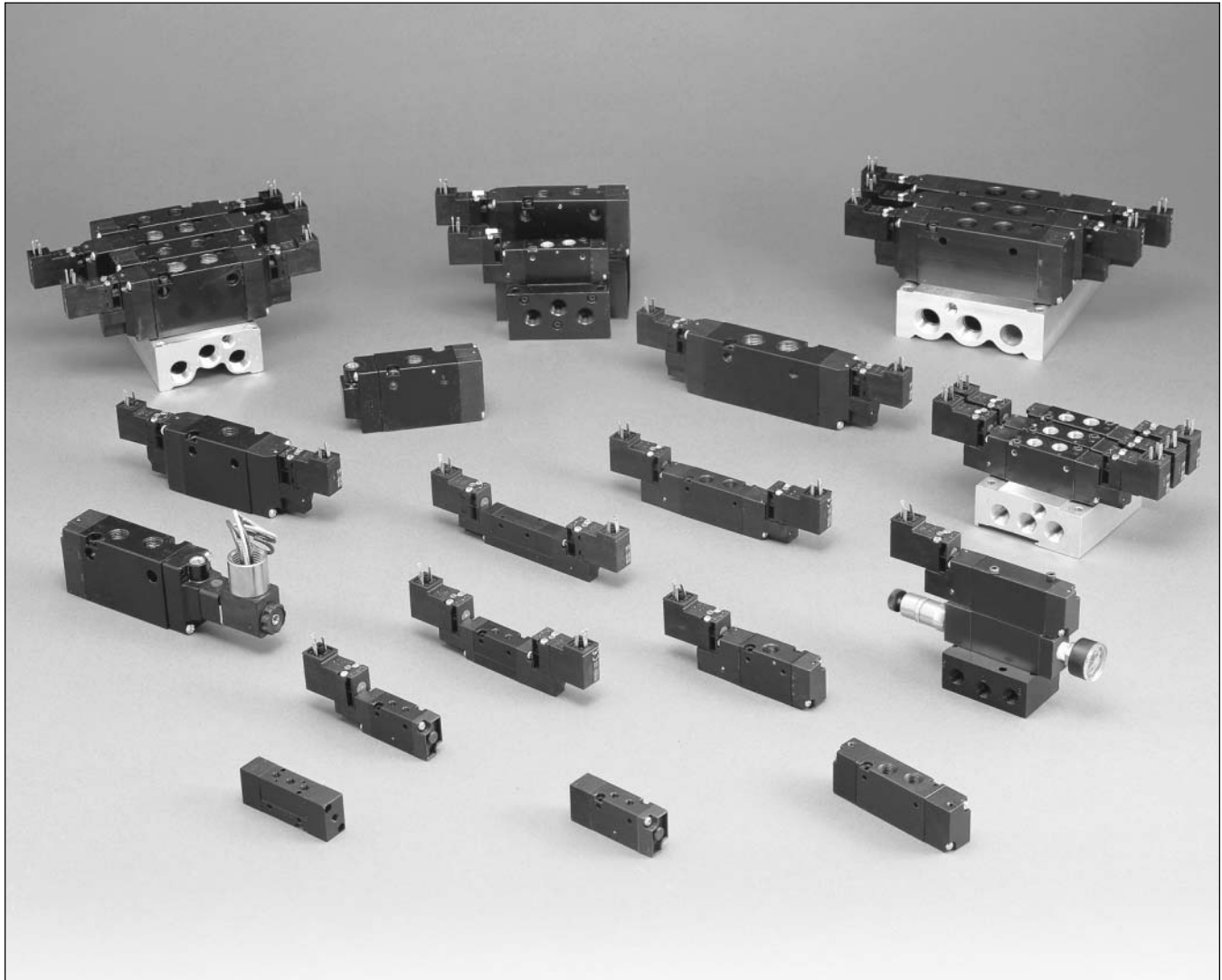


"B" Series

Air Control Valves

- **B2 - .16 Cv M5, 1/8" Port**
- **B3 - .75 Cv 1/8", 1/4" Port**
- **B4 - 1.22 Cv 1/4" Port**
- B5 - 1.40 Cv 1/4", 3/8" Port**
- B6 - 2.70 Cv 3/8" Port**
- B7 - 5.90 Cv 1/2" Port**
- B8 - 7.00 Cv 3/4" Port**

Section H



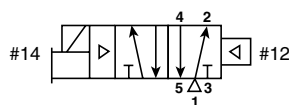
H

Basic Valve Functions	2-3
Basic Valve Features	4-5
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Electrical Connectors	24-25
Technical Information	26-28
Solenoid Repair Kits	29
Exploded Views & Kits	30-35
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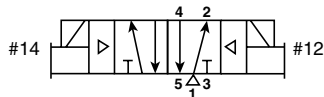
Bold text part numbers are standard.

Standard text part numbers may have longer lead times.

Single Solenoid**4-Way, 2-Position**

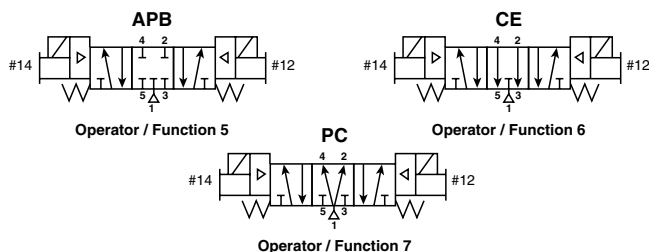
De-energized position – Solenoid operator #14 de-energized. Pressure at inlet port 1 connected to outlet port 2. Outlet port 4 connected to exhaust port 5.

Energized position – Solenoid operator #14 energized. Pressure at inlet port 1 connected to outlet port 4. Outlet port 2 connected to exhaust port 3.

Double Solenoid**4-Way, 2-Position**

Solenoid operator #14 energized last. Pressure at inlet port 1 connected to outlet port 4. Outlet port 2 connected to exhaust port 3.

Solenoid operator #12 energized last. Pressure at inlet port 1 connected to outlet port 2. Outlet port 4 connected to exhaust port 5.

Double Solenoid**4-Way, 3-Position**

With #12 operator energized – inlet port 1 connected to cylinder port 2, cylinder port 4 connected to exhaust port 5.

With #14 operator energized – inlet port 1 connected to cylinder port 4, cylinder port 2 connected to exhaust port 3.

Function 5: All Ports Blocked

All ports blocked in the center position.

Function 6: Center Exhaust

Cylinder ports 2 and 4 connected to exhaust ports 3 and 5 in center position. Port 1 is blocked.

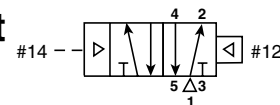
Function 7: Pressure Center

Pressure port 1 connected to cylinder ports 2 and 4, and exhaust ports 3 and 5 blocked in center position.

Dual Pressure:

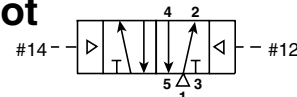
May be used for dual pressure service with pressure at ports 3 & 5. (Use either external pilot source option “K”, “W” or “X”, or dual pressure pilot source option “D” or “E”.) If pilot source “D” or “E” is selected, the high pressure must be at port #3. If pilot source “K”, “W” or “X” is selected, the external pilot must be plumbed to port #14 or “X” respectively. NOTE: The “B6” valve is also available with dual pressure using Port 5 for high pressure (Option “G” & “H”). This is only to be used if converting from a “42” (“CM”) Series traditional valve.

In the 3-Position valve, the effect of dual pressure is extremely important when the valve is in the center position, as the CE and PC functions are reversed. Therefore, care should be used when selecting a 3-Position valve.

Single Remote Pilot**4-Way, 2-Position**

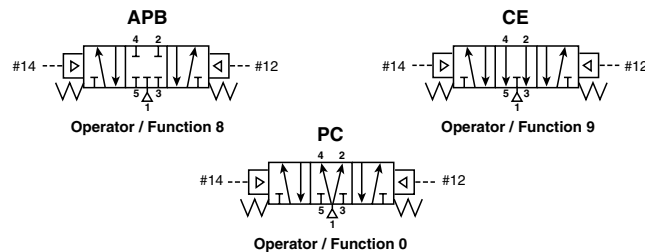
Normal position – Pressure at inlet port 1 connected to outlet port 2. Outlet port 4 connected to exhaust port 5.

Operated position – Maintained air signal at port 14. Pressure at inlet port 1 connected to outlet port 4. Outlet port 2 connected to exhaust port 3.

Double Remote Pilot**4-Way, 2-Position**

Momentary air signal at port 14 last. Pressure at inlet port 1 connected to outlet port 4. Outlet port 2 connected to exhaust port 3.

Momentary air signal at port 12 last. Pressure at inlet port 1 connected to outlet port 2. Outlet port 4 connected to exhaust port 5.

Double Remote Pilot**4-Way, 3-Position**

With #12 operator signaled – inlet port 1 connected to cylinder port 2, cylinder port 4 connected to exhaust port 5.

With #14 operator signaled – inlet port 1 connected to cylinder port 4, cylinder port 2 connected to exhaust port 3.

Function 8: All Ports Blocked

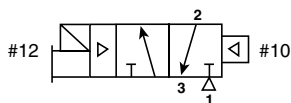
All ports blocked in the center position.

Function 9: Center Exhaust

Cylinder ports 2 and 4 connected to exhaust ports 3 and 5 in center position. Port 1 is blocked.

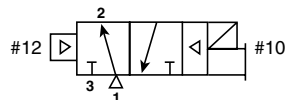
Function 0: Pressure Center

Pressure port 1 connected to cylinder ports 2 and 4, and exhaust ports 3 and 5 blocked in center position.

Single Solenoid**3-Way, 2-Position NC****Normally Closed:**

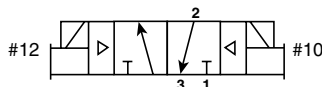
De-energized position – Solenoid #12 de-energized. Pressure at inlet port 1 blocked, outlet port 2 connected to exhaust port 3.

Energized position – Solenoid #12 energized. Pressure at inlet port 1 connected to outlet port 2, exhaust port 3 is blocked.

Single Solenoid**3-Way, 2-Position NO****Normally Open:**

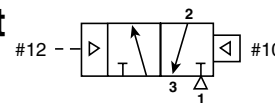
De-energized position – Solenoid #10 de-energized. Pressure at inlet port 1 connected to outlet port 2, exhaust port 3 is blocked.

Energized position – Solenoid #10 energized. Pressure at inlet port 1 blocked, outlet port 2 connected to exhaust port 3.

Double Solenoid**3-Way, 2-Position**

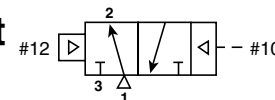
Solenoid operator #12 energized last. Pressure at inlet port 1 connected to outlet port 2, exhaust port 3 is blocked.

Solenoid operator #10 energized last. Pressure at inlet port 1 blocked, outlet port 2 connected to exhaust port 3.

Single Remote Pilot**3-Way, 2-Position NC****Normally Closed:**

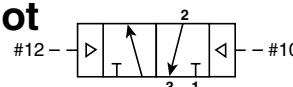
Normal position – Pressure at inlet port 1 blocked, outlet port 2 connected to exhaust port 3.

Operated position – Maintained air signal at port 12. Pressure at inlet port 1 connected to outlet port 2, exhaust port 3 is blocked.

Single Remote Pilot**3-Way, 2-Position NO****Normally Open:**

Normal position – Pressure at inlet port 1 connected to outlet port 2, exhaust port 3 is blocked.

Operated position – Maintained air signal at port 10. Pressure at inlet port 1 blocked, outlet port 2 connected to exhaust port 3.

Double Remote Pilot**3-Way, 2-Position**

Momentary air signal at port 12 last. Pressure at inlet port 1 connected to outlet port 2, exhaust port 3 is blocked.

Momentary air signal at port 10 last. Pressure at inlet port 1 blocked, outlet port 2 connected to exhaust port 3.

H**3-Way Configuration****B2, B6, B7, B8:**

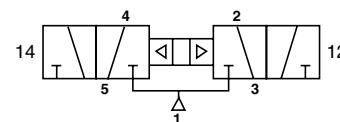
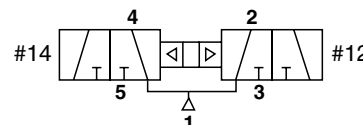
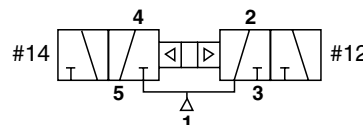
Looking at the #1 and #3 ports, the solenoid (or remote operator) is always on the #3 port end. Different spools are used for NO and NC functions.

B3, B4, B5:

Looking at the #1 and #3 ports, the solenoid (or remote operator) is on the #3 port end for NC and the #1 port end for NO. The same spool is used for both.

Dual 3-Way

Combines the functions of Two 3-Way valves into **One valve body**. The valve can be configured as

Two Normally Closed 3-Way Functions**Two Normally Open 3-Way Functions****One Normally Closed AND One Normally Open 3-Way Functions**

WCS

Wear Compensation System

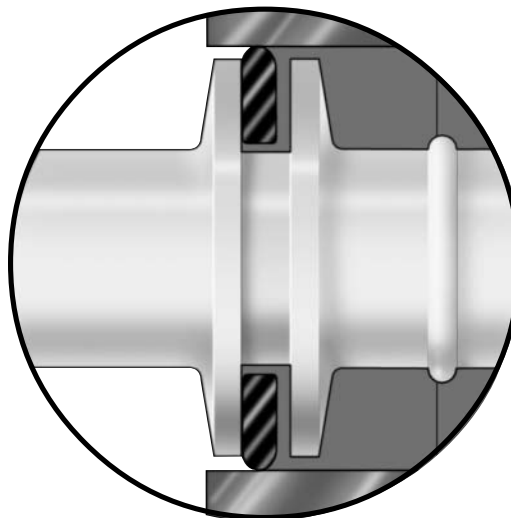
- **Maximum Performance**

- Low Friction
- Lower Operating Pressures
- Fast Response
- Less Wear

- **Long Cycle Life** - Under pressure, radial expansion of the seal occurs to maintain sealing contact with the valve bore..

- **Non-Lube Service** - No lubrication required for continuous valve shifting.

- **Bi-Directional Spool Seals** - Common spool used for any pressure, including vacuum.



"B" Series

Flow Characteristics

- B2: .16 Cv
- B3: .75 Cv
- B4: 1.22 Cv
- B5: 1.40 Cv
- B6: 2.70 Cv
- B7: 5.90 Cv
- B8: 7.00 Cv

Operating Pressure

- Vacuum to 145 PSIG

Ports

- B2: M5, 1/8 Inch
- B3: 1/8, 1/4 Inch
- B4: 1/4 Inch
- B5: 1/4, 3/8 Inch
- B6: 3/8 Inch
- B7: 1/2 Inch
- B8: 3/4 Inch

Mounting

- Inline
- Subbase
- IEM Stackable Base
- IEM Aluminum Bar
- 5-Port Subbase Aluminum Bar

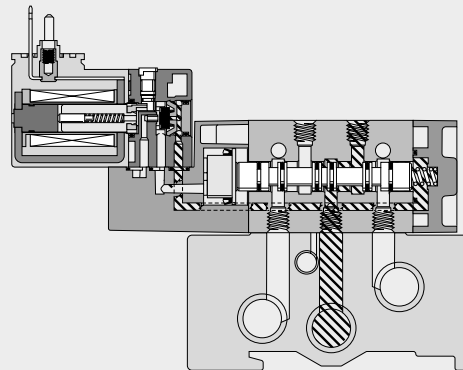
Solenoids

- 1.2 Watt – 15mm 3-Pin (DIN 43650C)
- 2.5 to 7.3 Watt – Conduit, Grommet, 22mm & 30mm 3-Pin DIN (43650)
- 12VDC to 240VAC
- Female DIN Electrical Connectors

Certification / Approval

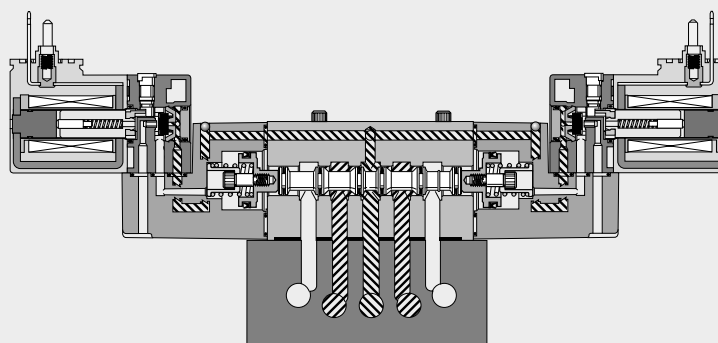
- Approved to be CE marked
- IP65 Rated
- CSA / NRTL-C*

* See catalog technical section for more information.



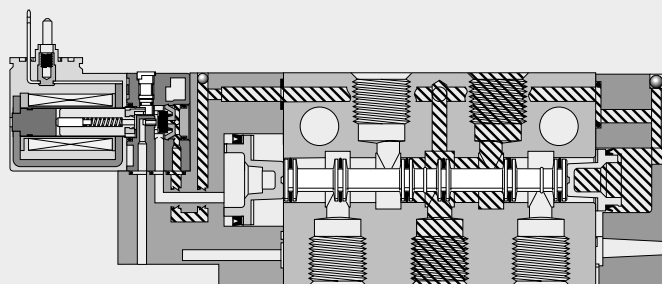
B2 Single Solenoid IEM Aluminum Bar Manifold

Shown De-Energized



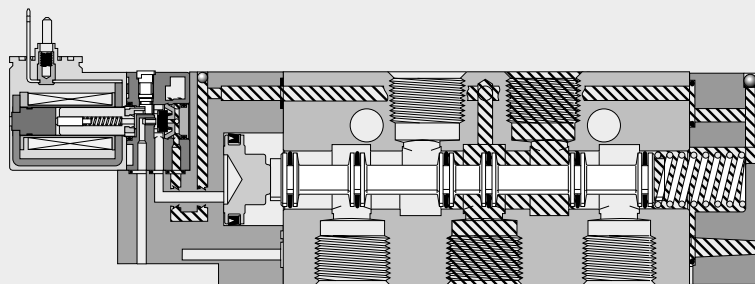
B3 Double Solenoid 3-Position Subbase Mounted

Shown De-Energized



B4 & B5 Single Solenoid Inline - Air Return

Shown De-Energized



B6, B7 & B8 Single Solenoid Inline - Spring / Air Return

Shown De-Energized



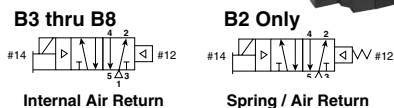
Pressure



Exhaust

H

Single Solenoid 4-Way, 2-Position



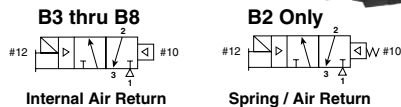
Inline

B2	B2ECBB553C B2ECBB549C	120VAC 24VDC	M5	.16 Cv
B3	B310BB553C B310BB549C	120VAC 24VDC	1/8"	.75 Cv
B4	B411BB553A B411BB549A	120VAC 24VDC	1/4"	1.2 Cv
B5	B511BB553C B511BB549C	120VAC 24VDC	1/4"	1.4 Cv
	B512BB553C B512BB549C	120VAC 24VDC	3/8"	
B6	B612BB553A B612BB549A	120VAC 24VDC	3/8"	2.7 Cv
B7	B713BB553A B713BB549A	120VAC 24VDC	1/2"	5.9 Cv
B8	B814BB553A B814BB549A	120VAC 24VDC	3/4"	7.0 Cv

Subbase

B2	B2EVXB553C B2EVXB549C	120VAC 24VDC	Less Base	.16 Cv
B3	B31VBB553C B31VBB549C	120VAC 24VDC	Less Base	.65 Cv

Single Solenoid 3-Way, 2-Position, NC

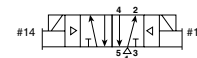


Inline

B2	B2VCBB553C B2VCBB549C	120VAC 24VDC	M5	.16 Cv
B3	B3G0BB553C B3G0BB549C	120VAC 24VDC	1/8"	.75 Cv
B4	B4G1BB553A B4G1BB549A	120VAC 24VDC	1/4"	1.2 Cv
B5	B5G1BB553C B5G1BB549C	120VAC 24VDC	1/4"	1.4 Cv
	B5G2BB553C B5G2BB549C	120VAC 24VDC	3/8"	
B6	B6G2BB553A B6G2BB549A	120VAC 24VDC	3/8"	2.7 Cv
B7	B7G3BB553A B7G3BB549A	120VAC 24VDC	1/2"	5.9 Cv
B8	B8G4BB553A B8G4BB549A	120VAC 24VDC	3/4"	7.0 Cv

3-Pin DIN 43650C Electrical Connection,
Non-Locking Flush Override.

Double Solenoid 4-Way, 2-Position



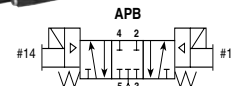
Inline

B2	B22CBB553C B22CBB549C	120VAC 24VDC	M5	.16 Cv
B3	B320BB553C B320BB549C	120VAC 24VDC	1/8"	.75 Cv
B4	B421BB553A B421BB549A	120VAC 24VDC	1/4"	1.2 Cv
B5	B521BB553C B521BB549C	120VAC 24VDC	1/4"	1.4 Cv
	B522BB553C B522BB549C	120VAC 24VDC	3/8"	
B6	B622BB553A B622BB549A	120VAC 24VDC	3/8"	2.7 Cv
B7	B723BB553A B723BB549A	120VAC 24VDC	1/2"	5.9 Cv
B8	B824BB553A B824BB549A	120VAC 24VDC	3/4"	7.0 Cv

Subbase

B2	B22VXB553C B22VXB549C	120VAC 24VDC	Less Base	.16 Cv
B3	B32VBB553C B32VBB549C	120VAC 24VDC	Less Base	.65 Cv

Double Solenoid 4-Way, 3-Position, APB



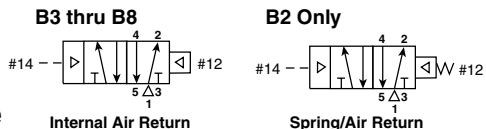
Inline

B2	B25CBB553C B25CBB549C	120VAC 24VDC	M5	.13 Cv
B3	B350BB553C B350BB549C	120VAC 24VDC	1/8"	.60 Cv
B4	B451BB553A B451BB549A	120VAC 24VDC	1/4"	1.2 Cv
B5	B551BB553C B551BB549C	120VAC 24VDC	1/4"	1.1 Cv
	B552BB553C B552BB549C	120VAC 24VDC	3/8"	
B6	B652BB553A B652BB549A	120VAC 24VDC	3/8"	2.1 Cv
B7	B753BB553A B753BB549A	120VAC 24VDC	1/2"	5.7 Cv
B8	B854BB553A B854BB549A	120VAC 24VDC	3/4"	6.6 Cv

Subbase

B2	B25VXB553C B25VXB549C	120VAC 24VDC	Less Base	.13 Cv
B3	B35VBB553C B35VBB549C	120VAC 24VDC	Less Base	.50 Cv

Single Remote Pilot 4-Way, 2-Position



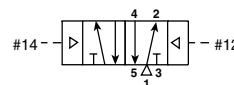
Inline

B2	B2FC000XXC	M5	.16 Cv
B3	B330000XXC	1/8"	.75 Cv
B4	B431000XXA	1/4"	1.2 Cv
B5	B531000XXC	1/4"	1.4 Cv
	B532000XXC	3/8"	
B6	B632000XXA	3/8"	2.7 Cv
B7	B733000XXA	1/2"	5.9 Cv
B8	B834000XXA	3/4"	7.0 Cv

Subbase

B2	B2FVX00XXC	Less Base	.16 Cv
B3	B33V000XXC	Less Base	.65 Cv

Double Remote Pilot 4-Way, 2-Position



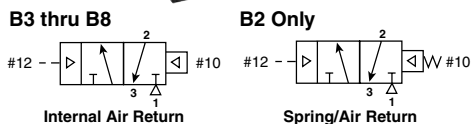
Inline

B2	B24C000XXC	M5	.16 Cv
B3	B340000XXC	1/8"	.75 Cv
B4	B441000XXA	1/8"	1.2 Cv
B5	B541000XXC	1/4"	1.4 Cv
	B542000XXC	3/8"	
B6	B642000XXA	3/8"	2.7 Cv
B7	B743000XXA	1/2"	5.9 Cv
B8	B844000XXA	3/4"	7.0 Cv

Subbase

B2	B24V000XXC	Less Base	.16 Cv
B3	B34V000XXC	Less Base	.65 Cv

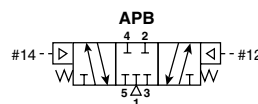
Single Remote Pilot 3-Way, 2-Position, NC



Inline

B2	B2XC000XXC	M5	.16 Cv
B3	B3K0000XXC	1/8"	.75 Cv
B4	B4K1000XXA	1/4"	1.2 Cv
B5	B5K1000XXC	1/4"	1.4 Cv
	B5K2000XXC	3/8"	
B6	B6K2000XXA	3/8"	2.7 Cv
B7	B7K3000XXA	1/2"	5.9 Cv
B8	B8K4000XXA	3/4"	7.0 Cv

Double Remote Pilot 4-Way, 3-Position, APB



Inline

B2	B28C000XXC	M5	.13 Cv
B3	B380000XXC	1/8"	.60 Cv
B4	B481000XXA	1/4"	1.2 Cv
B5	B581000XXC	1/4"	1.1 Cv
	B582000XXC	3/8"	
B6	B682000XXA	3/8"	2.1 Cv
B7	B783000XXA	1/2"	5.7 Cv
B8	B884000XXA	3/4"	6.6 Cv

Subbase

B2	B28V000XXC	Less Base	.13 Cv
B3	B38V000XXC	Less Base	.50 Cv

**B2 Series****BOLD OPTIONS ARE STANDARD**

Basic Series	Operator/Function	Port Size/Thread Type	Pilot Source/Exhaust	Overrides	Enclosures/Lead Length	Voltage	Options	Engineering Level																																																																																						
B2	E	C	B	B	5	49	—	C																																																																																						
Basic Series B2 Series				Overrides § 0 None, Remote Pilot Valve B Flush - Non-Locking C Flush - Locking D Extended - Non-Locking E Extended - Locking X Valve Less 15mm Solenoid		Voltage § <table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">AC</th> <th rowspan="2">DC</th> </tr> <tr> <th>60Hz</th> <th>50Hz</th> </tr> </thead> <tbody> <tr><td>42</td><td>24</td><td>22</td><td></td></tr> <tr><td>45</td><td></td><td></td><td>12</td></tr> <tr><td>47*</td><td></td><td></td><td>12</td></tr> <tr><td>48*</td><td></td><td></td><td>24</td></tr> <tr><td>49</td><td></td><td></td><td>24</td></tr> <tr><td>53</td><td>120</td><td>110</td><td></td></tr> <tr><td>57</td><td>240</td><td>230</td><td></td></tr> </tbody> </table>		AC		DC	60Hz	50Hz	42	24	22		45			12	47*			12	48*			24	49			24	53	120	110		57	240	230			Engineering Level C Current																																																				
	AC		DC																																																																																											
	60Hz	50Hz																																																																																												
42	24	22																																																																																												
45			12																																																																																											
47*			12																																																																																											
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49			24																																																																																											
53	120	110																																																																																												
57	240	230																																																																																												
Operator / Function		Pilot Source / Pilot Exhaust		Enclosures / Lead Length		Options																																																																																								
3-Way J Double Solenoid, 2-Position M Double Remote Pilot, 2-Position S Single Solenoid / Single Remote Pilot, 2-Position V Single Solenoid, 2-Position NC - Air Return / Spring Assist W Single Solenoid, 2-Position NO - Air Return / Spring Assist X Single Remote Pilot, 2-Position NC - Air Return / Spring Assist Y Single Remote Pilot, 2-Position NO - Air Return / Spring Assist 4-Way 2 Double Solenoid, 2-Position 4 Double Remote Pilot, 2-Position 5 Double Solenoid, 3-Position - APB 6 Double Solenoid, 3-Position - CE 7 Double Solenoid, 3-Position - PC 8 Double Remote Pilot, 3-Position - APB 9 Double Remote Pilot, 3-Position - CE 0 Double Remote Pilot, 3-Position - PC A Single Solenoid / Single Remote Pilot, 2-Position E Single Solenoid, 2-Position - Air Return / Spring Assist F Single Remote Pilot, 2-Position - Air Return / Spring Assist		0 None, Remote Pilot Valve B† Internal - Port #1 / Vented X‡ External - Manifold / Vented † Not available for Remote Pilot Valves or Subbase Valves. ‡ See gray box.		0 None, Remote Pilot Valve 5 15mm 3-Pin DIN 43650C (Male Only) X Valve Less 15mm Solenoid		Blank None 01* Operator on 12 End for Single Solenoid/ Remote Pilot 02 Solenoid Rotated 180° – Pins Down 03* 01 + 02 M8 3-Way with M800 / B2 'B' Mounting - Inline 3-Way Only * Not available with 3-Way valves.																																																																																								
Port Size / Thread Type		Voltage		Options																																																																																										
3-Way / 4-Way C M5 Inline V* Subbase Valve Less Base * Must be used with Pilot Source / Exhaust "X" (Except Operator 4, 8, 9, 0, M uses Pilot /Source / Exhaust "0").		XX Remote Pilot - M5 or Valve Less 15mm Solenoid YY† Remote Pilot - 5/32" (4mm) Tube † Mobile voltage. Only available with Overrides "D" & "E". ‡ Not available with Port Size 'V' or with IEM Bar Manifolds.		§ Enclosure '5' – Override / Voltage Availability S - Standard O - Option																																																																																										
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Pilot Source 'X' – External-Manifold / Vented

INLINE Valves –
Only used IF an IEM Aluminum Bar Manifold requires a common external pilot signal thru the manifold for low pressure / vacuum applications.

SUBBASE Valves –
The **ONLY** option for all Solenoid and Single Remote Pilot valves. The 5-Port Subbase Aluminum Bar Manifold always feeds the common external pilot galley connecting to the external pilot hole in the Subbase Valve body.

**B3 Series****BOLD OPTIONS ARE STANDARD**

Basic Series	Operator/ Function	Port Size/ Thread Type	Pilot Source/ Exhaust	Overrides	Enclosures/ Lead Length	Voltage	Options	Engineering Level
B3	1	0	B	B	5	49	—	C
Basic Series B3 Series	Operator / Function	Port Size / Thread Type	Pilot Source / Pilot Exhaust	Overrides §	Enclosures / Lead Length	Voltage §	Options	Engineering Level
3-Way G Single Solenoid, 2-Position NC - Air Return H Single Solenoid, 2-Position NO - Air Return J Double Solenoid, 2-Position K Single Remote Pilot, 2-Position NC - Air Return L Single Remote Pilot, 2-Position NO - Air Return M Double Remote Pilot, 2-Position S Single Solenoid / Single Remote Pilot, 2-Position V Single Solenoid, 2-Position NC - Air Return / Spring Assist W Single Solenoid, 2-Position NO - Air Return / Spring Assist X Single Remote Pilot, 2-Position NC - Air Return / Spring Assist Y Single Remote Pilot, 2-Position NO - Air Return / Spring Assist		0 None, Remote Pilot Valve A† Internal - Port #1 / Tapped M5 B† Internal - Port #1 / Vented E* Dual Pressure - Port #3 / Vented K† External - Body / Tapped M5 W†‡ External - Manifold / Tapped M5 X† External - Manifold / Vented	0 None, Remote Pilot Valve B Flush - Non-Locking C Flush - Locking D Extended - Non-Locking E Extended - Locking X Valve Less 15mm Solenoid	0 None, Remote Pilot Valve 5 15mm 3-Pin DIN 43650C (Male Only) X Valve Less 15mm Solenoid	42 24 45 22 47* 12 48* 12 49 24 53 120 110 57 240 230 XX Remote Pilot - M5 or Valve Less 15mm Solenoid YY Remote Pilot - 5/32" (4mm) Tube	Blank None 01* Operator on 12 End for Single Solenoid / Remote Pilot 02 Solenoid Rotated 180° - Pins Down 03* 01 + 02 V0† Fluorocarbon Seals V1† V0 + 01 V2† V0 + 02 V3† V1 + V2 MD Manual Detent	C Current	
Dual 3-Way N* Double Solenoid, Dual 3/2 NC/NC P* Double Solenoid, Dual 3/2 NO/NO Q* Double Solenoid, Dual 3/2 NC/NO R* Double Remote Pilot, Dual 3/2 NC/NC T* Double Remote Pilot, Dual 3/2 NO/NO U* Double Remote Pilot, Dual 3/2 NC/NO		0* 1/8" NPT Inline 3 Port 1, 2 - 1/4" Tube Inline 5* 1/8" BSPP "G" Inline F* Port 2 - 1/4" Tube Inline	0* 1/8" NPT Inline 3† Port 1, 2, 4 - 1/4" Tube Inline 5* 1/8" BSPP "G" Inline 6† Ports 2, 3, 4, 5 - 1/4" Tube Inline F*† Ports 2, 4 - 1/4" Tube Inline G‡ 1/8" NPT Subbase H‡ 1/4" NPT Subbase M‡ 1/8" BSPP "G" Subbase N‡ 1/4" BSPP "G" Subbase T** 1/8" NPT Face Mount V‡ Subbase Valve Less Base W** 1/8" BSPP "G" Face Mount	0 None, Remote Pilot Valve 5 15mm 3-Pin DIN 43650C (Male Only) X Valve Less 15mm Solenoid	42 24 45 22 47* 12 48* 12 49 24 53 120 110 57 240 230 XX Remote Pilot - M5 or Valve Less 15mm Solenoid YY Remote Pilot - 5/32" (4mm) Tube	Blank None 01* Operator on 12 End for Single Solenoid / Remote Pilot 02 Solenoid Rotated 180° - Pins Down 03* 01 + 02 V0† Fluorocarbon Seals V1† V0 + 01 V2† V0 + 02 V3† V1 + V2 MD Manual Detent	C Current	
4-Way 1 Single Solenoid, 2-Position - Air Return 2 Double Solenoid, 2-Position 3 Single Remote Pilot, 2-Position - Air Return 4 Double Remote Pilot, 2-Position 5 Double Solenoid, 3-Position - APB 6 Double Solenoid, 3-Position - CE 7 Double Solenoid, 3-Position - PC 8 Double Remote Pilot, 3-Position - APB 9 Double Remote Pilot, 3-Position - CE 0 Double Remote Pilot, 3-Position - PC A Single Solenoid / Single Remote Pilot, 2-Position E Single Solenoid, 2-Position - Air Return / Spring Assist F Single Remote Pilot, 2-Position - Air Return / Spring Assist		0* 1/8" NPT Inline 3† Port 1, 2, 4 - 1/4" Tube Inline 5* 1/8" BSPP "G" Inline 6† Ports 2, 3, 4, 5 - 1/4" Tube Inline F*† Ports 2, 4 - 1/4" Tube Inline G‡ 1/8" NPT Subbase H‡ 1/4" NPT Subbase M‡ 1/8" BSPP "G" Subbase N‡ 1/4" BSPP "G" Subbase T** 1/8" NPT Face Mount V‡ Subbase Valve Less Base W** 1/8" BSPP "G" Face Mount	0 None, Remote Pilot Valve 5 15mm 3-Pin DIN 43650C (Male Only) X Valve Less 15mm Solenoid	42 24 45 22 47* 12 48* 12 49 24 53 120 110 57 240 230 XX Remote Pilot - M5 or Valve Less 15mm Solenoid YY Remote Pilot - 5/32" (4mm) Tube	Blank None 01* Operator on 12 End for Single Solenoid / Remote Pilot 02 Solenoid Rotated 180° - Pins Down 03* 01 + 02 V0† Fluorocarbon Seals V1† V0 + 01 V2† V0 + 02 V3† V1 + V2 MD Manual Detent	C Current		

* Available with Pilot Source / Pilot Exhaust "0", "A" and "B" only.

† Tube Connection Valves. Remaining ports are NPT only. Not available with Options V0, V1, V2, V3.

‡ Subbase valves available for 4-Way valves only.

* Not available for 3-Way Valves.

† Not available for Remote Pilot Valves.

‡ See gray box lower right.

Pilot Source
'X' & 'W' -
 External-Manifold / Vented

INLINE & SUBBASE Valves -
 Only used IF an IEM or 5-Ported Subbase Aluminum Bar Manifold requires a common external pilot signal thru the manifold for low pressure / vacuum applications OR when used with Sandwich Regulators.

§ Enclosure '5' - Override / Voltage Availability

S - Standard
O - Option

Voltage Code	Override Code			
	B	C	D	E
42	O	O	-	-
45	O	O	-	-
47	-	-	O	O
48	-	-	O	O
49	S	S	O	O
53	S	S	O	O
57	O	O	-	-

Voltage Code	"02" Option			
	B	C	D	E
42	O	O	-	-
45	O	O	-	-
47	-	-	-	-
48	-	-	-	-
49	S	S	O	O
53	S	S	O	O
57	O	O	-	-

H

**B4 Series****BOLD OPTIONS ARE STANDARD**

Basic Series	Operator/ Function	Port Size/ Thread Type	Pilot Source/ Exhaust	Overrides	Enclosures/ Lead Length	Voltage	Options	Engineering Level																																																																																			
B4	1	1	B	C	5	53	—	A																																																																																			
Basic Series B4 Series																																																																																											
Operator / Function 3-Way G Single Solenoid, 2-Position NC - Air Return H Single Solenoid, 2-Position NO - Air Return J Double Solenoid, 2-Position K† Single Remote Pilot, 2-Position NC - Air Return L† Single Remote Pilot, 2-Position NO - Air Return M† Double Remote Pilot, 2-Position S Single Solenoid / Single Remote Pilot, 2-Position V Single Solenoid, 2-Position NC - Air Return / Spring Assist W Single Solenoid, 2-Position NO - Air Return / Spring Assist X† Single Remote Pilot, 2-Position NC - Air Return / Spring Assist Y† Single Remote Pilot, 2-Position NO - Air Return / Spring Assist 4-Way 1 Single Solenoid, 2-Position - Air Return 2 Double Solenoid, 2-Position 3† Single Remote Pilot, 2-Position - Air Return 4†† Double Remote Pilot, 2-Position 5 Double Solenoid, 3-Position - APB 6 Double Solenoid, 3-Position - CE 7 Double Solenoid, 3-Position - PC 8†† Double Remote Pilot, 3-Position - APB 9†† Double Remote Pilot, 3-Position - CE 0†† Double Remote Pilot, 3-Position - PC A Single Solenoid / Single Remote Pilot, 2-Position E Single Solenoid, 2-Position - Air Return / Spring Assist F† Single Remote Pilot, 2-Position - Air Return / Spring Assist		Overrides § 0 None, Remote Pilot Valve B Flush - Non-Locking without Light C Flush - Locking D Extended - Non-Locking E Extended - Locking X† Valve Less 15mm Solenoid † "X" available with Enclosure "X" only.	Voltage § <table border="1"> <thead> <tr> <th></th> <th colspan="2">AC</th> <th>DC</th> </tr> <tr> <th></th> <th>60Hz</th> <th>50Hz</th> <th></th> </tr> </thead> <tbody> <tr> <td>42</td> <td>24</td> <td>22</td> <td></td> </tr> <tr> <td>45</td> <td></td> <td></td> <td>12</td> </tr> <tr> <td>47*</td> <td></td> <td></td> <td>12</td> </tr> <tr> <td>48*</td> <td></td> <td></td> <td>24</td> </tr> <tr> <td>49</td> <td></td> <td></td> <td>24</td> </tr> <tr> <td>53</td> <td>120</td> <td>110</td> <td></td> </tr> <tr> <td>57</td> <td>240</td> <td>230</td> <td></td> </tr> </tbody> </table> Remote Pilot or Valve less Solenoid XX		AC		DC		60Hz	50Hz		42	24	22		45			12	47*			12	48*			24	49			24	53	120	110		57	240	230		Enclosures / Lead Length 0 None, Remote Pilot Valve 5 15mm 3-Pin DIN 43650C (Male Only) X Valve Less 15mm Solenoid	Pilot Source / Pilot Exhaust 0 None, Remote Pilot Valve A† Internal - Port #1 / Tapped Side B† Internal - Port #1 / Vented Side † Not available for Remote Pilot Valves.	Options Blank None 01† Operator on 12 End for Single Solenoid/ Remote Pilot 02* Solenoid Rotated 180° – Pins Down 03†† 01 + 02 * Not available with 3-Way valves. * Not available with Overrides D, E and Voltages 42, 45, 47, and 48.	Engineering Level A Current																																																
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Port Size / Thread Type 3-Way 1* 1/4" NPT Inline 4 Port 1 & 2 - 3/8" Tube Inline 6* 1/4" BSPP "G" Inline G* Port 2 - 3/8" Tube Inline 4-Way 1* 1/4" NPT Inline 4 Port 1, 2 & 4 - 3/8" Tube Inline 6* 1/4" BSPP "G" Inline G* Port 2 & 4 - 3/8" Tube Inline * Available for use on IEM Manifolds.		§ Enclosure '5' – Override / Voltage Availability S - Standard O - Option																																																																																									
Pilot Source 'X' & 'W' – External-Manifold / Vented INLINE Valves – Only used IF an IEM Aluminum Bar Manifold <u>requires</u> a common external pilot signal thru the manifold for low pressure / vacuum applications.		<table border="1"> <thead> <tr> <th rowspan="2">Voltage Code</th> <th colspan="4">Override Code Standard</th> </tr> <tr> <th>B</th> <th>C</th> <th>D</th> <th>E</th> </tr> </thead> <tbody> <tr> <td>42</td> <td>O</td> <td>O</td> <td>–</td> <td>–</td> </tr> <tr> <td>45</td> <td>O</td> <td>O</td> <td>–</td> <td>–</td> </tr> <tr> <td>47</td> <td>–</td> <td>–</td> <td>O</td> <td>O</td> </tr> <tr> <td>48</td> <td>–</td> <td>–</td> <td>O</td> <td>O</td> </tr> <tr> <td>49</td> <td>S</td> <td>S</td> <td>O</td> <td>O</td> </tr> <tr> <td>53</td> <td>S</td> <td>S</td> <td>O</td> <td>O</td> </tr> <tr> <td>57</td> <td>O</td> <td>O</td> <td>–</td> <td>–</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="4">"02" Option</th> </tr> <tr> <th>B</th> <th>C</th> <th>D</th> <th>E</th> </tr> </thead> <tbody> <tr> <td>42</td> <td>O</td> <td>O</td> <td>–</td> <td>–</td> </tr> <tr> <td>45</td> <td>O</td> <td>O</td> <td>–</td> <td>–</td> </tr> <tr> <td>47</td> <td>–</td> <td>–</td> <td>–</td> <td>–</td> </tr> <tr> <td>48</td> <td>–</td> <td>–</td> <td>–</td> <td>–</td> </tr> <tr> <td>49</td> <td>S</td> <td>S</td> <td>O</td> <td>O</td> </tr> <tr> <td>53</td> <td>S</td> <td>S</td> <td>O</td> <td>O</td> </tr> <tr> <td>57</td> <td>O</td> <td>O</td> <td>–</td> <td>–</td> </tr> </tbody> </table>		Voltage Code	Override Code Standard				B	C	D	E	42	O	O	–	–	45	O	O	–	–	47	–	–	O	O	48	–	–	O	O	49	S	S	O	O	53	S	S	O	O	57	O	O	–	–		"02" Option				B	C	D	E	42	O	O	–	–	45	O	O	–	–	47	–	–	–	–	48	–	–	–	–	49	S	S	O	O	53	S	S	O	O	57	O	O	–	–
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57	O	O	–	–																																																																																							

* Pilot Source / Pilot Exhaust must be "0".

† Override and Enclosure must be "0", voltage must be "XX".

B5 Series

BOLD OPTIONS ARE STANDARD

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B6 Series**BOLD OPTIONS ARE STANDARD**

Basic Series	Operator/ Function	Port Size/ Thread Type	Pilot Source/ Exhaust	Overrides	Enclosures/ Lead Length	Voltage	Options	Engineering Level																																											
B6	1	2	B	B	5	49	—	A																																											
Basic Series B6 Series	Operator / Function	Port Size / Thread Type	Pilot Source / Pilot Exhaust	Overrides §	Enclosures / Lead Length	Voltage §	Options	Engineering Level																																											
		3-Way / 4-Way 2* 3/8" NPT Inline 7* 3/8" BSPP "G" Inline T*** 3/8" NPT NAMUR Mount W*** 3/8" BSPP "G" NAMUR Mount		0 None, Remote Pilot Valve A† No Override B* Flush - Non-Locking C Flush - Locking D Extended - Non-Locking E* Extended - Locking X Valve Less 15mm Solenoid		AC 60Hz 50Hz DC 42 24 22 45 47* 48* 49 120 110 53** 120 120 57 240 230		A Current																																											
		* Available for use on IEM Manifolds. ** Available with Pilot Source "0", "A", "B", and "L" Only. † Available with Pilot Source "0", "A", "B" only. ‡ 4-Way only.		* Only Available with Enclosure "5". † Only Available with Enclosure "E".		* Mobile voltage. Only available with Enclosures – "5" (Overrides "D" & "E" Only); "G" & "Q" (Overrides "C" & "D" Only). ** Enclosure 5																																													
	3-Way G Single Solenoid, 2-Position NC - Air Return H Single Solenoid, 2-Position NO - Air Return K Single Remote Pilot, 2-Position NC - Air Return L Single Remote Pilot, 2-Position NO - Air Return V Single Solenoid, 2-Position NC - Air Return / Spring Assist W Single Solenoid, 2-Position NO - Air Return / Spring Assist X Single Remote Pilot, 2-Position NC - Air Return / Spring Assist Y Single Remote Pilot, 2-Position NO - Air Return / Spring Assist		Enclosures "0, 5 & X" 0 None, Remote Pilot Valve A† Internal - Port #1 / Tapped M5 B† Internal - Port #1 / Vented E* Dual Pressure - Port #3 / Vented H* Dual Pressure - Port #5 / Vented K† External - Body / Tapped M5 X† External - Manifold / Vented		Enclosures / Lead Length 0 None, Remote Pilot Valve 5 15mm 3-Pin DIN 43650C (Male Only) A 30mm Square 3-Pin – ISO 4400 Form A (Male Only) B 22mm Rectangular 3-Pin – Type B Industrial (Male Only) C 3-Pin Automotive - Mini D 5-Pin Automotive - Mini E* Intrinsically Safe - 30mm 3-Pin F** Hazardous Duty 1/2" NPT Conduit - 18" Leads G Grommet - 18" Leads H 1/2" NPT Conduit - 18" Leads N Valve Less "A - R" Coil Q Grommet - 72" Leads R 1/2" NPT Conduit - 72" Leads X Valve Less 15mm Solenoid		Blank None 01* Operator on 12 End for Single Solenoid/ Remote Pilot 02 Solenoid Rotated 180° – Pins Down 03* 01 + 02 42** Series Cylinder Mount Replacement																																												
	4-Way 1 Single Solenoid, 2-Position - Air Return 2 Double Solenoid, 2-Position 3 Single Remote Pilot, 2-Position - Air Return 4 Double Remote Pilot, 2-Position 5 Double Solenoid, 3-Position - APB 6 Double Solenoid, 3-Position - CE 7 Double Solenoid, 3-Position - PC 8 Double Remote Pilot, 3-Position - APB 9 Double Remote Pilot, 3-Position - CE 0 Double Remote Pilot, 3-Position - PC A Single Solenoid / Single Remote Pilot, 2-Position E Single Solenoid, 2-Position - Air Return / Spring Assist F Single Remote Pilot, 2-Position - Air Return / Spring Assist		Enclosures "A, B, C, D, E, F, G, H, N, Q & R" A† Internal - Port #1 / Tapped M5 B† Internal - Port #1 / Vented D** Dual Pressure - Port #3 / Tapped M5 G** Dual Pressure - Port #5 / Tapped M5 K† External - Body / Tapped M5 W†† External - Manifold / Tapped M5				* Not available with 3-Way valves. ** Only Available with Port Size "T" and "0", "A", "B", and "L" Pilot Source.																																												
			* Not available for 3-Way Valves. † Not available for Remote Pilot valves. ‡ See gray box.																																																
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			INLINE Valves – Only used IF an IEM Aluminum Bar Manifold requires a common external pilot signal thru the manifold for low pressure / vacuum applications.																																																
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							<table border="1"> <thead> <tr> <th rowspan="2">Voltage Code</th> <th colspan="4">Override Code</th> </tr> <tr> <th>B</th> <th>C</th> <th>D</th> <th>E</th> </tr> </thead> <tbody> <tr><td>42</td><td>O</td><td>O</td><td>–</td><td>–</td></tr> <tr><td>45</td><td>O</td><td>O</td><td>–</td><td>–</td></tr> <tr><td>47</td><td>–</td><td>–</td><td>O</td><td>O</td></tr> <tr><td>48</td><td>–</td><td>–</td><td>O</td><td>O</td></tr> <tr><td>49</td><td>S</td><td>S</td><td>O</td><td>O</td></tr> <tr><td>53</td><td>S</td><td>S</td><td>O</td><td>O</td></tr> <tr><td>57</td><td>O</td><td>O</td><td>–</td><td>–</td></tr> </tbody> </table>	Voltage Code	Override Code				B	C	D	E	42	O	O	–	–	45	O	O	–	–	47	–	–	O	O	48	–	–	O	O	49	S	S	O	O	53	S	S	O	O	57	O	O	–	–
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B7 & B8 Series**BOLD OPTIONS ARE STANDARD**

Basic Series	Operator/ Function	Port Size/ Thread Type	Pilot Source/ Exhaust	Overrides	Enclosures/ Lead Length	Voltage	Options	Engineering Level																																																
B7	1	3	A	B	G	53	—	A																																																
Basic Series B7 Series B8 Series	Operator / Function 3-Way G Single Solenoid, 2-Position NC - Air Return H Single Solenoid, 2-Position NO - Air Return K Single Remote Pilot, 2-Position NC - Air Return L Single Remote Pilot, 2-Position NO - Air Return V Single Solenoid, 2-Position NC - Air Return / Spring Assist W Single Solenoid, 2-Position NO - Air Return / Spring Assist X Single Remote Pilot, 2-Position NC - Air Return / Spring Assist Y Single Remote Pilot, 2-Position NO - Air Return / Spring Assist 4-Way 1 Single Solenoid, 2-Position - Air Return 2 Double Solenoid, 2-Position 3 Single Remote Pilot, 2-Position - Air Return 4 Double Remote Pilot, 2-Position 5 Double Solenoid, 3-Position - APB 6 Double Solenoid, 3-Position - CE 7 Double Solenoid, 3-Position - PC 8 Double Remote Pilot, 3-Position - APB 9 Double Remote Pilot, 3-Position - CE 0 Double Remote Pilot, 3-Position - PC A Single Solenoid / Single Remote Pilot, 2-Position E Single Solenoid, 2-Position - Air Return / Spring Assist F Single Remote Pilot, 2-Position - Air Return / Spring Assist	Port Size / Thread Type B7 Series 3* 1/2" NPT Inline 8* 1/2" BSPP "G" Inline B8 Series 4* 3/4" NPT Inline 9* 3/4" BSPP "G" Inline <small>* Available for use on IEM Manifolds.</small>	Overrides § 0 None, Remote Pilot Valve A† No Override B† Flush - Non-Locking C Flush - Locking D Extended - Non-Locking E* Extended - Locking X Valve Less 15mm Solenoid <small>* Only Available with Enclosure "5". † Only Available with Enclosure "E".</small>	Pilot Source / Pilot Exhaust Enclosures "0, 5 & X" 0 None, Remote Pilot Valve A† Internal - Port #1 / Tapped M5 B† Internal - Port #1 / Vented E* Dual Pressure - Port #3 / Vented K† External - Body / Tapped M5 X† External - Manifold / Vented Enclosures "A, B, C, D, E, F, G, H, N, Q & R" A† Internal - Port #1 / Tapped M5 B† Internal - Port #1 / Vented D†† Dual Pressure - Port #3 / Tapped M5 K† External - Body / Tapped M5 W†† External - Manifold / Tapped M5 <small>* Not available for 3-Way Valves. † Not available for Remote Pilot valves. † See gray box.</small>	Enclosures / Lead Length 0 None, Remote Pilot Valve 5 15mm 3-Pin DIN 43650C (Male Only) A 30mm Square 3-Pin - ISO 4400 Form A (Male Only) B 22mm Rectangular 3-Pin - Type B Industrial (Male Only) C 3-Pin Automotive - Mini D 5-Pin Automotive - Mini E* Intrinsically Safe - 30mm 3-Pin F** Hazardous Duty 1/2" NPT Conduit - 18" Leads G Grommet - 18" Leads H 1/2" NPT Conduit - 18" Leads N Valve Less "A - R" Coil Q Grommet - 72" Leads R 1/2" NPT Conduit - 72" Leads X Valve Less 15mm Solenoid <small>* 24 VDC & Override A Only. ** 12 VDC, 24 VDC, 120 VAC or 240 VAC.</small>	Voltage § <table border="1"> <thead> <tr> <th></th> <th colspan="2">AC</th> <th>DC</th> </tr> <tr> <th></th> <th>60Hz</th> <th>50Hz</th> <th></th> </tr> </thead> <tbody> <tr> <td>42</td> <td>24</td> <td>22</td> <td></td> </tr> <tr> <td>45</td> <td></td> <td></td> <td>12</td> </tr> <tr> <td>47*</td> <td></td> <td></td> <td>12</td> </tr> <tr> <td>48*</td> <td></td> <td></td> <td>24</td> </tr> <tr> <td>49</td> <td></td> <td></td> <td>24</td> </tr> <tr> <td>53**</td> <td>120</td> <td>110</td> <td></td> </tr> <tr> <td>53</td> <td>120</td> <td>120</td> <td></td> </tr> <tr> <td>57</td> <td>240</td> <td>230</td> <td></td> </tr> </tbody> </table> XX Remote Pilot - 1/8" or Valve Less Solenoid YY Remote Pilot - 5/32" (4mm) Tube <small>* Mobile voltage. Only available with Enclosures - "5" (Overrides "D" & "E" Only); "G" & "Q" (Overrides "C" & "D" Only). ** Enclosure 5</small>		AC		DC		60Hz	50Hz		42	24	22		45			12	47*			12	48*			24	49			24	53**	120	110		53	120	120		57	240	230		Options <table border="1"> <thead> <tr> <th>Blank</th> <th>None</th> </tr> </thead> <tbody> <tr> <td>01*</td> <td>Operator on 12 End for Single Solenoid/ Remote Pilot</td> </tr> <tr> <td>02</td> <td>Solenoid Rotated 180° - Pins Down</td> </tr> <tr> <td>03*</td> <td>01 + 02</td> </tr> </tbody> </table> <small>* Not available with 3-Way valves.</small>	Blank	None	01*	Operator on 12 End for Single Solenoid/ Remote Pilot	02	Solenoid Rotated 180° - Pins Down	03*	01 + 02	Engineering Level A Current
	AC		DC																																																					
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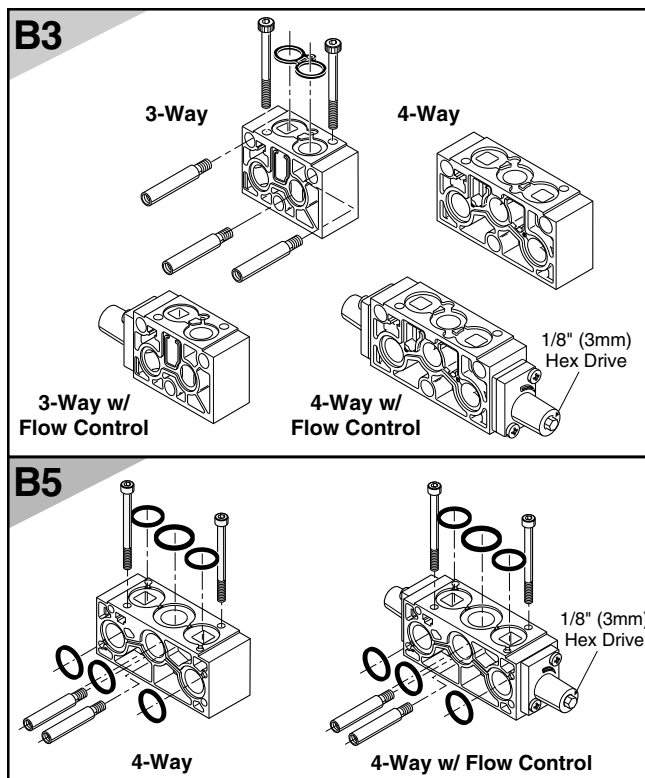
Pilot Source 'X' & 'W' -
 External-Manifold / Vented or Tapped M5
INLINE Valves -
 Only used IF an IEM Aluminum Bar Manifold requires a common external pilot signal thru the manifold for low pressure / vacuum applications.

H

IEM Stackable Manifolds

Series	Type	Kit Number	
		Standard	Flow Control
B3	3-Way	PS2948P	PS2949P
	4-Way	PS2917P	PS2918P
B4	3-Way	PS4548P	PS4549P
	4-Way	PS4517P	PS4518P
B5	4-Way	PS2817P	PS2818P

- Individual Manifold Bases stack together to form lightweight, custom length manifold system.
- Easy-to-connect male/female tie rods for modular assembly.
- Utilizes B3 / B4 3-Way & 4-Way and B5 4-Way Inline Valves.
- Low-cost, built-in Flow Controls with heavy-duty brass adjusting needles to control meter-out exhaust flow.
- Accessories include Isolator Plugs for pressure isolation and Universal Blanking Plates for auxiliary inlet and exhaust supply and future valve additions.
- **Kit includes:** (1) Manifold Base, (2) Hold-down Bolts, Tie-rods, Gaskets and O-rings.

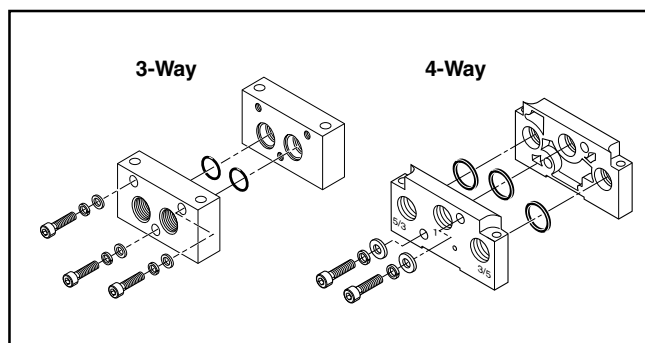


End Plate Kits

Series	Type	Kit Number	
		NPT	BSPP "G"
B3	3-Way	PS2950P	PS2951P
	4-Way	PS2915P	PS2916P
B4	3-Way	PS4550P	PS4551P
	4-Way	PS2815P*	PS2816P*
B5	4-Way	PS2815P*	PS2816P*

Kit includes: Right and Left End Plate, O-rings, Socket Head Cap Screws, Flat Washers and Lockwashers.

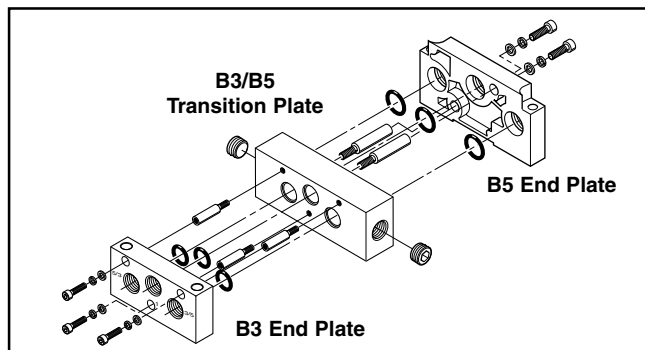
* B4 & B5 4-Way use the same Kit.

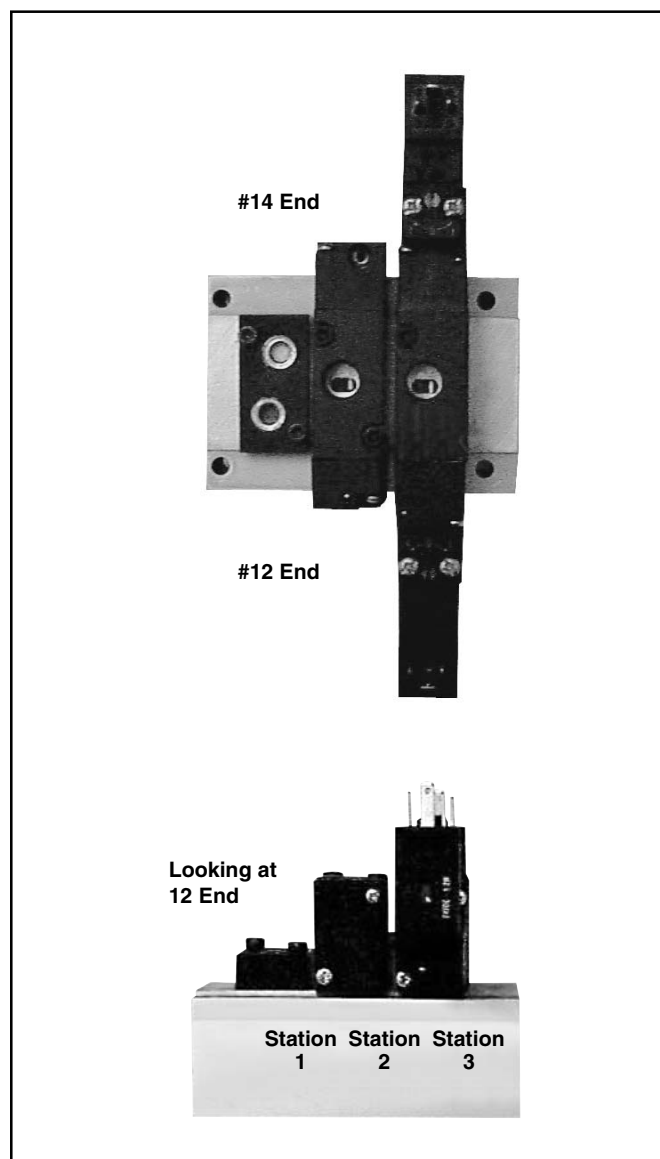


Transition Plate Kit

Series		Kit Number	
		NPT	BSPP "G"
B3	B5	PS2842BP	PS2843BP

- Combines B3 and B5 4-Way valves into a common inlet and exhaust manifold system. Looking at the #12 end, the B5 is on the right and the B3 is on the left.
- **Kit includes:** B3 End Plate, B3/B5 Transition Plate, B5 End Plate, Socket Head Cap Screws, Flat Washers, Lockwashers, Tie-rods, O-rings, Pipe Plugs, and Roll Pins.



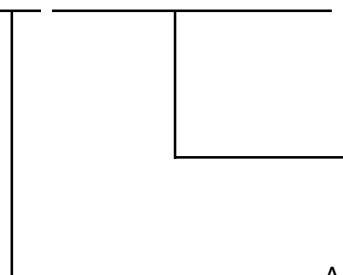


How To Order Aluminum Bar Manifold Assemblies

1. List Manifold Assembly call out. Use AA + the part number of the aluminum bar manifold. This automatically includes the aluminum bar manifold and assembly.
2. List complete valve model number, listing left to right, **LOOKING AT THE #12 END** of the manifold. The left most station is station 1.

(If a blank station is needed, list the blanking plate part number at the desired station.)

AA PS***##P**



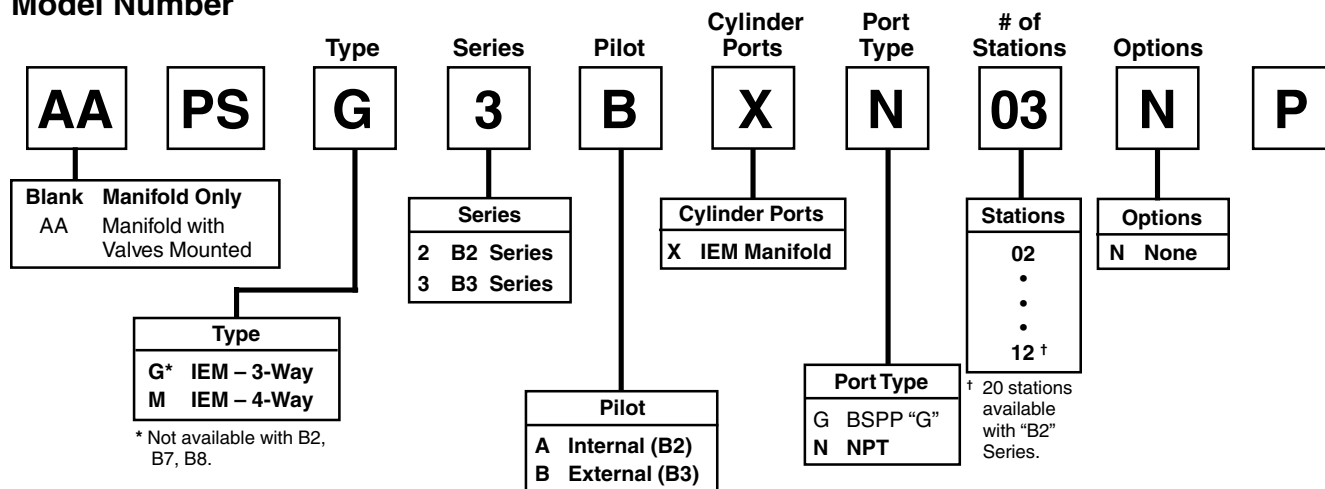
Use Aluminum Bar Manifold Kit Numbers from previous pages.

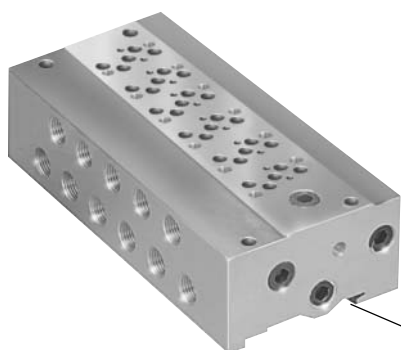
AA Manifold Assembly

Example: Application requires a 3-station "B3" 3-Way manifold with station #1 blanked off with valves assembled.

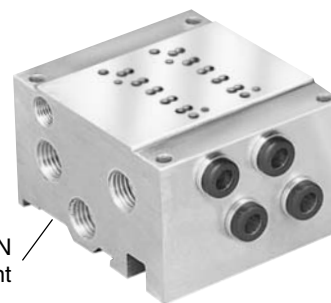
Qty.	Part No.	Comment
1	AAPSG3BXN03NP	
1	PS2966P	Station 1
1	B330000XXC	Station 2
1	B3J0BB553C	Station 3

Model Number



**B2 Series**35mm DIN
Rail Mount

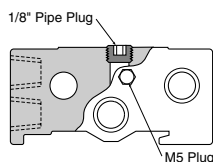
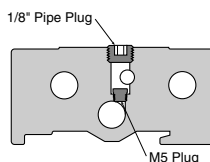
3-Way / 4-Way, 1/8" NPT	PSJ2A1N##NP	## – stations 02 to 20
3-Way / 4-Way, 1/4" Tube	PSJ2ABN##NP	

B3 Series35mm DIN
Rail Mount

4-Way, 1/8" NPT	PSJ3B1N##NP	## – stations 02 to 12
4-Way, 1/4" Tube	PSJ3BBN##NP	

- Utilizes Subbase mount B2 valves.
- 3-Way & 4-Way valves interchangeable.
- External Pilot Valves – "X" or "W", must be used.
- Common External Pilot galley is field convertible from Internal to External Pilot.

(Shipped as Internal Pilot from factory.)

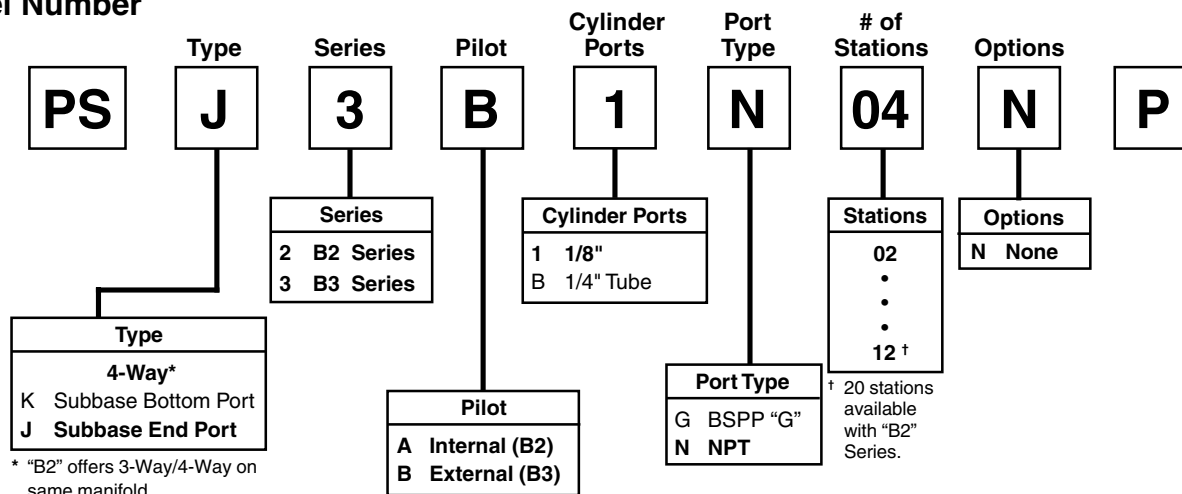
**Internal****External**

To convert from Internal Pilot pressure to External Pilot pressure, remove "X" galley M5 pipe plug from either end of manifold and remove 1/8" pipe plug from top of manifold. Insert the M5 pipe plug into the hole left open when removing the 1/8" pipe plug and tighten. Replace the 1/8" pipe plug and pressurize the open M5 "X" port.

- Utilizes Subbase mount B3 valves.
- Available for 4-Way valves. If 3-Way function is required, plug a cylinder port.
- Common External Pilot galley is standard.
- Standard Internal Pilot valves need not use this galley, and the galley does not need to be plugged.
- External Pilot Valves – "X" or "W", must have Common External Galley pressurized.

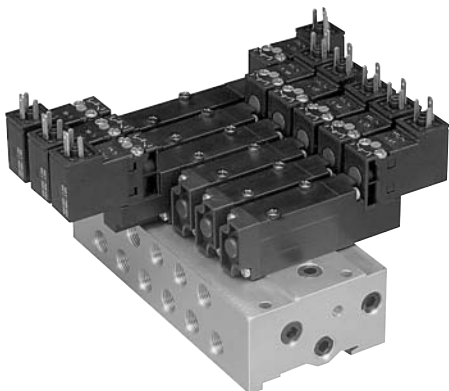
Kit includes:

Subbase – (1) Manifold (bolts & gasket come with subbase valve).

Model Number

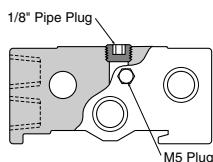


B2 Series

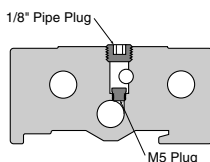


3-Way / 4-Way, 1/8" NPT	AAPSJ2A1N##NP	## – stations 02 to 20
3-Way / 4-Way, 1/4" Tube	AAPSJ2ABN##NP	

- Utilizes Subbase mount B2 valves.
- 3-Way & 4-Way valves interchangeable.
- External Pilot Valves – "X" or "W", must be used.
- Common External Pilot galley is field convertible from Internal to External Pilot.
(Shipped as Internal Pilot from factory.)



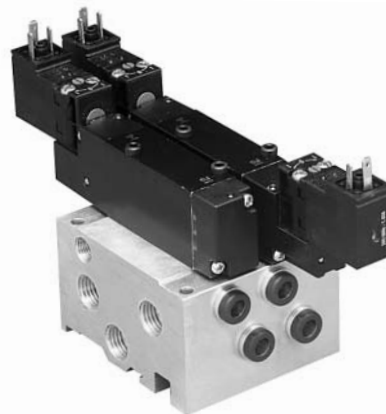
Internal



External

To convert from Internal Pilot pressure to External Pilot pressure, remove "X" galley M5 pipe plug from either end of manifold and remove 1/8" pipe plug from top of manifold. Insert the M5 pipe plug into the hole left open when removing the 1/8" pipe plug and tighten. Replace the 1/8" pipe plug and pressurize the open M5 "X" port.

B3 Series



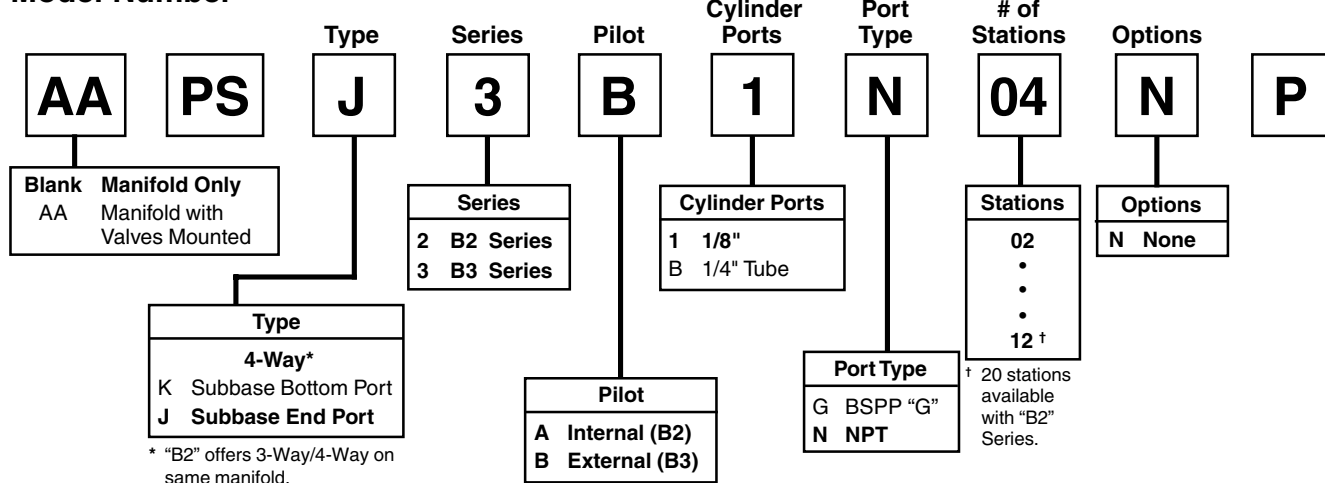
4-Way, 1/8" NPT	AAPSJ3B1N##NP	## – stations 02 to 12
4-Way, 1/4" Tube	AAPSJ3BBN##NP	


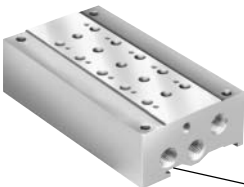











- Utilizes Subbase mount B3 valves.
- Available for 4-Way valves. If 3-Way function is required, plug a cylinder port.
- Common External Pilot galley is standard.
- Standard Internal Pilot valves need not use this galley, and the galley does not need to be plugged.
- External Pilot Valves – "X" or "W", must have Common External Galley pressurized.

Kit includes:

Subbase – (1) Manifold (bolts & gasket come with subbase valve).

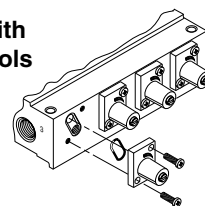
Model Number



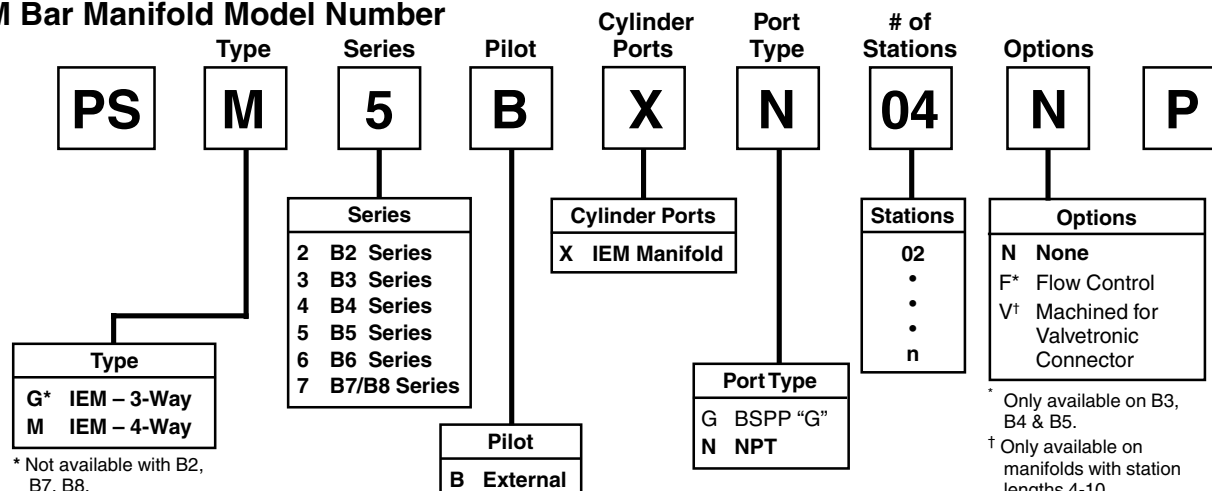
<div><div><div><div><div><div></div><div>B2 Series</div></div></div><div></div></div></div><div><div><div><div><div><div></div><div>35mm DIN Rail Mount</div></div></div><div></div></div></div></div></div>			<div><div><div><div><div><div></div><div>B3 Series</div></div></div><div></div></div></div><div><div><div><div><div><div></div><div>35mm DIN Rail Mount</div></div></div><div></div></div></div><div><div><div><div><div><div></div><div>3-Way</div></div></div><div></div></div></div><div><div><div><div><div><div></div><div>4-Way</div></div></div></div></div></div></div></div></div>		
3-Way / 4-Way, NPT	PSM2BXN##NP	## – stations 02 to 20	3-Way, NPT	PSG3BXN##NP	## – stations 02 to 12
			4-Way, NPT	PSM3BXN##NP	
<div><div><div><div><div><div></div><div>B4 Series</div></div></div><div></div></div></div><div><div><div><div><div><div></div><div>3-Way</div></div></div><div></div></div></div><div><div><div><div><div><div></div><div>4-Way</div></div></div></div></div></div></div></div>			<div><div><div><div><div><div></div><div>B5 Series</div></div></div><div></div></div></div><div><div><div><div><div><div></div><div>3-Way</div></div></div><div></div></div></div><div><div><div><div><div><div></div><div>4-Way</div></div></div></div></div></div></div></div>		
3-Way, NPT	PSG4BXN##NP	## – stations 02 to 12	3-Way, NPT	PSG5BXN##NP	## – stations 02 to 12
4-Way, NPT	PSM4BXN##NP		4-Way, NPT	PSM5BXN##NP	
<div><div><div><div><div><div></div><div>B6 Series</div></div></div><div></div></div></div><div><div><div><div><div><div></div><div>3-Way</div></div></div><div></div></div></div><div><div><div><div><div><div></div><div>4-Way</div></div></div></div></div></div></div></div>			<div><div><div><div><div><div></div><div>B7 & B8 Series</div></div></div><div></div></div></div><div><div><div><div><div><div></div><div>3-Way</div></div></div><div></div></div></div><div><div><div><div><div><div></div><div>4-Way</div></div></div></div></div></div></div></div>		
3-Way, NPT	PSG6BXN##NP	## – stations 02 to 12	3-Way & 4-Way, NPT	PSM7BXN##NP	## – stations 02 to 12
4-Way, NPT	PSM6BXN##NP				


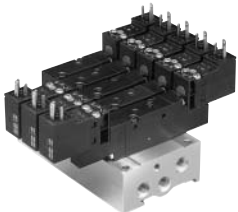



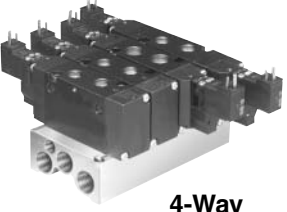

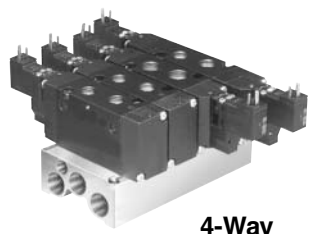

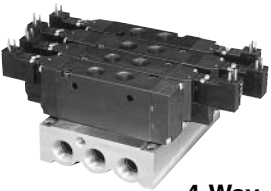

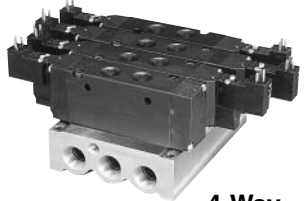
- Utilizes Inline mount "B" Series valves.
- Different manifold for 3-Way & 4-Way valves (B2, B7, B8 use common manifolds).
- Common External Pilot galley is standard. Standard Internal Pilot valves need not use this galley. This galley does not require a plug for internally piloted valves.
- External Pilot Valves – "X" or "W", must have Common External Galley pressurized.
- **Kits (PS....) include:** (1) Manifold, Valve Hold Down Bolts, Gaskets.

Manifold with Flow Controls

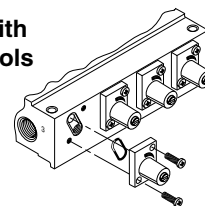


IEM Bar Manifold Model Number



B2 Series  			B3 Series  		
3-Way / 4-Way, NPT	AAPSM2BXN##NP	## – stations 02 to 20	3-Way, NPT 4-Way, NPT	AAPSG3BXN##NP AAPSM3BXN##NP	## – stations 02 to 12
B4 Series  			B5 Series  		
3-Way, NPT 4-Way, NPT	AAPSG4BXN##NP AAPSM4BXN##NP	## – stations 02 to 12	3-Way, NPT 4-Way, NPT	AAPSG5BXN##NP AAPSM5BXN##NP	## – stations 02 to 12
B6 Series  			B7 & B8 Series  		
3-Way, NPT 4-Way, NPT	AAPSG6BXN##NP AAPSM6BXN##NP	## – stations 02 to 12	3-Way & 4-Way, NPT	AAPSM7BXN##NP	## – stations 02 to 12

- Utilizes Inline mount “B” Series valves.
- Different manifold for 3-Way & 4-Way valves (B2, B7, B8 use common manifolds).
- Common External Pilot galley is standard. Standard Internal Pilot valves need not use this galley. This galley does not require a plug for internally piloted valves.
- External Pilot Valves – “X” or “W”, must have Common External Galley pressurized.
- **Kits (PS....) include:** (1) Manifold, Valve Hold Down Bolts, Gaskets.

**Manifold with
Flow Controls**

IEM Bar Manifold Assembly Model Number

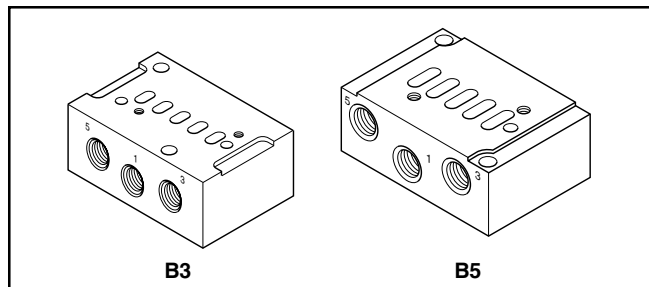
Type		Series	Pilot	Cylinder Ports	Port Type	Stations	Options				
AA	PS	M	5	B	X	N	04	N	P		
Blank Manifold Only AA Manifold with Valves Mounted		Series 2 B2 Series 3 B3 Series 4 B4 Series 5 B5 Series 6 B6 Series 7 B7/B8 Series		Cylinder Ports X IEM Manifold		Port Type G BSPP "G" N NPT		Stations 02 • • • n		Options N None F* Flow Control V† Machined for Valvetronic Connector	
Type G* IEM – 3-Way M IEM – 4-Way		Pilot B External									
* Not available with B2, B7, B8.										† Only available on manifolds with station lengths 4-10.	

Subbase

Type	Size	Kit Number	
		NPT	BSPP "G"
B3 4-Way	1/8"	PS2933P	PS2935P
	1/4"	PS2934P	PS2936P
B5 4-Way	1/4"	PS2833P	PS2835P
	3/8"	PS2834P	PS2836P

Kit includes: (1) subbase.

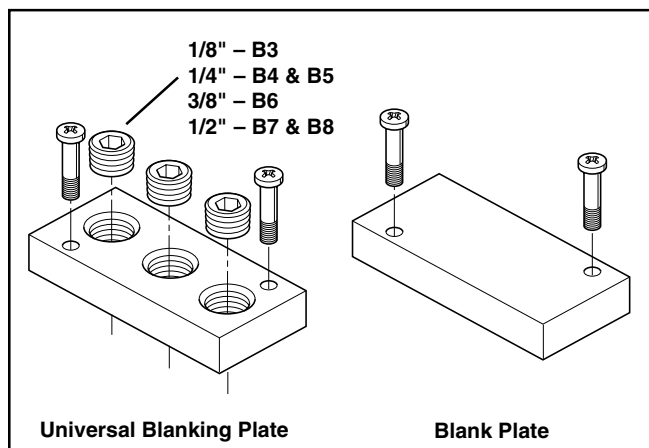
(Hold down bolts & gasket are included with valve.)



Blanking Plate

Type	Kit Number			
	IEM Universal		IEM Blank	Subbase Blank
	NPT	BSPP "G"		
B2 3-Way 4-Way	—	—	PS4494P	
B3 3-Way 4-Way	PS2966P PS2920P	PS2967P PS2921P	PS2968P PS2969P	— PS2994P
B4 3-Way 4-Way	PS4566P PS4520P	PS4567P PS4521P	PS4568P PS4569P	— —
B5 3-Way 4-Way	PS2866P PS2820P	PS2867P PS2821P	PS2868P PS2869P	— —
B6 3-Way 4-Way	PS2620P	PS2621P	PS2669P	—
B7 3-Way B8 4-Way	PS2520P	PS2521P	PS2569P	—

Kit includes: (1) Plate, (2) Screws, Seal / Gaskets



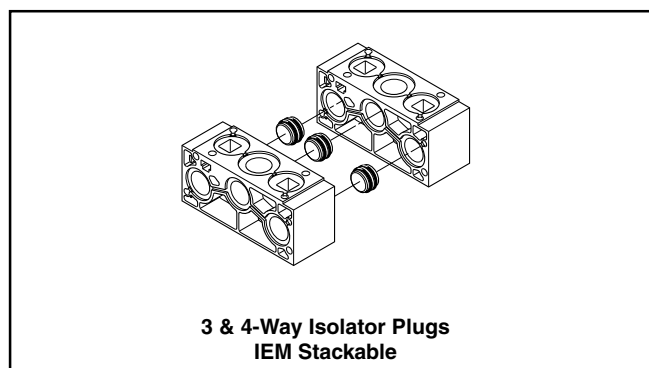
Isolator Plugs

Series	Kit Number	
	3-Way	4-Way
B2	—	—
B3	PS291901P	PS2919P
B4	PS4519P *	PS4519P *
B5	—	PS2819P

- Used to isolate the #1, #3 or #5 gallery between two Manifold Bases. (IEM STACKABLE ONLY)

- Kit includes:** 3-Way – (2) plugs and (4) o-rings
4-Way – (3) plugs and (6) o-rings

* B4 uses same kit for 3-Way and 4-Way



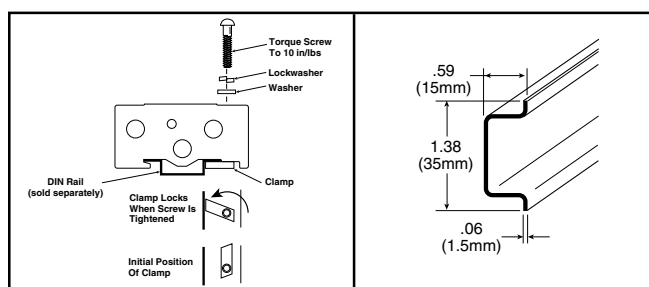
DIN Rail Hardware Kit

Series	IEM Bar	5-Port Subbase Bar
B2	PS4490P	PS4491P
B3	PS2990P	PS2991P
B4	PS4570F	—

Kit includes: (2) Screws, (2) Nuts, (2) Clamps

DIN Rail

AM1DE200 6 Foot Rail Length





Sandwich Regulators

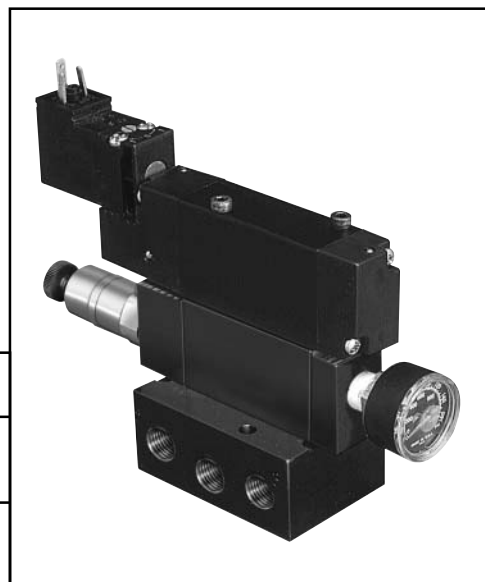
B2

B3

Features

- Use with B2 & B3 subbase valves on 5-Ported Subbase Bar Manifolds.
- Common Port or Dual Port regulation control.
- Unregulated Pressure Supplied to Valve Pilot - Use Pilot Source - 'X'.
- Easy adjust knob control.

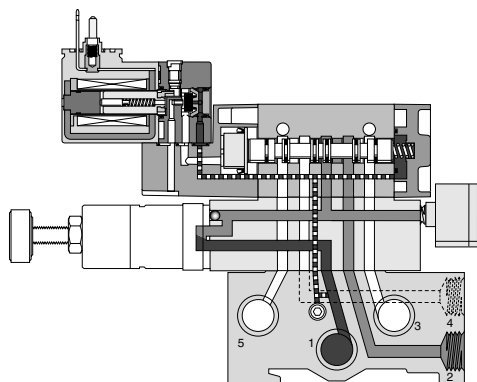
	Common Port with Gauge *	Common Port without Gauge	Dual Port without Gauge	Cv
B2	5-125 PSI 2-60 PSI PS4430166P PS4430155P	PS4430133P PS4430122P	PS4430233P PS4430222P	.11
B3	5-125 PSI 2-60 PSI PS2930166P PS2930155P	PS2930133P PS2930122P	PS2930233P PS2930222P	.33



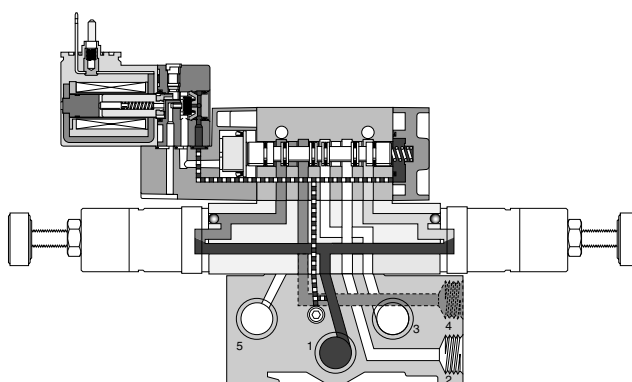
*Gauge is 160 PSI. Gauge shipped unassembled. For different gauge mounting configuration, use brass adapters listed at bottom of page.

B2

Common Port

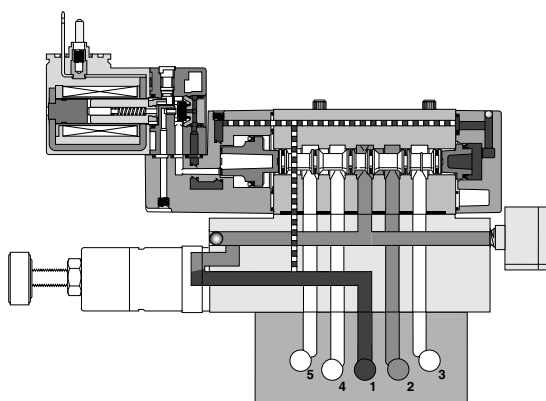


Dual Port

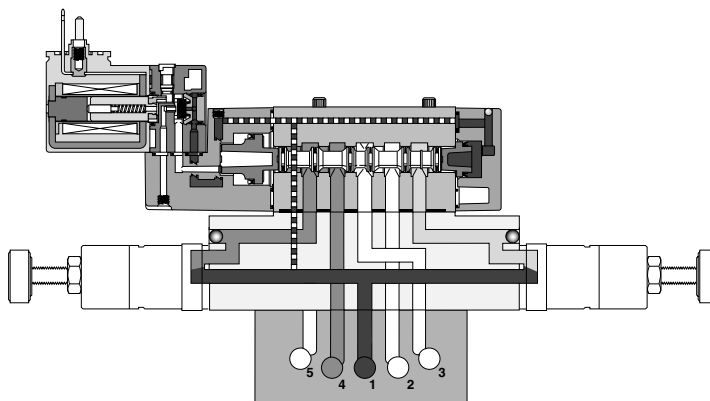


B3

Common Port



Dual Port



Brass Adapters for Gauge –

1/8" to 1/8" Female Coupling 207P-2
 1/8" Male Pipe Nippled 1.5" 215PNL-2-15
 1/8" Male to Female Adapter 222P-2-2

1/8" to 1/8" 45° Female Elbow 2201P-2-2
 1/8" to 1/8" 90° Female Elbow 2200P-2-2

Gauge 3/4" Face –

0-160 PSI PS3451160P

Solenoid Rotated 180° - Pins Down

B2 B3 B4 B5 B6 B7 B8

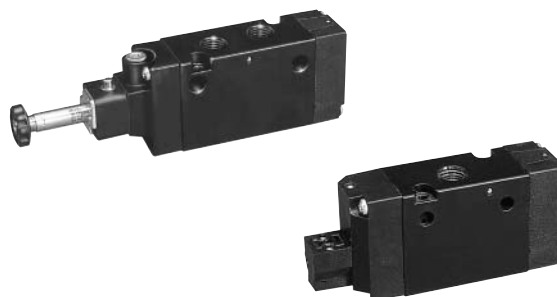
- 1.8W (2.4VA) solenoids – Enclosure "5".
- Override on top for easy access.
- "02" in the Options code.



Valve Less Solenoid

B2 B3 B4 B5 B6 B7 B8

- Valve ordered & shipped without solenoid.
- Efficient method in place of valve repair, fully tested at factory.



Alternate Solenoid Enclosures

B5 B6 B7 B8

- Enclosure "A": 2.6W - 4.1VA (Coil rotates in 45° increments)
- Enclosure "B" – "R": 4.6W - 7.3VA (Coil rotates in 90° increments)



"A" 30mm 3-Pin



"C" 3-Pin Mini



"G", "Q" Grommet



"B" 22mm 3-Pin



"D" 5-Pin Mini



"F", "H", "R" 1/2" Conduit

Tube Fitting Remote Pilot

B2 B3 B4 B5 B6 B7 B8

- "YY" Option
- 5/32" (4mm) Tube Fitting



Inline Valve Tube Fitting

B3 B4

- 1/4" Tube Fitting (B3)
- 3/8" or 8mm Tube Fitting (B4)
- Cylinder Ports and / or Inlet / Exhaust Ports



B5, B6, B7, B8 ("E" Option) Intrinsically Safe Solenoid Valves

Hazardous Location Class:

Class I; Groups A, B, C & D

Class II; Groups E, F, & G

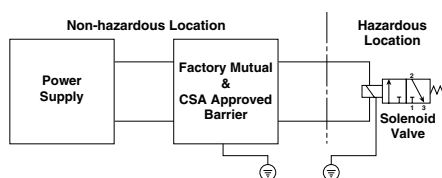
Class III; Div. I

For use in low voltage (24VDC) Intrinsically Safe applications.
NO OTHER VOLTAGE IS APPROVED.

Comes standard with non-lighted solenoid connector.

Must be connected to an FM approved Barrier.

For dimensions, reference standard solenoid models.
Maximum internally piloted valve pressure is 115 PSIG.
Pressures to 145 PSIG can be used when external pilot is utilized and pilot pressure is limited to 115 PSIG.



B5, B6, B7, B8 ("F" Option) Hazardous Duty Solenoid Valves

Hazardous Location Class:

Class I; Zone I EX, M, II & T4

Class I; Groups A, B, C, & D

Class II & III; Div. I, Groups E, F, & G

For use in low voltage (24VDC and 120VAC) Intrinsically Safe applications. NO OTHER VOLTAGE IS APPROVED.

Comes standard with non-lighted solenoid connector.

Voltage Range = $+10^{\circ} \pm 10\%$

Ambient Temp. Range = $-20^{\circ}\text{C} (-4^{\circ}\text{F})$ to $60^{\circ}\text{C} (140^{\circ}\text{F})$

Duty Factor = 100%

IPGS Rated (with Connected Conduit Connector)

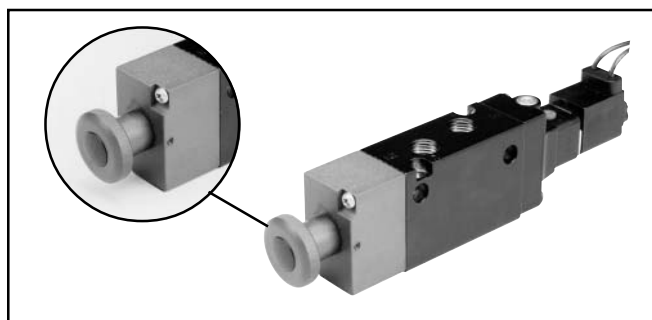
Notes:

1. Maximum non-hazardous location voltage not to exceed 250V RMS.
2. Connect per Barrier Manufacturers instructions.
3. Factory Mutual requires connections per ISA RP 12.6 instructions.
4. CSA requires "Installation to be in accordance with the Canadian Electrical Code, Part I."

B5 With Manual Detent

Features:

- Positive mechanical contact of the override knob assures actuation of valve, however, knob does not move during normal cycling.
- Hard coated override to resist harsh environments.
- Override return spring is stainless steel, for harsh environments.
- Heavy duty locking mechanism to maintain position.



B3 Dual 3-Way

Features:

- Up to 50% Reduction of Space
 - Proven WCS Spool Design
 - Can Easily Modify Internal Pilot Double Solenoid 4-Way Valves in the Field to Dual 3/2 Valves Using the Following Kits –
- NC: **PS297103P** and NO: **PS297104P**

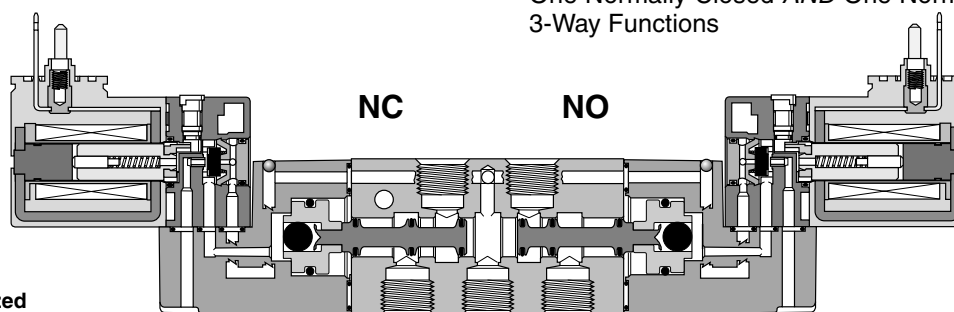
Applications:

- Control of Rod Lock Cylinders
- Paint Spray Systems
- Air Motor Control
- Piloting of Process Control Valves

Operation:

Combines the functions of Two 3-Way valves into to **One valve body**. The valve can be configured as

- Two Normally Closed 3-Way Functions
- Two Normally Open 3-Way Functions
- One Normally Closed **AND** One Normally Open 3-Way Functions



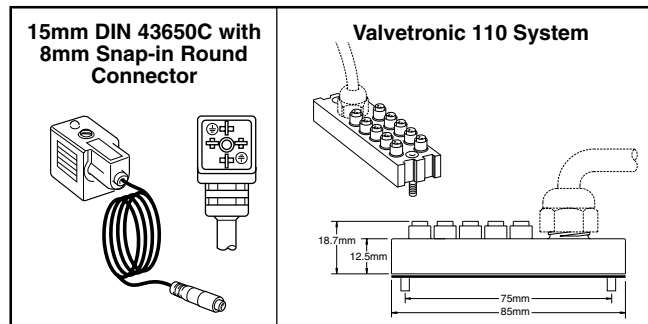
Shown De-Energized

Female Electrical Connectors

Valvetronic 110 System

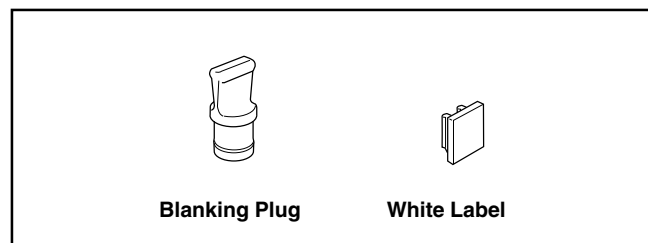
Connector	Description
9121719035	15mm DIN 43650C with 8mm Snap-in Round Connector, .3 (12") Meter Cable
9121719001	Valvetronic 110 Connection Block with 3 Meter Cable

Note: Rated up to 24VDC; 4 amp max.
 IP65 rated when properly installed.
 Can be mounted on the side of some bar manifolds.
 Please consult factory for availability



Blanking Plugs and Labels (Use with Valvetronic 110)

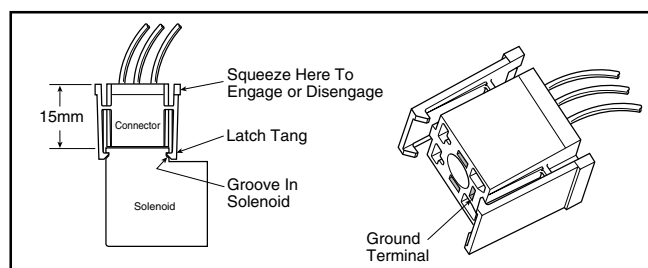
Model Number	Description
9121719003	Blanking Plugs to close unused connections (Pack of 10)
9121719004	Labels to insert in grooves on side of connection (Pack of 10)



15mm 3-Pin DIN 43650C Quick Connect (Use with Enclosure "5")

Connector	Description
PS298305P	18 Inch Cord (1/2 Meter)
PS298320P	72 Inch Cord (2 Meter)

Note: Rated up to 135VAC, 55VDC; .75 amp max.
Engineering Data:
 Conductors: 2 Poles Plus Ground
 Contact Spacing: 8mm



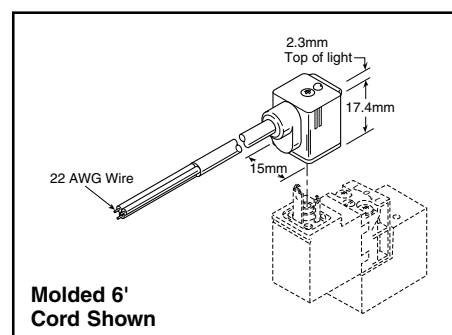
15mm 3-Pin DIN 43650C (Use with Enclosure "5")

Connector	Connector with 6' (2m) Cord	Description
PS2932BP	PS2932JBP	Unlighted
PS294675BP	PS2946J75BP*	Light – 12VAC or DC
PS294679BP	PS2946J79BP*	Light – 24VAC or DC
PS294683BP	PS2946J83BP*	Light – 110/120VAC
PS294687BP	N/A	Light – 240/230VAC

* LED with surge suppression.

Note: Max ø6.5mm (22 gage wire) cable size required for connector w/o 6' (2m) cord.
 IP65 rated when properly installed.

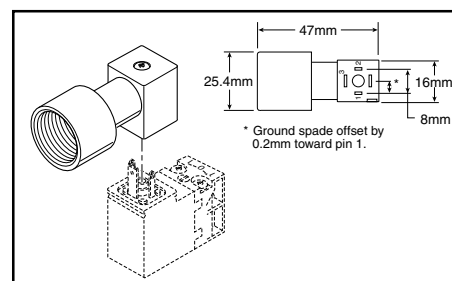
Engineering Data:
 Conductors: 2 Poles Plus Ground
 Cable Range (Connector Only): 4 to 6mm (0.16 to 0.24 Inch)
 Contact Spacing: 8mm



15mm 3-Pin DIN 43650C to 1/2" Conduit (Use with Enclosure "5")

Connector	Description
PS2998P	1/2" NPTF Conduit – Unlighted with 3' (1m) Leads 20 AWG Wire

Note: Rated up to 250VAC or VDC; 6 Amps
 IP65 rated when properly installed.



Female Electrical Connectors / Accessories

30mm Square 3-Pin – ISO 4400, DIN 43650A

(Use with Enclosure "A")

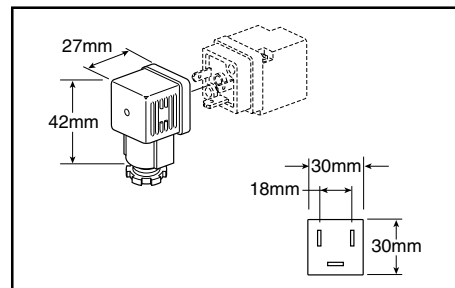
Connector	Connector with 6' (2m) Cord	Description
PS2028CP	PS2028JCP	Unlighted
PS203279CP	PS2032J79CP*	Light – 6-48V, 50/60Hz, 6-48VDC
PS203283CP	PS2032J83CP*	Light – 120V/60Hz
PS203283CP	N/A	Light – 240V/60Hz

* LED with surge suppression.

Note: Max ø6.5mm cable size required for connector w/o 6' (2m) cord. IP65 rated when properly installed.

Engineering Data:

Conductors: 2 Poles Plus Ground; Cable Range (Connector Only): 8 to 10mm (0.31 to 0.39 Inch); Contact Spacing: 18mm



22mm Rectangular 3-Pin – Type B Industrial

(Use with Enclosure "B")

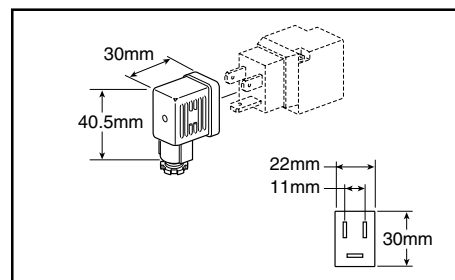
Connector	Connector with 6' (2m) Cord	Description
PS2429BP	PS2429JBP	Unlighted
PS243079BP	PS2430J79BP*	Light – 24V/60Hz, 24VDC
PS243083BP	PS2430J83BP*	Light – 120V/60Hz
PS243087BP	N/A	Light – 240V/60Hz

* LED with surge suppression.

Note: Max ø6.5mm cable size required for connector w/o 6' (2m) cord. IP65 rated when properly installed.

Engineering Data:

Conductors: 2 Poles Plus Ground; Cable Range (Connector Only): 6 to 8mm (0.24 to 0.31 Inch); Contact Spacing: 11mm



3-Pin / 5-Pin Male Automotive Connectors

(Use on 22mm Rectangular 3-Pin Solenoid)

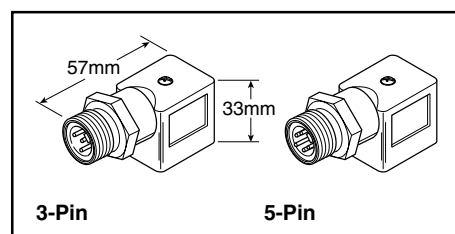
3-Pin	5-Pin	Description
PS2893CP	PS2893DP	Unlighted
PS2893C##P	PS2893D##P	Lighted - Voltage

— 75 - 12VDC

83 - 120VAC

79 - 24VDC & 24VAC

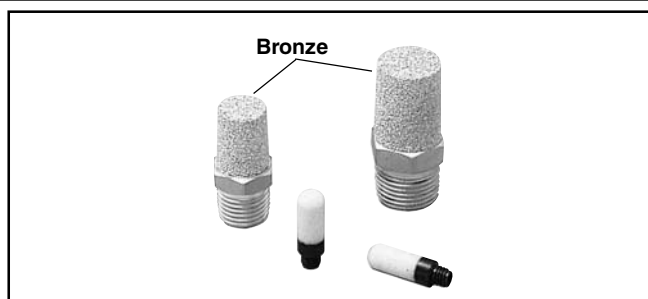
87 - 240VAC



Exhaust Mufflers

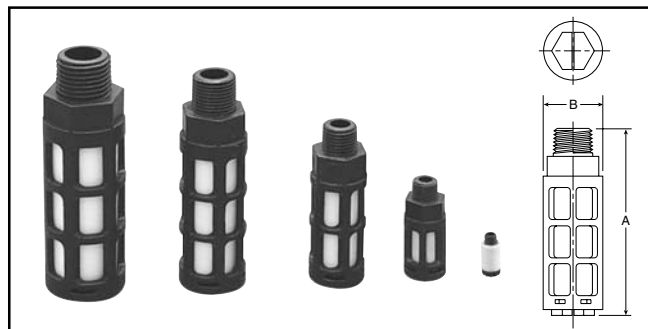
Pipe Thread	Model Number
M5	P6M-PAC5
1/8" NPT	EM12
1/4" NPT	EM25
3/8" NPT	EM37
1/2" NPT	EM50

P6M - Plastic; EM - Sintered Bronze



Plastic Silencers

Thread Size	Part Number		A (mm)	B (mm)
	NPT	BSPT		
M5	AS-5		.43 (11)	.32 (8)
1/8"	ASN-6	AS-6	1.57 (40)	.63 (16)
1/4"	ASN-8	AS-8	2.56 (65)	.83 (21)
3/8"	ASN-10	AS-10	3.35 (85)	.98 (25)
1/2"	ASN-15	AS-15	3.74 (95)	1.18 (30)



Flow Rating (C_v)

Size	Port Size	Mounting Style	2-Position	3-Position
B2	M5	Inline	.15	.13
	1/8" Ports	Subbase	.16	.13
B3	1/8" Ports	Inline	.75	.60
	1/4" Tube	Inline	.45	.45
	1/8" Ports	Subbase	.65	.45
	1/4" Ports	Subbase	.65	.50
B4	1/4" Ports	Inline	1.2	1.1
B5	1/4" Ports	Inline	1.4	1.1
	3/8" Ports	Inline	1.4	1.1
	1/4" Ports	Subbase	1.4	1.1
	3/8" Ports	Subbase	1.4	1.1
B6	3/8" Ports	Inline	2.7	2.1
B7	1/2" Ports	Inline	5.9	5.7
B8	3/4" Ports	Inline	7.0	6.6

ANSI / (NFPA) T3.21.3-1990 standard for Cv measurement.

Temperature Rating

5°F to 120°F (-15°C to 49°C) ambient.
 (Buna-N and Fluorocarbon)

Operating Pressure

Maximum: 145 PSIG (1000 kPa)

Minimum:

Operator/ Function	Internal Pilot	Minimum PSIG (kPa)						
		B2	B3	B4	B5	B6	B7	B8
1, G, H	Single Solenoid - Air Return	25 (173)	20 (138)	15 (103)	20 (138)	20 (138)	35 (241)	35 (241)
2, A, J, S	Double Solenoid							
3, K, L	Single Remote Pilot - Air Return							
4, M	Double Remote Pilot	Vacuum						
N, P, Q	Double Solenoid - Dual 3/2	—	40 (275)	—	—	—	—	—
5, 6, 7	Double Solenoid - APB, CE, PC	35 (241)	30 (207)	25 (173)	30 (207)	30 (207)	45 (310)	45 (310)
8, 9, 0	Double Remote Pilot - APB, CE, PC	Vacuum						
E, V, W	Single Solenoid - Air Return / Spring Assist	25 (173)	35 (241)	28(193)	35 (241)	35 (241)	35 (241)	35 (241)
F, X, Y	Single Remote Pilot - Air Return / Spring Assist							
External Pilot * †								
All	“B” Series	Vacuum						

* External Pilot Pressure / Remote Pilot Signal 35-145 PSIG (241-1000 kPa).

† External Pilot Not Available with B3 Dual 3/2.

Note: For CSA-NRTL/C approved solenoid valves – insert an 'L' at the end of the valve part number.

B2: Maximum pressure - 120 PSI

B3: Maximum pressure - 120 PSI

B5: Maximum pressure - 145 PSI*§

B6: Maximum pressure - 145 PSI*§

B7: No suffix required for CSA*†

B8: No suffix required for CSA*†

* Enclosure Option E is CSA / FM approved at source. For certification of valve / solenoid assembly, consult factory.

† Not Available with Enclosure 5

§ Not available with Enclosures 0, 5 & X

Solenoid Information (Solenoids are rated for continuous duty.)

Voltage			"B" Series Enclosure "5"				Voltage			B5 B6 B7 B8 Enclosure "A"		B5 B6 B7 B8 Enclosure "B" to "R"		
Code	AC		DC	Power Consumption	Holding (Amps)		Code	AC		DC	Power Consumption	Holding (Amps)	Power Consumption	Holding (Amps)
	60Hz	50Hz						60Hz	50Hz					
42	24	22		1.6VA	.065		42	24	24		3.9VA	.136	7.3VA	.309
45			12	1.2W	.098		45			12	2.6W	.208	4.6W	.365
47*			12	.91W	.074		47*			12	—	—	4.9W	.298
48*			24	.91W	.033		48*			24	—	—	4.8W	.142
49			24	1.2W	.049		49			24	2.7W	.112	4.8W	.200
53	120	110		1.6VA	.013		53	120	120		4.1VA	.033	6.3VA	.047
57	240	230		1.6VA	.007		57	230	230		3.7VA	.017	6.4VA	.026

Note: For enclosure "5" with "02" Option, solenoid wattage is 1.8W (2.4VA). Response time is 10% faster.
Voltage rated +10 / -15%.

* 47 and 48 code are mobile voltages, voltage +25 / -30%.

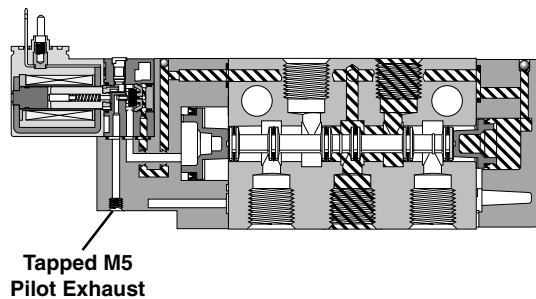
Response Time

Valve Size	Port Size	Enclosure “5”				Enclosure “A, B, C, D, G, H, Q & R”			
		0 Cu. In. Test Chamber		25* Cu. In. Test Chamber		0 Cu. In. Test Chamber		25* Cu. In. Test Chamber	
		Fill	Exhaust	Fill	Exhaust	Fill	Exhaust	Fill	Exhaust
2-Position Single Solenoid / Internal Air Return									
B2	M5	—	—	—	—	—	—	—	—
B3	1/8"	.024	.026	.149	.242	—	—	—	—
B4	1/4"	.038	.038	.104	.151	—	—	—	—
B5	1/4"	.038	.040	.106	.156	.025	.026	.090	.142
B5*	3/8"	.039	.041	.150	.245	.025	.027	.141	.241
B6*	3/8"	.037	.038	.096	.132	.016	.018	.084	.119
B7	1/2"	.073	.075	.195	.275	.049	.051	.167	.249
B8	3/4"	.072	.074	.166	.226	.049	.051	.142	.206
2-Position Single Solenoid Spring / Air Return									
B2	M5	.019	.023	.455	.864	—	—	—	—
B3	1/8"	.019	.022	.128	.217	—	—	—	—
B4	1/4"	.038	.039	.105	.155	—	—	—	—
B5	1/4"	.039	.041	.108	.162	.024	.026	.091	.143
B5*	3/8"	.040	.042	.169	.261	.024	.026	.143	.240
B6*	3/8"	.035	.036	.096	.133	.023	.024	.083	.120
B7	1/2"	.071	.074	.194	.275	.049	.051	.167	.249
B8	3/4"	.072	.074	.176	.239	.046	.048	.142	.204
2-Position Double Solenoid									
B2	M5	.012	.019	.441	.882	—	—	—	—
B3	1/8"	.013	.015	.122	.213	—	—	—	—
B4	1/4"	.023	.024	.085	.134	—	—	—	—
B5	1/4"	.016	.018	.082	.132	.012	.014	.077	.128
B5*	3/8"	.016	.018	.129	.222	.016	.018	.128	.225
B6*	3/8"	.016	.017	.074	.110	.012	.013	.071	.107
B7	1/2"	.026	.028	.145	.228	.022	.024	.138	.225
B8	3/4"	.026	.028	.123	.185	.022	.024	.115	.178
3-Position Double Solenoid									
B2	M5	—	—	—	—	—	—	—	—
B3	1/8"	.021	.023	.091	.141	—	—	—	—
B4	1/4"	.031	.032	.091	.177	—	—	—	—
B5	1/4"	.022	.023	.091	.141	.011	.011	.079	.135
B5*	3/8"	.022	.024	.135	.229	.016	.019	.135	.234
B6*	3/8"	.024	.026	.094	.139	.016	.018	.084	.132
B7	1/2"	.049	.051	.167	.257	.028	.030	.148	.238
B8	3/4"	.035	.037	.136	.206	.028	.030	.130	.195

Average Fill Time (Seconds): With 100 PSIG supply, time required to fill from 0-90 PSIG and exhaust from 100 PSIG to 10 PSIG is measured from instant of energizing, or de-energizing 120V/60Hz solenoid. Times shown are average.

* For 3/8" ported, 50 cu. in. test chamber is used. For 1/2" & 3/4", a 200 cu. in. test chamber is used.

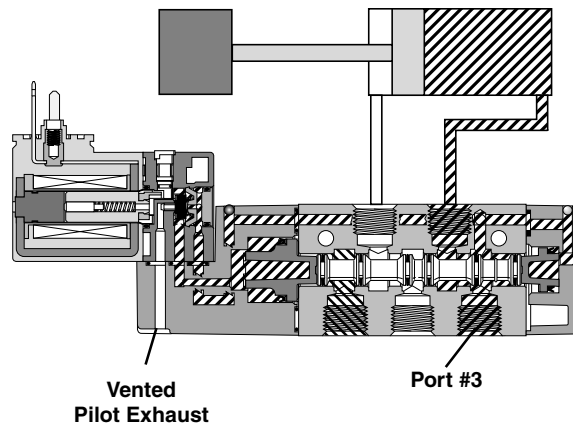
A - Internal - Port #1 / Tapped M5



B5 Shown

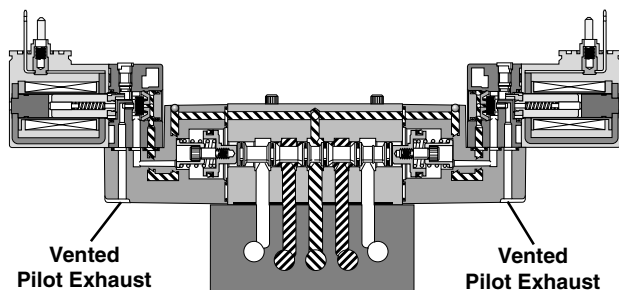
E - Dual Pressure - Port #3 / Vented

***H - Dual Pressure - Port #5 / Vented (Similar)**



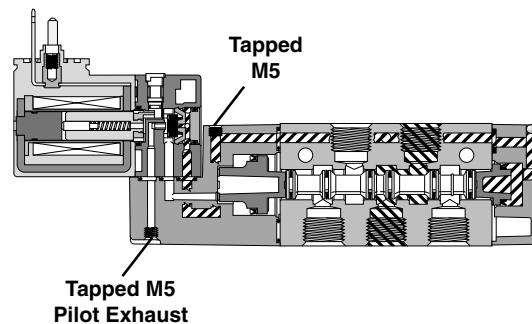
B3 Shown

B - Internal - Port #1 / Vented



B3 Shown

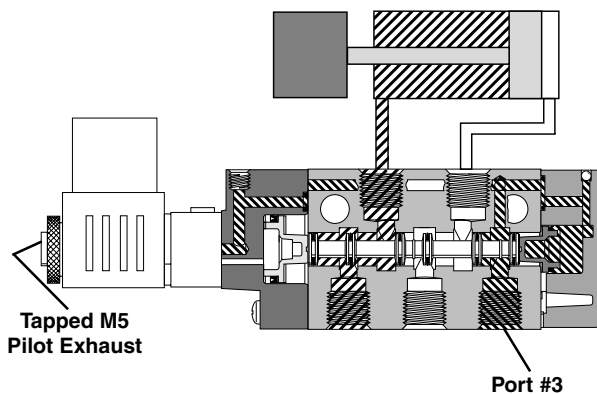
K - External - Body / Tapped M5



B3 Shown

D - Dual Pressure - Port #3 / Tapped M5

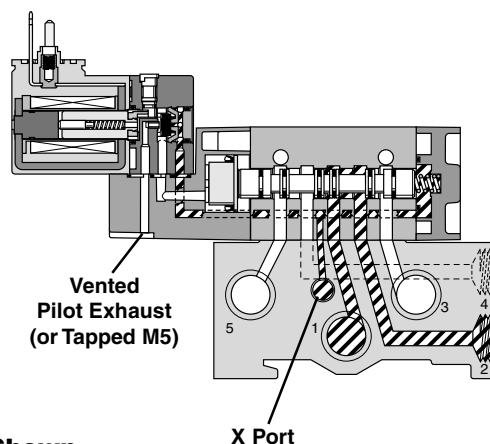
***G - Dual Pressure - Port #5 / Tapped M5 (Similar)**



B5 Shown

X - External - Manifold / Vented

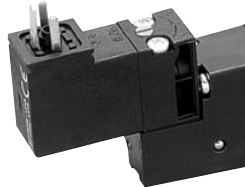
W - External - Manifold / Tapped M5



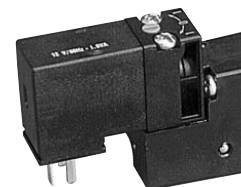
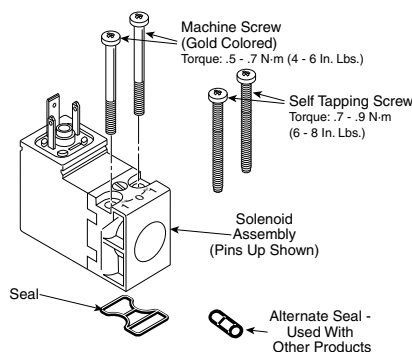
B2 Shown

Solenoid Kits – B2 'C', B3 'C', B4 'A', B5 'C', B6 'A', B7 'A', B8 'A'

3-Pin DIN 43650C 15mm



STANDARD



"02" OPTION

PS2982*##P – Enclosure '5'

* Override	## Voltage						
	42	45	47	48	49	53	57
B	O	O	–	–	S	S	O
C	O	O	–	–	S	S	O
D	–	–	O	O	O	O	–
E	–	–	O	O	O	O	–

S - Standard; O - Option

* Mobile Voltage

Kit Includes: Solenoid, (2) Machine Screws, (2) Self Threading Screws, (1) Gasket, (1) 3-cell Gasket.

PS3541*##P – Enclosure '5' with "02" Option

* Override	## Voltage			
	42	45	49	53
B	O	O	S	S
C	O	O	S	S
D	–	–	O	O
E	–	–	O	O

PS3441*##P

* Override	## Voltage
	57
B	O
C	O
D	–
E	–

H

Alternate Enclosures



"A & E" 30mm 3-Pin



"C" 3-Pin Mini



"G", "Q" Grommet



"B" 22mm 3-Pin



"D" 5-Pin Mini



"F", "H", "R" 1/2" Conduit

Enclosure 'A' thru 'R'

Part No.	Description	## Voltage						
		42 24VAC	45 12VDC	47 12VDC*	48 24VDC*	49 24VDC	53 120VAC	57 230VAC
PS2828A##P	30mm 3-Pin DIN 43650A	O	O	–	–	S	S	O
PS2828B##P	22mm 3-Pin DIN 43650 Industrial	O	O	–	O	S	S	O
PS2828E49P	Intrinsically Safe - 30mm, 3-Pin	–	–	–	–	O	–	–
PS2828F##P	Hazardous Duty - 1/2" Conduit - 18" Leads	–	O	–	–	O	O	O
PS2828G##P	Grommet - 18" Lead	O	O	O	O	S	S	O
PS2828H##P	1/2" Conduit - 18" Lead	O	O	O	–	S	S	O
PS2828Q##P	Grommet - 72" Lead	O	O	O	O	O	O	O
PS2828R##P	1/2" Conduit - 72" Lead	O	O	O	–	O	O	O

S - Standard; O - Option

* Mobile Voltage



B2 Series

Spool / Body Service Kits

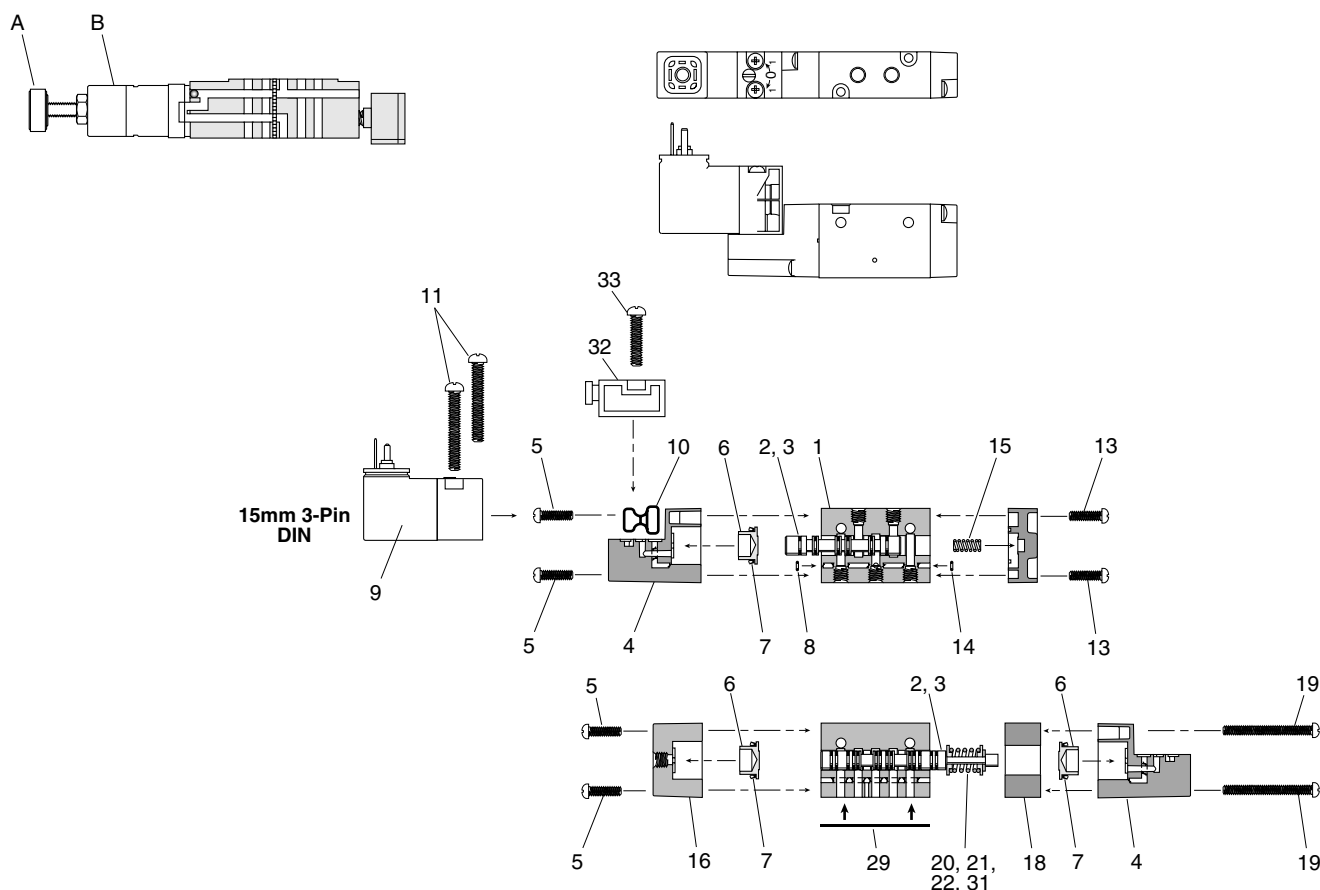
PS4401CP	4-Way, 2-Pos	<i>Kit Includes:</i>
PS4402CP	4-Way, 3-Pos APB	Item 2, 7 (2), 8 (2), 14, 15, 17 (2) grease packet
PS4403CP	4-Way, 3-Pos CE	Item 2, 7 (2), 8 (2), 17 (2), 20 (2), 21 (2), 22 (2), grease packet
PS4404CP	4-Way, 3-Pos PC	Item 2, 7 (2), 8 (2), 17 (2), 20 (2), 21 (2), 22 (2), grease packet
PS447100CP	3-Way, 2-Pos, Dbl Operator	Item 2, 7 (2), 8 (2), 17 (2) grease packet
PS447101CP	3-Way, 2-Pos, NC	Item 2, 7, 8, 15, 17 grease packet
PS447102CP	3-Way, 2-Pos, NO	Item 2, 7, 8, 15, 17 grease packet

Valve to Manifold Kits

PS4486P	Gasket (10) - Subbase / Inline Valve, Sand Regulator
PS4487P	Mounting Bolts (10) - Inline Valve
PS4488P	Mounting Bolts (10) - Subbase Valve

Sandwich Regulator Cartridge Kit

PS299922P	2-60 PSI Cartridge (Item A, B)
PS299933P	5-125 PSI Cartridge (Item A, B)



ITEM LIST – Parts not sold separately.

Item	Description	Item	Description	Item	Description
1	Inline Body - Tapped Ports	9*	15mm Solenoid (see Page 27)	20*	Bearing - 3-Position
2*	Spool - 2-Position (Seals Assembled)	10*	Gasket - Solenoid to Adapter	21*	Spring - 3-Position
3*	Spool Seal	11*	Self Tapping Screw - Solenoid	22*	Retaining Ring - 3-Position
4a	Solenoid Adapter - Vent Exhaust	12	Return Operator	29*	Gasket - Subbase Valve to Base
4b	Solenoid Adapter - Ext Pilot, Tapped Exhaust	13	Screws - Return Operator	30*	Screws - Subbase Valve (M2 x 28mm)
4c	Solenoid Adapter - Tapped Exhaust	14*	Gasket - Return Operator	31	Wear Ring - 3-Position
5	Screws - Operator Adapter	15*	Spring, Return Assist	32	Remote Pilot Adapter - 5/32" Tube (PVAP111)
6a	Operator Piston - 2-Position	16	Remote Pilot Operator	33	Screws - Remote Pilot Adapter
6b	Operator Piston - 3-Position	17*	O-ring - Remote Pilot		
7*	Lip Seal - Operator Piston	18	Adapter - 3-Position		
8*	Gasket - Body to Operator	19	Screws - 3-Position Adapter		

Note: * Parts are available in kits shown. For kit components, order VALVE LESS SOLENOID for assembled and tested repair valve.



B3 Series

Spool / Body Service Kits

PS2901CP	4-Way, 2-Pos	<i>Kit Includes:</i> Item 15, 21 (2), 24, 25, 31 (2), grease packet
PS2902CP	4-Way, 3-Pos APB	Item 16, 21 (2), 31 (2), grease packet
PS2903CP	4-Way, 3-Pos CE	Item 16, 21 (2), 31 (2), grease packet
PS2904CP	4-Way, 3-Pos PC	Item 16, 21 (2), 31 (2), grease packet
PS2971CP	3-Way, 2-Pos	Item 15, 21 (2), 24, 25, 31 (2), grease packet

Valve to Manifold Kits

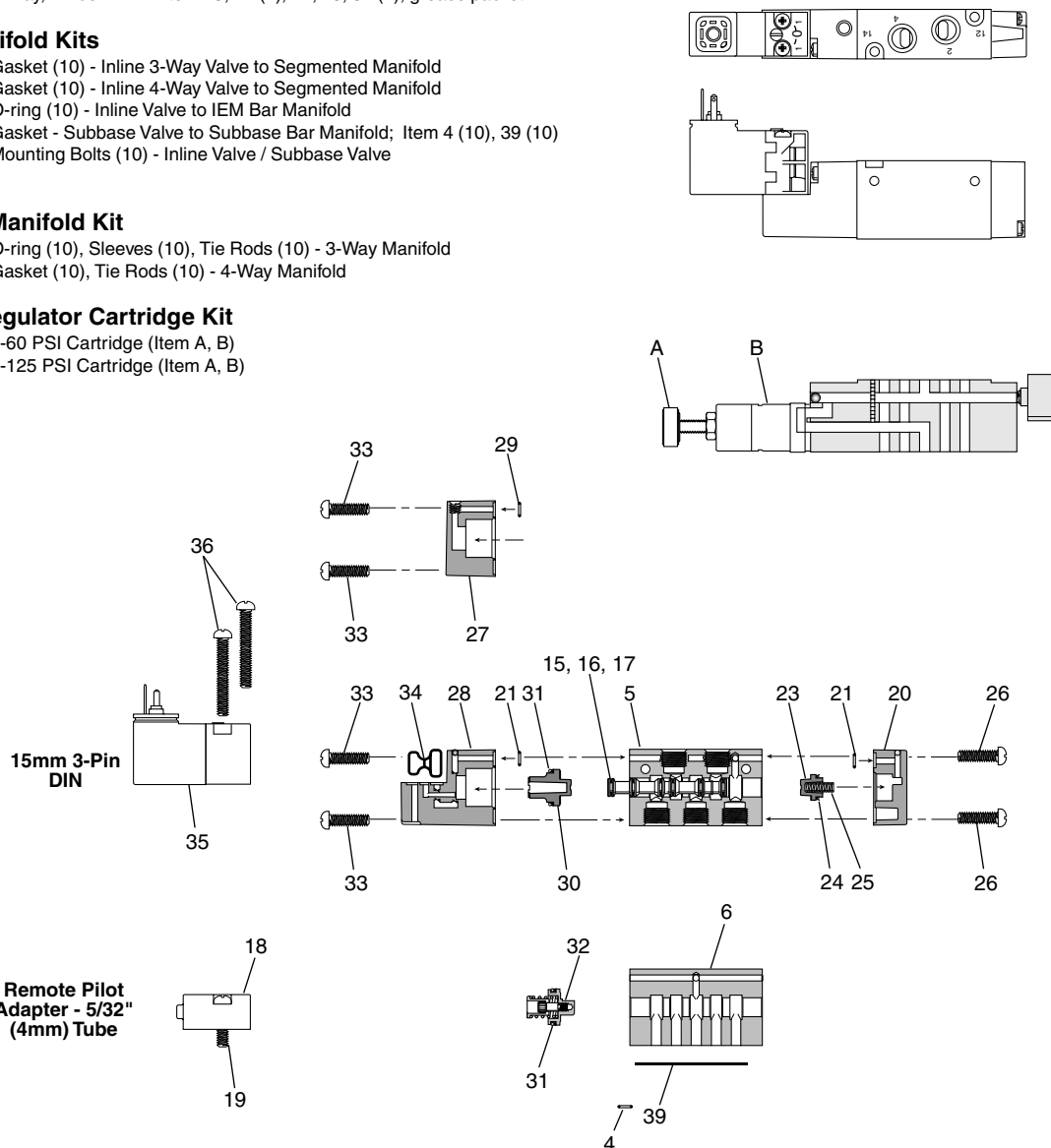
PS2980P	Gasket (10) - Inline 3-Way Valve to Segmented Manifold
PS2981P	Gasket (10) - Inline 4-Way Valve to Segmented Manifold
PS2984P	O-ring (10) - Inline Valve to IEM Bar Manifold
PS2986P	Gasket - Subbase Valve to Subbase Bar Manifold; Item 4 (10), 39 (10)
PS2987P	Mounting Bolts (10) - Inline Valve / Subbase Valve

Manifold to Manifold Kit

PS2995P	O-ring (10), Sleeves (10), Tie Rods (10) - 3-Way Manifold
PS2996P	Gasket (10), Tie Rods (10) - 4-Way Manifold

Sandwich Regulator Cartridge Kit

PS299922P	2-60 PSI Cartridge (Item A, B)
PS299933P	5-125 PSI Cartridge (Item A, B)



ITEM LIST – Parts not sold separately.

Item	Description	Item	Description	Item	Description
4*	O-ring - Ext Pilot Valve to Manifold	23	Return Piston	31*	Lip Seal - Operator Piston
5	Inline Body - Tapped Ports	24*	Lip Seal - Return Piston	32	Operator Piston Mechanism - 3-Position
6	Subbase Body	25*	Spring, Return Assist	33	Screws - Operator Adapter
7	Inline Body - Tube Ports	26	Screws - Return Operator	34*	Gasket - Solenoid to Adapter
15*	Spool - 2-Position (Seals Assembled)	27	Remote Pilot Operator	35*	15mm Solenoid (see Page 27)
16*	Spool - 3-Position (Seals Assembled)	28a	Solenoid Adapter - Vent Exhaust	36*	Self Tapping Screw - Solenoid (Effective May 99)
17*	Spool Seal	28b	Solenoid Adapter - Ext Pilot, Vent Exhaust	36*	Machine Screw - Solenoid (Jan 96 - May 99)
18	Remote Pilot Adapter (PVAP111)	28c	Solenoid Adapter - Ext Pilot, Tapped Exhaust	39*	Gasket - Subbase Valve to Base
19	Screw - Remote Pilot Adapter	28d	Solenoid Adapter - Tapped Exhaust	40*	Mounting Screws - Subbase Valve
20	Return Operator	29	O-ring - Remote Pilot		
21*	Gasket - Body to Operator	30	Operator Piston - 2-Position		

Note: * Parts are available in kits shown. For kit components, order VALVE LESS SOLENOID for assembled and tested repair valve.



B4 Series

Spool / Body Service Kits

Kit Includes:

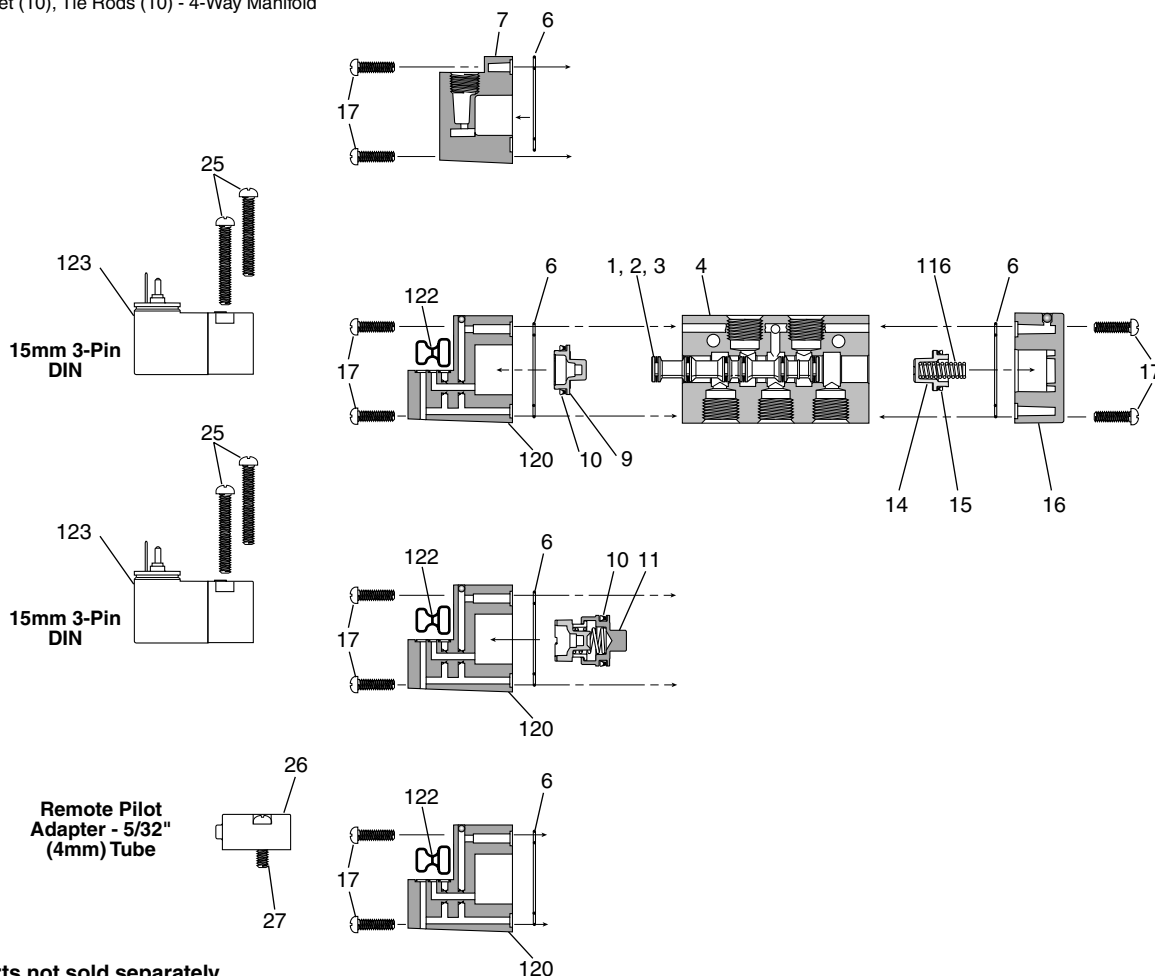
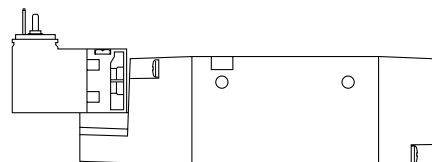
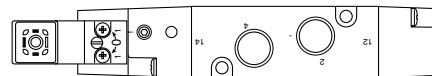
PS4501P	4-Way, 2-Pos	Item 2, 10 (2), 15, 116, 6 (2), grease packet
PS4502P	4-Way, 3-Pos APB	Item 3, 6 (2), 10 (2), grease packet
PS4503P	4-Way, 3-Pos CE	Item 3, 6 (2), 10 (2), grease packet
PS4504P	4-Way, 3-Pos PC	Item 3, 6 (2), 10 (2), grease packet
PS4571P	3-Way, 2-Pos	Item 2, 10 (2), 15, 116, 6 (2), grease packet

Valve to Manifold Kits

PS4580P	Gasket (10) - Inline 3-Way Valve to Segmented Manifold
PS4581P	Gasket (10) - Inline 4-Way Valve to Segmented Manifold
PS4584P	O-ring (10) - Inline Valve to IEM Bar Manifold
PS4587P	Mounting Bolts (10) - Inline Valve to IEM Manifold

Manifold to Manifold Kit

PS4595P	Gasket (10), Tie Rods (10) - 3-Way Manifold
PS4596P	Gasket (10), Tie Rods (10) - 4-Way Manifold



ITEM LIST – Parts not sold separately.

Item	Description	Item	Description
1*	Spool Seal		(Effective May 99)
2*	Spool - 2-Position (Seals Assembled)	26	Remote Pilot Adapter - 5/32" Tube (PVAP111)
3*	Spool - 3-Position (Seals Assembled)	27	Screws - Remote Pilot Adapter
4	Inline Body	116*	Spring, Return Assist
6*	Gasket - Body to Operator	120a	Solenoid Adapter - Vent Exhaust
7	Remote Pilot Operator	120b	Solenoid Adapter - Tapped Exhaust
9	Operator Piston - 2-Position	120d	Solenoid Adapter - Ext Pilot, Vent Exhaust
10*	Lip Seal - Operator Piston	120e	Solenoid Adapter - Ext Pilot, Tapped Exhaust
11	Operator Piston Mechanism - 3-Position	122*	Gasket - Solenoid to Adapter
14	Return Piston	123*	15mm Solenoid (see Page 27)
15*	Lip Seal - Return Piston		
16	Return Operator		
17*	Screws - Operator Adapter - 2-Position		
25*	Self Tapping Screw - Solenoid		

Note: * Parts are available in kits shown. For kit components, order VALVE LESS SOLENOID for assembled and tested repair valve.

B5 Series

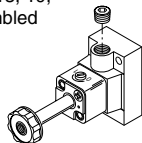
Spool / Body Service Kits

PS2801*P	4-Way, 2-Pos	Kit Includes:	Item 2, 10 (2), 15, 116, 6 (2), grease packet
PS2802*P	4-Way, 3-Pos APB		Item 3, 6 (2), 10 (2), 13 (2), grease packet
PS2803*P	4-Way, 3-Pos CE		Item 3, 6 (2), 10 (2), 13 (2), grease packet
PS2804*P	4-Way, 3-Pos PC		Item 3, 6 (2), 10 (2), 13 (2), grease packet
PS2871*P	3-Way, 2-Pos NC		Item 2, 10 (2), 15, 116, 6 (2), grease packet

* Viton Seal Kit (i.e. PS2801VP)

Pilot Replacement Kit – Alternate Enclosure

Kit Includes:	Item 6, 9, 10, 11, 17 (2), 18 (2), 13, 19, 20, 22, 23, 24 (2), 57, 58 Assembled
PS2897GBP	Non-Locking, BSPP
PS2897GCP	Locking, BSPP
PS2897NBP	Non-Locking, NPT
PS2897NCP	Locking, NPT



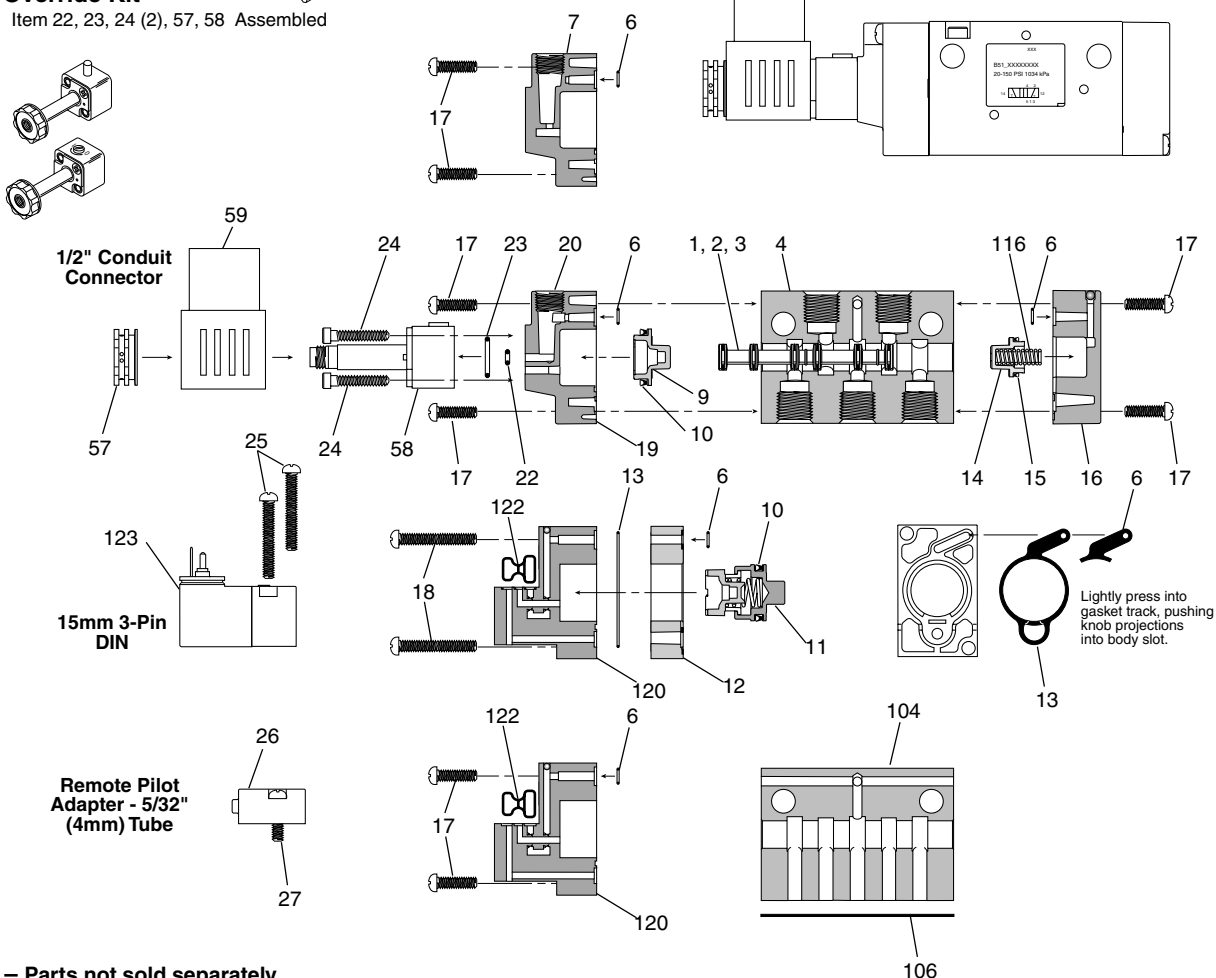
Armature / Override Kit

Kit Includes: Item 22, 23, 24 (2), 57, 58 Assembled

PS2844BP
Non-Locking

PS2844CP
Locking

PS2892P
Solenoid Nut -
Item 57 (10)



ITEM LIST – Parts not sold separately.

Item	Description	Item	Description	Item	Description
1*	Spool Seal	17*	Screws - Operator Adapter - 2-Position	58a*	Solenoid Base Assembly - Locking
2*	Spool - 2-Position (Seals Assembled)	18*	Screws - Operator Adapter - 3-Position	58b*	Solenoid Base Assembly - Non Locking
3*	Spool - 3-Position (Seals Assembled)	19*	Operator Adapter - Alt Enclosure	59*	Coil - Alternate Enclosure (see Page 27)
4	Inline Body	20*	1/8" NPT Pipe Plug	104	Subbase Body
6*	Gasket - Body to Operator	22*	O-ring - Small - Solenoid Base	106*	Gasket - Subbase Valve to Base
7	Remote Pilot Operator	23*	O-ring - Large - Solenoid Base	116*	Spring, Return Assist
9	Operator Piston - 2-Position	24*	Bolts - Solenoid Base	120a	Solenoid Adapter - Vent Exhaust
10*	Lip Seal - Operator Piston	25a*	Self Tapping Screw - Solenoid (Effective May 99)	120b	Solenoid Adapter - Tapped Exhaust
11	Operator Piston Mechanism - 3-Position	25b*	Machine Screw - Solenoid (Jan 96 - May 99)	120d	Solenoid Adapter - Ext Pilot, Vent Exhaust
12	Adapter - 3-Position	26	Remote Pilot Adapter - 5/32" Tube (PVAP111)	120e	Solenoid Adapter - Ext Pilot, Tapped Exhaust
13*	Gasket - 3-Position Adapter to Body	27	Screws - Remote Pilot Adapter	122*	Gasket - Solenoid to Adapter
14	Return Piston	57*	Solenoid Nut	123*	15mm Solenoid (see Page 27)
15*	Lip Seal - Return Piston				
16	Return Operator				

Note: * Parts are available in kits shown. For kit components, order VALVE LESS SOLENOID for assembled and tested repair valve.

B6 Series

Spool / Body Service Kits

PS2601*P	4-Way, 2-Pos	<i>Kit Includes:</i>	Item 2, 6 (2), 9 (2), 11, 14, grease packet
PS2602*P	4-Way, 3-Pos APB		Item 3, 6 (2), 9 (2), 13 (2), grease packet
PS2603*P	4-Way, 3-Pos CE		Item 3, 6 (2), 9 (2), 13 (2), grease packet
PS2604*P	4-Way, 3-Pos PC		Item 3, 6 (2), 9 (2), 13 (2), grease packet
PS267101*P	3-Way, 2-Pos, NC		Item 2, 6, 9, 14, grease packet
PS267102*P	3-Way, 2-Pos, NO		Item 2, 6, 9, 14, grease packet
* Viton Seal Kit (i.e. PS2801VP)			

Valve to Manifold Kits

PS2684P	O-ring (10) - Inline Valve to IEM Manifold
PS2887P	Mounting Bolts (10) - Inline Valve

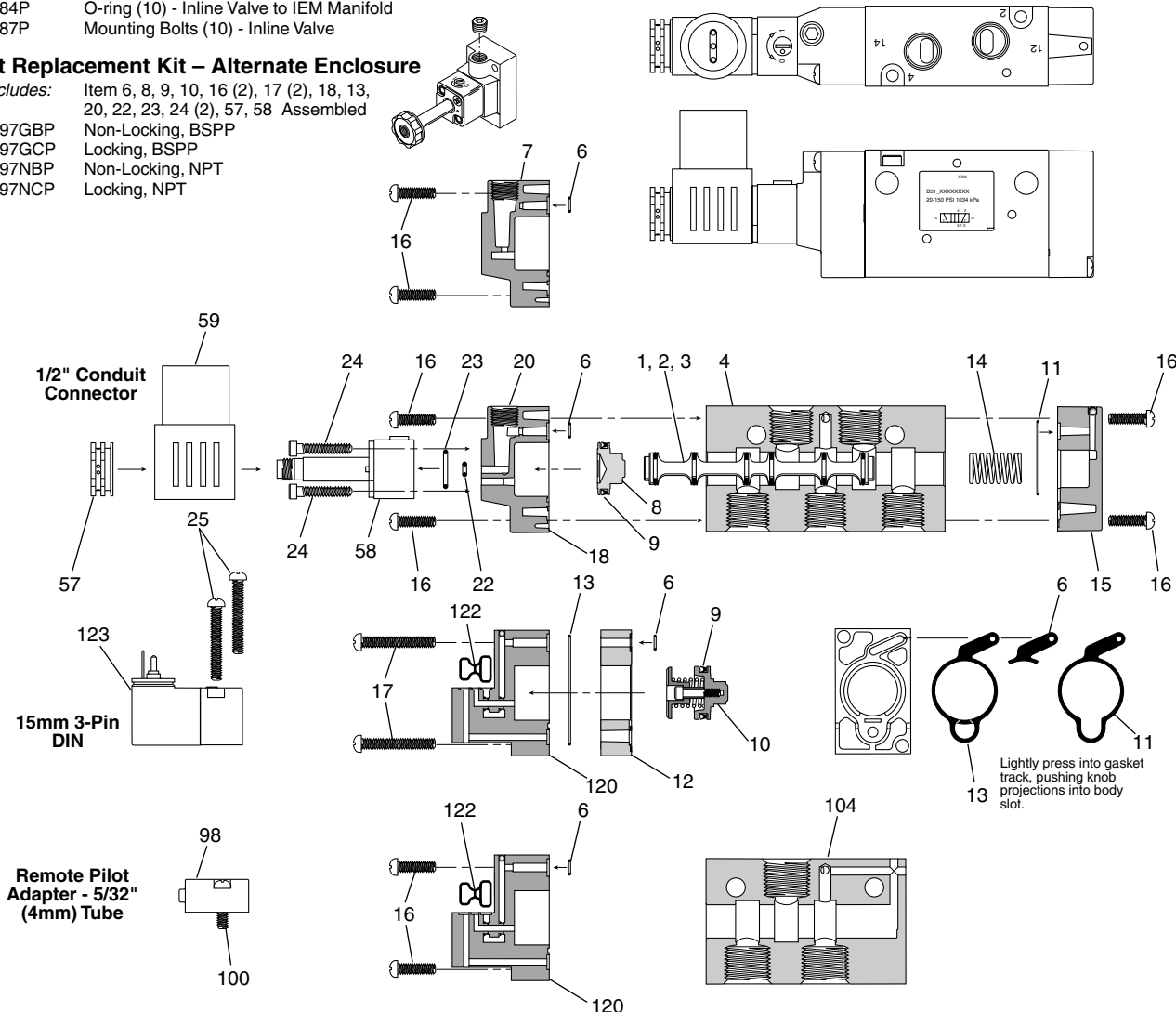
Pilot Replacement Kit – Alternate Enclosure

<i>Kit Includes:</i>	Item 6, 8, 9, 10, 16 (2), 17 (2), 18, 13, 20, 22, 23, 24 (2), 57, 58 Assembled
PS2897GBP	Non-Locking, BSPP
PS2897GCP	Locking, BSPP
PS2897NBP	Non-Locking, NPT
PS2897NCP	Locking, NPT

Armature / Override Kit –

Kit Includes: Item 22, 23, 24 (2), 57, 58 Assembled

PS2844BP	Non-Locking	PS2844CP	Locking
PS2892P	Solenoid Nut - Item 57 (10)		



ITEM LIST – Parts not sold separately.

Item	Description	Item	Description	Item	Description
1*	Spool Seal	15a	Return Operator	58b*	Solenoid Base Assembly - Non Locking
2*	Spool - 2-Position (Seals Assembled)	15b	Return Operator - CSA Option	59*	Coil - Alternate Enclosure (see Page 26)
3*	Spool - 3-Position (Seals Assembled)	16*	Screws - Operator Adapter - 2-Position	98*	Remote Pilot Adapter - 5/32" Tube (PVAP111)
4*	Inline Body - 4-Way	17*	Screws - Operator Adapter - 3-Position	100	Screws - Remote Pilot Adapter
6*	Gasket - Body to Operator	18*	Operator Adapter - Alt Enclosure	104	Inline Body - 3-Way
7	Remote Pilot Operator	20*	1/8" NPT Pipe Plug	120a	Solenoid Adapter - Vent Exhaust
8	Operator Piston - 2-Position	22*	O-ring - Small - Solenoid Base	120b	Solenoid Adapter - Tapped Exhaust
9*	Lip Seal - Operator Piston	23*	O-ring - Large - Solenoid Base	120c	Solenoid Adapter - Ext Pilot, Vent Exhaust
10	Operator Piston Mechanism - 3-Position	24*	Bolts - Solenoid Base	120d	Solenoid Adapter - Ext Pilot, Tapped Exhaust
11*	Gasket - Body to Return Cap	25*	Self Tapping Screw - Solenoid (Effective Jan 00)	122*	Gasket - Solenoid to Adapter
12	Adapter - 3-Position	57*	Solenoid Nut	123*	15mm Solenoid (see Page 26)
13	Gasket - 3-Position Adapter to Body	58a*	Solenoid Base Assembly - Locking		
14*	Spring, Return Assist				

Note: * Parts are available in kits shown. For kit components, order VALVE LESS SOLENOID for assembled and tested repair valve.

B7 & B8 Series

Spool / Body Service Kits

Kit Includes:

PS2501P	4-Way, 2-Pos	Item 2, 6 (2), 9 (2), 11, 14, grease packet
PS2502P	4-Way, 3-Pos APB	Item 3, 6 (2), 9 (2), 13 (2), grease packet
PS2503P	4-Way, 3-Pos CE	Item 3, 6 (2), 9 (2), 13 (2), grease packet
PS2504P	4-Way, 3-Pos PC	Item 3, 6 (2), 9 (2), 13 (2), grease packet
PS257101P	3-Way, 2-Pos, NC	Item 2, 6, 9, 14, grease packet
PS257102P	3-Way, 2-Pos, NO	Item 2, 6, 9, 14, grease packet

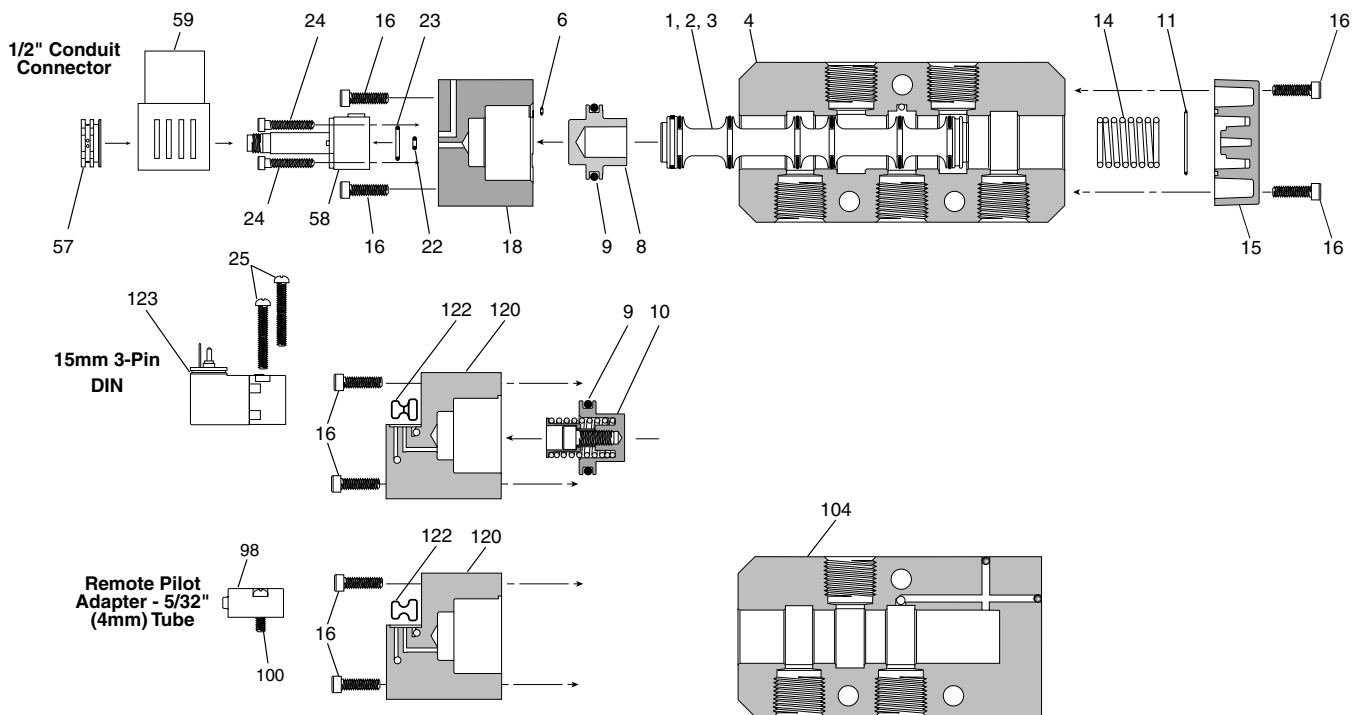
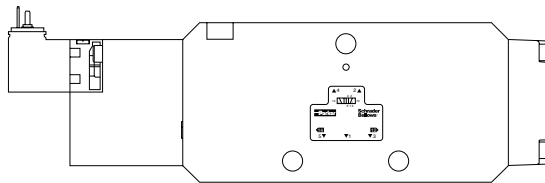
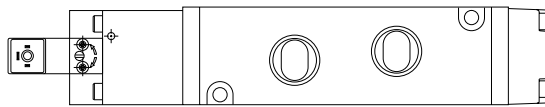
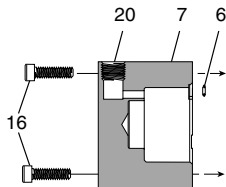
Valve to Manifold Kits

PS2584P	O-ring (10) - Inline Valve to IEM Manifold
PS2587P	Mounting Bolts (10) - Inline Valve

Pilot Replacement Kit – Alternate Enclosure

Kit Includes: Item 6, 8, 9, 10, 16 (4), 18, 20, 22, 23, 24 (2), 57, 58 Assembled

PS2597GBP	Non-Locking, BSPP
PS2597GCP	Locking, BSPP
PS2597NBP	Non-Locking, NPT
PS2597NCP	Locking, NPT



ITEM LIST – Parts not sold separately.

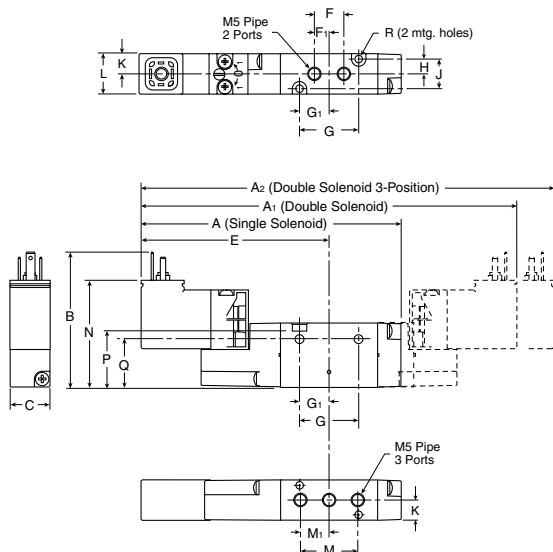
Item	Description	Item	Description	Item	Description
1*	Spool Seal	18*	Operator Adapter - Alt Enclosure	100	Screws - Remote Pilot Adapter
2*	Spool - 2-Position (Seals Assembled)	20*	1/8" NPT Pipe Plug	104	Inline Body - 3-Way
3*	Spool - 3-Position (Seals Assembled)	22*	O-ring - Small - Solenoid Base	120a	Solenoid Adapter - Vent Exhaust
4	Inline Body - 4-Way	23*	O-ring - Large - Solenoid Base	120b	Solenoid Adapter - Tapped Exhaust
6*	Gasket - Body to Operator	24*	Bolts - Solenoid Base	120c	Solenoid Adapter - Ext Pilot, Vent Exhaust
7	Remote Pilot Operator	25*	Self Tapping Screw - Solenoid	120d	Solenoid Adapter - Ext Pilot, Tapped Exhaust
8	Operator Piston - 2-Position		(Effective Jan 00)	122*	Gasket - Solenoid to Adapter
9*	Lip Seal - Operator Piston	57*	Solenoid Nut	123*	15mm Solenoid (see Page 26)
10	Operator Piston Mechanism - 3-Position	58a*	Solenoid Base Assembly - Locking		
11*	Gasket - Body to Return Cap	58b*	Solenoid Base Assembly - Non Locking		
14*	Spring, Return Assist	59*	Coil - Alternate Enclosure (see Page 26)		
15a	Return Operator	98*	Remote Pilot Adapter -		
16*	Screws - Operator Adapter		5/32" Tube (PVAP111)		

Note: * Parts are available in kits shown. For kit components, order VALVE LESS SOLENOID for assembled and tested repair valve.

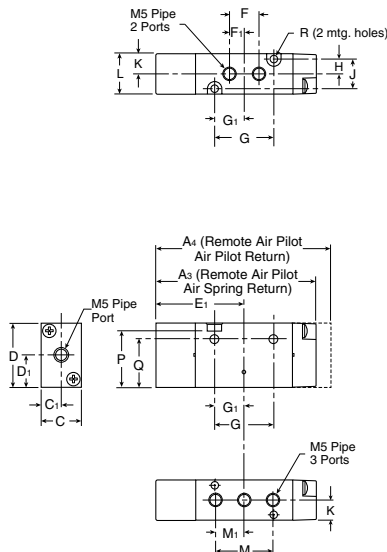


B2 Single & Double Operators 4-Way

Solenoid



Remote Pilot



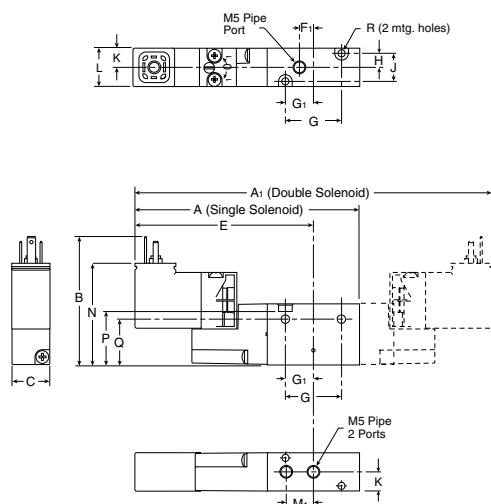
B2 4-Way Inline

A	A ₁	A ₂	A ₃	A ₄
3.74 (95)	5.43 (138)	6.06 (154)	2.32 (59)	2.56 (65)
B	C	C ₁	D	D ₁
2.00 (51)	.59 (15)	.30 (8)	.94 (24)	.47 (12)
E	E ₁	F	F ₁	G
2.72 (69)	1.30 (33)	.43 (11)	.22 (5)	.87 (22)
G ₁	H	J	K	L
.43 (11)	.22 (6)	.43 (11)	.30 (8)	.59 (15)
M	M ₁	N	P	Q
.84 (21)	.43 (11)	1.59 (40)	.83 (21)	.71 (18)
R				
Ø .11 Ø (3)				

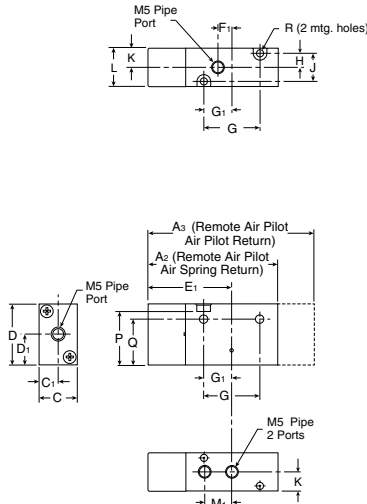
Inches (mm)

B2 Single & Double Operators 3-Way

Solenoid



Remote Pilot



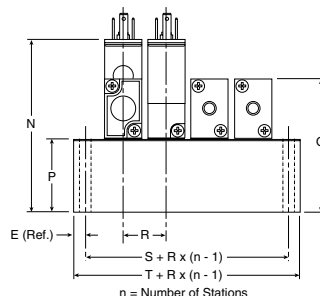
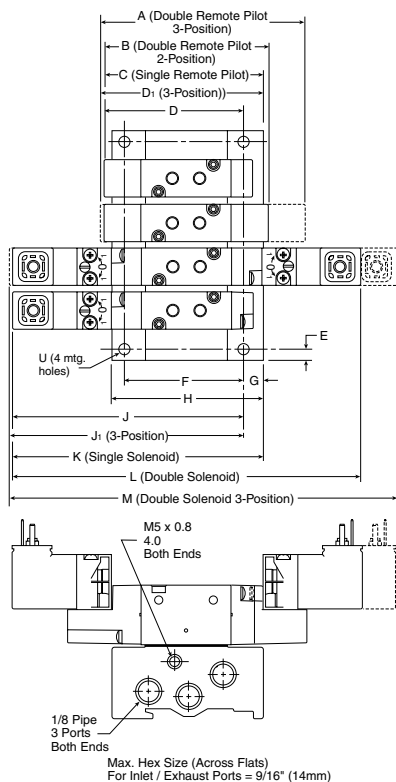
B2 3-Way Inline

A	A ₁	A ₂	A ₃	B
3.39 (86)	5.43 (138)	1.97 (50)	2.56 (65)	2.00 (51)
C	C ₁	D	D ₁	E
.59 (15)	.30 (8)	.94 (24)	.47 (12)	2.72 (69)
E ₁	F	G	G ₁	H
1.30 (33)	.22 (5)	.87 (22)	.43 (11)	.22 (6)
J	K	L	M ₁	N
.43 (11)	.30 (8)	.59 (15)	.43 (11)	1.59 (40)
P	Q	R		
.83 (21)	.71 (18)	Ø .11 Ø (3)		

Inches (mm)



B2 Single & Double Operators – IEM Aluminum Bar Manifold *



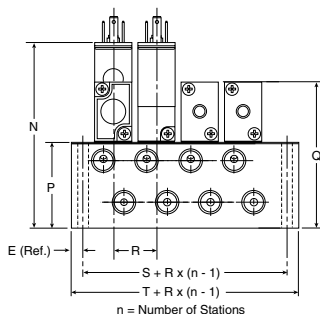
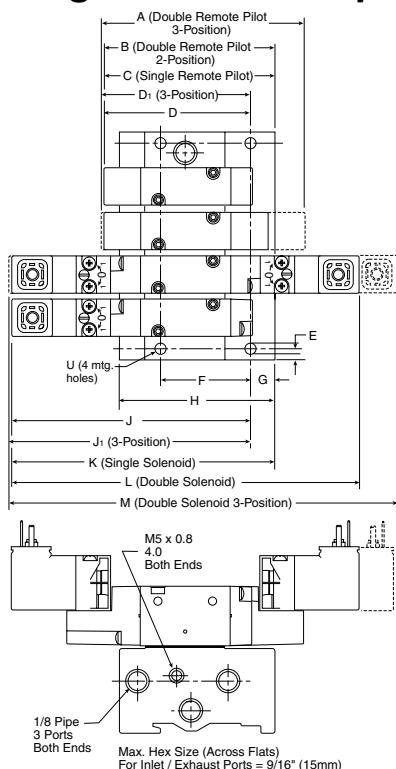
B2 IEM Aluminum Bar Manifold

A	B	C	D	D ₁
3.15 (80,0)	2.51 (63,9)	2.48 (62,9)	2.16 (54,9)	2.23 (56,5)
E	F	G	H	J
.18 (4,5)	1.89 (48,0)	.32 (8,0)	2.40 (61,0)	3.63 (92,2)
J ₁	K	L	M	N
3.69 (93,8)	3.94 (100,2)	5.45 (138,4)	6.09 (154,6)	2.74 (69,6)
P	Q	R	S	T
1.15 (29,3)	2.12 (53,8)	.69 (17,5)	1.18 (30,0)	1.54 (39,0)
U				
Ø .18 Ø (4,5)				

Inches (mm)

* Use with 3-Way & 4-Way valves.
 Dimensions are the same.

B2 Single & Double Operators – 5-Port Subbase Bar Manifold *



B2 Subbase Bar Manifold

A	B	C	D	D ₁
3.15 (80,0)	2.51 (63,9)	2.68 (68,1)	2.29 (58,1)	2.35 (59,7)
E	F	G	H	J
.18 (4,5)	1.44 (36,5)	.39 (10,0)	2.48 (63,0)	3.76 (95,4)
J ₁	K	L	M	N
3.82 (97,0)	4.15 (105,4)	5.45 (138,4)	6.09 (154,6)	2.95 (75,0)
P	Q	R	S	T
1.37 (34,7)	2.33 (59,2)	.69 (17,5)	1.52 (38,5)	1.87 (47,5)
U				
Ø .18 Ø (4,5)				

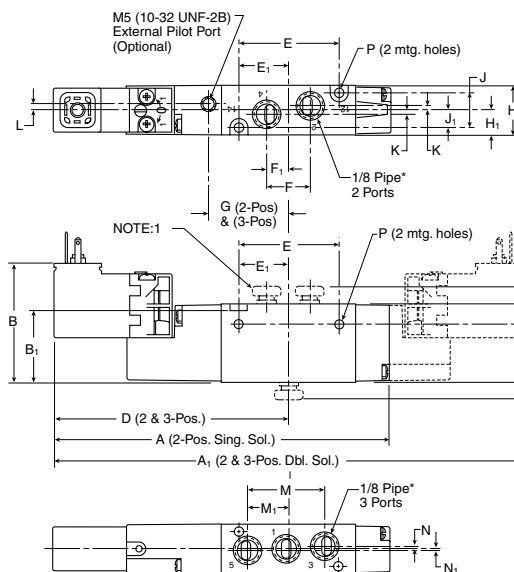
Inches (mm)

* Use with 3-Way & 4-Way valves.
 Dimensions are the same.

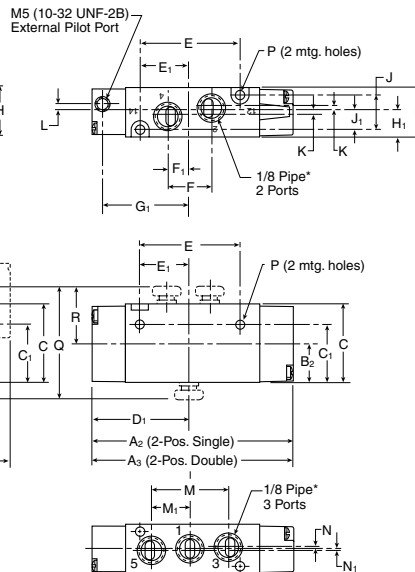


B3 Single & Double Operators – 4-Way Inline

Solenoid



Remote Pilot



NOTE 1: Series B3 valves with integral PRESTOLOK ports must use Parker PARFLEX tubing, which has the required O.D. tolerances for use. Be sure to use the tube support (part no. 63PTU) when using the series U polyurethane tubing. All applications should be carefully tested through the range of conditions which may be encountered prior to use.

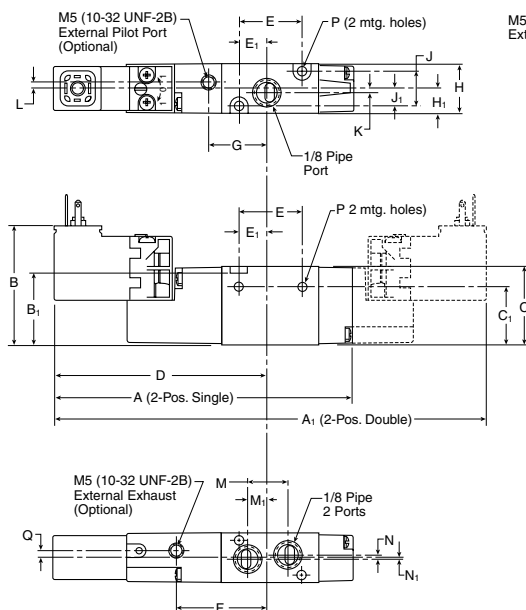
B3 4-Way Inline

A	A ₁	A ₂	A ₃	B
4.67 (119)	6.44 (164)	3.12 (79)	3.33 (85)	1.66 (42)
B ₁	B ₂	C	C ₁	D
1.05 (27)	.57 (14)	1.13 (29)	.84 (21)	3.22 (82)
D ₁	E	E ₁	F	F ₁
1.66 (42)	1.47 (37)	.73 (19)	.63 (16)	.32 (8)
G	G ₁	H	H ₁	J
1.13 (29)	1.50 (38)	.71 (18)	.36 (9)	.51 (13)
J ₁	K	L	M	M ₁
.26 (7)	.06 (2)	.11 (3)	1.12 (28)	.56 (14)
N	N ₁	P	Q 5/32 Prestolok	Q 1/4 Prestolok
.05 (1)	.05 (1)	Ø .13 Ø (3.3)	1.54 (39)	1.58 (40)
Q 1/4 Prestolok	R 1/4 Prestolok			
.77 (20)	.79 (20)			

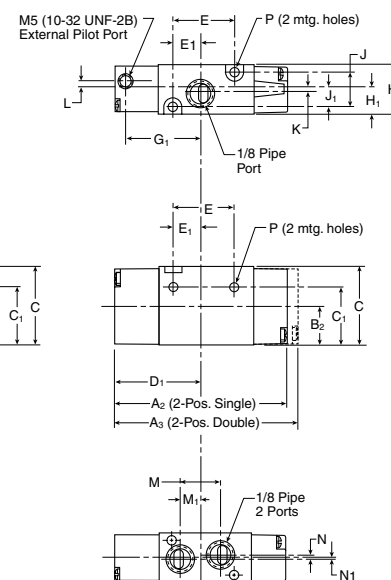
Inches (mm)

B3 Single & Double Operators – 3-Way Inline

Solenoid



Remote Pilot



B3 3-Way Inline

A	A ₁	A ₂	A ₃	B
4.20 (107)	5.96 (151)	2.65 (67)	2.86 (73)	1.66 (42)
B ₁	B ₂	C	C ₁	D
1.05 (27)	.57 (14)	1.13 (29)	.84 (21)	2.93 (74)
D ₁	E	E ₁	F	G
1.38 (35)	.98 (25)	.44 (11)	1.32 (34)	.85 (22)
G ₁	H	H ₁	J	J ₁
1.22 (31)	.71 (18)	.36 (9)	.51 (13)	.26 (7)
K	L	M	M ₁	N
.06 (2)	.11 (3)	.63 (16)	.27 (7)	.12 (3)
N ₁	P	Q		
.06 (2)	Ø .13 Ø (3.3)	.08 (2)		

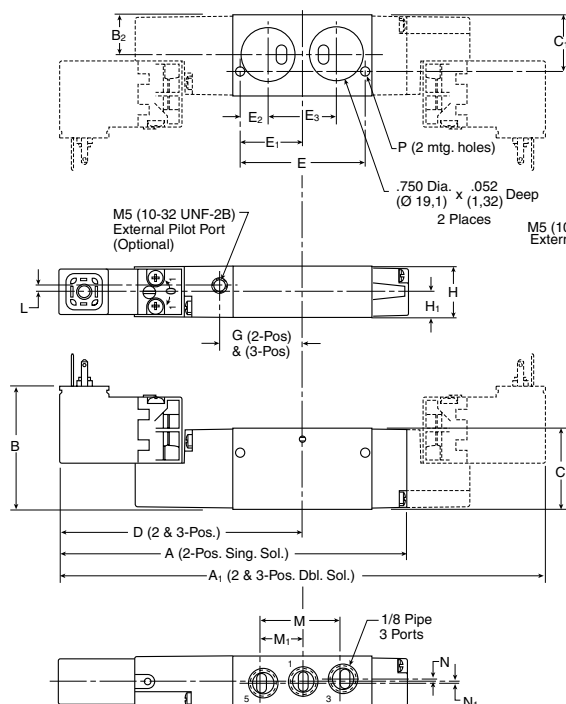
Inches (mm)



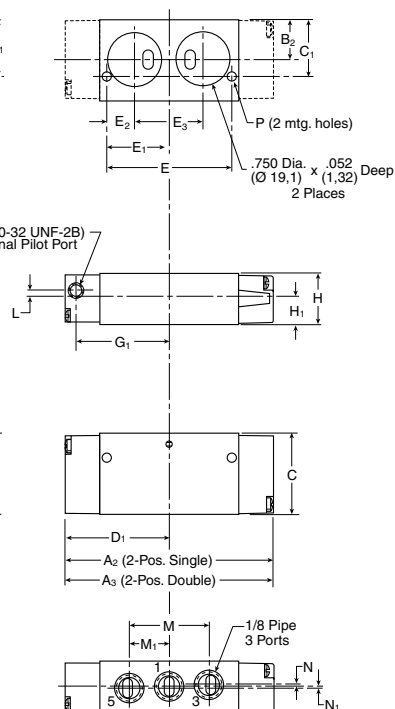
B3

Single & Double Operators – 4-Way Face Mount

Solenoid



Remote Pilot



B3 4-Way Face Mount

A	A ₁	A ₂	A ₃	B
4.67 (119)	6.44 (164)	3.12 (79)	3.33 (85)	1.66 (42)
B ₂	C	C ₁	D	D ₁
.58 (15)	1.13 (29)	.81 (21)	3.22 (82)	1.66 (42)
E	E ₁	E ₂	E ₃	G
1.74 (44)	.87 (22)	.39 (10)	.95 (24)	1.13 (29)
G ₁	H	H ₁	L	M
1.50 (38)	.71 (18)	.36 (9)	.11 (3)	1.12 (28)
M ₁	N	N ₁	P	
.56 (14)	.05 (1)	.05 (1)	Ø .13 Ø (3.3)	

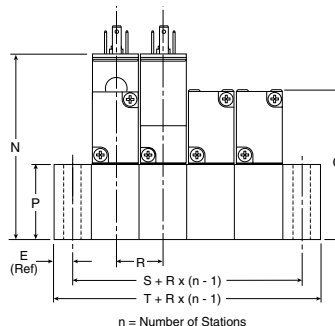
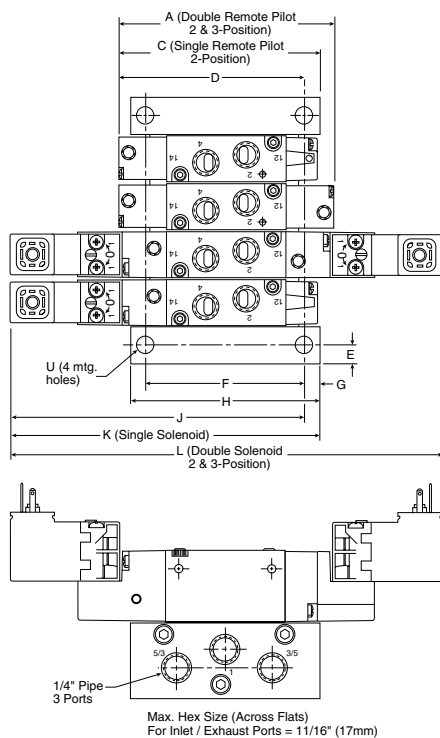
Inches (mm)

H



B3

Single & Double Operators – 4-Way IEM Stackable

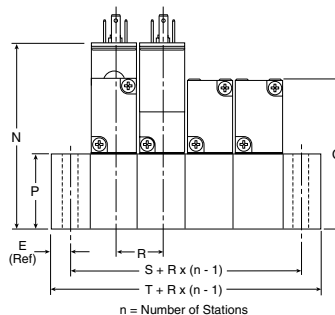
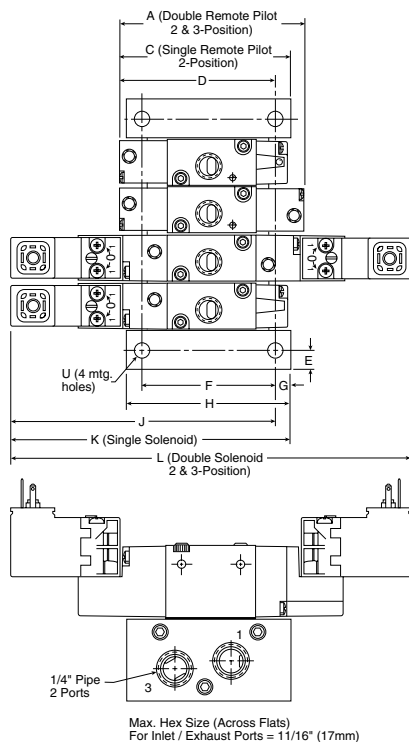

B3 4-Way IEM Stackables

A 3.33 (84,6)	C 3.12 (79,2)	D 2.91 (73,9)	E .30 (7,6)	F 2.49 (63,3)
G .25 (6,4)	H 3.00 (76,2)	J 4.46 (113,3)	K 4.67 (118,6)	L 6.43 (163,3)
N 2.91 (73,9)	P 1.25 (31,8)	Q 2.38 (60,5)	R .74 ± .01 (18,8) ± .3	
S 1.34 (34,0)	T 1.94 (49,3)	U Ø .28 Ø (7,1)		

Inches (mm)

B3

Single & Double Operators – 3-Way IEM Stackable


B3 3-Way IEM Stackable

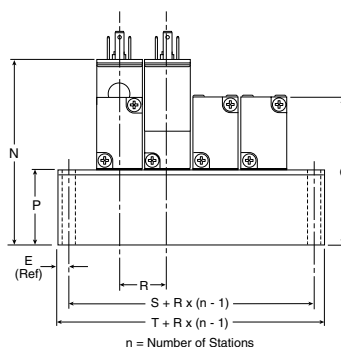
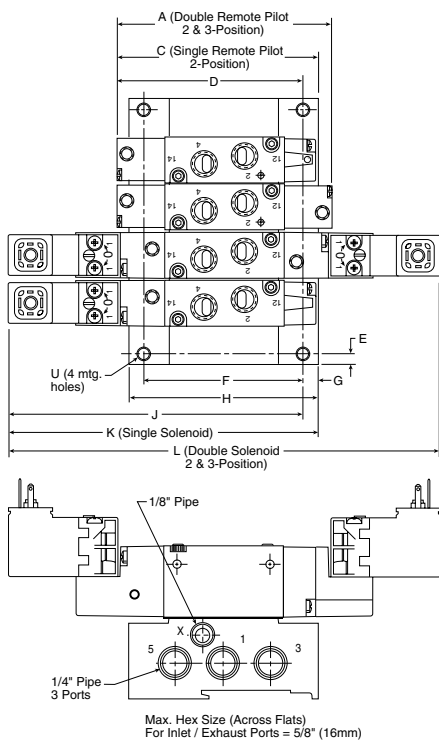
A 2.86 (72,6)	C 2.65 (67,3)	D 2.45 (62,2)	E .30 (7,6)	F 2.05 (52,0)
G .24 (6,0)	H 2.52 (64,0)	J 4.00 (101,7)	K 4.20 (106,7)	L 5.96 (151,4)
N 2.91 (73,9)	P 1.25 (31,8)	Q 2.38 (60,5)	R .74 ± .01 (18,8) ± .3	
S 1.34 (34,0)	T 1.94 (49,3)	U Ø .28 Ø (7,1)		

Inches (mm)



B3

Single & Double Operators – 4-Way IEM Aluminum Bar



B3 4-Way IEM Aluminum Bar Manifold

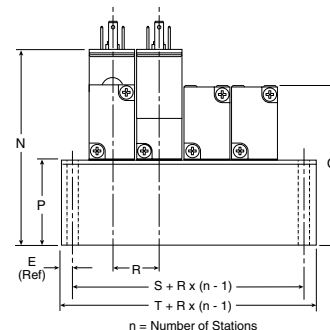
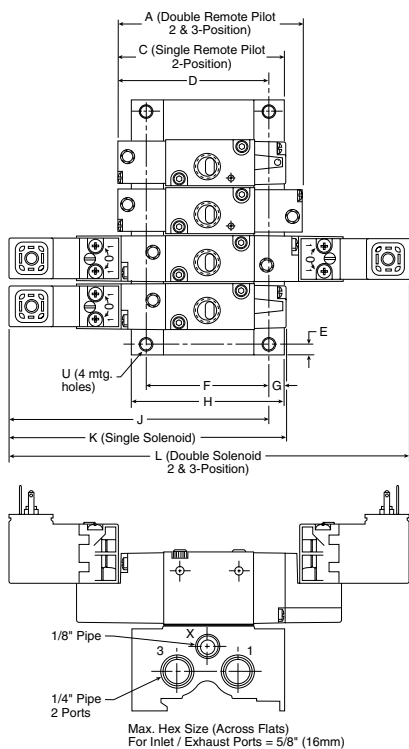
A	C	D	E	F
3.33 (84,6)	3.17 (80,5)	2.94 (74,7)	.25 (6,4)	2.54 (64,5)
G	H	J	K	L
.23 (5,9)	3.00 (76,2)	4.50 (114,2)	4.73 (120,1)	6.43 (163,3)
N	P	Q	R	S
2.94 (74,7)	1.28 (32,5)	2.41 (61,2)	.81 (20,5)	1.13 (28,8)
T	U			
1.64 (41,6)	Ø .23 Ø (5,8)			

Inches (mm)

H

B3

Single & Double Operators – 3-Way IEM Aluminum Bar



B3 3-Way IEM Aluminum Bar Manifold

A	C	D	E	F
2.86 (72,6)	2.65 (67,3)	2.33 (59,2)	.25 (6,4)	1.80 (45,7)
G	H	J	K	L
.23 (5,9)	2.25 (57,2)	3.88 (98,6)	4.20 (106,7)	5.96 (151,4)
N	P	Q	R	S
2.93 (74,5)	1.27 (32,4)	2.40 (61,1)	.81 (20,5)	1.13 (28,8)
T	U			
1.64 (41,6)	Ø .23 Ø (5,8)			

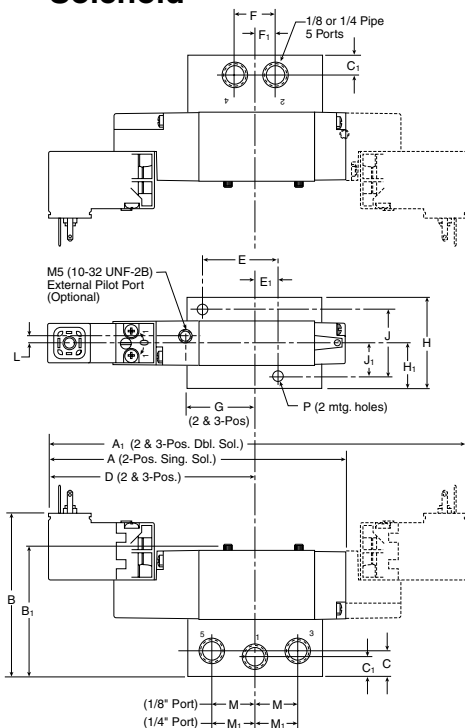
Inches (mm)



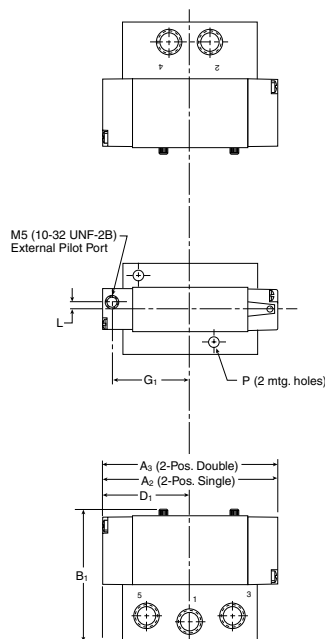
B3

Single & Double Operators – 4-Way Single Subbase

Solenoid



Remote Pilot



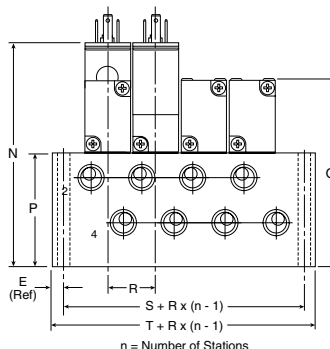
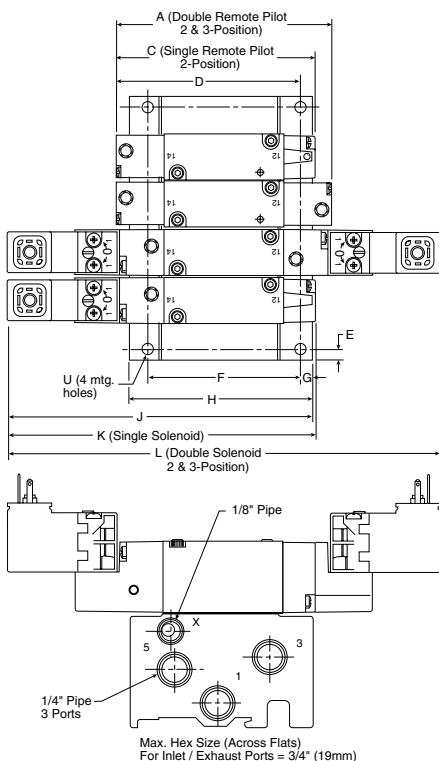
B3 4-Way Single Subbase

A 4.67 (119)	A₁ 6.44 (164)	A₂ 3.12 (79)	A₃ 3.33 (85)	B 2.63 (67)
B₁ 2.21 (56)	C .47 (12)	C₁ .37 (9)	D 3.22 (82)	D₁ 1.66 (42)
E 1.25 (32)	E₁ .38 (10)	F .69 (18)	F₁ .34 (9)	G 1.13 (29)
G₁ 1.50 (38)	H 1.50 (38)	H₁ .75 (19)	J 1.12 (28)	J₁ .56 (14)
M .71 (18)	M₁ .76 (19)	P Ø .18 Ø (4)		

Inches (mm)

B3

Single & Double Operators – 5-Port Subbase Bar Manifold



B3 5-Port Subbase Bar Manifold

A 3.33 (84,6)	C 3.12 (79,2)	D 2.88 (73,2)	E .25 (6,3)	F 2.43 (61,7)
G .22 (5,5)	H 2.93 (74,5)	J 4.66 (118,3)	K 4.67 (118,6)	L 6.43 (166,3)
N 3.47 (88,2)	P 1.81 (46,0)	Q 2.94 (74,7)	R .81 (20,5)	S 1.39 (35,4)
T 1.89 (48,0)	U Ø .22 Ø (5,6)			

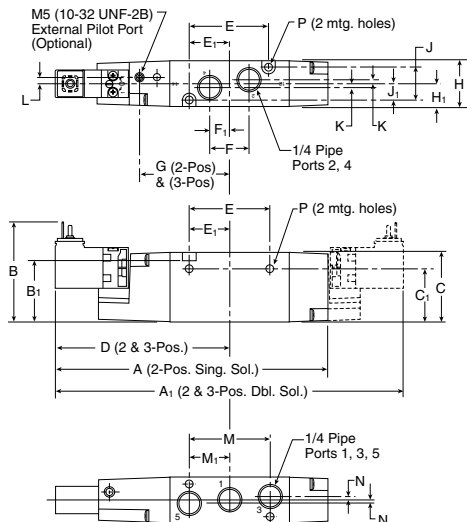
Inches (mm)



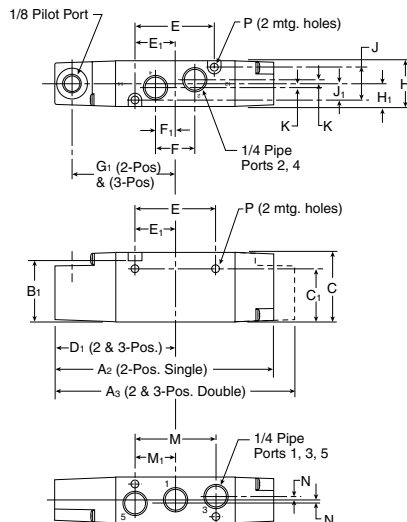
B4

Single & Double Operators – 4-Way Inline

Solenoid



Remote Pilot



B4 4-Way Inline

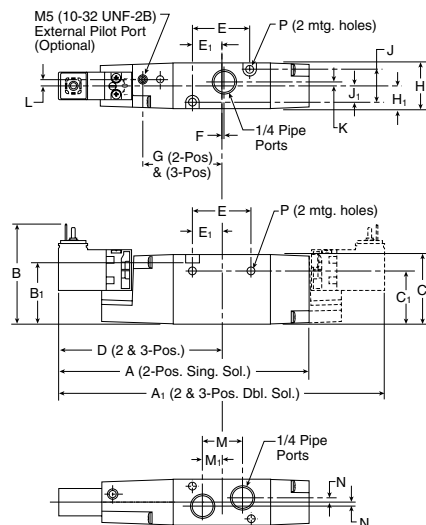
A	A ₁	A ₂	A ₃	B
5.87 (149,0)	7.49 (190,2)	4.70 (119,3)	5.17 (131,3)	2.15 (54,6)
B ₁	C	C ₁	D	D ₁
1.32 (33,5)	1.50 (38,0)	1.14 (29,0)	3.75 (95,3)	2.58 (66,0)
E	E ₁	F	F ₁	G
1.73 (44,0)	.87 (22,0)	.85 (21,5)	.42 (10,8)	1.91 (48,5)
G ₁	H	H ₁	J	J ₁
2.21 (56,1)	.98 (25,0)	.49 (12,5)	.71 (18,0)	.35 (9,0)
K	L	M	M ₁	N
.09 (2,3)	.14 (3,6)	1.73 (44,0)	.87 (22,0)	.07 (1,7)
P				
Ø.17 Ø(4,3)				

Inches (mm)

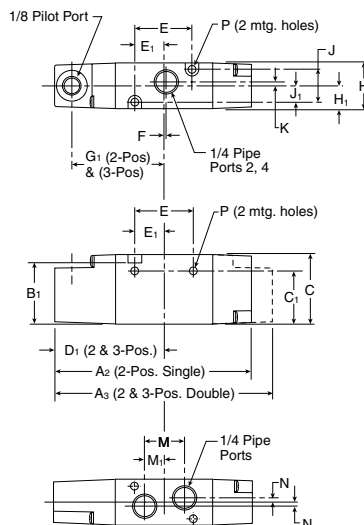
B4

Single & Double Operators – 3-Way Inline

Solenoid



Remote Pilot



B4 3-Way Inline

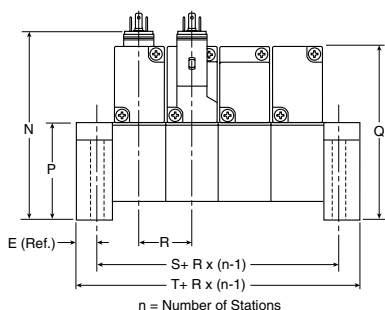
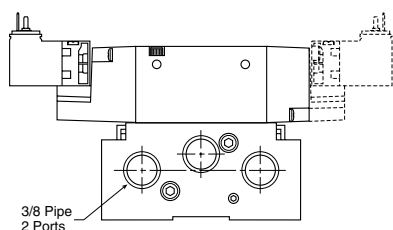
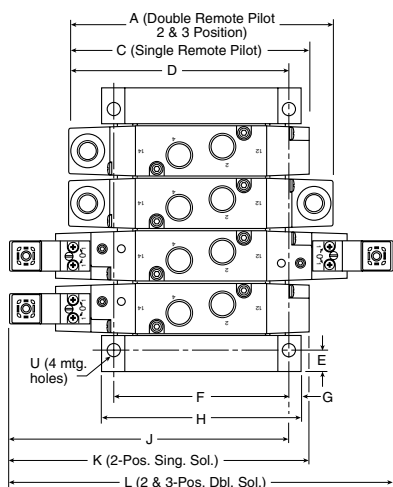
A	A ₁	A ₂	A ₃	B
5.39 (136,9)	7.01 (178,1)	4.22 (107,2)	4.69 (119,0)	2.15 (54,6)
B ₁	C	C ₁	D	D ₁
1.32 (33,5)	1.50 (38,0)	1.14 (29,0)	3.51 (89,2)	2.34 (59,5)
E	E ₁	F	G	G ₁
1.26 (32,0)	.63 (16,0)	.04 (1,0)	1.67 (42,4)	1.97 (50,0)
H	H ₁	J	J ₁	K
.98 (25,0)	.49 (12,5)	.71 (18,0)	.35 (9,0)	.09 (2,3)
L	M	M ₁	N	P
.14 (3,6)	.85 (21,5)	.42 (10,8)	.09 (2,2)	Ø.17 Ø(4,3)

Inches (mm)



B4

Single & Double Operators – 4-Way IEM Stackable



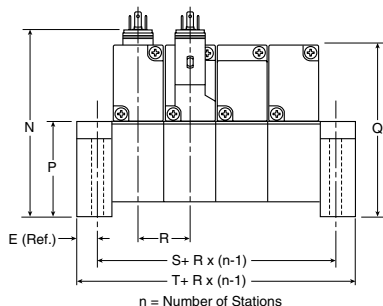
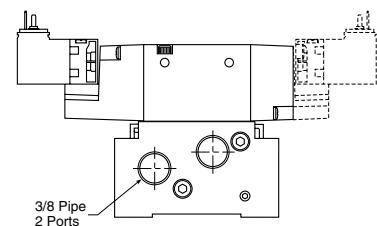
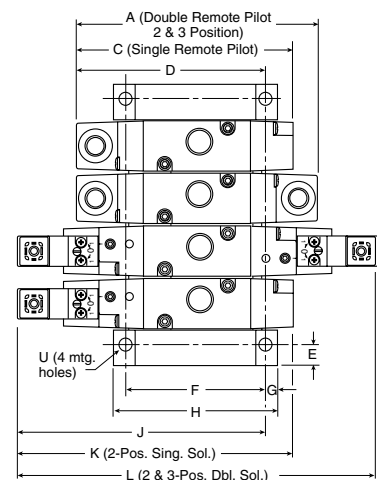
B4 4-Way IEM Stackable

A	C	D	E	F
5.17 (131,3)	4.70 (119,3)	4.32 (109,8)	.42 (10,7)	3.44 (87,5)
G	H	J	K	L
.24 (6,0)	3.92 (99,5)	5.47 (139,1)	5.87 (149,0)	7.49 (190,2)
N	P	Q	R	S
3.65 (92,7)	1.91 (48,5)	3.41 (86,5)	1.06 (26,8)	1.63 (41,5)
T	U			
2.47 (62,8)	.259 (6,6)			

Inches (mm)

B4

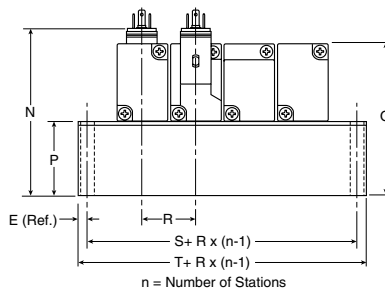
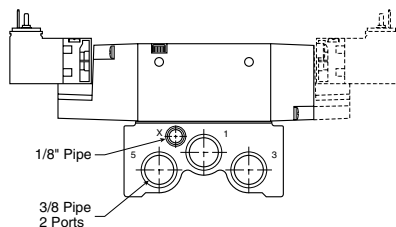
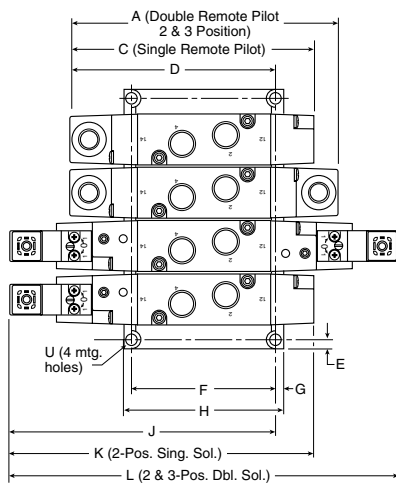
Single & Double Operators – 3-Way IEM Stackable



B4 3-Way IEM Stackable

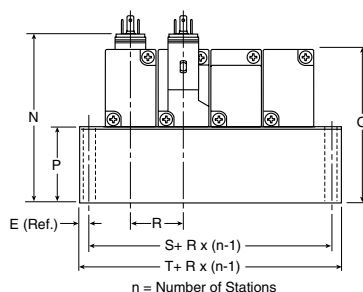
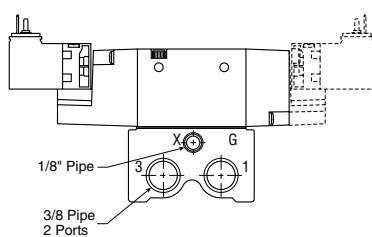
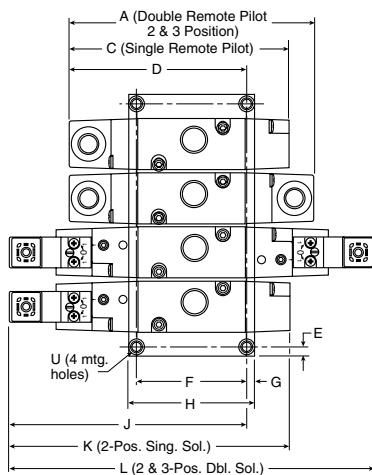
A	C	D	E	F
4.69 (119,0)	4.22 (107,2)	3.74 (95,0)	.42 (10,7)	2.80 (71,0)
G	H	J	K	L
.24 (6,0)	3.27 (83,0)	4.91 (124,7)	5.39 (136,9)	7.01 (178,1)
N	P	Q	R	S
3.65 (92,1)	1.91 (48,5)	3.41 (86,5)	1.06 (26,8)	1.63 (41,5)
T	U			
2.47 (62,8)	.259 (6,6)			

Inches (mm)

**B4****Single & Double Operators – 4-Way IEM Aluminum Bar****B4 4-Way IEM Aluminum Bar Manifold**

A 5.17 (131,3)	C 4.70 (119,3)	D 4.00 (101,8)	E .18 (4,6)	F 2.82 (71,6)
G .15 (3,8)	H 3.12 (79,3)	J 5.16 (131,1)	K 5.87 (149,0)	L 7.49 (190,2)
N 3.20 (81,5)	P 1.47 (37,3)	Q 2.97 (75,3)	R 1.07 (27,1)	S 1.58 (40,2)
T 1.94 (49,4)	U .208 (5,3)			

Inches (mm)

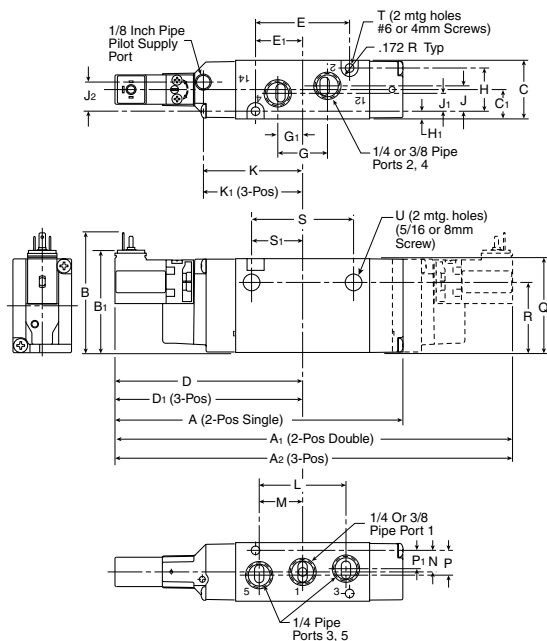
H**B4****Single & Double Operators – 3-Way IEM Aluminum Bar****B4 3-Way IEM Aluminum Bar Manifold**

A 4.69 (119,0)	C 4.22 (107,2)	D 3.42 (86,9)	E .18 (4,6)	F 2.16 (54,9)
G .15 (3,8)	H 2.46 (62,5)	J 4.60 (116,6)	K 5.39 (136,9)	L 7.01 (178,1)
N 3.20 (81,5)	P 1.47 (37,3)	Q 2.97 (75,3)	R 1.07 (27,1)	S 1.58 (40,2)
T 1.94 (49,4)	U .208 (5,3)			

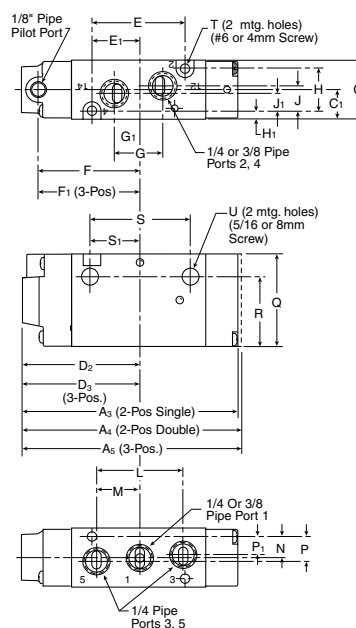
Inches (mm)

B5 Single & Double Operators – 4-Way Inline

Solenoid



Remote Pilot



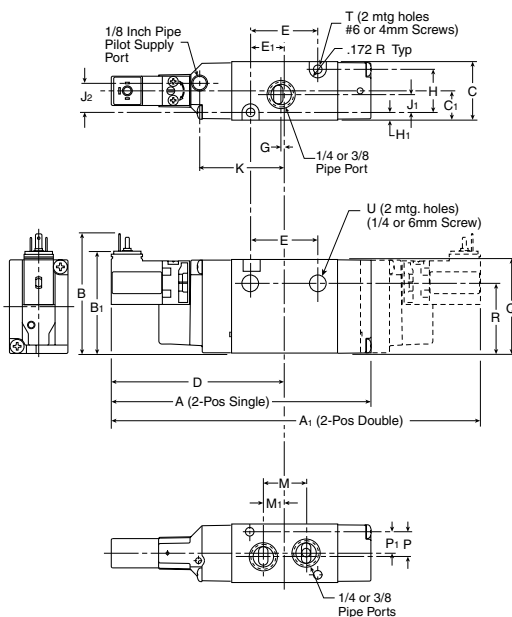
B5 4-Way Inline

A 5.78 (147)	A₁ 7.51 (191)	A₂ 8.45 (215)	A₃ 4.37 (110)	A₄ 4.70 (119)
A₅ 5.64 (143)	B 2.41 (61)	B₁ 2.06 (52)	C 1.18 (30)	C₁ .59 (15)
D 3.76 (96)	D₁ 4.23 (107)	D₂ 2.35 (60)	D₃ 2.82 (72)	E 1.89 (48)
E₁ .95 (24)	F 2.01 (51)	F₁ 2.47 (63)	G 1.00 (25)	G₁ .50 (13)
H .87 (22)	H₁ .16 (4)	J .51 (13)	J₁ .36 (9)	J₂ .58 (15)
K 2.00 (51)	K₁ 2.47 (63)	L 1.75 (44)	M .88 (22)	N .43 (48)
P .50 (13)	P₁ .37 (92)	Q 1.89 (48)	R 1.41 (36)	S 2.05 (52)
S₁ 1.03 (26)	T Ø .177 Ø (4.5)	U Ø .34 Ø (9)		

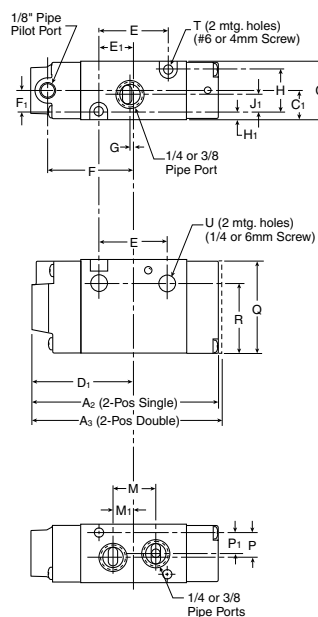
Inches (mm)

B5 Single & Double Operators – 3-Way Inline

Solenoid



Remote Pilot



B5 3-Way Inline

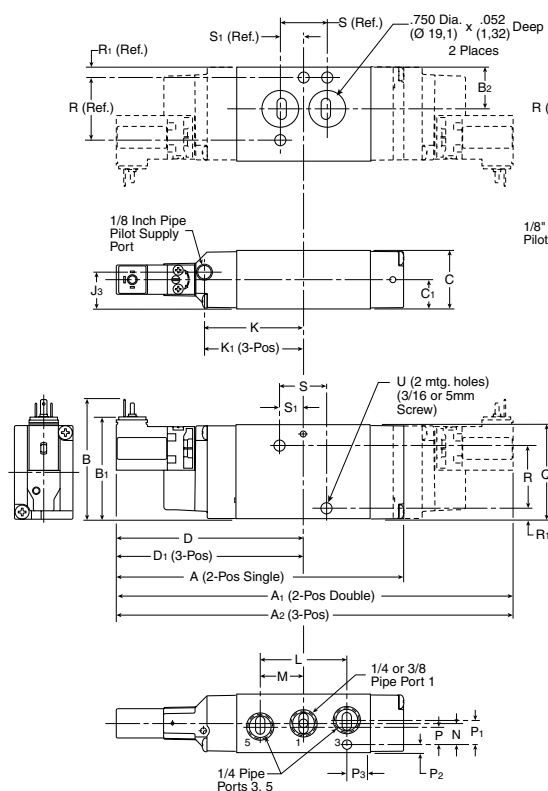
A 5.29 (134)	A₁ 7.03 (179)	A₂ 3.88 (99)	A₃ 4.21 (107)	B 2.41 (61)
B₁ 2.06 (52)	C 1.18 (30)	C₁ .59 (15)	D 3.43 (87)	D₁ 2.11 (54)
E 1.40 (36)	E₁ .70 (18)	F 1.77 (45)	F₁ .43 (11)	G .06 (2)
H .87 (22)	H₁ .16 (4)	J₁ .36 (9)	J₂ .58 (15)	K 1.67 (42)
M .88 (22)	M₁ .44 (11)	P .50 (13)	P₁ .37 (9)	Q 1.89 (48)
R 1.41 (36)	T Ø .177 Ø (4.5)	U Ø .26 Ø (6.6)		

Inches (mm)

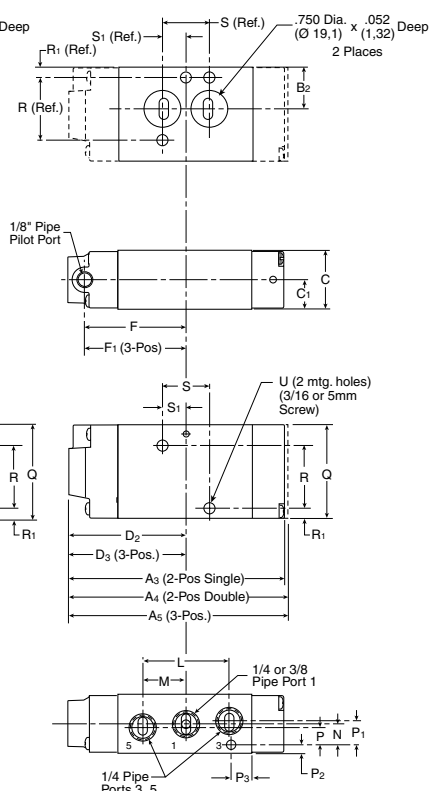
B5

Single & Double Operators – 4-Way NAMUR Mount

Solenoid



Remote Pilot



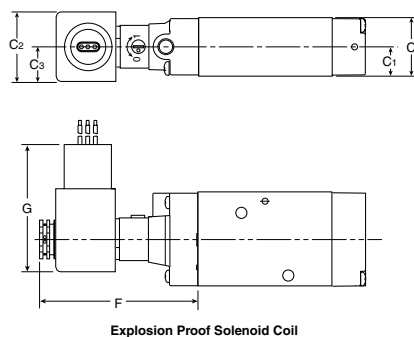
B5 4-Way NAMUR Mount

A	A ₁	A ₂	A ₃	A ₄
5.78 (147)	7.51 (191)	8.45 (215)	4.37 (110)	4.70 (119)
A ₅	B	B ₁	B ₂	C
5.64 (143)	2.41 (61)	2.06 (52)	.84 (21)	1.18 (30)
C ₁	D	D ₁	D ₂	D ₃
.59 (15)	3.76 (96)	4.23 (107)	2.35 (60)	2.82 (72)
F	F ₁	J ₃	K	K ₁
2.01 (51)	2.47 (63)	.74 (19)	2.00 (51)	2.47 (63)
L	M	N	P	P ₁
1.75 (44)	.88 (22)	.44 (11)	.37 (9.4)	.50 (13)
P ₂	P ₃	Q	R	R ₁
.16 (4)	.40 (10)	1.89 (48)	1.26 (32)	.21 (5)
S	S ₁	U		
.94 (24)	.47 (12)	Ø .224 Ø (5.7)		

Inches (mm)

B5

Alternative Electrical Enclosure Option F



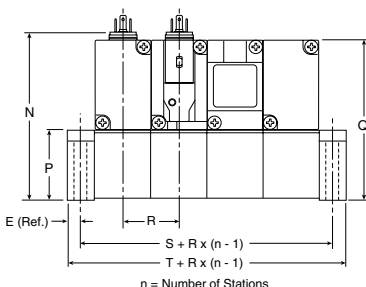
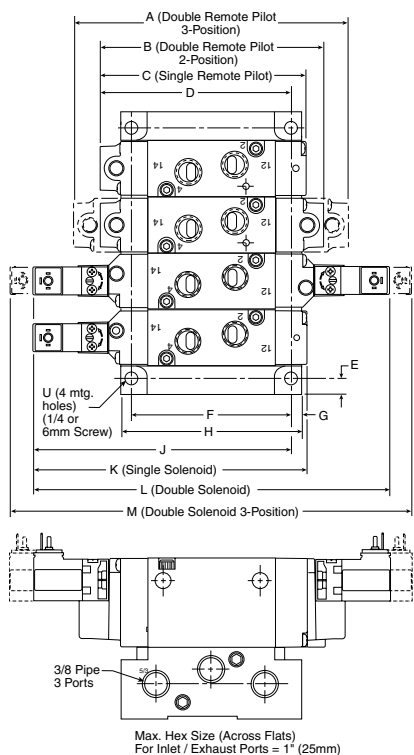
B5 4-Way NAMUR Mount with Option F Enclosure

C	C ₁	C ₂	C ₃	F
1.18 (30)	.59 (15)	1.42 (36)	.71 (18)	3.15 (80)
G				
2.60 (66)				

Inches (mm)

B5

Single & Double Operators – 4-Way IEM Stackable



B5 4-Way IEM Stackable

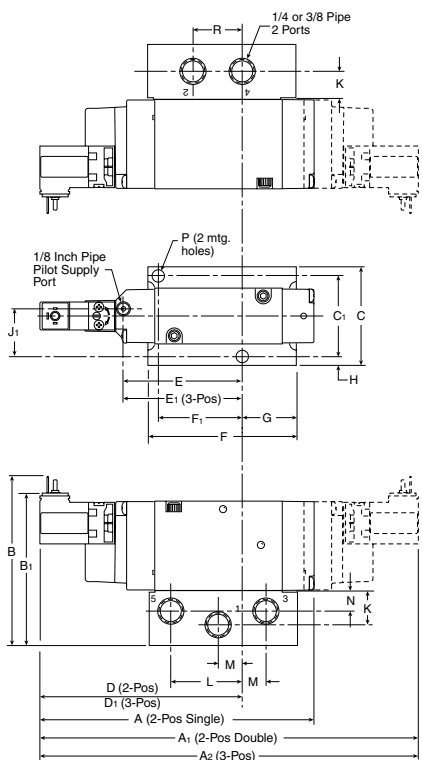
A	B	C	D	E
5.64 (143,3)	4.70 (119,4)	4.37 (110,0)	4.29 (109,0)	.29 (7,4)
F	G	H	J	K
3.44 (87,4)	.24 (6,1)	3.92 (99,6)	5.48 (139,2)	5.78 (146,8)
L	M	N	P	Q
7.52 (191,0)	8.46 (214,9)	3.56 (90,4)	1.50 (38,1)	3.42 (86,9)
R	S	T	U	
1.21 ± .01 (30,7) ± (.3)	1.79 (45,5)	2.37 (60,2)	Ø .28 Ø (7,1)	

Inches (mm)

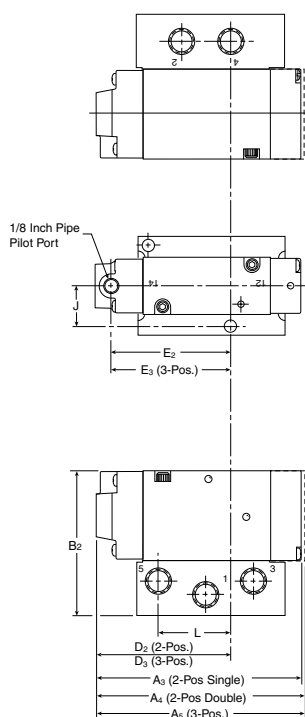
B5

Single & Double Operators – 4-Way Single Subbase

Solenoid



Remote Pilot



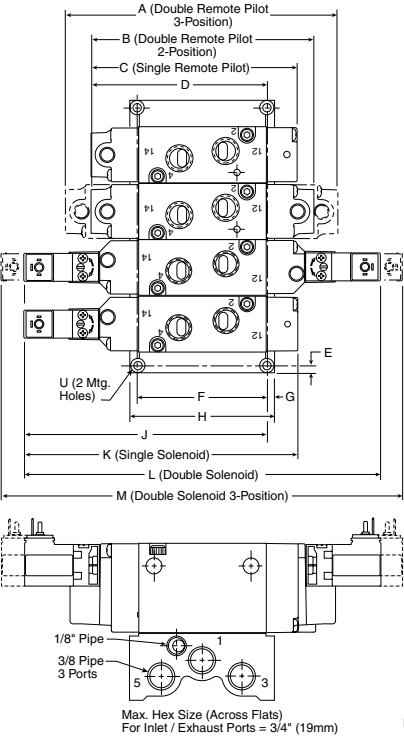
B5 4-Way Subbase

A	A ₁	A ₂	A ₃	A ₄
5.78 (147)	7.52 (191)	8.46 (215)	4.37 (110)	4.70 (119)
A ₅	B	B ₁	B ₂	C
5.64 (143)	3.56 (90)	3.21 (82)	3.03 (77)	2.12 (54)
C ₁	D	D ₁	D ₂	D ₃
1.69 (43)	4.26 (108)	4.73 (120)	2.85 (72)	3.32 (40)
E	E ₁	E ₂	E ₃	F
2.51 (65)	2.98 (76)	2.60 (66)	3.07 (80)	2.90 (74)
F ₁	G	H	J	J ₁
1.69 (43)	.95 (24)	.22 (5)	.84 (21)	.99 (25)
K	L	M	N	P
.71 (18)	1.50 (38)	.50 (13)	.46 (12)	Ø .27 Ø (7)
R				
1.00 (25)				

Inches (mm)

B5

Single & Double Operators – 4-Way IEM Aluminum Bar



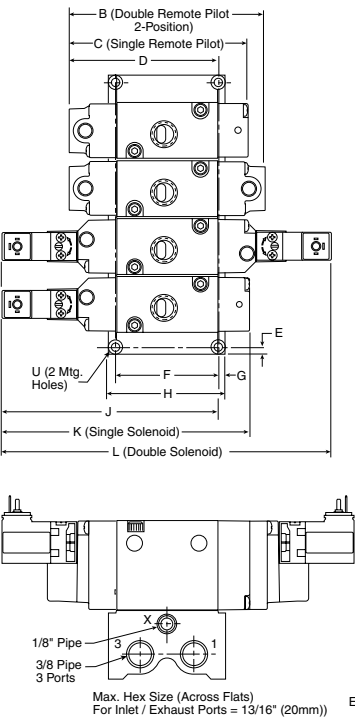
B5 4-Way IEM Aluminum Bar Manifold

A	B	C	D	E
5.64 (143,3)	4.70 (119,4)	4.37 (110,0)	3.74 (95,0)	.18 (4,6)
F	G	H	J	K
2.78 (70,6)	.17 (4,3)	3.12 (79,2)	5.15 (130,8)	5.78 (146,8)
L	M	N	P	Q
7.52 (191,0)	8.46 (214,9)	3.50 (89,0)	1.44 (36,6)	3.36 (85,3)
R	S	T	U	
1.26 (32,0)	1.78 (45,2)	2.14 (54,4)	Ø .22 Ø (5,5)	

Inches (mm)

B5

Single & Double Operators – 3-Way IEM Aluminum Bar



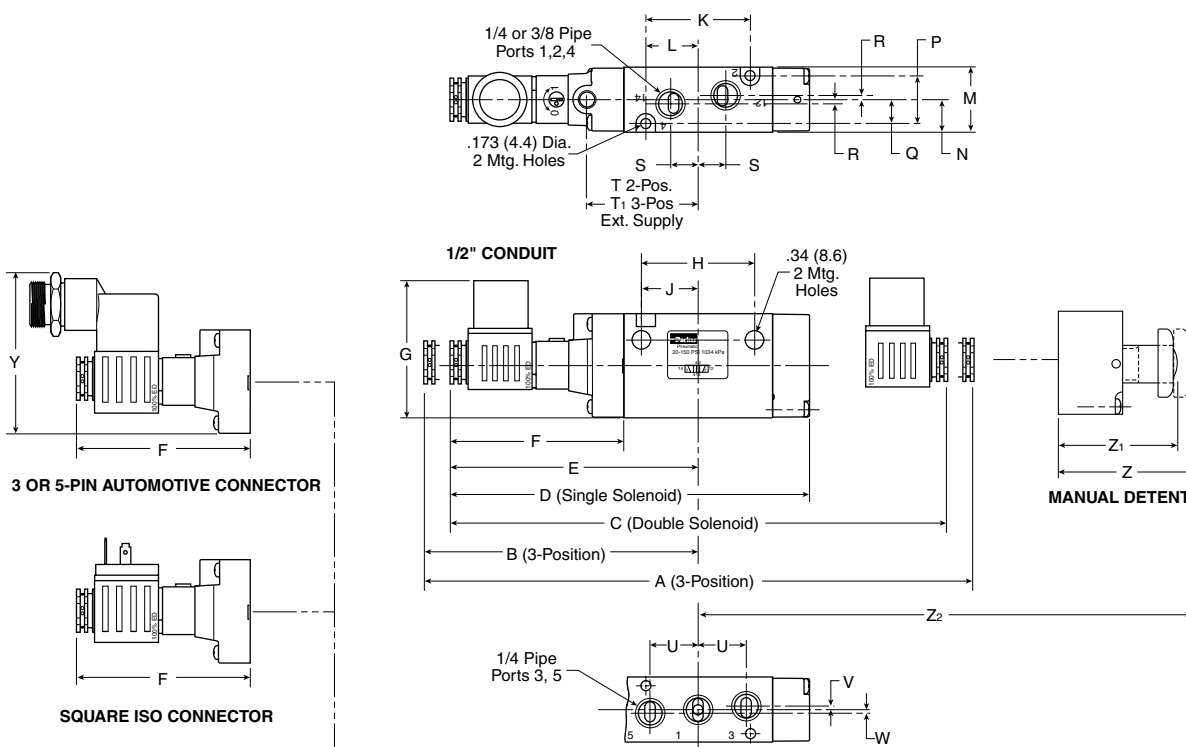
B5 3-Way IEM Aluminum Bar Manifold

B	C	D	E	F
4.21 (106,9)	3.88 (98,6)	3.41 (86,6)	.18 (4,6)	2.12 (53,8)
G	H	J	K	L
.17 (4,3)	2.46 (62,5)	4.82 (122,4)	5.29 (134,4)	7.03 (178,6)
N	P	Q	R	S
3.50 (89,0)	1.44 (36,6)	3.36 (85,3)	1.26 (32,0)	1.76 (44,7)
T	U			
2.12 (53,8)	Ø .18 Ø (4,6)			

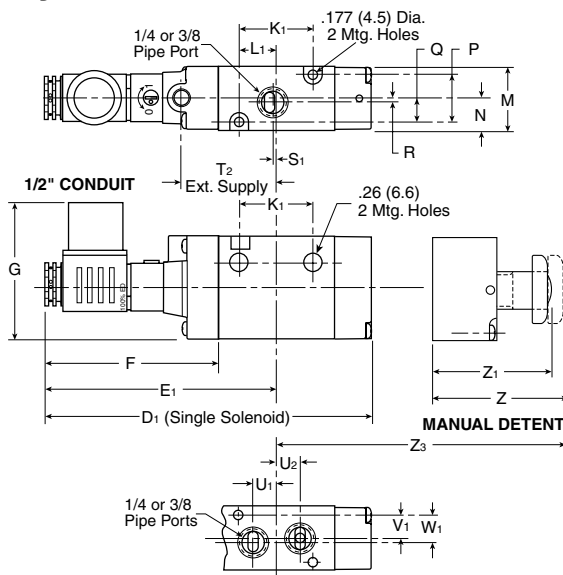
Inches (mm)

B5

4-Way Alternative Electrical Enclosures



3-Way Alternative Electrical Enclosures



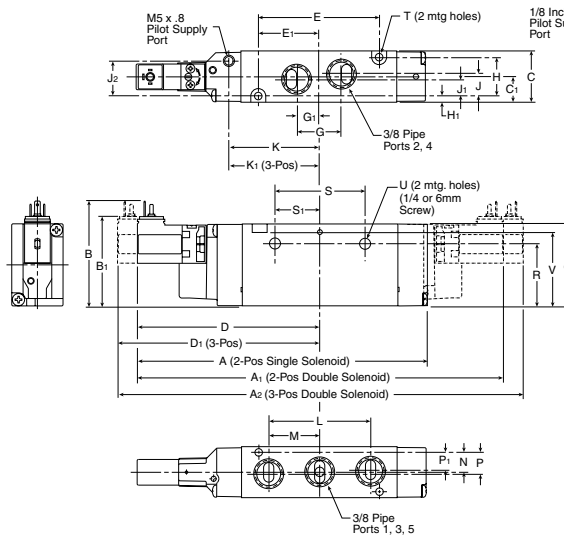
B5 Alternative – Electrical Enclosures, Inches (mm)

A	A ₁	B	C	D	D ₁	E	E ₁	F	G	H	J	K
9.94 (252,5)	.872 (221,4)	4.97 (126,2)	9.00 (228,6)	6.52 (165,6)	6.02 (152,9)	4.50 (114,3)	4.26 (108,1)	3.15 (80,0)	2.47 (62,8)	2.05 (52,1)	1.03 (26,2)	1.89 (48,0)
K ₁	L	L ₁	M	N	P	Q	R	S	S ₁	T	T ₁	T ₂
1.40 (35,5)	.95 (24,1)	.70 (17,8)	1.18 (30,0)	.59 (15,0)	.87 (22,1)	.43 (10,9)	.08 (2,0)	.50 (12,7)	.06 (1,5)	2.01 (51,1)	2.47 (62,7)	1.76 (44,8)
U	U ₁	U ₂	V	V ₁	W	W ₁	Y	Z	Z ₁	Z ₂	Z ₃	
.87 (22,1)	.43 (10,9)	.45 (11,3)	.06 (1,5)	.37 (9,3)	.07 (1,8)	.50 (13)	2.90 (73,6)	2.40 (60,9)	2.12 (53,8)	3.75 (95,2)	4.17 (105,8)	

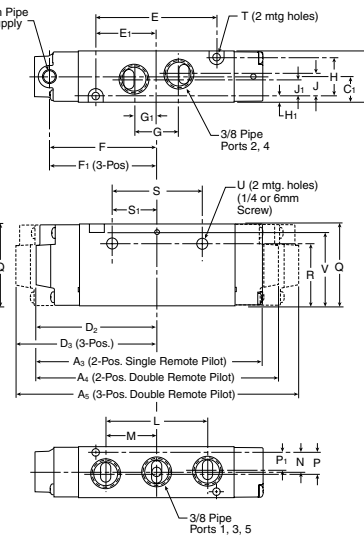
B6

Single & Double Operators – 4-Way Inline

Solenoid



Remote Pilot



B6 4-Way Inline

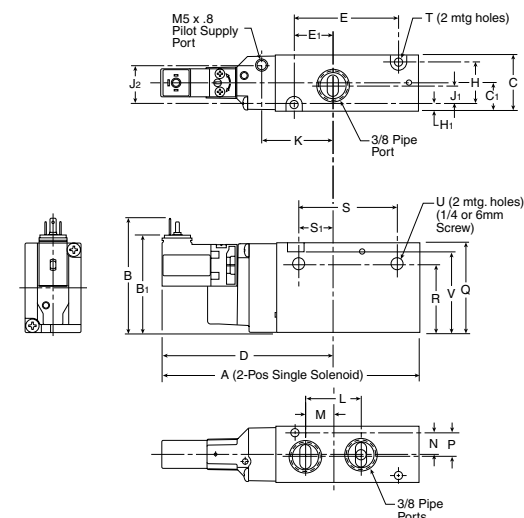
A 6.67 (169,5)	A₁ 8.41 (213,7)	A₂ 9.35 (237,6)	A₃ 5.26 (133,7)	A₄ 5.59 (142,1)
A₅ 6.54 (166,0)	B 2.41 (61,3)	B₁ 2.06 (52,3)	C 1.18 (30,0)	C₁ .59 (15,0)
D 4.21 (106,8)	D₁ 4.68 (118,8)	D₂ 2.80 (71,0)	D₃ 3.27 (83,0)	E 2.79 (70,8)
E₁ 1.39 (35,4)	F 2.45 (62,3)	F₁ 2.92 (74,3)	G 1.03 (26,1)	G₁ .51 (13,1)
H .91 (23,0)	H₁ .14 (3,5)	J .51 (13,1)	J₁ .39 (10,0)	J₂ .81 (20,6)
K 2.09 (53,0)	K₁ 2.56 (64,9)	L 2.34 (59,4)	M 1.17 (29,7)	N .45 (11,5)
P .49 (12,5)	P₁ .41 (10,5)	Q 1.89 (48,0)	R 1.45 (36,8)	S 2.09 (53,0)
S₁ 1.04 (26,5)	T Ø .17 Ø (4,4)	U Ø .27 Ø (6,9)	V 1.69 (43,0)	

Inches (mm)

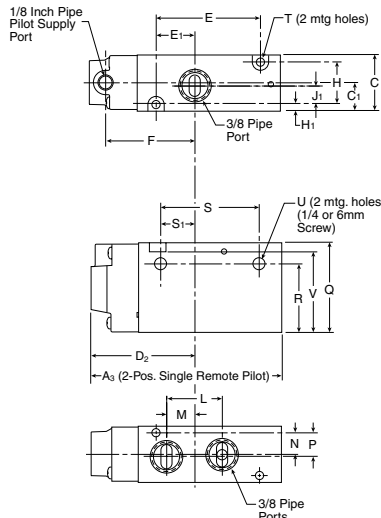
B6

Single Operators – 3-Way Inline

Solenoid



Remote Pilot



B6 3-Way Inline

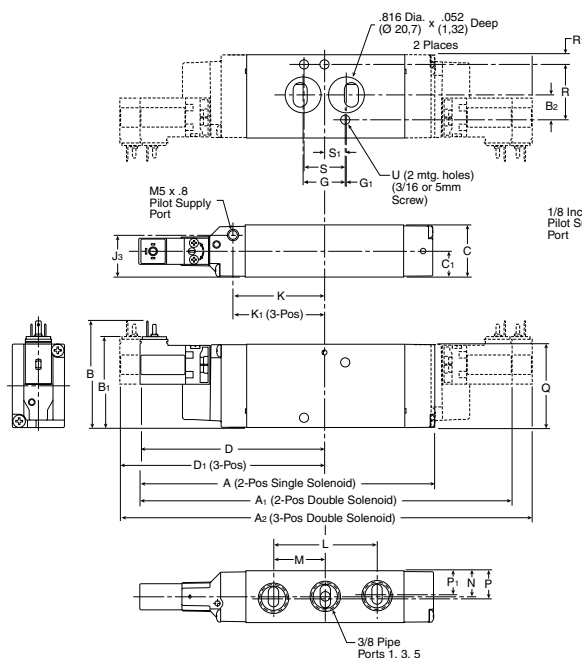
A 5.42 (137,7)	A₃ 4.01 (101,9)	B 2.41 (61,3)	B₁ 2.06 (52,3)	C 1.18 (30,0)
C₁ .59 (15,0)	D 3.63 (92,1)	D₂ 2.22 (56,3)	E 2.19 (55,6)	E₁ 0.82 (20,7)
F 1.87 (47,6)	H .91 (23,0)	H₁ .14 (3,5)	J₁ .39 (10,0)	J₂ .81 (20,6)
K 1.51 (38,3)	L 1.17 (29,7)	M .59 (15,0)	N .45 (11,5)	P .49 (12,5)
Q 1.89 (48,0)	R 1.45 (36,8)	S 2.09 (53,0)	S₁ 0.76 (19,4)	T Ø .17 Ø (4,4)
U Ø .27 Ø (6,9)	V 1.69 (43,0)			

Inches (mm)

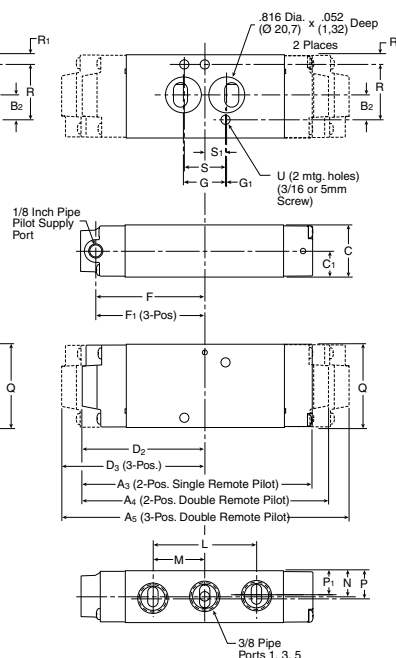
B6

Single & Double Operators – 4-Way NAMUR Mount

Solenoid



Remote Pilot



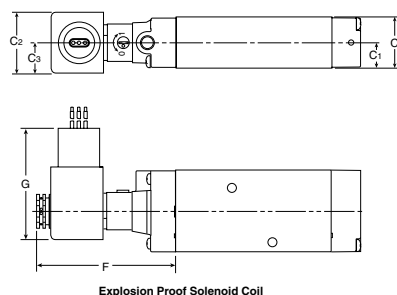
B6 4-Way NAMUR Mount

A	A ₁	A ₂	A ₃	A ₄
6.67 (169,5)	8.41 (213,7)	9.35 (237,6)	5.26 (133,7)	5.59 (142,1)
A ₅	B	B ₁	B ₂	C
6.54 (166,0)	2.41 (61,3)	2.06 (52,3)	.57 (14,4)	1.18 (30,0)
C ₁	D	D ₁	D ₂	D ₃
.59 (15)	4.21 (106,8)	4.68 (118,8)	2.80 (71,0)	3.27 (83,0)
F	F ₁	G	G ₁	J ₃
2.45 (62,3)	2.92 (74,3)	.95 (24,2)	.02 (0,53)	.95 (24,1)
K	K ₁	L	M	N
2.09 (53,0)	2.56 (64,9)	2.34 (59,4)	1.17 (29,7)	.59 (15)
P	P ₁	Q	R	R ₁
.63 (16)	.55 (14)	1.89 (48,0)	1.26 (32)	.22 (5,5)
S	S ₁	T	U	
.94 (24)	.47 (12)	Ø .17 (4,4)	Ø .27 (6,9)	

Inches (mm)

B6

Alternative Electrical Enclosure Option F



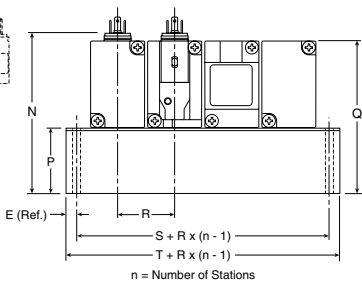
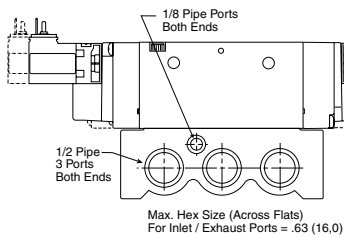
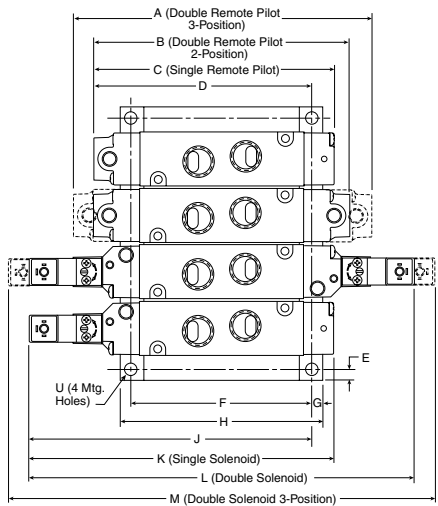
B5 4-Way NAMUR Mount with Option F Enclosure

C	C ₁	C ₂	C ₃	F
1.18 (30)	.59 (15)	1.42 (36)	.71 (18)	3.15 (80)
G				
2.60 (66)				

Inches (mm)

B6

Single & Double Operators – 4-Way IEM Aluminum Bar



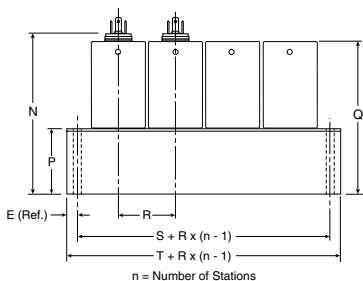
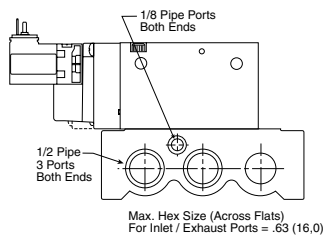
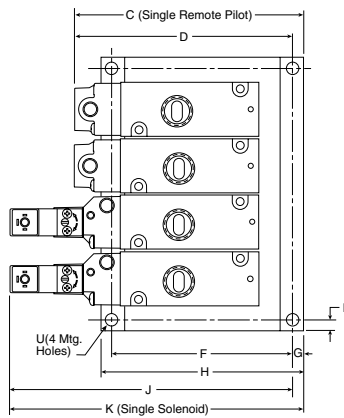
B6 4-Way IEM Aluminum Bar Manifold

A	B	C	D	E
6.54 (166,0)	5.59 (142,1)	5.26 (133,7)	4.76 (121,0)	.24 (6,0)
F	G	H	J	K
3.94 (100,0)	.24 (6,0)	4.41 (112,0)	6.17 (156,8)	6.67 (169,5)
L	M	N	P	Q
8.41 (213,7)	9.35 (237,6)	3.60 (91,3)	1.54 (39,0)	3.43 (87,0)
R	S	T	U	
1.24 (31,5)	1.77 (45,0)	2.24 (57,0)	Ø .26 Ø (6,5)	

Inches (mm)

B6

Single Operators – 3-Way IEM Aluminum Bar



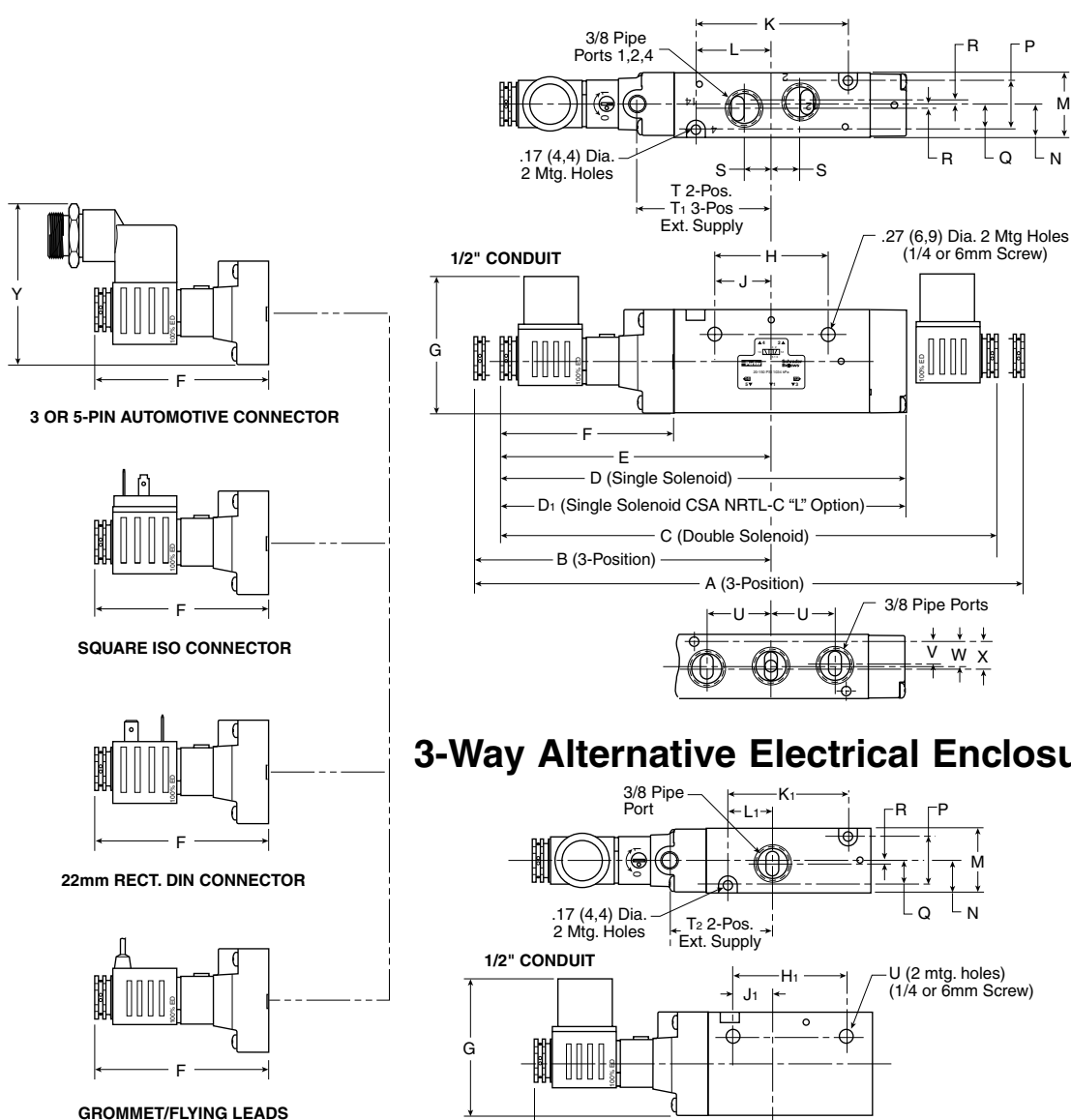
B6 3-Way IEM Aluminum Bar Manifold

C	D	E	F	G
5.00 (127,0)	4.76 (121,0)	.24 (6,0)	3.94 (100,0)	.24 (6,0)
H	J	K	N	P
4.41 (112,0)	6.17 (156,8)	6.41 (162,8)	3.60 (91,3)	1.54 (39,0)
Q	R	S	T	U
3.43 (87,0)	1.24 (31,5)	1.77 (45,0)	2.24 (57,0)	Ø .26 Ø (6,5)

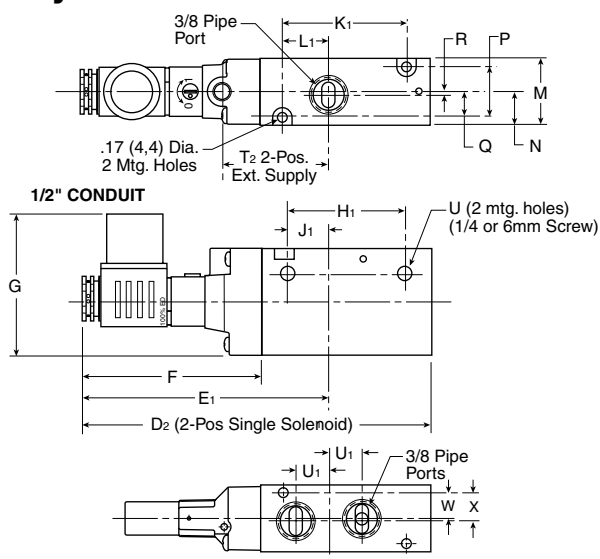
Inches (mm)

B6

4-Way Alternative Electrical Enclosures



3-Way Alternative Electrical Enclosures

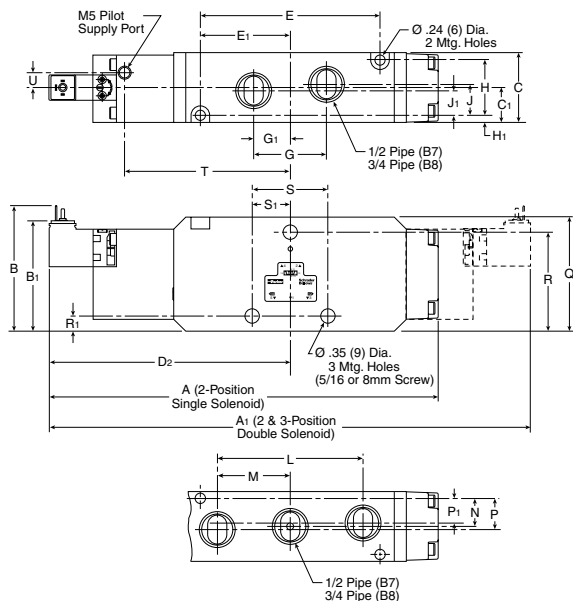


B6 Alternative – Electrical Enclosures, Inches (mm)

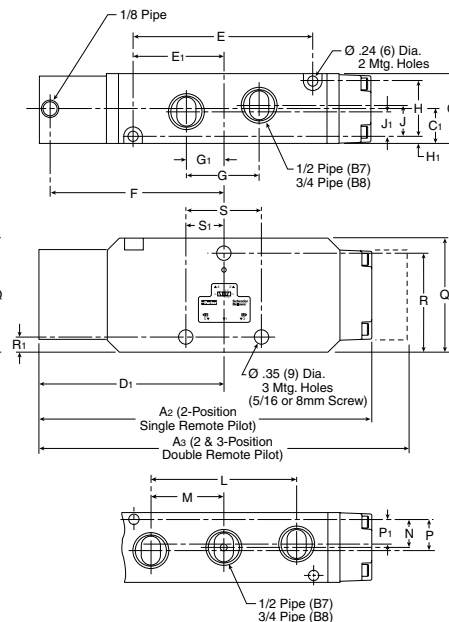
A	B	C	D	D ₁	D ₂	E	E ₂	F	G	H	H ₁	J
10.84 (275,3)	5.41 (137,5)	9.89 (251,3)	7.41 (188,2)	7.74 (196,6)	6.17 (156,6)	4.94 (125,6)	4.37 (111,0)	3.15 (80,0)	2.47 (62,8)	2.09 (53,0)	2.09 (53,0)	1.04 (26,5)
J ₁	K	K ₁	L	L ₁	M	N	P	Q	R	S	T	T ₁
0.76 (19,4)	2.79 (70,8)	2.19 (55,6)	1.39 (35,4)	.82 (20,7)	1.18 (30,0)	.59 (15,0)	.91 (23,0)	.45 (11,5)	.06 (1,6)	.51 (13,1)	2.45 (62,3)	2.93 (29,7)
T ₂	U	U ₁	V	W	X	Y						
1.89 (48,0)	.59 (15,0)	.59 (15,0)	.41 (10,5)	.45 (11,5)	.49 (12,5)	2.90 (73,6)						

B7 **B8** **Single & Double Operators – 4-Way Inline**

Solenoid



Remote Pilot



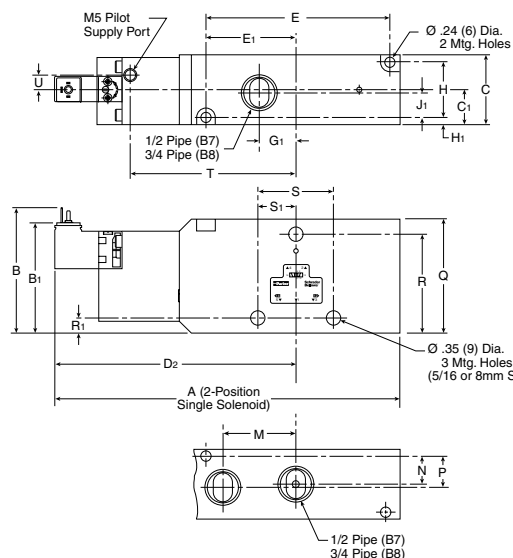
B7 & B8 4-Way Inline

A	A ₁	A ₂	A ₃
9.13 (232)	11.29 (287)	7.79 (198)	8.62 (219)
B	B ₁	C	C ₁
2.95 (75)	2.59 (66)	1.65 (42)	.83 (21)
D ₁	D ₂	E	E ₁
4.29 (109)	5.63 (143)	4.21 (107)	2.13 (54)
F	G	G ₁	H
4.06 (103)	1.73 (44)	.87 (22)	1.29 (33)
H ₁	J	J ₁	L
.16 (4)	.75 (19)	.59 (15)	3.39 (86)
M	N	P	P ₁
1.69 (43)	.67 (17)	.75 (19)	.59 (15)
Q	R	R ₁	S
2.68 (68)	2.32 (59)	.35 (9)	1.81 (46)
S ₁	T	U	
.90 (23)	3.94 (100)	.35 (9)	

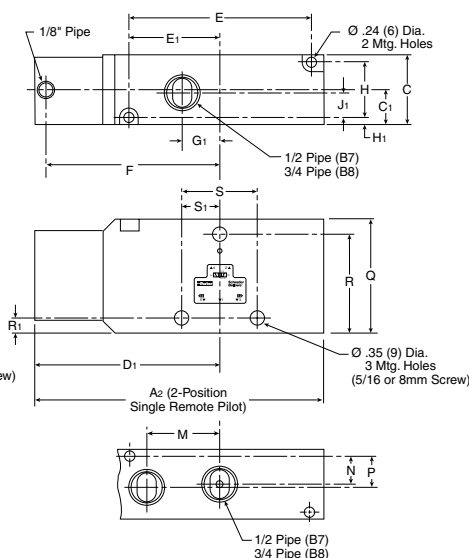
Inches (mm)

B7 **B8** **Single Operators – 3-Way Inline**

Solenoid



Remote Pilot



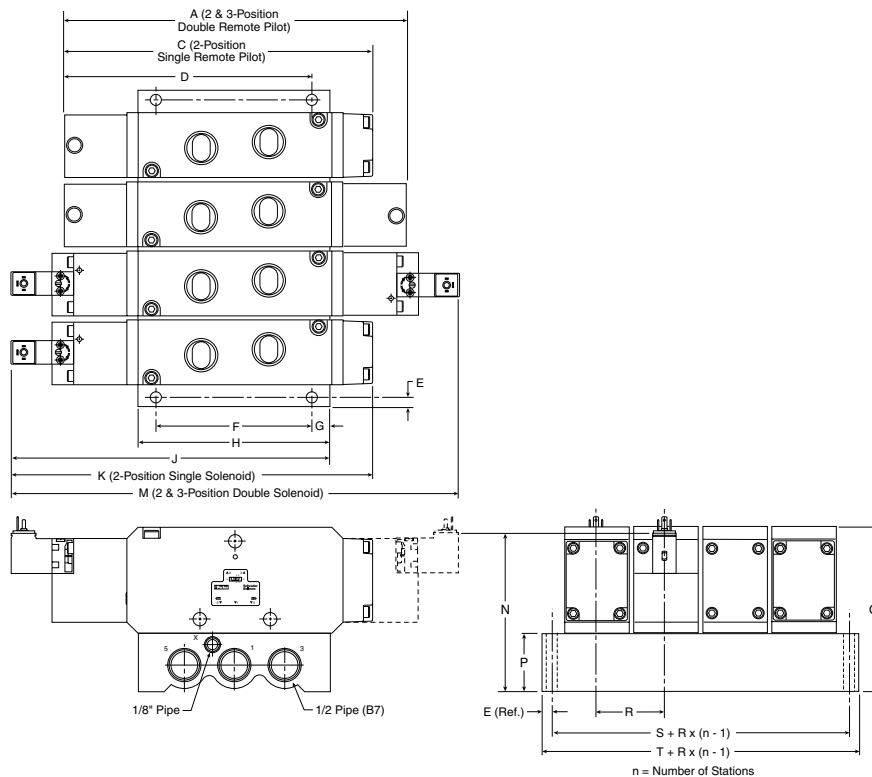
B7 & B8 3-Way Inline

A	A ₂	B	B ₁
7.99 (203)	6.65 (169)	2.95 (75)	2.59 (66)
C	C ₁	D ₁	D ₂
1.65 (42)	.83 (21)	4.29 (109)	5.63 (143)
E	E ₁	F	G ₁
4.21 (107)	2.13 (54)	4.06 (103)	.86 (22)
H	H ₁	J ₁	M
1.29 (33)	.16 (4)	.59 (15)	1.69 (43)
N	P	Q	R
.67 (17)	.75 (19)	2.68 (68)	2.32 (59)
R ₁	S	S ₁	T
.35 (9)	1.81 (46)	.90 (23)	3.94 (100)
U			
.35 (9)			

Inches (mm)

B7
B8

Single & Double Operators – 4-Way IEM Aluminum Bar



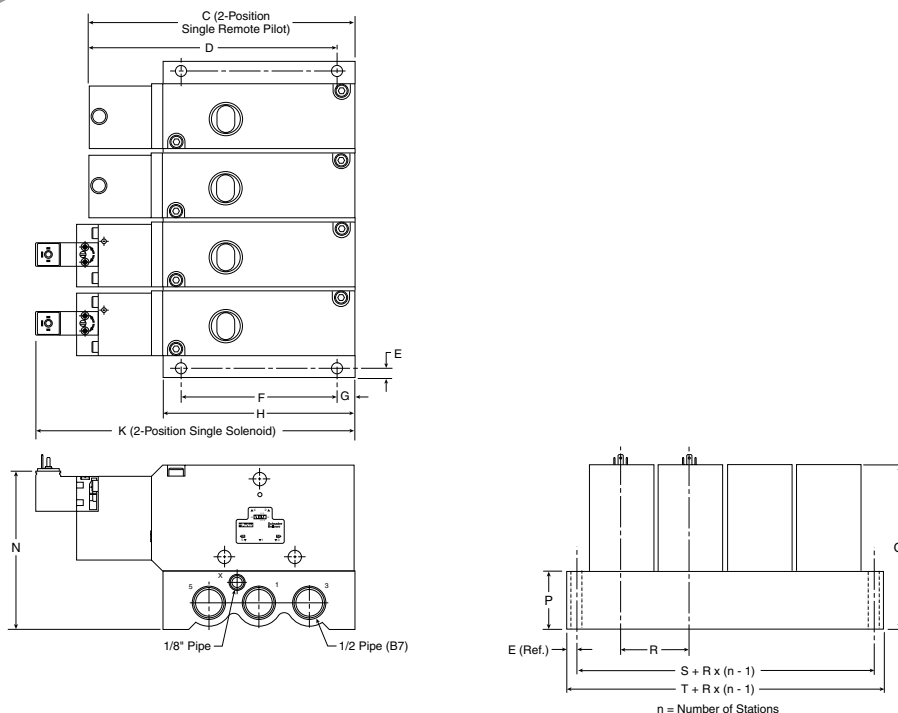
B7 & B8 4-Way IEM Aluminum Bar Manifold

A 7.79 (198)	C 8.62 (219)	D 6.26 (159)	E .24 (6)
F 3.94 (100)	G .45 (11,5)	H 4.84 (123)	J 8.07 (205)
K 9.13 (232)	M 11.29 (287)	N 4.00 (101,5)	P 1.48 (37.5)
Q 4.15 (105,5)	R 1.77 (45)	S 2.24 (57)	T 2.72 (69)

Inches (mm)

B7
B8

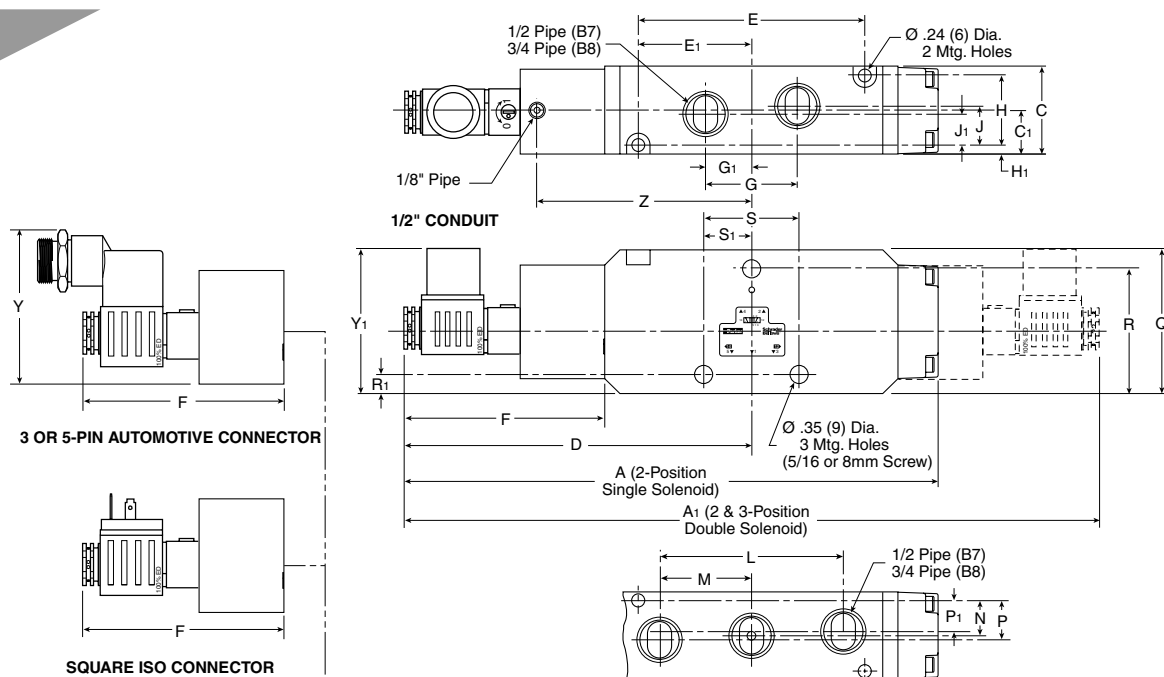
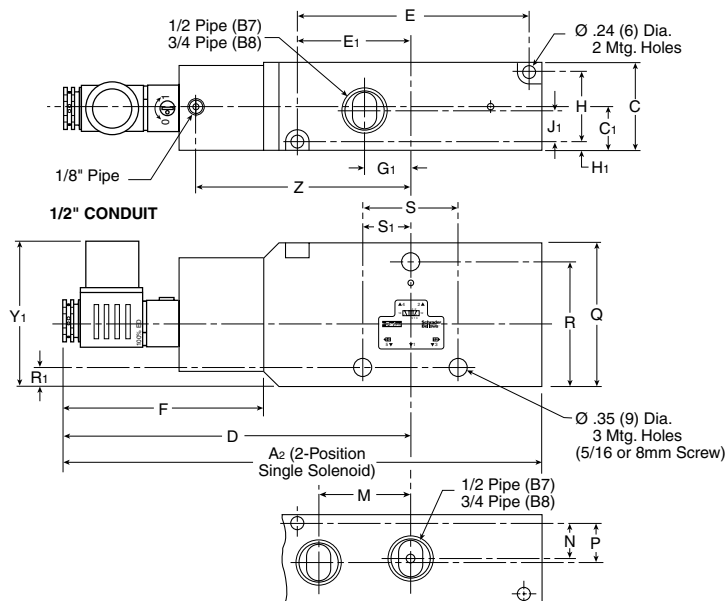
Single Operators – 3-Way IEM Aluminum Bar



B7 & B8 3-Way IEM Aluminum Bar Manifold

C 6.65 (169)	D 4.92 (124,9)	E .24 (6)	F 3.94 (100)
G .45 (11,5)	H 4.84 (123)	K 7.99 (203)	N 4.00 (101,5)
P 1.48 (37,5)	Q 4.15 (105,5)	R 1.77 (45)	S 2.24 (57)
T 2.72 (69)			

Inches (mm)

B7**B8****4-Way Alternative Electrical Enclosures****3-Way Alternative Electrical Enclosures****B7 & B8 4-Way Alternative – Electrical Enclosures, Inches (mm)**

A	A ₁	A ₂	C	C ₁	D	E	E ₁	F	G	G ₁	H	H ₁
9.92 (252)	12.91 (328)	8.78 (223)	1.65 (42)	.83 (21)	6.46 (164)	4.21 (107)	2.13 (54)	3.74 (95)	1.73 (44)	.86 (22)	1.29 (33)	.16 (4)
J	J ₁	L	M	N	P	P ₁	Q	R	R ₁	S	S ₁	Y
.75 (19)	.59 (15)	3.39 (86)	1.69 (43)	.67 (17)	.75 (19)	.59 (15)	2.68 (68)	2.32 (59)	.35 (9)	1.81 (46)	.90 (23)	2.87 (73)
Y ₁	Z											
2.71 (69)	3.98 (101)											

Definitions

CSA NRTL-C	Canadian Standards Association and UL Applicable. (See page 22)
IP65	International classification system for sealing effectiveness for enclosures of electrical equipment. IP stands for "Ingress Protection" and the two digits <u>XY</u> stand for: X - protection from solid objects and Y - protection from moisture. IP 65 is protection from dust and water washdown.
NEMA 4	National standard for electrical enclosure protection. NEMA 4 provides protection against dirt, dust, water hosedown and rain. (Similar to IP 65)
DIN 43650C	International standard for the 15mm 3-Pin connector. The pin spacing is 8mm.
3-WAY	Valve has three ways for air to flow. Also designated as 3/2.
4-WAY	Valve has four ways for air to flow. Also designated as 5/2 for 2-Position and 5/3 for 3-Position.
NC	Normally Closed. Pressure is blocked when in neutral position. (Normally Non-Passing)
NO	Normally Open. Pressure passes thru when in neutral position. (Normally Passing)
IEM	Inlet / Exhaust manifold. The inlet and exhaust ports are located in the manifold. The cylinder ports are accessed in the valve.
5-Port Subbase Bar Manifold	Manifold that includes the inlet and outlet ports as well as the #2 & #4 cylinder ports. Utilizes a subbase valve less base.
NLMOR	Non-Locking Manual Override. A constant actuation must be maintained for the valve to remain shifted.
LMOR	Locking Manual Override. Valve remains shifted without constant end user override actuation.
Surge Suppression	Nullifies reverse EMF generated when a solenoid is de-energized.
SCFM	Measure of air flow. Standard Cubic Feet per Minute at 68°F and 36% humidity at sea level.
PSIG	Pounds per Square Inch measured with a gage. (Catalog pressure reflects PSIG)
PSIA	Pounds per Square Inch atmospheric.
kPa	Kilopascals. International measure of pressure. 145 PSIG = 1000 kPa
PSIG = 0 → PSIA = 14.7 → In. of Hg = 29.92 → kPa = 0	

Product Shipping Weights

Series	Single Solenoid	3-Position Solenoid	Manifold Stackable	Subbase	End Plate
B2	.20	.30	—	—	—
B3	.25	.35	.20	.60	.50
B4	.50	.60	.20	—	—
B5	.70	.80	.20	.80	.70
B6	1.8	2.4	—	—	—
B7	2.5	2.9	—	—	—
B8	2.5	2.9	—	—	—

Weights are in pounds and are approximate.

C_v Calculations

C_v Measure of calculating flow of a valve (or other pneumatic device) that takes into effect the temperature, pressure, pressure drop, and flow. As a rule of thumb, a C_v of 1.0 is 25 SCFM with a 5 PSIG pressure drop.

$$C_v = \frac{\text{Cylinder Area (Sq. In.)} \times \text{Stroke (In.)} \times \text{Compression Factor (Table 1)}}{\text{Stroke Time (sec.)} \times 28.8}$$

Table 1

Compression Factors and "A" Constants

Inlet Pressure (PSIG)	Compression Factor	"A" Constants for Various Pressure Drop*		
		2 PSI Δ P	5 PSI Δ P	10 PSI Δ P
10	1.6	.155	.102	
20	2.3	.129	.083	.066
30	3.0	.113	.072	.055
40	3.7	.097	.064	.048
50	4.4	.091	.059	.043
60	5.1	.084	.054	.040
70	5.7	.079	.050	.037
80	6.4	.075	.048	.035
90	7.1	.071	.045	.033
100	7.8	.068	.043	.031
110	8.5	.065	.041	.030
120	9.2	.062	.039	.029
130	9.9	.060	.038	.028
140	10.6	.058	.037	.027
150	11.2	.056	.036	.026
160	11.9	.055	.035	.026
170	12.6	.054	.034	.025
180	13.3	.052	.033	.024
190	14.0	.051	.032	.024
200	14.7	.050	.031	.023

Note: Use "A" constant at 5 PSI Δ P for most applications. On very critical applications, use "A" at 2 PSI Δ P. You will find in many cases, a 10 PSI Δ P is not detrimental, and can save money and mounting space.

* Tabulated values are the solution of $\frac{1}{22.48} \sqrt{\frac{GT}{(P_1 - P_2) P_2}}$ where T is for 68°F and G = 1 for Air.

Table 2

Effective Square-Inch Areas for Standard-Bore-Size Cylinders

Bore Size	Cylinder Area (Sq. In.)	Bore Size	Cylinder Area (Sq. In.)
3/4"	.44	4"	12.57
1"	.79	4-1/2"	15.90
1-1/8"	.99	5"	19.64
1-1/4"	1.23	6"	28.27
1-1/2"	1.77	7"	38.48
1-3/4"	2.41	8"	50.27
2"	3.14	10"	78.54
2-1/2"	4.91	12"	113.10
3-1/4"	8.30	14"	153.94
3-5/8"	10.32		