

Features

- Unique sealing member isolates pilot air pressure from mainline fluid
- Variations in pilot air pressure do not affect valve operation
- Design provides long life handling of lubricated air
- Handle fluids up to 200°F (92°C)
- Some constructions handle steam up to 353°F (177°C)
- Mountable in any position

Construction

| Valve Parts in Contact with Fluids | |
|------------------------------------|---------------------------------|
| Body | Brass |
| Seat | NBR or PTFE (for steam service) |

Air Operators

Connection Size: 1/8" NPT.

Actuated Displacement Volume: 0.60 cu. ins. for 3-30 psi operators;
 0.25 cu. ins. for 30-125 psi operator.

Media: Air

(For vacuum or other media, consult your local ASCO sales office for details. Refer to Optional Features Section for other available manual operators.)

Important

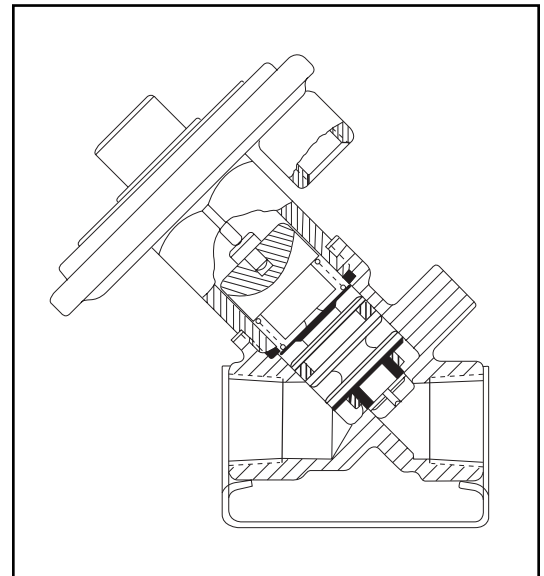
On 3-way and 4-way valves, except for those with zero minimum operating pressure, a Minimum Operating Pressure Differential must be maintained between the pressure and exhaust ports. Supply and exhaust piping must be full area, unrestricted. ASCO flow controls and similar components must be installed in the cylinder lines only.

Options

Elastomers: For F262, P262, P210, P320

Viton (suffix V), Oxygen Service (suffix N)

Refer to Engineering Section for fluid and temperature compatibility.



SPECIAL SERVICE VALVES

Nominal Ambient Temp. Ranges

32°F to 125°F (0°C to 52°C)

Refer to Engineering Section for details.

Ordering Information

We must have catalog number, operating pressure, and fluid to be handled. Use strainers with air operated valves.

Refer to Engineering Section for details.

Specifications (English units)

| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | Main Line Operating Pressure (psi) | | | | | Max. Fluid Temp. °F | Instrument Air Operator 3-30 psi Range ① | | Pneumatic Operator 30-125 psi Range ① | |
|---|---------------------|----------------|------------------------------------|------------------------------------|---------------|-------------------|-------------------|---------------------|--|-------------|---------------------------------------|-------------|
| | | | Min. | Maximum | | | | | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. |
| | | | | Air-Inert Gas | Water | Lt. Oil @ 300 SSU | Steam | | | | | |
| 2/2 VALVES | | | | | | | | | | | | |
| NORMALLY CLOSED (Closed when operator exhausted), Brass Body with NBR Seating | | | | | | | | | | | | |
| 1/4 | 5/32 | .52 | 0 | 125 | 125 | 125 | - | 200 | F262C202K | 1 | P262C202 | 1 |
| 1/4 | 9/32 | .88 | 0 | 40 | 40 | 40 | - | 200 | F262D090K | 1 | P262D090 ② | 1 |
| 3/8 | 5/8 | 2.8 | 0 | 125 | 125 | 125 | - | 180 | F210C093K | 6 | P210C093 | 6 |
| 3/8 | 3/8 | 1.5 | 1 ⑥ | 125 | 125 | 125 | - | 200 | F210C073K | 3 | P210C073 | 3 |
| 1/2 | 7/16 | 2.2 | 1 ⑥ | 125 | 125 | 125 | - | 200 | F210A015K | 4 | P210A015 | 4 |
| 1/2 | 5/8 | 3.6 | 0 | 125 | 125 | 125 | - | 180 | F210C094K | 6 | P210C094 | 6 |
| 3/4 | 3/4 | 5.5 | 0 | 125 | 125 | 125 | - | 180 | F210D095K | 7 | P210D095 | 7 |
| 3/4 | 3/4 | 5.5 | 5 | 125 | 125 | 125 | - | 180 | F210D009K | 8 | P210D009 | 8 |
| 1 | 1 | 13 | 5 | 125 | 125 | 125 | - | 180 | F210D004K | 10 | P210D004 | 10 |
| 1 1/4 | 1 1/8 | 15 | 5 | 125 | 125 | 125 | - | 180 | F210D008K | 12 | P210D008 | 12 |
| 2 | 1 3/4 | 43 | 5 | 125 | 125 | 125 | - | 180 | F210 100K | 15 | P210 100 | 15 |
| NORMALLY OPEN (Open when operator exhausted), Brass Body with NBR Seating | | | | | | | | | | | | |
| 1/4 | 5/32 | .50 | 0 | 125 | 125 | 125 | - | 200 | F262B106K | 2 | P262B106 | 2 |
| 3/8 | 5/8 | 2.8 | 0 | 125 | 125 | 125 | - | 180 | F210C033K | 16 | P210C033 | 16 |
| 1/2 | 5/8 | 3.5 | 0 | 125 | 125 | 125 | - | 180 | F210C034K | 16 | P210C034 | 16 |
| 3/4 | 3/4 | 5.5 | 0 | 125 | 125 | 125 | - | 180 | F210C035K | 17 | P210C035 | 17 |
| 1 | 1 | 13 | 5 | 125 | 125 | 125 | - | 180 | F210D014K | 18 | P210D014 | 18 |
| NORMALLY CLOSED (Closed when operator exhausted), Brass Body with PTFE Seating | | | | | | | | | | | | |
| 1/4 | 3/8 | 1.2 | 1 | - | - | - | 125 | 353 | F222A070K | 4 | P222A070 | 4 |
| 3/8 | 3/8 | 2.5 | 1 | - | - | - | 125 | 353 | F222A074K | 4 | P222A074 | 4 |
| 1/2 | 3/8 | 2.5 | 1 | - | - | - | 125 | 353 | F222A076K | 4 | P222A076 | 4 |
| 3/2 VALVES | | | | | | | | | | | | |
| NORMALLY CLOSED (Closed when operator exhausted), Brass Body with NBR Seats | | | | | | | | | | | | |
| 1/4 | 9/32 | ③ | 10 | 125 | 125 | 125 | - | 200 | F321A001K | 5 | P321A001 | 5 |
| 3/8 | 9/32 | ③ | 10 | 125 | 125 | 125 | - | 200 | F321A002K | 5 | P321A002 | 5 |
| 3/8 | 5/8 | 3 | 10 | 125 | 125 | - | - | 200 | F316D014K | 2 | P316D014 | 2 |
| 1/2 | 5/8 | 4 | 10 | 125 | 125 | - | - | 200 | F316D024K | 2 | P316D024 | 2 |
| 3/4 | 11/16 | 5.5 | 10 | 125 | 125 | - | - | 200 | F316E044K | 3 | P316E044 | 3 |
| 1 | 1 | 13 | 10 | 125 | 125 | - | - | 200 | F316E034K | 4 | P316E034 | 4 |
| UNIVERSAL (Pressure at any port), Brass Body with NBR Seats | | | | | | | | | | | | |
| 1/4 | 1/8 | .31 | 0 | 125 | 125 | 125 | - | 200 | F320A009K | 1 | P320A009 | 1 |
| 4/2 VALVES | | | | | | | | | | | | |
| Pipe Size (ins.) | Orifice Size (ins.) | Cv Flow Factor | | Main Line Operating Pressure (psi) | | | | Max. Fluid Temp. °F | Instrument Air Operator 3-30 psi Range | | Pneumatic Operator 30-125 psi Range | |
| | | Press. to Cyl. | Exh. to Cyl. | Min. | Maximum | | | | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. |
| | | | | | Air-Inert Gas | Water | Lt. Oil @ 300 SSU | | | | | |
| 2-Position Brass Body with Soft Seating ④ | | | | | | | | | | | | |
| 1/4 | 1/4 | .80 | 1 | 10 ⑤ | 125 | 125 | 125 | 200 | F444B000K | 1 | P444B000 | 1 |
| 3/8 | 3/8 | 1.4 | 2.2 | 10 ⑤ | 125 | 125 | 125 | 200 | F444C025K | 2 | P444C025 | 2 |

① 3-40 psi (.2 - 2.8 bar) and 50-125 psi (3.4 - 8.6 bar) range for steam valves only.
 ② Refers to operator minimum pressure: Catalog Number P262D090 requires 50 psi (3.4 bar) minimum pressure.
 ③ Cv pressure to cylinder = 0.8 (.7 Kv); Cv cylinder to exhaust = 1.2 (1.0 Kv).
 ④ Const. Ref. 1 has soft seating; Const. Ref. 2 and 3 have soft to metal seating.
 ⑤ 25 psi (1.7 bar) required on light oil service.
 ⑥ 5 psi (0.35 bar) required for air service.

SPECIAL SERVICE VALVES

Specifications (Metric units)

| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | Main Line Operating Pressure (bar) | | | | | Max. Fluid Temp. °C | Instrument Air Operator 0.2-2 bar Range ① | | Pneumatic Operator 2-8.6 bar Range ① | |
|---|-------------------|-----------------------|------------------------------------|------------------------------------|---------------|-------------------|-------------------|---------------------|---|-------------|--------------------------------------|-------------|
| | | | Min. | Maximum | | | | | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. |
| | | | | Air-Inert Gas | Water | Lt. Oil @ 300 SSU | Steam | | | | | |
| 2/2 VALVES | | | | | | | | | | | | |
| NORMALLY CLOSED (Closed when operator exhausted), Brass Body with NBR Seating | | | | | | | | | | | | |
| 1/4 | 4 | .45 | 0.0 | 9 | 9 | 9 | - | 93 | F262C202K | 1 | P262C202 | 1 |
| 1/4 | 7 | .76 | 0.0 | 3 | 3 | 3 | - | 93 | F262D090K | 1 | P262D090 ② | 1 |
| 3/8 | 16 | 2.4 | 0.0 | 9 | 9 | 9 | - | 82 | F210C093K | 6 | P210C093 | 6 |
| 3/8 | 10 | 1.3 | 0.07 ⑥ | 9 | 9 | 9 | - | 93 | F210C073K | 3 | P210C073 | 3 |
| 1/2 | 11 | 1.9 | 0.07 ⑥ | 9 | 9 | 9 | - | 93 | F210A015K | 4 | P210A015 | 4 |
| 1/2 | 16 | 3.1 | 0.0 | 9 | 9 | 9 | - | 82 | F210C094K | 6 | P210C094 | 6 |
| 3/4 | 19 | 4.7 | 0.0 | 9 | 9 | 9 | - | 82 | F210D095K | 7 | P210D095 | 7 |
| 3/4 | 19 | 4.7 | 0.3 | 9 | 9 | 9 | - | 82 | F210D009K | 8 | P210D009 | 8 |
| 1 | 25 | 11.1 | 0.3 | 9 | 9 | 9 | - | 82 | F210D004K | 10 | P210D004 | 10 |
| 1 1/4 | 29 | 12.9 | 0.3 | 9 | 9 | 9 | - | 82 | F210D008K | 12 | P210D008 | 12 |
| 2 | 45 | 36.9 | 0.3 | 9 | 9 | 9 | - | 82 | F210 100K | 15 | P210 100 | 15 |
| NORMALLY OPEN (Open when operator exhausted), Brass Body with NBR Seating | | | | | | | | | | | | |
| 1/4 | 4 | .43 | 0.0 | 9 | 9 | 9 | - | 93 | F262B106K | 2 | P262B106 | 2 |
| 3/8 | 16 | 2.4 | 0.0 | 9 | 9 | 9 | - | 82 | F210C033K | 16 | P210C033 | 16 |
| 1/2 | 16 | 3.0 | 0.0 | 9 | 9 | 9 | - | 82 | F210C034K | 16 | P210C034 | 16 |
| 3/4 | 19 | 4.7 | 0.0 | 9 | 9 | 9 | - | 82 | F210C035K | 17 | P210C035 | 17 |
| 1 | 25 | 11.1 | 0.3 | 9 | 9 | 9 | - | 82 | F210D014K | 18 | P210D014 | 18 |
| NORMALLY CLOSED (Closed when operator exhausted), Brass Body with PTFE Seating | | | | | | | | | | | | |
| 1/4 | 10 | 1.0 | 0.1 | - | - | - | 24 | 178 | F222A70K | 4 | P222A70 | 4 |
| 3/8 | 10 | 2.1 | 0.1 | - | - | - | 24 | 178 | F222A74K | 4 | P222A74 | 4 |
| 1/2 | 10 | 2.1 | 0.1 | - | - | - | 24 | 178 | F222A76K | 4 | P222A76 | 4 |
| 3/2 VALVES | | | | | | | | | | | | |
| NORMALLY CLOSED (Closed when operator exhausted), Brass Body with NBR Seats | | | | | | | | | | | | |
| 1/4 | 7 | ③ | 0.7 | 9 | 9 | 9 | - | 93 | F321A001K | 5 | P321A001 | 5 |
| 3/8 | 7 | ③ | 0.7 | 9 | 9 | 9 | - | 93 | F321A002K | 5 | P321A002 | 5 |
| 3/8 | 16 | 2.6 | 0.7 | 9 | 9 | - | - | 93 | F316D014K | 2 | P316D014 | 2 |
| 1/2 | 16 | 3.4 | 0.7 | 9 | 9 | - | - | 93 | F316D024K | 2 | P316D024 | 2 |
| 3/4 | 17 | 4.7 | 0.7 | 9 | 9 | - | - | 93 | F316E044K | 3 | P316E044 | 3 |
| 1 | 25 | 11.1 | 0.7 | 9 | 9 | - | - | 93 | F316E034K | 4 | P316E034 | 4 |
| UNIVERSAL (Pressure at any port), Brass Body with NBR Seats | | | | | | | | | | | | |
| 1/4 | 3 | .27 | 0 | 9 | 9 | 9 | - | 93 | F320A009K | 1 | P320A009 | 1 |
| 4/2 VALVES | | | | | | | | | | | | |
| Pipe Size (ins.) | Orifice Size (mm) | Kv Flow Factor (m3/h) | | Main Line Operating Pressure (bar) | | | | Max. Fluid Temp. °C | Instrument Air Operator 0.2-2 bar Range | | Pneumatic Operator 2-8.6 bar Range | |
| | | Press. to Cyl. | Exh. to Cyl. | Min. | Maximum | | | | Catalog Number | Const. Ref. | Catalog Number | Const. Ref. |
| | | | | | Air-Inert Gas | Water | Lt. Oil @ 300 SSU | | | | | |
| 2-Position Brass Body with Soft Seating ④ | | | | | | | | | | | | |
| 1/4 | 6 | .69 | .86 | 0.7 ⑤ | 9 | 9 | 9 | 93 | F444B000K | 1 | P444B000 | 1 |
| 3/8 | 10 | 1.2 | 1.9 | 0.7 ⑤ | 9 | 9 | 9 | 93 | F444C025K | 2 | P444C025 | 2 |

① 3-40 psi (.2 - 2.8 bar) and 50-125 psi (3.4 - 8.6 bar) range for steam valves only.
 ② Refers to operator minimum pressure: Catalog Number P262D090 requires 50 psi (3.4 bar) minimum pressure.
 ③ Cv pressure to cylinder = 0.8 (.7 Kv); Cv cylinder to exhaust = 1.2 (1.0 Kv).
 ④ Const. Ref. 1 has soft seating; Const. Ref. 2 and 3 have soft to metal seating.
 ⑤ 25 psi (1.7 bar) required on light oil service.
 ⑥ 5 psi (0.35 bar) required for air service.

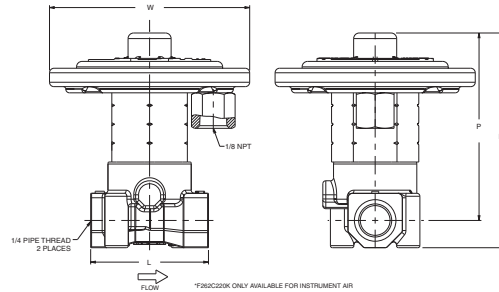
SPECIAL SERVICE VALVES

Dimensions inches (mm)

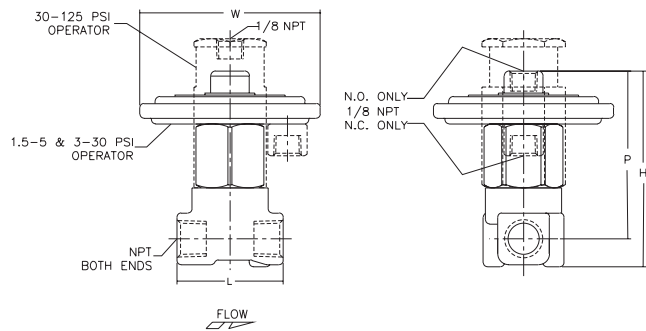
| Const. Ref. | | Instrument Air Operator 2/2 Valves with 3-30 PSI Operator ① | | | | Pneumatic Operator 2/2 Valves with 30-125 PSI Operator ① | | | |
|-------------|------|---|------|------|--------|--|------|------|------|
| | | H | L | P | W | H | L | P | W ② |
| 1 | ins. | 2.84 | 1.56 | 2.47 | Ø 2.66 | 3.34 | 1.56 | 2.94 | 1.29 |
| | mm | 72 | 40 | 63 | Ø 67 | 85 | 40 | 75 | 33 |
| 2 | ins. | 2.97 | 1.56 | 2.56 | Ø 2.66 | 2.78 | 1.56 | 2.38 | 1.29 |
| | mm | 75 | 40 | 65 | Ø 67 | 71 | 40 | 60 | 33 |
| 3 | ins. | 3.34 | 1.91 | 2.91 | Ø 2.66 | 3.69 | 1.91 | 3.25 | 1.12 |
| | mm | 85 | 49 | 74 | Ø 67 | 94 | 49 | 83 | 28 |
| 4 | ins. | 3.62 | 2.28 | 3.09 | Ø 2.66 | 4.22 | 2.28 | 3.66 | 1.12 |
| | mm | 92 | 58 | 79 | Ø 67 | 107 | 58 | 93 | 28 |
| 6 | ins. | 3.59 | 2.75 | 3.03 | Ø 2.66 | 4.00 | 2.75 | 3.44 | 2.28 |
| | mm | 91 | 70 | 77 | Ø 67 | 102 | 70 | 87 | 58 |
| 7 | ins. | 3.81 | 2.81 | 3.19 | Ø 2.66 | 4.22 | 2.81 | 3.59 | 2.28 |
| | mm | 97 | 71 | 81 | Ø 67 | 107 | 71 | 91 | 58 |
| 8 | ins. | 3.88 | 2.81 | 3.22 | Ø 2.66 | 4.28 | 2.81 | 3.62 | 2.31 |
| | mm | 99 | 71 | 82 | Ø 67 | 109 | 71 | 92 | 59 |
| 10 | ins. | 5.53 | 3.75 | 3.91 | Ø 2.66 | 6.00 | 3.75 | 4.38 | 2.94 |
| | mm | 141 | 95 | 99 | Ø 67 | 152 | 95 | 111 | 75 |
| 12 | ins. | 5.53 | 2.66 | 3.91 | Ø 2.66 | 6.00 | 3.66 | 4.38 | 3.38 |
| | mm | 141 | 68 | 99 | Ø 67 | 152 | 93 | 111 | 86 |
| 15 | ins. | 7.22 | 5.06 | 4.47 | 4.68 | 7.69 | 5.06 | 4.94 | 4.68 |
| | mm | 183 | 129 | 114 | 119 | 195 | 129 | 126 | 119 |
| 16 | ins. | 3.69 | 2.75 | 3.12 | Ø 2.66 | 3.44 | 2.75 | 2.88 | 2.28 |
| | mm | 94 | 70 | 79 | Ø 67 | 87 | 70 | 73 | 58 |
| 17 | ins. | 3.91 | 2.81 | 3.28 | Ø 2.66 | 3.69 | 2.81 | 3.03 | 2.28 |
| | mm | 99 | 71 | 83 | Ø 67 | 94 | 71 | 77 | 58 |
| 18 | ins. | 5.63 | 3.75 | 4.00 | 2.94 | 5.43 | 3.75 | 3.81 | 2.94 |
| | mm | 143 | 95 | 102 | 75 | 138 | 95 | 97 | 75 |

① When barbed tubing adapter is used, add 1.19 ins. (30 mm) to "H" and/or "P" (or overall) dimensions.
② Represents overall width of valve.

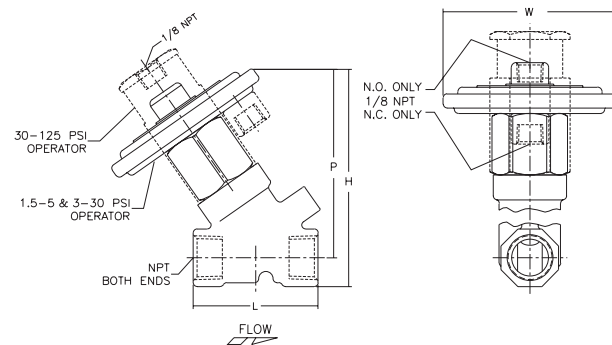
2/2 Valves - Const. Ref. 1



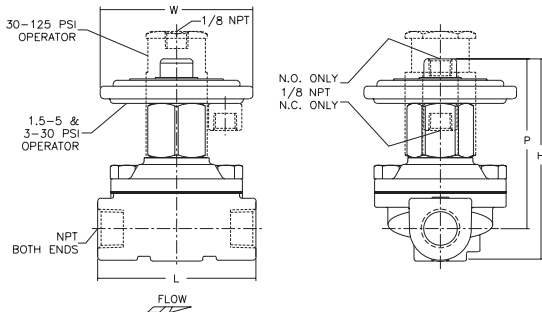
2/2 Valves - Const. Ref. 2



2/2 Valves - Const. Ref. 3, 4

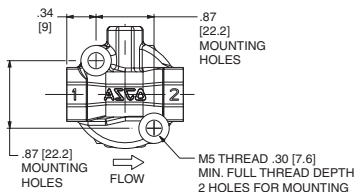


2/2 Valves - Const. Ref. 6 - 18



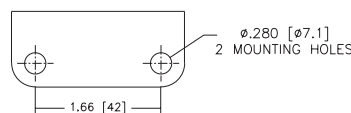
Mounting Bracket Const. Ref. 1

MOUNTING HOLES IN VALVE BODY
BRASS CONSTR. REFS. 1



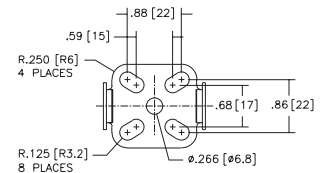
Mounting Bracket Const. Ref. 6 - 18

MOUNTING BRACKET
CONSTR. REF. 6, 7, 8, 9, 10,
11, 12, 13, 14-18



Mounting Bracket Const. Ref. 2, 3, 4

MOUNTING BRACKET
CONSTR. REF. 2, 3 & 4



**SPECIAL
SERVICE VALVES**

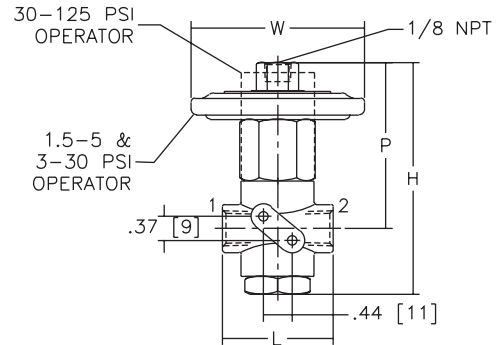
Dimensions inches (mm)

| Const. Ref. | Instrument Air Operator 3/2 Valves with 3-30 psi Operator ① | | | Pneumatic Operator 3/2 Valves with 30-125 psi Operator ① | | | | | | | |
|-------------|---|------|------|--|------|------|------|------|-----|------|-----|
| | | H | P | W ② | H | P | W ② | L | N | M | R |
| 1 | ins. | 3.56 | 2.56 | Ø 2.66 | 3.38 | 2.38 | 1.12 | 1.69 | X | X | X |
| | mm | 90 | 65 | Ø 67 | 86 | 61 | 28 | 43 | X | X | X |
| 2 | ins. | 5.07 | 3.93 | 4.30 | 4.89 | 3.75 | 4.30 | 2.76 | X | X | X |
| | mm | 129 | 100 | 109 | 124 | 95 | 109 | 70 | X | X | X |
| 3 | ins. | 6.00 | 4.31 | 3.31 | 5.82 | 4.13 | 3.31 | 3.38 | .53 | 2.16 | .50 |
| | mm | 152 | 109 | 84 | 148 | 105 | 84 | 86 | 13 | 55 | 13 |
| 4 | ins. | 6.62 | 4.56 | 5.34 | 6.44 | 4.38 | 5.34 | 4.44 | .88 | 2.68 | .88 |
| | mm | 168 | 116 | 136 | 164 | 111 | 136 | 113 | 22 | 68 | 22 |
| 5 | ins. | 3.84 | 2.81 | 3.39 | 3.66 | 2.62 | 2.62 | 3.12 | X | X | X |
| | mm | 98 | 71 | 86 | 93 | 67 | 67 | 79 | X | X | X |

① When barbed tubing adapter is used, add 1.19 ins. (30 mm) to "H" and/or "P" (or overall) dimensions.

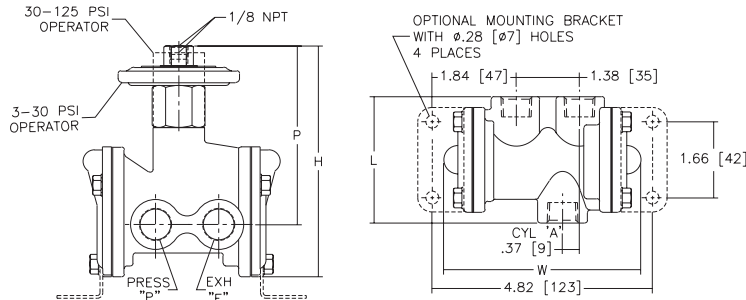
② Represents overall width of valve.

3/4 Valves Const. Ref. 1



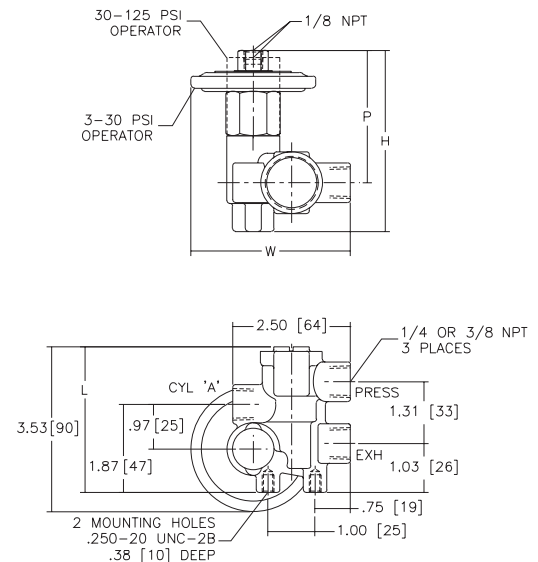
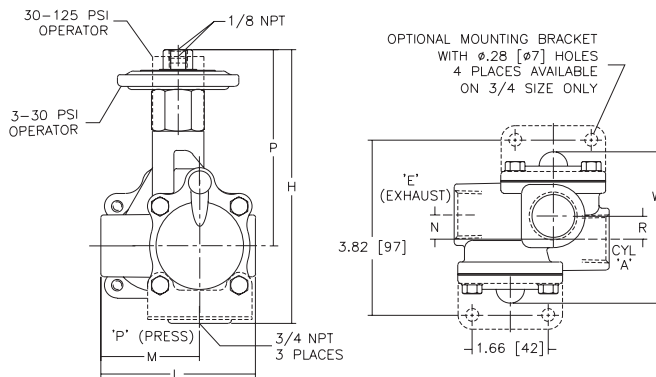
2 Mounting holes 0.28 (0.07 mm) deep for No. 8 thread cutting screw

3/4 Valves Const. Ref. 2



3/4 Valves Const. Ref. 5

3/4 Valves Const. Ref. 3, 4



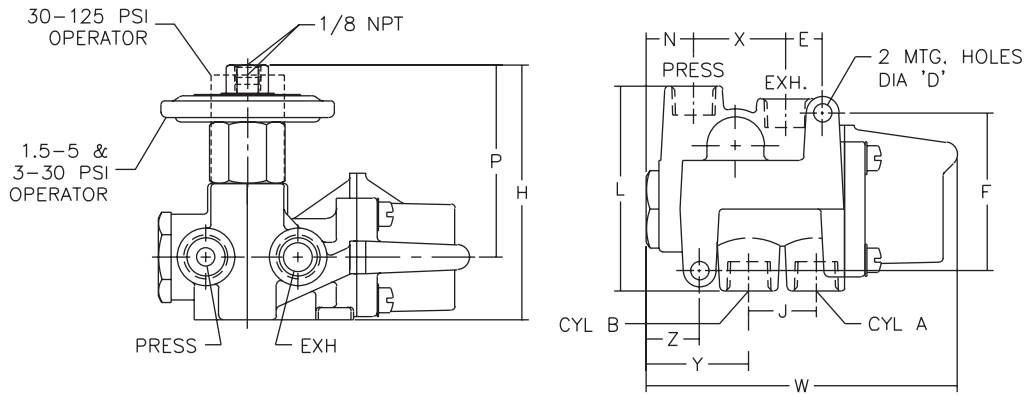
SPECIAL SERVICE VALVES

Dimensions inches (mm)

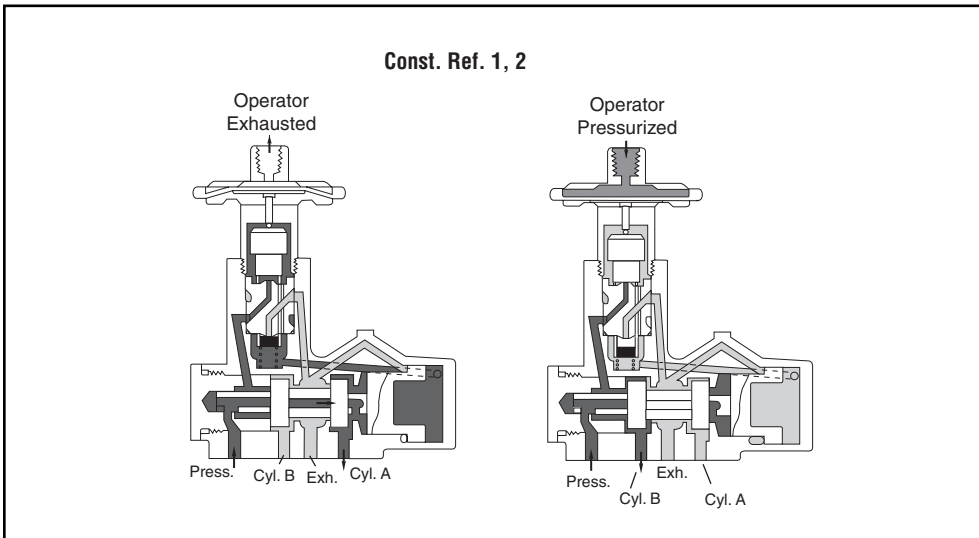
| Const. Ref. | Instrument Air Operator 4/2 Valves with 3-30 psi (.2-2 bar) Operator ① | | | Pneumatic Operator 4/2 Valves with 30-125 psi (2-8.6 bar) Operator ① | | | | | | | | | | | | |
|-------------|--|------|------|--|------|------|------|-----|------|------|------|-----|------|------|-------|-------|
| | H | P | W | H | P | W | E | F | J | L | N | X | Y | Z | DIA D | |
| 1 | ins. | 3.91 | 2.94 | 4.75 | 3.72 | 2.75 | 4.75 | .56 | 2.41 | 1.03 | 3.12 | .72 | 1.41 | 1.56 | .81 | Ø .28 |
| | mm | 99 | 75 | 121 | 94 | 70 | 121 | 14 | 61 | 26 | 79 | 18 | 36 | 40 | 21 | Ø 7 |
| 2 | ins. | 3.88 | 2.75 | 6.06 | 3.69 | 2.56 | 6.06 | .75 | 3.12 | 1.50 | 3.19 | .84 | 1.88 | 1.90 | .84 | Ø .34 |
| | mm | 98 | 70 | 154 | 94 | 65 | 154 | 19 | 79 | 38 | 81 | 21 | 48 | 48 | 21 | Ø 9 |

① When barbed tubing adapter is used, add 1.19 (30 mm) to "H" and/or "P" (or overall) dimensions.
IMPORTANT: Valves can be mounted in any position.

4/2 Valves - Const. Ref. 1, 2



Flow Diagrams



SPECIAL SERVICE VALVES