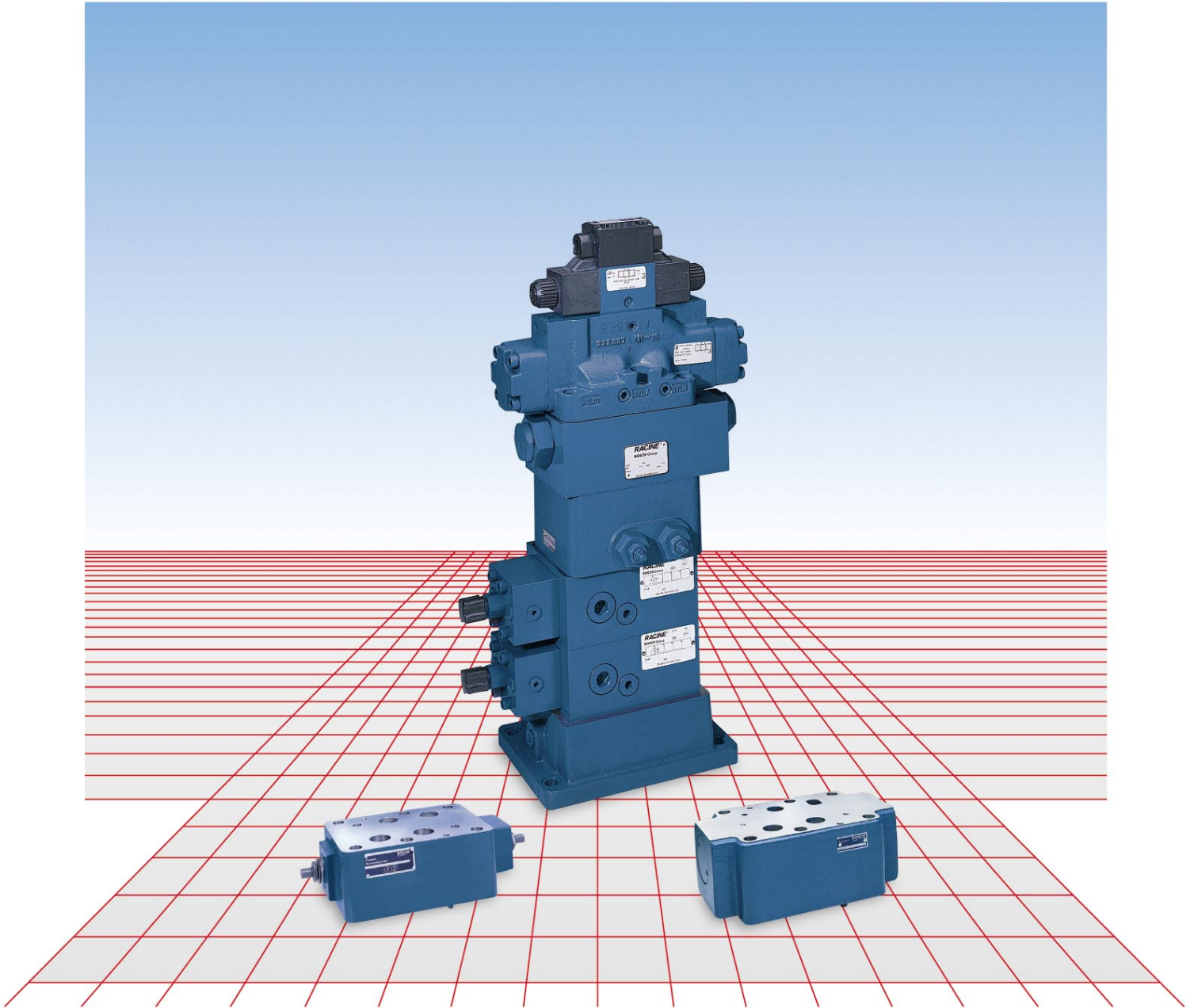




**BOSCH**



**Modular valves DO8 (NG 25)**

<b>Flow Control</b>	<b>3000 &amp; 4600 PSI</b>
<b>P.O. Check</b>	<b>3000 &amp; 4600 PSI</b>
<b>Reducing</b>	<b>3000 PSI</b>
<b>Relief Valve</b>	<b>5000 PSI</b>

Circuits are easily built with modular valves by stacking them between the directional control valve and the subplate. No piping is required which saves space and reduces the time and work required to build the circuit. This all saves money and there are no connections to leak. The circuit can be easily changed by adding or removing modules as needed.

When several modular valves are used together, how they are stacked can affect their performance. Some general rules are listed below. The valves can be broken down into two groups; those that function in the pressure line and those that function in the actuator lines (refer to drawing).

**Function in Pressure Line**

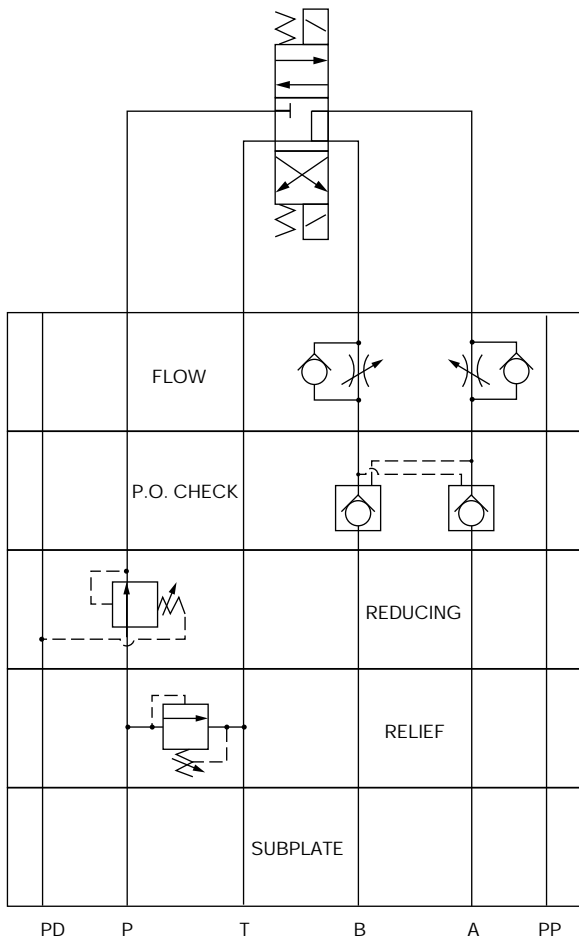
- Relief
- Reducing

1. Relief valve should be installed next to the subplate.
2. Reducing valve should be placed between the relief and directional control valve.

**Function in Actuator Line**

- Flow
- P.O. Check

When using a P.O. check module with a meter out flow control module, the P.O. check should be closer to the directional control valve. When used with a meter in flow control, the location is irrelevant.



**Index**

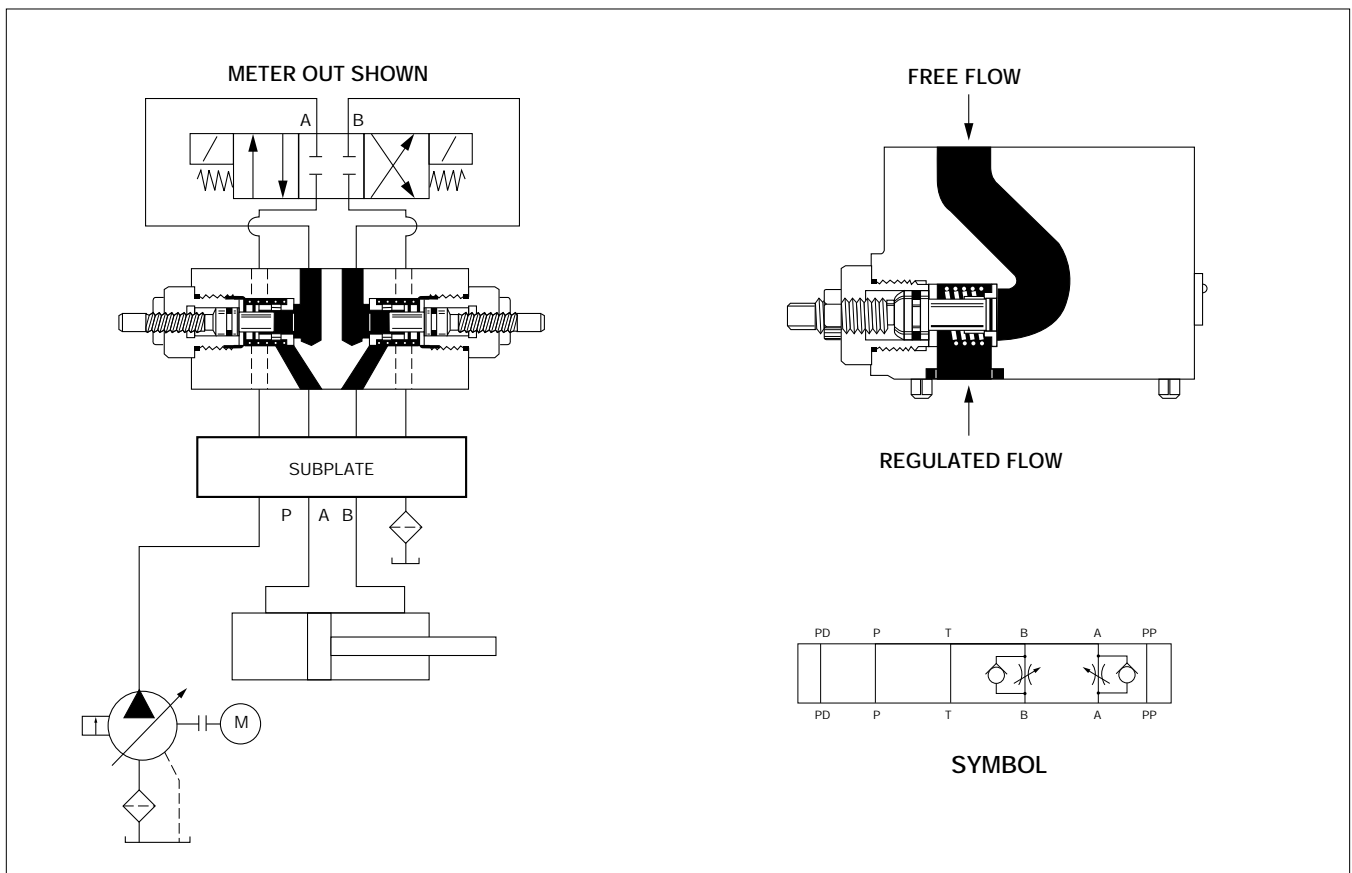
	<b>Page</b>
<b>Flow Control Valves</b>	<b>2</b>
<b>P.O. Check Valves</b>	<b>6</b>
<b>Pressure Reducing Valve</b>	<b>10</b>
<b>Relief Valve</b>	<b>12</b>
<b>D08 Modular Mounting Specifications</b>	<b>14</b>

Flow Control

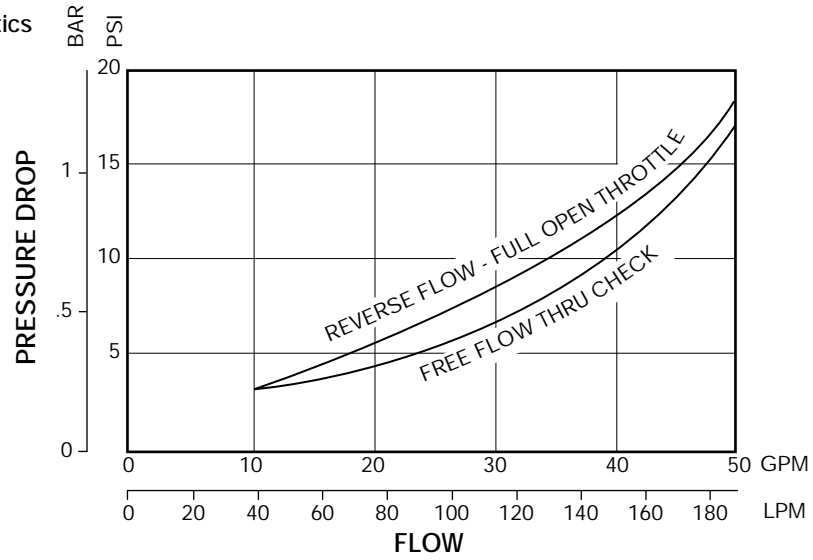
Throttle Check Valve



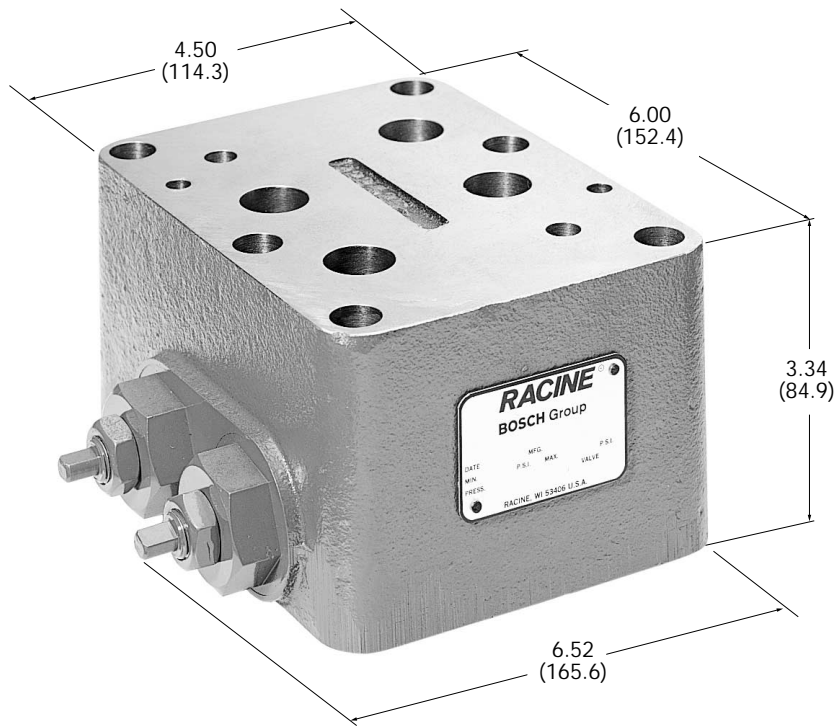
Specifications	
Valve Function	Flow Control / Throttle Check Valve
Pressure Rating	3000 psi (207 bar)
Mounting Type	Intermediate plate D08 (NG 25) ISO 4401
Mounting Position	Optional
Fluid	Mineral-oil or fluid HFA / B / C / D
Viscosity	60. . . 1600 SUS (10. . . 350 cST)
Fluid-temperature	-4 to 175°F (-20 to 80°C)
Filtration	Contamination class 19/16, according to ISO 4406 can be realized with filter $\beta_{25} = 75$
Seals	Viton
Material	Cast iron body, steel parts
Max. flow	50 gpm nominal flow
Weight	(Approx.) 15 lbs (6.8 kg)



Performance Characteristics



Dimensional Data



INCHES  
(MILLIMETERS)

NOTE:  
UNLESS OTHERWISE SPECIFIED  
ALL DIMENSIONS ARE NOMINAL

How To Order

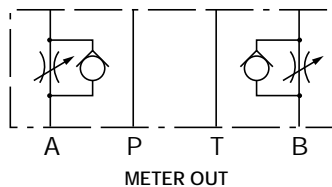
**FF1-SHMM-06H-50**

Flow control

Throttle Check Valve




Specifications	
Valve Function	Flow Control / Throttle Check Valve
Pressure Rating	4600 psi (315 bar)
Mounting Type	Intermediate plate D08 (NG 25) ISO 4401
Mounting Position	Unrestricted
Fluid	Mineral-oil based hydraulic fluids (ISO)
Viscosity	60. . . 1600 SUS (10. . . 350 cST)
Fluid-temperature	-4 to 175°F (-20 to 80°C)
Filtration	Contamination class 19/16, according to ISO 4406 can be realized with filter $\beta_{25} = 75$
Seals	BunaN
Max. operating pressure	4600 PSI (315 bar)
Max. flow	63.4 gpm (240 l/min.)
Weight	20.5 lb (9.3 Kg)



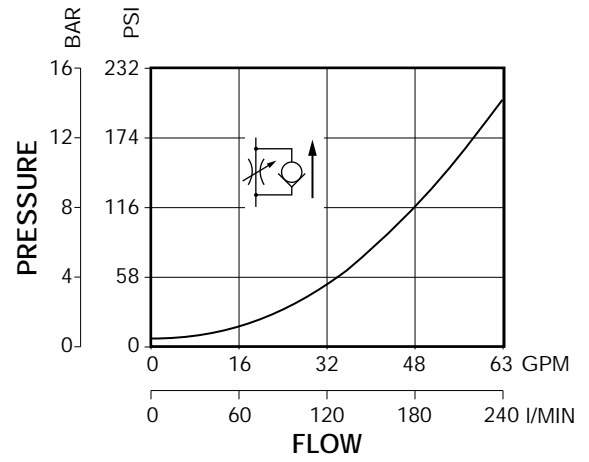
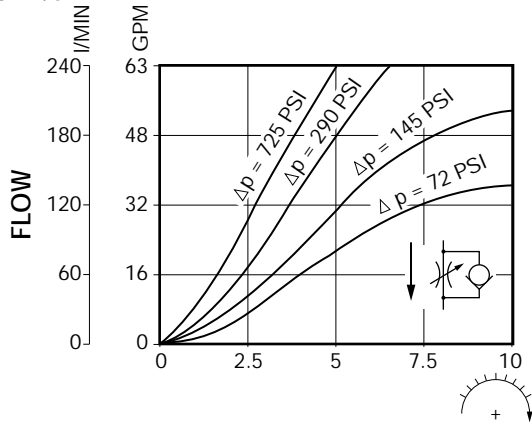
SYMBOL

How To Order

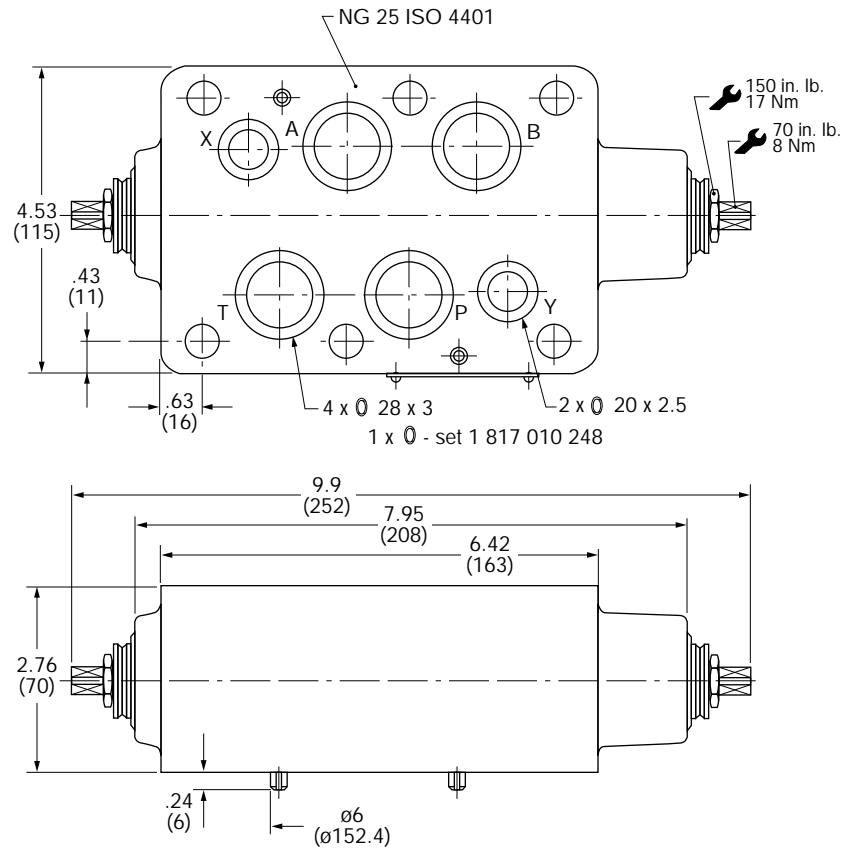
 0 811 321 009

**Performance Characteristics**

$v=1.38 \text{ in}^2/\text{s}$



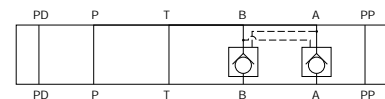
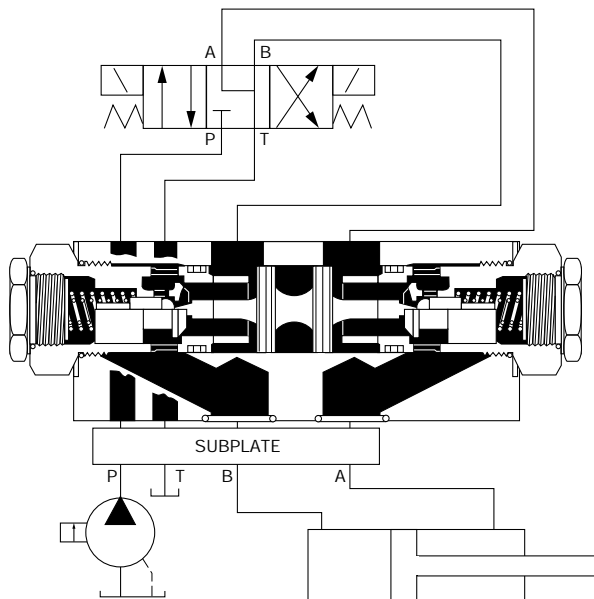
**Dimensional Data**



## Pilot Operated Check

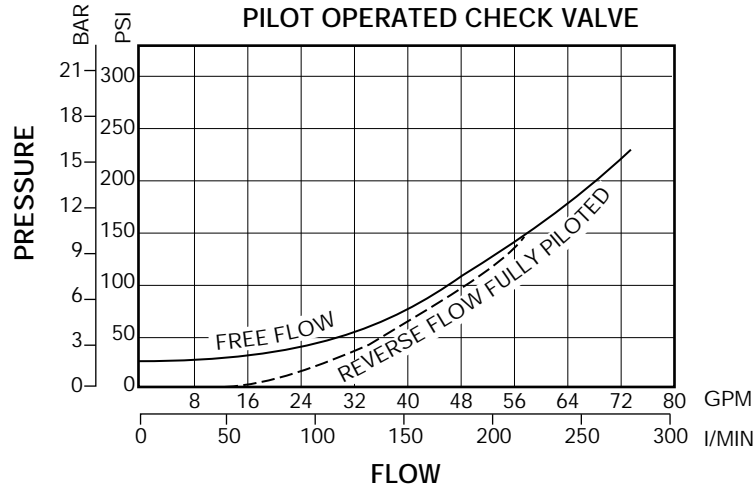


Specifications	
Valve Function	Pilot Operated Check Valve
Mounting Type	Intermediate Plate D08 (NG25) ISO 4401
Mounting Position	Unrestricted
Fluid	Mineral-oil or fluid HFA / B / C / D
Viscosity	60 . . . 1600 SUS (10 . . . 350 cST)
Fluid-Temperature	-4 to 175°F (-20 to 80°C)
Filtration	Contamination class 19/16, according to ISO 4406 can be realized with filter $\beta_{25} = 75$
Seals	Viton
Max Operating Pressure	3000 psi (207 bar)
Opening Ratio	2.6:1
Decompression Ratio	37.5:1
Leakage	Not more than 5 drops/min
Max. flow	60 gpm (227 L/min) nominal
Material	Cast iron body, steel parts
Weight	(Approx.) 21.3 lbs (9.6 kg)

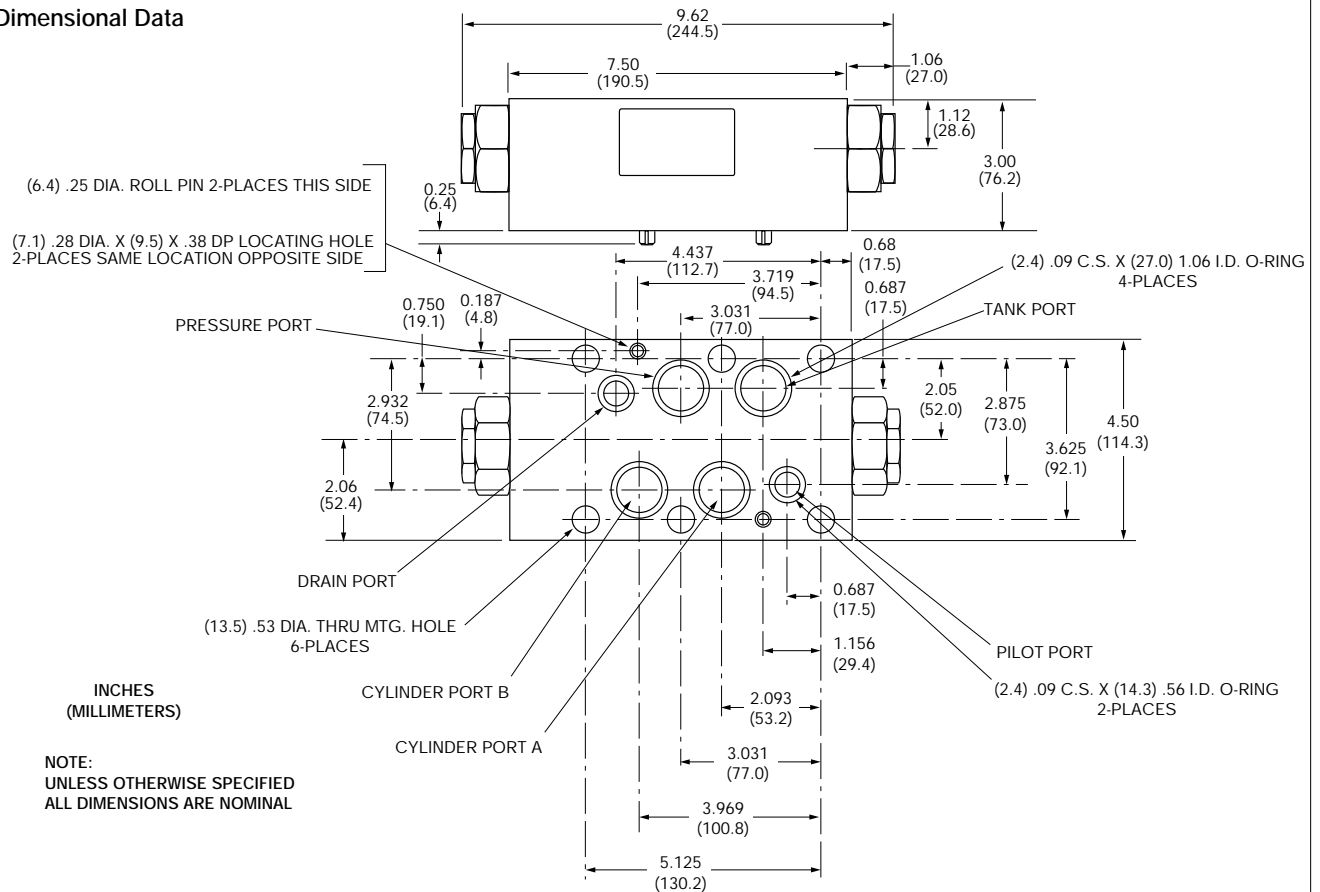


SYMBOL

Performance Characteristics



Dimensional Data



How To Order

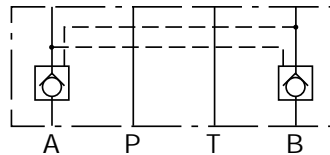
**FB1-POHM-106 N-60**

- N - Check, A & B
- A - Check, A Only
- B - Check, B Only

## Pilot Operated Check




Specifications	
Valve Function	Pilot Operated Check Valve
Mounting Type	Intermediate plate D08 (NG 25) ISO 4401
Mounting Position	Unrestricted
Fluid	Mineral-oil based hydraulic fluids (ISO)
Viscosity	60. . . 1600 SUS (10. . . 350 cST)
Fluid-temperature	-4 to 175°F (-20 to 80°C)
Filtration	Contamination class 19/16, according to ISO 4406 can be realized with filter $\beta_{25} = 75$
Seals	BunaN
Max. operating pressure	4600 PSI (315 bar)
Opening Ratio	5.1:1
Max. flow	66 gpm (250 l/min.)
Weight	23.75 lb (10.8 Kg)



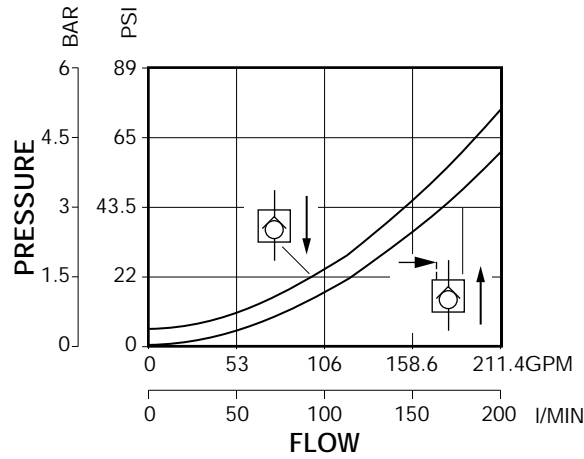
SYMBOL

## How To Order

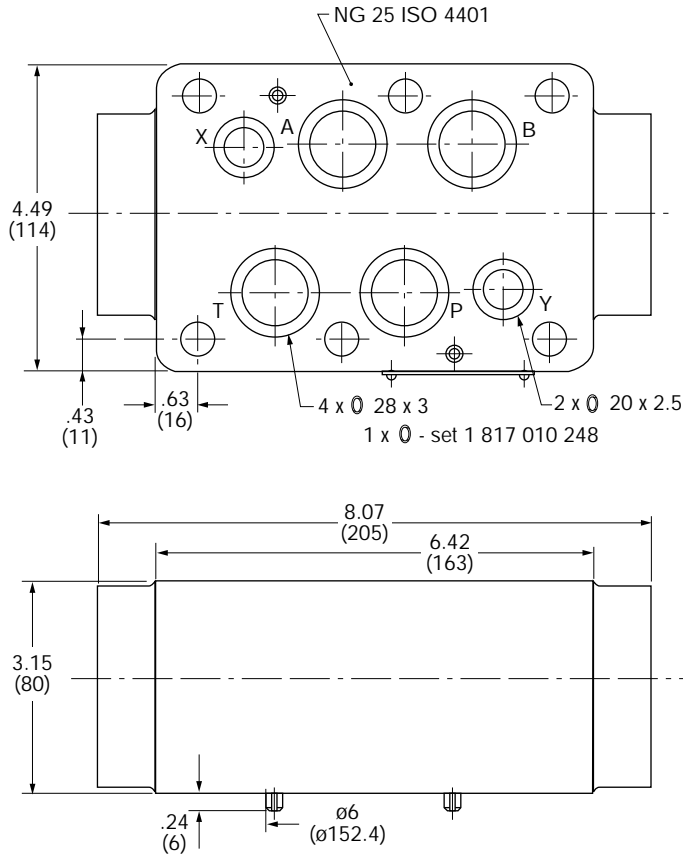
 0 811 021 003

**Performance Characteristics**

$v=1.38 \text{ in}^2/\text{s}$



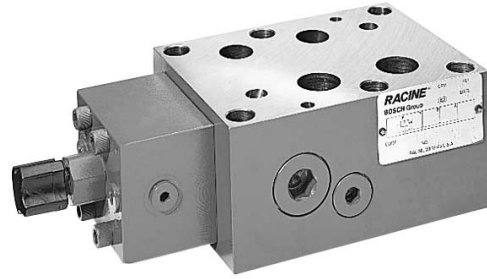
**Dimensional Data**



INCHES  
(MILLIMETERS)

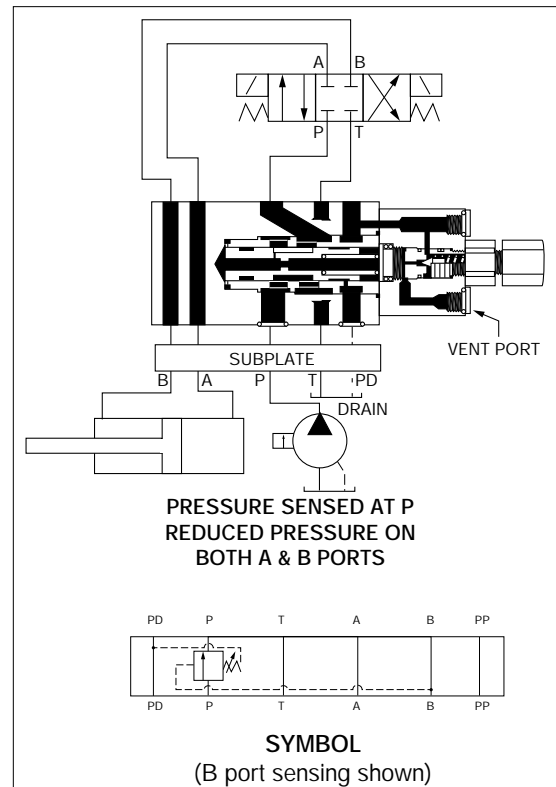
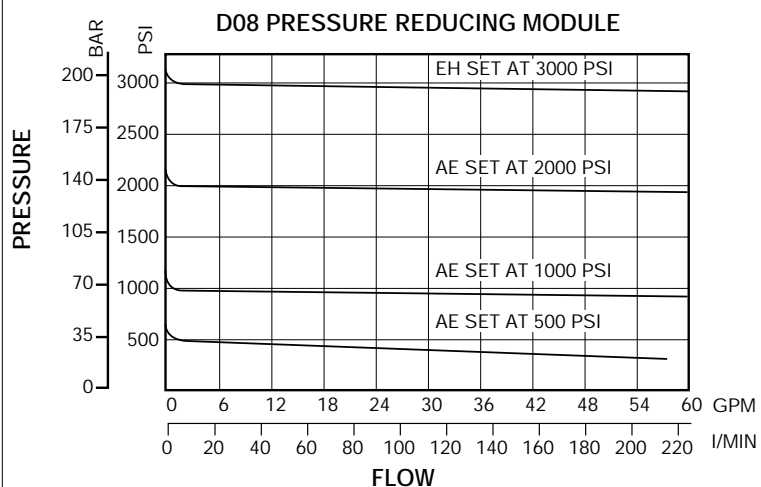
NOTE:  
UNLESS OTHERWISE SPECIFIED  
ALL DIMENSIONS ARE NOMINAL

## Pressure Reducing Valve

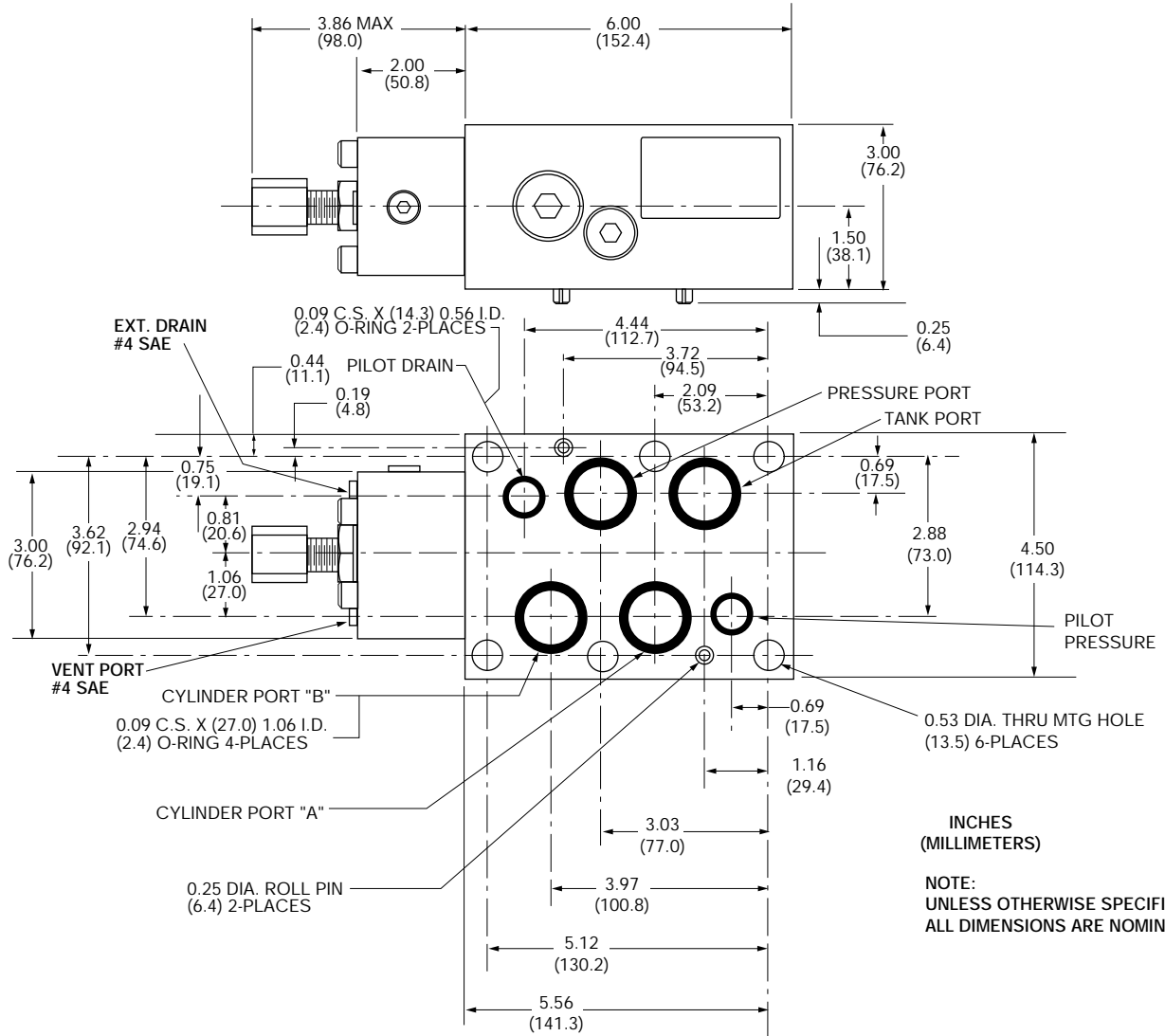


Specifications	
Valve Function	Reducing Valve / Pilot Operated
Mounting Type	Intermediate Plate D08 (NG 25) ISO 4401
Mounting Position	Unrestricted
Fluid	Mineral-oil or fluid HFA / B / C / D
Viscosity	60. . . 1600 SUS (10. . . 350 cST)
Fluid-Temperature	-4 to 175°F (-20 to 80°C)
Filtration	Contamination class 19/16, according to ISO 4406 can be realized with filter $\beta_{25} = 75$
Seals	Viton
Remote Control	Connect vent port to remote control relief valve
Max Operating Pressure	3000 psi (207 bar)
Min Reduced Pressure	100 psi (0.69 bar)
Adjusting Sensitivity	100-1500 PSI, 1500-3000 PSI
Drain	Control head is internally drained to pilot drain port in the subplate
Response Time	20 milliseconds dependent on circuit
Max. flow	60 gpm (227 L/min) nominal
Weight	(Approx.) 21.3 lbs (9.6 kg)

### Performance Characteristics



**Dimensional Data**



**How To Order**

**FE3-PAAE-MO6S-\*\***

Pressure Range

\*AE - 100-1500 PSI

\*EH - 1500-3000 PSI

\* Minimum Pressure Setting of 100 PSI.

Pressure Sensed At

S - Port P

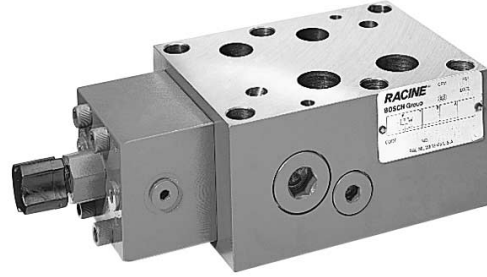
A - Port A

B - Port B

Design Digit

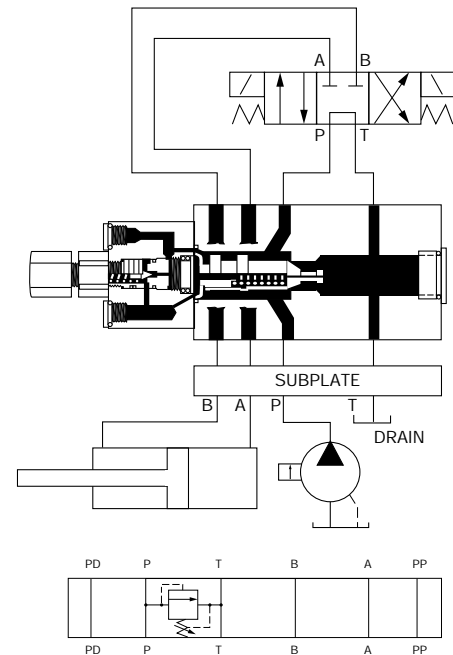
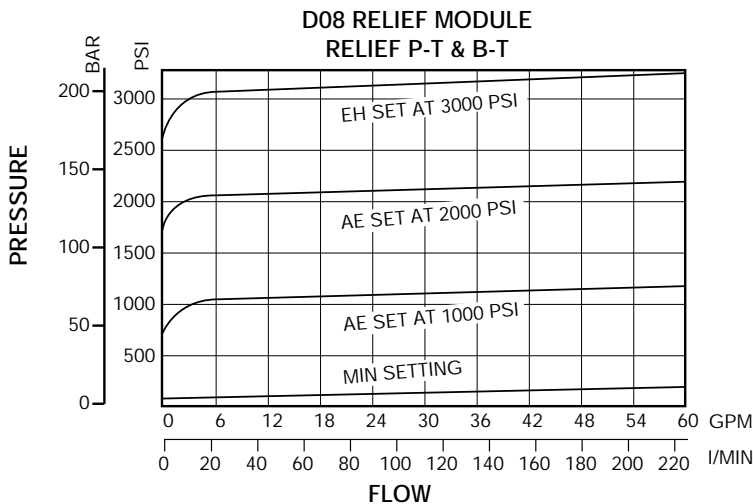
**Pressure Relief Valve**

**Pilot Operated**



Specifications	
Valve Function	Pressure Relief Valve / Pilot Operated
Mounting Type	Intermediate Plate D08 (NG 25) ISO 4401
Mounting Position	Unrestricted
Fluid	Mineral-oil or fluid HFA / B / C / D
Viscosity	60. . . 1600 SUS (10. . . 350 cST)
Fluid-Temperature	-4 to 175°F (-20 to 80°C)
Filtration	Contamination class 19/16, according to ISO 4406 can be realized with filter $\beta_{25} = 75$
Seals	Viton
Max. Pressure Setting	5000 psi (345 bar)
Min. Pressure Setting	100 psi (0.69 bar)
Repeatability	+/- 10 psi (0.69 bar)
Response Time	20 milliseconds
Venting	25 or 65 psi
Remote Control	Connect vent port to remote control relief valve
Max. flow	60 gpm (227 L/min) nominal
Material	All steel
Weight	(Approx.) 13.5 lbs (6.1 kg)

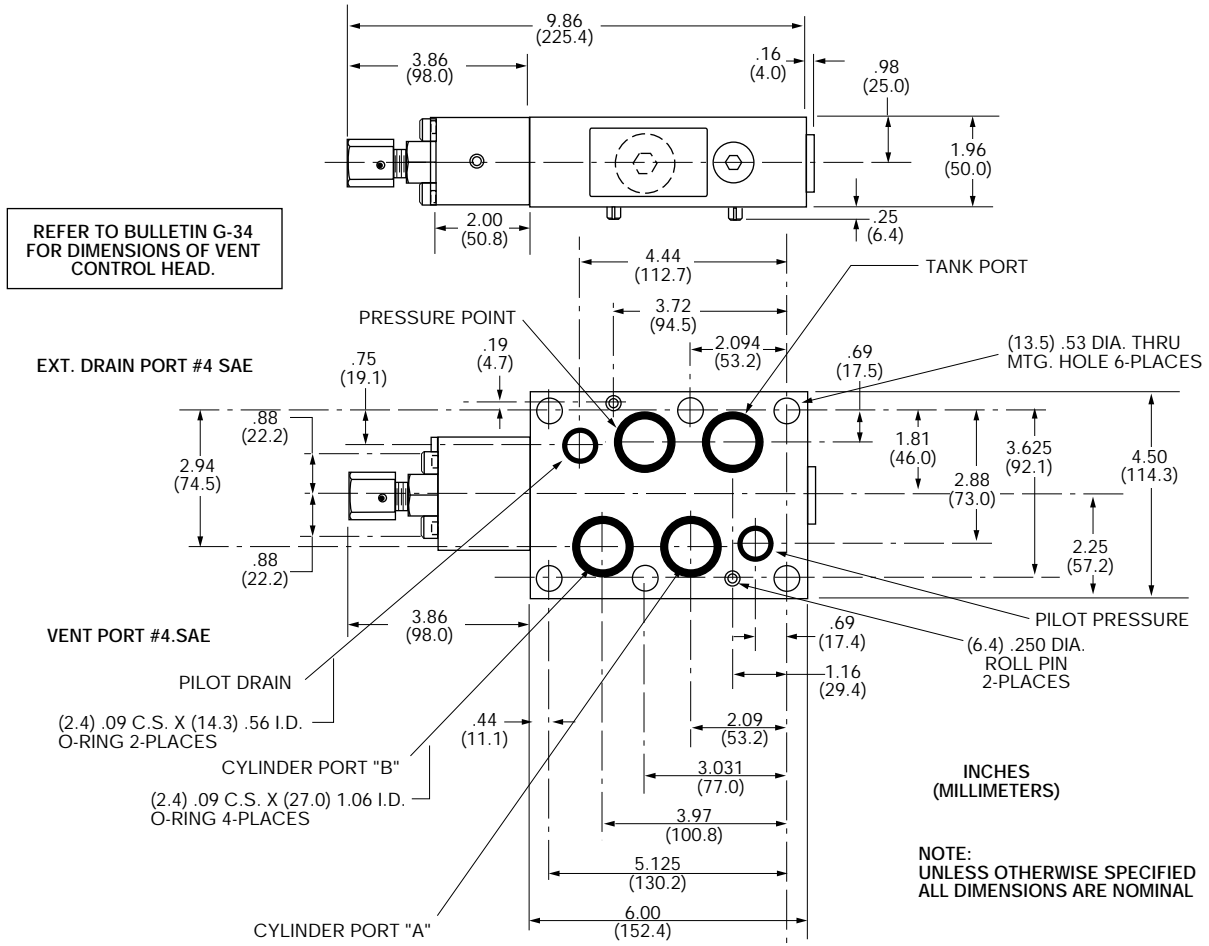
**Performance Characteristics**



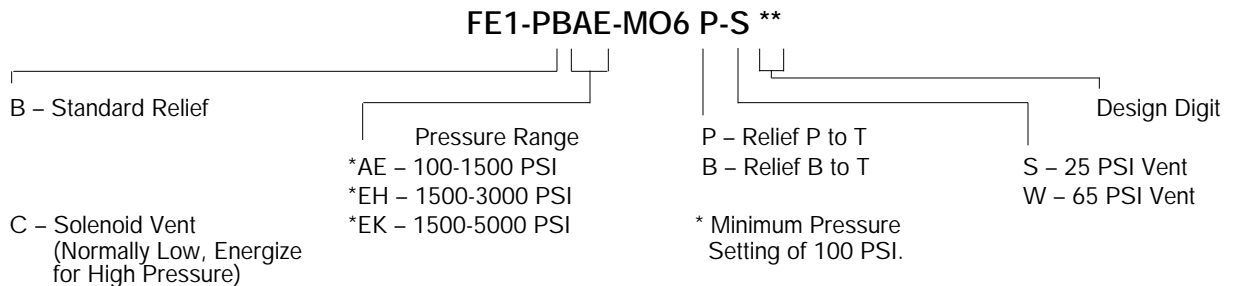
**SYMBOL**

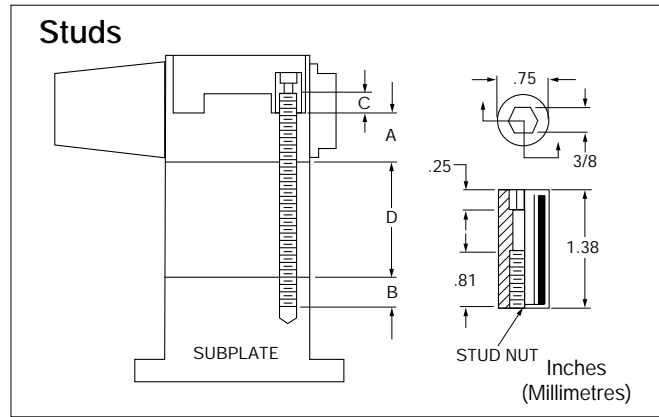
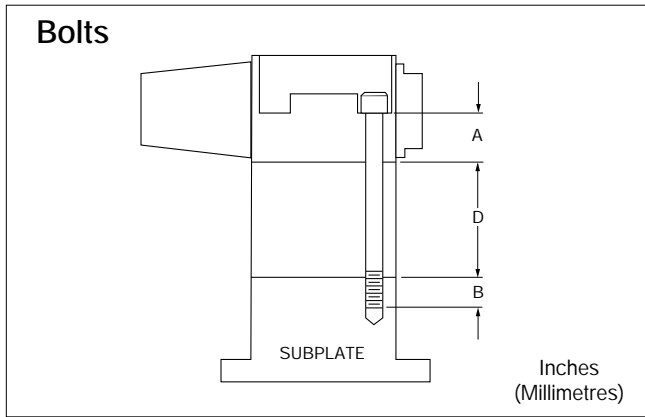
Relief "P to T", "B to T" ("P to T" shown)

**Dimensional Data**



**How To Order**





**Table 1**  
DO8 Valve & Subplate Dimensions for Bolts

Pressure Rating	A	B Minimum	A+B
3000 psi	1.04 (26.4)	.88 (22.4)	1.92 (48.8)
5000 psi	1.62 (41.1)	.88 (22.4)	2.5 (63.5)

**Determining Bolt Length**

To find the required length socket head cap screw when using a Bosch DO8 3000 psi 4-way valve and Bosch modules, use dimension A+B (Table 1) plus the total height of all modules and/or adaptors used (Table 3).

$$\text{Length} = 1.92" \text{ (2.5" for 5000 psi) + the combined height of all modules and/or adaptors.}$$

**Example:** Determine the proper length bolt to mount a check valve module with a DO8 (3000 psi) 4-way valve.

$$\text{Length} = 1.92" + 3" \text{ (Table 3)} \\ = 4.92"$$

Use bolt kit B-133 listed below.

**Table 2**  
DO8 Valve & Subplate Dimensions for Studs

Pressure Rating	A	B Minimum	C Min/Max	A+B+C*
3000 psi	1.04 (26.4)	.88 (22.4)	.68 (17.3)/.81 (20.6)	2.6 (66)
5000 psi	1.62 (41.2)	.88 (22.4)	.68 (17.3)/.81 (20.6)	3.18 (80.8)

\* Length determined using the minimum dimension for C.

**Determining Stud Length**

To find the required length stud when using a Bosch DO8 3000 psi 4-way valve and Bosch modules, use dimension A+B+C (Table 2) plus the total height of all modules and/or adaptors used (Table 3).

$$\text{Length} = 2.6" \text{ (3.18" for 5000 psi) + the combined height of all modules and/or adaptors.}$$

**Example:** Determine the proper length stud to mount a flow control and check valve module with a DO8 (3000 psi) 4-way valve.

$$\text{Length} = 2.6" + 3.34" \text{ (Table 3)} + 3" \text{ (Table 3)} \\ = 4.94"$$

Use stud kit B-148 listed below.

**Table 3**

**Available Bolt Kits\***

Length in Inches	Kit #
1.75	B-114
2.50	B-109
2.75	B-115
4.00	B-132
5.00	B-133
5.50	B-117
8.88	B-116

\* Consist of six 1/2-13 socket head cap screws.

**DO8 Module/Adaptor Thickness**

Module/Adaptor	Code	(D)Height
Relief	FE1-P***-MO6*-*	1.96 (49.8)
Check	FB1-POHM-106*	3.00 (76.2)
Reducing	FE3-PA** -MO6*	3.00 (76.2)
Flow	FF1-SHMK-06H	3.34 (84.6)
Cover Plate	DO6P-CP-**	0.75 (19.0)
Gage Plate	AP-PT-D6	1.19 (30.2)
Auxiliary Port Plate	AP-AB-D6	1.69 (42.9)
Transfer Plate	AP-PB-D6	1.69 (42.9)

Bolt kit B-158 is available to make your own stud kits. It contains threaded rod in three foot lengths (Grade 7) which can be cut to the desired length with a hack saw.

B-158 **10 each** 1/2-13 threaded rod  
36 inches (914.4) long  
**50 each** 1/2-13 stud nuts

**Torque**

1/2-13 Thread = 58 ft. lbs.

**Available Stud Kits\***

Length in Inches	Kit #
5.75	B-138
6.25	B-168
6.50	B-162
6.81	B-139
7.56	B-164
7.88	B-174
7.69	B-187
8.19	B-147
8.50	B-140
8.62	B-188
8.75	B-173
8.94	B-148
9.31	B-178
9.50	B-141
9.81	B-175
10.19	B-163
10.31	B-176
10.56	B-199
11.62	B-143
13.31	B-159

\* Consist of six 1/2-13 studs and six 1/2-13 stud nuts.

Note: If the mounting bolts are customer supplied, only SAE grade 8 bolts should be used. Minimum recommended thread engagement is 1.5 x diameter for cast iron and steel and 2 x diameter for aluminum.

9 535 233 170  
ATUS AKY 010/8 (5.96)

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