



**Pneumatic Division**  
Richland, Michigan 49083

**Installation & Service Instructions**  
**V457P**

**EZ1, EZ2 & EZ3 Series Air Control**  
**Valves 1/8", 1/4", 3/8" Inline**

**ISSUED: October, 2008**

**Supersedes: None**

**Doc. #V457P, EN #080198, Rev. 1**

## ⚠ WARNING

To avoid unpredictable system behavior that can cause personal injury and property damage:

- Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
- Disconnect air supply and depressurize all air lines connected to this product before installation, servicing, or conversion.
- Operate within the manufacturer's specified pressure, temperature, and other conditions listed in these instructions.
- Medium must be moisture-free if ambient temperature is below freezing.
- Service according to procedures listed in these instructions.
- Installation, service, and conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing, or conversion, air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or the product does not operate properly, do not put into use.
- Warnings and specifications on the product should not be covered by paint, etc. If masking is not possible, contact your local representative for replacement labels.

## Safety Guide

For more complete information on recommended application guidelines, see the Safety Guide section of Pneumatic Division catalogs or you can download the **Pneumatic Division Safety Guide** at: [www.parker.com/safety](http://www.parker.com/safety)

## Introduction

Follow these instructions when installing, operating, or servicing the product.

## Application Limits

These products are intended for use in general purpose compressed air systems only.

## Operating Pressure Range:

Maximum: 145 PSIG (10.0 bar) Standard; 110 PSIG (7.5 bar) for CSA rated EZ3 only.

Minimum: see chart

Operator / Function		EZ1	EZ2	EZ3
1, 3, G, H, K, L	Single Operator, Air Return	30 (2.1)	25 (1.7)	20 (1.4)
2	Double Solenoid Operator, 2-Position	30 (2.1)	25 (1.7)	20 (1.4)
4, 8, 9, 0	Double Remote Pilot Operator	Vacuum	Vacuum	Vacuum
5, 6, 7	Double Solenoid Operator, 3-Position	35 (2.4)	35 (2.4)	30 (2.0)
E, F, V, W, X, Y	Single Operator, Spring / Air Return	35 (2.4)	35 (2.4)	35 (2.4)

Remote Pilot Signal – 35 to 145 PSIG (3.1 to 10 bar)

**Ambient Temperature Range:** -15°C to 49°C (5°F to 120°F)

**Voltage Range:** Rated Voltage +10% / -10% Standard; +10% / -15% CSA Rated

## Lubrication

Factory Pre-lubed. If lubricating in service, use Parker F442 oil or equivalent paraffin based mineral oil with 150 to 200 SSU viscosity @ 100°F.

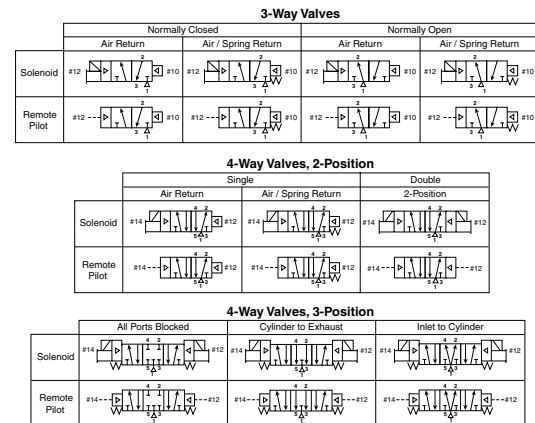
⚠ **CAUTION: DO NOT use oils that are synthetic, reconstituted, have an alcohol content or a detergent additive.**

## General Installation & Operating Instructions

Valve should be installed with reasonable accessibility for service whenever possible. Repair service kits are available. Keep pipe or tubing clean and free of dirt and chips. Pipe joint compound should be used sparingly and

applied only to the male pipe - never into the female port. Do not use PTFE tape to seal pipe joints - pieces have a tendency to break off and lodge inside the unit, possibly causing malfunction. After valve assembly is complete, plumb the valve, turn on air pressure and electrical power source. Test valve for functional operation and internal and external leakage. If leakage is audible (indicating improper assembly is likely), do not operate. Conduct assembly again.

## Symbols



## Port Identification

Port No.	Function	
	3-Way Valves	4-Way Valves
1	Inlet	Inlet
2	Cylinder	Cylinder
3	Exhaust	Exhaust
4	—	Cylinder
5	—	Exhaust

**NOTE 1:** 4-Way valves may be used for 3-Way function by plugging an outlet port.

**NOTE 2:** For 4-Way valves, the operator nearest a cylinder port causes that cylinder port to be pressurized, when that operator is in control of the valve.

## Wiring

Follow all requirements for local and national electrical codes.

## Electrical Connection:

1. Valve with lead wires should have power connected to the black wires.
2. Valves with 3-Pin male terminals should have power connected to the parallel terminals. Ground should be connected to the perpendicular terminal.

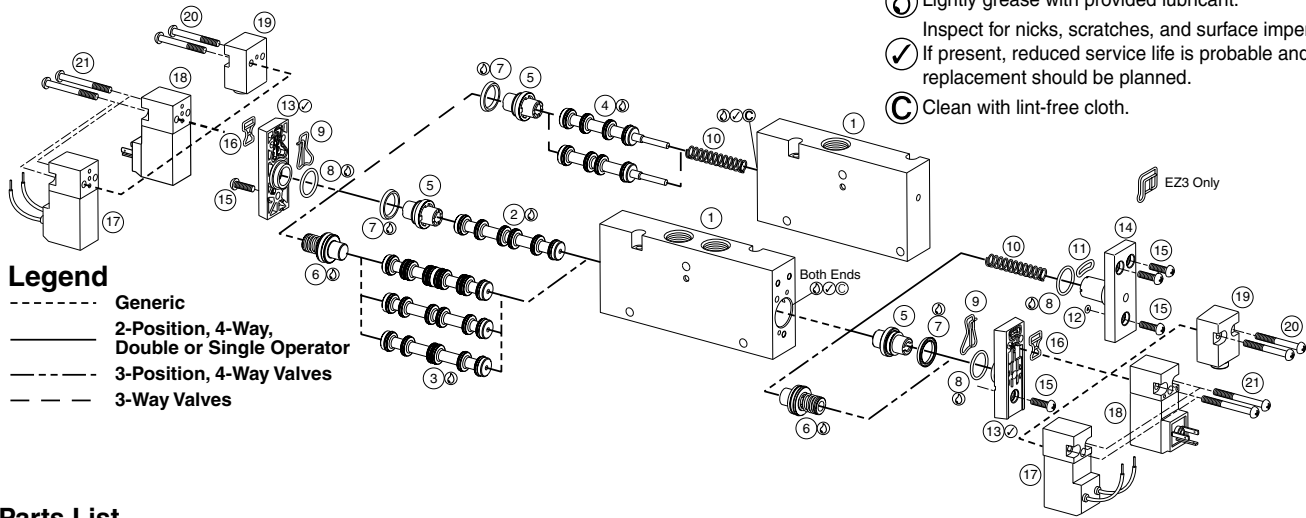
## ⚠ WARNING

**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 having 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 systems 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.

**EXTRA COPIES OF THESE INSTRUCTIONS ARE AVAILABLE FOR INCLUSION IN EQUIPMENT / MAINTENANCE MANUALS THAT UTILIZE THESE PRODUCTS. CONTACT YOUR LOCAL REPRESENTATIVE.**



**Legend**

- - - - - Generic
- \_\_\_\_\_ 2-Position, 4-Way, Double or Single Operator
- - - - - 3-Position, 4-Way Valves
- - - - - 3-Way Valves

- ☞ Lightly grease with provided lubricant.
- ☑ Inspect for nicks, scratches, and surface imperfections. If present, reduced service life is probable and future replacement should be planned.
- ☹ Clean with lint-free cloth.

**Parts List**

Item	Description	Item	Description
1	Valve Body	13	End Cap, Solenoid Operator
2	Spool Assembly, 2-Position	14	End Cap, 12 End Return
3	Spool Assembly, 3-Position	15	Screw, End Cap
4	Spool Assembly, 3-Way	16	Gasket, Solenoid
5	Piston, 2-Position	17	Solenoid Operator, Flying Lead
6	Piston Assembly, 3-Position	18	Solenoid Operator, DIN
7	Lip Seal	19	Remote Pilot Adapter
8	O-Ring	20	Screw, Remote Pilot Adapter
9	Gasket, 14 End Cap	21	Screw, Solenoid
10	Spring	22	Grease Tube (not shown)
11	O-Ring	23	Instruction Sheet (not shown)
12	O-Ring		

**Figure 1 Valve Assembly EZ2 Valve Shown**

All Valve Screws Torque to 1.0 to 1.2 Nm (9 to 11 in.lbs.)

**Service Kits**

Series	Type	Suffix	Included Items
PS5	7 EZ1 01	2-Position, 4-Way	P 2, 7, 10, 22, 23 (Fig. 1) 3, 7, 22, 23 (Fig. 1) 3, 7, 22, 23 (Fig. 1) 3, 7, 22, 23 (Fig. 1) 4, 7, 10, 22, 23 (Fig. 1) 4, 7, 10, 22, 23 (Fig. 1) A (Fig. 2) C (Fig. 2) C (Fig. 2) C (Fig. 2) 16, 19, 20, 23 (Fig. 1) Valve Mounting Screws and O-Rings (Fig. 2)
	8 EZ2 02	3-Position, APB	
	9 EZ3 03	3-Position, CE	
	04	3-Position, PC	
	71	3-Way, NC	
	72	3-Way, NO	
	69	Blanking Plate (A)	
	20	Blanking Plate C, NPT	
	21	Blanking Plate C, BSPP	
	22	Blanking Plate C, BSPT	
11	Air Pilot Conversion Kit*		
84	Valve to Base Mounting Kit		

**Examples:** Body Service Kit for EZ1 valve for 3 position PC: **PS5704P**  
 Blanking Plate Kit for EZ2 valve with NPT ports: **PS5820P**  
 Valve to base mounting kit for EZ3 valve: **PS5984P**  
 \*Use PS5711P for all sizes, EZ1, EZ2 and EZ3.

**Solenoid Kits**

PS57 Kits contain standard solenoids						
	Connection	Override	Voltage	Suffix		
PS57	5	3 Pin Din	B Non Locking	49	24 VDC	P
	G	Leads	C Locking	53	115 VAC	
PS58 Kits contain CSA approved solenoids						
	Connection	Override	Voltage	Suffix		
PS58	5	3 Pin Din	B Non Locking	49	24 VDC	P
			C Locking	53	115 VAC	
				57	230 VAC	

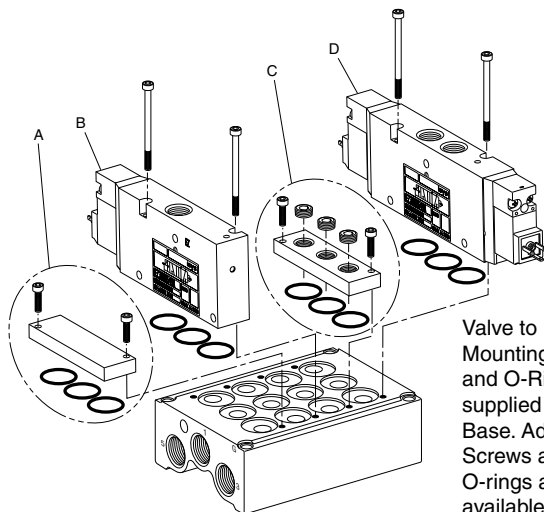
All solenoids kits include solenoid (17 or 18), gasket (16) and solenoid mounting screws (21) and instruction sheet (23).

**Example:** Flying Leads, Non Locking Override, 24VDC, Standard Wattage Solenoid Kit: **PS57GB49P**

**Maintenance & Trouble Shooting Hints**

**⚠ CAUTION:** It is recommended that double operated 2-Position valves be mounted so that the axis of the valve spool is in the horizontal plane.

If installing new spool: Remove old spool assembly, taking care not to scratch the bore. Install new spool assembly into clean bore, taking care to install squarely and push slowly to avoid damaging seals or the valve bore. If installing new piston, make sure seal cup faces out as Items 5 and 7 show in Figure 1. Install piston / seal assembly into the operator bore, taking care to assure the lips of the seal pass smoothly into the bore.



**Figure 2**

**EZ2 4-Station Manifold Shown**

- A. Blanking Plate Kit
- B. 3-Way Valve
- C. Universal Blanking Plate Kit
- D. Double Solenoid Valve

Manifold Mounting Screw Torque Chart		
Valve Size	Screw Type	Torque Nm (in.lbs.)
EZ1	M2.5	0.7 to 1.1 (6 to 10)
EZ2	M3	1.1 to 1.3 (10 to 12)
EZ3	M4	1.7 to 2.3 (15 to 20)

**⚠ WARNING**

Air exhausting from one valve into the exhaust gallery of the manifold may pressurize other valve circuits open to the same gallery. Design the circuit such that there is no hazard or damage consequence from this action.