



Pneumatic Division
Richland, Michigan 49083

Installation & Service Instructions:
V374EP
"B3" Series Valve, Modular Manifold,
4-Way & 3-Way
ISSUED: September, 2006
Supersedes: October, 2003
Doc# V-374P, ECN# 060870, Rev. 8

⚠ 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

Introduction

Follow these instructions, the unit's application limits, wiring instructions, and instructions for the proper installation of the valves for this manifold as shown in instruction form V-400BP, which was shipped with the valve. Service kits and other service instruction sheets are also referenced on this form. Copies of instruction form V-400BP are available from your local representative.

- Manifold End Plate Kit: 4-Way valvesPS2915P
- Manifold w/o Flow Control Kit: 4-Way valvesPS2917P
- Manifold w/Flow Control Kit: 4-Way valvesPS2918P
- Manifold End Plate Kit: 3-Way valvesPS2950P
- Manifold w/o Flow Control Kit: 3-Way valvesPS2948P
- Manifold w/Flow Control Kit: 3-Way valvesPS2949P

Assembly Procedure:
Modular Manifold and End Plates

Notes:

1. Assemblies can be made with or without valves (or inlet block / blanking plates) installed. Assembly is easier if valves are installed after the manifold is assembled.
2. **4-Way Valves:** (See Figure 1)
Valves can be installed in one of two positions on manifolds. It is recommended that valves be installed so outlet ports #4 are all in line. When valves are installed on a complete manifold assembly, the port on the end plate marked 5/3 or 3/5 nearest port #4 on the installed valves is port #5. The port on the end plate marked 3/5 or 5/3 nearest port #2 on the installed valve is port #3.

3-Way Valves: (See Figure 2)

Install valves so that the port designated as #1 on the valve body is closest to the port designated as #1 on the manifold end plate.

3. If isolator plugs are being used, they should be installed per the isolator plug kit instructions while the manifold is being assembled.
4. Manifolds with flow controls should not be used for dual pressure applications.

Assembly:

1. Preassemble tie rods (Item #72) into assemblies of equal length. For assemblies of 10 or more manifold bases, it may be necessary to back off one turn between tie rod shoulder-to-shoulder connection in order for tie rod screws to have initial engagement. Thread assemblies into end plate with o-ring grooves (Item #77).
2. Place end plate(s) with threaded assemblies on a flat surface with the o-ring grooves facing up and the tie rod assemblies vertical.
3. Install o-rings (Item #88) into grooves in end plate and at each port between manifolds.
4. Slide the first base over the tie rods with its gasket track facing up.
5. Install molded gasket (Item #103) into the unit just assembled and repeat the above procedure until all bases are assembled.
6. Assemble the remaining end plate (Item #76) with the flat washers (Item #87), lock washers (Item #86), and tie rod screws (Item #85). Tighten screws from 1.7 to 2.3 Nm (15 to 20 in-lbs) torque using 2.5mm hex wrench. (It may be beneficial to only snug tie rod screws, place the assembly horizontal, assure squareness, and then finally tighten tie rod screws.)
7. Place assembly horizontal with gasket track facing up. Install molded gaskets (Item #102) into tracks.
8. Place each valve onto its corresponding base and fasten with socket head cap screws (Item #84). Tighten screws to 1.1 Nm (10 in-lbs) torque using 2.5mm hex wrench.

⚠ 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.

“B3” Series Valve, Modular Manifold, 4-Way & 3-Way

V-374EP

9. Make plumbing and electrical connections.
10. Turn on air pressure and electrical power source. Test for proper functional operation and for internal and external air leakage. If leakage is audible (indicating improper assembly is likely), do not operate - conduct assembly again.

Isolator Plug Kit - PS2919P - 4-Way Valves PS291901P - 3-Way Valves

(See Figure 3)

1. If isolator plugs are to be used in an assembly, they should be installed while the modular manifold is being assembled.
2. Each kit contains three plug and o-ring assemblies (Item #90). Plugs may be installed in any one, or all of the common galleries in the assembly, or any combination thereof. Please consult your specific circuit diagram to determine the proper number and location of plugs to be used. Extra plugs may be discarded.
3. Lightly grease (supplied with kit) the plug o-rings and install one end into the proper bore in the manifold. When installing the next manifold base, care should be taken to assure that the exposed end of the plug enters the manifold bore without cutting the o-ring.
4. When assembly is complete, turn on air pressure and check for external leakage, as well as leakage across the isolator plug by pressurizing one side and check for leakage at the other side. If leakage is audible (indicating improper assembly is possible), do not operate - perform assembly again.

Inlet Block / Blanking Plate Kit - PS2920P - 4-Way Valves PS2966P - 3-Way Valves

(See Figure 4)

1. Install molded seal (Item #102), provided with base, into track on top of manifold base.
2. Place flat surface of plate (Item #92) (opposite port countersinks) onto manifold and install two hold down screws (Item #93). Tighten screws to 1.1 Nm (10 in-lbs) torque using 2.5mm hex wrench.

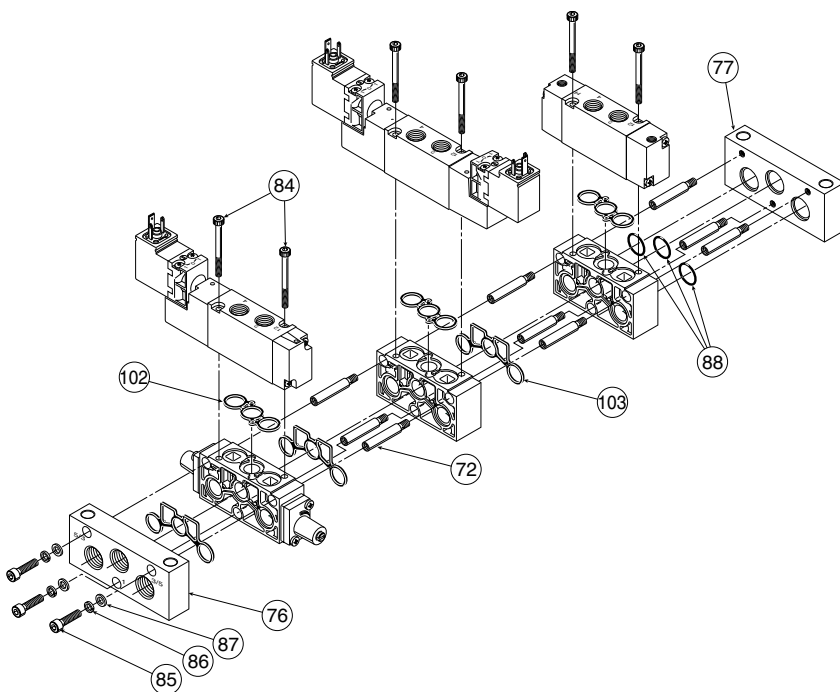


Figure 1:
4-Way Valve Manifolds

3. If being used as a blanking plate, install pipe plug (Item #94) into each port.

4. If being used for single pressure intermediate supply,

4-Way Valves:

Install two pipe plugs (Item #94) into two outside ports. Supply connection to common galley #1 is made to center port.

3-Way Valves:

Install pipe plug (Item #94) into port #3. Connect supply to port #1.

5. 4-Way Valves:

If being used for dual pressure intermediate supply, install one pipe plug (Item #94) into center port. Supply pressures are supplied to the two outside ports. The higher pressure is to be supplied to the port nearest port #2 on other valves in the assembly.

6. If being used for additional exhaust ports,

4-Way Valves:

Install one pipe plug (Item #94) into the center port for single pressure systems or two pipe plugs (Item #94) into the two outside ports for dual pressure systems.

3-Way Valves:

Install pipe plug (Item #94) into port #1

7. Turn on air pressure and check for leakage. If leakage is audible (indicating improper assembly is likely), do not operate - conduct assembly again.

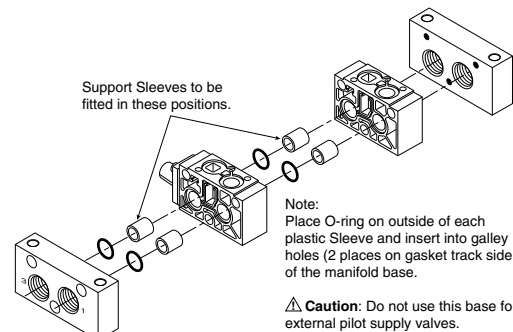


Figure 2:
3-Way Valve Manifolds

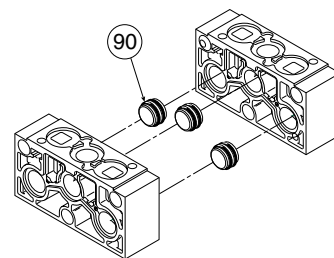


Figure 3:
4-Way Valve Manifold Is Shown

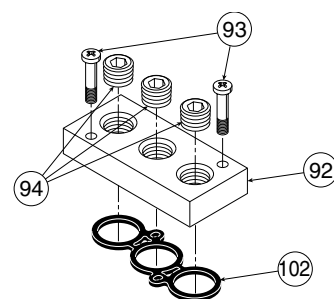


Figure 4:
4-Way Valve Plate Is Shown