

HUMPHREY M420 SERIES

SUBBASE MANIFOLD MOUNTED SOLENOID VALVES

TECHNICAL SECTION GENERAL INFORMATION

DESCRIPTION

M420

A 4-way normally open/normally closed, single solenoid, 2-position/ spring return, general purpose air valve. Comes with two spacer screws and one gasket.

SB-2

Subbase with two 1/4-inch outlet ports, marked 1 and 2. Comes with two spacer screws and two o-rings.

SBMP-2

Subbase with multi-pressure capability. Model SBMP-2 has four 1/4-inch external body ports marked IN, EXH, 1 and 2. This subbase is used to introduce an alternate pressure into a given assembly of valves operating at a different pressure. It is also used to supply additional air and/or exhaust capability to a subbase-mounted assembly of valves. Comes with two spacer screws and two o-rings.

SB-2R

Subbase for Model MR420 regulator. Comes with four spacer screws and two o-rings.

SB-2H

Subbase for HA240 series single or double solenoid, 2- or 3-position valves. Subbase has two 1/4-inch outlet ports, marked 1 and 2. Comes with two spacer screws and two o-rings.

INSTALLATION

The assembled subbase manifold should be mounted using the slotted mounting hole in each End Cap and 1/4-inch or M6 socket head cap screws or fillister head screws. One threaded 5/16-18 mounting hole is provided in each End Cap for mounting the finished assembly.

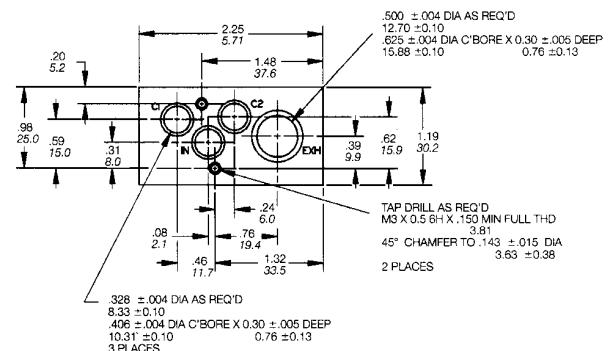
Valves can be mounted in any position in most environments, in keeping with the specifications. All models feature a Class B insulation system and molded coil for ambient temperatures from 32° to 125° F (0° to 50° C).

If manifold consists of a large number of valves or if several valves are to be actuated at the same time, Model SBMP-2 subbases can be used to feed additional supply air to the manifold and to provide additional exhaust capacity.

Humphrey M420 and HA240 Series valves and subbases (or subbases alone) can be ordered completely factory assembled, ready for installation in your equipment. Consult factory for details.

PORTING FOOTPRINT

Humphrey M420 valves can be mounted to your equipment or to special manifolds using the dimensional data shown below.



USE AS 3-WAY

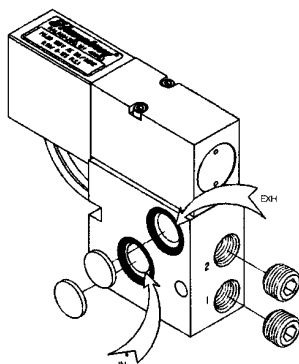
The Humphrey 1/4-18 NPT Port Plug # 130-15 can be used to convert the M420 4-way valve to 3-way service:

Normally closed 3-way: Plug Delivery Port 1.

Normally open 3-way: Plug Delivery Port 2.

USE AS 2-WAY

The Humphrey #130-15 Port Plug can also be used to convert the M420 to 2-way service:



Normally Closed 2-way: Plug Delivery Port #1. Use a Port Isolator to plug internal subbase EXH port. (Internal EXH port corresponds with EXH port in End Cap.) Also plug external EXH port when using Model SBMP-2 subbase, and the appropriate End Cap EXH port. Connect supply pressure to IN.

Normally Open 2-way: Plug Delivery Port #2. Use a Port Isolator to plug internal subbase IN port. (Internal IN port corresponds with IN port in End Cap.) Also plug external IN port when using Model SBMP-2 subbase, and the appropriate End Cap EXH port. Connect Supply pressure to IN.

MULTI-PRESSURE

Model SBMP-2 subbases can be used to create multiple pressures on a common subbase assembly. Use Port Isolators to isolate the subbase to be used with a separate pressure. Isolate the subbase and connect Supply pressure to the IN port of the subbase.

For simplicity, when mixing valves with different pressures on the same subbase manifold, consider locating valves of one common pressure on one end of the assembly. Use Port Isolators (part number 40-800A) to separate the last valve of a common pressure from other valves in the assembly, then mix/match valves of other pressures at the opposite end of the assembly.

MULTI-PRESSURE, ALTERNATE METHOD

Locate subbase/s for separate pressure on one end of the assembly. Use Port Isolators to plug the internal side ports (those interfacing with the alternate pressure source) of the last subbase to separate it from those operating at another pressure.

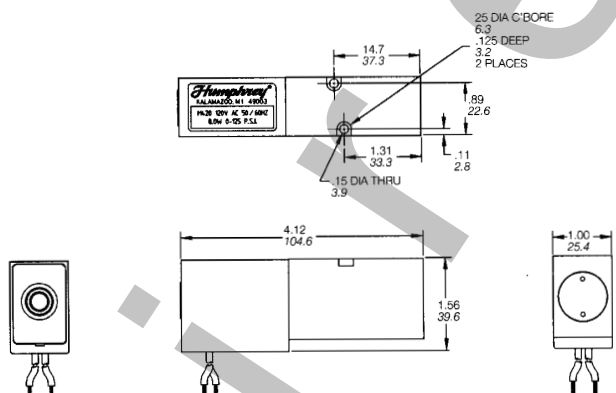
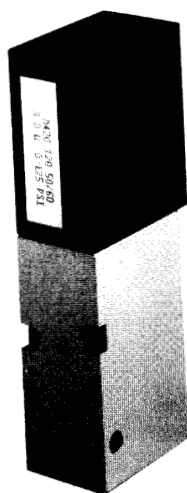
Connect separate pressure to End Cap. In this configuration, part of the assembly operates on one pressure, the other part operates on another pressure.

PLUMBING

M420 Series valves are direct acting. When used with vacuum or low pressure, use largest possible tubing size and minimum tubing length for optimum performance.

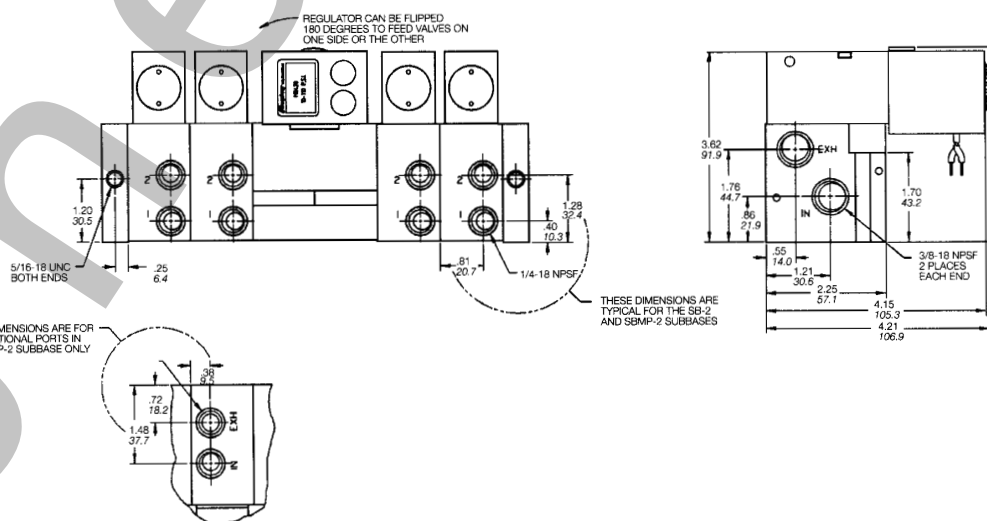
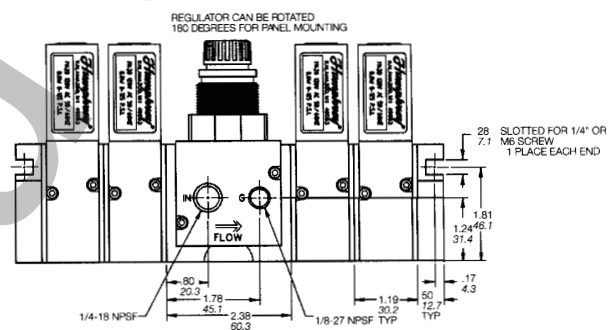
Before connecting fittings and tubing, blow all foreign material from these components. If a sealant is used, be sure the sealant does not enter the valve as it may cause malfunctions and/or leaks.

M420 SOLENOID VALVE



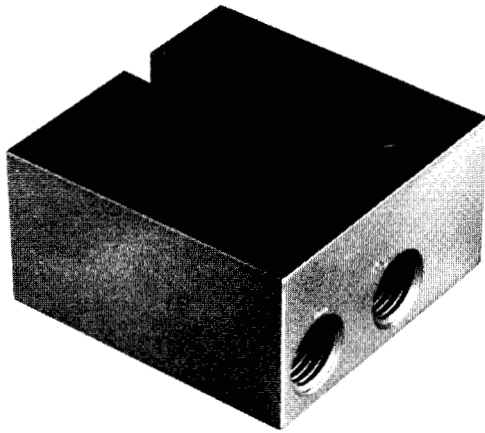
M420

- 4-way, Normally Open/Normally Closed
- 2-position, spring return
- Direct acting, single solenoid
- Continuous duty coil
- Four internal ports: In, Delivery ports 1 & 2, Exhaust
- Non-locking manual override
- (Optional locking override, specify order code -81)
- Two spacer screws and one gasket



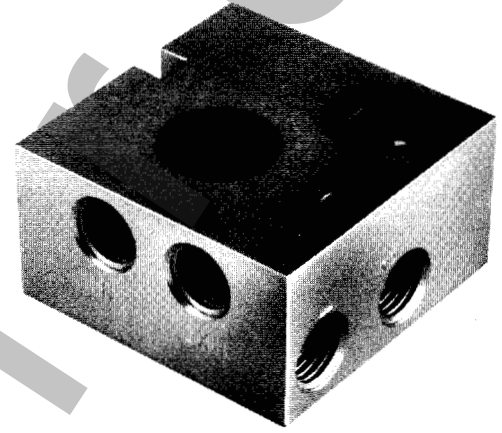
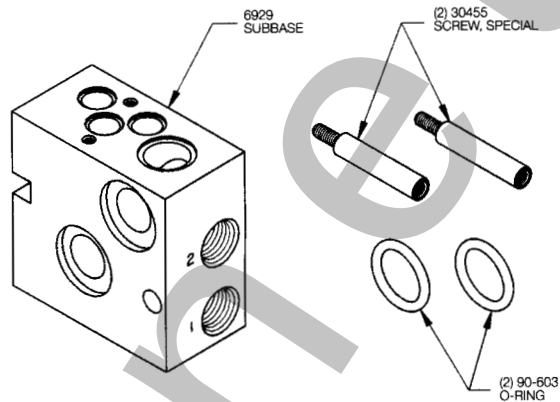
420 Manifold Mounted
12/21/97

SUBBASES, MANIFOLD END PLATE ASSEMBLIES AND REGULATOR



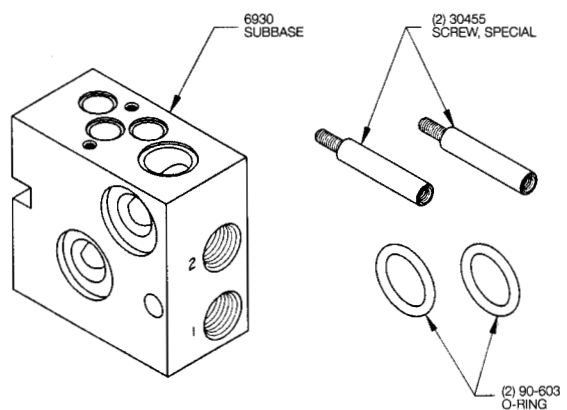
SB-2

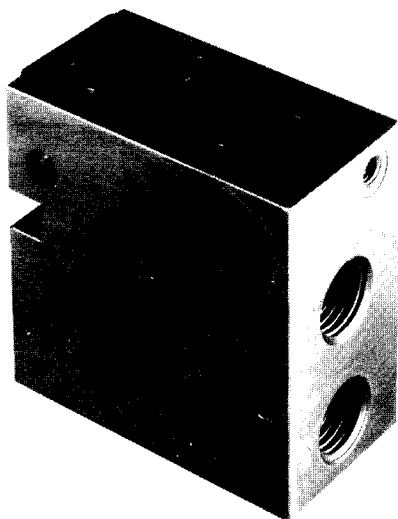
- Subbase for M420 valve
- Two delivery ports, marked 1 and 2
Port 1 is normally open, Port 2 is normally closed
- Two spacer screws and two o-rings for inter-subbase seal



SBMP-2

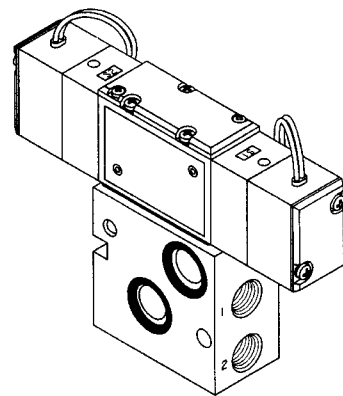
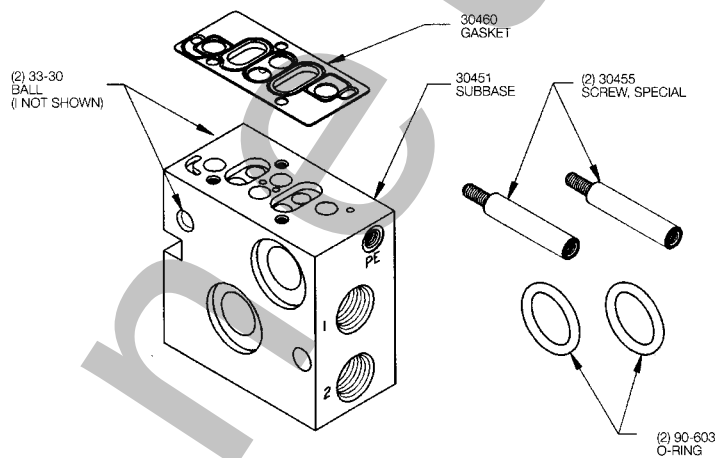
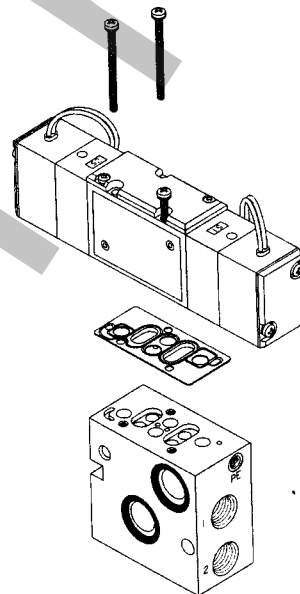
- Subbase for M420 valve
- Four ports: Two delivery ports marked 1 and 2
(Port 1 is normally open, Port 2 is normally closed);
plus one separate IN and one separate EXH port
- Two spacer screws, and two o-rings for inter-subbase seal

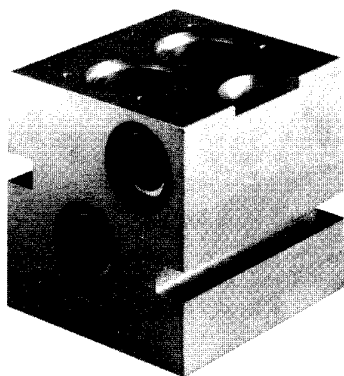




SB-2H

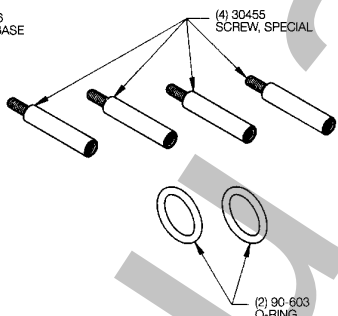
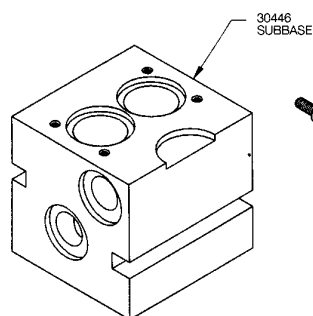
- Subbase for HA240 Series valves
- H240 valves are available as single or double solenoid. Double solenoid models are offered as either 2- or 3-position valves.
- Complete details on HA240 Series valves are given in the complete Humphrey valve catalog. This catalog is available from your Humphrey distributor or from the factory.
- Two spacer screws, gasket and two o-rings.





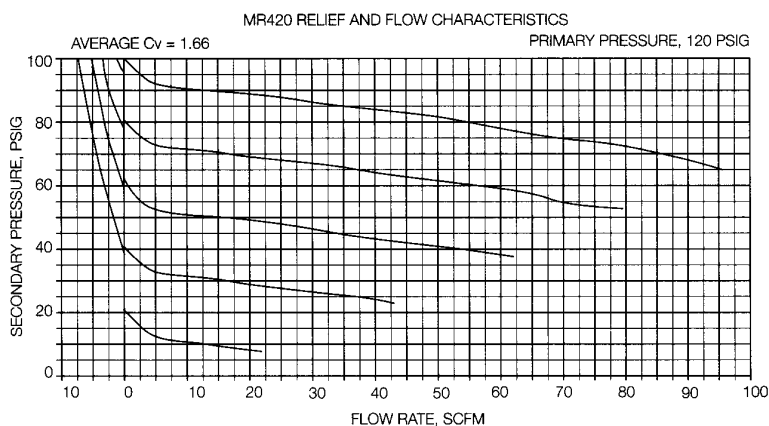
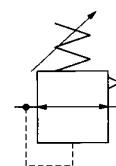
SB-2R

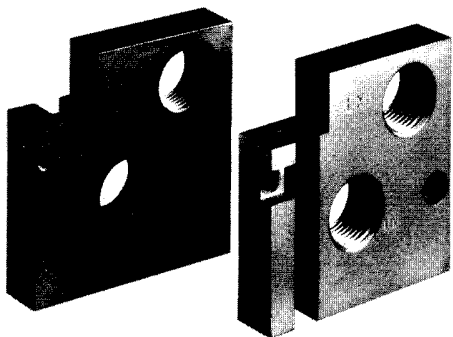
- Subbase for Model MR420 pressure regulator.
- Four spacer screws, two o-rings.



MR420

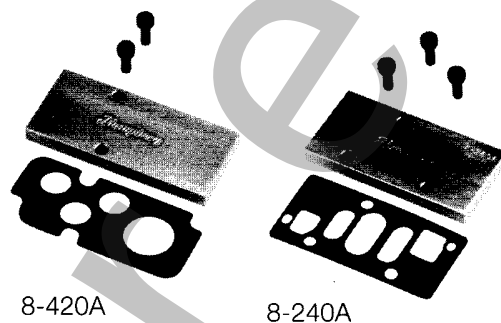
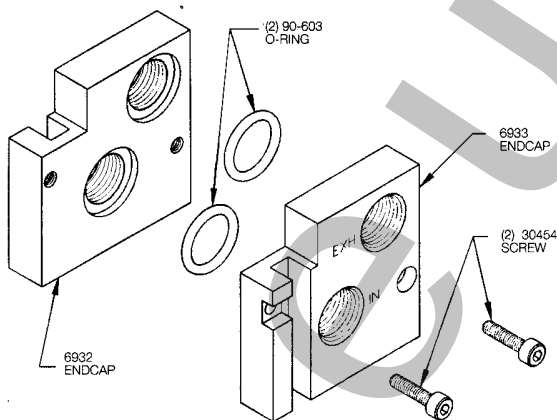
- Relieving type pressure regulator for manifold mounting alongside valves.
- Has a trim fingertip control knob (non-rising) and an adjustment locking ring.
- Can be rotated 180° in two different directions depending on application requirements.
- Eliminates need for piping between components.
- Makes systems more efficient and compact.
- Two mounting screws and two o-rings.
- One 130-15 and one 130-31 pipe plug; plug visible ports if not needed. (Has separate supply port and gauge port.)
- Whereas the MR420 regulator can regulate pressure to any number of valves, cycle rates and flow requirements are factors to be considered.





END PLATE ASSEMBLY PART NUMBER 7-200A

The End Plate Assembly consists of two subbase end caps and fastening accessories. One End Plate is mounted to each end of a completed subbase assembly. Tighten screws to 50 lb.·in. of torque, maximum. Two slotted holes provide a method of mounting a subbase assembly. Includes two o-rings to seal subbase to end cap, and two M4 socket head cap screws to secure tie rod spacers.



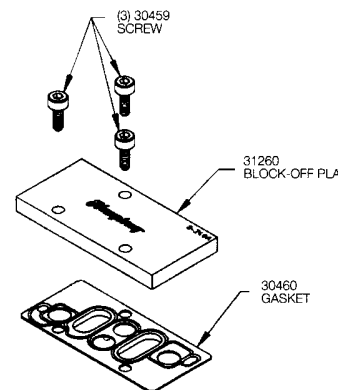
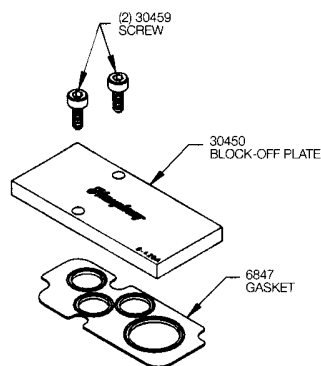
8-420A

8-240A

BLOCK-OFF PLATE

Model 8-420A anodized aluminum block-off plate is used to suspend the use of any SB-2 or SBMP-2 subbase. It can also be used to permit future valve additions related to machine options. Supplied with screws and o-rings to mate with subbase.

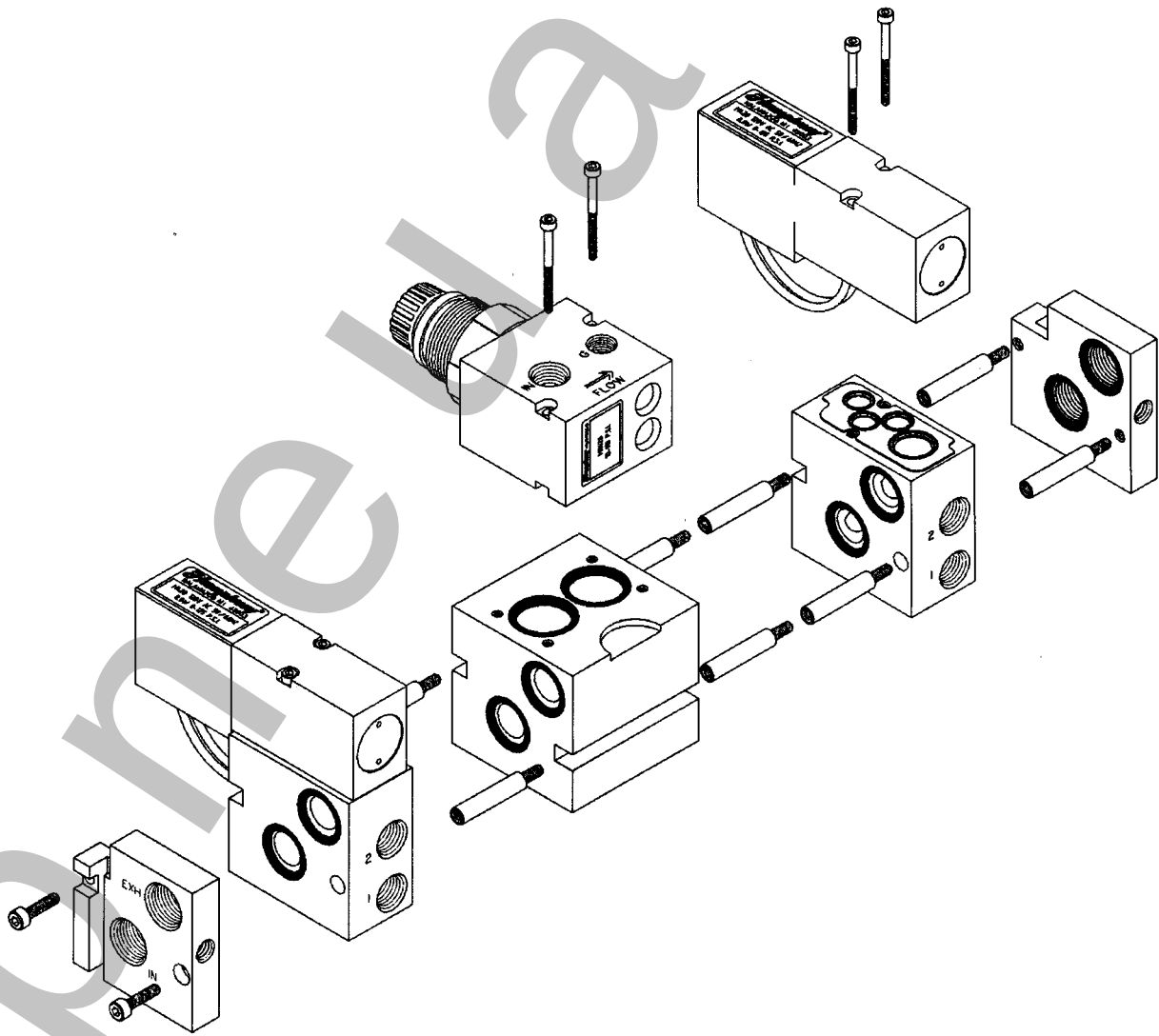
Model 8-240A accomplishes the same functions for HA240 series valves.



TO ASSEMBLE A VALVE MANIFOLD

1. Hand tighten each set of threaded spacers (two supplied per subbase) into units of equal length.
2. Ensure that o-ring seals (supplied) are placed in subbase side ports having o-ring grooves.
3. Place o-ring seals (two supplied) into End Cap that has o-ring grooves and thread spacers into this End Cap.
4. Assemble subbases onto spacers using subbase through-holes.
5. Secure entire assembly with M4 socket head screws (supplied with End Caps) and tighten with 3mm hex drive wrench (not supplied).
6. Place gasket (supplied with valve) onto the valve mounting surface on the subbase.
7. Mount valves to subbase assembly with M3 socket head cap screws (supplied with valve) and tighten with 2.5mm hex drive wrench (not supplied). Use 12 lb.-in. of torque, maximum.

NOTE: Coils face away from subbase Delivery ports.

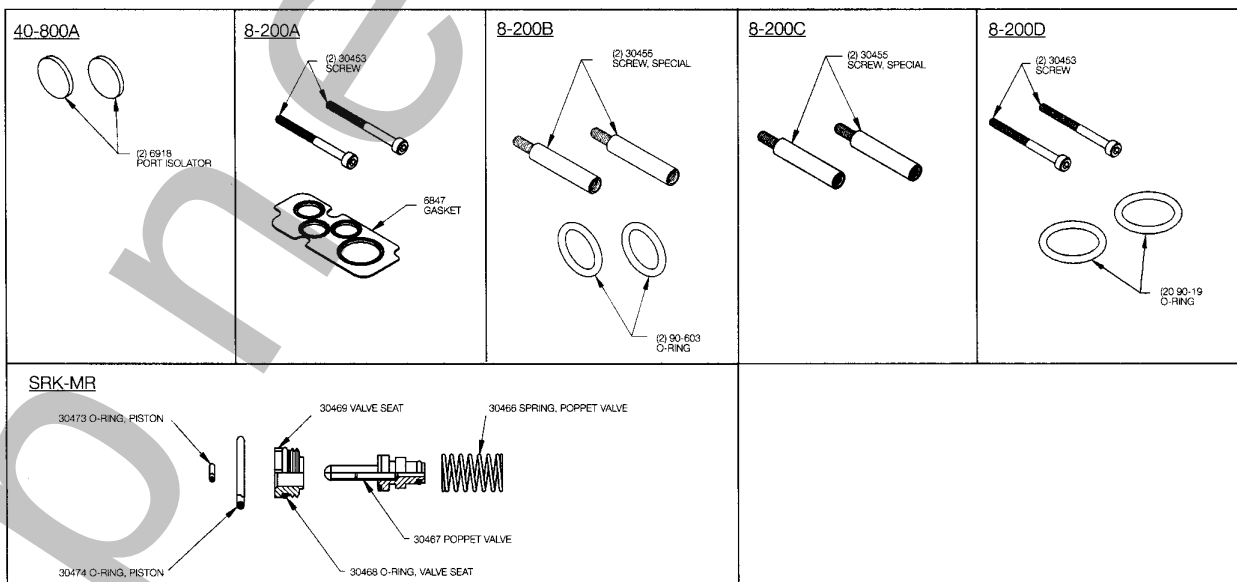


420 Manifold Mounted
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ORDER INFORMATION

SUBBASES AND ACCESSORIES

Model	Description
SB-2	Subbase with two delivery ports.
SBMP-2	Subbase with two delivery ports, and one IN and one EXH port.
SB-2H	Subbase for HA240 series valves, gasket, two spacer screws, two o-rings.
SB-2R	Subbase for Model MR420 regulator, four spacer screws, two o-rings.
7-200A	End cap kit (two subbase End Caps, two o-rings, and two screws).
8-200A	Valve mounting kit (one gasket, two spacer screws).
8-200B	Subbase mounting kit (two spacer screws, two o-rings).
8-200C	Mounting kit (two spacer screws).
8-200D	Regulator mounting kit (two screws, two o-rings).
8-240A	Block-off plate for HA240 series valves, gasket, three screws.
8-420A	Block-off plate for M420 series valves, gasket, two screws.
40-800A	Port isolator kit (two port isolators).
130-15	Port plug.
SRK-MR	Seals repair kit for Model MR420 regulator.
HS-3	DIN receptacle for use with Code 39 connector.
HS-3L	Lighted DIN receptacle for use with Code 39 connector. Specify voltage: AC/DC 12V, 24V, 120V or 240V.



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