted away from the control valve.



Dual 3/2 3/2 Valve Control

One 3/2 valve controls air supply for vacuum. The other 3/2 valve will generate an additional blow-off that may prove necessary to obtain quick part release from large vacuum pads. The effect of the blow-off can be controlled with an adjustable screw. In this type of circuit, the Vacuum Generator can be mounted directly to the valve by using Double Male Unions or as a stand alone item away from the control valve.



Vacuum Flow (SCFM)

Nozzle Diameter	inHg 0	3	6	9	12	15	18	21	24	27	30
P2M1PXVA	0.84	0.76	0.67	0.55	0.42	0.30	0.18	0.06	—	—	—

Evacuation Time

Series / Nozzle Diameter	Air Supply Pressure	Air Consumption	Evacuation Time in Sec / ft³ * to Reach Different Vacuum Levels (inHg)								
	PSI	SCFM	3	6	9	12	15	18	21	24	27
P2M1PXVA	70	1.60	5.6	14.2	22.0	42.4	62.3	85.0	116	198	—

* 1 ft³ = 28.31 liters

Vacuum Generator Model Number Index

P2M1PXVA F7 A F7 C MA

Basic Configuration

Basic Unit	P2M1PXVA

#1 Pressure Port

5/32" (4mm) Elbow	C4
6mm Elbow	C6
1/4" Elbow	C7
Joint Fitting	JJ
5/32" (4mm) Straight	F4
6mm Straight	F6
1/4" Straight	F7
No Fittings	XX

Port #1 Configuration

Fitting in Pressure Port and Blow-Off Port	A
Fitting in Pressure Port and Blow-Off Port Plugged*	B

* Can not be directly mounting to valve.

#2 Vacuum Port

C4	5/32" (4mm) Elbow
C6	6mm Elbow
C7	1/4" Elbow
F4	5/32" (4mm) Straight
F6	6mm Straight
F7	1/4" Straight

#2 Sensor Port

A	6mm Plug
B	Plug
K	1/4" Straight
L	1/4" Elbow
M	6mm Elbow

#3 Exhaust Port

C4	5/32" (4mm) Elbow
C6	6mm Elbow
C7	1/4" Elbow
F4	5/32" (4mm) Straight
F6	6mm Straight
F7	1/4" Straight
MA	Muffler

Intermediate Supply Module Model Number Index

P2M2BX V 0 4 F9 MM

Intermediate Supply Module	
Basic Unit	P2M2BX

Valve Type	
Individually Wired	T
Collective Wiring	V

Wiring Style	
No Cable	0

Plate Configuration	
#1 & #3 Blocked	1
#1 Open & #3 Blocked	2
#1 Blocked & #3 Open	3
#1 & #3 Open	4

	Inlet Port Type (#1 pressure)*
C0	10mm Elbow Fitting
C2	12mm Elbow Fitting
C6	6mm Elbow Fitting
C7	**1/4" Elbow Fitting**
C8	8mm Elbow Fitting
C9	**3/8" Elbow Fitting**
F0	10mm Straight Fitting
F2	12mm Straight Fitting
F3	**1/2" Straight Fitting**
F6	6mm Straight Fitting
F7	**1/4" Straight Fitting**
F8	8mm Straight Fitting
F9	**3/8" Straight Fitting**
MM	**Clip-in Muffler**
PP	**Clip-in Plug**

* Elbow fittings face up.

	Exhaust Port Type (#3 exhaust)*
C0	10mm Elbow Fitting
C2	12mm Elbow Fitting
C6	6mm Elbow Fitting
C7	**1/4" Elbow Fitting**
C8	8mm Elbow Fitting
C9	**3/8" Elbow Fitting**
F0	10mm Straight Fitting
F2	12mm Straight Fitting
F3	**1/2" Straight Fitting**
F6	6mm Straight Fitting
F7	**1/4" Straight Fitting**
F8	8mm Straight Fitting
F9	**3/8" Straight Fitting**
MM	**Clip-in Muffler**
PP	**Clip-in Plug**

* Elbow fittings face up.

Plate Configuration

#1 & #3 Blocked

#1 Port connected to valves on the right only. Left is blocked.

#3 Port connected to valves on the right only. Left is blocked.

#1 Open, #3 Blocked

#1 Port connected to valves on the right and the left.

#3 Port connected to valves on the right only. Left is blocked.

#1 Blocked, #3 Open

#1 Port connected to valves on the right only. Left is blocked.

#3 Port connected to valves on the right and the left.

#1 & #3 Open

#1 Port connected to valves on the right and the left.

3 Port connected to valves on the right and the left.

Solenoid Pilot 24VDC

Description	Part Number
Solenoid pilot (without plug-in electrical connector)	**P2D8V32C5**
Air pilot with 5/32" (4mm) tube fitting	**P2M2K0PA**
Solenoid pilot (without clip connector)	**P2D2W3226C5**

P2D2W3226C5

P2D8V32C5

P2M2K0PA

Size 1 Valve Without Solenoid Pilot and Without Subbase

P2M1X4EE

4-way / 2-position / Single Valve

	Solenoid	Part Number
	Single solenoid (Monostable)	**P2M1X4ES**
	Double solenoid (Bistable)	**P2M1X4EE**

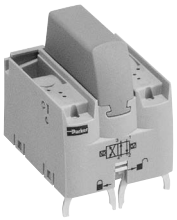
4-way / 2-position / Dual Valve

	Solenoid	Part Number
	Solenoid spring with exhaust check	**P2M1XJEE**

3-way / 2-position / Dual Valve

	Solenoid	Part Number
	Double solenoid NC + NC with exhaust check	**P2M1XDEE**
	Double solenoid NO + NO with exhaust check	**P2M1XCEE**
	Double solenoid NC + NO with exhaust check	**P2M1XEEE**
	Single solenoid NC with exhaust check	**P2M1X3ES**

Size 2 Valve Without Solenoid Pilot and Without Subbase



P2M2X4EE

4-way / 2-position / Dual Valve

	Solenoid	Part Number
	Single solenoid (Monostable)	**P2M2X4ES**
	Double solenoid (Bistable)	**P2M2X4EE**

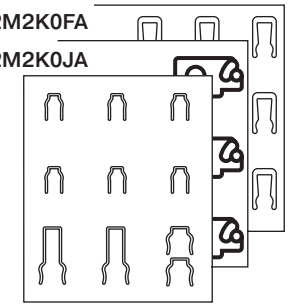
3-way / 2-position / Dual Valve

	Solenoid	Part Number
	Double solenoid NC + NC with exhaust check	**P2M2XDEE**
	Double solenoid NO + NO with exhaust check	**P2M2XCEE**
	Double solenoid NC + NO with exhaust check	**P2M2XEEE**
	Single solenoid NC with exhaust check	**P2M2X3ES**

Set of Maintenance Parts

Description		Part Number
Clips	Set of 14 clips: 6 for size 1 valves, 2 for size 2 valves, 4 for dual 4/2 valves, 2 for end plate and intermediate modules	**P2M2K0CA**
Seals	Set of 10 seals: 3 for manifold to manifold seals, 3 under solenoid pilot seals,4 under valve seals (two size 1 seals, two size 2 seals)	**P2M2K0JA**
Forks	Set of 10 isolation forks for solenoid pilot manual override	**P2M2K0FA**

P2M2K0FA
P2M2K0JA



P2M2K0CA

Moduflex Add-A-Fold Assembly Model Number Index

(Complete with Pneumatic and Electrical Connectors)

How To Order Plug-in Add-A-Fold Assemblies

1. List Add-A-Fold Assembly call out. This automatically includes the end plate kit assembly.
2. List valves and manifolds. List left to right, looking at the cylinder ports on the manifold.

P2MA	V	0	1	C9	C9	##

Moduflex Island Assembly	
Add-A-Fold	**P2MA***

* Includes pneumatic H & T end plate kit.

Style	
Individually Wired	**T**
Collective Wiring	**V***

* Includes 20-pin multi-connector or 25-pin, D-sub electrical head module.

Wiring / Bus Protocol	
No Cable (20-pin or multi-connector T series)	**0†**
2 Meter Cable (20-pin)	**2**
5 Meter Cable (20-pin)	5
9 Meter Cable (20-pin)	9
Bus	**B***
No Cable (25-pin, D-sub)	**D**
3 Meter Cable (25-pin, D-sub)	**F**

* Order bus module as a separate line item.
† Default to option "0" for T series.

Pilot Source	
Internal Supply / Internal Exhaust	**1**
Internal Supply / External Exhaust	2
External Supply / Internal Exhaust	3
External Supply / External Exhaust	4

Number of Segments†	
01 - 19*	**V-Type**
01 - 30	**T-Type**

* Max. number of addresses for V type is 19. Single solenoid valves equal one address. Double solenoid valves equal two addresses. Maximum address may depend upon choice of bus protocol.
† Intermediate modules are considered segments, but do not count against maximum number of addresses for manifold.

Exhaust Port Type (#3 Exhaust)*	
C0	10mm Elbow Fitting
C2	12mm Elbow Fitting
C6	6mm Elbow Fitting
C7	**1/4" Elbow Fitting**
C8	8mm Elbow Fitting
C9	**3/8" Elbow Fitting**
F0	10mm Straight Fitting
F2	12mm Straight Fitting
F3	**1/2" Straight Fitting**
F6	6mm Straight Fitting
F7	**1/4" Straight Fitting**
F8	8mm Straight Fitting
F9	**3/8" Straight Fitting**
MM	**Clip-in Muffler**
PP	**Clip-in Plug**

* Elbow fittings face up.

Inlet Port Type (#1 pressure)*	
C0	10mm Elbow Fitting
C2	12mm Elbow Fitting
C6	6mm Elbow Fitting
C7	**1/4" Elbow Fitting**
C8	8mm Elbow Fitting
C9	**3/8" Elbow Fitting**
F0	10mm Straight Fitting
F2	12mm Straight Fitting
F3	**1/2" Straight Fitting**
F6	6mm Straight Fitting
F7	**1/4" Straight Fitting**
F8	8mm Straight Fitting
F9	**3/8" Straight Fitting**
MM	**Clip-in Muffler**
PP	**Clip-in Plug**

* Elbow fittings face up.

"V" Series with 20-pin Connector

"V" Series with IO-Link

How to Order -

Example: Application requires V Series valves with 20-Pin, D-Sub and 2 Meter cable. Manifold to include (1) Size 2, 4/2 Double Solenoid Valve - 3/8" OD fitting, (1) Size 1, 4/2 Single Solenoid Valve - 1/4" OD Elbow Fitting, Intermediate Module - 3/8" OD Fitting with Exhaust Muffler, Port 1 and 3 Blocked, (1) Size 1, Dual 3/2 NC Valve and (1) Size 1, 4-Way Double Solenoid Valve both with 1/4" OD Straight Fittings. Includes 3/8 OD Inlet Fitting and Exhaust Muffler.

Line Item	Quantity	Part Number	Description
Complete Manifold Assembly			
1	1	**P2MAV21F9MM05**	Moduflex Island Assembly, Pneumatic Head and Tail Module Set, Internal Pilot Supply, Internal Pilot Exhaust, 3/8" Straight Fitting Port 1, Port 3 Muffler.
2	1	**P2M2V4EE2CV00F9**	Size 2, Double Solenoid, 4/2, 3/8" Straight Pneumatic Connectors.
3	1	**P2M1V4ES2CV00C7**	Size 1, Single Solenoid, 1/4" Elbow Pneumatic Connectors.
4	1	**P2M2BXV0A1F9MM**	Intermediate Module 3/8" Straight Fitting with Exhaust Muffler
5	1	**P2M1VDEE2CV00C7**	Size 1, Dual 3/2 NC + NC, 1/4" Elbow Pneumatic Connectors.
6	2	**P2M1VJEE2CV00F7**	Size 1, Dual 4/2, 1/4" Straight Pneumatic Connectors.
Components			
1	1	**P2M2HXT01**	Pneumatic Head and Tail Module Set
2	1	**P2M2HEV0A**	20-Pin, Multi-Connector Electrical Head Module
3	1	**P8LMH20M2A**	2 Meter, 20-Pin Cable
4	1	**P2M2V4EE2CV**	Size 2, V Series Island Valve Module, Double Solenoid, 4-Way
5	1	**P2M1V4ES2CV**	Size 1, V Series Island Valve Module, Single Solenoid, 4-Way
6	1	**P2M2BXV0A**	Intermediate Module
7	1	**P2M1VGEE2CV**	Size 1, V Series Island Valve Module, Dual 3/2 NC + NC
8	2	**P2M1VJEE2CV**	Size 1, V Series Island Valve Module, Dual 4/2
9	2	**CMD07-1B**	Size 1, 1/4" OD Tube Elbow Push-in Connector
10	6	**FMD07-1B**	Size 1, 1/4" OD Tube Straight Push-in Connector
11	4	**FMD09-2B**	Size 2, 3/8" OD Tube Straight Push-in Connector
12	2	**MMDVA2**	Clip-on Muffler

How to Order -

Example: Application requires V Series valves with IO-Link Class A Module. Manifold to include (1) Size 2, 4/2 Double Solenoid Valve - 3/8" OD fitting, (1) Size 1, 4/2 Single Solenoid Valve - 1/4" OD Elbow Fitting, Intermediate Module - 3/8" OD fitting with Exhaust Muffler, Port 1 and 3 Blocked, (1) Size 1, Dual 3/2 NC Valve and (1) Size 1, 4-Way Double Solenoid Valve both with 1/4" OD Straight Fittings. Include 3/8 OD Inlet Fitting and Exhaust Muffler.

Line Item	Quantity	Part Number	Description
Complete Manifold Assembly			
1	1	**P2MAVB1F9MM05**	Moduflex Island Assembly, Pneumatic Head and Tail Module Set, Internal Pilot Supply, Internal Pilot Exhaust, 3/8" Straight Fitting Port 1, Port 3 Muffler.
2	1	**P2M2HBVL12400AB**	IO-Link Class A Module
3	1	**P2M2V4EE2CV00F9**	Size 2, Double Solenoid, 4/2, 3/8" Straight Pneumatic Connectors.
4	1	**P2M1V4ES2CV00C7**	Size 1, Single Solenoid, 1/4" Elbow Pneumatic Connectors.
5	1	**P2M2BXV0A1F9MM**	Intermediate Module 3/8" Straight Fitting with Exhaust Muffler
6	2	**P2M1VDEE2CV00C7**	Size 1, Dual 3/2 NC + NC, 1/4" Elbow Pneumatic Connectors.
7	1	**P2M1VJEE2CV00F7**	Size 1, Dual 4/2, 1/4" Straight Pneumatic Connectors.
Components			
1	1	**P2M2HXT01**	Pneumatic Head and Tail Module Set
2	1	**P2M2HBVL12400AB**	IO-Link Class A Module
3	1	**P2M2V4EE2CV**	Size 2, V Series Island Valve Module, Double Solenoid, 4-Way
4	1	**P2M1V4ES2CV**	Size 1, V Series Island Valve Module, Single Solenoid, 4-Way
5	1	**P2M2BXV0A**	Intermediate Module
6	1	**P2M1VGEE2CV**	Size 1, V Series Island Valve Module, Dual 3/2 NC + NC
7	2	**P2M1VJEE2CV**	Size 1, V Series Island Valve Module, Dual 4/2
8	2	**CMD07-1B**	Size 1, 1/4" OD Tube Elbow Push-in Connector
9	6	**FMD07-1B**	Size 1, 1/4" OD Tube Straight Push-in Connector
10	4	**FMD09-2B**	Size 2, 3/8" OD Tube Straight Push-in Connector
11	2	**MMDVA2**	Clip-on Muffler

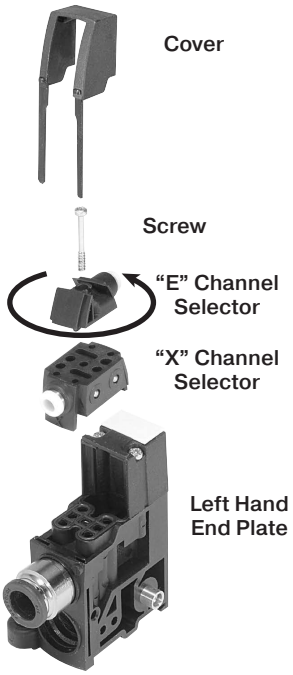
Internal and external pilot supply options

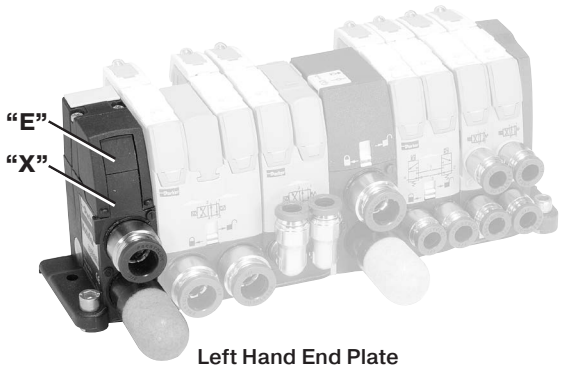
All T and V Series Valve bases incorporate an auxiliary channel **"X"** to supply pressure to the solenoid pilots. The **"X"** galley is pressurized from the left hand end plate. Depending on the configuration of the left hand end plate, this pressure is either supplied from the #1 port in the left hand end plate or supplied externally through a 4mm OD tube fitting in the left hand end plate This fitting is supplied in all left hand end plates and can be converted in the field.

Internal and external solenoid pilot exhaust options

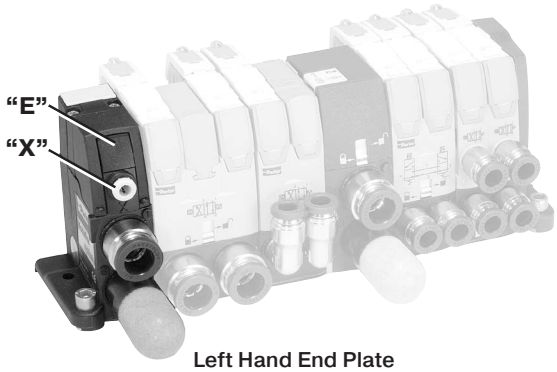
All T and V Series Valve bases incorporate an auxiliary channel **"E"** which is used to exhaust the solenoid pilot pressure from each solenoid valve. The **"E"** galley is connected to the left hand end plate. Depending on the configuration of the left hand end plate, this exhaust is either connected to the #3 exhaust port or is connected to a 4mm OD Tube fitting in the left hand end plate. This fitting is supplied in all left hand end plates and can be converted in the field.

To configure the left hand end plate, with pressure off, remove head cover to expose the selector section. Loosen selector section and rotate **"X"** or **"E"** channel selector to desired position. Tighten selector section and assemble cover.

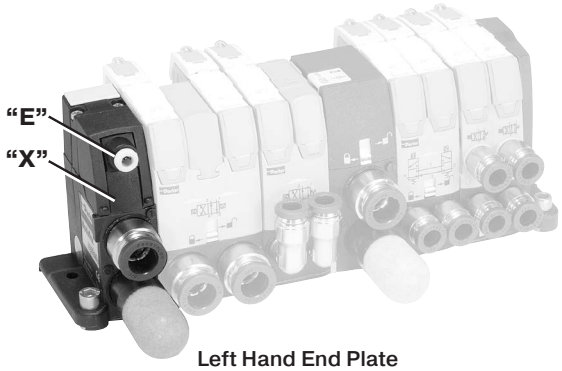




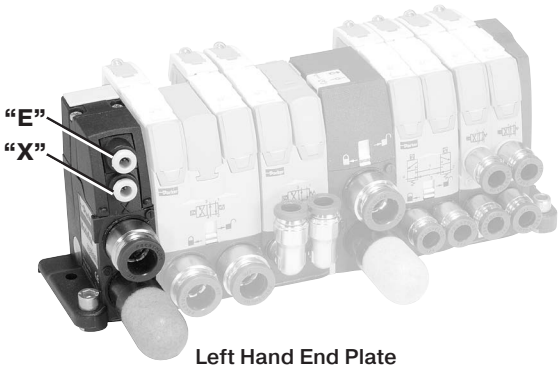
Left Hand End Plate
"E" Channel Internal Exhaust
"X" Channel Internal Pilot



Left Hand End Plate
"E" Channel Internal Exhaust
"X" Channel External Pilot



Left Hand End Plate
"E" Channel External Exhaust
"X" Channel Internal Pilot

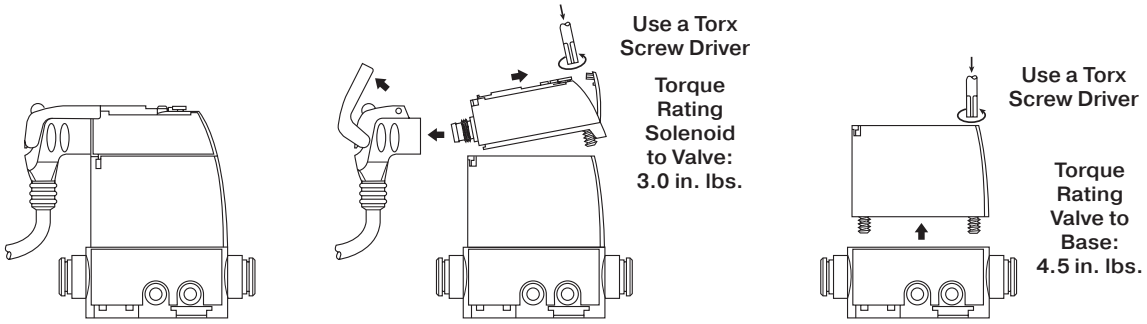


Left Hand End Plate
"E" Channel External Exhaust
"X" Channel External Pilot

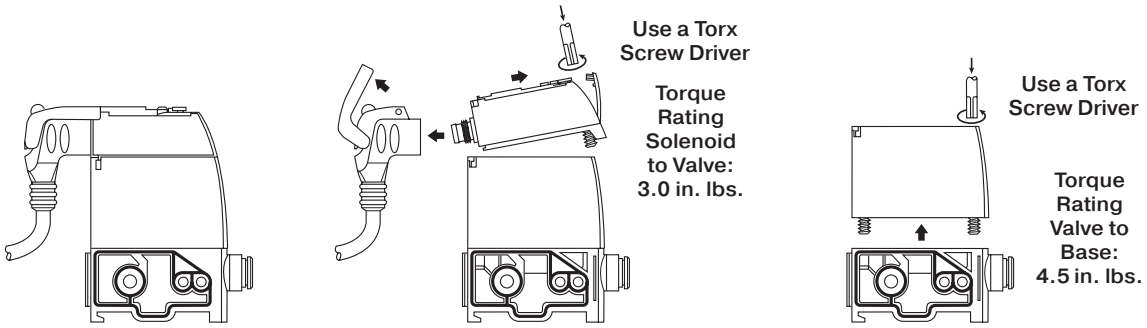
"V", "T" and "S" Series Maintenance

The latest generations of compact pneumatic valves have a life expectancy which generally exceeds the equipment they control. Therefore, maintenance is seldom required. When it is necessary to change the solenoid pilot, valve or connector, they can be easily replaced without removing the island base, as shown below.

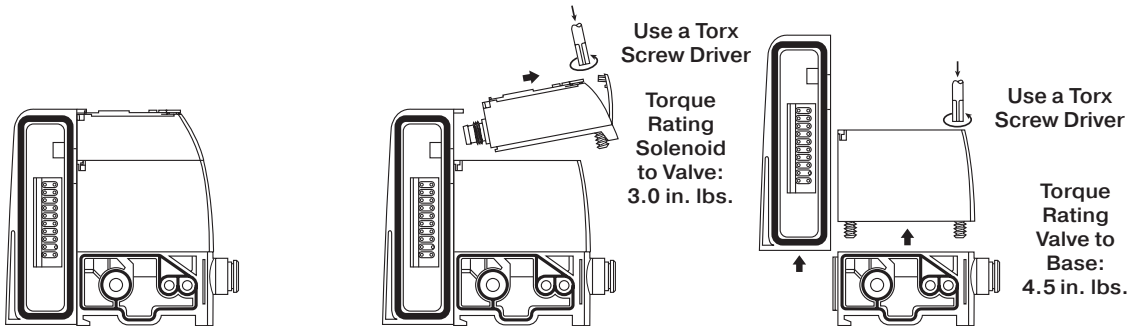
"S" Series



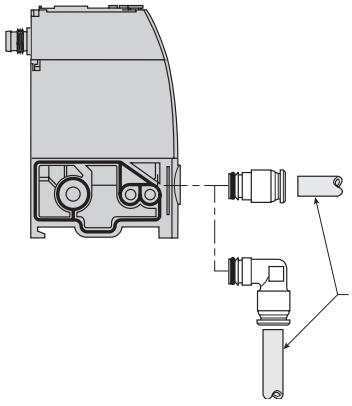
"T" Series



"V" Series



Fitting and Tubing Installation



Fitting Assembly: Pneumatic Connectors are retained by a clip in each module. Assembly is achieved by pushing the fitting into the module and sliding the clip down over the groove in the fitting. Pull fitting to check that it is secure.

Tubing Assembly: Cut tubing squarely & cleanly. Inspect the tubing to insure there are no sharp edges that may nick or cut the o-ring seal. Insert tubing into fitting until it bottoms out. A slight pull on the tube afterwards can help verify it is properly retained / inserted.

Tubing Disassembly: When it is required to remove the tubing from the fitting push the release button in towards the fitting & remove the tubing.

Tubing Reassembly: Inspect the tubing before re-inserting it for any scoring or other damage that would affect the o-ring sealing. It is recommended that for every insertion, the tubing end be trimmed, especially if it has any scoring or damage.

Pneumatic Valve Specifications

Fluid	Air, inert gas, filtered 40µ [1], dry [2] or lubricated [3]		
Operating Pressures	Vacuum to 120 PSI		
Piloting Pressure	43 to 120 PSI for operating pressures below, use external pilot supply available on all head modules [5]		
Pilot Supply	Internal with "S" Series, mixed internal / external with "T" and "V" Series		
Exhaust Collection	All exhausts are collectable, including solenoid pilot exhaust		
Life Cycle	100 million operations [4] (with dry air, 3 Hz, 20°C, 6 bar)		
Operating Temperatures	5°F to 140°F (32°F to 130°F for field bus systems)		
Stocking Temperatures	-40°F to 155°F		
Vibration Resistance	According to IEC 68 - 2 - 6	2G	2 to 150 Hz
Impact Resistance	According to IEC 68 - 2 - 27	15G	11 ms

1. Class 5 according to ISO 8573-1
2. Class 4 according to ISO 8573-1
3. With main air supply lubricated, monitor lubrication rate so that valve bank is not flooded with lubricant.
4. 4/2 valve
5. Double 3/2 minimum 50 PSI

Electrical Specifications

Rated Coil Voltage	24VDC			
Allowable Voltage Fluctuation	-15% to +10 % of nominal voltage			
Electrical Connection	Polarity insensitive: PNP and NPN compatible			
Coil insulation Type	Class B			
Power Consumption	1W (42 mA)			
Manual Override	Locking or non-locking, isolated if required			
Response Time of the Complete Valve	9.6 ms ± 1.2 on 4/2 Double Solenoid Valve Size 1 12.0 ms ± 1.2 on 4/2 Single Solenoid Valve Size 1 14.8 ms ± 2 on 4/2 Double Solenoid Valve Size 2 17.0 ms ± 2 on 4/2 Single Solenoid Valve Size 2		According to ISO 12238	
Type of Use	Continuous-duty Solenoid			
Dust and Water Protection	According to EN 60 529	"S" and "T" Series:	M8	IP67
			Clip	IP40
		"V" Series:		IP65

Specifications

1/4", 3/8" and 1/2" Fittings

Construction
Nickel Plated Brass Body; O-ring: Nitrile (Buna N) lubricated with Silicone lubricant; Grab Ring: 301 Stainless Steel;One Piece Button Collet: PVDF – black

Recommended Parker Tubing Series:
E (Linear Low Density Polyethylene), PP (Polypropylene), N (Plasticized Polyamide,Nylon), NR (Unplasticized Polyamide, Rigid Nylon), U (Polyurethane 90 Durometer Shore A), HU (Polyurethane 95 Durometer Shore A)

Other materials: Polyurethane 85 Durometer Shore A – Applications and service conditions vary and therefore the use of a tube support may be required for any 85A PU tubing. The following commercially available O.D. – I.D. 85A tubing sizes require the use of a tube support regardless of application. (5/32" – 3/32", 3/16" – 1/8", 1/4" - .170", 1/4" – 3/16", 5/16" – 1/4", 3/8" – 5/16", 1/2" – 3/8") Prestolok fittings should not be used for live swivel applications. Vacuum applications dependent upon temperature and type of tubing used.

6mm, 8mm, 10mm, 12mm Fittings

Construction

Polyamid HR Body (Right Angle), Nickel Plate Brass Body (Straight); O-ring: Nitrile (Buna N) lubricated with Silicone lubricant; Sleeve: Polyamide HR Body; Grab Ring: 301 Stainless Steel; One Piece Button Collet: Polyacetal - black

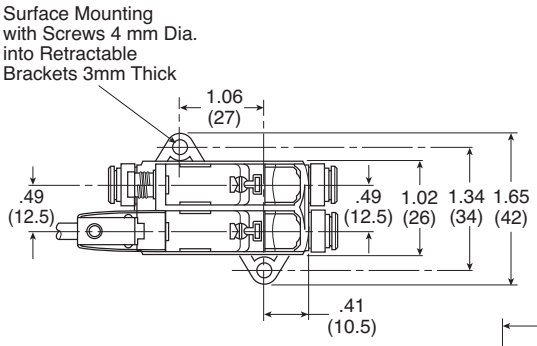
Recommended Parker Tubing Series for 6mm, 8mm, 10mm, 12mm Fittings:

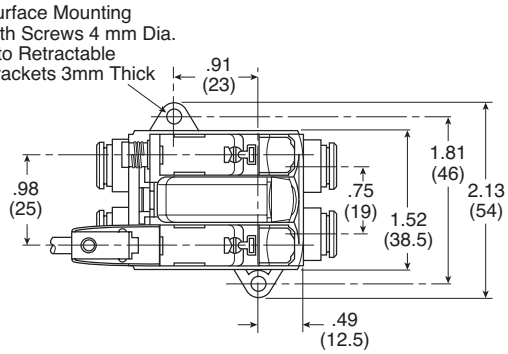
E (Linear Low Density Polyethylene), N (Plasticized Polyamide, Nylon), U (Polyurethane 90 Durometer Shore A), HU (Polyurethane 95 Durometer Shore A) Prestolok fittings should not be used for live swivel applications. Vacuum applications dependent upon temperature and type of tubing used.

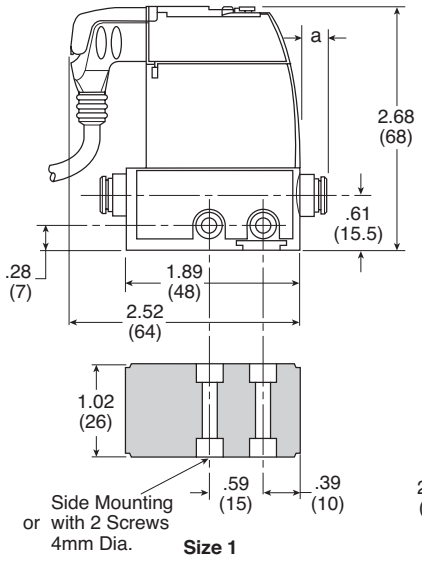
"S" Series Individual Subbase Valve Dimensions and Mounting

Subbase Valve Size 1

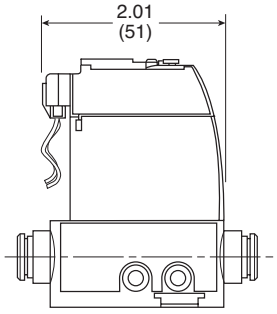
Subbase Valve Size 2

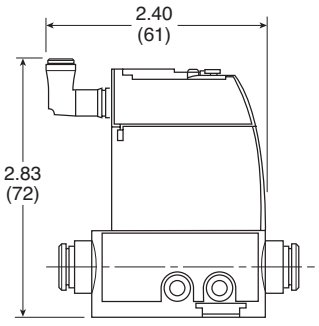




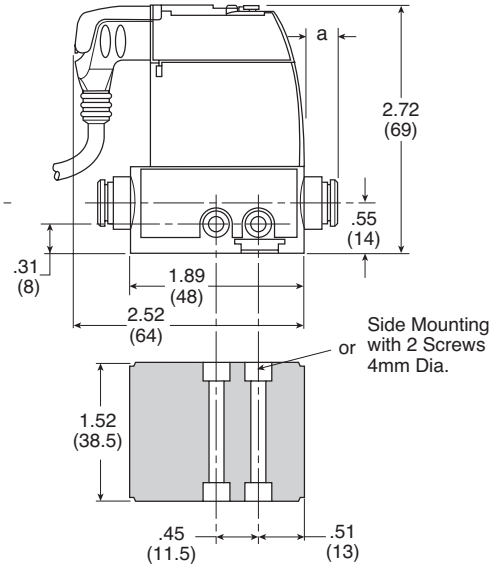


Size 1

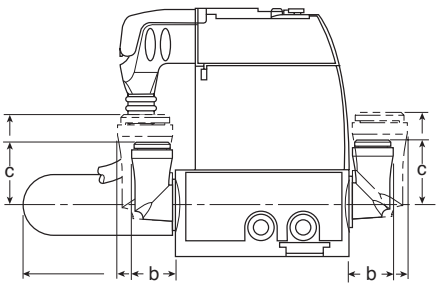




Air Pilot



Size 2

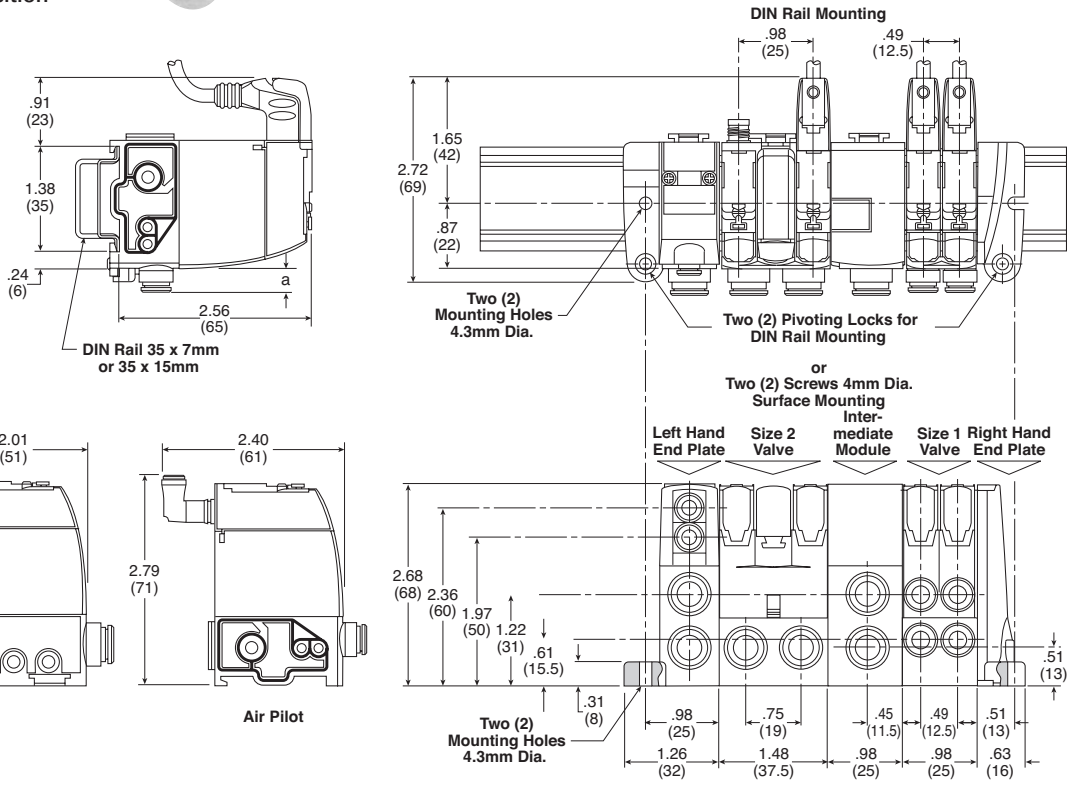


OD Tube Ext.		a	b	c
Size 1 Valves	5/32" (4 mm)	8	10	12
	6 mm	8	13	16
	1/4"	15	18	22
	Muffler		31	
Size 2 Valves	1/4"	12	18	22
	8 mm	9	16	19
	3/8"	16	23	26
	10 mm	13	18	22
	Muffler		40	

Special Case: 4/3 all ports blocked. Add the dual P.O. check valve that has been plugged in the basic valve.

"T" Series Manifold Dimensions and Mounting

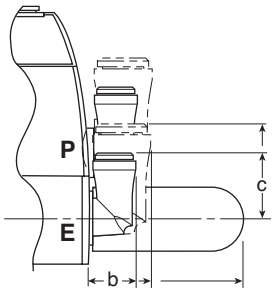
Total Width Depends on Valve Composition



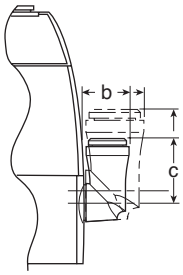
Special Case: 4/3 all ports blocked function within island version, add the dimensions of the dual P.O. check valve plugged into the island.

End Plate and Intermediate Modules

	a	b	c
6 mm Tube OD	8	13	16
1/4" Tube OD	12	18	22
8 mm Tube OD	9	16	19
3/8" Tube OD	16	23	26
10 mm Tube OD	13	18	25
12 mm Tube OD	13	19	25
1/2" Tube OD	13		
Muffler		40	



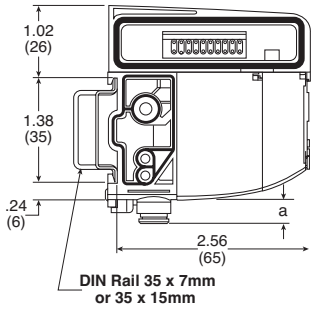
OD Tube	Ext.	a	b	c
Size 1 Valves	5/32" (4 mm)	8	10	12
	6 mm	8	13	16
	1/4"	15	18	22
Size 2 Valves	1/4"	12	18	22
	8 mm	9	16	19
	3/8"	16	23	26
	10 mm	13	18	22

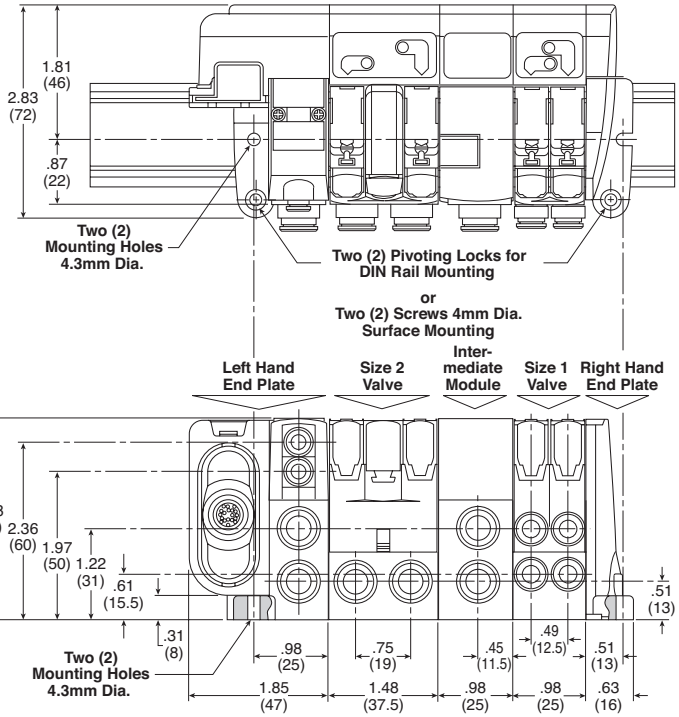


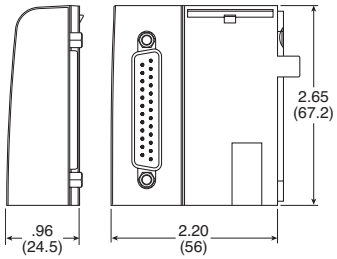
"V" Series Manifold Dimensions and Mounting

20-pin, Multi-Connector Valve Manifold

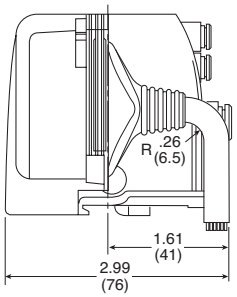
Total Width Depends on Valve Composition







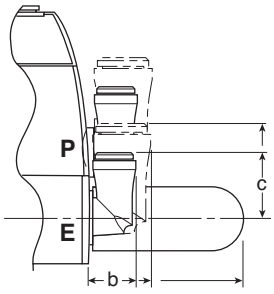
25-pin,
D-Sub



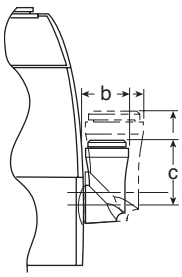
20-pin,
Multi-Connector

End Plate and Intermediate Modules

	a	b	c
6 mm Tube OD	8	13	16
1/4" Tube OD	12	18	22
8 mm Tube OD	9	16	19
3/8" Tube OD	16	23	26
10 mm Tube OD	13	18	25
12 mm Tube OD	13	19	25
1/2" Tube OD	13		
Muffler		40	



OD Tube	Ext.	a	b	c
Size 1 Modules	5/32" (4 mm)	8	10	12
	6 mm	8	13	16
	1/4"	15	18	22
Size 2 Modules	1/4"	12	18	22
	8 mm	9	16	19
	3/8"	16	23	26
	10 mm	13	18	22

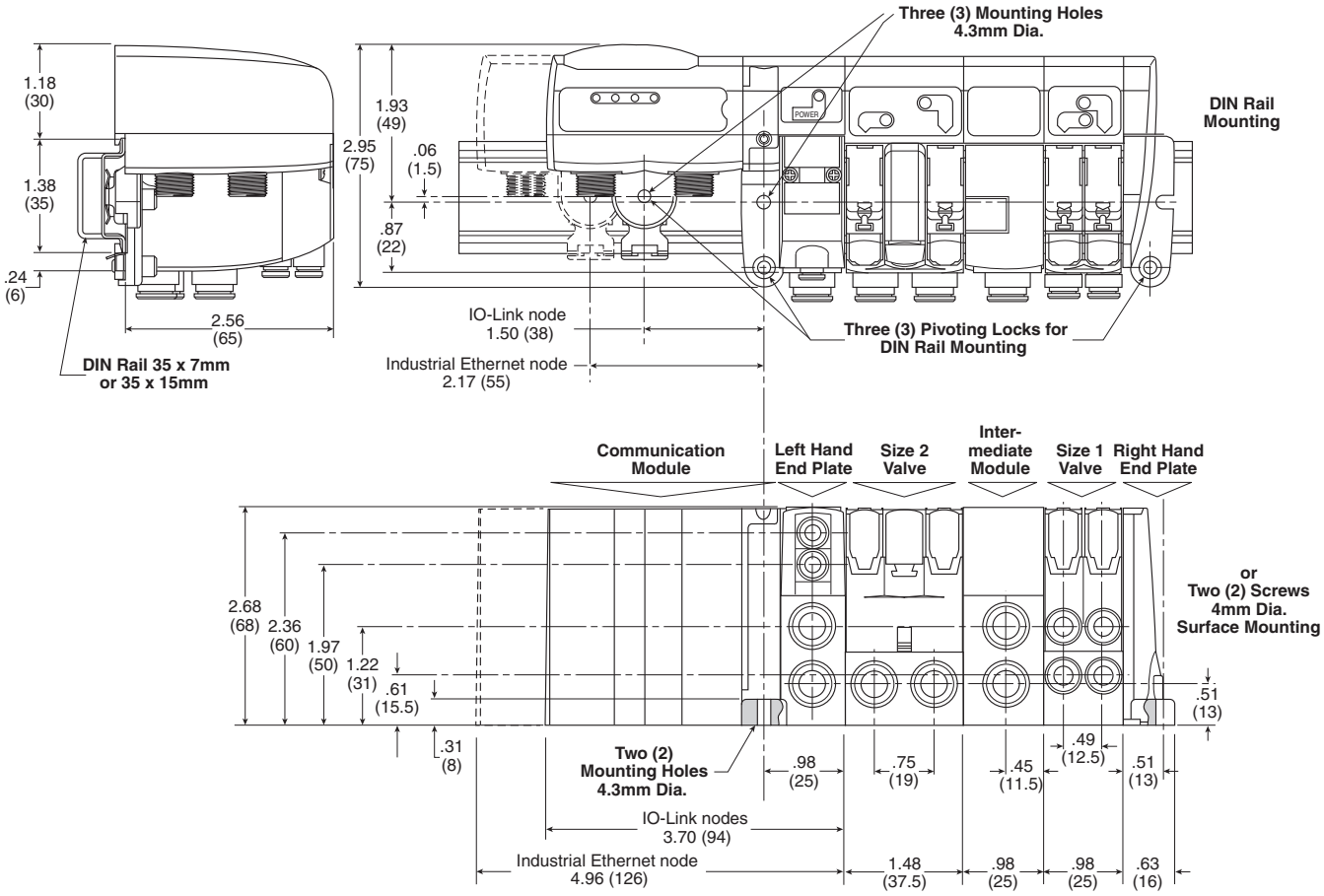


"V" Series Manifold Dimensions and Mounting

P2M Connected Valve Manifolds

Total Width Depends on Valve Composition

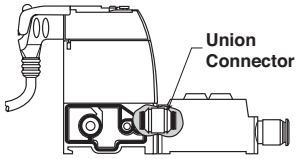
Industrial Ethernet and IO-Link P2M Network Nodes with Valve Manifold



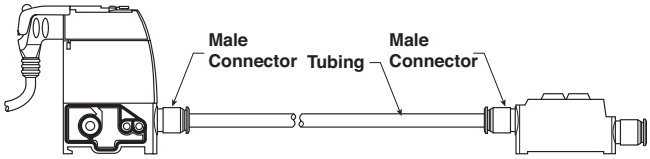
"P" Series Peripheral Modules Dimensions and Mounting

Reminder: Peripheral modules may either be plugged in the valve output ports or mounted in-line separate from the valve.

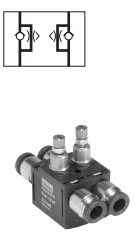
Peripheral Module Plugged in a Valve

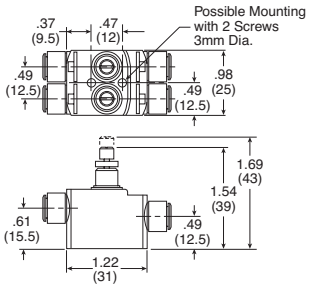


In-Line Peripheral Modules: Mounting is Required

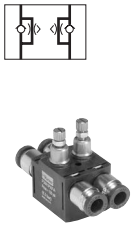


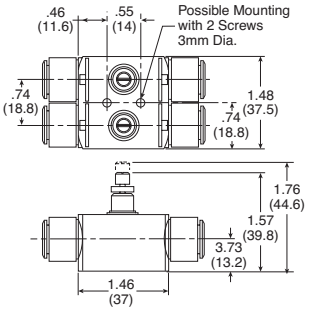
Dual Flow Control Size 1





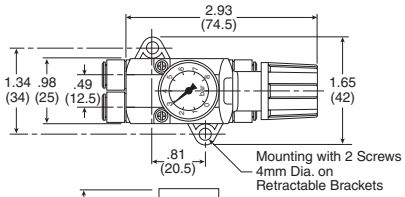
Dual Flow Control Size 2



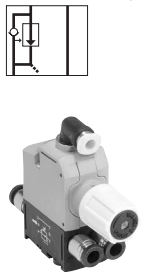


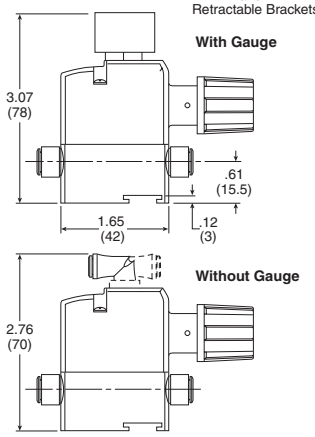
Pressure Regulator Size 1

With Gauge



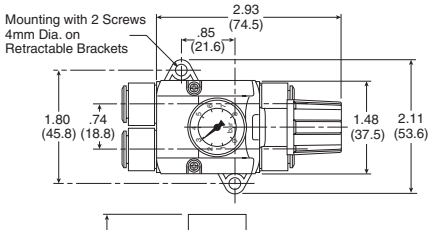
Without Gauge



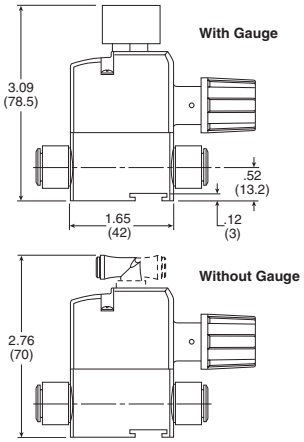


Pressure Regulator Size 2

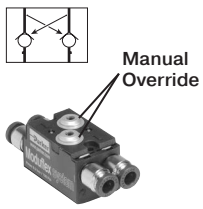
With Gauge

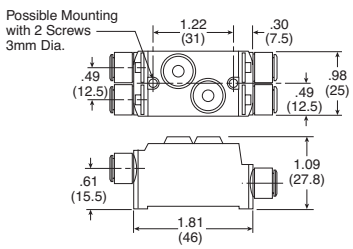


Without Gauge

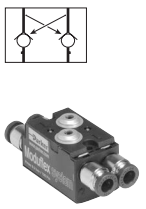


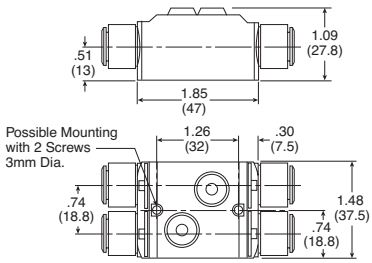
Dual P.O. Check Valve Size 1





Dual P.O. Check Valve Size 2

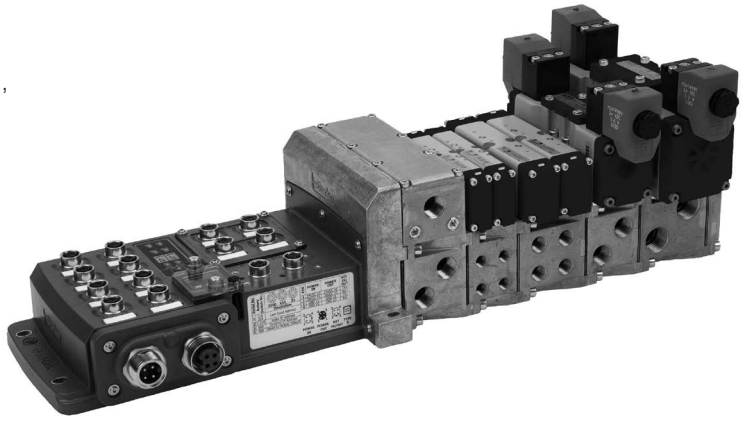




Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

H Series ISO

The H Series ISO valve conforms to international standards 15407 and 5599, providing maximum flexibility for end users. As Parker's premier manifold mount product offering, H Series ISO offers machine builders a complete offering with a wide variety of accessories and options in a valve family with flow ranges from 0.55 Cv up to 6.0 Cv. HB/HA/H1/H2/H3 can be mounted on the same manifold. Individual wiring is available with DIN or central connectors, and collective solutions offer installation time savings with either multi-pin connectors or network solutions.



Ports, Flow

- H Universal Manifold
  - HB: 1/8 inch, 0.55 Cv
  - HA: 1/4 inch, 1.1 Cv
  - H1: 3/8 inch, 1.5 Cv
  - H2: 1/2 inch, 3.0 Cv
- H Classic Manifold (not compatible with H Universal without H3 Transition Kit)
  - H3: 3/4 inch, 6.0 Cv
- NPT and BSPP "G" standard

Solenoids

- HB & HA: 24 VDC, 1.0 Watt, and 120 VAC, 1.0 VA
- H1, H2, & H3: 24 VDC, 3.2 Watt, 120 VAC, 4.5 VA, 24 VDC, 1.3 Watt

Certification / approval

- IP65 rated
- cCSAus approved voltages:
  - 15407-2 & 5599-2 24VDC manifolds only
  - 15407-2 & 5599-2 single subbase, all voltages
  - 15407-1 & 5599-1 manifold and single subbase, all voltages
- BSPP manifold and subbase ports meet ISO 1179 specifications

Operating Information

Operating pressure:	Vacuum to 145 PSIG (Vacuum to 10 bar)
Pilot pressure:	See chart
Temperature range:	5°F to 120°F (-15°C to 49°C)

Material Specifications

Body	Aluminum
End caps	PBT
End plates	Aluminum
Fasteners	Zinc plated steel
Manifolds	Aluminum
Seals	Nitrile
Spool	Aluminum

Operating Pressure

Maximum: 145 PSIG (1000 kPa)

Minimum: see below chart

Operator / Function	Internal Pilot	PSIG (Min. kPa) HB	PSIG (Min. kPa) HA	PSIG (Min. kPa) H1	PSIG (Min. kPa) H2	PSIG (Min. kPa) H3
1	Single solenoid - 2-position	30 (207)	25 (173)	25 (173)	25 (173)	35 (241)
2	Double solenoid- 2-position					
3	Single remote pilot - 2-position **	Vacuum	Vacuum	Vacuum	Vacuum	Vacuum
4	Double remote pilot - 2-position**	Vacuum	Vacuum	Vacuum	Vacuum	Vacuum
5, 6, 7	Double solenoid - 3-position APB, CE, PC	35 (241)	35 (241)	35 (241)	50 (345)	50 (345)
8, 9, 0	Double remote pilot - 3-position** APB, CE, PC	Vacuum	Vacuum	Vacuum	Vacuum	Vacuum
E	Single solenoid pilot - 2-position	30 (207)	30 (207)	35 (241)	45 (310)	45 (310)
	Air return / spring assist					
F	Single remote pilot - 2-position**					
	Air return / spring assist					
N, P, Q	Double solenoid - dual 3/2	30 (207)	N/A	N/A	N/A	N/A
	External pilot*	*	*	*	*	*
All	H Series	Vacuum	Vacuum	Vacuum	Vacuum	Vacuum

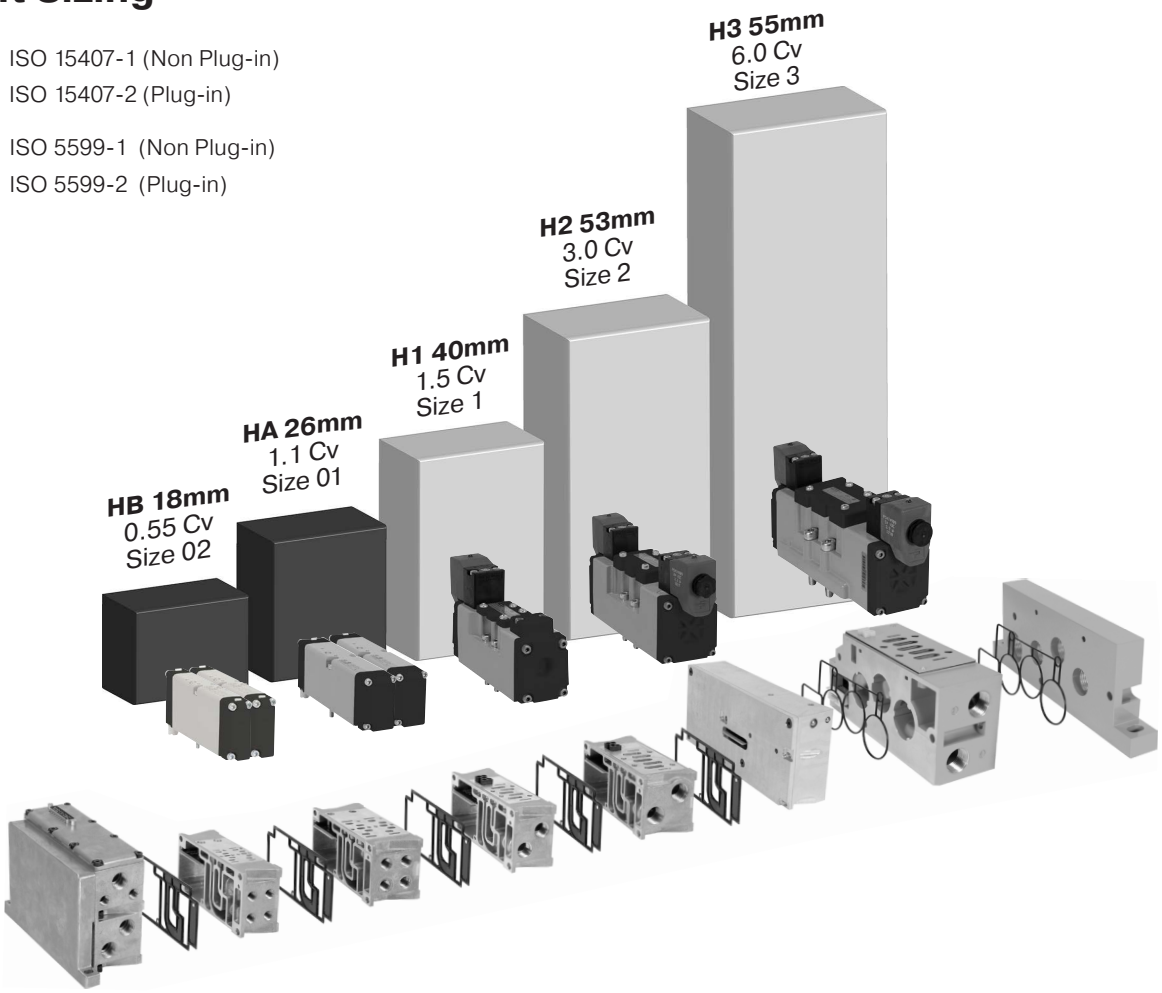
* External Pilot Pressure / Remote Pilot Supply - Must meet or exceed minimum pilot pressure for internal pilot option. Not available on Operator / Function N, P, or Q.

** Must be equal to or greater than operating pressure.

Right Sizing

ISO 15407-1 (Non Plug-in)
ISO 15407-2 (Plug-in)

ISO 5599-1 (Non Plug-in)
ISO 5599-2 (Plug-in)

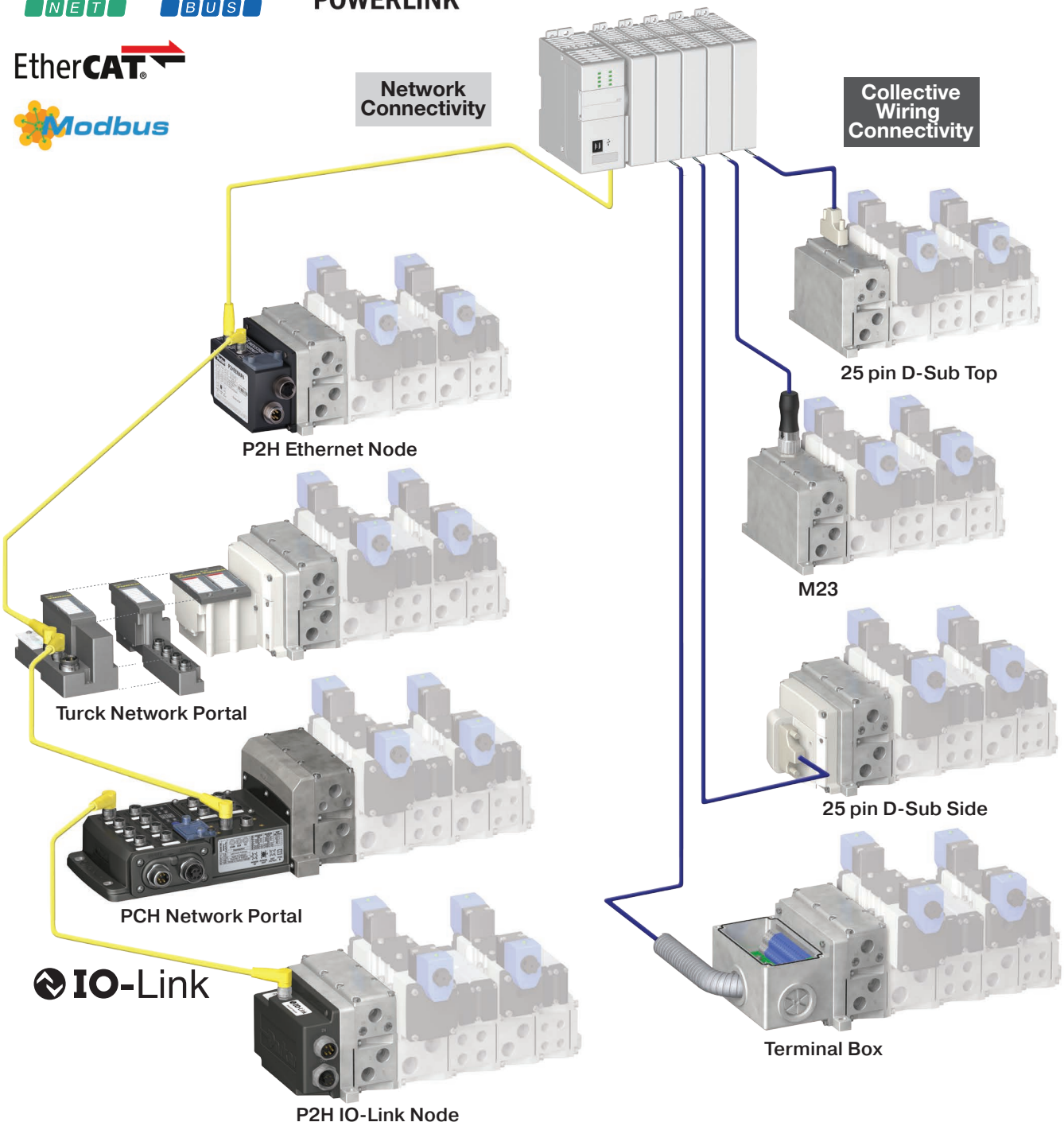


Cylinder Bore Size - inches (mm)

Cylinder Speed - in/s (mm/s)	1-1/4" (32 mm)	1-1/2" (40 mm)	2.00" (50 mm)	2-1/2" (63 mm)	3-1/4" (80 mm)	4.00" (100 mm)	5.00" (125 mm)	6.00" (150 mm)
1.96 (50)	0.03	0.04	0.06	0.10	0.17	0.26	0.41	0.59
3.93 (100)	0.05	0.08	0.13	0.21	0.35	0.53	0.82	1.19
5.90 (150)	0.08	0.12	0.20	0.31	0.52	0.79	1.24	1.78
7.87 (200)	0.10	0.16	0.26	0.41	0.69	1.05	1.64	2.37
9.84 (250)	0.13	0.20	0.33	0.52	0.87	1.32	2.06	2.97
11.81 (300)	0.16	0.25	0.40	0.62	1.05	1.58	2.47	3.56
13.77 (350)	0.18	0.29	0.46	0.72	1.22	1.85	2.88	4.15
15.74 (400)	0.21	0.33	0.53	0.82	1.39	2.11	3.30	4.75
17.71 (450)	0.24	0.37	0.59	0.93	1.57	2.37	3.71	5.34
19.68 (500)	0.26	0.41	0.66	1.03	1.74	2.64	4.12	5.94
	HB		HA		H1	H2	H3	

Connectivity

EtherNet/IP DeviceNet
PROFINET PROFIBUS ETHERNET POWERLINK
EtherCAT Modbus

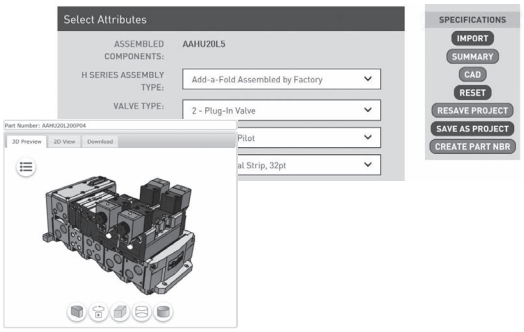


Industrial Ethernet protocol offerings differ by product line

Two easy ways to order H Universal

1 Online Configuration

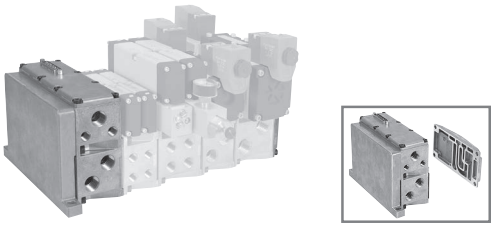
Navigate to the landing page
www.parker.com/pdn/HSeriesISO
Customize your manifold assembly
Create and save a unique assembled part number
Generate a CAD model



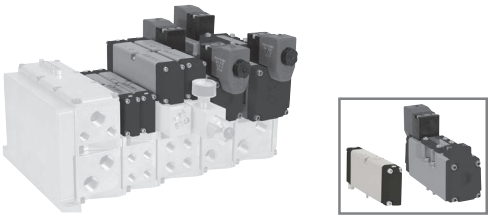
OR

2 Order Components

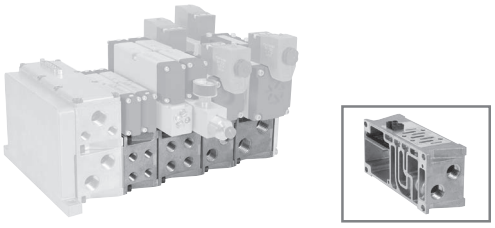
A **Select Endplate Kit**
Includes Left and Right Hand Endplate



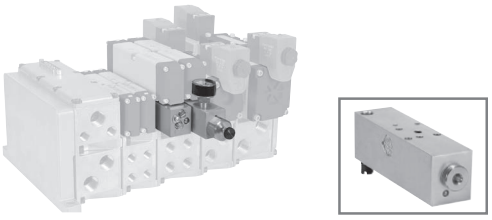
B **Select Valve Stations**
Valves (size HB, HA, H1 or H2)
Blanking Plate



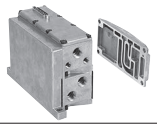
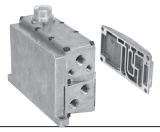
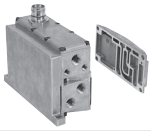
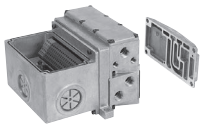
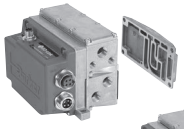
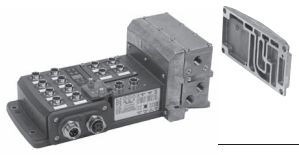
C **Select Valve Manifold Segments**
Manifold (size HB, HA, H1 or H2)
Air Supply Module



D **Select Sandwich Accessories**
Sandwich Regulators
Sandwich Flow Control
Pilot Exhaust

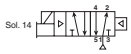
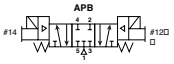
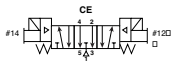
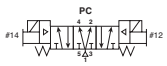
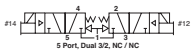
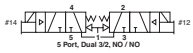


End Plate Kits - Universal for use with HB, HA, H1 H2

	Electrical option	NPT port	BSPP port
	25-pin, D-Sub Side, 24 address	**PSHU20L100P**	**PSHU20L101P**
	25-pin, D-Sub Top, 24 address	**PSHU20L200P**	**PSHU20L201P**
	19-pin, round, Brad Harrison, 16 address	**PSHU20L300P**	**PSHU20L301P**
	12-pin, M23, 8 address	**PSHU20L400P**	**PSHU20L401P**
	19-pin, M23, 16 address	**PSHU20M200P**	**PSHU20M201P**
	Terminal box, 32 address	**PSHU20L500P**	**PSHU20L501P**
 Class A Class B	P2H IO Link Class B, standard version, 24 address	**PSHU20N200P**	**PSHU20N201P**
	P2H IO Link Class B, safe version, 24 address	**PSHU20S200P**	**PSHU20S201P**
	P2H IO Link Class A, 4-pin safe version, 24 address	**PSHU20S400P**	**PSHU20S401P**
	P2H IO Link Class A, 5-pin safe version, 24 address	**PSHU20S500P**	**PSHU20S501P**
	P2H Ethernet Node, 32 addresses, EtherNet/IP™	**PSHU20P200PE000A-P4**	**PSHU20P201PE000A-P4**
	P2H Ethernet Node, 32 addresses, EtherCAT	**PSHU20P200PT000A-P4**	**PSHU20P201PT000A-P4**
	P2H Ethernet Node, 32 addresses, Profinet	**PSHU20P200PN000A-P4**	**PSHU20P201PN000A-P4**
	PCH Network Portal, 32 addresses with 2 Modules Variants, EtherNet/IP™	**PSHU20P300PEAAN0-P4**	**PSHU20P301PEAAN0-P4**
	PCH Network Portal, 32 addresses,with Modules Variants, EtherNet/IP™	**PSHU20P300PEAAB0-P5**	**PSHU20P301PEAAB0-P5**
	Turck Network with valve driver module, 16 address	**PSHU20T100P**	**PSHU20T101P**
	Turck Network with valve driver module, 32 address	**PSHU20T200P**	**PSHU20T201P**

Most popular.

Valve - 15407-2, Plug-in, Size 18mm (HB)

	Symbol	Type	Cv	Operator	Voltage	Pilot	Non-Locking	Locking
		4-way, 2-position, spring return	0.55	Single solenoid	24 VDC	Internal	**HBEVXBG0G9A**	**HBEVXBH0G9A**
						External	**HBEVXLG0G9A**	**HBEVXLH0G9A**
					120 VAC	Internal	**HBEVXBG023A**	**HBEVXBH023A**
						External	**HBEVXLG023A**	**HBEVXLH023A**
		4-way, 2-position, air return	0.55	Single solenoid	24 VDC	Internal	**HB1VXBG0G9A**	**HB1VXBH0G9A**
						External	**HB1VXLG0G9A**	**HB1VXLH0G9A**
					120 VAC	Internal	**HB1VXBG023A**	**HB1VXBH023A**
						External	**HB1VXLG023A**	**HB1VXLH023A**
		4-way, 2-position	0.55	Double solenoid	24 VDC	Internal	**HB2VXBG0G9A**	**HB2VXBH0G9A**
						External	**HB2VXLG0G9A**	**HB2VXLH0G9A**
					120 VAC	Internal	**HB2VXBG023A**	**HB2VXBH023A**
						External	**HB2VXLG023A**	**HB2VXLH023A**
		4-way, 3-position, all ports blocked	0.5	Double solenoid	24 VDC	Internal	**HB5VXBG0G9A**	**HB5VXBH0G9A**
						External	**HB5VXLG0G9A**	**HB5VXLH0G9A**
					120 VAC	Internal	**HB5VXBG023A**	**HB5VXBH023A**
						External	**HB5VXLG023A**	**HB5VXLH023A**
		4-way, 3-position, center exhaust	0.5	Double solenoid	24 VDC	Internal	**HB6VXBG0G9A**	**HB6VXBH0G9A**
						External	**HB6VXLG0G9A**	**HB6VXLH0G9A**
					120 VAC	Internal	**HB6VXBG023A**	**HB6VXBH023A**
						External	**HB6VXLG023A**	**HB6VXLH023A**
		4-way, 3-position, pressure center	0.5	Double solenoid	24 VDC	Internal	**HB7VXBG0G9A**	**HB7VXBH0G9A**
						External	**HB7VXLG0G9A**	**HB7VXLH0G9A**
					120 VAC	Internal	**HB7VXBG023A**	**HB7VXBH023A**
						External	**HB7VXLG023A**	**HB7VXLH023A**
		3-way, 2-position, dual valve, NC/NC	0.45	Double solenoid	24 VDC	Internal	**HBNVXBG0G9A**	**HBNVXBH0G9A**
					120 VAC	Internal	**HBNVXBG023A**	**HBNVXBH023A**
		3-way, 2-position, dual valve, NO/NO	0.45	Double solenoid	24 VDC	Internal	**HBPVXBG0G9A**	**HBPVXBH0G9A**
					120 VAC	Internal	**HBPVXBG023A**	**HBPVXBH023A**

Manifold Base - 2-Station, 15407-2, Plug-in, Size 18mm (HB)

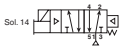
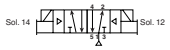
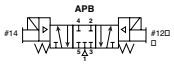
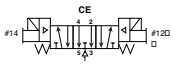
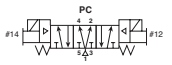
End Ported Bases	Enclosure / Lead Length	Solenoid Addresses	1/8" NPT	1/8" BSPP
	Circuit board	Single solenoid - 2 address	**PSHU1151J1P**	**PSHU1152J1P**
	Circuit board	Double solenoid - 4 addresses	**PSHU1151M1P**	**PSHU1152M1P**

Accessories - 15407-2, Plug-in, Size 18mm (HB)

	Accessories	Description		Part Number
	Gauge adapter kit	Includes 1/8" coupling, long nipple, and gauge		**PS5651160P**
	Blanking plate kit			**PS5634P**
	Sandwich flow control for individual valve	Note: Do not use with Independent sandwich regulators		**PS5635P**
	Sandwich supply module	1/8" NPT		**PS561600P**
		1/8" BSPP		**PS561601P**
	Sandwich regulator		Common Pressure	Independent Pressure
		2-60 PSIG w/ gauge	**PS5638155P**	**PS5638255P**
		5-125 PSIG w/ gauge	**PS5638166P**	**PS5638266P**

Most popular.

Valve - 15407-2, Plug-in, Size 26mm (HA)

	Symbol	Type	Cv	Operator	Voltage	Pilot	Non-Locking	Locking
		4-way, 2-position, spring return	1.1	Single solenoid	24 VDC	Internal	**HAEVXBG0G9A**	**HAEVXBH0G9A**
						External	**HAEVXLG0G9A**	**HAEVXLH0G9A**
					120 VAC	Internal	**HAEVXBG023A**	**HAEVXBH023A**
						External	**HAEVXLG023A**	**HAEVXLH023A**
		4-way, 2-position, air return	1.1	Single solenoid	24 VDC	Internal	**HA1VXBG0G9A**	**HA1VXBH0G9A**
						External	**HA1VXLG0G9A**	**HA1VXLH0G9A**
					120 VAC	Internal	**HA1VXBG023A**	**HA1VXBH023A**
						External	**HA1VXLG023A**	**HA1VXLH023A**
		4-way, 2-position	1.1	Double solenoid	24 VDC	Internal	**HA2VXBG0G9A**	**HA2VXBH0G9A**
						External	**HA2VXLG0G9A**	**HA2VXLH0G9A**
					120 VAC	Internal	**HA2VXBG023A**	**HA2VXBH023A**
						External	**HA2VXLG023A**	**HA2VXLH023A**
		4-way, 3-position, all ports blocked	1.0	Double solenoid	24 VDC	Internal	**HA5VXBG0G9A**	**HA5VXBH0G9A**
						External	**HA5VXLG0G9A**	**HA5VXLH0G9A**
					120 VAC	Internal	**HA5VXBG023A**	**HA5VXBH023A**
						External	**HA5VXLG023A**	**HA5VXLH023A**
		4-way, 3-position, center exhaust	1.0	Double solenoid	24 VDC	Internal	**HA6VXBG0G9A**	**HA6VXBH0G9A**
						External	**HA6VXLG0G9A**	**HA6VXLH0G9A**
					120 VAC	Internal	**HA6VXBG023A**	**HA6VXBH023A**
						External	**HA6VXLG023A**	**HA6VXLH023A**
		4-way, 3-position, pressure center	1.0	Double solenoid	24 VDC	Internal	**HA7VXBG0G9A**	**HA7VXBH0G9A**
						External	**HA7VXLG0G9A**	**HA7VXLH0G9A**
					120 VAC	Internal	**HA7VXBG023A**	**HA7VXBH023A**
						External	**HA7VXLG023A**	**HA7VXLH023A**

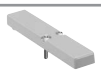
Single Subbase - 15407-2, Plug-in, Size 26mm (HA)

	Enclosure / Lead Length	Solenoid Addresses	1/4" NPT	1/4" BSPP
	Terminal strip in the base	Double solenoid - 2 addresses	**PS551113CP**	**PS551114CP**

Manifold Base - 2-Station, 15407-2, Plug-in, Size 26mm (HA)

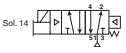
End Ported Bases	Enclosure / Lead Length	Solenoid Addresses	1/4" NPT	1/4" BSPP
	Circuit board	Single solenoid - 2 address	**PSHU1153J1P**	**PSHU1154J1P**
	Circuit board	Double solenoid - 4 addresses	**PSHU1153M1P**	**PSHU1154M1P**

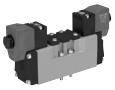
Accessories - 15407-2, Plug-in, Size 26mm (HA)

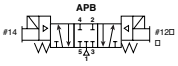
	Accessories	Description		Part Number
	Blanking plate kit			**PS5534P**
	Sandwich flow control for individual valve	Note : Do not use with Independent Port Sandwich Regulators		**PS5535P**
	Pilot exhaust module	Pilot presure control, without sensor, 1/8" BSPP		**PS55XXA0P**
	Sandwich supply module	1/4" NPT		**PS551600P**
		1/4" BSPP		**PS551601P**
	Sandwich regulator		Common Pressure	Independent Pressure
		2-60 PSIG w/ gauge	**PS5538155P**	**PS5538255P**
		5-125 PSIG w/ gauge	**PS5538166P**	**PS5538266P**

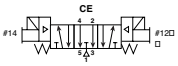
Most popular.

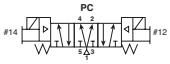
Valve - 5599-2, Plug-in, Size 1 (H1)









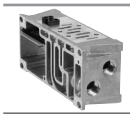


Symbol	Type	Cv	Operator	Voltage	Pilot	Non-Locking	Locking
	4-way, 2-position, spring return	1.5	Single solenoid	24 VDC	Internal	**H1EVXBG0B9D**	**H1EVXBH0B9D**
					External	**H1EVXXG0B9D**	**H1EVXXH0B9D**
					Internal	**H1EVXBG023D**	**H1EVXBH023D**
					External	**H1EVXXG023D**	**H1EVXXH023D**
	4-way, 2-position, air return	1.5	Single solenoid	24 VDC	Internal	**H11VXBG0B9D**	**H11VXBH0B9D**
					External	**H11VXXG0B9D**	**H11VXXH0B9D**
					Internal	**H11VXBG023D**	**H11VXBH023D**
					External	**H11VXXG023D**	**H11VXXH023D**

Single Subbase - 5599-2, Plug-in, Size 1 (H1)

Side Ported	Enclosure / Lead Length	Solenoid Addresses	3/8" NPT	3/8" BSPP
	Terminal strip in base	Double solenoid - 2 addresses	**PS401115CDP**	**PS401116CDP**
	6" flying leads	Double solenoid - 2 addresses	**PS401115ADP**	**PS401116ADP**
	4-pin, M12 micro connector in base, SAE / Ford wiring	Double solenoid - 2 addresses	**PS4011158FDP**	**PS4011168FDP**

Manifold Base - 5599-2, Plug-in, Size 1 (H1)



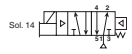
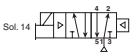
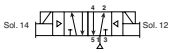
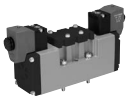
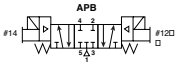
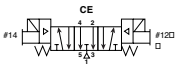
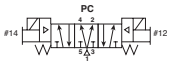
End Ported	Enclosure / Lead Length	Solenoid Addresses	3/8" NPT	3/8" BSPP
	Circuit board	Single solenoid - 1 address	**PSHU1155J1P**	**PSHU1156J1P**
	Circuit board	Double solenoid - 2 addresses	**PSHU1155M1P**	**PSHU1156M1P**

Accessories - 5599-2, Size 1 (H1)

	Accessory	Description		Part Number
	Sandwich regulator	Common pressure	5-125 PSIG w/ gauge	**PS4038166CP**
		Independent pressure	5-125 PSIG w/ gauge	**PS4038266CP**
	Blanking plate kit			**PS4034CP**
	Sandwich flow control A Sandwich Flow Control and Common Port Sandwich Regulator may be used together on a manifold or subbase. The Sandwich Flow Control MUST be located between the manifold/subbase and the Common Port Sandwich Regulator. Do not use with Independent Port Sandwich Regualtors.			**PS4035CP**

☐ Most popular.

Valve - 5599-2, Plug-in, Size 2 (H2)

Symbol	Type	Cv	Operator	Voltage	Pilot	Non-Locking	Locking
	4-way, 2-position, spring return	3.0	Single solenoid	24 VDC	Internal	**H2EVXBG0B9D**	**H2EVXBH0B9D**
					External	**H2EVXXG0B9D**	**H2EVXXH0B9D**
				120 VAC	Internal	**H2EVXBG023D**	**H2EVXBH023D**
					External	**H2EVXXG023D**	**H2EVXXH023D**
	4-way, 2-position, air return	3.0	Single solenoid	24 VDC	Internal	**H21VXBG0B9D**	**H21VXBH0B9D**
					External	**H21VXXG0B9D**	**H21VXXH0B9D**
				120 VAC	Internal	**H21VXBG023D**	**H21VXBH023D**
					External	**H21VXXG023D**	**H21VXXH023D**
	4-way, 2-position	3.0	Double solenoid	24 VDC	Internal	**H22VXBG0B9D**	**H22VXBH0B9D**
					External	**H22VXXG0B9D**	**H22VXXH0B9D**
				120 VAC	Internal	**H22VXBG023D**	**H22VXBH023D**
					External	**H22VXXG023D**	**H22VXXH023D**
 	4-way, 3-position, all ports blocked	2.8	Double solenoid	24 VDC	Internal	**H25VXBG0B9D**	**H25VXBH0B9D**
					External	**H25VXXG0B9D**	**H25VXXH0B9D**
				120 VAC	Internal	**H25VXBG023D**	**H25VXBH023D**
					External	**H25VXXG023D**	**H25VXXH023D**
	4-way, 3-position, center exhaust	2.8	Double solenoid	24 VDC	Internal	**H26VXBG0B9D**	**H26VXBH0B9D**
					External	**H26VXXG0B9D**	**H26VXXH0B9D**
				120 VAC	Internal	**H26VXBG023D**	**H26VXBH023D**
					External	**H26VXXG023D**	**H26VXXH023D**
	4-way, 3-position, pressure center	2.8	Double solenoid	24 VDC	Internal	**H27VXBG0B9D**	**H27VXBH0B9D**
					External	**H27VXXG0B9D**	**H27VXXH0B9D**
				120 VAC	Internal	**H27VXBG023D**	**H27VXBH023D**
					External	**H27VXXG023D**	**H27VXXH023D**

Single Subbase - 5599-2, Plug-in, Size 2 (H2)

Side Ported Base	Enclosure / Lead Length	Solenoid Addresses	1/2" NPT	1/2" BSPP
	Terminal strip in base	Double solenoid - 2 address	**PS411117CCP**	**PS411118CCP**
	6" flying leads	Double solenoid - 2 addresses	**PS411117ACP**	**PS411118ACP**

Manifold Base - 5599-2, Plug-in, Size 2 (H2)

End Ported	Enclosure / Lead Length	Solenoid Addresses	1/2" NPT	1/2" BSPP
	Circuit board	Single solenoid - 1 address	**PSHU1157J1P**	**PSHU1158J1P**
	Circuit board	Double solenoid - 2 addresses	**PSHU1157M1P**	**PSHU1158M1P**

Accessories - 5599-2, Size 2 (H2)

	Accessory	Description		Part Number
	Sandwich regulator	Common pressure	5-125 PSIG w/ gauge	**PS4138166CP**
		Independent pressure	5-125 PSIG w/ gauge	**PS4138266CP**
	Blanking plate kit			**PS4134CP**
	Sandwich flow control A Sandwich Flow Control and Common Port Sandwich Regulator may be used together on a manifold or subbase. The Sandwich Flow Control MUST be located between the manifold/subbase and the Common Port Sandwich Regulator. Do not use with Independent Port Sandwich Regualtors.			**PS4135CP**

Most popular.

End Plate Kit - Universal Plug-in

PSHU20 L1 0 0 P

Valve Type	
Plug-in (internal pilot)	**PSHU20**
Plug-in (external pilot)	**PSHU2X**

Thread Type	
0	**NPT**
1*	BSPP "G"

* BSPP conforms to ISO 1179-1 w 228-1 threads

Left Hand End Plate Type * †	
25-Pin, D-Sub (side)	**L1**
25-Pin, D-Sub (top)	**L2**
19-Pin, Round, Brad Harrison	L3
12-Pin, M23	L4
32-Point Terminal Strip	**L5**
19-Pin, M23	M2
P2H IO Link Class B, 24 Address, Standard Version	N2
P2H IO Link Class B, 24 Address, Safe Version	S2
P2H IO Link Class A, 24 Address, 4-Pin, Safe Version	**S4**
P2H IO Link Class A, 24 Address, 5-Pin, Safe Version	S5
Turck Network with valve driver module - 16 outputs ‡	**T1**
Turck Network with valve driver module - 32 outputs ‡	**T2**
------For P2H Ethernet Node and PCH Network Portal, see next pages ------	

Right Hand End Plate Type / Port	
0	**Low Profile (no ports)**
1	1/2 Exhaust and Inlet Port
2	3/4 Exhaust and Inlet Port
3*	H3 Transition Plate, 1" Exhaust and Inlet, (electrical pass through)
4*	H3 Transition Plate, 1" Exhaust and Inlet, (expansion to 25th address)

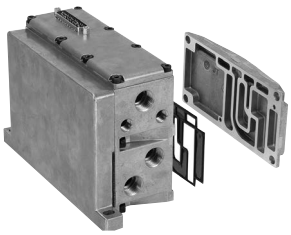
* 1, 3 & 5 manifold galley blocked at transition plate. 12 & 14 pass through.

* 120VAC is not CSA certified.
‡ Turck Network communication modules must be ordered separately. See Network Connectivity section for more information.
† PSHU11P gaskets included in each end plate kit.

Note: ***PSHU20 valve type:*** *Supply port 1 is internally connected to manifold pilot galley 12 and 14. With valve minimum operating pressure at port 1 of the left end plate, both 12 and 14 manifold pilot galley ways can be used for piloting externally piloted valves without pressure connected to port 12 or 14.*

PSHU2X valve type: *Supply port 1 is isolated from manifold pilot galley 12 and 14. Pilot pressure port 14 is connected to both manifold pilot galley 12 and 14.*

Port 14 is the primary pilot port for all externally piloted H Series ISO Valves.



25-pin D-Sub (top) with low profile end plate shown 3.97 Cv

Right Hand End Plate

Low Profile

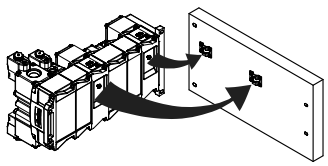
High Flow

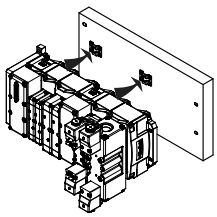
Description	NPT Port	BSPP Port
Right hand end plate only, low profile, 3.97 Cv	**PSHU4000P**	
Right hand end plate only, high flow 1/2" ports, 6.07 Cv	**PSHU4100P**	**PSHU4101P**
Right hand end plate only, high flow 3/4" ports, 8.35 Cv	**PSHU4200P**	**PSHU4201P**

H3 Transition Kit

H3 transition, H3 right hand end plate, 1" ports, electrical pass through (includes gaskets & bolts)	**PSHU7100P**	**PSHU7101P**
H3 transition, H3 right hand end plate, 1" ports, expansion to 25th address (includes gaskets & bolts)	**PSHU7200P**	**PSHU7201P**

Installation Bracket



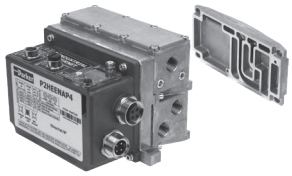


Bracket	Part Number
Bracket and Bolt (Quantity 2)	**PSHU60P**

End Plate Kit – Universal Plug-in

The P2H EtherNet Node is ordered as an endplate kit. This includes the P2H EtherNet Node, left hand air supply module, and right hand end plate. 32 pilot solenoid addresses with two choices of power source configurations.

For fully assembled manifold Add-A-Fold part number, reference page D91



PSHU20 P2 0 0 P E 000 A – P4

Valve Type	
Plug-in (Internal pilot)	**PSHU20**
Plug-in (External pilot)	PSHU2X

Thread Type	
NPT	**0**
BSPP "G"	1

Network Connections	
EtherNet/IP™	**E**
EtherCAT	**T**
PROFINET	**N**
Modbus TCP	**M**
Powerlink	**W**

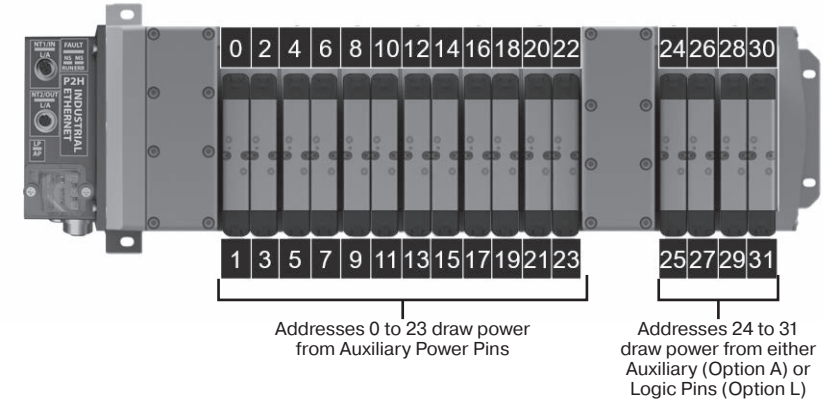
Power Connector	
4-pin Power IN/OUT with 1 Safe Power Capable Zone	**P4**
5-pin Power IN/OUT with 1 Safe Power Capable Zone	**P5**
5 Pin M12 L-Code IN/OUT with 1 Safe Power Capable Zone	L5

Right Hand End Plate Type / Thread Size	
Low profile (no ports)	**0**
1/2 Exhaust and Inlet Port	1
3/4 Exhaust and Inlet Port	2
H3 Transition Plate and End Plate (electrical pass through for plug-in valves only)	3
H3 Transition Plate and End Plate (expansion to 25th address for plug-in valves only)	4

Expansion Module / Power Source	
Power Source for Output 25-32: AUX Power	**A**
Power Source for Output 25-32: Logic Power	L

Power Source Selection

The P2H Node 32DO has two available power sources for addresses 24 to 31. Addresses 24 to 31 can draw their power from Auxiliary Power Pins (Power Source Option A) or Logic Power Pins (Power Source Option L). Must use Auxiliary Inlet Module with electrical expansion to access addresses 24 to 31. Address 0 to 23 is always auxiliary power source.



Most popular.

End Plate Kit – Universal Plug-in

The PCH Network Portal is ordered as an endplate kit. This includes the PCH Network Portal, left hand air supply module, and right hand end plate. 32 pilot solenoid addresses with configurable I/O.

For fully assembled manifold Add-A-Fold part number, reference page D92

PSHU20 P3 0 0 P E AAA 0 – P4

Valve Type	
Plug-in (Internal pilot)	**PSHU20**
Plug-in (External pilot)	PSHU2X

Thread Type	
NPT	**0**
BSPP "G"	1

Network Connections	
EtherNet/IP™	**E**
EtherCAT	**T**
PROFINET	**N**
Modbus TCP	**M**

Power Connector	
4-pin Power IN/OUT with 1 Safe Power Capable Zone	**P4**
5-pin Power IN/OUT with 1 Safe Power Capable Zone	**P5**
4-pin Power IN/IN with 2 Safe Power Zones	S4
5-pin Power IN/IN with 2 Safe Power Zones	S5

Right Hand End Plate Type / Thread Size	
Low profile (no ports)	**0**
1/2 Exhaust and Inlet Port	1
3/4 Exhaust and Inlet Port	2
H3 Transition Plate and End Plate (electrical pass through for plug-in valves only)	3
H3 Transition Plate and End Plate (expansion to 25th address for plug-in valves only)	4

Module Combinations

Module Position 1	Module Position 2	Module Position 3
A	**A**	**A**
A	A	B
A	A	C
A	**A**	**N**
A	B	B
A	B	C
A	B	N
A	C	C
A	C	N
B	B	B
B	B	C
B	B	N
B	C	C
B	C	N
C	C	C
C	C	N

For any module configurations not listed, consult factory.

Most popular.

Valve - 15407-2 Plug-in, Size 18mm (HB) & 26mm (HA)

HB 1 VX B G 0 G9 A 8P

Basic Series 15407-2	
ISO 15407-2 18mm	HB
ISO 15407-2 26mm	HA

15407-2 Operator / Function	
Single Solenoid, 2-Position - Air Return	1
Double Solenoid, 2-Position	2
Double Solenoid, 3-Position - APB	5
Double Solenoid, 3-Position - CE	6
Double Solenoid, 3-Position - PC	7
Single Solenoid, 2-Position - Air Return, Spring Assist	E
Double Solenoid, Dual 3/2, NC/NC	N*
Double Solenoid, Dual 3/2, NO/NO	P*
Double Solenoid, Dual 3/2, 14 End NC – 12 end NO	Q*

* Available on HB Only, must use Internal Pilot Source Option "B".

Options	
Blank	No Options
8P	M8, PNP, Spool Sensing
8N	M8, NPN, Spool Sensing
2P	M12, PNP, Spool Sensing

* Available on HA series with operator functions 1, 2, E only

15407-2 Engineering Level	
A	Current

15407-2 Voltage & Frequency				
	AC		DC	Light & Surge Suppression
	60Hz	50Hz		
G9			24	LED & Suppression
23	120	115		LED & Suppression

Mounting	
15407-2 Valve Less Base	VX

15407-2 Enclosure / Lead Length	
0	Valve Less Base

15407-2 Pilot Source / Pilot Exhaust	
B	Internal Pilot, Port #1 / Vented
L*	External Pilot, Port #14 / Vented

*Must be specified when using Sandwich Regulators.

15407-2 Overrides / Lights	
G	Non-Locking, Flush, Push - W/ Light
H	Locking, Flush, Push / Turn - W/ Light

Part Number	Cable Type
RKC 4.4T-2	M12, 4 Pin Female, PVC, 2m
PKG 3M-4/ S90	M8, 3 Pin Female, PUR, 4M, flying lead

HB 18mm Valve

Valve - 5599-2 Plug-in, Size H1 & H2

H1 E VX B G 0 B9 D

Basic Series 5599-2	
ISO 5599-2 Size 1	H1
ISO 5599-2 Size 2	H2

5599-2 Operator / Function	
Single Solenoid, 2-Position - Air Return	1
Double Solenoid, 2-Position	2
Double Solenoid, 3-Position - APB	5
Double Solenoid, 3-Position - CE	6
Double Solenoid, 3-Position - PC	7
Single Solenoid, 2-Position - Air Return, Spring Assist	E

5599-2 Engineering Level	
D	Current

5599-2 Voltage & Frequency				
	AC		DC	Light & Surge Suppression
	60Hz	50Hz		
42	24			
45			12	
B9			24	LED & Suppression, 3.2 Watt
F9			24	LED & Suppression, 1.3 Watt
23	120	115		LED & Suppression
57*	240			

* Single subbase only. Not available for 5599-2 manifold mount.

5599-2 Mounting	
5599-2 Valve Less Base	VX

5599-2 Enclosure / Lead length	
0	None, valve less base

5599-2 Pilot Source / Pilot Exhaust	
Internal Pilot, Port #1 / Vented	B
External Pilot, Port #12 Or #14 / Vented	X*

* Must be specified when using Sandwich Regulators.

5599-2 Overrides / Lights		
	Voltage code	
B	42, 45, 57	Non-Locking, Flush, Push - w/o Light
C	42, 45, 57	Locking, Flush, Push / Turn - w/o Light
G	B9, F9, 23	Non-Locking, Flush, Push - w/ Light
H	B9, 23	Locking, Flush, Push / Turn - w/ Light

H1 Valve shown

Most popular.

Manifold Kit - Universal Plug-in

PSHU1153 J 1 P

Mounting Style / Port Size	
HB Manifold with 1/8 NPT End Ports	**PSHU1151**
HB Manifold with 1/8 BSPP End Ports	PSHU1152*
HA Manifold with 1/4 NPT End Ports	**PSHU1153**
HA Manifold with 1/4 BSPP End Ports	PSHU1154*
H1 Manifold with 3/8 NPT End Ports	**PSHU1155**
H1 Manifold with 3/8 BSPP End Ports	PSHU1156*
H2 Manifold with 1/2 NPT End Ports	**PSHU1157**
H2 Manifold with 1/2 BSPP End Ports	PSHU1158*

* BSPP conforms to ISO 1179-1 w 228-1 threads.

Gasket Options	
1	**1,3,5 Ports Open And Pilots Open**
2	1,3,5 Ports Closed And Pilots Open
3	1 Closed, 3,5 Ports Open And Pilots Open
4	1 Port Open, 3,5 Ports Closed And Pilots Open
5	1,3,5 Ports Open And Pilots Closed
6	1,3,5 Ports Closed And Pilots Closed
7	1 Closed, 3,5 Ports Open And Pilots Closed
8	1 Port Open, 3,5 Ports Closed And Pilots Closed

Circuit Board Address Configuration	
J	**Interconnect, Single Address**
M	**Interconnect, Double Address**

HA manifold shown

Intermediate Air Supply - Universal Plug-in

PSHU115A T 1 P

Mounting Style / Port Size	
Intermediate Air Supply, NPT / Internal Pilot	**PSHU115A**
Intermediate Air Supply, BSPP / Internal Pilot	PSHU115B*
Intermediate Air Supply, NPT / External Pilot	**PSHU115C**
Intermediate Air Supply, BSPP / External Pilot	PSHU115D*

* BSPP conforms to ISO 1179-1 w 228-1 threads.

Gasket Options	
1	**1,3,5 Ports Open And Pilots Open**
2	1,3,5 Ports Closed And Pilots Open
3	1 Closed, 3,5 Ports Open And Pilots Open
4	1 Port Open, 3,5 Ports Closed And Pilots Open
5	1,3,5 Ports Open And Pilots Closed
6	1,3,5 Ports Closed And Pilots Closed
7	1 Closed, 3,5 Ports Open And Pilots Closed
8	1 Port Open, 3,5 Ports Closed And Pilots Closed

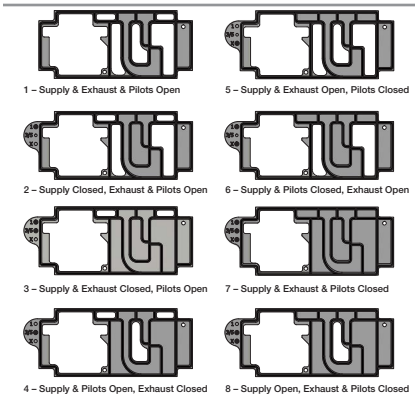
Circuit Board Address Configuration	
T	**With Electrical Pass Through**
E	**With Electrical Expansion To 25th Address**

Intermediate air supply module shown

Pneumatic Zoning

Multiple pressure zones can be created by selecting alternative gaskets between individual manifold segments or an intermediate air supply module. These zones can be designed to meet different application and safety requirements on the machine. Inserting the PXM Pilot Exhaust Module into one of these zones allows control of pilot pressure for the entire zone.

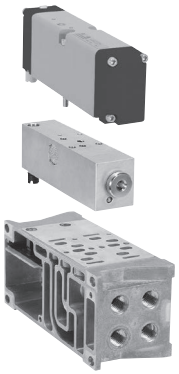
Gasket Kit - Universal Manifold to Manifold

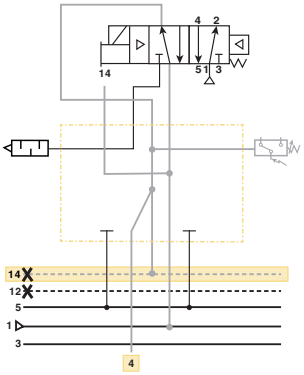


	Description	Part Number
Pilots opened	1 – Supply & Exhaust & Pilots Open	**PSHU11P**
	2 – Supply Closed, Exhaust & Pilots Open	**PSHU12P**
	3 – Supply & Exhaust Closed, Pilots Open	**PSHU13P**
	4 – Supply & Pilots Open, Exhaust Closed	**PSHU14P**
Pilots blocked	5 – Supply & Exhaust Open, Pilots Closed	**PSHU15P**
	6 – Supply & Pilots Closed, Exhaust Open	**PSHU16P**
	7 – Supply & Exhaust & Pilots Closed	**PSHU17P**
	8 – Supply Open, Exhaust & Pilots Closed	**PSHU18P**

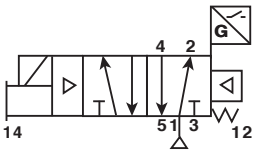
Pilot Exhaust Module / HA Spool Sensing

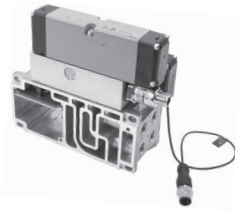
PXM Pilot Exhaust Module enables an H Series HA Single Solenoid valve to control the pilot pressure to other externally piloted H Series ISO valves in the same manifold zone. The HA valve in conjunction with the PXM will remove pilot pressure to all externally piloted valves in the manifold zone when solenoid 14 is de-energized (off). Control of all externally piloted valves in the zone is disabled for both solenoid actuation and manual override until solenoid 14 of the HA valve on the PXM is energized again (on).





Alternatively, the HA Single Solenoid spool sensing valve can be used in place of the standard HA Valve. The spool sensing option mounts on top of the PXM and provides the added benefit of solid-state sensing of spool position to the PLC via an M8 or M12 connection. The spool sensing can be used without the PXM module for sensing only.





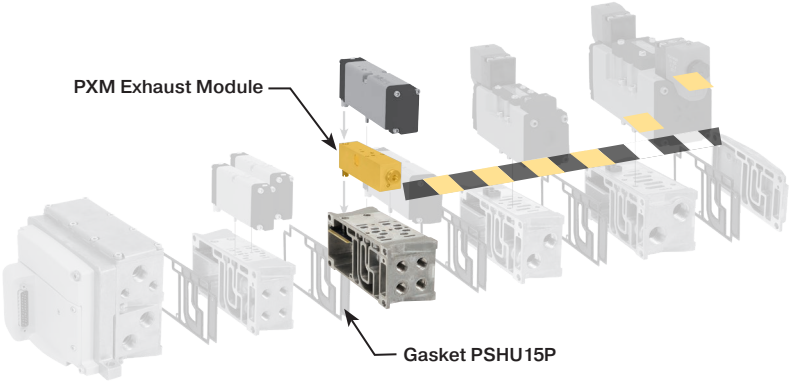
Gaskets blocking pilot pressure are required at the start of the zone the PXM is controlling. Special zoning gaskets (shown below) are available to meet any application requirement. In the example below, main pressure and exhaust pass through to the second zone, but pilot pressure is blocked. This results in the PXM providing pilot pressure for the zone after this gasket.

Part Number	Sensor Type
PS55XXA0P	No sensing
PS55XXM0P	Mechanical pressure switch
PS55XXE0P	Solid state pressure switch
Part Number	**Cable Type**
RKC 4.4T-2	M12, 4 Pin Female, PVC, 2m

PS55XXA0P

PS55XXM0P

PS55XXE0P



Sandwich Regulator - 15407-2, Plug-in

PS5638 1 6 6 P

Basic Series	
HB 15407-2, 18mm, Plug-in	PS5638
HA 15407-2, 26mm, Plug-in	PS5538

Regulator Function	
Common Pressure Regulator	1
Independent Pressure Regulator	2

	#2 Port Regulator / Gauge*
5	2-60 PSIG w/Gauge
6	**5-125 PSIG w/Gauge**

* For Common Pressure Regulator Option, Regulator Gauge callout must be the same number for both Port #4 and Port #2. (Example: 166)

	#4 Port Regulator / Gauge*
5	2-60 PSIG w/Gauge
6	**5-125 PSIG w/Gauge**

* For Common Pressure Regulator Option, Regulator Gauge callout must be the same number for both Port #4 and Port #2. (Example: 166)

Ordering Components
- *Sandwich Regulator Kit configured for Internal Pilot as standard.*
- *Order valve as External Pilot.*

HB - 18mm
(Independent Dual Port Regulator shown)

HA - 26mm
(Common Port Regulator shown)

How to Configure Sandwich Regulator / Valve Combinations

Internal Pilot Configuration of Sandwich Regulator HA, HB
Pressure in Base Port 1 feeds regulator configured for Internal Pilot which feeds valve configured for External Pilot.

	Accessories	Description	Part Number
	Gauge adapter kit	Includes 1/8" coupling, long nipple, and gauge	**PS5651160P**

Sandwich Regulator Cv Flow Chart*

	Common Pressure Code 166				Dual Pressure Code 266			
	1-2	1-4	2-3	4-5	1-2	1-4	2-3	4-5*
HB	0.20	0.20	0.41	0.34	0.23	0.19	0.28	0.27
HA	0.41	0.43	0.87	0.89	0.42	0.45	0.68	0.66

* Regulator Port exhaust through Base Port 3.

Note: All Cv's calculated with regulator adjusted full open.

Most popular.

Sandwich Regulator - 5599-2, Plug-in

PS4038 | 1 | 6 | 6 | C | P

Basic Series	
H1 5599-2, Plug-in	PS4038
H2 5599-2, Plug-in	PS4138

Regulator Function	
Common Pressure Regulator	1
Independent Pressure Regulator	2

#2 Port Regulator / Gauge*	
0**	Line By-Pass Plate
4	1-30 PSIG w/Gauge
5	2-60 PSIG w/Gauge
6	5-125 PSIG w/Gauge
D	Remote Pilot ISO 2 & 3 only

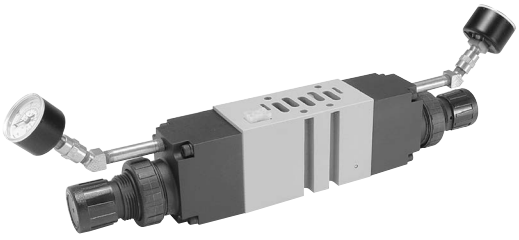
* For Common Pressure Regulator Option, Regulator Gauge callout must be the same number for both Port #4 and Port #2. (Example: 166)
** Pressure Line By-Pass Option can only be used with Independent Pressure Regulators.

#4 Port Regulator / Gauge*	
0**	Line By-Pass Plate
4	1-30 PSIG w/Gauge
5	2-60 PSIG w/Gauge
6	5-125 PSIG w/Gauge
D	Remote Pilot ISO 2 & 3 only

* For Common Pressure Regulator Option, Regulator Gauge callout must be the same number for both Port #4 and Port #2. (Example: 166)
** Pressure Line By-Pass Option can only be used with Independent Pressure Regulators.

Ordering Components
- *Sandwich Regulator Kit configured for Internal Pilot as standard.*
- *Order valve as External Pilot.*

H1 - Size 1
(Independent Dual Port Regulator shown)



H2 - Size 2
(Independent Dual Port Regulator shown)

How to Configure Sandwich Regulator / Valve Combinations

Internal Pilot Configuration of Sandwich Regulator H1, H2
Pressure in Base Port 1 feeds regulator configured for Internal Pilot which feeds valve configured for External Pilot.

External Pilot Configuration of Sandwich Regulator H1, H2
An External Pilot pressure in Port 12 or 14 of the base feeds thru the Sandwich Regulator 12 or 14 galley directly to the 12/14 pilot of the valve. This configuration takes an External Pilot from the 12 port of the base and passes it thru the regulator to feed the 12 galley of the valve.

Sandwich Regulator Cv Flow Chart*

	Common Pressure Code 166				Single Pressure 2 Code 206				Single Pressure 4 Code 260				Dual Pressure Code 266			
	1-2	1-4	2-3	4-5	1-2	1-4	2-3	4-5*	1-2	1-4	2-3	4-5*	1-2	1-4	2-3	4-5*
H1	0.62	0.61	1.28	1.18	0.73	0.96	0.96	0.93	0.34	0.70	0.94	0.98	0.52	0.48	0.86	0.88
H2	1.47	1.60	2.41	2.33	1.71	1.90	1.52	1.75	1.74	1.67	1.73	1.79	1.61	1.62	1.50	1.67

* Regulator Port exhaust through Base Port 3.

Note: All Cv's calculated with regulator adjusted full open.

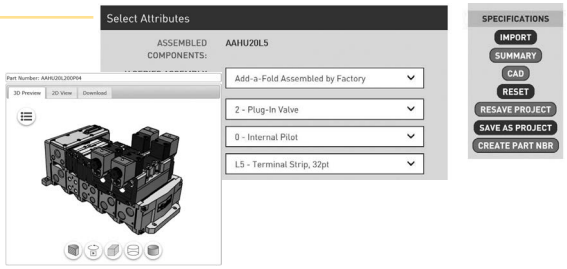
Online Configuration

Navigate to the landing page
www.parker.com/pdn/HSeriesISO

Customize your manifold assembly

Create and save a unique assembled part number

Generate a CAD model



Add-A-Fold - Universal Plug-in

AA HU20 L1 0 0 P 04

Valve Type	
Plug-in (internal)	**AAHU20**
Plug-in (external)	AAHU2X

Left Hand End Plate Type * †	
25-Pin, D-Sub (side)	**L1**
25-Pin, D-Sub (top)	**L2**
19-Pin, Round, Brad Harrison	L3
12-Pin, M23	L4
32-Point Terminal Strip	**L5**
19-Pin, M23	M2
P2H IO Link Class B, 24 Address, Standard Version	**N2**
P2H IO Link Class B, 24 Address, Safe Version	S2
P2H IO Link Class A, 24 Address, 4-Pin, Safe Version	**S4**
P2H IO Link Class A, 24 Address, 5-Pin, Safe Version	S5
Turck Network with valve driver module - 16 outputs ‡	**T1**
Turck Network with valve driver module - 32 outputs ‡	**T2**
------For P2H Ethernet Node and PCH Network Portal, see next pages ------	

* 120VAC is not CSA certified. Not available with 240VAC coils.
‡ Turck Network communication modules must be ordered separately. See Network Connectivity section for more information.
† PSHU11P gaskets included in each end plate kit, galley ports 1, 2, 3, 12 & 14 Open.

Number of Segments
01
↓
32

Thread Type	
0	**NPT**
1*	BSPP "G"

* BSPP Conforms to ISO 1179-1 w 228-1 Threads

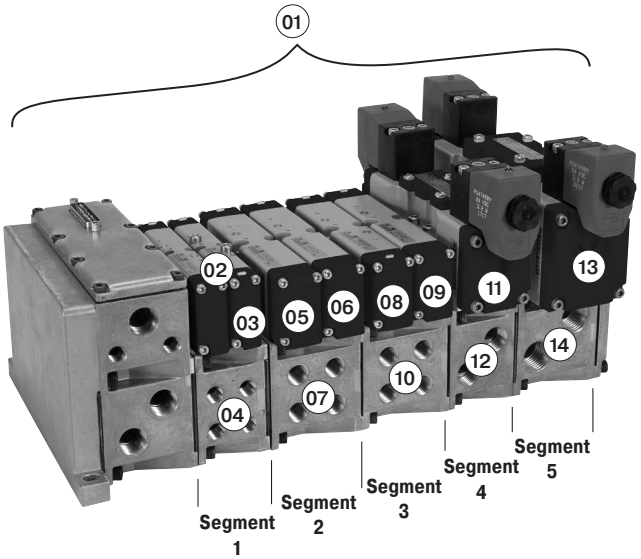
Right Hand End Plate Type / Port	
0	**Low profile (no ports)**
1	1/2 Exhaust and inlet port
2	3/4 Exhaust and inlet port
3*	H3 Transition plate, 1" exhaust and inlet, (electrical pass through)
4*	H3 Transition plate, 1" exhaust and inlet, (expansion to 25th address)

* 1, 3 & 5 manifold galley blocked at transition plate. 12 & 14 pass through.

Example

Application required a 5 segment manifold

Item	Part No.	Location	
01	**AAHUL200P05**		
02	**HB2VXBG0G9A**		Valve Station 1
03	**HB2VXBG0G9A**	Segment 1	Valve Station 2
04	**PSHU1151M1P**		Manifold Base
05	**HA1VXBG0G9A**		Valve Station 3
06	**HA2VXBG0G9A**	Segment 2	Valve Station 4
07	**PSHU1153M1P**		Manifold Base
08	**HA1VXBG0G9A**		Valve Station 5
09	**HA2VXBG0G9A**	Segment 3	Valve Station 6
10	**PSHU1153M1P**		Manifold Base
11	**H12VXBG0B9A**	Segment 4	Valve Station 7
12	**PSHU1155M1P**		Manifold Base
13	**H22VXBG0B9A**	Segment 5	Valve Station 8
14	**PSHU1157M1P**		Manifold Base



Example:
5 segment manifold with (2) HB, (4) HA, (1) H1, and (1) H2 valve on manifold bases with 25-pin, D-Sub end plate.

Add-A-Fold – Universal Plug-in – P2H Ethernet Node

The P2H Industrial EtherNet node is a control unit capable of controlling up to 32 digital outputs (pilot solenoids), through the most popular Industrial Ethernet protocols. The P2H Ethernet is as a low-cost network connection with easy integration and simple to use diagnostics all housed in a robust IP65 weld-resistant housing.

AAHU 20 P2 0 0 P 04 E 000 A – P4

Valve Type	
Plug-in Valves	
Internal pilot	**20**
External pilot	2X

Thread Type	
NPT	**0**
BSPP "G"	1

Number of Segments
0
↓
32

Network Connections	
EtherNet/IP™	**E**
EtherCAT	**T**
ProfiNet	**N**
Modbus TCP	**M**
Powerlink	**W**

Power Connector	
4-pin power IN/OUT with 1 safe power capable zone	**P4**
5-pin power IN/OUT with 1 safe power capable zone	**P5**
5 Pin M12 L-Code IN/OUT with 1 Safe Power Capable Zone	L5

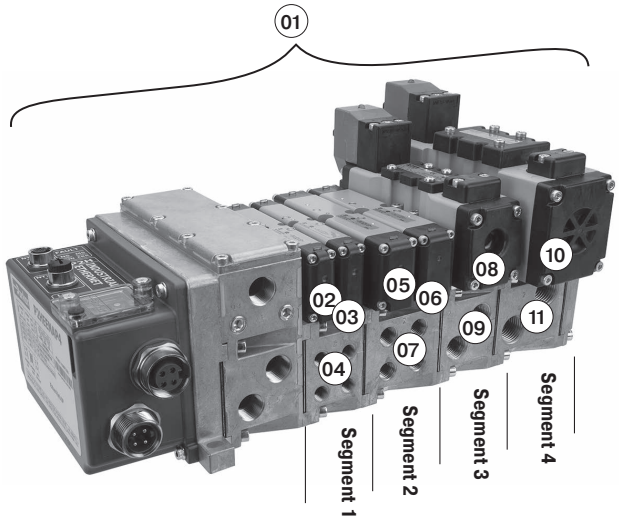
Right Hand End Plate Type / Thread Size	
Low profile (no ports)	**0**
1/2 Exhaust and inlet port	1
3/4 Exhaust and inlet port	2
H3 Transition plate and end plate (electrical pass through for plug-in valves only)	3
H3 Transition plate and end plate (expansion to 25th address for plug-in valves only)	4

Expansion Module / Power Source	
Power Source for Output 25-32: AUX Power	**A**
Power Source for Output 25-32: Logic Power	L

Example

Application required a 4 segment manifold

Item	Part No.	Location	
01	**AAHU20P200P04E000A-P4**		
02	**HB2VXBG0G9A**		Valve Station 1
03	**HB2VXBG0G9A**	Segment 1	Valve Station 2
04	**PSHU1151M1P**		Manifold Base
05	**HA1VXBG0G9A**		Valve Station 3
06	**HA2VXBG0G9A**	Segment 2	Valve Station 4
07	**PSHU1153M1P**		Manifold Base
08	**H12VXBG0B9A**	Segment 3	Valve Station 5
09	**PSHU1155M1P**		Manifold Base
10	**H2222VXBG0B9A**	Segment 4	Valve Station 6
11	**PSHU1157M1P**		Manifold Base



Example:
5 segment manifold with (2) HB, (2) HA, (1) H1, and (1) H2 valve on manifold bases with P2H Ethernet Node end plate.

Add-A-Fold – Universal Plug-in – PCH Network Portal

The PCH Network Portal redefines and revolutionizes machine I/O (Inputs and Outputs). The PCH Portal was engineered for the open protocol IO-Link A and IO-Link B devices as well as configurable inputs/outputs with true PNP/NPN circuitry switching on each port for easy machine design changes. The integrated configurability gives the user flexibility in designing I/O architecture. The PCH Network Portal is designed for general pneumatic control of industrial machinery on an Ethernet network for all types of automated industrial equipment.

AAHU	20	P3	0	0	P	04	E	AAA	0	–	P4

Valve Type

Plug-in Valves	
Internal pilot	**20**
External pilot	2X

Thread Type

NPT	**0**
BSPP "G"	1

Number of Segments

0
↓
32

Network Connections

EtherNet/IP™	**E**
EtherCAT	**T**
ProfiNet	**N**
Modbus TCP	**M**

Module Combinations

Module Position 1	Module Position 2	Module Position 3
A	**A**	**A**
A	A	B
A	**A**	**C**
A	A	N
A	B	B
A	B	C
A	B	N
A	C	C
A	C	N
B	B	B
B	B	C
B	B	N
B	C	C
B	C	N
C	C	C
C	C	N

For any module configurations not listed, consult factory.

Power Connector

4-pin power IN/OUT with 1 safe power capable zone	**P4**
5-pin power IN/OUT with 1 safe power capable zone	**P5**
4-pin power IN/IN with 2 safe power zones	S4
5-pin power IN/IN with 2 safe power zones	S5

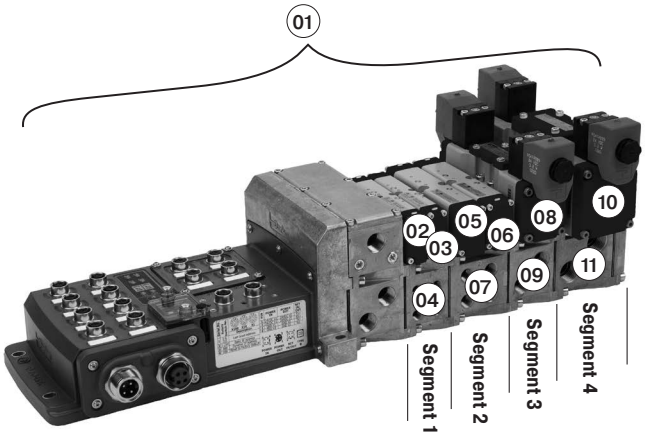
Right Hand End Plate Type / Thread Size

Low profile (no ports)	**0**
1/2 Exhaust and inlet port	1
3/4 Exhaust and inlet port	2
H3 Transition plate and end plate (electrical pass through for plug-in valves only)	3
H3 Transition plate and end plate (expansion to 25th address for plug-in valves only)	4

Example

Application required a 4 segment manifold

Item	Part No.	Location	
01	**AAHU20P300P04EAAA0-P4**		
02	**HB2VXBG0G9A**		Valve Station 1
03	**HB2VXBG0G9A**	Segment 1	Valve Station 2
04	**PSHU1151M1P**		Manifold Base
05	**HA1VXBG0G9A**		Valve Station 3
06	**HA2VXBG0G9A**	Segment 2	Valve Station 4
07	**PSHU1153M1P**		Manifold Base
08	**H12VXBG0B9A**	Segment 3	Valve Station 5
09	**PSHU1155M1P**		Manifold Base
10	**H2222VXBG0B9A**	Segment 4	Valve Station 6
11	**PSHU1157M1P**		Manifold Base



Example:
5 segment manifold with (2) HB, (2) HA, (1) H1, and (1) H2 valve on manifold bases with PCH Network Portal end plate.

Subbase Kit - Plug-in

PS55 **1113** **C** ☐ ☐ **P**

Series	
HA Subbase	PS55
H1 Subbase	PS40
H2 Subbase	PS41

Mounting Style / Port Size	
HA Series	
1/4 NPT side ports	**1113**
1/4 BSPP side ports	1114*
1/4 NPT bottom / side ports	1123
1/4 BSPP bottom / side ports	1124*
H1 Series	
3/8 NPT side ports	**1115**
3/8 BSPP side ports	1116*
H2 Series	
1/2 NPT side ports	**1117**
1/2 BSPP side ports	1118*

* BSPP conforms to ISO 1179-1 w 228-1 threads.

Engineering Level	
Blank	HA Series
D	H1 Series
C	H2 Series

Wiring Options	
Blank	None
C‡	Chrysler
F‡	SAE / Ford
G‡	General Motors

‡ Not available on HA series.

Enclosures / Lead Length	
Individually Wired Base*	
7†‡	3-Pin mini connector in base
8†‡	4-Pin M12 micro connector in base
9†‡	5-Pin mini connector in base
A‡	**6" Leads**
C	**Terminal block**

* Use plate with no connection.
† Must specify valve auto wiring option "C", "F", or "G".
‡ Not available on HA series.

HA subbase shown

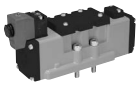
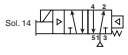
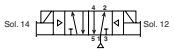
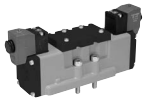
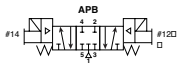
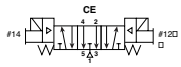
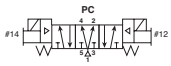
End Plate Kit - Plug-in, 5599-2, Size 3 (H3) * Not compatible with H Universal

Electrical Option		NPT Port	BSPP Port
	No connector - use with individually wired base	**PS4231010DP**	**PS4231011DP**
	25-pin, D-sub	**PS4220L20DP**	**PS4220L21DP**
	19-pin, round, Brad Harrison	**PS4220L30DP**	**PS4220L31DP**
	12-pin, M23	**PS4220L40DP**	**PS4220L41DP**
	19-pin, M23	**PS4220M20DP**	**PS4220M21DP**
	Turck Network with valve driver module - 16 address	**PS4220T10DP**	**PS4220T11DP**
	Turck Network with valve driver module - 24 address	**PS4220T20DP**	**PS4220T21DP**
	P2H IO Link Class B, standard version, 24 address	**PS4220N20DP**	**PS4220N21DP**
	P2H IO Link Class B, safe version, 24 address	**PS4220S20DP**	**PS4220S21DP**
	P2H IO Link Class A, 4-pin safe version, 24 address	**PS4220S40DP**	**PS4220S41DP**
	P2H IO Link Class A, 5-pin safe version, 24 address	**PS4220S50DP**	**PS4220S51DP**

Turck Netwok Node communication modules must be ordered separately. See Network Connectivity Section for more information.
Note: For cable part numbers and pin out information see Network Connectivity Accessories.

Most popular.

Valve - 5599-2, Plug-in, Size 3 (H3)

	Symbol	Type	Cv	Operator	Voltage	Pilot	Non-locking	Locking
		4-way, 2-position, spring return	6.0	Single solenoid	24 VDC	Internal	**H3EVXBG0B9D**	**H3EVXBH0B9D**
						External	**H3EVXXG0B9D**	**H3EVXXH0B9D**
					120 VAC	Internal	**H3EVXBG023D**	**H3EVXBH023D**
						External	**H3EVXXG023D**	**H3EVXXH023D**
		4-way, 2-position, air return	6.0	Single solenoid	24 VDC	Internal	**H31VXBG0B9D**	**H31VXBH0B9D**
						External	**H31VXXG0B9D**	**H31VXXH0B9D**
					120 VAC	Internal	**H31VXBG023D**	**H31VXBH023D**
						External	**H31VXXG023D**	**H31VXXH023D**
		4-way, 2-position	6.0	Double solenoid	24 VDC	Internal	**H32VXBG0B9D**	**H32VXBH0B9D**
						External	**H32VXXG0B9D**	**H32VXXH0B9D**
					120 VAC	Internal	**H32VXBG023D**	**H32VXBH023D**
						External	**H32VXXG023D**	**H32VXXH023D**
		4-way, 3-position, all ports blocked	5.0	Double solenoid	24 VDC	Internal	**H35VXBG0B9D**	**H35VXBH0B9D**
						External	**H35VXXG0B9D**	**H35VXXH0B9D**
					120 VAC	Internal	**H35VXBG023D**	**H35VXBH023D**
						External	**H35VXXG023D**	**H35VXXH023D**
		4-way, 3-position, center exhaust	5.0	Double solenoid	24 VDC	Internal	**H36VXBG0B9D**	**H36VXBH0B9D**
						External	**H36VXXG0B9D**	**H36VXXH0B9D**
					120 VAC	Internal	**H36VXBG023D**	**H36VXBH023D**
						External	**H36VXXG023D**	**H36VXXH023D**
		4-way, 3-position, pressure center	5.0	Double solenoid	24 VDC	Internal	**H37VXBG0B9D**	**H37VXBH0B9D**
						External	**H37VXXG0B9D**	**H37VXXH0B9D**
					120 VAC	Internal	**H37VXBG023D**	**H37VXBH023D**
						External	**H37VXXG023D**	**H37VXXH023D**

Subbase - Single 5599-2, Plug-in, Size 3 (H3)

Side Ported Base	Enclosure / Lead Length	Solenoid Addresses	3/4" NPT	3/4" BSPP
	Terminal strip in base	Double solenoid - 2 address	**PS421119CCP**	**PS421110CCP**
	6" flying leads	Double solenoid - 2 addresses	**PS421119ACP**	**PS421110ACP**

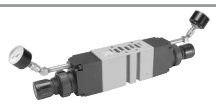
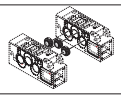
Manifold Base - 5599-2, Plug-in, Size 3 (H3)

Bottom / End Ported Bases	Enclosure / Lead Length	Solenoid Addresses	3/4" NPT	3/4" BSPP
	Circuit board	Double solenoid - 2 addresses	**PS421169MCP**	**PS421160MCP**
	Terminal strip in base	Double solenoid - 2 address	**PS421169CCP**	**PS421160CCP**
	6" flying leads	Double solenoid - 2 addresses	**PS421169ACP**	**PS421160ACP**

End Ported	Enclosure / Lead Length	Solenoid Addresses	3/4" NPT	3/4" BSPP
	Circuit board	Double solenoid - 2 addresses	**PS421159MCP**	**PS421150MCP**
	Terminal strip in base	Double solenoid - 2 address	**PS421159CCP**	**PS421150CCP**
	6" flying leads	Double solenoid - 2 addresses	**PS421159ACP**	**PS421150ACP**

Most popular.

Accessories - 5599-2, Size 3 (H3)

	Accessory	Description		Part Number
	Sandwich regulator	Common pressure	5-125 PSIG w/ gauge	**PS4238166CP**
		Independent pressure	5-125 PSIG w/ gauge	**PS4238266CP**
	Blanking plate kit			**PS4234CP**
	Sandwich flow control A Sandwich Flow Control and Common Port Sandwich Regulator may be used together on a manifold or subbase. The Sandwich Flow Control MUST be located between the manifold/subbase and the Common Port Sandwich Regulator. Do not use with Independent Port Sandwich Regualtors.			**PS4235CP**
	Manifold to manifold gasket kits			**PS4213P**
	Manifold isolation kit	Main galley (1, 3, 5)		**PS4232CP**
		Pilot galley		**PS4033CP**

Most popular.

End Plate Kit - Plug-in, 5599-2, Size 3 (H3) * Not compatible with H Universal

PS42 | 20L2 | 0 | D | P

Basic Series	
ISO 5599, Size 3	PS42

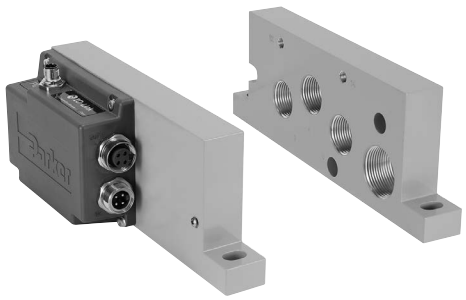
Engineering Level	
D	Current

Options †	
25-Pin, D-Sub	**20L2***
19-Pin, Round, Brad Harrison	20L3
12-Pin, M23	20L4
19-Pin, M23	20M2
P2H IO Link Class B, 24 Address, Standard Version	**20N2**
P2H IO Link Class B, 24 Address, Safe Version	20S2
P2H IO Link Class A, 24 Address, 4-Pin, Safe Version	**20S4**
P2H IO Link Class A, 24 Address, 5-Pin, Safe Version	20S5
Turck Network with Valve Driver Module - 16 Outputs	20T1
Turck Network with Valve Driver Module - 24 Outputs	20T2

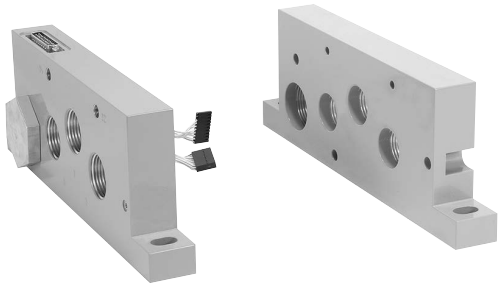
Thread Type	
0	**NPT**
1*	BSPP "G"

* BSPP Conforms to ISO 1179-1 w 228-1 Threads

* 120VAC is Not CSA Rated.
† Manifold bases must have a circuit board.
Turck Network, communication modules must be ordered separately.
See Network Connectivity Section for more information.



H3 P2H Class A
end plate shown



H3 25-pin D-Sub
end plate shown

Most popular.

Valve - Plug-in, 5599-2, Size 3

H3	E	VX	B	G	0	B9	D

Basic Series 5599-2

ISO 5599-2 Size 3	H3

5599-2 Operator / Function

Single solenoid, 2-position - air return	**1**
Double solenoid, 2-position	**2**
Double solenoid, 3-position - APB	**5**
Double solenoid, 3-position - CE	6
Double solenoid, 3-position - PC	7
Single solenoid, 2-position - air return, spring assist	**E**

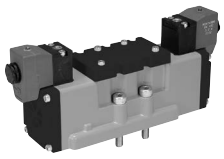
5599-2 Mounting

5599-2 Valve less base	**VX**

5599-2 Pilot source / Pilot exhaust

Internal pilot, port #1 / vented	**B**
External pilot, port #12 or #14 / vented	X*

* Must be specified when using Sandwich Regulators.



H3 Valve shown

5599-2 Enclosure / Lead length

0	**None, valve less base**

5599-2 Overrides / Lights

	Voltage code	
B	42, 45, 57	Non-locking, flush, push - w/o light
C	42, 45, 57	Locking, flush, push / turn - w/o light
G	**B9, F9, 23**	**Non-locking, flush, push - w/ light**
H	B9, 23	Locking, flush, push / turn - w/ light

5599-2 Engineering Level

D	**Current**

5599-2 Voltage & Frequency

	AC		DC	Light & surge suppression
	60Hz	50Hz		
42	**24**			
45			**12**	
B9			**24**	**LED & suppression, 3.2 watt**
F9			**24**	**LED & suppression, 1.3 watt**
23	**120**	**115**		**LED & suppression**
57	240			

Most popular.

Manifold / Subbase Kit - Plug-in, 5599-2, Size 3

PS421159 M [ ] C P

Mounting Base Style / Port Size	
Subbase: 3/4 NPT side port	**PS421119**
Subbase: 3/4 BSPP side port	PS421110*
Manifold: 3/4 NPT end port	**PS421159**
Manifold: 3/4 BSPP end port	PS421150*
Manifold: 3/4 NPT bottom / end port	PS421169
Manifold: 3/4 BSPP bottom / end port	PS421160*

* BSPP conforms to ISO 1179-1 w 228-1 threads.

Engineering Level	
C	**H3**

Wiring Options	
Blank	**None**
C	Chrysler
F	**SAE / Ford**
G	General Motors

Enclosures / Lead Length	
Individually Wired Base**	
7†	3-pin mini connector in base
8†	4-pin M12 micro connector in base
9†	5-pin mini connector in base
A	**6" Leads**
C	**Terminal block**
Collective Wired Base	
M*	**Circuit board, double address**

* Not available with subbase kits.
** Use plate with no connection.
† Must specify valve auto wiring option "C", "F", or "G".

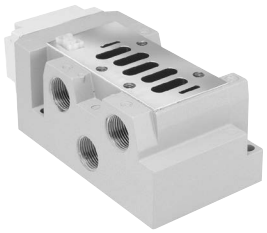
Note: When using the enclosure / lead length "M" option:

12VDC - Maximum number of coils energized simultaneously is 13

24VDC - Maximum number of coils energized simultaneously is 21, B9 coil
Maximum number of coils energized simultaneously is 24, F9 coil

120VAC - Coils limited by the number of pins available in the connector
(25-pin D-Sub = 24 coils, 19-pin Brad Harrison = 16, 12-pin M23 = 8)

240VAC - Must use "A" or "C" option, lead wires or terminal blocks



Subbase Kit

Automotive Connectors
Mounted in 1/2" Conduit Port
- 3-Pin - Wired for Single Solenoid
- 4-Pin / 5-Pin - Wired for Double Solenoid

Manifold Kit

Automotive Connectors
Mounted in Individual Manifold Conduit Cover
- 3-Pin - Wired for Single Solenoid
- 4-Pin / 5-Pin - Wired for Double Solenoid

☐ Most popular.

Sandwich Regulator - Plug-in, 5599-2

PS4038 | 1 | 6 | 6 | C | P

Basic Series	
H3 5599-2, Plug-in	PS4238

Regulator Function	
Common Pressure Regulator	1
Independent Pressure Regulator	2

#2 Port Regulator / Gauge*	
0**	Line By-Pass Plate
4	1-30 PSIG w/Gauge
5	2-60 PSIG w/Gauge
6	**5-125 PSIG w/Gauge**
D	Remote Pilot ISO 2 & 3 only

* For Common Pressure Regulator Option, Regulator Gauge callout must be the same number for both Port #4 and Port #2. (Example: 166)
** Pressure Line By-Pass Option can only be used with Independent Pressure Regulators.

#4 Port Regulator / Gauge*	
0**	Line By-Pass Plate
4	1-30 PSIG w/Gauge
5	2-60 PSIG w/Gauge
6	**5-125 PSIG w/Gauge**
D	Remote Pilot ISO 2 & 3 only

Ordering Components
- *Sandwich Regulator Kit configured for Internal Pilot as standard.*
- *Order valve as External Pilot.*

How to Configure Sandwich Regulator / Valve Combinations

Internal Pilot Configuration of Sandwich Regulator H3
Pressure in Base Port 1 feeds regulator configured for Internal Pilot which feeds valve configured for External Pilot.

External Pilot Configuration of Sandwich Regulator H3
An External Pilot pressure in Port 12 or 14 of the base feeds thru the Sandwich Regulator 12 or 14 galley directly to the 12/14 pilot of the valve. This configuration takes an External Pilot from the 12 port of the base and passes it thru the regulator to feed the 12 galley of the valve.

Sandwich Regulator Cv Flow Chart*

	Common Pressure Code 166				Single Pressure 2 Code 206				Single Pressure 4 Code 260				Dual Pressure Code 266			
	1-2	1-4	2-3	4-5	1-2	1-4	2-3	4-5*	1-2	1-4	2-3	4-5*	1-2	1-4	2-3	4-5*
H3	2.37	2.39	4.30	4.47	2.37	2.81	2.75	3.01	2.65	2.59	2.68	2.74	2.43	2.41	3.16	3.04

* Regulator Port exhaust through Base Port 3.

Note: All Cv's calculated with regulator adjusted full open.

Most popular.

Add-A-Fold Assembly - Plug-in, 5599-2, Size 3 * Not compatible with H Universal

AA	H3	D	0	03

Valve Series

Right & left end plate	H3

End Plate Type

Turck Network with valve driver module - 16 address	**A***
Turck Network with valve driver module - 32 address	**B***
25-pin, D-sub	**D†**
19-pin, Brad Harrison	**E†**
12-pin, M23	G†
19-pin, M23	H†
P2H IO Link Class B, 24 Address, Standard Version	**J**
P2H IO Link Class B, 24 Address, Safe Version	N
P2H IO Link Class A, 24 Address, 4-Pin, Safe Version	**P**
P2H IO Link Class A, 24 Address, 5-Pin, Safe Version	R
Standard, non-collective wiring	**S**

* Must order communication modules separately.
† Collective wiring module included.

Number of Segments

01
↓
32

Thread Type

0	**NPT**
1*	BSPP "G"

* BSPP Conforms to ISO 1179-1 w 228-1 Threads

How To Order Plug-in Add-A-Fold Assemblies

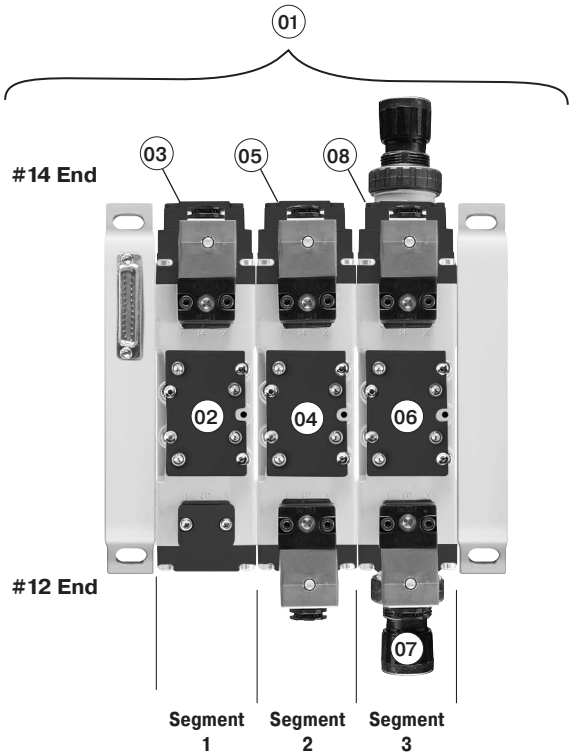
1. List Add-A-Fold Assembly call out. This automatically includes the end plate kit assembly.
2. List complete valve, regulator, flow control and manifold base kit. List left to right, looking at the cylinder ports on the #12 end of the manifold. The left most segment is segment 1. (If a blank station is needed, list the blanking plate part number and the individual manifold part numbers for the required segment.)

Example

Application requires a 3 segment manifold and regulator on segment 3.

Item	Part No.	Location	
01	AAH3D003		
02	H31VXBG0B9D	Segment 1	Valve Station 1
03	PS421159MCP		Manifold Base
04	H32VXBG0B9D	Segment 2	Valve Station 2
05	PS421159MCP		Manifold Base
06	H32VXXG0B9D	Segment 3	Valve Station 3
07	PS4238166CP		Sandwich regulator
08	PS421159MCP		Manifold Base

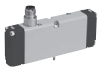
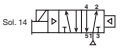
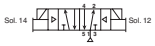
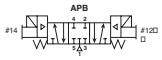
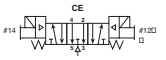
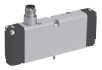
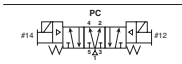
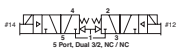
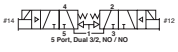
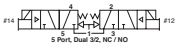
NOTE:
Construct manifold assemblies from left to right while looking at the cylinder ports. Valves must be ordered as External Pilot when using Sandwich Regulator.



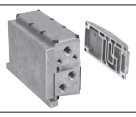
Example:
3 segment manifold with (3) H3 valves on manifold bases and regulator at segment 3.

Most popular.

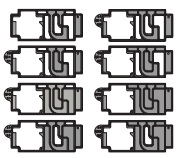
Valve -15407-1, Non Plug-in, Size 18mm (HB)

	Symbol	Type	Cv	Operator	Voltage	Pilot	Non-locking	Locking
		4-way, 2-position, spring return	0.55	Single solenoid	24 VDC	Internal	**HBEWXBG2G9000FA**	**HBEWXBH2G9000FA**
						External	**HBEWXLG2G9000FA**	**HBEWXLH2G9000FA**
		4-way, 2-position, air return	0.55	Single solenoid	24 VDC	Internal	**HB1WXBG2G9000FA**	**HB1WXBH2G9000FA**
						External	**HB1WXLG2G9000FA**	**HB1WXLH2G9000FA**
		4-way, 2-position	0.55	Double solenoid	24 VDC	Internal	**HB2WXBG2G9000FA**	**HB2WXBH2G9000FA**
						External	**HB2WXLG2G9000FA**	**HB2WXLH2G9000FA**
		4-way, 3-position, all ports blocked	0.5	Double solenoid	24 VDC	Internal	**HB5WXBG2G9000FA**	**HB5WXBH2G9000FA**
						External	**HB5WXLG2G9000FA**	**HB5WXLH2G9000FA**
		4-way, 3-position, center exhaust	0.5	Double solenoid	24 VDC	Internal	**HB6WXBG2G9000FA**	**HB6WXBH2G9000FA**
						External	**HB6WXLG2G9000FA**	**HB6WXLH2G9000FA**
		4-way, 3-position, pressure center	0.5	Double solenoid	24 VDC	Internal	**HB7WXBG2G9000FA**	**HB7WXBH2G9000FA**
						External	**HB7WXLG2G9000FA**	**HB7WXLH2G9000FA**
		3-way, 2-position, dual valve, NC/NC	0.45	Double solenoid	24 VDC	Internal	**HBNWXBG2G9000FA**	**HBNWXBH2G9000FA**
		3-way, 2-position, dual valve, NO/NO	0.45	Double solenoid	24 VDC	Internal	**HBPWXBG2G9000FA**	**HBPWXBH2G9000FA**
		3-way, 2-position, dual valve, NC/NO	0.45	Double solenoid	24 VDC	Internal	**HBQWXBG2G9000FA**	**NA**

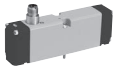
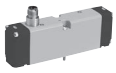
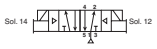
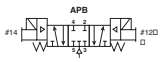
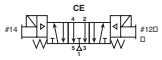
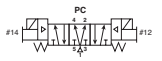
Base / End Plate - 15407-1, Non Plug-in, Size 18mm (HB)

		Description	NPT	BSPP
	Universal manifold base	2 station, end ported	**PSHU115101P**	**PSHU115201P**
	Universal end plate	Non-collective wiring	**PSHU31L000P**	**PSHU31L001P**

Accessories - 15407-1, Non plug-in, Size 18mm (HB)

	Accessories	Description		Part Number
	Gauge adapter kit	Includes 1/8" coupling and long nipple		**PS5651160P**
	Blanking plate kit			**PS5634P**
	Sandwich flow control	Do not use with Independent Port Sandwich Regualtors.		**PS5642P**
	Sandwich supply module	1/8" NPT		**PS562600P**
		1/8" BSPP		**PS562601P**
	Sandwich regulator		Common Pressure	Independent Pressure
		2-60 PSIG w/ gauge	**PS5637155P**	**PS5637255P**
		5-125 PSIG w/ gauge	**PS5637166P**	**PS5637266P**
	Manifold to manifold gasket kits		Pilot Open	Pilot Blocked
		#1, 3, 5 ports open	**PSHU11P**	**PSHU15P**
		Blocked #1 port	**PSHU12P**	**PSHU16P**
		Blocked #1, 3, 5, ports	**PSHU13P**	**PSHU17P**
		Blocked #3, 5 ports	**PSHU14P**	**PSHU18P**

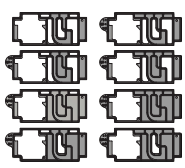
Valve - 15407-1, Non Plug-in, Size 26mm (HA)

	Symbol	Type	Cv	Operator	Voltage	Pilot	Non-locking	Locking
		4-way, 2-position, spring return	1.1	Single solenoid	24 VDC	Internal	**HAEWXBG2G9000FA**	**HAEWXBH2G9000FA**
						External	**HAEWXLG2G9000FA**	**HAEWXLH2G9000FA**
		4-way, 2-position, air return	1.1	Single solenoid	24 VDC	Internal	**HA1WXBG2G9000FA**	**HA1WXBH2G9000FA**
						External	**HA1WXLG2G9000FA**	**HA1WXLH2G9000FA**
		4-way, 2-position	1.1	Double solenoid	24 VDC	Internal	**HA2WXBG2G9000FA**	**HA2WXBH2G9000FA**
						External	**HA2WXLG2G9000FA**	**HA2WXLH2G9000FA**
		4-way, 3-position, all ports blocked	1.0	Double solenoid	24 VDC	Internal	**HA5WXBG2G9000FA**	**HA5WXBH2G9000FA**
						External	**HA5WXLG2G9000FA**	**HA5WXLH2G9000FA**
		4-way, 3-position, center exhaust	1.0	Double solenoid	24 VDC	Internal	**HA6WXBG2G9000FA**	**HA6WXBH2G9000FA**
						External	**HA6WXLG2G9000FA**	**HA6WXLH2G9000FA**
		4-way, 3-position, pressure center	1.0	Double solenoid	24 VDC	Internal	**HA7WXBG2G9000FA**	**HA7WXBH2G9000FA**
						External	**HA7WXLG2G9000FA**	**HA7WXLH2G9000FA**

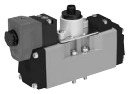
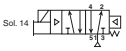
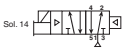
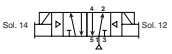
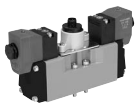
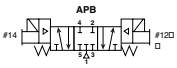
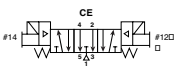
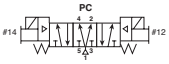
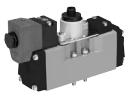
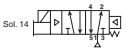
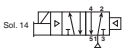
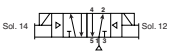
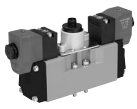
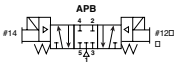
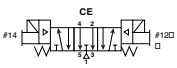
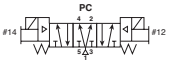
Base / End Plate - 15407-1, Non Plug-in, Size 26mm (HA)

		Description	NPT	BSPP
	Single subbase	Side ported base, 1/4" port	**PS5511130P**	**PS5511140P**
	Universal manifold base	2 station, end ported	**PSHU115301P**	**PSHU115401P**
	Universal end plate	Non-collective wiring	**PSHU31L000P**	**PSHU31L001P**

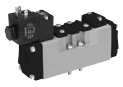
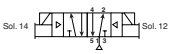
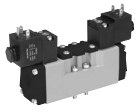
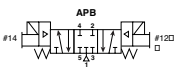
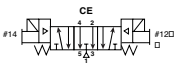
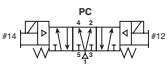
Accessories - 15407-1, Non Plug-in, Size 26mm (HA)

	Accessories	Description		Part Number
	Blanking plate kit			**PS5534P**
	Sandwich flow control			**PS5542P**
	Sandwich Flow Control and Common Port Sandwich Regulator may be sandwiched together on a manifold or subbase. The Sandwich Flow Control MUST be located between the manifold/subbase and the Common Port Sandwich Regulator. Do not use with Independent Port Sandwich Regualtors.			
	Pilot exhaust module	Pilot presure control, without sensor, 1/8" BSPP		**PS55XXA0P**
	Sandwich supply module	1/4" NPT		**PS552600P**
		1/4" BSPP		**PS552601P**
	Sandwich regulator		Common Pressure	Independent Pressure
		2-60 PSIG w/ gauge	**PS5537155P**	**PS5537255P**
		5-125 PSIG w/ gauge	**PS5537166P**	**PS5537266P**
	Manifold to manifold gasket kits		Pilot Open	Pilot Blocked
		#1, 3, 5 ports open	**PSHU11P**	**PSHU15P**
		Blocked #1 port	**PSHU12P**	**PSHU16P**
		Blocked #1, 3, 5, ports	**PSHU13P**	**PSHU17P**
		Blocked #3, 5 ports	**PSHU14P**	**PSHU18P**

Valve with Central Connector - 5599-1, Non Plug-in, Size 1 (H1)

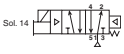
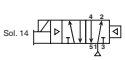
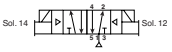
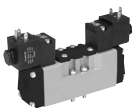
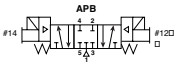
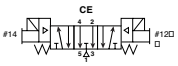
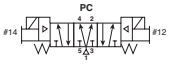
Symbol	Type	Cv	Operator	Voltage	Pilot	Non-locking	Locking
4-Pin Central M12 Connector, 24 VDC							
 	4-way, 2-position, spring return	1.5	Single solenoid	24 VDC	Internal	**H1EWXBG2B9000FD**	**H1EWXBH2B9000FD**
					External	**H1EWXXG2B9000FD**	**H1EWXXH2B9000FD**
	4-way, 2-position, air return	1.5	Single solenoid	24 VDC	Internal	**H11WXBG2B9000FD**	**H11WXBH2B9000FD**
					External	**H11WXXG2B9000FD**	**H11WXXH2B9000FD**
	4-way, 2-position	1.5	Double solenoid	24 VDC	Internal	**H12WXBG2B9000FD**	**H12WXBH2B9000FD**
					External	**H12WXXG2B9000FD**	**H12WXXH2B9000FD**
 	4-way, 3-position, all ports blocked	1.2	Double solenoid	24 VDC	Internal	**H15WXBG2B9000FD**	**H15WXBH2B9000FD**
					External	**H15WXXG2B9000FD**	**H15WXXH2B9000FD**
	4-way, 3-position, center exhaust	1.2	Double solenoid	24 VDC	Internal	**H16WXBG2B9000FD**	**H16WXBH2B9000FD**
					External	**H16WXXG2B9000FD**	**H16WXXH2B9000FD**
	4-way, 3-position, pressure center	1.2	Double solenoid	24 VDC	Internal	**H17WXBG2B9000FD**	**H17WXBH2B9000FD**
					External	**H17WXXG2B9000FD**	**H17WXXH2B9000FD**
5-Pin Central 7/8" Mini Connector, 120 VAC							
 	4-way, 2-position, spring return	1.5	Single solenoid	120 VAC	Internal	**H1EWXBG323000FD**	**H1EWXBH323000FD**
					External	**H1EWXXG323000FD**	**H1EWXXH323000FD**
	4-way, 2-position, air return	1.5	Single solenoid	120 VAC	Internal	**H11WXBG323000FD**	**H11WXBH323000FD**
					External	**H11WXXG323000FD**	**H11WXXH323000FD**
	4-way, 2-position	1.5	Double solenoid	120 VAC	Internal	**H12WXBG323000FD**	**H12WXBH323000FD**
					External	**H12WXXG323000FD**	**H12WXXH323000FD**
 	4-way, 3-position, all ports blocked	1.2	Double solenoid	120 VAC	Internal	**H15WXBG323000FD**	**H15WXBH323000FD**
					External	**H15WXXG323000FD**	**H15WXXH323000FD**
	4-way, 3-position, center exhaust	1.2	Double solenoid	120 VAC	Internal	**H16WXBG323000FD**	**H16WXBH323000FD**
					External	**H16WXXG323000FD**	**H16WXXH323000FD**
	4-way, 3-position, pressure center	1.2	Double solenoid	120 VAC	Internal	**H17WXBG323000FD**	**H17WXBH323000FD**
					External	**H17WXXG323000FD**	**H17WXXH323000FD**

Valve with 3-Pin DIN Connector - 5599-1, Non Plug-in, Size 1 (H1)

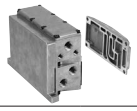
Symbol	Type	Cv	Operator	Voltage	Pilot	Non-locking	Locking
3-Pin DIN Connector, 24 VDC							
	4-way, 2-position, spring return	1.5	Single solenoid	24 VDC	Internal	**H1EWXBBL49D**	**H1EWXBCL49D**
					External	**H1EWXXBL49D**	**H1EWXXCL49D**
	4-way, 2-position, air return	1.5	Single solenoid	24 VDC	Internal	**H11WXBBL49D**	**H11WXBCL49D**
					External	**H11WXXBL49D**	**H11WXXCL49D**
	4-way, 2-position	1.5	Double solenoid	24 VDC	Internal	**H12WXBBL49D**	**H12WXBCL49D**
					External	**H12WXXBL49D**	**H12WXXCL49D**
 	4-way, 3-position, all ports blocked	1.2	Double solenoid	24 VDC	Internal	**H15WXBBL49D**	**H15WXBCL49D**
					External	**H15WXXBL49D**	**H15WXXCL49D**
	4-way, 3-position, center exhaust	1.2	Double solenoid	24 VDC	Internal	**H16WXBBL49D**	**H16WXBCL49D**
					External	**H16WXXBL49D**	**H16WXXCL49D**
	4-way, 3-position, pressure center	1.2	Double solenoid	24 VDC	Internal	**H17WXBBL49D**	**H17WXBCL49D**
					External	**H17WXXBL49D**	**H17WXXCL49D**

Most popular.

Valve with 3-Pin DIN Connector - 5599-1, Non Plug-in, Size 1 (H1) (continued)

Symbol	Type	Cv	Operator	Voltage	Pilot	Non-locking	Locking
3-Pin DIN Connector, 120 VAC							
	4-way, 2-position, spring return	1.5	Single solenoid	120 VAC	Internal	**H1EWXBBL53D**	**H1EWXBCL53D**
					External	**H1EWXXBL53D**	**H1EWXXCL53D**
	4-way, 2-position, air return	1.5	Single solenoid	120 VAC	Internal	**H11WXBBL53D**	**H11WXBCL53D**
					External	**H11WXXBL53D**	**H11WXXCL53D**
	4-way, 2-position	1.5	Double solenoid	120 VAC	Internal	**H12WXBBL53D**	**H12WXBCL53D**
					External	**H12WXXBL53D**	**H12WXXCL53D**
 	4-way, 3-position, all ports blocked	1.2	Double solenoid	120 VAC	Internal	**H15WXBBL53D**	**H15WXBCL53D**
					External	**H15WXXBL53D**	**H15WXXCL53D**
	4-way, 3-position, center exhaust	1.2	Double solenoid	120 VAC	Internal	**H16WXBBL53D**	**H16WXBCL53D**
					External	**H16WXXBL53D**	**H16WXXCL53D**
	4-way, 3-position, pressure center	1.2	Double solenoid	120 VAC	Internal	**H17WXBBL53D**	**H17WXBCL53D**
					External	**H17WXXBL53D**	**H17WXXCL53D**

Base / End Plate - 5599-1, Non Plug-in, Size 1 (H1)

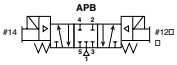
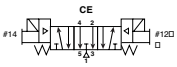
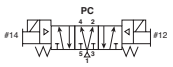
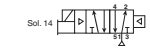
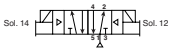
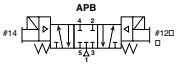
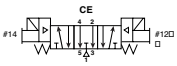
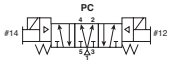
	Description	NPT	BSPP
Single subbase	Side ported, 3/8" port	**PS4011150DP**	**PS4011160DP**
Universal manifold base	End ported	**PSHU115501P**	**PSHU115601P**
 Universal end plate	Non-collective wiring	**PSHU31L000P**	**PSHU31L001P**

Accessories - 5599-1, Non Plug-in, Size 1 (H1)

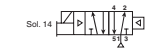
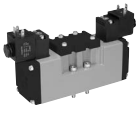
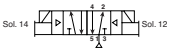
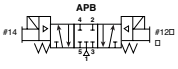
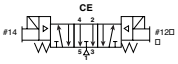
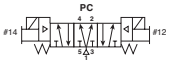
	Accessory	Description		Part Number
	Sandwich regulator	Common pressure	5-125 PSIG w/ gauge	**PS4037166CP**
		Independent pressure	5-125 PSIG w/ gauge	**PS4037266CP**
	Blanking plate kit			**PS4034CP**
	Sandwich flow control			**PS4042CP**
	Sandwich Flow Control and Common Port Sandwich Regulator may be sandwiched together on a manifold or subbase. The Sandwich Flow Control MUST be located between the manifold/subbase and the Common Port Sandwich Regulator. Do not use with Independent Port Sandwich Regualtors.			

Most popular.

Valve with Central Connector - 5599-1, Non Plug-in, Size 2 (H2)

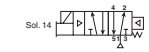
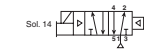
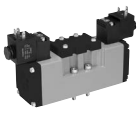
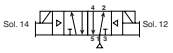
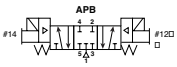
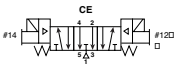
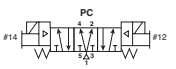
Symbol	Type	Cv	Operator	Voltage	Pilot	Non-locking	Locking
4-Pin Central M12 Connector, 24 VDC							
	4-way, 2-position, spring return	3.0	Single solenoid	24 VDC	Internal	**H2EWXBG2B9000FD**	**H2EWXBH2B9000FD**
					External	**H2EWXXG2B9000FD**	**H2EWXXH2B9000FD**
	4-way, 2-position, air return	3.0	Single solenoid	24 VDC	Internal	**H21WXBG2B9000FD**	**H21WXBH2B9000FD**
					External	**H21WXXG2B9000FD**	**H21WXXH2B9000FD**
	4-way, 2-position	3.0	Double solenoid	24 VDC	Internal	**H22WXBG2B9000FD**	**H22WXBH2B9000FD**
					External	**H22WXXG2B9000FD**	**H22WXXH2B9000FD**
	4-way, 3-position, all ports blocked	2.8	Double solenoid	24 VDC	Internal	**H25WXBG2B9000FD**	**H25WXBH2B9000FD**
					External	**H25WXXG2B9000FD**	**H25WXXH2B9000FD**
	4-way, 3-position, center exhaust	2.8	Double solenoid	24 VDC	Internal	**H26WXBG2B9000FD**	**H26WXBH2B9000FD**
					External	**H26WXXG2B9000FD**	**H26WXXH2B9000FD**
	4-way, 3-position, pressure center	2.8	Double solenoid	24 VDC	Internal	**H27WXBG2B9000FD**	**H27WXBH2B9000FD**
					External	**H27WXXG2B9000FD**	**H27WXXH2B9000FD**
5-Pin Central 7/8" Connector, 120 VAC							
	4-way, 2-position, spring return	3.0	Single solenoid	120 VAC	Internal	**H2EWXBG323000FD**	**H2EWXBH323000FD**
					External	**H2EWXXG323000FD**	**H2EWXXH323000FD**
	4-way, 2-position, air return	3.0	Single solenoid	120 VAC	Internal	**H21WXBG323000FD**	**H21WXBH323000FD**
					External	**H21WXXG323000FD**	**H21WXXH323000FD**
	4-way, 2-position	3.0	Double solenoid	120 VAC	Internal	**H22WXBG323000FD**	**H22WXBH323000FD**
					External	**H22WXXG323000FD**	**H22WXXH323000FD**
	4-way, 3-position, all ports blocked	2.8	Double solenoid	120 VAC	Internal	**H25WXBG323000FD**	**H25WXBH323000FD**
					External	**H25WXXG323000FD**	**H25WXXH323000FD**
	4-way, 3-position, center exhaust	2.8	Double solenoid	120 VAC	Internal	**H26WXBG323000FD**	**H26WXBH323000FD**
					External	**H26WXXG323000FD**	**H26WXXH323000FD**
	4-way, 3-position, pressure center	2.8	Double solenoid	120 VAC	Internal	**H27WXBG323000FD**	**H27WXBH323000FD**
					External	**H27WXXG323000FD**	**H27WXXH323000FD**

Valve with 3-Pin DIN Connector - 5599-1, Non Plug-in, Size 2 (H2)

Symbol	Type	Cv	Operator	Voltage	Pilot	Non-locking	Locking
3-Pin DIN Connector on Coil, 24 VDC							
	4-way, 2-position, spring return	3.0	Single solenoid	24 VDC	Internal	**H2EWXBBL49D**	**H2EWXBCL49D**
					External	**H2EWXXBL49D**	**H2EWXXCL49D**
	4-way, 2-position, air return	3.0	Single solenoid	24 VDC	Internal	**H21WXBBL49D**	**H21WXBCL49D**
					External	**H21WXXBL49D**	**H21WXXCL49D**
 	4-way, 2-position	3.0	Double solenoid	24 VDC	Internal	**H22WXBBL49D**	**H22WXBCL49D**
					External	**H22WXXBL49D**	**H22WXXCL49D**
	4-way, 3-position, all ports blocked	2.8	Double solenoid	24 VDC	Internal	**H25WXBBL49D**	**H25WXBCL49D**
					External	**H25WXXBL49D**	**H25WXXCL49D**
	4-way, 3-position, center exhaust	2.8	Double solenoid	24 VDC	Internal	**H26WXBBL49D**	**H26WXBCL49D**
					External	**H26WXXBL49D**	**H26WXXCL49D**
	4-way, 3-position, pressure center	2.8	Double solenoid	24 VDC	Internal	**H27WXBBL49D**	**H27WXBCL49D**
					External	**H27WXXBL49D**	**H27WXXCL49D**

Most popular.

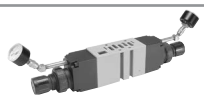
Valve with 3-Pin DIN Connector - 5599-1, Non Plug-in, Size 2 (H2) (continued)

Symbol	Type	Cv	Operator	Voltage	Pilot	Non-locking	Locking
3-Pin DIN connector on coil, 120 VAC							
	4-way, 2-position, spring return	3.0	Single solenoid	120 VAC	Internal	**H2EWXBBL53D**	**H2EWXBCL53D**
					External	**H2EWXXBL53D**	**H2EWXXCL53D**
	4-way, 2-position, air return	3.0	Single solenoid	120 VAC	Internal	**H21WXBBL53D**	**H21WXBCL53D**
					External	**H21WXXBL53D**	**H21WXXCL53D**
 	4-way, 2-position	3.0	Double solenoid	120 VAC	Internal	**H22WXBBL53D**	**H22WXBCL53D**
					External	**H22WXXBL53D**	**H22WXXCL53D**
	4-way, 3-position, all ports blocked	2.8	Double solenoid	120 VAC	Internal	**H25WXBBL53D**	**H25WXBCL53D**
					External	**H25WXXBL53D**	**H25WXXCL53D**
	4-way, 3-position, center exhaust	2.8	Double solenoid	120 VAC	Internal	**H26WXBBL53D**	**H26WXBCL53D**
					External	**H26WXXBL53D**	**H26WXXCL53D**
	4-way, 3-position, pressure center	2.8	Double solenoid	120 VAC	Internal	**H27WXBBL53D**	**H27WXBCL53D**
					External	**H27WXXBL53D**	**H27WXXCL53D**

Base / End Plate - 5599-1, Non Plug-in, Size 2 (H2)

		Description	1/2" NPT	1/2" BSPP
	Single subbase	Side ported, 1/2" port	**PS4111170CP**	**PS4111180CP**
	Universal manifold base	End ported	**PSHU115701P**	**PSHU115801P**
	Universal end plate	Non-collective wiring	**PSHU31L000P**	**PSHU31L001P**

Accessories - 5599-1, Non Plug-in, Size 2 (H2)

	Accessory	Description		Part number
	Sandwich regulator	Common pressure	5-125 PSIG w/ gauge	**PS4137166CP**
		Independent pressure	5-125 PSIG w/ gauge	**PS4137266CP**
	Blanking plate kit			**PS4134CP**
	Sandwich flow control			**PS4142CP**
	Sandwich Flow Control and Common Port Sandwich Regulator may be sandwiched together on a manifold or subbase. The Sandwich Flow Control MUST be located between the manifold/subbase and the Common Port Sandwich Regulator. Do not use with Independent Port Sandwich Regualtors.			

Most popular.

End Plate Kit - Universal Non Plug-in

Left hand end plate

PSHU31 L0 0 0 P

Valve Type	
Non Plug-in (internal pilot)	PSHU31
Non Plug-in (external pilot)	PSHU3X

Left Hand End Plate Type	
Non Plug-in	L0

Thread Type	
0	NPT
1*	BSPP "G"

* BSPP Conforms to ISO 1179-1 w 228-1 Threads

Right Hand End Plate Type / Port	
0	Low profile (no ports)
1	1/2 Exhaust and inlet port
2	3/4 Exhaust and inlet port
5*	H3 Transition plate, 1" exhaust and inlet

* 1, 3 & 5 manifold galley blocked at transition plate. 12 & 14 pass through.

Note: ***PSHU31 valve type:*** *Supply port 1 is internally connected to manifold pilot galley 12 and 14. With valve minimum operating pressure at port 1 of the left end plate, both 12 and 14 manifold pilot galley ways can be used for piloting externally piloted valves without pressure connected to port 12 or 14.*

PSHU3X valve type: *Supply port 1 is isolated from manifold pilot galley 12 and 14. Pilot pressure port 14 is connected to both manifold pilot galley 12 and 14.*

Port 14 is the primary pilot port for all externally piloted H Series ISO Valves.

Right Hand End Plate

Low Profile

High Flow

Description	NPT Port	BSPP Port
Right hand end plate only, low profile	**PSHU4000P**	
Right hand end plate only, high flow 1/2" ports	**PSHU4100P**	**PSHU4101P**
Right hand end plate only, high flow 3/4" ports	**PSHU4200P**	**PSHU4201P**

H3 Transition Kit

H3 transition, H3 right hand end plate, 1" ports (includes gaskets & bolts) — **PSU7300P** — **PSHU7301P**

Valve - Non Plug-in, 15407-1, Size 18mm (HB) & 26mm (HA)

HB E WX B G 2 G9 000F A 8P

Basic Series 15407-1	
ISO 15407-1 18mm	HB
ISO 15407-1 26mm	HA

15407-1 Operator / Function	
Single solenoid, 2-position - air return	1
Double solenoid, 2-position	2
Double solenoid, 3-position - APB	5
Double solenoid, 3-position - CE	6
Double solenoid, 3-position - PC	7
Single solenoid, 2-position - air return, spring assist	E
Double solenoid, dual 3/2, NC/NC	N†
Double solenoid, dual 3/2, NO/NO	P†
Double solenoid, dual 3/2, 14 end NC – 12 end NO	Q†

† Available on HB Only, must use Internal Pilot Source Option "B".

15407-1 Mounting	
Valve less base	WX

15407-1 Pilot Source / Pilot Exhaust	
B	Internal pilot, port #1 / vented
L*	External pilot, port #14 / vented

* Must be specified when using Sandwich Regulators.

15407-1 Overrides / Lights	
G	Non-locking, flush, push - w/ light
H	Locking, flush, push / turn - w/ light

15407-1 Enclosure / Lead length	
2	4-pin, M12 micro, straight connector

15407-1 Voltage & Frequency	
G9	24VDC LED & suppression

15407-1 Central Connector Wiring Options	
000F	SAE / Ford, ISO 20401

15407-1 Engineering level	
A	Current

Options	
Blank	No Options
8P	M8, PNP, Spool Sensing
8N	M8, NPN, Spool Sensing
2P	M12, PNP, Spool Sensing

* Available on HA series with operator functions 1, 2, E only

Part Number	Cable Type
RKC 4.4T-2	M12, 4 Pin Female, PVC, 2m
PKG 3M-4/ S90	M8, 3 Pin Female, PUR, 4M, flying lead

☐ Most popular.

Valve - Non Plug-in, 5599-1, Central Connector - Size 1 & 2

H1 E WX B G 2B9 000F D

Basic Series 5599-1	
ISO 5599-1 Size 1	H1
ISO 5599-1 Size 2	H2

5599 -1 Engineering Level	
D	Current

5599-1 Operator / Function	
Single solenoid, 2-position - air return	1
Double solenoid, 2-position	2
Double solenoid, 3-position - APB	5
Double solenoid, 3-position - CE	6
Double solenoid, 3-position - PC	7
Single solenoid, 2-position - air return, spring assist	E

5599-1 Central Connector Wiring Options	
000C	Chrysler
000F*	SAE / Ford, ISO 20401
000G	General Motors

* Complies to ISO 20401 with Enclosure Lead Length "2".

5599-1 Mounting	
Valve less base	WX

5599-1 Pilot Source / Pilot Exhaust	
Internal pilot, port #1 / vented	B
External pilot, port #12 or #14 / vented	X*

* Must be specified when using Sandwich Regulators.

5599-1 Overrides / Lights	
Non-locking, flush, with light	G
Locking, flush, with light	H

Enclosure / Lead Length / Voltage*	AC 60Hz	AC 50Hz	DC	
1B9†			24	3-pin, central mini connector, 3.2 watt
1F9†+			24	3-pin, central mini connector, 1.3 watt
123†	120	115		3-pin, central mini connector
2B9			**24**	**4-pin, central M12 micro connector, 3.2 watt**
2F9+			**24**	**4-pin, central M12 micro connector, 1.3 watt**
3B9			24	5-pin, central mini connector, 3.2 watt
3F9+			24	5-pin, central mini connector, 1.3 watt
323	120	115		5-pin, central mini connector
619‡			24	2-pin, M12 micro connector on coil

* All coils include LED & suppression
† Operator function "1" or "E"
‡ Only available with wiring option "000F"
+ Override "G" only.

Valve - Non Plug-in, 5599-1, CNOMO - Size 1 & 2

H1 E WX G B L53 D

Basic Series 5599-1	
ISO 5599-1 Size 1	H1
ISO 5599-1 Size 2	H2

5599-1 Engineering Level	
D	Current

5599-1 Operator / Function	
Single solenoid, 2-position - air return	1
Double solenoid, 2-position	2
Double solenoid, 3-position - APB	5
Double solenoid, 3-position - CE	6
Double solenoid, 3-position - PC	7
Single solenoid, 2-position - air return, spring assist	E

Enclosure / Lead length / Voltage	AC 60Hz	AC 50Hz	DC	
L42	24			3-pin, 30mm DIN 43650A with CNOMO connector
L45			12	3-pin, 30mm DIN 43650A with CNOMO connector
L49			**24**	**3-pin, 30mm DIN 43650A with CNOMO connector**
L53	**120**	**115**		**3-pin, 30mm DIN 43650A with CNOMO connector**
L57	240			3-pin, 30mm DIN 43650A with CNOMO connector
NXX				Valve less coil

5599-1 Mounting	
Valve less base	WX

5599-1 Pilot Source / Pilot Exhaust	
Internal pilot, port #1 / vented	B
External pilot, port #12 or #14 / vented	X*

* Must be specified when using Sandwich Regulators.

5599-1 Overrides / Lights	
B	Non-locking, flush, push - no light
C	Locking, flush, push / turn - no light

☐ Most popular.

Remote Pilot - Size 18mm (HB), Size 26mm (HA), Size 1 (H1) & Size 2 (H2)

H1 4 WX000XX D

Basic Series	
ISO 15407-1 18mm	HB
ISO 15407-1 26mm	HA*
ISO 5599-1 Size 1	H1*
ISO 5599-1 Size 2	H2*

* Must order remote pilot access plates for manifolds.

15407-1 Operator / Function	
Single remote pilot, 2-position - air return	3
Double remote pilot, 2-position	4
Double remote pilot, 3-position - APB	8
Double remote pilot, 3-position - CE	9
Double remote pilot, 3-position - PC	0
Single remote pilot, 2-position - air return, spring assist	F

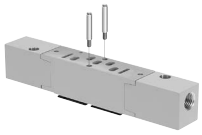
Remote Pilot Valve	
WX000XX	Remote pilot valve

Engineering Level	
A	15407 Current
D	5599 Current

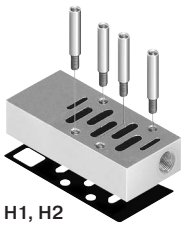
Note: *For manifolds, end plates, and accessories, see 15407-1 & 5599-1 Non Plug-in valve section.*

Note: *HB 18mm Valve Remote Pilot Option only available with PL02 Individual Subbase Kits.*

Remote Pilot Access Plate Kit



HA



H1, H2

Size	Port Size	NPT	BSPP "G"
HA	1/4"	**PS551500P**	**PS551501P**
H1	1/8"	**PS401500CP**	**PS401501CP**
H2	1/8"	**PS411500CP**	**PS411501CP**

Kit includes: Pilot port access plate, gasket and mounting studs.

☐ Most popular.

Manifold Kit - Universal Non Plug-in

PSHU1153 0 1 P

Mounting Style / Port Size	
HB manifold with 1/8 NPT end ports	**PSHU1151**
HB manifold with 1/8 BSPP end ports	PSHU1152*
HA manifold with 1/4 NPT end ports	**PSHU1153**
HA manifold with 1/4 BSPP end ports	PSHU1154*
H1 manifold with 3/8 NPT end ports	**PSHU1155**
H1 manifold with 3/8 BSPP end ports	PSHU1156*
H2 manifold with 1/2 NPT end ports	**PSHU1157**
H2 manifold with 1/2 BSPP end ports	PSHU1158*

* BSPP conforms to ISO 1179-1 w 228-1 threads.

	Gasket Options
1	**1,3,5 ports open and pilots open**
2	1,3,5 ports closed and pilots open
3	1 closed, 3,5 ports open and pilots closed
4	1 port open, 3,5 ports closed and pilots open
5	1,3,5 ports open and pilots closed
6	1,3,5 ports closed and pilots closed
7	1 closed, 3,5 ports open and pilots closed
8	1 port open, 3,5 ports closed and pilots open

Circuit Board Address Configuration	
0	**No interconnect**

HA manifold

Intermediate Air Supply - Universal Non Plug-in

PSHU115A 0 1 P

Mounting Style / Port Size	
Intermediate air supply, NPT / internal pilot	**PSHU115A**
Intermediate air supply, BSPP / internal pilot	PSHU115B*
Intermediate air supply, NPT / external pilot	**PSHU115C**
Intermediate air supply, BSPP / external pilot	PSHU115D*

* BSPP Conforms to ISO 1179-1 w 228-1 Threads.

	Gasket Options
1	**1,3,5 ports open and pilots open**
2	1,3,5 ports closed and pilots open
3	1 closed, 3,5 ports open and pilots closed
4	1 port open, 3,5 ports closed and pilots open
5	1,3,5 ports open and pilots closed
6	1,3,5 ports closed and pilots closed
7	1 closed, 3,5 ports open and pilots closed
8	1 port open, 3,5 ports closed and pilots open

Circuit Board Address Configuration	
0	**No electrical**

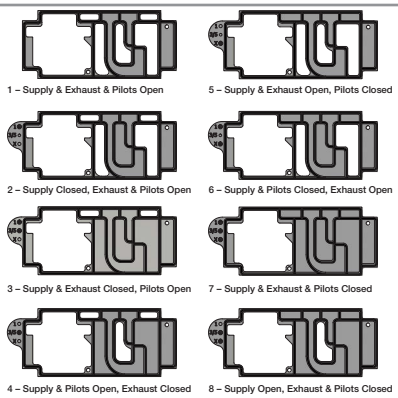
Intermediate air supply

☐ Most popular.

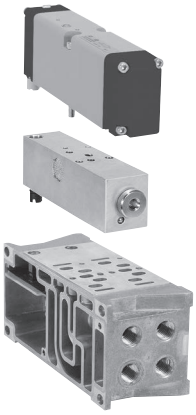
Pneumatic Zoning

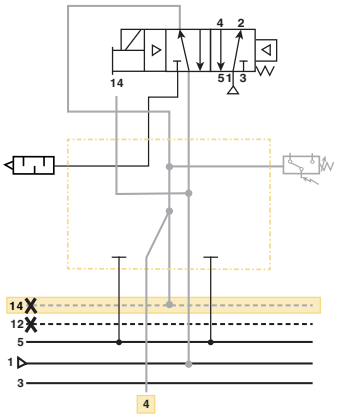
Multiple pressure zones can be created by selecting alternative gaskets between individual manifold segments or an intermediate air supply module. These zones can be designed to meet different application and safety requirements on the machine. Inserting the PXM Pilot Exhaust Module into a one of these zones allows control of pilot pressure for the entire zone.

Gasket Kit - Universal Manifold to Manifold

	Description		Part Number
	Pilots opened	1 – Supply & Exhaust & Pilots Open	**PSHU11P**
		2 – Supply Closed, Exhaust & Pilots Open	**PSHU12P**
		3 – Supply & Exhaust Closed, Pilots Open	**PSHU13P**
		4 – Supply & Pilots Open, Exhaust Closed	**PSHU14P**
	Pilots blocked	5 – Supply & Exhaust Open, Pilots Closed	**PSHU15P**
		6 – Supply & Pilots Closed, Exhaust Open	**PSHU16P**
		7 – Supply & Exhaust & Pilots Closed	**PSHU17P**
		8 – Supply Open, Exhaust & Pilots Closed	**PSHU18P**

Pilot Exhaust Module



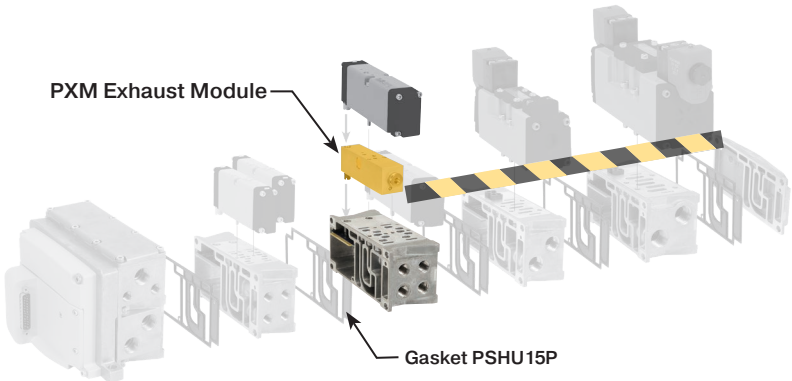


PXM Pilot Exhaust Module enables an H Series HA Single Solenoid valve to control the pilot pressure to other externally piloted H Series ISO valves in the same manifold zone. The HA valve in conjunction with the PXM will remove pilot pressure to all externally piloted valves in the manifold zone when solenoid 14 is de-energized (off). Control of all externally piloted valves in the zone is disabled for both solenoid actuation and manual override until solenoid 14 of the HA valve on the PXM is energized again (on).

Gaskets blocking pilot pressure are required at the start of the zone the PXM is controlling. Special zoning gaskets (shown below) are available to meet any application requirement. In the example below, main pressure and exhaust pass through to the second zone, but pilot pressure is blocked. This results in the PXM providing pilot pressure for the zone after this gasket.

Part Number	Sensor Type
PS55XXA0P	No sensing
PS55XXM0P	Mechanical pressure switch
PS55XXE0P	Solid state pressure switch
Part Number	**Cable Type**
RKC4.4T-2	M12 cable, PVC, 2m

PS55XXA0P **PS55XXM0P** **PS55XXE0P**



Sandwich Regulator - Non Plug-in, 15407-1

PS5637 | 1 | 6 | 6 | P

Basic Series	
HB 15407-1, 18mm, Non Plug-In	PS5637
HA 15407-1, 26mm, Non Plug-In	PS5537

Regulator Function	
Common Pressure Regulator	1
Independent Pressure Regulator	2

#2 Port Regulator / Gauge*	
5	2-60 PSIG w/Gauge
6	**5-125 PSIG w/Gauge**

* For Common Pressure Regulator Option, Regulator Gauge callout must be the same number for both Port #4 and Port #2. (Example: 166)

#4 Port Regulator / Gauge*	
5	2-60 PSIG w/Gauge
6	**5-125 PSIG w/Gauge**

* For Common Pressure Regulator Option, Regulator Gauge callout must be the same number for both Port #4 and Port #2. (Example: 166)

HB - 18mm
(Independent Dual Port Regulator shown)

HA - 26mm
(Common Port Regulator shown)

Ordering Components
- *Manifold or Subbase Kit required.*
- *Sandwich Regulator Kit configured for Internal Pilot as standard.*
- *Order valve as External Pilot.*

How to Configure Sandwich Regulator / Valve Combinations

Internal Pilot Configuration of Sandwich Regulator HA, HB
Pressure in Base Port 1 feeds regulator configured for Internal Pilot which feeds valve configured for External Pilot.

	Accessories	Description	Part Number
	Gauge adapter kit	Includes 1/8" coupling, long nipple, and gauge	**PS5651160P**

Sandwich Regulator Cv Flow Chart*

	Common Pressure Code 166				Dual Pressure Code 266			
	1-2	1-4	2-3	4-5	1-2	1-4	2-3	4-5*
HB	0.20	0.20	0.41	0.34	0.23	0.19	0.28	0.27
HA	0.41	0.43	0.87	0.89	0.42	0.45	0.68	0.66

* Regulator Port exhaust through Base Port 3.
Note: All Cv's calculated with regulator adjusted full open.

Sandwich Regulator - Non Plug-in, 5599-1

PS4037 1 6 6 C P

Basic Series	
H1 5599-1, Non Plug-in	PS4037
H2 5599-1, Non Plug-in	PS4137

Regulator Function	
Common Pressure Regulator	1
Independent Pressure Regulator	2

#2 Port Regulator / Gauge*	
0**	Line By-Pass Plate
4	1-30 PSIG w/Gauge
5	2-60 PSIG w/Gauge
6	5-125 PSIG w/Gauge
D	Remote Pilot ISO 2 & 3 only

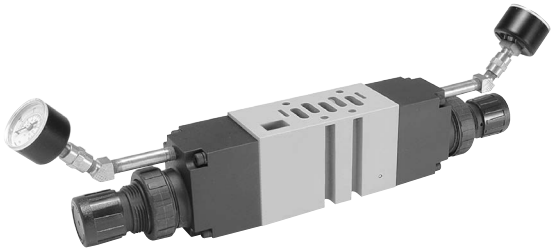
* For common pressure regulator option, regulator gauge callout must be the same number for both Port #4 and Port #2. (Example: 166)
** Pressure Line by-pass option can only be used with independent pressure regulators.

#4 Port Regulator / Gauge*	
0**	Line By-Pass Plate
4	1-30 PSIG w/Gauge
5	2-60 PSIG w/Gauge
6	5-125 PSIG w/Gauge
D	Remote Pilot ISO 2 & 3 only

* For common pressure regulator option, regulator gauge callout must be the same number for both Port #4 and Port #2. (Example: 166)
** Pressure Line by-pass option can only be used with independent pressure regulators.

Ordering Components
- *Sandwich regulator kit configured for internal pilot as standard.*
- *Order valve as external pilot.*

H1 - Size 1
(Independent Dual Port Regulator shown)



H2 - Size 2
(Independent Dual Port Regulator shown)

How to Configure Sandwich Regulator / Valve Combinations

Internal Pilot Configuration of Sandwich Regulator H1 & H2
Pressure in Base Port 1 feeds regulator configured for Internal Pilot which feeds valve configured for External Pilot.

External Pilot Configuration of Sandwich Regulator H1 & H2
An External Pilot pressure in Port 12 or 14 of the base feeds thru the Sandwich Regulator 12 or 14 galley directly to the 12/14 pilot of the valve. This configuration takes an External Pilot from the 12 port of the base and passes it thru the regulator to feed the 12 galley of the valve.

Sandwich Regulator Cv Flow Chart*

	Common Pressure Code 166				Single Pressure 2 Code 206				Single Pressure 4 Code 260				Dual Pressure Code 266			
	1-2	1-4	2-3	4-5	1-2	1-4	2-3	4-5*	1-2	1-4	2-3	4-5*	1-2	1-4	2-3	4-5*
H1	0.62	0.61	1.28	1.18	0.73	0.96	0.96	0.93	0.34	0.70	0.94	0.98	0.52	0.48	0.86	0.88
H2	1.47	1.60	2.41	2.33	1.71	1.90	1.52	1.75	1.74	1.67	1.73	1.79	1.61	1.62	1.50	1.67

* Regulator Port exhaust through Base Port 3.

Note: All Cv's calculated with regulator adjusted full open.

Most popular.

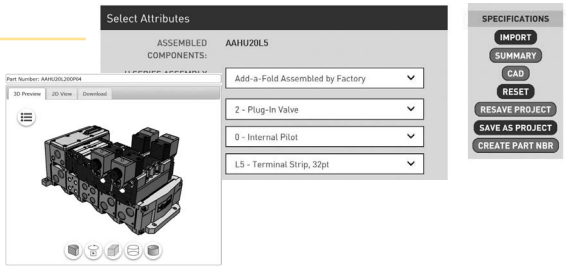
Online Configuration

Navigate to the landing page
www.parker.com/pdn/HSeriesISO

Customize your manifold assembly

Create and save a unique assembled part number

Generate a CAD model



Add-A-Fold - Universal Non Plug-in

AAHU31 L0 0 0 P 06

Valve Type	
Non plug-in (internal)	**AAHU31**
Non plug-in (external)	AAHU3X

Left Hand End Plate Type	
No connector, non plug-in	**L0**

Right Hand End Plate Type / Port	
Low profile (no ports)	**0**
1/2 Exhaust and inlet port	1
3/4 Exhaust and inlet port	2
H3 Transition plate, 1" exhaust and inlet	5*

* 1, 3 & 5 manifold galley blocked at transition plate. 12 & 14 pass through.

Thread Type	
0	**NPT**
1*	BSPP "G"

* BSPP conforms to ISO 1179-1 w 228-1 threads

Number of Segments
01
↓
32

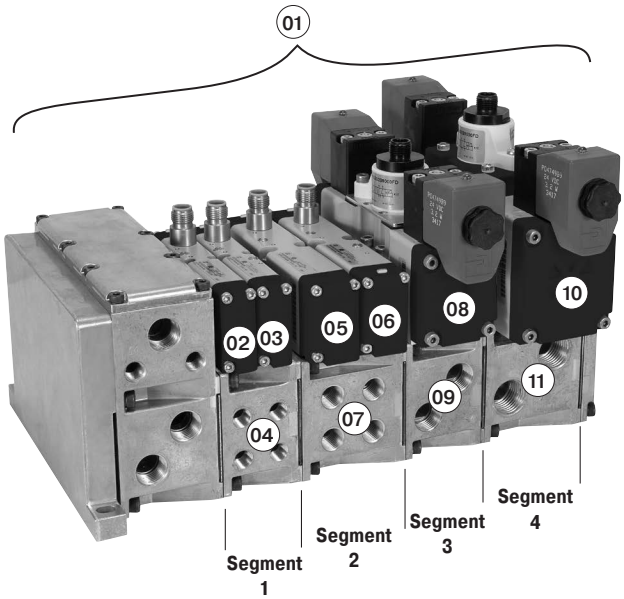
How To Order Plug-in Add-A-Fold Assemblies

1. List Add-A-Fold Assembly call out. This automatically includes the end plate kit assembly.
2. List complete valve, regulator, flow control and manifold base kit. List left to right, looking at the cylinder ports on the #12 end of the manifold. The left most segment is segment 1. (If a blank station is needed, list the blanking plate part number and the individual manifold part numbers for the required segment.)

Example

Application requires a 4 segment manifold.

Item	Part No.	Location	
01	AAHU31L000P04		
02	HB2WXBG2G9000FA	Segment 1	Valve station 1
03	HB2WXBG2G9000FA		Valve station 2
04	PSHU115101P		Manifold base
05	HA1WXBG2G9000FA	Segment 2	Valve station 3
06	HA2WXBG2G9000FA		Valve station 4
07	PSHU115301P		Manifold base
08	H12WXBG2B9000FD	Segment 3	Valve station 5
09	PSHU115501P		Manifold base
10	22WXBG2B9000FD	Segment 4	Valve station 6
11	PSHU115701P		Manifold base



Example:
4 segment manifold with (2) HB, (2) HA, (1) H1, and (1) H2 valve on manifold bases with low profile, NPT end plate.

Most popular.

Subbase Kit - Non Plug-in

HA non plug-in subbase shown

PS55 1113 0 P

Series	
HA Subbase	PS55
H1 Subbase	PS40
H2 Subbase	PS41

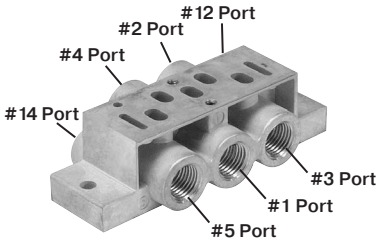
Mounting Style / Port Size	
HA Series	
1/4 NPT side ports	**1113**
1/4 BSPP side ports	1114*
1/4 NPT bottom / side ports	1123
1/4 BSPP bottom / side ports	1124*
H1 Series	
3/8 NPT side ports	**1115**
3/8 BSPP side ports	1116*
H2 Series	
1/2 NPT side ports	**1117**
1/2 BSPP side ports	1118*

* BSPP conforms to ISO 1179-1 w 228-1 threads.

Enclosures / Lead Length	
0	None, No Electrical Plug

Engineering Level	
Blank	HA Series
D	H1 Series
C	H2 Series

HB Series ISO 15407-1 Size 18mm (HB) Single Subbase

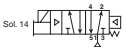
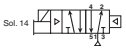
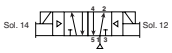
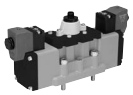
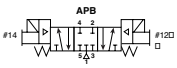
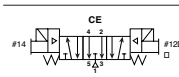
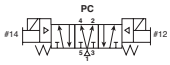
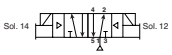
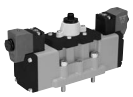
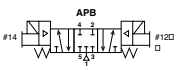
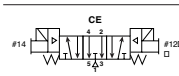
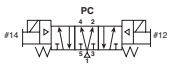


Side ported base
18mm DX02 / HB

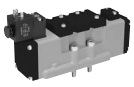
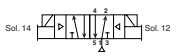
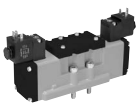
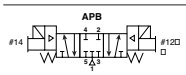
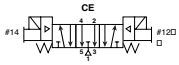
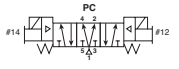
1/8" NPT	1/8" BSPP
PL02-01-80	**PL02-01-70**

Note: Can be used for external, single, or double remote pilot.

Valve with Central Connectors - 5599-1, Non Plug-in, Size 3 (H3)

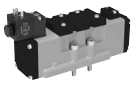
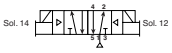
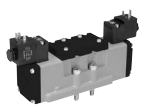
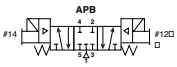
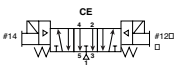
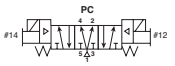
Symbol	Type	Cv	Operator	Voltage	Pilot	Non-locking	Locking
4-Pin Central M12 Connector, 24 VDC							
	4-way, 2-position, spring return	6.0	Single solenoid	24 VDC	Internal	**H3EWXBG2B9000FD**	**H3EWXBH2B9000FD**
					External	**H3EWXXG2B9000FD**	**H3EWXXH2B9000FD**
	4-way, 2-position, air return	6.0	Single solenoid	24 VDC	Internal	**H31WXBG2B9000FD**	**H31WXBH2B9000FD**
					External	**H31WXXG2B9000FD**	**H31WXXH2B9000FD**
	4-way, 2-position	6.0	Double solenoid	24 VDC	Internal	**H32WXBG2B9000FD**	**H32WXBH2B9000FD**
					External	**H32WXXG2B9000FD**	**H32WXXH2B9000FD**
 	4-way, 3-position, all ports blocked	5.0	Double solenoid	24 VDC	Internal	**H35WXBG2B9000FD**	**H35WXBH2B9000FD**
					External	**H35WXXG2B9000FD**	**H35WXXH2B9000FD**
	4-way, 3-position, center exhaust	5.0	Double solenoid	24 VDC	Internal	**H36WXBG2B9000FD**	**H36WXBH2B9000FD**
					External	**H36WXXG2B9000FD**	**H36WXXH2B9000FD**
	4-way, 3-position, pressure center	5.0	Double solenoid	24 VDC	Internal	**H37WXBG2B9000FD**	**H37WXBH2B9000FD**
					External	**H37WXXG2B9000FD**	**H37WXXH2B9000FD**
5-Pin, Central 7/8" Mini Connector, 120 VAC							
	4-way, 2-position, spring return	6.0	Single solenoid	120 VAC	Internal	**H3EWXBG323000FD**	**H3EWXBH323000FD**
					External	**H3EWXXG323000FD**	**H3EWXXH323000FD**
	4-way, 2-position, air return	6.0	Single solenoid	120 VAC	Internal	**H31WXBG323000FD**	**H31WXBH323000FD**
					External	**H31WXXG323000FD**	**H31WXXH323000FD**
	4-way, 2-position	6.0	Double solenoid	120 VAC	Internal	**H32WXBG323000FD**	**H32WXBH323000FD**
					External	**H32WXXG323000FD**	**H32WXXH323000FD**
 	4-way, 3-position, all ports blocked	5.0	Double solenoid	120 VAC	Internal	**H35WXBG323000FD**	**H35WXBH323000FD**
					External	**H35WXXG323000FD**	**H35WXXH323000FD**
	4-way, 3-position, center exhaust	5.0	Double solenoid	120 VAC	Internal	**H36WXBG323000FD**	**H36WXBH323000FD**
					External	**H36WXXG323000FD**	**H36WXXH323000FD**
	4-way, 3-position, pressure center	5.0	Double solenoid	120 VAC	Internal	**H37WXBG323000FD**	**H37WXBH323000FD**
					External	**H37WXXG323000FD**	**H37WXXH323000FD**

Valve with 3-Pin DIN Connectors - 5599-1, Non Plug-in, Size 3 (H3)

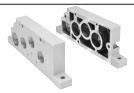
Symbol	Type	Cv	Operator	Voltage	Pilot	Non-locking	Locking
3-Pin DIN Connector on Coil, 24 VDC							
	4-way, 2-position, spring return	6.0	Single solenoid	24 VDC	Internal	**H3EWXBBL49D**	**H3EWXBCL49D**
					External	**H3EWXXBL49D**	**H3EWXXCL49D**
	4-way, 2-position, air return	6.0	Single solenoid	24 VDC	Internal	**H31WXBBL49D**	**H31WXBCL49D**
					External	**H31WXXBL49D**	**H31WXXCL49D**
	4-way, 2-position	6.0	Double solenoid	24 VDC	Internal	**H32WXBBL49D**	**H32WXBCL49D**
					External	**H32WXXBL49D**	**H32WXXCL49D**
 	4-way, 3-position, all ports blocked	5.0	Double solenoid	24 VDC	Internal	**H35WXBBL49D**	**H35WXBCL49D**
					External	**H35WXXBL49D**	**H35WXXCL49D**
	4-way, 3-position, center exhaust	5.0	Double solenoid	24 VDC	Internal	**H36WXBBL49D**	**H36WXBCL49D**
					External	**H36WXXBL49D**	**H36WXXCL49D**
	4-way, 3-position, pressure center	5.0	Double solenoid	24 VDC	Internal	**H37WXBBL49D**	**H37WXBCL49D**
					External	**H37WXXBL49D**	**H37WXXCL49D**

Most popular.

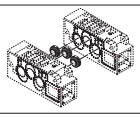
Valve with 3-Pin DIN Connectors - 5599-1, Non Plug-in, Size 3 (H3)

Symbol	Type	Cv	Operator	Voltage	Pilot	Non-locking	Locking
3-Pin DIN Connector on Coil, 120 VDC							
	4-way, 2-position, spring return	6.0	Single solenoid	120 VAC	Internal	**H3EWXBBL53D**	**H3EWXBCL53D**
					External	**H3EWXXBL53D**	**H3EWXXCL53D**
	4-way, 2-position, air return	6.0	Single solenoid	120 VAC	Internal	**H31WXBBL53D**	**H31WXBCL53D**
					External	**H31WXXBL53D**	**H31WXXCL53D**
	4-way, 2-position	6.0	Double solenoid	120 VAC	Internal	**H32WXBBL53D**	**H32WXBCL53D**
					External	**H32WXXBL53D**	**H32WXXCL53D**
 	4-way, 3-position, all ports blocked	5.0	Double solenoid	120 VAC	Internal	**H35WXBBL53D**	**H35WXBCL53D**
					External	**H35WXXBL53D**	**H35WXXCL53D**
	4-way, 3-position, center exhaust	5.0	Double solenoid	120 VAC	Internal	**H36WXBBL53D**	**H36WXBCL53D**
					External	**H36WXXBL53D**	**H36WXXCL53D**
	4-way, 3-position, pressure center	5.0	Double solenoid	120 VAC	Internal	**H37WXBBL53D**	**H37WXBCL53D**
					External	**H37WXXBL53D**	**H37WXXCL53D**

Base / End Plate - 5599-1, Non Plug-in, Size 3 (H3) * Not compatible with H Universal

	Description	NPT	BSPP
Single subbase	Side ported base, 3/4" port	**PS4211190CP**	**PS4211100CP**
Manifold base	End ported bases	**PS4211590CP**	**PS4211500CP**
	Bottom / end ported bases	**PS4211690CP**	**PS4211600CP**
	Note: Manifolds include 2 pipe plugs		
 End plate	End plate - non-collective wiring	**PS4231010DP**	**PS4231011DP**

Accessories - 5599-1, Non Plug-in, Size 3 (H3)

	Accessory	Description		Part number
	Sandwich regulator	Common pressure	5-125 PSIG w/ gauge	**PS4237166CP**
		Independent pressure	5-125 PSIG w/ gauge	**PS4237266CP**
	Blanking plate kit			**PS4234CP**
	Sandwich flow control			**PS4242CP**
	Sandwich Flow Control and Common Port Sandwich Regulator may be sandwiched together on a manifold or subbase. The Sandwich Flow Control MUST be located between the manifold/subbase and the Common Port Sandwich Regulator. Do not use with Independent Port Sandwich Regualtors.			
	Manifold to manifold gasket kits			**PS4213P**
	Manifold port isolation kit	Main galley (1, 3, 5)		**PS4232CP**
	Manifold port isolation kit	Pilot galley (12, 14)		**PS4033CP**

Most popular.

Valve Central Connector - Non Plug-in, 5599-1, Size 3 (H3)

H3 E WX B G 2B9 000F D

Basic Series 5599-1	
ISO 5599-1 Size 3	H3

5599 -1 Engineering Level	
D	Current

5599-1 Operator / Function	
Single solenoid, 2-position - air return	1
Double solenoid, 2-position	2
Double solenoid, 3-position - APB	5
Double solenoid, 3-position - CE	6
Double solenoid, 3-position - PC	7
Single solenoid, 2-position - air return, spring assist	E

5599-1 Central Connector Wiring Options	
000C	Chrysler
000F*	SAE / Ford, ISO 20401
000G	General Motors

* Complies to ISO 20401 with Enclosure Lead Length "2".

5599-1 Mounting	
Valve less base	WX

5599-1 Pilot Source / Pilot Exhaust	
Internal pilot, port #1 / vented	B
External pilot, port #12 or #14 / vented	X*

* Must be specified when using Sandwich Regulators.

5599-1 Overrides / Lights	
Non-locking, flush, with light	G
Locking, flush, with light	H

Enclosure / Lead length / Voltage*	AC 60Hz	AC 50Hz	DC	
1B9†			24	3-pin, central mini connector, 3.2 watt
1F9†+			24	3-pin, central mini connector, 1.3 watt
123†	120	115		3-pin, central mini connector
2B9			**24**	**4-pin, central M12 connector, 3.2 watt**
2F9+			**24**	**4-pin, central M12 connector, 1.3 watt**
3B9			24	5-pin, central mini connector, 3.2 watt
3F9+			24	5-pin, central mini connector, 1.3 watt
323	120	115		5-pin, central mini connector
619‡			24	2-pin, M12 connector on coil

* All coils include LED & suppression
† Operator function "1" or "E"
‡ Only available with wiring option "000F"
+ Override "G" only.

Valve CNOMO - Non Plug-in, 5599-1 Size 3 (H3)

H3 E WX B G L53 D

Basic Series 5599-1	
ISO 5599-1 Size 3	H3

5599-1 Engineering Level	
D	Current

5599-1 Operator / Function	
Single solenoid, 2-position - air return	1
Double solenoid, 2-position	2
Double solenoid, 3-position - APB	5
Double solenoid, 3-position - CE	6
Double solenoid, 3-position - PC	7
Single solenoid, 2-position - air return, spring assist	E

Enclosure / Lead Length / Voltage	AC 60Hz	AC 50Hz	DC	
L42	24			3-pin, 30mm DIN 43650A with CNOMO connector
L45			12	3-pin, 30mm DIN 43650A with CNOMO connector
L49			**24**	**3-pin, 30mm DIN 43650A with CNOMO connector**
L53	**120**	**115**		**3-pin, 30mm DIN 43650A with CNOMO connector**
L57	240			3-pin, 30mm DIN 43650A with CNOMO connector
NXX				Valve less coil

5599-1 Mounting	
Valve less base	WX

5599-1 Pilot Source / Pilot Exhaust	
Internal pilot, port #1 / vented	B
External pilot, port #12 or #14 / vented	X*

* Must be specified when using Sandwich Regulators.

5599-1 Overrides / Lights	
B	Non-locking, flush, push - no light
C	Locking, flush, push / turn - no light

☐ Most popular.

Remote Pilot - Size 3 (H3)

H3 4 WX000XX D

Basic Series	
ISO 5599-1 Size 3	H3*

* Must Order Remote Pilot Access Plates for Manifolds.

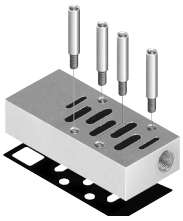
15407-1 Operator / Function	
Single remote pilot, 2-position - air return	**3**
Double remote pilot, 2-position	**4**
Double remote pilot, 3-position - APB	**8**
Double remote pilot, 3-position - CE	9
Double remote pilot, 3-position - PC	0
Single remote pilot, 2-position - air return, spring assist	F

Remote Pilot Valve	
WX000XX	Remote pilot valve

Engineering Level	
D	5599 Current

Note: For manifolds, end plates, and accessories, see 5599-1 Non Plug-in valve section.

Remote Pilot Access Plate Kits



Size	Port Size	NPT	BSPP "G"
H3	1/8"	**PS421500CP**	**PS421501CP**

Kit includes: Pilot Port Access Plate, Gasket and Mounting Studs.

Most popular.

Manifold / Subbase Kit - Non Plug-in, 5599-1, Size 3 (H3)

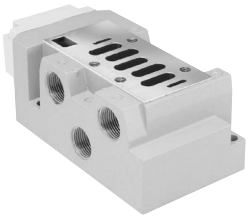
PS421159 0 C P

Mounting Base Style / Port Size	
Subbase: 3/4 NPT side ports	**PS421119**
Subbase: 3/4 BSPP side port	PS421110*
Manifold: 3/4 NPT End port	**PS421159**
Manifold: 3/4 BSPP end port	PS421150*
Manifold: 3/4 NPT bottom / end port	PS421169
Manifold: 3/4 BSPP bottom / end port	PS421160*

* BSPP conforms to ISO 1179-1 w 228-1 threads.

Engineering Level	
C	H3

Enclosures / Lead Length	
0	None, No Electrical Plug - 5599-1



H3 Subbase shown

H3 Manifold shown

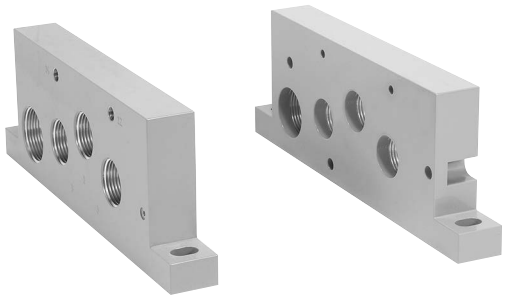
End Plate Kit - Non plug-in, 5599-1 * Not compatible with H Universal

PS423101 0 D P

Basic Series	
ISO 5599, Size 3	PS423101

Thread Type	
0	NPT
1*	BSPP "G"

* BSPP conforms to ISO 1179-1 w 228-1 threads.



H3 Non-Collective Wiring End Plates

Most popular.

Add-A-Fold Assembly - Non Plug-in, 5599-1, Size 3 (H3) * Not compatible with H Universal

AA H3 S 0 03

Valve Series	
Right & left end plate	H3

End Plate Type	
Standard - non-collective wiring	S

Thread Type	
0	NPT

Number of Segments
01
↓
32

How To Order Non Plug-in Add-A-Fold Assemblies

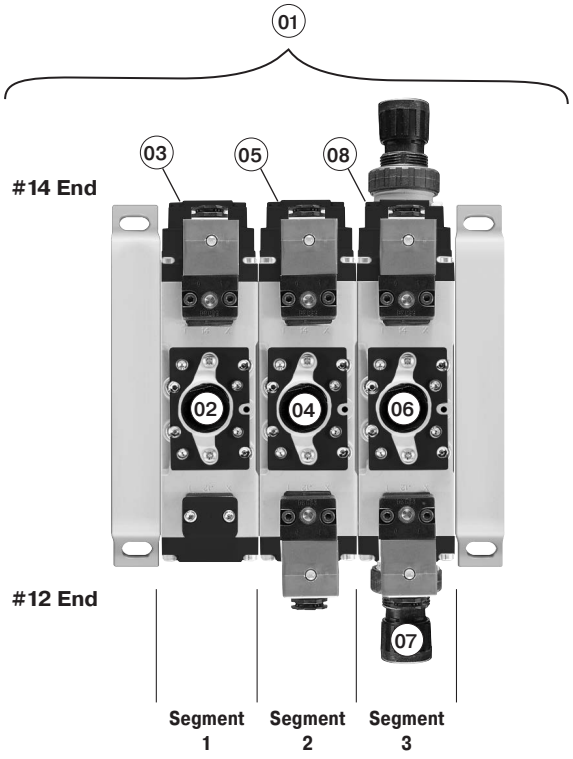
1. List Add-A-Fold Assembly call out. This automatically includes the end plate kit assembly.
2. List complete valve, regulator, flow control and manifold base kit. List left to right, looking at the cylinder ports on the #12 end of the manifold. The left most segment is segment 1. (If a blank station is needed, list the blanking plate part number and the individual manifold part numbers for the required segment.)

Example

Application requires a 3 segment manifold and regulator on segment 3.

Item	Part No.	Location	
01	AAH3S003		
02	H31WXBG2B9000FD	Segment 1	Valve station 1
03	PS4211590CP		Manifold base
04	H32WXBG2B9000FD	Segment 2	Valve station 2
05	PS4211590CP		Manifold base
06	H32WXXG2B9000FD	Segment 3	Valve station 3
07	PS4237166CP		Sandwich regulator
08	PS4211590CP		Manifold base

NOTE: Construct manifold assemblies from left to right while looking at the cylinder ports. Valves must be ordered as External Pilot when using Sandwich Regulator.



Example:
3 segment manifold with (3) H3 valves on manifold bases and regulator at segment 3.

Most popular.

Sandwich Regulator - Non Plug-in, 5599-1, Size 3 (H3)

PS4237 | 1 | 6 | 6 | C | P

Basic Series	
H3 5599-1, Non Plug-in	PS4237

Regulator Function	
Common Pressure Regulator	1
Independent Pressure Regulator	2

#2 Port Regulator / Gauge*	
0**	Line By-Pass Plate
4	1-30 PSIG w/Gauge
5	2-60 PSIG w/Gauge
6	5-125 PSIG w/Gauge
D	Remote Pilot ISO 2 & 3 only

* For common pressure regulator option, regulator gauge callout must be the same number for both Port #4 and Port #2. (Example: 166)
** Pressure line by-pass option can only be used with independent pressure regulators.

#4 Port Regulator / Gauge*	
0**	Line By-Pass Plate
4	1-30 PSIG w/Gauge
5	2-60 PSIG w/Gauge
6	5-125 PSIG w/Gauge
D	Remote Pilot ISO 2 & 3 only

* For common pressure regulator option, regulator gauge callout must be the same number for both Port #4 and Port #2. (Example: 166)
** Pressure line by-pass option can only be used with independent pressure regulators.

Ordering Components
- *Sandwich regulator kit configured for internal pilot as standard.*
- *Order valve as external pilot.*

How to Configure Sandwich Regulator / Valve Combinations

Internal Pilot Configuration of Sandwich Regulator H3
Pressure in Base Port 1 feeds regulator configured for Internal Pilot which feeds valve configured for External Pilot.

External Pilot Configuration of Sandwich Regulator H3
An External Pilot pressure in Port 12 or 14 of the base feeds thru the Sandwich Regulator 12 or 14 galley directly to the 12/14 pilot of the valve. This configuration takes an External Pilot from the 12 port of the base and passes it thru the regulator to feed the 12 galley of the valve.

Note: Do not use Independent Port Sandwich Regulators with Sandwich Flow Controls.
Independent Port Sandwich Port Regulators combine the #3 and #5 valve exhaust ports into the #5 exhaust at the manifold/subbase interface. The #3 port flow control will control both #3 and #5 exhaust. #5 port flow control is ineffective.

Sandwich Regulator Cv Flow Chart*

	Common Pressure Code 166				Single Pressure 2 Code 206				Single Pressure 4 Code 260				Dual Pressure Code 266			
	1-2	1-4	2-3	4-5	1-2	1-4	2-3	4-5*	1-2	1-4	2-3	4-5*	1-2	1-4	2-3	4-5*
H3	2.37	2.39	4.30	4.47	2.37	2.81	2.75	3.01	2.65	2.59	2.68	2.74	2.43	2.41	3.16	3.04

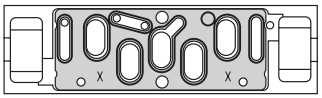
* Regulator Port exhaust through Base Port 3.

Note: All Cv's calculated with regulator adjusted full open.

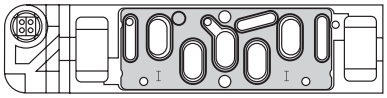
Most popular.

ISO Pneumatic Valve Standard Definitions

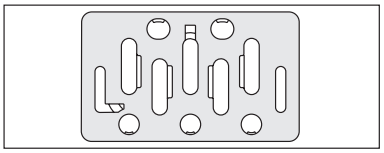
15407-1: Non-Plug-in Standards for Size 01 (26mm) & Size 02 (18mm) Wide Valves



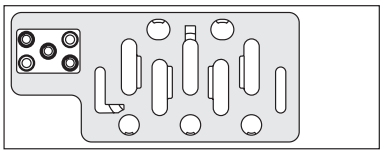
15407-2: Plug-in Standards for Size 01 (26mm) & Size 02 (18mm) Wide Valves



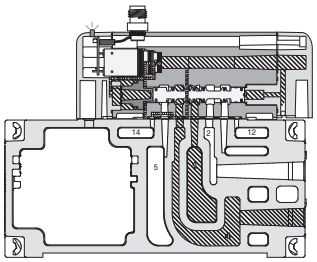
5599-1: Non-Plug-in Standards for Sizes 1, 2, 3



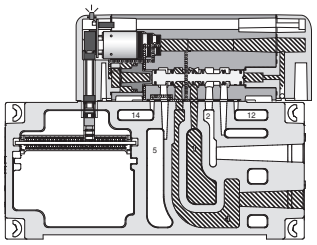
5599-2: Plug-in Standards for Size 1, 2, 3



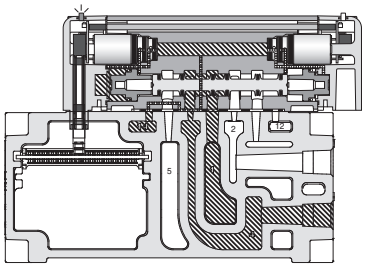
HB / HA Series



15407-1: 18mm Single Solenoid Internal Pilot Manifold Mounted



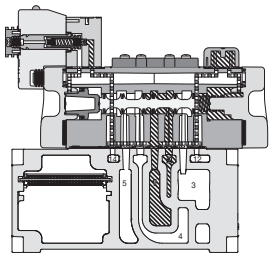
15407-2: 18mm Single Solenoid Internal Pilot Manifold Mounted



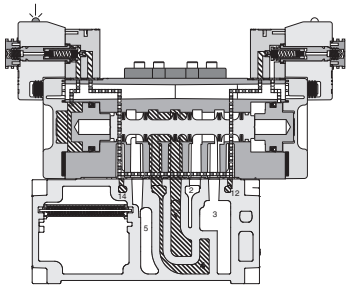
15407-2: 26mm Double Solenoid External Pilot Manifold Mounted

Pressure Exhaust

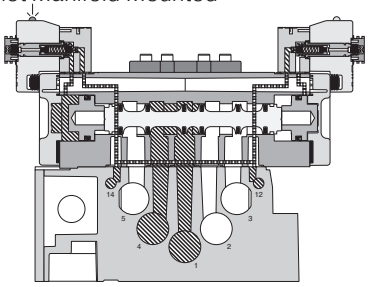
H1, H2, H3 Series



H1 5599-2: Single Solenoid Internal Pilot Manifold Mounted



H2 5599-2: Double Solenoid External Pilot Manifold Mounted

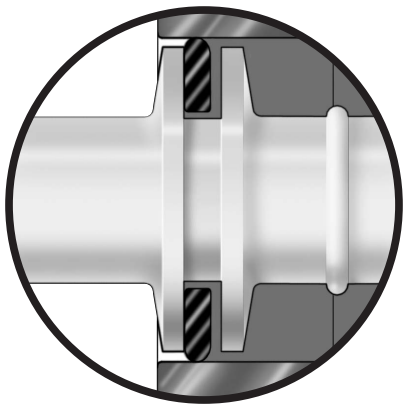


H3 5599-2: Double Solenoid External Pilot Subbase Mounted

Pressure Exhaust

Wear Compensation System

- Maximum Performance
  - Low Friction
  - Lower Operating Pressures
  - Fast Response
  - Less Wear
- Long Cycle Life - Under pressure, radial expansion of the seal occurs to maintain sealing contact with the valve bore.
- Non-Lube Service - No lubrication required for continuous valve shifting.
- Bi-Directional Spool Seals - Common spool used for any pressure, including vacuum.



Flow Rating (Cv)

Valve Size	Port Size	2-Position	3-Position
HB	1/8"	0.55 Cv, C = 1.5 Nl/s x bar, b = 0.25, Qn = 390 l/min, Qmax = 648 l/min	0.50 Cv, C = 1.4 Nl/s x bar, b = 0.25, Qn = 360 l/min, Qmax = 595 l/min
HA	1/4"	1.1 Cv, C = 3.6 Nl/s x bar, b = 0.30, Qn = 918 l/min, Qmax = 1518 l/min	1.0 Cv, C = 3.3 Nl/s x bar, b = 0.30, Qn = 845 l/min, Qmax = 1395 l/min
H1	3/8"	1.5 Cv, C = 5.0 Nl/s x bar, b = 0.30, Qn = 1248 l/min, Qmax = 2070 l/min	1.2 Cv, C = 4.1 Nl/s x bar, b = 0.30, Qn = 1000 l/min, Qmax = 1660 l/min
H2	1/2"	3.0 Cv, C = 9.7 Nl/s x bar, b = 0.35, Qn = 2520 l/min, Qmax = 4140 l/min	2.8 Cv, C = 9.0 Nl/s x bar, b = 0.35, Qn = 2340 l/min, Qmax = 3860 l/min
H3	3/4"	6.0 Cv, C = 18.7 Nl/s x bar, b = 0.35, Qn = 5022 l/min, Qmax = 7848 l/min	5.0 Cv, C = 15.4 Nl/s x bar, b = 0.35, Qn = 4185 l/min, Qmax = 6545 l/min

Cv tested per ANSI / (NFPA) T3.21.3 Flow tested According to ISO 6358.

Response Time** (ms)

Valve Size	Port Size	0 Cu. In. Chamber Fill	0 Cu. In. Chamber Exhaust	## Cu. In. Chamber Fill	## Cu. In. Chamber Exhaust
Single Solenoid 2-Position - Air Return / Spring Assist					
HB	1/8"	28	30	141	154
HA	1/4"	24	26	77	124
H1	3/8"	28	39	124	198
H2	1/2"	38	76	149	295
H3	3/4"	56	70	163	235
F9, 1.3 W Coil Only					
Single Solenoid 2-Position - Air Return / Spring Assist					
H1	3/8"	55	84	188	270
H2	1/2"	91	146	245	349
H3	3/4"	126	127	256	328

HB (12), HA (25), H1 (50), H2 (100), H3 (200)

** With 100 PSIG supply, time (ms) required to fill from 0 to 90 PSIG and Exhaust from 100 PSIG to 10 PSIG measured from the instant of energizing or de-energizing 24VDC solenoid.

Tested per ANSI / (NFPA) T3.21.8

Left End Plate Field Conversion

End plate kits and manifold assemblies are ordered as internal or single external pilot however field conversion is possible.

End Plate Configuration - Internal Pilot *

Insert 2 pipe plugs in locations A & B (1/8" NPT or G 1/8) as shown

Blocking off the pilot supply ports will configure the left end plate as internally piloted. Pilot pressure required to operate the H Series valves will be drawn from the supply or #1 port and no additional connections are required. Port locations C & D must be left unplugged for this option to function properly.

End Plate Configuration - Single External Pilot *

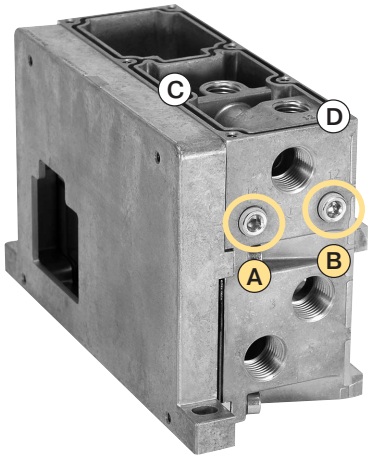
Insert 1 pipe plug into location C (1/4" NPT) as shown to configure the left end plate as single externally piloted.

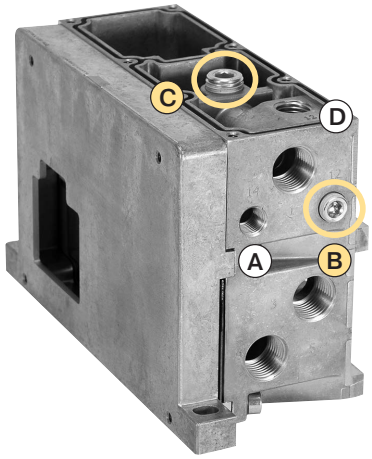
Pilot pressure required to operate the H Series valves must be supplied to the 14 port only at location A which is internally connected to the 12 pilot.

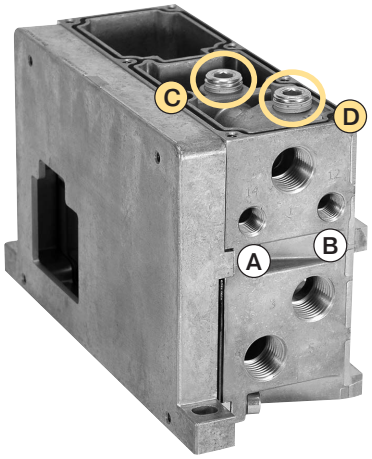
End Plate Configuration - Double External Pilot

Insert 2 pipe plugs in locations C & D (1/4" NPT) as shown to configure the left end plate as double externally piloted.

Pilot pressure required to operate the H Series valves must be supplied separately to both ports 14 and 12 (locations A and B).







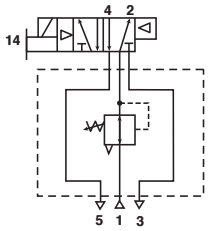
* Standard in catalog

Note: Left end plate shown with cover removed.

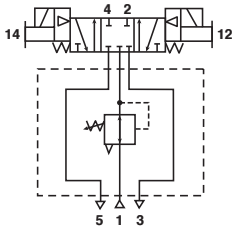
Common Port Regulation - Plug-in, HB & HA

Provides adjustable regulated air pressure to the valve's #1 port which gives the same pressure to both the #2 and #4 port of the manifold or subbase. The regulator is always on the 14 end of the valve.

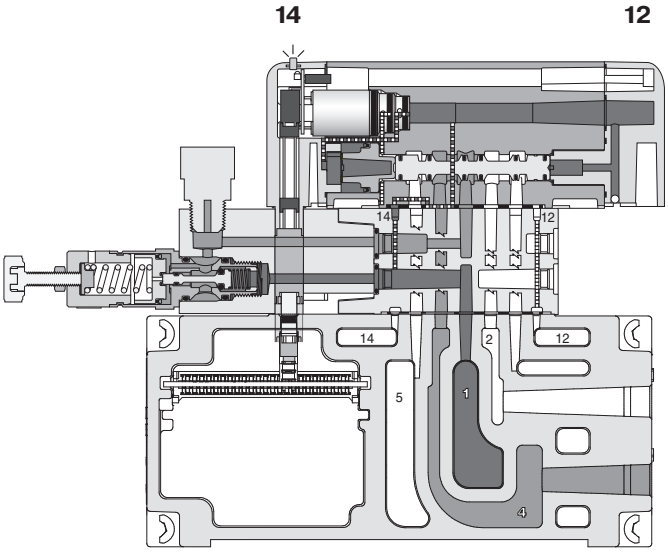
Common Port Regulator with 4-Way, 2-Position Single Solenoid Valve



Common Port Regulator with 4-Way, 3-Position APB Valve



HB Common Port Regulator Shown - Single Solenoid, 14 Energized

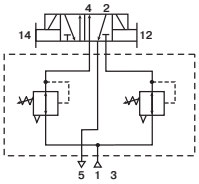


Independent Dual Port Regulation - Plug-in, HB & HA

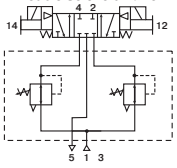
Dual Port Regulator

Provides regulated pressure to both ports. Pressure regulation can occur out of the #2 or #4 port of the valve.

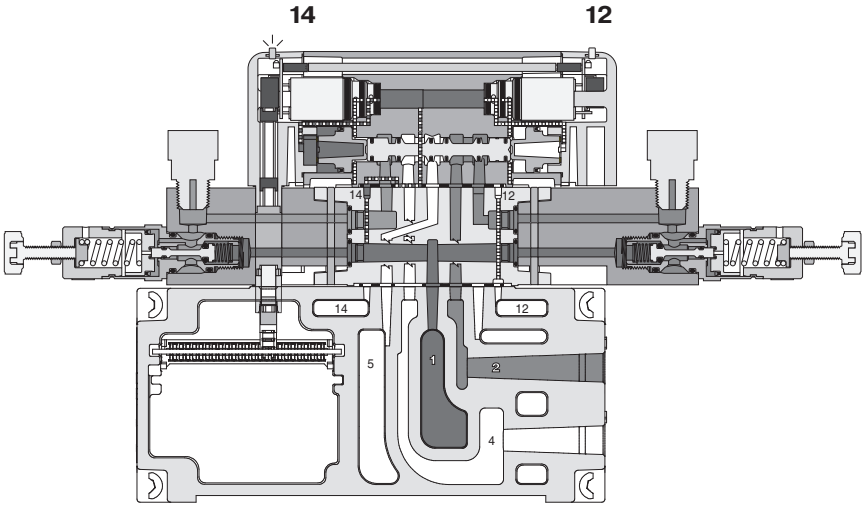
Independent Dual Port Regulator with 4-Way, 2-Position Double Solenoid Valve



Independent Dual Port Regulator with 4-Way, 3-Position Double Solenoid Valve



HB Independent Dual Port Regulator Shown - Double Solenoid, 14 Energized

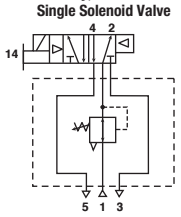


When using an Independent Pressure Sandwich Regulator, the cylinder outlet ports are reversed. The 12 end energizes the #4 port and the 14 end energizes the #2 port. The 3-Position CE and PC functions are also reversed. Do not use with Sandwich Flow Controls. Independent Port Sandwich Port Regulators combine the #3 and #5 valve exhaust ports into the #5 exhaust at the manifold/subbase interface. The #5 port flow control will control both #3 and #5 exhaust. #3 port flow control is ineffective. (See schematics above.)

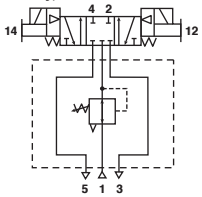
Common Port Regulation - Non Plug-in, HB & HA

Provides adjustable regulated air pressure to the valve's #1 port which gives the same pressure to both the #2 and #4 port of the manifold or subbase. The regulator is always on the 14 end of the valve.

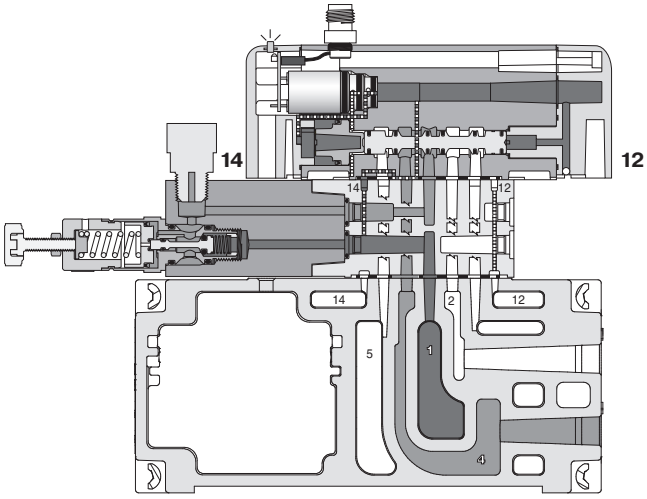
Common Port Regulator with 4-Way, 2-Position Single Solenoid Valve



Common Port Regulator with 4-Way, 3-Position APB Valve



HB Common Port Regulator Shown - Single Solenoid, 14 Energized

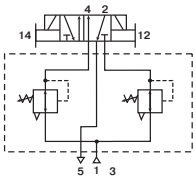


Independent Dual Port Regulation - Non Plug-in, HB & HA

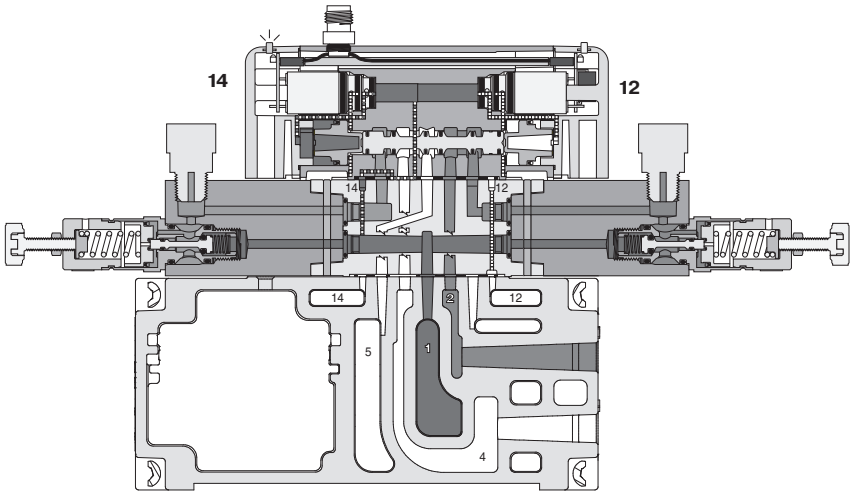
Dual Port Regulator

Provides regulated pressure to both ports. Pressure regulation can occur out of the #2 or #4 port of the valve.

Independent Dual Port Regulator with 4-Way, 2-Position Double Solenoid Valve



HB Independent Dual Port Regulator Shown - Double Solenoid, 14 Energized



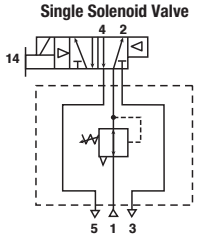
When using an Independent Pressure Sandwich Regulator, the cylinder outlet ports are reversed. The 12 end energizes the #4 port and the 14 end energizes the #2 port. The 3-Position CE and PC functions are also reversed. Do not use with Sandwich Flow Controls. Independent Port Sandwich Port Regulators combine the #3 and #5 valve exhaust ports into the #5 exhaust at the manifold/subbase interface. The #5 port flow control will control both #3 and #5 exhaust. #3 port flow control is ineffective. (See schematics on above.)

Most popular.

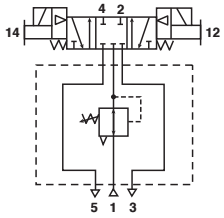
Common Port Regulation - Plug-in, H1, H2, H3

Provides adjustable regulated air pressure to the valve's #1 port which gives the same regulated pressure to both the #2 and #4 port of the manifold or subbase. The regulator is always on the 14 end of the valve.

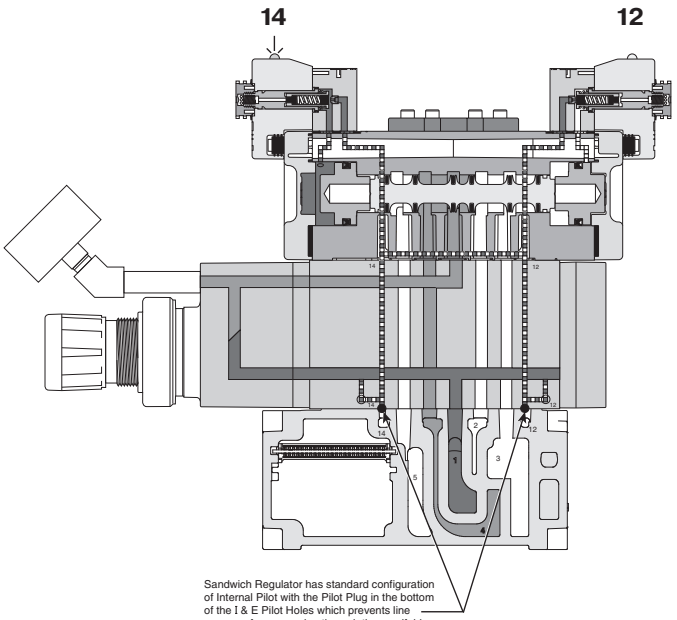
Common Port Regulator with 4-Way, 2-Position Single Solenoid Valve



Common Port Regulator with 4-Way, 3-Position APB Valve



H2 Common Port Regulator Shown - Double Solenoid, 14 Energized, Internal Pilot



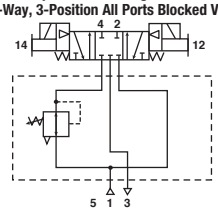
Sandwich Regulator has standard configuration of Internal Pilot with the Pilot Plug in the bottom of the I & E Pilot Holes which prevents line pressure from escaping through the manifold.

Independent Port Regulation - Plug-in, H1, H2, H3

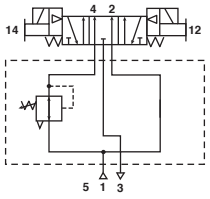
Single Port Regulator

Provides regulated pressure to one of the ports and full line pressure to the other by use of the Line Pressure By-Pass Plate. Pressure regulation can occur out of the #4 port of the valve.

Independent Port Regulator with 4-Way, 3-Position All Ports Blocked Valve

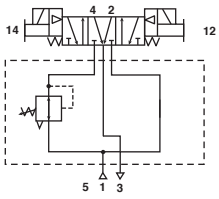


Independent Port Regulator with 4-Way, 3-Position, Inlet to Cylinder Function



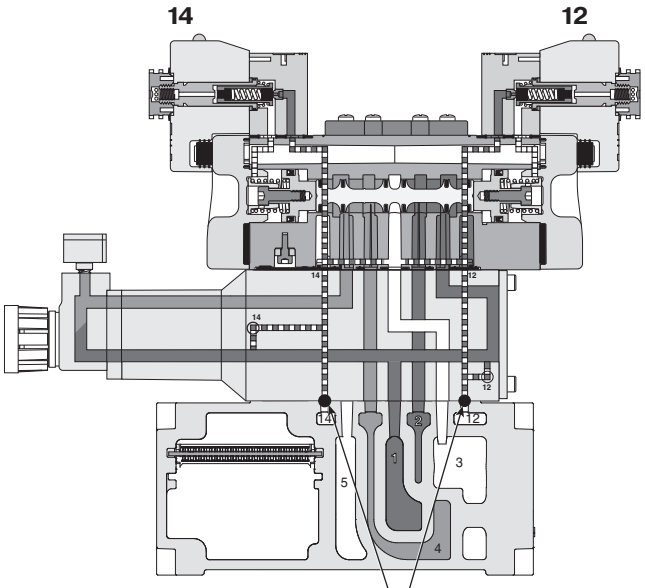
⚠ CAUTION: Requires 4-Way, 3-Position, Cylinder to Exhaust Valve

Independent Port Regulator with 4-Way, 3-Position, Cylinder to Exhaust Function



⚠ CAUTION: Requires 4-Way, 3-Position, Inlet to Cylinder Valve

H1 Independent Port Regulator Shown - Double Solenoid, De-energized, Internal Pilot



Sandwich Regulator has standard configuration of Internal Pilot with the Pilot Plug in the bottom #12 and #14 Pilot Hole which prevents line pressure from escaping through the manifold.

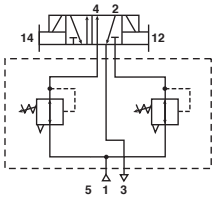
When using an Independent Pressure Sandwich Regulator, the cylinder outlet ports are reversed. The 12 end energizes the #4 port and the 14 end energizes the #2 port. The 3-Position CE and PC functions are also reversed. Do not use with Sandwich Flow Controls. Independent Port Sandwich Port Regulators combine the #3 and #5 valve exhaust ports into the #5 exhaust at the manifold/subbase interface. The #3 port flow control will control both #3 and #5 exhaust. #5 port flow control is ineffective. (See schematics above.)

Independent Dual Port Regulation - Plug-in, H1, H2, H3

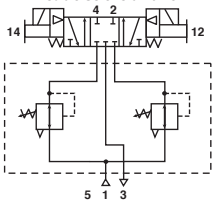
Dual Port Regulator

Provides regulated pressure to both ports. Pressure regulation can occur out of the #2 or #4 port of the valve.

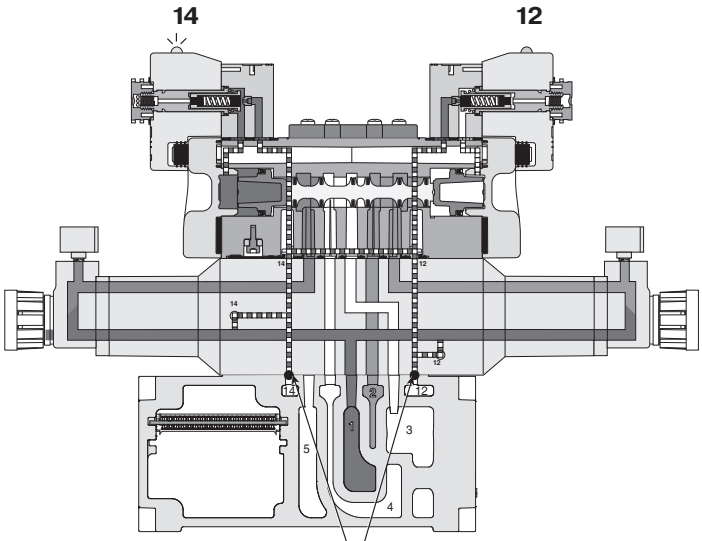
Independent Dual Port Regulator with 4-Way, 2-Position Double Solenoid Valve



Independent Dual Port Regulator with 4-Way, 3-Position Double Solenoid Valve



H1 Independent Dual Port Regulator Shown - Double Solenoid, 14 Energized, Internal Pilot



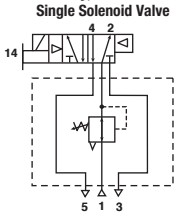
Sandwich Regulator has standard configuration of Internal Pilot with the Pilot Plug in the bottom #12 and #14 Pilot Hole which prevents line pressure from escaping through the manifold.

When using an Independent Pressure Sandwich Regulator, the cylinder outlet ports are reversed. The 12 end energizes the #4 port and the 14 end energizes the #2 port. The 3-Position CE and PC functions are also reversed. Do not use with Sandwich Flow Controls. Independent Port Sandwich Port Regulators combine the #3 and #5 valve exhaust ports into the #5 exhaust at the manifold/subbase interface. The #3 port flow control will control both #3 and #5 exhaust. #5 port flow control is ineffective. (See schematics on above.)

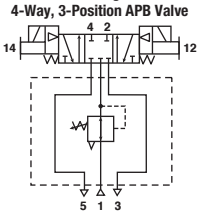
Common Port Regulation - Non Plug-in, H1, H2, H3

Provides adjustable regulated air pressure to the valve's #1 port which gives the same regulated pressure to both the #2 and #4 port of the manifold or subbase. The regulator is always on the 14 end of the valve.

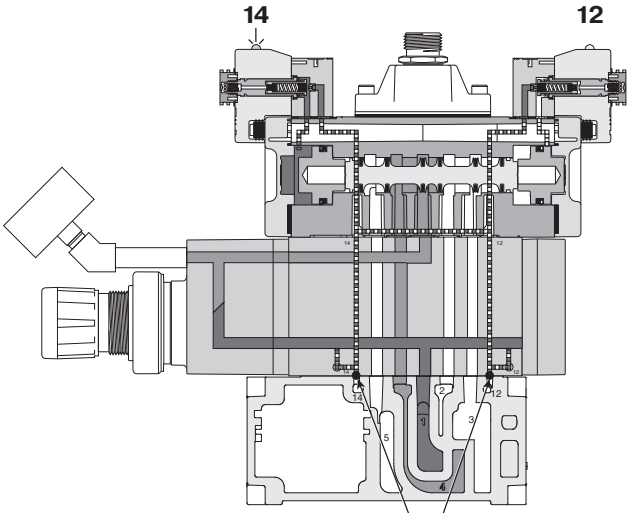
Common Port Regulator with 4-Way, 2-Position Single Solenoid Valve



Common Port Regulator with 4-Way, 3-Position APB Valve



H2 Common Port Regulator Shown - Double Solenoid, 14 Energized, Internal Pilot



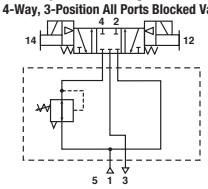
Sandwich Regulator has standard configuration of Internal Pilot with the Pilot Plug in the bottom of the I & E Pilot Holes which prevents line pressure from escaping through the manifold.

Independent Port Regulation - Non Plug-in, H1, H2, H3

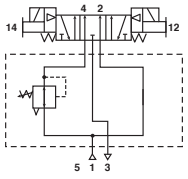
Single Port Regulator

Provides regulated pressure to one of the ports and full line pressure to the other by use of the Line Pressure By-Pass Plate. Pressure regulation can occur out of the #4 port of the valve.

Independent Port Regulator with 4-Way, 3-Position All Ports Blocked Valve

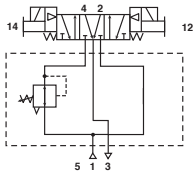


Independent Port Regulator with 4-Way, 3-Position, Inlet to Cylinder Function



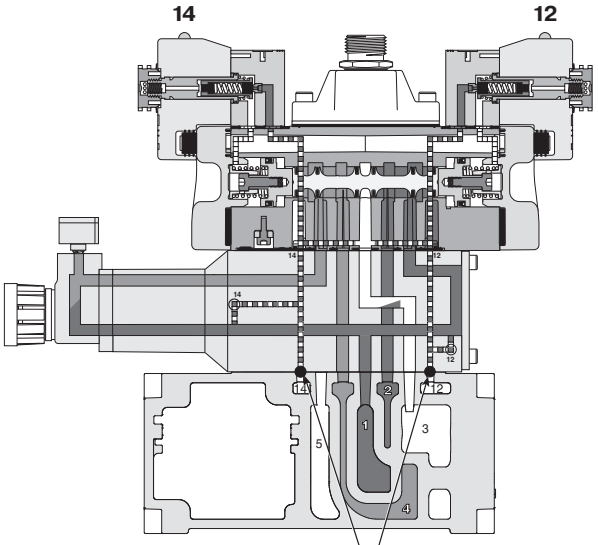
⚠ CAUTION: Requires 4-Way, 3-Position, Cylinder to Exhaust Valve

Independent Port Regulator with 4-Way, 3-Position, Cylinder to Exhaust Function



⚠ CAUTION: Requires 4-Way, 3-Position, Inlet to Cylinder Valve

H1 Independent Port Regulator Shown - Double Solenoid, De-energized, Internal Pilot



Sandwich Regulator has standard configuration of Internal Pilot with the Pilot Plug in the bottom #12 and #14 Pilot Hole which prevents line pressure from escaping through the manifold.

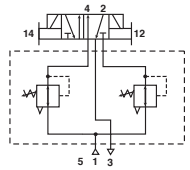
When using an Independent Pressure Sandwich Regulator, the cylinder outlet ports are reversed. The 12 end energizes the #4 port and the 14 end energizes the #2 port. The 3-Position CE and PC functions are also reversed. Do not use with Sandwich Flow Controls. Independent Port Sandwich Port Regulators combine the #3 and #5 valve exhaust ports into the #5 exhaust at the manifold/subbase interface. The #3 port flow control will control both #3 and #5 exhaust. #5 port flow control is ineffective. (See schematics on above.)

Independent Dual Port Regulation - Non Plug-in, H1, H2, H3

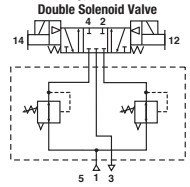
Dual Port Regulator

Provides regulated pressure to both ports. Pressure regulation can occur out of the #2 or #4 port of the valve.

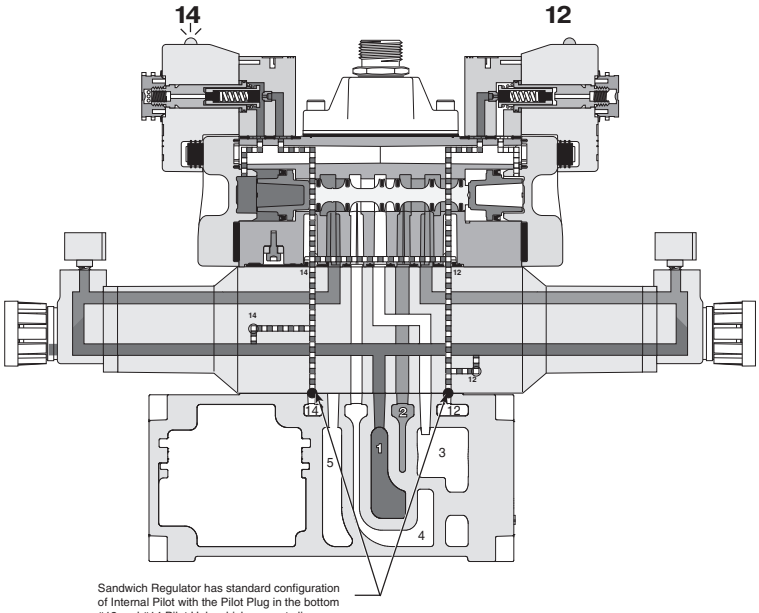
Independent Dual Port Regulator with 4-Way, 2-Position Double Solenoid Valve



Independent Dual Port Regulator with 4-Way, 3-Position Double Solenoid Valve



H1 Independent Dual Port Regulator Shown - Double Solenoid, 14 Energized, Internal Pilot



Sandwich Regulator has standard configuration of Internal Pilot with the Pilot Plug in the bottom #12 and #14 Pilot Hole which prevents line pressure from escaping through the manifold.

When using an Independent Pressure Sandwich Regulator, the cylinder outlet ports are reversed. The 12 end energizes the #4 port and the 14 end energizes the #2 port. The 3-Position CE and PC functions are also reversed. Do not use with Sandwich Flow Controls. Independent Port Sandwich Port Regulators combine the #3 and #5 valve exhaust ports into the #5 exhaust at the manifold/subbase interface. The #3 port flow control will control both #3 and #5 exhaust. #5 port flow control is ineffective. (See schematics on above.)

Minimum Operating Voltage

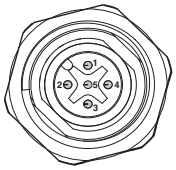
	HB	HA	H1	H2	H3
MOV (24VDC)	20.4	20.4	20.4	20.4	20.4
MOV (120VAC)	102*	102*	102	102	102

* 120VAC coils have a dropout voltage of 10VAC when used with solid state relays. A pull-down resister may be necessary.

P2H IO-Link

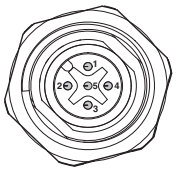
Class B, M12 pin

Pin Number	Address
1	L+
2	AUX+
3	L–
4	C/Q
5	AUX–

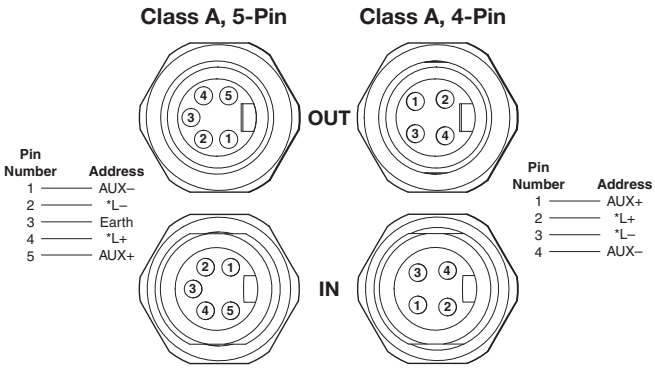


Class A, M12 pin

Pin Number	Address
1	L+
2	
3	L–
4	C/Q
5	



Class A, Power IN / OUT 7/8 pin

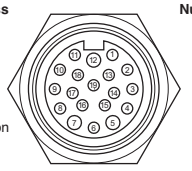


*7/8" logic power has no connection to internal P2H unit but does carryover to OUT 7/8" connector (for jumper logic power only). Logic power for P2H unit will be supplied from M12 (pin 1 & 3).

19-Pin Connector, Round Brad Harrison

Male, face view

Pin Number	Address	Pin Number	Address
1	0	11	8
2	1	12	Ground
3	2	13	9
4	3	14	10
5	N/A	15	11
6	4	16	12
7	Common	17	13
8	5	18	14
9	6	19	15
10	7		



19-Pin Round Cable Specifications

Common Pin "7" is rated for 8 amps. Cable common wire must be greater than total amperage of solenoids on Add-A-Fold assembly.

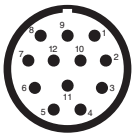
Example: 8 segment manifold, 16 solenoids, 120VAC - 16 x .039 amps = .63 total amp rating.

NEMA 4 rated with properly assembled NEMA 4 rated cable.

M23, Round Connector

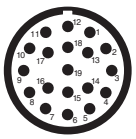
Male 12-pin connector, face view

Pin Number	Address	Pin Number	Address
1	0	7	6
2	1	8	7
3	2	9	Ret (Common)
4	3	10	Ret (Common)
5	4	11	Not Used
6	5	12	Ground



Male 19-pin connector, view into end plate

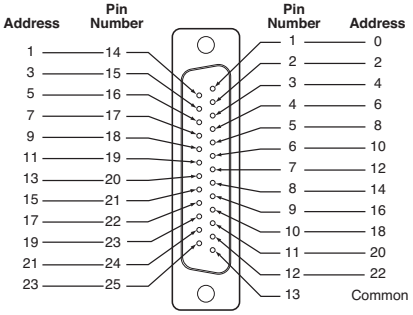
Pin Number	Address	Pin Number	Address
1	0	10	8
2	1	11	9
3	2	12	Not Used
4	3	13	10
5	4	14	11
6	Common	15	12
7	5	16	13
8	6	17	14
9	7	18	15
		19	Not Used



25-Pin, D-Sub Connector

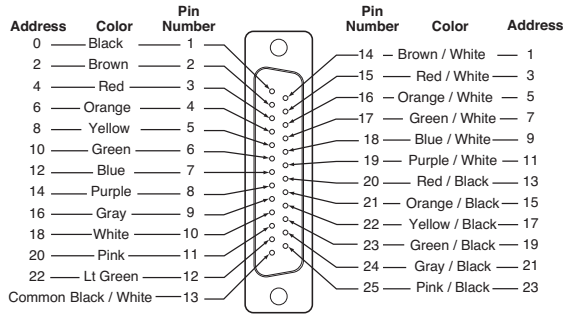
Male, view into end plate connector

Address	Pin Number	Pin Number	Address
1	14	1	0
3	15	2	2
5	16	3	4
7	17	4	6
9	18	5	8
11	19	6	10
13	20	7	12
15	21	8	14
17	22	9	16
19	23	10	18
21	24	11	20
23	25	12	22
		13	Common



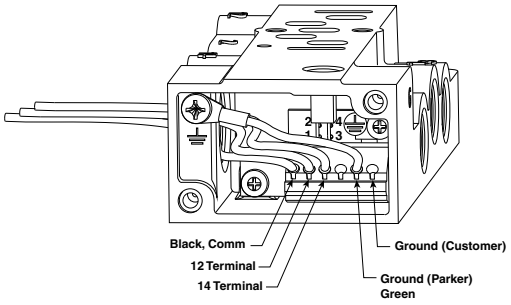
Female, view into cable connector

Address	Color	Pin Number	Pin Number	Color	Address
0	Black	1	14	Brown / White	1
2	Brown	2	15	Red / White	3
4	Red	3	16	Orange / White	5
6	Orange	4	17	Green / White	7
8	Yellow	5	18	Blue / White	9
10	Green	6	19	Purple / White	11
12	Blue	7	20	Red / Black	13
14	Purple	8	21	Orange / Black	15
16	Gray	9	22	Yellow / Black	17
18	White	10	23	Green / Black	19
20	Pink	11	24	Gray / Black	21
22	Lt Green	12	25	Pink / Black	23
Common	Black / White	13			



	Description	Length	Part Number
	25-pin, D-sub cable, IP20	3 Meters	**P8LMH25M3A**
	25-pin, D-sub cable, IP20	9 Meters	**SCD259D**
	25-pin, D-sub cable, IP65	3 Meters	**SCD253W**
	25-pin, D-sub cable, IP65	9 Meters	**SCD259WE**

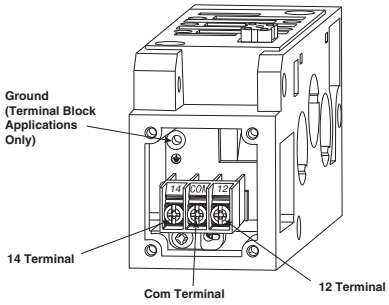
Subbase Wiring



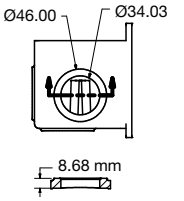
All commons internally
connected on terminal strip

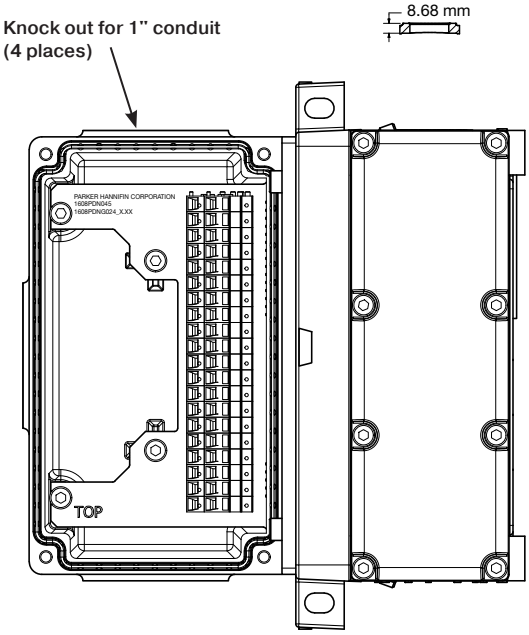
Connections	14 Solenoid	12 Solenoid
Valves with Wires	Black Wires	Red Wires
Valves with Terminal Block (Will accept 18 to 24 Gauge Wires)	14 and Com Terminals	12 and Com Terminals

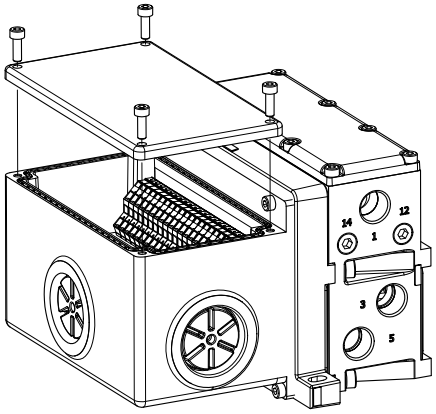
Manifold Wiring - Size 3



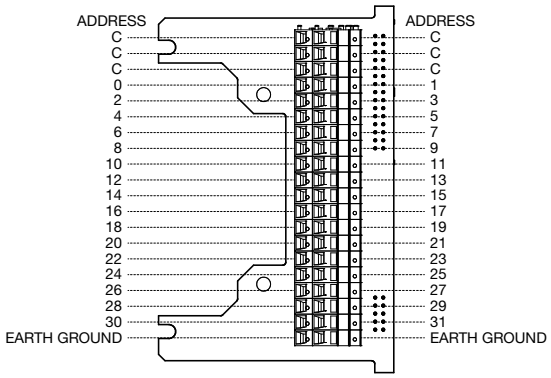
Terminal Box Wiring (H Universal)







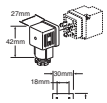
SCHEMATIC



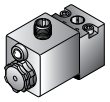
All commons internally
connected on terminal strip

Electrical Connectors - Size 1, 2 & 3

5599-1 CNOMO

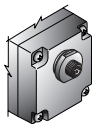


30mm 3-Pin ISO 4400 (DIN 43650A)

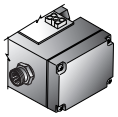


2-Pin M12 Euro

5599-2

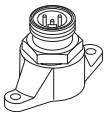


Manifold Auto Connector (H3 Only)

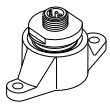


Subbase Auto Connector

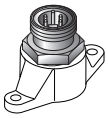
5599-1 AUTO



3-Pin Mini

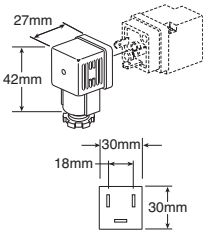


4-Pin Micro



5-Pin Mini

30mm Square 3-Pin – ISO 4400, DIN 43650A (Use with Enclosure "A")



Description	Connector with 6' (2m) Cord	Connector
Unlighted	**PS2028JCP**	**PS2028BP**
Light – 6-48V. 50/60Hz. 6-48VDC	**PS2032J79CP***	**PS203279BP**
Light – 120V/60Hz	**PS2032J83CP***	**PS203283BP**

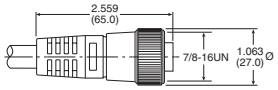
* LED with surge suppression.

Note: Max ø6.5mm cable size required for connector w/o 6' (2m) cord. IP65 rated when properly installed.

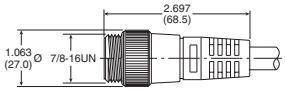
Engineering data: Conductors: 2 poles plus ground; cable range (connector only): 8 to 10mm (0.31 To 0.39 Inch); contact spacing: 18mm

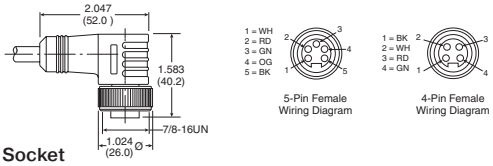
7/8" Mini Power Cables - use with 5-pin mini connector

RKM Female Socket



RSM Male Pins



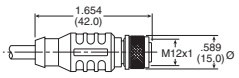


WKM Female Socket

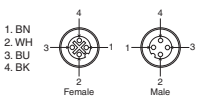
Description	Part Number
4-pin female to flying lead cable, 5 meters, TPE	**RKM 46-5M/S1587**
5-pin female to flying lead cable, 5 meters, TPE	**RKM 56-5M/S1587**
4-pin male to female cable, TPE	**RSM RKM 46-x/S1587**
5-pin male to female cable, TPE	**RSM RKM 56-x/S1587**
4-pin right angle female to flying lead cable, 5 meters,TPE	**WKM 46-5M/S1587**
5-pin right angle female to flying lead cable, TPE	**WKM 56-5M/S1587**

Where x = 2, 4, 5, 6, 8, 10 meter standard lengths

M12 A-code Cables - use with 4-pin micro, 2-pin micro



RKC Female Sockets



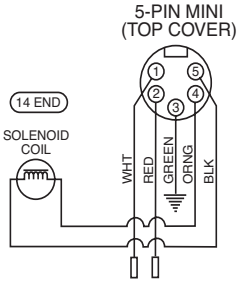
Description	Part Number
4-pin female to flying lead cable, PVC	**RKC 4.4T-1**
4-pin male to flying lead cable, PVC	**RSC 4.4T-***
4-pin male to female cable, PVC	**RKC 4.4T-*-RSC 4.4T**
5-pin female to flying lead cable, TPE	**RKC 4.5T-*/S1587**
5-pin male to flying lead cable, TPE	**RSC 4.5T-4/S1587**
5-pin male to female cable, TPE	**RKC 4.5T-*-RSC 4.5T/S1587**

Where * = 1, 2, 3, 4 meter standard lengths

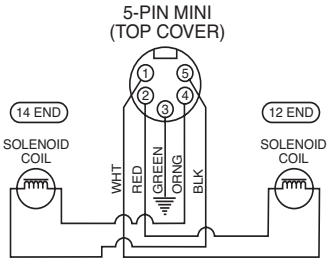
Automotive Connection – Wiring Options

'C' Chrysler Connection

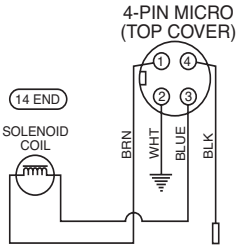
5-Pin Male / Single Solenoid
(Encl. Option 3, Auto Option C)



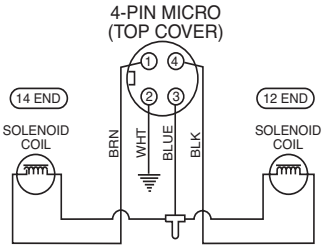
5-Pin Male / Double Solenoid
(Encl. Option 3, Auto Option C)



4-Pin Male / Single Solenoid
(Encl. Option 2, Auto Option C)

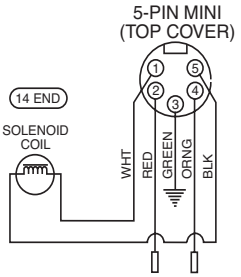


4-Pin Male / Double Solenoid
(Encl. Option 2, Auto Option C)

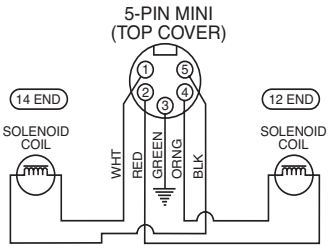


'F' SAE / Ford Wiring

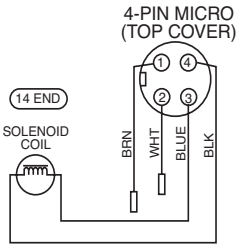
5-Pin Male / Single Solenoid
(Encl. Option 3, Auto Option F)



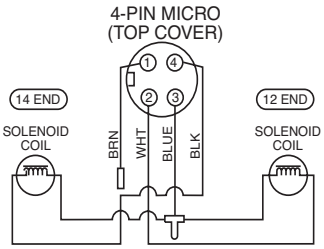
5-Pin Male / Double Solenoid
(Encl. Option 3, Auto Option F)



ISO 20401
4-Pin Male / Single Solenoid
(Encl. Option 2, Auto Option F)

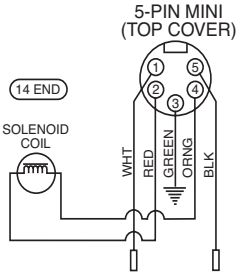


ISO 20401
4-Pin Male / Double Solenoid
(Encl. Option 2, Auto Option F)

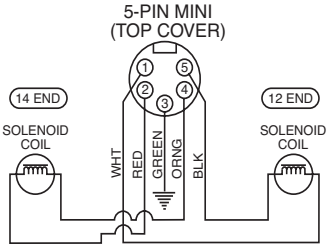


'G' GM Wiring

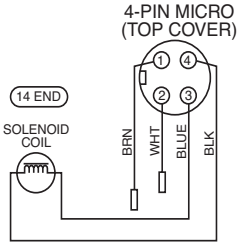
5-Pin Male / Single Solenoid
(Encl. Option 3, Auto Option G)



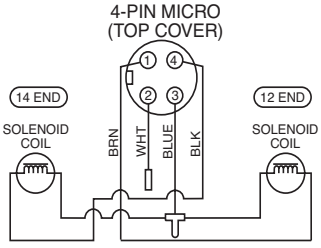
5-Pin Male / Double Solenoid
(Encl. Option 3, Auto Option G)



4-Pin Male / Single Solenoid
(Encl. Option 2, Auto Option G)

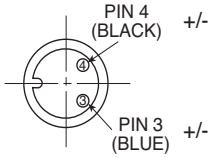


4-Pin Male / Double Solenoid
(Encl. Option 2, Auto Option G)

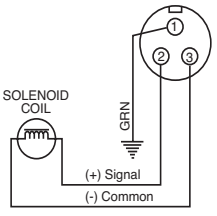


CNOMO Connection - Wiring Options

2-Pin Male / Single Solenoid
(Encl. Option 6, Auto Option F)



3-Pin Male / Single Solenoid
(Encl. Option 1, Auto Options C, F & G)



Maximum Number of Solenoids
(Maximum energized simultaneously)

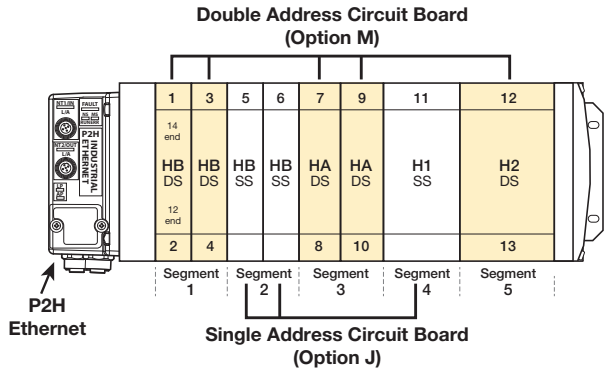
	Voltage Code	25-pin D-sub	19-pin Brad Harrison	12-Pin M23	19-pin M23	P2H IO-Link Node	P2H Ethernet Node	PCH Portal	Turck Network Portal 16 Outputs	Turck Network Portal 32 Outputs
HA & HB										
24VDC	G9 (1.0 watt)	24 (24)	16 (16)	8 (8)	16 (16)	24 (24)	32 (32)	32 (32)	16 (16)	32 (32)
120VAC*	23 (1.0 VA)	24 (24)	16 (16)	8 (8)	16 (16)	N/A	N/A	N/A	N/A	N/A
H1, H2										
12VDC	45 (2.4 watt)	24 (13)	16 (13)	8 (8)	16 (13)	N/A	N/A	N/A	N/A	N/A
24VAC*	42 (4.0 VA)	24 (24)	16 (16)	8 (8)	16 (16)	N/A	N/A	N/A	N/A	N/A
24VDC	B9 (3.2 watt)	24 (24)	16 (16)	8 (8)	16 (16)	24 (24)†	32 (32)	32 (32)	16 (16)	32 (32)
24VDC	F9 (1.3 watt)	24 (24)	16 (16)	8 (8)	16 (16)	24 (24)†	32 (32)	32 (32)	16 (16)	32 (32)
120VAC*	23 (4.5 VA)	24 (24)	16 (16)	8 (8)	16 (16)	N/A	N/A	N/A	N/A	N/A
H3 Only										
12VDC	45 (2.4 watt)	24 (13)	16 (13)	8 (8)	16 (13)	N/A	N/A	N/A	N/A	N/A
24VAC*	42 (4.0 VA)	24 (24)	16 (16)	8 (8)	16 (16)	N/A	N/A	N/A	N/A	N/A
24VDC	B9 (3.2 watt)	24 (20)	16 (16)	8 (8)	16 (16)	24 (24)†	32 (32)**	N/A	16 (16)	24 (21)
24VDC	F9 (1.3 watt)	24 (24)	16 (16)	8 (8)	16 (16)	24 (24)†	32 (32)**	N/A	16 (16)	24 (24)
120VAC*	23 (4.5 VA)	24 (24)	16 (16)	8 (8)	16 (16)	N/A	N/A	N/A	N/A	N/A

* Not CSA certified for 25-pin, D-sub option.

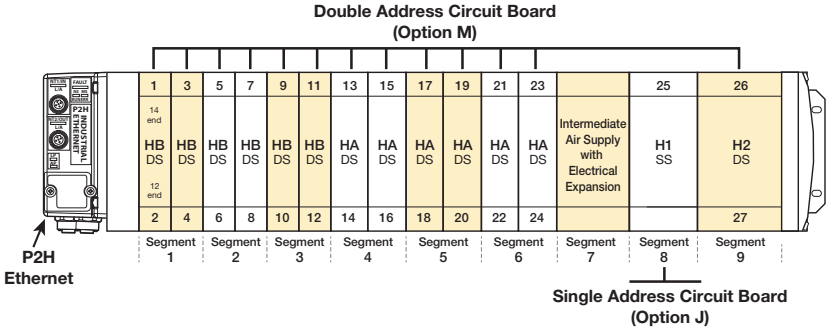
** Must use H Universal manifold end plate kit with transition kit to H3 manifold segments.
† Use Type A IO-Link module for 24 outputs simultaneously.

I/O Addressing Examples

HB, HA, H1, H2 - Five Segment Manifold Example



HB, HA, H1, H2 - Nine Segment Manifold with Intermediate Supply Example



Notes: SS = Single Solenoid Valve
DS = Double Solenoid Valve
First output address is the #14 end of the valve closest to the valve driver module.

Intermediate Module with Electrical Expansion to 25th address required for manifolds with greater than 24 solenoid addresses.

5599-2 & 5599-1 AUTO Solenoid Kits

Valve Size	Voltage Code	Coil Kit Number
H1, H2 & H3	42 (24VAC)	**PS404142P**
	45 (12VDC)	**PS404145P**
	B9 (24VDC), 3.2 watt	**PS4041B9P**
	F9 (24VDC), 1.3 watt	**PS4041F9P**
	23 (120VAC)	**PS404123P**
	57 (240VAC)	**PS404157P**

Quantity 1

Pilot Operator - CNOMO

Valve Size		Kit Number
H1, H2 & H3	Locking	**PS4052CP**
	Non-locking	**PS4053CP**
	Non-locking †	**PS4054CP**

† F9 (1.3 watt) coil option only.

Manifold Hardware Kits

Valve Size	Kit Number
HB, HA, H1, H2 *	**PSHU10P**
H3 **	**PS4212P**

* Quantity 20

** Quantity 12

Valve Bolt Kits

Valve Size	Kit Number
HB	**PS5687P**
HA	**PS5587P**
H1	**PS4087DP**
H2	**PS4187DP**
H3	**PS4287DP**

Quantity 12

Valve to Base Gasket Kits

Valve Size	Standard	Remote Pilot	Dual Pressure #3	Dual Pressure #5
HB	**PS5605P***	—	—	—
HA	**PS5505P***	—	—	—
H1	**PS4005DP**	**PS4006DP**	**PS40D3DP**	—
H2	**PS4105DP**	**PS4106DP**	**PS41D3DP**	**PS41D5DP**
H3	**PS4205DP**	**PS4206DP**	**PS42D3DP**	**PS42D5DP**

Quantity 1

* Quantity 10

5599-1 CNOMO Solenoid Kits

Voltage Code	3-pin, 30mm 'L' Coil Kit	2-pin, M12 Euro '6' Coil Kit
19	—	**PS2828619P**
42	**P2FCA442**	—
45	**P2FCA445**	—
49	**P2FCA449**	—
53	**P2FCA453**	—
57	**P2FCA457**	—

Quantity 1

Body Service Kits

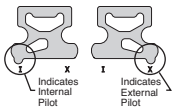
Valve Size	2-Position	3-Position		
		APB	CE	PC
HB	**PS5601P**	**PS5602P**	**PS5603P**	**PS5604P**
HA	**PS5501P**	**PS5502P**	**PS5503P**	**PS5504P**
H1	**PS4001CP**	**PS4002CP**	**PS4003CP**	**PS4004CP**
H2	**PS4101CP**	**PS4102CP**	**PS4103CP**	**PS4104CP**
H3	**PS4201CP**	**PS4202CP**	**PS4203CP**	**PS4204CP**

HB / HA Kit Includes: Spool assembly with seals.

H1, H2, H3 Kit Includes: Spool assembly with seals, all piston seals, return spring, pilot selector gasket, coil to end cap gasket.

Quantity 1

Pilot Select Gasket Kits

	Valve Size	Part Number
HB shown	HB	**PS5605P**
	HA	**PS5505P**
	H1, H2 & H3	**PS4007P**

Quantity 10

Regulator Kits

Valve Size	Part Number
H1	**PS4039P**
H2, H3	**PS4139P**

Regulator & Flow Control Mounting Studs

Valve Type	Type	Part Number
HB	Flow Control & Regulator	**PS5636P**
HA	Flow Control & Regulator	**PS5536P**
H1	Flow Control	**PS4036P**
	Regulator	**PS4040P**
H2	Flow Control	**PS4136P**
	Regulator	**PS4140P**
H3	Flow Control	**PS4236P**
	Regulator	**PS4240P**

Quantity 12

Regulator Gauge Kits – Size H1, H2 & H3

Gauge Type		Part Number
1" Face Air - Standard		
	0 to 60 PSIG	**PS4051060BP**
	0 to 160 PSIG	**PS4051160BP**
1-1/2" Face Air - Large*		
	0 to 60 PSIG	**PS4053060BP**
	0 to 160 PSIG	**PS4053160BP**
1-1/2" Face Liquid*		
	0 to 160 PSIG	**PS4052160BP**

* Includes brass pipe fitting extensions
Quantity 1

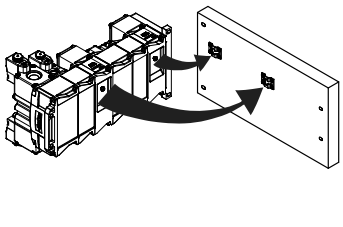
Pilot By-Pass Plate

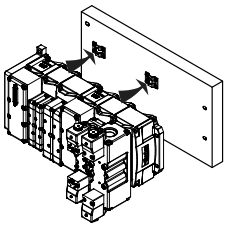
Valve Size	Part Number
H1, H2, H3	**PS4051CP**

Quantity 10

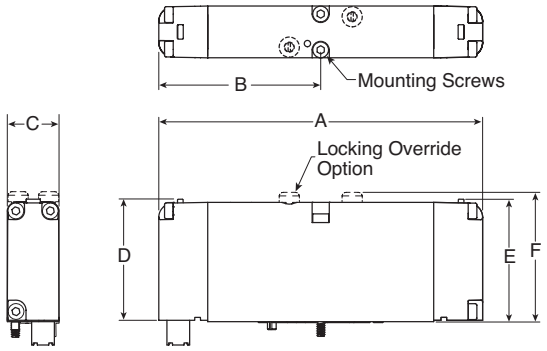
Installation Bracket

	Bracket	Part Number
	Bracket and Bolt (Quantity 2)	**PSHU60P**





H Series ISO 15407-2, Plug-in, Size 18mm (HB)



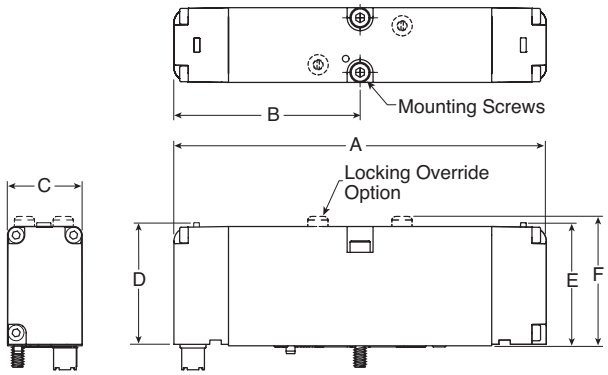
18mm Dimensions

A	B	C	D
4.43 (113)	2.22 (56)	.72 (18)	1.98 (50)

E	F
1.68 (43)	1.77 (45)

Inches (mm)

H Series ISO 15407-2, Plug-in, Size 26mm (HA)



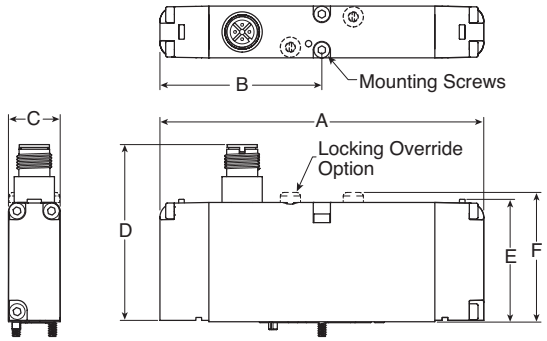
26mm Dimensions

A	B	C	D
5.10 (130)	2.55 (65)	1.02 (26)	1.98 (50)

E	F
1.68 (43)	1.77 (45)

Inches (mm)

H Series ISO 15407-1, Non Plug-in, Size 18mm (HB)



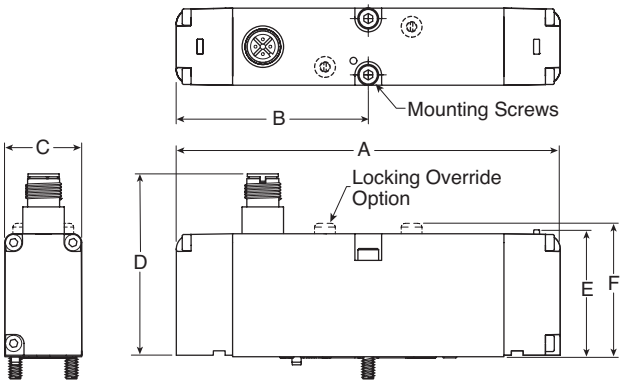
18mm Dimensions

A	B	C	D
4.43 (113)	2.22 (56)	.72 (18)	2.40 (61)

E	F
1.68 (43)	1.77 (45)

Inches (mm)

H Series ISO 15407-1, Non Plug-in, Size 26mm (HA)



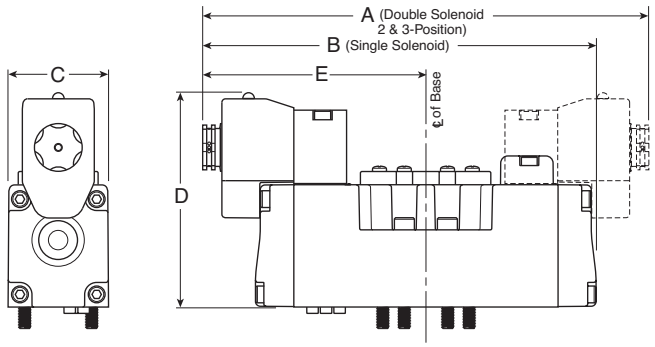
26mm Dimensions

A	B	C	D
5.10 (130)	2.55 (65)	1.02 (26)	2.40 (61)

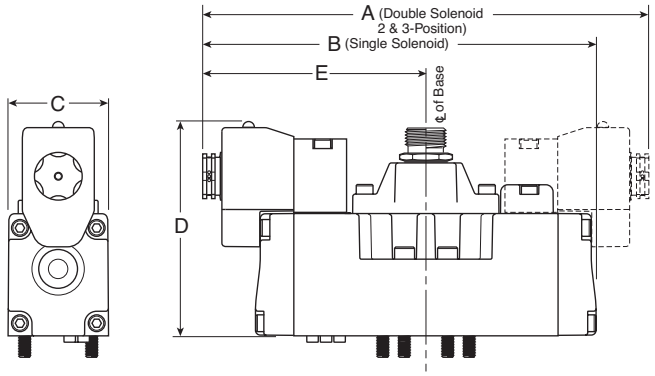
E	F
1.68 (43)	1.77 (45)

Inches (mm)

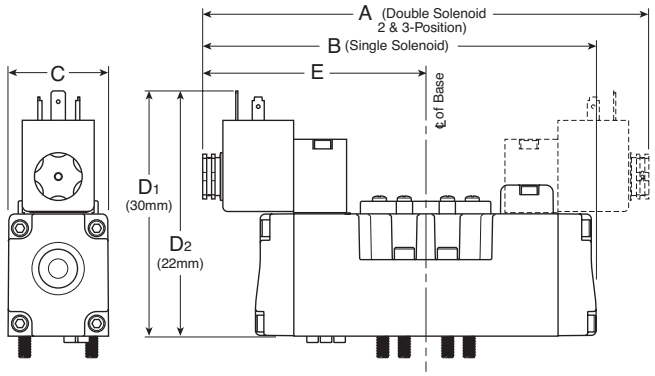
H Series ISO 5599-2



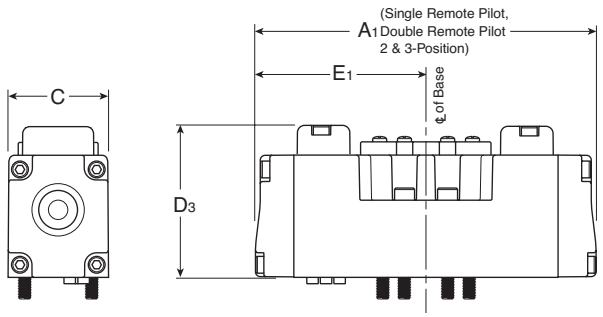
H Series ISO 5599-1 Auto



H Series ISO 5599-1 CNOMO



H Series ISO 5599-2 / 5599-1 Remote Pilot



H1 Valves Shown

H1 Dimensions

A	A1	B	C
7.32 (186)	5.59 (142)	6.46 (164)	1.65 (42)
D	**D1**	**D2**	**D3**
3.54 (90)	4.29 (109)	4.29 (109)	2.50 (63.5)
D4	**E**	**E1**	
2.48 (63)	3.66 (93)	2.80 (71)	

Inches
(mm)

H2 Dimensions

A	A1	B	C
8.35 (212)	6.62 (168)	7.48 (190)	2.17 (55)
D	**D1**	**D2**	**D3**
4.05 (103)	4.80 (122)	4.57 (116)	2.99 (76)
E	**E1**		
4.17 (106)	3.31 (84)		

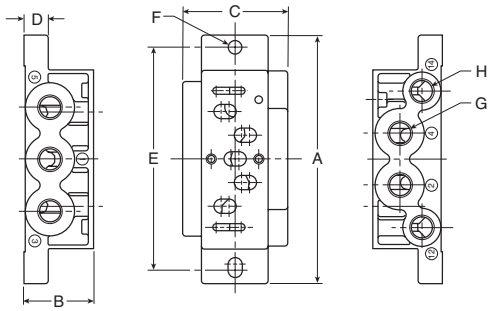
Inches
(mm)

H3 Dimensions

A	A1	B	C
9.68 (246)	6.98 (196.7)	8.68 (220)	2.17 (65.5)
D	**D1**	**D2**	**D3**
4.05 (103)	4.80 (122)	4.57 (116)	2.99 (76)
E	**E1**		
4.74 (121)	3.49 (89)		

Inches
(mm)

HB Series ISO 15407-1, Size 18mm (HB) Single Subbase

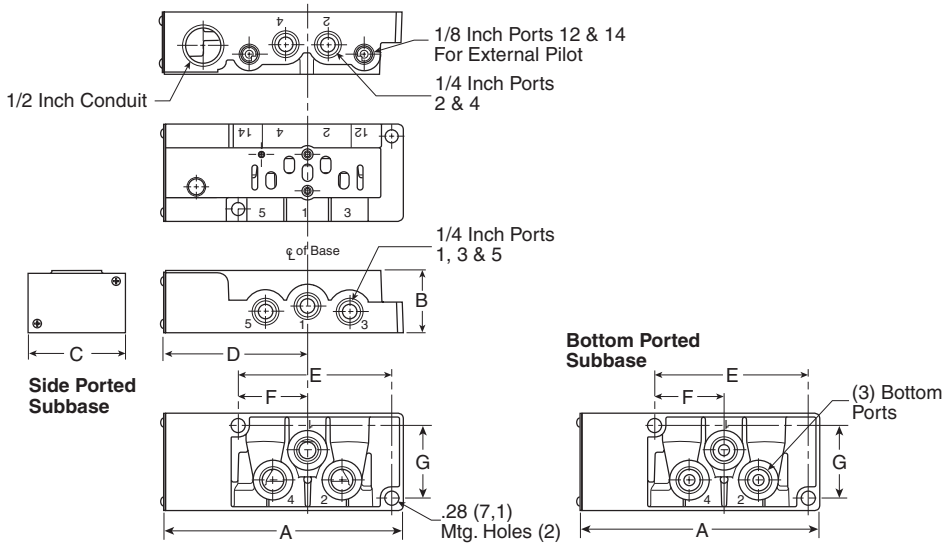


HB Dimensions (PL02)

A	B	C	D
3.15 (80)	.87 (22)	1.06 (27)	.31 (8)
E	**F**	**G**	**H**
2.76 (70)	.216 Dia. (Ø 5.5)	1/8	M5

Inches
(mm)

H Series ISO 15407-2 & 15407-1 Size 26mm (HA), Plug-in Subbases

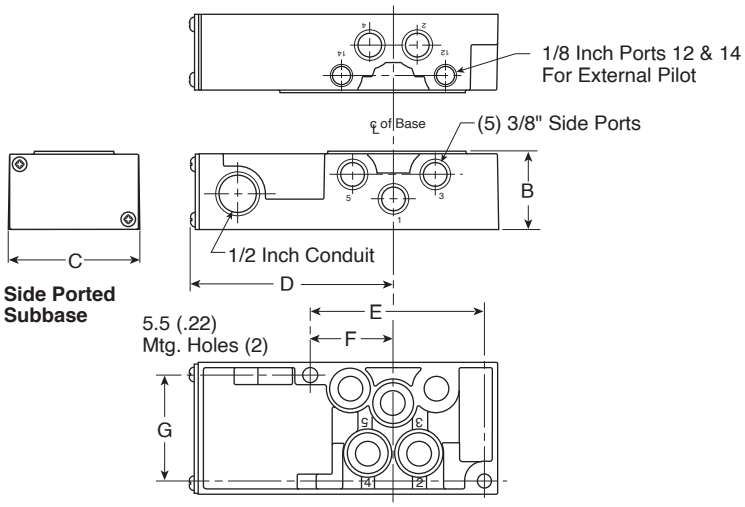


HA Dimensions

A	B	C	D
4.88 (124)	1.28 (32.5)	2.00 (50.8)	2.91 (74)
E	**F**	**G**	
1.43 (36.2)	3.16 (80.2)	1.49 (37.9)	

Inches
(mm)

H Series ISO 5599-1 Size H1, PS4011 Subbase



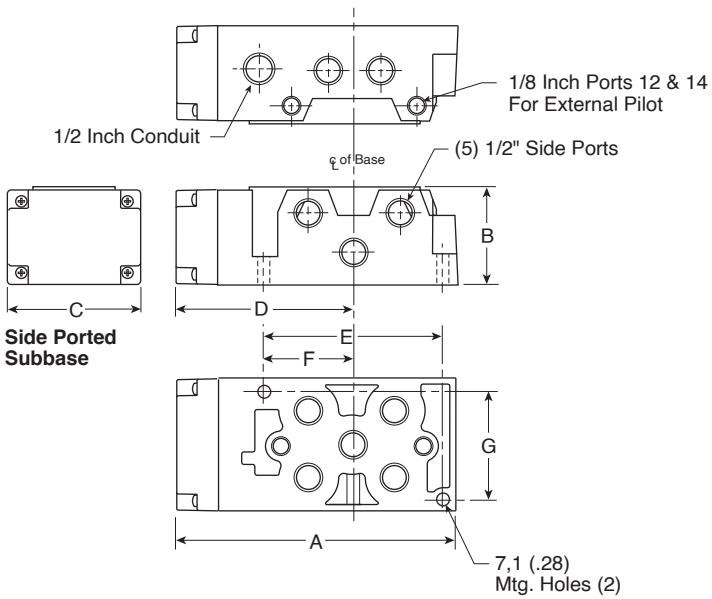
PS4011 Subbase Dimensions

A	B	C	D
5.83 (148)	1.48 (38)	2.50 (64)	3.86 (98)

E	F	G
3.29 (84)	1.57 (40)	2.00 (51)

Inches
(mm)

H Series ISO 5599-1 Size H2, PS4111 Subbase



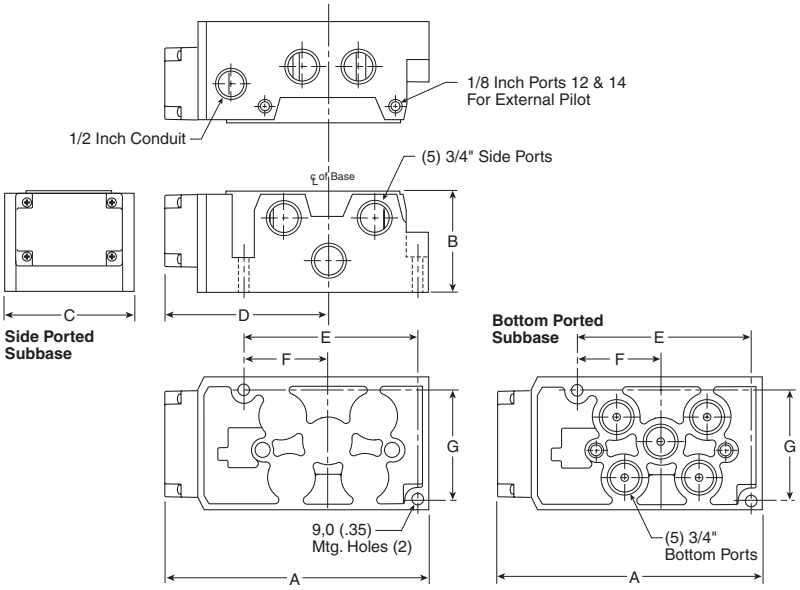
PS4111 Subbase Dimensions

A	B	C	D
6.69 (170)	2.33 (59)	3.15 (80)	4.25 (108)

E	F	G
4.21 (107)	2.07 (52)	2.56 (65)

Inches
(mm)

H Series ISO 5599-1 Size H3, PS4211 Subbase

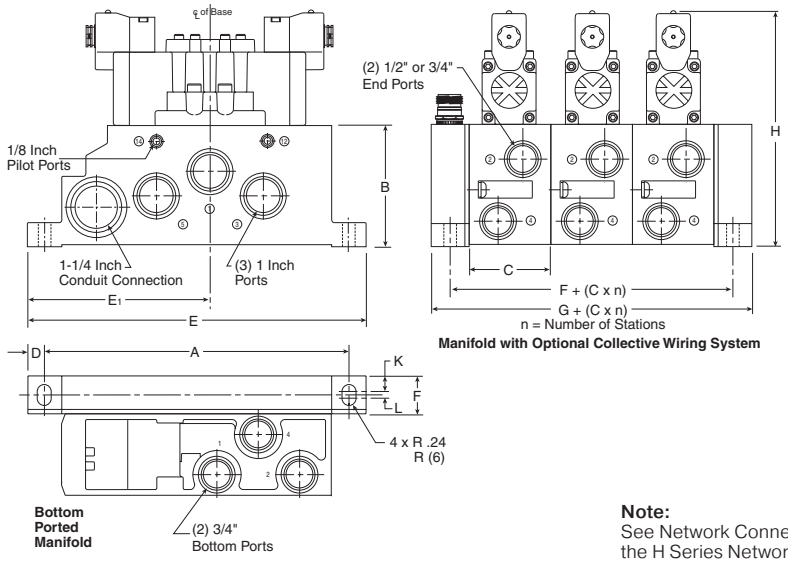


PS4211 Subbase Dimensions

A	B	C	D
7.90 (201)	2.96 (75)	3.90 (99)	4.92 (125)
E	**F**	**G**	
5.14 (131)	2.50 (64)	3.24 (82)	

Inches
(mm)

H Series ISO 5599 Size H3, PS4211 Manifold



PS4211 Manifold Dimensions

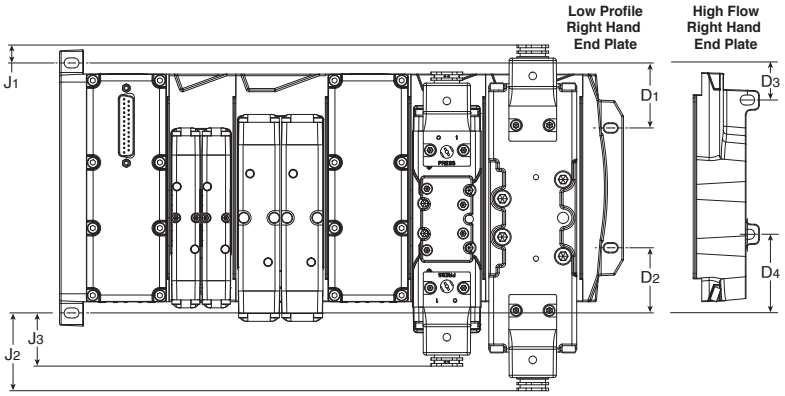
A	B	C	D	E
10.41 (265)	4.13 (105)	2.80 (71)	.59 (15)	11.61 (295)
E1	**F**	**G**	**H**	
6.26 (159)	1.30 (33)	2.60 (63)	8.19 (208)	
K	**L**			
.53 (13.5)	.24 (6)			

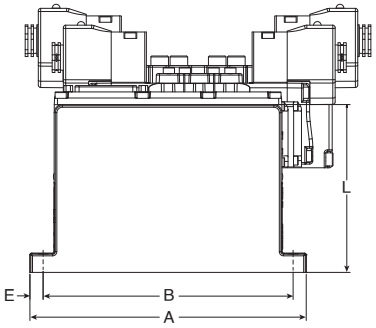
Inches
(mm)

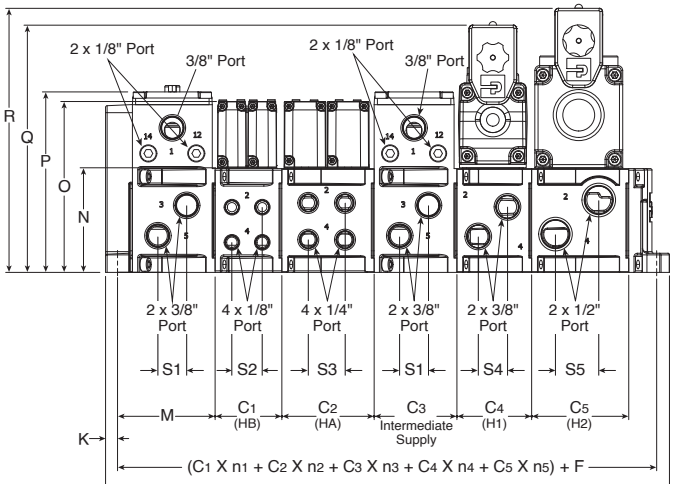
Note:
See Network Connectivity Section for the dimensions of manifolds utilizing the H Series Network, Turck Network, or P2M Network Node end plate type.

H Series ISO Universal Manifold

Network Connectivity dimensions (P2H, Turck, H Net, and P2M) are located at the end of the Network Connectivity Section.





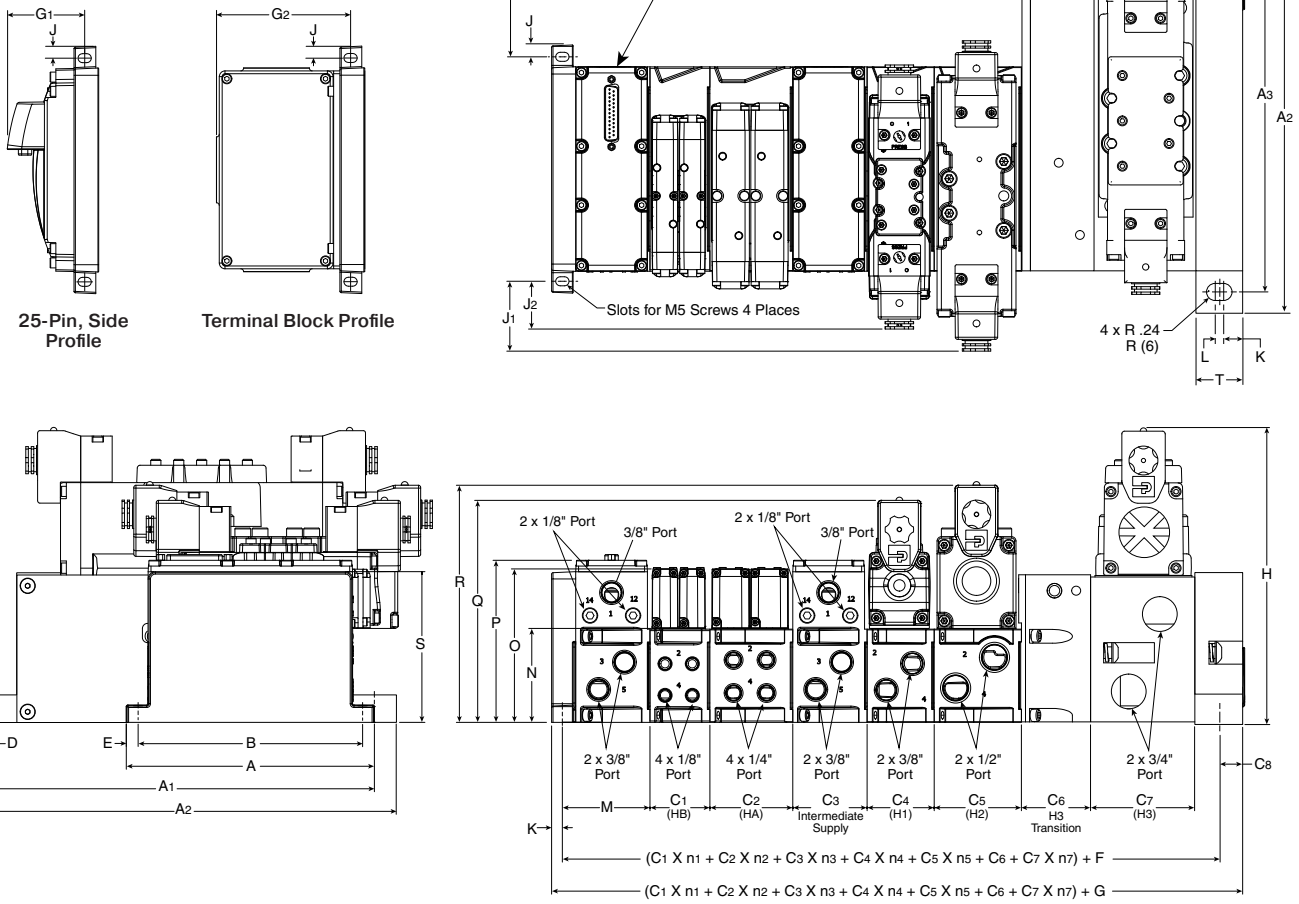


A	B	C1	C2	C3	C4	C5
6.81 (172.95)	6.16 (156.5)	1.65 (41.79)	2.28 (57.79)	2.04 (51.79)	1.84 (46.79)	2.39 (60.79)
D1	**D2**	**D3**	**D4**	**E**	**F**	**G**
1.60 (40.71)	1.60 (40.71)	0.96 (24.3)	1.92 (48.8)	0.32 (8.0)	3.09 (78.58)	4.39 (111.58)
J1	**J2**	**J3**	**K**	**L**	**M**	**N**
0.44 (11.2)	1.92 (48.7)	1.31 (33.3)	0.30 (7.5)	4.14 (105.08)	2.40 (61.08)	1.92 (48.7)
O	**P**	**Q**	**R**	**S1**	**S2**	**S3**
4.21 (107)	4.45 (113)	6.09 (154.77)	6.51 (165.32)	0.71 (18)	0.75 (19)	0.91 (23)
S4	**S5**					
0.72 (18.3)	1.07 (27.1)					

Inches
(mm)

H Series ISO Universal Manifold with H3 Transition

Network Connectivity dimensions (P2H, PCH and Turck Network) are located at the end of the Network Connectivity Section.



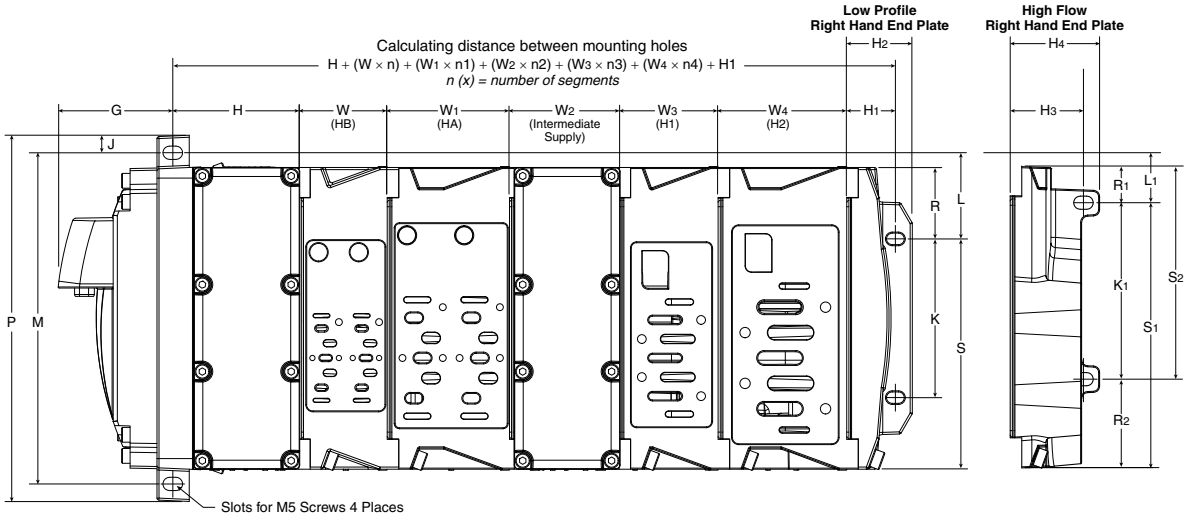
A	A1	A2	A3	B	C1	C2	C3	C4	C5	C6	C7
6.81	12.34	14.0	10.41	6.16	1.65	2.28	2.04	1.84	2.39	2.00	2.80
(172.95)	(313.43)	(365.3)	(265)	(156.5)	(41.79)	(57.79)	(51.79)	(46.79)	(60.79)	(51.0)	(71.0)

C8	D	E	F	G	G1	G2	H	J	J1	J2	J3
0.95	0.59	0.32	3.05	4.00	2.13	3.69	8.19	0.33	1.92	1.31	3.47
(16.5)	(15.0)	(8.0)	(77.58)	(101.6)	(54.0)	(93.8)	(208)	(8.3)	(48.7)	(33.3)	(88.25)

K	L	M	N	O	P	Q	R	S	T
0.30	0.24	2.40	1.92	4.21	4.45	6.09	6.51	4.14	1.30
(7.5)	(6.0)	(61.08)	(48.7)	(107)	(113)	(154.77)	(165.32)	(105.08)	(33.0)

Inches
(mm)

25-Pin Side with H Series ISO Valves



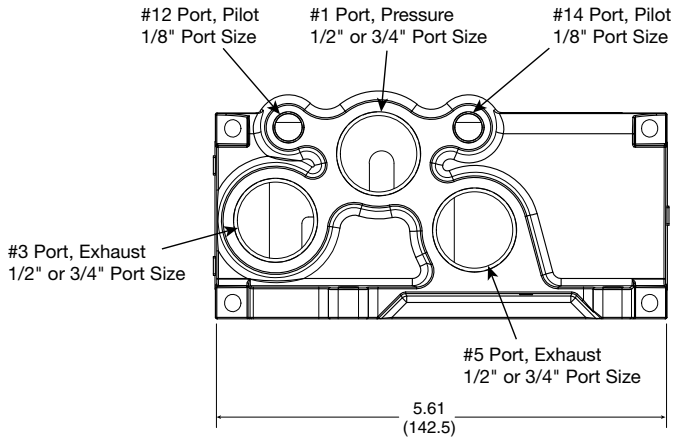
n (x) = number of segments

G	H	H1	H2	H3	H4	J	K	K1	L	L1	M
2.13 (54.0)	2.36 (60.0)	0.90 (23.0)	1.22 (31.0)	1.36 (34.6)	1.66 (42.3)	0.33 (8.3)	2.95 (75.0)	3.28 (83.4)	1.60 (40.7)	0.96 (24.3)	6.16 (156.5)

P	S	S1	S2	R	R1	R2	W	W1	W2	W3	W4
6.81 (173.1)	4.28 (108.8)	4.93 (125.2)	3.96 (100.7)	1.33 (33.7)	0.68 (17.3)	1.6 (41.8)	1.63 (41.3)	2.28 (57.8)	2.06 (52.3)	1.82 (46.3)	2.39 (60.8)

Inches
(mm)

Hi-Flow Right Hand End Plate

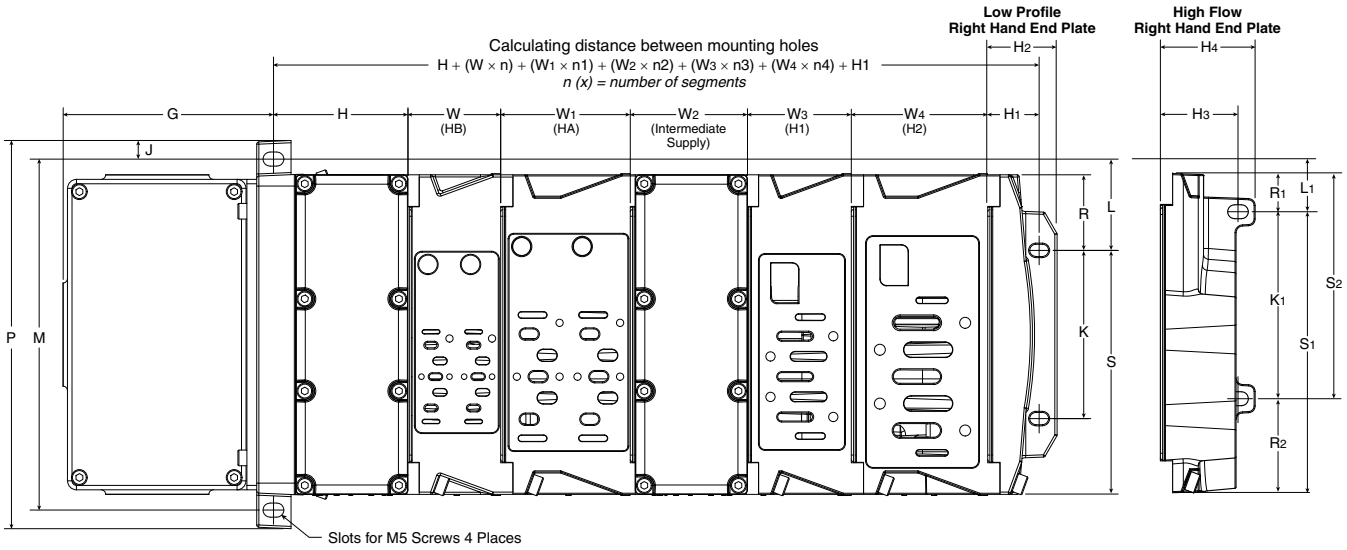


Hi-Flow Right Hand End Plate

PSHU41	1/2" port size
PSHU42	3/4" port size

Inches (mm)

Terminal Block with H Series ISO Valves

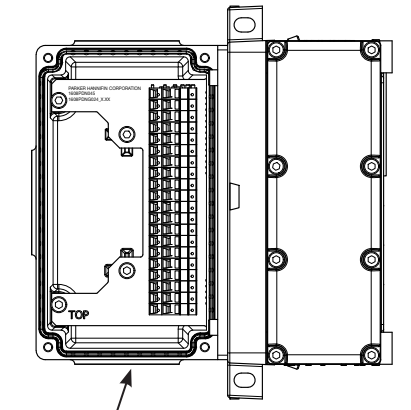


n (x) = number of segments

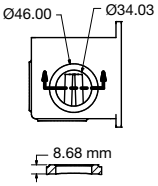
G	H	H1	H2	H3	H4	J	K	K1	L	L1	M
3.69 (93.8)	2.36 (60.0)	0.90 (23.0)	1.22 (31.0)	1.36 (34.6)	1.66 (42.3)	0.33 (8.3)	2.95 (75.0)	3.28 (83.4)	1.60 (40.7)	0.96 (24.3)	6.16 (156.5)

P	S	S1	S2	R	R1	R2	W	W1	W2	W3	W4
6.81 (173.1)	4.28 (108.8)	4.93 (125.2)	3.96 (100.7)	1.33 (33.7)	0.68 (17.3)	1.65 (41.8)	1.63 (41.3)	2.28 (57.8)	2.06 (52.3)	1.82 (46.3)	2.39 (60.8)

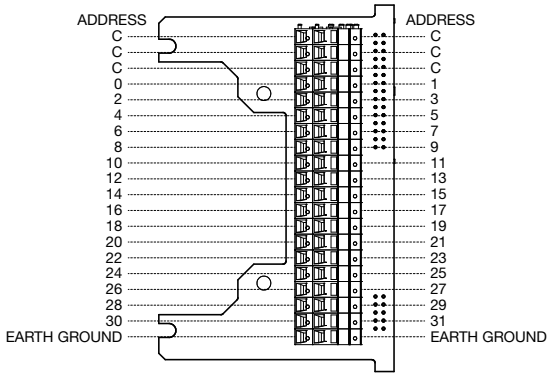
Inches
(mm)



Knock out for 1" conduit
(4 places)

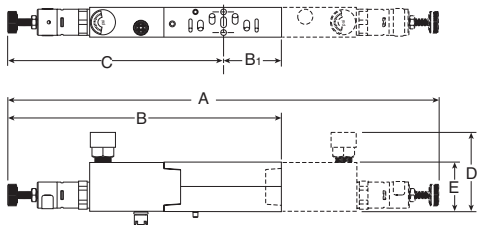


SCHEMATIC



All commons internally
connected on terminal strip

H Series ISO 15407, HB / HA Sandwich Regulator

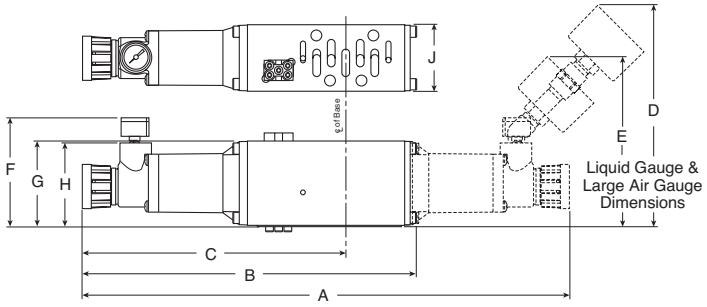


HB / HA Series Sandwich Regulator, Dimensions

HB (PS5637)	**A**	**B**	**B1**	**C**	**D**	**E**
	10.28 (261)	6.14 (156)	1.02 (26)	5.13 (130)	2.60 (66)	1.18 (30)
HA (PS5537)	**A**	**B**	**B1**	**C**	**D**	**E**
	10.00 (254)	6.42 (163)	1.42 (36)	5.00 (127)	2.72 (69)	1.18 (30)

Inches
(mm)

H Series ISO 5599, Size H1 Sandwich Regulator



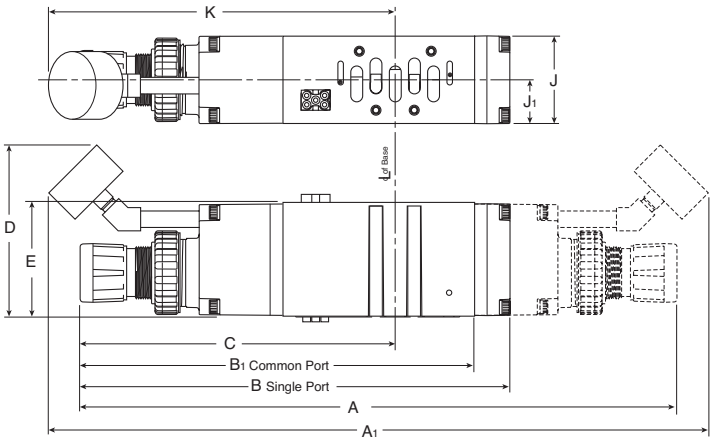
H1 Series Sandwich Regulator, Dimensions

H1 (PS4037) (PS4038)	**A**	**B**	**C**	**D**	**E**	**F**
	11.84 (301)	8.13 (207)	6.40 (163)	5.45 (138)	4.25 (108)	2.85 (72)
	G	**H**	**J**			
	2.09 (53)	2.05 (52)	1.63 (41)			

Inches
(mm)

H Series ISO 5599, Size H2 & H3 Sandwich Regulator

H2 Sandwich Regulator shown



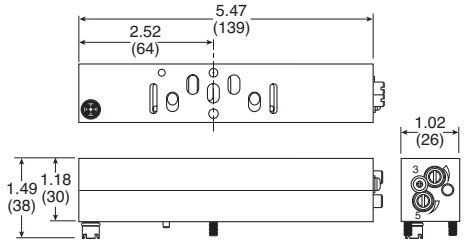
H2 & H3 Series Sandwich Regulator, Dimensions

H2 (PS4137) (PS4138)	**A**	**A1**	**B**	**B1**	**C**	**D**
	14.65 (372)	16.18 (411)	10.56 (268)	9.84 (250	7.71 (196)	4.20 (107)
	E	**J**	**J1**	**K**		
	2.80 (71)	2.15 (55)	1.07 (27)	8.50 (216)		
H3 (PS4237) (PS4238)	**A**	**A1**	**B**	**B1**	**C**	**D**
	15.67 (398)	17.15 (436)	11.53 (293)	10.67 (271)	8.37 (213)	4.20 (107)
	E	**J**	**J1**	**K**		
	2.93 (75)	2.50 (64)	1.25 (32)	9.10 (231)		

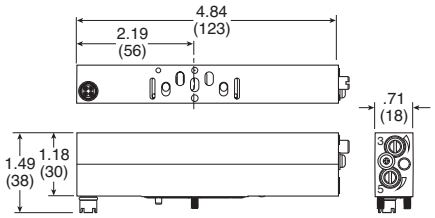
Inches
(mm)

H Series ISO 15407, Size 18mm (HB) & 26mm (HA), Flow Control

HA Flow Control

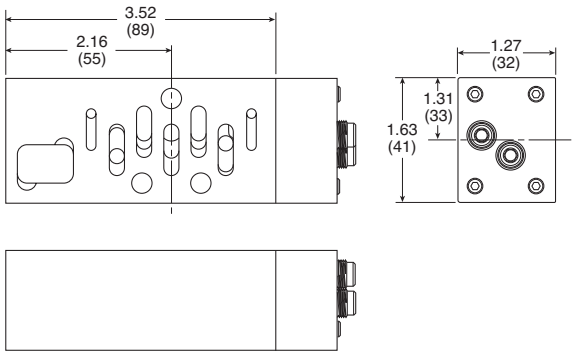


HB Flow Control

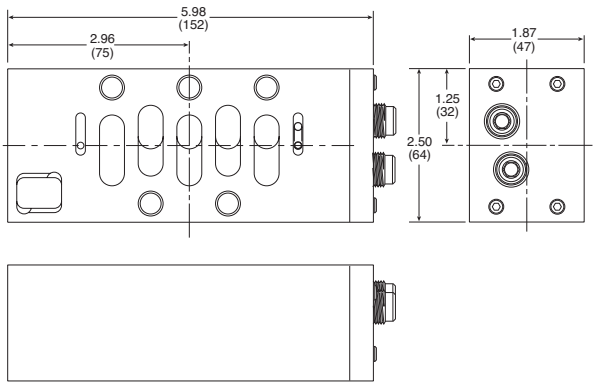


H Series ISO 5599, Size H1, H2 & H3, Flow Control

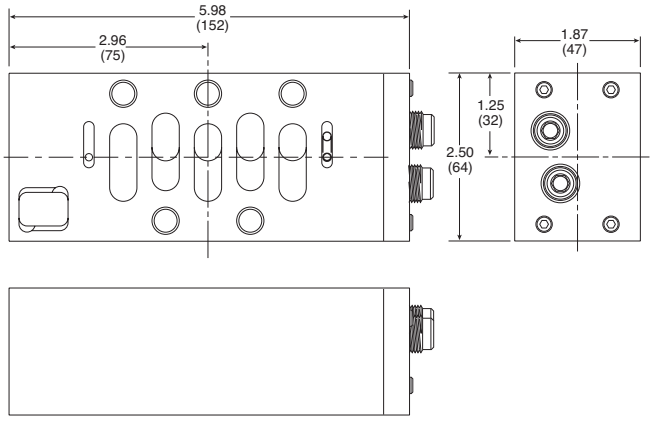
H1 Flow Control



H2 Flow Control



H3 Flow Control



Network Connectivity

Offering

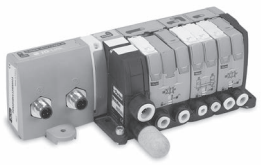
Valve series	P2M	P2H IO-Link	P2H Ethernet	PCH	Turck BL67
Moduflex	X				
H Series Micro	X				X
H Series ISO		X	X	X	X

Protocol	P2M	P2H IO-Link	P2H Ethernet	PCH	Turck BL67
IO-Link	X	X		X	
DeviceNet					X
EtherNet/IP™	X		X	X	X
Profibus-DP					X
Profinet	X		X	X	X
Modbus/TCP	X		X	X	X
EtherCAT	X		X	X	
PowerLink	X		X		
CANopen					X

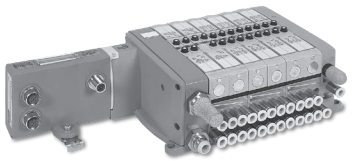
Options	P2M	P2H IO-Link	P2H Ethernet	PCH	Turck BL67
24 Solenoid control	X*	X			X
32 Solenoid control			X	X	X
Digital inputs / outputs				X	X
Analog inputs / outputs					X
Class A IO-Link master module				X	X
Class B IO-Link Master module				X	
Short circuit protection on inputs				X	X
Current sensing outputs				X	X
DeviceNet subnet					X
Power over DeviceNet / CANopen					X
CANopen expansion					X

* Only 19 usable when used with Moduflex Valve

P2M Network Nodes (shown on H Micro & Moduflex)

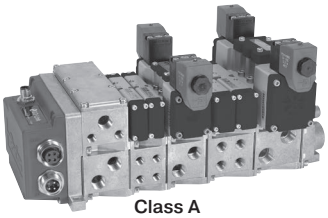


Moduflex

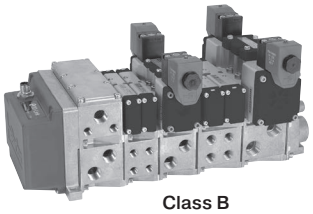


H Micro

P2H Network Node: IO-Link (shown on H Series ISO)

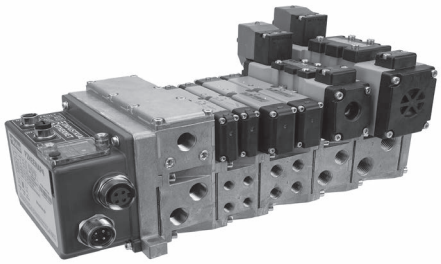


Class A

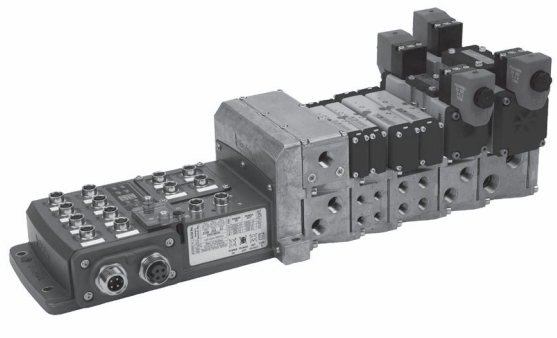


Class B

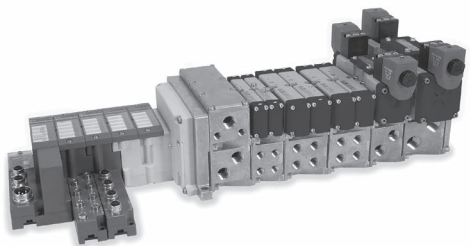
P2H Network Node: Industrial Ethernet (shown on H Series ISO)

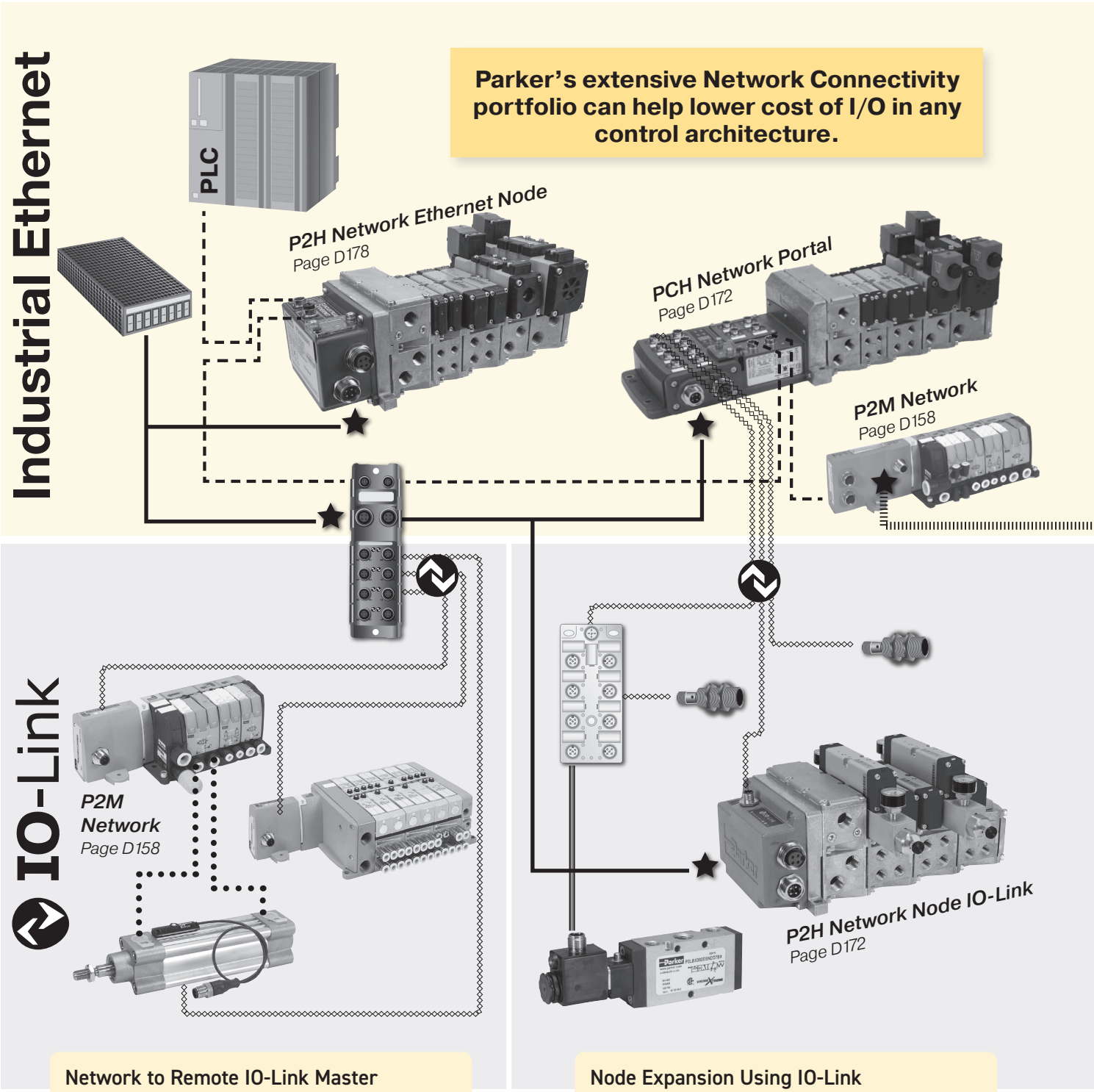


PCH Network Portal (shown on H Series ISO)



Turck Network Portal (shown on H Series ISO)





Parker's extensive Network Connectivity portfolio can help lower cost of I/O in any control architecture.

Network to Remote IO-Link Master

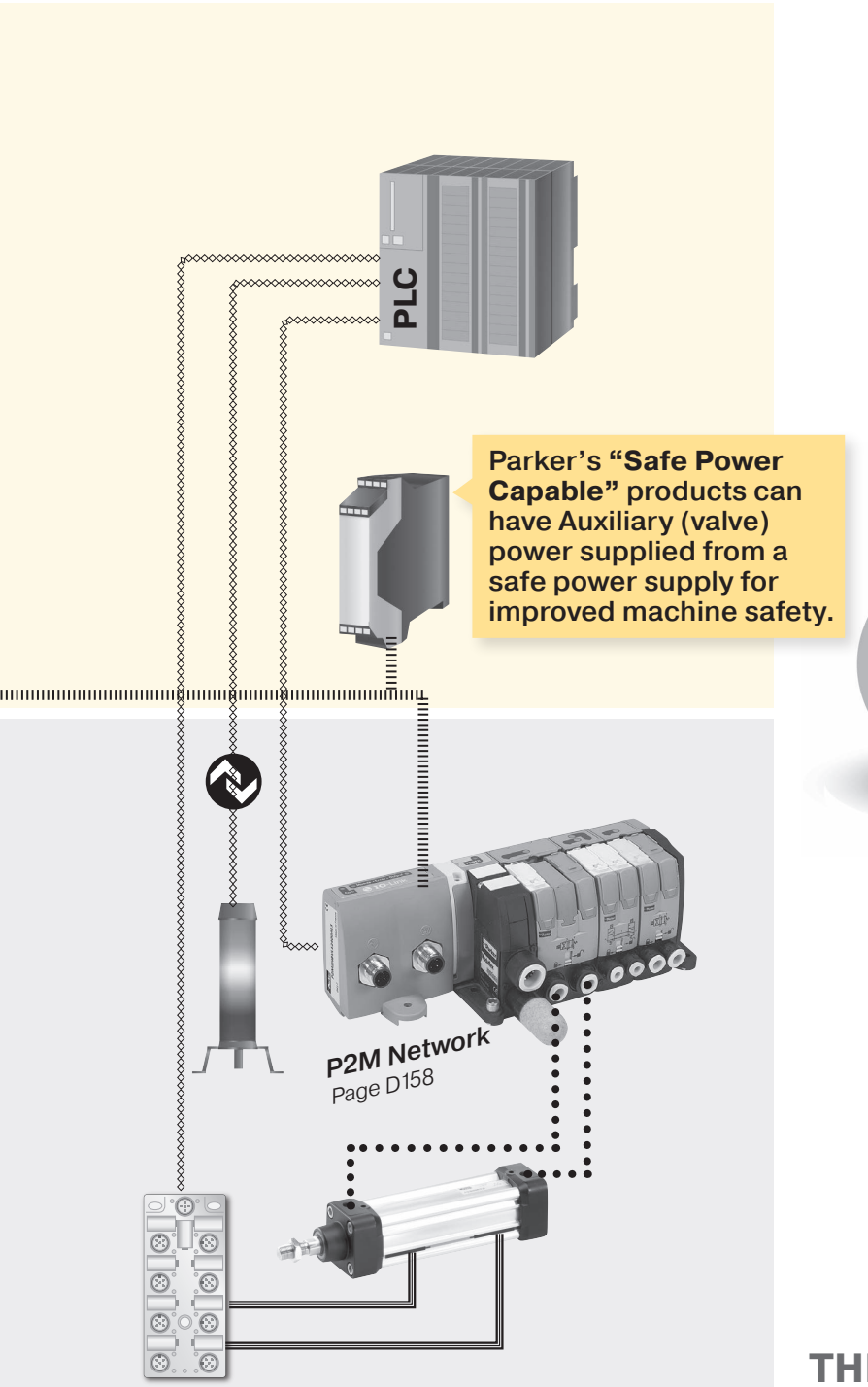
Reduce cabinet size by using a de-centralized "on-machine" IO-Link Master

* Control all local I/O with IO-Link Masters
  - Discrete I/O
  - "Smart" I/O
  - P2M IO-Link Class B & CPS pictured see www.parker.com/pdn/CPS and www.parker.com/pdn/P2M_IOL

Node Expansion Using IO-Link

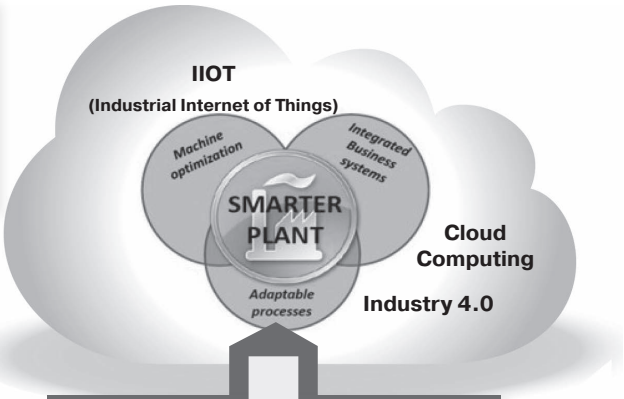
Reduce node count by adding an IO-Link Master module onto Turck Network manifold

* 20m max length for I/O-Link cables
* Control all "smart I/O" on 1 node
* Reduce cost of secondary valve manifold
  - P2H IO-Link Class A pictured see www.parker.com/pdn/P2H_IOL



Industrial Network
IO-Link
Discrete Wired Input / Output
24 VDC Power
24 VDC SAFE Power
Pneumatic

Parker's "Safe Power Capable" products can have Auxiliary (valve) power supplied from a safe power supply for improved machine safety.



IO-Link is another step towards the smarter plant by lowering the cost for gathering component level prognostics and diagnostics.

Out of Tolerance Warnings
* Voltage
* Temperature

Error Descriptors
* Solenoid short circuit
* IO-Link communication error cycle count for each valve

Non-Network I/O Control Using IO-Link

Use PLC with integrated IO-Link Master for machines with smaller I/O counts

* 20m max length for I/O-Link cables
* Control all local I/O with IO-Link
  - Discrete I/O
  - "Smart" I/O
  - P2M IO-Link Class A pictured

THIS IS EASIER
Faster installation than discrete wiring
Standard IP67 M12 cable

THIS IS SAVINGS
Fewer network nodes
Easy expandability

THIS IS VALUE
Easy access diagnostics
Prognostics to prevent downtime

System Overview - Discrete Wiring

- Up to 24 solenoids per manifold (19 when used with Moduflex Valve)
- Discretely wired solenoids - optimized for PLCs with onboard inputs and outputs
- 25-Pin D-Sub, 19-Pin Brad Harrison or M23, or 12-Pin M23 connectors available

Centralized Application

Valves Inside Control Cabinet

- Valves located near machine control
- Applications with caustic wash down, hazardous areas, or extreme temperatures

Disadvantages

- Difficult to troubleshoot
- Difficult to maintain
- Expensive bulkhead fittings
- Long wiring time in cabinet

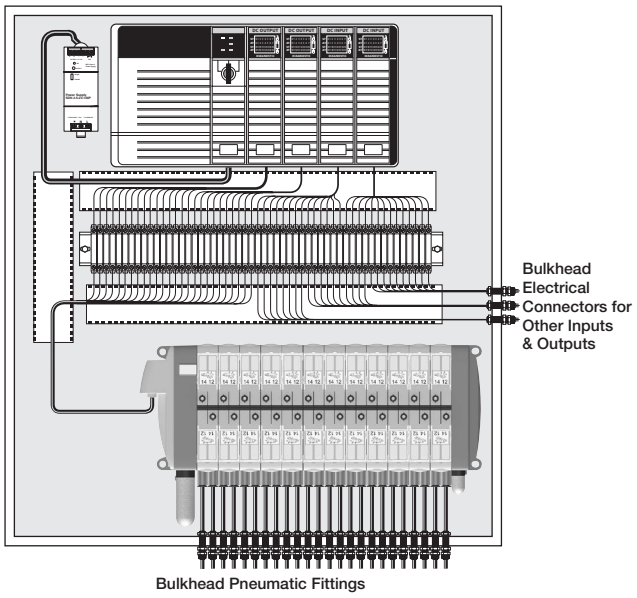
De-centralized Application

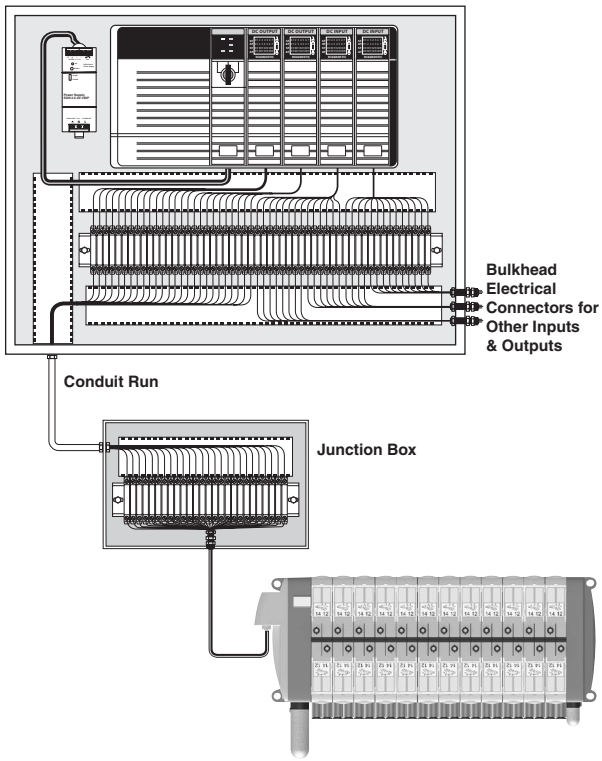
Valves Outside Control Cabinet

- Valves located near application - ready for machine mounting
- IP65 rating suitable for dusty and wet environments

Disadvantages

- Difficult to troubleshoot
- Difficult to maintain
- Long wiring time in cabinet
- Long wiring time in junction box





System Overview - P2M Network Node

- Up to 24 solenoids per manifold (19 when used with Moduflex Valve)
- Optimized for PLCs with network capability
- Routinely used on medium sized machines
- Connectivity to Moduflex, H Series Micro and H Series ISO valves

Centralized Application

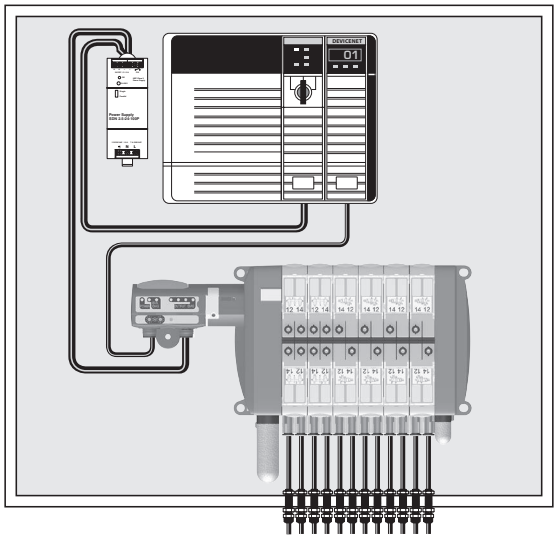
Valves Inside Control Cabinet

- Valves located near machine control
- Applications with caustic wash down, hazardous areas, or extreme temperatures
- Additional inputs and outputs are not directly attached to valve manifold

Advantages

- Highest degree of environmental protection
- One location for all control devices
- Small size requires minimal cabinet space
- Eliminates terminal strips and wire ways for valves
- Greatly reduces wiring time
- Eliminates junction boxes for valves
- Eliminates conduit runs for valves

IO-Link
ETHERNET POWERLINK
PROFINET INDUSTRIAL ETHERNET
EtherNet/IP
EtherCAT
Modbus



Bulkhead Pneumatic Fittings

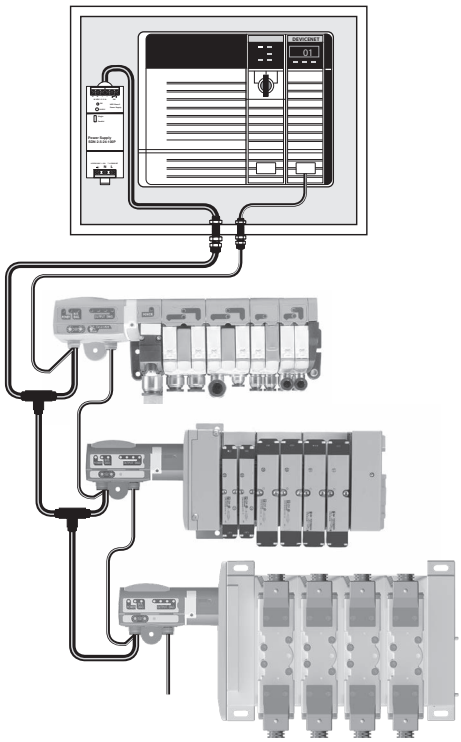
De-centralized Application

H Series Micro Outside Control Cabinet

- Valves located near application - ready for machine mounting
- IP65 rating suitable for dusty and wet environments
- Additional inputs and outputs are not directly attached to valve manifold

Advantages

- Smallest control cabinet
- Reduces tubing length and improves pneumatic response time
- Eliminates pneumatic bulk fittings on control cabinet
- Many network nodes can be attached to the network with little incremental cost – valve manifolds, inputs, outputs and other devices
- Eliminates terminal strips and wire ways for valves
- Greatly reduces wiring time
- Eliminates junction boxes for valves
- Eliminates conduit runs for valves



System Overview - Turck Network Portal

General Product Features

- Turck Network Portal with up to 256 inputs / outputs and up to 16 or 32 solenoids per manifold
- Digital inputs / outputs, IO-Link Class A Master analog inputs / outputs, serial interface, counter modules, and RFID modules available
- Connectivity to H Series Micro and H Series ISO valve series

Advantages

- Handle all I/O from one node; eliminate PLC input / output cards
- Optimized for PLC's with network capability
- Eliminates junction boxes, terminal strips, and conduit runs for all inputs and outputs, greatly reducing wiring time

Centralized Application

Valves Inside Control Cabinet

- Valves located near machine control
- Applications with caustic wash down, hazardous areas, or extreme temperatures

Advantages

- Highest degree of environmental protection
- One location for all control devices
- Small size requires minimal cabinet space

De-centralized Application

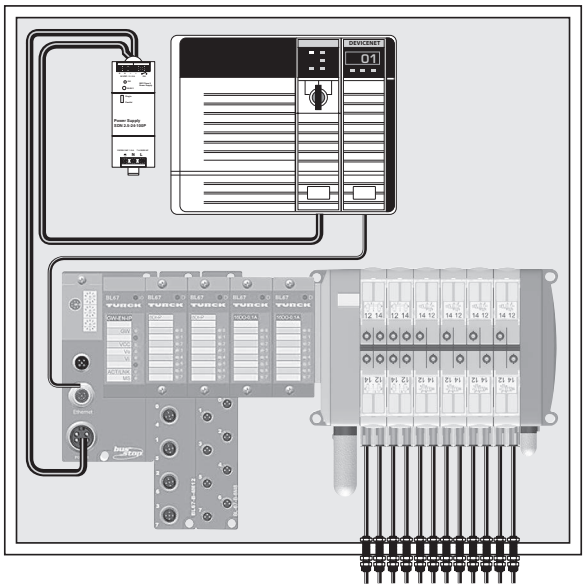
Valves Outside Control Cabinet

- Valves located near application - ready for machine mounting
- IP65 rating suitable for dusty and wet environments

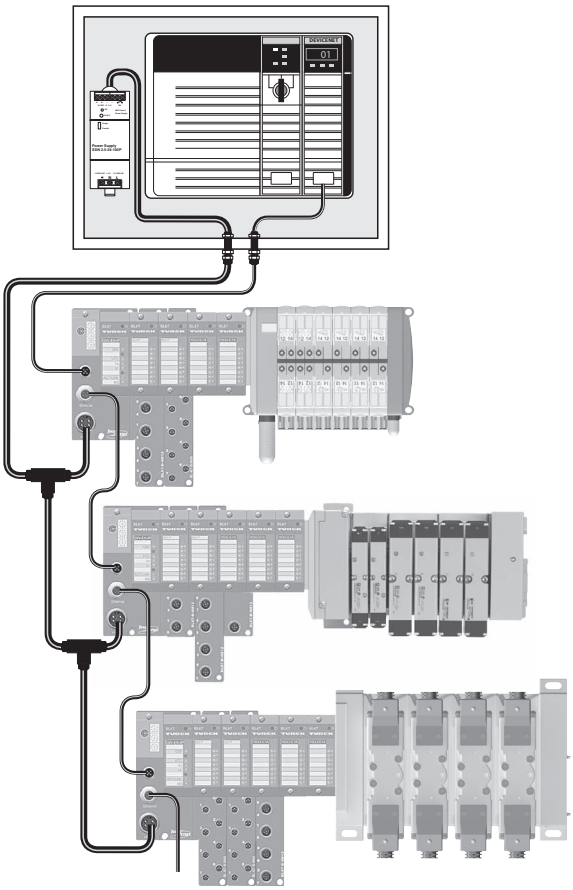
Advantages

- Smallest control cabinet
- Reduces tubing length and improves response time
- Eliminates pneumatic bulk fittings on control cabinet

EtherNet/IP™ PROFINET Modbus/TCP™
DeviceNet PROFIBUS CANopen



Bulkhead Pneumatic Fittings



System Overview - Turck Network Portal with CANopen Expansion

General Product Features

- Turck Network Portal with up to 256 inputs / outputs and up to 16 or 32 solenoids per manifold
- Digital inputs / outputs, IO-Link Class A Master analog inputs / outputs, serial interface, counter modules, and RFID modules available
- Connectivity to H Series Micro and H Series ISO valves

CANopen Expansion Features

- Using a CANopen interface module, a CANopen subnet is created within the Turck Network Portal, controlling an additional 64 inputs, outputs, or solenoids
- The CANopen subnet is independent of the main network, and is not visible to the master PLC
- Additional P2M CANopen modules can be attached to the CANopen subnet to provide a connection for 16 solenoids each
- Other 3rd party CANopen devices can also be used on this network, within the 64 bit CANopen expansion limit

System Advantages

- Handle all I/O from one node; eliminate PLC input / output cards
- Optimized for PLC's with network capability
- Several CANopen nodes can be attached to the network – valve manifolds, inputs, outputs or other devices
- CANopen expansion allows additional devices to be attached to the system without a CANopen scanner card
- Eliminates junction boxes, terminal strips, and conduit runs for all inputs and outputs, greatly reducing wiring time

Centralized Application

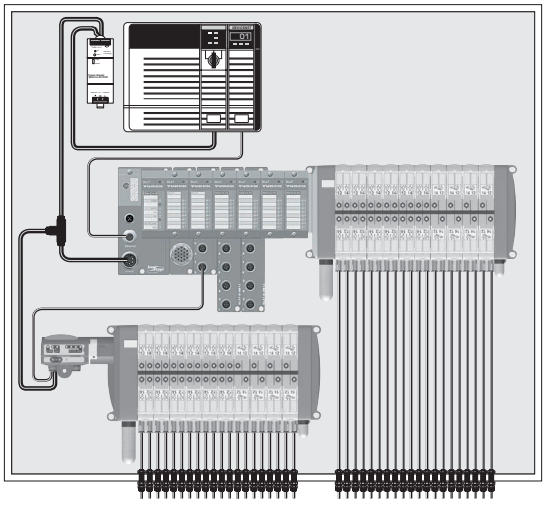
Valves Inside Control Cabinet

- Valves located near machine control
- Applications with caustic wash down, hazardous areas, or extreme temperatures

Advantages

- Highest degree of environmental protection
- One location for all control devices
- Small size requires minimal cabinet space

EtherNet/IP™ PROFINET INDUSTRIAL ETHERNET Modbus/TCP™
DeviceNet™ PROFIBUS PROCESS FIELD BUS CANopen



Bulkhead Pneumatic Fittings

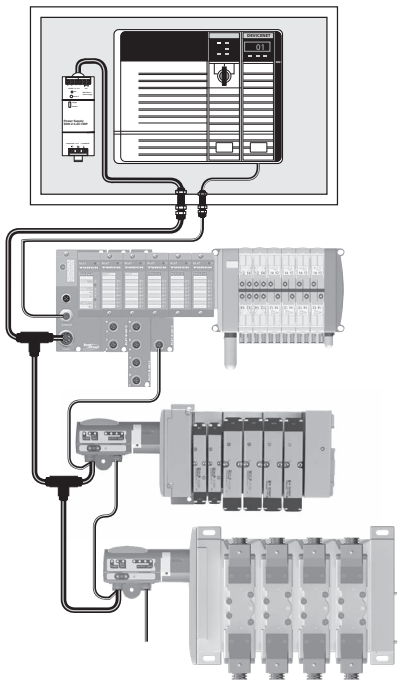
De-centralized Application

Valves Outside Control Cabinet

- Valves located near application - ready for machine mounting
- IP65 rating suitable for dusty and wet environments

Advantages

- Smallest control cabinet
- Reduces tubing length and improves response time
- Eliminates pneumatic bulk fittings on control cabinet



System Overview - Turck Network Portal with BL Remote DeviceNet Subnet

General Product Features

- Turck Network Portal with up to 256 inputs / outputs and up to 16 or 32 solenoids per manifold
- Digital inputs / outputs, IO-Link Class A Master analog inputs / outputs, serial interface, counter modules, and RFID modules available
- Connectivity to H Series Micro and H Series ISO valves

BL Remote DeviceNet Subnet Features

- With BL remote DeviceNet subnet functionality, each communication module has its own DeviceNet master which provides a connection for 63 DeviceNet nodes with additional inputs, outputs, and solenoid control
- BL remote DeviceNet subnet is independent of the main network, and is not visible to the master PLC
- P2M DeviceNet modules can be attached to the subnet to provide a connection for 16 solenoids each
- Turck DeviceNet modules can be attached to the subnet to provide a connection for 16 or 32 solenoids each and inputs and outputs up to the 256 input and output limitation

System Advantages

- Handle all I/O from one node; eliminate PLC input / output cards
- Optimized for PLC's with network capability
- Many DeviceNet nodes can be attached to the network – valve manifolds, inputs, outputs or other devices
- Eliminates junction boxes, terminal strips, and conduit runs for all inputs and outputs, greatly reducing wiring time

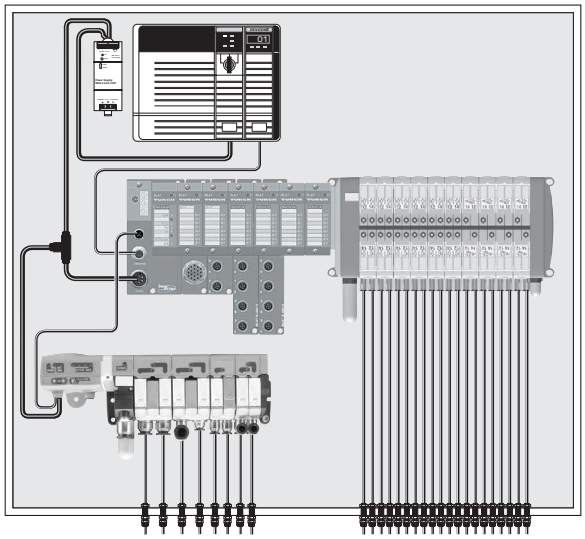
Centralized Application

Valves Inside Control Cabinet

- Valves located near machine control
- Applications with caustic wash down, hazardous areas or extreme temperatures

Advantages

- Highest degree of environmental protection
- One location for all control devices
- Small size requires minimal cabinet space



Bulkhead Pneumatic Fittings

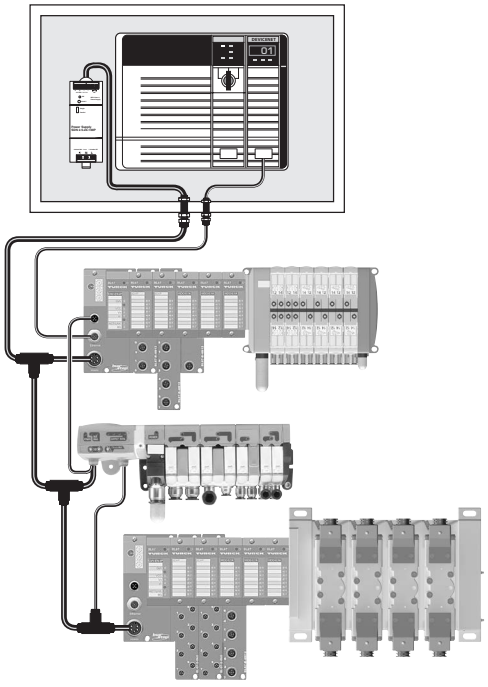
De-centralized Application

Valves Outside Control Cabinet

- Valves located near application - ready for machine mounting
- IP65 rating suitable for dusty and wet environments

Advantages

- Smallest control cabinet
- Reduces tubing length and improves response time
- Eliminates pneumatic bulk fittings on control cabinet



System Overview - Turck Network Portal with Stand Alone Control using CoDeSys

General Product Features
- Turck Network Portal with up to 256 inputs / outputs and 32 solenoids per manifold
- Digital inputs / outputs, analog inputs / outputs, serial interface, counter modules, and RFID modules available
- Connectivity to H Series Micro and H Series ISO valves

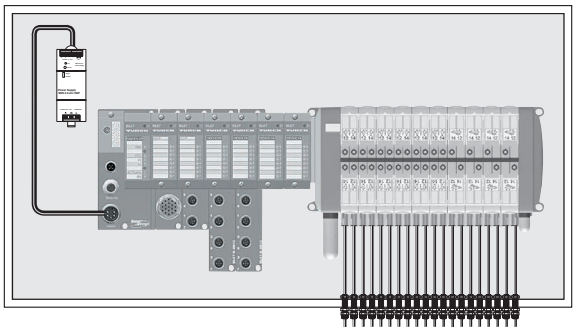
Stand Alone Control Features
- Communication modules equipped with standalone control – programmed according to IEC61131-3 with CoDeSys
- 512KB program memory with 32 bit RISC processor
- Run 1000 instructions in less than 1 ms
- Optimized for PLC's with network capability or standalone controllers that need to interface with other devices

System Advantages
- Handle all I/O and control with one system; eliminate the PLC when used as the main controller for smaller machines
- Reduces programming and bandwidth requirements on large machines with a master PLC controller by handling local I/O and interfacing with the PLC over the network
- Eliminates junction boxes, terminal strips, and conduit runs for all inputs and outputs, greatly reducing wiring time

Centralized Application Valves

Inside Control Cabinet
- Valves attached to the machine control
- Applications with caustic wash down, hazardous areas, or extreme temperatures

Advantages
- Highest degree of environmental protection
- One location for all control devices

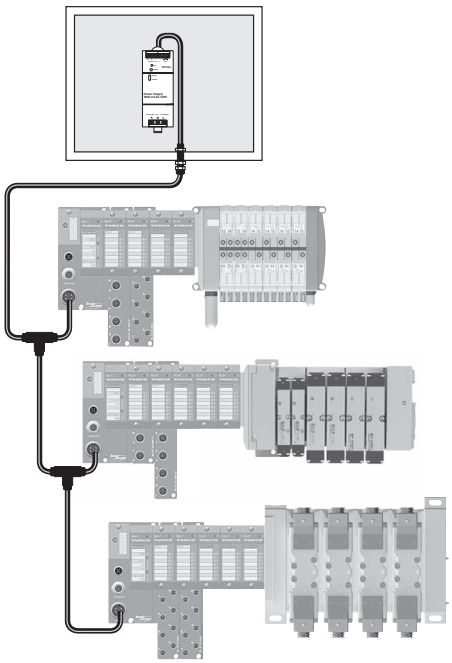


Bulkhead Pneumatic Fittings

De-centralized Application

Valves Outside Control Cabinet
- Valves and machine control located near application - ready for machine mounting
- IP65 rating suitable for dusty and wet environments

Advantages
- No control cabinet needed when used as the main controller
- Reduces tubing length and improves response time
- Eliminates pneumatic bulk fittings on control cabinet



P2M Network Nodes

P2M communication modules directly attach to the Moduflex valve series as well as the P2M endplates of the H Series Micro. It offers a compact and low cost network solution.

Features

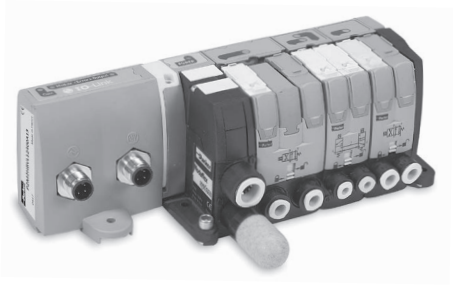
- Small, compact product design
- IO-Link Class A & Class B nodes
- Ethernet Communications
  - EtherNet/IP™
  - Profinet
  - EtherCat
  - Powerlink
  - ModbusTCP
- Channel-level diagnostics (LED and Electronic)
- Horizontal and vertical mounting without derating
- 5g vibration
- Quick-disconnects for I/O and network connectivity
- Built-in panel grounding
- CE certification

P2M Network Nodes

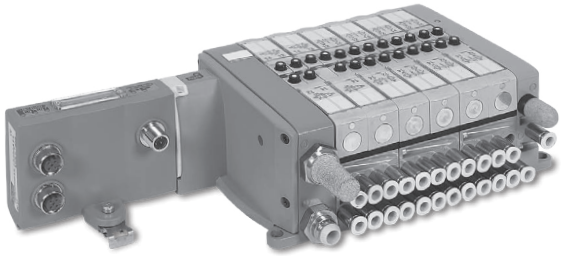
P2M communication module attaches directly to the end plate. It offers a compact and low cost network solution.

Features

- Small, compact product design
- IO-Link Class A & Class B nodes
- Broad protocol offering
- Built-in panel grounding
- CE certification



P2M2HBVL12400A13
(Class A IO-Link)



P2M2HBVE12400
(EtherNet/IP™)

	Industrial Ethernet Protocol	Maximum Addresses †	Part Number
	EtherNet/IP™ *(Safe Power Capable)*	24 †	**P2M2HBVE12400**
	PROFINET *(Safe Power Capable)*	24 †	**P2M2HBVN12400**
	EtherCAT *(Safe Power Capable)*	24 †	**P2M2HBVT12400**
	Modbus/TCP *(Safe Power Capable)*	24 †	**P2M2HBVM12400**
	PowerLink *(Safe Power Capable)*	24 †	**P2M2HBVW12400**

	IO-Link Class	IO-Link	Aux. Power	Aux. Power Pinout	Maximum Addresses †	Part Number	
						Standard	Safe Power Capable *
	Class A	3 Pins	3 Pins	1 & 3	24 †	**P2M2HBVL12400A13**	**P2M2HBVL12400A13-SPC**
		3 Pins	3 Pins	4 & 3	24 †	**P2M2HBVL12400A43**	**P2M2HBVL12400A43-SPC**
		3 Pins	5 Pins	4 & 2	24 †	**P2M2HBVL12400A42**	**P2M2HBVL12400A42-SPC**
	Class B	5 Pins		2 & 5	24 †	**P2M2HBVL12400B25**	**P2M2HBVL12400B25-SPC**

* Safe Power Capable (-SPC) version is suitable for connection to an OSSD (test pulsed) SAFE output source.

† If using with Moduflex valves, maximum solenoid addresses limit is 19.

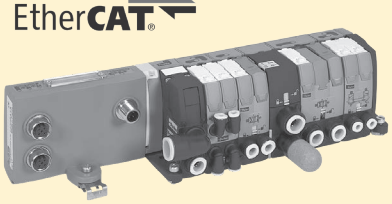
Further details: www.parker.com/pdn/P2M_IOL

Most popular.

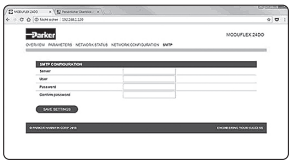
P2M Industrial Ethernet Node

The P2M Industrial Ethernet 24 DO node allows a very simple and cost efficient connection to the most popular Industrial Ethernet networks.

Designed with isolated auxiliary power, it can easily be adapted to all power supply architectures and follow any required machine directives as Safe Power Capable.



Simple Product Set-Up



The P2M Industrial Ethernet Node offers IP addressing through 3 rotary switches located on the top side.

The 3 rotary switches also allow for Factory Reset, IP address storage, and DHCP addressing.

If supported by the protocol used, the IP address can be modified through the embedded web page.

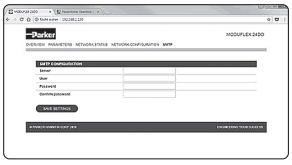
For an application requiring a regular disconnection / reconnection of communication & power, Profinet and EtherNet/IP™ protocols allow respectively a Fast Start-Up (FSU) and Quick Connect mode. This mode can be enabled or disabled.

Topology / Integrated Ethernet Switch

The P2M Industrial Ethernet 24 DO Node offers 2 Ethernet ports allowing a line topology without external switch. The Ring topology can also be supported (enable/disable) for Profinet, EtherNet/IP™ and Modbus TCP/IP.

The integrated Ethernet switch supports Class C services allowing use in an isochronous real time (IRT) structure.

Easy Diagnostics – Local LEDs, Process (cyclic) data, Parameter (acyclic) data



The P2M Industrial Ethernet 24 DO Node offers local diagnostics through 7 LED's located on the visible top side, showing:

- Logic status
- Ethernet activity on both ports
- Standard status due to protocol
- Output error / Auxiliary power

This local information as well as configuration and predictive maintenance diagnostics (Power monitoring, Solenoid cycle counting, etc) are available via both Process Data (cyclic) and Parameter Data (acyclic) via the PLC through the network and also easily viewable from the embedded web page.

When the PLC is NOT in control, the web page allows the user to force ON/OFF the solenoids state. This function has password protection.

Safe Power Capable

Auxiliary power of P2M Industrial Ethernet 24 DO Node can be supplied from a safe output device following machinery directives. This includes:

- Output Signal Switch Device (OSSD) test pulse compatible
- Galvanic isolation between 0 VDC Logic and Auxiliary power
- PP or PM cabling modes

For more details, refer to the user manuals located at www.parker.com/pdn/P2M_IE

P2M Industrial Ethernet Connections & Configuration

Ethernet ports and Auxiliary power connection

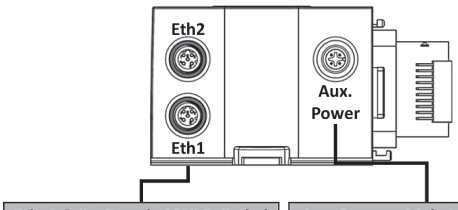
Ethernet ports: 2 x Standard Female M12 D-Coded – 5 pins
Auxiliary Power: Standard Male M12 A-Coded – 4 pins

Configuration file

The configuration files (.EDS, .GDS, etc) can be download from the product web page.

Add on Instructions & Function Blocks

Add on Instructions & Function Blocks to assist in the configuration and programming of the P2M Node are available on the product web page – www.parker.com/pdn/P2M_IE



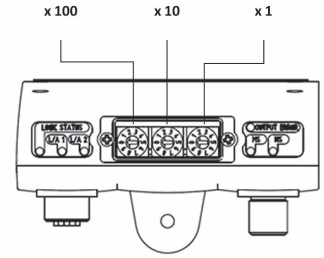
Eth. 1 & 2 – Female M12 D-Coded		
	PIN #	Description
	1	TxData +
	2	RxData +
	3	TxData -
	4	RxData -
	5	na

Aux. Power – Male M12 A-Coded		
	PIN #	Description
	1	Logic Power +
	2	AUX Power -
	3	Logic Power -
	4	AUX Power +

* 2A max current for P2M Industrial Ethernet Nodes

IP Address Setting

Can be done via Rotary Switches, DHCP, Web page, Ipconfig Tool or TCP/IP Interface Object, depending on protocol:



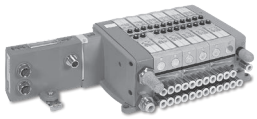
Description	EtherNet/IP™ Profinet IO Modbus TCP/IP	Ethernet PowerLink	EtherCAT
IP-Address setting stored into the NV-memory of the P2M node	000	000	N/A
IP-Address setting determined by the 3 rotary switches: • IP Address: 192.168.1.**xxx** • Subnet Mask: 255.255.255.0 • Default Gateway for 001: 192.168.1.**2** • Default Gateway for 002 - 254: 192.168.1.**1**	001 – 254	001 – 239	N/A
The device will obtains its address via DHCP	888	N/A	N/A
Reset to factory status	999	999	999
Invalid, the module will not start	All others	All others	All others

P2M Industrial Ethernet Valve Control

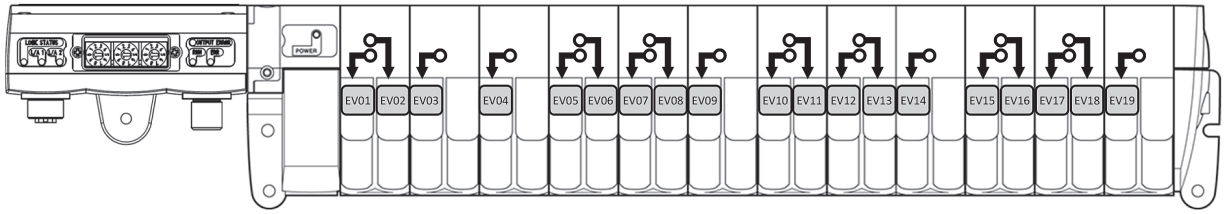
All P2M Industrial Ethernet Modules can easily connect to and control pneumatic valves sizes ranging from 0.18 Cv to 6.0 Cv utilizing the Moduflex, H Micro, or H ISO valve series including the new H ISO Universal manifold which can mix ISO sizes 15407 (sizes 02 & 01) and 5599 (sizes 1 & 2) without transition plates.

P2M on Moduflex

P2M on H Series Micro



P2M Industrial Ethernet Node Output (Solenoid) data mapping - shown on Moduflex valve series



	7 3	2 0
Byte 0	EV08	. . EV01
Byte 1	EV16	. . EV09
Byte 2*	EV24 . . . . . EV20	EV19 . . . . . EV17

* Byte 2 / Bits 3 to 7 are only available when connected to H Series Micro or H Series ISO valve manifolds. The Moduflex valve series is limited to 19.

Process (Cyclic) Diagnostic through network via ADI #9 – "Module Error Input"

Easy to access diagnostic data transmitted to the PLC as Application Device Instance (ADI) #9

- Voltage warning, short circuit condition, module error, etc
- For more details refer to user manual on product web page – www.parker.com/pdn/P2M_IE

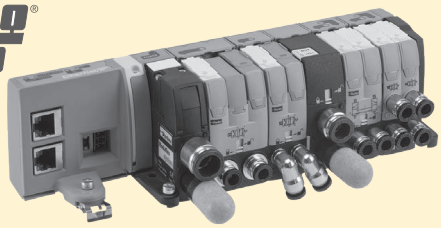
ADI	Instance Name	Data Type	Access
#9	Module error input	Unit 16	Read

Byte 0	Diag 7 . . . . . Diag 0
Byte 1	Reserved

Valve Island V Series with Industrial Ethernet connection

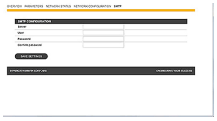
The P2M Industrial Ethernet Lite node 24DO allows a very simple and cost efficient connection to the most popular Industrial Ethernet networks.

In its compact IP40 version equiped with two RJ45 Ethernet ports, it saves size in cabinet applications and offers an easy connection to the network in a line topology.



Industrial Ethernet Protocol	Part Number
Profinet IO	**P2M2HBVE12400RJ**
EtherNet/IP™	**P2M2HBVN12400RJ**
EtherCAT	**P2M2HBVT12400RJ**

Product Set-Up



The P2M Lite Node 24DO is by default in DHCP mode. The module must be assigned to a static IP-Address in order be controlled via the network.

The Network Configuration settings can be done throuhg the embedded web server of the node as well as "IPconfig", "TIA Portal" or similar methods.

For an application requiring a regular disconnection / reconnection of the node, Profinet and EtherNet/IP™ protocols allow respectively a Fast Start- Up (FSU) and Quick Connect mode. This mode can be enable or disable .

Technology / Integrated Ethernet Switch

The P2M Industrial Ethernet Lite node 24DO offers 2 RJ45 ports allowing a line topology without external switch. The Ring topology can also be supported (enable/disable) for Profinet and EtherNet/IP™.

The integrated Ethernet switch support Class C Services allowing used in an isochronous real time (IRT) structure.

Diagnostic

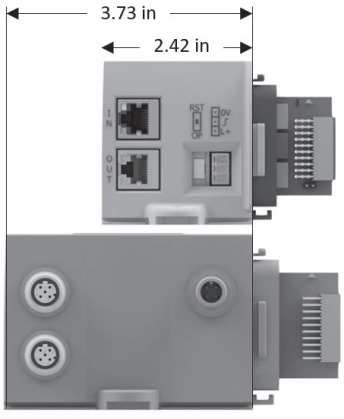
The P2M Industrial Ethernet Lite node 24DO offers a local diagnostic through 5 LED's located on the visible top side and 4 additionals on both Ethernet connectors showing:

- Logic status
- Ethernet activity on both ports
- Standard Status due to protocol
- Output error / Power Supply

This local information as well as trouble shooting and predictive maintenance diagnostics (Power monitoring, Life cycle counting, ...) are available in PLC through the network and reported on imbedded web page.

When PLC is in "STOP", the web page allows to force ON/OFF solenoids state. This function has a password protection.

Save 1.31 inches with P2M Lite Node compared to P2M Ethernet Node



Industrial Ethernet Lite Node Connections and Diagnostic Functions

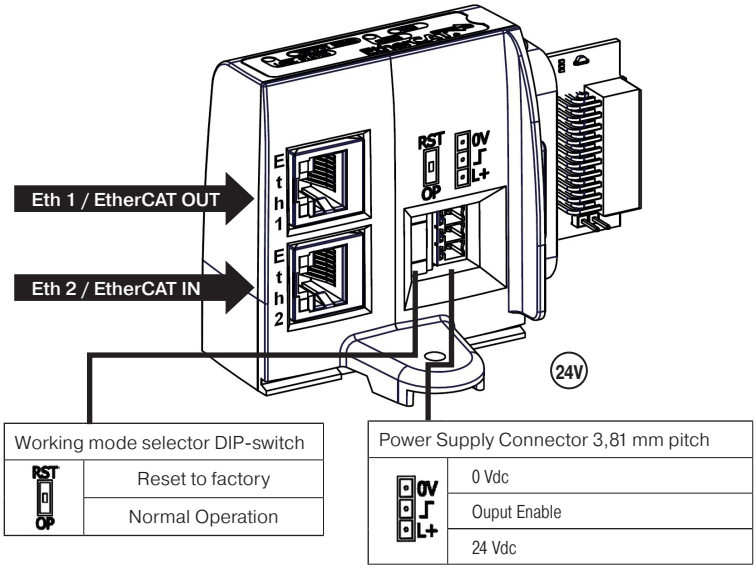
Ethernet and Power Connections

Network Communication Ports:
2 x Standard RJ45 Female connectors

Usage of standard manufactured cables available from your usual electrical supplier is recommended.

Power Supply:
Standard 3-Pin' Male Connector - 3,81 mm pitch

Working mode selector:
DIP-switch



Working mode selector DIP-switch	
RST OP	Reset to factory
	Normal Operation

Power Supply Connector 3,81 mm pitch	
0V L+	0 Vdc
	Ouput Enable
	24 Vdc

Configuration Files

The configuration files can be download from the product web page: www.parker.com/pde/P2M_IE

IP Address Setting

For both Profinet IO and EtherNet/IP™ protocols, the P2M Lite 24DO Node is by default in DHCP mode. The module must be assigned to a static IP-Address in order to be controlled via network. Please, refer to the user manual for IP-Address assignment process.

Local and Network Diagnostic Functions

Local Diagnostic

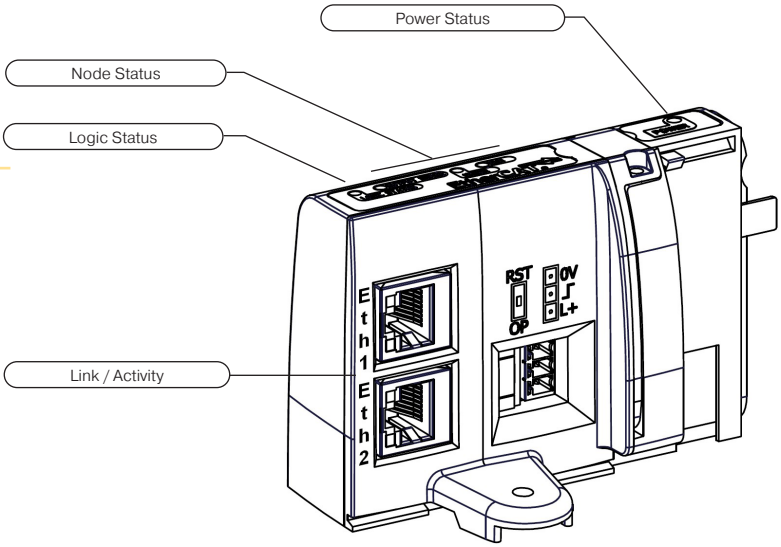
The P2M Lite 24DO node offers a local diagnostic via 9 LED's. Please refer to user manual with interpretation table.

Network Diagnostic

The P2M Lite 24DO Node offers additional useful module status information:

- Pilot overload or short circuit
- Power Voltage out of tolerance
- Cycle counter for every pilot
- Module temperature

For detailed technical information on the P2M Lite 24DO Node and a complete interpretation of node's diagnostic functionalities, please refer to the User Manual available from the product web page: www.parker.com/pde/P2M_IE



EtherNet/IP™

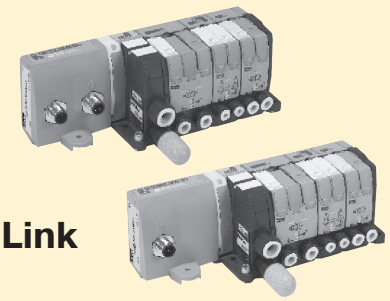
EtherCAT®

PROFINET INDUSTRIAL ETHERNET

Valve Island V Series with IO-Link connection

The P2M Moduflex **IO-Link** 24 DO node allows a very simple and cost efficient connection to any IO-Link master, centralised into the PLC or decentralised through an industrial Ethernet network.

Designed in both Class A and Class B versions with an isolated auxiliary power, it can easily be adapted to all power supply architectures and follow machine directives.

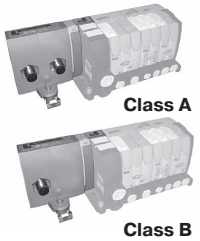


IO-Link

"V" Series Valve Island - P2M head module for IO-Link

Electrical Module for 24 outputs
(The last 5 outputs of this 24 DO module can not be used with Moduflex Valve)

IO-Link



Class A

Class B

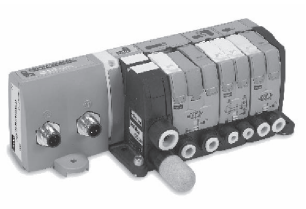
M12 A Coded Connector Connection

Description	IO-Link Class	IO-Link	Aux. Power	Aux. Power Pinout	Weight (g)	Part Number Standard	Part Number Safe Power Capable
P2M IO-Link communication module	Class A	3 Pin's	3 Pin's	1 & 3	160	**P2M2HBVL12400A13**	**P2M2HBVL12400A13-SPC**
		3 Pin's	3 Pin's	4 & 3	160	**P2M2HBVL12400A43**	**P2M2HBVL12400A43-SPC**
		3 Pin's	5 Pin's	4 & 2	160	**P2M2HBVL12400A42**	**P2M2HBVL12400A42-SPC**
	Class B	5 Pin's		2 & 5	140	**P2M2HBVL12400B25**	**P2M2HBVL12400B25-SPC**
Power & communication cable						**RKC 4.5T-*-RSC 4.5T/S1587**	

IODD file can be downloaded from IODD Finder or the Moduflex web site:
https://ioddfinder.io-link.com or www.parker.com/pdn/io-link

Where * = 1, 2, 3, 4, 5, 10, 20 meter standard lengths

P2M Class A Module with Independent Auxiliary Power Supply



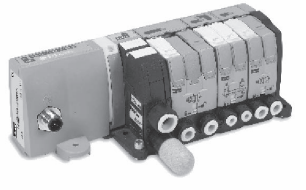
The P2M **IO-Link** Class A module can handle a Moduflex valve manifold having up to 19 solenoid outputs, or H Series Micro / ISO up to 24 solenoid outputs.

Thanks to its 2 x M12 A coded male connectors, the P2M node can be connected to any IO-Link Class A master and separately receive its auxiliary power supply for valves from an independent source.

The P2M **IO-Link** Class A module exists in 3 versions with the auxiliary power M12 connector pin out adapted to any sourcing through a standard M12 cable:

- P2M2HBVL12400A13 version: 24VDC / 0VDC on pins 1 & 3 – Standard version
- P2M2HBVL12400A43 version: 24VDC / 0VDC on pins 4 & 3 – Compatible with Siemens wiring
- P2M2HBVL12400A42 version: 24VDC / 0VDC on pins 4 & 2 – Compatible with Rockwell wiring and Turck wiring

P2M Class B Module



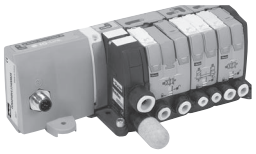
The P2M **IO-Link** Class B module can handle a Moduflex valve manifold having up to 19 solenoid outputs, or H Series Micro / ISO up to 24 solenoid outputs.

Thanks to its single M12 A coded male connectors, P2M node can be connected to any IO-Link Class B master receiving its auxiliary power supply for valves on pins 2 & 5 from the only cable simplifying the connection.

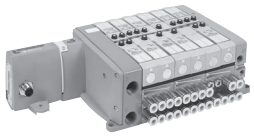
- P2M2HBVL12400B25 version: 24VDC / 0VDC on pins 2 & 5

Valve Series

Check the total maximum solenoid current consumption against the limit of the power supply and P2M module (standard version 4A, SPC version 2A).



Moduflex Valve
Cv: .18 - 0.80
19 Solenoids
42mA per Sol.



H Micro
Cv: 0.35
24 Solenoids
42mA per Sol.

IO-Link Module Connection and Diagnostic Functions

IO-Link

IO-Link Module Connection

Standard male M12 – type A

Usage of standard manufactured cables available from your usual electrical supplier is recommended.

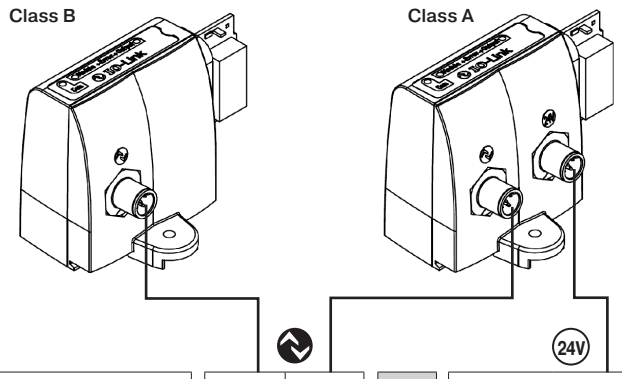
Note: Auxiliary power for solenoids can be wired allowing the user to turn outputs off while the communications remains on.

Configuration

IODD file can be downloaded from IODD Finder or the P2M web site:

https://ioddfinder.io-link.com

www.parker.com/pdn/P2M_IOL



Legend

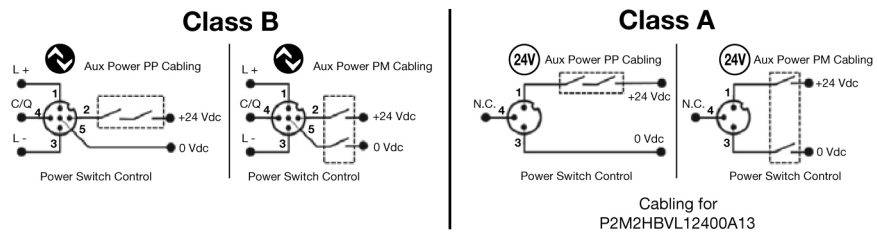
Symbol	Description
L+	IO-Link power supply "+"
L-	IO-Link power supply "-"
C/Q	IO-Link communication
Aux +	Auxiliary power supply 24 VDC
Aux -	Auxiliary power supply 0 VDC

Class B 5 pin's P2M...B..	Class A 3 pin's P2M...A..	M12 pin's	Class A 3 pin's P2M...A13	Class A 3 pin's P2M...A43	Class A 5 pin's P2M...A42
L+	L+	1	Aux +	Not used	Not used
Aux +	-	2	-	-	Aux -
L-	L-	3	Aux -	Aux -	Not used
C/Q	C/Q	4	n.c.	Aux +	Aux +
Aux -	-	5	-	-	Not used

Auxiliary Power Supply Compatibility

The P2M IO-Link Node can be powered from a 24VDC auxiliary source in PP or PM mode as grounds are isolated.

The P2M Safe Power Capable (-SPC) versions can be connected from a SAFE OSSD test pulsed power source.



IO-Link Module Diagnostic Functions

The P2M IO-Link module offers additional useful module status information:

- Solenoid overload or short circuit
- Auxiliary voltage out of tolerance
- Cycle counter for each solenoid
- Module temperature

For more information on product technical information and module diagnostic functionalities, please refer to the user manual available from the product web page: www.parker.com/pdn/P2M_IOL

COM. Green LED

LED Status	Description	Solving
OFF	IO-Link L+ / L- not powered	Check connection
ON	IOL L+ / L- powered IO mode	Set IO-Link mode in IO-Link master
Blinking	IO-Link communication active	NA

Module — Error Red LED

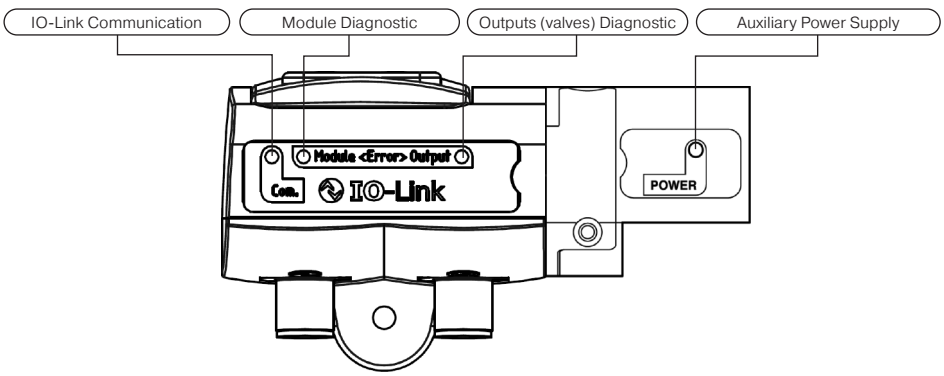
LED Status	Description	Solving
OFF	Standard mode	NA
ON	24 VDC AUX power missing or any active malfunction	Check power supply or change module

Error — Output Red LED

LED Status	Description	Solving
OFF	Standard mode	NA
ON	Any driver error (overload, over temperature, etc.)	Fix solenoid issue then acknowledge error

POWER Green LED

LED Status	Description	Solving
OFF	AUX power failure	Check Auxiliary Power Supply
ON	Standard	NA
Blinking	Aux Power is out of range, alarm level	Check Auxiliary Power Supply



Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Input Data

One byte of diagnostic input data is transferred from P2M IO-Link to the IO-Link Master.

Process Input Data

7	6	5	4	3	2	1	0
Output driver SPI error	Output driver channel error	Polyfuse tripped	Temperature warning	SPI error	AUX voltage error	AUX voltage warning	Acknowledge Required

Output Data

Three bytes of process data are received by P2M IO-Link from the IO-Link Master for control of solenoids.

Process Output Data (Byte 0)

7	6	5	4	3	2	1	0
EV8	EV7	EV6	EV5	EV4	EV3	EV2	EV1

Process Output Data (Byte 1)

7	6	5	4	3	2	1	0
EV16	EV15	EV14	EV13	EV12	EV11	EV10	EV9

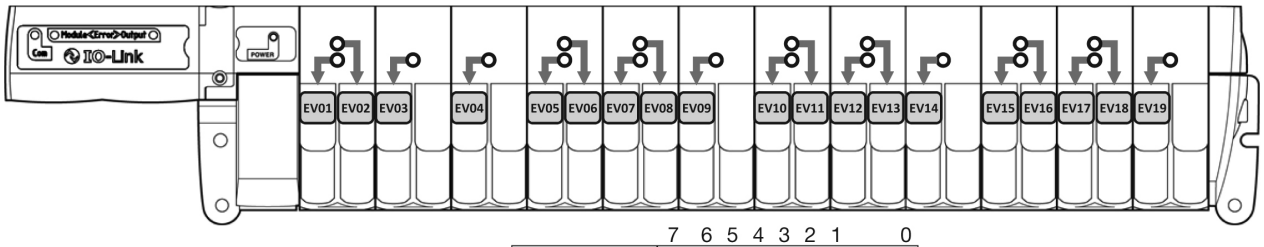
Process Output Data (Byte 2)

7	6	5	4	3	2	1	0
EV24	EV23	EV22	EV21	EV20	EV19	EV18	EV17

Solenoid Pilots Addressing and Process Mapping

P2M IO-Link node addressing used with Moduflex Valve System

The P2M IO-Link node, when used with Moduflex Valve System can handle up to 19 pilot solenoid valves. Addressing will be done as shown below.



PLC mapping Process output	7 6 5 4 3 2 1 0
Byte 0	EV08 ..... EV01
Byte 1	EV16 ..... EV09
Byte 2	EV24 ..... EV17

P2M IO-Link Module Electrical Specifications

IO-Link power supply	According to IO-Link standard V1.1.2
Speed communication	Com 2 – 38 kBd
Auxiliary power supply	20.4 VDC to 26.4 VDC
Current limit per channel	150 mA
Max current limit	4 A
Polarity inversion	YES
Short circuit protection	YES
Operating temperature	0°C to 55°C
Storage temperature	-25°C to 70°C
Shock according to IEC	60068-2-27:2008
Vibration according to IEC	60068-2-6:2007
EMC according to IEC	61000-4-2 up to -4-6

Network Diagnostic Through Process Mapping:

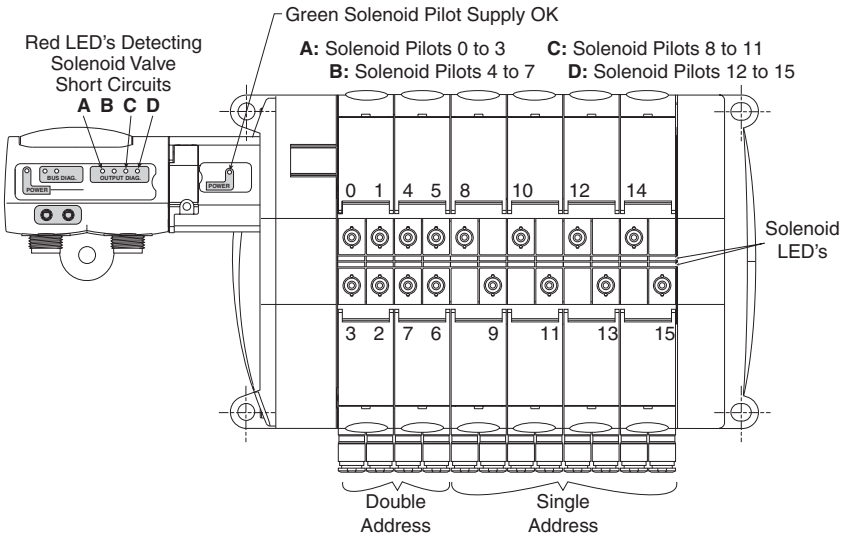
The P2M IO-Link module offers diagnostic data transmitted to the PLC through the master:

PLC mapping Process input	7 6 5 4 3 2 1 0
Byte 0	Diag 7 . . . . . Diag 0

Diag bit	Error message	Detail
Diag 0	Fail-safe status	Acknowledgement required
Diag 1	Auxiliary voltage warning	Check auxiliary power
Diag 2	Auxiliary voltage failure	Check auxiliary power
Diag 3	Module failure	Module HS. must be replaced
Diag 4	Module over-temperature	
Diag 5	Module over-load	
Diag 6	Pilot solenoid(s) short circuit	Solenoid must be replaced
Diag 7	Outputs stage failure	

For further details, refer to the user manual: can be downloaded from www.parker.com/pdn/P2M_IOL

Solenoid Pilot Diagnostic Common to All P2M Nodes



Inside the communication module, solenoid valve control is protected against short-circuits with the following visual indication provided:

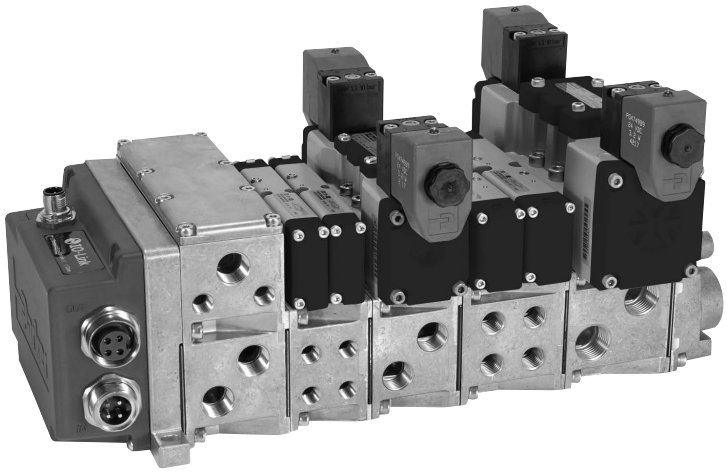
- The red LEDs with code, shown above, detect solenoid valve short-circuits
- Supply is OK when the solenoid pilot power supply indicator is green

P2H IO-Link Node 24 DO

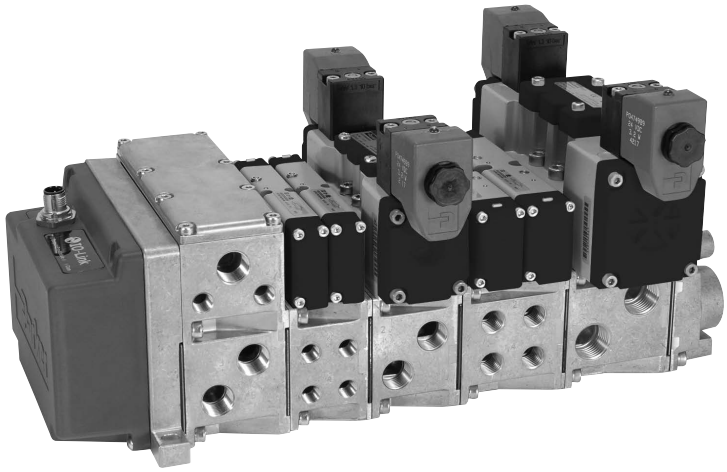
The P2H Network Node is available with IO-Link connectivity for the industries first connection of ISO valves (5599 & 15407) to the low cost IO-Link network.

Features

- Compact, robust product design
- Weld splatter resistant housing material
- Simple connection to IO-Link Class A or Class B masters
- Industries first power in & out capability for Class A version
- Industries first 7/8" power connectors on Class A version
- IO-Link connection to new H Series ISO Universal Manifold, capable of mixing valve sizes from 0.5 Cv – 3 Cv
- Safe Power Capable for supplying valve power from a safety device (i.e., safe relay)
- Diagnostics made SIMPLE! Useful diagnostic flags in process (cyclic) data for easy access and use for preventative maintenance
- Certified to IP65 ingress protection
- CE certification



Class A Node



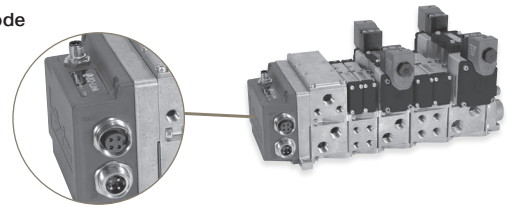
Class B Node

Overview - P2H IO-Link Node 24 DO

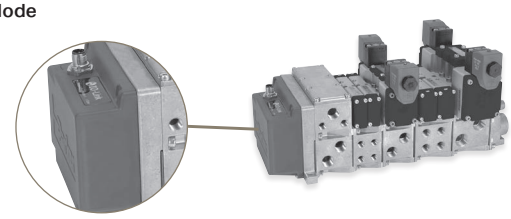
Designed to integrate directly with all H Series ISO valve sizes, the P2H IO-Link Network Node provides a compact, robust and cost efficient solution for IO-Link capability. The P2H IO-Link network node is offered as an end plate kit on the H Series valve for five sizes (HB, HA, H1, H2 and H3). The P2H node is suitable for use on a valve manifold with up to 24 solenoid outputs.

Connection Types and Power:

Class A Node



Class B Node

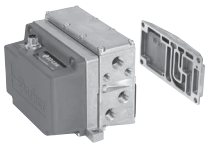


The Class A node has (1) 3 pin M12 connector for communication and logic power from any class A IO-Link master, and (2) 7/8" connectors for auxiliary valve power IN and OUT.

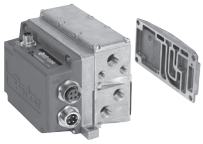
The Class B node has (1) 5 pin M12 connector to connect IO-Link for communication to a Class B IO-Link master, logic power and auxiliary power for the valve solenoids (up to the limit of the Class B node output*).

*It is recommended to use the Class A node with auxiliary power if the Class B master cannot provide enough power.

Left and Right Hand End Plate



Class B



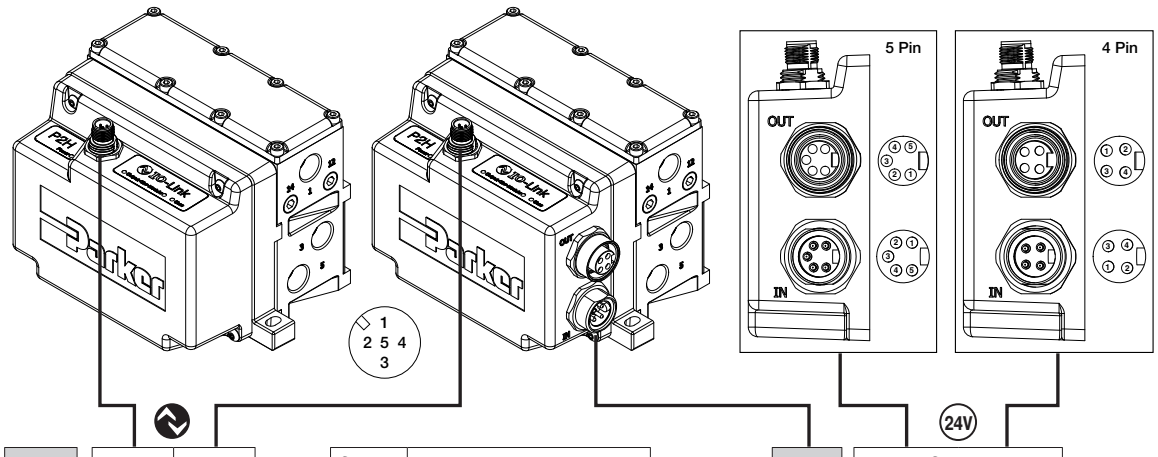
Class A

IO-Link Class / Type	Current	HB, HA, H1, H2 Valves NPT Port	HB, HA, H1, H2 Valves BSPP Port	H3 Valves NPT Port	H3 Valves BSPP Port
P2H IO-Link Class B, standard version, 24 address	3.2A max	**PSHU20N200P**	**PSHU20N201P**	**PS4220N20DP**	**PS4220N21DP**
P2H IO-Link Class B, Safe Power Capable, 24 address	2.0A max	**PSHU20S200P**	**PSHU20S201P**	**PS4220S20DP**	**PS4220S21DP**
P2H IO-Link Class A, 4-pin Safe Power Capable, 24 address	3.2A max	**PSHU20S400P**	**PSHU20S401P**	**PS4220S40DP**	**PS4220S41DP**
P2H IO-Link Class A, 5-pin Safe Power Capable, 24 address	3.2A max	**PSHU20S500P**	**PSHU20S501P**	**PS4220S50DP**	**PS4220S51DP**

www.parker.com/pdn/P2H_IOL

Description		Standard version	- Safe power capable versions
IO-Link power supply		According to IO-Link standard V1.1.2	
Speed communication		Com 2 – 38 kBd	
Auxiliary power supply	voltage	20,4 VDC to 26,4 VDC	
	OSSD compatibility	No	Yes
Short circuit protection		Yes	
Operating temperature		0°C to +55°C	
Shock		According to IEC 60068-2-27:2008	
Vibration		According to IEC 60068-2-6:2007	
EMC		According to EN 55011 & EN 61000-4-2 to -4-6	
Ingress protection		Certified to IP65	

P2H IO-Link Node 24 DO – Connections and LED Diagnostics



M12 pin's	Class B 5 pin's P2HLB..	Class A 5 pin's P2HLA..
1	L+	L+
2	Aux +	-
3	L-	L-
4	C/Q	C/Q
5	Aux -	-

Symbol	Description
L+	IO-Link power supply 24 VDC
L-	IO-Link power supply 0 VDC
C/Q	IO-Link communication
Aux +	Auxiliary power supply 24 VDC
Aux -	Auxiliary power supply 0 VDC

7/8 pin's	Class A 5 pin's P2HLA24P5	Class A 4 pin's P2HLA24P4
1	Aux -	Aux +
2	*L -	*L +
3	Earth	*L -
4	*L +	Aux -
5	Aux +	-

Note: * 7/8" logic power has no connection to internal P2H unit but does carryover to OUT 7/8" connector (for jumper logic power only). Logic power for P2H unit will be supplied from M12 (pin 1 & 3)

Local diagnostic through LED:

The P2H IO-Link Node offers a local diagnostic through 4 LED's status with interpretation described in the table below:

Power ○ Green LED

LED Status	Description	Solving
OFF ○	Auxiliary power failure < 18V or > 28,5V	Check auxiliary power supply
ON ●	Standard mode (auxiliary power within normal range 20,4V* to 26.4V*)	N/A
Blinking ✸	Auxiliary power out of range (warning level*)	Check auxiliary power supply, check/reset adjusted values

○ Output<Err> Red LED

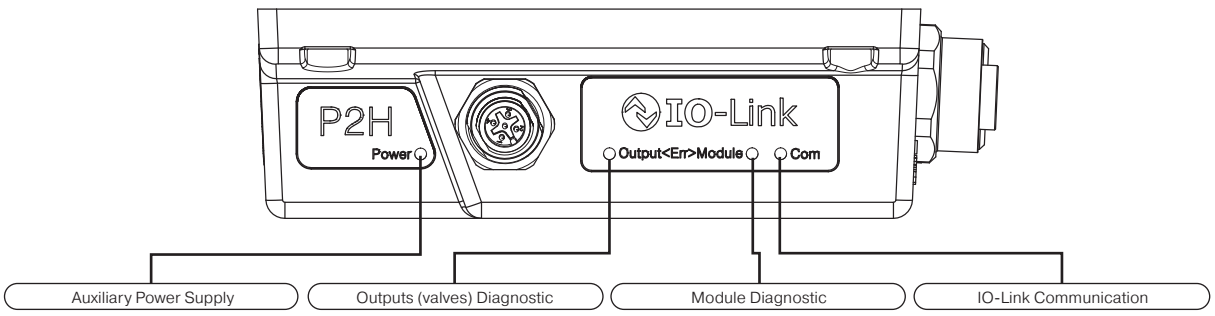
LED Status	Description	Solving
OFF ○	Standard mode (No error active)	N/A
ON ●	Any outputs driver error (auxiliary power error, overload, short circuit, over temperature, ...)	If auxiliary power OK (see Power LED status), check error messages and related troubleshooting

<Err>Module ○ Red LED

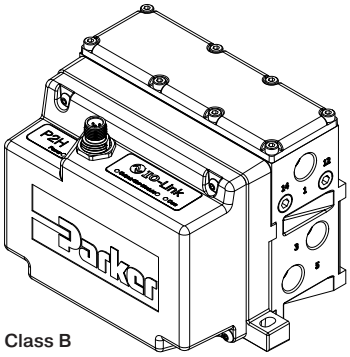
LED Status	Description	Solving
OFF ○	Standard mode (No error active)	N/A
ON ●	24 VDC auxiliary power missing or any active malfunction	Check Auxiliary power supply. If auxiliary power supply OK, module must be replaced

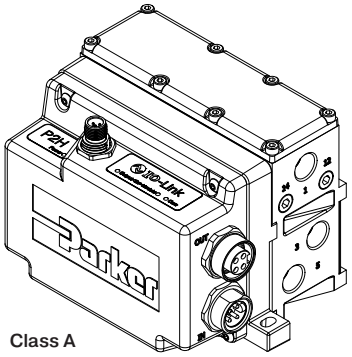
○ Com Green LED

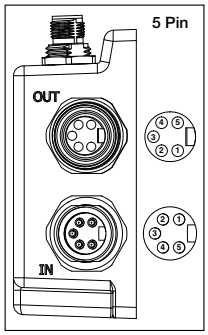
LED Status	Description	Solving
OFF ○	IO-Link L+ / L- line not powered	Check IO-Link power supply from IO-Link Master (pin's 1 & 3)
ON ●	IO-Link L+ / L- line powered IO-Link master port set as SIO mode	Set IO-Link master channel in IO-Link mode
Blinking ✸	IO-Link communication active	N/A

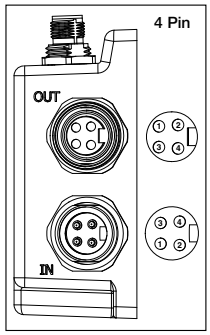


P2H IO-Link Node 24 DO – Connections and LED Diagnostics







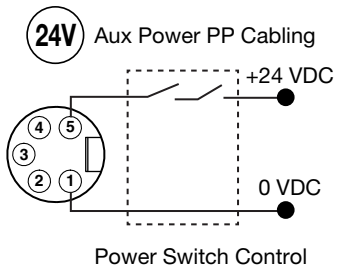


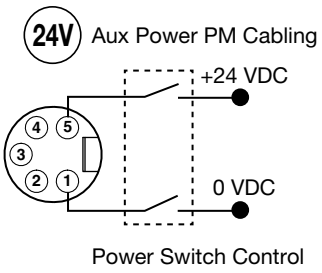
SAFETY

P2H IO-Link 24DO Node connection to SAFE Power PP / PM mode for valve control

The P2H IO-Link 24DO node can be powered from a SAFE 24 VDC auxiliary source in PP or PM mode as grounds are isolated. Auxiliary power for solenoids can be wired allowing the functionality to turn outputs OFF while communications remain active.

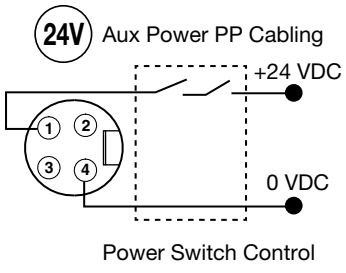
Class A – 5 Pin

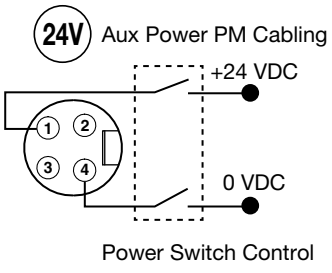




Pin Number	Address
1	AUX–
2	*L–
3	Earth
4	*L+
5	AUX+

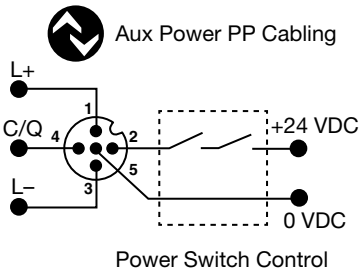
Class A – 4 Pin

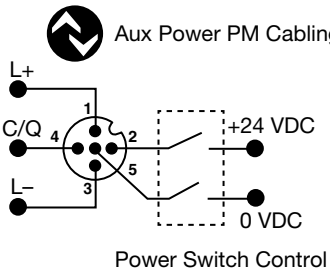




Pin Number	Address
1	AUX+
2	*L+
3	*L–
4	AUX–

Class B





Pin Number	Address
1	L+
2	AUX+
3	L–
4	C/Q
5	AUX–

* 7/8" logic power has no connection to internal P2H unit but does carryover to OUT 7/8" connector (for jumper logic power only). Logic power for P2H unit will be supplied from M12 (pin 1 & 3).

P2H IO-Link Node 24 DO – Input / Output Data Mapping

Input Data

One byte of diagnostic input data is transferred from Moduflex to the IO-Link Master.

Process Input Data

7	6	5	4	3	2	1	0
Output driver SPI error	Output driver channel error	Polyfuse tripped	Temperature warning	SPI error	Aux voltage error	Aux voltage warning	Acknowledge required

Diag bit	Error Message	Detail
Diag 0	Fail-safe status	Acknowledgment required
Diag 1	Auxiliary voltage warning	Auxiliary voltage out of range, check auxiliary power line
Diag 2	Auxiliary voltage failure	Auxiliary voltage out of order, check auxiliary power source
Diag 3	Module failure	Switch OFF / ON auxiliary power, if error message persists, replace the module
Diag 4	Module over-temperature	Switch OFF / ON auxiliary power, if error message persists, replace the module
Diag 5	Module over-load	Check overall pilot solenoid valves, if error message persists, replace the module
Diag 6	Pilot solenoid(s) short circuit	Check faulty pilot solenoid valve(s), replace if necessary
Diag 7	Outputs stage not available	Auxiliary power is OFF

Output Data

Three bytes of process data are received by Moduflex from the IO-Link Master for control of solenoids.

Process Output Data (Byte 0)

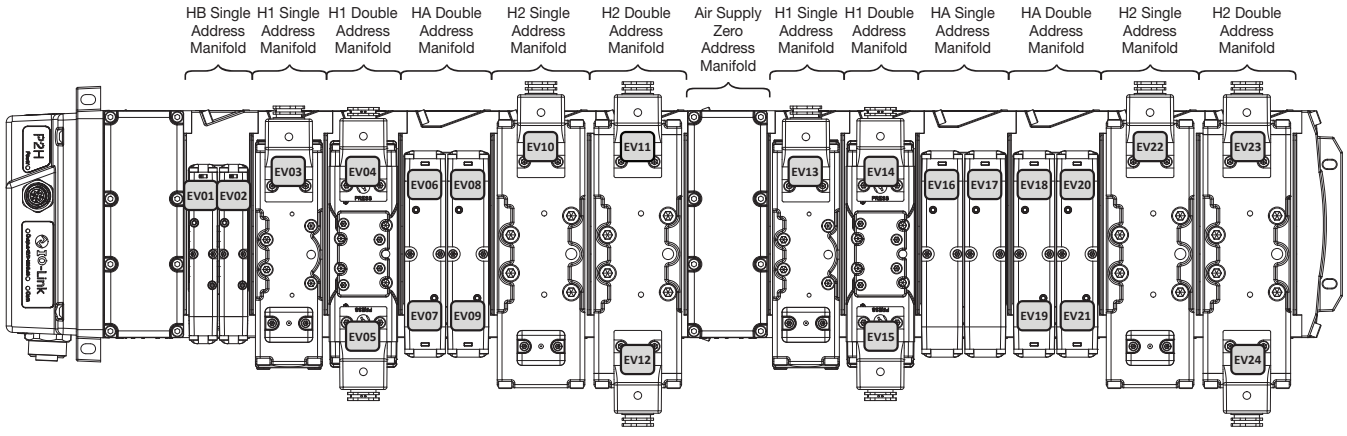
7	6	5	4	3	2	1	0
EV8	EV7	EV6	EV5	EV4	EV3	EV2	EV1

Process Output Data (Byte 1)

7	6	5	4	3	2	1	0
EV16	EV15	EV14	EV13	EV12	EV11	EV10	EV9

Process Output Data (Byte 2)

7	6	5	4	3	2	1	0
EV24	EV23	EV22	EV21	EV20	EV19	EV18	EV17



PLC Process outputs data mapping

	7 0
Byte 0	EV08 ..... EV01
Byte 1	EV16 ..... EV09
Byte 2	EV24 ..... EV17

Configuration IODD File

IODD file can be downloaded from IODD Finder or the P2H IO-Link web site:

- https://ioddfinder.io-link.com
- www.parker.com/pdn/P2H_IOL

P2H Ethernet Node 32 DO

The P2H Ethernet Node has been designed to be connected to a many popular Ethernet Networks. It can be used with Parker's H-Universal ISO 15407-2 (size 02 & 01) and 5599-2 (sizes 1, 2 & 3) valve series. It can control up to 32 pilot solenoid addresses with different power configuration options available and provides local visual and remote diagnostics through the Network. Designed for industrial environments, the P2H Ethernet Node is constructed of PBT material, which is glass-filled and offers weld splatter resistance, UV stability and has significant flame-retardant properties making it suitable for the durability required in industrial applications with high heat and welding applications.

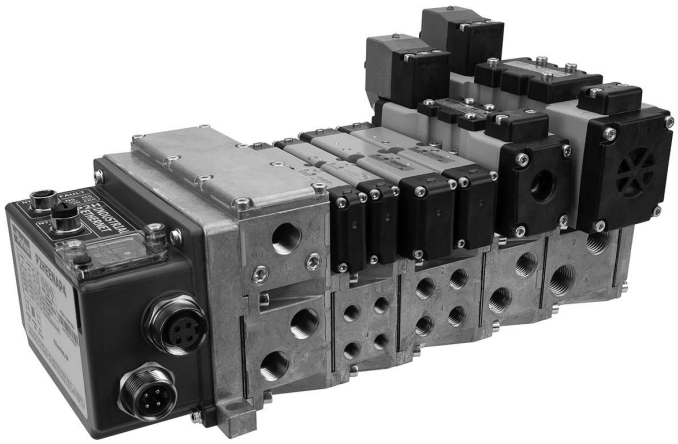
Features

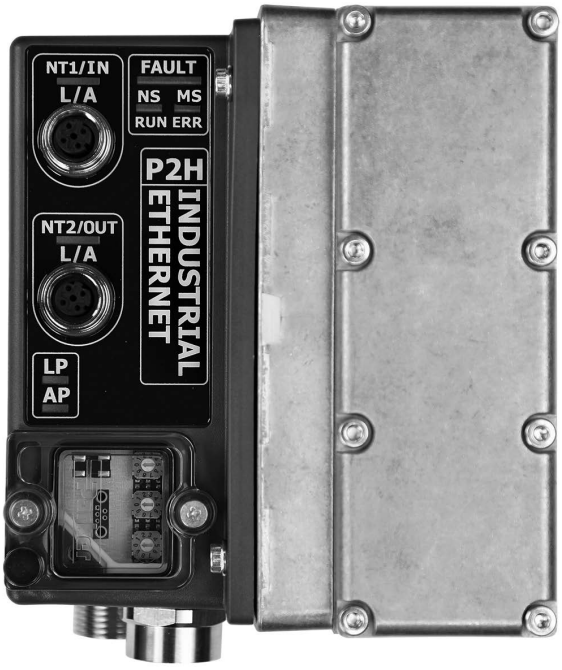
Industrial Ethernet Protocols:
- EtherNet/IP
- Profinet
- EtherCAT
- Modbus TCP
- Powerlink

Power Options:
- Power IN/OUT Connection
- 7/8 4 pin
- 7/8 5 pin
- L- Code M12 5 pin
- Safe Power Capable
- OSSD Compatible

Environment:
- IP65
- Weld Spatter Resistant
- Weld Noise Immune

Diagnostics:
- PLC
- Web Interface
- Network Specific LED's





P2H Ethernet Node 32 DO - Popular Module Combinations

- Listed below are popular module configurations
- For full model number structure, please refer to next page

EtherNet/IP™

Popular Part Number Configurations

Pilot Type	Thread Type	Power Source for Output 25-32	Power Connector	End Plate Part Number
Internal	NPT	Aux Power	7/8" 4-pin power IN/OUT with 1 safe power capable zone	**PSHU20P200PE000A-P4**
Internal	NPT	Logic Power Isolated from Aux Power	7/8" 4-pin power IN/OUT with 1 safe power capable zone	**PSHU20P200PE000L-P4**
Internal	NPT	Aux Power	7/8" 5-pin power IN/OUT with 1 safe power capable zone	**PSHU20P200PE000A-P5**
Internal	NPT	Logic Power Isolated from Aux Power	7/8" 5-pin power IN/OUT with 1 safe power capable zone	**PSHU20P200PE000L-P5**
Internal	NPT	Aux Power	M12 L-Coded, 5-pin power IN/OUT with 1 safe power capable zone	**PSHU20P200PE000A-L5**
Internal	NPT	Logic Power Isolated from Aux Power	M12 L-Coded, 5-pin power IN/OUT with 1 safe power capable zone	**PSHU20P200PE000L-L5**

PROFINET INDUSTRIAL ETHERNET

Popular Part Number Configurations

Pilot Type	Thread Type	Power Source for Output 25-32	Power Connector	End Plate Part Number
Internal	NPT	Aux Power	7/8" 4-pin power IN/OUT with 1 safe power capable zone	**PSHU20P200PN000A-P4**
Internal	NPT	Logic Power Isolated from Aux Power	7/8" 4-pin power IN/OUT with 1 safe power capable zone	**PSHU20P200PN000L-P4**
Internal	NPT	Aux Power	7/8" 5-pin power IN/OUT with 1 safe power capable zone	**PSHU20P200PN000A-P5**
Internal	NPT	Logic Power Isolated from Aux Power	7/8" 5-pin power IN/OUT with 1 safe power capable zone	**PSHU20P200PN000L-P5**
Internal	NPT	Aux Power	M12 L-Coded, 5-pin power IN/OUT with 1 safe power capable zone	**PSHU20P200PN000A-L5**
Internal	NPT	Logic Power Isolated from Aux Power	M12 L-Coded, 5-pin power IN/OUT with 1 safe power capable zone	**PSHU20P200PN000L-L5**

EtherCAT®

Popular Part Number Configurations

Pilot Type	Thread Type	Power Source for Output 25-32	Power Connector	End Plate Part Number
Internal	NPT	Aux Power	7/8" 4-pin power IN/OUT with 1 safe power capable zone	**PSHU20P200PT000A-P4**
Internal	NPT	Logic Power Isolated from Aux Power	7/8" 4-pin power IN/OUT with 1 safe power capable zone	**PSHU20P200PT000L-P4**
Internal	NPT	Aux Power	7/8" 5-pin power IN/OUT with 1 safe power capable zone	**PSHU20P200PT000A-P5**
Internal	NPT	Logic Power Isolated from Aux Power	7/8" 5-pin power IN/OUT with 1 safe power capable zone	**PSHU20P200PT000L-P5**
Internal	NPT	Aux Power	M12 L-Coded, 5-pin power IN/OUT with 1 safe power capable zone	**PSHU20P200PT000A-L5**
Internal	NPT	Logic Power Isolated from Aux Power	M12 L-Coded, 5-pin power IN/OUT with 1 safe power capable zone	**PSHU20P200PT000L-L5**

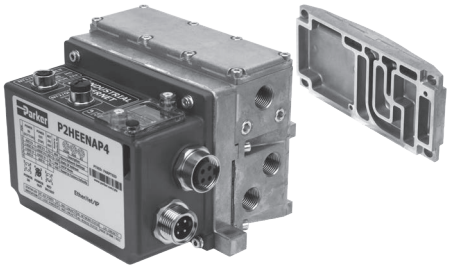
P2H Ethernet Node 32 DO - Overview

Designed to integrate directly with all H Series ISO valve sizes, the P2H Ethernet Network Node provides a compact, robust and cost-efficient solution for industrial ethernet connectivity to a PLC or other controls device that supports industrial ethernet protocols. The P2H Ethernet Network Node is offered as an end plate kit on the H Series valve for five sizes (HB, HA, H1, H2 and H3). The P2H Ethernet Network Node is suitable for use on a valve manifold with up to 32 solenoid outputs. P2H Ethernet Node connects to a network with two standard M12 D-coded connections. These two connections function as a switch to enable the network to be connected to another network device.

Power connectors are available in three styles:

- 7/8 4-pin
- 7/8 5-pin
- M12 L-Code 5-pin

The power connectors are arranged in an IN/OUT design, and this allows the flexibility to connect power to another down stream device, instead of running two separate cables from a power supply. Each power connector can supply up to 12 A of current on both Logic and Auxiliary power pins. All power connections support (OSSD) test pulsing if the P2H Ethernet Node is connected to a safety rated output device that uses test pulses to detect faults in a safety system.



PSHU20	P2	0	0	P	E	000	A	–	P4

Valve Type

Plug-in (Internal pilot)	**PSHU20**
Plug-in (External pilot)	PSHU2X

Thread Type

NPT	**0**
BSPP "G"	1

Network Connections

EtherNet/IP™	**E**
EtherCAT	**T**
PROFINET	**N**
Modbus TCP	**M**
Powerlink	**W**

Power Connector

7/8 4-pin Power IN/OUT with 1 Safe Power Capable Zone	**P4**
7/8 5-pin Power IN/OUT with 1 Safe Power Capable Zone	**P5**
M12 L-Code 5-pin IN/OUT with 1 Safe Power Capable Zone	L5

Right Hand End Plate Type / Thread Size

Low profile (no ports)	**0**
1/2 Exhaust and Inlet Port	1
3/4 Exhaust and Inlet Port	2
H3 Transition Plate and End Plate (electrical pass through for plug-in valves only)	3
H3 Transition Plate and End Plate (expansion to 25th address for plug-in valves only)	4

Expansion Module / Power Source

Power Source for Output 25-32: AUX Power	**A**
Power Source for Output 25-32: Logic Power	L

P2H Ethernet Node 32 DO - Expansion Module

Note: An optional intermediate air supply module must be installed to the manifold for expansion from 25 – 32 solenoids, 24 to 31 addresses.

PSHU115A **E** **1** **P**

Mounting Style / Port Size	
Intermediate Air Supply, NPT / Internal Pilot	**PSHU115A**
Intermediate Air Supply, BSPP / Internal Pilot	PSHU115B*
Intermediate Air Supply, NPT / External Pilot	**PSHU115C**
Intermediate Air Supply, BSPP / External Pilot	PSHU115D*

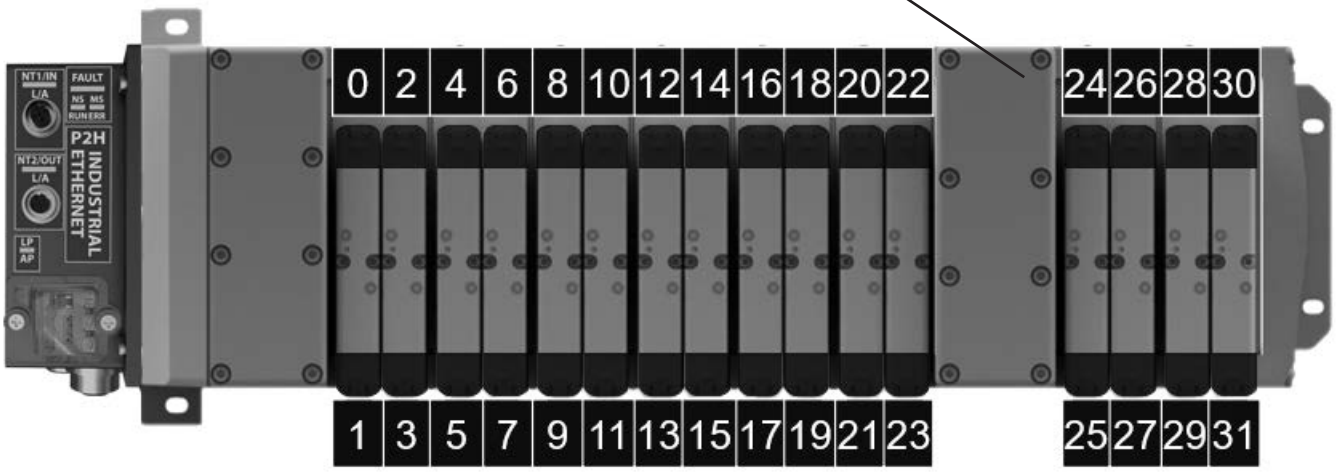
* BSPP conforms to ISO 1179-1 w 228-1 threads.

Gasket Options	
1	**1,3,5 Ports Open And Pilots Open**
2	1,3,5 Ports Closed And Pilots Open
3	1 Closed, 3,5 Ports Open And Pilots Open
4	1 Port Open, 3,5 Ports Closed And Pilots Open
5	1,3,5 Ports Open And Pilots Closed
6	1,3,5 Ports Closed And Pilots Closed
7	1 Closed, 3,5 Ports Open And Pilots Closed
8	1 Port Open, 3,5 Ports Closed And Pilots Closed

Circuit Board Address Configuration	
E	**With Electrical Expansion To 24th Address**

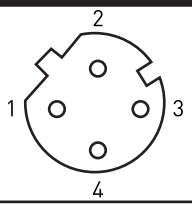
Intermediate air supply module shown

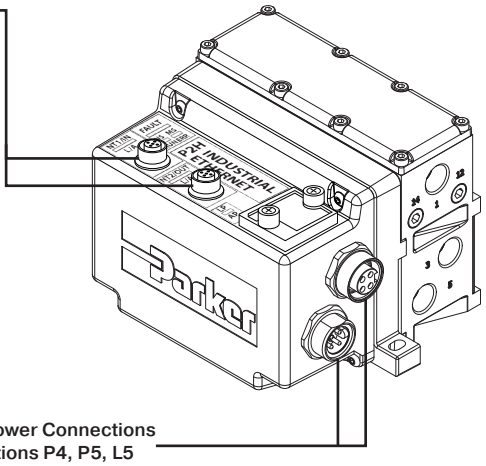
Address Numbers



P2H Ethernet Node 32 DO - Network Interface

The P2H Node 32DO allows connection to an industrial Ethernet Network via two M-12 D-Coded connectors (NT1 and NT2). An embedded switch allows for daisy-chaining ethernet communications. The connectors pin assignments are as follows:

M12, D-coded, Female	Pin No.	Function
	1	Tx+
	2	Rx+
	3	Tx-
	4	Rx-



7/8 Power Connections
Options P4, P5, L5

Industrial Ethernet Options

XXXXXX	P2	X	X	P	**E**	000	0	-	XX

Network Connections	
EtherNet/IP™	**E**
EtherCAT	T
PROFINET	N
Modbus TCP	M
Powerlink	W

P2H Ethernet Node 32 DO - Power Options

- The P2H Ethernet Network Node has 3 available power connectors
- There are two power schemes that can be achieved detailed below
- H ISO Universal manifold valves draw power from the AUX power pins of the power connecto

Consumption @ 24 VDC

AUX power max consumption	12A
Logic power max consumption	12A

Left over power that is not used by the P2H Ethernet Node can be passed on to other devices in the system through the power OUT connector

XXXXXX	P2	X	X	P	X	000	0	-	**P4**

Power Connector *	
7/8 4-pin power in/out with 1 safe power capable zone	**P4**
7/8 5-pin power in/out with 1 safe power capable zone	P5
M12 L-Code 5-Pin in/out with 1 Safe Power Capable zone	L5

Power Connection Layout

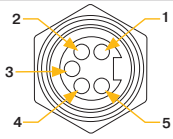
The following three types of power connectors are available based on the end user's requirement. Current considerations should be used in the power connection selection process. Each power connection type can support a maximum of 12 A of current on each channel (VAUX and VLOG). When daisy chaining power is used, care must be taken in knowing the downstream current draw in order not to overload the maximum current rating of the pins.

TOP CONNECTOR

P4 - 7/8", 4-pin — Power OUT

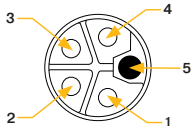
Pin	Function	Description
1	+ 24 V	V2 (VAUX)
2	+ 24 V	V1 (VLOG)
3	0 V	GND V1 (VLOG)
4	0 V	GND V2 (VAUX)

P5 - 7/8", 5-pin — Power OUT



Pin	Function	Description
1	0 V	GND V2 (VAUX)
2	0 V	GND V1 (VLOG)
3	PE	Protective Earth
4	+ 24 V	V1 (VLOG)
5	+ 24 V	V2 (VAUX)

L5 - L-Coded, M12 — Power OUT



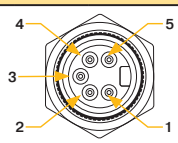
Pin	Function	Description
1	+ 24 V	V1 (VLOG)
2	0 V	GND V2 (VAUX)
3	0 V	GND V1 (VLOG)
4	+ 24 V	V2 (VAUX)
5	PE	Protective Earth

BOTTOM CONNECTOR

Power IN

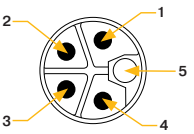
Pin	Function	Description
1	+ 24 V	V2 (VAUX)
2	+ 24 V	V1 (VLOG)
3	0 V	GND V1 (VLOG)
4	0 V	GND V2 (VAUX)

Power IN



Pin	Function	Description
1	0 V	GND V2 (VAUX)
2	0 V	GND V1 (VLOG)
3	PE	Protective Earth
4	+ 24 V	V1 (VLOG)
5	+ 24 V	V2 (VAUX)

Power IN

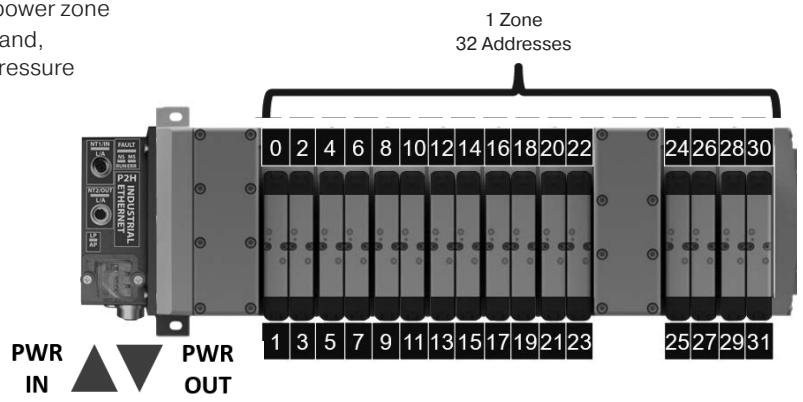


Pin	Function	Description
1	+ 24 V	V1 (VLOG)
2	0 V	GND V2 (VAUX)
3	0 V	GND V1 (VLOG)
4	+ 24 V	V2 (VAUX)
5	PE	Protective Earth

*PE – Protective Earth

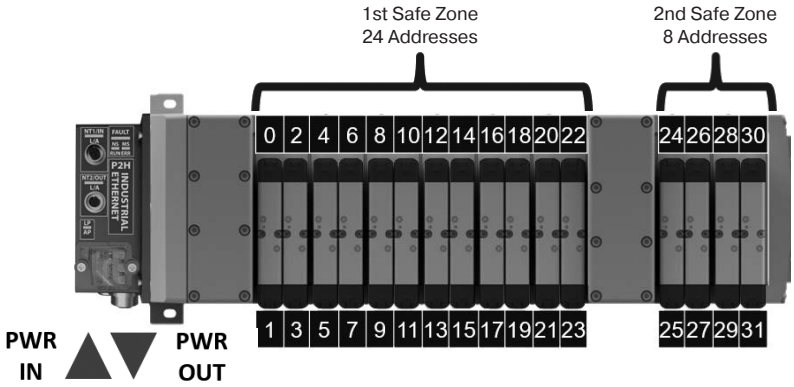
P2H Ethernet Node 32 DO - Power Scheme 1 Option "A"

- All 32 addresses are controlled in the same power zone
- Safety zoning is possible for valve solenoids and, with the H ISO Universal valves, pneumatic pressure
- Power zone is safe power capable



Power Scheme 2 Option "L"

- The 1st 24 addresses are supplied by auxiliary voltage power. The last 8 addresses are supplied by the logic voltage power.
- Each zone has an isolated safe ground pin so each can be powered by a SAFE 24 VDC auxiliary source in PP or PM mode. NOTE: You can treat each zone as a separate power zone/safe zone. Be aware that the last 8 addresses will be supplied by logic power. If power is shut down to this zone the P2H Ethernet module loses power and communication. This may cause extra time to reconnect to the network when power is restored.



Industrial Ethernet Options

XXXXXX	P2	X	X	P	X	000	A	-	XX

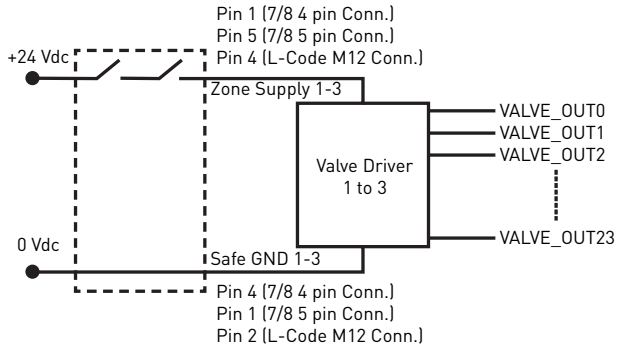
Expansion Module / Power Source	
Power Source for Output 25-32: AUX Power	**A**
Power Source for Output 25-32: Logic Power	L

P2H Ethernet Node 32 DO - Safe Power Connectivity

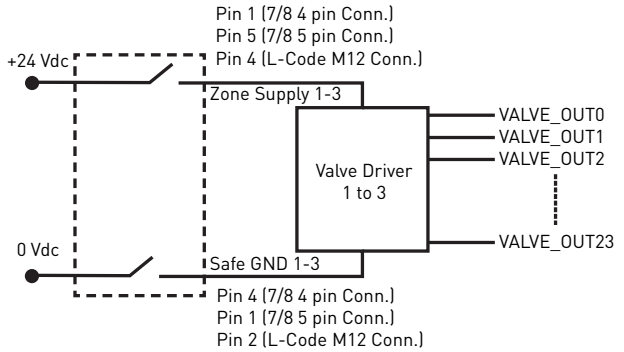
P2H Ethernet Node connection to SAFE Power PP / PM mode for valve control

The P2H Ethernet Node 32DO Auxiliary Power for valves can be supplied from an OSSD (Output Signal Switching Device) 24 VDC safe output power source in PP (plus plus) or PM (plus minus) configurations. The connection diagram below represents power option “A”. For power option “L” valve driver number 4 power would be supplied from the logic pins of the connection selected (please reference the power pinout diagram).

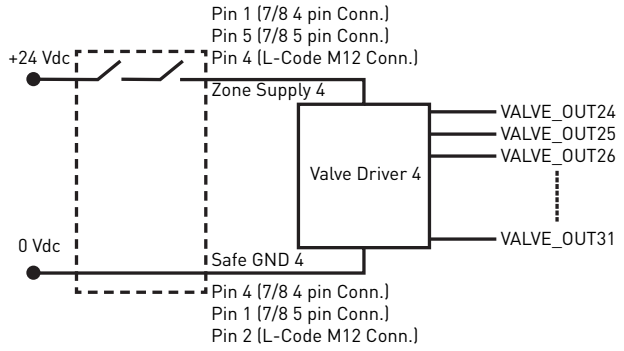
SAFE 24Vdc auxiliary source in PP mode for Zone 1 to 3 (Valve output 0 to 23)



SAFE 24Vdc auxiliary source in PM mode for Zone 1 to 3 (Valve output 0 to 23)

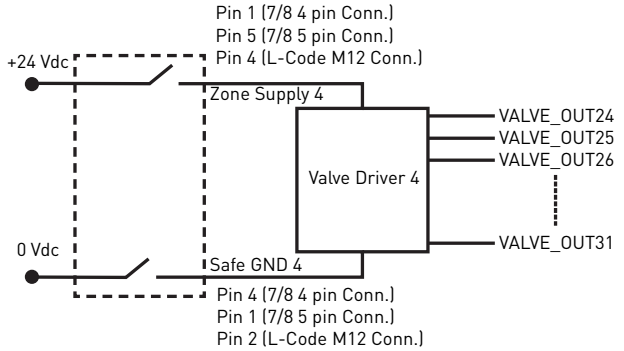


SAFE 24Vdc auxiliary source in PP mode for Zone 4 (Valve output 24 to 31) *



*If power option “L” is selected these outputs are supplied by logic power. This diagram does not apply.

SAFE 24Vdc auxiliary source in PM mode for Zone 4 (Valve output 24 to 31) *



*If power option “L” is selected these outputs are supplied by logic power. This diagram does not apply.

Note: Please check max. power available from the source. Refer to the “Auxiliary power consumption calculation” section.

* 7/8" logic power has no connection to internal P2H unit but does carryover to OUT 7/8" connector (for jumper logic power only).
Logic power for P2H unit will be supplied from M12 (pin 1 & 3).

P2H Ethernet Node 32 DO - Auxiliary Power Consumption Calculation

The P2H Node 32DO auxiliary power consumption calculation depends on the combination of the valves selected and the number of coils used. The table below can be used for power consumption calculation by valve type and the number of each type used. Take note that there are two types of coils for sizes 1,2,3. An energy efficient coil and standard coil.

Valve Range	Number of Pilots Simultaneously powered	Power	Total
H ISO - 15407-2 - Sizes 02 & 01	____	x 40 mA	= ____ mA
H ISO - 5599-2 - Sizes 1, 2 & 3 (Energy Efficiency Coils) *	____	x 54 mA	= ____ mA
H ISO - 5599-2 - Sizes 1, 2 & 3 (Standard Coils) **	____	x 133 mA	= ____ mA
		Total :	____ mA

* F9 Valve Voltage Code

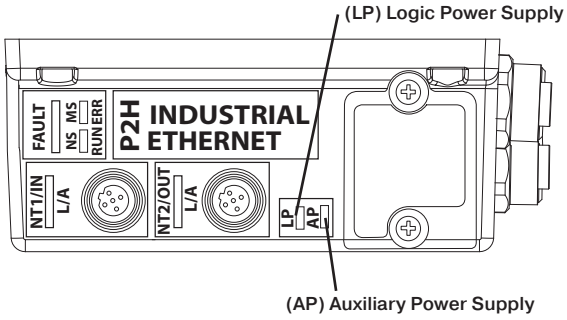
** B9 Valve Voltage Code

Power Supply Diagnostics

Power Supply Diagnostics through LED

The P2H Node 32DO monitors the logic and auxiliary power supply voltages and manages two levels of diagnostics: warning and error range. Status is indicated via LEDs located on the device. The range limits can be modified through parameter data.

To restore default value (factory setting), refer to "Factory Reset Section" in the manual.



LP and AP (Green / Yellow) LEDs		
LED Status	**Description**	**Troubleshooting**
OFF	Logic and/or Aux lines not powered	Check power supply (see Power Supply section for pin assignments)
ON (Green)	Voltage in normal range	N/A
ON (Red)	Voltage in error range (too low or too high)	Check power supply (see Power Supply section for pin assignments)
Blinking (Red)	Voltage in warning range (out of normal range, not in error range)	Check power supply (see Power Supply section for pin assignments)
Blinking (Yellow)	Invalid rotary switch setting	Check rotary switch setting
Blinking (Red / Yellow)	Firmware version error or Completed "Reset to Factory" procedure	If switches setting different from "999" and no "Reset to Factory" performed via webpage, then contact technical support

LED function details:

- "Logic power" or "Aux power" error is active from 9.6 to 19.4 VDC or above 28.5 VDC
- When "Logic power error" or "Aux power error" is active, LED is solid red

Power Supply Diagnostics through Network and Process Data Mapping

Diagnostics are available in Process Input data (byte 0) to indicate whether Logic and Auxiliary voltages are within range. There is a warning range (normal operation with fault indication) and an error range (module enters Failsafe state).

The default warning range is set as 20.4 VDC < power supply < 26.4 VDC. These limits can be modified via acyclic data, objects #11 and #12. The error range is set as 19.4 VDC < power supply < 28.5 VDC. These limits cannot be modified.

The voltage measured by the module, both Logic and Auxiliary, can be accessed via acyclic data, in Object #4. The displayed value is in mV.

P2H Ethernet Node 32 DO - Process Data mapping - Inputs

The following tables describes the input mapping for P2H Ethernet Node. The byte mapping order varies by protocol please reference the manual for specific byte order arrangement.

Channel Error – Input Mapping

	Input Bits								
Byte #	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0**	**Description**
1	EV07	EV06	EV05	EV04	EV03	EV02	EV01	EV00	
2	EV15	EV14	EV13	EV12	EV11	EV10	EV9	EV08	Valve Error Data
3	EV23	EV22	EV21	EV20	EV19	EV18	EV17	EV16	EVxx = Output on Valve range is 0 to 31
4	EV31	EV30	EV29	EV28	EV27	EV26	EV25	EV24	

Module Info Flags - Input Mapping

Module Info Flags			
Byte #	**Output Bits**	**Error Name**	**Error Description**
1	0	Heartbeat not toggling AUX 1	Heartbeat is currently not toggling
	1	Heartbeat not toggling AUX 2	
	2	SPI COM Error AUX 1	Error in SPI Communication between AUX and Logic. Outputs are switched off
	3	SPI COM Error AUX 2	
	4	SPI COM Lost AUX 1	Communication not possible. Outputs are switched off
	5	SPI COM Lost AUX 2	
	6	Output Interconnect Error	Short circuit between outputs detected. Affected outputs switched off.
	7	SPI NP40 Error	Error in communication between Logic and Comm
2	0	NP40 Version Error	Comm Module Version error. Outputs are switched off
	1-7	Reserved	These bits will be always set as 0

Module Error Input – Input Mapping

Module Error Input			
Byte #	**Output Bits**	**Error Name**	**Error Description**
1	0	AUX Voltage Warning	Set if Auxiliary Voltage in warning range. Module keeps normal operation
	1	AUX Voltage Error	Auxiliary Voltage in Error range. Outputs are switched OFF
	2	Logic Voltage Warning	Set if Logic voltage is out of range for warning.
	3	Logic Voltage Error	Set if Logic voltage is out of range for error. Outputs are switched OFF
	4	Temperature Warning	Set if a temperature increase above warning levels is detected by the output drivers
	5	Output Driver Channel Error	Set if a major fault is detected at the output stage – solenoid short circuit. Outputs are switched OFF
	6	Module Error	Set if an internal communication error is active
	7	Auxiliary Power Not Available	Auxiliary Power is off
2	0 - 7	Reserved	These bits will be always set as 0

P2H Ethernet Node 32 DO - Process Data mapping - Outputs

The following tables describes the input mapping for P2H Ethernet Node. The byte mapping order varies by protocol please reference the manual for specific byte order arrangement.

System Command – Output Mapping

System Command Module									
Byte #	Output Bits								Description
	7	6	5	4	3	2	1	0	
1	System Command Value								One Byte that accepts the system command value see table below for values

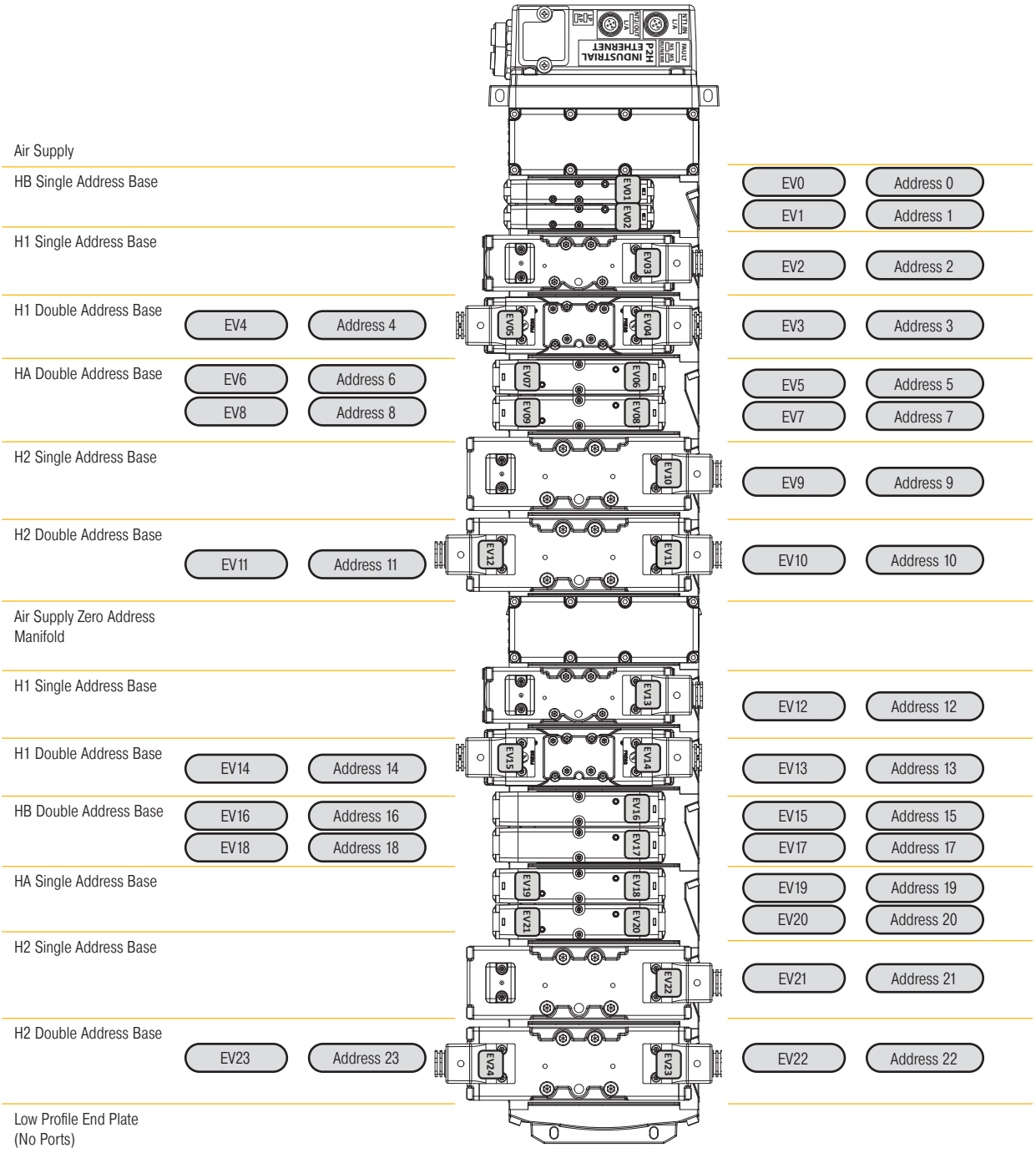
Command Value	Command Name	Description
0X02	Store Switching Cycle Counters	When this command is executed, the current values of the switching cycle counters are stored into EEPROM. This command is intended to be used before powering off the device.
0X03	Store Diagnostic Log	When this command is executed, the diagnostic log is stored to the EEPROM.
0X04	Delete Diagnostic Log	Removes all diagnostic log entries in EEPROM (required by webpage).

Solenoids – Output Mapping

Solenoid Module									
Byte #	Output Bits								Description
	7	6	5	4	3	2	1	0	
1	EV07	EV06	EV05	EV04	EV03	EV02	EV01	EV00	Valve Output Data EVxx -> Output on Valve range is 0 to 31
2	EV15	EV14	EV13	EV12	EV11	EV10	EV9	EV08	
3	EV23	EV22	EV21	EV20	EV19	EV18	EV17	EV16	
4	EV31	EV30	EV29	EV28	EV27	EV26	EV25	EV24	

P2H Ethernet Node 32 DO - Solenoid Addressing

- The P2H Ethernet Network Node can support up to 32 addresses as shown
- Addresses 25-31 can be accessed using an Intermediate Air Supply with Electric Expansion
- Each address is one solenoid



P2H Ethernet Node 32 DO - Technical Data

Mechanical Data

Housing Material	Housing /Enclosure: PBT with 33% GF and UL94-V0 Base Cover (plate): Aluminium 380
Enclosure rating	IP 65 (only when plugged-in and threaded-in)
Power Connectors	7/8" 4 pin or 7/8" 5 pin or L-Coded M12 5-pin male and female pin connector
Dimensions (L x B x H in mm)	226.6mm x 130.7mm x 55mm
Mounting type	Screw Mount
Ground strap attachment	M5
Weight	Approx. 1.3 kg

Operating Conditions

Operating Temperature	0°C to 50°C
Storage Temperature	-25°C to 70°C
CE as per	IEC 61000-6-2 (Industrial Immunity)
	IEC 61000-6-4 (Industrial Emission)
Shock/Vibrations	IEC 60068-2-27:2008
	IEC 60068-2-6:2007
Electrostatic Discharge	IEC 61000-4-2
Electrical Fast Transient/ Burst	IEC 61000-4-4
Surge Immunity	IEC 61000-4-5

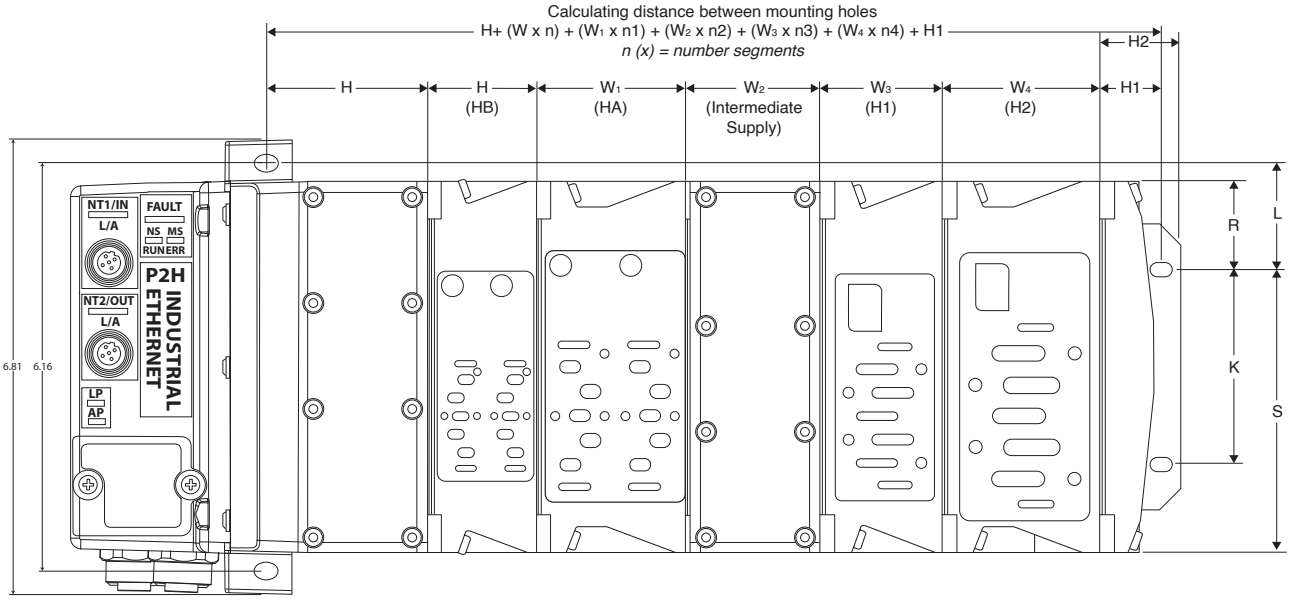
Electrical Data

Supply Voltage	24VDC (-15% to +20%)
Logic current at 24 V (V1)	Max Current 8A – Actual usage depends on configuration
Auxiliary current at 24 V (V2)	Max Current 12A – Actual usage depends on configuration

Valve Configuration

Compatible Valves	H Universal ISO Valves

P2H Ethernet Node 32 DO - H Series ISO Valves

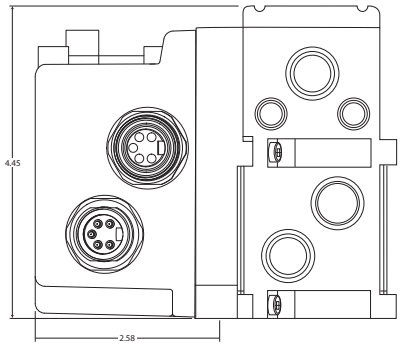


n (x) = number of segments

A	B	C	D	E	F	G	H	H1	H2	J	K	L
4.42 (112.3)	2.64 (67.1)	2.46 (62.5)	1.17 (29.7)	.55 (14)	9.32 (236.7)	1.51 (38.4)	2.36 (59.9)	.9 (22.9)	1.22 (31)	1.55 (39.4)	2.95 (74.9)	1.6 (40.6)

M	O	P	Q	R	S	T	W	W1	W2	W3	W4
8.91 (226.3)	5.61 (142.5)	6.86 (174.2)	6.18 (157)	1.33 (33.8)	4.28 (108.7)	7.14 (181.4)	1.63 (41.4)	2.28 (57.9)	2.03 (51.6)	1.82 (46.2)	2.39 (60.7)

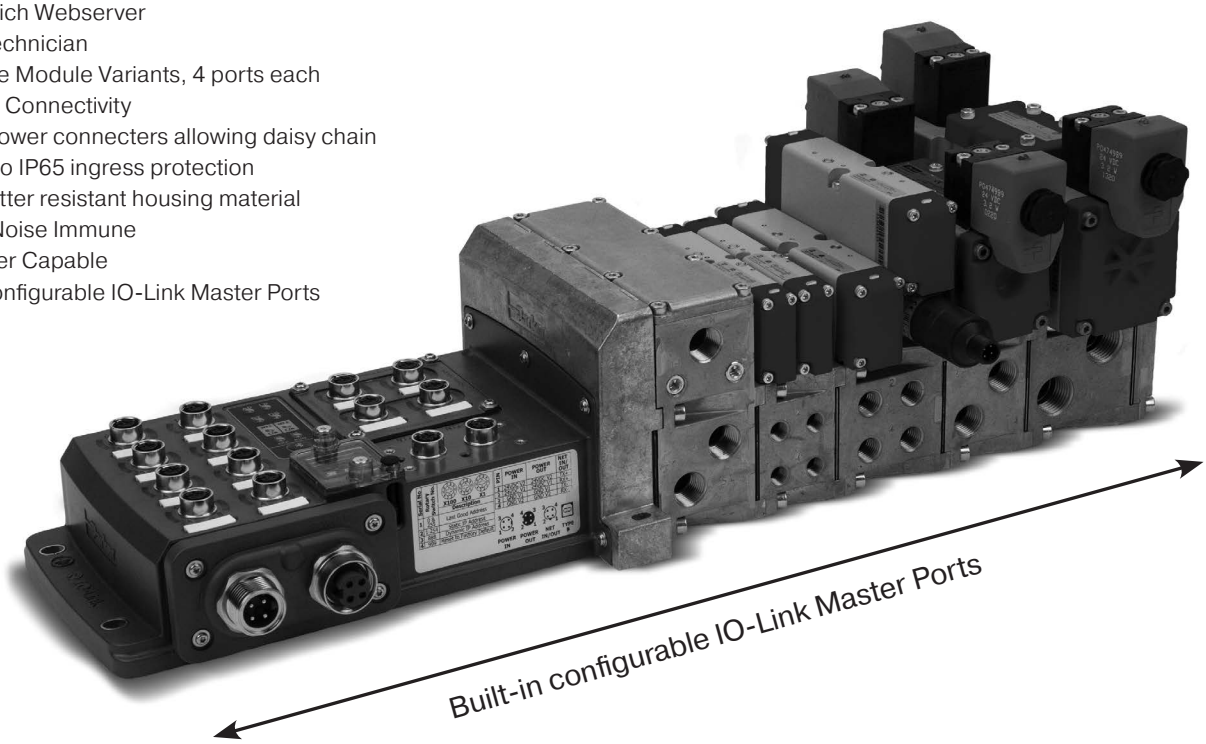
Inches (mm)



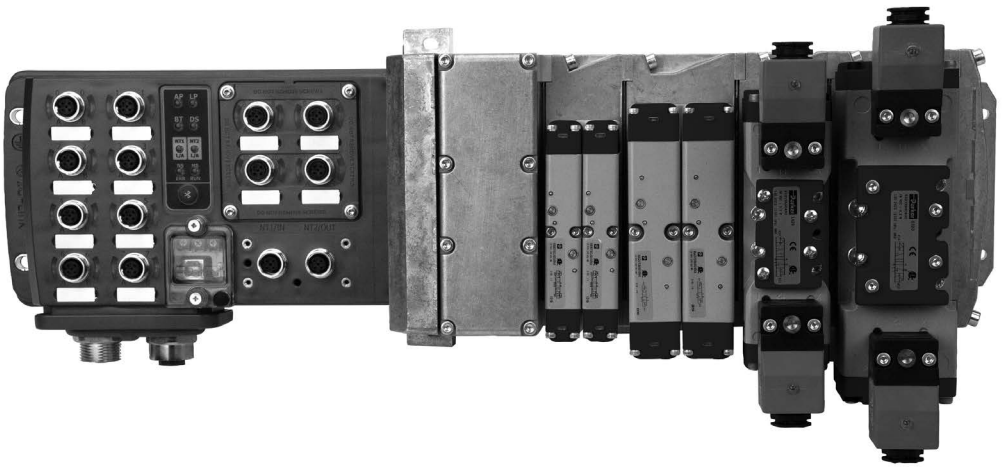
PCH Network Portal

Features

- Industrial Ethernet Communication
- Truly Configurable I/O
- Feature Rich Webserver
- Built-In Technician
- 3 Available Module Variants, 4 ports each
- Bluetooth Connectivity
- Flexible power connecters allowing daisy chain
- Certified to IP65 ingress protection
- Weld splatter resistant housing material
- Welding Noise Immune
- Safe Power Capable
- Built-in configurable IO-Link Master Ports



The PCH Network Portal redefines and revolutionizes decentralized machine I/O's architecture. The PCH Network Portal was engineered to support industrial ethernet protocols and the open protocol IO-Link with configurable inputs/outputs with true PNP/NPN circuitry switching on each port for easy machine design changes. This integrated configurability gives the user flexibility in designing custom I/O architecture on the fly.



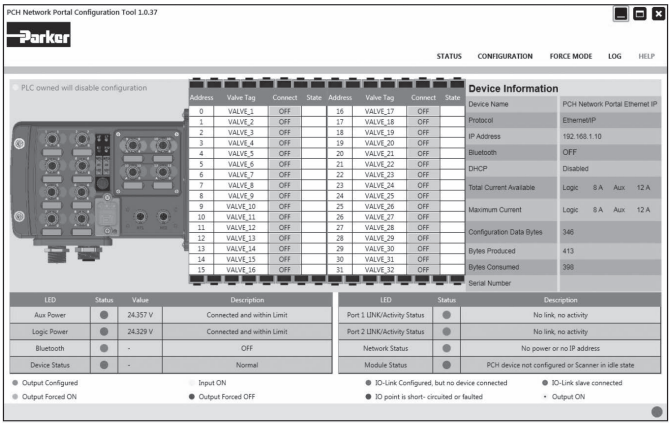
EtherNet/IP™ PROFINET INDUSTRIAL ETHERNET EtherCAT® Modbus TCP/IP

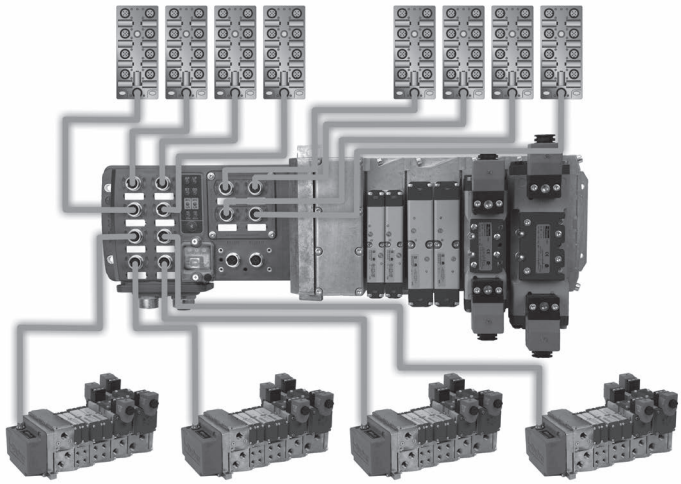
The PCH Network Portal can be assembled to Parker's H ISO Universal Manifold Platform, giving you access to a wid variety of low ranges all on one manifold.

Intuitive Interfaces

Modern factories recognize that plant floor architecture is an important structural part of machine design that can make a real difference in managing costs for future changes, integrations and expansions. The PCH Network Portal design team lived in this environment, therefore intuitive interfaces and complete modularity was the heart of PCH Network Portal design concepts.

As with all Cyber Physical Systems (CPS), intuitive interfaces are the backbone of simplicity in application. The PCH Network Portal offers several means of intuitive and embedded interfaces to shorten commission time.





IO-Link

Value Redefined

The PCH Network Portal minimizes machine costs by redefining the traditional process of connectivity within a single footprint that provides multiple configurations. The flexibility of configurable I/O combined with built-in IO-Link master ports revolutionizes machine design and can save thousands of dollars at the design phrase which typically accounts for 30-40% of overall costs. Changes can be made to the system with easy software reconfiguration of ports eliminating the need for additional hardware or time consuming programming.

Can't access the PLC? No Problem!

With meticulously designed embedded configuration tools, the PCH Network Portal can serve as your **virtual technician** to make problems easy to troubleshoot. A laptop, tablet or phone can access usable prognostic/diagnostic data and time stamped event logs to make accessing data and commissioning your machine simple. Once you've finished your configuration, the device's configuration profile can be downloaded and easily uploaded to other PCH Network Portals on your machine.

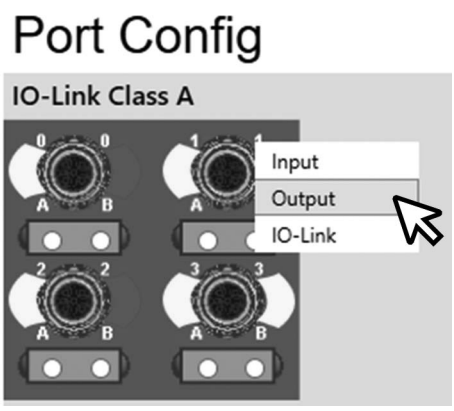
Configure via:

- Bluetooth App via phone or tablet
- Bluetooth connection via PC
- Integrated Webpage via ethernet connection
- Stand-a-lone "PCH Portal Configuration Tool" software via USB-B

Safety Foot Note:
Bluetooth application cannot turn on outputs if a PLC where present and in control. The application cannot override the PLC at any time.

Truly Configurable I/O

Configurable I/O means last minute design changes are now simple. Each PCH Network Portal is offered with three selectable modules that make up twelve configurable ports. All modules can be configured IO-Link A, IO-Link B or dual configurable I/O ports with true PNP/NPN circuitry switching on each port providing easy point and click changes on individual pins to customize a setup. Last minute design changes to the machine require minimal effort and no additional software or hardware. The ability to customize the machine design is no longer limited by the product.

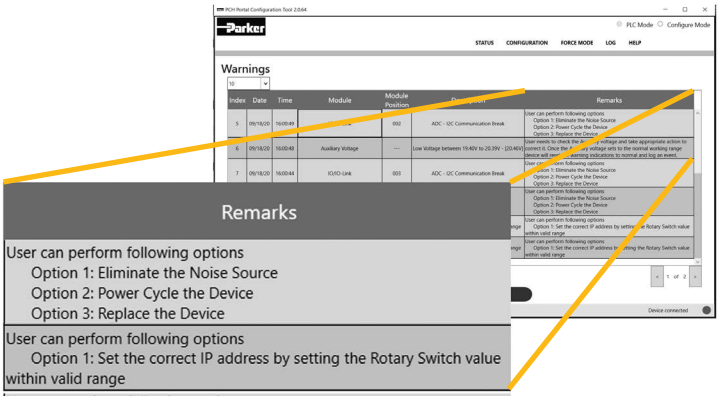


Tools Designed for Productivity

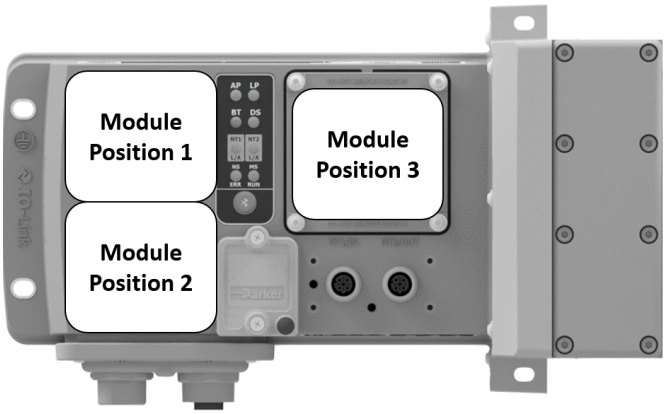
When a line stops and needs a reset you are often left wondering why. The root cause can seem a mystery and often stems back to over voltage or other power issues caused by the plant floor. Working with the PCH Network Portal is like having your own built-in technician. Rolling 40 errors, warnings and events are time and date stamped allowing you to spend time on what matters - running the facility. Let PCH Network Portal give you the detail so time can be better utilized elsewhere.

Built-In Technician

When using the 'PCH Portal Configuration Tool' your built-in technician comes to life with easy to follow screens for readouts, adjustments, and settings. Configuring the PCH Network Portal to the network is easy. Fast and storable configurations combined with embedded smart diagnostic and prognostic tools like built-in debounce times and up/down counters translate to quick change-over and short downtime. Further problems are easy to spot with the rolling 40 error, warnings, and events log which are time stamped. No more guessing at what went wrong in plant. Commissioning and troubleshooting a tool can even be done remotely from outside the work cell via the device's secure and lockable Bluetooth connectivity.

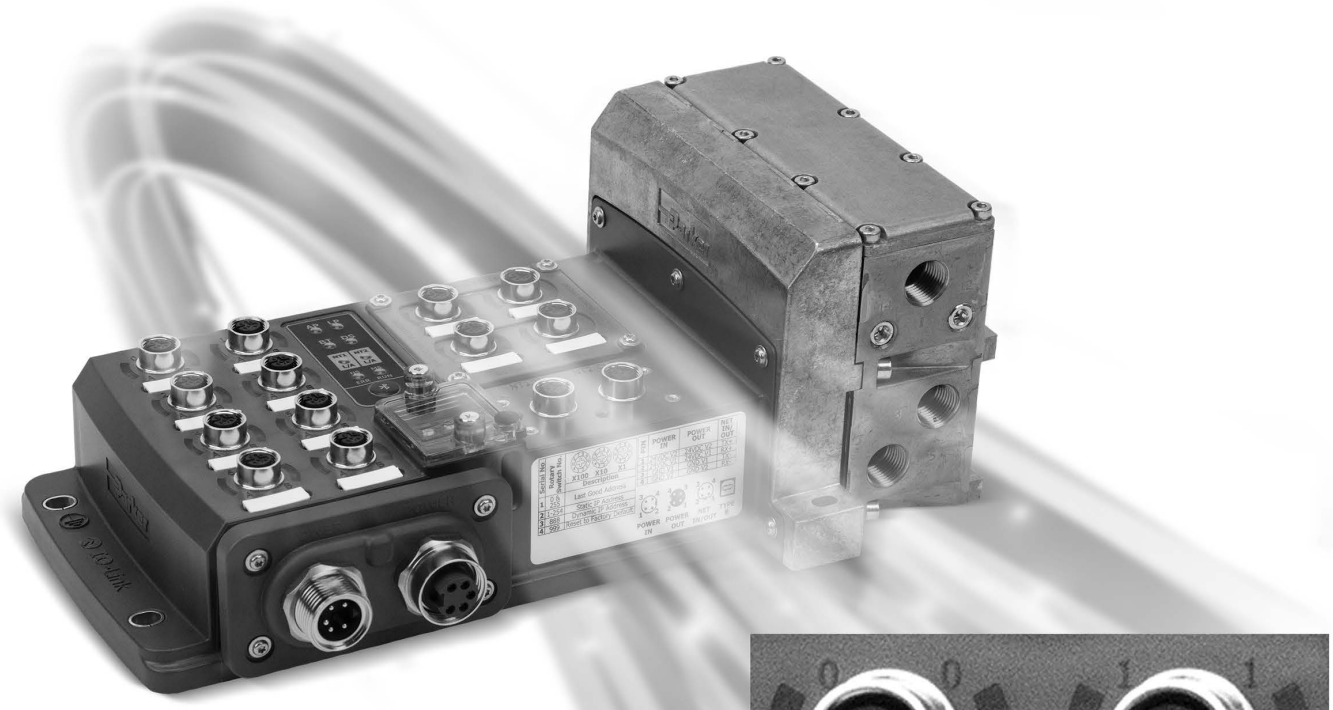


Value Redefined



What are Module Positions?

- The PCH Network Portal is split into 3 Module Positions
- Each Module Position can accept different Module Variants to meet the application needs
- Populating a Module Position with an I/O Module Variant gives the PCH Network Portal 4 configurable M12 ports

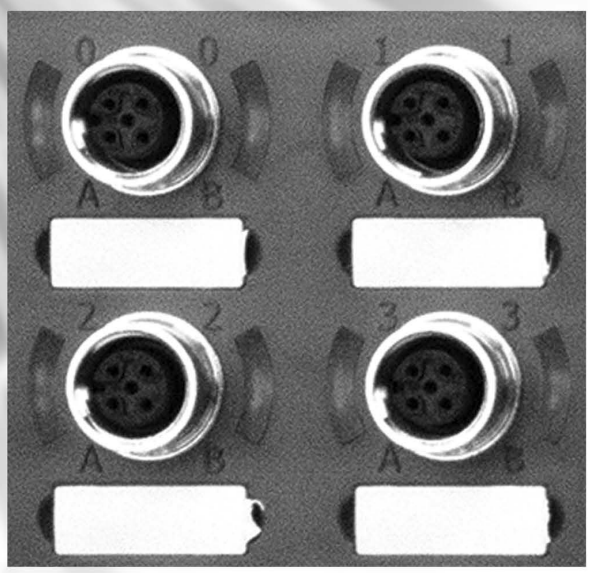


What is a Module Variant?

- 3 Module Variant are proposed offering each different capabilities (see details of Modules Variant A, B or C in next pages)
- A Module Variant offers 4 configurable M12 ports
- Depending on the Module Variant A, B or C selected, each M12 port can be individually configured differently between a variety of different behaviors

For Example

- With the Module Position 1 populated with Module Variant A, each M12 port can be individually configured as either IO-Link Class A Master or 2 Digital Inputs or 2 Digital Outputs
- A summary of the Module Variant offerings is on page D179



PCH Network Portal

Module Variants

Module

A

What is a Module Variant?

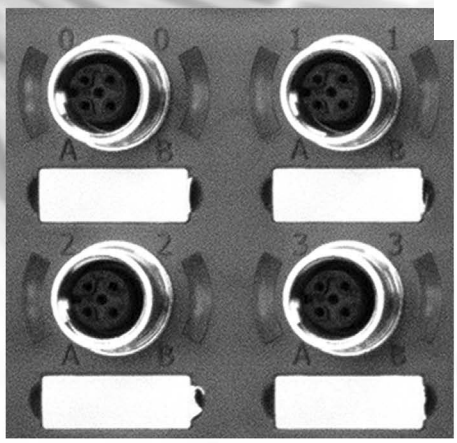
- The PCH Network Portal has 3 available Module Positions. Each module position can be populated with three different Module Variants
- Each Module Position can accept all module variants

Port Behavior

- Each port Is capable of the following behavior listed below
- Through software, the user can click and change how the port behaves on the fly
- The A Module Variant gives the user access to IO-Link Class A Master ports

Possible Port Behavior

IO-Link, Class A Master or 2 x Digital Inputs or 2 x Digital Outputs*	IO-Link, Class A Master or 2 x Digital Inputs or 2 x Digital Outputs*
IO-Link, Class A Master or 2 x Digital Inputs or 2 x Digital Outputs*	IO-Link, Class A Master or 2 x Digital Inputs or 2 x Digital Outputs*

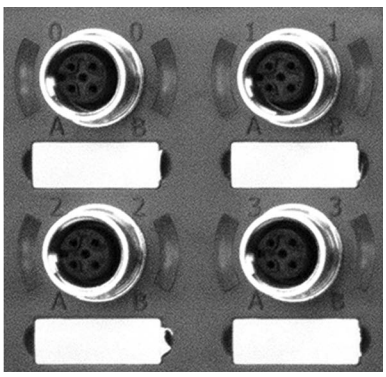


*Digital Output draws current from logic power

Port Behavior

- Each port's behavior can differ from one another
- For example, the user can select the behavior listed below through software (shown below)

IO-Link, Class A Master or **2 x Digital Inputs** 2 x Digital Outputs	**IO-Link, Class A Master** 2 x Digital Inputs or 2 x Digital Outputs
IO-Link, Class A Master or 2 x Digital Inputs or **2 x Digital Outputs**	IO-Link, Class A Master or 2 x Digital Inputs or **2 x Digital Outputs**



PCH Network Portal

Module Variants

Module

B

What is a Module Variant?

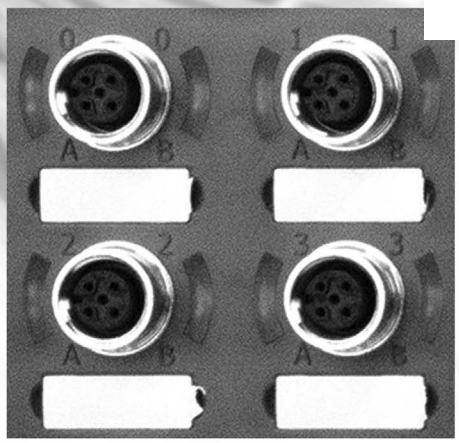
- The PCH Network Portal has 3 available Module Positions. Each module position can be populated with three different Module Variants
- Each Module Position can accept all module variants

Port Behavior

- Each port Is capable of the following behavior listed below
- Through software, the user can click and change how the port behaves on the fly
- The B Module Variant gives the user access to IO-Link Class B Master ports

Possible Port Behavior

IO-Link, Class B Master or 1 x Digital Input or 1 x Digital Output*	IO-Link, Class B Master or 1 x Digital Input or 1 x Digital Output*
IO-Link, Class B Master or 1 x Digital Input or 1 x Digital Output*	IO-Link, Class B Master or 1 x Digital Input or 1 x Digital Output*

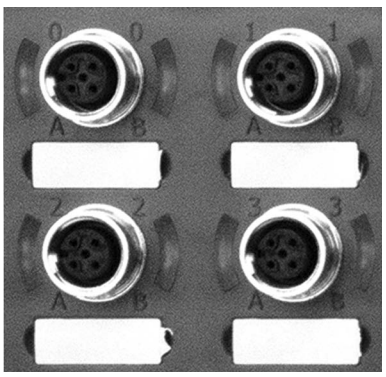


*Digital Output draws current from logic power

Port Behavior

- Each port's behavior can differ from one another
- For example, the user can select the behavior listed below through software (shown below)

IO-Link, Class B Master or **1 x Digital Input** 1 x Digital Output*	**IO-Link, Class B Master** 1 x Digital Input or 1 x Digital Output
IO-Link, Class B Master or 1 x Digital Input or **1 x Digital Output**	IO-Link, Class B Master or 1 x Digital Input or **1 x Digital Output**



PCH Network Portal

Module Variants

Module

C

What is a Module Variant?

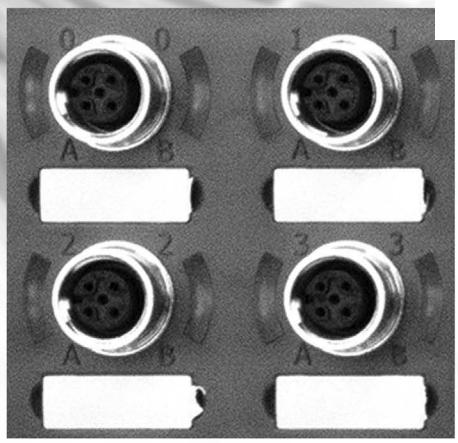
- The PCH Network Portal has 3 available Module Positions. Each module position can be populated with three different Module Variants
- Each Module Position can accept all module variants

Port Behavior

- Each port Is capable of the following behavior listed below
- Through software, the user can click and change how the port behaves on the fly
- The C Module Variant gives the user access to IO-Link Class B Master ports and fixed high current outputs

Possible Port Behavior

2 x Digital Outputs, 500 mA each, Fixed ¥	2 x Digital Outputs, 500 mA each, Fixed ¥
IO-Link, Class B Master or 1 x Digital Input or 1 x Digital Output*	IO-Link, Class B Master or 1 x Digital Input or 1 x Digital Output*



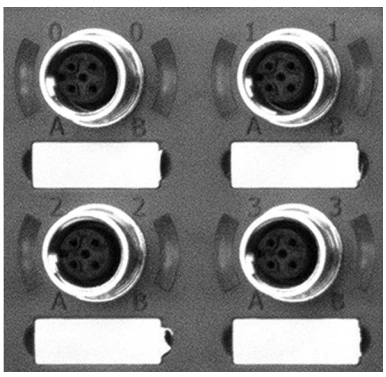
¥ Digital Outputs draw current from auxiliary power

* Digital Output draws current from logic power

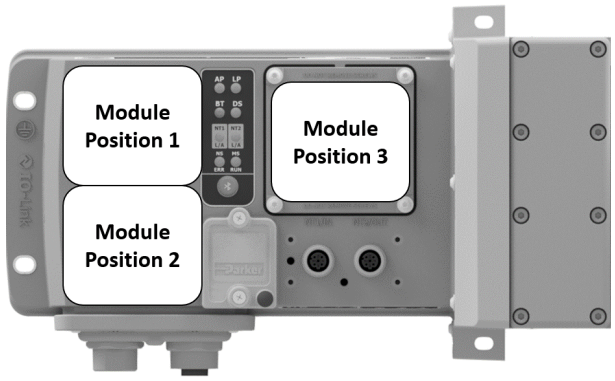
Port Behavior

- Each port's behavior can differ from one another
- For example, the user can select the behavior listed below through software (shown below)

2 x Digital Outputs, 500 mA each, Fixed	**2 x Digital Outputs, 500 mA each, Fixed**
IO-Link, Class B Master or 1 x Digital Input or **1 x Digital Output**	**IO-Link, Class B Master** 1 x Digital Input or 1 x Digital Output



I/O Module Combinations



- The PCH Network Portal gives true port flexibility
- The PCH Network Portal can be ordered with 3 available module variants
- Each module variant has 4, M12 Ports
- Each module variants can be chosen in any module position
- Each port is individually software configurable
- A blanking plate is available for Module Position 3
- **Important:** Once Module Variants are selected on the PCH Network Portal, they cannot be changed in the field

Before it comes through your door
Select which Module Variant you want in each Module Position

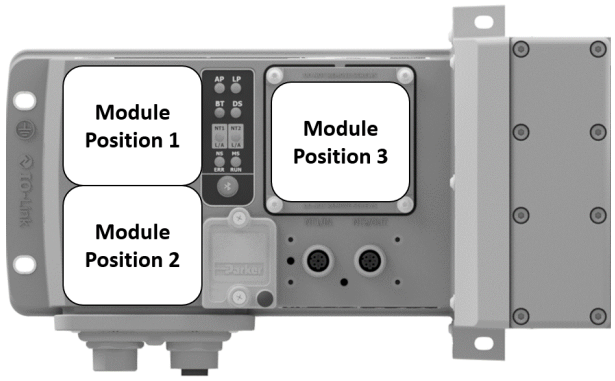
After it comes through your door
Truly Configurable I/O - Select port behavior from listed options

Module Variants

Module A		IO-Link, Class A Master **OR** 2 Inputs, PNP/NPN **OR** 2 Outputs, 250 mA ea		IO-Link, Class A Master **OR** 2 Inputs, PNP/NPN **OR** 2 Outputs, 250 mA ea
		IO-Link, Class A Master **OR** 2 Inputs, PNP/NPN **OR** 2 Outputs, 250 mA ea		IO-Link, Class A Master **OR** 2 Inputs, PNP/NPN **OR** 2 Outputs, 250 mA ea
Module B		IO-Link, Class B Master **OR** 1 Input, PNP/NPN **OR** 1 Output, 250 mA ea		IO-Link, Class B Master **OR** 1 Input, PNP/NPN **OR** 1 Output, 250 mA ea
		IO-Link, Class B Master **OR** 1 Input, PNP/NPN **OR** 1 Output, 250 mA ea		IO-Link, Class B Master **OR** 1 Input, PNP/NPN **OR** 1 Output, 250 mA ea
Module C		2 Outputs, 500 mA ea		2 Outputs, 500 mA ea
		IO-Link, Class B Master **OR** 1 Input, PNP/NPN **OR** 1 Output, 250 mA ea		IO-Link, Class B Master **OR** 1 Input, PNP/NPN **OR** 1 Output, 250 mA ea
Module N	Blank Cover, No Ports, Only available in Position 3			

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

I/O Module Combinations



- Below are 16 standard module combinations
- For simplicity, similar combinations of modules are consolidated into one combination

For Example:

Example Model Structure

XX	XX	P3	XX	P	XX	XXX	0 -	P4

Below are the standard module configurations

Refer to page 183 for full product Module Structure.

Order Code	Module Position 1	Module Position 2	Module Position 3
AAA	A	A	A
AAB	A	A	B
AAC	A	A	C
AAN	A	A	N
ABB	A	B	B
ABC	A	B	C
ABN	A	B	N
ACC	A	C	C
ACN	A	C	N
BBB	B	B	B
BBC	B	B	C
BBN	B	B	N
BCC	B	C	C
BCN	B	C	N
CCC	C	C	C
CCN	C	C	N

For any module configurations not listed, consult factory.

Power Options

- The PCH Network Portal has 4 available power connectors
- There are two power schemes that can be achieved detailed below
- Any I/O ports using AUX power and any attached H ISO Universal manifold valves draw power from the AUX power pins of the power connector

Consumption @ 24 VDC

AUX power max consumption	12A
Logic power max consumption	8A
Total possible passthrough for AUX line and Logic	**20A**

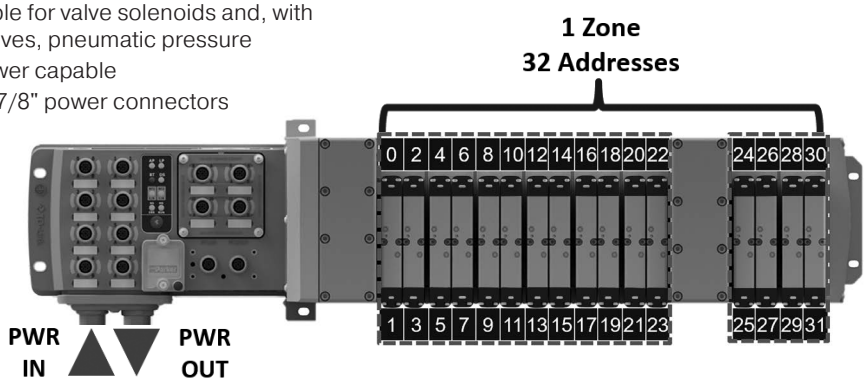
Any power left over can be passed on to other devices on the network

XX	XX	P3	XX	P	XX	AAA	0 -	**P4**

Power Connector *	
4-pin power in/out with 1 safe power capable zone	**P4**
5-pin power in/out with 1 safe power capable zone	**P5**
4-pin power in/in with 2 safe power zones	S4
5-pin power in/in with 2 safe power zones	S5

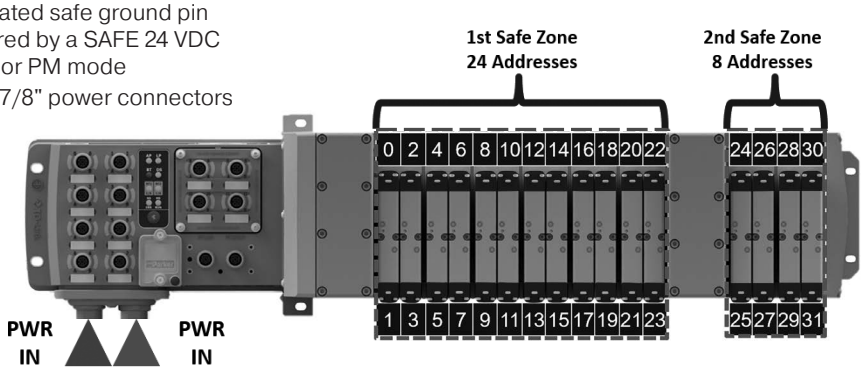
Power Scheme 1

- All 32 addresses are controlled in the same power zone
- Safety zoning is possible for valve solenoids and, with the H ISO Universal valves, pneumatic pressure
- Power zone is safe power capable
- Available in 4 or 5-pin 7/8" power connectors



Power Scheme 2

- The power connector separates the valve power
- Each zone has an isolated safe ground pin so each can be powered by a SAFE 24 VDC auxiliary source in PP or PM mode
- Available in 4 or 5 pin 7/8" power connectors



Popular Module Combinations

- Listed below are popular module configurations
- For full model number structure, please refer to next page

EtherNet/IP™

Popular Part Number Configurations

Pilot Type	Thread Type	Module Position			Power Connector	End Plate Part Number
		1	2	3		
Internal	NPT	A	A	A	4-pin power IN/OUT with 1 safe power capable zone	**PSHU20P300PEAAA0-P4**
Internal	NPT	A	A	B	4-pin power IN/OUT with 1 safe power capable zone	**PSHU20P300PEAAB0-P4**
Internal	NPT	A	B	C	4-pin power IN/OUT with 1 safe power capable zone	**PSHU20P300PEABC0-P4**
Internal	NPT	A	A	N	4-pin power IN/OUT with 1 safe power capable zone	**PSHU20P300PEAAN0-P4**
Internal	NPT	A	A	A	5-pin power IN/OUT with 1 safe power capable zone	**PSHU20P300PEAAA0-P5**
Internal	NPT	A	A	B	5-pin power IN/OUT with 1 safe power capable zone	**PSHU20P300PEAAB0-P5**
Internal	NPT	A	A	C	5-pin power IN/OUT with 1 safe power capable zone	**PSHU20P300PEAAC0-P5**
Internal	NPT	A	A	N	5-pin power IN/OUT with 1 safe power capable zone	**PSHU20P300PEAAN0-P5**
Internal	NPT	A	A	A	4-pin power IN/IN with 2 safe power zones	**PSHU20P300PEAAA0-S4**
Internal	NPT	A	A	N	5-pin power IN/IN with 2 safe power zones	**PSHU20P300PEAAN0-S5**

PROFINET

Popular Part Number Configurations

Pilot Type	Thread Type	Module Position			Power Connector	End Plate Part Number
		1	2	3		
Internal	NPT	A	A	A	5-pin power IN/OUT with 1 safe power capable zone	**PSHU20P300PNAAA0-P5**
Internal	NPT	A	A	B	5-pin power IN/OUT with 1 safe power capable zone	**PSHU20P300PNAAB0-P5**
Internal	NPT	A	B	C	5-pin power IN/OUT with 1 safe power capable zone	**PSHU20P300PNABC0-P5**
Internal	NPT	A	A	N	5-pin power IN/OUT with 1 safe power capable zone	**PSHU20P300PNAAN0-P5**
Internal	NPT	A	A	A	5-pin power IN/OUT with 1 safe power capable zone	**PSHU20P300PNAAA0-P5**
Internal	NPT	A	A	B	5-pin power IN/IN with 2 safe power zones	**PSHU20P300PNAAB0-S5**
Internal	NPT	A	A	C	5-pin power IN/IN with 2 safe power zones	**PSHU20P300PNAAC0-S5**
Internal	NPT	A	A	N	5-pin power IN/IN with 2 safe power zones	**PSHU20P300PNAAN0-S5**
Internal	NPT	A	A	A	5-pin power IN/IN with 2 safe power zones	**PSHU20P300PNAAA0-S5**
Internal	NPT	A	A	N	5-pin power IN/IN with 2 safe power zones	**PSHU20P300PNAAN0-S5**

EtherCAT®

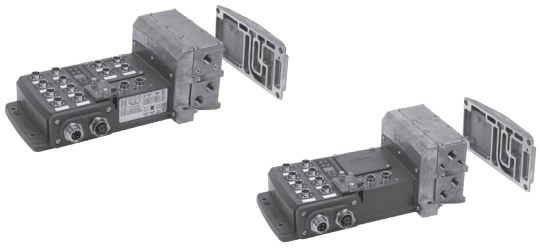
Popular Part Number Configurations

Pilot Type	Thread Type	Module Position			Power Connector	End Plate Part Number
		1	2	3		
Internal	NPT	A	A	A	4-pin power IN/OUT with 1 safe power capable zone	**PSHU20P300PTAAA0-P4**
Internal	NPT	A	A	B	4-pin power IN/OUT with 1 safe power capable zone	**PSHU20P300PTAAB0-P4**
Internal	NPT	A	B	C	4-pin power IN/OUT with 1 safe power capable zone	**PSHU20P300PTABC0-P4**
Internal	NPT	A	A	N	4-pin power IN/OUT with 1 safe power capable zone	**PSHU20P300PTAAN0-P4**
Internal	NPT	A	A	A	5-pin power IN/OUT with 1 safe power capable zone	**PSHU20P300PTAAA0-P5**
Internal	NPT	A	A	B	5-pin power IN/OUT with 1 safe power capable zone	**PSHU20P300PTAAB0-P5**
Internal	NPT	A	A	C	5-pin power IN/OUT with 1 safe power capable zone	**PSHU20P300PTAAC0-P5**
Internal	NPT	A	A	N	5-pin power IN/OUT with 1 safe power capable zone	**PSHU20P300PTAAN0-P5**
Internal	NPT	A	A	A	4-pin power IN/IN with 2 safe power zones	**PSHU20P300PTAAA0-S4**
Internal	NPT	A	A	N	5-pin power IN/IN with 2 safe power zones	**PSHU20P300PTAAN0-S5**

End Plate Kit – Universal Plug-in

The PCH Network Portal is ordered as an endplate kit. This includes the PCH Network Portal, left hand air supply module, and right hand end plate.

For fully assembled manifold Add-A-Fold part number, reference page D88



PSHU20	P3	0	0	P	E	AAA	0	–	P4

Valve Type

Plug-in (Internal pilot)	**PSHU20**
Plug-in (External pilot)	PSHU2X

Thread Type

NPT	**0**
BSPP "G"	1

Network Connections

EtherNet/IP™	**E**
EtherCAT	**T**
PROFINET	**N**
Modbus TCP	**M**

Power Connector

4-pin power IN/OUT with 1 safe power capable zone	**P4**
5-pin power IN/OUT with 1 safe power capable zone	**P5**
4-pin power IN/IN with 2 safe power zones	S4
5-pin power IN/IN with 2 safe power zones	S5

Right Hand End Plate Type / Thread Size

Low profile (no ports)	**0**
1/2 Exhaust and inlet port	1
3/4 Exhaust and inlet port	2
H3 Transition plate and end plate (electrical pass through for plug-in valves only)	3
H3 Transition plate and end plate (expansion to 25th address for plug-in valves only)	4

Module Combinations

Module Position 1	Module Position 2	Module Position 3
A	**A**	**A**
A	A	B
A	A	C
A	**A**	**N**
A	B	B
A	B	C
A	B	N
A	C	C
A	C	N
B	B	B
B	B	C
B	B	N
B	C	C
B	C	N
C	C	C
C	C	N

For any module configurations not listed, consult factory.

Most popular.

Mechanical Data

Housing Material	Housing /Enclosure: PBT with 33% GF and UL94-V0 Base Cover (plate): Aluminum 380
Enclosure rating	IP 65 (only when plugged-in and threaded-in)
Power Connectors	7/8" 4 or 5 pin male and female pin connector
Input ports/ Output ports	M12, A-coded (12 x female)
Dimensions (L x B x H in mm)	226.6mm x 130.7mm x 55mm
Mounting type	Screw Mount
Ground strap attachment	M5
Weight	Approx. 1.3 kg

Operating Conditions

Operating Temperature	0°C to 50°C
Storage Temperature	-25°C to 70°C
CE as per	IEC 61000-6-2 (Industrial Immunity)
	IEC 61000-6-4 (Industrial Emission)
Shock/Vibrations	IEC 60068-2-27:2008
	IEC 60068-2-6:2007
Electrostatic Discharge	IEC 61000-4-2
Electrical Fast Transient/ Burst	IEC 61000-4-4
Surge Immunity	IEC 61000-4-5

Electrical Data

Supply Voltage	24VDC (-15% to +20%)
Logic current at 24 V (V1)	Max Current 8A – Actual usage depends on configuration
Auxiliary current at 24 V (V2)	Max Current 12A – Actual usage depends on configuration

Valve Configuration

Compatible Valves	H Universal ISO Valves
Available addresses	24 addresses, 32 addresses with H Universal Extension Slice

I/O Port Pin Outs

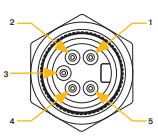
- The PCH Network Portal uses threaded M12 Ports for I/O Connections
- All configurable ports are configurable through software at any time

Module Variant	Connector	Pin No.	Function
A *Applies to ports 1-4 of this module		1	+24V, 500mA VLOG (V1)
		2	Input (PNP or NPN) / Output +24V, 250 mA (V1)
		3	GND (V1)
		4	IO-Link/Input (PNP or NPN) / Output +24V, 250mA (V1)
		5	Not Connected
B *Applies to ports 1-4 of this module		1	+24V, 250mA VLOG (V1)
		2	+24V, 1.2A VAUX (V2)
		3	GND (V1)
		4	IO-Link/Input (PNP or NPN) / Output +24V, 250mA (V1)
		5	GND (V2)
***Applies to ports 1-2 of this module** C		1	Not Connected
		2	Output +24VAUX (V2), 500mA
		3	GND (V2)
		4	Output +24VAUX (V2), 500mA
		5	Not Connected
*Applies to ports 3-4 of this module		1	+24V, 250mA VLOG (V1)
		2	+24V, 1.2A VAUX (V2)
		3	GND (V1)
		4	IO-Link/Input (PNP or NPN) / Output +24V, 250mA (V1)
		5	GND (V2)

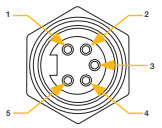
Power Conector Pin Outs

- The PCH Network Portal uses 7/8" ports for its left IN and right OUT or IN power connectors.
- Any power configuration below can be ordered
- For AIDA power connector, consult factory

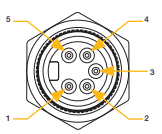
Left Power Connector: Power IN

Connector	Pin No.	Function	Description
P4	1	+24 V	V2 (VAUX), 12A
	2	+24 V	V1 (VLOG), 8A
	3	0 V	GND V1 (VLOG)
	4	0 V	GND V2 (VAUX)
P5	1	0 V	GND V2 (VAUX)
	2	0 V	GND V1 (VLOG)
	3	Protective Earth	Protective Earth
	4	+24 V	V1 (VLOG), 8A
	5	+24 V	V2 (VAUX), 12A
S4	1	+24 V	V2 (VAUX), 12A
	2	+24 V	V1 (VLOG), 8A
	3	0 V	GND V1 (VLOG)
	4	0 V	GND V2 (VAUX)
S5 	1	0 V	GND V2 (VAUX)
	2	0 V	GND V1 (VLOG)
	3	Protective Earth	Protective Earth
	4	+24 V	V1 (VLOG), 8A
	5	+24 V	V2 (VAUX), 12A

Right Power Connector: Power OUT

Connector	Pin No.	Function	Description
	1	+24 V	V2 (VAUX), 3.8A
	2	+24 V	V1 (VLOG), 1.28A
	3	0 V	GND V1 (VLOG)
	4	0 V	GND V2 (VAUX)
	1	0 V	GND V2 (AUX)
	2	0 V	GND V1 (VLOG)
	3	Protective Earth	Protective Earth
	4	+24 V	V1 (VLOG)
	5	+24 V	V2 (VAUX)

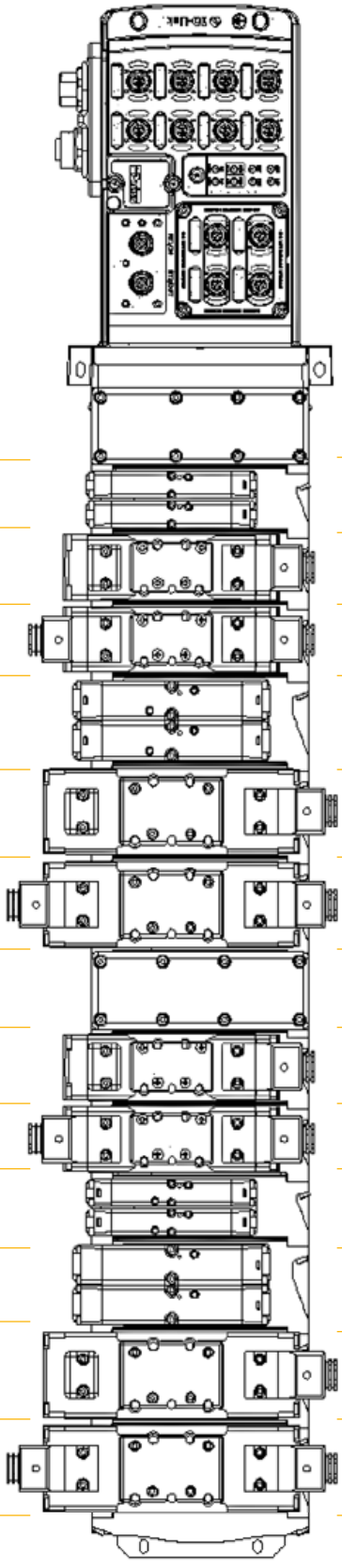
Right Power Connector: Power IN

	1	+24 V	V2 (VAUX), 3.8A
	2	+24 V	V1 (VAUX), 1.28A
	3	0 V	Safe GND 1-3*
	4	0 V	Safe GND 4*
	1	+24 V	V2 (VAUX), 3.8A
	2	+24 V	V1 (VAUX), 1.28A
	3	Protective Earth	Protective Earth
	4	0 V	Safe GND 1-3*
	5	0 V	Safe GND 4*

*"Safe GND 1-3" refers to solenoid addresses 0-23 and "Safe GND 4" refers to solenoid addresses 24-31

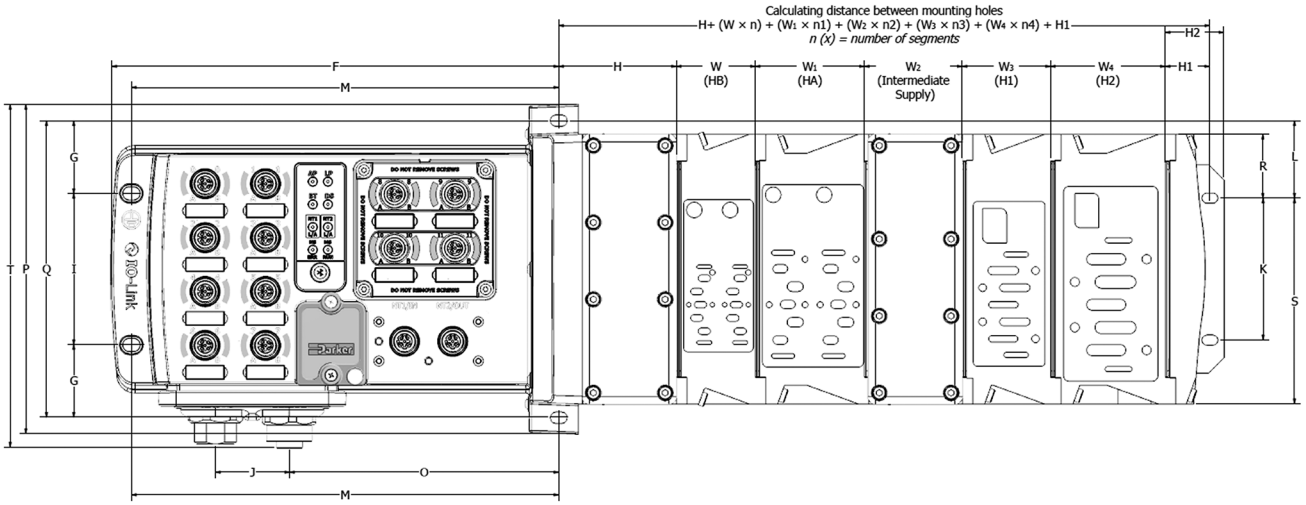
Solenoid Addressing

- The PCH Network Portal can used the following H ISO Universal Valves:
  - ISO 15407-2 – sizes 02 & 01
  - ISO 5599-2 – sizes 1, 2 & 3
- The PCH Network Portal can support up to 32 addresses as shown
- The data map and PCH Tool refers to each address with a Valve_X designator. Each Valve_X designator is as shown.
- Addresses 25-31 can be accessed using an Intermediate Air Supply with Electric Expansion
- Each address is one solenoid



Air Supply				
HB Single Address Manifold			EV0	Address 0
			EV1	Address 1
H1 Single Address Manifold			EV2	Address 2
H1 Double Address Manifold	EV4	Address 4	EV3	Address 3
HA Double Address Manifold	EV6	Address 6	EV5	Address 5
	EV8	Address 8	EV7	Address 7
H2 Single Address Manifold			EV9	Address 9
H2 Double Address Manifold	EV11	Address 11	EV10	Address 10
Air Supply Zero Address Manifold				
H1 Single Address Manifold			EV12	Address 12
H1 Double Address Manifold	EV14	Address 14	EV13	Address 13
HB Double Address Manifold	EV16	Address 16	EV15	Address 15
	EV18	Address 18	EV17	Address 17
HA Single Address Manifold			EV19	Address 19
			EV20	Address 20
H2 Single Address Manifold			EV21	Address 21
H2 Double Address Manifold	EV23	Address 23	EV22	Address 22
Low Profile End Plate (No Ports)				

PCH Network Portal with H Series ISO Valves

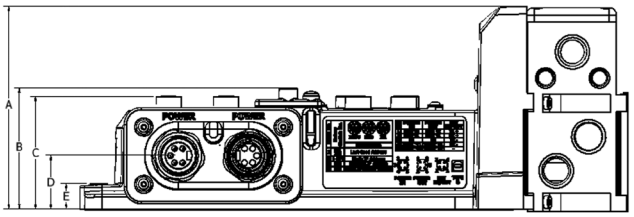


n (x) = number of segments

A	B	C	D	E	F	G	H	H1	H2	J	K	L
4.42 (112.3)	2.64 (67.1)	2.46 (62.5)	1.17 (29.7)	.55 (14)	9.32 (236.7)	1.51 (38.4)	2.36 (59.9)	.9 (22.9)	1.22 (31)	1.55 (39.4)	2.95 (74.9)	1.6 (40.6)

M	O	P	Q	R	S	T	W	W1	W2	W3	W4
8.91 (226.3)	5.61 (142.5)	6.86 (174.2)	6.18 (157)	1.33 (33.8)	4.28 (108.7)	7.14 (181.4)	1.63 (41.4)	2.28 (57.9)	2.03 (51.6)	1.82 (46.2)	2.39 (60.7)

Inches (mm)



Product Support

- The PCH Network Portal Product Landing page can be accessed at the following:

www.parker.com/pdn/PCHPortal

- The PCH Network Portal support material can be accessed at the following:

www.parker.com/pdn/networkconnectivity

- The PCH Connect - Bluetooth App

GET IT ON Google Play

Available on the App Store

User Manuals

- The PCH Network Portal User Manuals can be accessed at the following website. Click on QR code for hyperlink.

EtherNet/IP™ User Manual

Profinet User Manual

EtherCAT User Manual

Modbus User Manual

For more information on IO-Link

IO-Link www.io-link.com

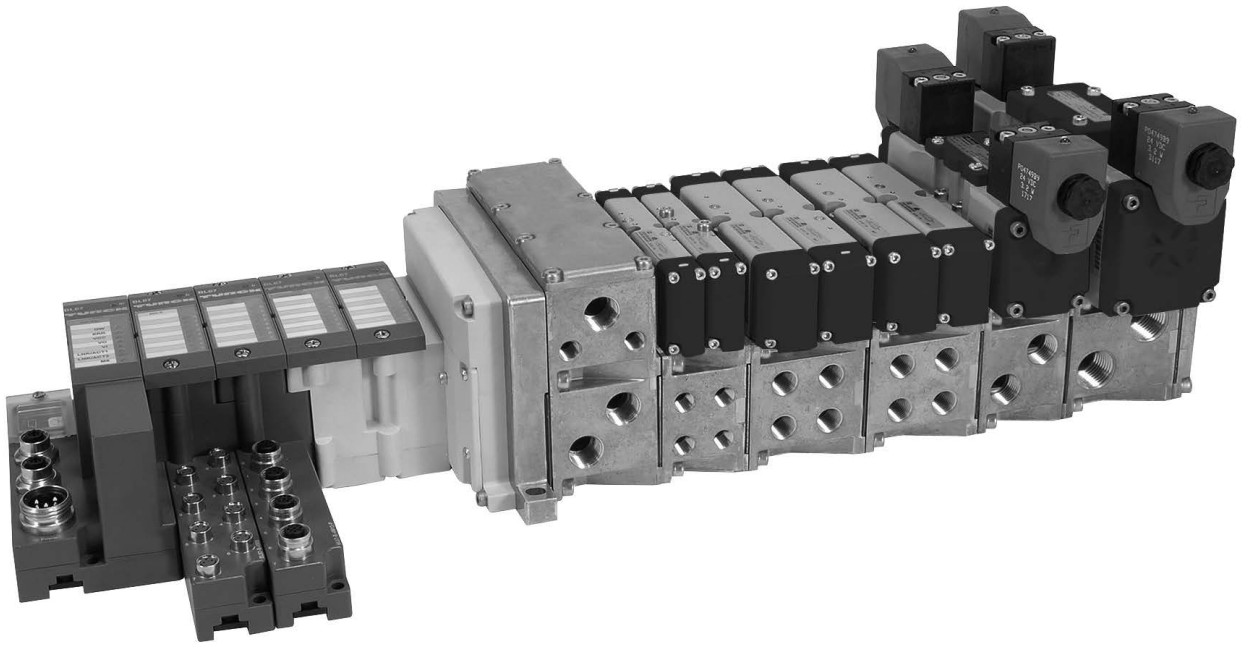
The Turck Network Portal

Turck Network Portal has four major components:

- **Valve Driver Module** provide control for either 16 or 32 solenoids on a manifold
- **I/O Modules** provide the field interface and system-interface circuitry
- **Communication Modules** provide the network-interface circuitry
- **Power Distribution Module** provide 5 additional power inputs to the Turck system

Turck Features

- Highly modular design (4pt – 16pt modularity)
- Broad application coverage
- Expandable 4 port Class A IO-Link master
- Channel-level diagnostics (LED and electronic)
- Channel-level alarm and annunciation (electronic)
- Channel-level open-wire detection with electronic feedback
- Channel-level short-circuit detection with electronic feedback
- Horizontal and vertical mounting without derating
- 5g vibration
- Electronic and mechanical keying
- Robust backplane design
- Quick-disconnects for I/O and network connectivity
- Built-in panel grounding
- Color-coded module labels
- UL, cCSAus, and CE certifications (as marked)
- Highly reliable structural integrity
- Optical isolation between field and system circuits



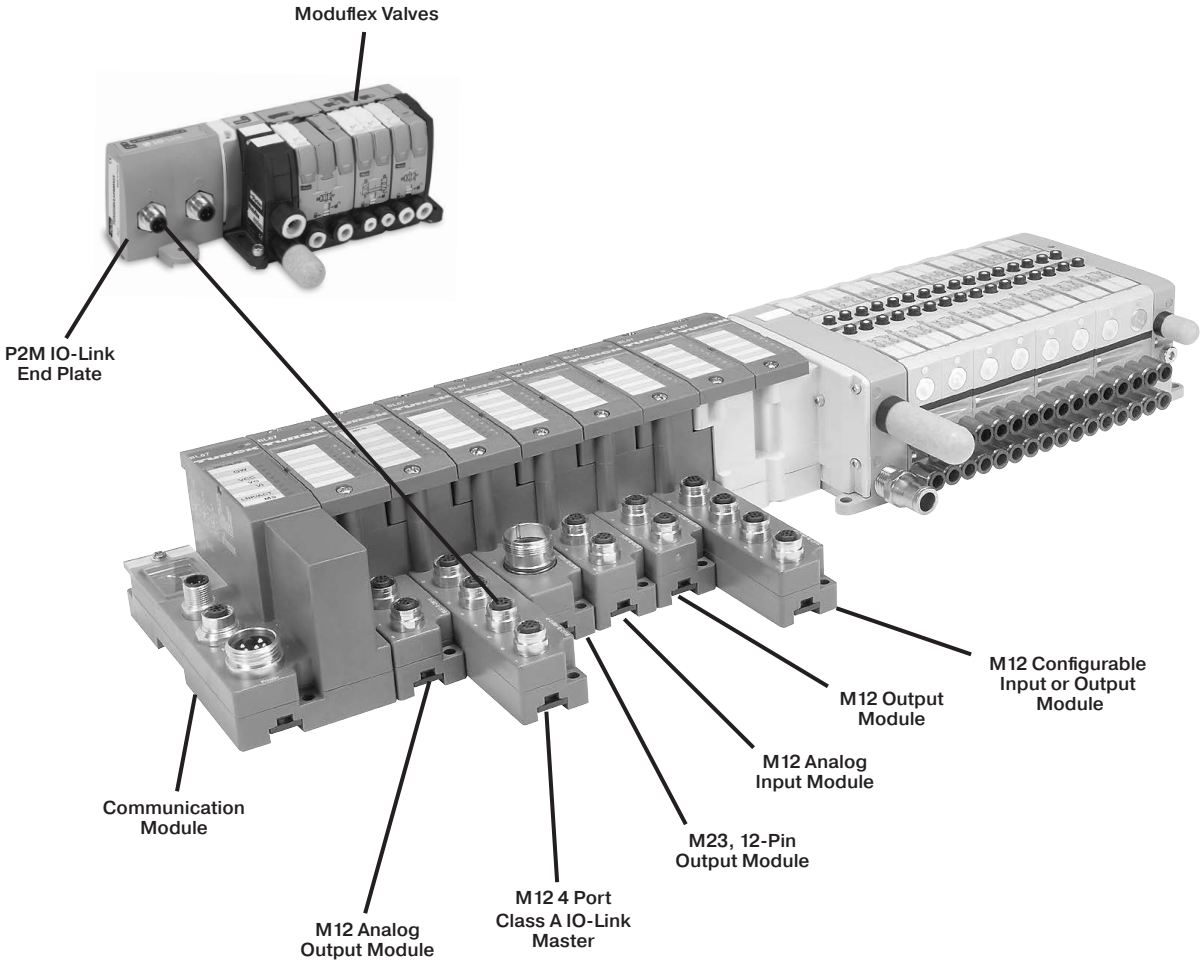
Turck Network Portal

- A complete network communication offering for all H Series ISO and H Series Micro valves
- CSA, cULus and CE certifications (as marked)

I/O Configuration

- Centralized Turck Network Portal
- Pneumatics and I/O are in close proximity with one another
- M23, 12-Pin or 19-Pin output extension to an additional H Series valve manifold
- I/O density per module = 4, 8 or 16

EtherNet/IP™ DeviceNet™ PROFIBUS PROFINET Modbus/TCP™ CANopen



Configure / Program any module with RS232, or directly through Ethernet for any module with an Ethernet physical layer.

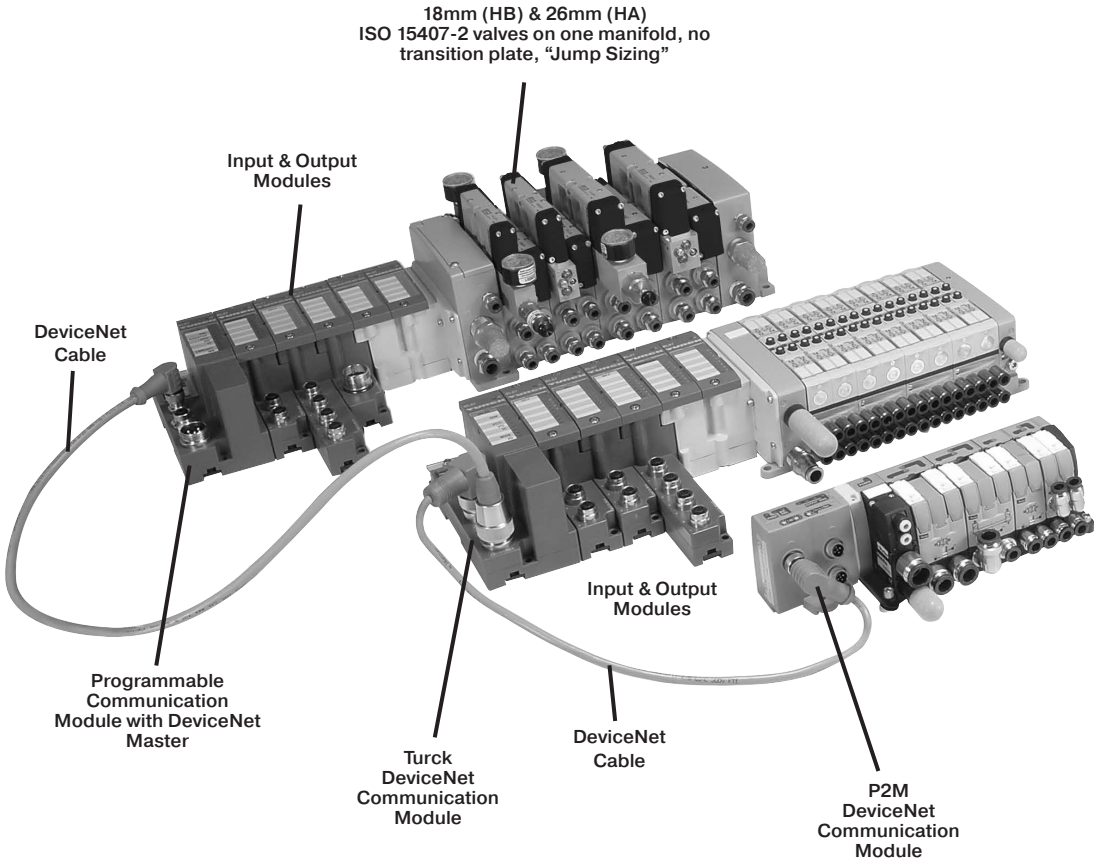
Turck Network Portal

- A complete network communication offering for all H Series ISO and H Series Micro valves.
- CSA, cCSAus and CE certifications (as marked).

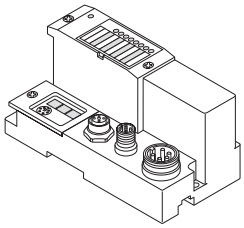
I/O Configuration

- Complete control of all I/O and valves with stand alone control
- Additional I/O and valves connected over DeviceNet with BL Remote Subnet
- BL Remote connection to P2M and Turck DeviceNet equipped communication modules
- I/O density per module = 4, 8 or 16

EtherNet/IP™ DeviceNet PROFIBUS PROFINET Modbus/TCP™ CANopen



Communications Module

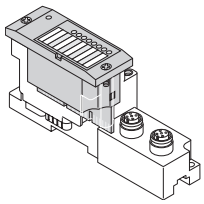


BL67 communication modules are the heart of a BL67 station. They are designed to connect the modular nodes to the higher level network (PROFIBUS-DP, DeviceNet, CANopen, Ethernet).

All BL67 electronic modules communicate over the internal module bus with the communication modules. The communication module structures the data and sends them clustered via network nodes to the higher control system.

This way all I/O modules can be configured independently of the system.

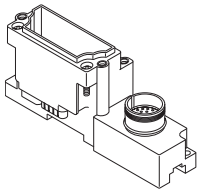
Electronic Module



BL67 electronic modules are inserted into the passive base modules from above and then simply affixed with two screws. Maintenance is extremely simplified due to the separation of connection level and module electronics.

Moreover, flexibility is enhanced because the base modules provide different types of connectors. Voltage supply for the electronic modules is either provided via the communication modules or a Power Extender module. Power Extender modules can be used to create galvanically isolated potential groups.

Base Module



BL67 base modules are aligned one by one to the right of the communication module and are tightened each with two screws, either with the communication modules or with the previous module. A DIN rail is not required. This way a compact and stable unit is created which can be mounted directly on the machine.

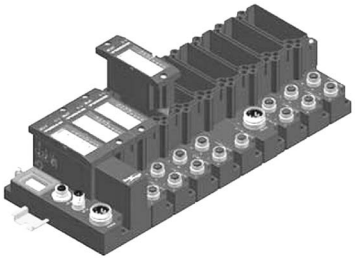
The base modules serve for connection of the field devices an are available with different connection types (M8, M12, M23 and 7/8).

A BL67 system can be extended to a total length of 1 m, comprising of a communication module for PROFIBUS-DP, DeviceNet / CANopen or Ethernet and a maximum of 32 modules.

System supply: The power supply for the BL67 system is either derived separately for Profibus-DP and Ethernet communication modules or directly from the DeviceNet / CANopen cable for the DeviceNet / CANopen communication module.

Power Extender modules can be inserted anywhere in the BL67 station. They provide isolated field voltage for the I/O modules mounted to their right.

Thus Power Extender modules can also be used to create different potential groups.



Maximum System Extension

		PROFIBUS		DeviceNet		CANopen		ModbusTCP		EtherNet/IP		PROFINET	
		Number of		Number of		Number of		Number of		Number of		Number of	
Module type		**chan.**	**mod.**	**chan.**	**mod.**	**chan.**	**mod.**	**chan.**	**mod.**	**chan.**	**mod.**	**chan.**	**mod.**
Digital inputs	4 DI	128	32	128	32	128	32	128	32	128	32	128	32
	8 DI	256	32	256	32	256	32	256	32	256	32	256	32
Digital outputs	4 DO	128	32	128	32	128	32	128	32	128	32	128	32
	8 DO	256	32	256	32	256	32	256	32	256	32	256	32
	16 DO	512	32	512	32	512	32	512	32	512	32	512	32
Analog inputs	2AI	64	32	64	32	64	32	64	32	64	32	64	32
	4AI	112	28	124	31	124	31	128	32	128	32	128	32
	2 AI-PT	56	28	64	32	64	32	64	32	64	32	64	32
	2 AI-TC	64	32	64	32	64	32	64	32	64	32	64	32
Analog outputs	2 AO-I	38	19	64	32	64	32	64	32	64	32	64	32
	2 AO-V	38	19	50	25	50	25	50	25	50	25	50	25

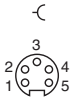
BL67-GW-DN

DeviceNet Communication Module with Power Over the Network

7/8 Mini bus in wiring, view into male connector

1 = Shield
2 = RD (V +)
3 = BK (V -)
4 = WH (CAN H)
5 = BU (CAN L)

7/8 Mini bus out wiring, view into female connector



1 = Shield
2 = RD (V +)
3 = BK (V -)
4 = WH (CAN H)
5 = BU (CAN L)

Turck Network Portal with up to 256 inputs, outputs, and 32 solenoids per H Series Micro or H Series ISO manifold. Digital inputs / outputs, analog inputs / outputs, serial interface, and counter modules are available. DeviceNet communication speeds selectable between 120, 250, 500 kbps, and CANopen communication speeds are selectable between 10 kbps up to 1 Mbps. Addressing for either module can be selected via rotary switches or set through software.

With the Power over the Network feature, it is only necessary to connect one cable to the communication module. For networks requiring additional power, a Bus Power Tee can be installed to combine separate network and power feeds into the communication module. See the Cables and Cordsets section for additional information.

BL67-GW-CO

CANopen Communication Module

M12 A-code bus out Wiring, view into female connector

1 = Shield
2 = RD (V +)
3 = BK (V -)
4 = WH (CAN H)
5 = BU (CAN L)

M12 A-code bus In Wiring, view into male connector

1 = Shield
2 = RD (V +)
3 = BK (V -)
4 = WH (CAN H)
5 = BU (CAN L)

7/8 Mini Power in wiring, view into male connector

1 = GND
2 = GND
3 = PE
4 = V_i
5 = V_o

Turck Network Portal with up to 256 inputs, outputs, and 32 solenoids per H Series Micro or H Series ISO manifold. Digital inputs / outputs, analog inputs / outputs, serial interface, and counter modules are available. CANopen communication speeds are selectable between 10 kbps up to 1 Mbps, and addressing can be selected via rotary switches or set through software.

BL67-GW-DPV1

Profibus Communication Module

M12 B-code bus out Wiring, view into female connector

1 = 5 VDC
2 = GN (Bus A)
3 = GND
4 = RD (Bus B)
5 = Shield

M12 B-code bus In Wiring, view into male connector

1 = n.c.
2 = GN (Bus A)
3 = n.c.
4 = RD (Bus B)
5 = Shield

7/8 Mini Power in wiring, view into male connector

1 = GND
2 = GND
3 = PE
4 = V_i
5 = V_o

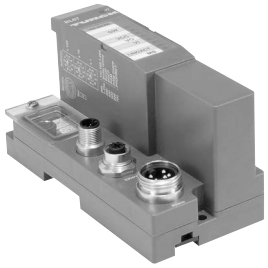
Turck Network Portal with up to 256 inputs, outputs, and 32 solenoids per H Series Micro or H Series ISO manifold. Digital inputs / outputs, analog inputs / outputs, serial interface, and counter modules are available. PROFIBUS communication speeds are selectable between 9.6 kbps up to 12 Mbps, and addressing can be selected via rotary switches or set through software.

BL67-GW-EN

Modbus/TCP, EtherNet/IP™, and ProfiNet

BL67-GW-EN-PN

PROFINET Communication Module



M12 D-code Ethernet in Wiring, view into female connector

1 = YE (TX+)
2 = WH (RX+)
3 = OG (TX-)
4 = BU (RX-)

7/8 Mini Power in wiring, view into male connector

1 = GND
2 = GND
3 = PE
4 = V_i
5 = V_o

Turck Network Portal with up to 256 inputs, outputs, and 32 solenoids per H Series Micro or H Series ISO manifold. Digital inputs / outputs, analog inputs / outputs, serial interface, and counter modules are available. Communication speeds of 10/100 Mbps, and addressing can be selected via rotary switches, BOOTP, DHCP, or through software.

BL67-GW-EN-DN

Modbus/TCP Communication Module with DeviceNet Subnet

BL67-GW-EN-IP-DN

EtherNet/IP™ Communication Module with DeviceNet Subnet

DeviceNet OUT

1 = Shield
2 = RD (V +)
3 = BK (V -)
4 = WH (CAN H)
5 = BU (CAN L)

M12 D-code Ethernet in Wiring, view into female connector

1 = YE (TX+)
2 = WH (RX+)
3 = OG (TX-)
4 = BU (RX-)

7/8 Mini Power in wiring, view into male connector

1 = GND
2 = GND
3 = PE
4 = V_i
5 = V_o

With BL Remote DeviceNet subnet functionality, each communication module has its own DeviceNet master which provides a connection for 63 DeviceNet nodes with additional inputs, outputs, and solenoid control. BL Remote DeviceNet subnet is independent of the main network, and is not visible to the master PLC.

BL67-PG-EN-DN

Modbus/TCP Programmable Communication Module with DeviceNet Subnet

BL67-PG-EN-IP-DN

EtherNet/IP™ Programmable Communication Module with DeviceNet Subnet

DeviceNet OUT

1 = Shield
2 = RD (V +)
3 = BK (V -)
4 = WH (CAN H)
5 = BU (CAN L)

M12 D-code Ethernet in Wiring, view into female connector

1 = YE (TX+)
2 = WH (RX+)
3 = OG (TX-)
4 = BU (RX-)

7/8 Mini Power in wiring, view into male connector

1 = GND
2 = GND
3 = PE
4 = V_i
5 = V_o

Communication modules are equipped with a built in standalone controller which is programmed according to IEC61131-3 with CoDeSys. Each module has 512KB Program memory with 32 bit RISC processor, and can run 1000 instructions in less than 1 ms. These network equipped modules are optimized to interface with PLC's with network capability or act as standalone controllers that need to interface with other network equipped devices.

With BL Remote DeviceNet subnet functionality, each communication module has its own DeviceNet master which provides a connection for 63 DeviceNet nodes with additional inputs, outputs, and solenoid control. BL Remote DeviceNet subnet is independent of the main network, and is not visible to the master PLC.

BL67-PG-DP

PROFIBUS Programmable Communication Module

BL67-PG-EN

Modbus/TCP Programmable Communication Module

BL67-PG-EN-IP

EtherNet/IP™ Programmable Communication Module

Profibus Wiring

M12 B-code bus out Wiring, view into female connector

1 = 5 VDC
2 = GN (Bus A)
3 = GND
4 = RD (Bus B)
5 = Shield

M12 B-code bus in Wiring, view into female connector

1 = n.c.
2 = GN (Bus A)
3 = n.c.
4 = RD (Bus B)
5 = Shield

Ethernet Wiring

M12 D-code Ethernet in Wiring, view into female connector

1 = YE (TX+)
2 = WH (RX+)
3 = OG (TX-)
4 = BU (RX-)

7/8 Mini Power in wiring, view into male connector Common to modules

1 = GND
2 = GND
3 = PE
4 = V_i
5 = V_o

Communication modules are equipped with a built in standalone controller which is programmed according to IEC61131-3 with CoDeSys. Each module has 512KB Program memory with 32 bit RISC processor, and can run 1000 instructions in less than 1 ms. These network equipped modules are optimized to interface with PLC's with network capability or act as standalone controllers that need to interface with other network equipped devices.

	Base Modules												
	BL67-B-4M8	BL67-B-8M8	BL67-B-1M12	BL67-B-1M12-8	BL67-B-2M12	BL67-B-2M12-P	BL67-B-4M12	BL67-B-4M12-P	BL67-B-1M23	BL67-B-1M23-19	BL67-B-1RSM	BL67-B-1RSM-4	BL67-1RSM-VO
Power Extender Modules													
BL67-PF-24VDC											✓	✓	✓
Digital Input Modules													
BL67-4DI-P	✓				✓	✓	✓		✓				
BL67-8DI-P		✓					✓	✓	✓				
BL67-4DI-PD	✓				✓	✓	✓		✓				
BL67-8DI-PD		✓					✓	✓	✓				
BL67-4DI-N	✓				✓	✓	✓		✓				
BL67-8DI-N		✓					✓	✓	✓				
Digital Output Modules													
BL67-4DO-0.5A-P	✓				✓	✓	✓		✓				
BL67-4DO-2A-P	✓				✓	✓	✓		✓				
BL67-8DO-0.5A-P		✓					✓	✓	✓				
BL67-16DO-0.1A-P										✓			
BL67-4DO-2A-N	✓				✓	✓	✓		✓				
BL67-8DO-0.5A-N		✓					✓	✓	✓				
Relay Output Modules													
BL67-8DO-R-NO								✓					
Digital Input / Output Modules													
BL67-4DI4DO-PD		✓					✓	✓	✓				
Configurable Digital Input / Output Modules													
BL67-8XSG-PD		✓					✓	✓	✓				
Analog Input Modules													
BL67-2AI-I					✓								
BL67-2AI-V					✓								
BL67-4AI-V/I							✓						
BL67-2AI-PT					✓								
BL67-2AI-TC					✓								
Analog Output Modules													
BL67-2AO-I					✓								
BL67-2AO-V					✓								
Technology Modules													
BL67-1RS232			✓	✓					✓				
BL67-1RS485/422			✓	✓					✓				
BL67-1SSI				✓					✓				
BL67-1CNT/ENC				✓					✓				
BL67-1CVI			✓										
BL *ident*® RFID Modules													
BL67-2RFID-A					✓								
BL67-2RFID-S					✓								

System Supply via the Module Bus

The number of BL67 modules that can be powered by the communication module, depends on the nominal current draw of all the modules in the system. The total bus power current consumption of the installed BL67 modules may not exceed 1.5 A. The total field power current for inputs may not exceed 4 A, and the total field power for outputs may not exceed 8 A for DeviceNet and CANopen with power over the network, or 10A for all other communication modules.

When using the software PACTware, the menu item <Station - Verify> will automatically generate an error message if the system supply via the module bus is not reliably ensured.

Nominal Current Consumption

The following table shows the nominal current consumption of the various BL67 modules:

Modules	Bus Power Current (mA)	Field Power for Inputs[1] (mA)	Field Power for Outputs (mA)
PROFIBUS-DP communication module	0		150
DeviceNet communication module	0		150
CANopen communication module	0		150
Ethernet communication module	0		150
Valve driver with 16 outputs	30		< 109 mA (plus load current)
Valve driver with 32 outputs	60		< 218 mA (plus load current)
BL67-PF-24VDC	30		9
BL67-4DI-P	30	< 49 mA	
BL67-4DI-N	30	< 10 mA	
BL67-4DI-PD	30	< 109 mA	
BL67-8DI-P	30	< 49 mA	
BL67-8DI-N	30	< 10 mA	
BL67-8-DI-PD	30	< 109 mA	
BL67-4DO-0.5A-P	30		< 109 mA (plus load current)
BL67-4DO-2A-P	30		< 109 mA (plus load current)
BL67-4DO-2A-N	30		< 109 mA (plus load current)
BL67-8DO-0.5A-P	30		< 109 mA (plus load current)
BL67-8DO-0.5A-N	30		< 109 mA (plus load current)
BL67-16DO-0.1A-P	30		< 109 mA (plus load current)
BL67-4DI4DO-PD	30		< 109 mA (plus load current)
BL67-8XSG-PD	30		< 109 mA (plus load current)
BL67-8DO-R-NO	30		< 109 mA (plus load current)
BL67-2AI-V	35	< 22 mA	
BL67-2AI-I	35	< 22 mA	
BL67-4AI-I/V	35	< 22 mA	
BL67-2AI-TC	35	< 40 mA	
BL67-2AI-PT	45	< 58 mA	
BL67-2AO-I	40		< 62 mA
BL67-2AO-V	60		< 67 mA
BL67-1RS232	140	< 90 mA	
BL67-1RS485/422	60	< 42 mA	
BL67-1SSI	50	< 39 mA	
BL67-1CNT/ENC	30	< 109 mA	
BL67-1CVI	30	< 109 mA	

1) Is limited to 4A by means of the integrated short-circuit protection.

Digital Input Modules

	I/O Modules	Voltage	Part Number
	8 PNP input module	7 to 30 VDC	**BL67-8DI-P**
	8 PNP input module, with diagnostics	7 to 30 VDC	**BL67-8DI-PD**
	8 NPN input module	24 VDC	**BL67-8DI-N**

	Base Module	Part Number
	8 x M8, 3 pole, female	**BL67-B-8M8**
	4 x M12, 5 pole, female, A-code	**BL67-B-4M12**
	4 x M12, 5 pole, female, A-code	**BL67-B-4M12-P**
	1 x M23, 12 pole, female	**BL67-B-1M23**

I/O Modules	Voltage	Part Number
4 PNP input module	7 to 30 VDC	**BL67-4DI-P**
4 PNP input module, with diagnostics	7 to 30 VDC	**BL67-4DI-PD**
4 NPN input module	24 VDC	**BL67-4DI-N**

	Base Module	Part Number
	4 x M8, 3 pole, female	**BL67-B-4M8**
	2 x M12, 5 pole, female, A-code	**BL67-B-2M12**
	2 x M12, 5 pole, female, A-code	**BL67-B-2M12-P**
	4 x M12, 5 pole, female, A-code	**BL67-B-4M12**
	1 x M23, 12 pole, female	**BL67-B-1M23**

Digital Output Modules

	I/O Modules	Output Current	Part Number
	8 PNP output module	0.5 amps per channel	**BL67-8DO-0.5A-P**
	8 NPN output module	0.5 amps per channel	**BL67-8DO-0.5A-N**

	Base Module	Part Number
	8 x M8, 3 pole, female	**BL67-B-8M8**
	4 x M12, 5 pole, female, A-code	**BL67-B-4M12**
	4 x M12, 5 pole, female, A-code	**BL67-B-4M12-P**
	1 x M23, 12 pole, female	**BL67-B-1M23**

I/O Modules	Output Current	Part Number
4 PNP output module	0.5 amps per channel	**BL67-4DO-0.5A-P**
4 PNP output module	2 amps per channel	**BL67-4DO-2A-P**
4 PNP output module	4 amps per channel	**BL67-4DO-4A-P**
4 NPN output module	2 amps per channel	**BL67-4DO-2A-N**

	Base Module	Part Number
	4 x M8, 3 pole, female	**BL67-B-4M8**
	2 x M12, 5 pole, female, A-code	**BL67-B-2M12**
	2 x M12, 5 pole, female, A-code	**BL67-B-2M12-P**
	4 x M12, 5 pole, female, A-code	**BL67-B-4M12**
	1 x M23, 12 pole, female	**BL67-B-1M23**

Most popular.

Digital Output Modules

I/O Modules	Output Current	Part Number
16 PNP output module	0.14 amps per channel	**BL67-16DO-0.1A-P**

	Base Module	Part Number
	1 x M23, 19 pole, female	**BL67-B-1M23-19**

Relay Output Modules

I/O Modules	Output Current	Part Number
8 normally open relays	0.14 amps per channel	**BL67-8DO-R-NO**

	Base Module	Part Number
	4 x M12, 5 pole, female, A-code	**BL67-B-4M12-P**

Analog Input Modules

I/O Modules	Input Type	Part Number
4 configurable current or voltage analog input module	4 to 20 mA or 0 to 20 mA -10 to +10 VDC or 0 to +10 VDC	**BL67-4AI-V/I**

	Base Module	Part Number
	4 x M12, 5 pole, female, A-code	**BL67-B-4M12**

I/O Modules	Input Type	Part Number
2 current analog input module	4 to 20 mA or 0 to 20 mA	**BL67-2AI-I**
2 voltage analog input module	-10 to +10 VDC or 0 to +10 VDC	**BL67-2AI-V**
2 temperature analog input module	PT100, PT200, PT500, PT1000, Ni100, Ni1000	**BL67-2AI-PT**
2 temperature analog input module	Type B, E, J, K, N R, S, T	**BL67-2AI-TC**

	Base Module	Part Number
	2 x M12, 5 pole, female, A-code	**BL67-B-2M12**

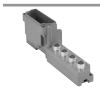
Combination Input / Output Modules

I/O Modules	Input Voltage & Output Current	Part Number
4 PNP output 4 PNP input module, with diagnostics	7 to 30 VDC 0.5 Amps	**BL67-4DI4DO-PD**
8 PNP configurable input or output module, with diagnostics	7 to 30 VDC 0.5 Amps	**BL67-8XSG-PD**

	Base Module	Part Number
	8 x M8, 3 pole, female	**BL67-B-8M8**
	4 x M12, 5 pole, female, A-code	**BL67-B-4M12**
	4 x M12, 5 pole, female, A-code	**BL67-B-4M12-P**

Analog Output Modules

I/O Modules	Input Type	Part Number
4 voltage analog output module	-10 to +10 VDC or 0 to +10 VDC	**BL67-4AO-V**

	Base Module	Part Number
	4 x M12, 5 pole, female, A-code	**BL67-B-4M12**

I/O Modules	Input Type	Part Number
2 current analog output module	4 to 20 mA or 0 to 20 mA	**BL67-2AO-I**
2 voltage analog output module	-10 to +10 VDC or 0 to +10 VDC	**BL67-2AO-V**

	Base Module	Part Number
	2 x M12, 5 pole, female, A-code	**BL67-B-2M12**

Most popular.

Combination Analog Input / Output Modules

I/O Modules	Output Current	Part Number
4 configurable input and 4 configurable output current or voltage analog module	4 to 20 mA or 0 to 20 mA -10 to +10 VDC or 0 to +10 VDC	**BL67-4AI4AO-V/I**

	Base Module	Part Number
	8 x M8, 3 pole, female	**BL67-B-8M8**
	4 x M12, 5 pole, female, A-code	**BL67-B-4M12**

CANopen Subnet Module

Extender Module	Capacity	Part Number
1 CANopen connection	64 bits of inputs or outputs	**BL67-1CVI**

	Base Module	Part Number
	1 x M12, 5 pole, female, A-code	**BL67-B-1M12**

IO-Link Class A Master

Extender Module	Part Number
4 master channels	**BL67-4IOL**

	Base Module	Part Number
	4 x M12, 5 pole, female, A-code	**BL67-B-4M12**

Power Extender Module

Extender Module	Current Capacity	Part Number
24 VDC field power module	10 amps input	**BL67-PF-24VDC**

	Base Module	Part Number
	5 pole mini connector to supply bus power and field power	**BL67-B-1RSM**
	5 pole mini connector to field power only	**BL67-B-1RSM-VO**
	4 pole mini connector to supply bus power and field power	**BL67-B-1RSM-4**

I/O Modules	Output Current	Part Number
2 configurable input and 2 configurable output current or voltage analog module	4 to 20 mA or 0 to 20 mA -10 to +10 VDC or 0 to +10 VDC	**BL67-2AI2AO-V/I**

	Base Module	Part Number
	8 x M8, 3 pole, female	**BL67-B-8M8**

Serial Interface Module

Extender Module	Capacity	Part Number
1 RS232 serial interface	300 to 115200 bps	**BL67-1RS232**
1 RS485 or 422 serial interface	300 to 115200 bps	**BL67-1RS485/422**

	Base Module	Part Number
	1 x M12, 5 pole, female, A-code	**BL67-B-1M12**
	1 x M12, 8 pole, female, A-code	**BL67-B-1M12-8**
	1 x M23, 12 pole, female	**BL67-B-1M23**

SSI and Counting Modules

Extender Module	Capacity	Part Number
1 SSI sensor interface	65 kbps up to 1 Mbps	**BL67-1SSI**
1 counter interface	Up to 250 kHz	**BL67-1CNT/ENC**

	Base Module	Part Number
	1 x M12, 8 pole, female, A-code	**BL67-B-1M12-8**
	1 x M23, 12 pole, female	**BL67-B-1M23**

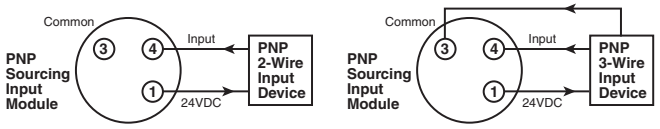
Most popular.

Digital PNP Input Modules

DC Input Module	BL67-4DI-P	BL67-8DI-P	BL67-4DI-PD	BL67-8DI-PD
Number of inputs	4	8	4	8
Sensor requirement	PNP Sourcing		PNP Sourcing	
Voltage, on-state input, nom.	24 VDC		24 VDC	
Field power for inputs current consumption	49 mA		109 mA	
Bus power current consumption	30 mA		30 mA	
Low level signal voltage	<4.5 V		<4.5 V	
High level signal voltage	7...30V		7...30V	
Low level signal current	<1.5 mA		<1.5 mA	
High level signal current	2.1...3.7 mA		2.1...3.7 mA	
Type of diagnostics	Group Diagnostics		Channel Diagnostics	
Short circuit protection	Group Protection		Channel Protection	
Input delay	0.25 ms		0.25; 2.5 ms	

PNP (Sourcing)

PNP input modules provide sourcing capabilities. When the input field device is passing, current flows from the input device into the Turck input module.

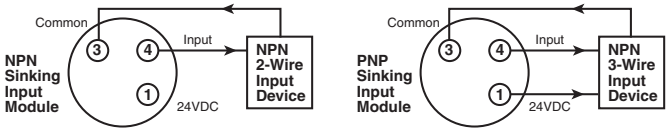


Digital NPN Input Modules

Digital DC Input Module	BL67-4DI-N	BL67-8DI-N
Number of inputs	4	8
Sensor requirement	NPN Sinking	NPN Sinking
Voltage, on-state input, nom.	24 VDC	24 VDC
Field power for inputs current consumption	10 mA	10 mA
Bus power current consumption	30 mA	30 mA
Low level signal voltage	>7 V	>7 V
High level signal voltage	<5 V	<5 V
Low level signal current	<2.5 mA	<1.2 mA
High level signal current	>3 mA	>1.5 mA
Type of diagnostics	Group Diagnostics	Group Diagnostics
Short circuit protection	Group Protection	Group Protection
Input delay	0.25 ms	0.25 ms

NPN (Sinking)

NPN input modules provide sinking capabilities. When the input field device is passing, current out of the Turck input module into the field input device.

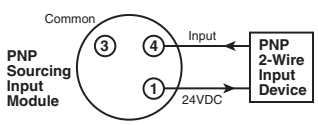


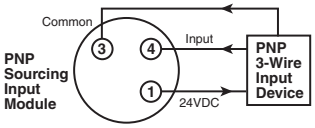
Digital PNP Output Modules

Digital DC Output Module	BL67-4DO-0.5A-P	BL67-8DO-0.5A-P	BL67-4DO-2A-P	BL67-16DO-0.1A-P
Number of outputs	4	8	4	16
Sensor requirement	PNP Sourcing	PNP Sourcing	PNP Sourcing	PNP Sourcing
Output voltage	24 VDC	24 VDC	24 VDC	24 VDC
Field power for outputs current consumption	109 mA (Plus load current)	109 mA (Plus load current)	109 mA (Plus load current)	109 mA (Plus load current)
Bus power current consumption	30 mA	30 mA	30 mA	30 mA
Output current per channel	0.5 A	0.5 A	2.0A	0.1 A
Output delay	3 ms	3 ms	3 ms	3 ms
Load type	Resistive, Inductive, Lamp Load	Resistive, Inductive, Lamp Load	Resistive, Inductive, Lamp Load	Resistive, Inductive
Load resistance, resistive	>48 Ohm	>48 Ohm	>12 Ohm	>250 Ohm
Load resistance, inductive	<1.2 H	<1.2 H	<1.2 H	<1.2 H
Lamp load	< 3W	< 3W	< 10W	< 10W
Switching frequency, resistive	<200 Hz	<200 Hz	<200 Hz	<200 Hz
Switching frequency, inductive	< 2 Hz	< 2 Hz	< 2 Hz	< 2 Hz
Switching frequency, lamp load	< 20 Hz	< 20 Hz	< 20 Hz	< 20 Hz
Short-circuit protection	Group Protection	Group Protection	Group Protection	Group Protection
Diagnostic bits	4	8	4	16

PNP (Sourcing)

PNP input modules provide sourcing capabilities. When the input field device is passing, current flows from the input device into the Turck input module.



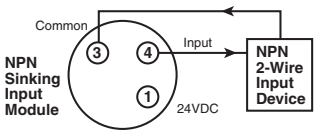


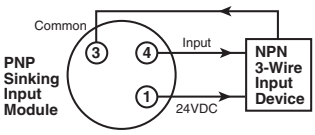
Digital NPN Output Modules

Digital DC Output Module	BL67-8DO-0.5A-N	BL67-4DO-2A-N
Number of outputs	8	4
Sensor requirement	NPN Sinking	NPN Sinking
Output voltage	24 VDC	24 VDC
Field power for outputs current consumption	109 mA (Plus load current)	109 mA (Plus load current)
Bus power current consumption	30 mA	30 mA
Output current per channel	0.5 A	2.0 A
Output delay	3 ms	3 ms
Load type	Resistive, Inductive, Lamp Load	Resistive, Inductive, Lamp Load
Load resistance, resistive	>48 Ohm	>48 Ohm
Load resistance, inductive	<1.2 H	<1.2 H
Lamp load	< 3W	< 3W
Switching frequency, resistive	<200 Hz	<200 Hz
Switching frequency, inductive	< 2 Hz	< 2 Hz
Switching frequency, lamp load	< 20 Hz	< 20 Hz
Short-circuit protection	Group Protection	Group Protection
Diagnostic bits	4	8

NPN (Sinking)

NPN input modules provide sinking capabilities. When the input field device is passing, current out of the Turck input module into the field input device.





Relay Output Modules

Relay Output Module	BL67-8DO-R-NO
Number of outputs	8
Output type	Relay
Output voltage	24 VDC
Field power for outputs current consumption	109 mA (Plus load current)
Bus power current consumption	30 mA
Output current per channel	100 mA
Output delay	3 ms
Load type	Resistive, TTL logic
Switching resistor	<31 Ohm
Switching frequency, resistive	<200 Hz
Short-circuit protection	None

Combination Digital Modules

Combination Input and Output Modules	BL67-4DI4DO-PD	BL-67-8XSG-PD
Number of outputs	4	Configurable 0 to 8
Number of inputs	4	Configurable 0 to 8
Total channels	8	8
Sensor requirement	PNP Sourcing	PNP Sourcing
Voltage, on-state input, nom.	24 VDC	24 VDC
Output voltage	24 VDC	24 VDC
Field power for outputs current consumption	109 mA	109 mA
Bus power current consumption	30 mA	30 mA
Input low level signal voltage	<4.5 V	<4.5 V
Input high level signal voltage	7...30V	7...30V
Input low level signal current	<1.5 mA	<1.5 mA
Input high level signal current	2.1...3.7 mA	2.1...3.7 mA
Input delay	0.25; 2.5 ms	0.25; 2.5 ms
Output current per channel	0.5 A	0.5 A
Output delay	3 ms	3 ms
Load type	Resistive, Inductive, Lamp Load	Resistive, Inductive, Lamp Load
Load resistance, resistive	>48 Ohm	>48 Ohm
Load resistance, inductive	<1.2 H	<1.2 H
Lamp load	< 3W	< 3W
Switching frequency, resistive	<200 Hz	<200 Hz
Switching frequency, inductive	< 2 Hz	< 2 Hz
Switching frequency, lamp load	< 20 Hz	< 20 Hz
Short-circuit protection	Channel Protection	Channel Protection
Diagnostic bits	8	12

Analog Input Modules

Analog Input Module	BL67-2AI-I	BL67-2AI-V	BL67-4AI-V/I
Number of inputs	2	2	4
Nominal voltage	24 VDC	24 VDC	24 VDC
Field power for inputs current consumption	22 mA	22 mA	22 mA
Bus power current consumption	35 mA	35 mA	35 mA
Analog input type	0/4...20mA	-10/0...+10 VDC	0/4...20mA or -10/0...+10 VDC
Input resistance	<0.125 kOhm	<98.5 kOhm	<0.125 kOhm or <98.5 kOhm
Maximum limiting frequency	50 Hz		20 Hz
Fault limit @ 23 degree C	<0.2%		<0.3%
Repeatability	0.05%	0.05%	0.05%
Temperature coefficient (ppm/degree C of full scale)	<300	<150	<300
Resolution	16 Bit	16 Bit	16 Bit
Measuring principle	Sigma Delta	Sigma Delta	Sigma Delta
Measured value display	16 bit signed integer, 12 bit full range left justified	16 bit signed integer, 12 bit full range left justified	16 Bit signed integer, 12 bit full range left justified
Diagnostic bits	16		32

Temperature Inputs

Analog Input Module	BL67-2AI-PT	BL67-2AI-TC
Number of inputs	2	2
Nominal voltage	24 VDC	24 VDC
Field power for inputs current consumption	58 mA	40 mA
Bus power current consumption	45 mA	35 mA
Temperature input type	PT100, PT200, PT500, PT1000, Ni100, Ni1000	B, E, J, K, N, R, S, T
Voltage resolution	n/a	+/- 50mV; <2uV
Fault limit @ 23 degree C	<0.2%	<0.2%
Repeatability	0.05%	0.05%
Temperature coefficient (ppm/degree c of full scale)	<300	<300
Resolution	16 Bit	16 Bit
Measured value display	16 bit signed integer, 12 bit full range left justified	16 bit signed integer, 12 bit full range left justified
Diagnostic bits	16	16

Analog Input Modules

Analog Input Module	BL67-2AO-I	BL67-2AO-V
Number of inputs	2	2
Nominal voltage	24 VDC	24 VDC
Field power for outputs current consumption	62 mA	67 mA
Bus power current consumption	40 mA	60 mA
Analog output type	0/4...20mA	-10/0...+10 VDC
Output current per channel	n/a	250 mA
Load resistance, resistive	<0.45 kOhm	> 1kOhm
Load resistance, inductive	<1 mH	n/a
Load resistance, capacitive	n/a	> 1 uF
Transmission frequency	<200 Hz	<100 Hz
Fault limit @ 23 degree C	<0.2%	<0.2%
Repeatability	0.05%	0.05%
Temperature coefficient (ppm/degree c of full scale)	<150	<300
Resolution	16 bit	16 bit
Measured value display	16 bit signed integer, 12 bit full range left justified	16 bit signed integer, 12 bit full range left justified

Combination Analog Modules

Analog Combination Module	BL67-4AI4AO-V/I	BL67-2AI2AO-V/I
Number of analog inputs	4	2
Number of analog outputs	4	2
Nominal voltage	24 VDC	24 VDC
Field power for outputs current consumption	67 mA	67 mA
Bus power current consumption	60 mA	60 mA
Analog input type	0/4...20mA or -10/0...+10 VDC	0/4...20mA or -10/0...+10 VDC
Input resistance	0.065 or 225 kOhm	0.065 or 225 kOhm
Maximum limiting frequency	20 Hz	20 Hz
Fault limit @ 23 degree c	<0.3%	<0.3%
Repeatability	0.05%	0.05%
Temperature coefficient (ppm/degree c of full scale)	<300	<300
Resolution	16 bit	16 bit
Measuring principle	Sigma Delta	Sigma Delta
Measured value display	16 bit signed integer, 12 bit full range left justified	16 bit signed integer, 12 bit full range left justified
Analog output type	-10/0...+10 VDC	-10/0...+10 VDC
Output current per channel	250 mA	250 mA
Load resistance, resistive	>1 kOhm	>1 kOhm
Load resistance, capacitive	<1 uF	<1 uF
Transmission frequency	<100 Hz	<100 Hz
Fault limit @ 23 degree C	<0.3%	<0.3%
Repeatability	0.05%	0.05%
Temperature coefficient (ppm/degree c of full scale)	<300	<300
Resolution	16 bit	16 bit
Measured value display	16 bit signed integer, 12 bit full range left justified	16 bit signed integer, 12 bit full range left justified
Diagnostic bits	8	4

Power Extender Module

Power Extender Module	BL67-PF-24VDC
Nominal voltage	24 VDC
Field power for outputs current consumption	9 mA
Bus power current consumption	30 mA
Supply for field power for inputs current	4.0 A
Supply for field power for outputs current	10 A
Diagnostic bits	3

RS232 Interface

RS232 Interface	BL67-1RS232
Number of channels	1
Field power for inputs current consumption	90 mA
Bus power current consumption	140 mA
Transmission level active (u rs1)	-15 to -3 VDC
Transmission level inactive (urso)	3 to 15 VDC
Common-mode range (ugl)	-7 to 12 VDC
Transmission signals	RxD, TxD, RTS, CTS
Data buffer received	128 Byte
Send data buffer	64 Byte
Connection type	Full Duplex
Transmission rate	300 to 115200 bps
Parameter	Transmission Rate, Diagnostics, Data Bits, Stop Bits, XON - Character, XOFF - Character, Parity, Flow Control
Cable length	15 m
Diagnostic bits	8

RS485 / 422 Interface

RS485/422 Interface	BL67-1RS485/422
Number of channels	1
Field power for inputs current consumption	42 mA
Bus power current consumption	60 mA
Transmission signals	RxD, TxD
Connection type	2 Wire Half Duplex or 4 Wire Full Duplex
Transmission rate	300 to 115200 bps
Parameter	RS485/422, Transmission Rate, Diagnostics, Data Bits, Stop Bits, XON - Character, XOFF - Character, Parity, Flow Control
Cable length	1000 m
Line impedance	120 Ohm
Bus termination	External
Diagnostic bits	8

SSI Sensor Interface

SSI Sensor Interface	BL67-1SSI
Number of channels	1
Field power for inputs current consumption	39 mA
Bus power current consumption	50 mA
Transmission signals	CL, D
Connection type	4 Wire Full Duplex (Clock Output/Signal Input)
Transmission rate	62.5 kbps up to 1 Mbps
Parameter	Transmission Rate, Diagnostics, Data Format (Binary / GRAY coded), Data Fram Bits (1-32), Number of Invalid Bits (LSB: 0-15, MSB 0-7)
Cable length	30 m
Diagnostic bits	8

Counting Module

Counting Module	BL67-1CNT/ENC
Number of channels	1
Field power for inputs current consumption	109 mA
Bus power current consumption	30 mA
Input type	PNP
Output type	PNP
Output current per channel	0.5 A
Output delay	2 ms
Load type	Resistive
Frequency measurement	Up to 250 kHz
Speed measurement	Factor Configurable
Period duration measurement	2 usec
Upper count limit	0x80000000 up to 0xFFFFFFFF
Lower count limit	0x80000000 up to 0xFFFFFFFF
Short circuit protection	Channel Protection

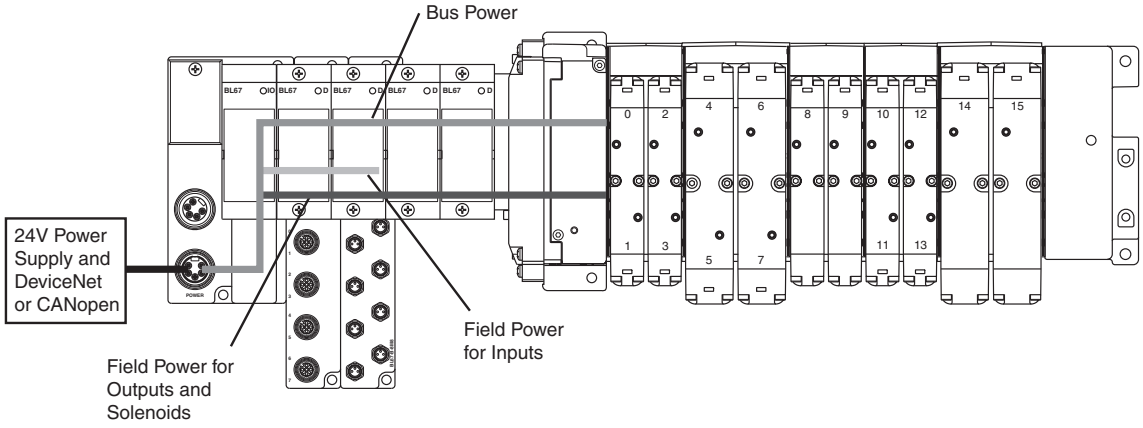
CANopen Expansion Module

CANopen Expansion Module	BL67-1CVI
Number of channels	1
Field power for inputs current consumption	109 mA
Bus power current consumption	30 mA
Transmission signals	CAN High, CAN Low
Connection type	CANopen
Transmission speed	10 kbps up to 1 Mbps
Parameter	Transmission Rate, Diagnostics, Bus Termination, Range of I/O Data
Bus termination	Internal
Diagnostic bits	48
Max number of CANopen nodes	8
Max processing data per module	8 Byte
Max data per node	4 Byte

Power Distribution Options for Turck Network Portal

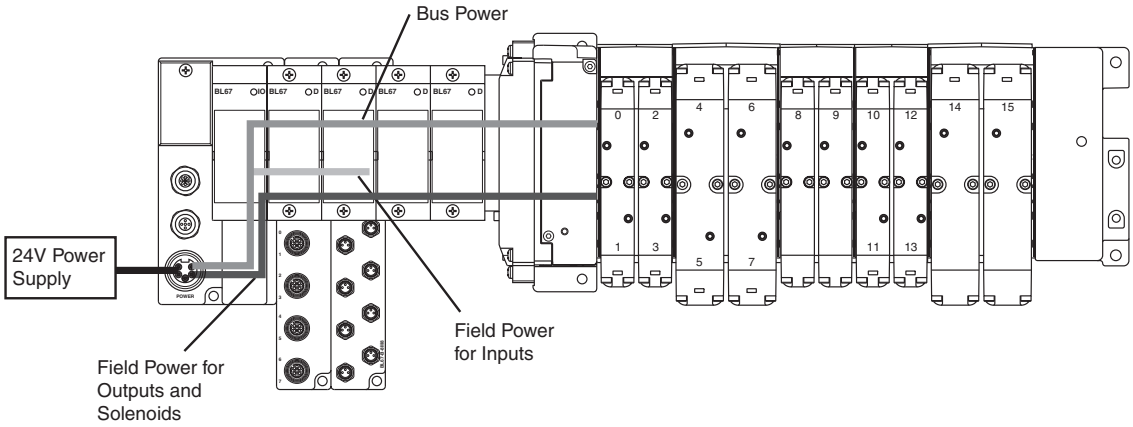
Turck Communication and I/O Modules - DeviceNet and CANopen, Power Over Network

The 24VDC power supply pins from the DeviceNet or CANopen network connection on the communication module provides a single power circuit. This circuit provides 1.5A bus power, 4A field power for inputs and 8A field power for outputs.



Turck Communication and I/O Modules - EtherNet/IP™, Modbus/TCP, Profinet, Profibus, and CANopen

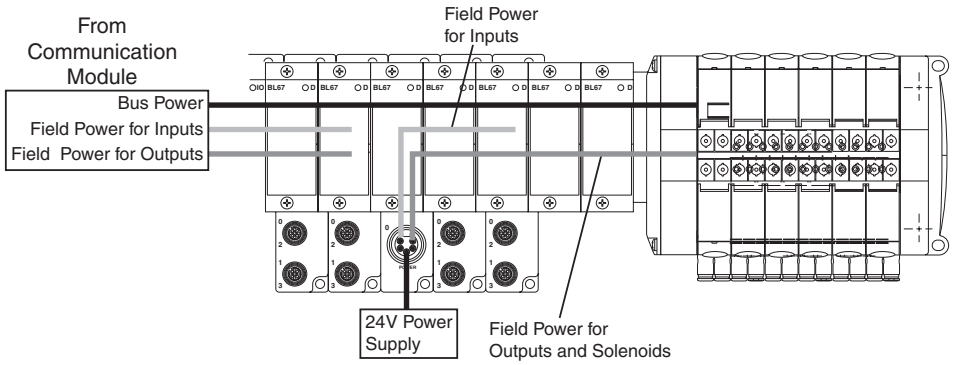
An auxiliary 24VDC power supply from the communication module provides power across two separate circuits. The first circuit provides 1.5A bus power and 4A field power for inputs. The second circuit provides 10A field power for outputs which can be wired to an e-stop circuit to kill all outputs.



Power Distribution Options for Turck Network Portal (continued)

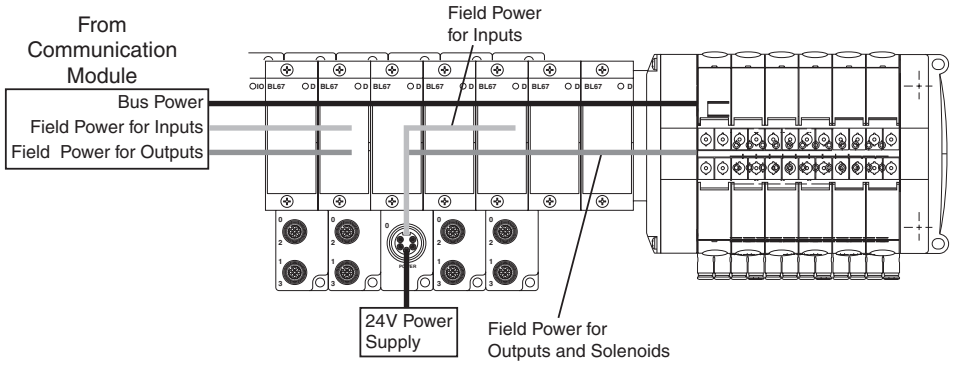
24VDC Power Extender Module (BL67-PF-24VDC) with Base Module BL67-B-1RSM

This configuration creates an auxiliary 24VDC power supply and provides power across two separate circuits, regardless of the communication module used. The first circuit provides 4A field power for inputs. The second circuit provides 10A field power for outputs which can be wired to an e-stop circuit to kill all outputs and solenoids to the right of the module. The 1.5A bus power is uninterrupted, and is still supplied from the communication module.



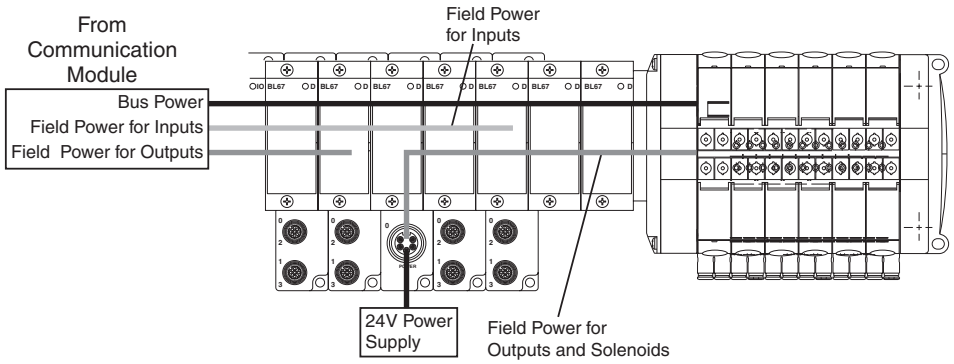
24VDC Power Extender Module (BL67-PF-24VDC) with Base Module BL67-B-1RSM-4

This configuration creates an auxiliary 24VDC power supply and provides power across one circuit, regardless of the communication module used. This circuit provides 4A field power for inputs and 10A field power for outputs. The 1.5A bus power is uninterrupted, and is still supplied from the communication module.



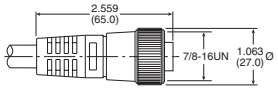
24VDC Power Extender Module (BL67-PF-24VDC) with Base Module BL67-B-1RSM-VO

This configuration creates an auxiliary 24VDC power supply and provides power across one circuit, regardless of the communication module used. This circuit provides 10A field power for outputs which can be wired to an e-stop circuit to kill all outputs and solenoids to the right of the module. The 1.5A bus power and 4A field power for inputs are uninterrupted, and are still supplied from the communication module.

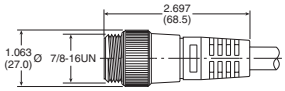


7/8" Mini Power Cables - P2H Network Node, H Series Network Portal, Turck Network Portal

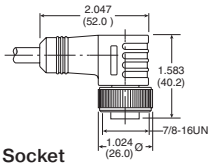
RKM Female Socket

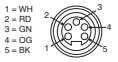


RSM Male Pins

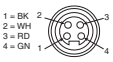


WKM Female Socket





5-Pin Female Wiring Diagram

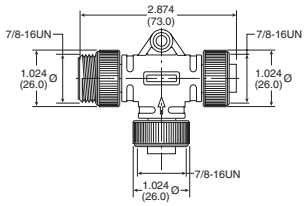


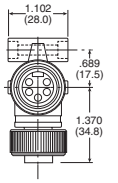
4-Pin Female Wiring Diagram

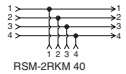
Description	Part Number
4-pin female to flying lead cable, 5 meters, TPE	**RKM 46-5M/S1587**
5-pin female to flying lead cable, 5 meters, TPE	**RKM 56-5M/S1587**
4-pin male to female cable, TPE	**RSM RKM 46-x/S1587**
5-pin male to female cable, TPE	**RSM RKM 56-x/S1587**
4-pin right angle female to flying lead cable, 5 meters,TPE	**WKM 46-5M/S1587**
5-pin right angle female to flying lead cable, TPE	**WKM 56-5M/S1587**

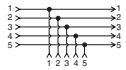
Where x = 2, 4, 5, 6, 8, 10 meter standard lengths

Power Tee - P2H Network Node, H Series Network Portal, Turck Network Portal





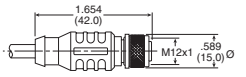


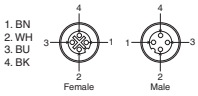
RSM-2RKM 40

RSM-2RKM 50

Description	Part Number
4-pin Male to 2 female sockets	**RSM-2RKM 40**
5-pin Male to 2 female sockets	**RSM-2RKM 50**

M12 A-code Cables - P2M IO-Link, P2H IO-Link, H Series IO-Link Network Portal, Turck IO-Link Network Portal

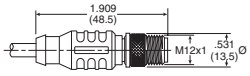
RKC Female Sockets

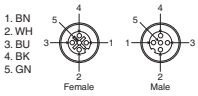




4-Pin Female Wiring Diagram

RSC Male Pins



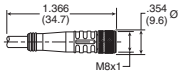


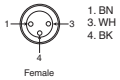
5 -Pin Female Wiring Diagram

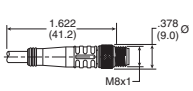
Description	Part Number
4-pin female to flying lead cable, PVC	**RKC 4.4T-1**
4-pin male to flying lead cable, PVC	**RSC 4.4T-***
4-pin male to female cable, PVC	**RKC 4.4T-*-RSC 4.4T**
5-pin female to flying lead cable, TPE	**RKC 4.5T-*/S1587**
5-pin male to flying lead cable, TPE	**RSC 4.5T-4/S1587**
5-pin male to female cable, TPE	**RKC 4.5T-*-RSC 4.5T/S1587**

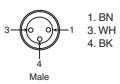
Where * = 1, 2, 3, 4 meter standard lengths

M8 Cables - H Series IO-Link Network Portal, Turck IO-Link Network Portal







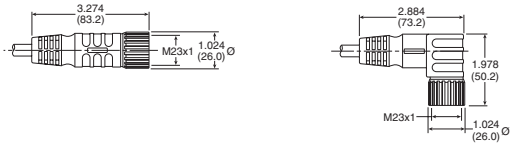


Description	Part Number
3-pin female to flying lead cable, PUR	**PKG 3M-4/S90**
3-pin male to flying lead cable, PUR	**PSG 3M-*/S90**
3-pin male to female cable, PUR	**PKG 3M-*-PSG 3M/S90**

Where * = 1, 2, 3, 4 meter standard lengths

Most popular.

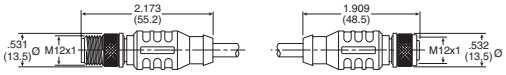
M23 Cables



Description	Part Number
12-pin, double ended female thread with male pins and female socket, PUR. Pinout optimized for H Series Network Portal.	**CSCM CKCM 12-11-x/S90**
19-pin, double ended female thread with male pins and female socket, PUR. Pinout optimized for H Series Network Portal.	**CSM CKM 19-19-x/S90**
19-pin, 90° double ended female thread with male pins and female socket, PUR. Pinout optimized for Turck Network Portal.	**CSWM CKWM 19-19-x/CS12852**

Where x = 1, 2, 3, 4 meter standard lengths

PROFIBUS Cables - P2M Network Node, Turck Network Portal



RSSW Side, Male Pins **RKSW Side, Female Sockets**

Description	Part Number
M12 male to M12 female, PUR	**RSSW RKSW 455-xM**

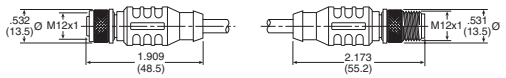
Where x = 2, 4, 5, 6, 8, 10 meter standard lengths

PROFIBUS Terminating Resistor - P2M Network Node, Turck Network Portal

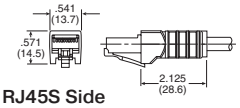
Male Pins

Description	Part Number
M12 male pin terminating resistor	**P8BPA00MB**

Ethernet Cables - P2M Network Node, H Series Network Portal, Turck Network Portal



RKSD Side, Female Sockets **RSSD Side, Male Pins**



RJ45S Side

Description	Part Number
M12 female to M12 male, PUR	**RSSD RKSD 443-xM**
RJ45 to M12 male, PUR	**RSSD RJ45S 443-2M**

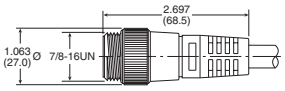
Where x = 2, 5, 10, 15, 20, 30 meter standard lengths

25-pin, D-Sub Cable (Female)

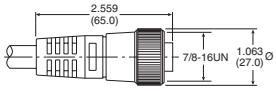
Description	Length	Part Number
25-pin, D-sub cable, IP20, PUR	3 meters	**P8LMH25M3A**
25-pin, D-sub cable, IP20, PUR	9 meters	**SCD259D**
25-pin, D-sub cable, IP65, PUR	3 meters	**SCD253W**
25-pin, D-sub cable, IP65, PUR	9 meters	**SCD259WE**

Most popular.

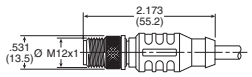
DeviceNet and CANopen Cables - P2M Network Node, H Series Network Portal, Turck Network Portal



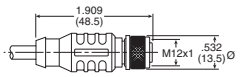
RSM Side, 7/8 Mini with Male Pins



RKM Side, 7/8 Mini with Male Pins



RSC Side, Male Pins

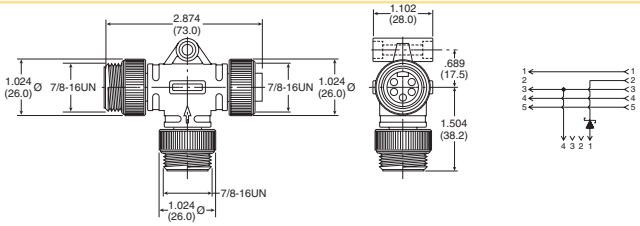


RKC Side, Female Sockets

Description	Part Number
7/8" mini male to 7/8" mini female, PUR	**RSM RKM 5711-xM**
7/8" mini male to M12 female, PUR	**RSM RKC 5711-xM**
M12 male to M12 female, PUR	**RSC RKC 5711-xM**
M12 male to 7/8" mini female, PUR	**RSC RKM 5711-xM**

Where x = 2, 4, 5, 6, 8, 10 meter standard lengths

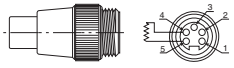
Bus Power Tee - P2M Network Node, H Series Network Portal, Turck Network Portal



Description	Part Number
Bus power tee	**RSM RKM 57 WSM 40 PST**

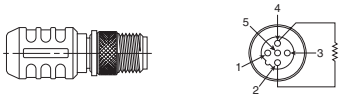
For systems not equipped with Power over network, combines separate network and power feeds into the communication module. Includes reverse current protection

DeviceNet & CANopen Terminating Resistor - P2M Network Node, H Series Network Portal, Turck Network Portal



RSM 57-TR2

Male Pins

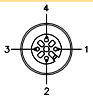


P8BPA00MB

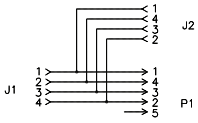
Male Pins

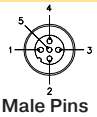
Description	Part Number
7/8" Mini Male Pin Terminating Resistor	**RSM 57-TR2**
M12 Male Pin Terminating Resistor	**P8BPA00MA**

M12 Power Splitter - PCH Network Portal, Turck Network Portal, P2M IO-Link, P2H IO-Link

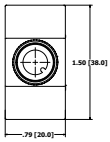


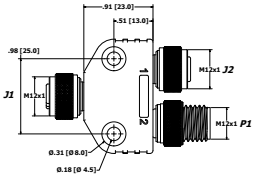
Female Pins (J1 and J2)

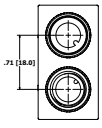




Male Pins (P1)



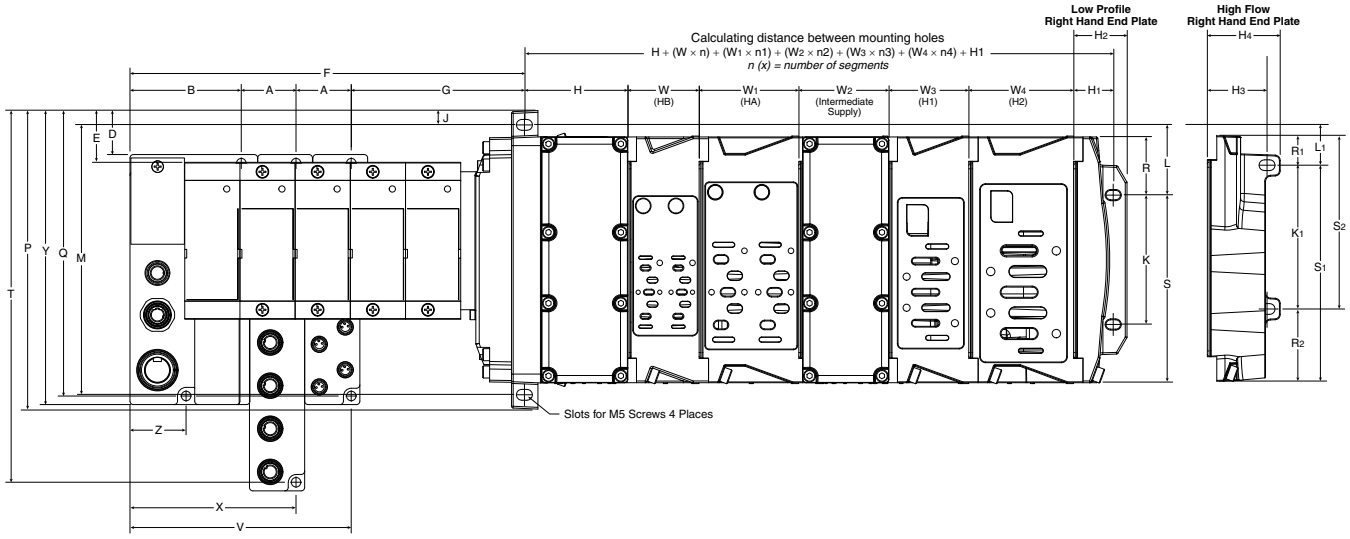




Description	Part Number
M12 Parallel Splitter	**100010909**

Most popular.

Turck with H Series ISO Valves



n (x) = number of segments

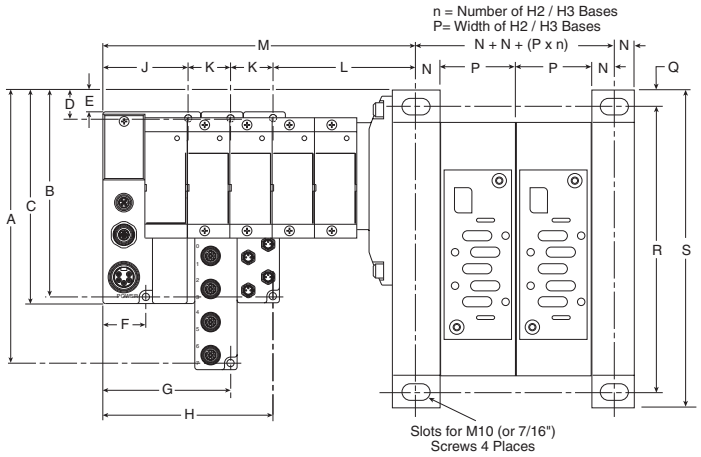
A	B	D	E	F	G	H	H1	H2	H3	H4	J
1.26 (32.0)	2.54 (64.5)	1.00 (25.4)	1.18 (29.9)	8.99 (228.4)	3.94 (100.1)	2.36 (60.0)	0.90 (23.0)	1.22 (31.0)	1.36 (34.6)	1.66 (42.3)	0.33 (8.3)

K	K1	L	L1	M	P	Q	R	R1	R2	S	S1
2.95 (75.0)	3.28 (83.4)	1.60 (40.7)	0.96 (24.3)	6.16 (156.5)	6.81 (173.1)	6.51 (165.4)	1.33 (33.7)	0.68 (17.3)	1.65 (41.8)	4.28 (108.8)	4.93 (125.2)

S2	T	V	W	W1	W2	W3	W4	X	Y	Z
3.96 (100.7)	8.48 (215.4)	5.05 (128.3)	1.63 (41.3)	2.28 (57.8)	2.06 (52.3)	1.82 (46.3)	2.39 (60.8)	3.79 (96.3)	6.71 (170.4)	1.28 (32.5)

Inches (mm)

H3 Manifold Assembly

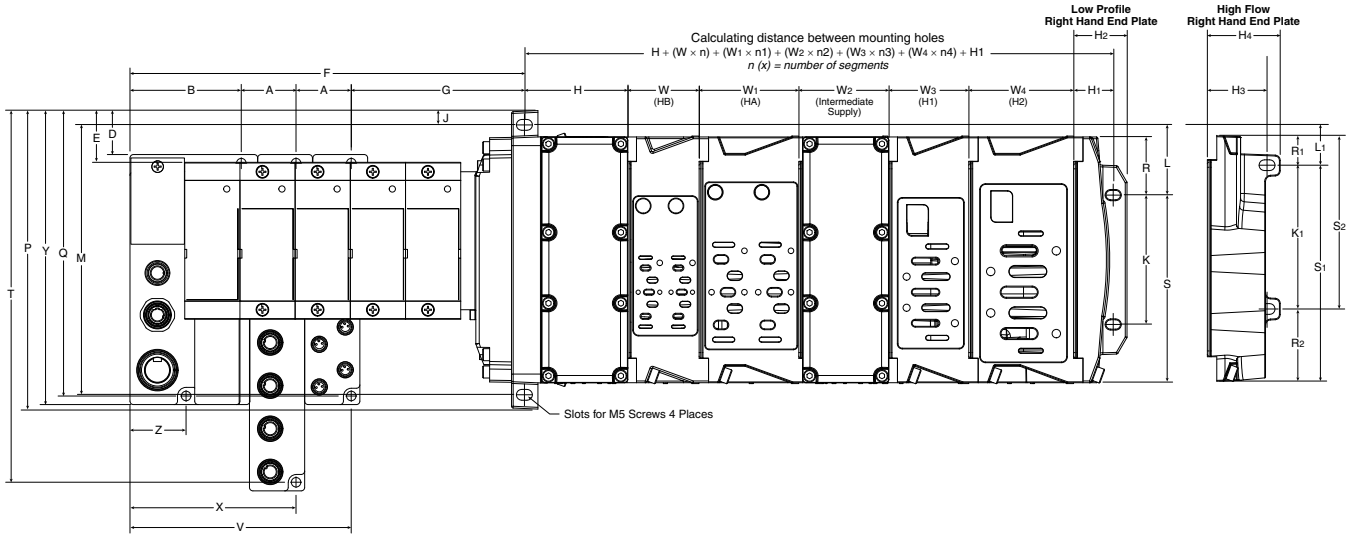


A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S
8.62 (218.9)	6.65 (168.9)	6.85 (173.9)	1.33 (33.9)	1.14 (28.9)	1.28 (32.5)	3.79 (96.5)	5.06 (128.5)	2.53 (64.5)	1.26 (32)	4.34 (110)	See note 1	.65 (16.5)	2.80 (71)	.59 (15)	10.43 (265)	11.61 (295)

Note 1: M =J+L+n_2xK, where n_2 = Number of Turck input / output modules

Inches (mm)

Turck with H Series ISO Valves



n (x) = number of segments

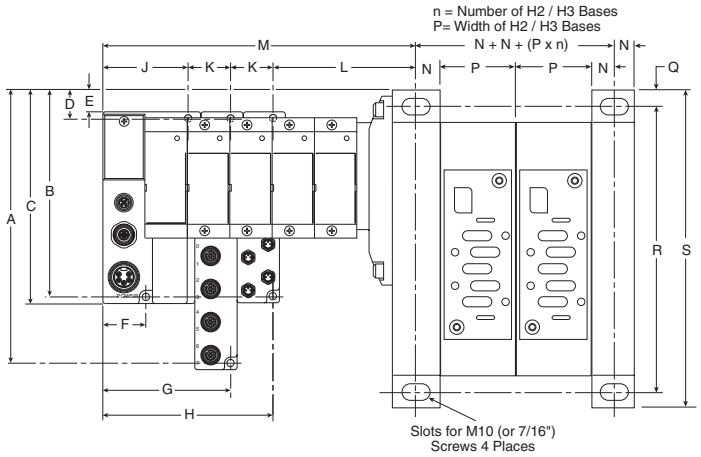
A	B	D	E	F	G	H	H1	H2	H3	H4	J
1.26 (32.0)	2.54 (64.5)	1.00 (25.4)	1.18 (29.9)	8.99 (228.4)	3.94 (100.1)	2.36 (60.0)	0.90 (23.0)	1.22 (31.0)	1.36 (34.6)	1.66 (42.3)	0.33 (8.3)

K	K1	L	L1	M	P	Q	R	R1	R2	S	S1
2.95 (75.0)	3.28 (83.4)	1.60 (40.7)	0.96 (24.3)	6.16 (156.5)	6.81 (173.1)	6.51 (165.4)	1.33 (33.7)	0.68 (17.3)	1.65 (41.8)	4.28 (108.8)	4.93 (125.2)

S2	T	V	W	W1	W2	W3	W4	X	Y	Z
3.96 (100.7)	8.48 (215.4)	5.05 (128.3)	1.63 (41.3)	2.28 (57.8)	2.06 (52.3)	1.82 (46.3)	2.39 (60.8)	3.79 (96.3)	6.71 (170.4)	1.28 (32.5)

Inches (mm)

H3 Manifold Assembly



A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S
8.62 (218.9)	6.65 (168.9)	6.85 (173.9)	1.33 (33.9)	1.14 (28.9)	1.28 (32.5)	3.79 (96.5)	5.06 (128.5)	2.53 (64.5)	1.26 (32)	4.34 (110)	See note 1	.65 (16.5)	2.80 (71)	.59 (15)	10.43 (265)	11.61 (295)

Note 1: M =J+L+n_2xK, where n_2 = Number of Turck input / output modules
Inches (mm)

DX ISOMAX Series

The ISOMAX range of directional control valves complies with ISO 15407-1 and VDMA 24563 for sizes 02 and 01 and ISO 5599-1 for sizes 1, 2 and 3. ISOMAX provides flows from 0.55 Cv to 4.15 Cv.

The ISOMAX range includes valves for pneumatic and electrical actuation with a wide choice of subbases and manifolds to suit different application needs.

All ISOMAX products use high-tech ceramic switching technology providing:

Excellent reliability
- Long life in excess of 100 million operations*
- Operates with lubricated or non-lubricated air
- Low sensitivity to air quality changes

High performance
- Slide valve concept allows high flow / size ratio and short response time due to short slide stroke and low friction

Stable long lasting performances
- Low friction switching: minimum wear of the valve member / seal assembly

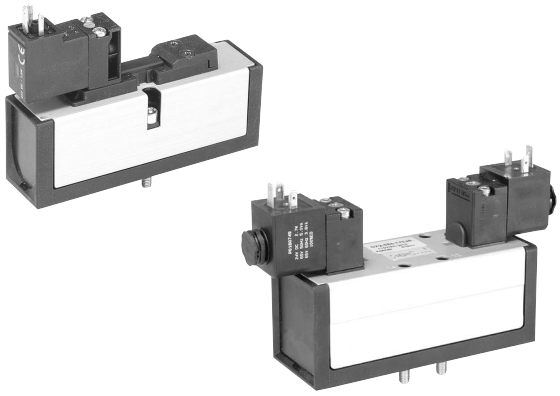
Valves fitted with switchable selector to give internal or external pilot supply

Corrosion free and modern design

Vacuum operation

Dual pressure

* Refer to our warranty conditions.



Operating information

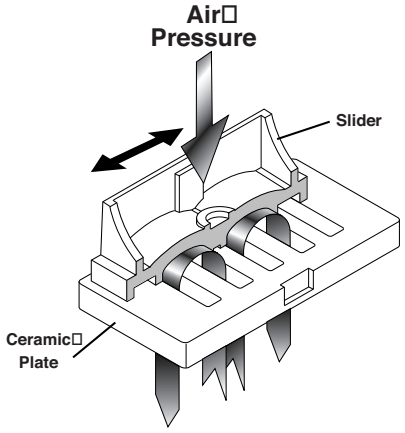
Operating Pressure: Vacuum to 145 PSIG (10 bar)

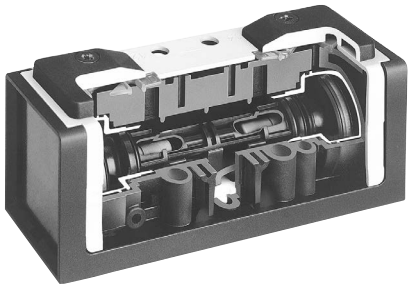
Function		M.O.P (PSIG)
20, 21, 22, 23	2-position, spring return	36
50, 51, 53, 54	2-position, air return	30
04, 05, 06, 08	2-position	15
09, 11, 12, 27	3-position, CE	45
16, 18, 19, 25	3-position, APB	45

Working temperatures: -10°C to 60°C (14°F to 140°F)
Storage temperatures: -20°C to 70°C (-4°F to 158°F)

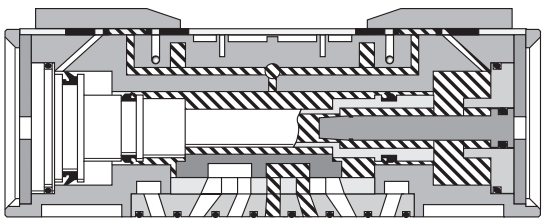
Material specifications

Body	Polyamide reinforced fiberglass
Casing	Anodized aluminum
End plates	Painted zinc plated steel
Function selector	Polyamide reinforced fiberglass
Screws	Zinc plated steel
Seals	Nitrile
Seat	Ceramic
Springs	Stainless steel
Top cover seals	Polyester
Valve members	Self lubricating acetal
Valve plate	Zinc



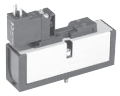
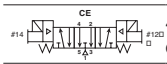
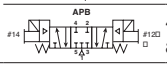


Remote Pilot

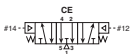
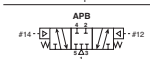


Pressure Exhaust

DX02 ISO Solenoid Valves

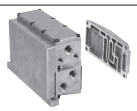
	Symbol	Type	Cv	Operator	Pilot	Override	24 VDC	120 VAC
		4-way, 2-position, spring return	0.55	Single solenoid	Internal	Non-locking	**DX02-621-951M**	**DX02-621-951J**
		4-way, 2-position, air return	0.55	Single solenoid	Internal	Non-locking	**DX02-651-951M**	**DX02-651-951J**
		4-way, 2-position	0.55	Double solenoid	Internal	Non-locking	**DX02-606-951M**	**DX02-606-951J**
		4-way, 3-position, center exhaust	0.4	Double solenoid	Internal	Non-locking	**DX02-611-951M**	**DX02-611-951J**
		4-way, 3-position, all ports blocked	0.4	Double solenoid	Internal	Non-locking	**DX02-616-951M**	**DX02-616-951J**

DX02 ISO Remote Pilot Valves

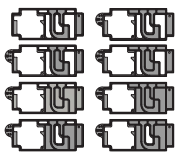
	Symbol	Type	Cv	Operator	Pilot	Part Number
		4-way, 2-position, spring return	0.55	Single remote pilot	Remote	**DX02-421-60**
		4-way, 2-position, air return	0.55	Single remote pilot	Remote	**DX02-451-60**
		4-way, 2-position	0.55	Double remote pilot	Remote	**DX02-406-60**
		4-way, 3-position, center exhaust	0.4	Double remote pilot	Remote	**DX02-411-60**
		4-way, 3-position, all ports blocked	0.4	Double remote pilot	Remote	**DX02-416-60**

Torque Specifications
DX02: 15 to 25 in-lbs (1.69 to 2.82 Nm) DX01: 20 to 30 in-lbs (2.26 to 3.39 Nm)

Base / End Plate - 15407-1, Non Plug-in, Size DX02

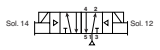
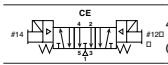
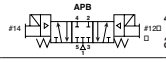
		Description	NPT	BSPP
	Universal manifold base	2 station, end ported	**PSHU115101P**	**PSHU115201P**
	Universal end plate	Non-collective wiring	**PSHU31L000P**	**PSHU31L001P**

Accessories - 15407-1, Non plug-in, Size DX02

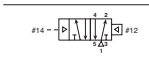
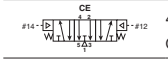
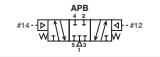
	Accessories	Description		Part number
	Gauge adapter kit	Includes 1/8" coupling and long nipple		**PS5651160P**
	Blanking plate kit			**PS5634P**
	Sandwich flow control	Do not use with Independent Port Sandwich Regualtors.		**PS5642P**
	Sandwich supply module	1/8" NPT		**PS562600P**
		1/8" BSPP		**PS562601P**
	Sandwich regulator		Common pressure	Independent pressure
		2-60 PSIG w/ gauge	**PS5637155P**	**PS5637255P**
		5-125 PSIG w/ gauge	**PS5637166P**	**PS5637266P**
	Manifold to manifold gasket kits		Pilot open	Pilot blocked
		#1, 3, 5 ports open	**PSHU11P**	**PSHU15P**
		Blocked #1 port	**PSHU12P**	**PSHU16P**
		Blocked #1, 3, 5, ports	**PSHU13P**	**PSHU17P**
		Blocked #3, 5 ports	**PSHU14P**	**PSHU18P**

☐ Most popular.

DX01 ISO Solenoid Valves

	Symbol	Type	Cv	Operator	Pilot	Override	24 VDC	120 VAC
		4-way, 2-position, spring return	0.75	Single solenoid	Internal	Non-locking	**DX01-621-951M**	**DX01-621-951J**
		4-way, 2-position, air return	0.75	Single solenoid	Internal	Non-locking	**DX01-651-951M**	**DX01-651-951J**
		4-way, 2-position	0.75	Double solenoid	Internal	Non-locking	**DX01-606-951M**	**DX01-606-951J**
		4-way, 3-position, center exhaust	0.5	Double solenoid	Internal	Non-locking	**DX01-611-951M**	**DX01-611-951J**
		4-way, 3-position, all ports blocked	0.5	Double solenoid	Internal	Non-locking	**DX01-616-951M**	**DX01-616-951J**

DX01 ISO Remote Pilot Valves

	Symbol	Type	Cv	Operator	Pilot	Part Number
		4-way, 2-position, spring return	0.75	Single remote pilot	Remote	**DX01-421-60**
		4-way, 2-position, air return	0.75	Single remote pilot	Remote	**DX01-451-60**
		4-way, 2-position	0.75	Double remote pilot	Remote	**DX01-406-60**
		4-way, 3-position, center exhaust	0.5	Double remote pilot	Remote	**DX01-411-60**
		4-way, 3-position, all ports blocked	0.5	Double remote pilot	Remote	**DX01-416-60**

Torque Specifications
DX02: 15 to 25 in-lbs (1.69 to 2.82 Nm) DX01: 20 to 30 in-lbs (2.26 to 3.39 Nm)

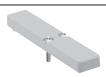
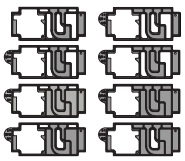
Base / End Plate - 15407-1, Non Plug-in, Size DX01

		Description	NPT	BSPP
	Single subbase	Side ported base, 1/4" port	**PS5511130P**	**PS5511140P**
	Universal manifold base	2 station, end ported	**PSHU115301P**	**PSHU115401P**
	Universal end plate	Non-collective wiring	**PSHU31L000P**	**PSHU31L001P**

☐ Most popular.

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Accessories - 15407-1, Non Plug-in, Size DX01

	Accessories	Description		Part number
	Blanking plate kit			**PS5534P**
	Sandwich flow control			**PS5542P**
	Sandwich Flow Control and Common Port Sandwich Regulator may be sandwiched together on a manifold or subbase. The Sandwich Flow Control MUST be located between the manifold/subbase and the Common Port Sandwich Regulator. Do not use with Independent Port Sandwich Regualtors.			
	Pilot exhaust module	Pilot presure control, without sensor, 1/8" BSPP		**PS55XXA0P**
	Sandwich supply module	1/4" NPT		**PS552600P**
		1/4" BSPP		**PS552601P**
	Sandwich regulator		Common pressure	Independent pressure
		2-60 PSIG w/ gauge	**PS5537155P**	**PS5537255P**
		5-125 PSIG w/ gauge	**PS5537166P**	**PS5537266P**
	Manifold to manifold gasket kits		Pilot open	Pilot blocked
		#1, 3, 5 ports open	**PSHU11P**	**PSHU15P**
		Blocked #1 port	**PSHU12P**	**PSHU16P**
		Blocked #1, 3, 5, ports	**PSHU13P**	**PSHU17P**
		Blocked #3, 5 ports	**PSHU14P**	**PSHU18P**

Most popular.

Model Number

DX02 – 6 06 – 95 1 M

Basic Series	
ISO 15407-1 (18mm)	DX02
ISO 15407-1 (26mm)	DX01

Pilot	
Air Operated Remote Pilot	4
Solenoid Operated	6

Function	
Internal Pilot Supply / Captured Exhaust 12	
2-Position, Spring Return	**21**
2-Position, Air Return	**51**
2-Position	**06**
3-Position, CE	**11**
3-Position, APB	**16**
External Pilot 14 Supply / Captured Exhaust 12*	
2-Position, Spring Return	23
2-Position, Air Return	54
2-Position	05
3-Position, CE	09
3-Position, APB	19
Internal Pilot Supply / Vented Exhaust	
2-Position, Spring Return	20
2-Position, Air Return	50
2-Position	04
3-Position, CE	27
3-Position, APB	25
External Pilot Supply / Vented Exhaust*	
2-Position, Spring Return	22
2-Position, Air Return	53
2-Position	08
3-Position, CE	12
3-Position, APB	18

* Must be specified when using Sandwich Regulators.

Voltage & Frequency			
	AC		DC
	60Hz	50Hz	
J	120	110	
M			24
Blank	Remote Pilot		

Override	
Blank	Remote Pilot
1	Non-Locking, Flush
3	Locking, Flush

Operator	
60	None, Remote Pilot Valve
95	15mm, 3-Pin, DIN 43650C

Note: DX02 18mm Valve Remote Pilot Option only available with PL02 Individual Subbase Kits

15407-1, DX02 & DX01 Manifold / Subbase Kits

PSHU1153 | **0** | **1** | **P**

Mounting Style / Port Size	
DX02 manifold with 1/8 NPT end ports	**PSHU1151**
DX02 manifold with 1/8 BSPP end ports	PSHU1152*
DX01 manifold with 1/4 NPT end ports	**PSHU1153**
DX01 manifold with 1/4 BSPP end ports	PSHU1154*
DX1 manifold with 3/8 NPT end ports	**PSHU1155**
DX1 manifold with 3/8 BSPP end ports	PSHU1156*
DX2 manifold with 1/2 NPT end ports	**PSHU1157**
DX2 manifold with 1/2 BSPP end ports	PSHU1158*

* BSPP conforms to ISO 1179-1 w 228-1 threads.

Gasket Options	
1	**1,3,5 ports open and pilots open**
2	1,3,5 ports closed and pilots open
3	1 closed, 3,5 ports open and pilots closed
4	1 port open, 3,5 ports closed and pilots open
5	1,3,5 ports open and pilots closed
6	1,3,5 ports closed and pilots closed
7	1 closed, 3,5 ports open and pilots closed
8	1 port open, 3,5 ports closed and pilots open

Circuit Board Address Configuration	
0	**No interconnect**

DX01 manifold

Subbase Kit - Non Plug-in

PS55 | **1113** | **0** | | **P**

HA non plug-in subbase shown

Series	
DX01 Subbase	**PS55**
DX1 Subbase	**PS40**
DX2 Subbase	**PS41**

Engineering Level	
Blank	HA Series
D	H1 Series
C	H2 Series

Mounting Style / Port Size	
DX01 Series	
1/4 NPT side ports	**1113**
1/4 BSPP side ports	1114*
1/4 NPT bottom / side ports	1123
1/4 BSPP bottom / side ports	1124*
DX1 Series	
3/8 NPT side ports	**1115**
3/8 BSPP side ports	1116*
DX2 Series	
1/2 NPT side ports	**1117**
1/2 BSPP side ports	1118*

* BSPP conforms to ISO 1179-1 w 228-1 threads.

Enclosures / Lead Length	
0	**None, No Electrical Plug**

DX02 Series ISO 15407-1 Size 18mm (DX02) Single Subbase

DX01 Series Subbase

Side ported base
18mm DX02 / HB

1/8" NPT	1/8" BSPP
PL02-01-80	**PL02-01-70**

Note: Can be used for external, single, or double remote pilot.

15407-1, DX02 & DX01 End Plate Kits

Left hand end plate

PSHU31 L0 0 0 P

Valve Type	
Non Plug-in (internal pilot)	**PSHU31**
Non Plug-in (external pilot)	PSHU3X

Left Hand End Plate Type	
Non Plug-in	**L0**

Thread Type	
0	**NPT**
1*	BSPP "G"

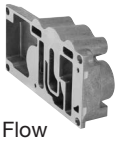
* BSPP Conforms to ISO 1179-1 w 228-1 Threads

Right Hand End Plate Type / Port	
0	**Low profile (no ports)**
1	1/2 Exhaust and inlet port
2	3/4 Exhaust and inlet port
5*	H3 Transition plate, 1" exhaust and inlet

* 1, 3 & 5 manifold galley blocked at transition plate. 12 & 14 pass through.

Right Hand End Plate

Low Profile



High Flow

Description	NPT port	BSPP port
Right hand end plate only, low profile	**PSHU4000P**	
Right hand end plate only, high flow 1/2" ports	**PSHU4100P**	**PSHU4101P**
Right hand end plate only, high flow 3/4" ports	**PSHU4200P**	**PSHU4201P**

H3 Transition Kit

H3 transition, H3 right hand end plate, 1" ports (includes gaskets & bolts)	**PSU7300P**	**PSHU7301P**

Manifold / Subbase Kit - Non Plug-in, 5599-1, Size 3 (H3)

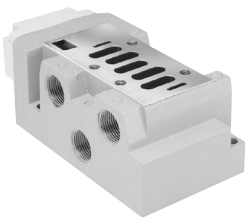
PS421159 0 C P

Mounting Base Style / Port Size	
Subbase: 3/4 NPT side ports	**PS421119**
Subbase: 3/4 BSPP side port	PS421110*
Manifold: 3/4 NPT End port	**PS421159**
Manifold: 3/4 BSPP end port	PS421150*
Manifold: 3/4 NPT bottom / end port	PS421169
Manifold: 3/4 BSPP bottom / end port	PS421160*

* BSPP conforms to ISO 1179-1 w 228-1 threads.

Engineering Level	
C	**H3**

Enclosures / Lead Length	
0	**None, No Electrical Plug - 5599-1**



H3 Subbase shown

H3 Manifold shown

Sandwich Regulators Features

- Remote Air Pilot Operated for hard-to-reach pressure control.
- Unregulated Pilot Pressure to valve for consistent valve shifting regardless of pressure adjustment.

PS5637 | 1 | 6 | 6 | P

Basic Series	
DX02 15407-1, 18mm, Non Plug-In	PS5637
DX01 15407-1, 26mm, Non Plug-In	PS5537

Regulator Function	
Common Pressure Regulator	1
Independent Pressure Regulator	2

#2 Port Regulator / Gauge*	
5	2-60 PSIG w/Gauge
6	**5-125 PSIG w/Gauge**

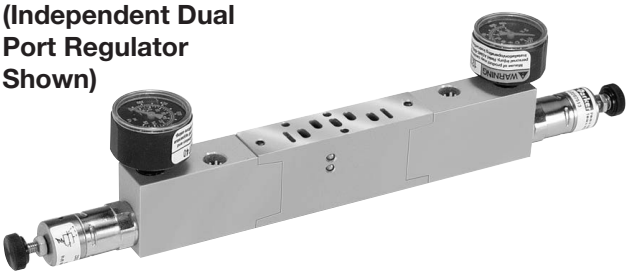
* For Common Pressure Regulator Option, Regulator Gauge callout must be the same number for both Port #4 and Port #2. (Example: 166)

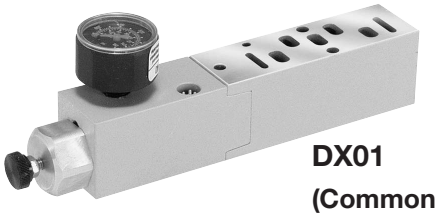
#4 Port Regulator / Gauge*	
5	2-60 PSIG w/Gauge
6	**5-125 PSIG w/Gauge**

* For Common Pressure Regulator Option, Regulator Gauge callout must be the same number for both Port #4 and Port #2. (Example: 166)

DX02

(Independent Dual Port Regulator Shown)





DX01

(Common Port Regulator Shown)

Ordering Components
- *Manifold or Subbase Kit required.*
- *Sandwich Regulator Kit configured for Internal Pilot as standard.*
- *Order valve as External Pilot.*

How to Configure Sandwich Regulator / Valve Combinations

Internal Pilot Configuration of Sandwich Regulator HA, HB
Pressure in Base Port 1 feeds regulator configured for Internal Pilot which feeds valve configured for External Pilot.

	Accessories	Description	Part number
	Gauge adapter kit	Includes 1/8" coupling, long nipple, and gauge	**PS5651160P**

Sandwich Regulator Cv Flow Chart*

	Common Pressure Code 166				Dual Pressure Code 266			
	1-2	1-4	2-3	4-5	1-2	1-4	2-3	4-5*
HB	0.20	0.20	0.41	0.34	0.23	0.19	0.28	0.27
HA	0.41	0.43	0.87	0.89	0.42	0.45	0.68	0.66

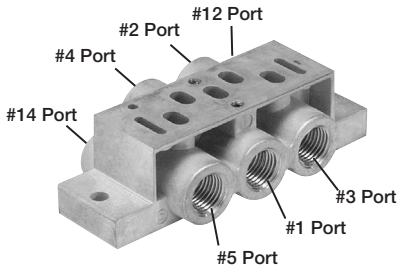
* Regulator Port exhaust through Base Port 3.
Note: All Cv's calculated with regulator adjusted full open.

Remote Pilot Access Plate Kit

		Part number	
Size	Port size	NPT	BSPP
26mm DX01	1/8"	**PS551500P**	**PS551501P**

DX02 Series Subbase & Manifolds

Single Subbase

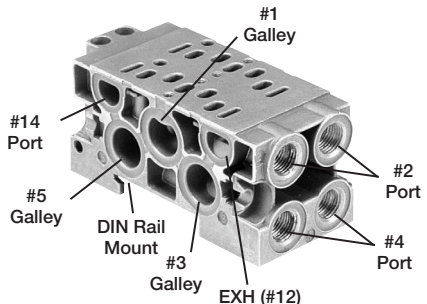


Side Ported Base
18mm DX02

1/8" NPT	1/8" BSPP
PL02-01-80	**PL02-01-70**

Note: Can be used for external, single, or double remote pilot.

2 Station Manifold Bases



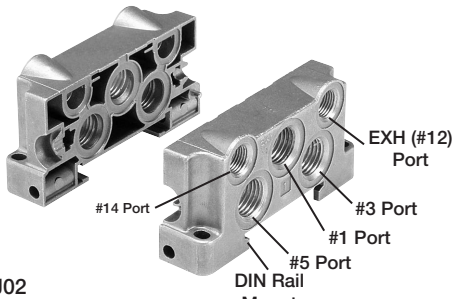
PJLP02

End Ported Bases
18mm DX02

1/8" NPT	1/8" BSPP
PJLP02-201-80	**PJLP02-201-70**

Note: Can be used for external pilot, not remote pilot. Gaskets and assembly hardware included.

End Plate Kit



PEJ02
(Type "P")

Side Ported Two Station
Manifold Base
18mm DX02

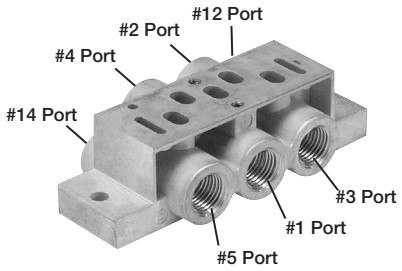
1/4" NPT Port	1/4" BSPP Port
PEJ02-02-80*	**PEJ02-02-70**

***Note:** Put a vent or muffler in "EXH" port when capturing pilot exhaust pressure with a solenoid valve. (See gasket selector page for details.) Gaskets and assembly hardware included.
Torque Specifications: 25 to 35 in-lbs (2.82 to 3.95 Nm)

☐ Most popular.

DX01 Series Subbase & Manifolds

Single Subbase

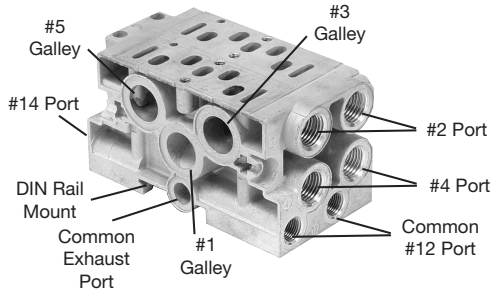


Side ported base
26mm DX01

Part number	
1/4" NPT	1/4" BSPP
PL01-02-80	**PL01-02-70**

Note: Can be used for external, single, or double remote pilot.

2 Station Manifold Bases

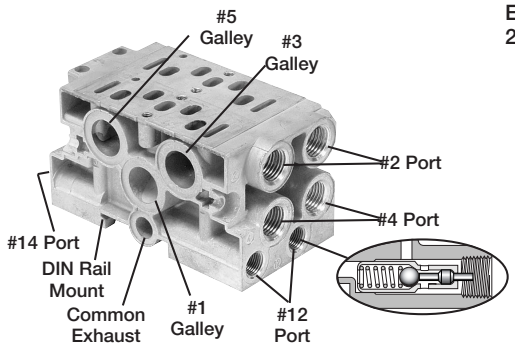


PJLP01

End ported bases
26mm DX01

1/4" NPT	1/4" BSPP
PJLP01-202-80	**PJLP01-202-70**

Note: Can be used for single remote pilot using the #14 Port and external pilot. Gaskets and assembly hardware included.



PJL01

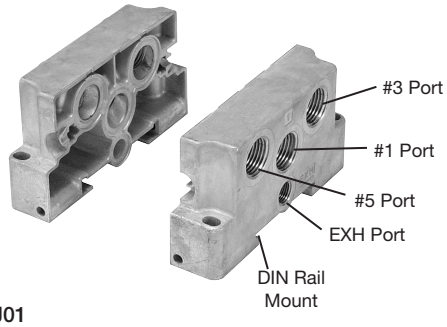
End ported bases
26mm DX01

1/4" NPT	1/4" BSPP
PJL01-202-80	**PJL01-202-70**

Notes: #12 ports work independently when plunger is not depressed by a plug. When a plug is inserted in #12 Port along with the captured pilot exhaust gasket selector option, pilot exhaust is sent to the Common Exhaust Port. Do Not plug exhaust, insert a vent of muffler.

Gaskets and assembly hardware included. Can be used for external, single or double remote pilot.

End Plate Kit



PEJ01

Side ported two station manifold base
26mm DX01

3/8 NPT port	3/8 BSPP port
PEJ01-03-80*	**PEJ01-03-70**

* Use with PJLP01 or PJL01

Notes: Put a vent or muffler in "EXH" port when capturing pilot exhaust pressure with a solenoid valve. (See gasket selector page for details.) Gaskets and assembly hardware included. Torque Specifications: 25 to 35 in-lbs (2.82 to 3.95 Nm)

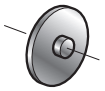
☐ Most popular.

Intermediate Air Supply Base

Size	Port size	Part number
18mm DX02	1/8" NPT	**D02P-01-80**
26mm DX01	1/4" NPT	**D01P-02-80**

Notes: Gasket & Mounting Bolts included.
Torque Specifications
Size 02: 15 to 25 in-lbs (1.69 to 2.82 Nm)
Size 01: 20 to 30 in-lbs (2.26 to 3.39 Nm)

Manifold Port Isolation Disc



Size		Part number
18mm DX02	Common Pressure	**D02BD0**
26mm DX01		**D01BD0**

Notes: 3 Discs per Kit.
Used on PJL Manifolds.

Blanking Plate

Size		Part number
18mm DX02	Common Pressure	**PS5634P**
26mm DX01		**PS5534P**

Notes: Gasket & Mounting Bolts included.
Torque Specifications
Size 02: 15 to 25 in-lbs (1.69 to 2.82 Nm)
Size 01: 20 to 30 in-lbs (2.26 to 3.39 Nm)

Sandwich Flow Control Features

DX02
18mm Shown

Size	Part number
18mm DX02	**PS5642P**
26mm DX01	**PS5542P**

- Both adjustment screws are located on the 12 end of the unit.
- Sandwich Flow Control mounts with its own studs, which means the valve uses standard bolts for mounting.
- Sandwich Flow Control is not to be used as a shut off device and is not bubble tight when needles are fully turned down.
- Do not use with Independent Port Sandwich Regulators.

Manifold to Manifold Gasket Kits

DX02M2MGSKT (PJLP02)

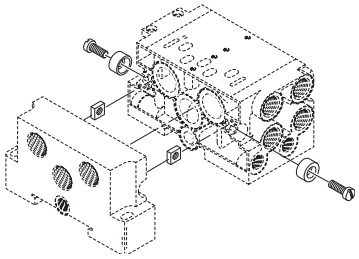
DX01M2MGSKT (PJLP01)

Size	Standard	Blocked #1 Port	Blocked #1, 3, 5 Ports	Blocked #3, 5 Ports
DX02* DX01*	**PS561AP**	**PS561BP**	**PS561CP**	**PS561DP**

DX02	**DX02M2MGSKT** (PJLP02)
DX01	**DX01M2MGSKT** (PJLP01)

* Gaskets used with PS5611 & PS5511 Manifolds.

Manifold Hardware Kits

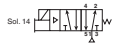
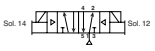
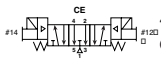
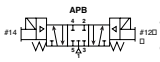


Description	Part number
Bolt, Washer & Nut*	**DX02M2MB****
Tie Rods for PS5611 Manifold (Qty. 12)	**PS5612P**
Tie Rods for PS5511 Manifold (Qty. 12)	**PS5512P**

* Includes 10 Bolts, 10 Washers, 10 Nuts
** Use this number for both sizes, PJLP02 & PJLP01.
Torque Specifications: 25 to 35 in-lbs (2.82 to 3.95 Nm)

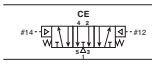
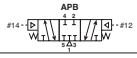
Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

DX1 ISO Solenoid Valves

	Symbol	Type	Cv	Operator	Pilot	Override	24 VDC	120 VAC
		4-way, 2-position, spring return	1.15	Single solenoid	Internal	Non-locking	**DX1-621-BL49**	**DX1-621-BL53**
						Locking	**DX1-621-CL49**	**DX1-621-CL53**
		4-way, 2-position, air return	1.15	Single solenoid	Internal	Non-locking	**DX1-651-BL49**	**DX1-651-BL53**
						Locking	**DX1-651-CL49**	**DX1-651-CL53**
		4-way, 2-position	1.15	Double solenoid	Internal	Non-locking	**DX1-606-BL49**	**DX1-606-BL53**
						Locking	**DX1-606-CL49**	**DX1-606-CL53**
		4-way, 3-position, center exhaust	0.75	Double solenoid	Internal	Non-locking	**DX1-611-BL49**	**DX1-611-BL53**
						Locking	**DX1-611-CL49**	**DX1-611-CL53**
		4-way, 3-position, all ports blocked	0.75	Double solenoid	Internal	Non-locking	**DX1-616-BL49**	**DX1-616-BL53**
						Locking	**DX1-616-CL49**	**DX1-616-CL53**

30mm 3-Pin Solenoid, NLMOR, Unlighted, Internal Pilot, Valve Less Base

DX1 ISO Remote Pilot Valves

	Symbol	Type	Cv	Operator	Pilot	Part Number
		4-way, 2-position, spring return	1.15	Single remote pilot	Remote	**DX1-421-60**
		4-way, 2-position, air return	1.15	Single remote pilot	Remote	**DX1-451-60**
		4-way, 2-position	1.15	Double remote pilot	Remote	**DX1-406-60**
		4-way, 3-position, center exhaust	0.75	Double remote pilot	Remote	**DX1-411-60**
		4-way, 3-position, all ports blocked	0.75	Double remote pilot	Remote	**DX1-416-60**

Base / End Plate - 5599-1, Non Plug-in, Size 1 DX1

		Description	NPT	BSPP
	Single subbase	Side ported, 3/8" port	**PS4011150DP**	**PS4011160DP**
	Universal manifold base	End ported	**PSHU115501P**	**PSHU115601P**
	Universal end plate	Non-collective wiring	**PSHU31L000P**	**PSHU31L001P**

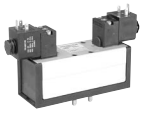
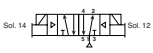
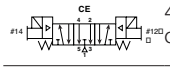
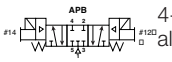
Accessories - 5599-1, Non Plug-in, Size 1 DX1

	Accessory	Description		Part number
	Sandwich regulator	Common pressure	5-125 PSIG w/ gauge	**PS4037166CP**
		Independent pressure	5-125 PSIG w/ gauge	**PS4037266CP**
	Blanking plate kit			**PS4034CP**
	Sandwich flow control			**PS4042CP**

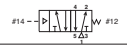
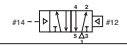
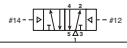
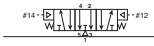
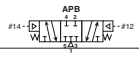
Sandwich Flow Control and Common Port Sandwich Regulator may be sandwiched together on a manifold or subbase. The Sandwich Flow Control MUST be located between the manifold/subbase and the Common Port Sandwich Regulator. Do not use with Independent Port Sandwich Regualtors.

Most popular.

DX2 ISO Valves

	Symbol	Type	Cv	Operator	Pilot	Override	24 VDC	120 VAC
		4-way, 2-position, spring return	2.5	Single solenoid	Internal	Non-locking	**DX2-621-BL49**	**DX2-621-BL53**
						Locking	**DX2-621-CL49**	**DX2-621-CL53**
		4-way, 2-position, air return	2.5	Single solenoid	Internal	Non-locking	**DX2-651-BL49**	**DX2-651-BL53**
						Locking	**DX2-651-CL49**	**DX2-651-CL53**
		4-way, 2-position	2.5	Double solenoid	Internal	Non-locking	**DX2-606-BL49**	**DX2-606-BL53**
						Locking	**DX2-606-CL49**	**DX2-606-CL53**
		4-way, 3-position, center exhaust	2.4	Double solenoid	Internal	Non-locking	**DX2-611-BL49**	**DX2-611-BL53**
						Locking	**DX2-611-CL49**	**DX2-611-CL53**
		4-way, 3-position, all ports blocked	2.4	Double solenoid	Internal	Non-locking	**DX2-616-BL49**	**DX2-616-BL53**
						Locking	**DX2-616-CL49**	**DX2-616-CL53**

DX2 ISO Remote Pilot Valves

	Symbol	Type	Cv	Operator	Pilot	Part Number
		4-way, 2-position, spring return	2.5	Single remote pilot	Remote	**DX2-421-60**
		4-way, 2-position, air return	2.5	Single remote pilot	Remote	**DX2-451-60**
		4-way, 2-position	2.5	Double remote pilot	Remote	**DX2-406-60**
		4-way, 3-position, center exhaust	2.4	Double remote pilot	Remote	**DX2-411-60**
		4-way, 3-position, all ports blocked	2.4	Double remote pilot	Remote	**DX2-416-60**

Base / End Plate - 5599-1, Non Plug-in, Size 2 DX2

		Description	1/2" NPT	1/2" BSPP
	Single subbase	Side ported, 1/2" port	**PS4111170CP**	**PS4111180CP**
	Universal manifold base	End ported	**PSHU115701P**	**PSHU115801P**
	Universal end plate	Non-collective wiring	**PSHU31L000P**	**PSHU31L001P**

Accessories - 5599-1, Non Plug-in, Size 2 DX2

	Accessory	Description		Part number
	Sandwich regulator	Common pressure	5-125 PSIG w/ gauge	**PS4137166CP**
		Independent pressure	5-125 PSIG w/ gauge	**PS4137266CP**
	Blanking plate kit			**PS4134CP**
	Sandwich flow control			**PS4142CP**

Sandwich Flow Control and Common Port Sandwich Regulator may be sandwiched together on a manifold or subbase. The Sandwich Flow Control MUST be located between the manifold/subbase and the Common Port Sandwich Regulator. Do not use with Independent Port Sandwich Regualtors.

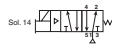
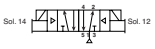
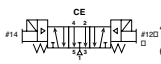
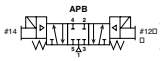
☐ Most popular.

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

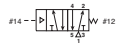
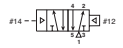
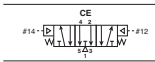
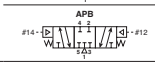
Common Part Numbers

DX ISOMAX 5599-1 Ceramic, DX3

DX3 ISO Valves

	Symbol	Type	Cv	Operator	Pilot	Override	24 VDC	120 VAC
		4-way, 2-position, spring return	4.15	Single solenoid	Internal	Non-locking	**DX3-621-BL49**	**DX3-621-BL53**
						Locking	**DX3-621-CL49**	**DX3-621-CL53**
		4-way, 2-position, air return	4.15	Single solenoid	Internal	Non-locking	**DX3-651-BL49**	**DX3-651-BL53**
						Locking	**DX3-651-CL49**	**DX3-651-CL53**
		4-way, 2-position	4.15	Double solenoid	Internal	Non-locking	**DX3-606-BL49**	**DX3-606-BL53**
						Locking	**DX3-606-CL49**	**DX3-606-CL53**
		4-way, 3-position, center exhaust	4.0	Double solenoid	Internal	Non-locking	**DX3-611-BL49**	**DX3-611-BL53**
						Locking	**DX3-611-CL49**	**DX3-611-CL53**
		4-way, 3-position, all ports blocked	4.0	Double solenoid	Internal	Non-locking	**DX3-616-BL49**	**DX3-616-BL53**
						Locking	**DX3-616-CL49**	**DX3-616-CL53**

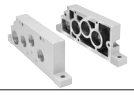
DX3 ISO Remote Pilot Valves

	Symbol	Type	Cv	Operator	Pilot	Part Number
		4-way, 2-position, spring return	4.15	Single remote pilot	Remote	**DX3-421-60**
		4-way, 2-position, air return	4.15	Single remote pilot	Remote	**DX3-451-60**
		4-way, 2-position	4.15	Double remote pilot	Remote	**DX3-406-60**
		4-way, 3-position, center exhaust	4.0	Double remote pilot	Remote	**DX3-411-60**
		4-way, 3-position, all ports blocked	4.0	Double remote pilot	Remote	**DX3-416-60**

DX3 Series Subbase & Manifolds

Single subbase	Description	3/4" NPT	3/4" BSPP
	Side ported base	**PS4211190CP**	**PS4211100CP**

Manifold bases		3/4" NPT	3/4" BSPP
	Bottom / End ported bases	**PS4211690CP**	**PS4211600CP**
	Note: Manifolds include 2 pipe plugs		

End plate kits		NPT port	BSPP port
	H3 Non-collective wiring end plates	**PS4231010DP**	**PS4231011DP**

5599-1, DX3 Accessories

Accessories		Description		Part Number
Sandwich regulator		Common pressure	5-125 PSIG w/ gauge	**PS4237166CP**
		Independent pressure	5-125 PSIG w/ gauge	**PS4237266CP**
Manifold to manifold gasket kit				**PS4213P**

☐ Most popular.

DX1 **6** **21** **B** **L** **53**

Basic Series	
ISO 5599-1	DX1 - Size 1
ISO 5599-1	DX2 - Size 2
ISO 5599-1	DX3 - Size 3

Pilot	
Air Operated Remote Pilot	4
Solenoid Operated	6

Function	
Internal Pilot Supply	
2-Position, Spring Return, Air Assist	21
2-Position, Diff Return	51
2-Position	06
3-Position, CE	11
3-Position, APB	16
3-Position, PC	13*
External Pilot Supply†	
2-Position, Spring Return, Air Assist	22
2-Position, Diff Return	53
2-Position	08
3-Position, CE	12
3-Position, APB	18
3-Position, PC	24*

* Not offered with DX3 Valves.
† Must be specified when using Sandwich Regulators.

Voltage & Frequency			
	AC		DC
	60Hz	50Hz	
19*			24
49			24
53	120	110	
Blank	Remote Pilot or Valve Less Coil		

* LED & Surge Suppression.
Only Available with Enclosure "6".

5599-1 Enclosure / Lead Length / Light	
0**	None, Remote Pilot Valve
6*	2-Pin, M12 EURO Connector with CNOMO Operator, Light
L	3-Pin, 30mm DIN 43650A with CNOMO Connector, No Light
P	3-Pin, 22mm Industrial with CNOMO Connector, No Light
N†	None, Valve Less Coil, No Light

* Only available with Voltage & Frequency "19".
**Must use Overrides Option "6".
† Must use Overrides Option "B" or "C".

5599-1 Overrides	
6	Remote Pilot / Without Solenoid
B	Non-Locking, Flush, Push
C	Locking, Flush, Push / Turn

Non-Plug-in, 5599-1, End Plate Kits

PS423101 0 C P

Basic Series	
ISO 5599, Size 3	PS423101

Thread Type	
0	NPT
1*	BSPP "G"

* BSPP Conforms to ISO 1179-1 w 228-1 Threads.

H1 Non-Collective Wiring End Plates

Sandwich Regulators Features

- Remote Air Pilot Operated for hard-to-reach pressure control.
- Unregulated Pilot Pressure to valve for consistent valve shifting regardless of pressure adjustment.

PS4037 | 1 | 6 | 6 | C | P

Basic Series	
H1 5599-1, Non Plug-in	PS4037
H2 5599-1, Non Plug-in	PS4137

Regulator Function	
Common Pressure Regulator	1
Independent Pressure Regulator	2

	#2 Port Regulator / Gauge*
0**	Line By-Pass Plate
4	1-30 PSIG w/Gauge
5	2-60 PSIG w/Gauge
6	**5-125 PSIG w/Gauge**
D	Remote Pilot ISO 2 & 3 only

* For common pressure regulator option, regulator gauge callout must be the same number for both Port #4 and Port #2. (Example: 166)

** Pressure Line by-pass option can only be used with independent pressure regulators.

	#4 Port Regulator / Gauge*
0**	Line By-Pass Plate
4	1-30 PSIG w/Gauge
5	2-60 PSIG w/Gauge
6	**5-125 PSIG w/Gauge**
D	Remote Pilot ISO 2 & 3 only

* For common pressure regulator option, regulator gauge callout must be the same number for both Port #4 and Port #2. (Example: 166)

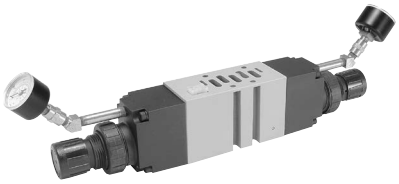
** Pressure Line by-pass option can only be used with independent pressure regulators.

DX1 - Size 1

(Independent Dual Port Regulator Shown)

DX2 - Size 2

(Independent Dual Port Regulator Shown)



Ordering Components

- *Manifold or Subbase Kit required.*
- *Sandwich Regulator Kit configured for Internal Pilot as standard.*
- *Order valve as External Pilot.*

How to Configure Sandwich Regulator / Valve Combinations

Internal Pilot Configuration -
Pressure in Base Port 1 feeds regulator configured for Internal Pilot which feeds valve configured for External Pilot.

External Pilot Configuration - DX1, DX2, DX3
An External Pilot pressure in Port 12 or 14 of the base feeds thru the Sandwich Regulator 12 or 14 galley directly to the 12/14 pilot of the valve. This configuration takes an External Pilot from the 12 port of the base and passes it thru the regulator to feed the 12 galley of the valve.

Note: Do not use Independent Port Sandwich Regulators with Sandwich Flow Controls.
Independent Port Sandwich Port Regulators combine the #3 and #5 valve exhaust ports into the #5 exhaust at the manifold/subbase interface. The #3 port flow control will control both #3 and #5 exhaust. #5 port flow control is ineffective.

Sandwich Regulator Cv Flow Chart*

	Common Pressure Code 166				Single Pressure 2 Code 206				Single Pressure 4 Code 260				Dual Pressure Code 266			
	1-2	1-4	2-3	4-5	1-2	1-4	2-3	4-5*	1-2	1-4	2-3	4-5*	1-2	1-4	2-3	4-5*
H1	0.62	0.61	1.28	1.18	0.73	0.96	0.96	0.93	0.34	0.70	0.94	0.98	0.52	0.48	0.86	0.88
H2	1.47	1.60	2.41	2.33	1.71	1.90	1.52	1.75	1.74	1.67	1.73	1.79	1.61	1.62	1.50	1.67

* Regulator Port exhaust through Base Port 3.

Note: All Cv's calculated with regulator adjusted full open.

☐ Most popular.

5599-1 Compact Manifolds, Subbases & Accessories

Manifold VDMA – Form C Bottom Port

Size	Port size	Part Number BSPP G
DX1	1/4"	**P2N-VM512MB**
DX2	3/8"	**P2N-WM513MB**
DX3	1/2"	**P2N-YM514MB**

VDMA End Plates – Form D

Size	Port size	Part Number BSPP G
DX1	3/8"	**P2N-VM513ES**
DX2	1/2"	**P2N-WM514ES**
DX3	1"	**P2N-YM518ES**

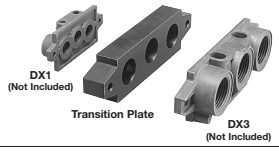
Subbase – Side Ports (5599-1 & VDMA)

Size	Port Size	5599-1 Part Number NPT	5599-1 Part Number BSPP "G"	VDMA Part Number BSPP "G"
DX1	1/4"	**PL1-1/4-80**	**PL1-1/4-70**	**P2N-VS512SD**
DX2	3/8"	**PL2-3/8-80**	**PL2-3/8-70**	**P2N-WS513SD**
DX3	1/2"	**PL3-1/2-80**	**PL3-1/2-70**	**P2N-YS514SD**

Subbase – Bottom Ports

Size	Port size	5599-1 Part Number NPT	5599-1 Part Number BSPP "G"
DX1	1/4"	**PD1-1/4-80**	**PD1-1/4-70**
DX2	3/8"	**PD2-3/8-80**	**PD2-3/8-70**

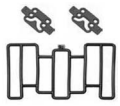
VDMA Transition Plate



Part Number
P2N-VM500AK

Kit includes: Transition Plate Only. Order P2N-VM513ES and P2N-YM518ES Separately to Assemble Add-A-Fold

External Seal Kit



Size	Part Number
DX1	**JJDX10-A**
DX2	**JJDX20-A**
DX3	**JJDX30-A**

Complete Seal Kit

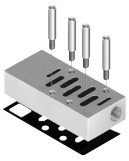
Size	Part Number
DX1	**JJDX15-A**
DX2	**JJDX25-A**
DX3	**JJDX35-A**

Blanking Plate Kits

Size	Part Number
DX1	**PS4034CP**
DX2	**PS4134CP**
DX3	**PS4234CP**

Kit includes:
Blanking Plate, Gasket, and Mounting Bolts.

Remote Pilot Access Plate Kits

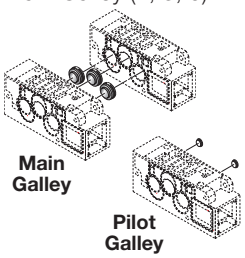


Size	Port Size	BSPP "G"
DX1	1/8"	**PS401501CP**
DX2	1/8"	**PS411501CP**
DX3	1/8"	**PS421501CP**

Kit includes: Pilot Port Access Plate, Gasket and Mounting Studs.

Manifold Port Isolation Kits

Main Galley (1, 3, 5)



Size	P2N Manifolds
DX1	**P2N-VK0P**
DX2	**P2N-WK0P**
DX3	**P2N-YK0P**

Kit includes: Plugs with O-rings.

Pilot Galley

Size	Part Number
DX3	**PS4033CP**

Kit includes: Plugs with O-rings.
For use with PS4 Series Manifolds.

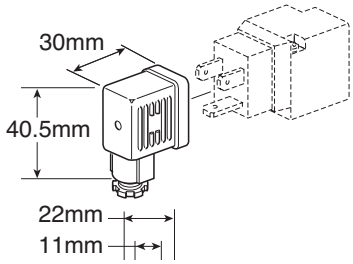
Sandwich Flow Controls Features

Size	Part Number
DX1	**PS4042CP**
DX2	**PS4142CP**
DX3	**PS4242CP**

- Both adjustment screws are located on the 12 end of the unit.
- Sandwich Flow Control mounts with its own studs, which means the valve uses standard bolts for mounting.
- Sandwich Flow Control is not to be used as a shut off device and is not bubble tight when needles are fully turned down.
- Do not use with Independent Port Sandwich Regulators.

22mm Rectangular 3-Pin – Type B Industrial

(Use with Enclosure "B")



Description	Connector	Connector with 6' (2m) Cord
Unlighted	**PS2429BP**	**PS2429JBP**
Light – 24V60Hz, 24VDC	**PS243079BP**	**PS2430J79BP***
Light – 120V/60Hz	**PS243083BP**	**PS2430J83BP***
Light – 240V/60Hz	**PS243087BP**	N/A

* LED with surge suppression.

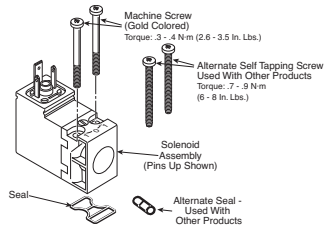
Note: Max ø6.5mm cable size required for connector w/o 6' (2m) cord. IP65 rated when properly installed.

Engineering Data:
Conductors: 2 Poles Plus Ground; Cable Range (Connector Only): 6 to 8mm (0.24 to 0.31 Inch); Contact Spacing: 11mm

CNOMO Operator Adapter

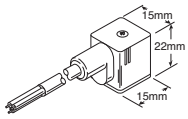
Size	Part Number
DX1, DX2, DX3	**PS2855P**

15mm 3-Pin DIN 43650C Replacement Solenoid Kits

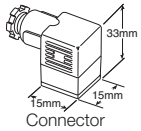


Voltage	Non-Locking	Locking
24VDC	**PS2982B49P**	**PS2982C49P**
110/50, 120/60	**PS2982B53P**	**PS2982C53P**

15mm 3-Pin DIN 43650C Connectors



Connector
with cord



Connector
only

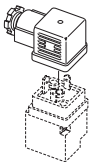
Description	Connector with 6' (2m) Cord	Connector
No circuit board	**PS2932JBP**	**PS2932BP**
Light – 24DC	**PS2946J79BP***	**PS294679BP**
Light – 110/120VAC	**PS2946J83BP***	**PS294683BP**

* LED with surge suppression.

Note: Max. ø6.5mm cable size required for connector without 6' (2m) cord. IP65 rated when properly installed.

Engineering Data:
Conductors: 2 poles plus ground
Cable range (Connector only): 4 to 6mm (0.16 to 0.24 Inch)
Contact spacing: 8mm

Female Electrical Connectors (IP65 Rated) 30mm, 3-Pin ISO 4400, (DIN 43650A)



Description	Connector with 6' (2m) cord	Connector
Unlighted	**PS2028JCP**	**PS2028BP**
Light – 6-48V, 50/60Hz; 6-48VDC	**PS2032J79CP***	**PS203279BP**
Light – 120V/60Hz	**PS2032J83CP***	**PS203283BP**
Light – 240V/60Hz	N/A	**PS203283BP**

* With surge suppression.

Engineering data:
Conductors: 2 poles plus ground; cable range (connector only): 8 to 10mm (0.31 To 0.39 inch); Contact spacing: 18mm

5599-1 CNOMO Solenoid Kits

Voltage Code	3-pin, 30mm 'L' Coil Kit	2-pin, M12 Euro '6' coil Kit
19	—	**PS2828619P**
42	**P2FCA442**	—
45	**P2FCA445**	—
49	**P2FCA449**	—
53	**P2FCA453**	—
57	**P2FCA457**	—

Quantity 1

Pilot Operator - CNOMO

Valve size		Kit Number
DX1, DX2 & DX3	Locking	**PS4052CP**
	Non-locking	**PS4053CP**

Ceramic Technology / Valve Specifications

- Subbase Mounted Valves Conforming to ISO Standard 5599/1
- High Flow: DX1 (1.15 Cv), DX2 (2.50 Cv), DX3 (4.15 Cv)
- Air or Solenoid Operation Using CNOMO Solenoids
- Can Be Vacuum Operated

Air Condition:
Filtered to 40µ

Dual Pressure Supply from Exhaust Ports:
Yes - Without additional pressure at 12 and 14

Dust and Water Protection:
IP65 (According to EN 60529)

Mechanical Life:
> 100 million operations (Dry air filtered 40 µ, 2 Hz, 6 bar, 20°C)

Media:
Air or inert gas, filtered 40 µ (Class 5 according to ISO 8573-1), lubricated or non-lubricated

Operating Temperature Range:
-10°C to 60°C (14°F to 140°F)

Flow Rating (Cv)

Size	Port Size	Mounting Style	2-Position	3-Position
DX1	1/4" Ports	Subbase	1.15	0.75
	1/4" Ports	Manifold	0.80	0.60
DX2	3/8" Ports	Subbase	2.50	2.40
	3/8" Ports	Manifold	2.05	1.95
DX3	1/2" Ports	Subbase	4.15	4.00
	1/2" Ports	Manifold	4.10	3.65

Cv tested per ANSI / (NFPA) T3.21.3

Flow Rating (Cv) with Sandwich Regulator

Size	Common Pressure				Dual Pressure			
DX1	1-2	1-4	2-3	4-5	1-2	1-4	2-3	4-5
DX2	0.55	0.49	1.06	1.02	0.32	0.42	0.25	0.38
DX3	1.06	1.05	2.33	2.17	0.93	0.66	0.77	1.15

Note: All Cv's calculated with regulator adjusted full open.

Response Time**

Single Solenoid 2-Position -
Air Return / Spring Assist

Size	Port Size	0 Cu. In. Chamber Fill	0 Cu. In. Chamber Exhaust	## Cu. In. Chamber Fill	## Cu. In. Chamber Exhaust
DX1	1/4"	.025	.030	.160	.235
DX2	3/8"	.040	.045	.170	.235
DX3	1/2"	.060	.065	.245	.330

DX1 (50), DX2 (100), DX3 (200)
** With 100 PSIG supply, time required to fill from 0 to 90 PSIG and Exhaust from 100 PSIG to 10 PSIG measured from the instant of energizing or de-energizing 24VDC solenoid.
Tested per ANSI / (NFPA) T3.21.8

Solenoid Information

Code	Voltage AC 60Hz	Voltage AC 50Hz	Voltage DC	Power (W / VA)
19	—	—	24	2.8W
49	—	—	24	2.7W
53	120	115	—	3.7VA

Data tested with LED and Surge Suppression.

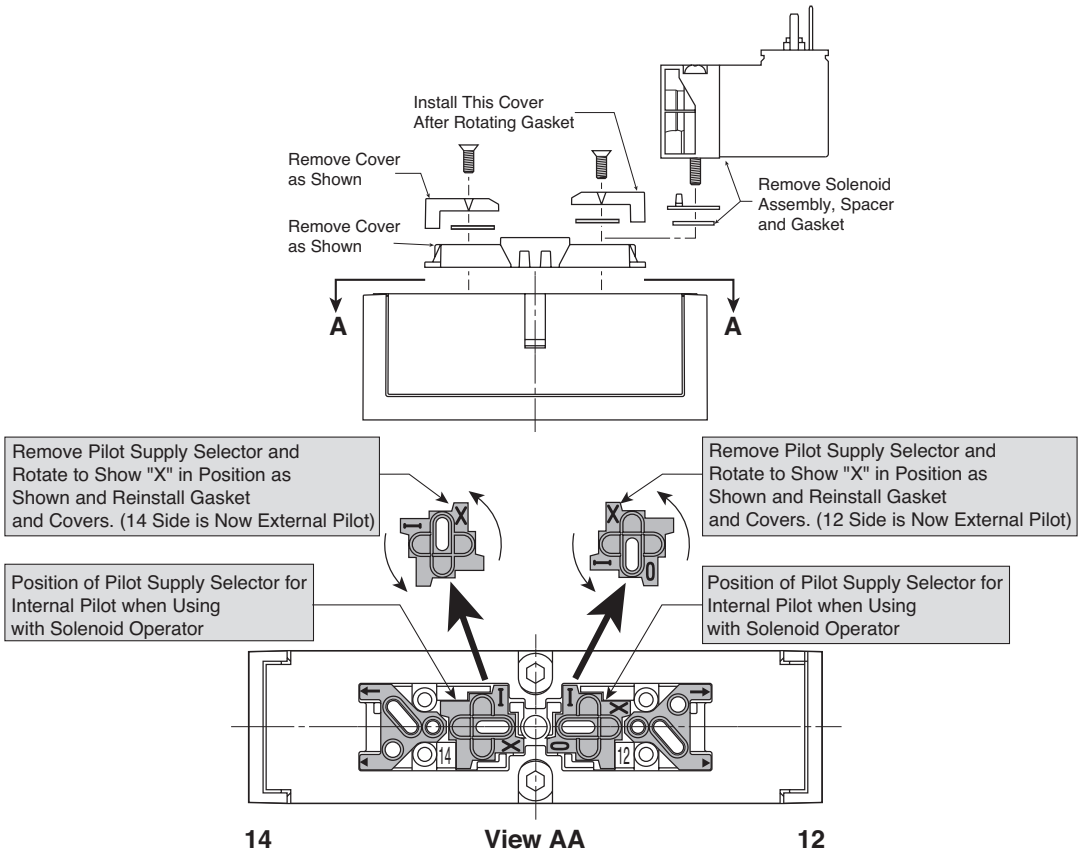
Operating Pressure

Vacuum to 145 PSIG (10 bar)

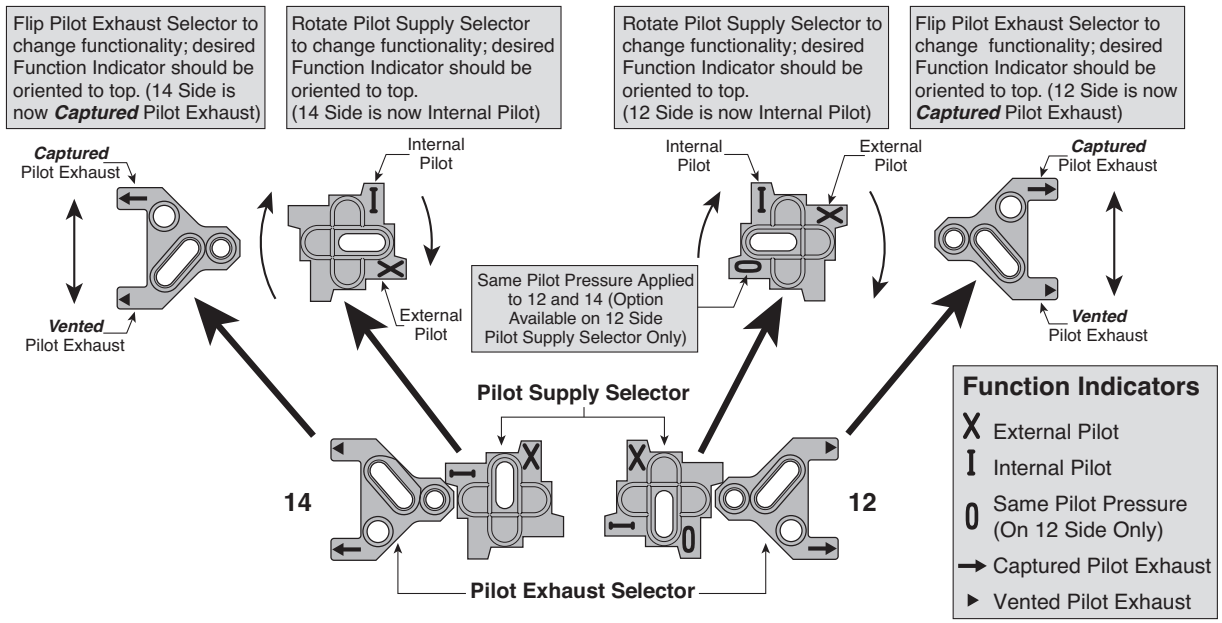
Function		M.O.P. (PSIG)		
Internal Pilot		**DX1**	**DX2**	**DX3**
21	2-Position, Spring Return	36	30	30
51	2-Position, Air Return	30	30	30
06	2-Position	15	15	15
11	3-Position, CE	45	36	36
16	3-Position, APB	45	36	36
13	3-Position, PC	45	36	—
External Pilot		**DX1**	**DX2**	**DX3**
22	2-Position, Spring Return	36	30	30
53	2-Position, Air Return	30	30	30
08	2-Position	15	15	15
12	3-Position, CE	45	36	36
18	3-Position, APB	45	36	36
24	3-Position, PC	45	36	—

DX ISOMAX Selector Gasket Conversion Instructions

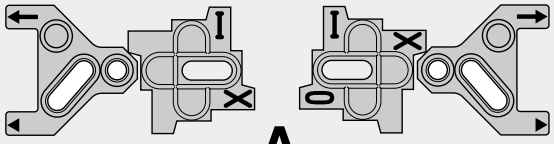
Changing from **Internal** to **External** Pilot Supply



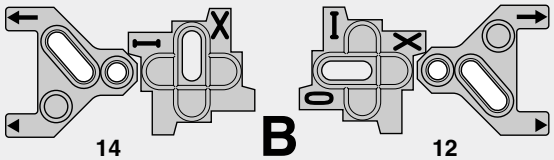
Changing from **External** Pilot Supply, Vented Pilot Exhaust to **Internal** Pilot Supply, Captured Pilot Exhaust



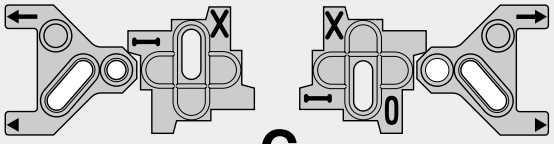
Internal Pilot Supply;
Captured Pilot Exhaust through 12



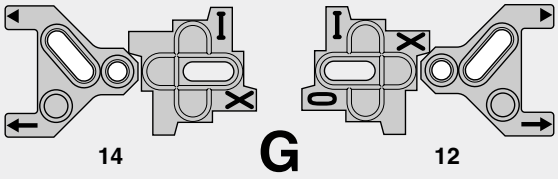
External or Single Remote Pilot Supply on 14;
Internal Pilot Supply on 12;
Captured Pilot Exhaust through 12



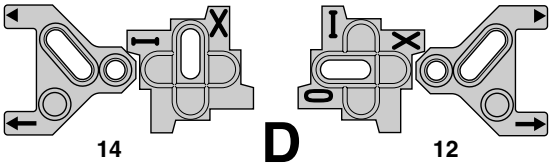
External, Double Remote Pilot Supply on 14 & 12;
Captured Pilot Exhaust



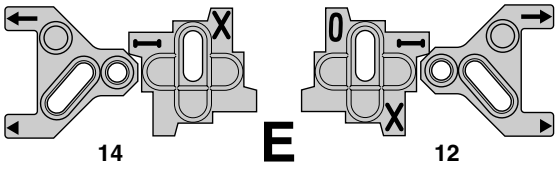
Internal Pilot Supply;
Vented Pilot Exhaust



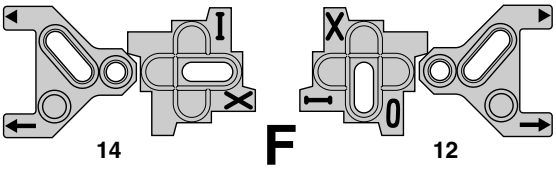
External Pilot Supply on 14;
Internal Pilot Supply on 12;
Vented Pilot Exhaust



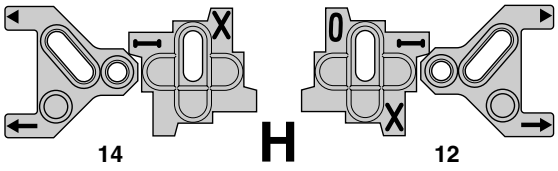
External Pilot Supply 14 Common to 12;
Captured Pilot Exhaust through 12



Internal Pilot Supply on 14;
External Pilot Supply on 12;
Vented Pilot Exhaust



External Pilot Supply 14 Common to 12;
Vented Pilot Exhaust



Base Pilot Port Used	None	14	14 and 12	None	14	14	12
Pilot Air Supply	**Internal Pilot Supply**	**14 External Pilot 12 Internal Pilot**	**External, Double Remote Pilot for 14 and 12**	**Internal Pilot Supply**	**14 External Pilot 12 Internal Pilot**	**One Common External Pilot Pressure for 14 and 12**	**14 Internal Pilot 12 External Pilot**
Pilot Exhaust	**Captured**	**Captured**	**Captured**	**Vented**	**Vented**	**Captured**	**Vented**
5/2 Double Solenoid	606 A	—	406 C	604 G	D	E	F
5/2 Single Solenoid	621	421	C	620	D	E	F
5/2 Double Solenoid, on Sandwich Regulator	—	—	—	—	External Pilot Supply 14 Common to 12 Vented Pilot Exhaust – See Diagram 'H'		
Spring Return	A	B	—	G	—	—	—
5/2 Single Solenoid, Differential Return	651 A	451 B	C	65 G	D	E	F
5/3 Pressure Center Exhaust	611 A	—	411 C	627 G	D	E	F
5/3 Pressure All Ports Blocked	616 A	—	416 C	625 G	D	E	F
	Part Numbers Available From Factory				**See Gasket Configurations Above for These Special Adaptations**		

Insert a muffler or vent in the EXH Port of the PEJ02 & PEJ01 Manifold End Plates or #12 of PL02 & PL01 Subbases when using solenoids with a ***Captured*** Exhaust.

A plug may be inserted in the EXH Port of the PEJ02 & PEJ01 Manifold End Plates #14 or #12 of PL02 & PL01 Subbases when using a ***Vented*** Exhaust.

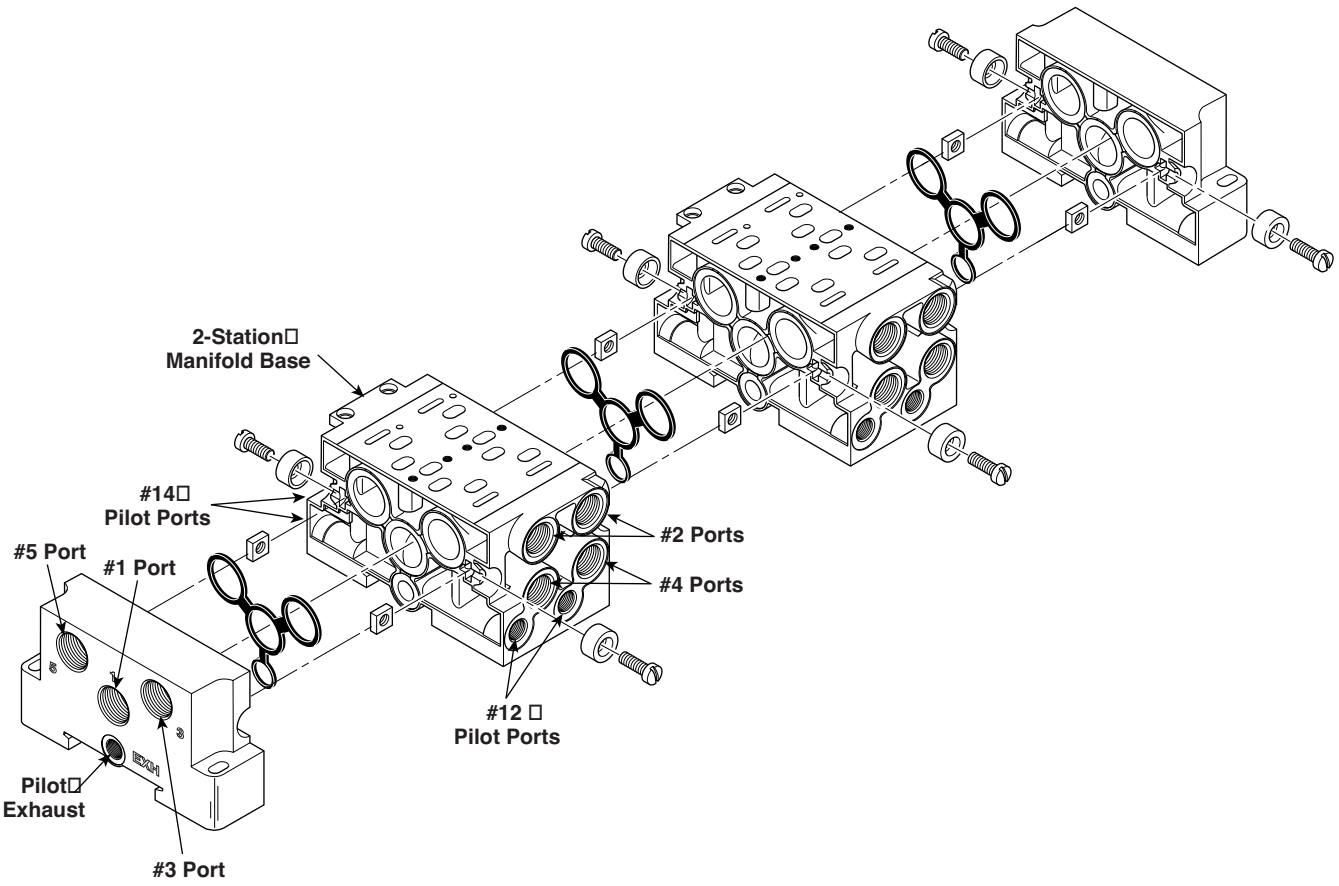
Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

DX01 Manifold Assembly

Ports

1 .....Pressure
2 .....#2 Cylinder Port, 1 to 2 Flow Path
3 ..... Cylinder Exhaust Port, 2 to 3 Flow Path
4 .....#4 Cylinder Port, 1 to 4 Flow Path
5 ..... Cylinder Exhaust Port, 4 to 5 Flow Path
14 .....#14 Pilot Port
12 ..... #12 Pilot Port

Torque Specifications: 25 to 35 in-lbs (2.82 to 3.95 Nm)



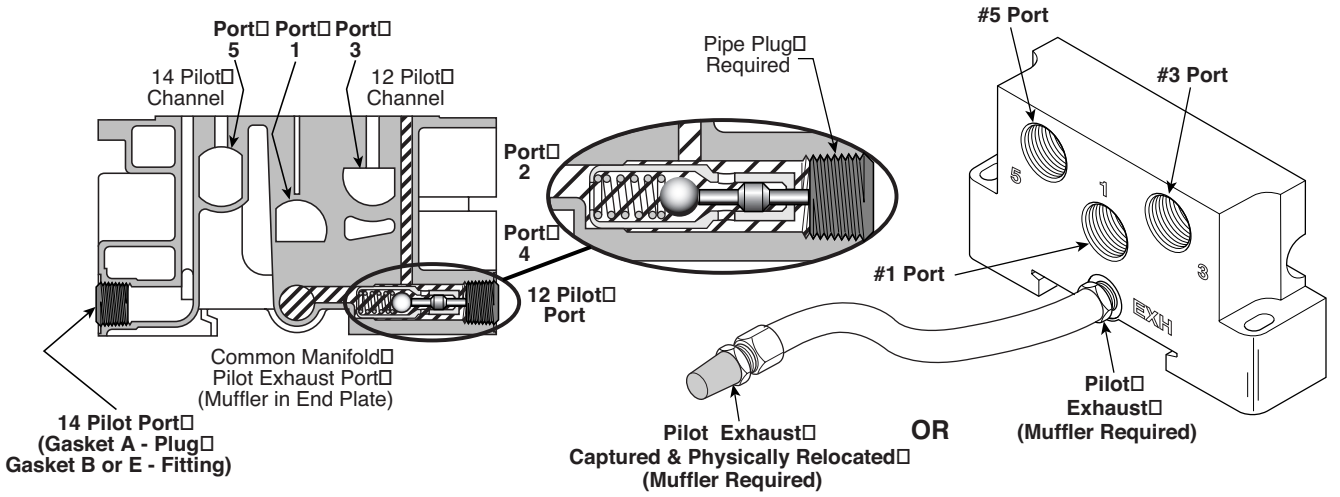
DX01 Shown

DX 15407-1 Size 01, Manifold Conversion Instructions

Captured Pilot Exhaust

PJL01, Size 01

A Built-in 2-Position Selector converts the External Pilot Channel (12) into a Common Solenoid Pilot Exhaust Channel.



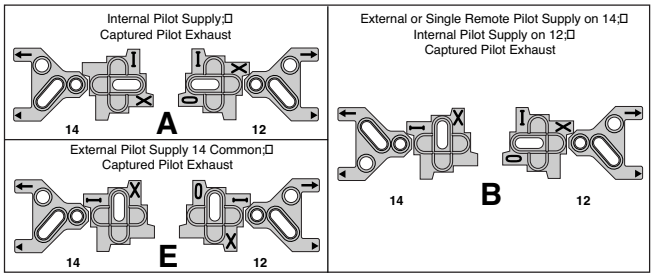
Built-in Selector

When using A, B or E ***Captured*** Selector Gasket Positions, the 12 Pilot Port is plugged. The 14 Pilot Port has a plug when using Gasket A or a fitting when using Gasket B or E. When in place, the Plug in the 12 Pilot Port depresses the Selector to connect the Valve Solenoid Pilot Exhaust to a Common Manifold Exhaust Port. The Plug must make contact with the Pin of the Internal Check Valve.

Insert a Muffler in the EXH Port of the End Plate.

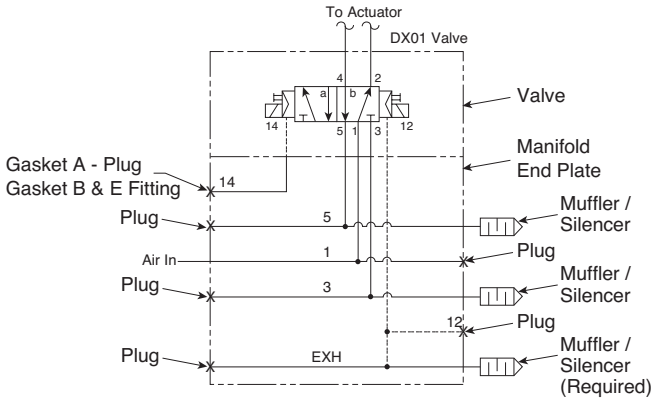
Captured Selector Gasket Positions

When using A, B or E Selector Gasket Positions as shown in the schematic at right.



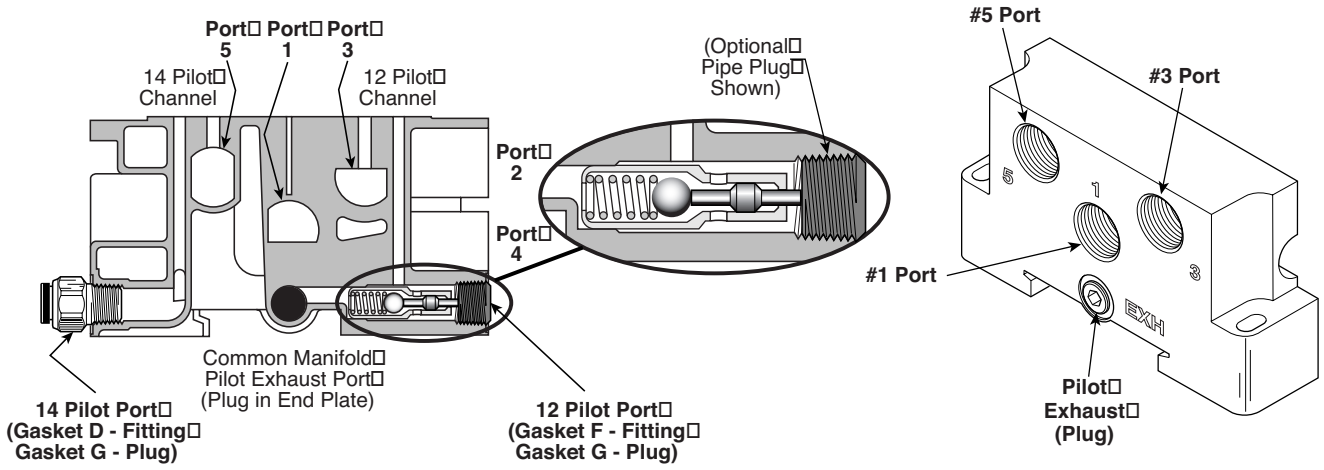
Insert a muffler or vent in the EXH Port of the PEJ02 & PEJ01 Manifold End Plates or #12 of PL02 & PL01 Subbases when using solenoids with ***Captured*** Pilot Exhaust.

DX01 Manifold Assembly Schematic for *Captured* Selector Gasket Positions A, B and E



DX 15407-1 Size 01, Manifold Conversion Instructions

Vented
Pilot Exhaust



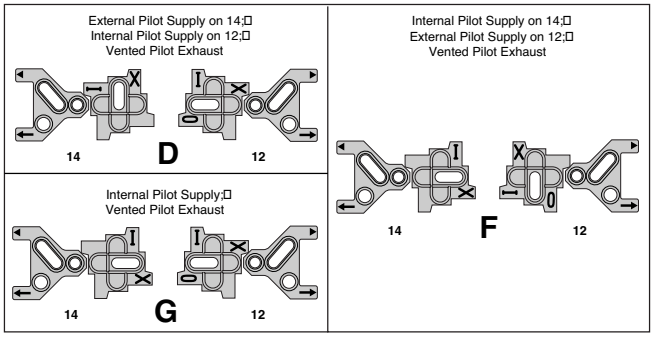
Manifold **End Plate**

Built-in Selector

When using D or G ***Vented*** Selector Gasket Positions, the 12 Pilot Port may be plugged (Optional). The 14 Pilot Port has a plug when using Gasket G or a fitting when using Gasket D or F. The valve solenoid pilot exhaust vents out the pilot adapter on the G Gasket Selection.

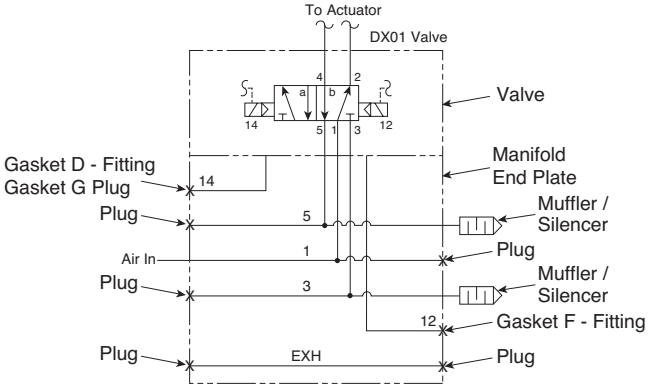
Vented Selector Gasket Positions

When using D, F or G Selector Gasket Positions, pilot exhaust air is vented out the valve.



A plug may be inserted in the EXH Port of the PEJ02 & PEJ01 Manifold End Plates, #12 of PL02 & PL01 Subbases.

DX01 Manifold Assembly Schematic for *Vented* Selector Gasket Positions D or G

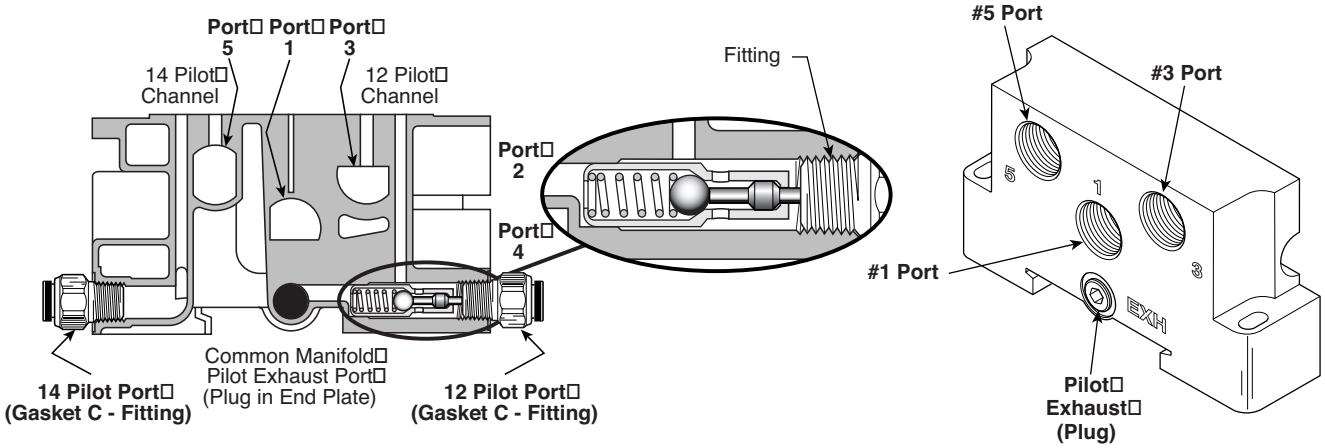


For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

DX 15407-1 Size 01, Manifold Conversion Instructions

External Double Remote Pilot

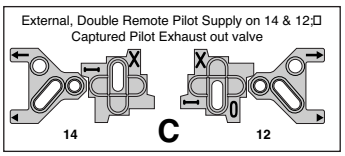


Built-in Selector

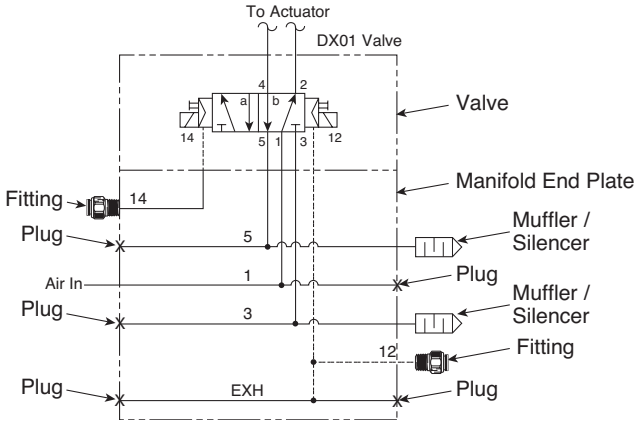
When using C ***External Double Remote Pilot*** Selector Gasket Position, a fitting is used in Pilot Port 14 & 12. Free flow between Port 14 & 12 and the valve allows Remote Pilot Pressure and an exhaust path for the captured pilot exhaust.

External Double Remote Pilot Selector Gasket Position

When using C Selector Gasket Position.



DX01 Manifold Assembly Schematic for *External Double Remote Pilot* Selector Gasket Position C

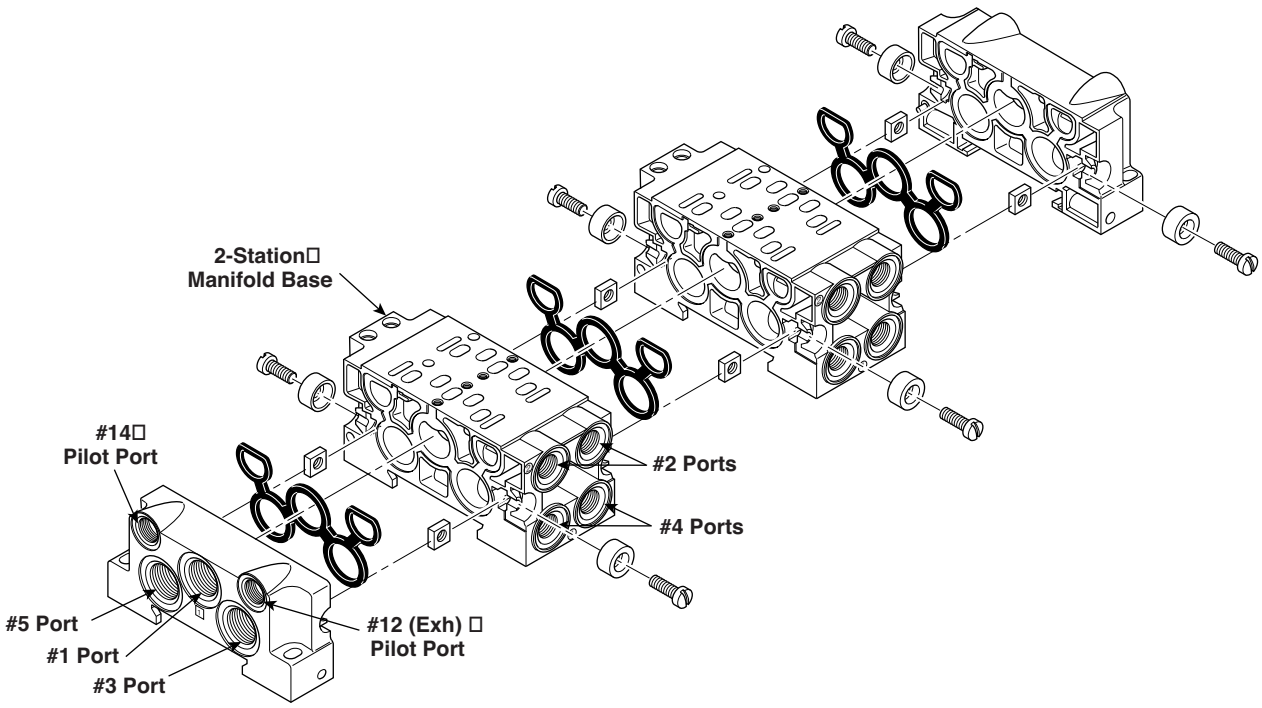


DX02 Manifold Assembly

Ports

1.....Pressure
2.....#2 Cylinder Port, 1 to 2 Flow Path
3..... Cylinder Exhaust Port, 2 to 3 Flow Path
4.....#4 Cylinder Port, 1 to 4 Flow Path
5..... Cylinder Exhaust Port, 4 to 5 Flow Path
14.....#14 Pilot Port
12.....#12 Pilot Port

Torque Specifications: 25 to 35 in-lbs (2.82 to 3.95 Nm)



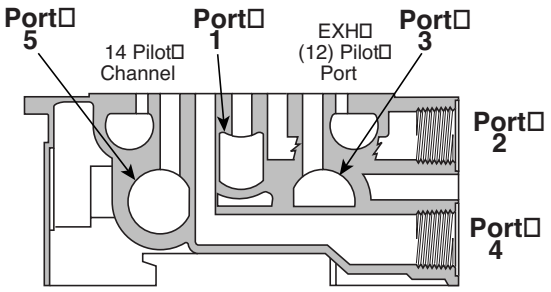
DX02 Shown

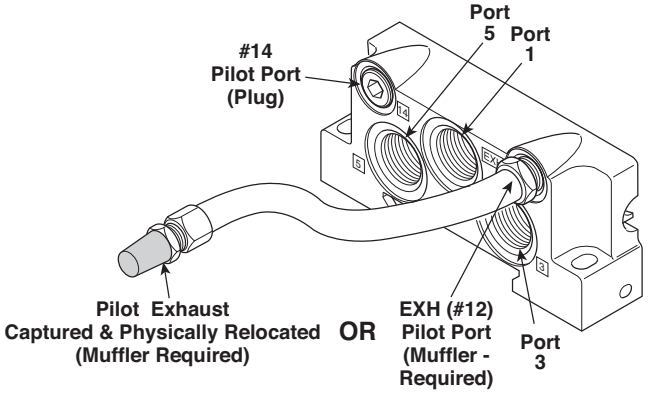
DX 15407-1 Size 02, Manifold Conversion Instructions

Captured
Pilot Exhaust

PJLP02, Size 02*

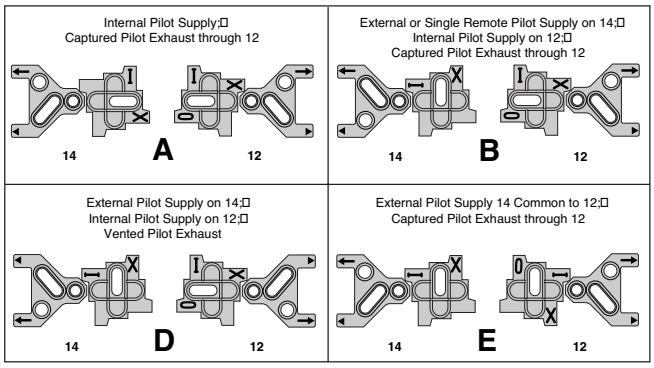
As shown in the illustrations below, the EXH (12) & 14 Pilot Ports are exhausted internally in the valve body into a single chamber labeled EXH on the end plate. When using A, B, D or E Selector Gasket Positions, the EXH (12) Pilot Port is vented with a muffler or micron screen. The 14 Pilot Port is plugged.





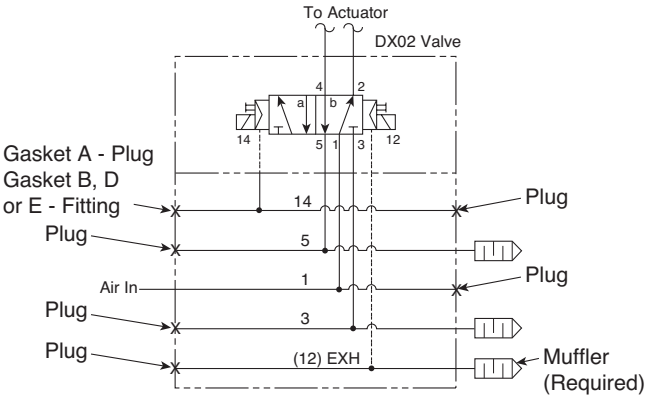
Captured Selector Gasket Positions

When using A, B, D or E, Selector Gasket Positions, the ports must be either plugged or vented with a muffler or micron screen as shown in the schematic at right.



* PJLP02 Manifolds can be used for External Pilot, **NOT** Remote Pilot

DX02 Manifold Assembly Schematic for *Captured* Selector Gasket Positions A, B, D and E



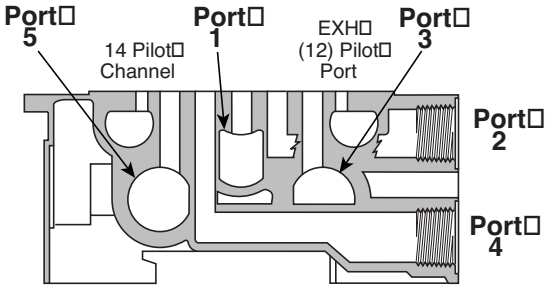
Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

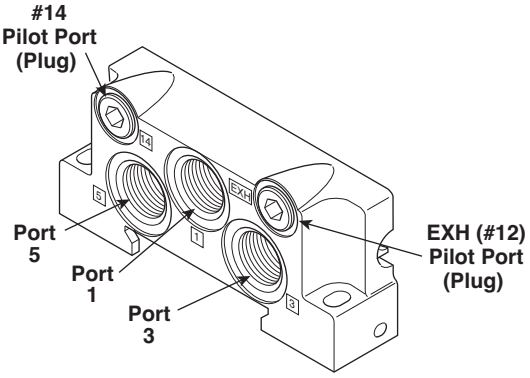
DX 15407-1 Size 02, Manifold Conversion Instructions

Vented
Pilot Exhaust

PJLP02, Size 02

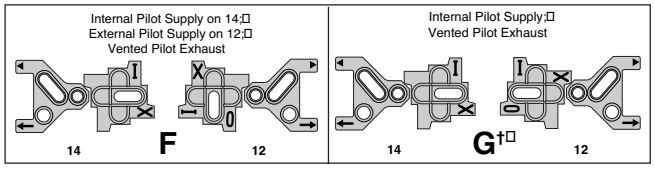
When using F or G Selector Gasket Positions, the EXH (12) Pilot Port and the 14 Pilot Port are plugged and the Pilot Exhaust is vented through the Pilot Adapter.





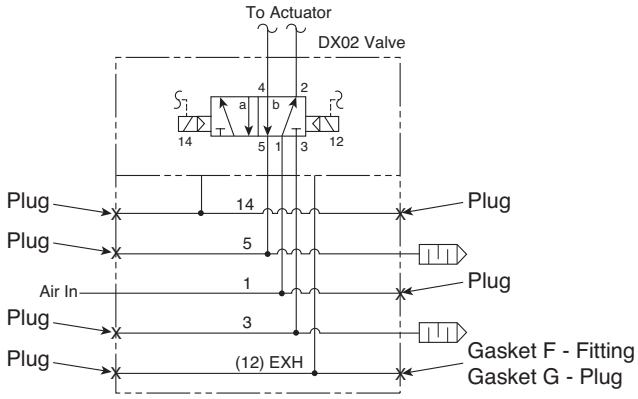
Vented Selector Gasket Positions

When using F or G, Selector Gasket Positions, the ports must be either plugged or vented with a muffler or micron screen as shown in the schematic at right.



† A plug may be inserted in the EXH Port of the PEJ02 & PEJ01 Manifold End Plates or #12 of PL02 & PL01 Subbases.

DX02 Manifold Assembly Schematic for *Vented* Selector Gasket Positions F and G



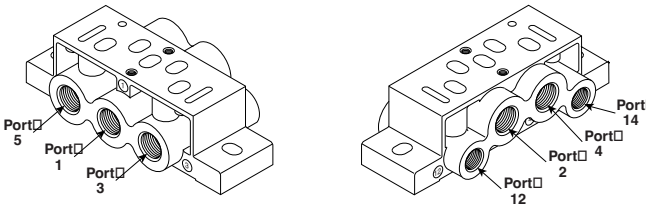
For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Subbase Assembly

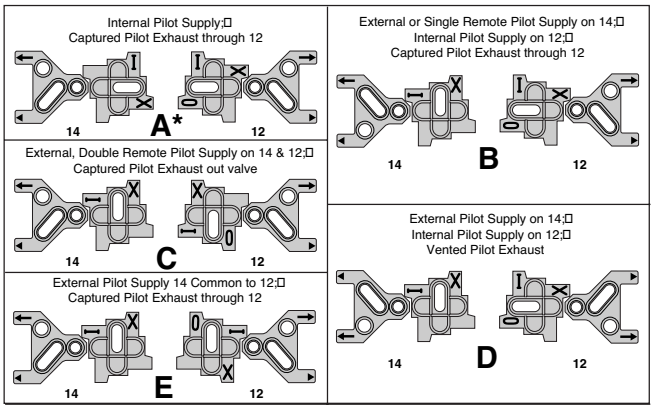
Ports

1.....Pressure
2..... #2 Cylinder Port. 1 to 2 Flow Path.
3.....Cylinder Exhaust Port. 2 to 3 Flow Path.
4..... #4 Cylinder Port. 1 to 4 Flow Path.
5.....Cylinder Exhaust Port. 4 to 5 Flow Path.
14.....#14 Pilot Port
12..... #12 Pilot Port

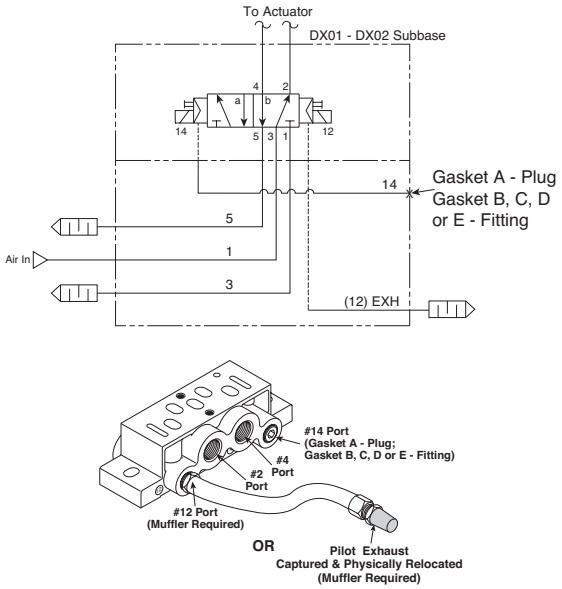


Captured Selector Gasket Positions

When using A, B, C, D or E, Selector Gasket Positions, the ports must be either plugged or vented with a muffler or micron screen as shown in the schematic at right.

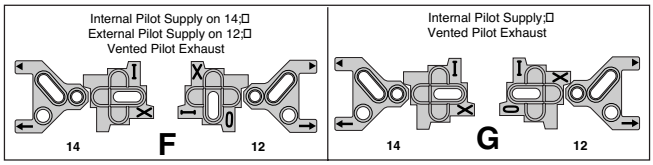


DX02 & DX01 Subbase Assembly Schematic for *Captured* Selector Gasket Positions A, B, C, D and E

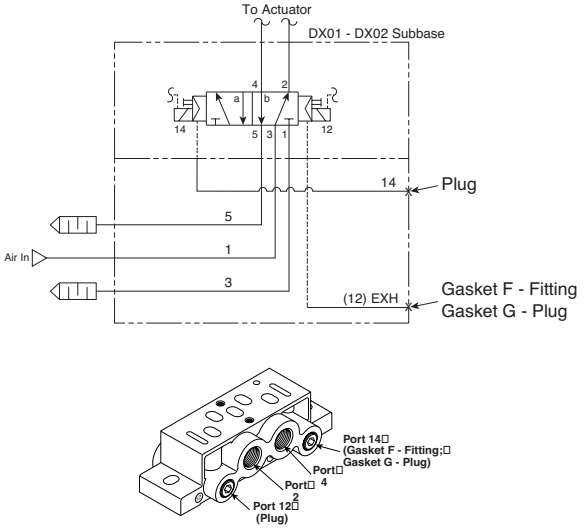


Vented Selector Gasket Positions

When using F or G, Selector Gasket Positions, the ports must be either plugged or vented with a muffler or micron screen as shown in the schematic at right.

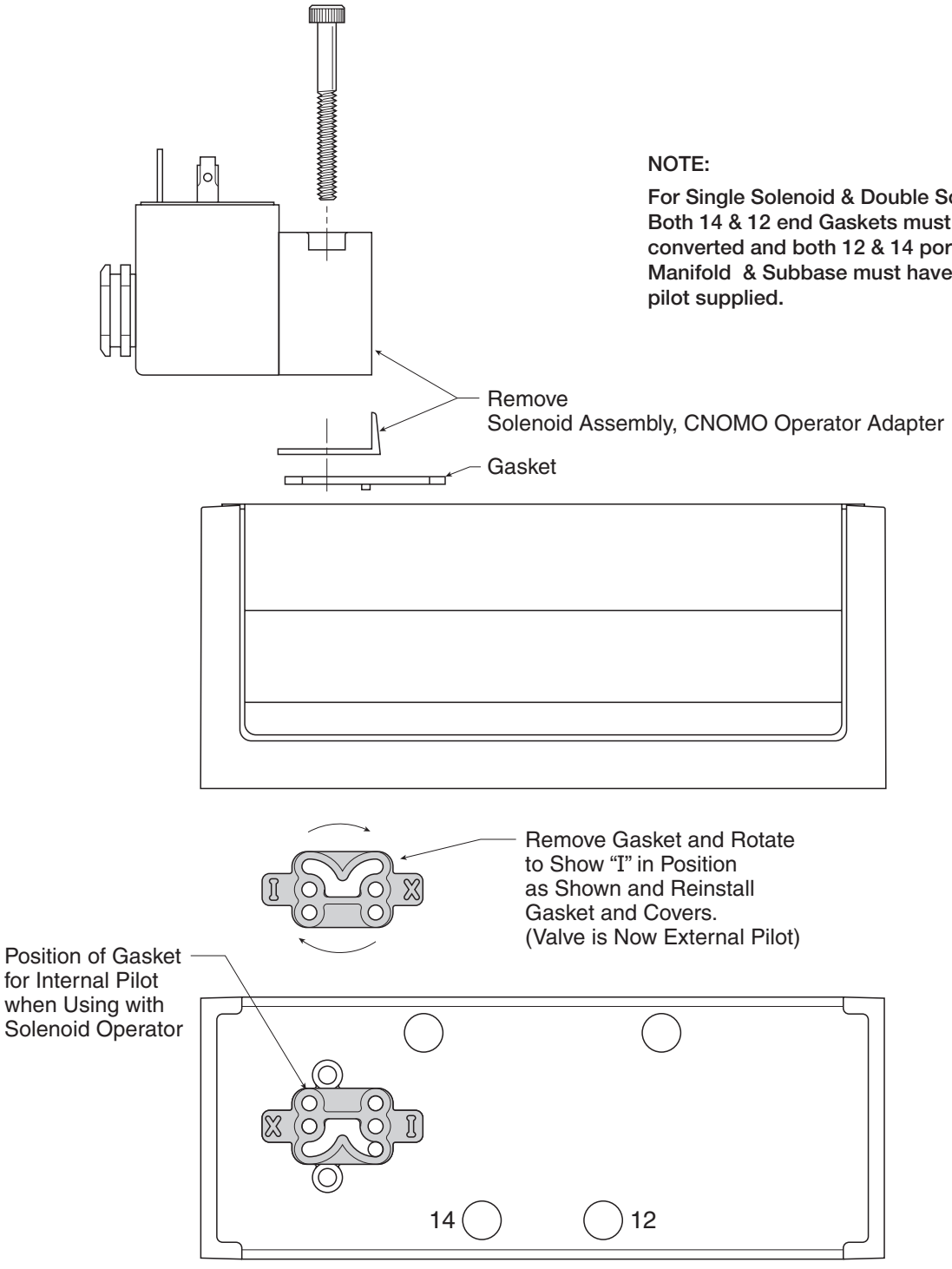


DX02 & DX01 Subbase Assembly Schematic for *Vented* Selector Gasket Positions F and G

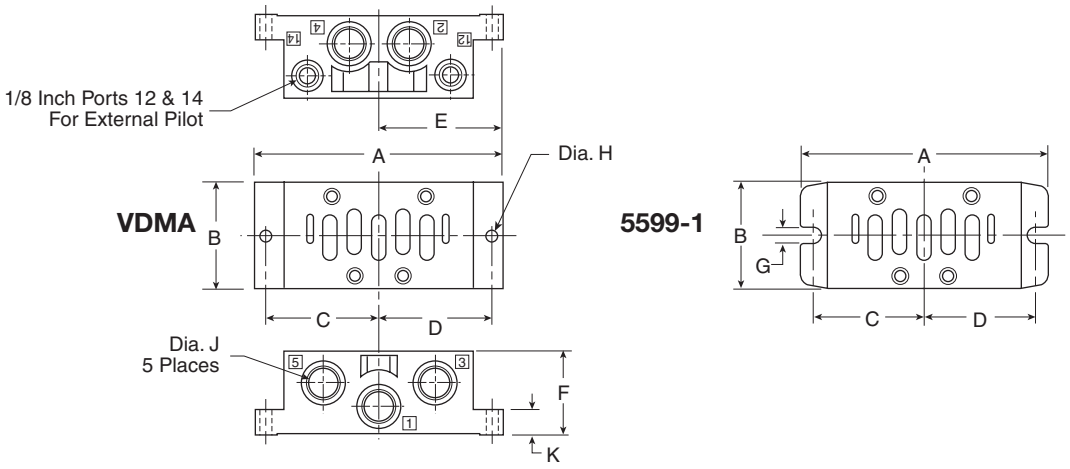


DX1 / DX2 / DX3

Internal / External Pilot Conversion Instructions



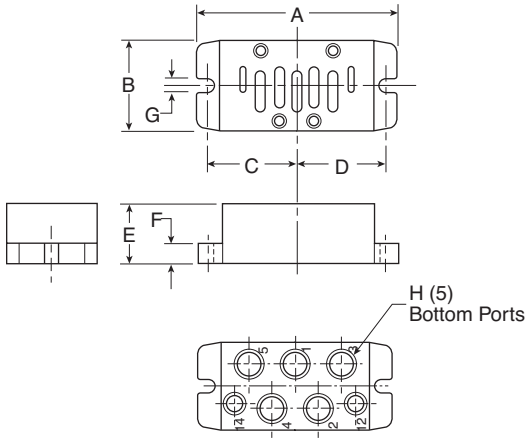
DX1, DX2, DX3 VDMA & 5599-1 Side Ported Subbase



	Series	Part Number	J	A	B	C	D	E	F	G	H	K
VDMA	DX1	**P2N-VS512SD**	BSPP G1/4	4.33 (110)	1.89 (48)	1.93 (49)	1.93 (49)	2.17 (55)	1.26 (32)	—	0.22 (5.5)	0.39 (9.9)
	DX2	**P2N-WS513SD**	BSPP G3/8	4.88 (124)	2.21 (56)	2.21 (56)	2.21 (56)	2.44 (62)	1.57 (40)	—	0.26 (6.6)	0.51 (13)
	DX3	**P2N-YS514SD**	BSPP G1/2	5.87 (149)	2.80 (71)	2.68 (68)	2.68 (68)	2.93 (74.5)	2.05 (52)	—	0.26 (6.6)	0.71 (18)
5599-1	DX1	**PL1-1/4-70**	BSPP G1/4	4.33 (110)	1.81 (46)	1.93 (49)	1.93 (49)	2.17 (55)	1.14 (29)	0.22 (5.5)	—	0.24 (6)
		PL1-1/4-80	NPT 1/4									
	DX2	**PL2-3/8-70**	BSPP G3/8	4.88 (124)	2.21 (56)	2.17 (55)	2.17 (55)	2.44 (62)	1.46 (37)	0.22 (5.5)	—	0.24 (6)
		PL2-3/8-80	NPT 3/8									
	DX3	**PL3-1/2-70**	BSPP G1/2	5.87 (149)	2.80 (71)	2.68 (68)	2.68 (68)	2.93 (74.5)	2.36 (60)	0.26 (6.6)	—	0.71 (18)
		PL3-1/2-80	NPT 1/2									

Inches (mm)

DX1, DX2 5599-1 Bottom Ported Subbase

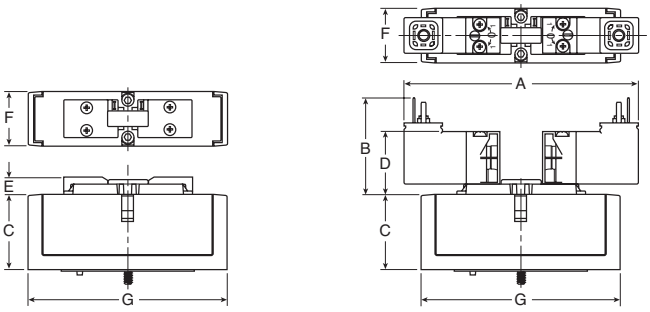


Bottom Ported Subbase

Series	Part Number	H	A	B	C	D	E	F	G
DX1	**PD1-1/4-70**	BSPP G1/4	4.33 (110)	1.81 (46)	1.93 (49)	1.93 (49)	1.14 (29)	0.24 (6)	0.22 (5.5)
	PD1-1/4-80	NPT 1/4							
DX2	**PD2-3/8-70**	BSPP G13/8	4.88 (124)	2.20 (56)	2.17 (55)	2.17 (55)	1.46 (37)	0.24 (6)	0.22 (5.5)
	PD2-3/8-80	NPT 3/8							

Inches (mm)

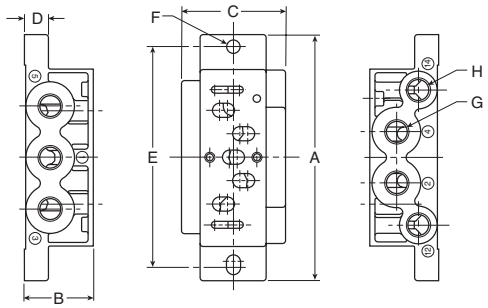
DX01 & DX02 Valve



Series	A	B	C	D	E	F	G
DX02	4.06 (103)	1.61 (41)	1.41 (36)	1.06 (27)	.31 (8)	.71 (18)	3.15 (80)
DX01	4.06 (103)	1.61 (41)	1.41 (36)	1.06 (27)	.31 (8)	1.02 (26)	3.94 (100)

Inches (mm)

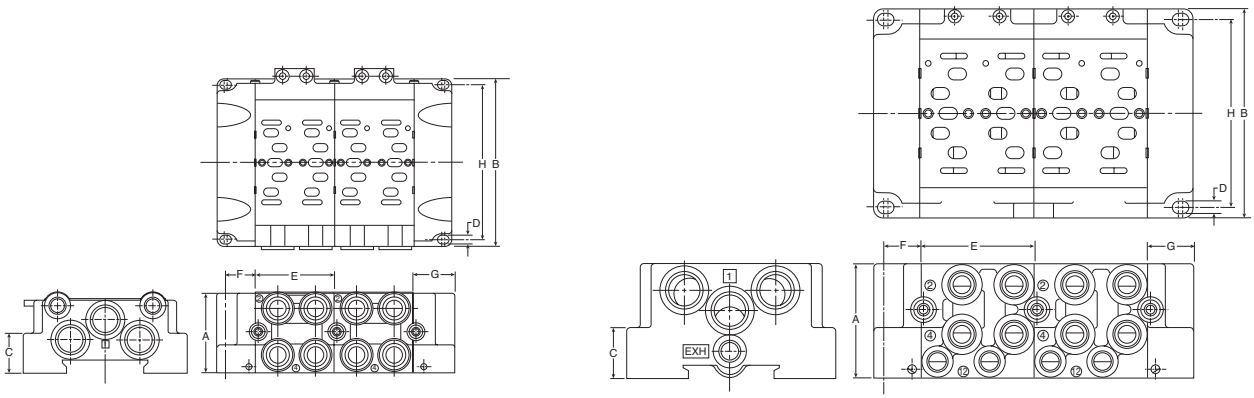
DX01 & DX02 Individual Subbase



Series	Part Number	A	B	C	D	E	F	G	H
DX02	**PL02**	3.15 (80)	.87 (22)	1.06 (27)	.31 (8)	2.76 (70)	.216 Dia. (Ø 5.5)	1/8	M5
DX01	**PL01**	3.94 (100)	1.10 (28)	1.65 (42)	.39 (10)	3.54 (90)	.216 Dia. (Ø 5.5)	1/4	1/8

Inches (mm)

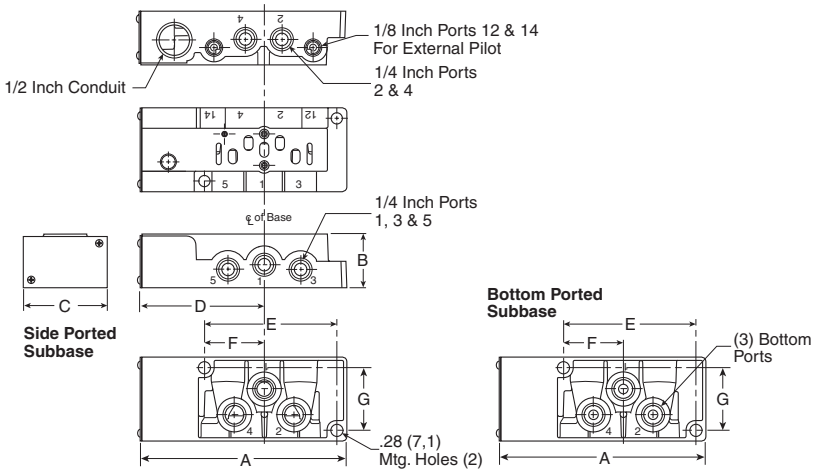
DX01 & DX02 2-Station Manifold Base



Series	Part Number	A	B	C	D	E	F	G	H
DX02	**PJLP02 / PEJ02**	1.52 (38.5)	3.15 (80)	.47 (12)	.165 Dia. (Ø 4.2)	1.50 (38)	.55 (14)	.71 (18)	2.83 (72)
DX01	**PJL01 / PJLP01 / PEJ01**	2.17 (55)	3.94 (100)	.94 (24)	.216 Dia. (Ø 5.5)	2.13 (54)	.67 (17)	.87 (22)	3.54 (90)

Inches (mm)

DX01 15407-1, PS5511 Subbases

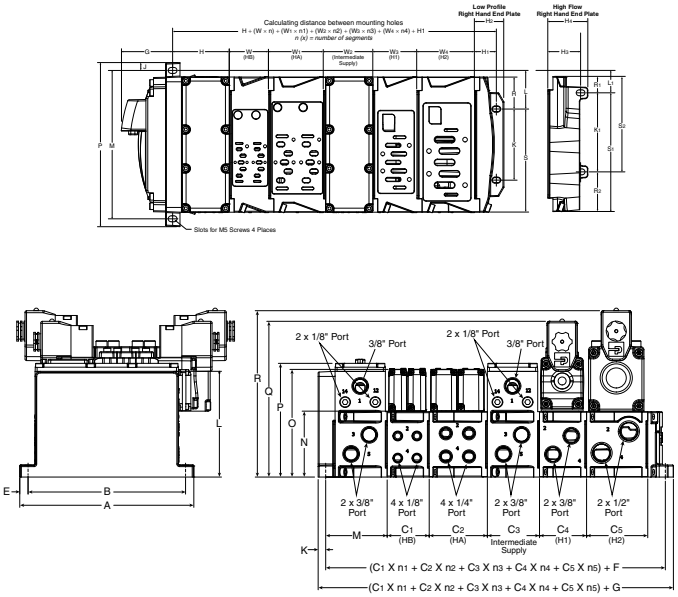


PS5511 Subbase

A	B	C	D
4.88 (124)	1.28 (32.5)	2.00 (50.8)	2.91 (74)
E	**F**	**G**	
1.43 (36.2)	3.16 (80.2)	1.49 (37.9)	

Inches (mm)

DX02 & DX01 15407-1, PS5611 & PS5511 Manifolds

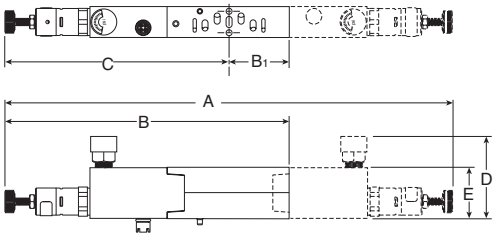


A	B	C1	C2	C3	C4	C5
6.81 (172.95)	6.16 (156.5)	1.65 (41.79)	2.28 (57.79)	2.04 (51.79)	1.84 (46.79)	2.39 (60.79)
D1	**D2**	**D3**	**D4**	**E**	**F**	**G**
1.60 (40.71)	1.60 (40.71)	0.96 (24.3)	1.92 (48.8)	0.32 (8.0)	3.09 (78.58)	4.39 (111.58)
J1	**J2**	**J3**	**K**	**L**	**M**	**N**
0.44 (11.2)	1.92 (48.7)	1.31 (33.3)	0.30 (7.5)	4.14 (105.08)	2.40 (61.08)	1.92 (48.7)
O	**P**	**Q**	**R**			
4.21 (107)	4.45 (113)	6.09 (154.77)	6.51 (165.32)			

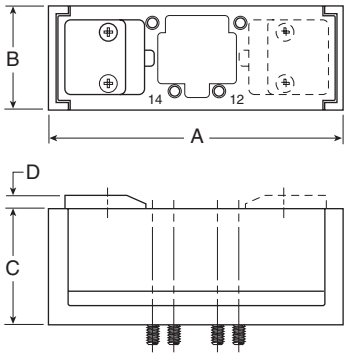
Inches (mm)

Series	Part Number	A	B	B1	C	D	E
DX02	**PS5637**	10.28 (261)	6.14 (156)	1.02 (26)	5.13 (130)	2.60 (66)	1.18 (30)
DX01	**PS5537**	10.00 (254)	6.42 (163)	1.42 (36)	5.00 (127)	2.72 (69)	1.18 (30)

Inches (mm)



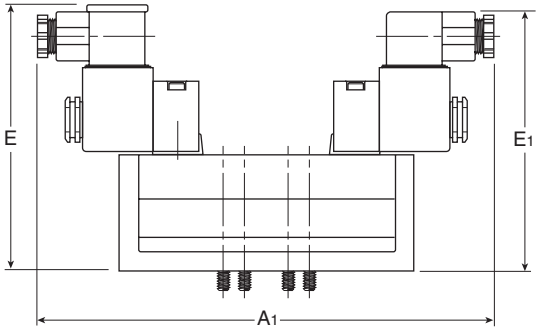
DX1, DX2 & DX3 Air Operated Valve



Series	A	B	C	D
DX1	4.72 (120)	1.65 (42)	1.85 (47)	.20 (5)
DX2	5.51 (140)	2.13 (54)	2.30 (58.5)	.20 (5)
DX3	6.69 (170)	2.68 (68)	2.80 (71)	.20 (5)

Inches (mm)

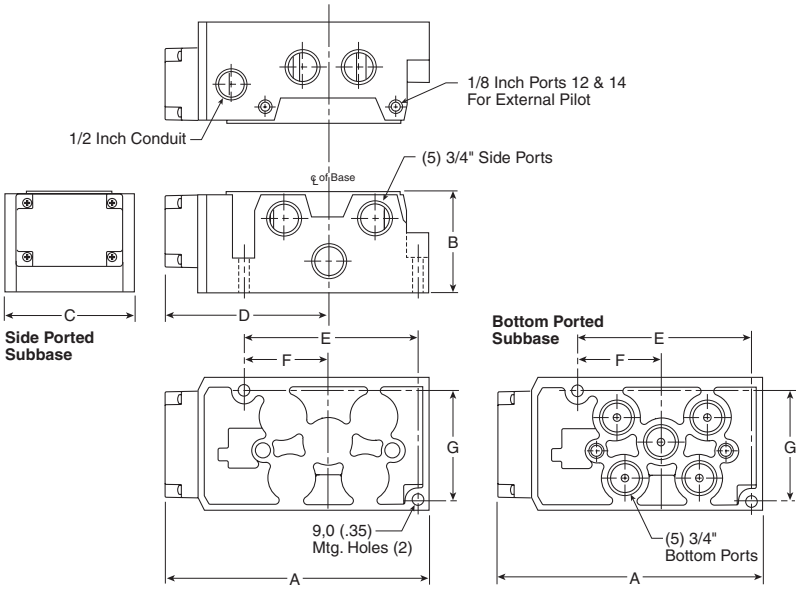
DX1, DX2 & DX3 Solenoid Operated Valve



Series	A_1	E	E_1	E_2
DX1	7.97 (202.5)	4.43 (112.5)	4.69 (119)	4.53 (115)
DX2	8.58 (218)	4.86 (123.5)	5.12 (130)	4.98 (126.5)
DX3	9.27 (235.5)	5.35 (136)	5.61 (142.5)	5.47 (139)

Inches (mm)

DX3 Subbase



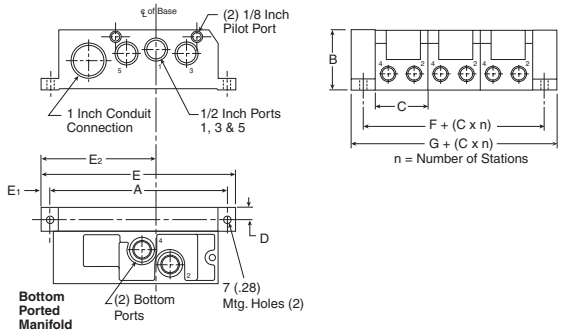
PS4211 Subbase

A	B	C	D
7.90 (201)	2.96 (75)	3.90 (990)	4.92 (125)
E	**F**	**G**	
5.14 (131)	2.50 (64)	3.24 (82)	

Inches (mm)

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

DX1 Manifold



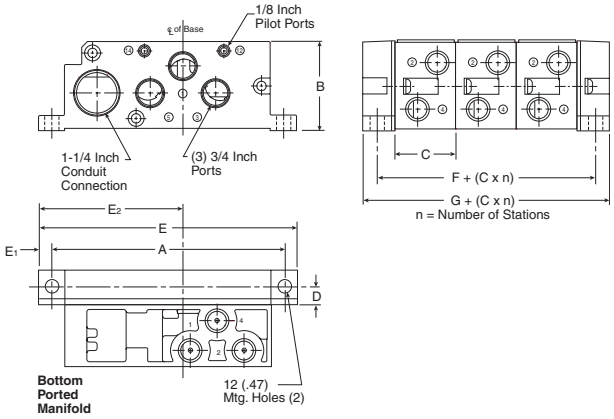
PS4011 Manifold

A	B	C	D	E
6.50 (165)	2.20 (56)	1.93 (49)	.44 (11)	7.15 (182)

E1	E2	F	G
.33 (8)	4.25 (108)	.87 (22)	1.80 (46)

Inches (mm)

DX2 Manifold



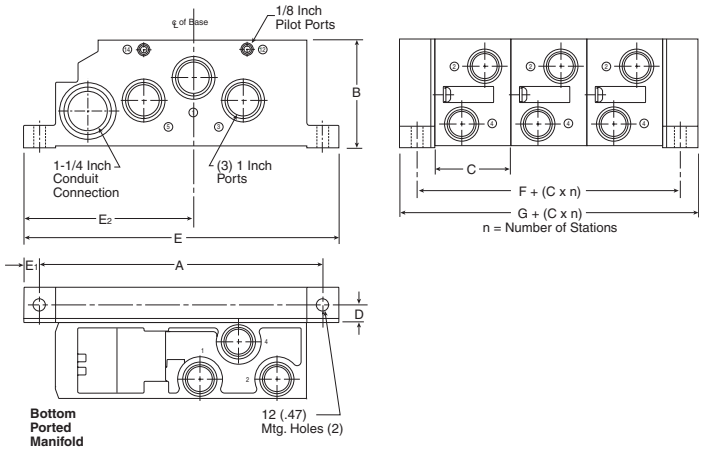
PS4111 Manifold

A	B	C	D	E
8.46 (215)	3.35 (85)	2.20 (56)	.59 (15)	9.41 (239)

E1	E2	F	G
.47 (12)	5.28 (134)	1.18 (30)	2.36 (60)

Inches (mm)

DX3 Manifold



PS4211 Manifold

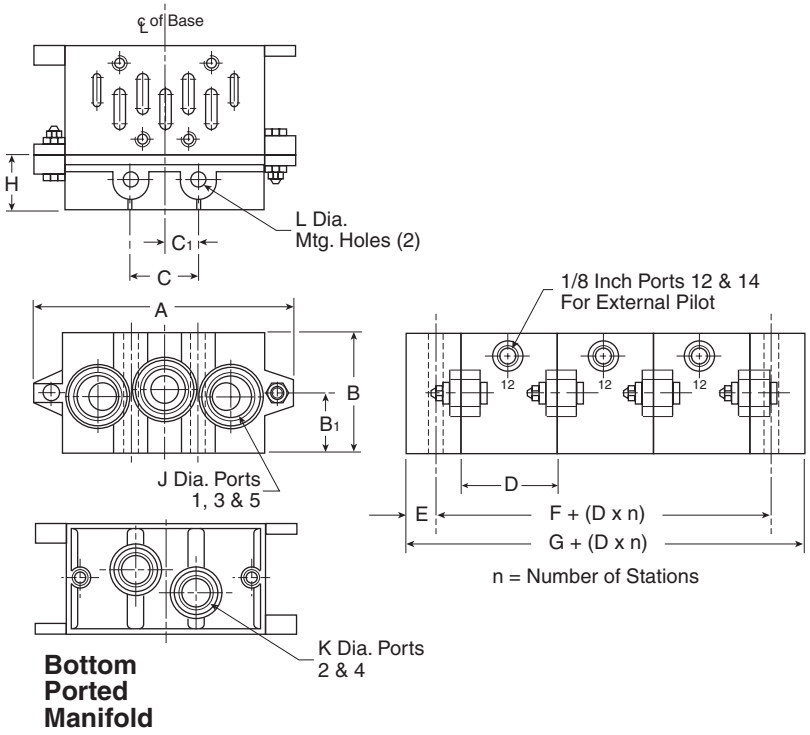
A	B	C	D	E
10.41 (265)	4.13 (105)	2.80 (71)	.65 (175)	11.61 (295)

E1	E2	F	G
.59 (15)	6.26 (159)	1.30 (33)	2.60 (63)

Inches (mm)

DX1, DX2, DX3 5599-1 VDMA

Form C Manifold & Form D End Plates



VDMA Form C Manifold

Series	Part Number	A	B	B1	D	E	F	G	J	K
DX1	**P2N-VM512MB**	4.33 (110)	1.81 (46)	0.94 (24)	1.69 (55)	0.43 (22)	0.87 (22)	1.73 (44)	BSPP G3/8	BSPP G1/4
DX2	**P2N-WM513MB**	5.31 (135)	1.85 (47)	0.94 (24)	2.20 (56)	0.51 (13)	1.02 (26)	2.05 (52)	BSPP G1/2	BSPP G3/8
DX3	**P2N-YM514MB**	7.48 (190)	2.20 (56)	1.34 (34)	2.80 (71)	0.59 (15)	1.18 (30)	2.36 (60)	BSPP G1/2	BSPP G1/2

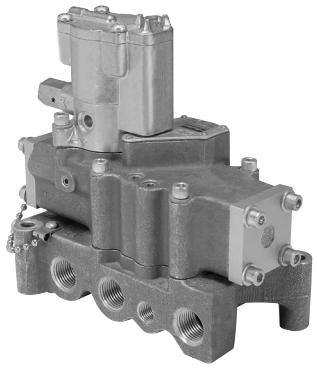
VDMA Form D End Plate

Series	Part Number	A	B	B1	C	C1	H	L
DX1	**P2N-VM513ES**	4.33 (110)	1.81 (46)	0.94 (24)	1.10 (28)	0.55 (14)	0.87 (22)	0.28 (7)
DX2	**P2N-WM514ES**	5.31 (135)	1.85 (47)	0.94 (24)	1.38 (35)	0.69 (18)	1.02 (26)	0.34 (9)
DX3	**P2N-YM518ES**	7.48 (190)	2.20 (56)	1.34 (34)	2.05 (52)	1.03 (26)	1.18 (30)	0.47 (12)

Inches (mm)

Valvair II Series

- Full air operation for fastest response
- "Plug-in" option simplifies maintenance and installation Reduces downtime. No wiring or plumbing to disturb
- "Direct pipe" design for economy and performance
- Variety of operators available; direct conduit, (JIC) junction box, NEMA 4, hazardous duty, (UL, CSA), and remote air pilot
- Field convertible to external pilot supply for vacuum or other services
- Synthetic rubber o-ring seals are specially compounded for minimum compression and friction for superior wear and abrasion resistance
- Precision ground spool "floats" on o-ring seals. Closed center cross-over design saves air
- General Purpose Approvals
  - CSA - Canadian Standards Association File number 42024
- Hazardous Duty Approvals
  - UL - Underwriters Laboratories, Inc. File number E42542 Category Y107
  - CSA - Canadian Standards Association File number 24349



Material specifications

Manifolds & subbases	Aluminum alloy	
Other seals	Nitrile	
Resilient seals: in valve body		
Dynamic	Polyurethane base on 3/8" basic valves*	
Static / dynamic	Nitrile base w / 12% Molybdenum Disulphide on 1/4" & 1/2" basic valves	
Shock pads	Polyurethane	
Solenoid bodies	Plated zinc alloy	
Internal components	Corrosion resistant steel	
Resilient seals	Standard service	Nitrile
	Special service (continuous duty)	Fluorocarbon & Silicone
Other seals	Nitrile	
Coil	Class "B" epoxy encapsulated (Class "H" also available on some models, consult supplier)	
Valve bodies	Aluminum alloy	
Valve spacers	Brass	
Valve spool	Aluminum alloy with special coating on 3/8" basic valves*.	
	Hard chrome plated AISI type 416 stainless steel on 1/4" & 1/2" basic valves.	

* These materials are specially designed for valves used on non-lubricated service

Operating information

Pressure range for solenoid operated valves

Media	Internal pilot supply 1/4"	3/8"	1/2"	External pilot supply 1/4"		3/8"	1/2"	1"
Air	35-140* PSIG			N.A.	Main	0-250 PSIG		
					Pilot	35-140* PSIG		
Vacuum	do not use			N.A.	Main	within 1 Hg of perfect		
					Pilot	35-140* PSIG		
Other	Consult supplier							

* 200 PSIG solenoid is optional (consult supplier).

Pressure range for remote pilot operated valves

Media		Valve type Single	Double & 3-position
Air	Main	35-250 PSIG	0-250 PSIG
	Pilot	35-200 PSIG	35-200 PSIG
Vacuum	Main	Do not use	Within 1" Hg of perfect
	Pilot	Do not use	35-200 PSIG
Other	Consult supplier		

Ambient temperature – standard service solenoid operator

Minimum	Maximum Intermittent duty	Continuous duty
0°F	125°F	100°F

Special service (continuous duty) solenoid operator

0°F	125°F	125°F

Ambient temperature – remote pilot operated valves

0°F	200°F

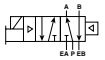
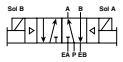
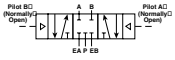
As the above chart indicates, Standard Duty Solenoids may be used on continuous duty but ambient temperature is de-rated.

In some cases, Special Service Solenoids may be rated for higher ambient temperatures (consult supplier).

⚠ **CAUTION:**
If it is possible that the ambient temperature may fall below freezing, the medium must be moisture free to prevent internal damage and unpredictable behavior.

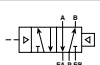
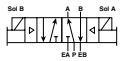
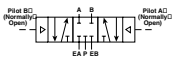
☐ Most popular.

3/8" Basic plug-in solenoid valve only with light

Symbol	Type	Cv	Operator	Voltage	Non-Locking	Locking
	4-way, 2-position, spring return	4.8	Single solenoid	24 VDC	**L6753810249**	**L6753910249**
				110 VAC	**L6753810253**	**L6753910253**
	4-way, 2-position	4.8	Double solenoid	24 VDC	**L6553810249**	**L6553910249**
				110 VAC	**L6553810253**	**L6553910253**
	4-way, 3-position, all ports blocked	4.8	Double solenoid	24 VDC	**L6653821149**	**L6653921149**
				110 VAC	**L6653821153**	**L6653921153**
	4-way, 3-position, center exhaust	4.8	Double solenoid	24 VDC	**L6653822149**	**L6653922149**
				110 VAC	**L6653822153**	**L6653922153**
	4-way, 3-position, pressure center	4.8	Double solenoid	24 VDC	**L6653823149**	**L6653923149**
				110 VAC	**L6653823153**	**L6653923153**

* Order subbase or manifold seperately.

3/8" Basic plug-in remote pilot valve only

Symbol	Type	Cv	Operator	Part Number
	4-way, 2-position, spring return	4.8	Single remote	**L67431102**
	4-way, 2-position	4.8	Double remote	**L65431102**
	4-way, 3-position, all ports blocked	4.8	Double remote	**L66431211**
	4-way, 3-position, center exhaust	4.8	Double remote	**L66431221**
	4-way, 3-position, pressure center	4.8	Double remote	**L66431231**

* Order subbase or manifold seperately.

3/8" Valve Subbase and Manifolds

Subbase

Manifold

Cv	Port	Subbase † (side ports)	Manifolds † (end & bottom ports)
4.8	3/8"	**K022090**	**K142230**
4.8	1/2"	**K022091**	**K142231**
4.8	3/4"	**K022101**	**K142270**

† Manifolds include mounting hardware, except for port adapters. Subbase includes valve mounting hardware.

Plug-in Subbase, 3/8" Basic

K022090 .....Inlet & Cylinder Ports 3/8" NPTF
Exhaust ports ..... 1/2" NPTF
K022091 .....Inlet & Cylinder Ports 1/2" NPTF
Exhaust ports ..... 1/2" NPTF
K022101 .....Inlet & Cylinder Ports 3/4" NPTF
Exhaust port ..... 3/4" NPTF
Conduit port ..... 1/2" NPTF

Note: Subbase assemblies include mounting hardware.

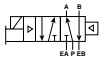
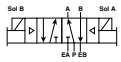
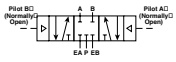
Plug-in Manifold, 3/8" Basic

K142230 .....Cylinder ports 3/8" NPTF
K142231 .....Cylinder ports 1/2" NPTF
K142270 .....Cylinder ports 3/4" NPTF
Exhaust port..... 1" NPTF
Inlet port..... 1" NPTF
Conduit port.....1-1/4" NPTF

Note: Manifold assemblies include mounting hardware.

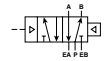
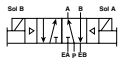
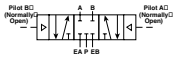
Most popular.

1" Basic plug-in solenoid valve only with light

	Symbol	Type	Cv	Operator	Voltage	Non-Locking	Locking
		4-way, 2-position, spring return	11.3	Single solenoid	24 VDC	**L6758810249**	**L6758910249**
					110 VAC	**L6758810253**	**L6758910253**
		4-way, 2-position	11.3	Double solenoid	24 VDC	**L6558810249**	**L6558910249**
					110 VAC	**L6558810253**	**L6558910253**
		4-way, 3-position, all ports blocked	11.3	Double solenoid	24 VDC	**L6658821149**	**L6658921149**
					110 VAC	**L6658821153**	**L6658921153**
		4-way, 3-position, center exhaust	11.3	Double solenoid	24 VDC	**L6658822149**	**L6658922149**
					110 VAC	**L6658822153**	**L6658922153**
		4-way, 3-position, pressure center	11.3	Double solenoid	24 VDC	**L6658823149**	**L6658923149**
					110 VAC	**L6658823153**	**L6658923153**

* Order subbase seperately.

1" Basic plug-in valve remote pilot valve only

	Symbol	Type	Cv	Operator	Part Number
		4-way, 2-position, spring return	11.3	Single remote	**L67481102**
		4-way, 2-position	11.3	Double remote	**L65481102**
		4-way, 3-position, all ports blocked	11.3	Double remote	**L66481211**
		4-way, 3-position, center exhaust	11.3	Double remote	**L66481221**
		4-way, 3-position, pressure center	11.3	Double remote	**L66481231**

* Order subbase seperately.

1" Valve Subbase

Subbase

Cv	Port	Subbase † (side ports)
11.3	1"	**K022095**

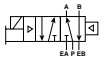
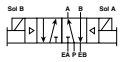
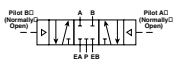
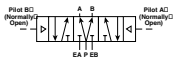
† Subbase includes valve mounting hardware.

Plug-in Subbase, 1" Basic

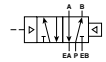
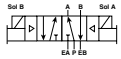
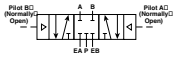
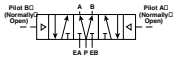
K022095 ..... Inlet & Cylinder Ports 1" NPTF
Exhaust ports ..... 1-1/4" NPTF
Conduit port ..... 1/2" NPTF

Note: Subbase assemblies include mounting hardware.

3/8" Basic direct pipe ported valve only. Solenoid junction box with light, 1/2" NPT ports

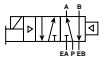
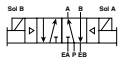
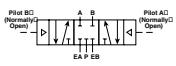
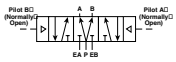
	Symbol	Type	Cv	Operator	Voltage	Non-Locking	Locking
		4-way, 2-position, spring return	4.8	Single solenoid	24 VDC	**L7054810249**	**L7054910249**
					110 VAC	**L7054810253**	**L7054910253**
		4-way, 2-position	4.8	Double solenoid	24 VDC	**L6854810249**	**L6854910249**
					110 VAC	**L6854810253**	**L6854910253**
		4-way, 3-position, all ports blocked	4.8	Double solenoid	24 VDC	**L6954821149**	**L6954921149**
					110 VAC	**L6954821153**	**L6954921153**
		4-way, 3-position, center exhaust	4.8	Double solenoid	24 VDC	**L6954822149**	**L6954922149**
					110 VAC	**L6954822153**	**L6954922153**
		4-way, 3-position, pressure center	4.8	Double solenoid	24 VDC	**L6954823149**	**L6954923149**
					110 VAC	**L6954823153**	**L6954923153**

3/8" Basic direct pipe ported remote pilot valve only, 1/2" NPT ports

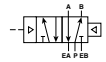
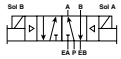
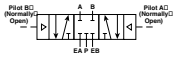
	Symbol	Type	Cv	Operator	Part Number
		4-way, 2-position, spring return	4.8	Single remote	**L70441102**
		4-way, 2-position	4.8	Double remote	**L68441102**
		4-way, 3-position, all ports blocked	4.8	Double remote	**L69441211**
		4-way, 3-position, center exhaust	4.8	Double remote	**L69441221**
		4-way, 3-position, pressure center	4.8	Double remote	**L69441231**

☐ **Most popular.**

1" Basic direct pipe ported valve only. Solenoid junction box with light, 1" NPT ports

	Symbol	Type	Cv	Operator	Voltage	Non-Locking	Locking
		4-way, 2-position, spring return	11.3	Single solenoid	24 VDC	**L7058810249**	**L7058910249**
					110 VAC	**L7058810253**	**L7058910253**
		4-way, 2-position	11.3	Double solenoid	24 VDC	**L6858810249**	**L6858910249**
					110 VAC	**L6858810253**	**L6858910253**
		4-way, 3-position, all ports blocked	11.3	Double solenoid	24 VDC	**L6958821149**	**L6958921149**
					110 VAC	**L6958821153**	**L6958921153**
		4-way, 3-position, center exhaust	11.3	Double solenoid	24 VDC	**L6958822149**	**L6958922149**
					110 VAC	**L6958822153**	**L6958922153**
		4-way, 3-position, pressure center	11.3	Double solenoid	24 VDC	**L6958823149**	**L6958923149**
					110 VAC	**L6958823153**	**L6958923153**

1" Basic direct pipe ported remote pilot valve only. 1" NPT ports

	Symbol	Type	Cv	Operator	Part Number
		4-way, 2-position, spring return	11.3	Single remote	**L70481102**
		4-way, 2-position	11.3	Double remote	**L68481102**
		4-way, 3-position, all ports blocked	11.3	Double remote	**L69481211**
		4-way, 3-position, center exhaust	11.3	Double remote	**L69481221**
		4-way, 3-position, pressure center	11.3	Double remote	**L69481231**

Lubricated Non-Lubricated Service
2-position, Plug-In, 3/8" & 1" Basic Size

L	67	5	3	9	10	2	53

Type

Double	**65**
Single	**67**

Operator

Remote	**4**
Solenoid	**5**

Size

3/8" Basic	**3**
1" Basic	**8**

Operator options

Solenoid (basic) or Remote	1
Solenoid with Locking Override	3
Solenoid w/Light (120VAC, 24VDC) & Non-Locking Override	**8**
Solenoid w/Light (120VAC, 24VDC) & Locking Override	**9**

Enclosure "Class"

10	**Standard (NEMA 1 & 12) or Remote**

Duty Cycle

2	**Standard Service, Solenoid or Remote**
4	Continuous Service Solenoid

Voltage & Frequency

	60Hz	50Hz	DC
45			12
49			**24**
53	**120**	**110**	
57	240	220	
Blank	Remote		

Lubricated or Non-Lubricated Service
3-position, Plug-In, 3/8" & 1" Basic Size

L	66	5	3	9	21	1	53

Type

Double	**66**

Operator

Remote	**4**
Solenoid	**5**

Size

3/8" Basic	**3**
1" Basic	**8**

Operator options

Solenoid (basic) or Remote	1
Solenoid with Locking Override	3
Solenoid w/Light (120VAC, 24VDC) & Non-Locking Override	**8**
Solenoid w/Light (120VAC, 24VDC) & Locking Override	**9**

Enclosure "Class"

21	**All Ports Blocked In Neutral (NEMA 1 & 12 enclosure) or Remote**
22	Cyl. Ports Open to Exhaust in Neutral (NEMA 1 & 12 enclosure) or Remote
23	Cyl. Ports Open to Inlet in Neutral (NEMA 1 & 12 enclosure) or Remote

Duty Cycle

1	**Standard Service, Solenoid or Remote**
5	Continuous Service Solenoid

Voltage & Frequency

	60Hz	50Hz	DC
45			12
49			**24**
53	**120**	**110**	
57	240	220	
Blank	Remote		

☐ Most popular.

Lubricated or Non-Lubricated Service
2-position, Direct Pipe Ported, 3/8" & 1" Basic Size

L	70	5	3	9	10	2	53	—

Type	
Double	**68**
Single	**70**

Operator	
Remote	**4**
Solenoid	**5**

Size	
3/8" NPT Inlet & Cylinder 1/2" NPT Exhaust	3
1/2" NPT Inlet, Cylinder & Exhaust	**4**
1" NPT Inlet & Cylinder 1-1/4" NPT Exhaust	**8**
1-1/4" NPT Inlet Cylinder & Exhaust	9*

* Not available operator option 4 - Remote pilot.

Operator options	
Solenoid (basic) or remote	1
Solenoid with locking override	3
Solenoid w/ junction box & locking override	6
Solenoid w/ junction box & light (120VAC, 24VDC) & non-locking override	**8**
Solenoid w/ junction box & light (120VAC, 24VDC) & locking override	**9**

Enclosure "Class"	
10	**Standard (NEMA 1 & 12) or Remote**
60*†	Hazardous Duty (NEMA 7 & 9)
80†	NEMA 4

Duty Cycle	
2	**Standard Service, Solenoid or Remote**
4	Continuous Service Solenoid

Voltage & Frequency			
	60Hz	**50Hz**	**DC**
45			12
49			**24**
53	**120**	**110**	
57	240	220	
Blank	Remote		

Lead Length	
Blank	**19" (Standard)**

* Voltage 49 / 53 only.
† Use with operator options 1 & 3 only.

Lubricated or Non-Lubricated Service
3-position, Direct Pipe Ported, 3/8" & 1" Basic Size

L	69	5	3	9	21	1	53	—

Type	
Double	**69**

Operator	
Remote	**4**
Solenoid	**5**

Size	
3/8" NPT Inlet & Cylinder 1/2" NPT Exhaust	3
1/2" NPT Inlet, Cylinder & Exhaust	**4**
1" NPT Inlet & Cylinder 1-1/4" NPT Exhaust	**8**
1-1/4" NPT Inlet Cylinder & Exhaust	9*

* Not available operator option 4 - Remote pilot.

Operator Options	
Solenoid (basic) or Remote	1
Solenoid with Locking Override	3
Solenoid w/ Junction Box & Locking Override	6
Solenoid w/ Junction Box & Light (120VAC, 24VDC) & Non-Locking Override	**8**
Solenoid w/ Junction Box & Light (120VAC, 24VDC) & Locking Override	**9**

Enclosure "Class"	
All Ports Blocked in Neutral	
21	**Standard (NEMA 1 & 12) or Remote**
71*†	Hazardous Duty (NEMA 7 & 9)
91†	NEMA 4
Cylinder Ports Open to Exhaust in Neutral	
22	Standard (NEMA 1 & 12) or Remote
72*†	Hazardous Duty (NEMA 7 & 9)
92†	NEMA 4
Cylinder Ports Open to Inlet in Neutral	
23	Standard (NEMA 1 & 12) or Remote
73*†	Hazardous Duty (NEMA 7 & 9)
93†	NEMA 4

Duty Cycle	
1	**Standard Service, Solenoid or Remote**
5	Continuous Service Solenoid

Voltage & Frequency			
	60Hz	**50Hz**	**DC**
45			12
49			**24**
53	**120**	**110**	
57	240	220	
Blank	Remote		

Lead Length	
Blank	**19" (Standard)**

* Voltage 49 / 53 only.
† Use with operator options 1 & 3 only.

Most popular.

Modular Pneumatic Controls Plug-In Sandwich Block Design for Modular Port Regulation

These modular regulators assemble to any 3/8" basic valve interface pattern.

Port Regulation Made Easy

Place the sandwich on the manifold or subbase, tighten the four securing screws, then plug the valve into the sandwich and tighten its securing screws to complete the assembly.

Within minutes, these modular components can be installed in new, or used to improve existing manifold systems, without disturbing wiring or air connections.

3-Configurations

1. **Common Port Regulation** - A common regulated pressure is selected to both cylinder ports.
2. **Single Port Regulation** - Line pressure is available to one cylinder port, while a single regulated pressure is selected to the other cylinder port.
3. **Independent Port Regulation** - Two independently regulated pressures selected to the cylinder ports.

NOTE: When using single or independent port sandwich regulators, be aware that:

1. Cylinder port outlets are reversed.
2. 3-Position, cylinder ports open to exhaust and cylinder ports open to inlet functions are reversed. To produce a cylinder ports open to exhaust function, order valve with cylinder ports open to inlet. To produce a cylinder ports open to inlet function, order valve with cylinder ports open to exhaust.

Manual or Remote secondary pressure adjustment.

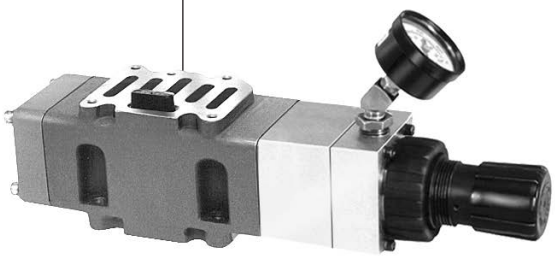
Three Pressure Ranges are standard for manual units:

1-30 PSIG
1-60 PSIG
2-125 PSIG

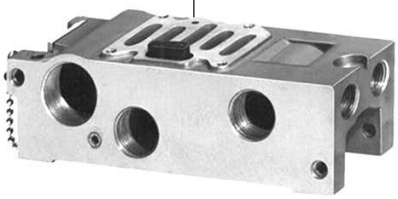
Range for Remote: 0-140 PSIG

Gauges are furnished standard; liquid filled gauges are optional.

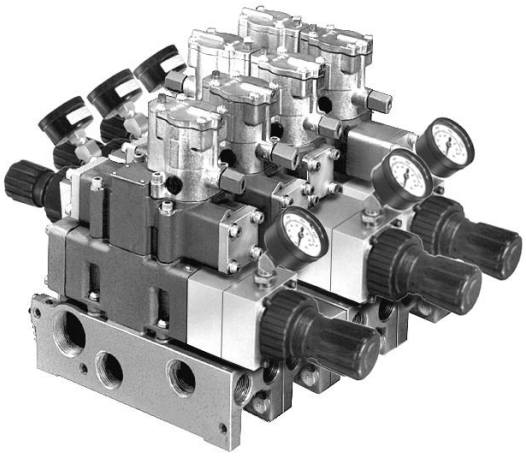
Solenoid Valve Assembly



Regulator Assembly



Manifold



Typical Assembly

Function - Common Port Regulations

This modular air pressure regulator assembly, installed between a 3/8" basic, 4-Way valve and subbase, supplies regulated pressures to both cylinder ports.

Valve must be converted to external pilot supply.

Features

Regulated pressure output from the valve is adjusted by knob on the manually set model or by air pressure signal applied to the regulator pilot port on the remotely set model.

Furnished with pressure gauge as standard.

Assembly "A" (Shown at right) or Assembly "B" may be specified as a matter of convenience, or to satisfy space limitations.*

Pressure Range Options

Maximum Supply Pressure ..... 140 PSIG

Output Pressure Range ..... 1 - 60 PSIG
2 - 125 PSIG

Operating Temperature Range

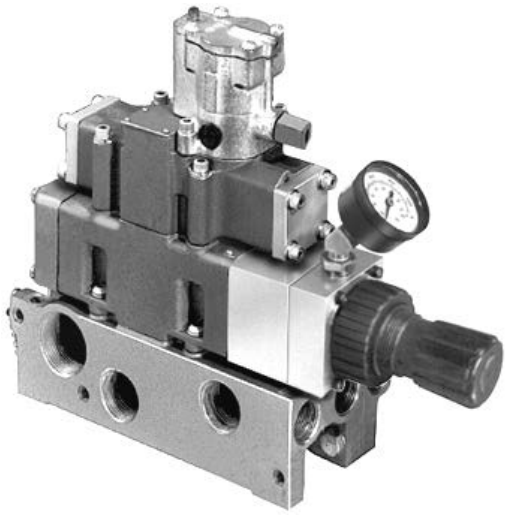
32°F (0°C) to 175°F (79°C)

How To Order

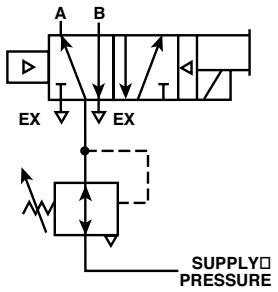
1. Select type of adjustment.
2. Select pressure range.
3. Select assembly style.

Example: Manual adjusted.
1-60 PSIG with regulator positioned over the junction box.

Model No. L55408302C

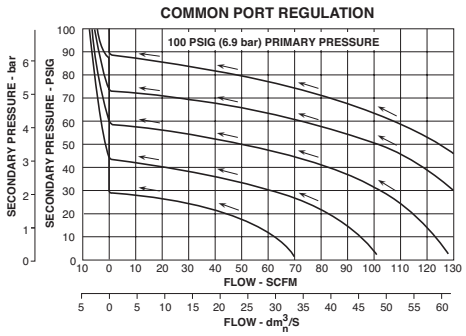


Assembly "A"



Regulated Pressure at Both "A" & "B"

Relief and Flow Characteristics



The above curves illustrate flow characteristics through an assembled valve, air regulator, and base (or modular manifold) unit.

Pressure Adjustment	Pressure Range PSIG	Model Number	
		Assembly "A"	Assembly "B" *
Manual	1 - 60	**L55402308C**	**L55408302C**
	2 - 125	**L55403308C**	**L55408303C**
Remote	0 - 140	**L55411308C**	**L55408311C**

* Assembly "A" places the regulator on the end opposite the electrical junction box. Assembly "B" places the regulator over the electrical junction box.

See parts and accessories for gauges.

Function - Single Port Regulation

This modular air pressure regulator assembly, when installed between a 3/8" basic, 4-Way valve and subbase or modular manifold, supplies one or more regulated pressures to one of the valve cylinder ports and supply pressure to the other cylinder port.

On Single Port Cylinder Port Regulation Units controlled by a single solenoid valve, cylinder port “B” is the normally open cylinder port. The solenoid is energized to open cylinder Port “A”. On double solenoid operated valves, energizing solenoid “B” opens cylinder port “A” and energizing solenoid “A” opens cylinder port “B”.

Valve must be converted to external pilot supply.

Features

Regulated pressure output from the valve is adjusted by knob on the manually set model or by air pressure signal applied to the regulator pilot port on the remotely set model.

For reduced pressure at “A” cylinder port, the regulator is mounted per assembly “A” on end opposite the electrical junction box. For reduced pressure at “B” cylinder port the regulator is mounted per Assembly “B” which places the regulator over the electrical junction box.

Furnished with pressure gauge as standard.

Pressure Range Options

Maximum Supply Pressure ..... 140 PSIG

Output Pressure Range ..... 1 - 30 PSIG
1 - 60 PSIG
2 - 125 PSIG

Operating Temperature Range

32°F (0°C) to 175°F (79°C)

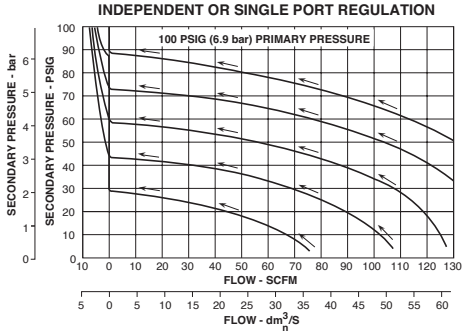
How To Order

1. Select type of adjustment.
2. Select pressure range.
3. Select assembly style.

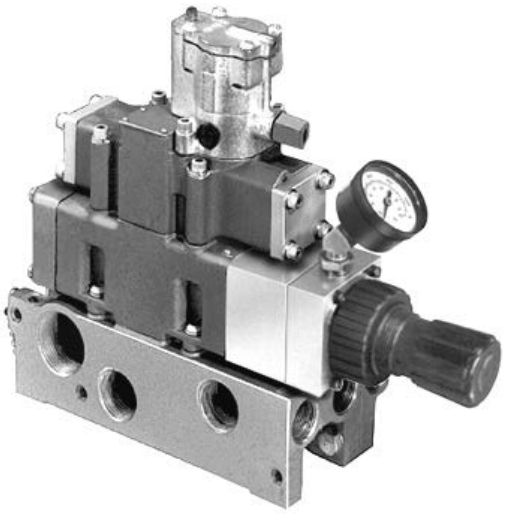
Example: Manual adjustment.
5-60 PSIG, Port A reduced.

Model No. L55405307C

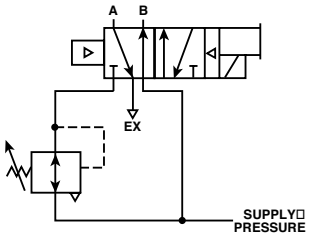
Relief and Flow Characteristics



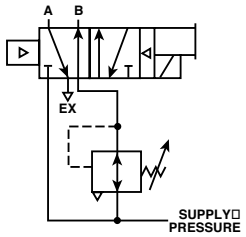
The above curves illustrate flow characteristics through an assembled valve, air regulator, and base (or modular manifold) unit.



Assembly “A”



Supply Pressure at “B” & Regulated at “A”



Supply Pressure at “A” & Regulated at “B”

Pressure Adjustment	Pressure Range PSIG	Model Number Reduced Pressure Cyl. Port “A”	Cyl. Port “B”
Manual	1 - 60	**L55405307C**	**L55407305C**
	2 - 125	**L55406307C**	**L55407306C**
Remote	0 - 140	**L55414307C**	**L55407314C**

Note: When using single or independent port sandwich regulators, be aware that:

1. Cylinder port outlets are reversed.
2. 3-Position, cylinder ports open to exhaust and cylinder ports open to inlet functions are reversed. To produce a cylinder ports open to exhaust function, order valve with cylinder ports open to inlet. To produce a cylinder ports open to inlet function, order valve with cylinder ports open to exhaust.

See parts and accessories for gauges.

Function - Independent Port Regulation

This modular air pressure regulation assembly, when installed between a 3/8" basic, 4-Way valve and subbase or modular manifold, supplies one or more regulated pressures to each of the valve cylinder ports.

Regulated pressure to cylinder port “A”, and a second regulated pressure to cylinder port “B”; independently adjustable.

On Independent Cylinder Port Regulation Units controlled by a single solenoid valve, cylinder port “B” is the normally open cylinder port. The solenoid is energized to open cylinder port “A”. On double solenoid operated valves, energizing solenoid “B” opens cylinder port “A” and energizing solenoid “A” opens cylinder port “B”

Valve must be converted to external pilot supply.

Features

Regulated pressure output from the valve is adjusted by knob on the manually set model or by air pressure signal applied to the regulator pilot port on the remotely set model.

Furnished with pressure gauge as standard.

The regulator controlling pressure to port “A” is mounted on the end opposite the electrical junction box (Assembly “A”). Regulated pressure from cylinder port “B” is controlled by the regulator installed over the electrical junction box (Assembly “B”).

Pressure Range Options

Maximum Supply Pressure ..... 140 PSIG

Output Pressure Range ..... 1 - 60 PSIG
2 - 125 PSIG

Operating Temperature Range

32°F (0°C) to 175°F (79°C)

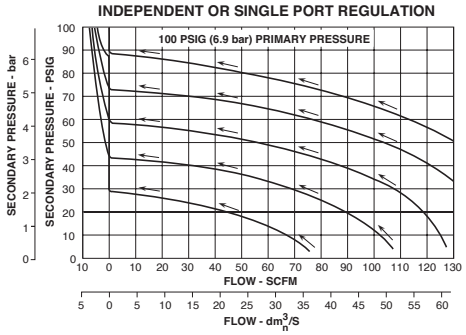
How To Order

1. Select type of adjustment.
2. Select pressure range.
3. Select assembly style.

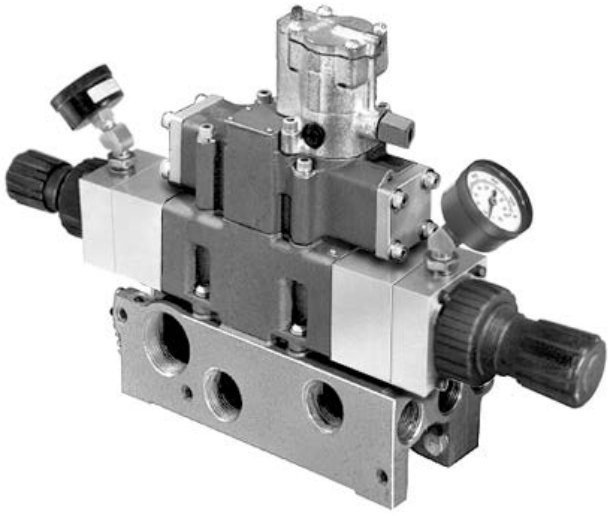
Example: Manual adjustment.
5-60 PSIG range for cylinder port “A”
and 10-125 PSIG for cylinder port “B”.

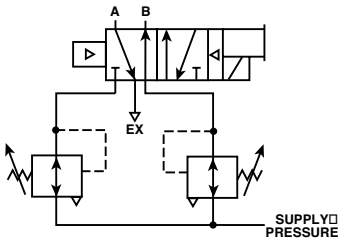
Model No. L55406305C

Relief and Flow Characteristics



The above curves illustrate flow characteristics through an assembled valve, air regulator, and base (or modular manifold) unit.





Independently Regulated Pressure at Both “A” & “B”

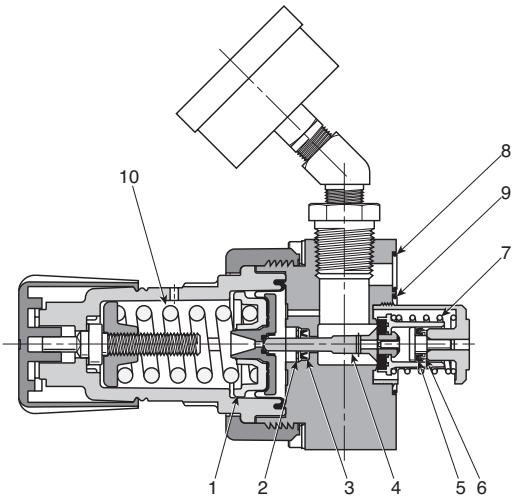
Pressure Adjustment	Cylinder Port “A” PSIG	Model Number Cylinder Port “B” 5 - 60	Cylinder Port “B” 10 - 125†
Manual	1 - 60	**L55405305C**	—
Remote	0 - 140	—	**L55414314C**†

† Remote operator units 0-140 PSIG

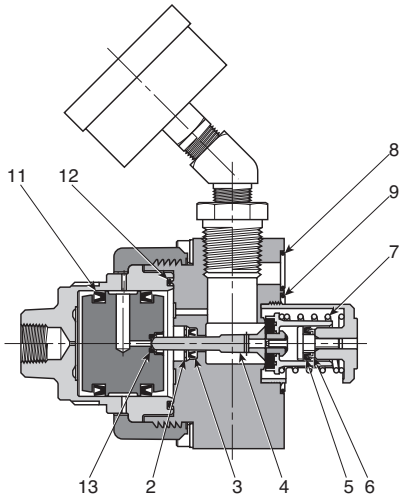
NOTE: When using single or independent port sandwich regulators, be aware that:

1. Cylinder port outlets are reversed.
2. 3-Position, cylinder ports open to exhaust and cylinder ports open to inlet functions are reversed. To produce a cylinder ports open to exhaust function, order valve with cylinder ports open to inlet. To produce a cylinder ports open to inlet function, order valve with cylinder ports open to exhaust.

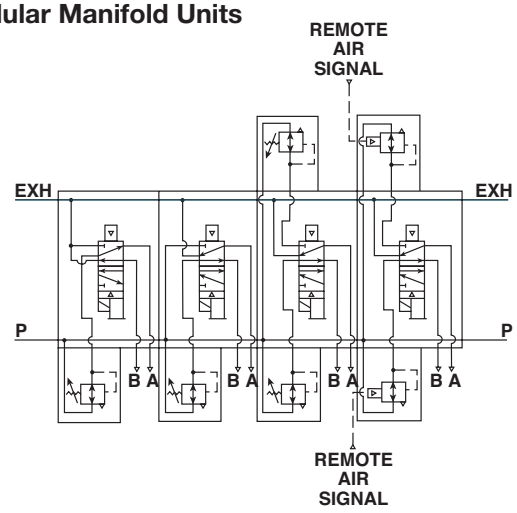
Manual Adjusting



Remote Operated



Suggested Schematic of Assembled Valve, Air Regulation and Modular Manifold Units



Replacement Parts

Item no.	Part Number		Description
1	○		Diaphragm Assembly
2	○	●	Retaining Ring
3	○	●	Vee Packing
4	○	●	Poppet Assembly
5	○	●	Vee Packing
6	○	●	Backflow Retainer
7	○	●	Poppet Spring
8	○	●	.989 ID x .070 W O-Ring
9	○	●	1.301 ID x .070 W O-Ring
10	**P01698**		1-30 PSI Spring
	P04062		1-60 PSI Spring (Blue)
	P04063		2-125 PSI Spring
11	●		Vee Packing
12	●		1.674 ID x .103 W O-Ring
13	●		Vent Seal

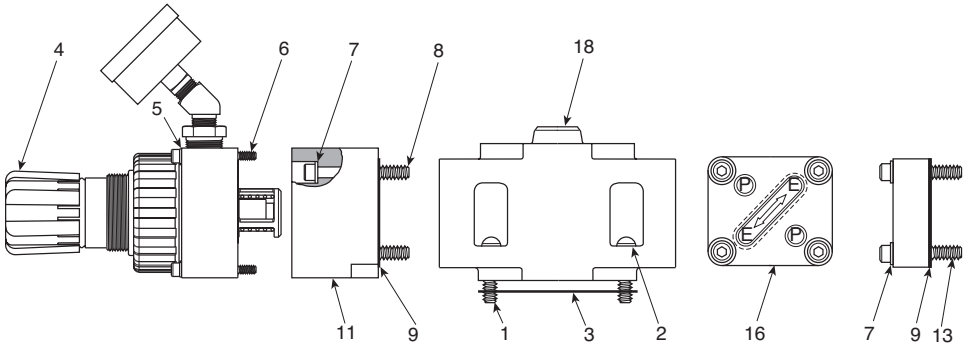
○ Parts included in K352409 service kit for manual operated modular regulators.

● Parts included in K352411 service kit for remote operated modular regulators.

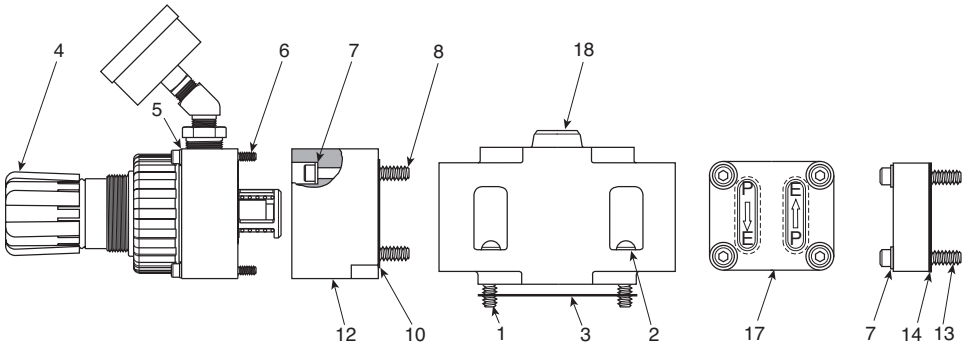
Replacement Gauges

PSIG	Standard
0-60	**K4520N14060**
0-160	**K4520N14160**
0-300	**K4520N14300**

Common Port Regulation



Single Port Regulation



Independent Port Regulation

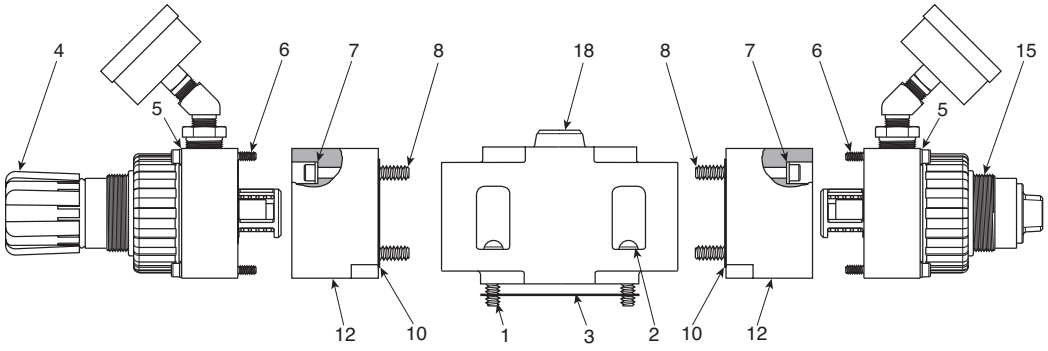


Table "E": Parts

Item No.	Part Number	Description
1	**H09815**	Screw (4)
2	**H17512**	Lockwasher (4)
3	**K183077**	Gasket
4	Standard	Manual Reg. Assy. (w/Gauge)
	K472001C	1-30 PSIG
	K472002C	1-60 PSIG
	K472003C	2-125 PSIG
5	**H17509**	#10 Lockwasher
6	**H10032**	#10-32 x 1.75" Lg. SHCS
7	**H17511**	1/4" Lockwasher
8	**H10069**	1/4-20 x 2.25" Lg. SHCS

Item No.	Part Number	Description
9	**K183082**	Gasket
10	**K183084**	Gasket
11	**K043012**	Function Block (P to P)
12	**K043011**	Function Block (P to E)
13	**H100107**	1/4-20 x 1-1/2" Lg. SHCS
14	**K183083**	Gasket
15	Standard	Remote Reg. Assy. (w/Gauge)
	K472009C	0-140 PSIG
16	**K362308**	Function Plate Assy. (Incl. 7, 9, 13)
17	**K362307**	Function Plate Assy. (Incl. 7, 13, 14)
18	**K032270**	Body Assy. (Incl. 1, 2, 3)

Plug-in Pilot

	Description	Standard Service		Special Service	
	Override type	**Locking**	**Non-locking**	**Locking**	**Non-locking**
With indicator light	With override (120VAC)	**K175903553**	**K175803553**	**K185902553**	**K185802553**
	With override (Other than 120VAC)	**K1753035****	—	**K1853025****	—

** Voltage code - (reference model index for availability)

NEMA 1 & 12

	Description	Standard Service		Special Service	
	Override type	**Locking**	**Non-locking**	**Locking**	**Non-locking**
Basic Pilot	Basic with override	**K0653035****	—	**K0853025****	—
JIC Pilot	JIC with junction box & override	**K0656035****	**K0655035****	**K0856025****	**K0855025****
	JIC pilot with junction box & override & indicator lights (120VAC Only)	**K0659035****	**K0658035****	**K0859025****	**K0858025****

** Voltage code - (reference model index for availability)

NEMA 4, 7 & 9

	Description	Standard Service		Special Service	
Hazardous Duty	Hazardous duty pilot - UL & CSA	**K0251035**†**		**K0451025**†**	
	NEMA 4 pilot	**K2351035**†**		—	
	Override type	**Locking**	**Non-locking**	**Locking**	**Non-locking**
NEMA 4 Pilot	Hazardous duty with override	**K0253035**†**	**K0252035**†**	**K0453025**†**	**K0452025**†**
	NEMA 4 with override	—	**K2353035**†**	**K2352035**†**	—

† 49 / 53 only ** Voltage code - (reference model index for availability)

Replacement Solenoid Coil

L□□□ □□ □□□ **

Voltage Code

Voltage Code	Voltage			Coil Number	
**	60 Hz	50 Hz	DC	Plug-In	Flying lead (19") *
49	—	—	24†	**K593060 K593274‡**	**K593014**
53	120†	110	—	**K593071 K593125‡**	**K593025**
57	240†	220	—	**K593081**	**K593035**

Notes: Bold Face type indicated primary coil rating.
† Indicates voltages approved for solenoid operators designed for use in hazardous locations.
* 19" Coil lead length is standard. Other lead lengths may be available, consult supplier.
‡ Assembly includes indicator light socket, less light.

Solenoid Characteristics Chart

Voltage Range +10/-15% of Nominal

3/8" & 3/4" Basic – L-Pilot

Voltage/ Cycles	Amps Inrush	Amps Holding	Resistance Ohms	Watts	Insulation Class
120/60VAC	.29	.18	122	12	B
110/50VAC	.21	.14	122	12	B
240/60VAC	.18	.12	610	12	B
24/60VAC	1.6	1.0	4.5	9.5	B
24/50VAC	1.2	.75	6.4	9.5	B
6VDC	–	1.4	4.5	7.6	B
12VDC	–	.66	17.7	9	B
24VDC	–	.32	71	9	B
48VDC	–	.22	216	11	B

Service Kits

To use this chart you must know the basic valve series, quantity, and type of operators, or the first three characters of the valve model number.

Basic Valve		Solenoid Operated *					
		Standard Service (intermittent duty)		Special Service ** (continuous duty)		Remote Pilot Operated	
Size	Series (prefix)	Single	Double 2 & 3-Position	Single	Double 2 & 3-Position	Single	Double 2 & 3-Position
3/8"	L65	—	**K352126**	—	**K352127**	—	**K352355**
	L66	—	**K352126**	—	**K352127**	—	**K352355**
	L67	**K352124**	—	**K352125**	—	**K352362**	—
	L68	—	**K352126**	—	**K352127**	—	**K352355**
	L69	—	**K352126**	—	**K352127**	—	**K352355**
	L70	**K352124**	—	**K352125**	—	**K352362**	—
1"	L65	—	**K352130**	—	**K352131**	—	**K352360**
	L66	—	**K352130**	—	**K352131**	—	**K352360**
	L67	**K352128**	—	**K352129**	—	**K352359**	—
	L68	—	**K352130**	—	**K352131**	—	**K352360**
	L69	—	**K352130**	—	**K352131**	—	**K352360**
	L70	**K352128**	—	**K352129**	—	**K352359**	—

Notes:
* Kits for solenoid operated valves include solenoid service kits.
** Special service (continuous duty) solenoids may be identified as having gold colored solenoid tops.

Blank Plate Kit - 3/8" Basic

Manifold Assembly	Port size	Part Number
K142230	3/8"	**K06020003**
K142231	1/2"	
K142270	3/4"	

Kit includes: Blank plate, gasket, mounting screws.

Flush Type Hex Drive Pipe Plugs for Port Isolation

Size (NPTF)	Part Number
1/8"	**K21R02012L**
1/4"	**K21R02025L**
3/8"	**K21R02037L**
1/2"	**K21R02050L**
3/4"	**K21R02075L**

Interchangeable Manual Override Assemblies for Solenoid Operators

Non-Locking Type	Locking Type
K162001	**K152003**

To override valve, use a flat head screwdriver to press in and rotate plunger 90° until plunger locks in place. For proper valve operation, override should be in the out position.

Conversion Kits: Lubricated to Non-Lubricated Operation

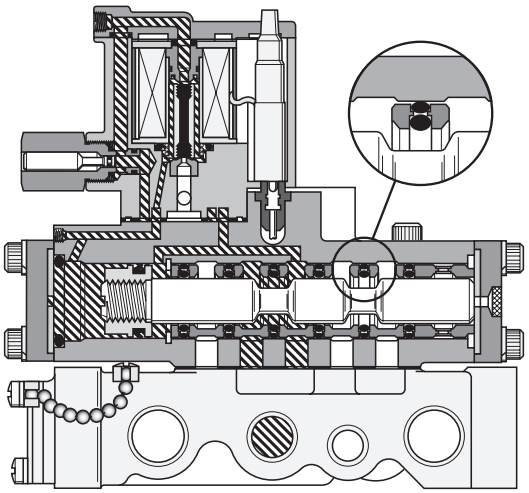
Basic Size	Operators (solenoid or remote pilot)	
	Single	Double (2-position)
3/8"	**K322012**	**K322013**

Electrical Connectors Single or Double Solenoid Valves

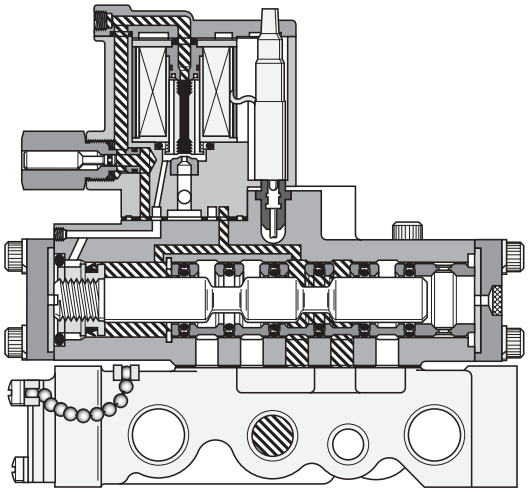
Basic Size	Valve Body		Subbase / Manifold	
	Single Solenoid	Double Solenoid	10" Leads	72" Leads
3/8" 1"	**H02723**	**H02722**	**H02713**	**H02789**

Plug-In

De-Energized

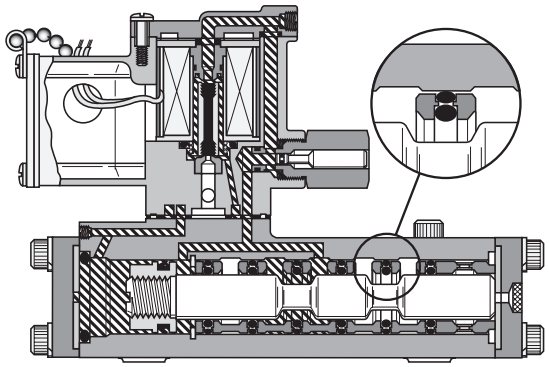


Energized

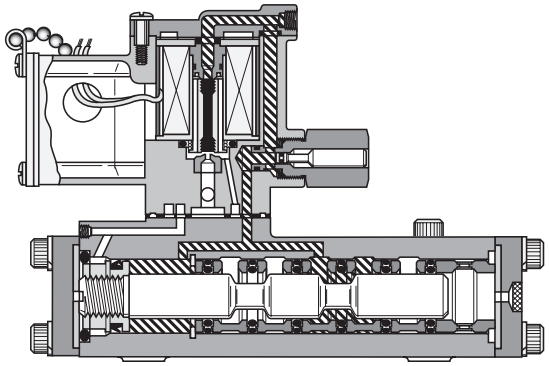


Direct Pipe Ported

De-Energized



Energized



Pressure **Exhaust**

Flow Capacities

Valve Type	Cylinder Port Size (NPTF)	Mounting Style	Cv Flow Rating Inlet to Cylinder "A"
3/8" Single	3/8"	Direct Pipe	4.7
	1/2"	Direct Pipe	5.3
3/8" Double	3/8"	Direct Pipe	4.5
	1/2"	Direct Pipe	5.5
	3/4"	Subbase	5.0
	3/4"	Manifold	4.9
3/8" Double 3-Position	3/8"	Direct Pipe	4.1
	1/2"	Direct Pipe	4.5
	3/4"	Subbase	4.5
	3/4"	Manifold	4.1
1" Single & Double	1"	Direct Pipe	12.0
		Subbase	11.3

Recommended Filtration

Maintained 40 Micron Filtration

Life Expectancy

Valves designed for non-lubricated service as well as those designed for lubricated service will provide millions of maintenance free cycles. Under laboratory conditions service life exceeds 25,000,000 cycles.

Factory Pre-Lubrication

Valves are lubricated at assembly with Sunaplex 781 or equivalent. Valves specified for vacuum service are lubricated with Dow Corning Valve Seal A.

Valves for Non-Lubricated Service

3/8" basic valve sizes are designed to operate in applications where in-service lubrication is not desirable. Valves are factory pre-lubed as noted above. These valves may be used for lubricated service as well.

Lubrication

Air Line Lubricant (compatible with Nitrile & Polyurethane seals) must readily atomize and be of the medium analine type. Analine point range must be between 180° and 220°F. Viscosity @ 100°F: 140-170 SUS.

Recommended Lubricant

If in-service lubrication is required, use F442 oil, or equivalent. F442 is specially formulated to provide peak performance and maximum service life for air operated equipment.

Listing Agencies

General Purpose Approvals

CSA - Canadian Standards Association
File Number 42024

Hazardous Duty Approvals

UL - Underwriters Laboratories, Inc.
File Number E42542
Category Y107

CSA - Canadian Standards Association
File Number 24349

Solenoid Enclosure Ratings

Type	Listing Agency	NEMA Rating	Description
Plug-In	CSA	1 & 12	General purpose indoor only dust tight
Conduit / flying lead	CSA	1 & 12	General purpose indoor only dust tight
* Conduit (as specified)	UL & CSA	7 & 9	Hazardous location see chart below)
* Conduit (as specified)	CSA	4	General purpose indoor / outdoor

* See ordering information on specific valve type. (Direct Pipe Ported Valves Only.)

Hazardous Duty Solenoid Listing

Valves with solenoid operators designated for hazardous locations are UL & CSA Approved as follows:

National Electric Code	Ambient Conditions	NEMA Classification
Class I Div. 1 Group C	Ethyl, Ether, Etc., Gases & Vapors	VII (7)
Class I Div. 1 Group D	Gasoline, Etc., Gases & Vapors	VII (7)
Class I Div. 2 Group B	Butadiene, Etc., Liquid, Fluid or Vapor Normally Contained, or Atmosphere Ventilated	VII (7)
Class II Div. 1 Group E	Metal Dust	IX (9)
Class II Div. 1 Group F	Coal, Coke, Carbon Black Dust	IX (9)
Class II Div. 1 Group G	Flour, Starch, Grain Dust	IX (9)

See Article 500 - Hazardous (Classified) Locations, National Electric Code.

Installation

Valves should be installed with reasonable accessibility for service. Exercise care in keeping piping lengths to a minimum. Piping should be free of dirt, chips & scale. Pipe joint compound should be used sparingly applied only to the thread, never to the valve body. Avoid undue strain at piping joints. Protect the valve from exposure to extreme temperatures, dirt and moisture to maximize life.

Note: Valves equipped with locking manual overrides. Override(s) must be in the fully extended position for proper valve operation.

Double Solenoid / Remote Caution

Note: It is recommended that double solenoid and double remote 2-Position valves be mounted with the main spool in the horizontal plane.

Wiring Instructions for Base Mounted Valves

Single Solenoid:

Use wires marked “2” & “3” for connection. Units with DC Solenoids and indicator lights are polarity sensitive. Wire marked “3” is positive (+).

Double Solenoid:

Use wires marked “1” & “2” for Solenoid “A”. Use wires marked “3” & “4” for Solenoid “B”. Units with DC Solenoids and indicator lights are polarity sensitive. Wires marked “1” and “3” are positive.

⚠ **CAUTION:**
DC Solenoids are polarity sensitive. Observe polarities indicated above.

Units with Flying Leads

Wires are not polarity sensitive.

⚠ **CAUTION:**
DC solenoids with indicator lights and / or arc suppression coils are polarity sensitive. Use red wire as positive.

“Special Service” Solenoid (Continuous Duty)

Special Service Solenoids are designed for use when the solenoid duty cycle is greater that 70% or when energization times are for 10 minutes or longer.

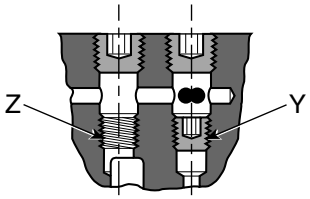
These solenoids should be used when valves are to be held energized for hours, days or weeks… or when extended ambient temperature operation is required. Apply the duty cycle formula to determine if this type of solenoid is required.

Duty Cycle Formula

$$\frac{\text{Time Energized}}{\text{Time Energized + Time Off}} \text{ x 100 = \% Duty Cycle}$$

If Duty Cycle is 70% or greater, then Special Service (Continuous Duty) Solenoid should be used.

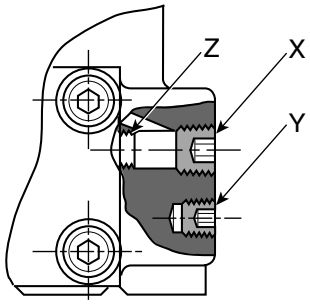
Pilot Supply Conversion



Base Mounted

For field conversion to external pilot supply, remove two 1/8" NPTF plugs from top of valve body and move bottom plug from “Y” to “Z”.

Replace 1/8" NPTF plugs and connect pilot pressure to the 1/4" NPTF external pilot supply port “X” in subbase.

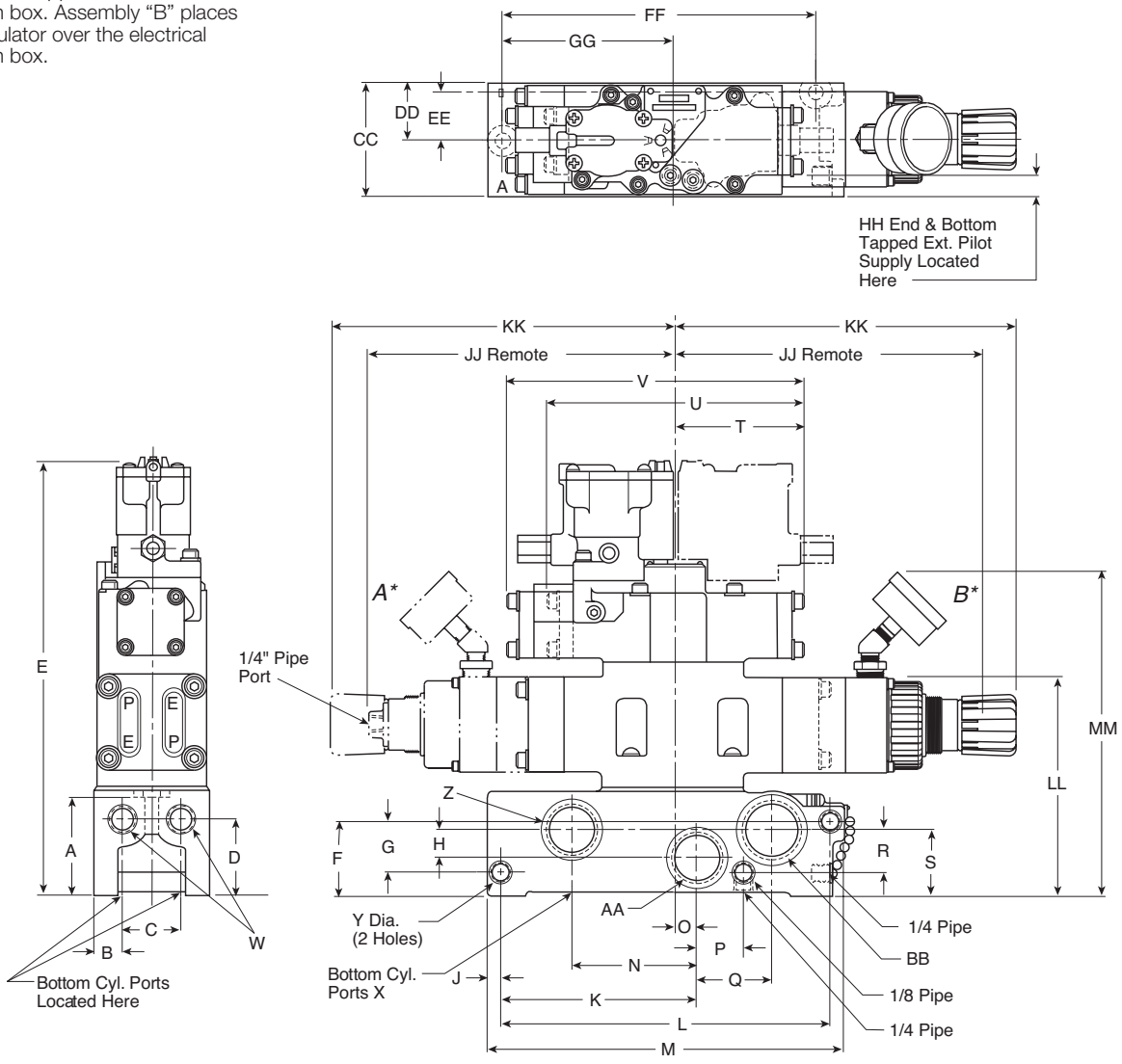


Direct Pipe Ported

For field conversion to external pilot supply, remove and discard 1/4" NPTF plug in external pilot supply port “X”. Move stored plug “Y” to location “Z” in bottom of pilot supply port “X”. Then connect pilot pressure to port “X” in valve body.

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

* Assembly "A" places the regulator on the end opposite the electrical junction box. Assembly "B" places the regulator over the electrical junction box.



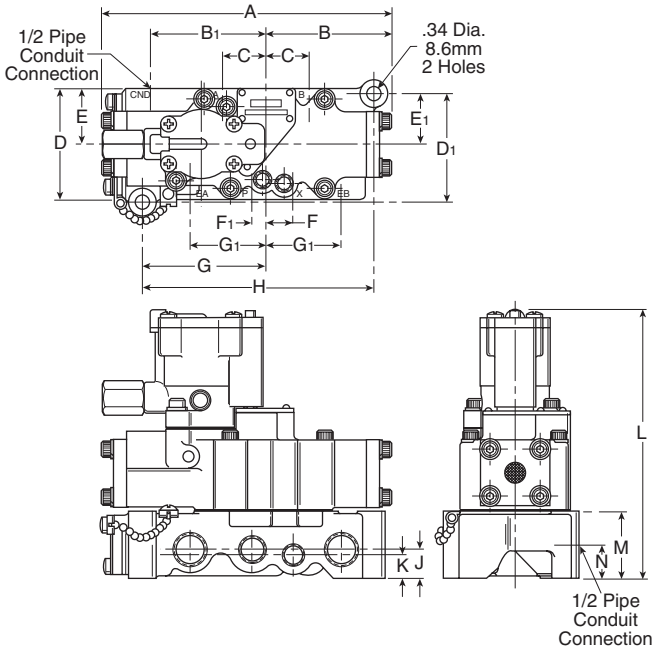
Dimensions - 3/8" Basic Valve

A	B	C	D	E	F	G	H	J	K	L	M	N	O
2.56 (65.0)	.75 (19.1)	1.50 (38.1)	2.09 (53.1)	11.28 (286.5)	2.06 (52.3)	1.41 (35.8)	.75 (19.1)	.34 (8.64)	5.00 (127.0)	8.44 (214.4)	9.09 (230.9)	3.19 (81.0)	.61 (15.5)

P	Q	R	S	T	U	V	W	X	Y	Z	AA	BB	CC
1.19 (30.2)	1.91 (48.5)	1.09 (27.7)	1.81 (46.0)	3.32 (84.3)	6.64 (168.7)	7.56 (192.0)	3/8", 1/2" or 3/4" NPTF		.39 (9.9)	1" NPTF	1" NPTF	1-1/4" NPTF	3.00 (76.2)

DD	EE	FF	GG	HH	JJ	KK	LL	MM
1.50 (38.1)	1.24 (31.5)	7.97 (202.4)	4.34 (110.2)	.40 (10.2)	8.53 (216.6)	10.15 (257.8)	5.46 (138.6)	8.80 (223.5)

Inches (mm)

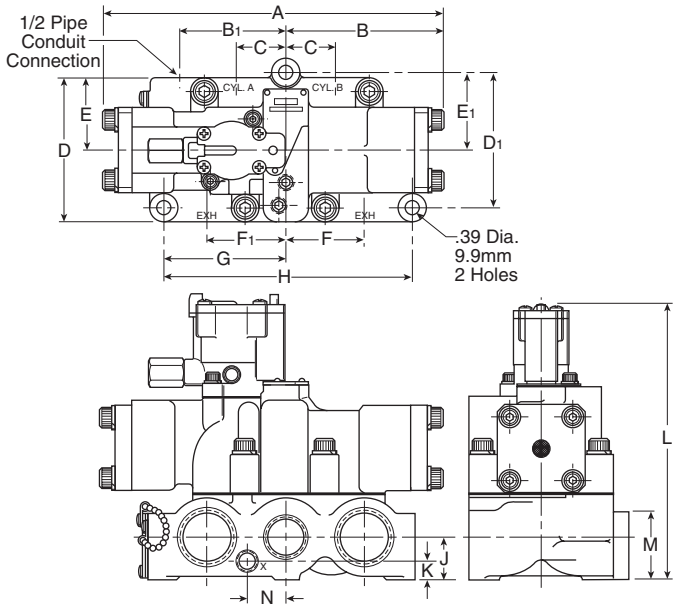


L6753 3/8" Dimensions, Single Solenoid

A	B	B1	C	D	D1	E	E1	F
7.56 (192)	3.32 (84.3)	2.94 (74.7)	1.12 (28.4)	2.88 (73.2)	2.84 (72.1)	1.44 (36.6)	1.34 (34)	.75 (19.1)

F1	G	G1	H	J	K	L	M	N
.38 (9.7)	3.16 (80.3)	2.00 (50.8)	6.03 (153.2)	.75 (19.1)	.62 (15.7)	6.93 (176)	1.75 (44.5)	1.00 (25.4)

Inches (mm)

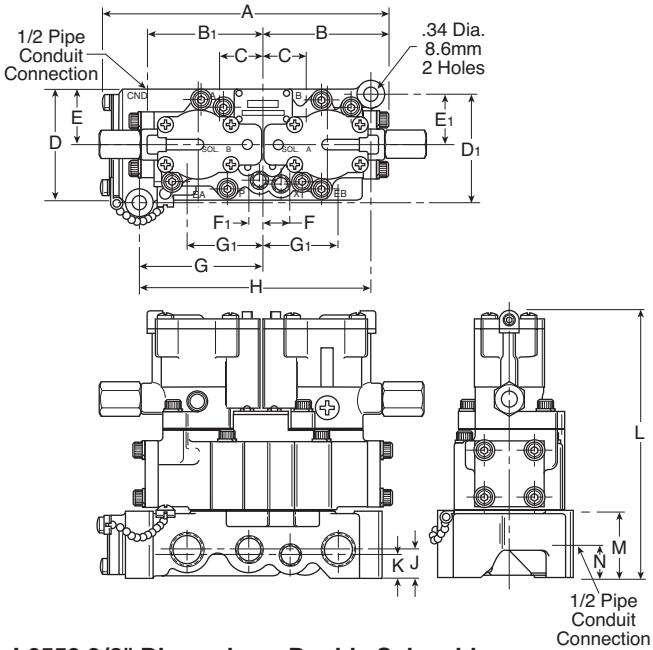


L6758 1" Dimensions, Single Solenoid

A	B	B1	C	D	D1	E	E1	F
10.46 (265.7)	4.75 (120.6)	2.94 (74.7)	3.38 (85.8)	4.56 (115.8)	4.28 (108.7)	2.28 (57.9)	2.44 (62)	2.45 (62.2)

F1	G	H	J	K	L	M	N
2.46 (62.5)	3.81 (96.8)	7.62 (193.5)	1.31 (33.3)	.59 (15)	8.74 (222)	2.09 (53.1)	1.22 (31)

Inches (mm)

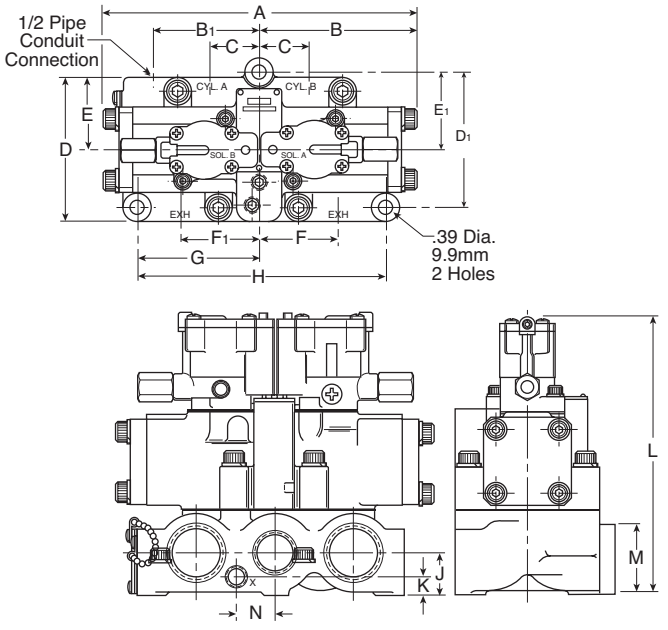


L6553 3/8" Dimensions, Double Solenoid

A	B	B1	C	D	D1	E	E1	F
7.38 (187.5)	3.32 (84.3)	2.94 (74.7)	1.12 (28.4)	2.88 (73.2)	2.84 (72.1)	1.44 (36.6)	1.34 (34)	.75 (19.1)

F1	G	G1	H	J	K	L	M	N
.38 (9.7)	3.16 (80.3)	2.00 (50.8)	6.03 (153.2)	.75 (19.1)	.62 (15.7)	6.93 (176)	1.75 (44.5)	1.00 (25.4)

Inches (mm)

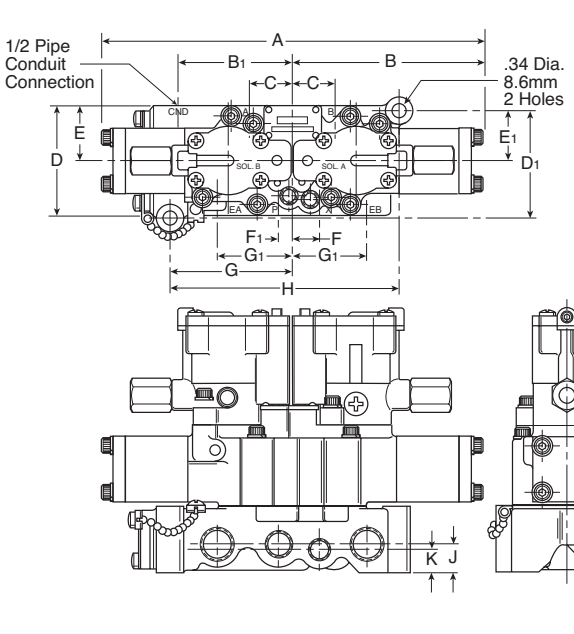


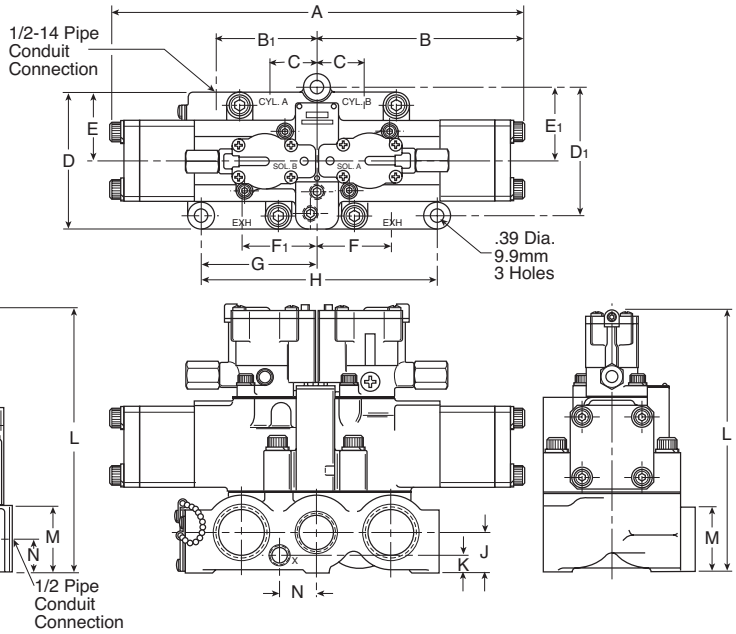
L6558 1" Dimensions, Double Solenoid

A	B	B1	C	D	D1	E	E1	F
9.50 (241.3)	4.75 (120.6)	3.38 (85.8)	1.53 (38.9)	4.56 (115.8)	4.28 (108.7)	2.28 (57.9)	2.44 (62)	2.45 (62.2)

F1	G	H	J	K	L	M	N
2.46 (62.5)	3.81 (96.8)	7.62 (193.5)	1.31 (33.3)	.59 (15)	8.74 (222)	2.09 (53.1)	1.22 (31)

Inches (mm)





L6653 3/8" Dimensions, 3-Position, Double Solenoid

A	B	B1	C	D	D1	E	E1	F
9.64 (244.8)	4.82 (122.4)	2.94 (74.7)	1.12 (28.4)	2.88 (73.2)	2.84 (72.1)	1.44 (36.6)	1.34 (34)	.75 (19.1)

F1	G	G1	H	J	K	L	M
.38 (9.7)	3.16 (80.3)	2.00 (50.8)	6.03 (153.2)	.75 (19.1)	.62 (15.7)	6.93 (176)	1.00 (25.4)

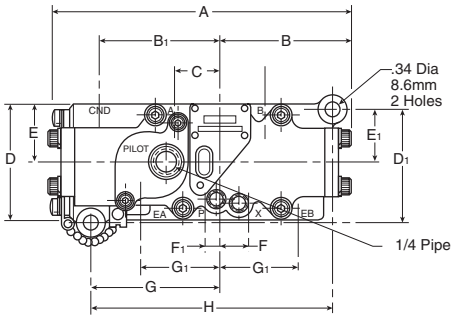
Inches (mm)

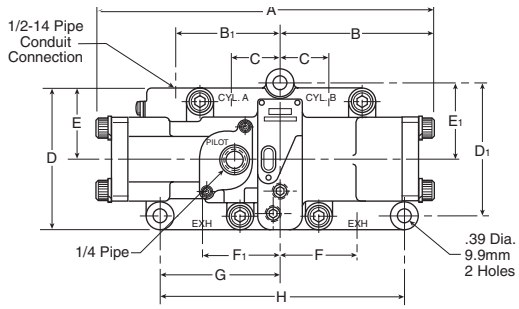
L6658 1" Dimensions, 3-Position, Double Solenoid

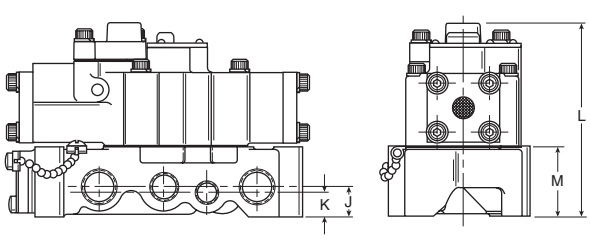
A	B	B1	C	D	D1	E	E1	F
13.62 (345.9)	6.81 (173)	3.38 (85.8)	1.53 (38.9)	4.56 (115.8)	4.28 (108.7)	2.28 (57.9)	2.44 (62)	2.45 (62.2)

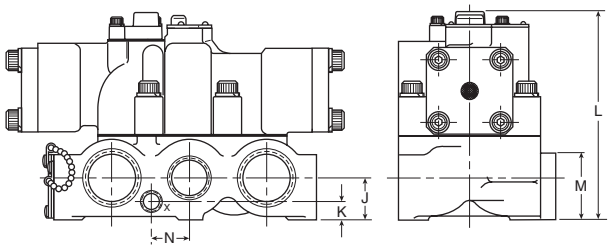
F1	G	H	J	K	L	M	N
2.46 (62.5)	3.81 (96.8)	7.62 (193.5)	1.31 (33.3)	.59 (15)	8.74 (222)	2.09 (53.1)	1.22 (31)

Inches (mm)









L6743 3/8" Dimensions, Single Remote Pilot

A	B	B1	C	D	D1	E	E1	F
7.56 (192)	3.32 (84.3)	2.94 (74.7)	1.12 (28.4)	2.88 (73.2)	2.84 (72.1)	1.44 (36.6)	1.34 (34)	.75 (19.1)

F1	G	G1	H	J	K	L	M
.38 (9.7)	3.16 (80.3)	2.00 (50.8)	6.03 (153.2)	.75 (19.1)	.62 (15.7)	4.76 (120.9)	1.75 (44.5)

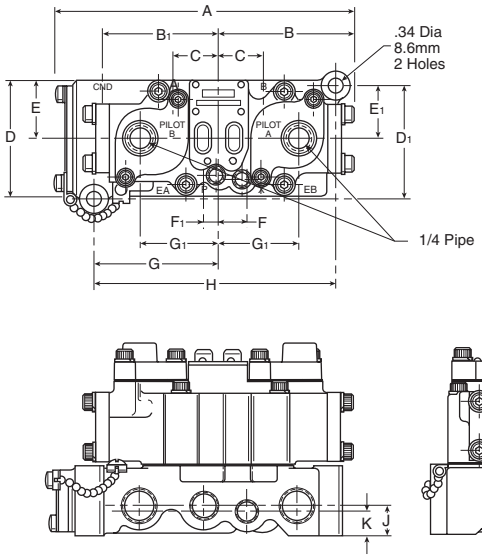
Inches (mm)

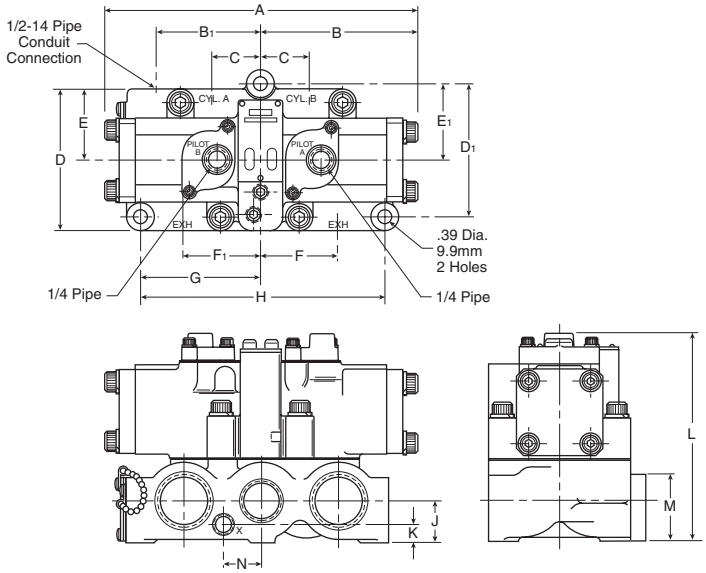
L6748 1" Dimensions, Single Remote Pilot

A	B	B1	C	D	D1	E	E1	F
10.46 (265.7)	4.75 (120.6)	3.38 (85.8)	1.53 (38.9)	4.56 (115.8)	4.28 (108.7)	2.28 (57.9)	2.44 (62)	2.45 (62.2)

F1	G	H	J	K	L	M	N
2.46 (62.5)	3.81 (96.8)	7.62 (193.5)	1.31 (33.3)	.59 (15)	6.57 (166.9)	2.09 (53.1)	1.22 (31)

Inches (mm)





L6543 3/8" Dimensions, Double Remote Pilot

A	B	B1	C	D	D1	E	E1	F
7.56	3.32	2.94	1.12	2.88	2.84	1.44	1.34	.75
(192)	(84.3)	(74.7)	(28.4)	(73.2)	(72.1)	(36.6)	(34)	(19.1)

F1	G	G1	H	J	K	L	M
.38	3.16	2.00	6.03	.75	.62	4.76	1.75
(9.7)	(80.3)	(50.8)	(153.2)	(19.1)	(15.7)	(120.9)	(44.5)

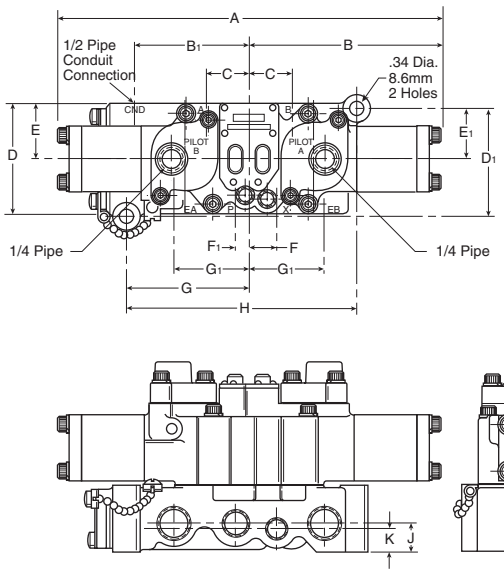
Inches (mm)

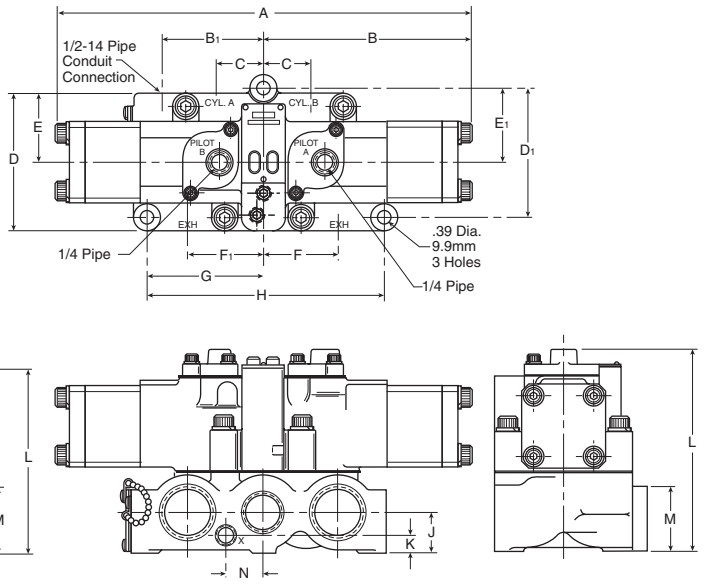
L6548 1" Dimensions, Double Remote Pilot

A	B	B1	C	D	D1	E	E1	F
9.50	4.75	3.38	1.53	4.56	4.28	2.28	2.44	2.45
(241.3)	(120.6)	(85.8)	(38.9)	(115.8)	(108.7)	(57.9)	(62)	(62.2)

F1	G	H	J	K	L	M	N
2.46	3.81	7.62	1.31	.59	6.57	2.09	1.22
(62.5)	(96.8)	(193.5)	(33.3)	(15)	(166.9)	(53.1)	(31)

Inches (mm)





L6643 3/8" Dimensions, 3-Position, Remote Pilot

A	B	B1	C	D	D1	E	E1	F
9.64	4.82	2.94	1.12	2.88	2.84	1.44	1.34	.75
(244.8)	(122.4)	(74.7)	(28.4)	(73.2)	(72.1)	(36.6)	(34)	(19.1)

F1	G	G1	H	J	K	L	M
.38	3.16	2.00	6.03	.75	.62	4.76	1.75
(9.7)	(80.3)	(50.8)	(153.2)	(19.1)	(15.7)	(120.9)	(44.5)

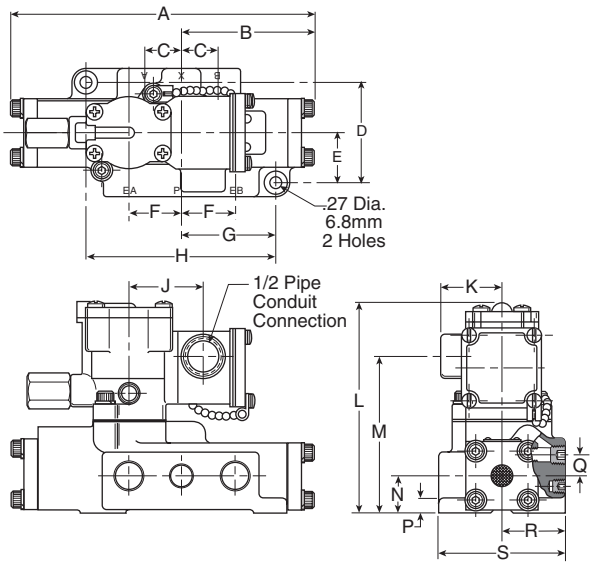
Inches (mm)

L6648 1" Dimensions, 3-Position, Remote Pilot

A	B	B1	C	D	D1	E	E1	F
13.62	6.81	3.38	1.53	4.56	4.28	2.28	2.44	2.45
(345.9)	(173)	(85.8)	(38.9)	(115.8)	(108.7)	(57.9)	(62)	(62.2)

F1	G	H	J	K	L	M	N
2.46	3.81	7.62	1.31	.59	6.57	2.09	1.22
(62.5)	(96.8)	(193.5)	(33.3)	(15)	(166.8)	(53.1)	(31)

Inches (mm)

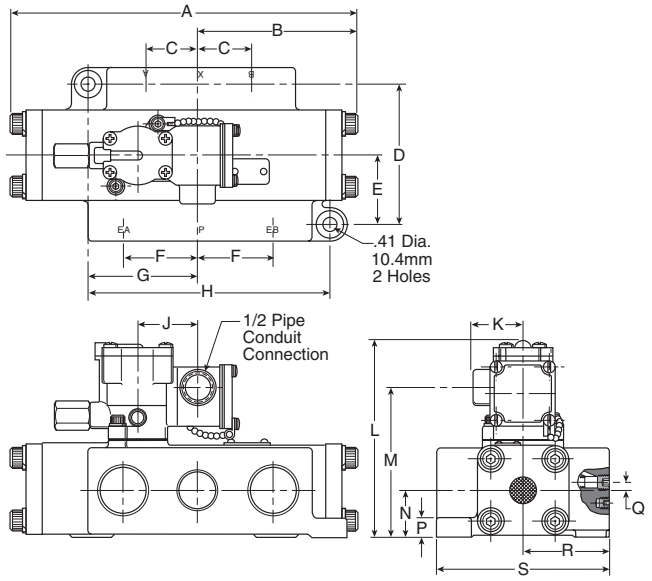


L705 3/8" Dimensions, Single Solenoid

A	B	C	D	E	F	G	H	J
7.56 (192)	3.32 (84.3)	.90 (22.9)	2.56 (65)	1.28 (32.5)	1.33 (33.8)	2.34 (59.4)	4.69 (119.1)	1.82 (46.2)

K	L	M	N	P	Q	R	S
1.50 (38.1)	5.35 (135.9)	3.91 (99.3)	.94 (23.9)	.38 (9.7)	.53 (13.5)	1.62 (41.1)	3.25 (82.6)

Inches (mm)

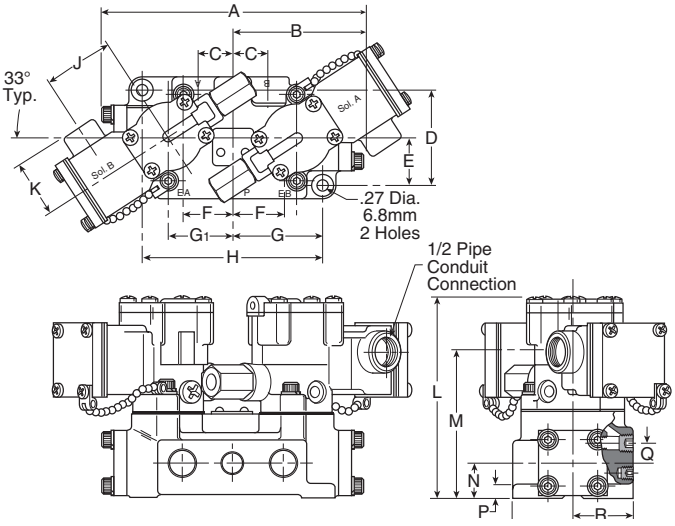


L705 1" Dimensions, Single Solenoid

A	B	C	D	E	F	G	H	J
10.46 (265.7)	4.75 (120.6)	1.62 (41.1)	4.25 (108)	2.12 (53.8)	2.19 (55.6)	3.44 (87.4)	7.44 (189)	1.82 (46.2)

K	L	M	N	P	Q	R	S
1.50 (38.1)	6.44 (163.6)	4.95 (125.7)	1.50 (38.1)	.69 (17.5)	.20 (5.1)	2.62 (66.5)	5.25 (133.4)

Inches (mm)

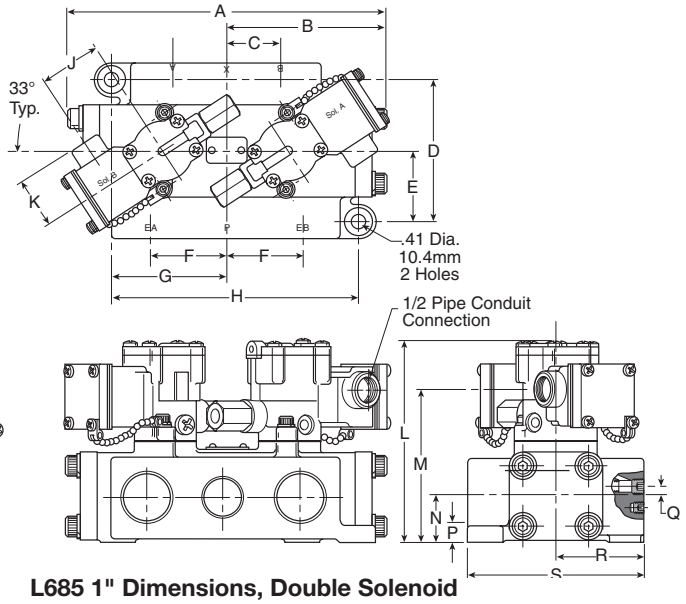


L685 3/8" Dimensions, Double Solenoid

A	B	C	D	E	F	G	G1	H
7.56 (192)	3.32 (84.3)	.90 (22.9)	2.56 (65)	1.28 (32.5)	1.33 (33.8)	2.34 (59.4)	1.66 (42.4)	4.69 (119.1)

J	K	L	M	N	P	Q	R	S
1.82 (46.2)	1.50 (38.1)	5.35 (135.9)	3.91 (99.3)	.94 (23.9)	.38 (9.7)	.53 (13.5)	1.62 (41.1)	3.25 (82.6)

Inches (mm)

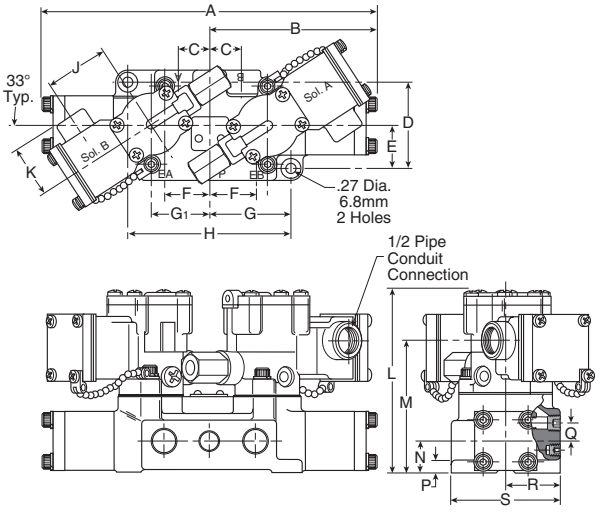


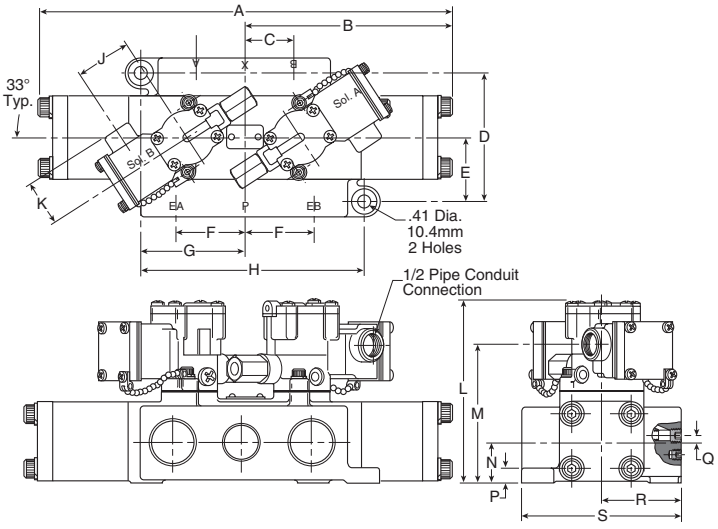
L685 1" Dimensions, Double Solenoid

A	B	C	D	E	F	G	H	J
9.50 (241.3)	4.75 (120.6)	1.62 (41.1)	4.25 (108)	2.12 (53.8)	2.19 (55.6)	3.44 (87.4)	7.44 (189)	1.82 (46.2)

K	L	M	N	P	Q	R	S
1.50 (38.1)	6.44 (163.6)	4.95 (125.7)	1.50 (38.1)	.69 (17.5)	.20 (5.1)	2.62 (66.5)	5.25 (133.4)

Inches (mm)





L695 3/8" Dimensions, 3-Position Double Solenoid

A	B	C	D	E	F	G	G1	H
9.64	4.82	.90	2.56	1.28	1.33	2.34	1.66	4.69
(244.8)	(122.4)	(22.9)	(65)	(32.5)	(33.8)	(59.4)	(42.4)	(119.1)

J	K	L	M	N	P	Q	R	S
1.82	1.50	5.35	3.91	.94	.38	.53	1.62	3.25
(46.2)	(38.1)	(135.9)	(99.3)	(23.9)	(9.7)	(13.5)	(41.1)	(82.6)

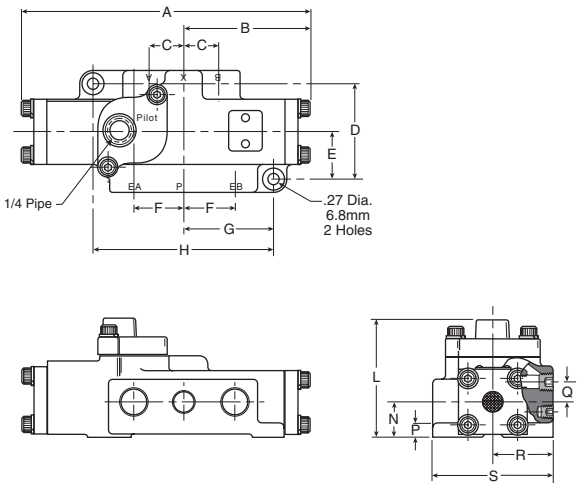
Inches (mm)

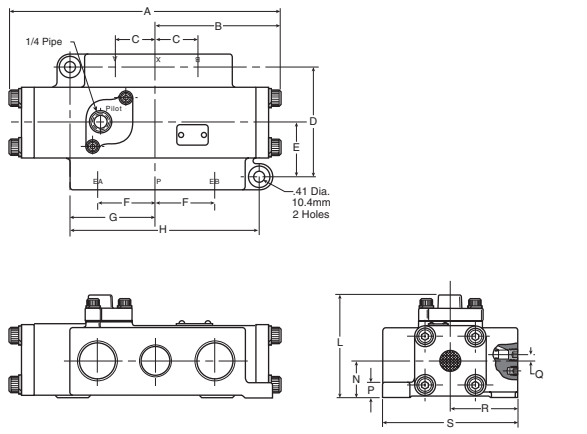
L695 1" Dimensions, 3-Position, Double Solenoid

A	B	C	D	E	F	G	H	J
13.63	6.81	1.62	4.25	2.12	2.19	3.44	7.44	1.82
(346.2)	(173)	(41.1)	(108)	(53.8)	(55.6)	(87.4)	(189)	(46.2)

K	L	M	N	P	Q	R	S
1.50	6.44	4.95	1.50	.69	.20	2.62	5.25
(38.1)	(163.6)	(125.7)	(38.1)	(17.5)	(5.1)	(66.5)	(133.4)

Inches (mm)





L704 3/8" Dimensions, Single Remote Pilot

A	B	C	D	E	F	G	H	L
7.56	3.32	.90	2.56	1.28	1.33	2.34	4.69	3.18
(192)	(84.3)	(22.9)	(65)	(32.5)	(33.8)	(59.4)	(119.1)	(80.8)

N	P	Q	R	S
.94	.38	.53	1.62	3.25
(23.9)	(9.7)	(13.5)	(41.1)	(82.6)

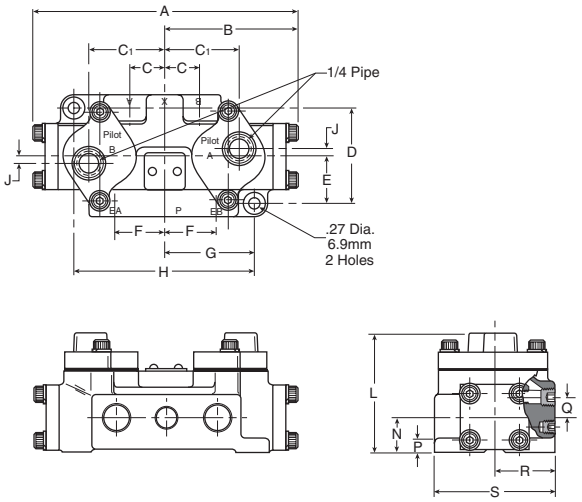
Inches (mm)

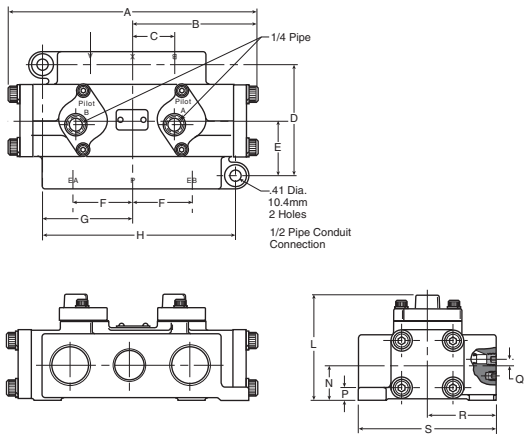
L704 1" Dimensions, Single Remote Pilot

A	B	C	D	E	F	G	H	L
10.46	4.75	1.62	4.25	2.12	2.19	3.44	7.44	4.09
(265.7)	(120.6)	(41.1)	(108)	(53.8)	(55.6)	(87.4)	(189)	(103.9)

N	P	Q	R	S
1.50	.69	.20	2.62	5.25
(38.1)	(17.5)	(5.1)	(66.5)	(133.4)

Inches (mm)





L684 3/8" Dimensions, Double Remote Pilot

A	B	C	C1	D	E	F	G	H
6.64	3.32	.90	1.98	2.56	1.28	1.33	2.34	4.69
(168.7)	(84.3)	(22.9)	(50.3)	(65)	(32.5)	(33.8)	(59.4)	(119.1)

J	L	N	P	Q	R	S
.22	3.05	.94	.38	.53	1.62	3.25
(5.6)	(77.5)	(23.9)	(9.7)	(13.5)	(41.1)	(82.6)

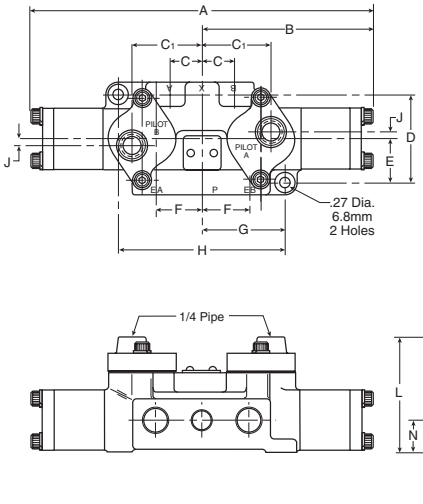
Inches (mm)

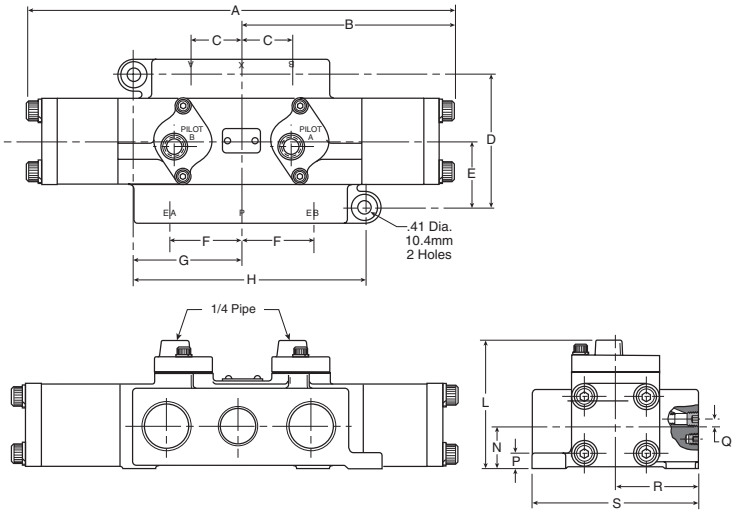
L684 1" Dimensions, Double Remote Pilot

A	B	C	D	E	F	G	H	L
9.50	4.75	1.62	4.25	2.12	2.19	3.44	7.44	4.09
(241.3)	(120.6)	(41.1)	(108)	(53.8)	(55.6)	(87.4)	(189)	(103.9)

N	P	Q	R	S
1.50	.69	.20	2.62	5.25
(38.1)	(17.5)	(5.1)	(66.5)	(133.4)

Inches (mm)





L694 3/8" Dimensions, 3-Position, Double Remote Pilot

A	B	C	C1	D	E	F	G	H
9.64	4.82	.90	1.98	2.56	1.28	1.33	2.34	4.69
(244.8)	(122.4)	(22.9)	(50.3)	(65)	(32.5)	(33.8)	(59.4)	(119.1)

J	L	N	P	Q	R	S
.22	3.05	.94	.38	.53	1.62	3.25
(5.6)	(77.5)	(23.9)	(9.7)	(13.5)	(41.1)	(82.6)

Inches (mm)

L694 1" Dimensions, 3-Position, Double Remote Pilot

A	B	C	D	E	F	G	H	L
13.63	6.81	1.62	4.25	2.12	2.19	3.44	7.44	6.44
(346.2)	(173)	(41.1)	(108)	(53.8)	(55.6)	(87.4)	(189)	(163.6)

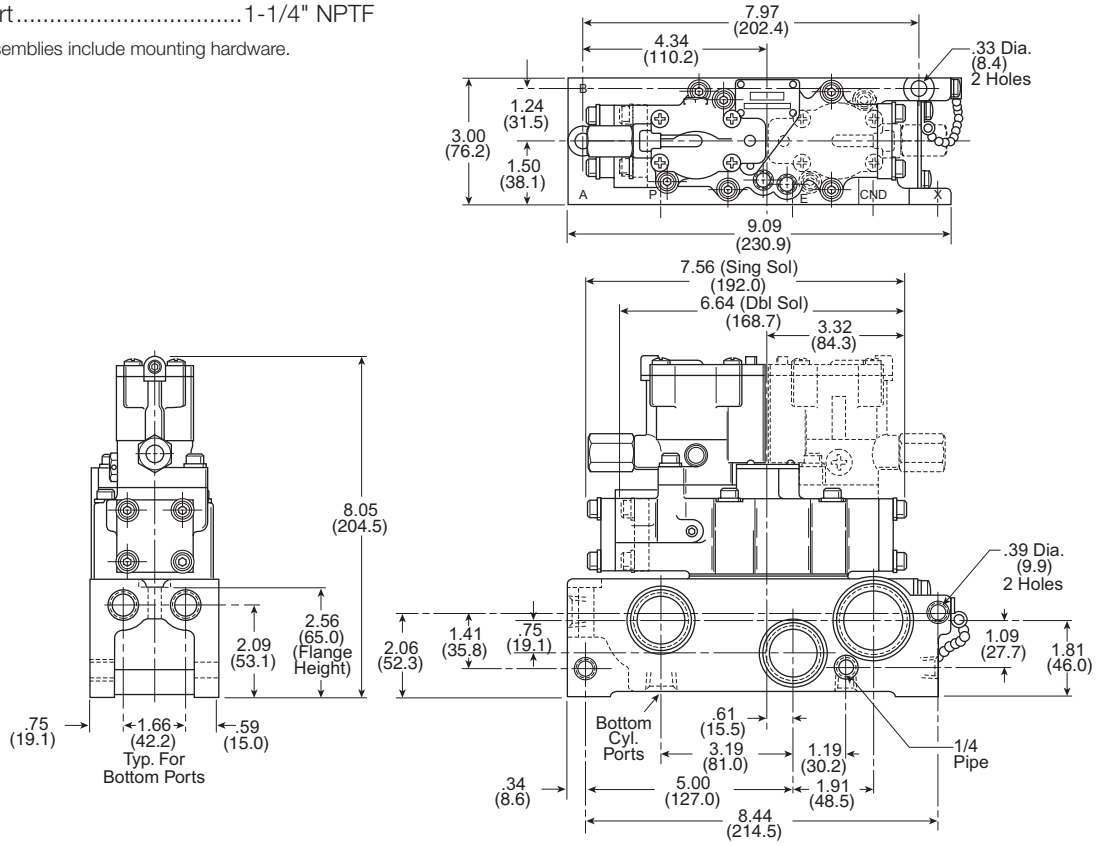
N	P	Q	R	S
1.50	.69	.20	2.62	5.25
(38.1)	(17.5)	(5.1)	(66.5)	(133.4)

Inches (mm)

Plug-in Manifold, 3/8" Basic

K142230 .....Cylinder ports 3/8" NPTF
K142231 .....Cylinder ports 1/2" NPTF
K142270 .....Cylinder ports 3/4" NPTF
Exhaust port..... 1" NPTF
Inlet port..... 1" NPTF
Conduit port.....1-1/4" NPTF

Note: Manifold assemblies include mounting hardware.



Directair 2 & 4 Series

Directair 2, 1/8" valves
Poppet style – .17 Cv

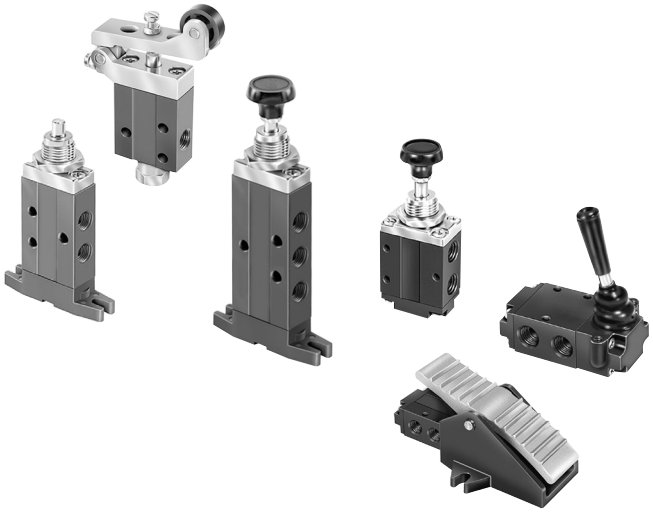
- Economical
- 3-way normally closed function

Directair 2, 1/8" valves
Packed bore style – .20 Cv

- Stainless steel spool
- Fluorocarbon o-rings
- 3-way & 4-way

Directair 4, 1/4" valves
Packed bore style – .83 Cv

- Stainless steel spool
- Fluorocarbon o-rings
- 3-way & 4-way



Material specifications

Body and operator housings	Aluminum extrusion
Bushings and pilot piston	Brass
Dynamic seals	Fluorocarbon
Operator o-rings, u-cups	Buna (nitrile)
Poppet ball	Nylon
Spacers - Directair 2	Aluminum
Spacers - Directair 4	Zinc die cast
Spool	Stainless steel

Operating information

Operating pressure	Vacuum to 150 PSI (28 inHg to 1035 kPa)*
Temperature range	32°F to 175°F (0°C to 80°C)

* Poppet valves cannot be used for vacuum. Minimum operating pressure = 0 PSIG.

⚠ ***CAUTION:***
If it is possible that the ambient temperature may fall below freezing, the medium must be moisture free to prevent internal damage or unpredictable behavior.

Flow Rating (Cv)

Flow Path	Direct Pipe Spool, 1/8" Ports	Direct Pipe Poppet, 1/8" Ports
Directair 2		
1 → 2	.199	.125
1 → 4	.191	—
2 → 3	.192	.215
4 → 5	.212	—
Avg.	.199	N/A
Directair 4		
1 → 2	.82	.64
1 → 4	.84	.66
2 → 3	.84	.63
4 → 5	.83	.63
Avg.	.83	.64

Lubrication

For maximum service life use clean, lubricated air. Valves are shipped pre-lubricated and can be operated without additional lubrication with reduced service life.

Suggested Lubricant

F442 Oil

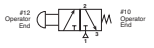
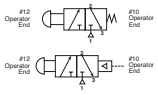
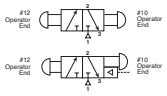
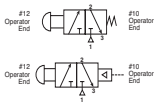
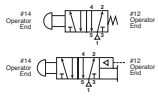
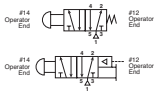
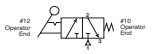
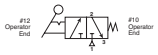
Mechanically operated actuating forces in lbs. 1/4" Directair 4 valves

	2-Position Spring Return	2-Position Manual Return	3-Position Spring Return	3-Position Manual Return
Button Actuator	13.0	2.0	13.0	N/A
Roller Actuator	13.0	N/A	N/A	N/A
Lever Actuator	4.0	2.0	4.0	2.5

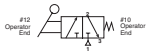
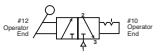
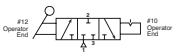
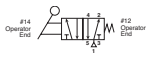
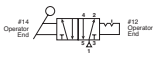
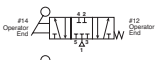
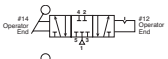
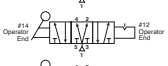
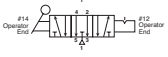
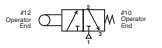
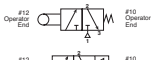
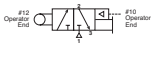
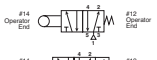
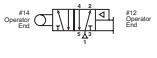
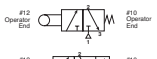
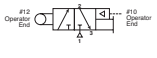
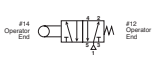
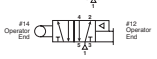
Notes: N/A = Not Applicable
All valves are at 100 PSIG inlet pressure to the valve.

☐ Most popular.

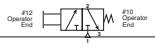
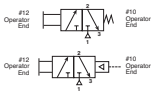
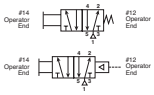
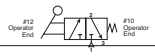
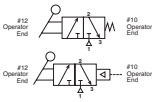
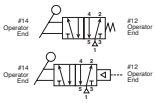
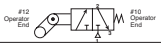
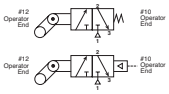
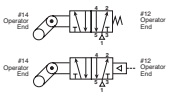
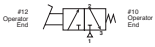
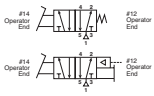
3-Way & 4-Way Valves

	Symbol	Port Size	Cv	Description	Valve Type	Part Number
Button Operated, 3-Way		1/8"	.17	3-Way, Spring Return	Poppet	**404411000**
		1/8"	.20	3-Way, Spring Return	Spool	**414411000**
		1/8"	.20	3-Way, Spring Return, Foot Mounted	Spool	**414421000**
		1/8"	.20	3-Way, Pilot Return	Spool	**414451000**
		1/8"	.20	3-Way, Manual Return	Spool	**414931000**
		1/8"	.20	3-Way, Manual Return, Foot Mounted	Spool	**414941000**
		1/8"	.20	3-Way, Manual Or Pilot Return	Spool	**414951000**
		1/4"	.83	3-Way, Spring Return	Spool	**524411000**
		1/4"	.83	3-Way, Pilot Return	Spool	**524451000**
		1/4"	.83	3-Way, Manual Return	Spool	**524431000**
Button Operated, 4-Way		1/8"	.20	4-Way, Spring Return	Spool	**410411000**
		1/8"	.20	4-Way, Spring Return, Foot Mounted	Spool	**410421000**
		1/8"	.20	4-Way, Pilot Return	Spool	**410451000**
		1/8"	.20	4-Way, Manual Return	Spool	**410931000**
		1/8"	.20	4-Way, Manual Return, Foot Mounted	Spool	**410941000**
		1/8"	.20	4-Way, Manual Or Pilot Return	Spool	**410951000**
		1/4"	.83	4-Way, Spring Return	Spool	**520411000**
		1/4"	.83	4-Way, Pilot Return	Spool	**520451000**
		1/4"	.83	4-Way, Manual Return	Spool	**520431000**
Toggle Operated, Detented		1/8"	.17	3-Way, Spring Assist Return	Poppet	**404811000**
		1/8"	.20	3-Way, Spring Assist Return	Spool	**414811000**
		1/8"	.20	3-Way, Spring Assist Return, Foot Mounted	Spool	**414821000**
		1/8"	.20	4-Way, Spring Assist Return	Spool	**410811000**
		1/8"	.20	4-Way, Spring Assist Return, Foot Mounted	Spool	**410821000**

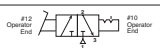
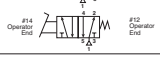
3-Way & 4-Way Valves

	Symbol	Port Size	Cv	Description	Valve Type	Part Number
Lever Operated		1/4"	.83	3-Way, Spring Return	Spool	**524811000**
		1/4"	.83	3-Way, Manual Return	Spool	**524831000**
		1/4"	.83	3-Way, 3-Position Detented, All Ports Blocked	Spool	**523831000**
		1/4"	.83	4-Way, Spring Return	Spool	**520811000**
		1/4"	.83	4-Way, Manual Return	Spool	**520831000**
		1/4"	.83	4-Way, Spring Centered, Closed Center	Spool	**521811000**
		1/4"	.83	4-Way, Spring Centered, Pressure Center	Spool	**522811000**
		1/4"	.83	4-Way, Spring Centered, Exhaust Center	Spool	**529811000**
		1/4"	.83	4-Way, Detented, Closed Center	Spool	**521831000**
		1/4"	.83	4-Way, Detented, Pressure Center	Spool	**522831000**
		1/4"	.83	4-Way, Detented, Exhaust Center	Spool	**529831000**
Roller Operated		1/8"	.20	3-Way, Spring Return	Poppet	**404211000**
		1/8"	.20	3-Way, Spring Return	Spool	**414211000**
		1/8"	.20	3-Way, Spring Return, Foot Mounted	Spool	**414221000**
		1/8"	.20	3-Way, Pilot Return	Spool	**414251000**
		1/8"	.20	4-Way, Spring Return	Spool	**410211000**
		1/8"	.20	4-Way, Spring Return, Foot Mounted	Spool	**410221000**
		1/8"	.20	4-Way, Pilot Return	Spool	**410251000**
Roller Operated		1/4"	.83	3-Way, Spring Return, Delrin Roller	Spool	**524211000**
		1/4"	.83	3-Way, Pilot Return, Delrin Roller	Spool	**524251000**
		1/4"	.83	3-Way, Spring Return, Steel Roller	Spool	**524A11000**
		1/4"	.83	3-Way, Pilot Return, Steel Roller	Spool	**524A51000**
		1/4"	.83	4-Way, Spring Return, Delrin Roller	Spool	**520211000**
		1/4"	.83	4-Way Pilot Return, Delrin Roller	Spool	**520251000**
		1/4"	.83	4-Way, Spring Return, Steel Roller	Spool	**520A11000**
		1/4"	.83	4-Way, Pilot Return, Steel Roller	Spool	**520A51000**

3-Way & 4-Way Valves

	Symbol	Port Size	Cv	Description	Valve Type	Part Number
Plunger Operated		1/8"	.17	3-Way, Spring Return	Poppet	**404111000**
		1/8"	.20	3-Way, Spring Return	Spool	**414111000**
		1/8"	.20	3-Way, Spring Return, Foot Mounted	Spool	**414121000**
		1/8"	.20	3-Way, Pilot Return	Spool	**414151000**
		1/8"	.17	4-Way, Spring Return	Spool	**410111000**
		1/8"	.20	4-Way, Spring Return, Foot Mounted	Spool	**410121000**
		1/8"	.20	4-Way, Pilot Return	Spool	**410151000**
Hand Lever Operated		1/8"	.17	3-Way, Spring Return	Poppet	**404711000**
		1/8"	.20	3-Way, Spring Return	Spool	**414711000**
		1/8"	.20	3-Way, Spring Return, Foot Mounted	Spool	**414721000**
		1/8"	.20	3-Way, Pilot Return	Spool	**414751000**
		1/8"	.20	4-Way, Spring Return	Spool	**410711000**
		1/8"	.20	4-Way, Spring Return, Foot Mounted	Spool	**410721000**
		1/8"	.20	4-Way, Pilot Return	Spool	**410751000**
One Way Tripper Operated		1/8"	.17	3-Way, Spring Return	Poppet	**404311000**
		1/8"	.20	3-Way, Spring Return	Spool	**414311000**
		1/8"	.20	3-Way, Spring Return, Foot Mounted	Spool	**414321000**
		1/8"	.20	3-Way, Pilot Return	Spool	**414351000**
		1/8"	.20	4-Way, Spring Return	Spool	**414311000**
		1/8"	.20	4-Way, Spring Return, Foot Mounted	Spool	**414321000**
		1/8"	.20	4-Way, Pilot Return	Spool	**414351000**
Pedal Operated		1/4"	.83	3-Way, Spring Return	Spool	**524711000**
		1/4"	.83	3-Way, Pilot Return	Spool	**524751000**
		1/4"	.83	4-Way, Spring Return	Spool	**520711000**
		1/4"	.83	4-Way, Pilot Return	Spool	**520751000**

⚠ ***CAUTION:***
This valve shall not be used to actuate a punch press. Do not use this valve on punch presses or press brakes. See OSHA 1910.217.

Treadle Operated		1/4"	.83	3-Way, Treadle Operated, Detented	Spool	**524931000**
		1/4"	.83	4-Way, Treadle Operated, Detented	Spool	**520931000**

⚠ ***CAUTION:***
This valve shall not be used to actuate a punch press. Do not use this valve on punch presses or press brakes. See OSHA 1910.217.

Directair 2

41 0 1 1 1 000

Basic Series	
1/8" Port Poppet Valve	40*
1/8" Port Spool Valve	41

* Only available in Spring Return.

Type	
4-Way, 2-Position Valve	0*
3-Way, 2-Position	4

* N/A with Basic Series 40.

Actuation	
Plunger	1
Roller - Delrin	2
One-Way Tripper	3
Button - Spring Return	4
Hand Lever	7
Toggle	8
Button - Push-Pull	9*

* N/A with Basic Series 40.

Mounting	
1	Direct Pipe Ported, NPT
K	Direct Pipe Ported, BSPP

Return	
1†	Spring
2†	Spring w/ Foot Mount
3*	None (Manual Return)
4*	None (Manual Return w/ Foot Mount)
5†	Remote Pilot Return

* Available only with Actuation 9.
† N/A with Actuation 8.

Manual / Mechanical	
000	Standard

Directair 4

52 0 8 1 1 000

Basic Series	
1/4" Port Spool Valve	52

Type	
4-Way, 2-Position Valve	0
4-Way, 3-Position, Closed Center	1*
4-Way, 3-Position, Pressure Center	2*
3-Way, 3-Position, Closed Center	3*
3-Way, 2-Position, Normally Closed	4
3-Way, 2-Position, Normally Open	6
4-Way, 3-Position, Exhaust Center	9*

* Only Available with Actuation 8 Lever.

Actuation	
Roller - Delrin	2
Button	4
Pedal	7
Lever	8
Treadle	9
Roller - Metal	A

Mounting	
1	Direct Pipe Ported, NPT
L	Direct Pipe Ported, BSPP

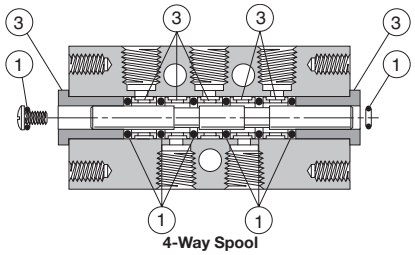
Return	
1††	Spring
3†	None (Manual Return)
5*	Remote Pilot Return

* N/A with Actuation 8 & 9.
† N/A with Actuation 2, 7 or A.
†† N/A with Actuation 9.

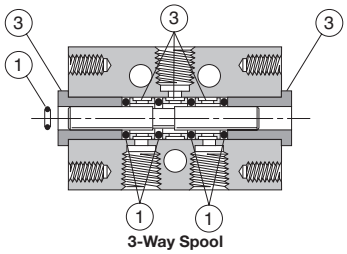
Manual / Mechanical	
000	Standard

Service Kits – 1/8 Port Size Valves (DA2)

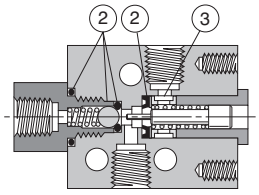
①	Spool Valve Seal Kit (3 & 4-way, direct pipe ported)	**410008000**
②	Poppet Valve Seal Kit	**404118000**
③	Body Service Kit	**410008005**



4-Way Spool



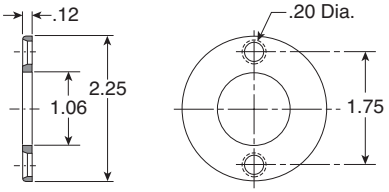
3-Way Spool



3-Way Poppet

Panel Mounting Kit – No. 520838004

Available for panel mounting direct pipe ported, lever operated 1/4" Directair 4 Series valves only. Kit includes a flange and two screws.

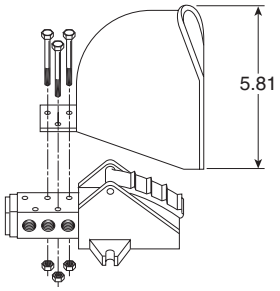


Pedal Guard Kit – No. 520718001

Pedal guard meets safety requirements for foot operated valves by protecting pedal from accidental tripping from all angles. Guard is constructed of lightweight aluminum casting for strength and durability. Bolts quickly into place with only three screws without special valve mounting. One model fits any pedal (not treadle) operated 1/4" Directair 4 Series valve.

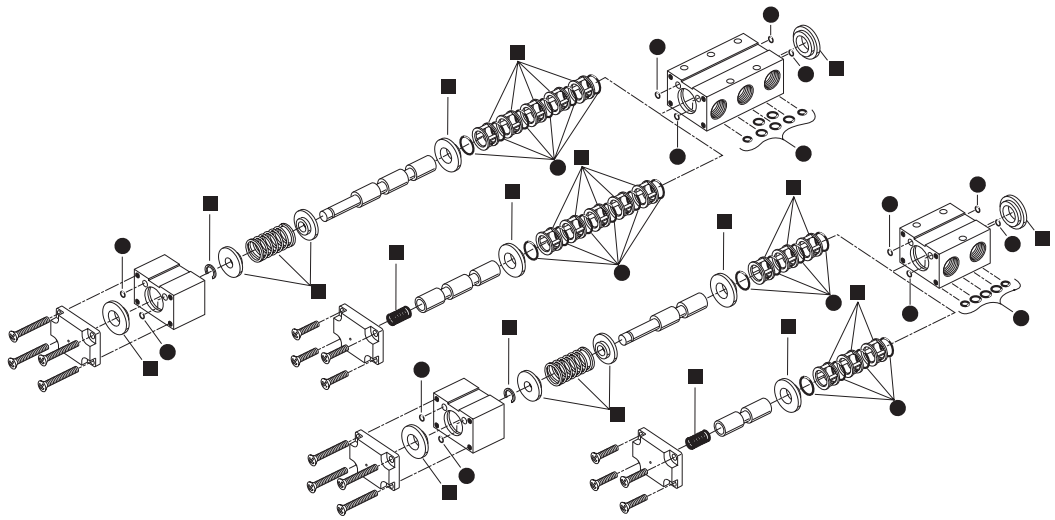
⚠ ***CAUTION:***

This valve shall not be used to actuate a punch press.
Do not use this valve on punch presses or press brakes.
See OSHA 1910.217.



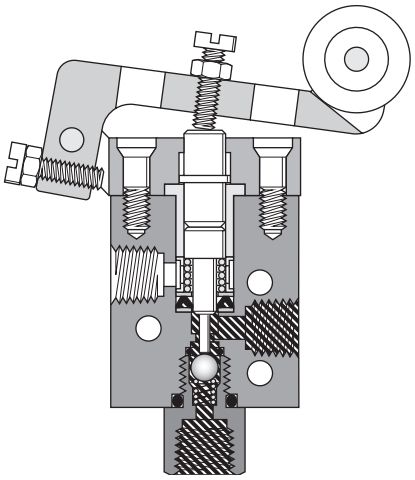
Service Kits – 1/4 Port Size Valves (DA4)

●	**Valve Seal Kit** (Contains all soft seals found in 3 & 4-way bodies and all actuator styles.)	**520008050**
	All fluorocarbon	**520008500**
■	**Body Service Kit** (Contains bushing, springs, retainers and shell from 2 & 3-position, 3 & 4-way bodies.)	**520018005**



For inventory, lead times, and kit lookup, visit www.pdnplu.com

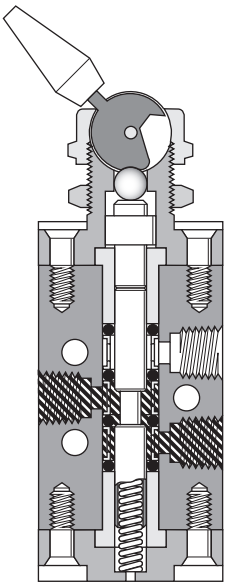
Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics



Roller Operated Poppet

Button Operated

Lever Operated



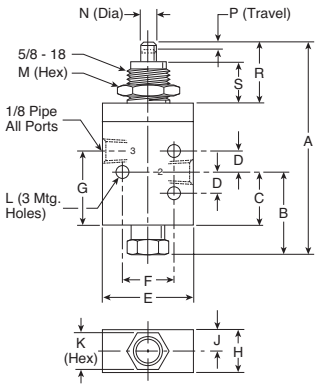
Toggle Operated Spool

Treadle Operated

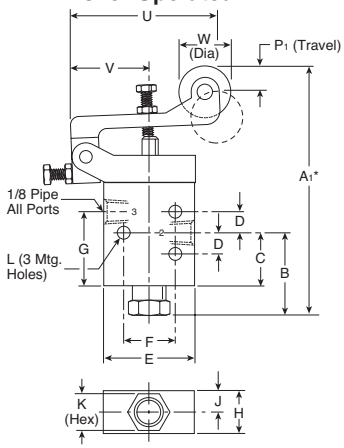
Pressure **Exhaust**

Plunger, Roller, One-way Tripper & Toggle Operated — 3-Way, 3-Port, 2-Position – 1/8" Ports

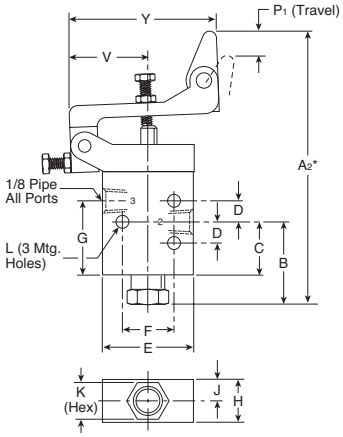
Plunger Operated



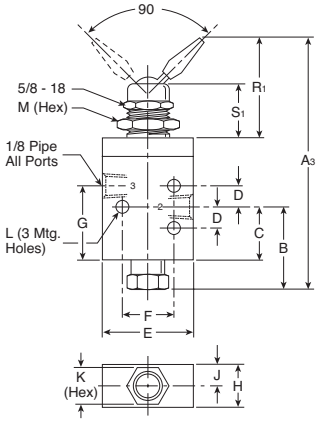
Roller Operated



One-Way Tripper Operated



Toggle Operated



3-Way, 3-Port, 2-Position

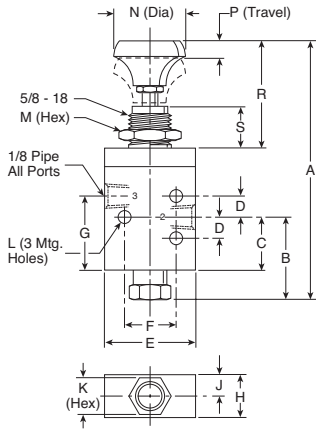
A	A1*	A2*	A3	B
3.37 (86)	4.21 (107)	4.46 (113)	3.99 (101)	1.03 (26)
C	**D**	**E**	**F**	**G**
.55 (14)	.31 (8)	1.31 (33)	.75 (19)	.90 (23)
H	**J**	**K**	**L**	**M**
.62 (16)	.31 (8)	.56 (14)	.19 (5)	.88 (22)
N	**P**	**P1**	**R**	**R1**
.25 (6)	.17 (4)	.38 (10)	.91 (23)	1.53 (39)
S	**S1**	**U**	**V**	**W**
.62 (16)	.78 (20)	2.28 (58)	1.19 (30)	.75 (19)
X	**Y**			
.19 (5)	2.19 (56)			

* Dimensions may be reduced .44" using adjusting screw.

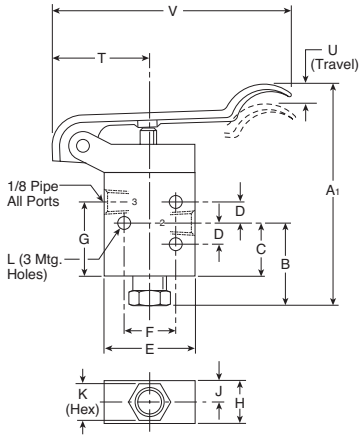
Inches (mm)

Button & Hand Lever Operated — 3-Way, 3-Port, 2-Position – 1/8" Ports

Button Operated



Hand Lever Operated



3-Way, 3-Port, 2-Position

A	A1	B	C	D
4.13 (105)	3.34 (85)	1.03 (26)	.55 (14)	.31 (8)
E	**F**	**G**	**H**	**J**
1.31 (33)	.75 (19)	.90 (23)	.62 (16)	.31 (8)
K	**L**	**M**	**N**	**P**
.56 (14)	.19 (5)	.88 (22)	1.06 (27)	.17 (4)
R	**S**	**T**	**U**	**V**
1.67 (42)	.63 (16)	1.19 (30)	.53 (13)	3.38 (86)

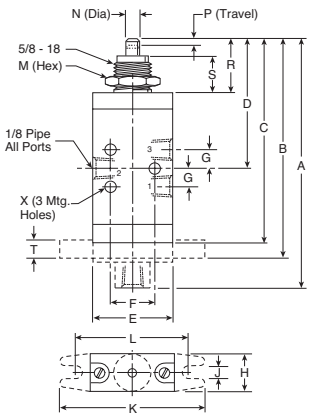
Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

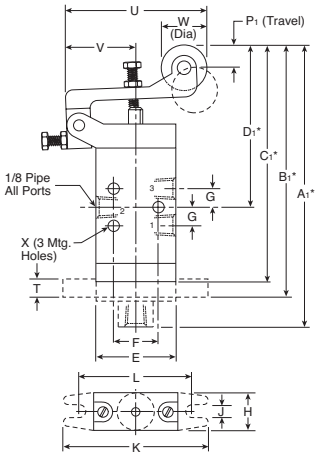
Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Plunger, Roller, One-way Tripper & Toggle Operated — 3-Way, 3-Port, 2-Position – 1/8" Ports

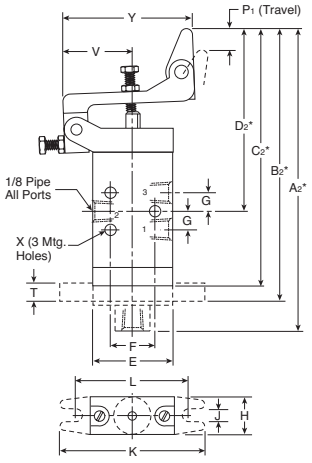
Plunger Operated



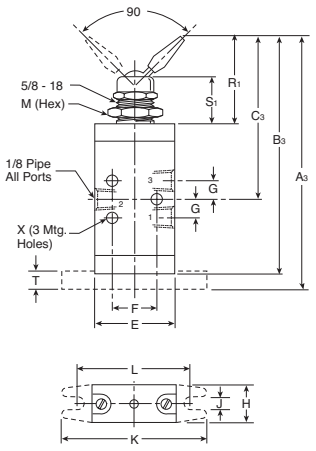
Roller Operated



One-Way Tripper Operated



Toggle Operated



3-Way, 3-Port, 2-Position

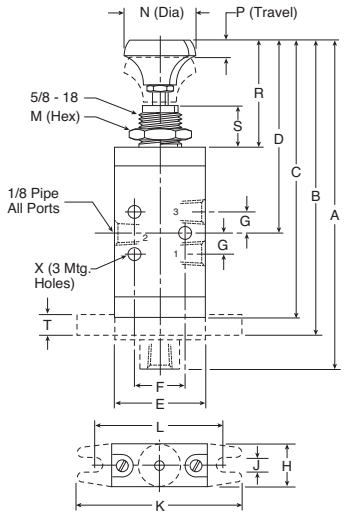
A	A1*	A2*	A3	B
4.14 (105)	4.98 (126)	5.23 (133)	4.23 (107)	3.61 (92)
B1	**B2**	**B3**	**C**	**C1**
4.45 (113)	4.70 (119)	4.00 (102)	3.38 (86)	4.22 (107)
C2	**C3**	**D**	**D1**	**D2**
4.47 (113)	2.75 (70)	2.05 (52)	2.98 (76)	3.22 (82)
E	**F**	**G**	**H**	**J**
1.31 (33)	.75 (19)	.31 (8)	.62 (16)	.20 (5)
K	**L**	**M**	**N**	**P**
2.38 (60)	1.88 (48)	.88 (22)	.25 (6)	.17 (4)
P1	**R**	**R1**	**S**	**S1**
.38 (10)	.91 (23)	1.53 (39)	.62 (16)	.78 (20)
T	**U**	**V**	**W**	**X**
.25 (6)	2.28 (58)	1.19 (30)	.75 (19)	.19 (5)
Y				
2.19 (56)				

* Dimensions may be reduced .44" using adjusting screw.

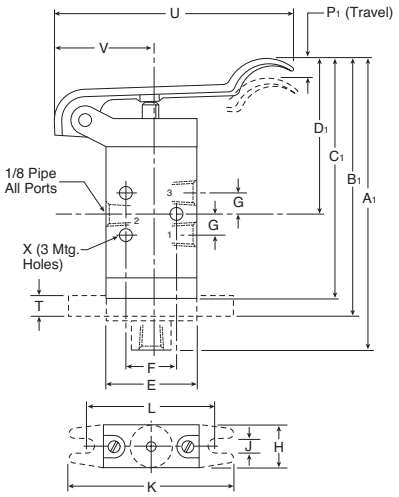
Inches (mm)

Button, Hand Lever Operated — 3-Way, 3-Port, 2-Position – 1/8" Ports

Button Operated



Hand Lever Operated



3-Way, 3-Port, 2-Position

A	A1	B	B1	C
5.08 (129)	4.29 (109)	4.55 (115)	3.77 (96)	4.31 (109)
C1	**D**	**D1**	**E**	**F**
3.53 (90)	3.08 (78)	2.29 (58)	1.31 (33)	.75 (19)
G	**H**	**J**	**K**	**L**
.31 (8)	.62 (16)	.20 (5)	2.38 (60)	1.88 (48)
M	**N**	**P**	**P1**	**R**
.88 (22)	1.06 (27)	.17 (4)	.53 (13)	1.67 (42)
S	**T**	**U**	**V**	**X**
.63 (16)	.25 (6)	3.38 (86)	1.19 (30)	.19 (5)
Y				
.59 (15)				

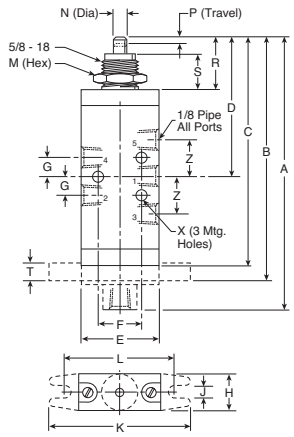
Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

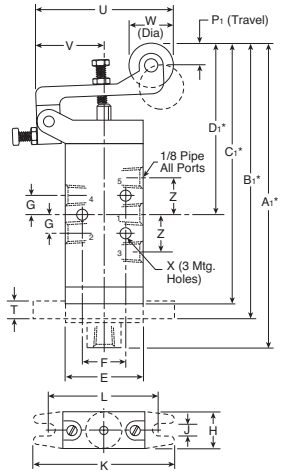
Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Plunger, Roller, One-way Tripper & Toggle Operated — 4-Way, 5-Port, 2-Position – 1/8" Ports

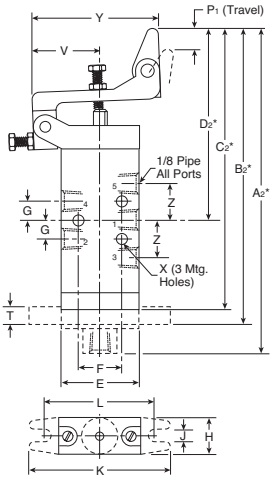
Plunger Operated



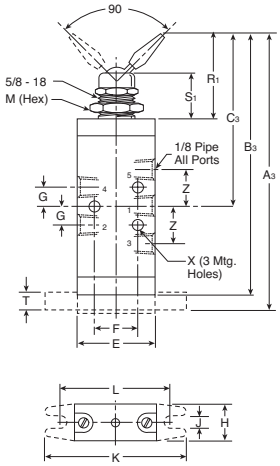
Roller Operated



One-Way Tripper Operated



Toggle Operated



4-Way, 5-Port, 2-Position

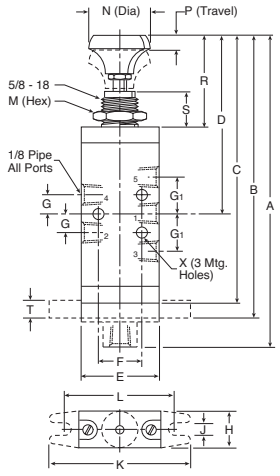
A	A_1*	A_2*	A_3	B
4.75 (121)	5.59 (142)	5.84 (148)	4.84 (123)	4.22 (107)
B_1*	**B_2***	**B_3**	**C**	**C_1***
5.06 (128)	5.31 (135)	4.61 (117)	3.99 (102)	4.83 (123)
C_2*	**C_3**	**D**	**D_1***	**D_2***
5.08 (129)	3.06 (78)	2.44 (62)	3.28 (83)	3.53 (90)
E	**F**	**G**	**H**	**J**
1.31 (33)	.75 (19)	.31 (8)	.62 (16)	.20 (5)
K	**L**	**M**	**N**	**P**
2.38 (60)	1.88 (48)	.88 (22)	.25 (6)	.17 (4)
P_1	**R**	**R_1**	**S**	**S_1**
.38 (10)	.91 (23)	1.53 (39)	.62 (16)	.78 (20)
T	**U**	**V**	**W**	**X**
.25 (6)	2.28 (58)	1.19 (30)	.75 (19)	.19 (5)
Y	**Z**			
2.19 (56)	.62 (16)			

* Dimensions may be reduced .44" using adjusting screw.

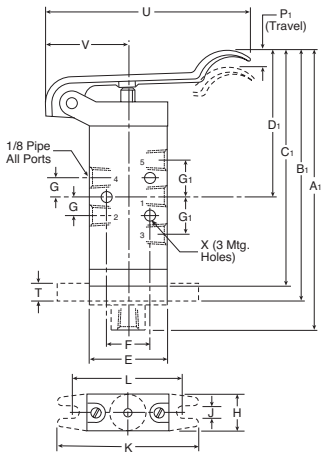
Inches (mm)

Button & Hand Lever Operated — 4-Way, 5-Port, 2-Position – 1/8" Ports

Button Operated



Hand Lever Operated



4-Way, 5-Port, 2-Position

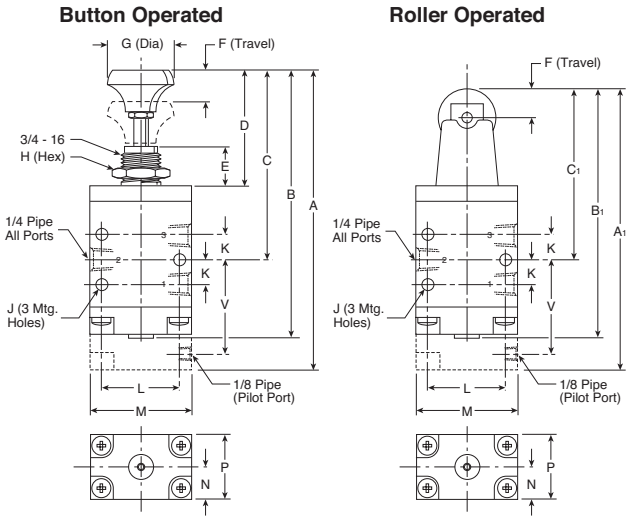
A	A_1	B	B_1	C
5.69 (144)	4.90 (124)	5.16 (131)	4.38 (111)	4.92 (125)
C_1	**D**	**D_1**	**E**	**F**
4.14 (105)	3.67 (93)	2.90 (74)	1.31 (33)	.75 (19)
G	**G_1**	**H**	**J**	**K**
.31 (8)	.63 (16)	.62 (16)	.20 (5)	2.38 (60)
L	**M**	**N**	**P**	**P_1**
1.88 (48)	.88 (22)	1.06 (27)	.17 (4)	.53 (13)
R	**S**	**T**	**U**	**V**
1.67 (42)	.63 (16)	.25 (6)	3.38 (86)	1.19 (30)
X	**Y**			
.19 (5)	.59 (15)			

Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Button & Roller Operated — 3-Way, 3-Port, 2-Position

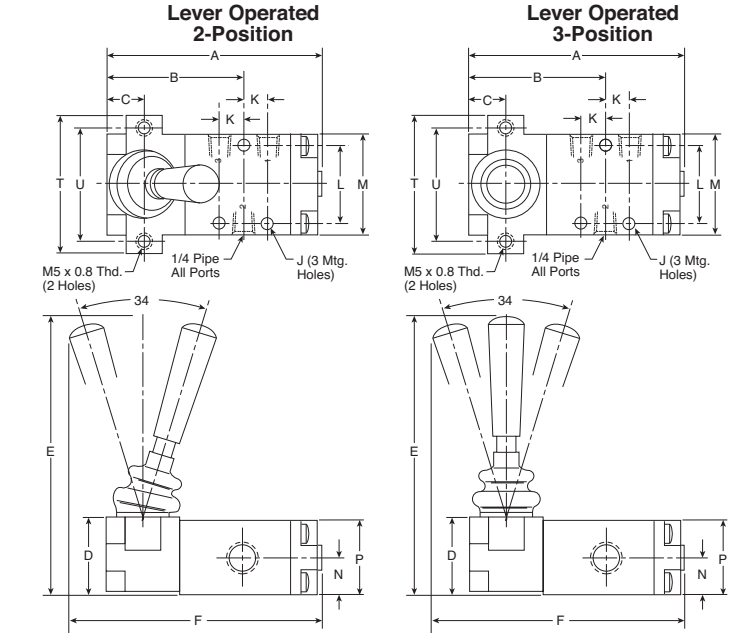


3-Way, 3-Port, 2-Position

A	A1	B	B1	C
4.91 (125)	4.25 (108)	4.44 (113)	3.78 (96)	3.10 (79)
C1	**D**	**E**	**F**	**G**
2.44 (62)	2.00 (51)	.63 (16)	.32 (8)	1.05 (27)
H	**J**	**K**	**L**	**M**
1.00 (25)	.19 (5)	.41 (10)	1.25 (32)	1.63 (42)
N	**P**	**V**		
.53 (14)	1.06 (27)	1.52 (39)		

Inches (mm)

Lever & Pedal Operated — 3-Way, 3-Port, 2 & 3-Position

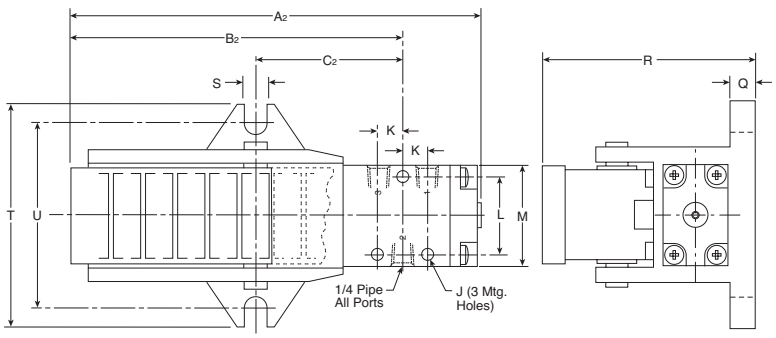


3-Way, 3-Port, 2 & 3-Position

A	A1	B	B1	C
3.31 (84)	6.55 (166)	1.97 (50)	5.20 (132)	.53 (14)
C1	**D**	**E**	**F**	**J**
2.19 (56)	1.12 (28)	4.06 (103)	3.90 (99)	.19 (5)
K	**L**	**M**	**N**	**P**
.41 (10)	1.25 (32)	1.63 (42)	.53 (14)	1.06 (27)
Q	**R**	**S**	**T**	**T1**
.37 (10)	2.40 (61)	.34 (9)	2.13 (54)	3.50 (89)
U	**U1**			
1.75 (44)	3.00 (76)			

Inches (mm)

Pedal / Treadle Operated



⚠ CAUTION:

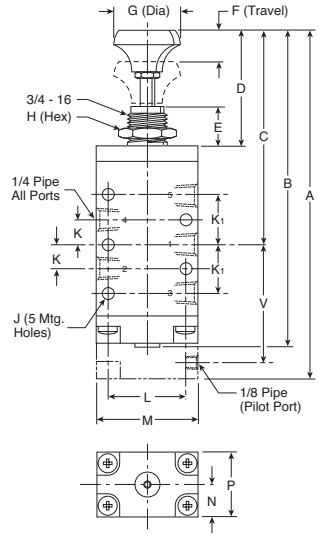
This valve shall not be used to actuate a punch press.
Do not use this valve on punch presses or press brakes.
See OSHA 1910.217.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

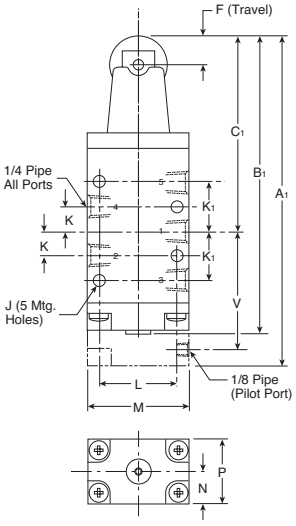
Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Button, Roller, Pedal & Treadle, Lever Operated — 4-Way, 5-Port, 2-Position

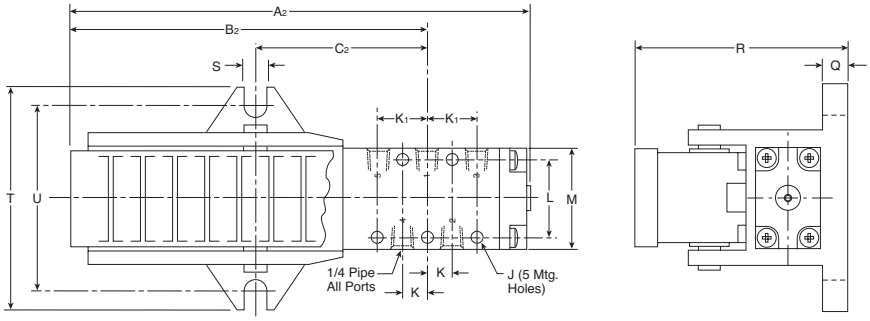
Button Operated



Roller Operated



Pedal and Treadle Operated



4-Way, 5-Port, 2-Position

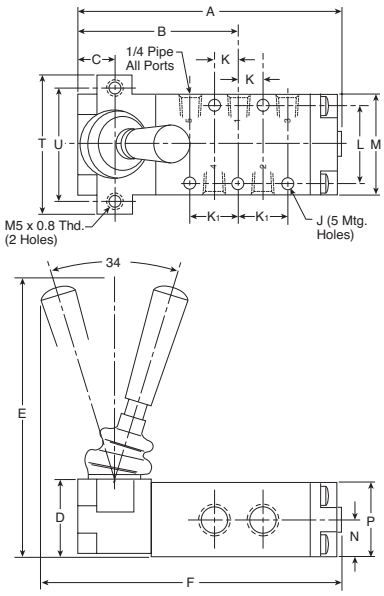
A	A1	A2	B	B1
5.75 (146)	5.13 (130)	7.41 (189)	5.28 (134)	4.66 (118)
B2	**C**	**C1**	**C2**	**D**
5.63 (143)	3.50 (89)	2.88 (73)	2.64 (67)	2.00 (51)
E	**F**	**G**	**H**	**J**
.63 (16)	.32 (8)	1.05 (27)	1.00 (25)	.19 (5)
K	**K1**	**L**	**M**	**N**
.44 (11)	.84 (21)	1.25 (32)	1.63 (41)	.53 (14)
P	**Q**	**R**	**S**	**T**
1.06 (27)	.37 (10)	2.40 (61)	.34 (9)	3.50 (89)
U	**V**			
3.00 (76)	1.96 (50)			

Inches (mm)

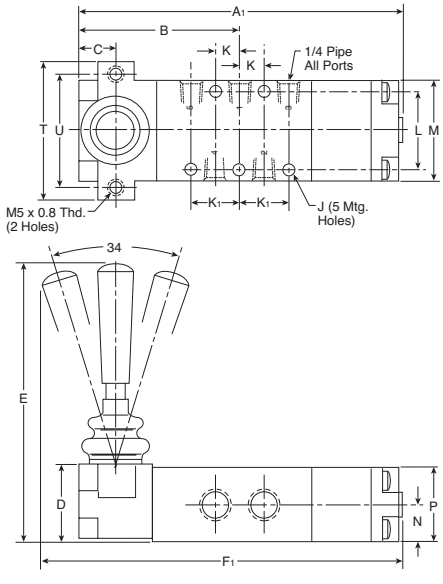
CAUTION:
This valve shall not be used to actuate a punch press. Do not use this valve on punch presses or press brakes. See OSHA 1910.217.

Lever Operated — 4-Way, 5-Port, 2 & 3-Position

Lever Operated 2-Position



Lever Operated 3-Position



4-Way, 5-Port, 2 & 3-Position

A	A1	B	C	D
4.19 (106)	5.09 (129)	2.41 (61)	.53 (14)	1.12 (28)
E	**F**	**F1**	**J**	**K**
4.06 (103)	4.78 (121)	5.78 (147)	.19 (5)	.44 (11)
K1	**L**	**M**	**N**	**P**
.84 (21)	1.25 (32)	1.63 (42)	.53 (14)	1.06 (27)
T	**U**			
2.13 (54)	1.75 (44)			

Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Viking Xtreme Manual Series

The Viking Xtreme Manual valve range is robust, versatile and combines high performance with compact installation dimensions. The valves rugged lever actuator has been specifically designed for gloved hands to suit mobile applications in the most arduous of environments. Available in 3/2, 5/2 and 5/3 functions with either spring return or detented lever. The lever actuated versions are available across the entire range from 1/8 to 1/2 port sizes.

- **Heavy duty lever**
- **Inline valve**
  – 1/8", 1/4", 3/8", 1/2" NPT & BSPP
- **2-position models**
  – 4-way & 3-way
- **3-position models**
  – all ports blocked
  – pressure center
  – center exhaust
- **Approval**
  – Canada Registration Number available (CRN)
- **Over-moulded single piece aluminium spool**
  – Reduced product complexity
  – Increased flow
  – Wide operating temperature range
  – Stable seal performance even with high flow / pressure drop across spool.

Operating information

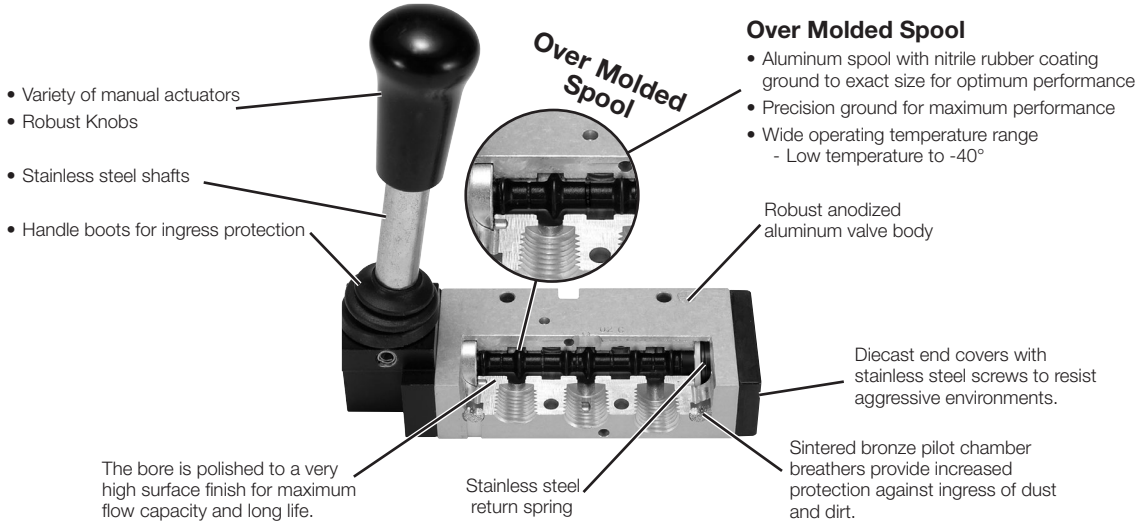
Operating pressure:	Type A & B:	Vacuum to 232 PSIG (Vacuum to 16 bar Max.)
	Type C & D:	Vacuum to 174 PSIG (Vacuum to 12 bar Max.)
Temperature range:	Xtreme:	-40°F to 140°F (-40°C to 60°C)

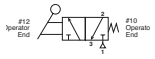
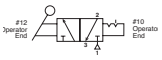
Material specifications

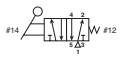
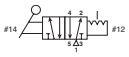
End covers	Anodized aluminum
Lever	Reinforced polyamide plastic
Lever housing	Acetal plastic
Piston	Acetal plastic / anodized aluminum
Seals	Nitrile rubber
Screws	Stainless steel
Spool	Aluminum & nitrile rubber
Springs	Stainless steel
Valve body	Anodized aluminum

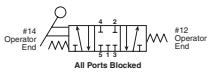
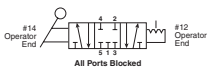
Lever Handle – 1/8" valve size, 5/2 & 5/3 only	Twist Handle – 1/4" valve sizes	Lever Handle – All other valve sizes

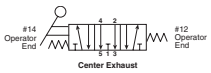
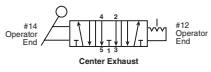
Features



3/2 - 2-Position *	Symbol	Valve Type	Port Size	Cv	Weight lb (kg)	Part Number NPT	Part Number BSPP
Size P2LBX Shown		Lever Spring Return	1/8	0.6	0.73 (0.33)	**P2LAX391VS**	**P2LAX311VS**
			1/4	1.5	0.73 (0.33)	**P2LBX392VS**	**P2LBX312VS**
			3/8	2.5	0.88 (0.40)	**P2LCX393VS**	**P2LCX313VS**
			1/2	2.7	1.32 (0.60)	**P2LDX394VS**	**P2LDX314VS**
Size P2LAX Shown		Lever Detent	1/8	0.7	0.73 (0.33)	**P2LAX391VV**	**P2LAX311VV**
			1/4	1.3	0.73 (0.33)	**P2LBX392VV**	**P2LBX312VV**
			3/8	2.5	0.88 (0.40)	**P2LCX393VV**	**P2LCX313VV**
			1/2	2.7	1.32 (0.60)	**P2LDX394VV**	**P2LDX314VV**

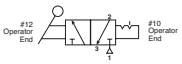
5/2 - 2-Position *	Symbol	Valve Type	Port Size	Cv	Weight lb (kg)	Part Number NPT	Part Number BSPP
Size P2LBX Shown		Lever Spring Return	1/8	0.6	0.40 (0.18)	**P2LAX591VS**	**P2LAX511VS**
			1/4	1.5	0.73 (0.33)	**P2LBX592VS**	**P2LBX512VS**
			3/8	2.5	0.88 (0.40)	**P2LCX593VS**	**P2LCX513VS**
			1/2	2.7	1.32 (0.60)	**P2LDX594VS**	**P2LDX514VS**
Size P2LAX Shown		Lever Detent	1/8	0.7	0.40 (0.18)	**P2LAX591VV**	**P2LAX511VV**
			1/4	1.3	0.73 (0.33)	**P2LBX592VV**	**P2LBX512VV**
			3/8	2.5	0.88 (0.40)	**P2LCX593VV**	**P2LCX513VV**
			1/2	2.7	1.32 (0.60)	**P2LDX594VV**	**P2LDX514VV**

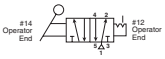
5/3 - 3-Position,* All Ports Blocked	Symbol	Valve Type	Port Size	Cv	Weight lb (kg)	Part Number NPT	Part Number BSPP
Size P2LAX Shown		Lever Spring Center	1/8	0.6	0.40 (0.18)	**P2LAX69111**	**P2LAX61111**
			1/4	1.5	0.73 (0.33)	**P2LBX69211**	**P2LBX61211**
			3/8	2.5	1.56 (0.71)	**P2LCX69311**	**P2LCX61311**
			1/2	2.7	1.61 (0.73)	**P2LDX69411**	**P2LDX61411**
Size P2LBX Shown		Lever Detent	1/8	0.7	0.40 (0.18)	**P2LAX69122**	**P2LAX61122**
			1/4	1.3	0.73 (0.33)	**P2LBX69222**	**P2LBX61222**
			3/8	2.5	1.56 (0.71)	**P2LCX69322**	**P2LCX61322**
			1/2	2.7	1.61 (0.73)	**P2LDX69422**	**P2LDX61422**

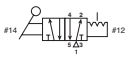
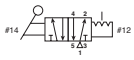
5/3 - 3-Position,* Center Exhaust	Symbol	Valve Type	Port Size	Cv	Weight lb (kg)	Part Number NPT	Part Number BSPP
Size P2LDX Shown		Lever Spring Center	1/8	0.6	0.40 (0.18)	**P2LAX89111**	**P2LAX81111**
			1/4	1.5	0.73 (0.33)	**P2LBX89211**	**P2LBX81211**
			3/8	2.5	1.56 (0.71)	**P2LCX89311**	**P2LCX81311**
			1/2	2.7	1.61 (0.73)	**P2LDX89411**	**P2LDX81411**
Size P2LBX Shown		Lever Detent	1/8	0.7	0.40 (0.18)	**P2LAX89122**	**P2LAX81122**
			1/4	1.3	0.73 (0.33)	**P2LBX89222**	**P2LBX81222**
			3/8	2.5	1.56 (0.71)	**P2LCX89322**	**P2LCX81322**
			1/2	2.7	1.61 (0.73)	**P2LDX89422**	**P2LDX81422**

* Valve lever movement 90° to ports.

☐ Most popular.

3/2 - 2-Position	Symbol	Valve Type	Port Size	Cv		Part Number NPT	Part Number BSPP
		Twist Handle Detent	1/4	1.3	0.73 (0.33)	**P2LBX392JJ**	**P2LBX312JJ**

5/2 - 2-Position	Symbol	Valve Type	Port Size	Cv		Part Number NPT	Part Number BSPP
		Twist Handle Detent	1/4	1.3	0.73 (0.33)	**P2LBX592JJ**	**P2LBX512JJ**

5/2 - 2-Position *	Symbol	Valve Type	Port size	Cv		Part Number NPT	Part Number BSPP
		Lever Spring Return	1/4	1.3	0.73 (0.33)	**P2LBX592ZS**	**P2LBX512ZS**
		Lever Detent	1/4	1.3	0.73 (0.33)	**P2LBX592ZZ**	**P2LBX512ZZ**

* Valve lever movement inline to ports.

Viking Xtreme Manual Operated Valves

Vacuum to 232 PSIG (Vacuum to 16 bar) -40°F to 140°F (-40°C to 60°C)

P2L A X 5 91 VS

Valve Size	
1/8"	A
1/4"	**B**
3/8"	**C**
1/2"	D

Valve Type / Function	
3/2 NC - 2-Position	**3**
5/2 2-Position	**5**
5/3 3-Position, APB	**6**
5/3 3-Position, PC	7
5/3 3-Position, CE	**8**

Actuator / Position / Lever	
JJ*	**Twist Handle Detent, 2-Position**
VS	**Spring Return Lever, 2-Position, 90° to Ports**
VV	**Lever, Detent, 2-Position, 90° to Ports**
ZS**	Spring Return Lever, 2-Position, Inline to Ports
ZZ**	Lever Detent, 2-Position, Inline to Ports
11	Spring Centered Lever, 3-Position, 90° to Ports
22	Lever, Detent, 3-Position, 90° to Ports
55**	Spring Return Lever, 3-Position, Inline to Ports
66**	Lever Detent, 3-Position, Inline to Ports

* Not available with 3-position valves or main port thread 1N or 9N, valve size B only.
** Size B valve only.

Main Port Thread	
11	G1/8 (P2LA)
12	G1/4 (P2LB)
1N*	G1/4 (P2LB) NAMUR Mount
13	G3/8 (P2LC)
14	G1/2 (P2LD)
91	**1/8" NPT (P2LA)**
92	**1/4" NPT (P2LB)**
9N*	**1/4 NPT (P2LB) NAMUR Mount**
93	**3/8" NPT (P2LC)**
94	1/2" NPT (P2LD)

* 5/2, 2-position valve only.

☐ Most popular.

Exhaust Mufflers

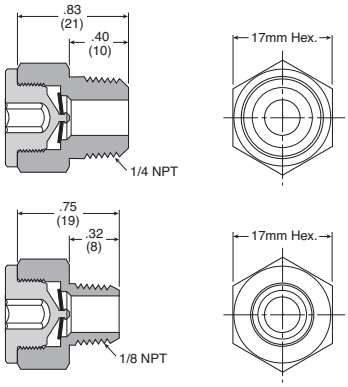
Pipe Thread	Part Number
M5	**P6M-PAC5**
1/8" NPT	**EM12**
1/4" NPT	**EM25**
3/8" NPT	**EM37**
1/2" NPT	**EM50**

P6M - Plastic; EM - Sintered bronze

Plastic Silencers

Thread Size	Part Number NPT	BSPT	Metric	A (mm)	B (mm)
M5			**AS-5**	.43 (11)	.32 (8)
1/8"	**ASN-6**	**AS-6**		1.57 (40)	.63 (16)
1/4"	**ASN-8**	**AS-8**		2.56 (65)	.83 (21)
3/8"	**ASN-10**	**AS-10**		3.35 (85)	.98 (25)
1/2"	**ASN-15**	**AS-15**		3.74 (95)	1.18 (30)

Exhaust Protector



Features

- 1/8 and 1/4 NPT male sizes
- Fitted with a brass pipe adapter and a fluorocarbon membrane
- Resistant to rust, clog, wash down and contamination

Applications

These protectors are intended for mobile applications, quick venting applications and alternative exhaust port breathers that require protection against clogging.

Ideal for valves exposed to harsh environmental conditions (which can cause a “caking up” in the exhaust pipe ports where the bronze mufflers or breather vents are installed).

Particularly suitable for time-sensitive applications such as axle-lift suspensions or pushers or tag axles.

Specifications

Operating pressure ..... 0 – 150 PSIG
(0 to 10 bar, 0 to 1034 kPa)

Operating temperature ..... -40°F to 158°F (-40°C to 70°C)

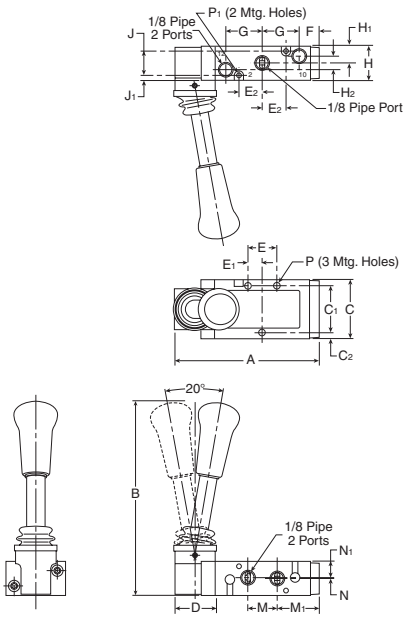
Material:

Body and pipe adapter ..... Brass
Membrane .....Fluorocarbon

Flow Data (SCFM)

Part Number	Size	60 PSIG Inlet	90 PSIG Inlet	125 PSIG Inlet
E90016	1/8"	40.1	56.5	75.5
E90017	1/4"	44.6	62.7	83.5

P2LAX 3/2 Hand Lever Operated
Lever operation 90° to ports movement

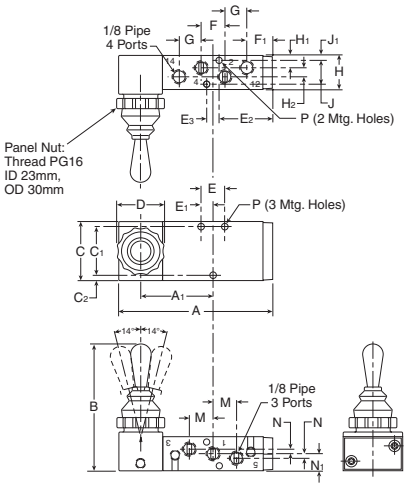


P2LAX 3/2

A	B	C
3.88 (99)	5.23 (133)	1.57 (40)
C1	**C2**	**D**
1.26 (32)	.16 (4)	1.06 (27)
E	**E1**	**E2**
.79 (20)	.39 (10)	.63 (16)
F	**G**	**H**
.55 (14)	.98 (25)	.87 (22)
H1	**H2**	**J**
.42 (10.6)	.02 (0.5)	.65 (16.5)
J1	**M**	**M1**
.11 (2.9)	.79 (20)	1.14 (29)
N	**N1**	**P**
.18 (4.5)	.26 (6.6)	Ø .17 Ø (4.3)
P1		
Ø .12 Ø (3.1)		

Inches (mm)

P2LAX 5/2 & 5/3 Hand Lever Operated
Lever operation 90° to ports movement

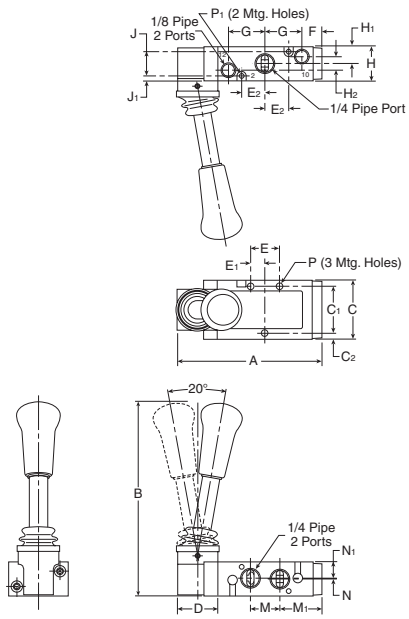


P2LAX 5/2 & 5/3

A	A1	B
4.02 (102)	1.89 (48)	3.23 (82)
C	**C1**	**C2**
1.57 (40)	1.30 (33)	.14 (3.5)
D	**E2**	**E3**
1.18 (30)	1.42 (36)	.33 (8.5)
F	**F1**	**G**
.63 (16)	.67 (17)	.59 (15)
H	**H1**	**H2**
.87 (22)	.31 (8)	.24 (6)
J	**J1**	**M**
.63 (16)	.12 (3)	.63 (16)
N	**N1**	**P**
.12 (3)	.43 (11)	Ø .16 Ø (4.1)

Inches (mm)

P2LBX 3/2 Hand Lever Operated
Lever operation 90° to ports movement

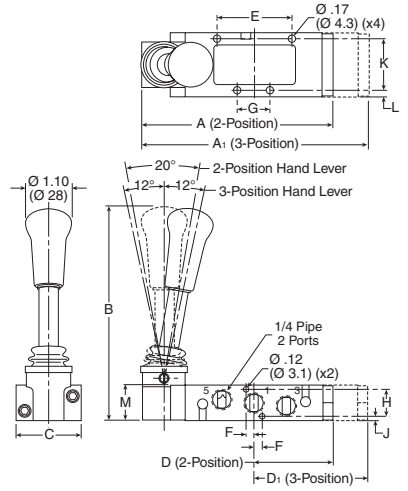


P2LBX 3/2

A	B	C
3.88 (99)	5.23 (133)	1.57 (40)
C1	**C2**	**D**
1.26 (32)	.16 (4)	1.06 (27)
E	**E1**	**E2**
.79 (20)	.39 (10)	.63 (16)
F	**G**	**H**
.55 (14)	.98 (25)	.87 (22)
H1	**H2**	**J**
.42 (10.6)	.02 (0.5)	.65 (16.5)
J1	**M**	**M1**
.11 (2.9)	.79 (20)	1.14 (29)
N	**N1**	**P**
.18 (4.5)	.26 (6.6)	Ø .17 Ø (4.3)
P1		
Ø .12 Ø (3.1)		

Inches (mm)

P2LBX 5/2 & 5/3 Hand Lever Operated
Lever operation 90° to ports movement



P2LBX 5/2 & 5/3

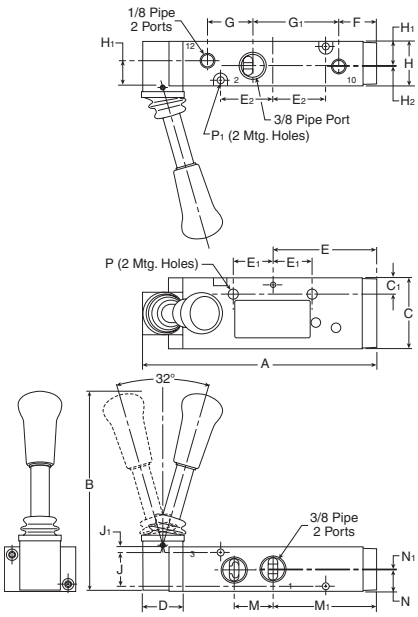
A	A1	B
4.67 (118.5)	5.51 (140)	5.19 (131.8)
C	**D**	**D1**
1.57 (40)	1.93 (49)	2.35 (59.8)
E	**F**	**G**
1.81 (46)	.20 (5)	.79 (20)
H	**J**	**K**
.65 (16.5)	.11 (2.85)	1.26 (32)
L	**M**	
.16 (4)	.87 (22.2)	

Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

P2LCX 3/2 Hand Lever Operated
Lever operation 90° to ports movement

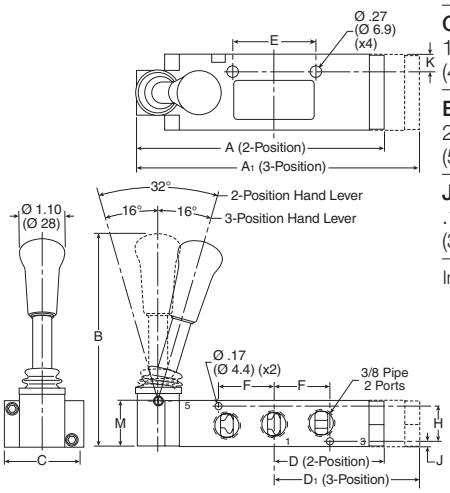


P2LCX 3/2

A	B	C
6.20 (158)	5.36 (136)	1.89 (48)
C1	**D**	**E**
.43 (11)	1.06 (27)	2.76 (70)
E1	**E2**	**F**
1.04 (27)	1.40 (36)	1.02 (26)
G	**G1**	**H**
1.22 (31)	2.24 (57)	1.18 (30)
H1	**H2**	**J**
.67 (17)	.02 (0.5)	.91 (23)
J1	**M**	**M1**
.14 (3.5)	1.18 (30)	2.76 (70)
N	**N1**	**P**
.59 (15)	.04 (1)	Ø .27 Ø (6.9)
P1		
Ø .17 Ø (4.4)		

Inches (mm)

P2LCX 5/2 & 5/3 Hand Lever Operated
Lever operation 90° to ports movement

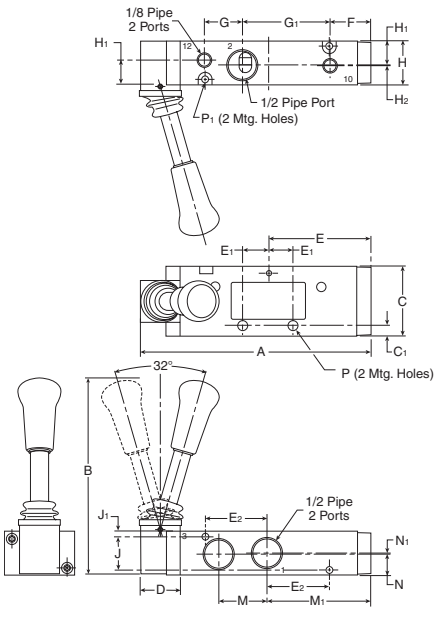


P2LCX 5/2 & 5/3

A	A1	B
6.20 (157.5)	7.07 (179.5)	5.36 (136.3)
C	**D**	**D1**
1.89 (48)	2.76 (70)	3.19 (81)
E	**F**	**H**
2.09 (53)	1.40 (35.5)	.91 (23)
J	**K**	**M**
.14 (3.5)	.43 (11)	1.18 (30)

Inches (mm)

P2LDX 3/2 Hand Lever Operated
Lever operation 90° to ports movement

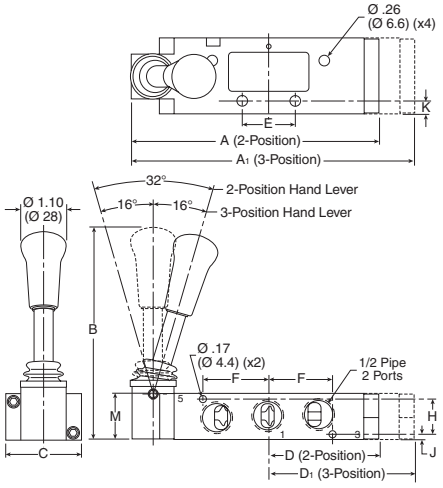


P2LDX 3/2

A	B	C
6.20 (158)	5.36 (136)	1.89 (48)
C1	**D**	**E**
.30 (7.5)	1.06 (27)	2.76 (70)
E1	**E2**	**F**
.67 (17)	1.65 (42)	1.08 (28)
G	**G1**	**H**
.98 (25)	2.36 (60)	1.18 (30)
H1	**H2**	**J**
.67 (17)	.02 (0.5)	.91 (23)
J1	**M**	**M1**
.14 (3.5)	1.30 (33)	2.76 (70)
N	**N1**	**P**
.59 (15)	.04 (1)	Ø .26 Ø (6.6)
P1		
Ø .17 Ø (4.4)		

Inches (mm)

P2LDX 5/2 & 5/3 Hand Lever Operated
Lever operation 90° to ports movement



P2LDX 5/2 & 5/3

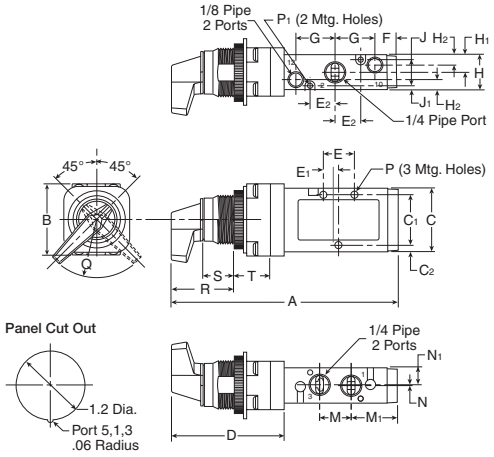
A	A1	B
6.20 (157.5)	7.07 (179.5)	5.36 (136.3)
C	**D**	**D1**
1.89 (48)	3.19 (81)	2.76 (70)
E	**F**	**H**
1.34 (34)	1.65 (42)	.91 (23)
J	**K**	**M**
.14 (3.5)	.30 (7.5	1.18 (30)

Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

P2LBX 3/2 Twist Lever Operated



P2LBX 3/2

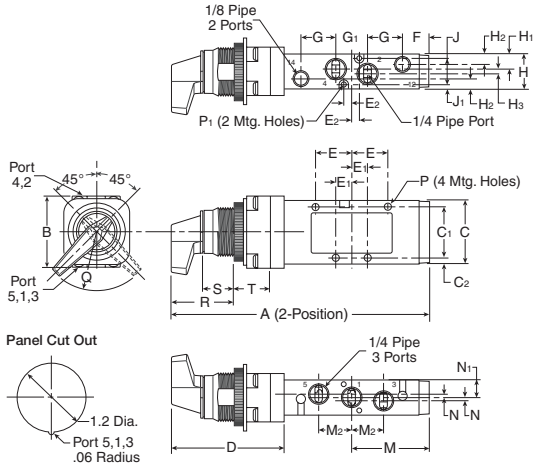
A	B	C	C1	C2	D	E	E1	E2
5.67	1.79	1.57	1.26	.16	2.87	.79	.39	.63
(144)	(45.5)	(40)	(32)	(4)	(73)	(20)	(10)	(16)

F	G	H	H1	H2	J	J1	M	M1
.55	.98	.87	.44	.26	.65	.11	.79	1.14
(14)	(25)	(22.2)	(11.1)	(6.6)	(16.5)	(2.9)	(20)	(29)

N	N1	P	P1	Q	R	S	T
.02	.42	Ø .17	Ø .12	1.5R	1.85	1.10	.67
(0.5)	(10.6)	Ø (4.3)	Ø (3.1)	(38.1)R	(47)	(28)	(17)

Inches (mm)

P2LBX 5/2 Twist Lever Operated



P2LBX 5/2

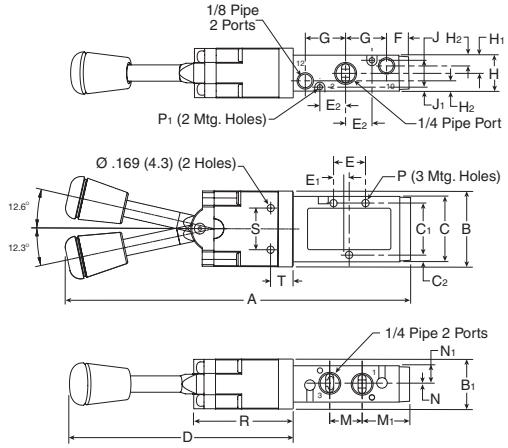
A	B	C	C1	C2	D	E	E1	E2	F
6.46	1.79	1.57	1.26	.15	2.87	.91	.39	.20	.67
(164)	(45.5)	(40)	(32)	(4)	(73)	(23)	(10)	(5)	(17)

G	G1	H	H1	H2	H3	J	J1	M	M2
.87	.79	.87	.44	.26	.12	.65	.11	1.93	.79
(22)	(20)	(22.2)	(11.1)	(6.6)	(3)	(16.5)	(2.9)	(49)	(20)

N	N1	P	P1	Q	R	S	T
.08	.44	Ø .17	Ø .12	1.5R	1.85	1.10	.67
(0.2)	(11.1)	Ø (4.3)	Ø (3.1)	(38.1)R	(47)	(28)	(17)

Inches (mm)

P2LBX 3/2 Knob Lever Operated
Lever operation inline with ports



P2LBX 3/2

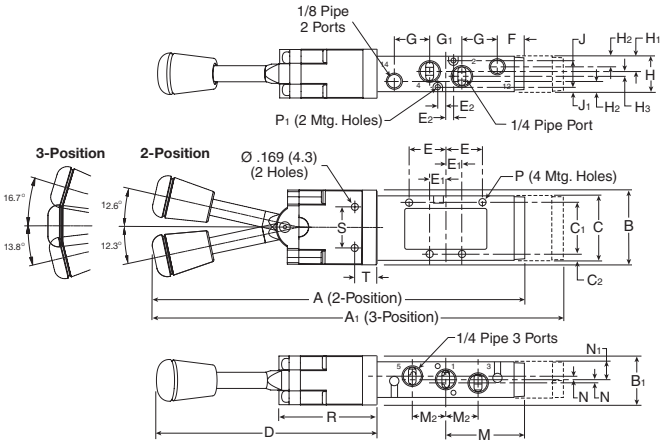
A	B	B1	C	C1	C2	D	E	E1
8.19	1.79	1.2	1.57	1.26	.16	5.39	.79	.39
(208)	(45.5)	(30.5)	(40)	(32)	(4)	(137)	(20)	(10)

E2	F	G	H	H1	H2	J	J1	M
.63	.55	.98	.87	.44	.26	.65	.11	.79
(16)	(14)	(25)	(22.2)	(11.1)	(6.6)	(16.5)	(2.9)	(20)

M1	N	N1	P	P1	R	S	T
1.14	.02	.42	Ø .17	Ø .12	2.38	.98	.52
(29)	(0.5)	(10.6)	Ø (4.3)	Ø (3.1)	(60.5)	(25.0)	(13.2)

Inches (mm)

P2LBX 5/2 & 5/3 Knob Lever Operated
Lever operation inline with ports



P2LBX 5/2 & 5/3

A	A1	B	B1	C	C1	C2	D	E	E1
8.97	9.84	1.79	1.2	1.57	1.26	.15	5.39	.91	.39
(228)	(250)	(45.5)	(30.5)	(40)	(32)	(4)	(137)	(23)	(10)

E2	F	G	G1	H	H1	H2	H3	J	J1
.20	.67	.87	.79	.87	.44	.26	.12	.65	.11
(5)	(17)	(22)	(20)	(22.2)	(11.1)	(6.6)	(3)	(16.5)	(2.9)

M	M2	N	N1	P	P1	R	S	T
1.93	.79	.08	.44	Ø .17	Ø .12	2.38	.98	.52
(49)	(20)	(0.2)	(11.1)	Ø (4.3)	Ø (3.1)	(60.5)	(25.0)	(13.2)

Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

42 Lever / Pedal Series

Heavy duty lever
- Parallel mount handle
- Perpendicular mount handle

Heavy duty foot pedal

1 port size
- 3/8" port – 1.3 to 2.9 Cv

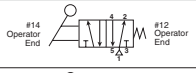
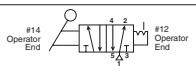
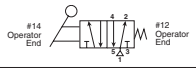
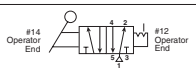
2-position
- 4-way

3-position valves
- All ports blocked
- Center exhaust

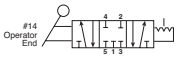
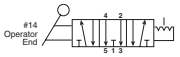
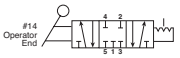
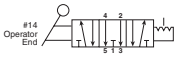
Operating information

Operating pressure: Vacuum to 150 PSI (710 mmHg to 1035 kPa)
Temperature range: 0°F to 140°F (-18°C to 60°C)

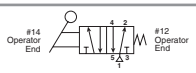
Lever Valve - 2-Position

	Symbol	Port Size	Cv	Description	Valve Type	Part Number
		3/8"	2.9	Inline, parallel	2-position, spring return	**422CS021K**
		3/8"	2.9	Inline, parallel	2-position, detent	**422CS021W**
		3/8"	2.9	Inline, perpendicular	2-position, spring return	**422CR021K**
		3/8"	2.9	Inline, perpendicular	2-position, detent	**422CR021W**

Lever Valve - 3-Position

	Symbol	Port Size	Cv	Description	Valve Type	Part Number
		3/8"	1.3	Inline, parallel	3-position, APB	**422CS023W**
		3/8"	1.3	Inline, parallel	3-position, CE	**422CS024W**
		3/8"	1.3	Inline, perpendicular	3-position, APB	**422CR023W**
		3/8"	1.3	Inline, perpendicular	3-position, CE	**422CR024W**

Foot Pedal Valve - 2-Position

	Symbol	Port Size	Cv	Description	Valve Type	Part Number
		3/8"	2.9	Foot pedal	2-position, spring return	**422CT021K**

⚠ ***CAUTION:***
This valve shall not be used to actuate a punch press. Do not use this valve on punch presses or press brakes. See OSHA 1910.217.

☐ Most popular.

42 Lever / Pedal Series

422 C R 0 1 1 K

Operator #14 End	
Lever Perpendicular (Inline Only)	R
Lever Parallel	S
Foot Pedal (2-Position, Spring Return, Inline Only)	T

Style	
NPT	0

Function (4-Way)	
2-Position	
1	Single Pressure
3-Position*	
3	Single Pressure - All Ports Blocked
4	Single Pressure - Cyl. Ports to Exhaust

* Available Detented Only.

Port Size	
2	3/8"

Operator #12 End	
K	Spring Return (2-Position Only)
W	Detented

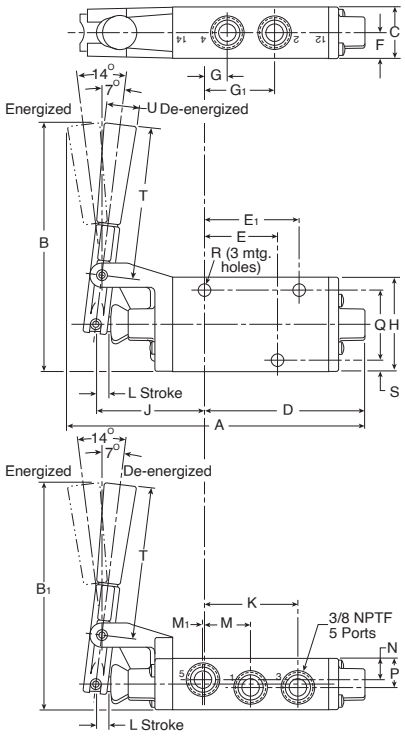
Valve body service kits

2-position valve	Single pressure	**PS2038P**
	Dual pressure	**PS2039P**
3-position valve	Single pressure	**PS2041P**

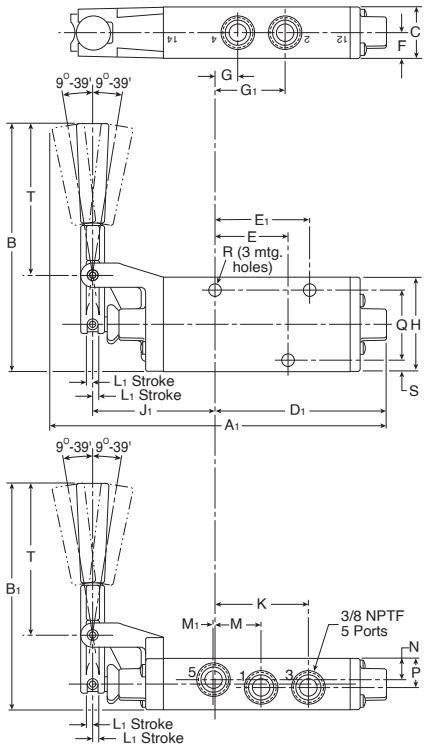
Kit includes: all soft seals and spool.

☐ Most popular.

2-Position



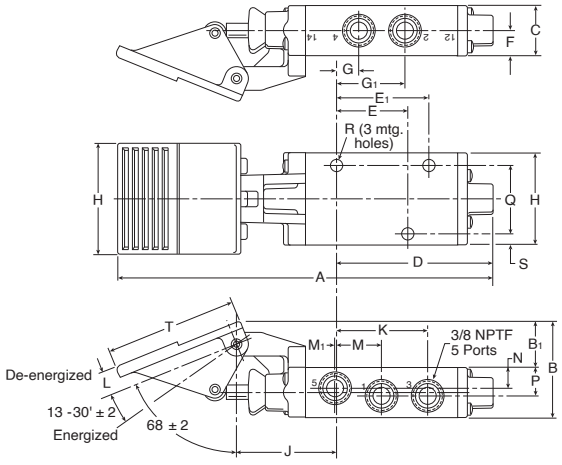
3-Position



Lever Valve

A	A1	B	B1	C
6.70 (170)	7.58 (193)	5.55 (141)	5.05 (128)	1.15 (29)
D	**D1**	**E**	**E1**	**F**
3.59 (91)	3.83 (97)	1.58 (40)	2.06 (52)	.57 (14)
G NPT	**G1 NPT**	**H**	**J**	**J1**
.55 (14)	1.51 (38)	2.13 (54)	2.44 (62)	2.80 (71)
K NPT	**L**	**L1**	**M**	**L**
2.13 (54)	.25 (6)	.18 (5)	1.03 (36)	.25 (6)
L1	**M**	**M1 NPT**	**N**	**P**
.18 (5)	1.03 (36)	.06 (2)	.50 (13)	.65 (17)
Q	**R**	**S**	**T**	**U Dia**
1.58 (40)	.33 (8)	.27 (7)	3.42 (87)	.75 (19)

Inches (mm)



Foot Pedal Valve

A	B	B1	C	D
8.64 (220)	2.18 (55)	1.03 (26)	1.15 (29)	3.59 (91)
E	**E1**	**F**	**G NPT**	**G1 NPT**
1.58 (40)	2.06 (52)	.57 (14)	.55 (14)	1.51 (38)
H	**H1**	**J**	**K NPT**	**L**
2.13 (54)	2.50 (64)	2.32 (59)	2.13 (54)	.60 (15)
M	**M1 NPT**	**N**	**P**	**Q**
1.03 (26)	.06 (2)	.50 (13)	.65 (17)	1.58 (40)
R	**S**	**T**	**U**	
.33 (8)	.27 (7)	3.00 (76)	.48 (11)	

Inches (mm)

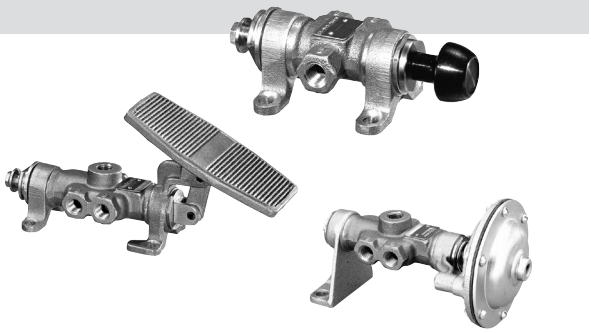
⚠ ***CAUTION:***

This valve shall not be used to actuate a punch press.
Do not use this valve on punch presses or press brakes.
See OSHA 1910.217.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

MO Series

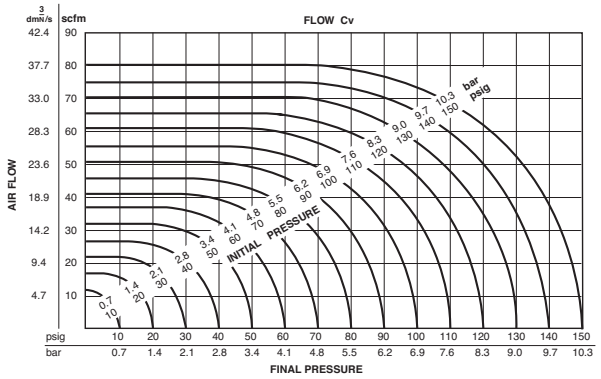


- 1/4" to 3/4" NPTF ports
- Standard operators listed. Consult factor for variations in orientation
- Standard 2 position 3-way and 4-way valves listed. Consult factory for 2-way and 3 position valves
- Corrosion resistant bronze body
- High flow brass spacers position o-ring, permit reverse piping and vacuum service
- Specially compounded o-rings suitable for non-lube air service and low pressure oil service
- Floating stem of hard chrome plated stainless steel; no metal to metal contact
- Closed at crossover design for air savings
- Piped exhaust convenient for muffling
- Interchangeable operators
- Interchangeable end sections
- Service without disturbing plumbing
- Dual mounting brackets on most models

Flow Cv ratings

Valve Type	Port Size	Port 1 to 2	Port 1 to 3	Port 2 to 3	Port 2 to 4	Port 3 to 4
3-Way 2-Position	1/4	2.4	—	2.4	—	—
	3/8	3.2	—	3.4	—	—
	1/2	5.0	—	5.1	—	—
	3/4	9.5	—	9.8	—	—
4-Way 2-Position	1/4	2.4	2.4	—	2.0	2.2
	3/8	3.4	3.2	—	3.0	3.1
	1/2	5.2	5.3	—	4.7	4.7
	3/4	8.7	9.2	—	7.9	8.0

Flow Cv



Flow capacities

The capacity curves shown in the chart are for a theoretical valve having a Cv = 1.0 for air at standard conditions.

Flow rating determined in accordance with NFPA recommended standard NFPA/T3.21.3 - 1974.

Operating information

Pressure limitations
Knob (manual and spring return) and palm operators (manual and spring return)

Media	Port size	PSI (kPa) 3-way	4-way
Air and Hydraulic	1/4	200 (1380)	180 (1240)
	3/8	175 (1210)	170 (1170)
	1/2	160 (1100)	150 (1030)
	3/4	150 (1030)	150 (1030)
Vacuum	All	Within 1" Hg of perfect	
Other	Consult factory		

Pressure limitations
Knob (detent), lever, pedal, treadle, clevis, cam air operated diaphragm and cylinder

Media	Port size	PSI (kPa) 3-way	4-way
Air and Hydraulic	1/4	225 (1550)	225 (1550)
	3/8	225 (1550)	225 (1550)
	1/2	215 (1480)	215 (1480)
	3/4	200 (1380)	200 (1380)
Vacuum	All	Within 1" Hg of perfect	
Other	Consult factory		

Temperature range: -15°F to 200°F (-26° to 93°C)

Lubrication: For best results and service life use clean, moisture free lubricated air.

Material specifications

Body	High pressure valve bronze
Knobs and palm buttons	Anodized aluminum
Operators	Iron castings; steel rod, bar and tube, and plated for corrosion resistance
O-rings	Buna-N and impregnated with Molybdenum Disulfide
Spacers and end bearings	Brass bar stock
Springs	high quality steel and plated for corrosion resistance
Stem	Stainless steel and hard chrome plated

Warnings

⚠ Install guards on all hand operated valves if accidental operation can cause personal injury.

⚠ Foot operated valves must be protected against inadvertent operation that can cause serious bodily injury. Use of a guard is strongly recommended as it will reduce the likelihood of inadvertent operation.

MO Series Air Pilot, Manual & Mechanically Actuated Valves

3-Way And 4-Way Knob Operated	Description	Part Number 1/4 NPT	Part Number 3/8 NPT	Part Number 1/2 NPT	Part Number 3/4 NPT
	3-way, detent ball, foot bracket	M05422448	M05432448	M05442448	M05462448
	3-way, detent ball, panel mount with nut	M05822451	M05832451	M05842451	M05862451
	3-way, N.C., manual, foot bracket	M08521848	M08531848	M08541848	M08561848
	3-way, N.C., manual, panel nut	M08521851	M08531851	M08541851	M08561851
	3-way, N.C., pull to operate, spring return, foot bracket	M09721848	M09731848	M09741848	M09761848
	3-way, N.C., pull to operate, spring return, panel mount with nut	M06421851	M06431851	M06441851	M06461851
	3-way, N.C., push to operate, spring return, foot bracket	M09821848	M09831848	M09841848	M09861848
	3-way, N.C., push to operate, spring return, panel mount with nut	M06521851	M06531851	M06541851	M06561851
	4-way, detent ball, foot bracket	M05425448	M05435448	M05445448	M05465448
	4-way, detent ball, panel mount with nut	M05825451	M05835451	M05845451	M05865451
	4-way, manual, foot bracket	M08524648	M08534648	M08544648	M08564648
	4-way, manual, panel nut	M08524651	M08534651	M08544651	M08564651
	4-way, pull to operate, spring return, foot bracket	M09724648	M09734648	M09744648	M09764648
	4-way, pull to operate, spring return, panel mount with nut	M06424651	M06434651	M06444651	M06464651
	4-way, push to operate, spring return, foot bracket	M09824648	M09834648	M09844648	M09864648
	4-way, push to operate, spring return, panel mount with nut	M06524651	M06534651	M06544651	M06564651
3-Way and 4-way Palm Button Operated					
	3-way, N.C., pull palm button to operate, spring return, panel mount with nut	M06421859	M06431859	M06441859	M06461859
	3-way, N.C., push palm button to operate, spring return, panel mount with nut	M06521859	M06531859	M06541859	M06561859
	4-way, pull palm button to operate, spring return panel mount with nut	M06424659	M06434659	M06444659	M06464659
	4-way, push palm button to operate, spring return, panel mount with nut	M06524659	M06534659	M06544659	M06564659
3-Way and 4-Way Lever Operated					
	3-way, detent ball, foot bracket	M05422443	M05432443	M05442443	M05462443
	3-way, manual, foot bracket	M08521843	M08531843	M08541843	M08561843
	3-way, N.C., pull lever to operate, spring return, foot bracket	M09621843	M09631843	M09641843	M09661843
	3-way, N.C., push lever to operate, spring return, foot bracket	M09521843	M09531843	M09541843	M09561843
	4-way, detent ball, foot bracket	M05425443	M05435443	M05445443	M05465443
	4-way, manual, foot bracket	M08524643	M08534643	M08544643	M08564643
	4-way, pull lever to operate, spring return, foot bracket	M09624643	M09634643	M09644643	M09664643
	4-way, push lever to operate, spring return, foot bracket	M09524643	M09534643	M09544643	M09564643

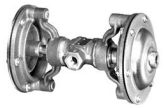
Red Square = Discontinued

Most popular.

MO Series Air Pilot, Manual & Mechanically Actuated Valves

3-Way and 4-Way, Foot Operated: Treadle / Pedal Type	Description	Part Number 1/4 NPT	Part Number 3/8 NPT	Part Number 1/2 NPT	Part Number 3/4 NPT
	3-way, treadle operated, detent ball, foot bracket	M05422488	M05432488	M05442488	–
	3-way, treadle operated, manual return, foot bracket	M08521888	M08531888	M08541888	–
	3-way, N.C., spring return, pedal operated, foot bracket	M06221840	M06231840	M06241840	–
	4-way, treadle operated, detent ball, foot bracket	M05425488	M05435488	M05445488	–
	4-way, treadle operated, manual return, foot bracket	M08524688	M08534688	M08544688	–
	4-way, spring return, pedal operated, foot bracket	M06224640	M06234640	M06244640	–

⚠ *CAUTION:*
This valve shall not be used to actuate a punch press. Do not use this valve on punch presses or press brakes. See OSHA 1910.217.

3-Way and 4-Way Air Operated : Diaphragm or Cylinder					
	3-way, N.C., single air diaphragm, air signal to actuate, spring return foot bracket	M08421830	M08431830	M08441830	–
	3-way, single air cylinder signal to actuate, spring return foot bracket	M08521826	M08531826	M08541826	M08561826
	3-way, double air diaphragm	M03321833	M03331833	M03341833	–
	3-way, double air cylinder foot bracket	M01921819	M01931819	M01941819	M01961819
	4-way, single air diaphragm, air signal to actuate, spring return foot bracket	M08424630	M08434630	M08444630	–
	4-way, single air cylinder signal to actuate, spring return foot bracket	M08524626	M08534626	M08544626	M08564626
	4-way, double air diaphragm	M03324633	M03334633	M03344633	–
	4-way, double air cylinder foot bracket	M01924619	M01934619	M01944619	M01964619

Note: diaphragm operators : pilot signal pressures from 20 to 60 psi. Cylinder operators : pilot signal pressures from 20 to 250 psi.

3-Way and 4-Way Clevis Operated					
	3-way, manual, foot bracket	M08521805	M08531805	M08541805	M08561805
	3-way, N.C., pull to operate, spring return foot bracket	M09621805	M09631805	M09641805	M09661805
	3-way, N.C., push to operate, spring return, foot bracket	M09521805	M09531805	M09541805	M09561805
	4-way, manual, foot bracket	M08524605	M08534605	M08544605	M08564605
	4-way, pull clevis to operate, spring return, foot bracket	M09624605	M09634605	M09644605	M09664605
	4-way, push clevis to operate, spring return, foot bracket	M09524605	M09534605	M09544605	M09564605

3-Way and 4-Way Cam Operated					
	3-way, N.C., spring return, cam operated, foot bracket	M09521803	M09531803	M09541803	M09561803
	4-way, spring return, cam operated, foot bracket	M09524603	M09534603	M09544603	M09564603

Red Square = Discontinued

Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

MO Valve: 1/4", 3/8", 1/2" Port Size

M0 85 3 18 48

Valve Series	
Basic Series	M0

Left End Section	
Double Cylinder	19
Double Air Diaphragm	33
Ball Detent, Small Bracket	54
Ball Detent, Panel Mounted	58
Direct Acting Spring Return, Less Bracket (Push Lever)	62
Reverse Acting Spring Return, Less Bracket (Pull Lever)	63
Light Spring Return Direct Acting, Less Bracket (Pull Knob)	64
Light Spring Return Reverse Acting, Less Bracket (Push Knob)	65
Stem Stop, Large Bracket	84
Stem Stop, Small Bracket	85
Direct Acting Spring Return, Small Bracket (Push Lever)	95
Reverse Acting Spring Return, Small Bracket (Pull Lever)	96
Light Spring Return Direct Acting, Small Bracket (Pull Knob)	97
Light Spring Return Reverse Acting, Small Bracket (Push Knob)	98

Pipe Size	
NPT	Port Size
1/4	2
3/8	3
1/2	4

Operating End Section: Right End	
03	Cam Follower
05	Clevis, Small Bracket
19	Double Cylinder
26	Single Cylinder
30	Single Diaphragm, Std. Spring
33	Double Diaphragm
40	Pedal
43	Lever, Mounting Feet
48	Knob, Small Bracket
51	Knob, Panel Mounted
59	Palm Button, Panel Mounted
88	Treadle
99	Palm Button

Body / Function	
18	3-Way
24*	3-Way, 2-Position Detent
46	4-Way
54*	4-Way, 2-Position Detent

* At least one end section must be coded 54.

MO Valve: 3/4" Port Size

M0 85 6 18 48

Valve Series	
Basic Series	M0

Left End Section	
Double Cylinder	19
Ball Detent, Small Bracket	54
Ball Detent, Panel Mounted	58
Direct Acting Spring Return, Less Bracket (Push Lever)	62
Reverse Acting Spring Return, Less Bracket (Pull Lever)	63
Light Spring Return Direct Acting, Less Bracket (Pull Knob)	64
Light Spring Return Reverse Acting, Less Bracket (Push Knob)	65
Stem Stop, Small Bracket	85
Direct Acting Spring Return, Small Bracket (Push Lever)	95
Reverse Acting Spring Return, Small Bracket (Pull Lever)	96
Light Spring Return Direct Acting, Small Bracket (Pull Knob)	97
Light Spring Return Reverse Acting, Small Bracket (Push Knob)	98

Pipe Size	
NPT	Port Size
3/4	6

Operating End Section: Right End	
03	Cam Follower
05	Clevis, Small Bracket
19	Double Cylinder
26	Single Cylinder
43	Lever, Mounting Feet
48	Knob, Small Bracket
51	Knob, Panel Mounted
59	Palm Button, Panel Mounted
99	Palm Button

Body / Function	
18	3-Way
24*	3-Way, 2-Position Detent
46	4-Way
54*	4-Way, 2-Position Detent

* At least one end section must be coded 54.

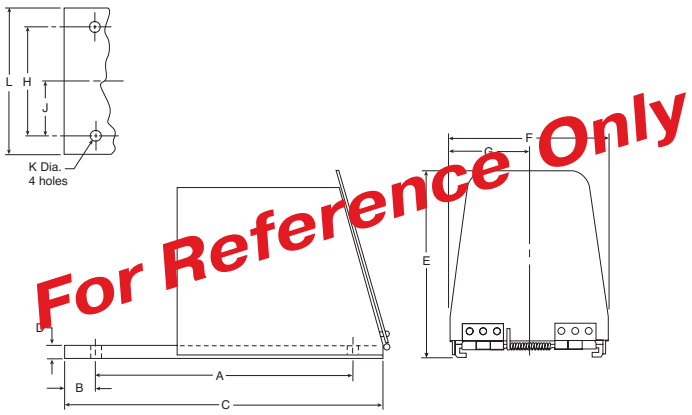
CAUTION:
Be sure to order end sections that are functionally effective with each other and with the body section selected. Model number combinations are possible which may not operate.

For Reference Only
For Reference Only

Pedal Guard
(Fits All Pedal Operated Valves)

Description	Model number
Guard with door	M232001
Guard without door	M232002
Guard with door for 1/4 and 3/8 valve	M232003*
Guard without door for 1/4 and 3/8 valve	M232004*
Guard with door for 1/2 and 3/4	M232005*
Guard without door for 1/2 and 3/4	M232006*

* Includes mounting hardware.



For Reference Only

⚠ *CAUTION:*

Foot valves utilizing this guard shall not be used to actuate a punch press.
Do not use this valve on punch presses or press brakes.
See OSHA 1910.217.

Dimensions

A	B	C	D	E	F	G
10.50	1.25	13.00	.50	7.38	6.36	3.18
266.7	31.8	330.2	12.7	187.4	161.5	80.8

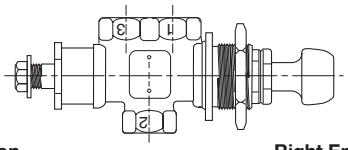
H	J	K	L
4.50	2.25	.44	6.00
114.3	57.2	11.2	152.4

MO valve 9 digit part number dissection

The MO Valve Series has with wide variety of operating and return ends which can be ordered either on the left or right hand side of the valve body. Common part numbers on the previous pages can be ordered with the left and right hand ends swapped. Swapping operator and return end sections does not change the spool function, but can reverse the expected function of the valve. For example, a 3-way, normally closed, “NC”, spring return valve will become a 3-way normally open, “NO”, valve when the operator and return section is swapped. There are other non-cataloged options available and this part number dissection will enable you to discuss your valve part number with the factory for options.

3-way

Series name	Left end	Port size	Body function	Right end
M0	XX	X	XX	XX

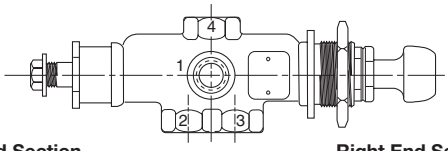


Left End Section in relation to port #2 ← → Right End Section in relation to port #2

Most popular.

4-way

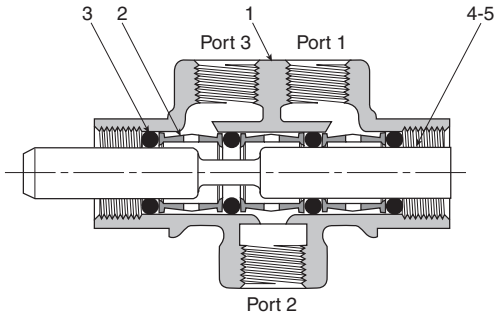
Series name	Left end	Port size	Body function	Right end
M0	XX	X	XX	XX



Left End Section in relation to port #2 ← → Right End Section in relation to port #3

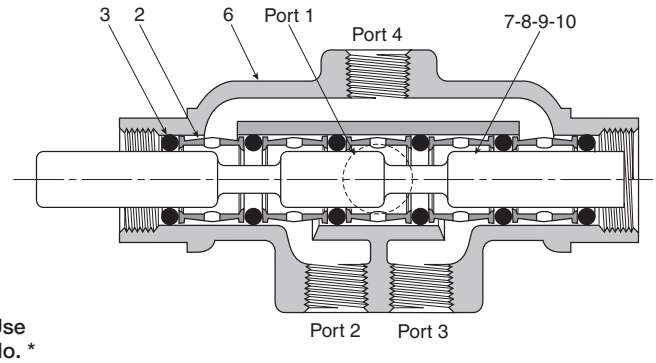
Red Square = Discontinued

Body Sections



M032*18
Standard 3-Way
M032*24
2-Position Detent 3-Way

Port Size	Use No. *
1/4	2
3/8	3
1/2	4
3/4	6



M032*46
Standard 4-Way
M032*54
2-Position Detent 4-Way

	Part Number				
Item No.	1/4"	3/8"	1/2"	3/4"	Description
1	M053007	M053019	M053030	M053038	Body – 3-Way
2	M313004	M313011	M313013	M313017	Spacer (2-3-5)
3	H13466	H13588	H13580	H13584	O-Ring (3-4-6)
4	M373014	M373060	M373102	M373142	Stem – 3-Way
5	M373020	M373064	M373103	M373146	Stem – 3-Way 2-Pos. Detent
6	M053003	M053020	M053033	M053039	Body – 4-Way
7	M373033	M373074	M373116	M373156	Stem – 4-Way
8	M373039	M373076	M373118	—	Stem – 4-Way 2-Pos. Detent

NOTE: ( ) denotes quantity required when more than one.

Service Kits

(Field service instructions)

Description (For all 3 & 4-way valves)	1/4	3/8	1/2	3/4
Manual & mechanical operators	M242001	M242002	M242003	M242004
Cylinder (single, double & double-acting)	M242006	M242007	M242008	M242009
Diaphragm (single & double)	M242011	M242012	M242013	M242014

Replacement Knobs & Palm Buttons

Knob & Adapter Kit

Palm Button & Adapter Kit

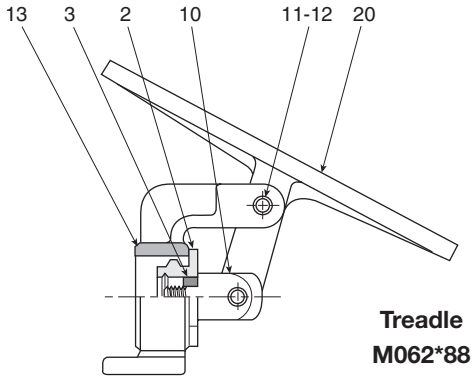
Description	1/4" & 3/8"	1/2"	3/4"
Knob & Adapter Kit	M122001	M122002	M122003
Palm Button & Adapter Kit	M122004	M122005	M122006

Hex Drive Pipe Plugs

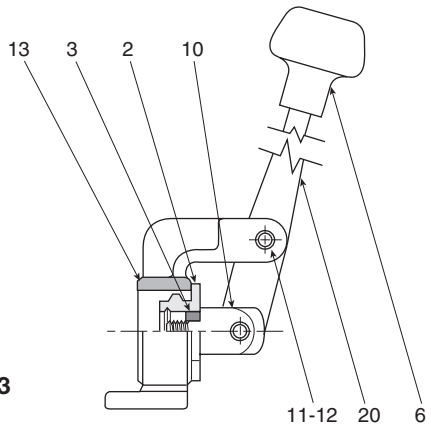
Port Size	1/4"	3/8"	1/2"	3/4"
Part Number	K21R02025L	K21R02037L	K21R02050L	K21R02075L

Red Square = Discontinued

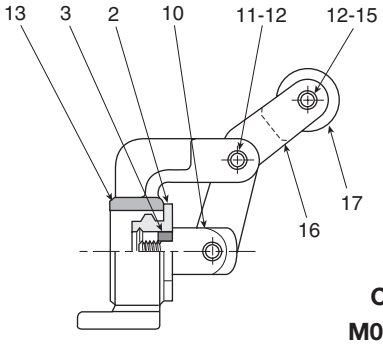
Manual & Mechanical Operators



Treadle
M062*88

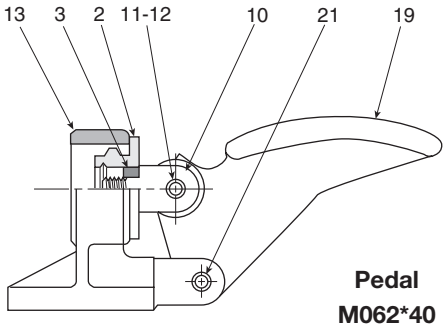


Lever
M062*43



Cam
M062*03

Port Size	Use No. *
1/4	2
3/8	3
1/2	4
3/4	6



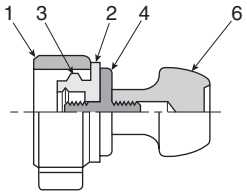
Pedal
M062*40

	Part Number				
Item No.	1/4"	3/8"	1/2"	3/4"	Description
2	M103012	M103047	M103066	M103108	End Bearing
3	H17705	H17705	H17706	H17408	Lockwasher
6	H05028	H05028	H05028	H05028	Knob
10	M133003	M133003	M133012	M133018	Clevis
11	H07229	H07229	M333013	M333013	Pivot Pin (2)
12	—	—	H08903	H08903	Retaining Ring (4)
13	M073009	M073022	M073033	M073042	Bracket
14	M273022	M273022	M273023	M273024	Lever
15	—	H07230	M333016	M333016	Roller Trunnion
16	M273002	M273002	M273006	M273007	Cam Arm
17	M443003	M443003	M443002	M443002	Roller
19	M323005	M323005	M323006	M323007	Pedal
20	M553004	M553004	M553005	—	Treadle
21	H07229	H07229	M333013	M333014	Pivot Pin

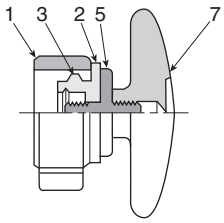
NOTE: ( ) denotes quantity required when more than one.

Red Square = Discontinued

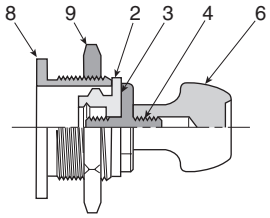
Manual & Mechanical Operators



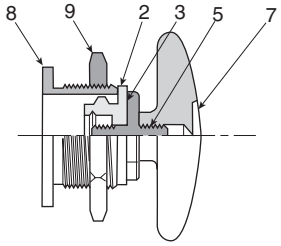
Knob
M062*48



Palm Button
M062*99

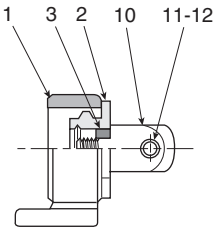


Panel Mounted Knob
M062*51



Panel Mounted Palm Button
M062*59

Port Size	Use No. *
1/4	2
3/8	3
1/2	4
3/4	6



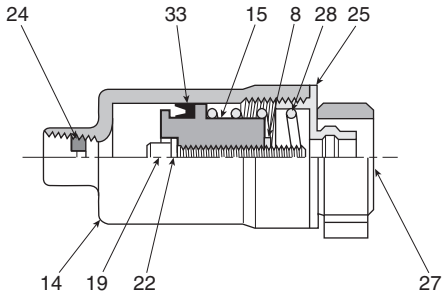
Clevis
M062*05

	Part Number				
Item No.	1/4"	3/8"	1/2"	3/4"	Description
1	M073016	M073026	M073037	M073046	Bracket
2	M103012	M103047	M103066	M103108	End Bearing
3	H17705	H17705	H17706	H17408	Lockwasher
4	M013011	M013011	M013012	M013013	Knob Adapter
5	M013011	M013011	M013012	M013013	Palm Knob Adapter
6	H05028	H05028	H05028	H05028	Knob
7	H05029	H05029	H05029	H05029	Palm Button
8	M013014	M013015	M013016	M013017	Panel Adapter
9	M303005	M303006	M303007	M303008	Jam Nut
10	M133003	M133003	M133012	M133018	Clevis
11	H07229	H07229	M333013	M333013	Pivot Pin (2)
12	—	—	H08903	H08903	Retaining Ring (4)

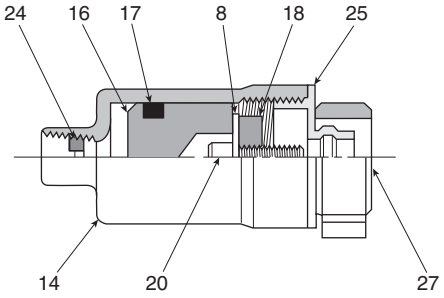
NOTE: ( ) denotes quantity required when more than one.

Red Square = Discontinued

Pneumatic Operators



Single Cylinder
M062*26



Double Cylinder
M062*19

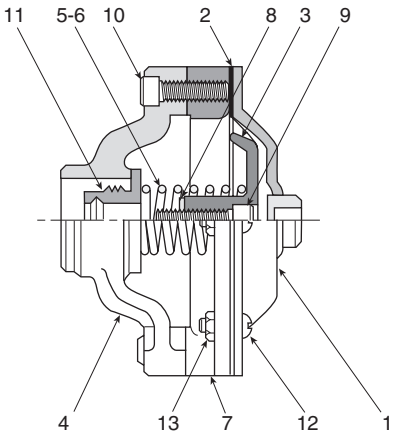
Port Size	Use No. *
1/4	2
3/8	3
1/2	4
3/4	6

	Part Number				
Item No.	1/4"	3/8"	1/2"	3/4"	Description
8	H17705	H17705	H17706	H17408	Lockwasher
14	M243028	M243028	M243028	M243036	Housing
15	M343019	M343019	M343018	M343027	Piston – Single Act.
16	M343022	M343022	M343022	M343028	Piston – Double Cyl.
17	H14515	H14515	H14515	H14520	Packer
18	M013005	M013005	M013007	M013009	Adapter
19	H10121	H10121	H10147	H10219	Screw – Single Act.
20	H10117	H10117	H10145	H10215	Screw – Double Act.
22	H17514	H17514	H17519	H17524	Lockwasher
24	M363002	M363002	M363002	M363002	Restrictor
25	M383007	M383011	M383018	M383029	Retainer
27	M073016	M073026	M073037	M073046	Bracket
28	M493015	M493015	M493015	M493020	Spring
33	H22232	H22232	H22232	H14520	Packer

NOTE: ( ) denotes quantity required when more than one.

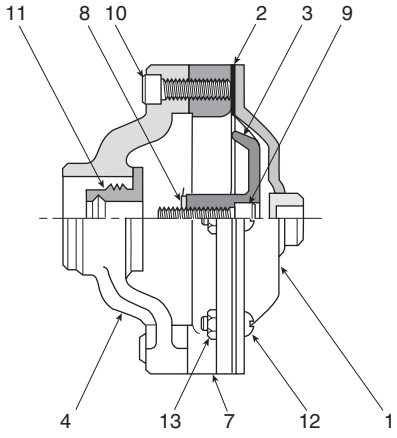
Red Square = Discontinued

Pneumatic Operators



Single Diaphragm
M062*30

Port Size	Use No. *
1/4	2
3/8	3
1/2	4
3/4	6



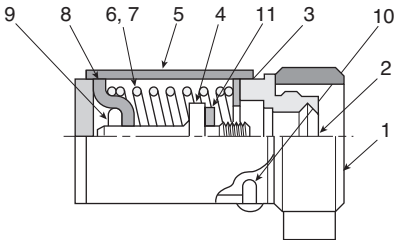
Double Diaphragm
M062*33

	Part Number				
Item No.	1/4"	3/8"	1/2"	3/4"	Description
1	**M163005**	**M163005**	**M163005**	**M163012**	Cover
2	**M193002**	**M193002**	**M193002**	**M193005**	Diaphragm
3	**M343038**	**M343038**	**M343032**	**M343039**	Piston
4	**M573004**	**M573003**	**M573001**	**M573011**	Yoke
5	**M493024**	**M493024**	**M493010**	**M493023**	Spring
6	**M493022**	**M493022**	**M493009**	—	Spring (Inst. Air)
7	**M423002**	**M423002**	**M423002**	**M423004**	Ring
8	**H17705**	**H17705**	**H17706**	**H17408**	Lockwasher
9	**H10119**	**H10119**	**H10145**	**H10217**	Screw
10	**H10115**	**H10115**	**H10115**	**H10115**	Screw (2)
11	**M103012**	**M103047**	**M103066**	**M103108**	End Bearing
12	**H11333**	**H11333**	**H11333**	**H11333**	Screw (6)
13	**H06416**	**H06416**	**H06416**	**H06416**	Nut (6)

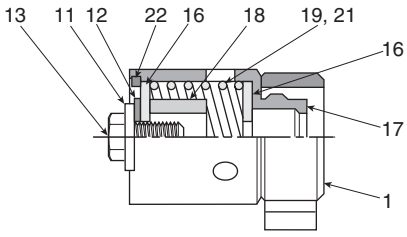
NOTE: ( ) denotes quantity required when more than one.

Red Square = Discontinued

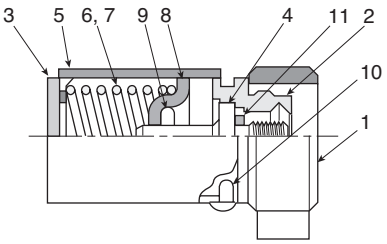
End Sections



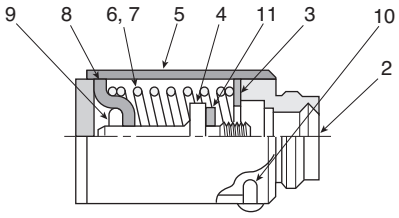
Direct Acting Spring Return with Bracket
M062*95 Push Lever
M062*97 Pull Knob



Spring Centered Neutral
M062*74 Standard Spring
M062*78 Heavy Spring

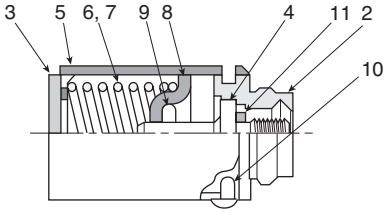


Reverse Acting Spring Return with Bracket
M062*96 Pull Lever
M062*98 Push Knob



Direct Acting Spring Return Less Bracket
M062*62 Push Lever
M062*64 Pull Knob

Port Size	Use No. *
1/4	2
3/8	3
1/2	4
3/4	6



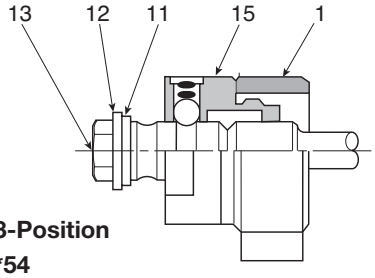
Reverse Acting Spring Return Less Bracket
M062*63 Pull Lever
M062*65 Push Knob

	Part Number				
Item No.	1/4"	3/8"	1/2"	3/4"	Description
1	**M073016**	**M073026**	**M073037**	**M073046**	Bracket
2	**M103111**	**M103112**	**M103113**	**M103114**	End Bearing
3	**M413015**	**M413015**	**M413016**	**M413017**	Spring Retainer Washer
4	**M523009**	**M523009**	**M523010**	**M523011**	Stem Stop – Guide
5	**M243043**	**M243043**	**M243044**	**M243045**	Spring Housing
6	**M493037**	**M493037**	**M493027**	**M493026**	Spring – Knob Oper.
7	**M493038**	**M493038**	**M493011**	**M493012**	Spring – Other Oper.
8	**M383032**	**M383032**	**M383033**	**M383034**	Spring Retainer
9	**H07254**	**H07254**	**H07270**	**H07271**	Roll Pin
10	**H11215**	**H11215**	**H11216**	**H11217**	Screw
11	**H17705**	**H17705**	**H17706**	**H17408**	Lockwasher
12	**M563002**	**M563002**	**M563006**	**M563014**	Stem Stop
13	**H09626**	**H09626**	**H09645**	**H09706**	Stem Stop Screw
16	**M563007**	**M563009**	**M563008**	**M563016**	Washer
17	**M243008**	**M243019**	**M243027**	**M243032**	Spring Housing
18	**M083003**	**M083004**	**M083005**	**M083008**	Spacer
19	**M493008**	**M493008**	**M493008**	**M493014**	Spring
21	**M493006**	**M493006**	**M493006**	**M493007**	Spring – Dbl. Act. Cyl.
22	**H09025**	**H09025**	**H09025**	**H09012**	Retainer Ring

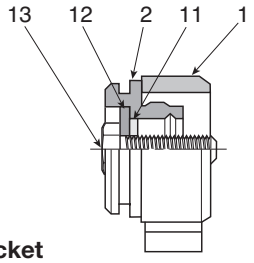
Red Square = Discontinued

NOTE: ( ) denotes quantity required when more than one.

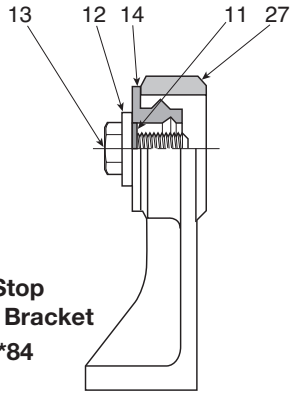
End Sections



Ball Detent, 3-Position
M062*54



Stem Stop
with Small Bracket
M062*85



Stem Stop
with Large Bracket
M062*84

Port Size	Use No. *
1/4	2
3/8	3
1/2	4
3/4	6

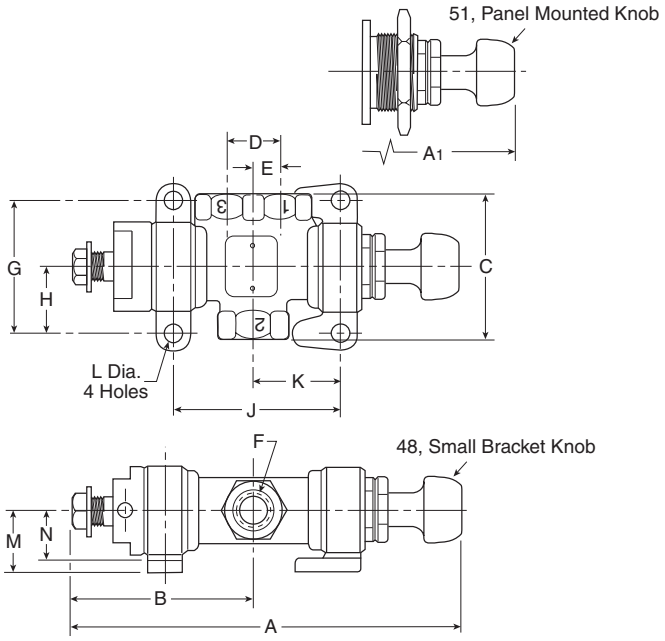
	Part Number				
Item No.	1/4"	3/8"	1/2"	3/4"	Description
1	**M073016**	**M073026**	**M073037**	**M073046**	Bracket
2	**M103111**	**M103112**	**M103113**	**M103114**	End Bearing
11	**H17705**	**H17705**	**H17706**	**H17408**	Lockwasher
12	**M563002**	**M563002**	**M563006**	**M563014**	Stem Stop
13	**H09626**	**H09626**	**H09645**	**H09706**	Stem Stop Screw
14	**M103012**	**M103047**	**M103066**	**M103108**	End Bearing – Plain
15	**M012001**	**M012002**	**M012003**	**M012005**	Ball Detent Assembly
27	**M073006**	**M073017**	**M073028**	—	Large Bracket

NOTE: ( ) denotes quantity required when more than one.

Knob Operated, 2-Position Detent, Ball Detent

M054 Ball Detent, Small Bracket & M058 Ball Detent, Panel Mounted

3-Way

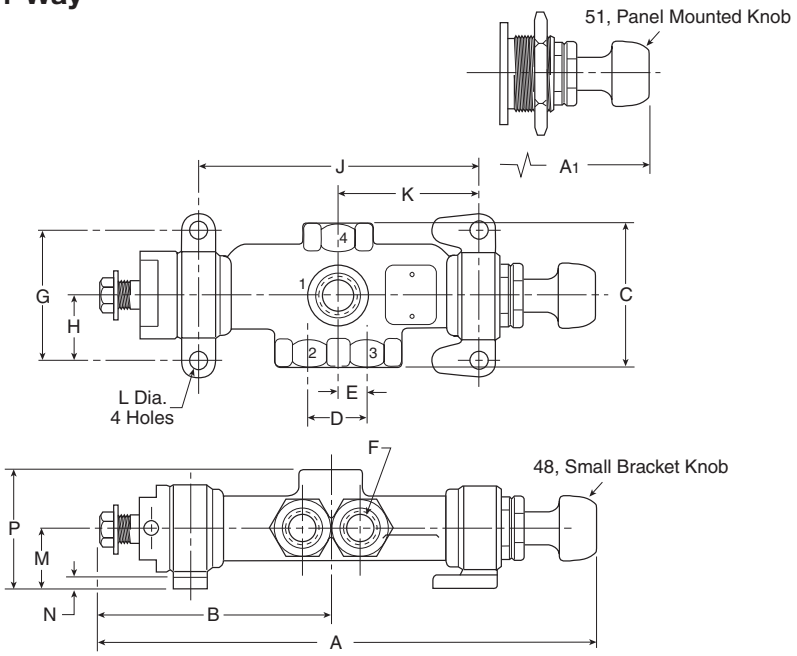


	1/4	3/8	1/2	3/4
A	6.57 (166.9)	7.30 (185.4)	8.56 (217.4)	10.40 (264.2)
A1	6.57 (166.9)	7.30 (185.4)	8.56 (217.4)	10.40 (264.2)
B	3.25 (82.6)	3.66 (93.0)	4.39 (111.5)	5.41 (137.4)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	.47 (11.9)	.53 (13.5)	.62 (15.8)	.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	2.63 (66.8)	3.13 (79.5)	3.72 (94.5)	4.56 (115.8)
K	1.31 (33.3)	1.56 (39.6)	1.86 (47.2)	2.28 (57.9)
L	.34 (8.6)	.34 (8.6)	.41 (10.4)	.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	.25 (6.4)	.25 (6.4)	.31 (7.9)	.31 (7.9)

Inches (mm)

M054 Ball Detent, Small Bracket & M058 Ball Detent, Panel Mounted

4-Way



	1/4	3/8	1/2	3/4
A	8.02 (203.7)	9.13 (231.9)	11.17 (283.7)	13.10 (332.7)
A1	8.02 (203.7)	9.13 (231.9)	11.17 (283.7)	13.10 (332.7)
B	4.00 (101.6)	4.57 (116.1)	5.44 (138.2)	6.76 (171.7)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	.47 (11.9)	.53 (13.5)	.62 (15.8)	.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	4.14 (105.2)	4.98 (126.5)	5.85 (148.6)	7.39 (187.7)
K	2.07 (52.6)	2.49 (63.2)	2.92 (74.2)	3.69 (93.7)
L	.34 (8.6)	.34 (8.6)	.41 (10.4)	.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	.25 (6.4)	.25 (6.4)	.31 (7.9)	.31 (7.9)
P	2.12 (53.8)	2.18 (55.4)	2.63 (66.8)	3.06 (77.7)

Inches (mm)

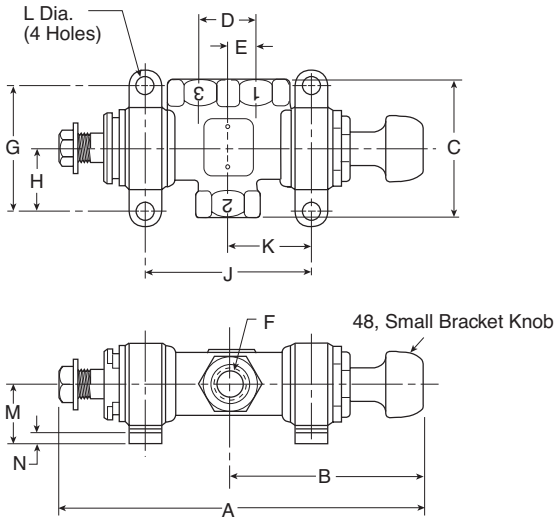
For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Knob Operated, Manual Return, Stem Stop

M085 Stem Stop, Small Bracket

3-Way

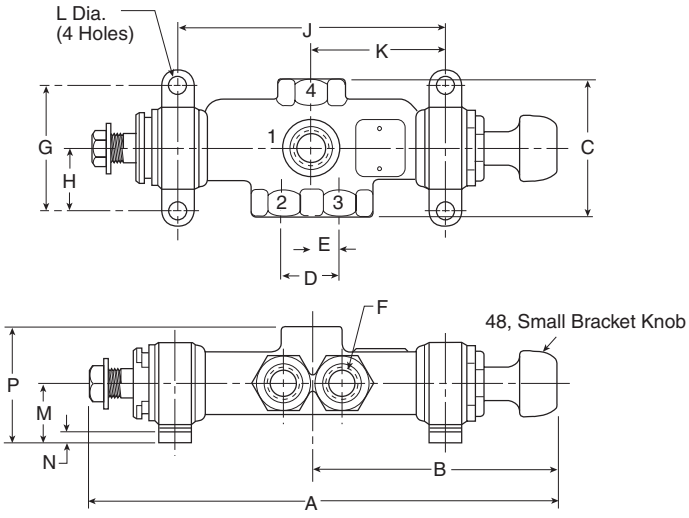


	1/4	3/8	1/2	3/4
A	5.99 (152.2)	6.69 (169.9)	7.90 (200.7)	9.60 (243.8)
B	3.32 (84.3)	3.64 (92.5)	4.17 (105.9)	4.99 (126.8)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	2.64 (67.1)	3.14 (79.8)	3.73 (94.7)	4.67 (118.6)
K	1.32 (33.5)	1.57 (39.9)	1.87 (47.5)	2.33 (59.2)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
Travel	0.62 (15.7)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

M085 Stem Stop, Small Bracket

4-Way



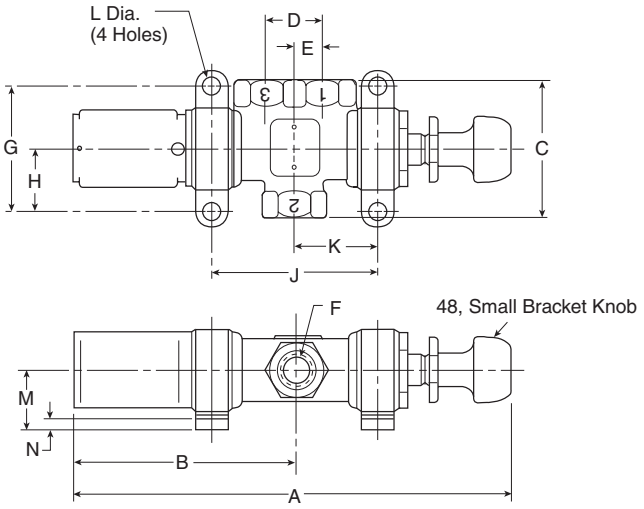
	1/4	3/8	1/2	3/4
A	7.49 (190.2)	8.53 (216.7)	10.01 (254.2)	12.31 (312.7)
B	4.02 (102.1)	4.56 (115.8)	5.73 (145.5)	6.34 (161.0)
C	2.38 (60.4)	2.62 (66.6)	3.12 (79.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	4.14 (105.2)	4.98 (126.5)	5.85 (148.6)	7.39 (187.7)
K	2.07 (52.6)	2.49 (63.2)	2.93 (74.4)	3.69 (93.7)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
P	2.12 (53.8)	2.18 (55.4)	2.63 (66.8)	3.06 (77.7)
Travel	0.62 (15.7)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

Knob & Palm Button Operated, Light Spring Return

M097 Light Spring Return Direct Acting, Small Bracket (Pull Knob)

3-Way

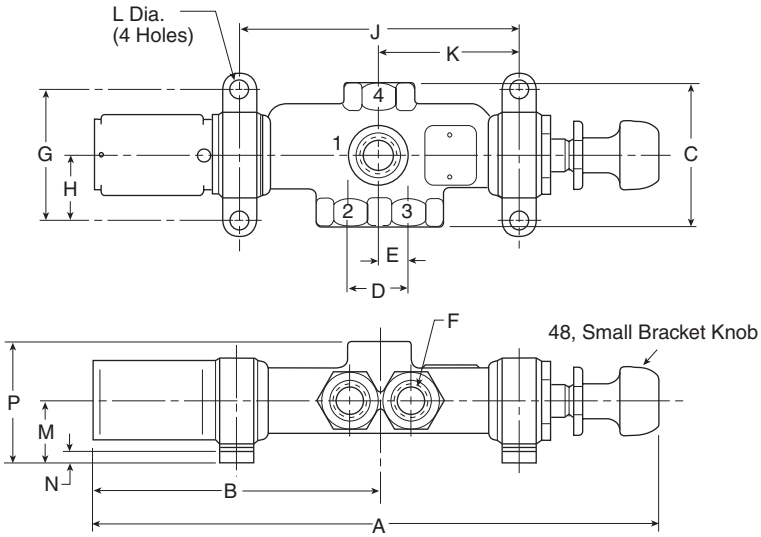


	1/4	3/8	1/2	3/4
A	7.86 (199.8)	8.55 (217.2)	10.36 (263.1)	13.01 (330.4)
B	3.92 (99.6)	4.24 (107.7)	5.32 (135.2)	6.92 (175.8)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	2.64 (67.1)	3.14 (79.8)	3.73 (94.7)	4.67 (118.6)
K	1.32 (33.5)	1.57 (39.9)	1.87 (47.5)	2.33 (59.2)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
Travel	0.62 (15.7)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

M097 Light Spring Return Direct Acting, Small Bracket (Pull Knob)

4-Way



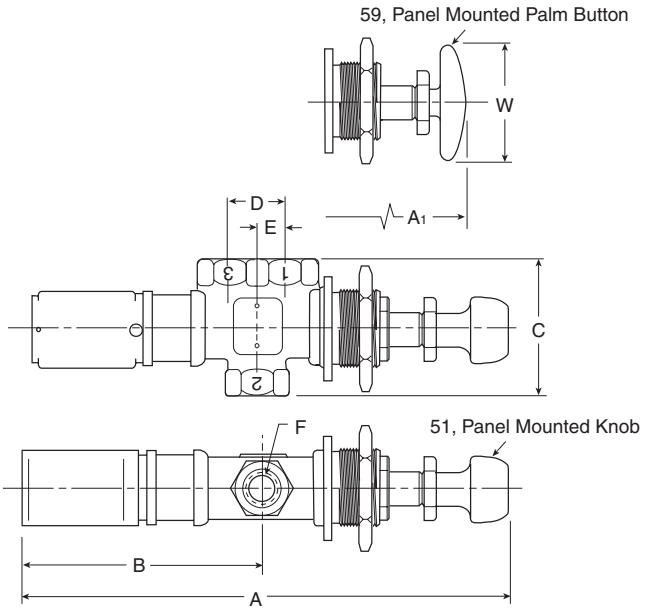
	1/4	3/8	1/2	3/4
A	9.36 (237.9)	10.39 (263.9)	12.48 (317.0)	15.73 (399.5)
B	4.67 (118.5)	5.15 (130.8)	6.37 (161.8)	8.27 (210.1)
C	2.38 (60.4)	2.62 (66.6)	3.12 (79.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	4.14 (105.2)	4.98 (126.5)	5.85 (148.6)	7.39 (187.7)
K	2.07 (52.6)	2.49 (63.2)	2.93 (74.4)	3.69 (93.7)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
P	2.12 (53.8)	2.18 (55.4)	2.63 (66.8)	3.06 (77.7)
Travel	0.62 (15.7)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

Panel Mounted, Knob & Button Operated, Light Spring Return

M064 Direct Acting, Less Bracket (Pull Knob) & M065 Reverse Acting, Less Bracket (Push Knob)

3-Way

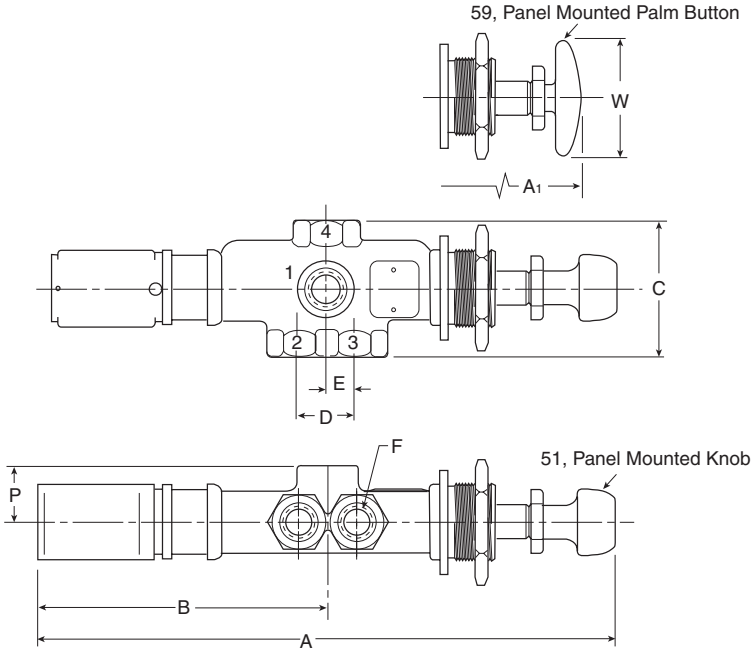


	1/4	3/8	1/2	3/4
A	7.86 (199.6)	8.55 (217.1)	10.36 (263.1)	13.01 (330.4)
A1	7.55 (191.8)	8.24 (209.3)	10.05 (255.3)	12.70 (322.6)
B	3.96 (99.5)	4.23 (107.4)	5.31 (134.9)	6.91 (175.5)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
W	2.25 (57.2)	2.25 (57.2)	2.25 (57.2)	2.25 (57.2)
Travel	0.62 (15.7)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

M064 Direct Acting, Less Bracket (Pull Knob) & M065 Reverse Acting, Less Bracket (Push Knob)

4-Way



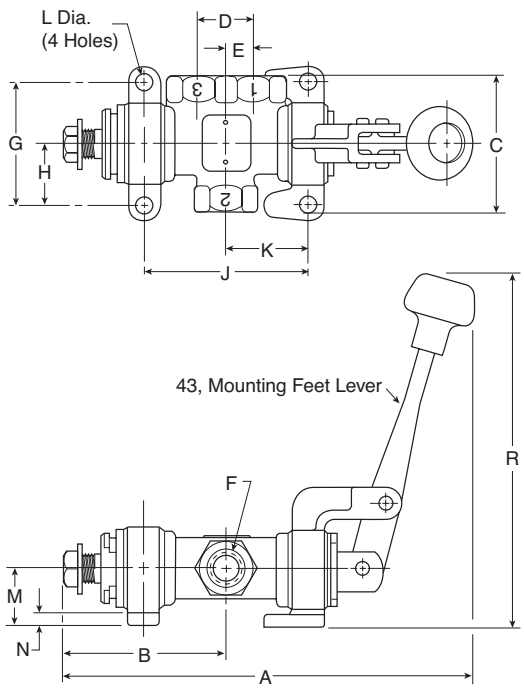
	1/4	3/8	1/2	3/4
A	9.36 (237.7)	10.39 (263.9)	12.48 (317.0)	15.73 (399.5)
A1	9.05 (229.9)	10.08 (256.0)	12.17 (309.1)	15.42 (391.7)
B	4.67 (118.5)	5.15 (130.8)	6.37 (161.8)	8.27 (210.1)
C	2.38 (60.4)	2.62 (66.6)	3.12 (79.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
P	2.12 (53.8)	2.18 (55.4)	2.63 (66.8)	3.06 (77.7)
W	2.25 (57.2)	2.25 (57.2)	2.25 (57.2)	2.25 (57.2)
Travel	0.62 (15.7)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

Lever Operated, Manual Return, Stem Stop

M085 Stem Stop, Small Bracket

3-Way

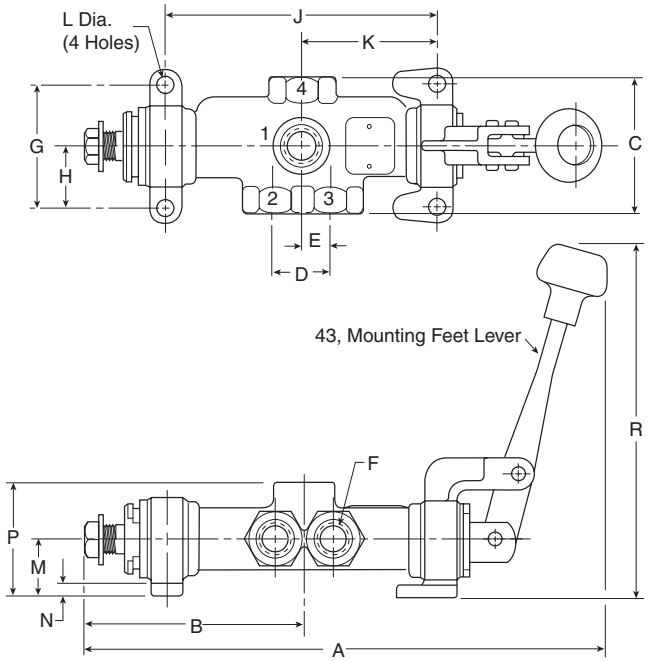


	1/4	3/8	1/2	3/4
A	6.77 (172.0)	7.76 (197.1)	9.29 (236.0)	11.46 (291.1)
B	2.67 (67.8)	3.05 (77.5)	3.72 (94.5)	4.61 (117.1)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	2.63 (66.8)	3.13 (79.5)	3.72 (94.5)	4.56 (115.8)
K	1.31 (33.3)	1.56 (39.6)	1.86 (47.2)	2.28 (57.9)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
R	6.78 (172.2)	6.78 (172.2)	8.10 (205.7)	10.73 (272.5)
Travel	0.62 (15.7)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

M085 Stem Stop, Small Bracket

4-Way



	1/4	3/8	1/2	3/4
A	8.28 (210.3)	9.60 (243.8)	11.08 (281.4)	14.17 (359.9)
B	3.42 (86.9)	3.97 (100.8)	4.78 (121.4)	5.97 (151.6)
C	2.38 (60.4)	2.62 (66.6)	3.12 (79.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	4.14 (105.2)	4.98 (126.5)	5.85 (148.6)	7.39 (187.7)
K	2.07 (52.6)	2.49 (63.2)	2.92 (74.2)	3.69 (93.7)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
P	2.12 (53.8)	2.18 (55.4)	2.63 (66.8)	3.06 (77.7)
R	6.78 (172.2)	6.78 (172.2)	8.10 (205.7)	10.73 (272.5)
Travel	0.62 (15.7)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

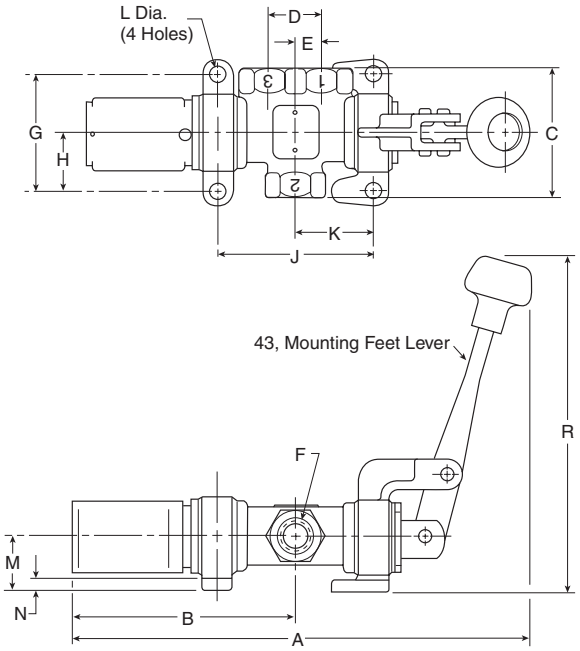
For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Lever Operated, Spring Return

M095 Direct Acting, Small Bracket (Push Lever) & M096 Reverse Acting, Small Bracket (Pull Lever)

3-Way

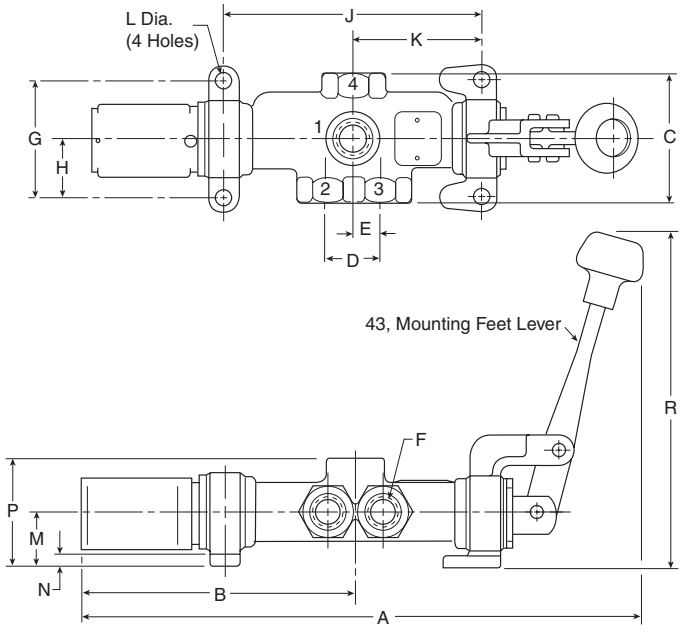


	1/4	3/8	1/2	3/4
A	7.99 (202.8)	8.94 (227.0)	10.88 (276.4)	13.76 (349.5)
B	3.92 (99.5)	4.24 (107.6)	5.31 (134.9)	6.92 (175.8)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	2.63 (66.8)	3.13 (79.5)	3.72 (94.5)	4.56 (115.8)
K	1.31 (33.3)	1.56 (39.6)	1.86 (47.2)	2.28 (57.9)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
R	6.78 (172.2)	6.78 (172.2)	8.10 (205.7)	10.73 (272.5)
Travel	0.62 (15.7)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

M095 Direct Acting, Small Bracket (Push Lever) & M096 Reverse Acting, Small Bracket (Pull Lever)

3-Way



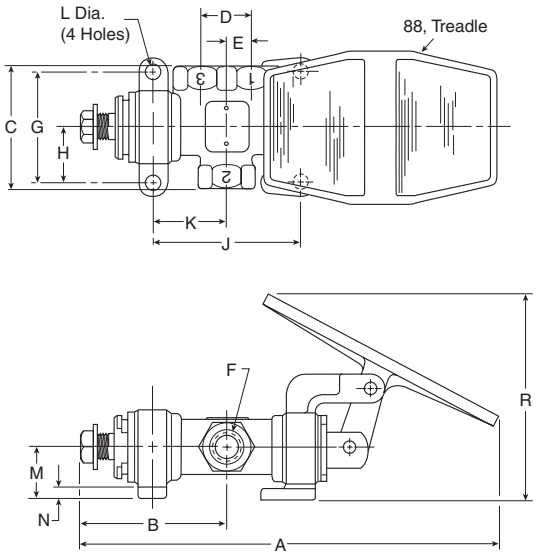
	1/4	3/8	1/2	3/4
A	9.53 (242.1)	10.78 (273.8)	12.67 (321.8)	16.47 (418.3)
B	4.67 (118.6)	5.15 (130.8)	5.68 (144.3)	8.27 (210.1)
C	2.38 (60.4)	2.62 (66.6)	3.12 (79.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Plpe	3/8" Plpe	1/2" Plpe	3/4" Plpe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	4.14 (105.2)	4.98 (126.5)	5.85 (148.6)	7.39 (187.7)
K	2.07 (52.6)	2.49 (63.2)	2.92 (74.2)	3.69 (93.7)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
P	2.12 (53.8)	2.18 (55.4)	2.63 (66.8)	3.06 (77.7)
R	6.78 (172.2)	6.78 (172.2)	8.10 (205.7)	10.73 (272.5)
Travel	0.62 (15.7)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

Treadle Operated, Manual Return, Stem Stop

M085 Stem Stop, Small Bracket

3-Way

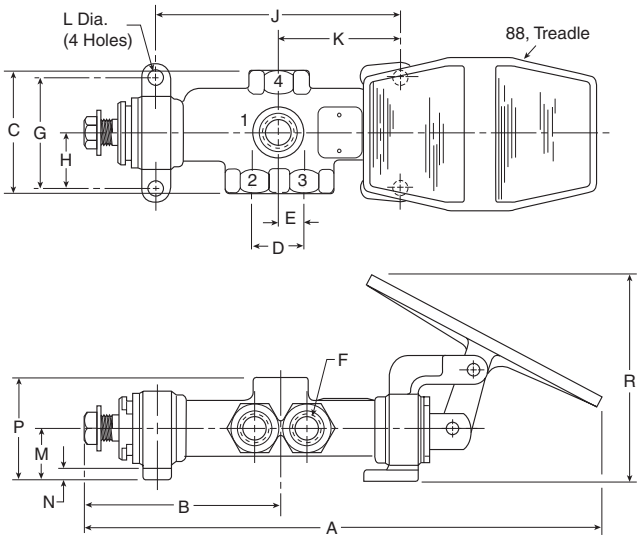


	1/4	3/8	1/2
A	8.01 (203.4)	8.73 (221.7)	10.32 (262.1)
B	2.67 (68.8)	3.06 (77.7)	4.06 (103.1)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)
J	2.63 (66.8)	3.13 (79.5)	3.72 (94.5)
K	1.31 (33.3)	1.56 (39.6)	1.86 (47.2)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)
R	4.51 (114.6)	4.65 (118.1)	4.85 (123.2)
Travel	0.62 (15.8)	0.69 (17.5)	0.88 (22.4)

Inches (mm)

M085 Stem Stop, Small Bracket

4-Way



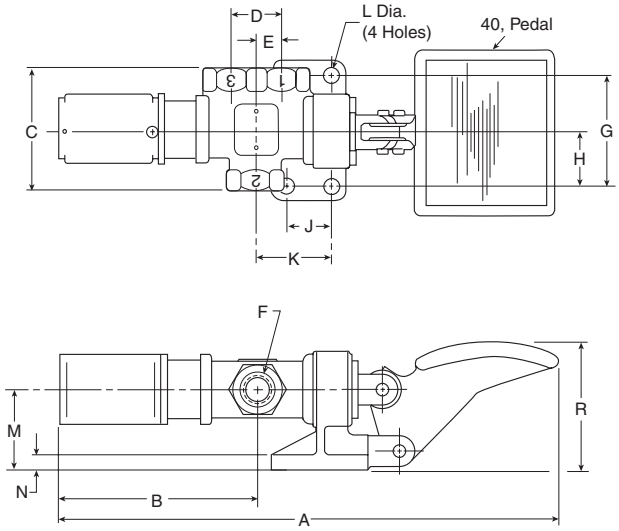
	1/4	3/8	1/2
A	9.52 (241.8)	10.57 (268.5)	12.11 (307.6)
B	3.42 (86.9)	3.97 (100.8)	4.78 (121.4)
C	2.38 (60.4)	2.62 (66.6)	3.12 (79.2)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)
J	4.14 (105.2)	4.98 (126.5)	5.85 (148.6)
K	2.07 (52.6)	2.49 (63.2)	2.92 (74.2)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)
P	2.12 (53.8)	2.18 (55.4)	2.63 (66.8)
R	4.51 (114.6)	4.65 (118.1)	4.85 (123.2)
Travel	0.62 (15.8)	0.69 (17.5)	0.88 (22.4)

Inches (mm)

Pedal Operated, Spring Return

M062 Direct Acting Spring Return, Less Bracket (Push Lever)

3-Way

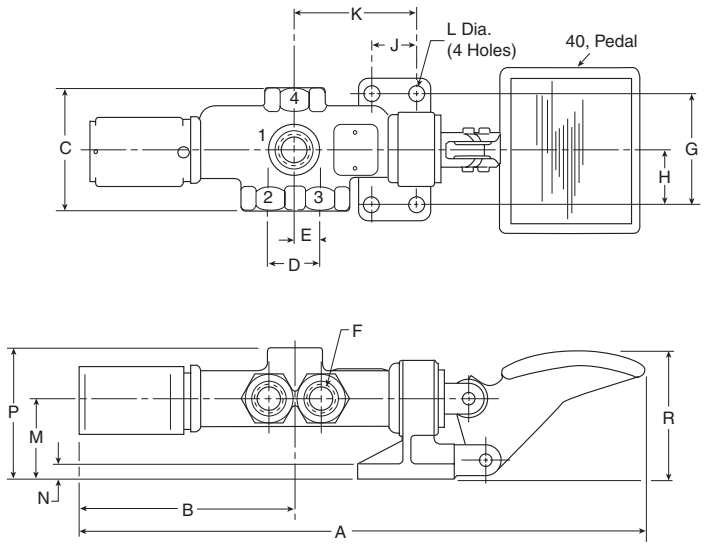


	1/4	3/8	1/2
A	9.99 (253.8)	10.50 (269.2)	12.66 (321.6)
B	3.92 (99.5)	4.23 (107.4)	5.31 (134.9)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)
J	0.97 (24.6)	0.97 (24.6)	1.12 (28.4)
K	1.44 (36.6)	1.56 (39.6)	1.83 (46.5)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)
M	1.72 (43.7)	1.72 (43.7)	2.00 (50.8)
N	0.31 (7.9)	0.31 (7.9)	0.38 (9.6)
R	2.66 (67.6)	2.71 (68.8)	2.74 (69.6)
Travel	0.62 (15.8)	0.69 (17.5)	0.88 (22.4)

Inches (mm)

M062 Direct Acting Spring Return, Less Bracket (Push Lever)

4-Way



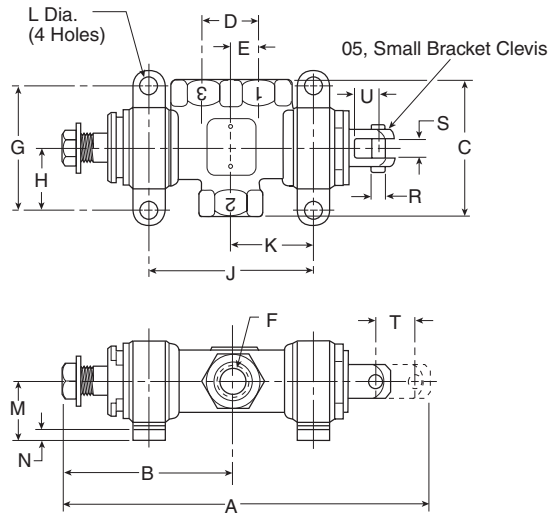
	1/4	3/8	1/2
A	11.50 (292.1)	12.44 (315.9)	14.45 (367.0)
B	4.67 (118.5)	5.15 (130.8)	5.68 (144.3)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)
J	0.97 (24.6)	0.97 (24.6)	1.12 (28.4)
K	2.19 (55.6)	2.48 (63.0)	2.89 (73.4)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)
M	1.72 (43.7)	1.72 (43.7)	2.00 (50.8)
N	0.31 (7.9)	0.31 (7.9)	0.38 (9.6)
P	2.72 (69.1)	2.78 (70.6)	3.38 (85.8)
R	2.66 (67.6)	2.71 (68.8)	2.74 (69.6)
Travel	0.62 (15.8)	0.69 (17.5)	0.88 (22.4)

Inches (mm)

Clevis Operated, Mechanical Return, Stem Stop

M085 Stem Stop, Small Bracket

3-Way

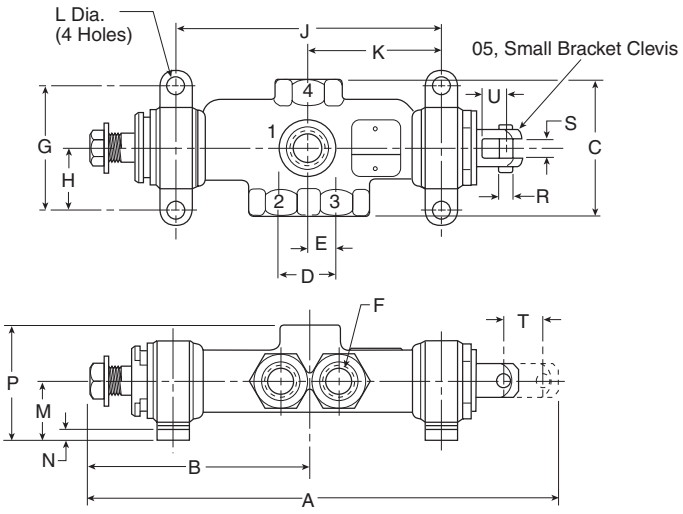


	1/4	3/8	1/2	3/4
A	5.31 (134.9)	6.01 (152.6)	7.36 (186.9)	8.92 (226.6)
B	2.68 (68.1)	3.06 (77.7)	4.85 (123.2)	4.62 (117.3)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	2.64 (67.1)	3.14 (79.8)	3.73 (94.7)	4.67 (118.6)
K	1.32 (33.5)	1.57 (39.9)	1.87 (47.5)	2.33 (59.2)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
R	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
S	0.38 (9.6)	0.38 (9.6)	0.44 (11.2)	0.44 (11.2)
U	0.47 (11.9)	0.47 (11.9)	0.56 (14.2)	0.62 (15.8)
Travel	0.62 (15.8)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

M085 Stem Stop, Small Bracket

4-Way



	1/4	3/8	1/2	3/4
A	6.81 (173.0)	7.85 (199.4)	9.48 (240.8)	11.64 (295.7)
B	3.42 (86.9)	3.97 (100.8)	5.91 (150.1)	5.97 (151.6)
C	2.38 (60.4)	2.62 (66.6)	3.12 (79.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	4.14 (105.2)	4.98 (126.5)	5.85 (148.6)	7.39 (187.7)
K	2.07 (52.6)	2.49 (63.2)	2.92 (74.2)	3.69 (93.7)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
P	2.12 (53.8)	2.18 (55.4)	2.63 (66.8)	3.06 (77.7)
R	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
S	0.38 (9.6)	0.38 (9.6)	0.44 (11.2)	0.44 (11.2)
U	0.47 (11.9)	0.47 (11.9)	0.56 (14.2)	0.62 (15.8)
Travel	0.62 (15.8)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

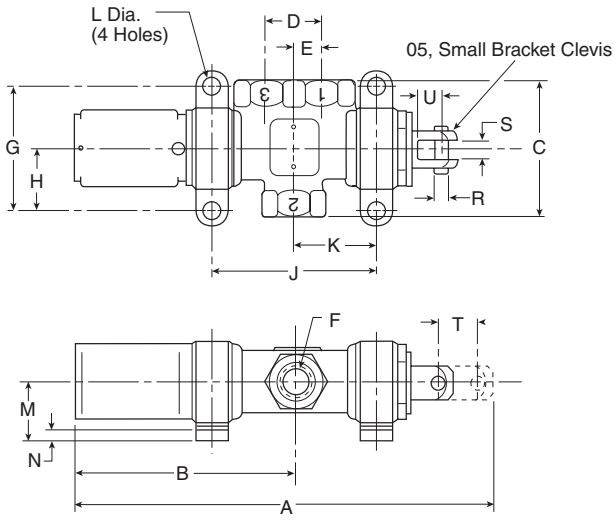
For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Clevis Operated, Spring Return, Small Bracket

M095 Direct Acting (Push Lever) & M096 Reverse Acting (Pull Lever)

3-Way

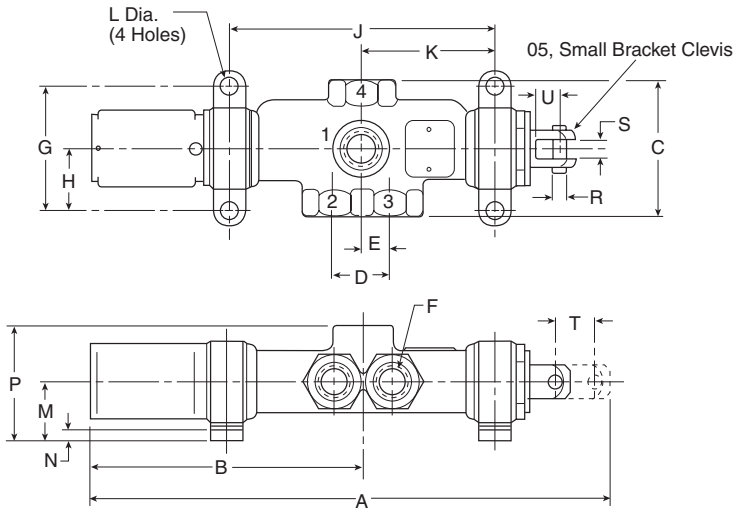


Inches (mm)

	1/4	3/8	1/2	3/4
A	6.56 (166.5)	7.19 (182.6)	8.95 (227.3)	11.22 (285.0)
B	3.92 (99.5)	4.24 (107.6)	5.31 (134.9)	6.92 (175.8)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	2.63 (66.8)	3.13 (79.5)	3.72 (94.5)	4.56 (115.8)
K	1.31 (33.3)	1.56 (39.6)	1.86 (47.2)	2.28 (57.9)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
R	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
S	0.38 (9.6)	0.38 (9.6)	0.44 (11.2)	0.44 (11.2)
U	0.47 (11.9)	0.47 (11.9)	0.56 (14.2)	0.62 (15.8)
Travel	0.62 (15.8)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

M095 Direct Acting (Push Lever) & M096 Reverse Acting (Pull Lever)

4-Way



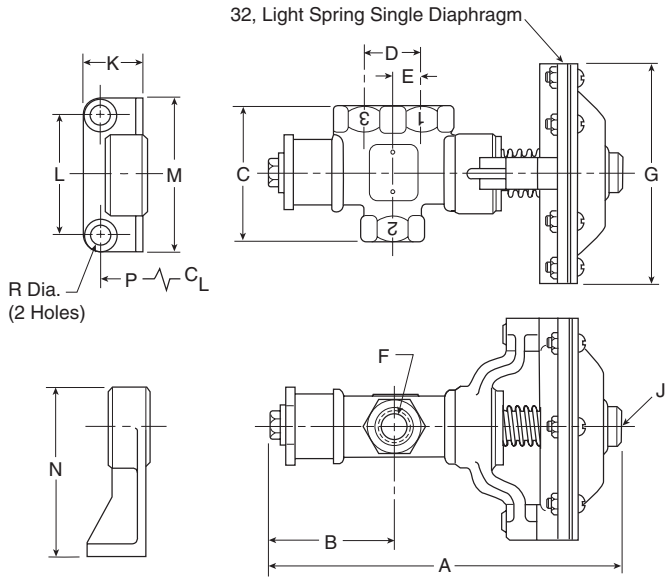
Inches (mm)

	1/4	3/8	1/2	3/4
A	8.06 (204.6)	9.03 (229.3)	11.07 (281.2)	13.94 (354.1)
B	4.67 (118.6)	5.15 (130.8)	5.68 (144.3)	8.27 (210.1)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	4.14 (105.2)	4.98 (126.5)	5.85 (148.6)	7.39 (187.7)
K	2.07 (52.6)	2.49 (63.2)	2.9 (74.2)	3.69 (93.7)
L	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
P	2.12 (53.8)	2.18 (55.4)	2.63 (66.8)	3.06 (77.7)
R	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.31 (7.9)
S	0.38 (9.6)	0.38 (9.6)	0.44 (11.2)	0.44 (11.2)
U	0.47 (11.9)	0.47 (11.9)	0.56 (14.2)	0.62 (15.8)
Travel	0.62 (15.8)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Single Diaphragm Operated, Spring Return Stem Stop

M084 Stem Stop, Large Bracket

3-Way

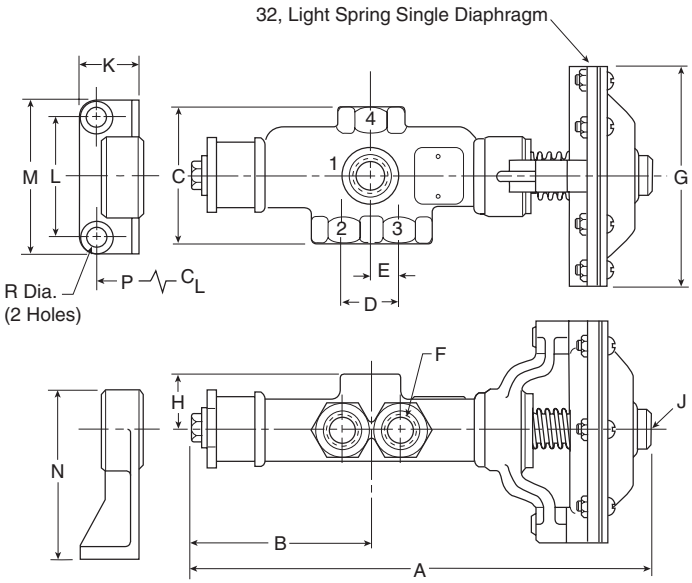


	1/4	3/8	1/2	3/4
A	6.14 (156.0)	6.85 (174.0)	8.03 (204.0)	9.89 (251.2)
B	2.03 (51.6)	2.36 (59.9)	2.83 (71.9)	3.48 (88.4)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	4.34 (110.2)	4.34 (110.2)	4.34 (110.2)	5.27 (133.9)
J	1/8" Pipe	1/8" Pipe	1/8" Pipe	1/8" Pipe
K	1.12 (28.4)	1.12 (28.4)	1.75 (44.4)	2.00 (50.8)
L	2.00 (50.8)	2.38 (60.4)	2.00 (50.8)	3.25 (82.6)
M	2.75 (69.8)	3.00 (76.2)	3.00 (76.2)	4.19 (106.4)
N	3.22 (81.8)	3.28 (83.3)	3.40 (86.4)	4.00 (101.6)
P	1.81 (46.0)	2.03 (51.6)	2.74 (69.6)	3.18 (80.8)
R	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
Travel	0.62 (15.8)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

M084 Stem Stop, Large Bracket

4-Way



	1/4	3/8	1/2	3/4
A	7.65 (194.3)	8.69 (220.7)	9.82 (249.4)	12.60 (320.0)
B	2.79 (70.9)	3.28 (83.3)	3.89 (98.8)	4.84 (122.9)
C	2.38 (60.4)	2.62 (66.6)	3.12 (79.2)	3.62 (92.0)
D	0.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	0.47 (11.9)	0.53 (13.5)	0.62 (15.8)	0.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	4.34 (110.2)	4.34 (110.2)	4.34 (110.2)	5.27 (133.9)
H	1.00 (25.4)	1.06 (26.9)	1.38 (30.0)	1.50 (38.1)
J	1/8 Pipe	1/8 Pipe	1/8 Pipe	1/8 Pipe
K	1.12 (28.4)	1.12 (28.4)	1.75 (44.4)	2.00 (50.8)
L	2.00 (50.8)	2.38 (60.4)	2.00 (50.8)	3.25 (82.6)
M	2.75 (69.8)	3.00 (76.2)	3.00 (76.2)	4.19 (106.4)
N	3.22 (81.8)	3.28 (83.3)	3.40 (86.4)	4.00 (101.6)
P	2.57 (65.3)	2.95 (74.9)	3.80 (96.5)	4.54 (115.3)
R	0.34 (8.6)	0.34 (8.6)	0.41 (10.4)	0.41 (10.4)
Travel	0.62 (15.8)	0.69 (17.5)	0.88 (22.4)	1.12 (28.4)

Inches (mm)

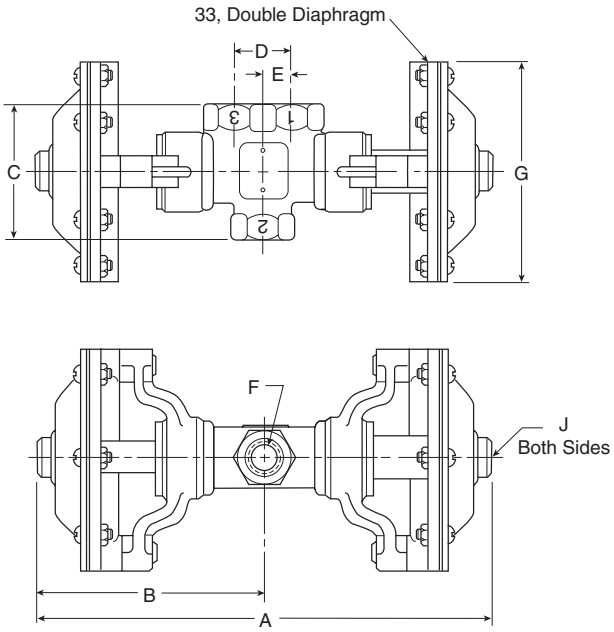
For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Double Diaphragm Operated

M033 Double Diaphragm

3-Way

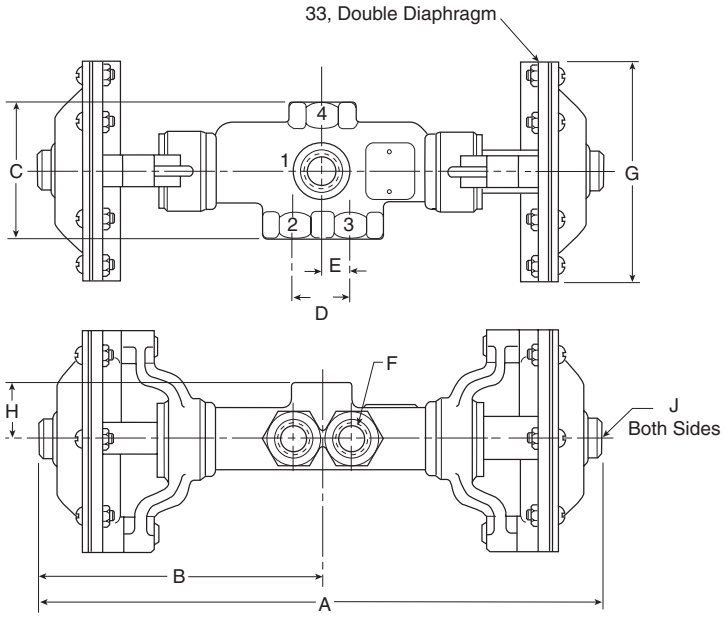


	1/4	3/8	1/2	3/4
A	8.22 (208.8)	8.98 (228.1)	10.40 (264.2)	12.82 (325.6)
B	4.11 (104.4)	4.49 (114.0)	5.20 (132.1)	6.41 (162.8)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	.47 (11.9)	.53 (13.5)	.62 (15.8)	.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	4.34 (110.2)	4.34 (110.2)	4.34 (110.2)	5.27 (133.9)
J	1/8" Pipe	1/8" Pipe	1/8" Pipe	1/8" Pipe

Inches (mm)

M033 Double Diaphragm

4-Way



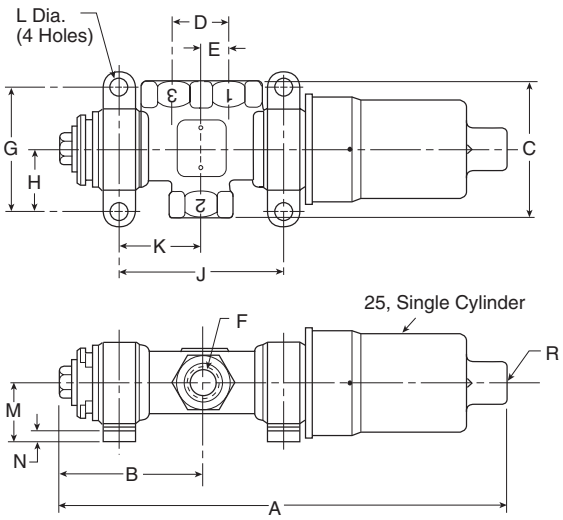
	1/4	3/8	1/2	3/4
A	9.72 (246.9)	10.82 (274.8)	11.86 (301.2)	15.52 (394.2)
B	4.86 (123.4)	5.41 (137.4)	5.93 (150.6)	7.76 (197.1)
C	2.38 (60.4)	2.62 (66.6)	3.12 (79.2)	3.62 (92.0)
D	.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	.47 (11.9)	.53 (13.5)	.62 (15.8)	.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	4.34 (110.2)	4.34 (110.2)	4.34 (110.2)	5.27 (133.9)
H	1.00 (25.4)	1.06 (26.9)	1.38 (30.0)	1.50 (38.1)
J	1/8" Pipe	1/8" Pipe	1/8" Pipe	1/8" Pipe

Inches (mm)

Single Cylinder Operated, Spring Return, Stem Stop

M085 Stem Stop, Small Bracket

3-Way

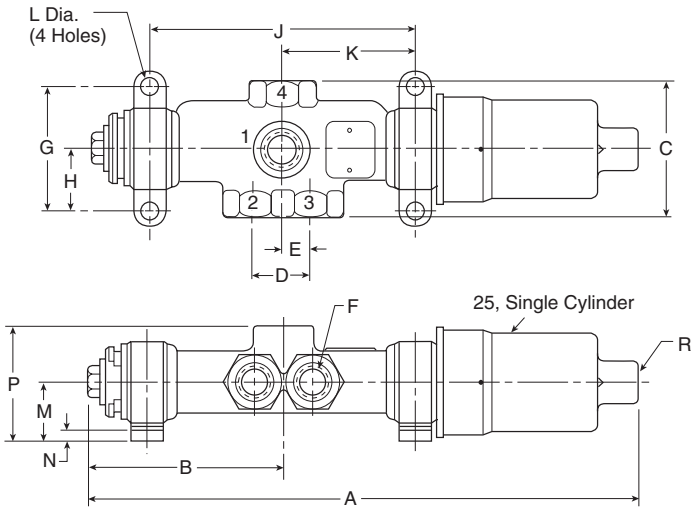


	1/4	3/8	1/2	3/4
A	7.50 (190.5)	8.14 (206.8)	9.03 (229.4)	11.18 (284.0)
B	2.03 (51.6)	2.36 (59.9)	2.83 (71.9)	3.48 (88.4)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	.47 (11.9)	.53 (13.5)	.62 (15.8)	.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	2.64 (67.1)	3.14 (79.8)	3.73 (94.7)	4.67 (118.6)
K	1.32 (33.5)	1.57 (39.9)	1.87 (47.5)	2.33 (59.2)
L	.34 (8.6)	.34 (8.6)	.41 (10.4)	.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	.25 (6.4)	.25 (6.4)	.31 (7.9)	.31 (7.9)
R	1/4" Pipe	1/4" Pipe	1/4" Pipe	1/4" Pipe
Travel	.62 (15.7)	.69 (17.5)	.88 (22.4)	1.12 (28.4)

Inches (mm)

M085 Stem Stop, Small Bracket

4-Way



	1/4	3/8	1/2	3/4
A	9.00 (228.6)	9.98 (253.5)	11.15 (283.2)	13.90 (353.1)
B	2.79 (70.9)	3.28 (83.3)	3.89 (98.8)	4.84 (122.9)
C	2.38 (60.4)	2.62 (66.6)	3.12 (79.2)	3.62 (92.0)
D	.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	.47 (11.9)	.53 (13.5)	.62 (15.8)	.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	4.14 (105.2)	4.98 (126.5)	5.85 (148.6)	7.39 (187.7)
K	2.07 (52.6)	2.49 (63.2)	2.92 (74.2)	3.69 (93.7)
L	.34 (8.6)	.34 (8.6)	.41 (10.4)	.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	.25 (6.4)	.25 (6.4)	.31 (7.9)	.31 (7.9)
P	2.12 (53.8)	2.18 (55.4)	2.63 (66.8)	3.06 (77.7)
R	1/4" Pipe	1/4" Plpe	1/4" Pipe	1/4" Pipe
Travel	.62 (15.8)	.69 (17.5)	.88 (22.4)	1.12 (28.4)

Inches (mm)

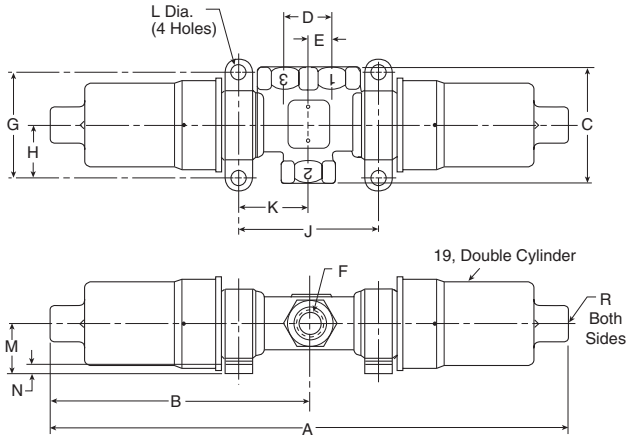
For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Double Cylinder Operated

M019 Double Cylinder

3-Way

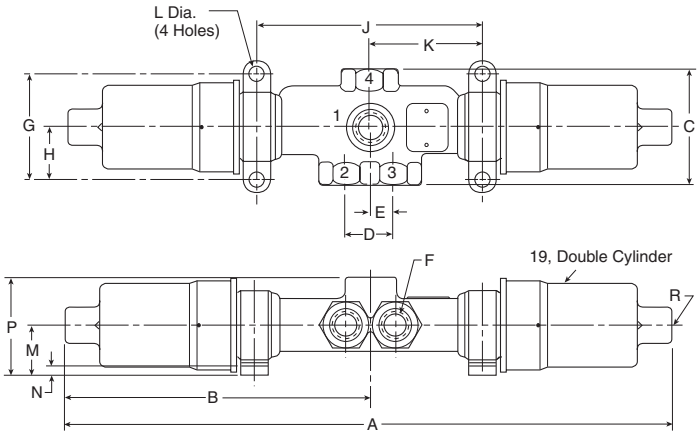


	1/4	3/8	1/2	3/4
A	10.94 (277.9)	11.56 (293.6)	12.40 (315.0)	15.40 (391.2)
B	5.47 (138.9)	5.78 (146.8)	6.20 (157.5)	7.70 (195.6)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	.47 (11.9)	.53 (13.5)	.62 (15.8)	.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	2.64 (67.1)	3.14 (79.8)	3.73 (94.7)	4.67 (118.6)
K	1.32 (33.5)	1.57 (39.9)	1.87 (47.5)	2.33 (59.2)
L	.34 (8.6)	.34 (8.6)	.41 (10.4)	.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	.25 (6.4)	.25 (6.4)	.31 (7.9)	.31 (7.9)
R	1/4" Pipe	1/4" Pipe	1/4" Pipe	1/4" Pipe

Inches (mm)

M019 Double Cylinder

4-Way



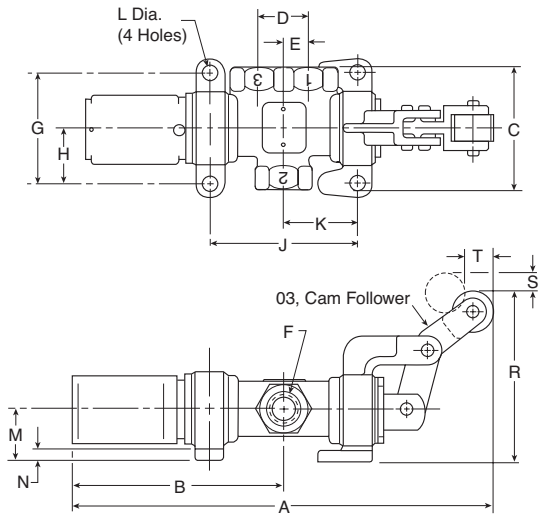
	1/4	3/8	1/2	3/4
A	12.42 (315.5)	13.40 (340.4)	14.52 (368.8)	18.12 (460.2)
B	6.21 (157.7)	6.70 (170.2)	7.26 (184.4)	9.06 (230.1)
C	2.38 (60.4)	2.62 (66.6)	3.12 (79.2)	3.62 (92.0)
D	.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	.47 (11.9)	.53 (13.5)	.62 (15.8)	.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	4.14 (105.2)	4.98 (126.5)	5.85 (148.6)	7.39 (187.7)
K	2.07 (52.6)	2.49 (63.2)	2.92 (74.2)	3.69 (93.7)
L	.34 (8.6)	.34 (8.6)	.41 (10.4)	.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	.25 (6.4)	.25 (6.4)	.31 (7.9)	.31 (7.9)
P	2.12 (53.8)	2.18 (55.4)	2.63 (66.8)	3.06 (77.7)
R	1/4" Pipe	1/4" Pipe	1/4" Pipe	1/4" Pipe

Inches (mm)

Cam Operated, Spring Return

M095 Direct Acting, Small Bracket (Push Lever)

3-Way

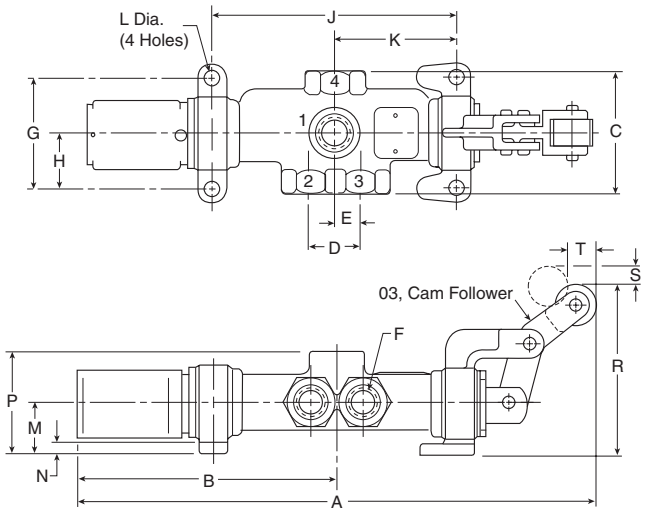


	1/4	3/8	1/2	3/4
A	7.98 (202.6)	8.72 (221.5)	10.77 (273.6)	13.54 (343.9)
B	3.92 (99.6)	4.24 (107.7)	5.31 (134.9)	6.92 (175.8)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	.47 (11.9)	.53 (13.5)	.62 (15.8)	.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	2.63 (66.8)	3.13 (79.5)	3.72 (94.5)	4.56 (115.8)
K	1.31 (33.3)	1.56 (39.6)	1.86 (47.2)	2.28 (57.9)
L	.34 (8.6)	.34 (8.6)	.41 (10.4)	.41 (10.4)
M	1.12 (38.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	.25 (6.4)	.25 (6.4)	.31 (7.9)	.31 (7.9)
R	3.88 (98.6)	3.88 (98.6)	4.23 (107.4)	4.88 (124.0)
S	.43 (10.9)	.47 (11.9)	.70 (17.8)	.67 (17.0)
Travel	.53 (13.5)	.59 (15.0)	.75 (19.0)	.81 (20.6)

Inches (mm)

M095 Direct Acting, Small Bracket (Push Lever)

4-Way



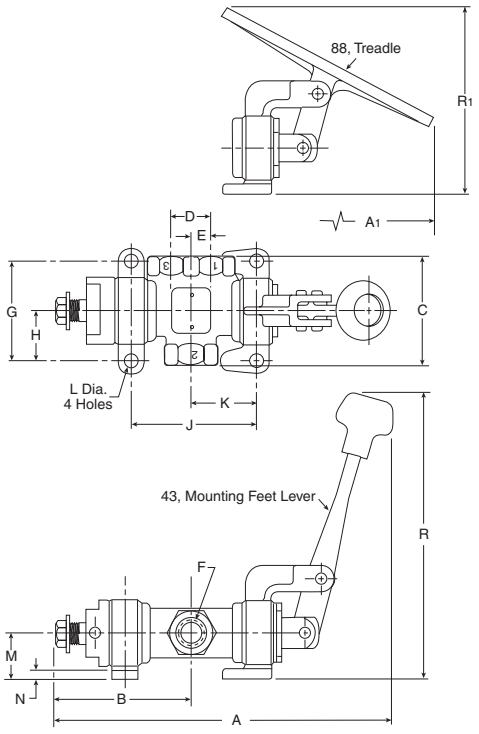
	1/4	3/8	1/2	3/4
A	9.48 (204.7)	10.56 (268.2)	12.89 (327.4)	16.26 (413.0)
B	4.67 (118.6)	5.15 (130.8)	5.68 (144.3)	8.27 (210.1)
C	2.38 (60.4)	2.62 (66.6)	3.12 (79.2)	3.62 (92.0)
D	.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	.47 (11.9)	.53 (13.5)	.62 (15.8)	.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	4.14 (105.2)	4.98 (126.5)	5.85 (148.6)	7.39 (187.7)
K	2.07 (52.6)	2.49 (63.2)	2.92 (74.2)	3.69 (93.7)
L	.34 (8.6)	.34 (8.6)	.41 (10.4)	.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	.25 (6.4)	.25 (6.4)	.31 (7.9)	.31 (7.9)
P	2.12 (53.8)	2.18 (55.4)	2.63 (66.8)	3.06 (77.7)
R	3.88 (98.6)	3.88 (98.6)	4.23 (107.4)	4.88 (124.0)
S	.43 (10.9)	.47 (11.9)	.70 (17.8)	.67 (17.0)
Travel	.53 (13.5)	.59 (15.0)	.75 (19.0)	.81 (20.6)

Inches (mm)

Lever & Treadle Operated, 2-Position Ball Detent

M054 Ball Detent, Small Bracket

3-Way

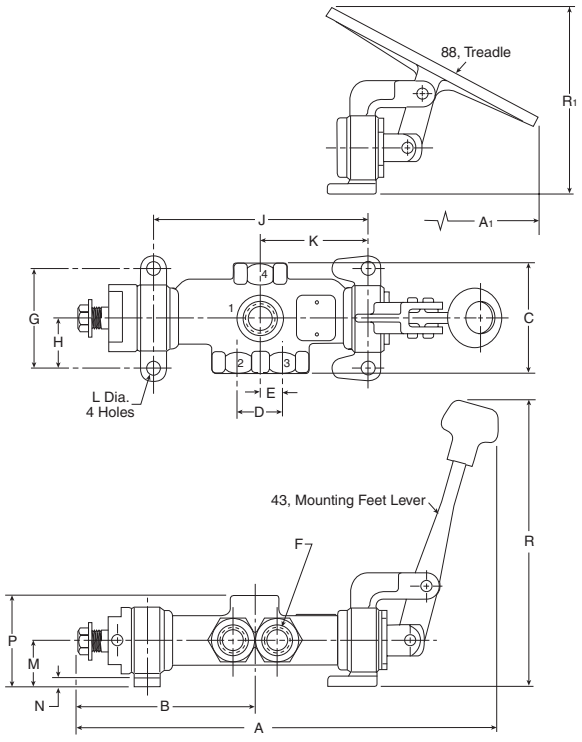


	1/4	3/8	1/2	3/4
A	7.35 (186.7)	8.36 (212.3)	9.95 (252.7)	12.25 (311.2)
A1	8.59 (218.2)	9.33 (237.0)	10.65 (270.5)	12.90 (327.7)
B	3.25 (82.6)	3.66 (93.0)	4.39 (11.5)	5.41 (137.4)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	.47 (11.9)	.53 (13.5)	.62 (15.8)	.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	2.63 (66.8)	3.13 (79.5)	3.72 (94.5)	4.56 (115.8)
K	1.31 (33.3)	1.56 (39.6)	1.86 (47.2)	2.28 (57.9)
L	.34 (8.6)	.34 (8.6)	.41 (10.4)	.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	.25 (6.4)	.25 (6.4)	.31 (7.9)	.31 (7.9)
R1	6.78 (172.2)	6.78 (172.2)	8.10 (205.7)	10.73 (272.5)
R2	4.51 (114.6)	4.65 (18.1)	4.85 (123.2)	6.03 (153.2)

Inches (mm)

M054 Ball Detent, Small Bracket

4-Way



	1/4	3/8	1/2	3/4
A	8.86 (225.0)	10.20 (259.1)	11/74 (298.2)	14/96 (380.0)
A1	10.01 (254.2)	11.17 (283.7)	12.77 (324.4)	15.62 (396.8)
B	4.00 (101.6)	4.57 (116.1)	5.44 (138.2)	6.76 (171.7)
C	2.38 (60.4)	2.62 (66.6)	3.00 (76.2)	3.62 (92.0)
D	.94 (23.9)	1.06 (26.9)	1.25 (31.8)	1.62 (41.2)
E	.47 (11.9)	.53 (13.5)	.62 (15.8)	.81 (20.6)
F	1/4" Pipe	3/8" Pipe	1/2" Pipe	3/4" Pipe
G	2.25 (57.2)	2.38 (60.4)	2.62 (66.6)	3.25 (82.6)
H	1.12 (28.4)	1.19 (30.2)	1.31 (33.3)	1.62 (41.2)
J	4.14 (105.2)	4.98 (126.5)	5.85 (148.6)	7.39 (187.7)
K	2.07 (52.6)	2.49 (63.2)	2.92 (74.2)	3.69 (93.7)
L	.34 (8.6)	.34 (8.6)	.41 (10.4)	.41 (10.4)
M	1.12 (28.4)	1.12 (28.4)	1.25 (31.8)	1.56 (39.6)
N	.25 (6.4)	.25 (6.4)	.31 (7.9)	.31 (7.9)
P	2.12 (53.8)	2.18 (55.4)	2.63 (66.8)	3.06 (77.7)
R1	6.78 (172.2)	6.78 (172.2)	8.10 (205.7)	10.73 (272.5)
R2	4.51 (114.6)	4.65 (18.1)	4.85 (123.2)	6.03 (153.2)

Inches (mm)

Parker is protecting your most valuable assets…

OSHA® www.osha.gov
Standard 190.147

- This applies to the servicing and maintenance of a machine or equipment.
- Any new, replacement, repair, or renovation to a machine must include an energy isolation device that can accept a lock out device.
- Lock out devices should not be used for any other purposes
- Verification of energy isolation is required

ANSI
Standard Z244

- This applies to all machines
- Lockout / tagout is the primary method of hazardous energy control
- Machines shall be designed, manufactured, supplied, and installed with energy isolating devices

ANSI B11.0
B11.TR6

PMMI B155.1

- B11.0 applies to a broad range of machines, B11.TR6 is specific to machine tools, and B155.1 is specific to packaging and converting machines
- Energy isolating device shall:
  - Be capable of being locked in the OFF position only
  - Be easy to operate
  - Have an exhaust port equal or greater than its supply port
  - Have a pressure indicator that is visible to an operator to verify line is relieved of pressure

…By offering the best in pneumatic safety for machine maintenance:

Traditional Ball Valve

Not a dedicated energy isolation device ✖
Not a full exhaust port ✖
No verification of line exhaust ✖
Can be locked ON ✖
Not easily identifiable ✖

Parker Solution

✓ **Dedicated energy isolation device**
✓ Full exhaust port
✓ Verification of line exhaust
✓ Only lockable in OFF position
✓ Easily identifiable

LV / LVSS Series

Lockout valves are installed in pneumatic drop legs, or individual pneumatic control lines. In accordance with OSHA procedures, lockout valves are used during maintenance and service procedures of pneumatically (air) operated equipment.

- Used for compliance with OSHA 29 CFR part 1910
- 1/4" to 2" pipe sizes. NPT or BSPP
- Yellow cast aluminum body with red handle or stainless steel (NACE MR0175 / ISO 15156)
- Inline or surface mountable
- Built in port for pressure verification to meet ANSI B11 and PMMI B155 requirements
- Fluorocarbon slipper seals for easy shifting, even after long periods of inactivity

Material specifications

Description	LV	LVSS
Body:	Cast aluminum alloy	Stainless steel
Handle:	Plastic	Stainless steel
Spool:	Aluminum	Stainless steel
Seals:	Carboxylated nitrile	Fluorocarbon
Detent spring:	Stainless steel	Stainless steel
Grease:	Magnalube G †	Magnalube G †

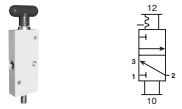
† **Trademark Magnalube**

Operating information

Operating pressure:	LV	LVSS
Compact	15 to 145 PSIG	–
Standard	15 to 300 PSIG	15 to 300 PSIG
High flow	15 to 300 PSIG	–
Operating temperature:	40°F to 175°F	30°F to 175°F

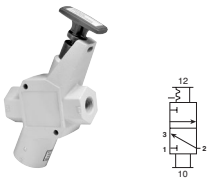
Operating media: Clean, dry, compressed air (5 micron)

Compact



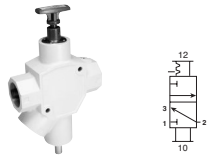
Port in/Out	Port Exhaust	SCFM In/Out	SCFM Exhaust	Wt (lb)	Part Number *
1/4	3/8	41.8	40.7	0.9	**LV2N3B**
3/8	3/8	60.7	60.7	0.9	**LV3N3B**

Standard



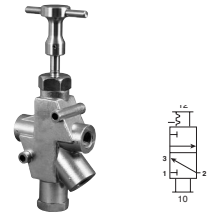
Port In/Out	Port Exhaust	SCFM In/Out	SCFM Exhaust	Wt (lb)	Part Number *
3/8	3/4	107.7	81.1	2.0	**LV3N6B**
1/2	3/4	161.4	90.9	2.0	**LV4N6B**
3/4	3/4	187.7	93.2	2.0	**LV6N6B**
3/4	1-1/4	297.7	204	3.2	**LV6NAB**
1	1-1/4	375	216	3.2	**LV8NAB**
1-1/4	1-1/4	436.4	221	3.2	**LVANAB**

High Flow



Port In/Out	Port Exhaust	SCFM in/out	SCFM Exhaust	Wt (lb)	Part Number *
1-1/2	2	761.4	1156	8.2	**LVBNCB**
2	2	918.2	1186	8.2	**LVCNCB**

Stainless Steel



Port In/Out	Port Exhaust	SCFM In/Out	SCFM Exhaust	Wt (lb)	Part Number *
1/4	1/4	48.6	47.2	3.8	**LV2N2BSS**
3/8	1/2	131.6	142	6.0	**LV3N4BSS**
1/2	1/2	131.6	142	6.0	**LV4N4BSS**
3/4	1	325	386	13	**LV6N8BSS**
1	1	325	386	13	**LV8N8BSS**
1-1/2	2	889	1023	35	**LVBNCBSS**
2	2	889	1023	35	**LVCNCBSS**

NOTE: Exhaust flow rates calculated using inlet pressure 100 psig (6.7 bar), pressure drop 5 psi (0.34 bar), air temp 68°F (20°C), and 36% relative humidity.

* For BSPP ports, change 4th digit from "N" to "B"

☐ Most popular.

EZ Series

The EZ series meets all the same standards as the LV series with the added feature of a soft start when opened. There are still 2 detented positions for the handle (push close, pull to open), but when pulled open, an adjustable needle valve controls the rate of pressure build-up This can protect equipment during start up after maintenance. The EZ is distinguishable from the LV series by the blue dot on the label.

Features

- Combines lockout and soft-start functions in a single unit
- Used in systems for compliance with OSHA standard 29 CFR part 1910
- 3/8 Inch to 1-1/4 inch pipe sizes
- Cv's from 3.7 to 13.7
- 3/4 and 1-1/4 inch: exhaust ports available
- Exhaust port threaded for installation of silencer or line for remote exhausting
- Inline or surface mountable
- Yellow cast aluminum body with red handle. Blue dot on body indicates EZ Series valve
- Fluorocarbon slipper seals for easy shifting, even after long periods of inactivity

3/4" Exhaust Shown

Operating information

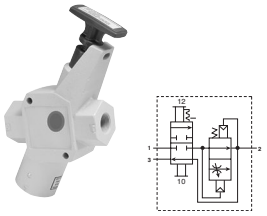
Operating pressure:	
Standard	15 to 300 PSIG
Operating temperature:	40°F to 175°F

Operating media: Clean, dry, compressed air (5 micron)

Material specifications

Description	
Body:	Cast aluminum alloy
Handle:	Plastic
Spool:	Aluminum
Seals:	Carboxylated nitrile
Detent spring:	Stainless steel
Grease:	Magnalube G †

† **Trademark Magnalube**



NOTE: Exhaust flow rates calculated using inlet pressure 100 psig (6.7 bar), pressure drop 5 psi (0.34 bar), air temp 68°F (20°C), and 36% relative humidity.
* For BSPP ports, change 5th digit from "N" to "B"

☐ Most popular.

Applications

Lockout valves are installed in pneumatic drop legs, or individual pneumatic control lines (see Figure 1). In accordance with OSHA procedures, EZ valves are used during maintenance and service procedures of pneumatically (air) operated equipment. Prior to servicing, the red handle is pressed inward, blocking pressure and relieving all downstream air pressure. A padlock is installed through the locking hasp, preventing accidental actuation during the maintenance procedure. Following maintenance, the padlock is removed and the red handle is pulled outward, gradually returning air pressure to the system. (For complete Lockout / Tagout procedures, consult OSHA Standard 29 CFR Part 1910 in U.S. Federal Register/Vol. 54 No. 169, Friday, September 1, 1989 / Page 36644.)

Mounting

Valves can be inline mounted or surface mounted using the two mounting holes provided in the valve body. Mount valves in plain view with the handle oriented for accessibility.

Placement of Lockout Device

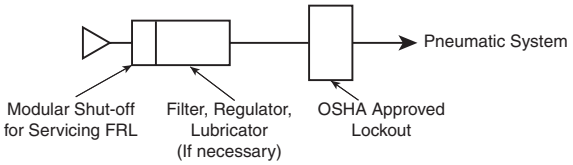
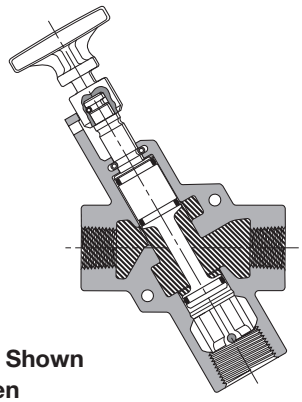


Figure 1.

LV / LVSS Operation

Normal Machine Operation – Valve Open

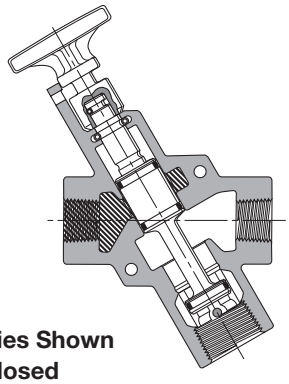
With the handle pulled outward. Inlet Port 1 is open to outlet Port 2. Exhaust Port 3 is blocked.



LV Series Shown Open

Lockout Operation – Valve Closed

With the handle pushed inward. Inlet Port 1 is blocked. Outlet Port 2 is open to Exhaust Port 3.

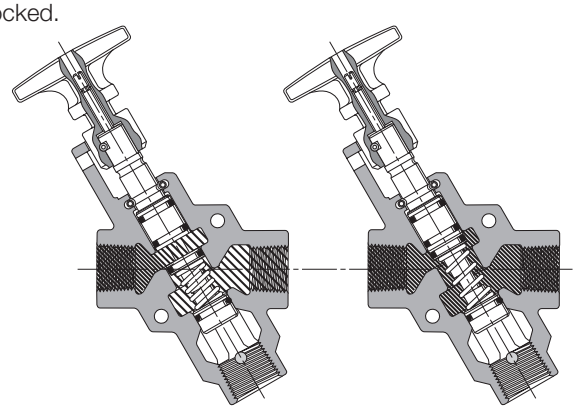


LV Series Shown Closed

EZ Operation

Normal Machine Operation – Valve Open

When the red handle is pulled outward, the adjustable needle valve (accessed through the top of the handle) setting determines the rate of pressure buildup. When downstream pressure reaches the full flow described in the specifications below, Inlet Port 1 is open to outlet Port 2. Exhaust Port 3 is blocked.

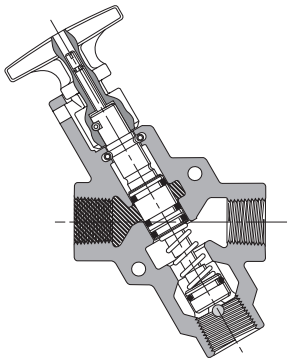


Open Pressure Building Up

Open Full Flow

Lockout Operation – Valve Closed

When the red handle is pushed inward, the Inlet Port 1 is blocked. Downstream air is exhausted through Exhaust Port 3.



Closed

Corrosion resistant mufflers for harsh environments

Port Size	Construction	Threads	Dimensions In. (mm) Width	Length	Part Number
1/4	Stainless steel	Male. NPT	0.56 (14.2)	1.75 (44.5)	**5500A2004**
1/2	Stainless steel	Male, NPT	0.87 (22.1)	2.75 (69.7)	**5500A4004**
1	Stainless steel	Male, NPT	1.31 (33.3)	3.87 (98.3)	**5500B6004**
2	Nickel plated	Male, NPT	2.37 (60.2)	5.50 (139.7)	**5500A9004***

* Nickel plated

* NPT ports standard, for BSPT ports, add a “B” after the “S”

Pop-up Pressure Indicator

Brass – Part # **988A30** – Can be used on all LV or EZ series to provide visual verification of line exhaust

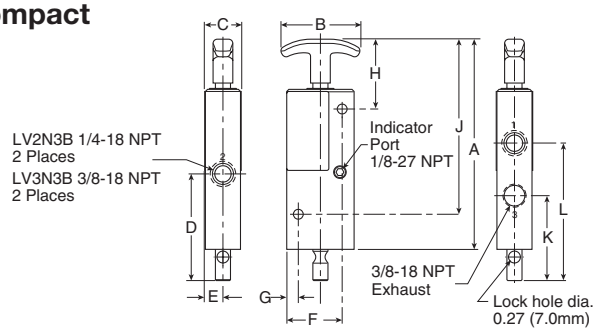
Stainless – Part# **1155H30** – Can be used on SS LV series to provide visual verification of line exhaust

Pressure Switch

- Part # **PPS1-2C3-RHM** (DIN 9.4mm connector)
- Part # **PPS1-2C3-RWL** (18" leads)
- Signal verification of line exhaust
- Field adjustable set point

LZ Series, Exhaust Port - Compact, Standard, High Flow

Compact



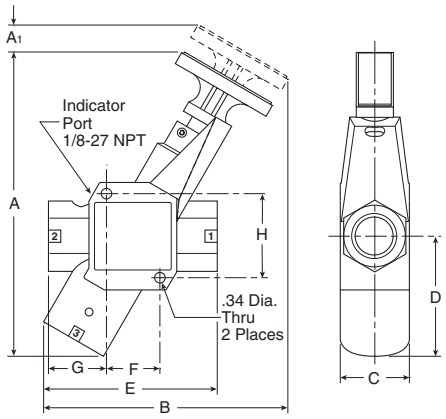
Compact LV Series, 3/8" Exhaust Port Dimensions

A	B	C	D	E	F
6.50 (165)	2.25 (57)	1.05 (27)	3.04 (77)	.51 (13)	1.58 (40)

G	H	J	K	L
.33 (8)	1.99 (51)	4.99 (127)	2.42 (62)	3.92 (100)

Inches (mm)

Standard



Compact LV Series, 3/4" Exhaust Port Dimensions

A	A1	B	C	D	E
8.32 (211)	0.64 (16)	6.60 (168)	2.00 (51)	3.06 (78)	4.24 (108)

F	G	H
1.32 (111)	1.56 (40)	2.21 (56)

Inches (mm)

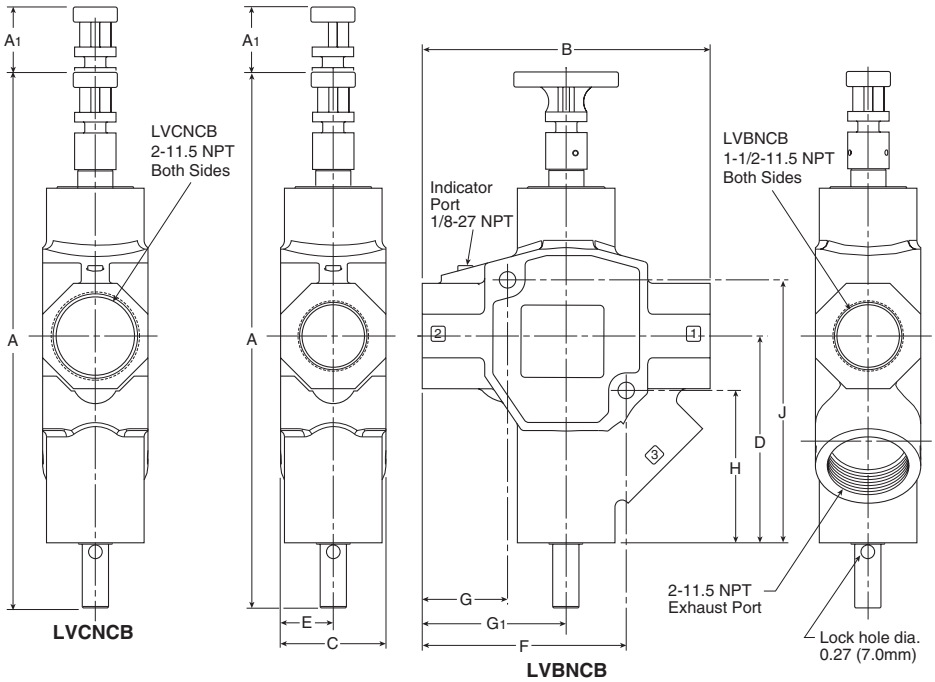
Compact LV Series, 1-1/4" Exhaust Port Dimensions

A	A1	B	C	D	E
9.91 (252)	0.85 (22)	7.95 (202)	2.25 (57)	3.91 (99)	5.65 (144)

F	G	H
1.74 (44)	1.89 (48)	2.74 (70)

Inches (mm)

High Flow



High Flow LV Series, 2" Exhaust Port Dimensions

A	A1	B
14.82 (376)	1.87 (47)	8.20 (208)

C	D	E
3.00 (76)	5.89 (150)	1.50 (38)

F	G	G1
5.81 (148)	2.43 (62)	4.10 (104)

H	J
4.34 (110)	7.49 (190)

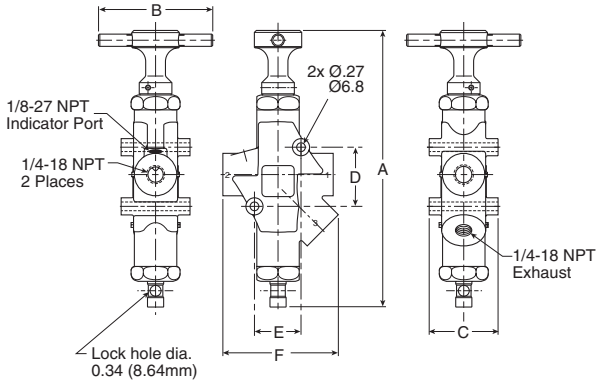
Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

LZ Series, Exhaust Port - Compact, Standard, High Flow

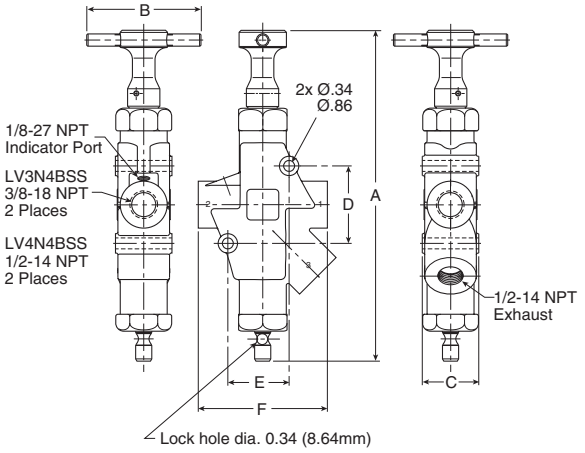
Stainless Steel



Stainless Steel LV Series, 1/4" Exhaust Port Dimensions

A	B	C	D	E	F
8.47 (215)	3.50 (89)	2.11 (54)	1.81 (46)	1.43 (36)	3.54 (90)

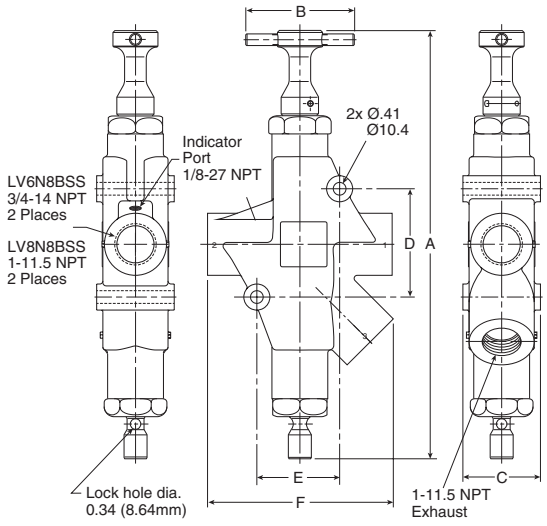
Inches (mm)



Stainless Steel LV Series, 1/2" Exhaust Port Dimensions

A	B	C	D	E	F
10.24 (260)	3.50 (89)	1.75 (45)	2.40 (61)	190 (48)	4.00 (102)

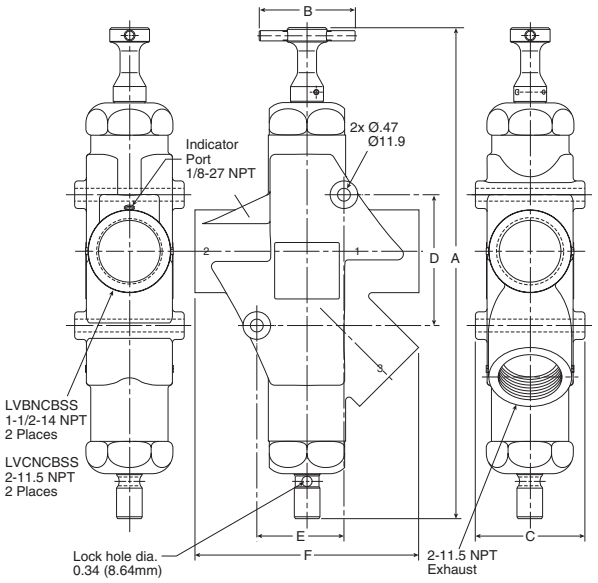
Inches (mm)



Stainless Steel LV Series, 1" Exhaust Port Dimensions

A	B	C	D	E	F
13.80 (351)	3.50 (89)	2.50 (64)	3.49 (89)	2.67 (68)	5.99 (152)

Inches (mm)



Stainless Steel LV Series, 2" Exhaust Port Dimensions

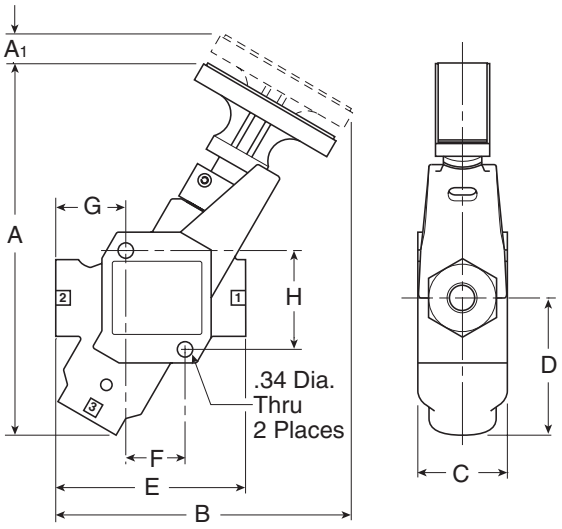
A	B	C	D	E	F
17.92 (455)	3.50 (89)	4.00 (102)	4.77 (121)	3.18 (81)	8.16 (207)

Inches (mm)

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

EZ Series, Exhaust Port - Standard Flow



EZ 3/4" Exhaust Port Dimensions

A	A1	B	C	D
8.32 (211)	0.64 (16)	6.60 (168)	2.00 (51)	3.06 (78)
E	**F**	**G**	**H**	
4.24 (108)	1.32 (111)	1.56 (40)	2.21 (56)	

Inches (mm)

EZ 1-1/4" Exhaust Port Dimensions

A	A1	B	C	D
9.91 (252)	0.85 (22)	7.95 (202)	2.25 (57)	3.91 (99)
E	**F**	**G**	**H**	
5.65 (144)	1.74 (44)	1.89 (48)	2.74 (70)	

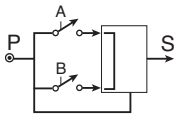
Inches (mm)

Two-Hand Controls

Two-Hand Controls

- The pre-assembled two-hand control enclosure occupies both hands of an operator by requiring nearly simultaneous operation of two pushbuttons
- Poppet – snap-acting (no spools)
- Same air as in cylinders – Filtration: 40 micron
- No lubrication required

Part number	Connection
PXP-C111-A	5/32" Instant



General Characteristics

Operating Pressure		40 to 120 PSI (3 to 8 bar)
Permissible Fluids –		Air or neutral gas 40 micron filtration, lubricated or dry
Flow at 90 PSI (6 bar)		7 SCFM (200 l/mn ANR)
Operating Temperature		-5°F to 140°F (-15°C to 60°C)
		Below 40°F (5°C), an air dryer is required
Storage Temperature		-40°F to 160°F (-40°C to 70°C)
Number of operations with dry air at 90 PSI (6 bar), 68°F (20°C), frequency 1 Hz		1 Million Operations
Vibration resistance –		Conforms to section 19-2 of bureau Véritas regulations (November 1987)
Materials –	Body	Glass Filled Nylon
	Operating Head	Zinc Alloy and Plastic
Connections:		5/32" instant

Mounting

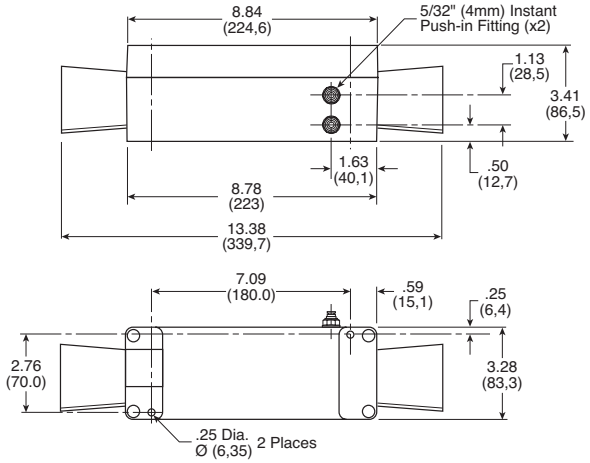
Approvals:

- In accordance with European Standard EN 574 - September 1996
- Conforms to the model that has obtained CE Type Test Certificate No. 02526 520 4631 0397

⚠ WARNING

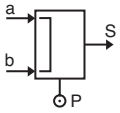
These devices should NOT be used in any application involving rotary clutch presses. Two hand control modules do not of themselves insure the safety of any machine. Users and original equipment manufacturers are responsible for making sure that installations meet all relevant safety regulations.

Notes: **These two-hand control modules provide an output signal upon nearly concurrent operation of two pushbuttons.**



Inches (mm)

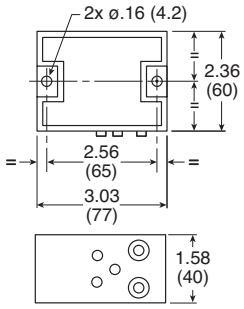
Two-Hand Control Module



PXP-A11-A

S = Output
AdB = Momentary input
P = Pressure supply

Part number	Connection
PXP-A11-A	5/32" Instant



Specifications

Air Quality – Standard Shop Air, Lubricated or Dry		40 µm Filtration
Materials –	Body	Polyamide
	Operating Head	Zinc Alloy & Plastic
Flow at 90 PSI (6 bar) in SCFM (l/mn ANR)		7 (200)
Number of Operations with Dry Air at 90 PSI (6 bar) and 68°F (20°C) - Frequency 1 Hz		1 million Operations
Operating Positions		All Positions
Operating Pressure –		15 to 115 PSIG (1 to 8 bar)
Ports	5/32" Instant for Semi-Rigid Nylon or Polyurethane Tube	
Operating Temperature –		
	Operating	32°F to 122°F (0°C to 50°C)
	Storage	-22°F to 140°F (-30°C to 60°C)
Vibration resistance:	Conforms to section 19-2 of bureau Véritas regulations (November 1987)	

⚠ WARNING

These devices should NOT be used in any application involving rotary clutch presses. Two hand control modules do not of themselves insure the safety of any machine. Users and original equipment manufacturers are responsible for making sure that installations meet all relevant safety regulations.

Notes: **These two-hand control modules provide an output signal upon nearly concurrent operation of two pushbuttons.**

Two-Hand Control Module Guard

PPRL15

Part number	Base component
PPRL15	**PXP-C111-A**

Two Hand Repair Parts

Part number	Quantity required	Description
PXP-A11-A	1	Control Module
PXBB4931	2	Valve Body & Mounting Ring
ZB4BR*	2	Push Button
PPRL15	2	Control Module Guard

* 2 = Black, 3 = Green, 4 = Red

PL / VL Series

These are 4-Way, 3-Position, rotary disc, direct-operated air valves. Two different types of control are offered. The forged bronze disc and the cast iron surface upon which the disc works are ground and lapped to provide a leak-proof seal. Air pressure from the inlet port is confined beneath the disc, making the seal tighter as the pressure increases, yet friction between the lapped surfaces is so low that only 15 pounds of force is required to move the lever at 100 PSI line pressure. The need for packing to seal around the stem is eliminated.

Valve can be furnished for gasketing to a manifold on customer's machine or with an adaptor for tapped bottom porting.

Valves are detented.

Operating handles may be installed in any of four positions.

Operating information

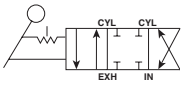
Operating pressure: 0 to 150 PSI (0 to 1035 kPa)

Temperature range: 18°F to 200°F (-8°C to 93°C)

Lubrication: Filtered and lubricated air recommended for maximum valve life and minimum maintenance.

PL Series Valves

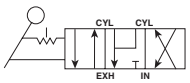
This type has a 90° lever movement. In neutral position, inlet is closed to pressure – outlets closed to exhaust. With clockwise (CW), inlet is connected to cylinder port directly opposite. Other cylinder port is connected to exhaust. With counterclockwise (CCW), inlet is connected to cylinder port diagonally opposite. Other cylinder port is connected to exhaust. Recommended for stationary air cylinders, arbor presses, and as a throttling valve for positioning air cylinders.



Port Size	Description	Cv	Part Number
3/8" NPT	4-Way, 3-Position, Detent, Closed Center	3.0	**PL37**
1/2" NPT	4-Way, 3-Position, Detent, Closed Center	6.2	**PL50**

VL Series Valves

This type has a 90° lever movement. In neutral position, inlet is closed to pressure – outlets open to exhaust. With clockwise (CW), inlet is connected to cylinder port directly opposite. Other cylinder port is connected to exhaust. With counterclockwise (CCW), inlet is connected to cylinder port diagonally opposite. Other cylinder port is connected to exhaust. This valve is particularly suited for pneumatic chuck operation.

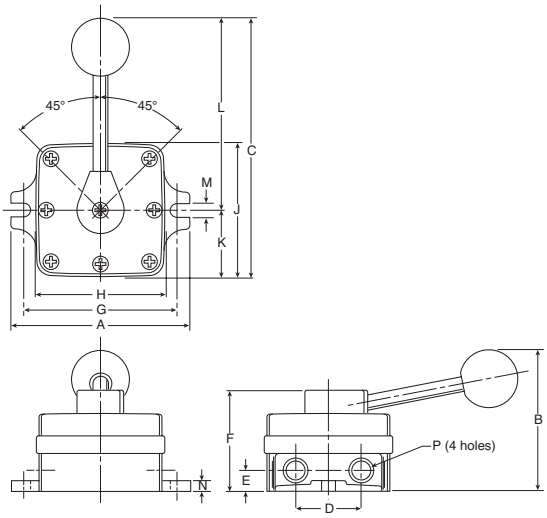


Port Size	Description	Cv	Part Number
3/8" NPT	4-Way, 3-Position, Detent, Exhaust Center	3.0	**VL37**
1/2" NPT	4-Way, 3-Position, Detent, Exhaust Center	6.2	**VL50**

Service kits

Description	Valve Size	Part Number
Lever Assembly Service Kits	PL37, PL37HP, VL25, & VL37	**PL2425P**
	PL50, PL50HP & VL50	**PL2424P**
Body Gasket	PL37, PL37HP, VL25, & VL37	**P66837**
	PL50, PL50HP & VL50	**P66829**

☐ Most popular.



PL-VL Dimensions

	A	B	C	D	E	F	G	H	J	K	L	M	N	P
PL37	4.75	3.81	6.81	1.69	.56	2.75	4.12	3.50	3.50	1.69	5.06	.34	.28	3/8
VL37	(121)	(97)	(173)	(43)	(14)	(70)	(105)	(89)	(89)	(43)	(129)	(9)	(7)	NPT
PL50	5.62	4.44	8.94	2.12	.66	3.25	5.00	4.38	4.38	2.12	6.75	.34	.34	1/2
VL50	(143)	(113)	(227)	(54)	(17)	(83)	(127)	(111)	(111)	(54)	(171)	(9)	(9)	NPT

inches (mm)

HV Valve Series

- Compact and simple design
- Rotary disc, direct operated valves
- Side porting
- Detent action smooth lever actuation
- General pneumatic applications

Material specifications

Cover	Zinc
Body	Aluminum
Seals	Polyurethane

Operating information

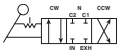
Operating pressure: 0 to 150 PSI (0 to 10 bar)

Temperature range: 32°F to 166°F (0°C to 60°C)

Lubrication: Filtered and lubricated air recommended for maximum valve life and minimum maintenance.

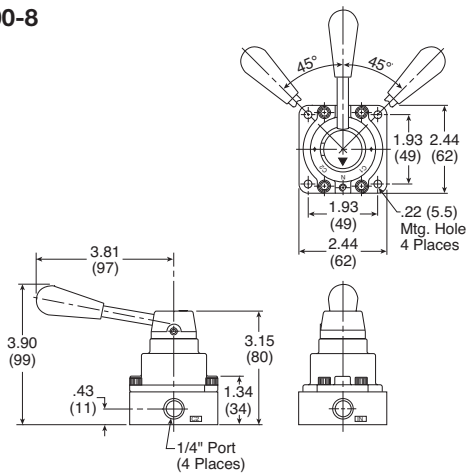
HV Series Valves

These closed center valves have a 90° lever movement. In neutral position, the inlet is closed to pressure and outlets are closed to exhaust. With clockwise (CW) rotation, inlet (IN) is connected to C2, C1 is connected to exhaust (EXH). With counter-clockwise (CCW) rotation, inlet (IN) is connected to C1, C2 is connected to exhaust (EXH). These valves are recommended for stationary air cylinders, and as throttling valves for positioning air cylinders. They are not to be used on punch presses or press brakes.

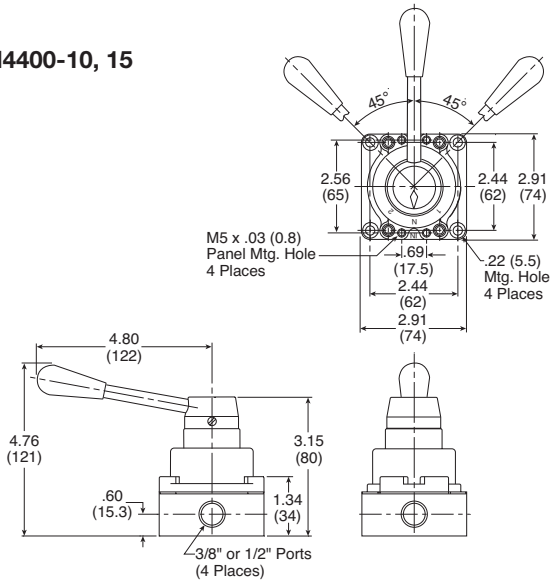


Port Size	Description	Cv (ANSI)	Cv (JIS)	Part Number
1/4" NPT	4-Way, 3-Position	0.5	0.4	**HVN4200-8**
3/8" NPT	4-Way, 3-Position	1.4	2.72	**HVN4400-10**
1/2" NPT	4-Way, 3-Position	1.5	3.26	**HVN4400-15**

HVN4200-8



HVN4400-10, 15



Service kits

Description	Valve Size	Part Number
Disk & Seal Service Kits	HV4200	**HVRK420001**
	HV4400	**HVRK440001**

Most popular.

ANSI Cv vs. JIS Cv

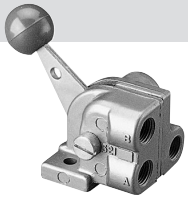
For Pneumatic Valve flow, the measurement Cv – Coefficient of Flow – is used to convey to the user how much air can flow through a given valve. Most valve manufacturers publish this information in their catalogs to assist the user in choosing the proper valve for their application. In publishing this data however, there are discrepancies in how the Cv is calculated, resulting in some Cv's being OVERSTATED by 20 to 40%. This can adversely affect the user's application because the valve flows LESS than the published Cv.

The reason for the large discrepancy is in the method of calculation - the ANSI (NFPA) or the JIS standard. Parker's Cv valve is calculated using the ANSI (NFPA) T3.21.3-1990 standard. The ANSI (NFPA) method is a structured test using very specific tube sizes and lengths, inlet pressures and pressure drops, and volume chambers.

Hand Operated Sliding Seal Valves

Sliding seal valves provide 3 or 4-Way directional control in a compact body size. Comfortable hand lever is easy to operate and maintains set position. Disc type valve has minimum number of moving parts. Valves should be used with filtered and lubricated air.

⚠ CAUTION:
Install guards on all hand operated valves.
Accidental operation can cause personal injury.



1/8" 3-Way

1/4" 4-Way

Material specifications

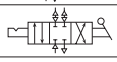
Internal components	Brass, stainless steel
Body	Die cast zinc
Seals	Buna N

Operating information

Operating pressure: Max. 200 PSIG air only
Min. 26" Hg vacuum

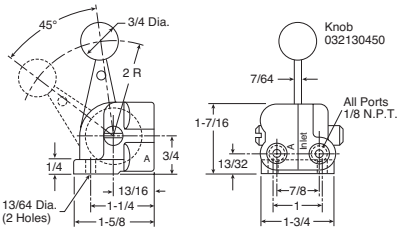
Temperature range: -40°F to 212°F (-40°C to 100°C)
(If it is possible that the ambient temperature may fall below freezing, the medium must be moisture free to prevent internal damage or unpredictable behavior.)

Hand Operated Sliding Seal Valve

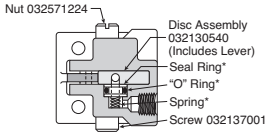
Symbol	Port Size	Function	Cv (Avg)	Service Kit*	Part Number
	1/8"	3-Way, 2-Position, Detented	0.54	**032130899**	**032130599**
	1/8"	4-Way, 2-Position, Detented	0.54	**032130899**	**032140299**
	1/4"	4-Way, 3-Position, Detented, Center Blocked	1.25	**008230299**	**008240109**

Note: 3-Way exhaust passage is through an untapped hole in bottom side of valve.

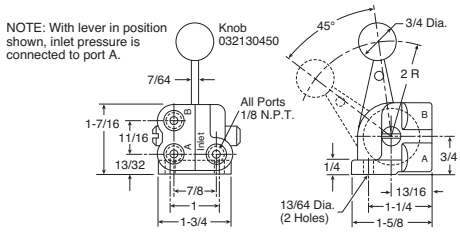
1/8" 3-Way 032130599



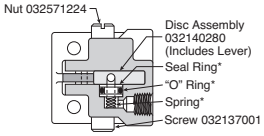
Service Kit 032130899*



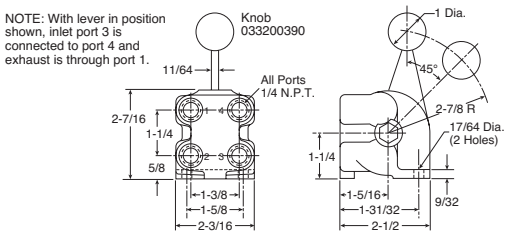
1/8" 4-Way 032140299



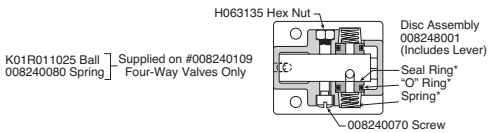
Service Kit 032130899*



1/4" 4-Way 008240109



Service Kit 008230299*



Most popular.

* Service kits contain asterisk items

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Button Operated Valves

2 & 3-way normally closed poppet, 1/4" Port valve operates at the press of a button and may be installed in a pipe line or used as a portable blow gun attached to a length of hose.

⚠ CAUTION:
Install guards on all hand operated valves.
Accidental operation can cause personal injury.

Material specifications

Internal components	Brass, stainless and plated steel
Body	Brass
Seals	Buna N

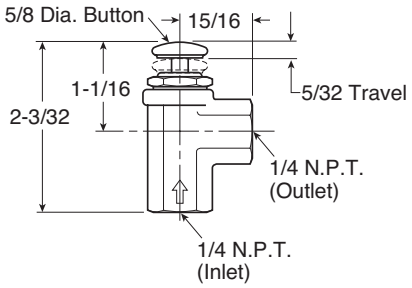
Operating information

Operating pressure:	Max. 150 PSIG air only Min. 0 PSIG
Temperature range:	-20°F to 180°F (-28°C to 82°C)

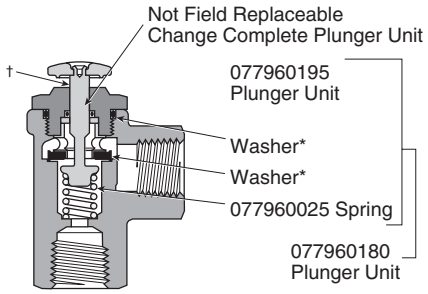
Button Operated Valves

	Port Size	Function	Cv (Avg)	Old Number	Service Kit	Part Number
	1/4"	2-way	0.94	7796SP1	**077960105**	**077960199**
	1/4"	3-way	0.94	8187	**077960105**	**081870129**

Dimensions



Replacement Parts

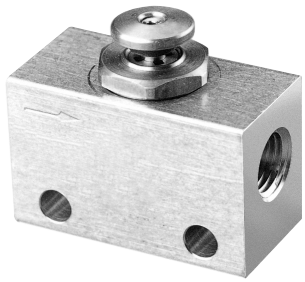


† 077960199 2-Way valve shown.
* Included in service kits listed above.

Hand / Cam Operated Valves

Inline, button-operated, 2 & 3-way normally closed poppet, 1/4" port valve has mounting holes for single or gang mounting. Actuation by hand, cam or mechanical fingers. Valves should be used with filtered and lubricated air.

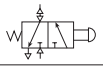
⚠ CAUTION:
Install guards on all hand operated valves.
Accidental operation can cause personal injury.

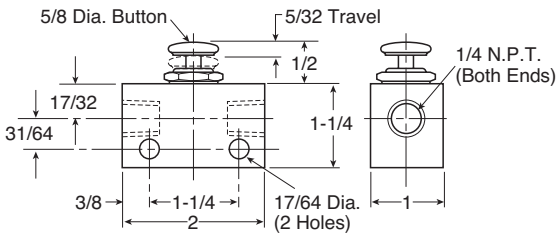


Operating information

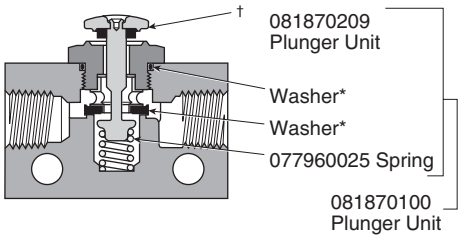
Operating pressure:	Max. 150 PSIG air only Min. 0 PSIG
Temperature range:	-20°F to 180°F (-28°C to 82°C)

Hand / Cam Operated Valves

	Port Size	Function	Cv (Avg)	Old Number	Service Kit	Part Number
	1/4"	2-Way	0.94	7796SP5	**077960105**	**077960319**
	1/4"	3-Way	0.94	8187SP1	**077960105**	**081870139**



Replacement Parts



† 081870139 3-Way valve shown.
* Included in service kits listed above.

Bleed Valves

This 2-way normally closed bleeder valve is an accessory that may be used with any double pilot-operated valve (bleed type). It provides manual or cam-operated control. A 1/4" pipe thread fits either the pilot valve port or the feeder airline. Opposite end has standard 1/2-20 thread for easy mounting on machine or panel. Valves should be used with filtered and lubricated air.

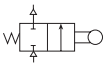
Material specifications

Internal components	Brass, stainless steel
Body	Brass
Seals	Fluorocarbon

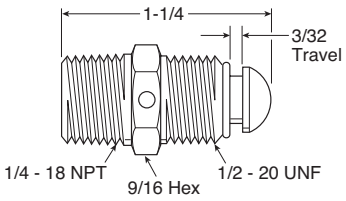
Operating information

Operating pressure:	Max. 150 PSIG air only Min. 0 PSIG
Temperature range:	-40°F to 450°F (-40°C to 232°C)

Bleed Valves

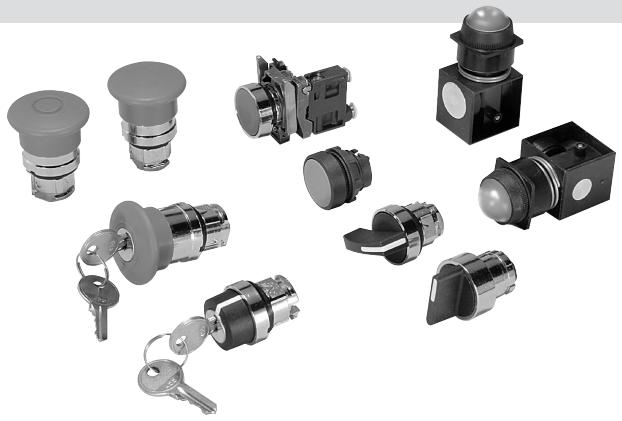
	Port Size	Function	Part Number
	1/4"	2-way	**315139000**

Dimensions



Control Panel Products

HUMAN-MACHINE DIALOG requires devices such as push buttons and selector switches to provide command inputs. A wide variety of these devices are available to meet most application needs; in both pneumatic and electrical switch bodies. All of these devices use the 22 mm (7/8") mounting standard.



Complete Assemblies– 3/2 Valve Bodies with 5/32" Instant Straight Connections

Flush Push Buttons

	Color	Function	Type of Switching*	Part Number
	Black	Spring Return	NNP	**PXBB3111BA2**
	Green			**PXBB3111BA3**
	Red			**PXBB3111BA4**
	Black	Spring Return	NNP+NP	**PXBB3251BA2**
	Black	Spring Return	Single Universal 3-Way	**PXBB4131BA2**
	Green			**PXBB4131BA3**
	Red			**PXBB4131BA4**
	Black	Spring Return	Dual Universal 3-Way	**PXBB4231BA2**

* Type of switching: Universal 3-way: valve can be connected either as NP or NNP as required by connecting the primary air supply to port 1 or port 3.

Note: Mount up to three valves on mounting ring.

Mushroom Head Push Buttons (40mm Diameter)

	Color	Function	Type of Switching*	Part Number
	Black	Spring Return	NNP	**PXBB3111BC2**
	Red	Push-Pull		**PXBB3111BT4**
	Red	Push-Pull	NP	**PXBB3121BT4**
	Black	Spring Return	Single Universal 3-Way	**PXBB4131BC2**
	Red	Push-Pull		**PXBB4131BT4**

* Type of switching: Universal 3-way: valve can be connected either as NP or NNP as required by connecting the primary air supply to port 1 or port 3.

Note: Mount up to three valves on mounting ring.

Selector Switches

	Color	Function	Type of Switching*	Part Number
	Black	2 Maintained Positions with Std. Handle	NNP	**PXBB3111BD2**
	Black		NNP+NNP	**PXBB3211BD2**
	Black		NNP+NP	**PXBB3251BD2**
	Black	3 Maintained Positions with Cdle	NNP+NNP	**PXBB3211BD3**
	Black		NNP+NP	**PXBB3251BD3**
	Black	3 Positions, Spring Return to Center with Long Handle	NNP+NNP	**PXBB3211BJ5**
	Black	2 Maintained Positions with Std. Handle	Single Universal 3-Way	**PXBB4131BD2**
	Black	2 Maintained Positions with Std. Handle	Dual Universal 3-Way	**PXBB4231BD2**
	Black	3 Maintained Positions with Std. Handle	Dual Universal 3-Way	**PXBB4231BD3**
	Black	3 Maintained Positions with Long Handle	Dual Universal 3-Way	**PXBB4231BJ5**

* Type of switching: Universal 3-way: valve can be connected either as NP or NNP as required by connecting the primary air supply to port 1 or port 3.

Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

For Use With PXBB Valve Bodies and ZBE Electrical Switch Bodies

Push Buttons

	Color	Function	Type	Plastic Head**	Metal Head*
	Black	Spring Return	Flush	**ZB5AA2**	**ZB4BA2**
	Green			**ZB5AA3**	**ZB4BA3**
	Red			**ZB5AA4**	**ZB4BA4**
	Yellow			—	**ZB4BA5**
	Blue			—	**ZB4BA6**
	Black	Spring Return	Extended	**ZB5AL2**	**ZB4BL2**
	Green			**ZB5AL3**	**ZB4BL3**
	Red			**ZB5AL4**	**ZB4BL4**
	Yellow			—	**ZB4BL5**
	Black	Spring Return	Booted	—	**ZB4BPA2**
	Green			—	**ZB4BPA3**
	Red			—	**ZB4BP4**
	Black	Detent 2 Position	Flush	—	**ZB4BH02**
	Green			—	**ZB4BH03**
	Red			—	**ZB4BH04**

* ZB4*** model numbers are metal head operators
** ZB5*** model numbers are plastic head operators, use with plastic mounting ring.

Selector Switches

Standard black handle

	Description	Function	Part Number*
	Maintained	2 positions	**ZB4BD2**
	Spring Return from Right to Left		**ZB4BD4**
	Maintained	3 positions	**ZB4BD3**
	Spring Return to Center from Left and Right		**ZB4BD5**
	Maintained Right Spring Return from Left to Center	3 positions	**ZB4BD7**
	Maintained Left Spring Return from Right to Center	3 positions	**ZB4BD8**

Long Black Handle

	Maintained	2 positions	**ZB4BJ2**
	Spring Return from Right to Left		**ZB4BJ4**
	Maintained	3 positions	**ZB4BJ3**
	Spring Return to Center from Left and Right		**ZB4BJ5**

* ZB4*** model numbers are metal head operators

For Push Buttons and Visual Indicators

Mounting Ring for Valve Bodies, Switch Bodies and Operating Heads

Description		Part Number
	Metal Mounting Ring	**ZB4BZ009**
	Plastic Mounting Ring	**ZB5AZ009**

Note: To release push button from mounting ring, pull lever on top of mounting ring up and remove push button operator. To assemble push button operator to mounting ring, align arrows and snap into place.

Key Operated Selectors

	Key Withdrawal	Function	Part Number*
	Left	2 Maintained Positions	**ZB4BG2**
	Left and Right		**ZB4BG4**
	Center	3 Maintained Positions	**ZB4BG3**
	Left and Right		**ZB4BG5**
	Center	3 Positions 2 Spring Return to Center	**ZB4BG7**

* ZB4*** Model numbers are metal head operators

Mushroom Head Push Buttons with Key Select

	Color	Function	Description	Part Number*
	Red	Latching Turn to Release	Ø 40mm head	**ZB4BS844**
	Red	Key Latching		**ZB4BS944**

* ZB4**** model numbers are metal head operators

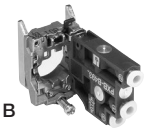
Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

For Use With 2B4*** Metal Operating Heads

PXBB3111B


PXBB4131B

* NNP: Normally non-passing.

Note: Mount up to 3 valves on mounting ring for push buttons.
Mount up to 2 valves on mounting ring for selector switches, valves cannot be mounted in center position.

Specifications

Air Quality – Standard Shop Air, Lubricated or Dry		40 µm Filtration
Flow –	PXBB3•	Cv=.08
	PXBB4•	Cv=.18
Materials –	Body	Polyamide
	Operating Head	Zinc Alloy & Plastic
Operating Positions		All Positions
Operating Pressure –		
	PXBB3•	15 to 115 PSIG (1 to 9 bar)
	PXBB4•	15 to 145 PSIG (1 to 10 bar)
Ports	5/32" Instant for Semi-Rigid Nylon or Polyurethane Tube	
Operating Temperature –		5°F to 140°F (-15°C to 60°C)

Additional Valve Bodies

PXBB3911

PXBB4932

PXBB4931

Connections	Function	Type of Switching*	Part Number
5/32" instant straight	3/2	NNP	**PXBB3911**
5/32" instant swivel			**PXBB3912**
5/32" instant straight	3/2	NP	**PXBB3921**
5/32" instant swivel			**PXBB3922**
5/32" instant straight	3/2	Universal 3 Way	**PXBB4931**
5/32" instant swivel			**PXBB4932**

* NNP: Normally non-passing.

Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

For Push Buttons and Visual Indicators

Legend Plates for PXBB Devices (22mm)

Description				Part Number
Without Text for Customer Engraving				
	Black / red background (white letters)			**ZBY2101**
	Yellow / white background (black letters)			**ZBY4101**
With Text for Push Buttons				
	Start			**ZBY2303**
	Stop			**ZBY2304**
	Forward			**ZBY2305**
	Reverse			**ZBY2306**
	Up			**ZBY2307**
	Down			**ZBY2308**
	On			**ZBY2311**
	Off			**ZBY2312**
	Open			**ZBY2313**
	Close			**ZBY2314**
	Inch			**ZBY2321**
	Reset			**ZBY2323**
	Power On			**ZBY2326**
	Slow			**ZBY2327**
	Fast			**ZBY2328**
	Emergency stop			**ZBY2330**
	Run			**ZBY2334**
With Text for 2-Position Selectors				
		Off	On	**ZBY2367**
With Text for 3-Position Selectors				
	Hand	Off	Auto	**ZBY2387**

Blank Legend Plates for Inscription

For PXBB devices (2 lines of 11 characters maximum)

Please indicate the required text when ordering.

Description	Part Number
Black Background / White Letters	**ZBY2002**

For 22mm Visual Indicators Only

2 lines of 11 characters maximum

Please indicate the required text when ordering.

Description	Part Number
Black Background / White Letters	**ZB2BY2002**

Electrical Switch Bodies

When combined with pneumatic valves ,these contact blocks allow different forms of power to be provided from a single push button. Can be mounted with both types of valves PXBB3 / PXBB4.

	Type of contact	Part Number
	Normally Open (NO)	**ZBE101**
	Normally Closed (NC)	**ZBE102**

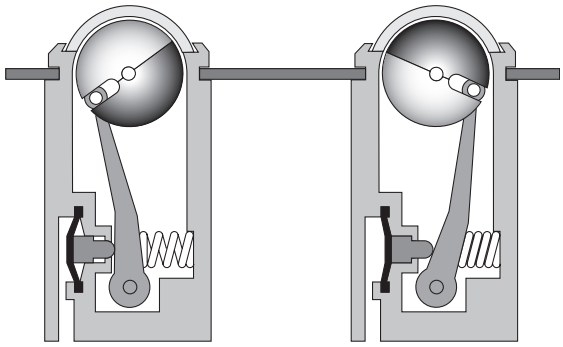
Note: Plastic mounting ring ZB5AZ009 to be used with ZB5 plastic operating heads. Metal mounting ring ZB4BZ009 to be used with ZB4 metal operating heads.

Electrical specification: 240V, 10 Amp

Most popular.

Pneumatic Visual Indicators

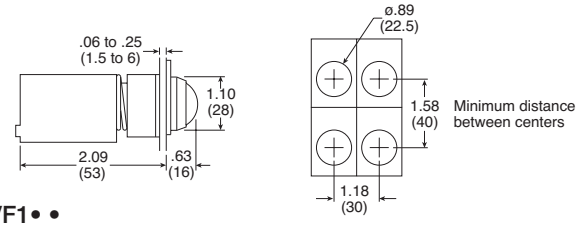
An indicator ball is rotated by a pneumatic input, changing the visible color. The ball sits behind a clear plastic window, providing a wide field of view. The visual indicators are available in five brightly colored Day-Glow paints for increased visibility. Like push buttons and selector switches, visual indicators use the 22mm (7/8") mounting standard.



Unactuated State **Actuated State**

With 5/32" Instant Connections

Notes: The Pneumatic Indicators are black in one position and colored in the other. The colored position corresponds either to the presence of a pressure ("ON" Indicator) or the absence of pressure ("OFF" Indicator).



PXVF1• •

Specifications

Air Quality – Standard Shop Air, Lubricated or Dry		40 µm Filtration
Materials –	Body	Polyamide
	Operating Head	Zinc Alloy & Plastic
Number of Operations with Dry Air at 90 PSI (6 bar) and 68°F (20°C) - Frequency 1 Hz		1 million Operations
	Mushroom Head	300,000 Operations
Operating Positions		All Positions
Operating Pressure –		15 to 115 PSIG (1 to 8 bar)
Ports		5/32" Instant for Semi-Rigid Nylon or Polyurethane Tube 10-32 UNF Available
Operating Temperature –		
	Operating	32°F to 122°F (0°C to 50°C)
	Storage	-22°F to 140°F (-30°C to 60°C)

Mounting Accessories

	Color	Description	Part Number
	—	Plastic Head (ZB5) Mounting Nut Tightening Tool	**ZB5AZ905**
	Black Plastic	Guard for 40mm	**ZBZ1602**

Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

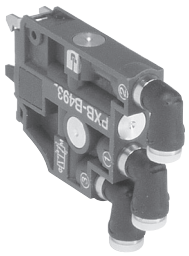
Modular Pneumatic / Electric Push Buttons

As with electrical contact switches, pneumatic valve modules can be mounted on a number of different operating heads.

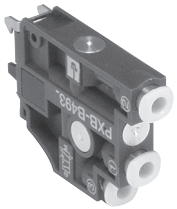
- Pneumatic normally non passing (NNP) is equivalent to electrical normally open (N.O.).
- Pneumatic normally passing (NP) is equivalent to electrical normally closed (N.C.).

Note: Electrical switches can be stacked, but the rear connection on pneumatic switches prevents stacking. Therefore, when mixing electrical and pneumatic switch bodies on the same operator, the pneumatic switch must be mounted last.

PXBB3911



PXBB4932



PXBB4931

Push Buttons

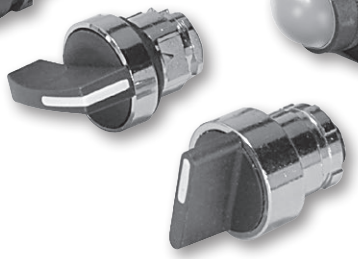
Spring Return or Latching Mushroom Headed Push Buttons

Standard Push Button

Visual indicators

Selector Switches

2 or 3 Positions, Fixed or ReturnTo Center

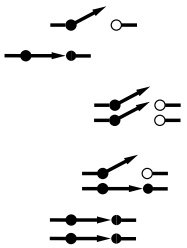


Functionality Explanation

Fluid Power		Universal Description	Electrical	
Function	**Symbol**		**Function**	**Symbol**
Normally Closed (N.C.)	2-Way / 3-Way	Normally Non-Passing (NNP)	**Normally Open (N.O.)**	
Normally Open (N.O.)	2-Way / 3-Way	Normally Passing (NP)	**Normally Closed (N.C.)**	

Type of Switching: Universal 3-Way: Valve can be connected either as NP or NNP as required by connecting the primary air supply to port 1 or port 3.

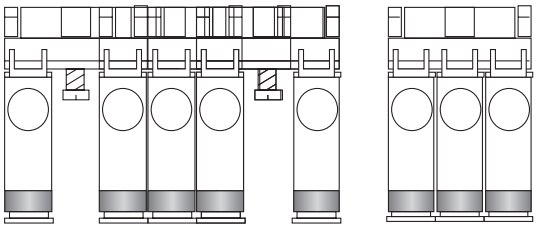
NP 3 2 NNP 1 2



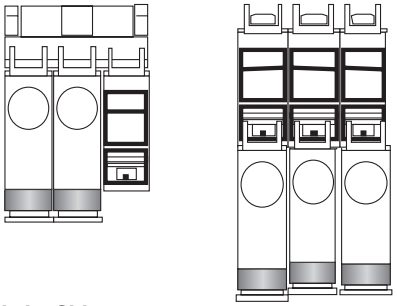
Combination of Output Devices On a Single Mounting Block

Up to 3 output devices (valves or electrical contacts) can be mounted side by side on 1 mounting block.

Note: The central position can only be activated by push button heads.



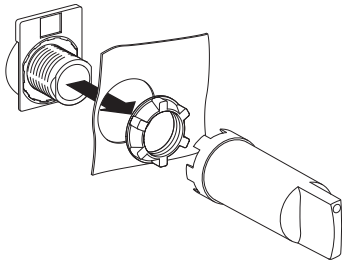
Electrical Contacts and Valves can be Combined Either Side by Side, or by Mounting the Valve on the Back of the Electrical Contact.



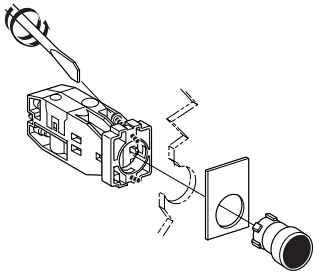
Side by Side Combination

Combination by Mounting Valves On the Back of the Electrical Contact

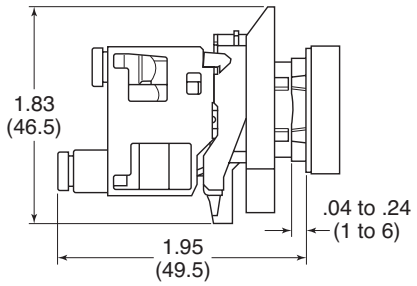
Assembling Output Devices and Heads On ZB5 Series Mounting Block

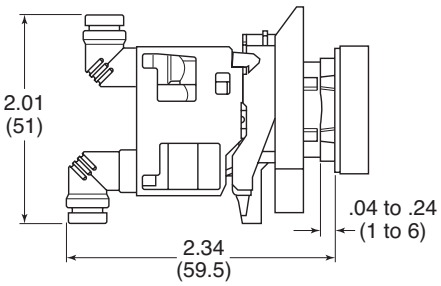


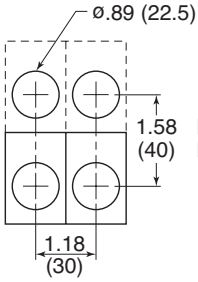
Replacement Old Style Mounting



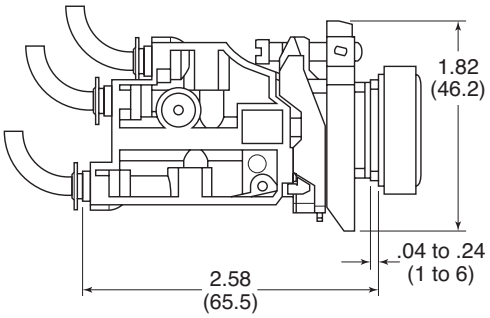
PXB-B3 Dimensions





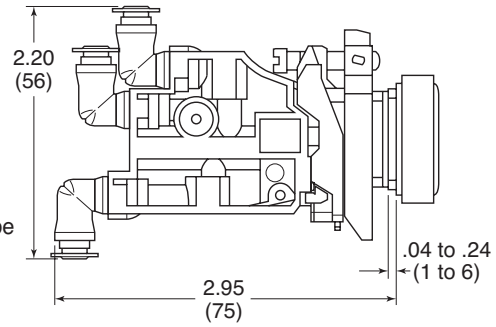


PXB-B4 Dimensions



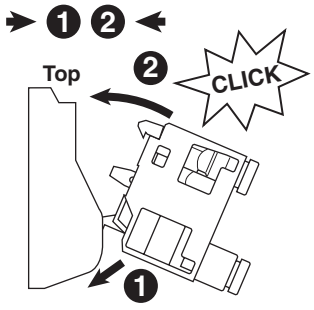
Tube Bending Radius For PXBB3 and PXBB4

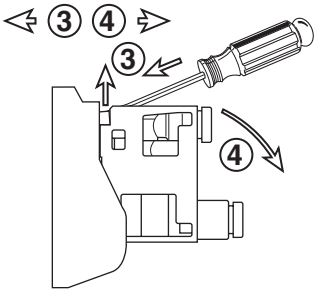
- 4 mm O.D. x 2 mm I.D. Tube = Minimum 0.39 (10) Radius
- 4 mm O.D. x 2.7 mm I.D. Tube = Minimum 0.59 (15) Radius



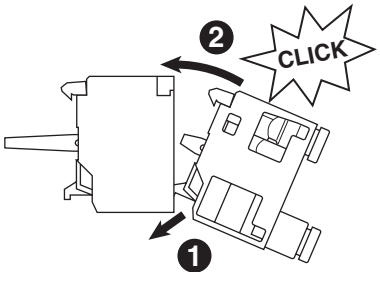
Assembly

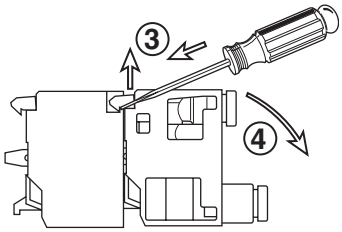
Assembling PXB Valves On Mounting Block





Assembling PXB Valves On the Back of the Electrical Contact



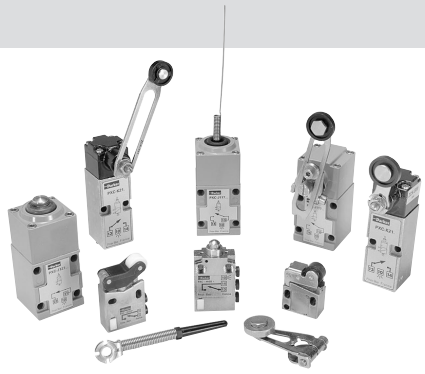


Limit Switches

To achieve the sensing or feedback function, pneumatic sensors can be:

- Limit switches in a variety of sizes and configurations
- Pressure switches with many adjustable ranges
- Components designed specifically for pneumatic technology using pressure variation, air bleed or blocking for detection.

A wide variety of pneumatic sensors are available to suit any application requirement.



Material specifications

Body	Zinc alloy
Poppets	Polyurethane
Seals	Nitrile (Buna N)

Operating information

Operating pressure:	40 to 115 PSIG (3 to 8 bar)
Operating temperature:	
Operating	32°F to 122°F (0°C to 50°C)
Storage	-22°F to 140°F (-30°C to 60°C)

3/2 Miniature Direct Acting Limit Switches

1/16" I.D. Internal Orifice

	Actuator	Type of switching*	Flow SCFM (Nl/min)	Nominal Bore	Connection	Part Number
	Steel Plunger Operating Levers Available	NNP	2.2 (60)	1/16" (1.5mm)	5/32" instant	**PXCM111**
					10-32 UNF	**PXCM115**
	Plastic Roller	NNP	3.0 (85)		5/32" Instant	**PXCM121**
					10-32 UNF	**PXCM125**

7/64" I.D. Internal Orifice

	Plastic Roller	NNP	8.8 (250)	7/16" (2.5mm)	5/32" Instant	**PXCM521**

Actuators For Steel Plunger (Use with PXCM11*)

	Plastic Roller Lever	**PXCZ11**

* NNP: Normally non-passing.

Specifications

Air Quality – Standard Shop Air, Lubricated or Dry	40 µm Filtration
Maximum Operating Frequency	5 Hz
Number of Operations with Dry Air at 90 PSI (6 bar) and 68°F (20°C) - Frequency 1 Hz	10 million
Operating Positions	All Positions

☐ Most popular.

3/2 Compact Pilot Operated Limit Switches

7/64" I.D. Internal Orifice, 5/32" Instant Connections, Pipeable Exhaust Port

	Actuator	Type of Switching*	Flow SCFM (Nl/min)	Nominal Bore	Connection	Part Number
	Steel Plunger Operating Levers Available	NNP	8.8 (250)	7/64" (2.5mm)	5/32" instant	**PXCM601A110**
	Steel Roller Plunger					**PXCM601A102**
	90° Steel Roller Plunger					**PXCM601A103**

Standard Duty Limit Switches – "K" Series

Plunger Operated Limit Switches

1/8" I.D. Internal Orifice, 5/32" Instant Connections, Pipeable Exhaust Port

	Actuator	Type of Switching*	Flow SCFM (Nl/min)	Nominal Bore	Connection	Part Number
	Steel Plunger	NNP	7.4 (210)	1/8" (3mm)	5/32" instant	**PXCK21101**
		NP				**PXCK22101**
	Steel Roller Plunger	NNP				**PXCK21102**
		NP				**PXCK22102**
	Plastic Roller Plunger	NNP				**PXCK21121**
		NP				**PXCK22121**
	Cats Whisker	NNP				**PXCK21106**
		NP				**PXCK22106**

* NNP: Normally non-passing.

☐ **Most popular.**

Roller Operated Limit Switches

1/8" I.D. Internal Orifice, 5/32" Instant Connections, Pipeable Exhaust Port

	Actuator	Type of Switching*	Flow SCFM (Nl/min)	Nominal Bore	Connection	Part Number
	Fixed Delrin Roller Lever Multi-Function Head Actuates: - from Right and Left	NNP	7.4 (210)	1/8" (3mm)	5/32" Instant	**PXCK2110031**
	- from Right - from Left	NP				**PXCK2210031**
	Adjustable Delrin Roller Lever Multi-Function Head Actuates: - from Right and Left	NNP				**PXCK2110041**
	- from Right - from Left	NP				**PXCK2210041**

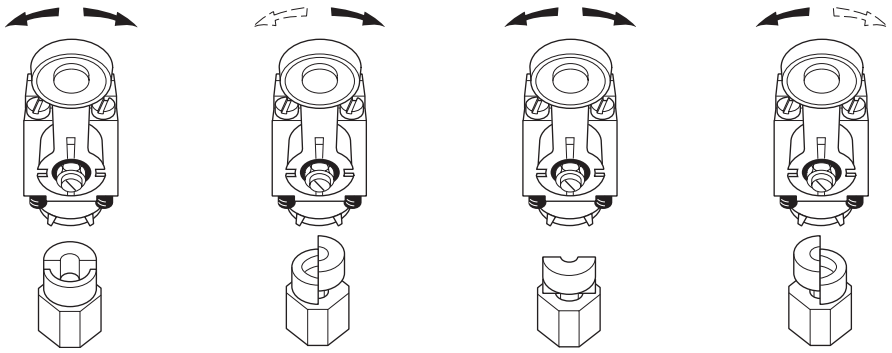
Separate Pneumatic Switch Bodies

	Actuator	Type of Switching*	Part Number
	For Use with Zck Series Operating Heads	NNP	**PXCK211**
		NP	**PXCK221**

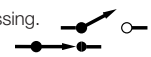
Pneumatic Switch Bodies with Rotary Heads

	Actuator	Type of Switching*	Part Number
	Multi-Function Head Actuates: - from Right and Left	NNP	**PXCK21100**
	- from Right - from Left	NP	**PXCK22100**

Field Conversion of Rotary Operating Head



* NNP: Normally non-passing.
NP: Normally passing.



Most popular.

Standard Duty Limit Switches – "K" Series

Operating Heads
For Use With PXCK Switch Bodies

	Actuator	Description	Part Number
Rotary operated			
	—	Die Cast Zinc	**ZCKG00**
Plunger operated			
	Roller plunger	Plunger Operated	**ZCKD02**
	Whisker		**ZCKD06**
	Rod plunger		**ZCKD10**
	Delrin roller lever on plunger		**ZCKD21**
	Steel roller lever on plunger		**ZCKD23**

Operating Levers for Rotary Heads
For Use With Rotary Head ZCKG00

	Actuator	Description	Part Number
ZCKY81 **ZCKY91**	Steel 1/8" Square	Rod Levers	**ZCKY51**
	Fiberglas 1/8" Dia. Round		**ZCKY52**
	Plastic Spring Rod Lever		**ZCKY81**
	Metal Spring Rod Lever		**ZCKY91**
	Delrin Roller Lever	Roller Levers	**ZCKY11**
	Steel Roller Lever		**ZCKY13**
	Adjust. Delrin Roller Lever		**ZCKY41**
	Adjust. Steel Roller Lever		**ZCKY43**

Heavy Duty Limit Switches – "J" Series

Switch Bodies Only

	Type of Switching*	Part Number
PXCJ117	NNP	**PXCJ117**
	NP	**PXCJ127**

Separate Pneumatic Switch Bodies

	Direction of Actuator	Type of Switching*	Part Number
PXCJ11701	Right & Left, Spring Return	NNP	**PXCJ11701**
	Right or left, Spring Return		**PXCJ11705**
	Right & Left, Spring Return	NP	**PXCJ12701**
	Right or Left, Spring Return		**PXCJ12705**

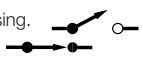
Operating Levers for Rotary Heads
Die Cast Zinc. For Use With PXCJ Switch Bodies

	Operator	Description	Part Number
ZC2JY11 **ZC2JY31**	Delrin Roller	Spring Return	**ZC2JY11**
	Steel Roller		**ZC2JY13**
	Offset Delrin Roller		**ZC2JY21**
	Plastic Spring Rod		**ZC2JY81**
	Metal Spring Rod		**ZC2JY91**
ZC2JY81 **ZC2JY91**	Delrin Roller	Adjustable Roller	**ZC2JY31**
	Offset Delrin Roller		**ZC2JY41**
	Single Track, Delrin Roller	Fork Lever	**ZC2JY71**
	Double Track, Delrin Rollers		**ZC2JY61**

Top Plunger & Rotary Operating Heads
Die Cast Zinc. For Use With PXCJ Switch Bodies

	Operation	Description	Part Number
Top Plunger Type			
ZC2JE70	Top Push	Spring Return	**ZC2JE61**
	Top Roller Push		**ZC2JE62**
	Side Push		**ZC2JE63**
	Cat's Whisker		**ZC2JE70**
Rotary Type			
ZC2JE01	From Left & Right	Spring Return	**ZC2JE01**
	Counterclockwise from Right		**ZC2JE02**
	Clockwise from Left		**ZC2JE03**
	From Left or Right		**ZC2JE05**
	Maintained Positions		**ZC2JE09**

* NNP: Normally non-passing.
NP: Normally passing.



Most popular.

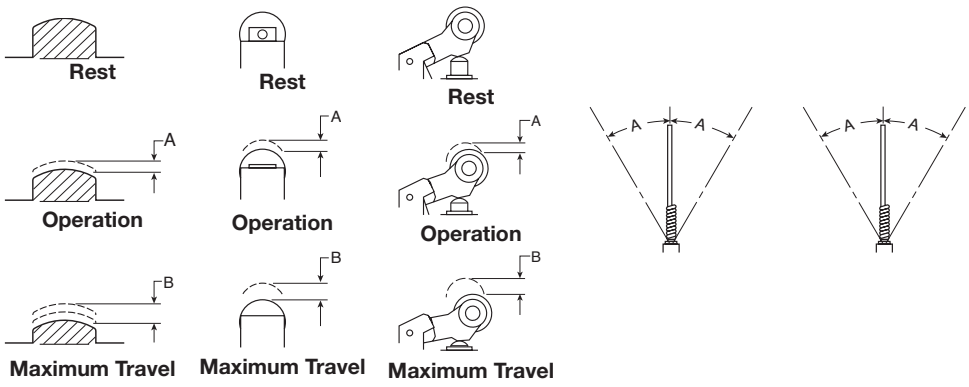
For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

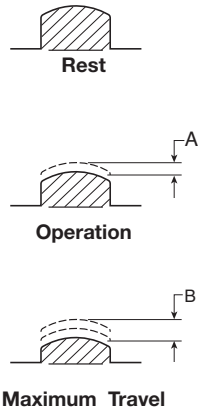
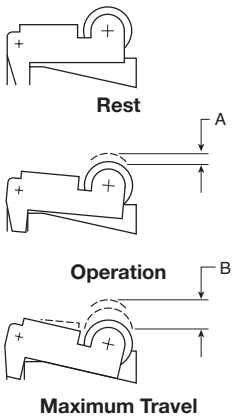
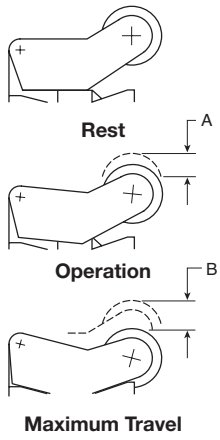
Operator Specifications

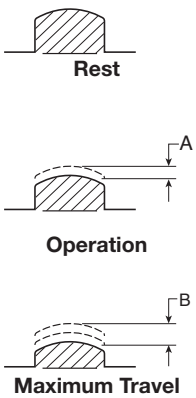
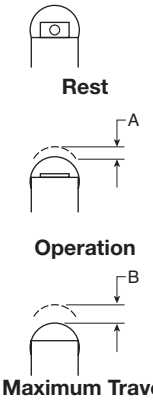
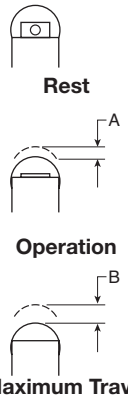
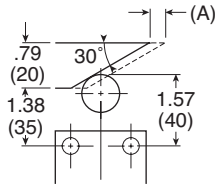
	PXCK2••01	PXCK2••02	PXCK2••03	PXCK2••06	PXCK2••00 + Actuator
Differential Angle	—	—	—	12°	3°
Differential Travel	.008" (0.2 mm)	.008" (0.2 mm)	.008" (0.2 mm)		
Maximum Angle of Travel	—	—	—	—	80°
Maximum Travel (B) at 90 PSIG (6 bar)	.228" (5.8 mm)	.228" (5.8 mm)	.228" (5.8 mm)	—	—
Minimum Pre-Travel (A) at 90 PSIG (6 bar)	.087" (2.2 mm)	.087" (2.2 mm)	.102" (2.6 mm)	—	—
Minimum Operating Force at 90 PSI (6 bar)	3.6 lbf (16N)	4.5 lbf (20N)	3.4 lbf (15N)	—	—
Minimum Operating Torque at 90 PSI (6 bar)	—	—	—	17.0 oz in (120mNm)	29.8 oz in (210mNm)
Operating Angle	—	—	—	35°	31° (Minimum lever travel including pre-travel required for operation)

Operating Diagram



Operators

	PXCM111	PXCM121	PXCM521
Differential Travel at 90 PSI (6 bar)	.006" (0.15 mm)	.012" (0.3 mm)	.020" (0.5 mm)
Maximum Travel (B) at 90 PSIG (6 bar)	.055" (1.4 mm)	.126" (3.2 mm)	.228" (5.8 mm)
Minimum Pre-Travel (A) at 90 PSIG (6 bar)	.035" (0.9 mm)	.079" (2 mm)	.087" (2.2 mm)
Minimum Operating Force at 90 PSI (6 bar)	2.5 lb (11 N)	1.0 lb (4.5 N)	1.6 lb (7 N)
Operating Diagram			

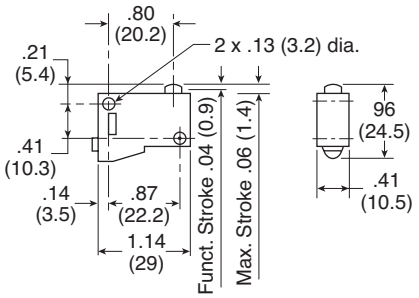
	PXCM601A110	PXCM601A102	PXCM601A103	PXCM601A110 + XCMZ24
Differential Travel at 90 PSI (6 bar)	.012" (0.3 mm)	.008" (0.2 mm)	.020" (0.5 mm)	.047" (1.2 mm) (A)
Maximum Travel (B) at 90 PSIG (6 bar)	.197" (5 mm)	.197" (5 mm)	.197" (5 mm)	—
Minimum Pre-Travel (A) at 90 PSIG (6 bar)	.066" (1.7 mm)	.066" (1.7 mm)	.066" (1.7 mm)	.370" (9.4 mm) (A)
Minimum Operating Force at 90 PSI (6 bar)	5.4 lbf (24 N)	5.2 lbf (23 N)	5.2 lbf (23)	4.3 lbf (19)
Operating Diagram				 A = cam travel

For inventory, lead times, and kit lookup, visit www.pdnplu.com

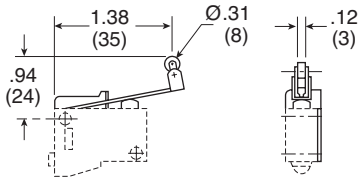
Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Miniature Limit Switches

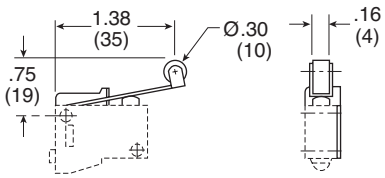
PXCM111



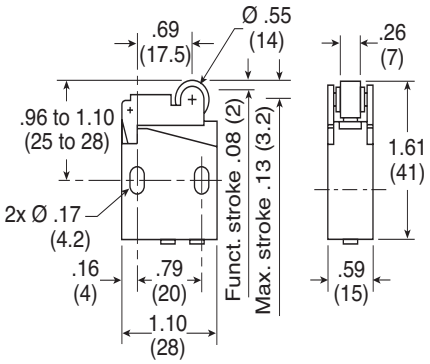
PXCZ12



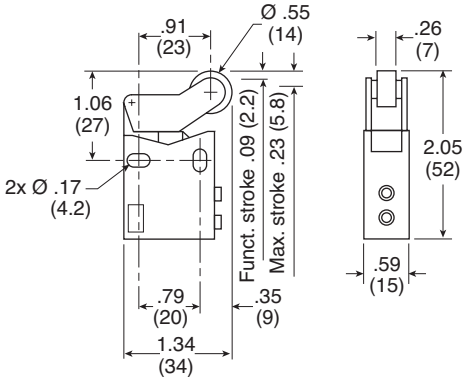
PXCZ11



PXCM121, PXCM131

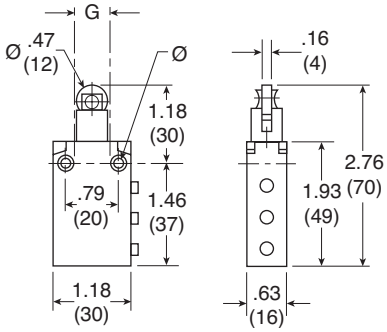


PXCM521



Compact Limit Switches

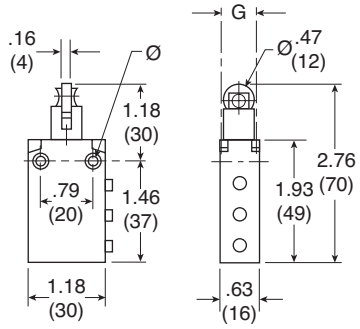
PXCM601A102



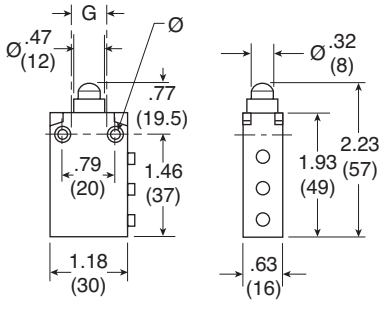
Ø:
2 mounting holes Ø .17" (4.3)
2 countersunk Ø .32" (8.2)
depth 4 mm

G:
top mounting holes, 2 x M5
.71" (18 mm) centers

PXCM601A103

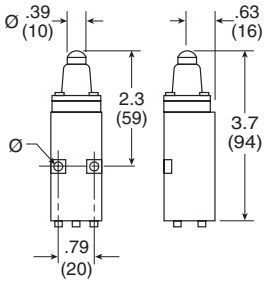


PXCM601A110

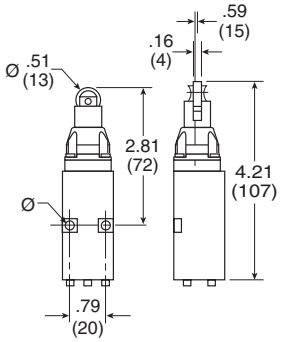


K Series

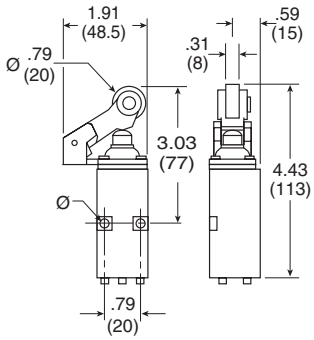
PXCK21101, PXCK22101



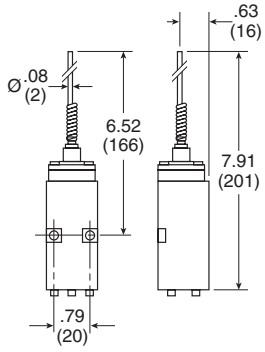
PXCK21102, PXCK22102



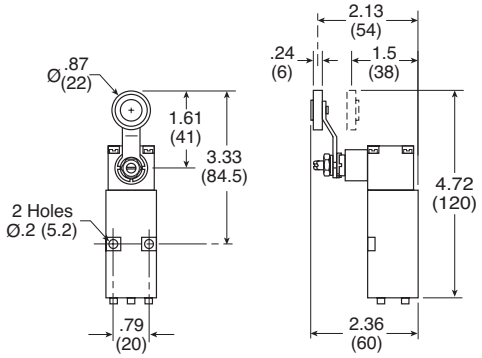
PXCK21121, PXCK22121



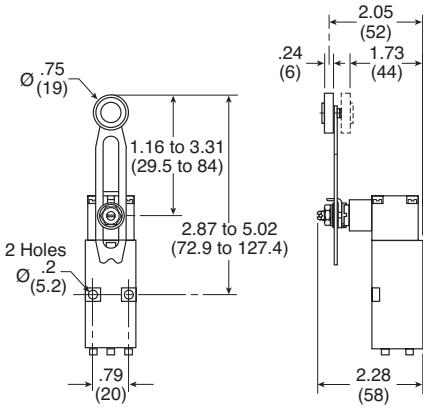
PXCK21106, PXCK22106



PXCK2110031, PXCK2210031

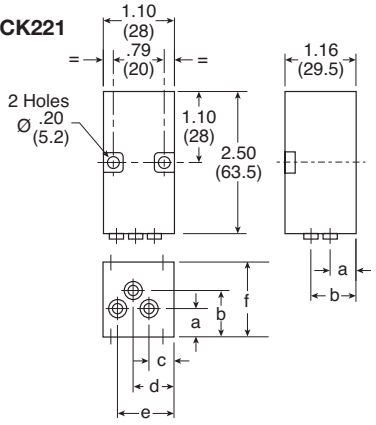


PXCK2110041, PXCK2210041



Pneumatic Switch Bodies

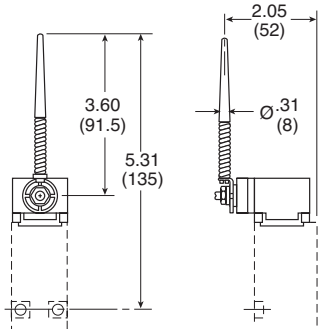
PXCK211, PXCK221



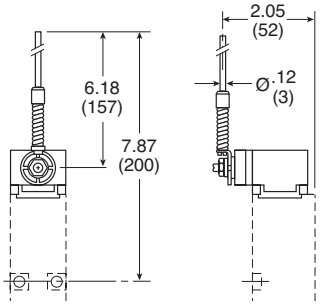
	inch	mm
a	.39	10
b	.77	19.5
c	.35	9
d	.61	15.5
e	.87	22
r	1.66	29.5

Rotary Heads with Operating Levers

ZCKY81



ZCKY91



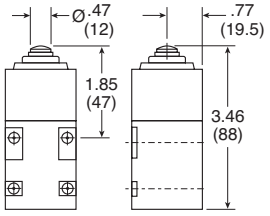
For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

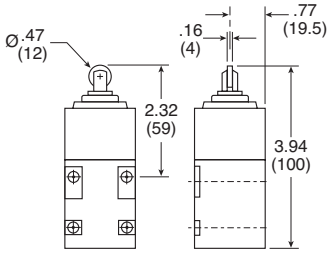
J Series

Switch Body With Plunger Heads

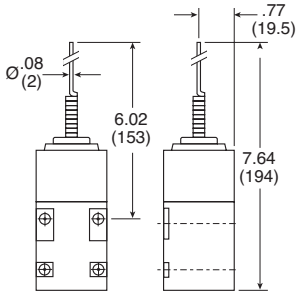
With ZC2JE61



With ZC2JE62

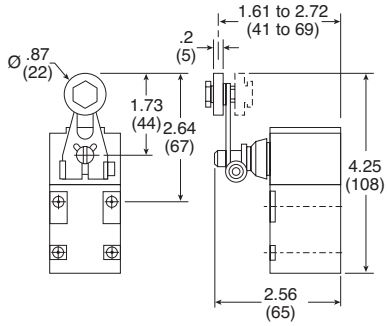


With ZC2JE70

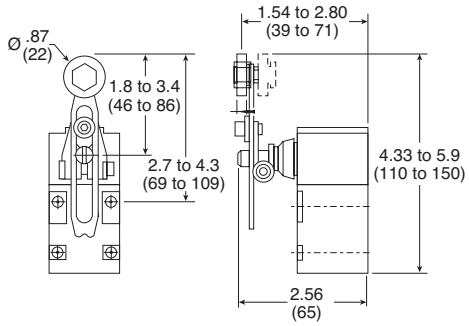


Switch Body With Rotary Heads and Operating Levers

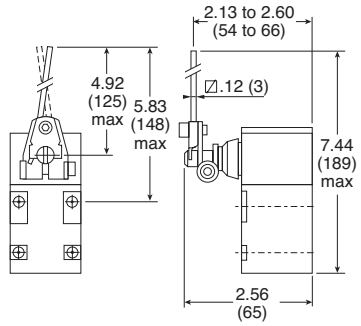
With ZC2JY11



With ZC2JY31

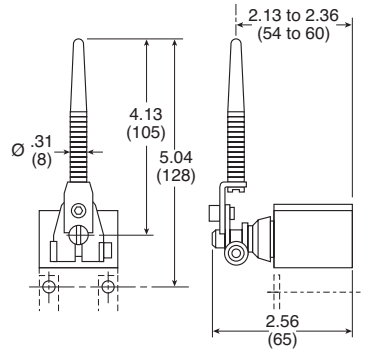


With ZC2JY51

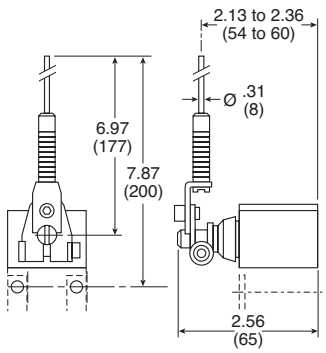


Rotary Heads With Operating Levers

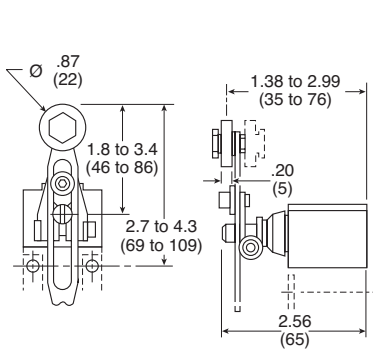
ZC2JY81



ZC2JY91

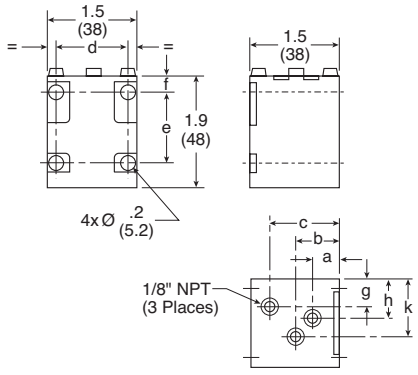


ZC2JY41



Pneumatic Switch Bodies

PXCJ117, PXCJ127



	inch	mm
a	.47	12
b	.75	19
c	1.16	29.5
d	1.14 to 1.18	29 to 30
e	1.18	30
f	.28	7
g	.43	11
h	.51	13
k	.94	24

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Pneumatic Valve Products
Accessories

Flow Controls & Check Valves

337 Micrometer Series	F2
338 Series	F3
3250 Series	F4-F5
3251 Series	F6
339 Series	F7
3047 Series	F7

Miscellaneous Accessories

EM Series Sintered Bronze Muffler / Filters	F8
Muffler / Flow Controls	F8
Breather Vents	F9
Silencers	F9
Stainless Steel Mufflers	F10
Air Line Silencers, Plastic	F11-F12
ECS Reclassifier	F13
Quick Exhaust & Shuttle Valves	F14-F16
Threshold Sensors, PWS Series	F17-F19
Tank Valves	F20
Blow Guns	F21-F22

Integrated Fittings

Index	F23-F24
Compact Flow Control Valves	F25-F26
Miniature Flow Control Valves	F27
Swivel Outlet Flow Control Valves	F28
Plug-In Flow Control Valves	F29
In-Line Flow Control Valves	F30-F31
Compact Metal Flow Control Valves	F32
Flow Control Check Valves	F33-F34
Blocking Flow Control Valves	F35
Threshold Sensors	F36

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

337 Series Micrometer Flow Control Valves, 1/8" to 3/4" Ports

The "337" Series Flow Control Valves meter flow of air in one direction and allow free flow in the reverse direction.

Valves are manufactured with a fine tapered needle providing precise flow control, even at low flow rates. The perimeter of the adjustment knob features numerical micrometer position markings providing a visual indication of the setting. Once the desired flow is selected, a set screw can be tightened to maintain the setting.

These valves are available with NPTF ports in 1/8", 1/4", 3/8", 1/2", and 3/4" sizes. This series is recommended for pneumatic service.

Material Specifications

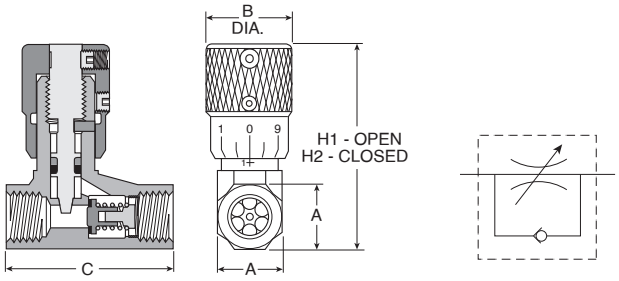
Body	Brass
Check Seal	Urethane
Knob	Aluminum
Needle	Stainless steel
Needle Seals	Buna N (Fluorocarbon optional – consult factory)
Retainer	Zinc- Plated Steel
Spring	Stainless Steel
Set Screw	Steel

Operating information

Maximum operating pressure: 250 PSIG
Cracking pressure for return check poppet 1 to 2 PSIG

Operating temperature:*
Standard: 0°F to 180°F
Extended: 0°F to 300°F (consult factory)

*** Ambient temperatures below freezing require moisture-free air. Ambient temperatures below freezing and above 180° require lubricants especially selected for suitability at these temperatures. Pneumatic valves should be used with filtered and lubricated air.**



337 Micrometer Flow Control Valves – NPT

Port Size	Flow (SCFM †) Adj.	Free Flow	A	B	C	H1	H2	Part Number	Service Kits
1/8"	15	32	9/16"	0.75	1.47	2.03	1.81	**003371000**	**003378000**
1/4"	28	75	11/16"	0.75	1.47	2.28	2.03	**003371001**	**003378001**
3/8"	59	139	7/8"	0.88	2.31	2.84	2.53	**003371002**	**003378002**
1/2"	126	183	1-3/16"	1.06	3.25	3.62	3.22	**003371003**	**003378003**
3/4"	140	327	1-3/8"	1.06	3.25	3.72	3.31	**003371004**	**003378004**

337 Micrometer Flow Control Valves – BSPP

Port Size	Flow (SCFM †) Adj.	Free Flow	A	B	C	H1	H2	Part Number	Service Kits
1/8"	15	32	9/16"	0.75	1.47	2.03	1.81	**00337G1000**	**003378000**
1/4"	28	75	11/16"	0.75	1.47	2.28	2.03	**00337G1001**	**003378001**

† At 100 PSIG inlet pressure with full pressure drop.

Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

338 Series Flow Control Valves, 1/8" to 3/4" Ports

"338" Series needle valves bi-directionally meter the flow of air through the valve.

This series features a fine tapered needle providing precise flow of air in both directions. Numerical micrometer position markings are stamped on the perimeter of the adjustment knob which provide a visual indication of the setting. Once the desired flow is selected, a set screw can be tightened to maintain the setting.

These valves are available with NPTF ports in 1/8", 1/4", 3/8" 1/2" and 3/4" sizes. This series is recommended for pneumatic service.

Material Specifications

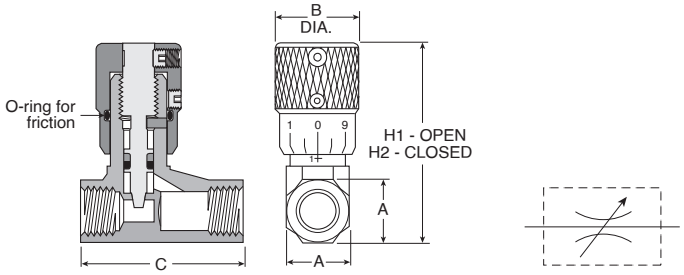
Body	Brass
Internal Components	Stainless steel
Seals	Buna N (Fluorocarbon optional – consult factory)

Operating information

Maximum operating pressure: 250 PSIG

Operating temperature:*
Standard: 0°F to 180°F
Extended: 0°F to 300°F (consult factory)

*** Ambient temperatures below freezing require moisture-free air. Ambient temperatures below freezing and above 180° require lubricants especially selected for suitability at these temperatures. Pneumatic valves should be used with filtered and lubricated air.**



338 Needle Valves – NPT

Port Size	Flow (SCFM †)	A	B	C	H1	H2	Part Number	Service Kits
1/8"	15	9/16"	0.75	1.47	2.03	1.81	**003381100**	**003378000**
1/4"	28	11/16"	0.75	1.47	2.28	2.03	**003381101**	**003378001**
3/8"	59	7/8"	0.88	2.31	2.84	2.53	**003381102**	**003378002**
1/2"	126	1-3/16"	1.06	3.25	3.62	3.22	**003381103**	**003378003**
3/4"	140	1-3/8"	1.06	3.25	3.72	3.31	**003381104**	**003378004**

338 Needle Valves – BSPP

Port Size	Flow (SCFM †)	A	B	C	H1	H2	Part Number	Service Kits
1/8"	15	9/16"	0.75	1.47	2.03	1.81	**00338G1100**	**003378000**
1/4"	28	11/16"	0.75	1.47	2.28	2.03	**00338G1101**	**003378001**

† At 100 PSIG inlet pressure with full pressure drop.

Most popular.

3250 Series Flow Control Valves, 1/8" to 3/4" Ports

The "3250" Series Flow Control Valves are specifically designed to accurately meter the flow of air in one direction and allow free flow in the opposite direction. The "3250" Series Flow Control Valves are also suitable for low pressure hydraulic service.

When air is moving in the free flow direction through the valve, it forces the poppet off its seat and unrestricted air flow is permitted.

When air is moving in the metered direction through the valve, air pressure and the force of the poppet spring causes the poppet to close. Flow must then be through the orifice that is controlled by the metering screw. Opening this screw allows more flow; closing it, less flow.

Material Specifications

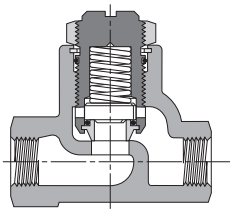
Body	Brass
Internal Components	Brass, Stainless steel
Seals	Buna N

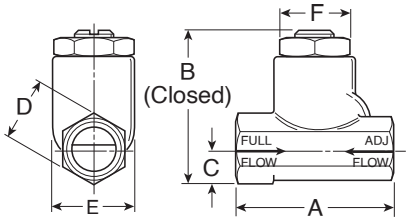
Operating information

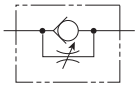
Operating pressure: 250 PSIG (Air)
250 PSIG (Hydraulic)

Operating temperature:
Standard: 0°F to 180°F
Extended: 0°F to 300°F

Valve will operate mounted in any position. Lock nut on metering screw prevents change in setting during operation.







3250 Flow Control Valves, 1/8" to 3/4" Ports – NPT

Port Size	Max. Flow (SCFM) Metered Direction	Free Flow Direction	A	B	C	D	E	F	Part Number
1/8"	70	60	1.75	1.56	0.37	0.62	0.81	0.68	**032500119**
1/4"	130	120	2.33	1.97	0.44	0.75	1.09	0.94	**032500219**
3/8"	220	205	2.66	2.44	0.56	1.00	1.38	1.19	**032500319**
1/2"	295	346	3.11	3.06	0.75	1.25	1.63	1.38	**032500419**
3/4"	420	615	3.56	3.69	0.88	1.50	2.00	1.75	**032500519**

3250 Flow Control Valves, 1/8" to 3/4" Ports – BSPP

Port Size	Max. flow (SCFM) Metered Direction	Free Flow Direction	A	B	C	D	E	F	Part Number
1/8"	70	60	1.75	1.56	0.37	0.62	0.81	0.68	**3250G0119**
1/4"	130	120	2.33	1.97	0.44	0.75	1.09	0.94	**3250G0219**
3/8"	220	205	2.66	2.44	0.56	1.00	1.38	1.19	**3250G0319**
1/2"	295	346	3.11	3.06	0.75	1.25	1.63	1.38	**3250G0419**
3/4"	420	615	3.56	3.69	0.88	1.50	2.00	1.75	**3250G0519**

☐ Most popular.

3250 Series Needle Valves, 1" to 1-1/2" Ports

These extra large flow control valves have been developed to provide effective flow settings for large diameter cylinders and for other similar air applications. Each valve has a fine screw adjustment allowing precise settings which are secured by a sturdy lock nut.

Large internal port passages coupled with unique soft seal poppet and inline design provide maximum full flow capacity and minimum pressure drop in the free flow direction. Their cone shaped brass metering valve will provide consistent cylinder speed by regulating cylinder exhaust.

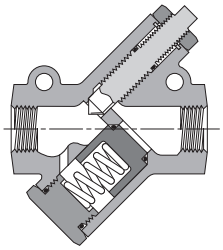
Material Specifications

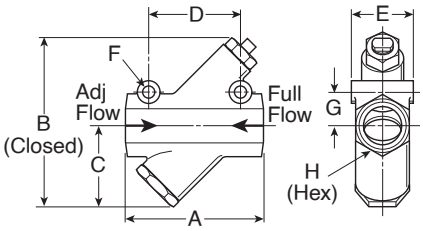
Body	Cast Aluminum
Internal Components	Brass, Aluminum
Seals	Buna N, Urethane
Spring	Stainless Steel

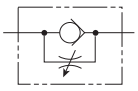
Operating information

Maximum operating pressure: 250 PSIG

Operating temperature:
Standard: -40°F to 180°F
Extended: -40°F to 350°F (consult factory)







3250 Flow Control Valves, 1" to 1-1/2" Ports – NPT

Port Size	Max. Flow Needle Open SCFM†	Cv	A	B	C	D	E	F	G	H	Part Number
1"	1000	12.3	5.00	6.50	3.00	3.25	2.25	.39	1.31	2.13	**032501000**
1-1/4"	1200	13.8	5.00	6.50	3.00	3.25	2.25	.39	1.31	2.13	**032501250**
1-1/2"	1800	17.5	5.88	8.00	3.75	3.50	2.50	.39	1.50	2.38	**032501500**

3250 Flow Control Valves, 1" to 1-1/2" Ports – BSPP

Port Size	Max. Flow Needle Open SCFM†	Cv	A	B	C	D	E	F	G	H	Part Number
1"	1000	12.3	5.00	6.50	3.00	3.25	2.25	.39	1.31	2.13	**03250G1000**
1-1/4"	1200	13.8	5.00	6.50	3.00	3.25	2.25	.39	1.31	2.13	**03250G1250**
1-1/2"	1800	17.5	5.88	8.00	3.75	3.50	2.50	.39	1.50	2.38	**03250G1500**

† At 100 PSIG inlet pressure with full pressure drop.

Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

3251 Series Right Angle Flow Control Valves, 1/8" to 1/2" Ports

The Right Angle Flow Control is an ideal solution to cylinder speed control where space is at a premium. Costly fittings, connections and piping expenses can be eliminated because the valve can rotate 360°, the piping alignment can be in any direction. It then locks into place. The 1/8" model can be rotated after final assembly.

Install by threading male end directly into cylinder port. The free-flow and metered-flow direction is automatically predetermined. Free-flow direction is into cylinder and metered-flow is out of the cylinder. Flow is adjusted with an Allen wrench and locked with nut.

Right Angle Flow Control also available with Prestolok fittings on inlet port to accommodate 5/32 - 3/8 tube sizes. This allows for quick connection and eliminates need for separate tube fitting.

Shown with Threaded Inlet

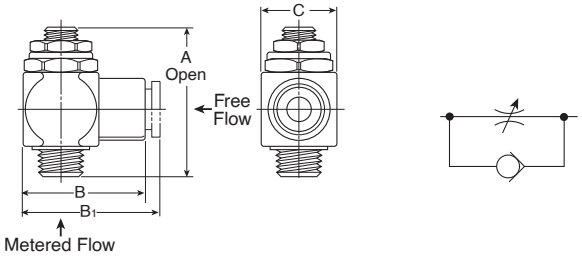
Shown with Prestolok Inlet Fitting

Material Specifications

Body	Brass
Plunger	Brass and Acetal
Seals	Buna N

Operating information

Operating pressure:	125 PSIG (863 kPa) max.
Operating temperature:	0°F to 140°F (-18°C to 60°C)



3251 Flow Control Valves – NPT

Thread (NPT) Male	Thread (NPT) Female	Cv Adjusted Flow	Cv Free Flow	A mm	B mm	C mm	Weight oz.	Weight kg.	Part Number
1/8	1/8	0.26	0.20	44	30	17	2.0	0.9	**032510125**
1/4	1/4	0.75	0.68	51	36	23	4.5	2.0	**032510250**
3/8	3/8	0.84	0.72	58	43	27	7.0	3.2	**032510375**
1/2	1/2	1.64	1.41	68	53	32	11.0	5.0	**032510500**
With Prestolok Fittings									
1/8	5/32	0.19	0.16	44	30	17	2.0	0.9	**032511215**
1/8	1/4	0.28	0.22	44	30	17	2.0	0.9	**032511225**
1/4	1/4	0.51	0.44	51	36	23	4.5	2.0	**032512525**
1/4	3/8	0.62	0.53	51	36	23	4.5	2.0	**032512538**
3/8	3/8	0.78	0.65	58	43	27	7.0	3.2	**032513838**

⚠ **CAUTION:** If it is possible that the ambient temperature may fall below freezing, the medium must be moisture-free to prevent internal damage or unpredictable behavior.

☐ **Most popular.**

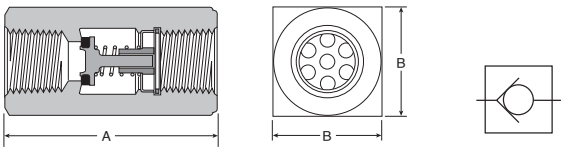
Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

339 Series Check Valves, 1/8" to 3/4" Ports

"339" Series check valves allow free flow in one direction and provide positive checked flow in the reverse direction. These valves are available with NPTF ports in 1/8", 1/4", 3/8", 1/2" & 3/4" sizes. This series is recommended for pneumatic service.

Material Specifications

Body	Brass
Internal Components	Brass / stainless steel / zinc-plated steel
Seals	Urethane (standard) Fluorocarbon (optional, consult factory)



Operating information

Operating pressure:	250 PSIG max. Cracking pressure 1 to 2 PSIG
Operating temperature:*	
Standard:	0°F to 180°F
Extended Option:	0°F to 300°F (consult factory)

*** Ambient temperatures below freezing require moisture-free air. Ambient temperatures below freezing and above 180° require lubricants especially selected for suitability at these temperatures. Pneumatic valves should be used with filtered and lubricated air.**

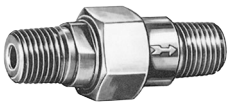
339 Check Valve

Port Size	Flow (SCFM †)	A	B	Part Number NPT	Part Number BSPP
1/8"	35	1.22	0.56	**003393000**	**00339G3000**
1/4"	75	1.34	0.69	**003393001**	**00339G3001**
3/8"	143	2.00	0.88	**003393002**	–
1/2"	162	2.56	1.19	**003393003**	–
3/4"	323	2.66	1.38	**003393004**	–

† At 100 PSIG inlet pressure with full pressure drop.

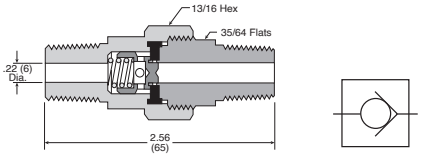
3047 Series Check Valves, 1/4" Ports

"3047" Series check valves allow free flow in one direction and provide positive checked flow in the reverse direction. This valve is available with a male 1/4" NPTF connection and is recommended for pneumatic service.



Material Specifications

Body	Brass
Internal Components	Brass / stainless steel
Seals	Nitrile



Operating information

Operating pressure:	250 PSIG max. Cracking pressure 1 to 2 PSIG
Operating temperature:*	
Standard:	0°F to 180°F

*** Ambient temperatures below freezing require moisture-free air. Ambient temperatures below freezing and above 180° require lubricants especially selected for suitability at these temperatures. Pneumatic valves should be used with filtered and lubricated air.**

3047 Check Valve

Port Size	Flow (SCFM †)	Part Number
1/4"	30	**030470099**

† At 100 PSIG inlet pressure with full pressure drop.

Most popular.

EM Series – Sintered Bronze Muffler / Filters

Muffler / filters effectively reduce air exhaust noises to an industry accepted level with minimum flow restriction. They protect valves, impact wrenches, screw drivers and other air tools by preventing dirt and other foreign matter from entering the system. Non-corrosive. Can be cleaned with many common solvents.

EM Series

Pipe Thread	Overall Length	Hex Size	Part Number
M5	.75	5/16"	**EMM5**
1/8"	1.00	7/16"	**EM12**
1/4"	1.32	9/16"	**EM25**
3/8"	1.54	11/16"	**EM37**
1/2"	1.85	7/8"	**EM50**
3/4"	2.29	1-1/6"	**EM75**
1"	2.91	1-5/16"	**EM100**
1-1/4"	3.25	1-11/16"	**EM125**
1-1/2"	3.69	2"	**EM150**

Operating information

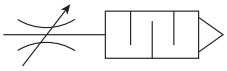
Operating pressure: 250 PSIG (Air)
Cracking pressure 1 to 2 PSIG

Operating temperature:* 0°F to 300°F

*** Ambient temperatures below freezing require moisture-free air. Ambient temperatures below freezing and above 180° require lubricants especially selected for suitability at these temperatures. Pneumatic valves should be used with filtered and lubricated air.**

Muffler / Flow Controls

Muffler / flow controls provide an acceptable exhaust noise level and effectively meter exhaust. Installed in valve exhaust ports, they control cylinder piston speeds throughout a wide range. The adjusting screw cannot be accidently blown out, can be locked to maintain setting. Brass and bronze construction. Clean with commonly used solvents.



Muffler / Flow Controls

Pipe Thread	Overall Length	Hex Size	Part Number
1/8"	1.15	9/16"	**045020002**
1/4"	1.42	1/2"	**045040004**
3/8"	1.49	11/16"	**045060060**
1/2"	1.77	7/8"	**045080080**
3/4"	1.98	1-1/16"	**045120012**
1"	2.15	1-5/16"	**045160016**

Operating information

Operating pressure: 250 PSIG (Air)
Cracking pressure 1 to 2 PSIG

Operating temperature:* 0°F to 300°F

*** Ambient temperatures below freezing require moisture-free air. Ambient temperatures below freezing and above 180° require lubricants especially selected for suitability at these temperatures. Pneumatic valves should be used with filtered and lubricated air.**

☐ Most popular.

Breather Vents

These low silhouette versions of the muffler / filter are useful where space is a problem and / or to prevent contamination. Use for vacuum relief or pressure equalization in gear boxes, oil tanks, reservoirs, etc.

NOTE: Breather vents should not be used as exhaust mufflers.

Breather Vent

Pipe Thread	Overall Length	Hex Size	Part Number
1/8"	0.44	7/16"	**047020002**
1/4"	0.63	9/16"	**047040004**
3/8"	0.75	11/16"	**047060006**
1/2"	0.88	7/8"	**047080008**
3/4"	1.00	1-1/6"	**047120012**
1"	1.31	1-5/16"	**047160016**
1-1/4"	1.41	1-11/16"	**047200020**
1-1/2"	1.50	2"	**047240024**

Operating information

Operating pressure: 150 PSIG (Air) max.

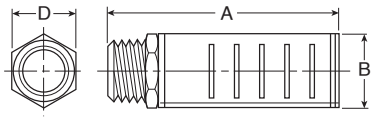
Operating temperature:* 0°F to 300°F

Material:
Breather vent: Sintered bronze,
Housing: Zinc plated steel

* **Ambient temperatures below freezing require moisture-free air. Ambient temperatures below freezing and above 180° require lubricants especially selected for suitability at these temperatures. Pneumatic valves should be used with filtered and lubricated air.**

ES Series – Silencer

The silencer is designed to give superior performance in noise control with a minimum effect on air efficiency. “Trimline” design allows location in the tightest places without extra plumbing and fittings. Fits directly into the exhaust port of more than 90% of present commercial valves. Slotted body permits rapid discharge of air without undesirable back pressure. Unique nylon screen element resists dirt buildup or clogging.



Operating information

Operating pressure: 250 PSIG (Air) max.

Operating temperature:* 0°F to 300°F

* **Ambient temperatures below freezing require moisture-free air. Ambient temperatures below freezing and above 180° require lubricants especially selected for suitability at these temperatures. Pneumatic valves should be used with filtered and lubricated air.**

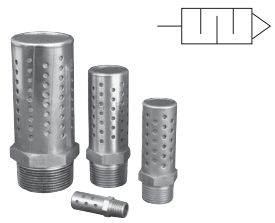
ES Series – Silencer

Pipe Thread	Flow SCFM @ 100 PSIG Inlet	Dimensions A	B	D	Part Numbers NPTF	BSPT (R)
1/8"	115	1.85	0.81	0.63	**ES12MC**	**ESB12MC**
1/4"	129	1.85	0.81	0.63	**ES25MC**	**ESB25MC**
3/8"	219	3.31	1.26	1.00	**ES37MC**	**ESB37MC**
1/2"	549	3.31	1.26	1.00	**ES50MC**	**ESB50MC**
3/4"	893	4.56	2.01	1.62	**ES75MC**	**ESB75MC**
1"	1,013	4.56	2.01	1.62	**ES100MC**	**ESB100MC**
1-1/4"	1,486	5.69	2.88	—	**ES125MC**	**ESB125MC**
1-1/2"	1,580	5.69	2.88	—	**ES150MC**	**ESB150MC**

☐ Most popular.

Stainless Steel Mufflers

Corrosion resistant mufflers for harsh environments



Port Size	Construction	Threads	Dimensions In. (mm) Width	Length	Part Number
1/4	Stainless steel	Male. NPT	0.56 (14.2)	1.75 (44.5)	**5500A2004**
1/2	Stainless steel	Male, NPT	0.87 (22.1)	2.75 (69.7)	**5500A4004**
1	Stainless steel	Male, NPT	1.31 (33.3)	3.87 (98.3)	**5500A6004**
2	Nickel plated	Male, NPT	2.37 (60.2)	5.50 (139.7)	**5500A9004***

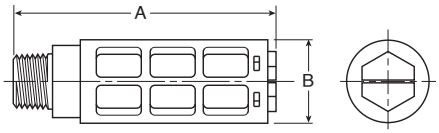
* Nickel plated

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

ASN Air Line Silencer, Plastic

- Compact
- Lightweight
- Easy to Install
- Excellent Noise Reduction
- Protects Components from Contamination
- NPT and BSPT Threads Available

The plastic silencer is designed to give excellent noise reduction with a minimum effect on air efficiency. The “Trimline” design allows for locating the silencer in the tightest places without extra plumbing or fittings. Fits directly into the exhaust port of most commercial valves. Open surface area of element allows for rapid discharge of air without undesirable back pressure.



Operating information

Operating pressure:	0 to 150 PSIG (0 to 10 bar, 0 to 1034 kPa)
Operating temperature:	14°F to 140°F (-10°C to 60°C)

Material Specifications

Body	Acetal (Plastic)
Element	Polyethylene

ASN Air Line Silencer, Plastic

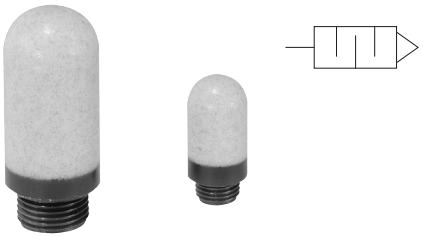
Thread Size	A (mm)	B (mm)	Maximum Flow (SCFM) 100 PSIG Inlet	Sound Pressure Level (dBA)		Part Number	
				20 PSIG Inlet	100 PSIG Inlet	NPT	BSPT
M5	0.43 (11)	0.32 (8)	15	69	79	**AS-5**	
1/8"	1.57 (40)	0.63 (16)	51	69	81	**ASN-6**	**AS-6**
1/4"	2.56 (65)	0.83 (21)	124	67	84	**ASN-8**	**AS-8**
3/8"	3.35 (85)	0.98 (25)	247	83	98	**ASN-10**	**AS-10**
1/2"	3.74 (95)	1.18 (30)	370	69	96	**ASN-15**	**AS-15**

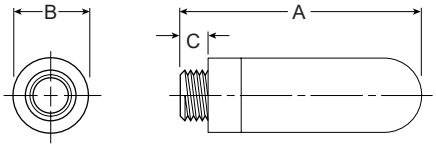
Most popular.

P6M G Thread Air Line Silencer, Plastic

- All Plastic Ultra Light Weight Versions
- High Noise Level Reduction
- Low Back Pressure Generation

The plastic silencer is designed to give excellent noise reduction with a minimum effect on air efficiency. The "Trimline" design allows for locating the silencer in the tightest places without extra plumbing or fittings. Fits directly into the exhaust port of most commercial valves. Open surface area of element allows for rapid discharge of air without undesirable back pressure.





Operating information

Operating pressure:	0 to 246 PSIG (0 to 17 bar, 0 to 1700 kPa)
Operating temperature:	
Plastic	14°F to 176°F (-10°C to 80°C)
Metal	14°F to 165°F (-10°C to 74°C)
Efficiency	92%

P6M G Thread, Air Line Silencer, Plastic

Port Thread	A	Diameter B	C	Weight (grams)	Part Number
M5	0.86 (21.8)	0.26 (6,5)	0.16 (4)	0.01	P6M-PAC5
G1/8	1.36 (34.5)	0.50 (12.7)	0.26 (6.7)	0.02	P6M-PAB1
G1/4	1.69 (42.8)	0.65 (16.5)	0.35 (8.9)	0.04	P6M-PAB2
G3/8	2.64 (67)	0.79 (20)	0.43 (11)	0.06	P6M-PAB3
G1/2	3.05 (77.5)	0.96 (24.3)	0.43 (11)	0.10	P6M-PAB4
G3/4	5.16 (131)	1.50 (38)	0.61 (15.5)	0.50	P6M-PAB6
G1	6.30 (160)	1.89 (48)	0.79 (20)	0.62	P6M-PAB8

Most popular.

ECS Reclassifier, Air Line Muffler

The ECS (Muffler-Reclassifier) eliminates unwanted oil mist and reduces exhaust noise from pneumatic valves, cylinders and air motors.

- 99.97% Oil Removal Efficiencies
- 25 dBA Noise Attenuation
- 1/2" NPT and 1" NPT
- Disposable Units
- Continuous or Plugged Drain Option
- Metal Retained Construction
- Fast Exhaust Time

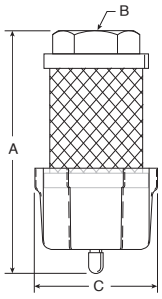
Improve Overall Plant Environment

Exhaust oil mist and noise pollution have a direct impact on worker productivity.

Oil aerosol mist from lubricators and compressors is pervasive and enters the industrial plant environment through the exhaust ports of valves, cylinders and air motors. This rapidly expanding exhaust also produces sudden and excessive noise.

The ECS (Muffler-Reclassifier) is 99.97% efficient at removing the oil aerosols. The ECS also acts as a silencer to lower the dBA levels below O.S.H.A. requirements.

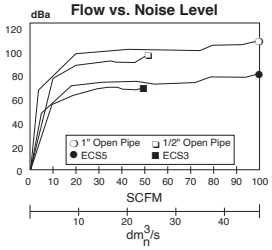
The result is a cleaner, quieter environment which equates to greater work productivity and safety.

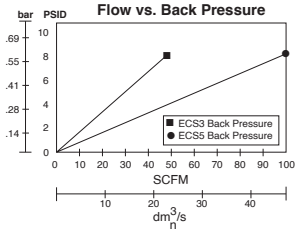


ECS Reclassifier, Air Line Muffler

Thread Size	A	B	C	Part Number
1/2	5.30 (135 mm)	1/2" NPT	2.57 (65 mm)	**ECS3**
1	7.30 (185mm)	1" NPT	2.57 (65mm)	**ECS5**

Performance Characteristics





Most popular.

Operating information

Maximum line pressure:	100 PSIG (6.8 bar)
Maximum operating temperature:	125°F (52°C)

Operation

Compressor oils and lubricating oils are exhausted from valves, cylinders and air motors into the ECS. Oil aerosols are “coalesced” into larger droplets and gravity pulls them into the attached drain sump. The sump can then be drained manually or by using a 1/4" ID plastic tube drain. The air flowing into the ECS is also muffled or silenced as it enters the inside of the ECS and passes through the filter media into the atmosphere.

Proven Technology

The ECS units are constructed from the same materials that go into our oil removal coalescing filter elements.

The seamless design insures media uniformity and strength. This proven technology provides high coalescing efficiency with low pressure drop.

The filter media is supported by cylindrical perforated steel retainers both inside and out. These retainers, fully plated for excellent corrosion resistance, give the ECS units high rupture strength in either flow direction. These filters can also be used as high efficiency inlet or bypass filters for vacuum pumps, or breather elements to protect the air above critical process liquids.

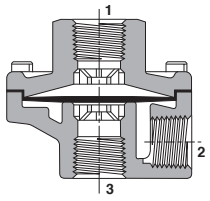
ECS3 / ECS5

The ECS solves two problems inherent in compressed air exhaust from valves, cylinders and air motors - oil mist removal and noise abatement.

The ECS will improve your industrial plant environment, thereby improving worker productivity.

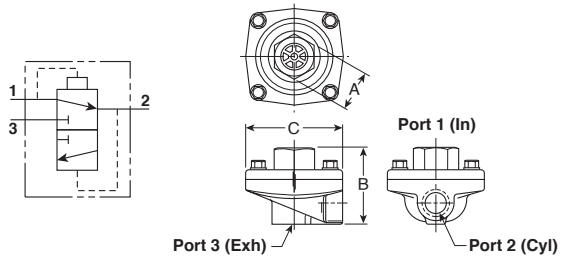
OR Series Quick Exhaust & Shuttle Valves

Quick exhaust valves provide rapid exhaust of control air when placed between control valve and actuator. They can also be used as shuttle valves. Diaphragm materials are available in urethane, Nitrile, Fluorocarbon, and PTFE to meet a wide variety of operating conditions.



Material Specifications

Body	Die cast aluminum
Static Seals	Nitrile standard with urethane (Others see chart below)
Diaphragm	Standard – Urethane Optional – Fluorocarbon, PTFE, or Nitrile (Depending on size)



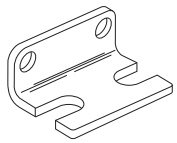
Operating information

Operating pressure (Air):	150 PSIG (max), 3 PSIG (min) 200 PSIG (max), 50 PSIG (min) for Model No. 0R37TB (PTFE diaphragm)
Operating temperature:*	
Urethane:	0°F to 180°F* (-18°C to 80°C)
Nitrile:	0°F to 180°F* (-18°C to 80°C)
Fluorocarbon:	0°F to 400°F* (-18°C to 205°C)
PTFE:	0°F to 500°F* (-18°C to 260°C)

*** Ambient temperatures below freezing require moisture-free air. Ambient temperatures below freezing and above 180° require lubricants especially selected for suitability at these temperatures. Pneumatic valves should be used with filtered and lubricated air.**

Mounting Bracket Kit – No. 036408100
(Including body screws)

For "OR12" and "OR25" sizes with 7/8" "A" Dimension.



Model Selection, Performance Data and Dimensions

Port 1	Port 2	Port 3	Flow (SCFM †)	Part Number NPTF	Part Number BSPP "G"	A	B	C	Service Kit No.
STANDARD Urethane Diaphragms (Nitrile static seals)									
1/4"	1/4"	3/8"	150	**0R25NB**	**0RB25NB**	1" Hex	2.06	2.44	**033400105**
	3/8"	3/8"	240	**0R25PB**	—	1" Hex	2.06	2.44	**033400105**
3/8"	3/8"	3/8"	240	**0R37B**	**0RB37B**	1" Hex	2.06	2.44	**033400105**
1/2"	1/2"	1/2"	450	**0R50B**	**0RB50B**	1-1/2" Hex	2.88	3.38	**034750109**
3/4"	3/4"	3/4"	550	**0R75B**	**0RB75B**	1-1/2" Hex	2.88	3.38	**034750109**
Nitrile Diaphragms (Nitrile static seals)									
1/8"	1/8"	1/8"	70	**0R12B**	**0RB12B**	7/8" Sq.	1.75	1.88	**033400105**
	1/8"	1/4"	70	**0R12NB**	**0RB12NB**	7/8" Sq.	1.75	1.88	**033400105**
1/4"	1/4"	1/4"	90	**0R25B**	**0RB25B**	7/8" Sq.	1.75	1.88	**036408000**
	1/4"	3/8"	90	**0R25NFB**	**0RB25NFB**	1" Hex	2.06	2.44	**033408000**
3/8"	3/8"	3/8"	240	**0R37FB**	**0RB37FB**	1" Hex	2.06	2.44	**033408000**
3/4"	3/4"	3/4"	550	**0R75FB**	**0RB75FB**	1-1/2" Hex	2.88	3.38	**034759000**
Fluorocarbon Diaphragms for Extended Temperature Operation (Fluorocarbon static seals)									
1/8"	1/8"	1/8"	70	**0R12VB**	**0RB12VB**	7/8" Sq.	1.75	1.88	**036508000**
	1/8"	1/4"	70	**0R12NVB**	**0RB12NVB**	7/8" Sq.	1.75	1.88	**036508000**
1/4"	1/4"	1/4"	90	**0R25VB**	**0RB25VB**	7/8" Sq.	1.75	1.88	**036508000**
3/8"	3/8"	3/8"	240	**0R37VB**	**0RB37VB**	1" Hex	2.06	2.44	**033400319**
1/2"	1/2"	1/2"	450	**0R50VB**	**0RB50VB**	1-1/2" Hex	2.88	3.38	**034750120**
3/4"	3/4"	3/4"	550	**0R75VB**	**0RB75VB**	1-1/2" Hex	2.88	3.38	**034750120**
PTFE Diaphragms for Higher Pressure and Temperature (Fibre static seals)									
3/8"	3/8"	3/8"	240	**0R37TB**	**0RB37TB**	1" Hex	2.06	2.44	**033400504**

† At 100 PSIG inlet pressure with full pressure drop.

Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Shuttle Valves

Shuttle valves determine a single pneumatic output from two separate inputs. If pressure is applied to both ports simultaneously, the valve will select the port with the higher pressure.

Material Specifications

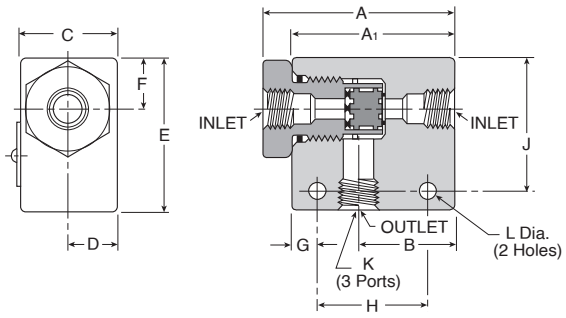
Body	Aluminum
Internal Components	Aluminum
Seals	Nitrile

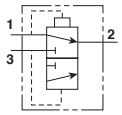
Operating information

Operating pressure:
- Maximum: 200 PSIG
- Minimum: Differential Pressure 3 PSIG

Operating temperature:* 0°F to 160°F

* **Ambient temperatures below freezing require moisture-free air. Ambient temperatures below freezing and above 180° require lubricants especially selected for suitability at these temperatures. Pneumatic valves should be used with filtered and lubricated air.**



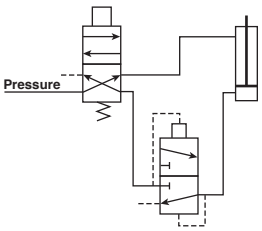


Model Selection and Dimensions

Port Size	Flow (Cv)	Dimensions A	A1	B	C	D	E	F	G	H	J	K	L	Part Number
1/8"	0.32	N/A	1.62	0.81	0.62	0.31	1.00	0.281	0.312	1.00	0.75	1/8 - 27	0.219	**N1641001**
1/4"	1.65	2.50	2.12	1.25	1.25	0.62	2.00	0.67	0.265	1.25	1.35	1/4 - 18	0.219	**N1642003**
3/8"	2.02	2.50	2.12	1.25	1.25	0.62	2.00	0.67	0.265	1.25	1.35	3/8 - 16	0.219	**N1643003**

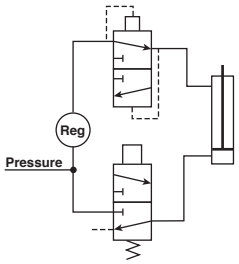
☐ Most popular.

Typical "Quick Exhaust Valve" Applications



Rapid Retraction – Double Acting Cylinder

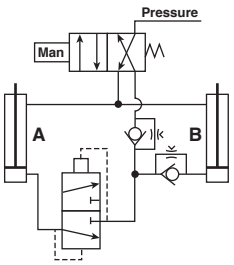
In this circuit, air is exhausted through a Quick Exhaust Valve that is **close coupled** to the cap end of the cylinder. Because the Quick Exhaust Valve has a greater exhaust capacity than the four-way Control Valve, increased cylinder speed can be accomplished with a smaller and less expensive control valve.



Dual Pressure Actuation of Double Acting Cylinder

This circuit utilizes a Quick Exhaust Valve and a three-way Control Valve to permit rapid extension of the cylinder at a high pressure.

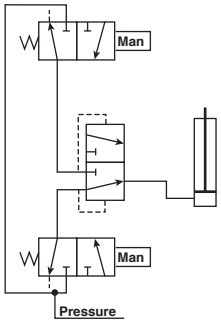
NOTE: Line pressure must be 3 or 4 times greater than rod end pressure. Effective working pressure is the differential between the cap and rod end.



Bi-Directional Control of Two Double Acting Cylinders

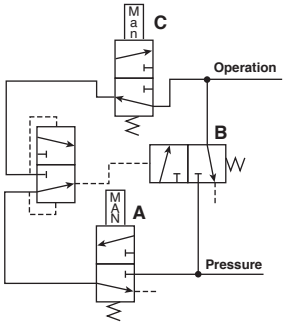
This circuit provides maximum control with a minimum of valving. A large four-way Control Valve is not needed to permit the rapid retraction of Cylinder A, as the Quick Exhaust Valve performs this function. The extension of Cylinders A and B and retraction of Cylinder B are controlled by Speed Control Valves.

Typical "Shuttle Valve" Applications



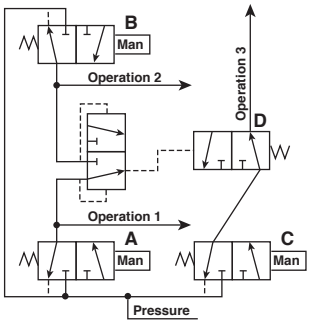
"OR" Circuit

The most common application of the Shuttle Valve is the "OR" Circuit. Here a cylinder or other work device can be actuated by either control valve. The valves can be manually or electrically actuated and located in any position.



Memory Circuit

This circuit enables continuous operation once initiated. Pressure is delivered to the circuit when Valve A is actuated. This allows pressure to pass through the shuttle valve actuating Valve B. Pressure then flows through Valve B and also the other side of the shuttle valve which holds Valve B open for continuous operation. To unlock the circuit, Valve C must be opened to exhaust the circuit and allow Valve B to return to its normally closed position.



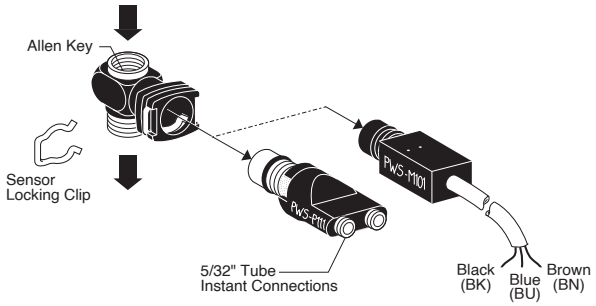
Interlock

This circuit prevents the occurrence of a specific operation while one or another operation takes place. When either Valve A or B is actuated to perform operation 1 or 2, Valve D is shifted to the closed position and prevents operation 3 from occurring.

Threshold Sensors

The plug-in threshold sensors provide feedback information on pneumatic cylinder status in either pneumatic or electrical outputs. Mounted into the cylinder port, these devices monitor the back pressure of the cylinder's exhaust. When the cylinder's piston stops, the back pressure rapidly drops and the threshold sensor provides the desired output. Ideal for variable stroke applications such as robotics where other sensor type devices such as limit switches are impractical, these devices provide a signal whenever the cylinder stops motion.

The threshold sensor consists of two complementary sub assemblies (1) the banjo fitting and (2) the plug-in sensor element. In all cases, the sensor is easily plugged into the banjo fitting and locked in place with a spring clip. The banjo fitting is designed to accept (piggy backed) other functional fittings such as flow controls or blocking valves. Simply select the sensor based on the type feedback signal that best fits the application.



Operating information

Operating pressure:	0 to 150 PSIG (0 to 10.3 bar)
Operating temperature:	
Operating	5°F to 140°F (-15°C to 60°C)
Storage	-40°F to 160°F (-40°C to 70°C)

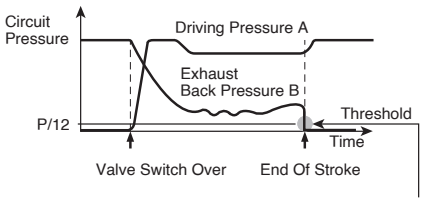
⚠ **Caution:** If it is possible that the ambient temperature may fall below freezing, the medium must be moisture free to prevent internal damage or unpredictable behavior.

Mounting

Banjo fittings in 10-32 to 1/2" pipe sizes are designed to be installed directly into actuator ports (up to 5" bore cylinders). The banjo fitting can accommodate other functional fittings and components such as right angle flow control valves or blocking valves. Banjo fittings screw into actuators using an Allen wrench or 5/16" hex head wrench for 10-32 size. Electrical or pneumatic feedback element snaps into place using a locking clip.

Operation

Pneumatic sensors have a continuous pressure signal applied to the sensor device. Electrical sensors have a continuous electrical signal applied to the sensor device. The threshold sensor assembly mounted directly into the cylinder Port provides an output signal S, which can be pneumatic or electrical, when the falling back pressure in the exhausting chamber of the cylinder reaches the operating threshold (approximately 6-9 PSIG). (The device is a normally passing device. The output is only on when there is nearly zero pressure at the cylinder.)



Material specifications

Body	Thermoplastic
Mounting screw	Brass

Banjo Sockets (with Sensor Clip)

	Port Size	Wrench	Part Number
	10-32	5/16" Hex	**PWSB1557**
	1/8"	3/16" Allen	**PWSB1887**
	1/4"	5/16" Allen	**PWSB1997**
	3/8"	3/8" Allen	**PWSB1337**
	1/2"	1/2" Allen	**PWSB1227**

Plug-in Sensors

	Output	Connection	Part Number
	Pneumatic	5/32" push-in	**PWSP111**
	Electrical	3-wire cable (6 ft)	**PWSM1012**

☐ Most popular.

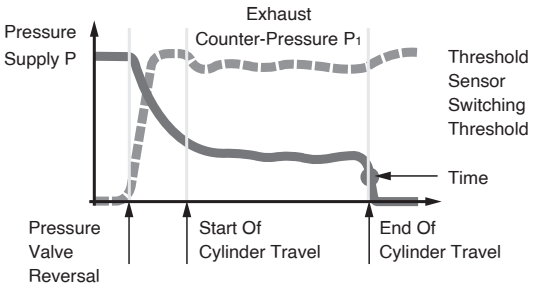
For inventory, lead times, and kit lookup, visit www.pdnplu.com

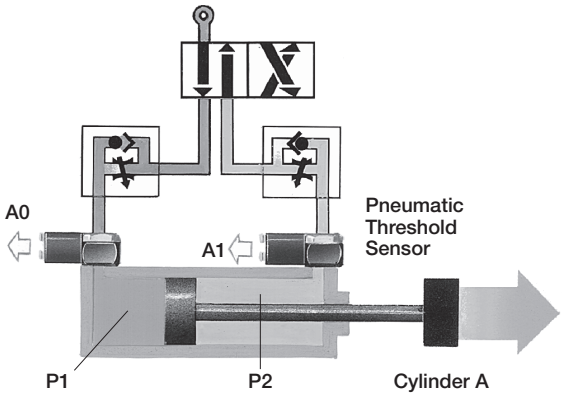
Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

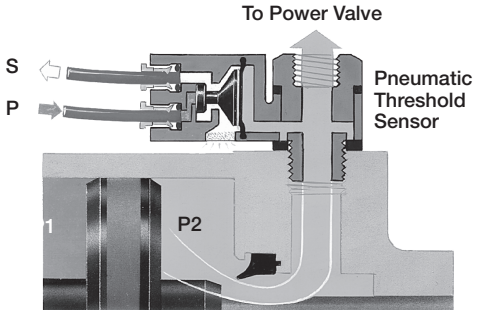
Specifications

Maximum Operating Frequency	10 Hz
Pilot Pressure (PWSP111)	>64 PSIG (4.4 bar)
Threshold Pressure	6 to 9 PSIG (.4 to .6 bar)
Output Flow Rate (PWSP111)	3 SCFM at 90 PSIG
Current Rating (PWSM1012) –	5 VA, 250 VAC 5W, 48 VAC
Life Expectancy –	10 million cycles with dry air at 90 PSIG, 68°F, and 1 Hz operating frequency
Voltage Range (PWSM1012) –	12 - 240 VAC 12 - 48 VDC

Air Quality – Standard Shop Air, Lubricated or Dry 40 µm Filtration







PWS General Characteristics

Permissible Fluids	Air or neutral gas, 50 µm filtration, lubricated or not
Flow	N/A
Mechanical Life	10 Million
Maximum Operating Frequency	10Hz
Maximum Mounting Torque:	
10-32 UNF and M5	88 inch pounds
1/8"	70 inch pounds
1/4"	105 inch pounds
3/8"	265 inch pounds
1/2"	310 inch pounds
Adjustment	N/A
Adjustment Locking	N/A

Piloting and De-Piloting Pressure

Threshold Sensors	Pilot with Operating Pressure of 90 PSI	Depilot with Operating Pressure of 90 PSI
PWSP111	64 PSI	6 PSI
PWSM1012	15 PSI	9 PSI
PWSE101 and PWSE111	10 PSI	7 PSI

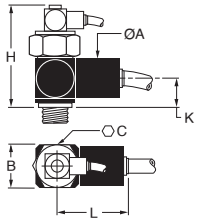
Fluid Power			Universal Description	Electrical	
Function	Symbol			Function	Symbol
Normally Closed (N.C.)	2-Way	3-Way	Normally Non-Passing (NNP)	Normally Open (N.O.)	
Normally Open (N.O.)	2-Way	3-Way	Normally Passing (NP)	Normally Closed (N.C.)	

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

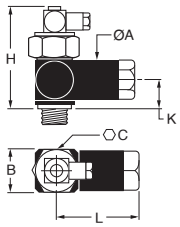
Blocking Valves

PWBA14/34



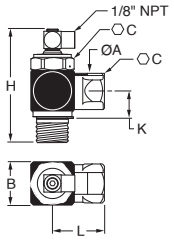
ØA	B	C	K	H	L	Flow*	Part Number
0.86" (22)	0.82" (21)	0.94" (24)	0.53" (13.5)	2.32" (59)	1.54" (39)	14.8	PWBA1468/3468
0.86" (22)	0.82" (21)	0.94" (24)	0.53" (13.5)	2.09" (53)	1.54" (39)	19.4	PWBA1469/3469 PWBA1489
1.06""(27)	1.10" (28)	0.94" (24)	0.55" (14)	2.09" (53)	1.98" (50)	45.9	PWBA1483 PWBA1493/3493
1.22" (31)	1.30" (33)	1.30" (33)	0.94" (24)	2.59" (66)	2.59" (66)	81.2	PWBA1412/3412

PWBA18/38



0.86" (22)	0.82" (21)	0.94" (24)	0.53" (13.5)	2.32" (59)	1.71" (43.5)	14.8	PWBA1898/3888
0.86" (22)	0.82" (21)	0.94" (24)	0.53" (13.5)	2.09" (53)	1.71" (43.5)	19.4	PWBA1899/3899
1.06" (27)	1.10" (28)	0.94" (24)	0.55" (14)	2.09" (53)	2.18" (55)	45.9	PWBA1833/3833
1.22" (31)	1.30" (33)	1.30" (33)	0.94" (24)	2.59" (66)	2.47" (63)	81.2	PWBA1822/3822

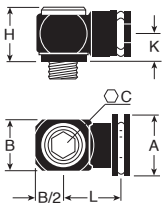
PWBA38



0.75" (19)	0.87" (22)	0.83" (21)	0.67" (17)	2.20" (56)	1.73" (44)	14.8	PWBA38887
0.75" (19)	0.87" (22)	0.83" (21)	0.67" (17)	2.20" (56)	1.73" (44)	19.4	PWBA38997
1.06" (27)	1.18" (30)	1.06" (27)	0.91" (23)	2.64" (67)	1.42" (36)	45.9	PWBA38337
1.06" (27)	1.18" (30)	1.06" (27)	0.91" (23)	2.64" (67)	1.42" (36)	81.2	PWBA38227

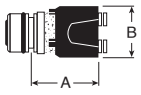
Threshold Sensors

Banjo Socket



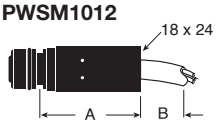
A	B	C	H	K	L	Part Number
.98 (25)	.43 (11)	5/16" Hex	.79 (20)	.40 (10)	.67 (17)	PWSB1557
.98 (25)	.63 (16)	3/16" Allen	.71 (18)	.40 (10)	.79 (20)	PWSB1887
.98 (25)	.83 (21)	5/16" Allen	.71 (18)	.40 (10)	.87 (22)	PWSB1997
.98 (25)	1.10 (28)	3/8" Allen	.79 (20)	.47 (12)	.98 (25)	PWSB1337
.98 (25)	1.30 (33)	1/2" Allen	.93 (24)	.55 (14)	1.02 (26)	PWSB1227

PWSP111



A	B	Part number
.87 (22)	.79 (20)	PWSP111
1.26 (32)	.79 (20)	PWSM1012

PWSM1012

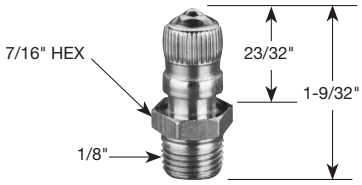


Tank Valves

For tanks, steel barrels, compressors and other pneumatic containers where a dependable automatic air valve is needed. Equipped with standard valve core and sealing cap. Maximum operating pressure is 185 PSIG. Temperature range is -40°F to 220°F.

091660060, 1/8" pipe thread, dome shaped cap

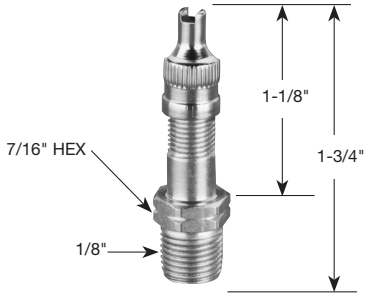
Has a 1/8" pipe thread at bottom for minimum protrusion. N/P finish, dome shaped cap.



Thread Size	Box Qty	Part Number
1/8	25	**091660060**

006450060, 1/8" pipe thread at bottom, screwdriver type cap

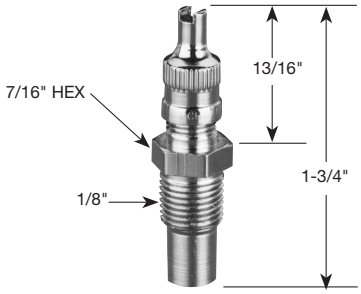
A 1/8" pipe thread at bottom permits maximum protrusion. N/P finish, screwdriver type cap.



Thread Size	Box Qty	Part Number
1/8	25	**006450060**

014680006, 1/8" pipe thread part way up the stem, screwdriver type cap

Has a 1/8" pipe thread part way up the stem which allows for minimum protrusion. N/P finish, has screwdriver type cap.



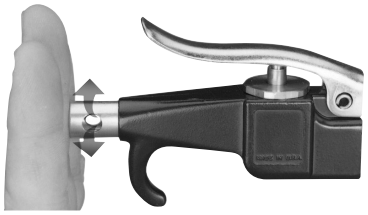
Thread Size	Box Qty	Part Number
1/8	25	**014680006**

Most popular.

O.S.H.A. Certification — All safety blow guns conform to the requirements of Compressed Air Standards as currently described in the U.S. Bureau of Labor Standards, paragraph 1910.242, when pressurized at the inlet to a maximum of 100 PSIG. Conform to current O.S.H.A. Directive No. 100-1.

Brass Nozzle Blow Guns

Contoured lever or button control both provide a natural, comfortable grip even when used with gloves. Finger guard and hang-up hook for finger protection and quick safe storage. Die cast zinc body, painted finish.



Brass Nozzle Blow Gun

Type	Inlet Port	SCFM Rating*	Part Number
Lever Operated	1/4	20	**004750010**
Button Operated	1/4	20	**004700010**

*** Based on 100 PSIG inlet pressure.**

Vortec FLO-GAIN Blow Guns

A quiet Vortec FLO-GAIN nozzle is combined with a high performance blow gun. Compressed air attains sonic velocity through an adjustable slot and attaches to the exterior surface of the cone shaped nozzle. Settings are shown on a micrometer dial. Sound level of 80 dBA with 80 PSIG inlet. Finger guard and hang-up hook offers desirable finger protection and quick secure storage. Die cast zinc body, painted finish.

Vortec FLO-GAIN Blow Gun

Type	Inlet Port	SCFM Rating*	Part Number
Lever Operated	1/4	70+	**004750900**
Button Operated	1/4	70+	**004700900**

*** Based on 100 PSIG inlet pressure.**

Self-Regulating Blow Gun

Designed with integral self-regulating pressure reducing valve for automatic shut-off when nozzle is blocked. Prevents air pressure buildup over 30 PSIG in compliance with U.S. Dept. of Labor standards.

Air shield aids in protecting the operator against blow back of flying chips of dirt. Designed to operate at less than 90 dBA to comply with government regulations. Die cast zinc body, painted finish.

Self-Regulating Blow Gun

Type	Inlet Port	SCFM Rating*	Part Number
Lever Operated	1/4	10	**004750010**

*** Based on 100 PSIG inlet pressure.**

Most popular.

Performance Data

Inlet Pressure	Blocked Pressure	Sound Level
70 PSIG	17.0 PSIG	79 dBA
100 PSIG	21.0 PSIG	83 dBA
175 PSIG	28.0 PSIG	87 dBA

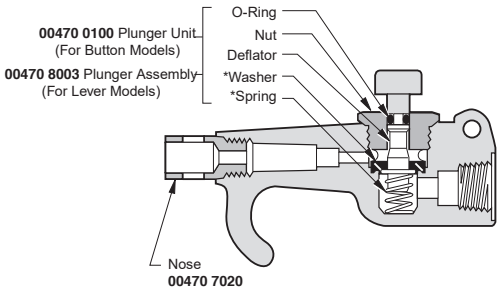
Brass Nozzle

004707020

General purpose nozzles are supplied as standard on 004700010 and 004750010 blow guns. Conform to the requirements of the Williams Steiger Occupational Safety and Health Act of 1970, paragraph 1910.242 when fitted with blow guns pressurized at the inlet to a maximum of 100 PSIG. Conform to O.S.H.A. Directive 100-1.

	Part Number
Brass Nozzle	**004707020**

470 and 475 Series Blow Guns



* Contained in Service Kit No. **00470 0090**

Most popular.

Compact Flow Control Valves	**FCC731** Meter Out Page F27	**FCC731** Meter Out - BSPP Page F27	**FCCB731** Bi-Directional Flow Control Page F27	**FCCB731** Bi-Directional Flow Control - BSPP Page F27	**FCKC731** Knobless Meter Out Flow Control Page F28
FCKC731 Knobless Flow Control - BSPP Page F28	**FCKCB731** Knobless Bi-Directional Flow Control - BSPP Page F28	**Miniature Flow Control Valves**	**FCM731** Meter Out Flow Control Page F29	**FCM731** Flow Control - BSPP Page F29	**FCMB731** Bi-Directional Flow Control - BSPP Page F29
FCMK731 Knobless Mini Meter Out Flow Control Page F29	**Swivel Outlet Flow Control Valves**	**FCCS731** Compact Swivel Outlet Flow Control Page F30	**FCMS731** Mini Swivel Outlet Flow Control Page F30	**FCMS731** Miniature Swivel Outlet - BSPP Page F30	**FCCS731** Compact Swivel Outlet - BSPP Page F30
Plug-In Flow Control Valves	**FCMSP731** Mini Flow Control Page F31	**FCMSP701** Miniature Flow Control Page F31	**FCCSP731** Compact Flow Control Page F31		
In-Line Flow Control Valves	**FC832** Flow Control Page F32	**FCB832** Bi-Directional Flow Control Page F32	**FCPM832** Panel Mountable Flow Control Page F33	**FC836** Threaded Flow Control Page F33	**FC836** Threaded Flow Control - BSPP Page F33
Compact Metal Flow Control Valves	**FC705** Push-to-Connect Metal Flow Control Page F34	**FC701** Push-to-Connect Metal Flow Control - BSPP Page F34	**FC708** Threaded Port Meter Out Flow Control Page F34	**FC702** Threaded Port Metal Flow Control - BSPP Page F34	
Flow Control Check Valves	**32PLCK** In-Line Check Valve Page F35	**W68PLCK** Male Check Valve Page F35	**W68PLCKI** Male Check Valve Meter In Page F35	**68PLCK** Male Check Valve Meter Out - BSPP Page F36	**68PLCKI** Male Check Valve Meter In - BSPP Page F36
VC Check Valve Page F36					

Blocking Flow Control Valves	**FC601** Push-to-Connect Lock Out Valves Page F37	**FC601** Push-to-Connect Lock-Out Valve - BSPP Page F37	**FC602** Threaded Port Lock Out Valves Page F37	**FC608** Threaded Port Lock-Out Valve - BSPP Page F37	
Threshold Sensor	**PSBJ731** Pneumatic - 5/32 Pilot Page F38	**PSBJ731** Pneumatic - 4mm Pilot Page F38	**PSPJ731** Pneumatic - 10-32 Pilot Page F38	**PSBJ708** Pneumatic - M5 Pilot Page F38	**PSPE701** Pneumatic / Electric - BSPP Page F38

Compact Flow Control Valves

Compact flow control regulators ensure excellent performance of flow and are perfectly suited for reduced spaces due to their small size. The sensitivity of the adjustment screw provides very precise air flow control and regulation. A locking nut guarantees stability of adjustment against vibration tampering of the flow setting.

Material Specifications

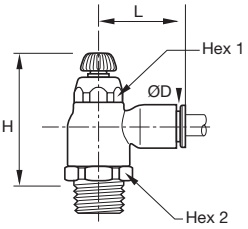
Body (depending upon the model)	Glass reinforced nylon 6.6 Brass
Gripping Ring	Stainless Steel
Adjustment Screws	Nickel-plated brass
Locking Nut	Nickel-plated brass
Base	Nickel-plated brass

Operating information

Pressure range:	15 to 145 PSI
Temperature range:	30°F to 160°F
Working fluid:	Compressed air

Applicable Tube

Tube O.D.	1/8, 5/32, 1/4, 3/8
Tube O.D. (mm)	4, 6, 8, 10, 12

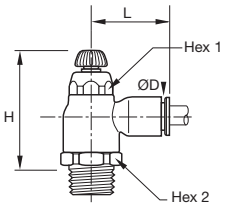


FCC731 Compact Meter Out - NPT

Tube Size (In)	NPT	Hex 1 (In)	Hex 2 (In)	H Open	H Closed	L	Part Number
5/32	1/8	0.63	0.39	1.67	1.44	0.85	**FCC731-5/32-2**
	1/4	0.63	0.39	1.67	1.44	0.85	**FCC731-5/32-4**
1/4	1/8	0.63	0.39	1.67	1.44	0.85	**FCC731-4-2**
	1/4	0.63	0.39	1.67	1.44	0.85	**FCC731-4-4**
3/8	1/4	0.91	0.67	2.03	1.71	1.22	**FCC731-6-4**
	3/8	0.91	0.67	2.03	1.71	1.22	**FCC731-6-6**

FC731 Compact Meter Out - BSPP

Tube Size (mm)	BSPP	Hex 1 (mm)	Hex 2 (mm)	H Open	H Closed	L	Part Number
4	1/8	10	16	38.0	44.0	22.0	**FCC731-4M-2G**
6	1/8	10	16	38.0	44.0	22.0	**FCC731-6M-2G**
	1/4	10	16	36.5	42.5	22.0	**FCC731-6M-4G**
8	1/8	14	19	41.5	48.0	28.0	**FCC731-8M-2G**
	1/4	14	19	41.5	48.0	28.0	**FCC731-8M-4G**
	3/8	14	19	41.5	48.0	28.0	**FCC731-8M-6G**
10	1/4	17	23	45.5	53.5	31.5	**FCC731-10M-4G**
	3/8	17	23	45.5	54.0	31.5	**FCC731-10M-6G**
12	3/8	17	23	45.5	54.0	35.0	**FCC731-12M-6G**
	1/2	17	24	45.5	54.0	35.0	**FCC731-12M-8G**



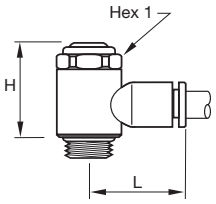
FCCB731 Compact Bi-Directional Flow Control - NPT

Tube Size (In)	NPT	Hex 1 (In)	Hex 2 (In)	H Open	H Closed	L	Part Number
5/32	1/8	0.63	0.39	1.67	1.44	0.85	**FCCB731-5/32-2**
1/4	1/8	0.63	0.39	1.67	1.44	0.85	**FCCB731-4-2**
	1/4	0.63	0.39	1.67	1.44	0.85	**FCCB731-4-4**

FCCB731 Compact Bi-Directional Flow Control - BSPP

Tube Size (mm)	BSPP	Hex 1 (mm)	Hex 2 (mm)	H Open	H Closed	L	Part Number
4	1/8	10	16	38.0	44.0	22.0	**FCCB731-4M-2G**
6	1/8	10	16	38.0	44.0	22.0	**FCCB731-6M-2G**
	1/4	10	16	36.5	42.5	22.0	**FCCB731-6M-4G**
8	1/8	14	19	41.5	48.0	28.0	**FCCB731-8M-2G**
	1/4	14	19	41.5	48.0	28.0	**FCCB731-8M-4G**
	3/8	14	19	41.5	48.0	28.0	**FCCB731-8M-6G**

Most popular.

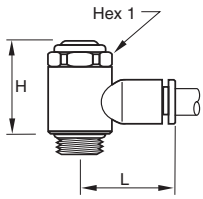


FCKC731 Knobless Meter Out Flow Control - NPT

Tube Size (In)	NPT / UNF	Hex 1 (In)	H	L	Part Number
1/8	10-32	10-32	–	0.69	**FCKC731-2-0**
	1/8	1/8	13	0.79	**FCKC731-2-2**
5/32	10-32	10-32	–	0.69	**FCKC731-5/32-0**
	1/8	1/8	13	0.79	**FCKC731-5/32-2**
1/4	10-32	10-32	–	0.69	**FCKC731-4-0**
	1/8	1/8	13	0.79	**FCKC731-4-2**
	1/4	1/4	17	1.04	**FCKC731-4-4**
5/16	1/8	1/8	13	0.79	**FCKC731-5-2**
	1/4	1/4	17	1.04	**FCKC731-5-4**
3/8	1/4	1/4	17	1.04	**FCKC731-6-4**
	3/8	3/8	20	1.14	**FCKC731-6-6**

FCKC731 Knobless Meter Out Flow Control - BSPP

Tube Size (mm)	BSPP / M5	Hex 1 (mm)	H	L	Part Number
4	M5X0.8	8.0	17.5	17.0	**FCKC731-4M-M5**
	1/8	13.0	25.0	19.0	**FCKC731-4M-2G**
6	M5X0.8	8.0	17.5	19.0	**FCKC731-6M-M5**
	1/8	13.0	25.0	21.0	**FCKC731-6M-2G**
	1/4	17.0	26.5	22.0	**FCKC731-6M-4G**
8	1/8	13.0	25.0	26.0	**FCKC731-8M-2G**
	1/4	17.0	26.5	27.0	**FCKC731-8M-4G**
	3/8	20.0	37.5	29.0	**FCKC731-8M-6G**
10	1/4	17.0	26.5	29.0	**FCKC731-10M-4G**
	3/8	20.0	37.5	31.0	**FCKC731-10M-6G**
	1/2	23.0	43.0	37.0	**FCKC731-10M-8G**
12	3/8	20.0	37.5	6.8	**FCKC731-12M-6G**
	1/2	23.0	43.0	37.0	**FCKC731-12M-8G**



FCKCB731 Knobless Bi-Directional Flow Control - BSPP

Tube Size (In)	BSPP / M5	Hex 1 (In)	H	L	Part Number
4	M5X0.8	8	17.5	17.0	**FCKCB731-4M-M5**
	1/8	13	25.0	19.0	**FCKCB731-4M-2G**
6	M5X0.8	8	17.5	19.0	**FCKCB731-6M-M5**
	1/8	13	25.0	21.0	**FCKCB731-6M-2G**
	1/4	17	26.5	22.0	**FCKCB731-6M-4G**
8	1/8	13	25.0	26.0	**FCKCB731-8M-2G**
	1/4	17	26.5	27.0	**FCKCB731-8M-4G**
	3/8	20	37.5	29.0	**FCKCB731-8M-6G**

Miniature Flow Control Valves

The miniature flow control regulator is especially adapted for all very small sized pneumatic applications (micro-pneumatic in particular). They are specifically designed for use with small bore cylinders (pancake / flat cylinders). Miniature flow control regulators are available in meter out, meter in and Bi-Directional versions.

Material Specifications

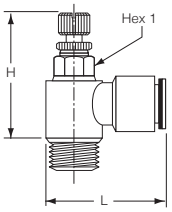
Body (depending upon the model)	Glass reinforced nylon 6.6 Brass
Gripping Ring	Stainless Steel
Adjustment Screws	Nickel-plated brass
Locking Nut	Nickel-plated brass
Base	Nickel-plated brass

Operating information

Pressure range:	15 to 145 PSI
Temperature range:	30°F to 160°F
Working fluid:	Compressed air

Applicable Tube

Tube O.D.	1/8, 5/32, 1/4
Tube O.D. (mm)	3, 4, 6, 8

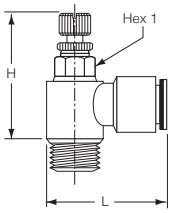


FCM731 Miniature Meter Out Flow Control - NPT

Tube Size (In)	NPT	Hex 1 (mm)	H Open	H Closed	L	Part Number
1/8	10-32	6	1.14	0.91	0.67	**FCM731-2-0**
	1/8	7	1.41	1.26	0.69	**FCM731-2-2**
5/32	10-32	6	1.02	0.93	0.67	**FCM731-5/32-0**
	1/8	7	1.16	1.06	0.71	**FCM731-5/32-2**
1/4	10-32	6	1.02	0.93	0.73	**FCM731-4-0**
	1/8	7	1.16	1.06	0.75	**FCM731-4-2**
	1/4	8	1.28	1.18	0.77	**FCM731-4-4**

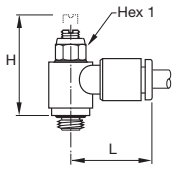
FCM731 Miniature Meter Out Flow Control - BSPP

Tube Size (mm)	BSPP	Hex 1 (mm)	H Closed	H Open	L	Part Number
3	M3X0.5	6	23.5	26.0	17.0	**FCM731-3M-M3**
	M5X0.8	6	23.5	26.0	17.0	**FCM731-3M-M5**
4	M3X0.5	6	23.5	26.0	16.5	**FCM731-4M-M3**
	M5X0.8	6	23.5	26.0	17.0	**FCM731-4M-M5**
	1/8	7	27.0	29.5	18.0	**FCM731-4M-2G**
6	M5X0.8	6	23.5	26.0	18.0	**FCM731-6M-M5**
	1/8	7	27.0	29.5	18.5	**FCM731-6M-2G**
	1/4	8	30.0	32.5	19.0	**FCM731-6M-4G**
8	1/8	13	26.5	31.0	26.0	**FCM731-8M-2G**
	1/4	16	29.0	34.0	27.5	**FCM731-8M-4G**
	3/8	20	36.0	42.0	29.0	**FCM731-8M-6G**



FCMB731 Miniature Bi-Directional Flow Control - BSPP

Tube Size (mm)	BSPP	Hex 1	H Open	H Closed	L	Part Number
4	M5X0.8	6	23.5	26.0	16.5	**FCMB731-4M-M5**
	1/8	7	27.0	29.5	17.0	**FCMB731-4M-2G**
6	M5X0.8	6	23.5	26.0	18.0	**FCMB731-6M-M5**
	1/8	7	27.0	29.5	18.0	**FCMB731-6M-2G**
6	1/4	8	30.0	32.5	18.5	**FCMB731-6M-4G**



FCMB731 Miniature Bi-Directional Flow Control - BSPP

Tube Size (in)	NPT	Hex 1 mm	H Open	H Closed	L	Part Number
1/8	10-32	6	0.79	0.65	0.65	**FCMK731-2-0**
	1/8	6	0.85	0.71	0.71	**FCMK731-2-2**
5/32	10-32	6	0.79	0.65	0.65	**FCMK731-5/32-0**
	1/8	6	0.85	0.71	0.71	**FCMK731-5/32-2**
1/4	10-32	6	0.79	0.65	0.65	**FCMK731-4-0**
	1/8	6	0.85	0.71	0.73	**FCMK731-4-2**
	1/4	6	0.97	0.83	0.73	**FCMK731-4-4**

Most popular.

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Swivel Outlet Flow Control Valves

Flow control regulators with “swivel outlet” are especially designed to allow a vertical or angled tube exit where access is restricted. The swivel outlet comes with instant push-in connection to ease installation. Flow control regulators with swivel outlet are available in meter out and meter in versions.

Material Specifications

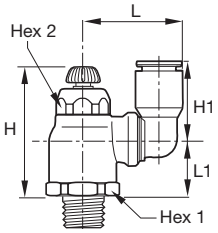
Body	Glass reinforced nylon 6.6
Gripping Ring	Stainless Steel
Adjustment Screws	Nickel-plated brass
Locking Nut	Nickel-plated brass
Base	Nickel-plated brass

Applicable Tube

Tube O.D.	5/32, 1/4, 3/8
Tube O.D. (mm)	4, 6, 8, 10, 12

Operating information

Pressure range:	15 to 145 PSI
Temperature range:	30°F to 160°F
Working fluid:	Compressed air

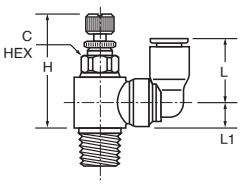


FCCS731 Compact Swivel Outlet Flow Control

Tube Size (In)	NPT	Hex 1 mm	Hex 2 mm	H Closed	H Open	H1	L	L1	Part Number
1/4	1/8	19	10	1.87	2.09	0.63	0.93	0.65	**FCCS731-4-2**
	1/4	19	14	1.79	1.99	0.73	1.00	0.89	**FCCS731-4-4**
3/8	1/4	23	17	1.93	2.20	1.04	1.34	0.97	**FCCS731-6-4**
	3/8	23	17	1.93	2.20	1.04	1.34	0.97	**FCCS731-6-6**

FCCS731 Compact Swivel Outlet - BSPP

Tube Size (In)	BSPP	Hex 1 mm	Hex 2 mm	H Closed	H Open	H1	L	L1	Part Number
6	1/8	16	10	38.0	44.0	16.0	23.5	18.0	**FCCS731-6M-2G**
	1/4	16	10	36.5	42.5	16.0	23.5	16.5	**FCCS731-6M-4G**
8	1/8	19	14	41.5	48.0	23.0	28.0	19.0	**FCCS731-8M-2G**
	1/4	19	14	41.5	48.0	23.0	28.0	19.5	**FCCS731-8M-4G**
10	3/8	19	14	41.5	48.0	23.0	28.0	17.5	**FCCS731-8M-6G**
	1/4	23	17	45.5	53.5	26.5	35.0	21.0	**FCCS731-10M-4G**
	3/8	23	17	45.5	54.0	26.5	35.0	21.5	**FCCS731-10M-6G**
12	3/8	23	17	45.5	54.0	31.0	38.0	21.5	**FCCS731-12M-6G**
	1/2	23	17	45.5	54.0	31.0	38.0	21.0	**FCCS731-12M-8G**



FCMS731 Mini Swivel Outlet Flow Control

Tube Size (In)	NPT	Hex 1 mm	H Closed	H Open	H1	L	L1	Part Number
5/32	10-32	6	0.96	1.08	0.55	0.73	0.26	**FCMS731-5/32-0**
	1/8	8	1.08	1.20	0.55	0.73	0.33	**FCMS731-5/32-2**

FCMS731 Miniature Swivel Outlet - BSPP

Tube Size (In)	BSPP	Hex 1 mm	H Closed	H Open	H1	L	L1	Part Number
4	M5X0.8	6	24.5	27.5	14.5	19.5	6.5	**FCMS731-4M-M5**
	1/8	7	27.5	31.0	14.5	20.0	8.5	**FCMS731-4M-2G**
6	M5X0.8	6	24.5	27.5	16.0	21.5	6.5	**FCMS731-6M-M5**
6	1/8	7	27.5	31.0	16.0	22.0	8.5	**FCMS731-6M-2G**

Plug-In Flow Control Valves

Plug-in flow control regulators can be directly mounted into existing fittings and allow very compact installations. They are particularly suited for mounting in manifolds using cartridges. Their design and function give equal performance to that of flow control regulators with threaded connections.

Material Specifications

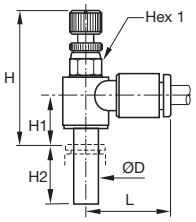
Body	Glass reinforced nylon 6.6
Gripping Ring	Stainless Steel
Adjustment Screws	Nickel-plated brass
Locking Nut	Nickel-plated brass
Tailpiece	Nickel-plated brass

Applicable Tube

Tube O.D.	1/8, 5/32, 1/4
Tube O.D. (mm)	4, 6, 8, 10, 12

Operating information

Pressure range:	15 to 145 PSI
Temperature range:	30°F to 160°F
Working fluid:	Compressed air

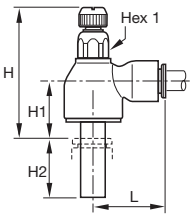


FCMSP731 Plug-In Mini Flow Control

Tube Size (In)	Hex 1 mm	H Open	H Closed	H1	H2	L	Part Number
1/8	6	1.04	0.94	0.12	0.59	0.67	**FCMSP731-2**
5/32	6	1.10	1.00	0.37	0.61	0.67	**FCMSP731-5/32**
1/4	7	1.18	1.08	0.12	0.73	0.73	**FCMSP731-4**

FCMSP701 - Plug-In Miniature Flow Control

Tube Size (mm)	Hex 1 mm	H Closed	H Open	H1	H2	L	Part Number
4	6	25.5	28.0	9.5	15.5	17.0	**FCMSP701-4M**
6	7	27.5	29.0	10.5	17.0	18.5	**FCMSP701-6M**



FCCSP731 Plug-In Compact Flow Control

Tube Size (mm)	Hex 1 mm	H Closed	H Open	H1	H2	L	Part Number
6	10	35.0	41.0	14.0	17.0	22.0	**FCCSP731-6M**
8	14	39.5	46.5	16.0	21.5	28.0	**FCCSP731-8M**
10	17	43.5	51.5	17.5	24.5	31.5	**FCCSP731-10M**
12	17	43.0	51.0	17.0	27.0	31.5	**FCCSP731-12M**

In-Line Flow Control Valves

In-line flow controls are unidirectional flow control valves. Intake air flows freely through the flow control; exhaust air is metered out through a specially designed adjustment screw. An arrow on the body of the valve indicates the direction of controlled flow. They can be easily added to existing circuitry. Simply splice it into the cylinder port line.

They can be used individually or they may be stacked together using two joining clips.

Material Specifications

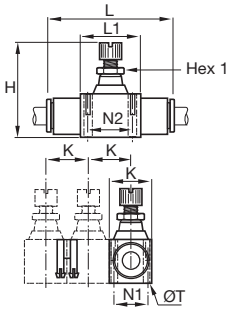
Body	Glass reinforced nylon 6.6
Gripping Ring	Stainless Steel
Adjustment Screws	Nickel-plated brass
Locking Nut	Nickel-plated brass
Tailpiece	Nickel-plated brass

Applicable Tube

Tube O.D.	5/32, 1/4, 5/16, 3/8, 1/2
Tube O.D. (mm)	4, 6, 8, 10, 12

Operating information

Pressure range:	15 to 145 PSI
Temperature range:	30°F to 160°F
Working fluid:	Compressed air

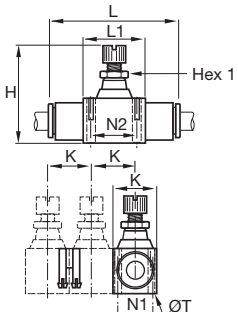


FC832 In-Line Flow Control

Tube Size (In)	Hex 1 mm	H Closed	H Open	K	L	L1	N1	N2	T	Part Number
5/32	5	1.15	1.31	0.47	1.52	0.59	0.31	0.43	0.09	**FC832-5/32**
1/4	8	1.54	1.74	0.66	2.00	0.90	0.43	0.66	0.12	**FC832-4**
5/16	11	1.73	1.97	0.73	2.38	1.02	0.49	0.79	0.13	**FC832-5**
3/8	14	2.03	2.38	0.94	2.87	1.29	0.62	1.01	1.60	**FC832-6**
1/2	14	2.24	2.63	1.09	3.35	1.37	0.78	1.07	0.16	**FC832-8**

FC832 In-Line Flow Control

Tube Size (mm)	Hex 1 mm	H Closed	H Open	K	L	L1	N1	N2	T	Part Number
4	5	29.5	33.5	12.0	39.0	15.0	8.0	11.0	2.2	**FC832-4M**
6	8	39.5	44.5	17.0	54.0	23.0	11.0	17.0	3.2	**FC832-6M**
8	11	44.0	50.0	18.5	60.5	26.0	12.5	20.0	3.2	**FC832-8M**
10	14	52.0	61.0	24.0	76.0	33.0	16.0	26.0	4.2	**FC832-10M**
12	14	57.5	67.5	28.0	86.0	35.0	20.0	27.5	4.2	**FC832-12M**

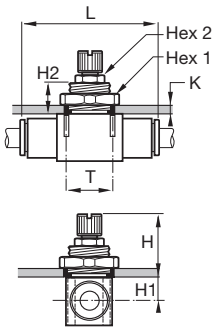


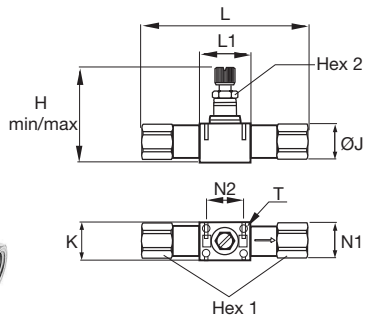
FCB832 In-Line Bi-Directional Flow Control

Tube Size (In)	Hex 1 mm	H Closed	H Open	K	L	L1	N1	N2	T	Part Number
5/32	5	1.15	1.31	0.47	1.52	0.59	0.31	0.43	0.09	**FCB832-5/32**
1/4	8	1.54	1.74	0.66	2.00	0.90	0.43	0.66	0.12	**FCB832-4**
5/16	11	1.73	1.97	0.73	2.38	1.02	0.49	0.79	0.13	**FCB832-5**

FCB832 In-Line Bi-Directional Flow Control

Tube Size (mm)	Hex 1 mm	H Closed	H Open	K	L	L1	N1	N2	T	Part Number
4	5	29.5	33.5	12.0	39.0	15.0	8.0	11.0	2.2	**FCB832-4M**
6	8	39.5	44.5	17.0	54.0	23.0	11.0	17.0	3.2	**FCB832-6M**
8	11	44.0	50.0	18.5	60.5	26.0	12.5	20.0	3.2	**FCB832-8M**





FCPM832 In-Line Panel Mountable Flow Control

Tube Size (mm)	Hex 1 mm	Hex 2 mm	H Closed	H Open	K	L	H1	H2	T	Part Number
4	14		21.5	25.5	6.0	39.0	6.5	11.0	10.5	**FCPM832-4M**
6	19		27.5	32.5	7.0	54.0	7.5	13.5	16.5	**FCPM832-6M**
8	24	11	28.5	34.5	7.0	60.5	9.0	13.5	18.5	**FCPM832-8M**
10	30	14	29.5	38.5	7.0	76.0	11.5	13.5	24.5	**FCPM832-10M**
12	32	14	32.0	42.0	8.0	86.0	12.5	15.5	27.5	**FCPM832-12M**

FC836 Threaded In-Line Flow Control

NPT	Hex 1 mm	Hex 2 mm	H Closed	H Open	K	L	L1	N1	N2	T	Part Number
1/8	13	8.00	1.56	1.75	0.67	2.70	0.91	0.43	0.67	0.12	**FC836-2**
1/4	16	11.00	1.73	1.97	0.73	3.27	1.02	0.49	0.79	0.12	**FC836-4**
3/8	22	14.00	2.05	2.40	0.94	3.82	1.30	0.63	1.02	0.16	**FC836-6**
1/2	24	14.00	2.26	2.66	1.10	4.76	1.38	0.79	1.08	0.16	**FC836-8**

FC836 Threaded In-Line Flow Control - BSPP

BSPP	Hex 1 mm	Hex 2 mm	H Closed	H Open	K	L	L1	N1	N2	T	Part Number
1/8	13	8	39.5	44.5	17.0	68.5	23.1	11.0	17.0	3.2	**FC836-2G**
1/4	16	11	44.0	50.0	18.5	83.0	25.9	12.5	20.0	3.2	**FC836-4G**
3/8	19	14	52.0	61.0	24.0	97.0	33.0	16.0	26.0	4.2	**FC836-6G**
1/2	24	14	57.5	67.5	28.0	121.0	35.0	20.0	27.5	4.2	**FC836-8G**

Compact Metal Flow Control Valves

Metal flow control regulators are suited for use in severe conditions (temperatures, sparks, abrasion, etc). The screw and locking nut have been designed for easy manipulation, by hand. Adjustment can be made with a screwdriver and locking by use of a wrench.

Material Specifications

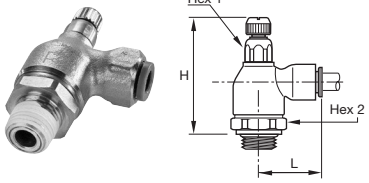
Body	Treated Brass
Gripping Ring	Stainless Steel
Adjustment Screws	Nickel-plated Brass
Locking Nut	Nickel-plated Brass
Tailpiece	Nickel-plated Brass

Applicable Tube

Tube O.D.	1/8, 5/32, 1/4, 3/8
Tube O.D. (mm)	4, 6, 8, 10, 12, 14

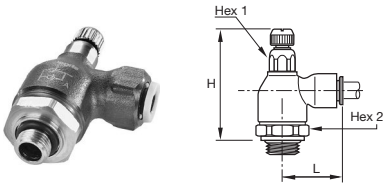
Operating information

Pressure range:	15 to 145 PSI
Temperature range:	30°F to 160°F
Working fluid:	Compressed air



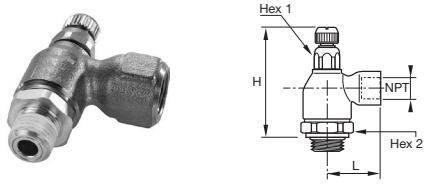
FC705 Push-to-Connect Metal Flow Control

Tube Size (In)	NPT	Hex 1 mm	Hex 2 mm	H Closed	H Open	L	Part Number
5/32	1/8	19	10	1.79	2.01	0.85	**FC705-5/32-2**
1/4	1/8	19	10	1.79	2.01	0.97	**FC705-4-2**
	1/4	19	10	1.79	2.01	0.97	**FC705-4-4**
3/8	1/4	19	14	1.91	2.11	1.14	**FC705-6-4**
	3/8	25	17	2.15	2.40	1.40	**FC705-6-6**



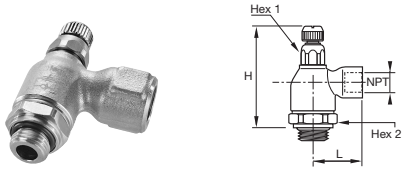
FC701 Push-to-Connect Metal Flow Control - BSPP

Tube Size (mm)	BSPP	Hex 1 mm	Hex 2 mm	H Closed	H Open	L	Part Number
4	1/8	10	19	47.0	53.0	21.0	**FC701-4M-2G**
6	1/8	10	19	47.0	53.0	24.5	**FC701-6M-2G**
	1/4	10	19	47.5	53.0	24.5	**FC701-6M-4G**
8	1/8	14	19	50.0	55.0	29.0	**FC701-8M-2G**
	1/4	14	19	50.0	56.0	29.0	**FC701-8M-4G**
	3/8	17	25	56.0	62.0	30.5	**FC701-8M-6G**
10	1/4	14	19	50.0	56.0	35.0	**FC701-10M-4G**
	3/8	17	25	56.0	62.0	35.0	**FC701-10M-6G**
12	3/8	17	25	56.0	62.0	38.0	**FC701-12M-6G**
	1/2	17	25	55.0	62.0	38.0	**FC701-12M-8G**
14	1/2	17	25	55.0	62.0	41.0	**FC701-14M-8G**



FC708 Threaded Port Meter Out Flow Control

NPT	Hex 1 mm	Hex 2 mm	H Closed	H Open	L	L1	L2	Part Number
1/8	19	10	1.79	2.01	0.89	0.87	1.14	**FC708-2**
1/4	19	14	1.91	2.11	1.28	0.87	1.28	**FC708-4**
3/8	25	17	2.15	2.40	1.36	0.91	1.44	**FC708-6**
1/2	25	17	2.15	2.40	1.50	0.91	1.50	**FC708-8**



FC702 Threaded Port Meter Out Flow Control - BSPP

BSPP	Hex 1 mm	Hex 2 mm	H Closed	H Open	L	Part Number
1/8	10	19	47.0	52.5	22.5	**FC702-2G**
1/4	14	19	50.5	55.5	32.0	**FC702-4G**
3/8	17	25	56.0	62.0	34.5	**FC702-6G**
1/2	17	25	55.0	62.0	37.5	**FC702-8G**

Flow Control Check Valves

These in-line check valves allows air to pass in one direction while blocking flow in the other direction. Their extreme compactness and light weight make them suitable as a safety item in compressed air circuits. The body of the fitting contains an arrow to indicate the direction of flow.

Material Specifications

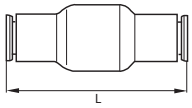
Body	32PLCK: Nylon/nickel plated brass 68PLCK: Nylon body with nickel-plated brass base VC: Acetal
Gripping Ring	Stainless Steel
O-ring	Nitrile (32PLCK & 68PLCK) EPDM (VC)

Applicable Tube

Tube O.D.	PLCK: 5/32, 1/4, 5/16, 3/8 VC: 1/4, 5/16, 3/8
Tube O.D. (mm)	PLCK: 4, 6, 8, 10, 12

Operating information

Pressure range:	15 to 145 PSI
Temperature range:	34°F to 150°F
Cracking pressure:	PLCK: 7 PSI VC: 1/3 PSI
Working fluid:	Compressed air

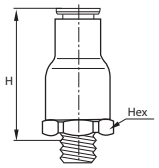


32PLCK In-Line Check Valve - NPT

Tube Size (In)	L	Part Number
5/32	1.52	**32PLCK-5/32**
1/4	1.61	**32PLCK-4**
5/16	2.03	**32PLCK-5**
3/8	2.50	**32PLCK-6**

32PLCK In-Line Check Valve - BSPP

Tube Size (mm)	L	Part Number
4	38.5	**32PLCK-4M**
6	41.0	**32PLCK-6M**
8	51.5	**32PLCK-8M**
10	63.5	**32PLCK-10M**
12	66.5	**32PLCK-12M**

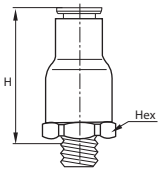


W68PLCK Male Check Valve

Tube Size (In)	NPT/ UNF	Hex mm	H	Part Number
5/32	10-32	9	1.26	**68PLCK-5/32-0**
5/32	1/8	16	1.12	**W68PLCK-5/32-2**
1/4	1/8	19	1.42	**W68PLCK-4-2**
1/4	1/4	19	1.42	**W68PLCK-4-4**
3/8	1/4	23	1.65	**W68PLCK-6-4**
3/8	3/8	23	1.65	**W68PLCK-6-6**

W68PLCKI Male Check Valve Meter In

Tube Size (in)	NPT/ UNF	Hex mm	H	Part Number
5/32	10-32	9	1.26	**68PLCKI-5/32-0**
5/32	1/8	16	1.12	**W68PLCKI-5/32-2**
1/4	1/8	19	1.42	**W68PLCKI-4-2**
1/4	1/4	19	1.42	**W68PLCKI-4-4**
3/8	1/4	23	1.65	**W68PLCKI-6-4**
3/8	3/8	23	1.65	**W68PLCKI-6-6**

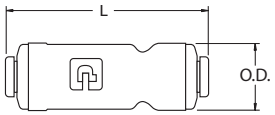


68PLCK Male Check Valve Meter Out - BSPP

Tube Size (mm)	BSPP	Hex 1 mm	H	Part Number
4	M5X0.8	9	32.0	**68PLCK-4M-M5**
4	1/8	16	28.5	**68PLCK-4M-2G**
6	1/8	16	30.5	**68PLCK-6M-2G**
6	1/4	16	30.5	**68PLCK-6M-4G**
8	1/8	19	36.0	**68PLCK-8M-2G**
8	1/4	19	36.0	**68PLCK-8M-4G**

68PLCKI Male Check Valve Meter In - BSPP

Tube Size (mm)	BSPP	Hex 1 mm	H	Part Number
4	M5X0.8	9	32.0	**68PLCKI-4M-M5**
6	1/8	16	30.5	**68PLCKI-6M-2G**
8	1/8	19	36.0	**68PLCKI-8M-2G**
8	1/4	19	36.0	**68PLCKI-8M-4G**
10	3/8	23	42.0	**68PLCKI-10M-6G**
12	3/8	23	42.0	**68PLCKI-12M-6G**
12	1/2	23	44.0	**68PLCKI-12M-8G**



VC – Check Valve

Tube Size (in)	BSPP	Hex 1 mm	Part Number
1/4	2.00	.66	**A4VC4-MG**
5/16	2.10	.70	**A5VC5-MG**
3/8	2.15	.80	**A6VC6-MG**

Blocking Flow Control Valves

Blocking valves prevents damage to work and equipment in the event of a loss of pressure. Blocking valves which are mounted in pairs on a cylinder lock the piston by simultaneously cutting off the supply and exhaust. Functional locks are more precise and rapid when blocking valves are located on the cylinder: the volume of air in the pipe work no longer needs to be taken into consideration.

Material Specifications

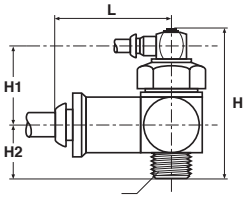
Body	Treated brass
Gripping Ring	Stainless Steel
Seals, Diaphragm	Nitrile

Applicable Tube

Tube O.D.	1/8, 5/32, 1/4, 3/8
Tube O.D. (mm)	4, 6, 8, 10, 12, 14

Operating information

Pressure range:	15 to 145 PSI
Temperature range:	-4°F to 160°F
Number of cycles:	> 10 million at 68°F and 1 Hz
Leak rate:	< 3.2 CCM
Working fluid:	Compressed air

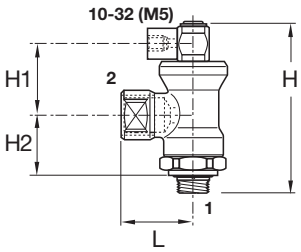


FC601 Push-to-Connect Lockout Valves

Tube Size (In)	NPT	Hex mm	H	H1	H2	L	Part Number
1/4	1/8	21	2.03	1.24	0.79	1.10	**FC601-4-2**
1/4	1/4	21	2.03	1.24	0.79	1.10	**FC601-4-4**
3/8	3/8	24	2.19	1.14	1.04	1.38	**FC601-6-6**
1/2	1/2	24	2.19	1.14	1.04	1.69	**FC601-8-8**

FC601 Push-to-Connect Lockout Valve - BSPP

Tube Size (mm)	BSPP	Hex 1 mm	H	H1	H2	L	Part Number
6	1/8	21	53	24.5	21.0	28.0	**FC601-6M-2G**
6	1/4	21	53	24.5	21.0	28.0	**FC601-6M-4G**
8	1/4	21	53	24.5	21.0	28.0	**FC601-8M-4G**
8	3/8	24	56	25.0	23.0	34.5	**FC601-8M-6G**
10	3/8	24	56	25.0	23.0	35.0	**FC601-10M-6G**
12	1/2	24	56	25.0	23.0	37.5	**FC601-12M-8G**



FC602 Threaded Port Lockout Valves

1 NPT	2 NPT	Hex mm	H	H1	H2	L	Part Number
1/4	1/8	21	2.03	1.24	0.79	1.04	**FC602-2**
1/4	1/4	21	2.03	1.24	0.79	1.04	**FC602-4**
3/8	3/8	24	2.19	1.14	1.04	1.34	**FC602-6**
1/2	1/2	24	2.19	1.14	1.04	1.57	**FC602-8**

FC608 Threaded Port Lockout Valve - BSPP

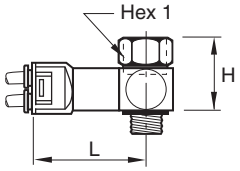
1 BSPP	2 BSPP	Hex 1 mm	H	H1	H2	L	Part Number
1/8	1/4	21	53	24.5	21.0	28.0	**FC608-4G-2G**
1/4	1/4	21	53	24.5	21.0	28.0	**FC608-4G-4G**
3/8	3/8	24	56	25.0	23.0	34.0	**FC608-6G-6G**
1/2	1/2	24	56	25.0	23.0	41.0	**FC608-8G-8G**

Threshold Sensor

The sensor fitting detects the absence of pressure and translates it to a high pressure pneumatic output. When used to monitor the decaying or exhausting side of a pneumatic cylinder's piston, it emits a positive output. When the cylinder comes to the end of its stroke, wherever that may be, the signal emitted from the sensor can then be used to pilot the next step.

Operating information

	PSBJ, PSPJ	PSPE
Working pressure:	45 to 115 PSI	45 to 115 PSI
Breaking pressure:	8.5 PSI	7 PSI
Working temperature:	5°F to 140°F	–
Response time:	3 Ms	–
Current rating:	–	5A / 250VAC 5W / 48VDC
Reset pressure: UL listed component	10 PSI	10 PSI

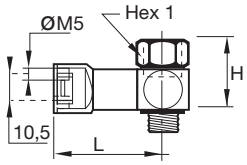


PSBJ731 Pneumatic Threshold Sensor - 5/32 Pilot

NPT / UNF	Hex 1 mm	H	L	Part Number
10-32	5/16	0.62	1.70	**PSBJ731-0**
1/8	9/16	0.90	1.74	**PSBJ731-2**
1/4	5/8	1.09	1.81	**PSBJ731-4**
3/8	7/8	1.13	1.91	**PSBJ731-6**
1/2	1	1.17	2.05	**PSBJ731-8**

PSBJ731 Pneumatic Threshold Sensor - 4mm Pilot

BSPP	Hex 1 mm	H	L	Part Number
M5X0.8	8	16	43.5	**PSBJ731-M5**
1/8	14	23	44.5	**PSBJ731-2G**
1/4	17	28	46.5	**PSBJ731-4G**
3/8	22	29	49.0	**PSBJ731-6G**
1/2	27	30	52.5	**PSBJ731-8G**

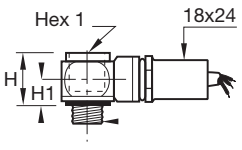


PSPJ731 Pneumatic Threshold Sensor - 10-32 Pilot

NPT	Hex 1 mm	H	L	Part Number
1/8	9/16	0.90	1.58	**PSPJ731-2**
1/4	5/8	1.09	1.66	**PSPJ731-4**
3/8	7/8	1.13	1.76	**PSPJ731-6**

PSBJ708 Pneumatic Threshold Sensor - M5 Pilot

BSPP	Hex 1 mm	H	L	Part Number
1/8	14	23	40.5	**PSBJ708-2G**
1/4	17	28	42.5	**PSBJ708-4G**



PSPE701 Pneumatic / Electric Threshold Sensor - BSPP

NPT	Hex 1 mm	H	H1	L	Part Number
M5X0.8	8	20	10	49	**PSPE701-M5**
1/8	6	20	10	52	**PSPE701-2G**
1/4	8	20	10	54	**PSPE701-4G**
3/8	10	22	12	57	**PSPE701-6G**
1/2	12	26	14	58	**PSPE701-8G**

Fax Forms, Part Number Index, Safety Guide, Offer of Sale

Part Number Index	G2-G26
Safety Guide	G27-G28
Offer of Sale	G29

Model No.	Section / Page No.
3371000	F2, F3
3371001	F2, F3
3371002	F2, F3
3371003	F2, F3
3371004	F2, F3
3378000	F2, F3
3378001	F2, F3
3378002	F2, F3
3378003	F2, F3
3378004	F2, F3
3393000	F7
3393001	F7
3393002	F7
3393003	F7
3393004	F7
4700010	F21
4700900	F21
4707020	F22
4750010	F21
4750900	F21
6450060	F20
8230299	E63, E64, E65
8240109	E63, E64, E65
32130599	E63, E64, E65, E66
32130899	E63, E64, E65
32140299	E63
32500119	F4
32500219	F4
32500319	F4
32500419	F4
32500519	F4
32501500	F5
32510125	F6
32510250	F6
32510375	F6
32510500	F6
32511215	F6
32511225	F6
32512525	F6
32512538	F6
32513838	F6
33400105	F14
33400319	F14
33400504	F14
33408000	F14
34750109	F14
34750120	F14
34759000	F14
36408000	F14
36408100	F14
36508000	F14
45020002	F8
45040004	F8
45060060	F8
45080080	F8
45120012	F8
45160016	F8
47020002	F9
47040004	F9
47060006	F9
47080008	F9
47120012	F9
47160016	F9
47200020	F9
47240024	F9
67390000	F20, F22
91660060	F20
404111000	E5
404118000	E7
404211000	E4
404311000	E5
404411000	E3
404711000	E5
404811000	E3
410008000	E7
410008005	E7
410111000	E5
410121000	E5
410151000	E5
410211000	E4
410221000	E4
410251000	E4
410411000	E3
410421000	E3
410451000	E3
410711000	E5
410721000	E5
410751000	E5
410811000	E3
410821000	E3
410931000	E3
410941000	E3
410951000	E3
414111000	E5
414121000	E5
414151000	E5
414211000	E4
414221000	E4
414251000	E4
414311000	E5
414321000	E5
414351000	E5
414411000	E3
414421000	E3
414451000	E3
414711000	E5
414721000	E5
414751000	E5
414811000	E3
414821000	E3
414931000	E3
414941000	E3
414951000	E3
520008050	E7
520008500	E7
520018005	E7
520211000	E4
520251000	E4
520411000	E3
520431000	E3
520451000	E3
520711000	E5
520718001	E7
520751000	E5
520811000	E4
520831000	E4
520838004	E7
520931000	E5
521811000	E4
521831000	E4
522811000	E4
522831000	E4
523831000	E4
524211000	E4
524251000	E4
524411000	E3
524431000	E3
524451000	E3
524711000	E5
524751000	E5
524811000	E4
524831000	E4
524931000	E5
529811000	E4
529831000	E4
9121658063	C6
9121658068	C6
9121658075	C6
9121658076	C6
9121658077	C6
9121658078	C6
00339G3000	F7
00339G3001	F7
0220 19 00	C87
0R12B	F14
0R12NB	F14
0R12NVB	F14
0R12VB	F14
0R25B	F14
0R25NB	F14
0R25NFB	F14
0R25PB	F14
0R25VB	F14
0R37B	F14
0R37FB	F14
0R37TB	F14
0R37VB	F14
0R50B	F14
0R50VB	F14
0R75B	F14
0R75FB	F14
0R75VB	F14
0RB12B	F14
0RB12NB	F14
0RB12NVB	F14
0RB12VB	F14

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Model No.	Section / Page No.
0RB25B	F14
0RB25NB	F14
0RB25NFB	F14
0RB25VB	F14
0RB37B	F14
0RB37FB	F14
0RB37TB	F14
0RB37VB	F14
0RB50B	F14
0RB50VB	F14
0RB75B	F14
0RB75FB	F14
0RB75VB	F14
1155H30	E54
1738-EXT1	D192
1738-EXT3	D192
3250G1000	F5
3250G1250	F5
3250G1500	F5
32PLCK	F23
32PLCK-10M	F33
32PLCK-12M	F33
32PLCK-4	F33
32PLCK-4M	F33
32PLCK-5	F33
32PLCK-5/32	F33
32PLCK-6	F33
32PLCK-6M	F33
32PLCK-8M	F33
422CR021K	E19
422CR021W	E19
422CR023W	E19
422CR024W	E19
422CS021K	E19
422CS021W	E19
422CS023W	E19
422CS024W	E19
422CT021K	E19
520A11000	E4
520A51000	E4
524A11000	E4
524A51000	E4
5500A2004	E54
5500A2004	F10
5500A4004	E54
5500A4004	F10
5500A6004	F10
5500A9004	E54
5500A9004	F10
5500B6004	E54
5599-1	D270
62PM	D26, D27
68PLCK	F23
68PLCK-4M-2G	F34
68PLCK-4M-M5	F34
68PLCK-5/32-0	F33
68PLCK-6M-2G	F34
68PLCK-6M-4G	F34
68PLCK-8M-2G	F34
68PLCK-8M-4G	F34
68PLCKI	F23
68PLCKI-10M-6G	F34
68PLCKI-12M-6G	F34
68PLCKI-12M-8G	F34
68PLCKI-4M-M5	F34
68PLCKI-5/32-0	F33
68PLCKI-6M-2G	F34
68PLCKI-8M-2G	F34
68PLCKI-8M-4G	F34
91213202SXZ	C6
91213202SXZN	C6
91213204SXZ	C6
91213204SXZN	C6
91213206SXZ	C6
91213206SXZN	C6
91213208SXZ	C6
91213208SXZN	C6
91213210SXZ	C6
91213210SXZN	C6
912132BPSXZ	C6
9121594805X	C6
9121594805XN	C6
9121594806X	C6
9121594806XN	C6
9121594807X	C6
9121594807XN	C6
9121594808X	C6
9121594808XN	C6
9121594809X	C6, C21
9121594812X	C6
9121594812XN	C6
9121658068N	C6
9121658075N	C6
9121658076N	C6
9121658077N	C6
9121658078N	C6
988A30	E54
A	
A00S	C89
A00S-B-M3	C85
A00SBP	C86
A00SC23-1P	C85
A00SG	C87
A00SS	C87
A05P	C89, C91
A05P-AC-CL10	C86
A05P-AC-CL5	C86
A05PAIEM5	C86
A05PAISM5	C86
A05PAXIEM5	C86
A05PAXISM5	C86
A05PBG1	C83
A05PBN1	C83
A05PD251P	C82
A05PDCC	C86
A05P-DC-CB10	C86
A05P-DC-CL10	C86
A05P-DC-CL30	C86
A05P-DC-CL5	C86
A05PDCCM	C86
A05PG	C87
A05PG-BP	C86
A05PLA	C86
A05PLB	C86
A05PN	C87
A05PS	C87
A05PS251P	C82
A05PSCC	C86
A05PSCCM	C86
A05PXG	C87
A05R	C90
A05RABM5	C87
A05RAIEM5	C86
A05RAISM5	C86
A05RAXIEM5	C86
A05RAXISM5	C86
A05RBF	C87
A05RBS	C87
A05RD251PM5MF	C82
A05RG	C87
A05RGBP	C86
A05RS	C87
A05RS251PM5MF	C82
A12P	C91
A12PAIEN1	C86
A12PAISN1	C86
A12PAXIEN1	C86
A12PAXISN1	C86
A12PBG2	C83
A12PBN2	C83
A12PD252P	C82
A12PG	C87
A12PGBP	C86
A12PS	C87
A12PS251P	C82
A12PS252P	C82
A12PXG	C87
A12R	C89, C91
A12RABG1	C87
A12RABN1	C87
A12RAIEN1	C86
A12RAISN1	C86
A12RAXIEN1	C86
A12RAXISN1	C86
A12RBF	C87
A12-RBS	C87
A12RD252PN1MF	C82
A12RG	C87
A12RGBP	C86
A12RS	C87
A12RS252PN1MF	C82
A4VC4-MG	F34
A5VC5-MG	F34
A6VC6-MG	F34
AAH3S003	D118
AAHMD5249M0M	D9

Model No.	Section / Page No.
AAHMT5129M0M	D10
AAHMW5209M0M	D11
AAHMX5209M0M	D11
AAHU31L000P04	D111
AAPL2AXGAXG##NP	C21
AAPL2AXGAXN##NP	C21
AAPL2AXMAXG##NP	C21
AAPL2AXMAXN##NP	C21
AAPL2BXGAXG##NP	C21
AAPL2BXGAXN##NP	C21
AAPL2BXMAXG##NP	C21
AAPL2BXMAXN##NP	C21
AAPL2CXMAXG##NP	C21
AAPL2CXMAXN##NP	C21
AS-10	C28, E17, F11
AS-15	C28, E17, F11
AS-5	C28, E17, F11
AS-6	C28, E17, F11
AS-8	C28, E17, F11
ASC/ASO500	C72
ASC500	C74
ASC500-1W-10	C80
ASC500-1W-90	C80
ASC-D24-CL10	C80
ASN-10	C28, E17, F11
ASN-15	C28, E17, F11
ASN-6	C28, E17, F11
ASN-8	C28, E17, F11
ASO500	C74
ASO500-1W-10	C80
ASO500-1W-90	C80
ASV13000	C74
ASV15000	C74
ASV200	C72, C74
ASV2000	C72, C74
ASV2000-AA-17	C76
ASV2000-AA-97	C76
ASV200-AA-M5	C75
ASV5000	C72, C74
ASV5000-AA-21	C77
ASV5000-AA-91	C77
B	
B310BB549C	C40
B310BB553C	C40
B320BB549C	C40
B320BB553C	C40
B330000XXC	C42
B340000XXC	C42
B350BB549C	C41
B350BB553C	C41
B360BB549C	C41
B360BB553C	C41
B370BB549C	C41
B370BB553C	C41
B380000XXC	C42
B3G0BB549C	C40
B3G0BB553C	C40
B511BB549C	C40
B511BB553C	C40
B512BB549C	C40
B512BB553C	C40
B521BB549C	C40
B521BB553C	C40
B522BB549C	C40
B522BB553C	C40
B531000XXC	C42
B532000XXC	C42
B541000XXC	C42
B542000XXC	C42
B551BB549C	C41
B551BB553C	C41
B552BB549C	C41
B552BB553C	C41
B561BB549C	C41
B561BB553C	C41
B562BB549C	C41
B562BB553C	C41
B571BB549C	C41
B571BB553C	C41
B572BB549C	C41
B572BB553C	C41
B581000XXC	C42
B582000XXC	C42
B5G1BB549C	C40
B5G1BB553C	C40
B5G2BB549C	C40
B5G2BB553C	C40
B612BB549A	C40
B612BB553A	C40
B622BB549A	C40
B622BB553A	C40
B632000XXA	C42
B642000XXA	C42
B652BB549A	C41
B652BB553A	C41
B662BB549A	C41
B662BB553A	C41
B672BB549A	C41
B672BB553A	C41
B682000XXA	C42
B713BB549A	C60
B713BB553A	C60
B723BB549A	C60
B723BB553A	C60
B753BB549A	C61
B753BB553A	C61
B763BB549A	C61
B763BB553A	C61
B773BB549A	C61
B773BB553A	C61
B7V3BB549A	C60
B7V3BB553A	C60
B7X3000XXA	C42
B814BB549A	C60
B814BB553A	C60
B824BB549A	C60
B824BB553A	C60
B854BB549A	C61
B854BB553A	C61
B864BB549A	C61
B864BB553A	C61
B874BB549A	C61
B874BB553A	C61
B8V4BB549A	C60
B8V4BB553A	C60
BC03M3	C87
BC03M5	C87
BC04M3	C87
BL67-16DO-0.1A-P	D210, D211, D213, D216
BL67-1CNT/ENC	D210, D211, D214, D221
BL67-1CVI	D210, D211, D214, D221
BL67-1RS232	D210, D211, D214, D220
BL67-1RS485/422	D210, D211, D214, D220
BL67-1RSM-VO	D210
BL67-1SSI	D210, D211, D214, D221
BL67-2AI2AO-V/I	D214, D219
BL67-2AI-I	D210, D211, D213, D218
BL67-2AI-PT	D210, D211, D213, D218
BL67-2AI-TC	D210, D211, D213, D218
BL67-2AI-V	D210, D211, D213, D218
BL67-2AO-I	D210, D211, D213, D219
BL67-2AO-V	D210, D211, D213, D219
BL67-2RFID-A	D210
BL67-2RFID-C	D210
BL67-4AI4AO-V/I	D214, D219
BL67-4AI-I/V	D211
BL67-4AI-V/I	D210, D213, D218
BL67-4AO-V	D213
BL67-4DI4DO-PD	D210, D211, D213, D217
BL67-4DI-N	D210, D211, D212, D215
BL67-4DI-P	D210, D211, D212, D215
BL67-4DI-PD	D210, D211, D212, D215
BL67-4DO-0.5A-P	D210, D211, D212, D216
BL67-4DO-2A-N	D210, D211, D212, D216
BL67-4DO-2A-P	D210, D211, D212, D216
BL67-4DO-4A-P	D212
BL67-8DI-N	D210, D211, D212, D215
BL67-8DI-P	D210, D211, D212, D215

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Model No.	Section / Page No.
BL67-8DI-PD	D210, D212, D215
BL67-8-DI-PD	D211
BL67-8DO-0.5A-N	D210, D211, D212, D216
BL67-8DO-0.5A-P	D210, D211, D212, D216
BL67-8DO-R-NO	D210, D211, D213, D217
BL67-8XSG-PD	D210, D211, D213
BL-67-8XSG-PD	D217
BL67-B-1M12	D210, D214
BL67-B-1M12-8	D210, D214
BL67-B-1M23	D210, D212, D214
BL67-B-1M23-19	D210, D213
BL67-B-1RSM	D210, D214, D223
BL67-B-1RSM-4	D210, D214, D223
BL67-B-1RSM-VO	D214, D223
BL67-B-2M12	D210, D212, D213
BL67-B-2M12-P	D210, D212
BL67-B-4M12	D210, D212, D213, D214
BL67-B-4M12P	D213
BL67-B-4M12-P	D210, D212, D213
BL67-B-4M8	D210, D212
BL67-B-8M8	D210, D212, D213, D214
BL67-GW-CO	D208
BL67-GW-DN	D208
BL67-GW-DPV1	D208
BL67-GW-EN	D208
BL67-GW-EN-DN	D209
BL67-GW-EN-IP-DN	D209
BL67-GW-EN-PN	D208
BL67-PF-24VDC	D210, D211, D214, D220, D223
BL67-PG-DP	D209
BL67-PG-EN	D209
BL67-PG-EN-DN	D209
BL67-PG-EN-IP	D209
BL67-PG-EN-IP-DN	D209

C

Model No.	Section / Page No.
CMD04-1	D34, D38, D42, D54
CMD06-1	D34, D38, D42, D54
CMD06-2	D34, D38, D42, D54
CMD07-1B	D34, D38, D42, D54, D61
CMD07-2B	D34, D38, D42, D54
CMD08-2	D34, D38, D42, D54
CMD09-2B	D34, D38, D42, D54
CMD10-2	D34, D38, D42, D54
CMD12-2	D34, D38, D42, D54
CSCM CKCM 12-11-x/S90	D225
CSM CKM 19-19-x/S90	D225
CSWM CKWM 19-19-x/ CS12852	D225

D

Model No.	Section / Page No.
D01BD0	D244
D01P-02-80	D244
D02BD0	D244
D02P-01-80	D244
DSS25FB1	C86
DX ISOMAX Series	D233
DX01-406-60	D235, D245
DX01-411-60	D235, D245
DX01-416-60	D235, D245
DX01-421-60	D235, D245
DX01-451-60	D235, D245
DX01-606-951J	D235
DX01-606-951M	D235
DX01-611-951J	D235
DX01-611-951M	D235
DX01-616-951J	D235
DX01-616-951M	D235
DX01-621-951J	D235
DX01-621-951M	D235
DX01-651-951J	D235
DX01-651-951M	D235
DX01M2MGSKT	D235, D244
DX02-406-60	D234, D246
DX02-411-60	D234, D246
DX02-416-60	D234, D246
DX02-421-60	D234, D246
DX02-451-60	D234, D246
DX02-606-951J	D234
DX02-606-951M	D234
DX02-611-951J	D234
DX02-611-951M	D234
DX02-616-951J	D234
DX02-616-951M	D234
DX02-621-951J	D234
DX02-621-951M	D234
DX02-651-951J	D234
DX02-651-951M	D234
DX02M2MB	D235, D244
DX02M2MGSKT	D244
DX1-606-BL49	D245
DX1-606-BL53	D245
DX1-606-CL49	D245
DX1-606-CL53	D245
DX1-611-BL49	D245
DX1-611-BL53	D245
DX1-611-CL49	D245
DX1-611-CL53	D245
DX1-616-BL49	D245
DX1-616-BL53	D245
DX1-616-CL49	D245
DX1-616-CL53	D245
DX1-621-BL49	D245
DX1-621-BL53	D245
DX1-621-CL49	D245
DX1-621-CL53	D245
DX1-651-BL49	D245
DX1-651-BL53	D245
DX1-651-CL49	D245
DX1-651-CL53	D245
DX2-606-BL49	D246
DX2-606-BL53	D246
DX2-606-CL49	D246
DX2-606-CL53	D246
DX2-611-BL49	D246
DX2-611-BL53	D246
DX2-611-CL49	D246
DX2-611-CL53	D246
DX2-616-BL49	D246
DX2-616-BL53	D246
DX2-616-CL49	D246
DX2-616-CL53	D246
DX2-621-BL49	D246
DX2-621-BL53	D246
DX2-621-CL49	D246
DX2-621-CL53	D246
DX2-651-BL49	D246
DX2-651-BL53	D246
DX2-651-CL49	D246
DX2-651-CL53	D246
DX3-406-60	D247
DX3-411-60	D247
DX3-416-60	D247
DX3-421-60	D247
DX3-451-60	D247
DX3-606-BL49	D247
DX3-606-BL53	D247
DX3-606-CL49	D247
DX3-606-CL53	D247
DX3-611-BL49	D247
DX3-611-BL53	D247
DX3-611-CL49	D247
DX3-611-CL53	D247
DX3-616-BL49	D247
DX3-616-BL53	D247
DX3-616-CL49	D247
DX3-616-CL53	D247
DX3-621-BL49	D247
DX3-621-BL53	D247
DX3-621-CL49	D247
DX3-621-CL53	D247
DX3-651-BL49	D247
DX3-651-BL53	D247
DX3-651-CL49	D247
DX3-651-CL53	D247

E

Model No.	Section / Page No.
E90016	C28, E17
E90017	C28, E17
ECS3	F13
ECS5	F13

Model No.	Section / Page No.
EM100	F8
EM12	C28, C87, E17, F8
EM125	F8
EM150	F8
EM25	C28, C87, E17, F8
EM37	C28, E17, F8
EM50	C28, E17, F8
EM75	F8
EMM5	F8
ES100MC	E54, F9
ES125MC	E54, F9
ES12MC	F9
ES150MC	E54, F9
ES200MC	E54
ES25MC	E54, F9
ES37MC	E54, F9
ES50MC	E54, F9
ES75MC	E54, F9
ESB100MC	F9
ESB125MC	F9
ESB12MC	F9
ESB150MC	F9
ESB25MC	F9
ESB37MC	F9
ESB50MC	F9
ESB75MC	F9
EZ03NB6	E52
EZ04NB6	E52
EZ06NB6	E52
EZ06NBA	E52
EZ08NBA	E52
EZ0ANBA	E52
F	
FC601	F24
FC601-10M-6G	F35
FC601-12M-8G	F35
FC601-4-2	F35
FC601-4-4	F35
FC601-6-6	F35
FC601-6M-2G	F35
FC601-6M-4G	F35
FC601-8-8	F35
FC601-8M-4G	F35
FC601-8M-6G	F35
FC602	F24
FC602-2	F35
FC602-4	F35
FC602-6	F35
FC602-8	F35
FC608	F24
FC608-4G-2G	F35
FC608-4G-4G	F35
FC608-6G-6G	F35
FC608-8G-8G	F35
FC701	F23
FC701-10M-4G	F32
FC701-10M-6G	F32
FC701-12M-6G	F32
FC701-12M-8G	F32
FC701-14M-8G	F32
FC701-4M-2G	F32
FC701-6M-2G	F32
FC701-6M-4G	F32
FC701-8M-2G	F32
FC701-8M-4G	F32
FC701-8M-6G	F32
FC702	F23
FC702-2G	F32
FC702-4G	F32
FC702-6G	F32
FC702-8G	F32
FC705	F23
FC705-4-2	F32
FC705-4-4	F32
FC705-5/32-2	F32
FC705-6-4	F32
FC705-6-6	F32
FC708	F23
FC708-2	F32
FC708-4	F32
FC708-6	F32
FC708-8	F32
FC800-5/32	D9
FC832	F23
FC832-10M	F30
FC832-12M	F30
FC832-4	D9
FC832-4	F30
FC832-4M	F30
FC832-5	F30
FC832-5/32	F30
FC832-6	F30
FC832-6M	F30
FC832-8	F30
FC832-8M	F30
FC836	F23
FC836-2	F31
FC836-2G	F31
FC836-4	F31
FC836-4G	F31
FC836-6	F31
FC836-6G	F31
FC836-8	F31
FC836-8G	F31
FCB832	F23
FCB832-4	F30
FCB832-4M	F30
FCB832-5	F30
FCB832-5/32	F30
FCB832-6M	F30
FCB832-8M	F30
FCC731	F23
FCC731-10M-4G	F25
FCC731-10M-6G	F25
FCC731-12M-6G	F25
FCC731-12M-8G	F25
FCC731-4-2	F25
FCC731-4-4	F25
FCC731-4M-2G	F25
FCC731-5/32-2	F25
FCC731-5/32-4	F25
FCC731-6-4	F25
FCC731-6-6	F25
FCC731-6M-2G	F25
FCC731-6M-4G	F25
FCC731-8M-2G	F25
FCC731-8M-4G	F25
FCC731-8M-6G	F25
FCCB731	F23
FCCB731-4-2	F25
FCCB731-4M-2G	F25
FCCB731-5/32-2	F25
FCCB731-6M-2G	F25
FCCB731-6M-4G	F25
FCCB731-8M-2G	F25
FCCB731-8M-4G	F25
FCCB731-8M-6G	F25
FCCS731	F23
FCCS731-10M-4G	F28
FCCS731-10M-6G	F28
FCcS731-12M-6G	F28
FCcS731-12M-8G	F28
FCCS731-4-2	F28
FCCS731-4-4	F28
FCCS731-6-4	F28
FCCS731-6-6	F28
FCCS731-6M-2G	F28
FCcS731-6M-4G	F28
FCcS731-8M-2G	F28
FCCS731-8M-4G	F28
FCcS731-8M-6G	F28
FCCSP731	F23
FCCSP731-10M	F29
FCCSP731-12M	F29
FCCSP731-6M	F29
FCCSP731-8M	F29
FCKC731	F23
FCKC731-10M-4G	F26
FCKC731-10M-6G	F26
FCKC731-10M-8G	F26
FCKC731-12M-6G	F26
FCKC731-12M-8G	F26
FCKC731-2-0	F26
FCKC731-2-2	F26
FCKC731-4-0	F26
FCKC731-4-2	F26
FCKC731-4-4	F26
FCKC731-4M-2G	F26
FCKC731-4M-M5	F26
FCKC731-5/32-0	F26
FCKC731-5/32-2	F26
FCKC731-5-2	F26
FCKC731-5-4	F26
FCKC731-6-4	F26
FCKC731-6-6	F26
FCKC731-6M-2G	F26

Model No.	Section / Page No.
FCKC731-6M-4G	F26
FCKC731-6M-M5	F26
FCKC731-8M-2G	F26
FCKC731-8M-4G	F26
FCKC731-8M-6G	F26
FCKCB731	F23
FCKCB731-4M-2G	F26
FCKCB731-4M-M5	F26
FCKCB731-6M-2G	F26
FCKCB731-6M-4G	F26
FCKCB731-6M-M5	F26
FCKCB731-8M-2G	F26
FCKCB731-8M-4G	F26
FCKCB731-8M-6G	F26
FCM731	F23
FCM731-2-0	F27
FCM731-2-2	F27
FCM731-3M-M3	F27
FCM731-3M-M5	F27
FCM731-4-0	F27
FCM731-4-2	F27
FCM731-4-4	F27
FCM731-4M-2G	F27
FCM731-4M-M3	F27
FCM731-4M-M5	F27
FCM731-5/32-0	F27
FCM731-5/32-2	F27
FCM731-6M-2G	F27
FCM731-6M-4G	F27
FCM731-6M-M5	F27
FCM731-8M-2G	F27
FCM731-8M-4G	F27
FCM731-8M-6G	F27
FCMB731	F23
FCMB731-4M-2G	F27
FCMB731-4M-M5	F27
FCMB731-6M-2G	F27
FCMB731-6M-4G	F27
FCMB731-6M-M5	F27
FCMK731	F23
FCMK731-2-0	F27
FCMK731-2-2	F27
FCMK731-4-0	F27
FCMK731-4-2	F27
FCMK731-4-4	F27
FCMK731-5/32-0	F27
FCMK731-5/32-2	F27
FCMS731	F23
FCMS731-4M-2G	F28
FCMS731-4M-M5	F28
FCMS731-5/32-0	F28
FCMS731-5/32-2	F28
FCMS731-6M-2G	F28
FCMS731-6M-M5	F28
FCMSP701	F23
FCMSP701-4M	F29
FCMSP701-6M	F29
FCMSP731	F23
FCMSP731-2	F29
FCMSP731-4	F29
FCMSP731-5/32	F29
FCPM832	F23
FCPM832-10M	F31
FCPM832-12M	F31
FCPM832-4M	F31
FCPM832-6M	F31
FCPM832-8M	F31
FMD04-1	D34, D38, D42, D54
FMD06-1	D34, D38, D42, D54
FMD06-2	D34, D38, D42, D54
FMD07-1B	D34, D38, D42, D45, D54, D56, D61
FMD07-2B	D34, D38, D42, D54
FMD08-2	D34, D38, D42, D54
FMD09-2B	D34, D38, D42, D54, D61
FMD10-2	D34, D38, D42, D54
FMD12-2	D34, D38, D42, D54
FMD13-2B	D34, D42, D54

H

Model No.	Section / Page No.
H Series ISO	D71
H02713	D291
H02722	D291
H02723	D291
H02789	D291
H05028	E28, E29
H05029	E29
H06326	C105, C106, C109, C110
H06332	C105, C106, C109, C110
H06338	C107, C108, C109, C110
H06416	E31
H07229	E28, E29
H07230	E28
H07254	E32
H07270	E32
H07271	E32
H08903	E28, E29
H09012	E32
H09025	E32
H09626	E32, E33
H09645	E32, E33
H09706	E32, E33
H09815	D289
H100107	D289
H10032	D289
H10069	D289
H10115	E31
H10117	E30
H10119	E31
H10121	E30
H10145	E30, E31
H10147	E30
H10215	E30
H10217	E31
H10219	E30
H11215	E32
H11216	E32
H11217	E32
H11333	E31
H11VXBG023D	D78
H11VXBG0B9D	D78
H11VXBH023D	D78
H11VXBH0B9D	D78
H11VXXG023D	D78
H11VXXG0B9D	D78
H11VXXH023D	D78
H11VXXH0B9D	D78
H11WXBBL49D	D100
H11WXBBL53D	D101
H11WXBDL49D	D100
H11WXBDL53D	D101
H11WXBG2B9000FD	D100
H11WXBG323000FD	D100
H11WXBH2B9000FD	D100
H11WXBH323000FD	D100
H11WXXBL49D	D100
H11WXXBL53D	D101
H11WXXDL49D	D100
H11WXXDL53D	D101
H11WXXG2B9000FD	D100
H11WXXG323000FD	D100
H11WXXH2B9000FD	D100
H11WXXH323000FD	D100
H12VXBG023D	D78
H12VXBG0B9D	D78
H12VXBH023D	D78
H12VXBH0B9D	D78
H12VXXG023D	D78
H12VXXG0B9D	D78
H12VXXH023D	D78
H12VXXH0B9D	D78
H12WXBBL49D	D100
H12WXBBL53D	D101
H12WXBDL49D	D100
H12WXBDL53D	D101
H12WXBG2B9000FD	D100, D111
H12WXBG323000FD	D100
H12WXBH2B9000FD	D100
H12WXBH323000FD	D100
H12WXXBL49D	D100
H12WXXBL53D	D101
H12WXXDL49D	D100
H12WXXDL53D	D101
H12WXXG2B9000FD	D100
H12WXXG323000FD	D100
H12WXXH2B9000FD	D100
H12WXXH323000FD	D100
H13413	C99
H13436	C101

Model No.	Section / Page No.
H13466	E27
H13473	C99, C100
H13499	C109, C110
H13529	C110
H13580	E27
H13584	E27
H13588	E27
H13648	C105, C106, C109, C110
H13676	C105, C106, C109, C110
H13716	C100
H13728	C105, C106, C107, C108, C109, C110
H13752	C107, C108, C109, C110
H14201	C99
H14202	C101
H14213	C99
H14215	C101
H14509	C105
H14510	C105, C109
H14515	E30
H14520	E30
H15VXBG023D	D78
H15VXBG0B9D	D78
H15VXBH023D	D78
H15VXBH0B9D	D78
H15VXXG023D	D78
H15VXXG0B9D	D78
H15VXXH023D	D78
H15VXXH0B9D	D78
H15WXBBL49D	D100
H15WXBBL53D	D101
H15WXBDL49D	D100
H15WXBDL53D	D101
H15WXBG2B9000FD	D100
H15WXBG323000FD	D100
H15WXBH2B9000FD	D100
H15WXBH323000FD	D100
H15WXXBL49D	D100
H15WXXBL53D	D101
H15WXXDL49D	D100
H15WXXDL53D	D101
H15WXXG2B9000FD	D100
H15WXXG323000FD	D100
H15WXXH2B9000FD	D100
H15WXXH323000FD	D100
H16VXBG023D	D78
H16VXBG0B9D	D78
H16VXBH023D	D78
H16VXBH0B9D	D78
H16VXXG023D	D78
H16VXXG0B9D	D78
H16VXXH023D	D78
H16VXXH0B9D	D78
H16WXBBL49D	D100
H16WXBBL53D	D101
H16WXBDL49D	D100
H16WXBDL53D	D101
H16WXBG2B9000FD	D100
H16WXBG323000FD	D100
H16WXBH2B9000FD	D100
H16WXBH323000FD	D100
H16WXXBL49D	D100
H16WXXBL53D	D101
H16WXXDL49D	D100
H16WXXDL53D	D101
H16WXXG2B9000FD	D100
H16WXXG323000FD	D100
H16WXXH2B9000FD	D100
H16WXXH323000FD	D100
H17408	E28, E29, E30, E31, E32, E33
H17509	D289
H17511	D289
H17512	D289
H17514	E30
H17519	E30
H17524	E30
H17705	E28, E29, E30, E31, E32, E33
H17706	E28, E29, E30, E31, E32, E33
H17811	C105, C106, C109, C110
H17813	C105, C106, C109, C110
H17817	C107, C108, C109, C110
H17VXBG023D	D78
H17VXBG0B9D	D78
H17VXBH023D	D78
H17VXBH0B9D	D78
H17VXXG023D	D78
H17VXXG0B9D	D78
H17VXXH023D	D78
H17VXXH0B9D	D78
H17WXBBL49D	D100
H17WXBBL53D	D101
H17WXBDL49D	D100
H17WXBDL53D	D101
H17WXBG2B9000FD	D100
H17WXBG323000FD	D100
H17WXBH2B9000FD	D100
H17WXBH323000FD	D100
H17WXXBL49D	D100
H17WXXBL53D	D101
H17WXXCL49D	D100
H17WXXDL53D	D101
H17WXXG2B9000FD	D100
H17WXXG323000FD	D100
H17WXXH2B9000FD	D100
H17WXXH323000FD	D100
H19102	C99
H1EVXBG023D	D78
H1EVXBG0B9D	D78
H1EVXBH023D	D78
H1EVXBH0B9D	D78
H1EVXXG023D	D78
H1EVXXG0B9D	D78
H1EVXXH023D	D78
H1EVXXH0B9D	D78
H1EWXBBL49D	D100
H1EWXBBL53D	D101
H1EWXBDL49D	D100
H1EWXBDL53D	D101
H1EWXBG2B9000FD	D100
H1EWXBG323000FD	D100
H1EWXBH2B9000FD	D100
H1EWXBH323000FD	D100
H1EWXXBL49D	D100
H1EWXXBL53D	D101
H1EWXXDL49D	D100
H1EWXXDL53D	D101
H1EWXXG2B9000FD	D100
H1EWXXG323000FD	D100
H1EWXXH2B9000FD	D100
H1EWXXH323000FD	D100
H21VXBG023D	D79
H21VXBG0B9D	D79
H21VXBH023D	D79
H21VXBH0B9D	D79
H21VXXG023D	D79
H21VXXG0B9D	D79
H21VXXH023D	D79
H21VXXH0B9D	D79
H21WXBBL49D	D102
H21WXBBL53D	D103
H21WXBCL49D	D102
H21WXBCL53D	D103
H21WXBG2B9000FD	D102
H21WXBG323000FD	D102
H21WXBH2B9000FD	D102
H21WXBH323000FD	D102
H21WXXBL49D	D102
H21WXXBL53D	D103
H21WXXCL49D	D102
H21WXXCL53D	D103
H21WXXG2B9000FD	D102
H21WXXG323000FD	D102
H21WXXH2B9000FD	D102
H21WXXH323000FD	D102
H22232	E30
H22VXBG023D	D79
H22VXBG0B9D	D79
H22VXBH023D	D79
H22VXBH0B9D	D79
H22VXXG023D	D79
H22VXXG0B9D	D79
H22VXXH023D	D79
H22VXXH0B9D	D79
H22WXBBL49D	D102
H22WXBBL53D	D103
H22WXBCL49D	D102
H22WXBCL53D	D103
H22WXBG2B9000FD	D102, D111
H22WXBG323000FD	D102

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Model No.	Section / Page No.
H22WXBH2B9000FD	D102
H22WXBH323000FD	D102
H22WXXBL49D	D102
H22WXXBL53D	D103
H22WXXCL49D	D102
H22WXXCL53D	D103
H22WXXG2B9000FD	D102
H22WXXG323000FD	D102
H22WXXH2B9000FD	D102
H22WXXH323000FD	D102
H24969	C99, C100
H25VXBG023D	D79
H25VXBG0B9D	D79
H25VXBH023D	D79
H25VXBH0B9D	D79
H25VXXG023D	D79
H25VXXG0B9D	D79
H25VXXH023D	D79
H25VXXH0B9D	D79
H25WXBBL49D	D102
H25WXBBL53D	D103
H25WXBCL49D	D102
H25WXBCL53D	D103
H25WXBG2B9000FD	D102
H25WXBG323000FD	D102
H25WXBH2B9000FD	D102
H25WXBH323000FD	D102
H25WXXBL49D	D102
H25WXXBL53D	D103
H25WXXCL49D	D102
H25WXXCL53D	D103
H25WXXG2B9000FD	D102
H25WXXG323000FD	D102
H25WXXH2B9000FD	D102
H25WXXH323000FD	D102
H26VXBG023D	D79
H26VXBG0B9D	D79
H26VXBH023D	D79
H26VXBH0B9D	D79
H26VXXG023D	D79
H26VXXG0B9D	D79
H26VXXH023D	D79
H26VXXH0B9D	D79
H26WXBBL49D	D102
H26WXBBL53D	D103
H26WXBCL49D	D102
H26WXBCL53D	D103
H26WXBG2B9000FD	D102
H26WXBG323000FD	D102
H26WXBH2B9000FD	D102
H26WXBH323000FD	D102
H26WXXBL49D	D102
H26WXXBL53D	D103
H26WXXCL49D	D102
H26WXXCL53D	D103
H26WXXG2B9000FD	D102
H26WXXG323000FD	D102
H26WXXH2B9000FD	D102
H26WXXH323000FD	D102
H27VXBG023D	D79
H27VXBG0B9D	D79
H27VXBH023D	D79
H27VXBH0B9D	D79
H27VXXG023D	D79
H27VXXG0B9D	D79
H27VXXH023D	D79
H27VXXH0B9D	D79
H27WXBBL49D	D102
H27WXBBL53D	D103
H27WXBCL49D	D102
H27WXBCL53D	D103
H27WXBG2B9000FD	D102
H27WXBG323000FD	D102
H27WXBH2B9000FD	D102
H27WXBH323000FD	D102
H27WXXBL49D	D102
H27WXXBL53D	D103
H27WXXCL49D	D102
H27WXXCL53D	D103
H27WXXG2B9000FD	D102
H27WXXG323000FD	D102
H27WXXH2B9000FD	D102
H27WXXH323000FD	D102
H2EVXBG023D	D79
H2EVXBG0B9D	D79
H2EVXBH023D	D79
H2EVXBH0B9D	D79
H2EVXXG023D	D79
H2EVXXG0B9D	D79
H2EVXXH023D	D79
H2EVXXH0B9D	D79
H2EWXBBL49D	D102
H2EWXBBL53D	D103
H2EWXBCL49D	D102
H2EWXBCL53D	D103
H2EWXBG2B9000FD	D102
H2EWXBG323000FD	D102
H2EWXBH2B9000FD	D102
H2EWXBH323000FD	D102
H2EWXXBL49D	D102
H2EWXXBL53D	D103
H2EWXXCL49D	D102
H2EWXXCL53D	D103
H2EWXXG2B9000FD	D102
H2EWXXG323000FD	D102
H2EWXXH2B9000FD	D102
H2EWXXH323000FD	D102
H31VXBG023D	D91
H31VXBG0B9D	D91
H31VXBH023D	D91
H31VXBH0B9D	D91
H31VXXG023D	D91
H31VXXG0B9D	D91
H31VXXH023D	D91
H31VXXH0B9D	D91
H31WXBBL49D	D113
H31WXBBL53D	D114
H31WXBCL49D	D113
H31WXBCL53D	D114
H31WXBG2B9000FD	D113, D118
H31WXBG323000FD	D113
H31WXBH2B9000FD	D113
H31WXBH323000FD	D113
H31WXXBL49D	D113
H31WXXBL53D	D114
H31WXXCL49D	D113
H31WXXCL53D	D114
H31WXXG2B9000FD	D113
H31WXXG323000FD	D113
H31WXXH2B9000FD	D113
H31WXXH323000FD	D113
H32VXBG023D	D91
H32VXBG0B9D	D91
H32VXBH023D	D91
H32VXBH0B9D	D91
H32VXXG023D	D91
H32VXXG0B9D	D91
H32VXXH023D	D91
H32VXXH0B9D	D91
H32WXBBL49D	D113
H32WXBBL53D	D114
H32WXBCL49D	D113
H32WXBCL53D	D114
H32WXBG2B9000FD	D113, D118
H32WXBG323000FD	D113
H32WXBH2B9000FD	D113
H32WXBH323000FD	D113
H32WXXBL49D	D113
H32WXXBL53D	D114
H32WXXCL49D	D113
H32WXXCL53D	D114
H32WXXG2B9000FD	D113, D118
H32WXXG323000FD	D113
H32WXXH2B9000FD	D113
H32WXXH323000FD	D113
H35VXBG023D	D91
H35VXBG0B9D	D91
H35VXBH023D	D91
H35VXBH0B9D	D91
H35VXXG023D	D91
H35VXXG0B9D	D91
H35VXXH023D	D91
H35VXXH0B9D	D91
H35WXBBL49D	D113
H35WXBBL53D	D114
H35WXBCL49D	D113
H35WXBCL53D	D114
H35WXBG2B9000FD	D113
H35WXBG323000FD	D113
H35WXBH2B9000FD	D113
H35WXBH323000FD	D113
H35WXXBL49D	D113
H35WXXBL53D	D114
H35WXXCL49D	D113

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Model No.	Section / Page No.
H35WXXCL53D	D114
H35WXXG2B9000FD	D113
H35WXXG323000FD	D113
H35WXXH2B9000FD	D113
H35WXXH323000FD	D113
H36VXBG023D	D91
H36VXBG0B9D	D91
H36VXBH023D	D91
H36VXBH0B9D	D91
H36VXXG023D	D91
H36VXXG0B9D	D91
H36VXXH023D	D91
H36VXXH0B9D	D91
H36WXBBL49D	D113
H36WXBBL53D	D114
H36WXBCL49D	D113
H36WXBCL53D	D114
H36WXBG2B9000FD	D113
H36WXBG323000FD	D113
H36WXBH2B9000FD	D113
H36WXBH323000FD	D113
H36WXXBL49D	D113
H36WXXBL53D	D114
H36WXXCL49D	D113
H36WXXCL53D	D114
H36WXXG2B9000FD	D113
H36WXXG323000FD	D113
H36WXXH2B9000FD	D113
H36WXXH323000FD	D113
H37VXBG023D	D91
H37VXBG0B9D	D91
H37VXBH023D	D91
H37VXBH0B9D	D91
H37VXXG023D	D91
H37VXXG0B9D	D91
H37VXXH023D	D91
H37VXXH0B9D	D91
H37WXBBL49D	D113
H37WXBBL53D	D114
H37WXBCL49D	D113
H37WXBCL53D	D114
H37WXBG2B9000FD	D113
H37WXBG323000FD	D113
H37WXBH2B9000FD	D113
H37WXBH323000FD	D113
H37WXBL49D	D113
H37WXBL53D	D114
H37WXXCL49D	D113
H37WXXCL53D	D114
H37WXXG2B9000FD	D113
H37WXXG323000FD	D113
H37WXXH2B9000FD	D113
H37WXXH323000FD	D113
H3EVXBG023D	D91
H3EVXBG0B9D	D91
H3EVXBH023D	D91
H3EVXBH0B9D	D91
H3EVXXG023D	D91
H3EVXXG0B9D	D91
H3EVXXH023D	D91
H3EVXXH0B9D	D91
H3EWXBBL49D	D113
H3EWXBBL53D	D114
H3EWXBCL49D	D113
H3EWXBCL53D	D114
H3EWXBG2B9000FD	D113
H3EWXBG323000FD	D113
H3EWXBH2B9000FD	D113
H3EWXBH323000FD	D113
H3EWXXBL49D	D113
H3EWXXBL53D	D114
H3EWXXCL49D	D113
H3EWXXCL53D	D114
H3EWXXG2B9000FD	D113
H3EWXXG323000FD	D113
H3EWXXH2B9000FD	D113
H3EWXXH323000FD	D113
HA1VXBG023A	D77
HA1VXBG0G9A	D77
HA1VXBH023A	D77
HA1VXBH0G9A	D77
HA1VXLG023A	D77
HA1VXLG0G9A	D77
HA1VXLH023A	D77
HA1VXLH0G9A	D77
HA1WXBG2G9000FA	D99, D111
HA1WXBH2G9000FA	D99
HA1WXLG2G9000FA	D99
HA1WXLH2G9000FA	D99
HA2VXBG023A	D77
HA2VXBG0G9A	D77
HA2VXBH023A	D77
HA2VXBH0G9A	D77
HA2VXLG023A	D77
HA2VXLG0G9A	D77
HA2VXLH023A	D77
HA2VXLH0G9A	D77
HA2WXBG2G9000FA	D99, D111
HA2WXBH2G9000FA	D99
HA2WXLG2G9000FA	D99
HA2WXLH2G9000FA	D99
HA5VXBG023A	D77
HA5VXBG0G9A	D77
HA5VXBH023A	D77
HA5VXBH0G9A	D77
HA5VXLG023A	D77
HA5VXLG0G9A	D77
HA5VXLH023A	D77
HA5VXLH0G9A	D77
HA5WXBG2G9000FA	D99
HA5WXBH2G9000FA	D99
HA5WXLG2G9000FA	D99
HA5WXLH2G9000FA	D99
HA6VXBG023A	D77
HA6VXBG0G9A	D77
HA6VXBH023A	D77
HA6VXBH0G9A	D77
HA6VXLG023A	D77
HA6VXLG0G9A	D77
HA6VXLH023A	D77
HA6VXLH0G9A	D77
HA6WXBG2G9000FA	D99
HA6WXBH2G9000FA	D99
HA6WXLG2G9000FA	D99
HA6WXLH2G9000FA	D99
HA7VXBG023A	D77
HA7VXBG0G9A	D77
HA7VXBH023A	D77
HA7VXBH0G9A	D77
HA7VXLG023A	D77
HA7VXLG0G9A	D77
HA7VXLH023A	D77
HA7VXLH0G9A	D77
HA7WXBG2G9000FA	D99
HA7WXBH2G9000FA	D99
HA7WXLG2G9000FA	D99
HA7WXLH2G9000FA	D99
HAEVXBG023A	D77
HAEVXBG0G9A	D77
HAEVXBH023A	D77
HAEVXBH0G9A	D77
HAEVXLG023A	D77
HAEVXLG0G9A	D77
HAEVXLH023A	D77
HAEVXLH0G9A	D77
HAEWXBG2G9000FA	D99
HAEWXBH2G9000FA	D99
HAEWXLG2G9000FA	D99
HAEWXLH2G9000FA	D99
HB1VXBG023A	D76
HB1VXBG0G9A	D76
HB1VXBH023A	D76
HB1VXBH0G9A	D76
HB1VXLG023A	D76
HB1VXLG0G9A	D76
HB1VXLH023A	D76
HB1VXLH0G9A	D76
HB1WXBG2G9000FA	D98
HB1WXBH2G9000FA	D98
HB1WXLG2G9000FA	D98
HB1WXLH2G9000FA	D98
HB2VXBG023A	D76
HB2VXBG0G9A	D76
HB2VXBH023A	D76
HB2VXBH0G9A	D76
HB2VXLG023A	D76
HB2VXLG0G9A	D76
HB2VXLH023A	D76
HB2VXLH0G9A	D76
HB2WXBG2G9000FA	D98, D111
HB2WXBH2G9000FA	D98
HB2WXLG2G9000FA	D98
HB2WXLH2G9000FA	D98

Model No.	Section / Page No.
HB5VXBG023A	D76
HB5VXBG0G9A	D76
HB5VXBH023A	D76
HB5VXBH0G9A	D76
HB5VXLG023A	D76
HB5VXLG0G9A	D76
HB5VXLH023A	D76
HB5VXLH0G9A	D76
HB5WXBG2G9000FA	D98
HB5WXBH2G9000FA	D98
HB5WXLG2G9000FA	D98
HB5WXLH2G9000FA	D98
HB6VXBG023A	D76
HB6VXBG0G9A	D76
HB6VXBH023A	D76
HB6VXBH0G9A	D76
HB6VXLG023A	D76
HB6VXLG0G9A	D76
HB6VXLH023A	D76
HB6VXLH0G9A	D76
HB6WXBG2G9000FA	D98
HB6WXBH2G9000FA	D98
HB6WXLG2G9000FA	D98
HB6WXLH2G9000FA	D98
HB7VXBG023A	D76
HB7VXBG0G9A	D76
HB7VXBH023A	D76
HB7VXBH0G9A	D76
HB7VXLG023A	D76
HB7VXLG0G9A	D76
HB7VXLH023A	D76
HB7VXLH0G9A	D76
HB7WXBG2G9000FA	D98
HB7WXBH2G9000FA	D98
HB7WXLG2G9000FA	D98
HB7WXLH2G9000FA	D98
HBEVXBG023A	D76
HBEVXBG0G9A	D76
HBEVXBH023A	D76
HBEVXBH0G9A	D76
HBEVXLG023A	D76
HBEVXLG0G9A	D76
HBEVXLH023A	D76
HBEVXLH0G9A	D76
HBEWXBG2G9000FA	D98
HBEWXBH2G9000FA	D98
HBEWXLG2G9000FA	D98
HBEWXLH2G9000FA	D98
HBNVXBG023A	D76
HBNVXBG0G9A	D76
HBNVXBH023A	D76
HBNVXBH0G9A	D76
HBNWXBG2G9000FA	D98
HBNWXBH2G9000FA	D98
HBPVXBG023A	D76
HBPVXBG0G9A	D76
HBPVXBH023A	D76
HBPVXBH0G9A	D76
HBPWXBG2G9000FA	D98
HBPWXBH2G9000FA	D98
HBQWXBG2G9000FA	D98
HM*VX2049A	D13
HM2VX2049A	D4, D13, D15
HM5VX2049A	D4, D13, D17
HMBVX00XXA	D4, D12
HMCVX00XXA	D4, D12
HMDXX1	D34, D38, D42, D54
HMDXX2	D34, D38, D42, D54
HMEVX2049A	D4, D9, D10, D11, D13, D14
HMNVX2049A	D4, D10, D11, D13, D15
HMPVX2049A	D4, D13, D16
HMQVX2049A	D4, D13, D16
HV Valve Series	E62
HVN4200-8	E62
HVN4400	E62
HVN4400-10	E62
HVN4400-15	E62
HVRK420001	E62
HVRK440001	E62
J	
JJDX10-A	D255
JJDX15-A	D255
JJDX20-A	D255
JJDX25-A	D255
JJDX30-A	D255
JJDX35	D255
K	
K012003	C107, C108
K013001	C101
K022090	D278
K022091	D278
K022095	D279
K022101	D278
K0251035	D290
K0252035	D290
K0253035	D290
K032270	D289
K043011	D289
K043012	D289
K0451025	C100, D290
K0452025	C100, D290
K0453025	C100, D290
K053010	C110
K053011	C110
K053018	C106
K053019	C106
K053022	C105, C109
K053023	C109
K053025	C105, C109
K053026	C105, C109
K053064	C106, C110
K053065	C106, C110
K053067	C106, C110
K053069	C106, C110
K053070	C106, C110
K053075	C105, C109
K053076	C105, C109
K053077	C105, C109
K053078	C105, C109
K053111	C107, C108, C109
K053113	C107, C108, C109
K053114	C107, C108, C109
K053115	C107, C108
K053116	C107, C108, C109
K053143	C110
K053145	C110
K053146	C110
K053157	C110
K053159	C110
K053218	C105, C109
K053219	C106, C110
K053220	C105, C109
K053221	C106, C110
K06020003	D291
K062005	C101
K0652035	C99
K0653035	C99, D290
K0655035	C99, D290
K0656035	C99, D290
K0658035	C99, D290
K0659035	C99, D290
K0852025	C99
K0853025	C99, D290
K0855025	C99, D290
K0856025	C99, D290
K0858025	C99, D290
K0859025	C99, D290
K092020	C105, C106, C109, C110
K092034	C105, C106, C109, C110
K092046	C107, C108, C109, C110
K103035	C105, C106, C109, C110
K103053	C105, C106, C109, C110
K103061	C107, C108, C109, C110
K112045	C101
K112046	C101
K123018	C109
K123021	C109
K123024	C109
K1351045	C101
K1355045	C101
K1356045	C101
K135804553	C101
K135904553	C101
K14213	C100
K142230	D278, D279, D302
K142231	D278, D302
K142270	D278, D302
K152003	C99, C100, D291
K162001	D291

Model No.	Section / Page No.
K1753035	D290
K175803553	D290
K175903553	D290
K183001	C99, C100
K183012	C101
K183047	C99
K183049	C105, C106, C109, C110
K183057	C105, C106, C109, C110
K183058	C107, C108, C109, C110
K183077	D289
K183082	D289
K183083	D289
K183084	D289
K183108	C99
K1853025	D290
K185802553	D290
K185902553	D290
K202001	C105, C106, C109, C110
K202002	C105, C106, C109, C110
K212001	C105, C106, C109, C110
K212002	C105, C106, C109, C110
K21R02012L	D291
K21R02025L	D291, E27
K21R02037L	D291, E27
K21R02050L	D291, E27
K21R02075L	D291, E27
K2351035	D290
K2352035	D290
K2353035	D290
K255202549	C100
K2553025	C100
K272002	C101
K272004	C99
K313028	C107, C108, C109, C110
K313029	C107, C108, C109, C110
K322004	C101
K322012	D291
K322013	D291
K323027	C110
K343001	C99, C100
K343002	C99, C100
K343042	C101
K352056	C110
K352064	C101
K352073	C109
K352074	C109
K352075	C109
K352076	C105, C106
K352077	C105, C106
K352078	C107
K352080	C108
K352083	C110
K352124	D291
K352125	D291
K352126	D291
K352127	D291
K352128	D291
K352129	D291
K352130	D291
K352131	D291
K352166	C99, C100
K352276	C105, C106
K352277	C105, C106
K352355	D291
K352359	D291
K352360	D291
K352362	D291
K352366	C99, C100
K362307	D289
K362308	D289
K41RB72008	C100
K41RB72009	C100
K41RB72011	C99, C100
K41RB72121	C105, C106, C109, C110
K41RB72143	C107, C108, C109, C110
K41RB72210	C106
K41RB72211	C106
K41RB72221	C105, C106, C109, C110
K423001	C100
K423002	C100
K423006	C99
K423010	C99
K423020	C101
K423022	C101
K4520N14060	D288
K4520N14160	D288
K4520N14300	D288
K472001C	D289
K472002C	D289
K472003C	D289
K472009C	D289
K473010	C101
K473011	C101
K473014	C105, C106, C109, C110
K473015	C105, C106, C109, C110
K473016	C107, C108, C109, C110
K493002	C105, C106, C109, C110
K493009	C105, C106, C109, C110
K493016	C107, C108, C109, C110
K563015	C105
K563016	C106, C110
K563017	C105
K563021	C106, C110
K563027	C110
K593003	C99, C100, C102
K593007	C102
K593010	C99, C100, C102
K593014	C99, C100, C102
K593014	D290
K593025	C99, C100, C102
K593025	D290
K593035	C99, C100, C102
K593035	D290
K593041	C99, C100, C102
K593060	D290
K593071	D290
K593081	D290
K593094	C102
K593097	C101, C102
K593098	C102
K593107	C101
K593108	C101, C102
K593111	C102
K593112	C101
K593125	D290
K593185	C102
K593254	C102
K593271	C102
K593274	D290

L

Model No.	Section / Page No.
L55402308C	D285
L55403308C	D285
L55405305C	D287
L55405307C	D286
L55406307C	D286
L55407305C	D286
L55407306C	D286
L55407314C	D286
L55408302C	D285
L55408303C	D285
L55408311C	D285
L55411308C	D285
L55414307C	D286
L55414314C	D287
L6543	D298
L65431102	D278
L6548	D298
L65481102	D279
L6553	D296
L6553810249	D278
L6553810253	D278
L6553910249	D278
L6553910253	D278
L6558	D296
L6558810249	D279
L6558810253	D279
L6558910249	D279
L6558910253	D279
L6643	D298
L66431211	D278
L66431221	D278
L66431231	D278
L6648	D298
L66481211	D279

Model No.	Section / Page No.
L66481221	D279
L66481231	D279
L6653	D297
L6653821149	D278
L6653821153	D278
L6653822149	D278
L6653822153	D278
L6653823149	D278
L6653823153	D278
L6653921149	D278
L6653921153	D278
L6653922149	D278
L6653922153	D278
L6653923149	D278
L6653923153	D278
L6658	D297
L6658821149	D279
L6658821153	D279
L6658822149	D279
L6658822153	D279
L6658823149	D279
L6658823153	D279
L6658921149	D279
L6658921153	D279
L6658922149	D279
L6658922153	D279
L6658923149	D279
L6658923153	D279
L6743	D297
L67431102	D278
L6748	D297
L67481102	D279
L6753	D296
L6753810249	D278
L6753810253	D278
L6753910249	D278
L6753910253	D278
L6758	D296
L6758810249	D279
L6758810253	D279
L6758910249	D279
L6758910253	D279
L684	D301
L68441102	D280
L68481102	D281
L685	D299
L6854810249	D280
L6854810253	D280
L6854910249	D280
L6854910253	D280
L6858810249	D281
L6858810253	D281
L6858910249	D281
L6858910253	D281
L694	D301
L69441211	D280
L69441221	D280
L69441231	D280
L69481211	D281
L69481221	D281
L69481231	D281
L695	D300
L6954821149	D280
L6954821153	D280
L6954822149	D280
L6954822153	D280
L6954823149	D280
L6954823153	D280
L6954921149	D280
L6954921153	D280
L6954922149	D280
L6954922153	D280
L6954923149	D280
L6954923153	D280
L6958821149	D281
L6958821153	D281
L6958822149	D281
L6958822153	D281
L6958823149	D281
L6958823153	D281
L6958921149	D281
L6958921153	D281
L6958922149	D281
L6958922153	D281
L6958923149	D281
L6958923153	D281
L704	D300
L70441102	D280
L70481102	D281
L705	D299
L7054810249	D280
L7054810253	D280
L7054910249	D280
L7054910253	D280
L7058810249	D281
L7058810253	D281
L7058910249	D281
L7058910253	D281
LV2N2BSS	E51
LV2N3B	E51
LV3N3B	E51
LV3N4BSS	E51
LV3N6B	E51
LV4N4BSS	E51
LV4N6B	E51
LV6N6B	E51
LV6N8BSS	E51
LV6NAB	E51
LV8N8BSS	E51
LV8NAB	E51
LVANAB	E51
LVBNCB	E51
LVBNCBSS	E51
LVCNCB	E51
LVCNCBSS	E51
M	
M012001	E33
M012002	E33
M012003	E33
M012005	E33
M013005	E30
M013007	E30
M013009	E30
M013011	E29
M013012	E29
M013013	E29
M013014	E29
M013015	E29
M013016	E29
M013017	E29
M01921819	E24
M01924619	E24
M01931819	E24
M01934619	E24
M01941819	E24
M01944619	E24
M01961819	E24
M01964619	E24
M032*18	E27
M032*24	E27
M032*46	E27
M032*54	E27
M03321833	E24
M03324633	E24
M03331833	E24
M03334633	E24
M03341833	E24
M03344633	E24
M053003	E27
M053007	E27
M053019	E27
M053020	E27
M053030	E27
M053033	E27
M053038	E27
M053039	E27
M05422443	E23
M05422448	E23
M05422488	E24
M05425443	E23
M05425448	E23
M05425488	E24
M05432443	E23
M05432448	E23
M05432488	E24
M05435443	E23
M05435448	E23
M05435488	E24
M05442443	E23
M05442448	E23
M05442488	E24
M05445443	E23
M05445448	E23
M05445488	E24
M05462443	E23
M05462448	E23

Model No.	Section / Page No.
M05465443	E23
M05465448	E23
M05822451	E23
M05825451	E23
M05832451	E23
M05835451	E23
M05842451	E23
M05845451	E23
M05862451	E23
M05865451	E23
M062*03	E28
M062*05	E29
M062*19	E30
M062*26	E30
M062*30	E31
M062*33	E31
M062*40	E28
M062*43	E28
M062*48	E29
M062*51	E29
M062*54	E33
M062*59	E29
M062*62	E32
M062*63	E32
M062*64	E32
M062*65	E32
M062*74	E32
M062*78	E32
M062*84	E33
M062*85	E33
M062*88	E28
M062*95	E32
M062*96	E32
M062*97	E32
M062*98	E32
M062*99	E29
M06221840	E24
M06224640	E24
M06231840	E24
M06234640	E24
M06241840	E24
M06244640	E24
M06421851	E23
M06421859	E23
M06424651	E23
M06424659	E23
M06431851	E23
M06431859	E23
M06434651	E23
M06434659	E23
M06441851	E23
M06441859	E23
M06444651	E23
M06444659	E23
M06461851	E23
M06461859	E23
M06464651	E23
M06464659	E23
M06521851	E23
M06521859	E23
M06524651	E23
M06524659	E23
M06531851	E23
M06531859	E23
M06534651	E23
M06534659	E23
M06541851	E23
M06541859	E23
M06544651	E23
M06544659	E23
M06561851	E23
M06561859	E23
M06564651	E23
M06564659	E23
M073006	E33
M073009	E28
M073016	E29, E30, E32, E33
M073017	E33
M073022	E28
M073026	E29, E30, E32, E33
M073028	E33
M073033	E28
M073037	E29, E30, E32, E33
M073042	E28
M073046	E29, E30, E32, E33
M083003	E32
M083004	E32
M083005	E32
M083008	E32
M08421830	E24
M08424630	E24
M08431830	E24
M08434630	E24
M08441830	E24
M08444630	E24
M08521805	E24
M08521826	E24
M08521843	E23
M08521848	E23
M08521851	E23
M08521888	E24
M08524605	E24
M08524626	E24
M08524643	E23
M08524648	E23
M08524651	E23
M08524688	E24
M08531805	E24
M08531826	E24
M08531843	E23
M08531848	E23
M08531851	E23
M08531888	E24
M08534605	E24
M08534626	E24
M08534643	E23
M08534648	E23
M08534651	E23
M08534688	E24
M08541805	E24
M08541826	E24
M08541843	E23
M08541848	E23
M08541851	E23
M08541888	E24
M08544605	E24
M08544626	E24
M08544643	E23
M08544648	E23
M08544651	E23
M08544688	E24
M08561805	E24
M08561826	E24
M08561843	E23
M08561848	E23
M08561851	E23
M08564605	E24
M08564626	E24
M08564643	E23
M08564648	E23
M08564651	E23
M09521803	E24
M09521805	E24
M09521843	E23
M09524603	E24
M09524605	E24
M09524643	E23
M09531803	E24
M09531805	E24
M09531843	E23
M09534603	E24
M09534605	E24
M09534643	E23
M09541803	E24
M09541805	E24
M09541843	E23
M09544603	E24
M09544605	E24
M09544643	E23
M09561803	E24
M09561805	E24
M09561843	E23
M09564603	E24
M09564605	E24
M09564643	E23
M09621805	E24
M09621843	E23
M09624605	E24
M09624643	E23
M09631805	E24
M09631843	E23
M09634605	E24
M09634643	E23
M09641805	E24
M09641843	E23
M09644605	E24

Model No.	Section / Page No.
M09644643	E23
M09661805	E24
M09661843	E23
M09664605	E24
M09664643	E23
M09721848	E23
M09724648	E23
M09731848	E23
M09734648	E23
M09741848	E23
M09744648	E23
M09761848	E23
M09764648	E23
M09821848	E23
M09824648	E23
M09831848	E23
M09834648	E23
M09841848	E23
M09844648	E23
M09861848	E23
M09864648	E23
M103012	E28, E29, E31, E33
M103047	E28, E29, E31, E33
M103066	E28, E29, E31, E33
M103108	E28, E29, E31, E33
M103111	E32, E33
M103112	E32, E33
M103113	E32, E33
M103114	E32, E33
M122001	E27
M122002	E27
M122003	E27
M122004	E27
M122005	E27
M122006	E27
M133003	E28, E29
M133012	E28, E29
M133018	E28, E29
M163005	E31
M163012	E31
M193002	E31
M193005	E31
M232001	E26
M232002	E26
M232003	E26
M232004	E26
M232005	E26
M232006	E26
M242001	E27
M242002	E27
M242003	E27
M242004	E27
M242006	E27
M242007	E27
M242008	E27
M242009	E27
M242011	E27
M242012	E27
M242013	E27
M242014	E27
M243008	E32
M243019	E32
M243027	E32
M243028	E30
M243032	E32
M243036	E30
M243043	E32
M243044	E32
M243045	E32
M273002	E28
M273006	E28
M273007	E28
M273022	E28
M273023	E28
M273024	E28
M303005	E29
M303006	E29
M303007	E29
M303008	E29
M313004	E27
M313011	E27
M313013	E27
M313017	E27
M323005	E28
M323006	E28
M323007	E28
M333013	E28, E29
M333014	E28
M333016	E28
M343018	E30
M343019	E30
M343022	E30
M343027	E30
M343028	E30
M343032	E31
M343038	E31
M343039	E31
M363002	E30
M373014	E27
M373020	E27
M373033	E27
M373039	E27
M373060	E27
M373064	E27
M373074	E27
M373076	E27
M373102	E27
M373103	E27
M373116	E27
M373118	E27
M373142	E27
M373146	E27
M373156	E27
M383007	E30
M383011	E30
M383018	E30
M383029	E30
M383032	E32
M383033	E32
M383034	E32
M413015	E32
M413016	E32
M413017	E32
M423002	E31
M423004	E31
M443002	E28
M443003	E28
M493006	E32
M493007	E32
M493008	E32
M493009	E31
M493010	E31
M493011	E32
M493012	E32
M493014	E32
M493015	E30
M493020	E30
M493022	E31
M493023	E31
M493024	E31
M493026	E32
M493027	E32
M493037	E32
M493038	E32
M523009	E32
M523010	E32
M523011	E32
M553004	E28
M553005	E28
M563002	E32, E33
M563006	E32, E33
M563007	E32
M563008	E32
M563009	E32
M563014	E32, E33
M563016	E32
M573001	E31
M573003	E31
M573004	E31
M573011	E31
MCS10A05PDL	C84
MFSA05DB	C87
MFSA12DB	C87
MFUA05DB	C87
MFUA12DB	C87
MMCS‡‡A05FM5	C83
MMCS‡‡A12FF1	C83
MMCU‡‡A05F	C83
MMCU‡‡A12F	C83
MMDVA1	D34, D38, D42, D54
MMDVA2	D34, D38, D42, D54, D61
MMFS##A05FM5	C83

Model No.	Section / Page No.
MMFS##A12FF1	C83
MMFS6A00M3	C85
MMFU##A05F	C83
MMFU##A12F	C83
MMFU**A**F	C83
N	
N1641001	F15
N1642003	F15
N1643003	F15
N31431091	C98
N31441091	C98
N31461091	C98
N31471091	C98
N3153904549	C95
N3153904553	C95
N3154904549	C95
N3154904553	C95
N3156904549	C95
N3156904553	C95
N3157904549	C95
N3157904553	C95
N32471091	C98
N32481091	C98
N32491091	C98
N3257904753	C97
N3258904753	C97
N3259904753	C97
N35431091	C98
N35441091	C98
N35461091	C98
N35471091	C98
N3553904549	C95
N3553904553	C95
N3554904549	C95
N3554904553	C95
N3556904549	C95
N3556904553	C95
N3557904549	C95
N3557904553	C95
N36471091	C98
N36481091	C98
N36491091	C98
N3657904753	C97
N3658904753	C97
N3659904753	C97
N37431091	C98
N37441091	C98
N37461091	C98
N37471091	C98
N3753904549	C95
N3753904553	C95
N3754904549	C95
N3754904553	C95
N3756904549	C95
N3756904553	C95
N3757904549	C95
N3757904553	C95
N38471091	C98
N38481091	C98
N38491091	C98
N3857904753	C97
N3858904753	C97
N3859904753	C97
P	
P01698	D288
P04062	D288
P04063	D288
P0566202	D12
P0568800	D9
P2D2W3226C5	D59
P2D8V32C5	D59
P2FA22-15	C26
P2FCA442	D133, D257
P2FCA445	D133, D257
P2FCA449	D133, D257
P2FCA453	D133, D257
P2FCA457	D133, D257
P2FCB449	C6
P2FCB453	C6
P2FCT446	C22
P2FCV446	C22
P2FP13N4C	C68
P2FP13N4D	C68
P2FP1P	C6
P2FS13N1AE49	C64
P2LAX	C30, C31
P2LAX311VS	E15
P2LAX311VV	E15
P2LAX391ESHDDB47	C16
P2LAX391ESHDDB48	C16
P2LAX391ESHDDG47	C16
P2LAX391ESHDDG48	C16
P2LAX391ESNDD7B9	C12
P2LAX391ESNDDB49	C12
P2LAX391ESNDDB53	C12
P2LAX391ESNDDG49	C12
P2LAX391ESNDDG53	C12
P2LAX391ESNXB549	C12
P2LAX391ESNXB553	C12
P2LAX391PS	C19
P2LAX391VS	E15
P2LAX391VV	E15
P2LAX511VS	E15
P2LAX511VV	E15
P2LAX591EEHDDB47	C17
P2LAX591EEHDDB48	C17
P2LAX591EEHDDG47	C17
P2LAX591EEHDDG48	C17
P2LAX591EENDD7B9	C14
P2LAX591EENDDB49	C14
P2LAX591EENDDB53	C14
P2LAX591EENDDG49	C14
P2LAX591EENDDG53	C14
P2LAX591EENXB549	C14
P2LAX591EENXB553	C14
P2LAX591ESHDDB47	C16
P2LAX591ESHDDB48	C16
P2LAX591ESHDDG47	C16
P2LAX591ESHDDG48	C16
P2LAX591ESNDD7B9	C13
P2LAX591ESNDDB49	C13
P2LAX591ESNDDB53	C13
P2LAX591ESNDDG49	C13
P2LAX591ESNDDG53	C13
P2LAX591ESNXB549	C13
P2LAX591ESNXB553	C13
P2LAX591PP	C19
P2LAX591PS	C19
P2LAX591VS	E15
P2LAX591VV	E15
P2LAX61111	E15
P2LAX61122	E15
P2LAX69111	E15
P2LAX69122	E15
P2LAX691EEHDDB47	C17
P2LAX691EEHDDB48	C17
P2LAX691EEHDDG47	C17
P2LAX691EEHDDG48	C17
P2LAX691EENDD7B9	C15
P2LAX691EENDDB49	C15
P2LAX691EENDDB53	C15
P2LAX691EENDDG49	C15
P2LAX691EENDDG53	C15
P2LAX691EENXB549	C15
P2LAX691EENXB553	C15
P2LAX691PP	C19
P2LAX81111	E15
P2LAX81122	E15
P2LAX89111	E15
P2LAX89122	E15
P2LAX891EEHDDB47	C17
P2LAX891EEHDDB48	C17
P2LAX891EEHDDG47	C17
P2LAX891EEHDDG48	C17
P2LAX891EENDD7B9	C15
P2LAX891EENDDB49	C15
P2LAX891EENDDB53	C15
P2LAX891EENDDG49	C15
P2LAX891EENDDG53	C15
P2LAX891EENXB549	C15
P2LAX891EENXB553	C15
P2LAX891PP	C19
P2LAXBXSK1	C29
P2LAXGAXG##NP	C21
P2LAXGAXN##NP	C21
P2LAXK20P	C21
P2LAXK84P	C21
P2LAXK87P	C21
P2LAXMAXG##NP	C21
P2LAXMAXN##NP	C21
P2LAXSK1	C29
P2LAXSK2	C29
P2LAZ311EENDBB49	C3
P2LAZ311EENDBB53	C3
P2LAZ311ESNDBB49	C3
P2LAZ311ESNDBB53	C3

Model No.	Section / Page No.
P2LAZ391EENDBB49	C3
P2LAZ391EENDBB53	C3
P2LAZ391ESNDBB49	C3
P2LAZ391ESNDBB53	C3
P2LAZ391PS	C5
P2LAZ511EENDBB49	C3
P2LAZ511EENDBB53	C3
P2LAZ511ESNDBB49	C3
P2LAZ511ESNDBB53	C3
P2LAZ591EENDBB49	C3
P2LAZ591EENDBB53	C3
P2LAZ591ESNDBB49	C3
P2LAZ591ESNDBB53	C3
P2LAZ591PP	C5
P2LAZ591PS	C5
P2LAZ611EENDBB49	C3
P2LAZ611EENDBB53	C3
P2LAZ691EENDBB49	C3
P2LAZ691EENDBB53	C3
P2LAZ711EENDBB49	C4
P2LAZ711EENDBB53	C4
P2LAZ791EENDBB49	C4
P2LAZ791EENDBB53	C4
P2LAZ811EENDBB49	C4
P2LAZ811EENDBB53	C4
P2LAZ891EENDBB49	C4
P2LAZ891EENDBB53	C4
P2LBX	C32, C33, C34
P2LBX312JJ	E16
P2LBX312VS	E15
P2LBX312VV	E15
P2LBX392ESHDDB47	C16
P2LBX392ESHDDB48	C16
P2LBX392ESHDDG47	C16
P2LBX392ESHDDG48	C16
P2LBX392ESNDD7B9	C12
P2LBX392ESNDDB49	C12
P2LBX392ESNDDB53	C12
P2LBX392ESNDDG49	C12
P2LBX392ESNDDG53	C12
P2LBX392ESNXB549	C12
P2LBX392ESNXB553	C12
P2LBX392JJ	E16
P2LBX392PS	C19
P2LBX392VS	E15
P2LBX392VV	E15
P2LBX512JJ	E16
P2LBX512VS	E15
P2LBX512VV	E15
P2LBX512ZS	E16
P2LBX512ZZ	E16
P2LBX592EEHDDB47	C17
P2LBX592EEHDDB48	C17
P2LBX592EEHDDG47	C17
P2LBX592EEHDDG48	C17
P2LBX592EENDD7B9	C14
P2LBX592EENDDB49	C14
P2LBX592EENDDB53	C14
P2LBX592EENDDG49	C14
P2LBX592EENDDG53	C14
P2LBX592EENXB549	C14
P2LBX592EENXB553	C14
P2LBX592ESHDDB47	C16
P2LBX592ESHDDB48	C16
P2LBX592ESHDDG47	C16
P2LBX592ESHDDG48	C16
P2LBX592ESNDD7B9	C13
P2LBX592ESNDDB49	C13
P2LBX592ESNDDB53	C13
P2LBX592ESNDDG49	C13
P2LBX592ESNDDG53	C13
P2LBX592ESNXB549	C13
P2LBX592ESNXB553	C13
P2LBX592JJ	E16
P2LBX592PP	C19
P2LBX592PS	C19
P2LBX592VS	E15
P2LBX592VV	E15
P2LBX592ZS	E16
P2LBX592ZZ	E16
P2LBX61211	E15
P2LBX61222	E15
P2LBX69*PP	C19
P2LBX69211	E15
P2LBX69222	E15
P2LBX692EEHDDB47	C17
P2LBX692EEHDDB48	C17
P2LBX692EEHDDG47	C17
P2LBX692EEHDDG48	C17
P2LBX692EENDD7B9	C15
P2LBX692EENDDB49	C15
P2LBX692EENDDB53	C15
P2LBX692EENDDG49	C15
P2LBX692EENDDG53	C15
P2LBX692EENXB549	C15
P2LBX692EENXB553	C15
P2LBX81211	E15
P2LBX81222	E15
P2LBX89211	E15
P2LBX89222	E15
P2LBX892EEHDDB47	C17
P2LBX892EEHDDB48	C17
P2LBX892EEHDDG47	C17
P2LBX892EEHDDG48	C17
P2LBX892EENDD7B9	C15
P2LBX892EENDDB49	C15
P2LBX892EENDDB53	C15
P2LBX892EENDDG49	C15
P2LBX892EENDDG53	C15
P2LBX892EENXB549	C15
P2LBX892EENXB553	C15
P2LBX892PP	C19
P2LBXGAXG##NP	C21
P2LBXGAXN##NP	C21
P2LBXK20P	C21
P2LBXK84P	C21
P2LBXK87P	C21
P2LBXMAXG##NP	C21
P2LBXMAXN##NP	C21
P2LBXSK1	C29
P2LBZ312EENDBB49	C3
P2LBZ312EENDBB53	C3
P2LBZ312ESNDBB49	C3
P2LBZ312ESNDBB53	C3
P2LBZ392EENDBB49	C3
P2LBZ392EENDBB53	C3
P2LBZ392ESNDBB49	C3
P2LBZ392ESNDBB53	C3
P2LBZ392PS	C5
P2LBZ512EENDBB49	C3
P2LBZ512EENDBB53	C3
P2LBZ512ESNDBB49	C3
P2LBZ512ESNDBB53	C3
P2LBZ592EENDBB49	C3
P2LBZ592EENDBB53	C3
P2LBZ592ESNDBB49	C3
P2LBZ592ESNDBB53	C3
P2LBZ592PP	C5
P2LBZ592PS	C5
P2LBZ612EENDBB49	C3
P2LBZ612EENDBB53	C3
P2LBZ692EENDBB49	C3
P2LBZ692EENDBB53	C3
P2LBZ712EENDBB49	C4
P2LBZ712EENDBB53	C4
P2LBZ792EENDBB49	C4
P2LBZ792EENDBB53	C4
P2LBZ812EENDBB49	C4
P2LBZ812EENDBB53	C4
P2LBZ892EENDBB49	C4
P2LBZ892EENDBB53	C4
P2LCX	C35, C36
P2LCX313VS	E15
P2LCX313VV	E15
P2LCX393ESHDDB47	C16
P2LCX393ESHDDB48	C16
P2LCX393ESHDDG47	C16
P2LCX393ESHDDG48	C16
P2LCX393ESNDD7B9	C12
P2LCX393ESNDDB49	C12
P2LCX393ESNDDB53	C12
P2LCX393ESNDDG49	C12
P2LCX393ESNDDG53	C12
P2LCX393ESNXB549	C12
P2LCX393ESNXB553	C12
P2LCX393PS	C19
P2LCX393VS	E15
P2LCX393VV	E15
P2LCX513VS	E15
P2LCX513VV	E15
P2LCX593EEHDDB47	C17
P2LCX593EEHDDB48	C17
P2LCX593EEHDDG47	C17
P2LCX593EEHDDG48	C17
P2LCX593EENDD7B9	C14
P2LCX593EENDDB49	C14

Model No.	Section / Page No.
P2LCX593EENDDB53	C14
P2LCX593EENDDG49	C14
P2LCX593EENDDG53	C14
P2LCX593EENXB549	C14
P2LCX593EENXB553	C14
P2LCX593ESHDDB47	C16
P2LCX593ESHDDB48	C16
P2LCX593ESHDDG47	C16
P2LCX593ESHDDG48	C16
P2LCX593ESNDD7B9	C13
P2LCX593ESNDDB49	C13
P2LCX593ESNDDB53	C13
P2LCX593ESNDDG49	C13
P2LCX593ESNDDG53	C13
P2LCX593ESNXB549	C13
P2LCX593ESNXB553	C13
P2LCX593PP	C19
P2LCX593PS	C19
P2LCX593VS	E15
P2LCX593VV	E15
P2LCX61311	E15
P2LCX61322	E15
P2LCX69311	E15
P2LCX69322	E15
P2LCX693EEHDDB47	C17
P2LCX693EEHDDB48	C17
P2LCX693EEHDDG47	C17
P2LCX693EEHDDG48	C17
P2LCX693EEND7B9	C15
P2LCX693EENDDB49	C15
P2LCX693EENDDB53	C15
P2LCX693EENDDG49	C15
P2LCX693EENDDG53	C15
P2LCX693EENXB549	C15
P2LCX693EENXB553	C15
P2LCX693PP	C19
P2LCX81311	E15
P2LCX81322	E15
P2LCX89311	E15
P2LCX89322	E15
P2LCX893EEHDDB47	C17
P2LCX893EEHDDB48	C17
P2LCX893EEHDDG47	C17
P2LCX893EEHDDG48	C17
P2LCX893EEND7B9	C15
P2LCX893EENDDB49	C15
P2LCX893EENDDG49	C15
P2LCX893EENDDG53	C15
P2LCX893EENXB549	C15
P2LCX893EENXB553	C15
P2LCX893PP	C19
P2LCXDXSK1	C29
P2LCXK20P	C21
P2LCXK87P	C21
P2LCXMAXG##NP	C21
P2LCXMAXN##NP	C21
P2LCZ313EENDBB49	C3
P2LCZ313EENDBB53	C3
P2LCZ313ESNDBB49	C3
P2LCZ313ESNDBB53	C3
P2LCZ393EENDBB49	C3
P2LCZ393EENDBB53	C3
P2LCZ393ESNDBB49	C3
P2LCZ393ESNDBB53	C3
P2LCZ393PS	C5
P2LCZ513EENDBB49	C3
P2LCZ513EENDBB53	C3
P2LCZ513ESNDBB49	C3
P2LCZ513ESNDBB53	C3
P2LCZ593EENDBB49	C3
P2LCZ593EENDBB53	C3
P2LCZ593ESNDBB49	C3
P2LCZ593ESNDBB53	C3
P2LCZ593PP	C5
P2LCZ593PS	C5
P2LCZ613EENDBB49	C3
P2LCZ613EENDBB53	C3
P2LCZ693EENDBB49	C3
P2LCZ693EENDBB53	C3
P2LCZ713EENDBB49	C4
P2LCZ713EENDBB53	C4
P2LCZ793EENDBB49	C4
P2LCZ793EENDCB53	C4
P2LCZ813EENDBB49	C4
P2LCZ813EENDBB53	C4
P2LCZ893EENDBB49	C4
P2LCZ893EENDBB53	C4
P2LDX	C37, C38
P2LDX314VS	E15
P2LDX314VV	E15
P2LDX394ESHDDB47	C16
P2LDX394ESHDDB48	C16
P2LDX394ESHDDG47	C16
P2LDX394ESHDDG48	C16
P2LDX394ESND7B9	C12
P2LDX394ESNDDB49	C12
P2LDX394ESNDDB53	C12
P2LDX394ESNDDG49	C12
P2LDX394ESNDDG53	C12
P2LDX394ESNXB549	C12
P2LDX394ESNXB553	C12
P2LDX394PS	C19
P2LDX394VS	E15
P2LDX394VV	E15
P2LDX514VS	E15
P2LDX514VV	E15
P2LDX594EEHDDB47	C17
P2LDX594EEHDDB48	C17
P2LDX594EEHDDG47	C17
P2LDX594EEHDDG48	C17
P2LDX594EEND7B9	C14
P2LDX594EENDDB49	C14
P2LDX594EENDDB53	C14
P2LDX594EENDDG49	C14
P2LDX594EENDDG53	C14
P2LDX594EENXB549	C14
P2LDX594EENXB553	C14
P2LDX594ESHDDB47	C16
P2LDX594ESHDDB48	C16
P2LDX594ESHDDG47	C16
P2LDX594ESHDDG48	C16
P2LDX594ESND7B9	C13
P2LDX594ESNDDB49	C13
P2LDX594ESNDDB53	C13
P2LDX594ESNDDG49	C13
P2LDX594ESNDDG53	C13
P2LDX594ESNXB549	C13
P2LDX594ESNXB553	C13
P2LDX594PP	C19
P2LDX594PS	C19
P2LDX594VS	E15
P2LDX594VV	E15
P2LDX61411	E15
P2LDX61422	E15
P2LDX69411	E15
P2LDX69422	E15
P2LDX694EEHDDB47	C17
P2LDX694EEHDDB48	C17
P2LDX694EEHDDG47	C17
P2LDX694EEHDDG48	C17
P2LDX694EEND7B9	C15
P2LDX694EENDDB49	C15
P2LDX694EENDDB53	C15
P2LDX694EENDDG49	C15
P2LDX694EENDDG53	C15
P2LDX694EENXB549	C15
P2LDX694EENXB553	C15
P2LDX694PP	C19
P2LDX81411	E15
P2LDX81422	E15
P2LDX89411	E15
P2LDX89422	E15
P2LDX894EEHDDB47	C17
P2LDX894EEHDDB48	C17
P2LDX894EEHDDG47	C17
P2LDX894EEHDDG48	C17
P2LDX894EEND7B9	C15
P2LDX894EENDDB49	C15
P2LDX894EENDDB53	C15
P2LDX894EENDDG49	C15
P2LDX894EENDDG53	C15
P2LDX894EENXB549	C15
P2LDX894EENXB553	C15
P2LDX894PP	C19
P2M1K0GL	D54
P2M1K0GN	D54
P2M1K0GT	D54
P2M1K0TASD	D38, D42
P2M1PXCA	D55
P2M1PXFA	D55, D56
P2M1PXFAF7F7	D56
P2M1PXSG	D54, D56
P2M1PXSGF7F7	D56
P2M1PXSL	D54
P2M1PXSM	D54
P2M1PXSN	D54

For inventory, lead times, and kit lookup, visit www.pdnplu.com

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Model No.	Section / Page No.
P2M1PXSR	D54
P2M1PXST	D54
P2M1PXVA	D57
P2M1S3ES2C	D33
P2M1S3ES2CW	D33
P2M1S3PS	D33
P2M1S4EE2C	D33
P2M1S4EE2CW	D33
P2M1S4ES2C	D33
P2M1S4ES2CW	D33
P2M1S4PP	D33
P2M1S4PS	D33
P2M1SCEE2C	D33
P2M1SCEE2CW	D33
P2M1SCPP	D33
P2M1SDEE2C	D33
P2M1SDEE2CW	D33
P2M1SDPP	D33
P2M1SEEE2C	D33
P2M1SEEE2CW	D33
P2M1SGEE2C	D33
P2M1SGEE2CW	D33
P2M1T3ES2C	D37
P2M1T3ES2CW	D37
P2M1T3PS	D37
P2M1T4EE2C	D37
P2M1T4EE2CW	D37
P2M1T4ES2C	D37
P2M1T4ES2CW	D37
P2M1T4PP	D37
P2M1T4PS	D37
P2M1TCEE2C	D37
P2M1TCEE2CW	D37
P2M1TCPP	D37
P2M1TDEE2C	D37
P2M1TDEE2CW	D37
P2M1TDPP	D37
P2M1TEEE2C	D37
P2M1TEEE2CW	D37
P2M1TGEE2C	D37
P2M1TGEE2CW	D37
P2M1TJEE2C	D37
P2M1TJEE2CW	D37
P2M1TJPP	D37
P2M1V3ES2CV	D41
P2M1V4EE2CV	D41
P2M1V4ES2CV	D41, D45, D61
P2M1V4ES2CV00C7	D61
P2M1VCEE2CV	D41
P2M1VDEE2CV	D41
P2M1VDEE2CV00C7	D61
P2M1VEEE2CV	D41
P2M1VGEE2CV	D41, D61
P2M1VJEE2CV	D41, D61
P2M1VJEE2CV00F7	D61
P2M1X3ES	D59
P2M1X4EE	D59
P2M1X4ES	D59
P2M1XCEE	D59
P2M1XDEE	D59
P2M1XEEE	D59
P2M1XJEE	D59
P2M2BXT0A	D37
P2M2BXV0A	D43, D61
P2M2BXV0A1F9MM	D61
P2M2HBVC21600	D160
P2M2HBVD21600	D160
P2M2HBVE12400	D43, D49
P2M2HBVK12400	D160
P2M2HBVL12400A13	D43, D51, D160, D163
P2M2HBVL12400A13-SPC	D160, D163
P2M2HBVL12400A42	D43, D51, D160, D163
P2M2HBVL12400A42-SPC	D160, D163
P2M2HBVL12400A43	D43, D51, D160, D163
P2M2HBVL12400A43-SPC	D160, D163
P2M2HBVL12400AB	D61
P2M2HBVL12400B25	D43, D51, D160, D163
P2M2HBVL12400B25-SPC	D160, D163
P2M2HBVM12400	D43, D49
P2M2HBVN12400	D43, D49 D160
P2M2HBVP21600	D160
P2M2HBVS11600	D160
P2M2HBVT12400	D43, D49
P2M2HBVW12400	D43, D49
P2M2HEV0A	D43, D61
P2M2HEV0D	D43
P2M2HXT01	D37, D43, D61
P2M2HXT0T	D37, D43
P2M2K0CA	D59
P2M2K0FA	D59
P2M2K0JA	D59
P2M2K0PA	D59
P2M2PXCA	D55
P2M2PXFA	D55
P2M2PXSG	D54
P2M2PXSL	D54
P2M2PXSM	D54
P2M2PXSN	D54
P2M2PXSR	D54
P2M2PXST	D54
P2M2S3ES2C	D33
P2M2S3ES2CW	D33
P2M2S3PS	D33
P2M2S4EE2C	D33
P2M2S4ES2C	D33
P2M2S4ES2CW	D33
P2M2S4PP	D33
P2M2S4PS	D33
P2M2SCEE2C	D33
P2M2SCEE2CW	D33
P2M2SCPP	D33
P2M2SDEE2C	D33
P2M2SDEE2CW	D33
P2M2SDPP	D33
P2M2SEEE2C	D33
P2M2SEEE2CW	D33
P2M2SGEE2C	D33
P2M2SGEE2CW	D33
P2M2T3ES2C	D37
P2M2T3ES2CW	D37
P2M2T3PS	D37
P2M2T4EE2C	D37
P2M2T4EE2CW	D37
P2M2T4ES2C	D37
P2M2T4ES2CW	D37
P2M2T4PP	D37
P2M2T4PS	D37
P2M2TCEE2C	D37
P2M2TCEE2CW	D37
P2M2TCPP	D37
P2M2TDEE2C	D37
P2M2TDEE2CW	D37
P2M2TDPP	D37
P2M2TEEE2C	D37
P2M2TGEE2C	D37
P2M2TGEE2CW	D37
P2M2V3ES2CV	D41
P2M2V4EE2CV	D41, D61
P2M2V4EE2CV00F9	D61
P2M2V4ES2CV	D41
P2M2V4ES2CV00F7	D45
P2M2VCEE2CV	D41
P2M2VDEE2CV	D41
P2M2VEEE2CV	D41
P2M2VGEE2CV	D41
P2M2X3ES	D59
P2M2X4EE	D59
P2M2X4ES	D59
P2M2XCEE	D59
P2M2XDEE	D59
P2M2XEEE	D59
P2M7BXG02NP	C63
P2M7BXG04NP	C63
P2M7BXG06NP	C63
P2M7BXG08NP	C63
P2M7BXN02NP	C63
P2M7BXN04NP	C63
P2M7BXN06NP	C63
P2M7BXN08NP	C63
P2MAV21F9MM05	D61
P2MAVB1F9MM05	D61
P2N-VK0P	D256
P2N-VM500AK	D255
P2N-VM512MB	D255, D276
P2N-VM513ES	D255, D276
P2N-VS512SD	D255, D270
P2N-WK0P	D256
P2N-WM513MB	D255, D276
P2N-WM514ES	D255, D276

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Model No.	Section / Page No.
P2N-WS513SD	D255, D270
P2N-YK0P	D256
P2N-YM514MB	D255, D276
P2N-YM518ES	D255, D276
P2N-YS514SD	D255, D270
P2PCX	C37
P66829	E60
P66837	E60
P6M-PAB1	D9, D10, D11, F12
P6M-PAB2	F12
P6M-PAB3	D9, D10, D11, F12
P6M-PAB4	F12
P6M-PAB6	F12
P6M-PAB8	F12
P6M-PAC5	C28, C87, E17, F12
P8BPA00MA	D226
P8BPA00MB	D225
P8CS0803J	D34, D38
P8CS1204J	D34, D38
P8CS1205AA	D42
P8LMH20M*A	D47
P8LMH20M2A	D42, D61
P8LMH20M5A	D42, D47
P8LMH20M9A	D42, D47
P8LMH25M3A	D12, D42, D46, D128, D225
P8LS08L226C	D34, D38
P8LS08L526C	D34, D38
P8LS08L926C	D34, D38
P8LW021C	D34, D38
P8LW021C02	D34, D38
P8LW021C04	D34, D38
P8LW021C08	D34, D38
PD1-1/4-70	D255, D270
PD1-1/4-80	D255, D270
PD2-3/8-70	D255, D270
PD2-3/8-80	D255, D270
PEJ01	D271
PEJ01-03-70	D242
PEJ01-03-80	D242
PEJ02	D271
PEJ02-02-70	D241
PEJ02-02-80	D241
PESC10	B6
PESC2001F	B6
PESC2020B	B6
PJL01	D271
PJLP01	D271
PJLP02	D271
PJLP02-201-70	D241, D242
PJLP02-201-80	D241, D242
PKG 3M-*-PSG 3M/S90	D224
PKG 3M-4/S90	D224
PL01	D271
PL01-02-70	D242
PL01-02-80	D242
PL02	D271
PL02-01-70	D112
PL02-01-70	D241
PL02-01-80	D112
PL02-01-80	D241
PL1-1/4-70	D255, D270
PL1-1/4-80	D255, D270
PL2-3/8-70	D255, D270
PL2-3/8-80	D255, D270
PL2424P	E60
PL2425P	E60
PL3-1/2-70	D255, D270
PL3-1/2-80	D255, D270
PL37	E60
PL50	E60
PMDYY1	D38, D42, D54
PMDYY2	D34, D38, D42, D54
PPRL15	E58, E59
PPS1-2C3-RHM	E54
PPS1-2C3-RWL	E54
PS1556	C6, C26
PS2028BP	C26, C65, D130, D257
PS2028JCP	C26, C65, D130, D257
PS203279BP	C26, C65, D130, D257
PS203283BP	C26, C65, D130, D257
PS2032J79CP	C26, C65, D130, D257
PS2032J83CP	C26, C65, D130, D257
PS2038P	E20
PS2039P	E20
PS2041P	E20
PS2043P	E19
PS2429BP	C6, C26, C65, D256
PS2429JBP	C6, C26, C65, D256
PS243079BP	C6, C26, C65, D256
PS243083BP	C6, C26, C65, D256
PS243087BP	C26, C65, D256
PS2430J79BP	C6, C26, C65, D256
PS2430J83BP	C6, C26, C65, D256
PS2501P	C68
PS2502P	C68
PS2503P	C68
PS2504P	C68
PS257101P	C68
PS257102P	C68
PS2584P	C68
PS2587P	C68
PS2597GBP	C68
PS2597GCP	C68
PS2597NBP	C68
PS2597NCP	C68
PS2601P	C52
PS2602P	C52
PS2603P	C52
PS2604P	C52
PS2620P	C47
PS2684P	C52
PS2801*P	C51
PS2801VP	C51
PS2802*P	C51
PS2802VP	C51
PS2803*P	C51
PS2803VP	C51
PS2804*P	C51
PS2804VP	C51
PS2815P	C47
PS2817P	C47
PS2818P	C47
PS2819P	C47
PS2820P	C47
PS2828619P	D133, D257
PS2855P	D256
PS2869P	C47
PS2871P	C51
PS2871VP	C51
PS2884P	C51
PS2886P	C51
PS2887P	C52
PS2892P	C6, C26
PS2893C##P	C65
PS2893CP	C65
PS2893D##P	C65
PS2893DP	C65
PS2896P	C51
PS2901CP	C50
PS2902CP	C50
PS2903CP	C50
PS2904CP	C50
PS2915P	C47
PS2917P	C47
PS2918P	C47
PS2919P	C47
PS2920P	C47
PS2932BP	B10
PS2932BP	B10, C26, C40, C41, C48, C65, D257
PS2932HBP	B10, C26, C40, C41, C48, C65
PS2932JBP	B10, C26, C40, C41, C48, C65, D257
PS294675BP	B10, C26, C40, C41, C48, C65
PS294679BP	B10, C26, C40, C41, C48, C65, D257
PS294683BP	B10, C26, C40, C41, C48, C65, D257
PS294687BP	B10, C26, C40, C41, C48, C65
PS2946J75BP	B10, C26, C40, C41, C48, C65
PS2946J79BP	B10, C26, C40, C41, C48, C65, D257

Model No.	Section / Page No.
PS2946J83BP	B10, C26, C40, C41, C48, C65, D257
PS2969P	C47
PS2971CP	C50
PS2980P	C50
PS2981P	C50
PS2982*##P	B10
PS2982*##P	C24, C48, C50, C51, C52, C60, C61, C68
PS2982B49P	D257
PS2982B53P	D257
PS2982C49P	D257
PS2982C53P	D257
PS2984P	C50
PS2987P	C50
PS2996P	C50
PS2998P	C40, C41, C48, C65
PS3202*##P	B10
PS3441*##P	B10
PS3541*##P	B10
PS3541*##P	C50, C51, C52, C68
PS4001CP	D133
PS4002CP	D133
PS4003CP	D133
PS4004CP	D133
PS4005DP	D133
PS4006DP	D133
PS4007P	D133
PS4011	D138
PS4011	D275
PS401115	D249
PS4011150DP	D101, D245
PS4011158FDP	D78
PS401115ADP	D78
PS401115CDP	D78
PS401116	D249
PS4011160DP	D101, D245
PS4011168FDP	D78
PS401116ADP	D78
PS401116CDP	D78
PS401155	D249
PS4011550DP	D245
PS401156	D249
PS4011560CP	D245
PS401165	D249
PS4011650CP	D245
PS401166	D249
PS4011660CP	D245
PS4013P	D245
PS401500CP	D106, D256
PS401501CP	D106, D256
PS402501	D250
PS402601	D250
PS402701	D250
PS402801	D250
PS403000CP	D245
PS403001CP	D245
PS4031010CP	D245
PS4031011DP	D245
PS4032CP	D256
PS4033CP	D256
PS4033CP	D92, D114
PS4034CP	D78, D101, D256
PS4035CP	D78
PS4036P	D134
PS4037	D144, D251
PS4037166CP	D101, D245
PS4037266CP	D101, D245
PS4038	D144
PS4038166CP	D78
PS4038266CP	D78
PS4039P	D133
PS4040P	D134
PS404123P	D133
PS404142P	D133
PS404145P	D133
PS404157P	D133
PS4041B9P	D133
PS4041F9P	D133
PS4042CP	D101, D256
PS4045BP	D134
PS4047BP	D134
PS4048BP	D134
PS4050030P	D134
PS4050060P	D134
PS4050125P	D134
PS4051060BP	D134
PS4051160BP	D134
PS4051CP	D134
PS4052160BP	D134
PS4052CP	D133, D257
PS4053060BP	D134
PS4053160BP	D134
PS4053CP	D133, D257
PS4087DP	D133
PS40D3DP	D133
PS4101CP	D133
PS4102CP	D133
PS4103CP	D133
PS4104CP	D133
PS4105DP	D133
PS4106DP	D133
PS4111	D138, D275
PS411117	D249
PS4111170CP	D103, D246
PS411117ACP	D79
PS411117CCP	D79
PS411118	D249
PS4111180CP	D103, D246
PS411118ACP	D79
PS411118CCP	D79
PS411127	D249
PS411128	D249
PS411157	D249
PS411158	D249
PS411167	D249
PS4111670CP	D246
PS411168	D249
PS4111680CP	D246
PS4113P	D246
PS411500CP	D106, D256
PS411501CP	D106, D256
PS4131010DP	D246
PS4131011DP	D246
PS4132CP	D256
PS4134CP	D79, D103, D256
PS4135CP	D79
PS4136P	D134
PS4137	D144
PS4137	D251
PS4137166CP	D103, D246
PS4137266CP	D103, D246
PS4138	D144
PS4138166CP	D79
PS4138266CP	D79
PS4139P	D133
PS4140P	D134
PS4142CP	D103, D256
PS4145BP	D134
PS4147BP	D134
PS4148BP	D134
PS4150030BP	D134
PS4150060BP	D134
PS4150125BP	D134
PS4187DP	D133
PS41D3DP	D133
PS41D5DP	D133
PS4201CP	D133
PS4202CP	D133
PS4203CP	D133
PS4204CP	D133
PS4205DP	D133
PS4206DP	D133
PS4211	D139, D142, D144, D275
PS421110	D249
PS421110ACP	D91
PS421110CCP	D91
PS4211170CP	D247
PS4211180CP	D114, D247
PS421119	D249
PS4211190CP	D114
PS421119ACP	D91
PS421119CCP	D91
PS421120	D249
PS421129	D249
PS421150	D249
PS4211500CP	D114
PS421150ACP	D91
PS421150CCP	D91
PS421150MCP	D91
PS4211590CP	D114, D118
PS421159ACP	D91

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Model No.	Section / Page No.
PS421159CCP	D91
PS421159MCP	D91
PS421160	D249
PS4211600CP	D114, D247
PS421160ACP	D91
PS421160CCP	D91
PS421160MCP	D91
PS421169	D249
PS4211690CP	D114, D247
PS421169ACP	D91
PS421169CCP	D91
PS421169MCP	D91
PS4212P	D92, D114, D133, D247
PS421500CP	D116, D256
PS421501CP	D116, D256
PS4220L20DP	D90
PS4220L21DP	D90
PS4220L30DP	D90
PS4220L31DP	D90
PS4220L40DP	D90
PS4220L41DP	D90
PS4220L60DP	D90
PS4220L61DP	D90
PS4220M20DP	D90
PS4220M21DP	D90
PS4220M40DP	D90
PS4220M41DP	D90
PS4220N20DP	D90, D168
PS4220N21DP	D90, D168
PS4220S20DP	D90, D168
PS4220S21DP	D90, D168
PS4220S40DP	D90, D168
PS4220S41DP	D90, D168
PS4220S50DP	D90, D168
PS4220S51DP	D90, D168
PS4220T10DP	D90
PS4220T11DP	D90
PS4220T20DP	D90
PS4220T21DP	D90
PS4231010DP	D90, D114, D247
PS4231011DP	D90, D114, D247
PS4232CP	D92, D114, D256
PS4234CP	D92, D114, D256
PS4235CP	D92
PS4236P	D134
PS4237	D144, D251
PS4237166CP	D114, D118, D247
PS4237266CP	D114, D247
PS4238	D144
PS4238166CP	D92
PS4238266CP	D92
PS4240P	D134
PS4242CP	D114, D256
PS4287DP	D133
PS42D3DP	D133
PS42D5DP	D133
PS5501P	D133
PS5502P	D133
PS5503P	D133
PS5504P	D133
PS5505P	D133
PS5511	D237, D272
PS5511130P	D99
PS551113CP	D77
PS5511140P	D99
PS551114CP	D77
PS5511530P	D235
PS5511540P	D235
PS5512P	D244
PS551500P	D106, D235, D239
PS551500P	D106, D235, D239
PS552600P	D77, D99, D235
PS552601P	D77, D99, D235
PS552700P	D235
PS552701P	D235
PS5531011P	D235
PS5534P	D77, D99, D244
PS5535P	D77
PS5536P	D134
PS5537	D144, D272
PS5537155DXP	D235
PS5537155P	D99
PS5537166DXP	D235
PS5537166P	D99
PS5537255DXP	D235
PS5537255P	D99
PS5537266DXP	D235
PS5537266P	D99
PS5538255P	D77
PS5538266P	D77
PS5542P	D99, D244
PS5587P	D133
PS55XXA0P	D77, D84, D99, D108
PS55XXE0P	D84, D108
PS55XXM0P	D84, D108
PS5601P	D133
PS5602P	D133
PS5603P	D133
PS5604P	D133
PS5605P	D133
PS5611	D237, D272
PS5611510P	D234
PS5611520P	D234
PS5612P	D244
PS561600P	D76
PS561601P	D76
PS561AP	D244
PS561BP	D244
PS561CP	D244
PS561DP	D244
PS562600P	D98, D234
PS562601P	D98, D234
PS562700P	D234
PS562701P	D234
PS5631010P	D234, D235
PS5631011P	D234
PS5634P	D76, D98, D244
PS5635P	D76
PS5636P	D134
PS5637	D144, D272
PS5637155DXP	D234
PS5637155P	D98
PS5637166DXP	D234
PS5637166P	D98
PS5637255DXP	D234
PS5637255P	D98
PS5637266DXP	D234
PS5637266P	D98
PS5638155P	D76
PS5638166P	D76
PS5638255P	D76
PS5638266P	D76
PS5642P	D98, D244
PS5651160P	D76, D85, D98, D109, D234, D235
PS567900	D26
PS567904	D9, D26
PS567906	D9, D26
PS567925	D9, D10, D11, D26
PS568204	D9, D26
PS568206	D9, D26
PS568215	D9, D26
PS568225	D9, D26
PS568308	D9, D27
PS568310	D9, D27
PS568325	D9, D27
PS568338	D9, D10, D11, D27
PS5687P	D133
PS5706	D12
PSBJ708	F24
PSBJ708-2G	F36
PSBJ708-4G	F36
PSBJ731	F24
PSBJ731-0	F36
PSBJ731-2	F36
PSBJ731-2G	F36
PSBJ731-4	F36
PSBJ731-4G	F36
PSBJ731-6	F36
PSBJ731-6G	F36
PSBJ731-8	F36
PSBJ731-8G	F36
PSBJ731-M5	F36
PSG 3M-*/S90	D224
PSHU10P	D133
PSHU115101P	D98, D111
PSHU1151J1P	D76

Model No.	Section / Page No.
PSHU1151M1P	D76
PSHU115201P	D98
PSHU1152J1P	D76
PSHU1152M1P	D76
PSHU115301P	D99, D111
PSHU1153J1P	D77
PSHU1153M1P	D77
PSHU115401P	D99
PSHU1154J1P	D77
PSHU1154M1P	D77
PSHU115501P	D101, D111
PSHU1155J1P	D78
PSHU1155M1P	D78
PSHU115601P	D101
PSHU1156J1P	D78
PSHU1156M1P	D78
PSHU115701P	D103, D111
PSHU1157J1P	D79
PSHU1157M1P	D79
PSHU115801P	D103
PSHU1158J1P	D79
PSHU1158M1P	D79
PSHU11P	D84, D98, D99, D108
PSHU12P	D84, D98, D99, D108
PSHU13P	D84, D98, D99, D108
PSHU14P	D84, D98, D99, D108
PSHU15P	D84, D98, D99, D108
PSHU16P	D84, D98, D99, D108
PSHU17P	D84, D98, D99, D108
PSHU18P	D84, D98, D99, D108
PSHU20L100P	D75
PSHU20L101P	D75
PSHU20L200P	D75
PSHU20L201P	D75
PSHU20L300P	D75
PSHU20L301P	D75
PSHU20L400P	D75
PSHU20L401P	D75
PSHU20L500P	D75
PSHU20L501P	D75
PSHU20L600P	D75
PSHU20L601P	D75
PSHU20M200P	D75
PSHU20M201P	D75
PSHU20M400P	D75
PSHU20M401P	D75
PSHU20M500P	D75
PSHU20M501P	D75
PSHU20N200P	D75, D168
PSHU20N201P	D75, D168
PSHU20P300 PEAAB0-P5	D75
PSHU20P300 PEAAN0-P4	D75
PSHU20P300PEAAA-P4	D182
PSHU20P300PEAAA-P5	D182
PSHU20P300PEAAA-S4	D182
PSHU20P300PEAAA-S5	D182
PSHU20P300PEAAB-P4	D182
PSHU20P300PEAAB-P5	D182
PSHU20P300PEAAB-S5	D182
PSHU20P300PEAAC-P5	D182
PSHU20P300PEAAC-S5	D182
PSHU20P300PEAAN-P4	D182
PSHU20P300PEAAN-P5	D182
PSHU20P300PEAAN-S5	D182
PSHU20P300PEABC-P4	D182
PSHU20P300PEABC-P5	D182
PSHU20P301 PEAAB0-P5	D75
PSHU20P301 PEAAN0-P4	D75
PSHU20S200P	D75, D168
PSHU20S201P	D75, D168
PSHU20S400P	D75, D168
PSHU20S401P	D75, D168
PSHU20S500P	D75, D168
PSHU20S501P	D75, D168
PSHU20T100P	D75
PSHU20T101P	D75
PSHU20T200P	D75
PSHU20T201P	D75
PSHU31L000P	D98, D99, D101, D103
PSHU31L001P	D98, D99, D101, D103
PSHU4000P	D80, D104
PSHU41	D142
PSHU4100P	D80, D104
PSHU4101P	D80, D104
PSHU42	D142
PSHU4200P	D80, D104
PSHU4201P	D80, D104
PSHU60P	D80, D134
PSHU7100P	D80
PSHU7101P	D80
PSHU7200P	D80
PSHU7201P	D80
PSHU7300P	D104
PSHU7301P	D104
PSM0001	D12, D18
PSM0002	D12, D18
PSM0003	D12, D18
PSM0004	D12, D18
PSM001*	D26
PSM0010	D12
PSM0011	D12
PSM0012	D12
PSM0013	D12, D26
PSM0014	D12
PSM0022	D12
PSM0025	D12
PSM002E	D12
PSM002N	D12
PSM002P	D12
PSM002Q	D12
PSM21JAP	D4, D9, D10, D11
PSM21MAP	D4, D10, D11
PSM22JAP	D4
PSM22MAP	D4
PSM31JAPE7E7E7E7	D11
PSM31MAPN7N7N7N7	D11
PSM3BXN02NP	C46
PSM3BXN04NP	C46
PSM3BXN06NP	C46
PSM3BXN08NP	C46
PSM5BXN02NP	C46
PSM5BXN04NP	C46
PSM5BXN06NP	C46
PSM5BXN08NP	C46
PSM6BXN02NP	C46
PSM6BXN04NP	C46
PSM6BXN06NP	C46
PSM6BXN08NP	C46
PSML21AP	D5
PSML22AP	D5
PSML25AP	D5, D9
PSML26AP	D5
PSML61AP	D5
PSML62AP	D5
PSML65AP	D5
PSML66AP	D5
PSMM41AP	D5
PSMM42AP	D5
PSMM45AP	D5, D10
PSMM46AP	D5
PSMM51AP	D5
PSMM52AP	D5
PSMM55AP	D5, D11
PSMM56AP	D5
PSMM61AP	D5
PSMM62AP	D5
PSMM65AP	D5, D11
PSMM66AP	D5
PSMM71AP	D5
PSMM72AP	D5
PSMM75AP	D5
PSMM76AP	D5
PSMRAX6AP	D9
PSMT11AP	D5
PSMT12AP	D5

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Model No.	Section / Page No.
PSMT15AP	D5
PSMT16AP	D5
PSMT21AP	D5
PSMT22AP	D5
PSMT25AP	D5
PSMT26AP	D5
PSMXN##NP	B6
PSPE701	F24
PSPE701-2G	F36
PSPE701-4G	F36
PSPE701-6G	F36
PSPE701-8G	F36
PSPE701-M5	F36
PSPJ731	F24
PSPJ731-2	F36
PSPJ731-4	F36
PSPJ731-6	F36
PSSBASE	D192
PSSCDM12A	D11
PSSCENA	D190, D197, D203
PSSCPBA	D190, D197, D203
PSSN16M12A	D190, D195, D203
PSSN16xxx	D202
PSSN8M12A	D11, D190, D195, D203
PSSN8M8A	D190, D195, D203
PSSN8xxx	D202
PSSNACM12A	D191, D196, D202, D203
PSSNAVM12A	D191, D196, D202, D203
PSSP8xxx	D202
PSSSE24A	D191, D193, D194, D197, D199, D203
PSST16M12A	D191, D195, D203
PSST16xxx	D202
PSST8M12A	D191, D195, D203
PSST8M23A	D191, D195, D203
PSST8xxx	D202
PSSTERM	D191
PSSTR4M12A	D191, D195, D203
PSSTR4MRA	D202
PSSV32A	D134, D197, D202, D203
PSSVEXT1	D11
PSSVEXT1	D192, D193, D194
PSSVM32A	D197, D202, D203
PSXM2186P	B6
PSXM31010P	B6
PSXM40900P	B6
PSXM530CP	B6
PSXM8100P	B6
PSXM8288P	B6
PSXM8310P	B6
PWBA1412/3412	F19
PWBA1468/3468	F19
PWBA1469/3469	F19
PWBA1483	F19
PWBA1489	F19
PWBA1493/3493	F19
PWBA1822/3822	F19
PWBA1833/3833	F19
PWBA1898/3888	F19
PWBA1899/3899	F19
PWBA38227	F19
PWBA38337	F19
PWBA38887	F19
PWBA38997	F19
PWSB1227	F17, F19
PWSB1337	F17, F19
PWSB1557	F17, F19
PWSB1887	F17, F19
PWSB1997	F17, F19
PWSE101	F18
PWSE111	F18
PWSM1012	F17, F18, F19
PWSP111	F17, F18, F19
PXB-B3	E74
PXBB3111B	E59, E69
PXBB3111BA2	E67
PXBB3111BA3	E67
PXBB3111BA4	E67
PXBB3111BC2	E67
PXBB3111BD2	E67
PXBB3111BT4	E67
PXBB3121B	E69
PXBB3121BT4	E67
PXBB3211BD2	E67
PXBB3211BD3	E67
PXBB3211BJ5	E67
PXBB3251BA2	E67
PXBB3251BD2	E67
PXBB3251BD3	E67
PXBB3911	E69, E72
PXBB3912	E69
PXBB3921	E69
PXBB3922	E69
PXB-B4	E74
PXBB4131B	E69
PXBB4131BA2	E67
PXBB4131BA3	E67
PXBB4131BA4	E67
PXBB4131BC2	E67
PXBB4131BD2	E67
PXBB4131BT4	E67
PXBB4231BA2	E67
PXBB4231BD2	E67
PXBB4231BD3	E67
PXBB4231BJ5	E67
PXBB4931	E69, E72
PXBB4932	E69, E72
PXCJ117	E78, E83
PXCJ11701	E78
PXCJ11705	E78
PXCJ127	E78, E83
PXCJ12701	E78
PXCJ12705	E78
PXCK211	E77, E82
PXCK21100	E77
PXCK2110031	E77, E82
PXCK2110041	E77, E82
PXCK21101	E76, E82
PXCK21102	E76, E82
PXCK21106	E76, E82
PXCK21121	E76, E82
PXCK221	E77, E82
PXCK22100	E77
PXCK2210031	E77, E82
PXCK2210041	E77, E82
PXCK22101	E76, E82
PXCK22102	E76, E82
PXCK22106	E76, E82
PXCK22121	E76, E82
PXCM111	E75, E80, E81
PXCM115	E75
PXCM121	E75, E80, E81
PXCM125	E75
PXCM131	E81
PXCM521	E75, E80, E81
PXCM601A102	E76, E80, E81
PXCM601A103	E76, E80, E81
PXCM601A110	E76, E80, E81
PXCZ11	E75, E81
PXCZ12	E81
PXPA11	E59
PXPC111	E59
PXVF111	E71
PXVF1211	E71
PXVF1213	E71
PXVF1214	E71
PXVF1215	E71
PXVF1216	E71
PXVF131	E71
PXVF141	E71
PXVF151	E71
PXVF161	E71
R	
RKC 4.4T-*-RSC 4.4T	D130, D224
RKC 4.4T-1	D130, D224
RKC 4.4T-2	C26
RKC 4.5T-*/S1587	D130, D224
RKC 4.5T-*-RSC 4.5T/S1587	D130, D163, D224
RKC 4.5T-*-RSC 4.5T/S1587	D42, D51
RKC4.4T-2	D84, D108

Parker Hannifin Corporation
Pneumatic Division
Richland, Michigan
www.parker.com/pneumatics

Model No.	Section / Page No.
RKM 46-5M/S1587	D130, D224
RKM 56-5M/S1587	D130, D224
RSC 4.4T-*	D130, D224
RSC 4.5T-4/S1587	D130, D224
RSC RKC 5711-xM	D226
RSC RKM 5711-xM	D226
RSM 57-TR2	D226
RSM RKC 5711-xM	D226
RSM RKM 46-x/S1587	D130, D224
RSM RKM 56-x/S1587	D130, D224
RSM RKM 57 WSM 40 PST	D226
RSM RKM 5711-xM	D226
RSM-2RKM 40	D224
RSM-2RKM 50	D224
RSSD RJ45S 443-2M	D225
RSSD RKSD 443-xM	D225
RSSW RKSW 455-xM	D225
S	
S421159	D249
SCD253W	D12, D42, D46
SCD253W	D128, D225
SCD259D	D12, D42, D46
SCD259D	D128, D225
SCD259WE	D12, D42, D46
SCD259WE	D128, D225
V	
VC	F23
VDMA	D270
VL37	E60
VL50	E60
W	
W68PLCK	F23
W68PLCK-4-2	F33
W68PLCK-4-4	F33
W68PLCK-5/32-2	F33
W68PLCK-6-4	F33
W68PLCK-6-6	F33
W68PLCKI	F23
W68PLCKI-4-2	F33
W68PLCKI-4-4	F33
W68PLCKI-5/32-2	F33
W68PLCKI-6-4	F33
W68PLCKI-6-6	F33
WKM 46-5M/S1587	D130, D224
WKM 56-5M/S1587	D130, D224
WPASV13000-AA-34	C78
WPASV13000-AA-94	C78
WPASV15000-AA-42	C79
WPASV15000-AA-92	C79
WPASV2000-AA-17	C76
WPASV2000-AA-97	C76
WPASV200-AA-M5	C75
WPASV5000-AA-21	C77
WPASV5000-AA-91	C77
X	
XCMZ24	E80
XM30NB49A	B3
XM30NB549A	B3
XM30NB553A	B3
XM30NBG49A	B3
XM30NBG53A	B3
XM30NBH49A	B3
XM30NBH53A	B3
XM3VNB549A	B3
XM3VNB553A	B3
XM3VNBG49A	B3
XM3VNBG53A	B3
XM40NB549A	B3
XM40NB553A	B3
XM40NBG49A	B3
XM40NBG53A	B3
XM40NBH49A	B3
XM40NBH53A	B3
XM4VNB549A	B3
XM4VNB553A	B3
XM4VNBG49A	B3
XM4VNBG53A	B3
ZB2BY2002	E70
ZB4BA2	E68
ZB4BA3	E68
ZB4BA4	E68
ZB4BA5	E68
ZB4BA6	E68
ZB4BC2	E68
ZB4BC3	E68
ZB4BC4	E68
ZB4BD2	E68
ZB4BD3	E68
ZB4BD4	E68
ZB4BD5	E68
ZB4BD7	E68
ZB4BD8	E68
ZB4BG2	E68
ZB4BG3	E68
ZB4BG4	E68
ZB4BG5	E68
ZB4BG7	E68
ZB4BH02	E68
ZB4BH03	E68
ZB4BH04	E68
ZB4BJ2	E68
ZB4BJ3	E68
ZB4BJ4	E68
ZB4BJ5	E68
ZB4BL2	E68
ZB4BL3	E68
ZB4BL4	E68
ZB4BL5	E68
ZB4BP2	E68
ZB4BP3	E68
ZB4BP4	E68
ZB4BR	E59
ZB4BR2	E68
ZB4BR3	E68
ZB4BR4	E68
ZB4BS844	E68
ZB4BS944	E68
ZB4BT2	E68
ZB4BZ009	E68
ZB5AA2	E68
ZB5AA3	E68
ZB5AA4	E68
ZB5AL2	E68
ZB5AL3	E68
ZB5AL4	E68
ZB5AZ009	E68
ZB5AZ905	E71
ZBE101	E70
ZBE102	E70
ZBY2002	E70
ZBY2101	E70
ZBY2303	E70
ZBY2304	E70
ZBY2305	E70
ZBY2306	E70
ZBY2307	E70
ZBY2308	E70
ZBY2309	E70
ZBY2310	E70
ZBY2311	E70
ZBY2312	E70
ZBY2313	E70
ZBY2314	E70
ZBY2321	E70
ZBY2323	E70
ZBY2326	E70
ZBY2327	E70
ZBY2328	E70
ZBY2330	E70
ZBY2334	E70
ZBY2367	E70
ZBY2387	E70
ZBY4101	E70
ZBZ1602	E71
ZC2JE01	E78
ZC2JE02	E78
ZC2JE03	E78
ZC2JE05	E78
ZC2JE09	E78
ZC2JE61	E78, E83
ZC2JE62	E78, E83
ZC2JE63	E78
ZC2JE70	E78, E83
ZC2JY11	E78, E83
ZC2JY13	E78
ZC2JY21	E78
ZC2JY31	E78, E83
ZC2JY41	E78, E83
ZC2JY51	E83
ZC2JY61	E78
ZC2JY71	E78

Model No.	Section / Page No.	Model No.	Section / Page No.	Model No.	Section / Page No.	Model No.	Section / Page No.
ZC2JY81	E78, E83						
ZC2JY91	E78, E83						
ZCKD02	E78						
ZCKD06	E78						
ZCKD10	E78						
ZCKD21	E78						
ZCKD23	E78						
ZCKG00	E78						
ZCKY11	E78						
ZCKY13	E78						
ZCKY41	E78						
ZCKY43	E78						
ZCKY51	E78						
ZCKY52	E78						
ZCKY81	E78, E82						
ZCKY91	E78, E82						

Safety Guide For Selecting And Using Pneumatic Division Products And Related Accessories

⚠ WARNING:

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF PNEUMATIC DIVISION PRODUCTS, ASSEMBLIES OR RELATED ITEMS ("PRODUCTS") CAN CAUSE DEATH, PERSONAL INJURY, AND PROPERTY DAMAGE. POSSIBLE CONSEQUENCES OF FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THESE PRODUCTS INCLUDE BUT ARE NOT LIMITED TO:

- Unintended or mistimed cycling or motion of machine members or failure to cycle
- Work pieces or component parts being thrown off at high speeds.
- Failure of a device to function properly for example, failure to clamp or unclamp an associated item or device.
- Explosion
- Suddenly moving or falling objects.
- Release of toxic or otherwise injurious liquids or gasses.

Before selecting or using any of these Products, it is important that you read and follow the instructions below.

1. GENERAL INSTRUCTIONS

1.1. Scope: This safety guide is designed to cover general guidelines on the installation, use, and maintenance of Pneumatic Division Valves, FRLs (Filters, Pressure Regulators, and Lubricators), Vacuum products and related accessory components.

1.2. Fail-Safe: Valves, FRLs, Vacuum products and their related components can and do fail without warning for many reasons. Design all systems and equipment in a fail-safe mode, so that failure of associated valves, FRLs or Vacuum products will not endanger persons or property.

1.3. Relevant International Standards: For a good guide to the application of a broad spectrum of pneumatic fluid power devices see: ISO 4414: 1998, Pneumatic Fluid Power – General Rules Relating to Systems. See www.iso.org for ordering information.

1.4. Distribution: Provide a copy of this safety guide to each person that is responsible for selection, installation, or use of Valves, FRLs or Vacuum products. Do not select, or use Parker valves, FRLs or vacuum products without thoroughly reading and understanding this safety guide as well as the specific Parker publications for the products considered or selected.

1.5. User Responsibility: Due to the wide variety of operating conditions and applications for valves, FRLs, and vacuum products Parker and its distributors do not represent or warrant that any particular valve, FRL or vacuum product is suitable for any specific end use system. This safety guide does not analyze all technical parameters that must be considered in selecting a product. The user, through its own analysis and testing, is solely responsible for:

- Making the final selection of the appropriate valve, FRL, Vacuum component, or accessory.
- Assuring that all user's performance, endurance, maintenance, safety, and warning requirements are met and that the application presents no health or safety hazards.
- Complying with all existing warning labels and / or providing all appropriate health and safety warnings on the equipment on which the valves, FRLs or Vacuum products are used; and,
- Assuring compliance with all applicable government and industry standards.

1.6. Safety Devices: Safety devices should not be removed, or defeated.

1.7. Warning Labels: Warning labels should not be removed, painted over or otherwise obscured.

1.8. Additional Questions: Call the appropriate Parker technical service department if you have any questions or require any additional information. See the Parker publication for the product being considered or used, or call 1-800-CPARKER, or go to www.parker.com, for telephone numbers of the appropriate technical service department.

2. PRODUCT SELECTION INSTRUCTIONS

2.1. Flow Rate: The flow rate requirements of a system are frequently the primary consideration when designing any pneumatic system. System components need to be able to provide adequate flow and pressure for the desired application.

2.2. Pressure Rating: Never exceed the rated pressure of a product. Consult product labeling, Pneumatic Division catalogs or the instruction sheets supplied for maximum pressure ratings.

2.3. Temperature Rating: Never exceed the temperature rating of a product. Excessive heat can shorten the life expectancy of a product and result in complete product failure.

2.4. Environment: Many environmental conditions can affect the integrity and suitability of a product for a given application. Pneumatic Division products are designed for use in general purpose industrial applications. If these products are to be used in unusual circumstances such as direct sunlight and/or corrosive or caustic environments, such use can shorten the useful life and lead to premature failure of a product.

2.5. Lubrication and Compressor Carryover: Some modern synthetic oils can and will attack nitrile seals. If there is any possibility of synthetic oils or greases migrating into the pneumatic components check for compatibility with the seal materials used. Consult the factory or product literature for materials of construction.

2.6. Polycarbonate Bowls and Sight Glasses: To avoid potential polycarbonate bowl failures:

- Do not locate polycarbonate bowls or sight glasses in areas where they could be subject to direct sunlight, impact blow, or temperatures outside of the rated range.
- Do not expose or clean polycarbonate bowls with detergents, chlorinated hydro-carbons, keytones, esters or certain alcohols.
- Do not use polycarbonate bowls or sight glasses in air systems where compressors are lubricated with fire resistant fluids such as phosphate ester and di-ester lubricants.

2.7. Chemical Compatibility: For more information on plastic component chemical compatibility see Pneumatic Division technical bulletins Tec-3, Tec-4, and Tec-5

2.8. Product Rupture: Product rupture can cause death, serious personal injury, and property damage.
- Do not connect pressure regulators or other Pneumatic Division products to bottled gas cylinders.
- Do not exceed the maximum primary pressure rating of any pressure regulator or any system component.
- Consult product labeling or product literature for pressure rating limitations.

3. PRODUCT ASSEMBLY AND INSTALLATION INSTRUCTIONS

3.1. Component Inspection: Prior to assembly or installation a careful examination of the valves, FRLs or vacuum products must be performed. All components must be checked for correct style, size, and catalog number. DO NOT use any component that displays any signs of nonconformance.

3.2. Installation Instructions: Parker published Installation Instructions must be followed for installation of Parker valves, FRLs and vacuum components. These instructions are provided with every Parker valve or FRL sold, or by calling 1-800-CPARKER,or at www.parker.com.

3.3. Air Supply: The air supply or control medium supplied to Valves, FRLs and Vacuum components must be moisture-free if ambient temperature can drop below freezing

4. VALVE AND FRL MAINTENANCE AND REPLACEMENT INSTRUCTIONS

4.1. Maintenance: Even with proper selection and installation, valve, FRL and vacuum products service life may be significantly reduced without a continuing maintenance program. The severity of the application, risk potential from a component failure, and experience with any known failures in the application or in similar applications should determine the frequency of inspections and the servicing or replacement of Pneumatic Division products so that products are replaced before any failure occurs. A maintenance program must be established and followed by the user and, at minimum, must include instructions 4.2 through 4.9. Failure to follow routine maintenance can lead to a reduction in the expected service life of the product and can result in damage to the system, personal injury and/or property damage.

4.2. Installation and Service Instructions: Before attempting to service or replace any worn or damaged parts consult the appropriate Service Bulletin for the valve or FRL in question for the appropriate practices to service the unit in question. These Service and Installation Instructions are provided with every Parker valve and FRL sold, or are available by calling 1-800-CPARKER, or by accessing the Parker website at www.parker.com.

4.3. Lockout / Tagout Procedures: Be sure to follow all required lockout and tagout procedures when servicing equipment. For more information see: OSHA Standard – 29 CFR, Part 1910.147, Appendix A, The Control of Hazardous Energy – (Lockout / Tagout)

4.4. Visual Inspection: Any of the following conditions requires immediate system shut down and replacement of worn or damaged components:
- Air leakage: Look and listen to see if there are any signs of visual damage to any of the components in the system. Leakage is an indication of worn or damaged components.
- Damaged or degraded components: Look to see if there are any visible signs of wear or component degradation including but not limited to swelling, bulging, creaks or leaks.
- Kinked, crushed, or damaged hoses. Kinked hoses can result in restricted air flow and lead to unpredictable system behavior.
- Any observed improper system or component function: Immediately shut down the system and correct malfunction.
- Excessive dirt build-up: Dirt and clutter can mask potentially hazardous situations.

Caution: Leak detection solutions should be rinsed off after use.

4.5. Routine Maintenance Issues:
- Remove excessive dirt, grime and clutter from work areas.
- Make sure all required guards and shields are in place.

4.6. Functional Test: Before initiating automatic operation, operate the system manually to make sure all required functions operate properly and safely.

4.7. Service or Replacement Intervals: It is the user's responsibility to establish appropriate service intervals. Valves, FRLs and vacuum products contain components that age, harden, wear, and otherwise deteriorate over time. Environmental conditions can significantly accelerate this process. Valves, FRLs and vacuum components need to be serviced or replaced on routine intervals. Failure to follow routine service can lead to a reduction in the expected service life of the product and can result in damage to the system, personal injury and/or property damage. Service intervals need to be established based on:
- Previous performance experiences.
- Government and / or industrial standards.
- When failures could result in unacceptable down time, equipment damage or personal injury risk.

4.8. Servicing or Replacing of any Worn or Damaged Parts: To avoid unpredictable system behavior that can cause death, personal injury and property damage:
- Follow all government, state and local safety and servicing practices prior to service including but not limited to all OSHA Lockout Tagout procedures (OSHA Standard – 29 CFR, Part 1910.147, Appendix A, The Control of Hazardous Energy – Lockout / Tagout).
- Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
- Disconnect air supply and depressurize all air lines connected to system and Pneumatic Division products before installation, service, or conversion.
- Installation, servicing, and / or conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing, or conversions air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or if the product does not operate properly, do not put product or system into use.
- Warnings and specifications on the product should not be covered or painted over. If masking is not possible, contact your local representative for replacement labels.

4.9. Putting Serviced System Back into Operation: Follow the guidelines above and all relevant Installation and Maintenance Instructions supplied with the valve FRL or vacuum component to insure proper function of the system.

1. **Definitions**. As used herein, the following terms have the meanings indicated.
"Buyer" means any customer receiving a Quote for Products.
"Buyer's Property" means any tools, patterns, plans, drawings, designs, specifications materials, equipment, or information furnished by Buyer, or which are or become Buyer's property.
"Confidential Information" means any technical, commercial, or other proprietary information of Seller, including, without limitation, pricing, technical drawings or prints and/or part lists, which has been or will be disclosed, delivered, or made available, whether directly or indirectly, to Buyer.
"Goods" means any tangible part, system or component to be supplied by Seller.
"Intellectual Property Rights" means any patents, trademarks, copyrights, trade dress, trade secrets or similar rights.
"Products" means the Goods, Services and/or Software as described in a Quote.
"Quote" means the offer or proposal made by Seller to Buyer for the supply of Products.
"Seller" means Parker-Hannifin Corporation, including all divisions, subsidiaries and businesses selling Products under these Terms.
"Seller's IP" means patents, trademarks, copyrights, or other intellectual property rights relating to the Products, including without limitation, names, designs, images, drawings, models, software, templates, information, any improvements or creations or other intellectual property developed prior to or during the relationship contemplated herein.
"Services" means any services to be provided by Seller.
"Software" means any software related to the Goods, whether embedded or separately downloaded.
"Special Tooling" means equipment acquired by Seller or otherwise owned by Seller necessary to manufacture Goods, including but not limited to tools, jigs, and fixtures.
"Terms" means the terms and conditions of this Offer of Sale.

2. Terms. All sales of Products by Seller will be governed by, and are expressly conditioned upon Buyer's assent to, these Terms. These Terms are incorporated into any Quote provided by Seller to Buyer. Buyer's order for any Products whether communicated to Seller verbally, in writing, by electronic data interface or other electronic commerce, shall constitute acceptance of these Terms. Seller objects to any contrary or additional terms or conditions of Buyer. Reference in Seller's order acknowledgement to Buyer's purchase order or purchase order number shall in no way constitute an acceptance of any of Buyer's terms or conditions of purchase. Any Quote made by Seller to Buyer shall be considered a firm and definite offer and shall not be deemed to be otherwise despite any language on the face of the Quote. Seller reserves all rights to accept or reject any purported acceptance by Buyer to Seller's Quote if such purported acceptance attempts to vary the terms of the Quote. If Seller ships Products after Buyer issues an acceptance to the Quote, any additional or different terms proposed by Buyer will not become part of the parties' business relationship unless agreed to in a writing that is signed by an authorized representative of Seller, excluding email correspondence. If the transaction proceeds without such agreement on the part of Seller, the business relationship will be governed solely by these Terms and the specific terms in Seller's Quote.

3. Price; Payment. The Products set forth in the Quote are offered for sale at the prices indicated in the Quote. Unless otherwise specifically stated in the Quote, prices are valid for thirty (30) days and do not include any sales, use, or other taxes or duties. Seller reserves the right to modify prices for any reason and at any time by giving ten (10) days prior written notice. Unless otherwise specified by Seller, all prices are F.C.A. Seller's facility (INCOTERMS 2020). All sales are contingent upon credit approval and full payment for all purchases is due thirty (30) days from the date of invoice (or such date as may be specified in the Quote). Under any circumstances, Buyer may not withhold or suspend payment of any amounts due and payable as a deduction, set-off or recoupment of any amount, claim or dispute with Seller. Unpaid invoices beyond the specified payment date incur interest at the rate of 1.5% per month or the maximum allowable rate under applicable law. Seller reserves the right to require advance payment or provision of securities for first and subsequent deliveries if there is any doubt, in Seller's sole determination, regarding the Buyer's creditworthiness or for other business reasons. If the requested advance payment or securities are not provided to Seller's satisfaction, Seller reserves the right to suspend performance or reject the purchase order, in whole or in part, without prejudice to Seller's other rights or remedies, including the right to full compensation. Seller may revoke or shorten any payment periods previously granted in Seller's sole determination. The rights and remedies herein reserved to Seller are cumulative and in addition to any other or further rights and remedies available at law or in equity. No waiver by Seller of any breach by Buyer of any provision of these terms will constitute a waiver by Seller of any other breach of such provision.

4. Shipment; Delivery; Title and Risk of Loss. All delivery dates are approximate, and Seller is not responsible for damages or additional costs resulting from any delay. All deliveries are subject to our ability to procure materials from our suppliers. Regardless of the manner of shipment, delivery occurs and title and risk of loss or damage pass to Buyer, upon placement of the Products with the carrier at Seller's facility. Unless otherwise agreed prior to shipment and for domestic delivery locations only, Seller will select and arrange, at Buyer's sole expense, the carrier and means of delivery. When Seller selects and arranges the carrier and means of delivery, freight and insurance costs for shipment to the designated delivery location will be prepaid by Seller and added as a separate line item to the invoice. Buyer shall be responsible for any additional shipping charges incurred by Seller due to Buyer's acts or omissions. Buyer shall not return or repackage any Products without the prior written authorization from Seller, and any return shall be at the sole cost and expense of Buyer.

5. Warranty. The warranty for the Products is as follows:
(i) Goods are warranted against defects in material or workmanship for a period of twelve (12) months from the date of delivery or 2,000 hours of use, whichever occurs first; (ii) Services shall be performed in accordance with generally accepted practices and using the degree of care and skill that is ordinarily exercised and customary in the field to which the Services pertain and are warranted for a period of six (6) months from the date of completion of the Services; and (iii) Software is only warranted to perform in accordance with applicable specifications provided by Seller to Buyer for ninety (90) days from the date of delivery or, when downloaded by a Buyer or end-user, from the date of the initial download. All prices are based upon the exclusive limited warranty stated above, and upon the following disclaimer: **EXEMPTION CLAUSE; DISCLAIMER OF WARRANTY, CONDITIONS, REPRESENTATIONS: THIS WARRANTY IS THE SOLE AND ENTIRE WARRANTY, CONDITION, AND REPRESENTATION, PERTAINING TO PRODUCTS. SELLER DISCLAIMS ALL OTHER WARRANTIES, CONDITIONS, AND REPRESENTATIONS, WHETHER STATUTORY, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THOSE RELATING TO DESIGN, NONINFRINGEMENT, MERCHANTABILITY, AND FITNESS FOR A PARTICULAR PURPOSE. SELLER DOES NOT WARRANT THAT THE SOFTWARE IS ERROR-FREE OR FAULT-TOLERANT, OR THAT BUYER'S USE THEREOF WILL BE SECURE OR UNINTERRUPTED, UNLESS OTHERWISE AUTHORIZED IN WRITING BY SELLER, THE SOFTWARE SHALL NOT BE USED IN CONNECTION WITH HAZARDOUS OR HIGH-RISK ACTIVITIES OR ENVIRONMENTS. EXCEPT AS EXPRESSLY STATED HEREIN, ALL PRODUCTS ARE PROVIDED "AS IS".**

6. Claims; Commencement of Actions. Buyer shall promptly inspect all Products upon receipt. No claims for shortages will be allowed unless reported to Seller within ten (10) days of delivery. Buyer shall notify Seller of any alleged breach of warranty within thirty (30) days after the date the non-conformance is or should have been discovered by Buyer. Any claim or action against Seller based upon breach of contract or any other theory, including tort, negligence, or otherwise must be commenced within twelve (12) months from the date of the alleged breach or other alleged event, without regard to the date of discovery.

7. LIMITATION OF LIABILITY. IN THE EVENT OF A BREACH OF WARRANTY, SELLER WILL, AT ITS OPTION, REPAIR OR REPLACE THE NON-CONFORMING PRODUCTS, RE-PERFORM THE SERVICES, OR REFUND THE PURCHASE PRICE PAID WITHIN A REASONABLE PERIOD OF TIME. IN NO EVENT IS SELLER LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES INCLUDING ANY LOSS OF REVENUE OR PROFITS, WHETHER BASED IN CONTRACT, TORT OR OTHER LEGAL THEORY. IN NO EVENT SHALL SELLER'S LIABILITY UNDER ANY CLAIM MADE BY BUYER EXCEED THE PURCHASE PRICE PAID FOR THE PRODUCTS.

8. Confidential Information. Buyer acknowledges and agrees that Confidential Information has been and will be received in confidence and will remain the property of Seller. Buyer further agrees that it will not use Seller's Confidential Information for any purpose other than for the benefit of Seller and shall return all such Confidential Information to Seller within thirty (30) days upon request.

9. Loss to Buyer's Property. Buyer's Property will be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer ordering the Products manufactured using Buyer's Property.

09/22

Also, Seller shall not be responsible for any loss or damage to Buyer's Property while it is in Seller's possession or control.

10. Special Tooling. Seller may impose a tooling charge for any Special Tooling. Special Tooling shall be and remain Seller's property. In no event will Buyer acquire any interest in the Special Tooling, even if such Special Tooling has been specially converted or adapted for manufacture of Goods for Buyer and notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller has the right to alter, discard or otherwise dispose of any Special Tooling or other property owned by Seller in its sole determination at any time.

11. Security Interest. To secure payment of all sums due from Buyer, Seller retains a security interest in all Products delivered to Buyer and, Buyer's acceptance of these Terms is deemed to be a Security Agreement under the Uniform Commercial Code. Buyer authorizes Seller as its attorney to execute and file on Buyer's behalf all documents Seller deems necessary to perfect Seller's security interest.

12. User Responsibility. Buyer, through its own analysis and testing, is solely responsible for making the final selection of the Products and assuring that all performance, endurance, maintenance, safety and warning requirements of the application of the Products are met. Buyer must analyze all aspects of the application and follow applicable industry standards, specifications, and any technical information provided with the Quote or the Products, such as Seller's instructions, guides and specifications. If Seller provides options of or for Products based upon data or specifications provided by Buyer, Buyer is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the Products. In the event Buyer is not the end-user of the Products, Buyer will ensure such end-user complies with this paragraph.

13. Use of Products, Indemnity by Buyer. Buyer shall comply with all instructions, guides and specifications provided by Seller with the Quote or the Products. If Buyer uses or resells the Products in any way prohibited by Seller's instructions, guides or specifications, or Buyer otherwise fails to comply with Seller's instructions, guides and specifications, Buyer acknowledges that any such use, resale, or non-compliance is at Buyer's sole risk. Further, Buyer shall indemnify, defend, and hold Seller harmless from any losses, claims, liabilities, damages, lawsuits, judgments and costs (including attorney fees and defense costs), whether for personal injury, property damage, intellectual property infringement or any other claim, arising out of or in connection with: (a) improper selection, design, specification, application, or any misuse of Products; (b) any act or omission, negligent or otherwise, of Buyer; (c) Seller's use of Buyer's Property; (d) damage to the Products from an external cause, repair or attempted repair by anyone other than Seller, failure to follow instructions, guides and specifications provided by Seller, use with goods not provided by Seller, or opening, modifying, deconstructing, tampering with or repackaging the Products; or (e) Buyer's failure to comply with these Terms, including any legal or administrative proceedings, collection efforts, or other actions arising from or relating to such failure to comply. Seller shall not indemnify Buyer under any circumstance except as otherwise provided in these Terms.

14. Cancellations and Changes. Buyer may not cancel or modify, including but not limited to movement of delivery dates for the Products, any order for any reason except with Seller's written consent and upon terms that will indemnify, defend and hold Seller harmless against all direct, incidental and consequential loss or damage and any additional expense. Seller, at any time, may change features, specifications, designs and availability of Products.

15. Assignment. Buyer may not assign its rights or obligations without the prior written consent of Seller.

16. Force Majeure. Seller is not liable for delay or failure to perform any of its obligations by reason of any events or circumstances beyond its reasonable control. Such circumstances include without limitation: accidents, labor disputes or stoppages, government acts or orders, acts of nature, pandemics, epidemics, other widespread illness, or public health emergency, cyber related disruptions, cyber-attacks, ransomware sabotage, delays or failures in delivery from carriers or suppliers, shortages of materials, sudden increases in the price of raw material or components, shutdowns or slowdowns affecting the supply of raw materials or components, or the transportation thereof, oil shortages or oil price increases, energy crisis, energy or fuel interruption, war (whether declared or not) or the serious threat of same, riots, rebellions, acts of terrorism, embargoes, fire or any reason whether similar to the foregoing or otherwise. Seller will resume performance as soon as practicable after the event of force majeure has been removed. All delivery dates affected by an event of force majeure shall be tolled for the duration of such event of force majeure and rescheduled for mutually agreed dates as soon as practicable after the event of force majeure ceases to exist. The right to allocate capacity is in the Seller's sole discretion. An event of force majeure shall not include financial distress, insolvency, bankruptcy, or other similar conditions affecting one of the parties, affiliates and/or subcontractors. An event of force majeure in the meaning of these Terms means any circumstances beyond Seller's control that permanently or temporarily hinders performance, even where that circumstance was already foreseen. Buyer shall not be entitled to cancel any orders following its claim of an event of force majeure.

17. Waiver and Severability. Failure to enforce any provision of these Terms will not invalidate that provision; nor will any such failure prejudice either party's right to enforce that provision in the future. Invalidation of any provision of these Terms shall not invalidate any other provision herein and, the remaining provisions will remain in full force and effect.

18. Duration. Unless otherwise stated in the Quote, any agreement governed by or arising from these Terms shall: (a) be for an initial duration of one (1) year; and (b) shall automatically renew for successive one-year terms unless terminated by Buyer with at least 180-days written notice to Seller or if Seller terminates the agreement pursuant to Section 19 of these Terms.

19. Termination. Seller may, without liability to Buyer, terminate any agreement governed by or arising from these Terms for any reason and at any time by giving Buyer thirty (30) days prior written notice. Seller may immediately terminate, in writing, if Buyer: (a) breaches any provision of these Terms, (b) becomes or is deemed insolvent, (c) appoints or has appointed a trustee, receiver or custodian for all or any part of Buyer's property,(d) files a petition for relief in bankruptcy on its own behalf, or one is filed against Buyer by a third party, (e) makes an assignment for the benefit of creditors; or (f) dissolves its business or liquidates all or a majority of its assets.

20. Ownership of Rights. Buyer agrees that (a) Seller (and/or its affiliates) owns or is the valid licensee of Seller's IP and (b) the furnishing of information, related documents or other materials by Seller to Buyer does not grant or transfer any ownership interest or license in or to Seller's IP to Buyer, unless expressly agreed in writing. Without limiting the foregoing, Seller retains ownership of all Software supplied to Buyer. In no event shall Buyer obtain any greater right in and to the Software than a right in a license limited to the use thereof and subject to compliance with any other terms provided with the Software. Buyer further agrees that it will not, directly or through intermediaries, reverse engineer, decompile, or disassemble any Software (including firmware) comprising or contained within a Product, except and only to the extent that such activity may be expressly permitted, either by applicable law or, in the case of open source software, the applicable open source license.

21. Indemnity for Infringement of Intellectual Property Rights. Seller is not liable for infringement of any Intellectual Property Rights except as provided in this Section. Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on a third-party claim that one or more of the Products infringes the Intellectual Property Rights of a third party in the country of delivery of the Products by Seller to Buyer. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of any such claim, and Seller having sole control over the defense of the claim including all negotiations for settlement or compromise. If one or more Products is subject to such a claim, Seller may, at its sole expense and option, procure for Buyer the right to continue using the Products, replace or modify the Products to render them non-infringing, or offer to accept return of the Products and refund the purchase price less a reasonable allowance for depreciation. Seller has no obligation or liability for any claim of infringement: (i) arising from information provided by Buyer (including Seller's use of Buyer's Property); or (ii) directed to any Products for which the designs are specified in whole or part by Buyer; or (iii) resulting from the modification, combination or use in a system of any Products. The foregoing provisions of this Section constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for claims of infringement of Intellectual Property Rights.

22. Governing Law. These Terms, the terms of any Quote, and the sale and delivery of all Products are deemed to have taken place in, and shall be governed and construed in accordance with, the laws of the State of Ohio, as applicable to contracts executed and wholly performed therein and without regard to conflicts of laws principles. Buyer irrevocably agrees and consents to the exclusive jurisdiction and venue of the courts of Cuyahoga County, Ohio with respect to any dispute, controversy or claim arising out of or relating to the sale and delivery of the Products.

23. Entire Agreement. These Terms, along with the terms set forth in the Quote, forms the entire agreement between the Buyer and Seller and constitutes the final, complete and exclusive expression of the terms of sale and purchase. In the event of a conflict between any term set forth in the Quote and these Terms, the terms set forth in the Quote shall prevail. All prior or contemporaneous written or oral agreements or negotiations with

respect to the subject matter shall have no effect. No modification to these Terms will be binding on Seller unless agreed to in a writing that is signed by an authorized representative of Seller, excluding email correspondence, 'clickwrap' or other purported electronic assent to different or additional terms. Sections 2-25 of these Terms shall survive termination or cancellation of any agreement governed by or arising from these Terms.

24. No 'Wrap' Agreements/No Authority to Bind. Seller's clicking any buttons or any similar action, such as clicking "I Agree" or "Confirm," to utilize Buyer's software or webpage for the placement of orders, is NOT an agreement to Buyer's Terms and Conditions. **NO EMPLOYEE, AGENT OR REPRESENTATIVE OF SELLER HAS THE AUTHORITY TO BIND SELLER BY THE ACT OF CLICKING ANY BUTTON OR SIMILAR ACTION ON BUYER'S WEBSITE OR PORTAL.**

25. Compliance with Laws. Buyer agrees to comply with all applicable laws, regulations, and industry and professional standards, including those of the United States of America, and the country or countries in which Buyer may operate, including without limitation the U.S. Foreign Corrupt Practices Act ("FCPA"), the U.S. Anti-Kickback Act ("Anti-Kickback Act"), U.S. and E.U. export control and sanctions laws ("Export Laws"), the U.S. Food Drug and Cosmetic Act ("FDCA"), and the rules and regulations promulgated by the U.S. Food and Drug Administration ("FDA"), each as currently amended. Buyer agrees to indemnify, defend, and hold harmless Seller from the consequences of any violation of such laws, regulations and standards by Buyer, its employees or agents. Buyer represents that it is familiar with all applicable provisions of the FCPA, the Anti-Kickback Act, Export Laws, the FDCA and the FDA and certifies that Buyer will adhere to the requirements thereof and not take any action that would make Seller violate such requirements. Buyer represents and agrees that Buyer will not make any payment or give anything of value, directly or indirectly, to any governmental official, foreign political party or official thereof, candidate for foreign political office, or commercial entity or person, for any improper purpose, including the purpose of influencing such person to purchase Products or otherwise benefit the business of Seller. Buyer further represents and agrees that it will not receive, use, service, transfer or ship any Products from Seller in a manner or for a purpose that violates Export Laws or would cause Seller to be in violation of Export Laws. Buyer agrees to promptly and reliably provide Seller all requested information or documents, including end-user statements and other written assurances, concerning Buyer's ongoing compliance with Export Law.

Parker Hannifin Corporation
Pneumatic Division
8676 E. M89
Richland, MI 49083 USA
Tel: 269 629 5000
Applications Engineering: pdn.technical@support.parker.com
Customer Support: pdn.support@support.parker.com
Web site: www.parker.com/pneumatics