



Directional Control Valves for Hazardous and Corrosive Environments.

INSTALLATION, OPERATING & MAINTENANCE **INSTRUCTIONS**

VALVE TYPES: HIPEX-04-X
HIPEX-06X
HIPEX-08-X
HIPEX-12X
HIPEX-16-X
HIPEX-24X
HIPEX-32-X

DESCRIPTION: HIPEX SERIES QUICK EXHAUST VALVE RANGE

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1.0 INTRODUCTION

The following procedures apply to all model HIPEX series exhaust valves.

NOTE Bifold Fluidpower do not recommend that untrained personnel attempt any service work and strongly advise that valves are returned to Bifold Fluidpower for servicing as required.

2.0 INSTALLATION

The manufacturer strongly recommends that tube fittings are sealed into fluid ports using thread sealant, Loctite 577 or equivalent, and that PTFE tape is not to be used.

Where the valve is supplied with support brackets, these should be secured using appropriate fixings.

Where the exhaust valve is supported by connecting pipework or other plant, ensure the unit has adequate clearance to avoid vibration and that no individual connecting pipe is over stressed.

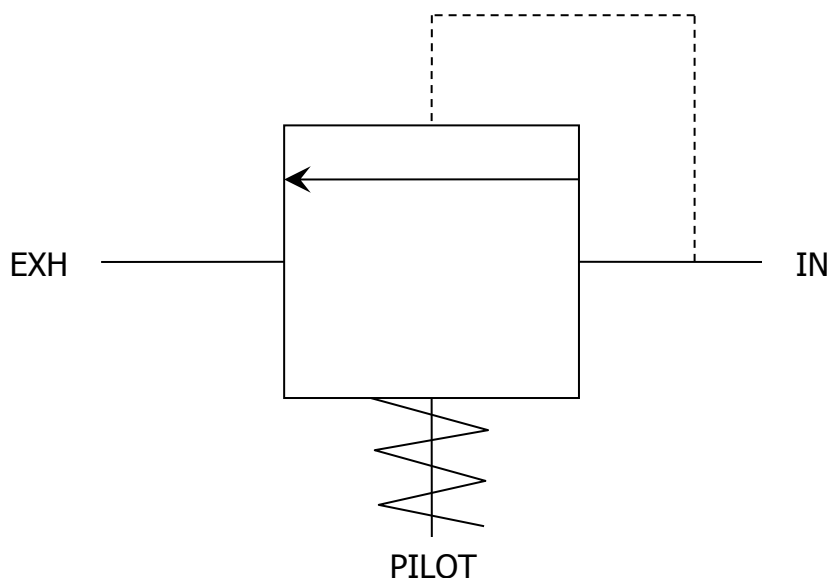
All units may be mounted in any orientation.

Warning: Do not allow any debris to fall in any open port during installation as this may affect the operation of the unit.

Take every precaution to prevent the ingress of dirt, fluids or other contaminants.

Prior to applying pressure, check that the unit is correctly orientated and that all the pipework/tubing connections are correct and secure.

Schematic Representation



3.0 OPERATION

The Bifold Hipex Valve converts a low volume pressure signal into a 1:1 ratio high volume exhaust. It is specifically designed for rapid venting of large volumes.

When a low volume pilot pressure signal of 2 to 10 bar g is applied to the sensing port, the main valve assembly remains closed provided the pilot signal is at or above the inlet pressure.

A reduction in the pilot pressure signal will allow the valve to open to permit high volume flow from the main inlet port to the outlet port, provided the inlet remains above the pilot signal pressure.

If the sensing head detects that the inlet pressure has dropped to less than the pilot pressure the valve will close.

Hipex Exhaust Valves are supplied tested at 1.5 times the maximum working pressure stated on the identification label. Do not exceed this pressure during system proof pressure testing, or the stated working pressure under normal operating conditions.

WARNING Do not exceed the maximum valve inlet pressure of 20 bar g or attempt to operate the unit outside the specified operating temperature range as this may damage the valve.

4.0 MAINTENANCE

Important Note

Prevent contamination entering the Exhaust Valve by conducting maintenance or servicing under workshop or covered conditions. If the unit is to be shelved always ensure that the ports are plugged.

No annual maintenance is necessary on pilot operated Exhaust Valves. Care should be taken to avoid ingress of dirt. The repair kit number is HIPEX-★, please specify seal material. ★ - V = Viton, S = Nitrile).

5.0 SERVICING

With reference to section 1, Bifold recommend valves are returned to their workshop for servicing and complete valves are held in stores as spares. However, if a spare valve is not available refer to these servicing procedures.

WARNING: - Prior to removal from system, ensure the connecting pipework holds no pressure.

NOTE: - Where disassembly requires clamping the valve body, ensure that the valve is held only using protective soft vice/clamp jaws.

5.1 Disassembly (Refer to outline detail page 6 and section drawing page 7)

1. Slacken securing screws and remove Port Blocks '20'
2. Slacken securing screws '3' and remove the Pilot Cap '2'.
3. Remove and note the position of the Pilot Cap O-ring '21'.
4. Grip the end of the Stem '9' and undo the Nyloc Nut '8'.
5. Withdraw the Stem.
6. Using a suitable DIA push-rod from beneath, push the Sensing Piston '4', O-ring '7', O-ring '5' and Washer '6' out of the bore. (3.5mm DIA for HIPEX-08 / 5.0mm DIA for HIPEX-16).
NOTE: - This seal '5' must be kept separate from the rest.
7. Remove the Internal circlip / retaining ring '17' carefully avoiding damage to the bore.
8. The Guide Top Seat '15' and remaining internal components should slide out of the bore when inverted, if not use a suitable push-rod (8-10mm DIA) from beneath.
9. Remove and replace the Seal '16' beneath the Guide Top Seat.
10. Remove the Spring '14'.
11. The Poppet Seat '10' assembly can be further dismantled to service the seals '12' and '13'***.

***For models with screw-in retainers, Poppet and Piston Exhaust Seat assemblies are separated by unscrewing the threaded Retainer using circlip pliers.

For models having press-fit Poppet and Piston Exhaust Seat assemblies, further dismantling is not recommended unless visible seal damage is evident. The integrity of the re-fitted pressed assembly cannot be assured.

5.2 Re-assembly (Refer to outline detail page 6 and section drawing page 7)

1. Ultrasonically clean all machined parts where possible.
2. Lightly smear all replacement o-ring seals with silicone grease.
3. Assemble the Poppet Seat '10' and Retainer '11' with new seals '12' and '13'.
4. Fit a new Seal '16' in the main bore of the Body.
5. Place the Poppet Seat '10' assembly at the base of the bore and centralise visually.
6. Fit the Spring '14' into the above.

7. Lower the Guide Top Seat '15' into the bore, push it down against the Spring whilst the Retaining Ring '17' is refitted.
8. Place the Washer '6' and Sensing Piston '4', complete with new seals '7' and '5' into the bore.
9. From beneath offer the Stem '9' up through the assembly until it protrudes through the piston.
10. Fit and fasten the Nyloc Nut '8' to the Stem top, prevent rotation of the Stem using suitable tools.
11. Replace the Pilot Cap O-ring '21'.
12. Position the Pilot Cap correctly on the Valve Body and replace the four Cap screws. Tighten each after all are nipped.
13. Re-fit and secure Port Blocks '20'

Diagram A
Outline Detail

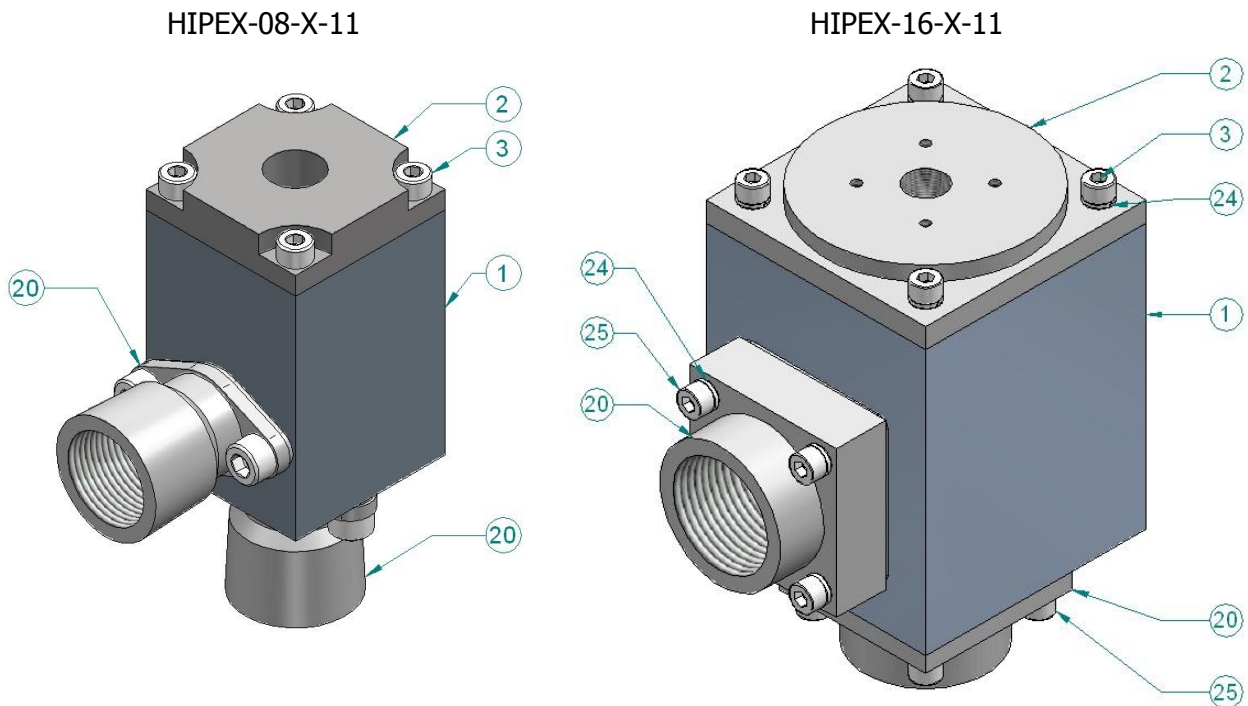
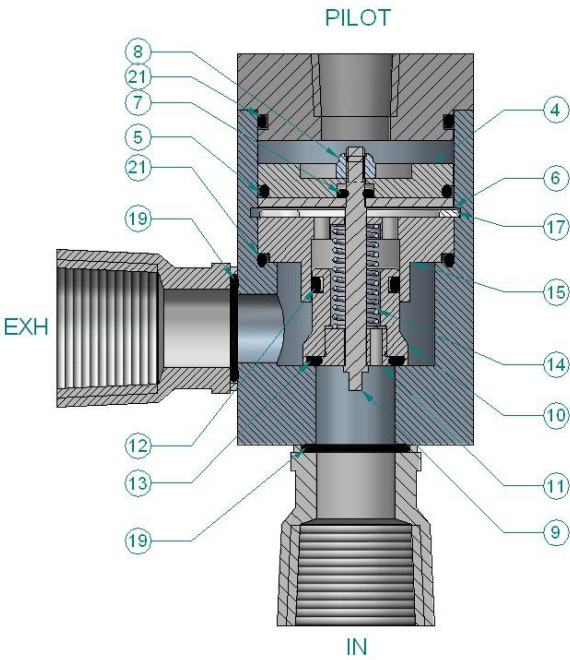
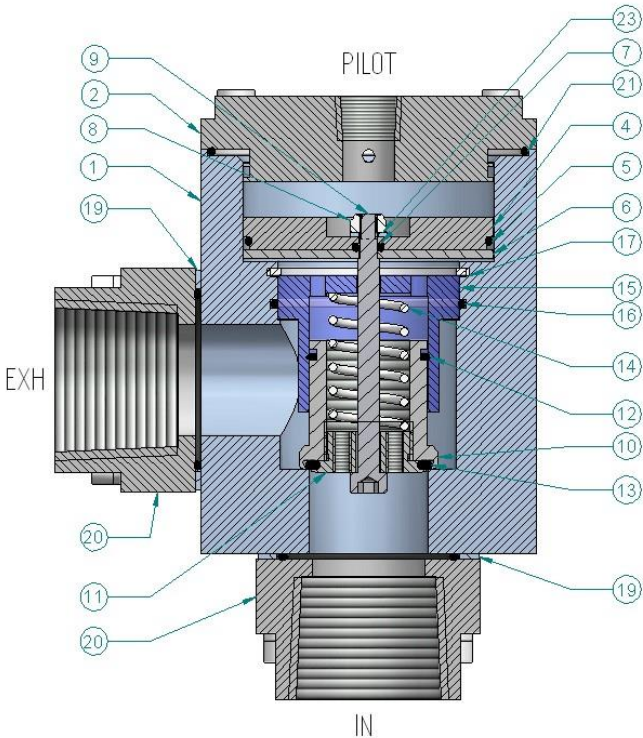


Diagram B
Sectional Detail

HIPEX-08-X-11



HIPEX-16-X-11



6.0 TESTING

Refer to section 2.0 and 3.0.

With the Hipex Valve correctly connected to a CLEAN air supply, function the unit twenty (20) times.

Check for internal leakage in all positions. Ensure that the unit is gas tight.

Raise pressure to 1.5 times maximum working pressure stated on the VALVE identification label. Leave for 10 minutes and inspect for external leakage.

Lower pressure to maximum working pressure and voltage to minimum system voltage, cycle 20 times check for leakage from the return port applicable.

<4 ml/hr Mineral Oil

<8 ml/hr Water Based Fluids

On satisfactory completion of above tests re-install valve into system or if being stored cap all open ports and suitable pack to protect from mechanical damage.