Flanged Products

Introduction
Parker Hannifin’s response to the demand for reduction in leakage paths has been the combination of primary and secondary valves into one compact unit. The combining of piping and instrument valves into a single unit has benefitted various markets. We now offer a range of Ultra-Low Emission products which meet class A or class B levels of ISO 15848 standard for Ultra-Low emissions, as required.

Parker Hannifin can offer the unique combination of double block and bleed valve systems together with integral fittings, both being designed and produced by one company. Selection of this combination results in the elimination of taper thread connections and the need for thread sealant. For more information on leak path reductions and how to combine connections and valves into one unit, please contact us.

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Primary, secondary and vent valve applications and installations

Solutions
Parker Hannifin offers the unique solution by incorporating primary and secondary valve systems into one complete block. In addition traditional instrument taper thread connections can be totally eliminated resulting in systems being free of thread sealant contamination.

Conventional Installation [1]
• A welded flange, connected to a primary ANSI class isolating valve. The primary valve will be connected to a secondary instrument valve. A pressure gauge or transmitter will then be installed downstream of the instrument valve

Parker Pro-Bloc® [2]
• A one-piece integral forging incorporating up to 3 ball valves or mixture of ball and needle design.
• Improved safety: leak paths reduced by up to 60%
• Reduced costs: installation and component costs reduced by up to 70%
• Reduced weight: by up to 80%
• Reduced susceptibility to problems caused by vibration.

Parker Monoflange [3]
• More compact than Pro-Bloc®, adding further space and weight saving possibilities
• Improved safety: leak paths reduced by up to 60%, less susceptibility to vibration
• Reduced costs: installation and component costs reduced by up to 80%
• Reduced weight: by up to 85%
See pages 11-16 for standard and pages 23-31 for Ultra-Low Emission products

Parker Hi-Pro Manifolds [4]
• Enables the user to continue to use traditional NPT threaded connections and at the same time utilise the double block and bleed principals. Available in several combinations of ball and needle valves
Full details can be found in CAT 4190 HBM

Design codes
All Parker Hannifin double block and bleed designs comply with the following codes:
• ANSI/ASME B16.34 (Designed to meet the pressure and temperature requirements)
• ANSI/ASME B1.20.1 (Threads)
• ANSI/ASME B16.5 (Dimensions)
• BS6755 PART 2/API 607 (Fire safe designed to meet the requirements and verified by internal testing)
• ISO 15848 for Ultra-Low emissions
• B31.1
Flanged Products

Ball valve specification

Specifications
- 316 Stainless steel construction
- Maximum cold working pressure rating 6,000 psig (414 barg) with P.T.F.E. seats*
- Temperature rating PTFE seats -54°C to +232°C (-65°F to +450°F)*
- Temperature rating PEEK seats -54°C to +232°C (-65°F to +450°F)*
  *always refer to P/T graph

Features
- Two piece body design - minimal leakage paths
- 4:1 Pressure boundary designed safety factor
- Designed to comply with requirements of ANSI/ASME B16.34 where applicable
- Bi-directional
- PEEK and PTFE standard ball seat materials
- PTFE and Graphoil gland packings
- Bubble tight shutoff.
- Floating ball principal with dynamic response seats featuring inherent self relief
- Anti blowout stem
- Integral compression ends available eliminating taper threads and thread sealants
- Low torque operation
- Quarter turn positive stop handle with ergonomically designed protective sleeve
- Full hydrostatic and low pressure air tested
- Connector thread environmentally sealed
- Anti static
- Firesafe designed to meet BS6755 Part 2/ API 607, (optional)

Part description

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>End connector</td>
</tr>
<tr>
<td>2.</td>
<td>E-seal™</td>
</tr>
<tr>
<td>3.</td>
<td>Sealing washer</td>
</tr>
<tr>
<td>4.</td>
<td>Seats</td>
</tr>
<tr>
<td>5.</td>
<td>Body</td>
</tr>
<tr>
<td>6.</td>
<td>Ball</td>
</tr>
<tr>
<td>7.</td>
<td>Anti blowout stem</td>
</tr>
<tr>
<td>8.</td>
<td>Thrust Seal</td>
</tr>
<tr>
<td>9.</td>
<td>Gland packing</td>
</tr>
<tr>
<td>10.</td>
<td>Upper gland packing</td>
</tr>
<tr>
<td>11.</td>
<td>Thrust bush</td>
</tr>
<tr>
<td>12.</td>
<td>Stop pin</td>
</tr>
<tr>
<td>13.</td>
<td>Thrust bush</td>
</tr>
<tr>
<td>14.</td>
<td>Lock nut</td>
</tr>
<tr>
<td>15.</td>
<td>Locking dome nut</td>
</tr>
<tr>
<td>16.</td>
<td>Handle</td>
</tr>
<tr>
<td>17.</td>
<td>Handle grip</td>
</tr>
</tbody>
</table>

Performance Data Pressure vs temperature

- See catalogue 4180-HBV Hi-Pro Ball Valve for High Performance Process Isolation

Outside screw and yoke (O.S.&Y.) needle valve

Features
- Externally adjustable gland
- P.T.F.E. or Graphite packing for bubble tight sealing
- Self centering needle tip for bubble tight shut off and repeatability
- Available in 316, Monel, Duplex, Super Duplex, Hasteloy, Inconel, Incoloy, 6Mo, Carbon Steel, other materials on application
- Stainless steel as standard
- Optional wetted parts in a variety of exotic materials
- Firesafe certified to BS6755 part 2/ API 607
- Pressure rating up to 10,000 psig (690 barg)
- Temperature -54°C to 538°C (-65 F to 1000 F)
- Body to bonnet flange gasket for 100% atmospheric seal
- Back stopped spindle for blow out prevention, and minimum atmospheric leakage
- Rolled spindle operating threads
- Independent spindle thread bush with maximum female thread interface
- Colour coded close contact dust cap and function label for easy identification
- Optional: NACE compliance, heat code trace certification, oxygen clean

Part description

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Body</td>
</tr>
<tr>
<td>2.</td>
<td>Tip</td>
</tr>
<tr>
<td>3.</td>
<td>Joint seal</td>
</tr>
<tr>
<td>4.</td>
<td>Packing</td>
</tr>
<tr>
<td>5.</td>
<td>Thrust bush</td>
</tr>
<tr>
<td>6.</td>
<td>Stem</td>
</tr>
<tr>
<td>7.</td>
<td>Ball adjuster</td>
</tr>
<tr>
<td>8.</td>
<td>Bridge nuts</td>
</tr>
<tr>
<td>9.</td>
<td>Bonnet-bridge studding</td>
</tr>
<tr>
<td>10.</td>
<td>Handle</td>
</tr>
<tr>
<td>11.</td>
<td>Grub screw</td>
</tr>
<tr>
<td>12.</td>
<td>Dust cap</td>
</tr>
<tr>
<td>13.</td>
<td>Bridge</td>
</tr>
<tr>
<td>14.</td>
<td>Bonnet</td>
</tr>
<tr>
<td>15.</td>
<td>Body-bonnet studding</td>
</tr>
<tr>
<td>16.</td>
<td>Stud nuts</td>
</tr>
</tbody>
</table>

When selecting products for specific applications users should refer to our notice at the bottom of page 13.
Flanged Products

' H ' Series globe style needle valve

For safe, reliable and repeatable performance

Part description

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Positive handle retention</td>
</tr>
<tr>
<td>2</td>
<td>‘ T ’ bar</td>
</tr>
<tr>
<td>3</td>
<td>Dust Cap</td>
</tr>
<tr>
<td>4</td>
<td>Gland packing adjuster</td>
</tr>
<tr>
<td>5</td>
<td>Gland adjuster lock nut</td>
</tr>
<tr>
<td>6</td>
<td>Valve Bonnet</td>
</tr>
<tr>
<td>7</td>
<td>Anti blowout spindle</td>
</tr>
<tr>
<td>8</td>
<td>Thrust Bush</td>
</tr>
<tr>
<td>9</td>
<td>Gland packing (adjustable)</td>
</tr>
<tr>
<td>10</td>
<td>Bonnet/body washer</td>
</tr>
<tr>
<td>11</td>
<td>Spindle tip</td>
</tr>
</tbody>
</table>

Features

- Rolled spindle operating threads for low torque operation
- Gland packing in PTFE or Graphite for bubble tight sealing
- Colour coded close contact dust cap and function label for easy identification
- Available in 316L, Monel, Duplex, Super Duplex, Hastelloy, Inconel, Incoloy, 6Mo, Titanium, other materials on application
- T-bar operating handle for low torque function
- Self centering cramped needle tip for bubble tight seat sealing
- Close contact dust cap for operating thread protection
- Back seated spindle for blow out prevention and minimum atmospheric leakage
- Adjustable gland with easy access
- Gland lock nut for vibration access

Pressure vs temperature

Note: For ANSI/ASME B31.1 compliant products please see pages 12-15.

Anti-tamper spindle

For key only - part no. ATHKEY/1

Retro-fit kit part number KITAT without key

KITATK with key

Bolted bonnet inside screw

Not available on Low Emission valves

Part description

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
</tr>
<tr>
<td>2</td>
<td>Tip</td>
</tr>
<tr>
<td>3</td>
<td>Joint seal</td>
</tr>
<tr>
<td>4</td>
<td>Packing</td>
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<td>5</td>
<td>Thrust bush</td>
</tr>
<tr>
<td>6</td>
<td>Stem</td>
</tr>
<tr>
<td>7</td>
<td>Nut</td>
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<td>8</td>
<td>Gland adjuster</td>
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<td>9</td>
<td>Handle</td>
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<td>10</td>
<td>Grub screw</td>
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<tr>
<td>11</td>
<td>Dust cap</td>
</tr>
<tr>
<td>12</td>
<td>Bonnet</td>
</tr>
<tr>
<td>13</td>
<td>Body-bonnet studing</td>
</tr>
<tr>
<td>14</td>
<td>Stud nuts</td>
</tr>
</tbody>
</table>

**WARNING**

When selecting products for specific applications users should refer to our notice at the bottom of page 13.
Monoflange (MF) manifolds

Purpose
This manifold range is designed to replace conventional multiple-valve installations currently in use for interface with pressure measuring systems. By combining customer specified valves into a single manifold, the number of leak paths is considerably reduced and the mass of the system is lowered reducing the stresses from loading and vibration. The result of which substantially improves installation and operational safety factors. Reduction in leakage path connections together with a one-piece solution also provides positive installation cost savings. Suitable for Ultra-Low Emission requirements.

Key advantages of Parker Monoflanges
- Strong construction produced from one piece grain flow controlled forged body
- Various flow and valve configurations available allowing true flexibility to meet all customer requirements
- Variety of flange sizes and outlet connections
- Standard materials of Carbon Steel A105, Low Temperature Carbon Steel A350 LF2, Stainless Steel A182-F316 and Duplex Stainless Steel A182-F51
- Optional materials include Super Duplex, Monel, Hastelloy, 6Mo, Incoloy 625
- Incorporation of standard H series needle valve technology and state of the art O.S.&Y. design
- 4mm Needle valve orifice
- Ergonomically designed operating handles with low torque function
- Full range of customer retrofit fit handle options
- User friendly part number and specification construction system
- Customised designs welcome
- Available to meet ISO 15848, Class A

Instrument outlet connections
One of the unique features Parker can offer users which can further enhance safety factors is the incorporation of single or twin female compression fittings as an integral part of the outlet connection.

Installation of the instrument which require remote positioning will be interconnected using conventional tube and fittings, whilst NPT taper threads are accepted as a standard their use involves some form of thread sealant which adds to the complication of instrument performance through contamination within the system. Avoiding these taper thread connections wherever possible reduces this contaminant risk and Parker, being a leading manufacturer of compression type of fittings (which requires no sealant mediums), can incorporate them in the outlet connection, totally eliminating the contamination risk.
**Flanged Products**

**Monoflange (MF) manifold selection and part number construction - made easy**

Select the style of Monoflange from the choice of arrangements below noting the complete MF reference.

If the style or arrangement is not shown below please provide full description and specification.

Please note vent valve is not anti-tamper as standard.

For bleed port only specify MF*160.

For flange to flange variants replace MF*1** with MF*2**.

For dual outlets specify MF*115.

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### Example: MFY100

<table>
<thead>
<tr>
<th>Block bleed block</th>
<th>Block bleed block</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Isolate: Needle</td>
<td>1st Isolate: Needle</td>
</tr>
<tr>
<td>2nd Isolate: Needle</td>
<td>Vent: Needle</td>
</tr>
<tr>
<td>MFH110</td>
<td>MFH110</td>
</tr>
</tbody>
</table>

### Flanged Products

| B | 32T2500 |

2. **Material**

A Carbon Steel ASTM A105
B Stainless Steel ASTM A182-F316
D Monel M400
E Duplex ASTM A182-F51
F Super Duplex ASTM A182-F53/F55
G Hastelloy C-276
H Low Temp. C. St. ASTM A550 LF2
K 6Mo
M Inconel 625

### Flange details

<table>
<thead>
<tr>
<th>Flange Size</th>
<th>Flange Face Style</th>
<th>Flange Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>Raised Face Spiral</td>
<td>150 = 150</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>Ring Type Joint</td>
<td>300 = 300</td>
</tr>
<tr>
<td>1&quot;</td>
<td>Needle</td>
<td>600 = 600</td>
</tr>
<tr>
<td>1 1/2&quot;</td>
<td>Needle</td>
<td>900 = 900</td>
</tr>
<tr>
<td>2&quot;</td>
<td>Needle</td>
<td>1500 = 1500</td>
</tr>
</tbody>
</table>

### 3. Flange details

<table>
<thead>
<tr>
<th>Size</th>
<th>Flange Face Style</th>
<th>Flange Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>Raised Face Spiral</td>
<td>150 = 150</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>Ring Type Joint</td>
<td>300 = 300</td>
</tr>
<tr>
<td>1&quot;</td>
<td>Needle</td>
<td>600 = 600</td>
</tr>
<tr>
<td>1 1/2&quot;</td>
<td>Needle</td>
<td>900 = 900</td>
</tr>
<tr>
<td>2&quot;</td>
<td>Needle</td>
<td>1500 = 1500</td>
</tr>
</tbody>
</table>

### 4. Outlet style (1/2" FNPT is standard)

<table>
<thead>
<tr>
<th>Size</th>
<th>Connection Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot;</td>
<td>Female NPT Thread</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>Male NPT Thread</td>
</tr>
</tbody>
</table>

### 5. Plugged vent (1/4" FNPT is standard)

<table>
<thead>
<tr>
<th>Size</th>
<th>FNPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>6V</td>
<td>3/8&quot;</td>
</tr>
<tr>
<td>6B</td>
<td>1/2&quot;</td>
</tr>
</tbody>
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### 6. Valve packing and seat materials

<table>
<thead>
<tr>
<th>Material</th>
<th>Seat Material</th>
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</thead>
<tbody>
<tr>
<td>PTFE</td>
<td>Needle only</td>
</tr>
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</table>

### 7. Valve handle operating options

<table>
<thead>
<tr>
<th>Operating Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anti tamper</td>
<td>Anti tamper</td>
</tr>
<tr>
<td>Padlock handle locking</td>
<td>Padlock handle locking</td>
</tr>
<tr>
<td>Regulating tip (H series needle valve only)</td>
<td>Regulating tip (H series needle valve only)</td>
</tr>
</tbody>
</table>

### 8. Condition

A Anti tamper
F Firesafe design (primary only - O.S.&Y. needle valve)
N NACE

#### IMPORTANT NOTES

- All non wetted parts will be supplied in standard stainless steel for exotic materials. For carbon steel construction trim materials will be supplied in stainless steel.
- Ring type joints (T) CANNOT be supplied for 1/2" & 3/4" class 150 flanges. SI St. grades 302 and 304 are NOT used in the construction of any of these products. For customer specific options not covered here engineering will allocate a part number at quotation stage. Certification requirements and customer specifications MUST be provided at enquiry and order stage.
- For API flange requirements full details must be specified separately.
- Part number example MFY100B2T2500AF Monoflange Double-Block and Bleed (O.S.&Y.) Needle Bleed Block (Needle) MFY100 - 316 St. St. construction B - 2 Pipe flange, Ring type joint, class 2500 (32T2500) - 1/2" female NPT outlet - 1/4" Female NPT vent - Anti-tamper vent (A3) - Firesafe design and certified (F), valves fitted with PTFE packing, metal seated 17-4PH st.st. tips.
- Padlocks not supplied

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Please refer to our notice at the bottom of page 27.
Flanged Products

Monoflange manifolds compliant with ANSI B31.1

Purpose
This manifold range is designed to replace conventional multiple-valve installations currently in use for interface with pressure measuring systems. By combining customer specified valves into a single manifold, the number of leak paths is considerably reduced and the mass of the system is lowered thus reducing the stresses from loading and vibration. The result of which substantially improves installation and operational safety factors. Reduction in leakage path connections together with a one-piece solution also provides positive installation cost savings.

Key advantages of Parker Monoflanges
• Strong construction produced from one piece grain flow controlled forged body
• Various flow and valve configurations available allowing true flexibility to meet all customer requirements
• Variety of flange sizes and outlet connections
• Incorporation of HPP series needle valve technology
• 4mm Needle valve orifice
• Ergonomically designed operating handles with low torque function
• Full range of customer retro fit handle options
• User friendly part number and specification construction system
• Customised designs welcome

Instrument outlet connections
One of the unique features Parker can offer users which can further enhance safety factors is the incorporation of single or twin ferrule compression fittings as an integral part of the outlet connection.
Installation of the instrument which require remote positioning will be interconnected using conventional tube and fittings, whilst NPT taper threads are accepted as a standard their use involves some form of thread sealant which adds to the complication of instrument performance through contamination within the system.

Avoiding these taper thread connections wherever possible reduces this contaminant risk and Parker, being a leading manufacturer of compression type of fittings (which requires no sealant mediums), can incorporate them in the outlet connection, totally eliminating the contamination risk.

Monoflange features
• 1/2 to 2 N.B. Flanges (15 to 50 DN)
• ANSI B16.5 150 to 2500 flange class
• 1/2-14 NPT (female) standard outlet
• 1/4-18 NPT (female) standard vent
• Variety of optional end connection sizes and thread forms including tube connections 1/2 /22mm diameter
• Standard materials of construction: Stainless steel ASTM A182 F316/F316L, Carbon steel ASTM A55 LF2/A105
• Instrument connections A-LOK® inverted available
• Raised face and ring type joint flange face styles
• One-piece forged construction flange as standard
• Graphite packing to meet full pressure/temperature requirements of ANSI B31.1 materials
• Pressure boundary designs calculated to ANSI B31.1
• 4:1 Factor of Safety

Pressure vs temperature

Features
• All valves are graphite packed for high temperature service
• Non rotating, hard stem tip with metal to metal seating for bubble tight shut-off
• Back seat design
• Blow-out proof stem
• Pressures & temperatures in accordance with ASME class 2500
• Patented Tru-Lok® safety bonnet locking device prevents accidental removal
• Standard orifice 4mm (Cv 0.35)

Specific pressure / temperature performance
316 SS
6000 psig @ 100°F (414 bar @ 38°C)
2915 psig @ 1000°F (201 bar @ 538°C)

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

Offer of Sale
The items described in this document are hereby offered for sale by Parker Hannifin Corporation, its subsidiaries or its authorized distributors. Any Order accepted by Parker Hannifin will be subject to our terms and conditions of sale, copy available on request.
Flanged Products

ANSI B31.1 compliant manifold selection and part number construction - made easy

Select the style of Monoflange from the choice of arrangements below noting the complete reference. If the style or arrangement is not shown below please provide full description and specification.

1. Monoflange part number
   Insert from page 14

2. Material
   A. Carbon Steel ASTM A105
   B. Stainless Steel ASTM A182-F316
   C. Hastelloy C-276
   D. Low Temp. C. St. ASTM A350 LF2

3. Flange details
<table>
<thead>
<tr>
<th>Size</th>
<th>Flange Face Style</th>
<th>Flange Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>F = Raised Face Spiral</td>
<td>150-300</td>
</tr>
<tr>
<td>12</td>
<td>T = Ring Type Joint</td>
<td>300-600</td>
</tr>
<tr>
<td>16</td>
<td>1/2</td>
<td>900-1500</td>
</tr>
<tr>
<td>24</td>
<td>1</td>
<td>136-150/300/</td>
</tr>
<tr>
<td></td>
<td></td>
<td>600</td>
</tr>
<tr>
<td>32</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

   API: specify separately
   DIN: see page 20
   1/2. flange size only

4. Outlet style (1/2" FNPT is standard NO part designator needed)
<table>
<thead>
<tr>
<th>Connection Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 = 1/4 F = Female NPT Thread</td>
</tr>
<tr>
<td>6 = 3/8 M = Male NPT Thread</td>
</tr>
<tr>
<td>8 = 1/2 A = A-LOK® (inverted only)</td>
</tr>
<tr>
<td>M6 = 6mm G = Swivel gauge</td>
</tr>
<tr>
<td>M10 = 10mm</td>
</tr>
<tr>
<td>M12 = 12mm NPT/F (fitted)</td>
</tr>
</tbody>
</table>

5. Plugged vent (1/4" FNPT is standard NO part designator needed)
<table>
<thead>
<tr>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>V6 = 3/8 FNPT</td>
</tr>
<tr>
<td>V8 = 1/2 FNPT</td>
</tr>
</tbody>
</table>

6. Condition
   NACE: Combine designators as required
   Please Note: Certification requirements and customer specifications MUST be provided at enquiry and order stage.

7. Valve handle operating options
   A. Anti tamper
   L. Padlock handle locking
   R: Regulating tip (H series needle valve only)

   * Insert valve number 1 = primary, 2 = secondary, 3 = vent, 4 = all.
   Padlocks not supplied

8. Valve packing
   3 Graphoil (standard)

IMPORTANT NOTES

All non wetted parts will be supplied in standard stainless steel for exotic materials. For carbon steel construction trim materials will be supplied in stainless steel.

Ring type joints (T) CANNOT be supplied for 1/2" & 3/4" class 150 flanges.
St. St. grades 302 and 304 are NOT used in the construction of any of these products.
Part number example PPMFH100: Carbon Steel ASTM A105 Monoflange - Double Block and Bleed - Block (Needle Bleed) (Needle) Block (Needle)

Please note vent valve is not anti-tamper as standard.

Flange details:
Flange Flange Face Style Flange Class
Size     
8        = 1/2" F = Raised Face Spiral 150 = 150
12       = 3/4" T = Ring Type Joint 300 = 300
16       = 1/2" 900 = 900
24       = 1" 136 = 150/300/600
32       = 2" 2500 = 2500

API: specify separately
DIN: see page 20
1/2. flange size only

Example PPMFH100 B 32T2500

1. Monoflange part number
Insert from page 14

2. Material
A. Carbon Steel ASTM A105
B. Stainless Steel ASTM A182-F316
C. Hastelloy C-276
D. Low Temp. C. St. ASTM A350 LF2

3. Flange details
<table>
<thead>
<tr>
<th>Size</th>
<th>Flange Face Style</th>
<th>Flange Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>F = Raised Face Spiral</td>
<td>150-300</td>
</tr>
<tr>
<td>12</td>
<td>T = Ring Type Joint</td>
<td>300-600</td>
</tr>
<tr>
<td>16</td>
<td>1/2</td>
<td>900-1500</td>
</tr>
<tr>
<td>24</td>
<td>1</td>
<td>136-150/300/</td>
</tr>
<tr>
<td></td>
<td></td>
<td>600</td>
</tr>
<tr>
<td>32</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

API: specify separately
DIN: see page 20
1/2. flange size only

4. Outlet style (1/2" FNPT is standard NO part designator needed)
<table>
<thead>
<tr>
<th>Connection Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 = 1/4 F = Female NPT Thread</td>
</tr>
<tr>
<td>6 = 3/8 M = Male NPT Thread</td>
</tr>
<tr>
<td>8 = 1/2 A = A-LOK® (inverted only)</td>
</tr>
<tr>
<td>M6 = 6mm G = Swivel gauge</td>
</tr>
<tr>
<td>M10 = 10mm</td>
</tr>
<tr>
<td>M12 = 12mm NPT/F (fitted)</td>
</tr>
</tbody>
</table>

5. Plugged vent (1/4" FNPT is standard NO part designator needed)
<table>
<thead>
<tr>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>V6 = 3/8 FNPT</td>
</tr>
<tr>
<td>V8 = 1/2 FNPT</td>
</tr>
</tbody>
</table>

6. Condition
NACE: Combine designators as required
Please Note: Certification requirements and customer specifications MUST be provided at enquiry and order stage.

7. Valve handle operating options
A. Anti tamper
L. Padlock handle locking
R. Regulating tip (H series needle valve only)

* Insert valve number 1 = primary, 2 = secondary, 3 = vent, 4 = all.
Padlocks not supplied

8. Valve packing
3 Graphoil (standard)
Flanged Products

Pro-Bloc® (PB) Manifolds

Purpose
This manifold range is designed to replace conventional multiple-valve installations currently in use for interface with pressure measuring systems. By combining customer specified valves into a single manifold, the number of leak paths is considerably reduced and the mass of the system is lowered reducing the stresses from loading and vibration. The result of which substantially improves installation and operational safety factors. Reduction in leakage path connections together with a one-piece solution also provides positive installation cost savings.

Key advantages of Parker Pro-Bloc®
- Strong construction produced from one piece grain flow controlled forged body
- Various flow and valve configurations available allowing true flexibility to meet all customer requirements
- Single flange, double flange or triple flange configurations available
- Standard materials of Carbon Steel A105, Low Temperature Carbon Steel A350 LF2, Stainless Steel A182-F316 and Duplex Stainless Steel A182-F51
- Optional materials include Super Duplex, Monel, Hastelloy, 6Mo, Incoloy 625
- Incorporation of standard Hi-Pro ball valve and H series needle valve technology
- 10mm/15mm/20mm/25mm full bore valve design
- Ergonomically designed operating handles with low torque function
- User friendly part number and specification construction system
- Optional integral A-LOK™/CPI™ outlet connection
- Parker Tru-loc™ (patent pending) safety system

Instrument outlet connections
One of the unique features Parker can offer users which can further enhance safety factors is the incorporation of single or twin ferrule compression fittings as an integral part of the outlet connection. Installation of the instrument which require remote positioning will be interconnected using conventional tube and compression fittings, whilst NPT taper threads are accepted as a standard their use involves some form of thread sealant which adds to the complication of instrument performance through contamination within the system. Avoiding these taper thread connections wherever possible reduces this contaminant risk and Parker, being a leading manufacturer of compression type of fittings (which requires no sealant mediums), can incorporate them in the outlet connection, totally eliminating the contamination risk.

Pro-Bloc® features
- 1/2” to 3” N.B. Flanges (15 to 50 DN)
- ANSI B16.5 150 to 2500 flange class and API 10,000
- 10mm/15mm/20mm/25mm full bore valve design
- 1/2” -14 to 1” -11.5 NPT (female) standard outlet (depending on bore size)
- 1/2” NPT (female) standard vent
- Variety of optional end connection sizes and thread forms including tube connections up to 1”/25mm diameter (depending on bore size)
- Optional materials on request
- Instrument connections A-LOK™/CPI™ available
- Raised face and ring type joint flange face styles
- One-piece forged construction flange as standard
- Optional fire safe designed (and tested) to meet BS 6755 Part 2/API 607
- 316 stainless steel handles and trim as standard to reduce the risk of corrosion
- Designed to meet the pressure and temperature requirements of ASME/ANSI B16.34/B16.5
- Pressure boundary designs calculated to ASME VIII Div 1 and verified by testing
- 4:1 Factor of Safety
- Heat code traceable material to EN10204.3.1
- Bubble tight shut off
- Colour coded functional valves
- Optional locking and anti tamper devices for all valve types available
- Positive lever stop
- NACE MR 0175/ISO 15156 compliance available on request
- Large user friendly handles
- Permanent affixed reference label
- O.S.&Y. and H series needle valves can be combined with ball valves

Standard specification flange x screw:
Outlet - FNPT; Vent - 1/2” FNPT plugged; Ball seats. P.T.F.E.; Needle seats. metal/metal 17-4 PH St. St.; P.T.F.E. packing all valves.
### Flanged Products

**Pro-Bloc® (PB) manifold selection and part number construction - made easy**

Select the style of Pro-Bloc® from the choice of arrangements below noting the complete PB reference.

#### Style

<table>
<thead>
<tr>
<th>Style</th>
<th>PB<strong>1</strong></th>
<th>PB<strong>2</strong></th>
<th>PB<strong>5</strong></th>
<th>PB<strong>6</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Single piece forging flange x screw</td>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
</tr>
<tr>
<td>Modular construction flange x screw</td>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
<td><img src="image7.png" alt="Image" /></td>
<td><img src="image8.png" alt="Image" /></td>
</tr>
</tbody>
</table>

#### Arrangement

<table>
<thead>
<tr>
<th>Block bleed block</th>
<th>PB<strong>00</strong></th>
<th>PB<strong>10</strong></th>
<th>PB<strong>20</strong></th>
<th>PB<strong>30</strong></th>
<th>PB<strong>40</strong></th>
<th>PB<strong>50</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Isolate: Ball</td>
<td><img src="image9.png" alt="Image" /></td>
<td><img src="image10.png" alt="Image" /></td>
<td><img src="image11.png" alt="Image" /></td>
<td><img src="image12.png" alt="Image" /></td>
<td><img src="image13.png" alt="Image" /></td>
<td><img src="image14.png" alt="Image" /></td>
</tr>
<tr>
<td>2nd Isolate: Ball Vent: Needle</td>
<td><img src="image15.png" alt="Image" /></td>
<td><img src="image16.png" alt="Image" /></td>
<td><img src="image17.png" alt="Image" /></td>
<td><img src="image18.png" alt="Image" /></td>
<td><img src="image19.png" alt="Image" /></td>
<td><img src="image20.png" alt="Image" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Block &amp; bleed</th>
<th>PB<strong>50</strong></th>
<th>PB<strong>60</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Isolate: Ball Vent: Needle</td>
<td><img src="image21.png" alt="Image" /></td>
<td><img src="image22.png" alt="Image" /></td>
</tr>
<tr>
<td>2nd Isolate: Needle</td>
<td><img src="image23.png" alt="Image" /></td>
<td><img src="image24.png" alt="Image" /></td>
</tr>
</tbody>
</table>

#### Flange details

<table>
<thead>
<tr>
<th>Flange Size</th>
<th>Flange Face Style</th>
<th>Flange Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>Raised Face Spiral</td>
<td>150</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>Ring Type Joint</td>
<td>600</td>
</tr>
<tr>
<td>1&quot;</td>
<td>1/2</td>
<td>900</td>
</tr>
<tr>
<td>1 1/2&quot;</td>
<td>2</td>
<td>1500</td>
</tr>
<tr>
<td>2&quot;</td>
<td>3 (25mm bore only)</td>
<td>2500</td>
</tr>
</tbody>
</table>

#### Packing, seat and construction options

- PTFE Packing
- Needle tip 17-4PH St. St.
- Needle Tip (non firesafe only)
- Bolted construction connection
- * fitted as standard no part NO designator required.

#### Outlet style

Only available with 10mm bore ball valve. Single isolate. 

**Example**

<table>
<thead>
<tr>
<th>PB</th>
<th>Y</th>
<th>1 00</th>
<th>B</th>
<th>32T2500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>10mm bore = 1/2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>15mm bore = 1/2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W</td>
<td>20mm bore = 3/4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>25mm bore = 1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For style see page 18 section ‘Style’

For arrangement see page 18 section ‘Arrangement’

#### Valve handle operating options

- Anti tamper (Needle Valve only)
- Padlock hand locking
- Regulating tip (H series Needle Valve only)
- Fire safe needle valve with locking device NOT available

#### 5. Plugged vent (1/2" NPTF as standard NO part designator needed)

- Fire safe design
- NACE

Please Note:
Certification requirements and customer specifications MUST be provided at enquiry and order stage.

Note: Firesafe needle valve with locking device NOT available

#### 7. Valve handle operating options

- Insert valve number 1 = primary, 2 = secondary, 3 = vent, 4 = all.
- Padlocks not supplied

---

**Example**

PB Y 1 00 B 32T2500

---

8. Condition

- F Firesafe design
- N NACE

Combine designators as required

Please Note:
Certification requirements and customer specifications MUST be provided at enquiry and order stage.

---

5. Flanged Products

### Example

<table>
<thead>
<tr>
<th>PB</th>
<th>Y</th>
<th>1 00</th>
<th>B</th>
<th>32T2500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>10mm bore = 1/2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>15mm bore = 1/2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W</td>
<td>20mm bore = 3/4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>25mm bore = 1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For style see page 18 section ‘Style’

For arrangement see page 18 section ‘Arrangement’

2. Material

- Carbon Steel ASTM A105
- Stainless Steel ASTM A182-F316
- Monel M400
- Duplex ASTM A182-F51
- Super Duplex ASTM A182-F53/F55
- Hastelloy C-276
- Low Temp. C. St. ASTM A350 LF2
- Inconel 625

3. Flange details

<table>
<thead>
<tr>
<th>Flange Size</th>
<th>Flange Face Style</th>
<th>Flange Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>Raised Face Spiral</td>
<td>150</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>Ring Type Joint</td>
<td>600</td>
</tr>
<tr>
<td>1&quot;</td>
<td>1/2</td>
<td>900</td>
</tr>
<tr>
<td>1 1/2&quot;</td>
<td>2</td>
<td>1500</td>
</tr>
<tr>
<td>2&quot;</td>
<td>3 (25mm bore only)</td>
<td>2500</td>
</tr>
</tbody>
</table>

4. Outlet style (each bore size has its own standard size female NPT outlet - the standard does not require this field to be completed)

Standard outlets (female NPT)

- 10mm bore = 1/2
- 15mm bore = 1/2
- 20mm bore = 3/4
- 25mm bore = 1

For optional outlets see page 20

---

**Certification requirements and customer specifications MUST be provided at enquiry and order stage.**

---

3. Flange details

<table>
<thead>
<tr>
<th>Flange Size</th>
<th>Flange Face Style</th>
<th>Flange Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2&quot;</td>
<td>Raised Face Spiral</td>
<td>150</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>Ring Type Joint</td>
<td>600</td>
</tr>
<tr>
<td>1&quot;</td>
<td>1/2</td>
<td>900</td>
</tr>
<tr>
<td>1 1/2&quot;</td>
<td>2</td>
<td>1500</td>
</tr>
<tr>
<td>2&quot;</td>
<td>3 (25mm bore only)</td>
<td>2500</td>
</tr>
</tbody>
</table>

4. Outlet style (each bore size has its own standard size female NPT outlet - the standard does not require this field to be completed)

Standard outlets (female NPT)

- 10mm bore = 1/2
- 15mm bore = 1/2
- 20mm bore = 3/4
- 25mm bore = 1

For optional outlets see page 20
Other flange detail options
(reference Box 3 flange details pages 11, 15, 19, 29 & 31)

3. Flange details API 6A / ISO 10423*
   (Dimensionally compliant only)

<table>
<thead>
<tr>
<th>Flange Size</th>
<th>Flange Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>29 = 1 13/16</td>
<td>2K = 2000 psig</td>
</tr>
<tr>
<td>33 = 2 1/16</td>
<td>3K = 3000 psig</td>
</tr>
<tr>
<td>35 = 2 9/16</td>
<td>5K = 5000 psig</td>
</tr>
<tr>
<td>41 = 2 9/16</td>
<td>10K = 10000 psig</td>
</tr>
</tbody>
</table>

(Not available for Ultra-Low emission products).

* Only available with 10mm bore (PBY) and Monoflange products.

Other outlet options
(reference Box 4 outlet style pages 11, 15, 19, 29 & 31)

4. Optional outlets
   Size Connection Style

<table>
<thead>
<tr>
<th>Size</th>
<th>Connection Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>F = Female NPT</td>
</tr>
<tr>
<td>6</td>
<td>M = Male NPT</td>
</tr>
<tr>
<td>8</td>
<td>A = A-LOK</td>
</tr>
<tr>
<td>10</td>
<td>Z = CPI</td>
</tr>
<tr>
<td>12</td>
<td>G = Swivel gauge adaptor</td>
</tr>
<tr>
<td>14</td>
<td>1/2 Female NPT (fitted)</td>
</tr>
</tbody>
</table>

Note: Contact factory for bore size/outlet connection combinations.

IMPORTANT NOTES

When selecting products for specific applications users should refer to our notice at the bottom of page 18.

All non wetted parts will be supplied in standard stainless steel for exotic materials. For carbon steel construction trim materials will be supplied in stainless steel.

For flange to flange construction when the required flanges are different sizes then specify both sizes in section 3 example: 1st flange 1" pipe (16), raised face (F), class 900 (900), 2nd flange 1/2" (8), raised face (F), class 900 (900) insert: 16F9008F900. Consult factory for available combinations.

Ring type joints (T) CANNOT be supplied for 1/2" & 3/4" class 150 flanges.

St. St. grades 302 and 304 are NOT used in the construction of any of these products.

For customer specific options not covered here engineering will allocate a part number at quotation stage.

Certification requirements and customer specifications MUST be provided at enquiry and order stage.

For API flange requirements full details must be specified separately.

Part number example FEPBY100B20ST5OF Ultra-Low Emission Pro-Bloc® - Flange by screw - Double Block and Bleed - Block (Ball) Bleed (Needle) Block (Ball) (FEPBY100 - 316 St. St. construction) - 2 - Pipe flange. Ring type joint, class 2500 (30750) - 1/2 Female NPT outlet - 1/2 Female NPT vent - Firesafe design and certified (F), all valves PTFE packed, ball seats PTFE, needle valve metal seated 17-4PH st.st. lips.

Flanged Products

Pro-Bloc® (PB) Manifolds

Pro-Bloc® for sampling applications (10mm + 15mm bore only)

This manifold range is designed to replace conventional multiple-valve installations where sampling of the process stream is required. This design has been developed to remove a sample directly from the process stream at full system pressure. All of the options and configurations shown within the standard Pro-Bloc® range can be offered for sampling service by the addition of a customised sampling probe which extends from the pipe flange into the process stream. Also available to suit ISO15848 Class A Ultra-Low emission standard.

Pro-Bloc® for sampling applications - part numbering

In order to specify the addition of a sampling probe to your Pro-Bloc® simply add an S to the beginning of the part number i.e. SPB or FESPB. The probe length in mm must be added to the end of the part number, see below. Due to the internal bore size of standard ASME flanges probes can only be installed on a range of flanges - please see the attached table.

When selecting products for specific applications users should refer to our notice at the bottom of page 18.

10mm Size 1" and above, ASME flanges up to class 2500.
15mm Size 1 1/2" and above, ASME flanges up to class 2500.
20mm Not available.
25mm Not available.

The probe length must be specified from the raised face to the end of the probe in mm, to the nearest mm. Probes are supplied to suit the insertion length required by the pipeline and thus must be specified by the customer.

A wide variety of end preparations and support collars are available on request. Probe strength wake frequency calculations can be carried out against pipeline flow rates on request. In the event of the required valve configuration not be shown please do not hesitate to contact the factory as Parker Hannifin IPD offer bespoke customer solutions.

Pro-Bloc® for sampling applications - part numbering

<table>
<thead>
<tr>
<th>Bore</th>
<th>Flange range</th>
</tr>
</thead>
<tbody>
<tr>
<td>10mm</td>
<td>Size 1&quot; and above, ASME flanges up to class 2500.</td>
</tr>
<tr>
<td>15mm</td>
<td>Size 1 1/2&quot; and above, ASME flanges up to class 2500.</td>
</tr>
<tr>
<td>20mm</td>
<td>Not available.</td>
</tr>
<tr>
<td>25mm</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

WARNING

When selecting products for specific applications users should refer to our notice at the bottom of page 18.
Flanged Products

Pro-Bloc® (PB) Manifolds

Pro-Bloc® for injection applications (10mm + 15mm bore only)

This manifold range is designed to replace conventional multiple-valve installations where injection into the process stream is required. This design has been developed to inject directly into the process stream at full system pressure. All of the options and configurations shown within the standard Pro-Bloc range can be offered for injection service by the addition of a customised injection probe which extends from the pipe flange into the process stream. Pro-Bloc® s for injection applications include an injection probe which enables the fluid to be injected directly into the process stream and a high integrity full bore non-return valve to eliminate the risk of back flow out of the process stream. Also available to meet ISO15848 Class A Ultra-Low emission standard.

Pro-Bloc® for injection applications - part numbering

In order to specify the addition of an injection probe and non-return valve to your Pro-Bloc® simply add a ‘J’ to the beginning of the part number i.e. JPB or FEJPB. The probe length in mm must be added to the end of the part number, see below. Due to the internal bore size of standard ASME flanges probes can only be installed on a range of flanges - please see the table in the sampling Pro-Bloc® section (previous page).

The probe length must be specified from the raised face to the end of the probe in mm, to the nearest mm. Probes are supplied to suit the insertion length required by the pipeline and thus must be specified by the customer.

A wide variety of end preparations and support collars are available on request.

Probes strength wake frequency calculations can be carried out against pipeline flow rates on request.

Hi-Check non-return valve

This high integrity full bore non-return valve eliminates the risk of back flow out of the process stream. The design utilises a spring loaded poppet to ensure leak proof performance. The Hi-Check Non Return Valve is designed for higher flow and low pressure drop across the valve - having a larger through bore than most other manufacturers equivalent product.

As standard a viton seal will be supplied with a ‘crack’ proof performance. The Hi-Check Non Return Valve design utilises a spring loaded poppet to ensure leak tightness with respect to stem sealing diameter. These classes are class A, B and C. Class A having the smallest environmental leakage. Each class level is one hundred fold lower than the class above i.e. a class B product may have a leakage of 100 times that of a class A product. The standard also specifies the duty that the valve has been tested to.

Meeting the ISO Standard

From October 2007 all UK processing plants and power stations will have to comply with the EU’s IPPC directive 96/61/EC. In essence, the IPPC Directive is about minimising pollution from various industrial sources throughout the European Union. An important part of this legislation is reducing Ultra-Low emissions, which will have significant consequences for all processes. According to the IPPS all plants and factories which fail to comply with the standards set by the directive may be closed from this point.

To put the scale of the challenge into perspective, a typical European refinery loses between 600 and 10,000 tonnes of emissions per annum. Around 70% of these losses are estimated to be caused by plant equipment such as pipe flanges, pumps, valves and vessels. Leakage from valves is often the biggest culprit, reportedly accounting for around 50% of the Ultra-Low emissions within the chemical and petrochemical industries.

Irrespective of the environmental impact, there is a tremendous financial burden on industry because it represents a huge loss of product, and cause of plant inefficiency. However, the true costs to industry are not always appreciated, as many of the costs associated with Ultra-Low emissions are hidden. Such as labour and materials to repair leaks, wasted energy, environmental fines and clean up costs, lost sales due to a poor green image, claims for personal injury and more. In this way, reducing Ultra-Low emissions not only protects the environment, but can save companies time and money.

With the above in mind, the legislation introduces a concept of Best Available Technique (BAT), urging plants to find the best available solution for reducing Ultra-Low emissions throughout the process, from areas such as design, product selection, fitting and fitter training, to maintenance, site monitoring, and so on.

With regard to the design and site monitoring of Ultra-Low emissions ISO 15848 parts 1 and 2 have been developed respectively.

Part 1 covers the classification system and qualification procedure for type testing of valves. The standard specifies three tightness classes of leakage with respect to stem sealing diameter. These classes are class A, B and C. Class A having the smallest environmental leakage. Each class level is one hundred fold lower than the class above i.e. a class B product may have a leakage of 100 times that of a class A product.

Parker Hannifin is now able to offer our full range of flanged products with a class A approval to ISO 15848-1. These products are identified as the Ultra-Low Emissions range and are certified as ISO FE AH-C01-SSA1-IR7.180 C-ANSI2500-ISO 15848-1. This states that the product has been classified as meeting the ISO 15848-1 standard with the following criteria:

- Class A tested with Helium
- Endurance class C01 a mechanical valve which has been tested throughout 500 mechanical actuations with two thermal cycles
- Temperature class RT+180C – Fully thermal cycled and tested from -29°C to +180°C Pressure class ANSI 2500 6000 psi in 316 st.st.

Part 2 of the international standard covers production acceptance testing of valves. This production testing can only be carried out to product which has already been approved to part 1 of the standard. Production testing can be carried out to and sampling percentage specified by the purchaser with a minimum of one per lot. The production testing is a simpler helium sniffer test which is carried out at room temperature with no mechanical actuations.

Parker Hannifin is now able to offer our full range of flanged products with a class A approval to ISO 15848-1. These products are identified as the Ultra-Low Emissions range and are certified as ISO FE AH-C01-SSA1-IR7.180 C-ANSI2500-ISO 15848-1. This states that the product has been classified as meeting the ISO 15848-1 standard with the following criteria:

- Class A tested with Helium
- Endurance class C01 a mechanical valve which has been tested throughout 500 mechanical actuations with two thermal cycles
- Temperature class RT+180C – Fully thermal cycled and tested from -29°C to +180°C Pressure class ANSI 2500 6000 psi in 316 st.st.

Part 2 of the international standard covers production acceptance testing of valves. This production testing can only be carried out to product which has already been approved to part 1 of the standard. Production testing can be carried out to and sampling percentage specified by the purchaser with a minimum of one per lot. The production testing is a simpler helium sniffer test which is carried out at room temperature with no mechanical actuations.

Parker Hannifin is now able to offer our full range of flanged products with a class A approval to ISO 15848-1. These products are identified as the Ultra-Low Emissions range and are certified as ISO FE AH-C01-SSA1-IR7.180 C-ANSI2500-ISO 15848-1. This states that the product has been classified as meeting the ISO 15848-1 standard with the following criteria:

- Class A tested with Helium
- Endurance class C01 a mechanical valve which has been tested throughout 500 mechanical actuations with two thermal cycles
- Temperature class RT+180C – Fully thermal cycled and tested from -29°C to +180°C Pressure class ANSI 2500 6000 psi in 316 st.st.

Part 2 of the international standard covers production acceptance testing of valves. This production testing can only be carried out to product which has already been approved to part 1 of the standard. Production testing can be carried out to and sampling percentage specified by the purchaser with a minimum of one per lot. The production testing is a simpler helium sniffer test which is carried out at room temperature with no mechanical actuations.
Ultra-Low Emissions flange product ball valve specification

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<th>Part</th>
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<td>3</td>
<td>Sealing washer</td>
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<tr>
<td>4</td>
<td>Antiextrusion rings</td>
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<td>Anti blowout stem</td>
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<td>Antiextrusion rings</td>
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<td>Antiextrusion rings</td>
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<td>22</td>
<td>Anti-extrusion rings</td>
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Features

- Class ‘A’ leakage rates achieved
- Bolted ball valve bonnet assembly
- All threads sealed from the media
- All ball valves are bi-directional
- Firesafe design available

Specifications

- Tightness class A >1 x 10⁻⁶ mg.s⁻¹.m⁻¹.
- Maximum cold working pressure rating 6,000 psig
- Temperature rating 
  -29°C to 180°C (-20°F to 356°F)
- ISO15848-1 prototype tested using global helium vacuum method
- Performance class
  - ISO FE AH-D01-SSA1-TRT,180 C-ANSI2500-ISO 15848-1
- Production testing and certification available on request
- Other specifications as per standard Hi-Pro, see page 4

When selecting products for specific applications users should refer to our notice at the bottom of page 13.
Ultra-Low Emission outside screw and yoke (OS&Y) needle valve

### Specifications
- Tightness class A \( \geq 1 \times 10^{-6} \, \text{mg.s}^{-1}.\text{m}^{-1} \)
- Maximum cold working pressure rating 6,000 psig (414 barg)
- Temperature rating -29°C to 180°C (-20°F to 356°F)
- ISO15848-1 prototype tested using global helium vacuum method
- Performance class ISO FE AH-C01-SSA1-t(RT,180°C)-ANSI2500-ISO 15848-1
- Production testing and certification available on request
- Other specifications as per standard OS&Y, see page 5

### Pressure vs temperature

- When selecting products for specific applications users should refer to our notice at the bottom of page 13.

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Ultra-Low Emissions “H” Series globe style needle valve

### Specifications
- Tightness class A \( \geq 1 \times 10^{-6} \, \text{mg.s}^{-1}.\text{m}^{-1} \)
- Maximum cold working pressure rating 6,000 psig (414 barg)
- Temperature rating -29°C to 180°C (-20°F to 356°F)
- ISO15848-1 prototype tested using global helium vacuum method
- Performance class ISO FE AH-C01-SSA1-t(RT,180°C)-ANSI2500-ISO 15848-1
- Production testing and certification available on request
- Other specifications as per standard needle valve, see page 6

### Pressure vs temperature

- When selecting products for specific applications users should refer to our notice at the bottom of page 13.
ISO 015848 Class ‘A’ Ultra-Low Emission Monoflanges - made easy

Select the style of Monoflange from the choice of arrangements below noting the complete FEMF reference. If the style or arrangement is not shown below please provide full description and specification.

- For dual outlets specify FEMF*105.
- For dual outlets specify FEMF*115.
- For flange to flange variants replace FEMF*1** with FEMF*2**.

ISO 015848 Class ‘A’ Ultra-Low Emission Monoflanges

Example FEMFY100 B 32T2500

1. Monoflange part number Insert from page 28

2. Material
   A Carbon Steel ASTM A105
   B Stainless Steel ASTM A182-F316
   C Monel M400
   D Duplex ASTM A182-F51
   E Super Duplex ASTM A182-F53/F55
   F Hastelloy C-276
   G Low Temp. C. St. ASTM A350 LF2
   H 6Mo
   K Inconel 625

3. Flange details
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<tr>
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<th>Flange Face Style</th>
<th>Flange Class</th>
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<td>F = Raised Face Spiral</td>
<td>150 = 150</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>T = Ring Type Joint</td>
<td>300 = 300</td>
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<tr>
<td>1&quot;</td>
<td>1 = 1/2</td>
<td>600 = 600</td>
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<td>1 1/2&quot;</td>
<td>2 = 1 1/2</td>
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<tr>
<td>2&quot;</td>
<td>3 = 2</td>
<td>1500 = 1500</td>
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4. Outlet style (1/2” FNPT is standard NO part designator needed)
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<td>1/4&quot;</td>
<td>F = Female NPT Thread</td>
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<td>3/8&quot;</td>
<td>M = Male NPT Thread</td>
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<tr>
<td>1/2&quot;</td>
<td>A = A-LOK (inverted)</td>
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<tr>
<td>3/4&quot;</td>
<td>G = Swivel gauge</td>
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<tr>
<td>1&quot;</td>
<td>NPTF (fitted)</td>
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5. Plugged vent (1/4” FNPT is standard NO part designator needed)
   Size | V6 = 3/8” FNPT |
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<td>1/4”</td>
<td>V8 = 1/2” FNPT</td>
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6. Valve packing and seal materials
   - PTFE Packing
   - Needle tip 17-4PH St. St.
   - Graphoil (fitted as standard when fire safe design is specified)
   - PEEK Needle tip all valves (non fire safe only)
   * fitted as standard no part NO designator required.

When selecting products for specific applications users should refer to our notice at the bottom of page 19.

IMPORTANT NOTES

All non wetted parts will be supplied in standard stainless steel for exotic materials. For carbon steel construction trim materials will be supplied in stainless steel.

Ring type joints (T) CANNOT be supplied for 1/2” & 3/4” class 150 flanges.

St. St. grades 302 and 304 are NOT used in the construction of any of these products.

Ring type joints (T) CANNOT be supplied for 1/2” & 3/4” class 150 flanges.

For dual outlets specify FEMF*105.

For flange to flange variants replace FEMF*1** with FEMF*2**.

Please note vent valve is not anti-tamper as standard.

Please note vent valve is not anti-tamper as standard.

For bleed port only specify FEMF*160.

FEMFY100

FEMFY100

FEMFY120

FEMFY120

FEMFY130

FEMFY130

FEMFY140

FEMFY150

FEMFY100B32T2500A3F

Please Note:

Certification requirements and customer specifications MUST be provided at enquiry and order stage.

If the style or arrangement is not shown below please provide full description and specification.

Please note vent valve is not anti-tamper as standard.

For bleed port only specify FEMF*160.

Please note vent valve is not anti-tamper as standard.

For bleed port only specify FEMF*160.
Flanged Products

ISO15848 Class 'A' Ultra-Low Emission Pro-Blocs

Select the style of Pro-Bloc from the choice of arrangements below noting the complete FEPB reference.

**Style**

- **FEPB'1**
  - Single piece forging flange x screw
  - Modular construction flange x flange

- **FEPB'2**
  - Single piece forging flange x flange
  - Modular construction flange x flange

**Arrangement**

- **FEPB**
  - Block bleed block
    - Flange x screw
    - 1st Isolate: Ball
    - 2nd Isolate: Ball
    - Vent: Needle
  - FEPB'10

- **FEPB**
  - Block & bleed
    - Flange x screw
    - 1st Isolate: Ball
    - Vent: Needle
  - FEPB'30

- **FEPB**
  - Double block
    - Flange x screw
    - 1st Isolate: Ball
    - 2nd Isolate: Needle
  - FEPB'50

- **FEPB**
  - Only available with 10mm bore ball valve.
  - Single isolate: specify FEPB'165, FEPB'265.

**Material**

- **A** Carbon Steel ASTM A105
- **B** Stainless Steel ASTM A182-F316
- **D** Monel M400
- **E** Duplex ASTM A182-F51
- **F** Super Duplex ASTM A182-F53/F55
- **G** Hastelloy C-276
- **H** Low Temp. C. St. ASTM A350 LF2
- **I** 6Mo
- **L** 825
- **M** Inconel 625

**Certification & condition**

- **F** Firesafe design and certified
- **H** Heat code certificates to EN10204.3.1.B
- **N** NACE

**Outlet style**

- For style see page 30 section 'Style'
- For arrangement see page 30 section 'Arrangement'

**Flange details**

- **Arrangement**
  - **Block bleed block**
    - Flange x screw
    - 1st Isolate: Ball
    - 2nd Isolate: Ball
    - Vent: Needle
  - FEPB'10

**Valve handle operating options**

- **A** Anti tamper (Needle Valve only)
- **L** Padlock handle locking
- **R** Regulating tip (H series Needle Valve only)
- **S** Spanner actuated (Ball Valve only)
- **Y** O.S.&Y. Needle Valve

**Outlet style (each bore size has its own standard size female NPT outlet - the standard does not require this field to be completed)**

- Standard outlets (female NPT)
  - 10mm bore = 1/2
  - 15mm bore = 1/2
  - 20mm bore = 3/4
  - 25mm bore = 1
  - For optional outlets see page 20

**认证及条件**

- **F** 消防设计并通过认证
- **H** 附带EN10204.3.1.B认证
- **N** NACE

**螺栓、密封件和结构选项**

- **PTFE Packing**
- **PTFE Ball seats**
- **Needle tip 17-4PH St. St.**
- **PEEK Ball and needle seating**
- **PEEK Ball seats**
- **PEEK Needle tip (non firesafe only)**

**螺杆式操作选项**

- **A** 防篡改（针阀仅适用）
- **L** 钥匙锁头锁定
- **R** 调节针（H系列针阀仅适用）
- **S** 脉冲塞（球阀仅适用）
- **Y** O.S.&Y. 针阀

**螺栓、密封件和结构选项**

- **PTFE Packing**
- **PTFE Ball seats**
- **Needle tip 17-4PH St. St.**
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**螺杆式操作选项**

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- **R** 调节针（H系列针阀仅适用）
- **S** 脉冲塞（球阀仅适用）
- **Y** O.S.&Y. 针阀

**螺栓、密封件和结构选项**

- **PTFE Packing**
- **PTFE Ball seats**
- **Needle tip 17-4PH St. St.**
- **PEEK Ball and needle seating**
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- **PEEK Needle tip (non firesafe only)**

**螺杆式操作选项**

- **A** 防篡改（针阀仅适用）
- **L** 钥匙锁头锁定
- **R** 调节针（H系列针阀仅适用）
- **S** 脉冲塞（球阀仅适用）
- **Y** O.S.&Y. 针阀
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<td>VE – Venezuela</td>
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<td>Tel: +58 212 236 5422</td>
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<td>ZA – South Africa</td>
<td>Kempton Park</td>
<td>Tel: +27 (0)11 961 0700, <a href="mailto:parker.southafrica@parker.com">parker.southafrica@parker.com</a></td>
</tr>
</tbody>
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