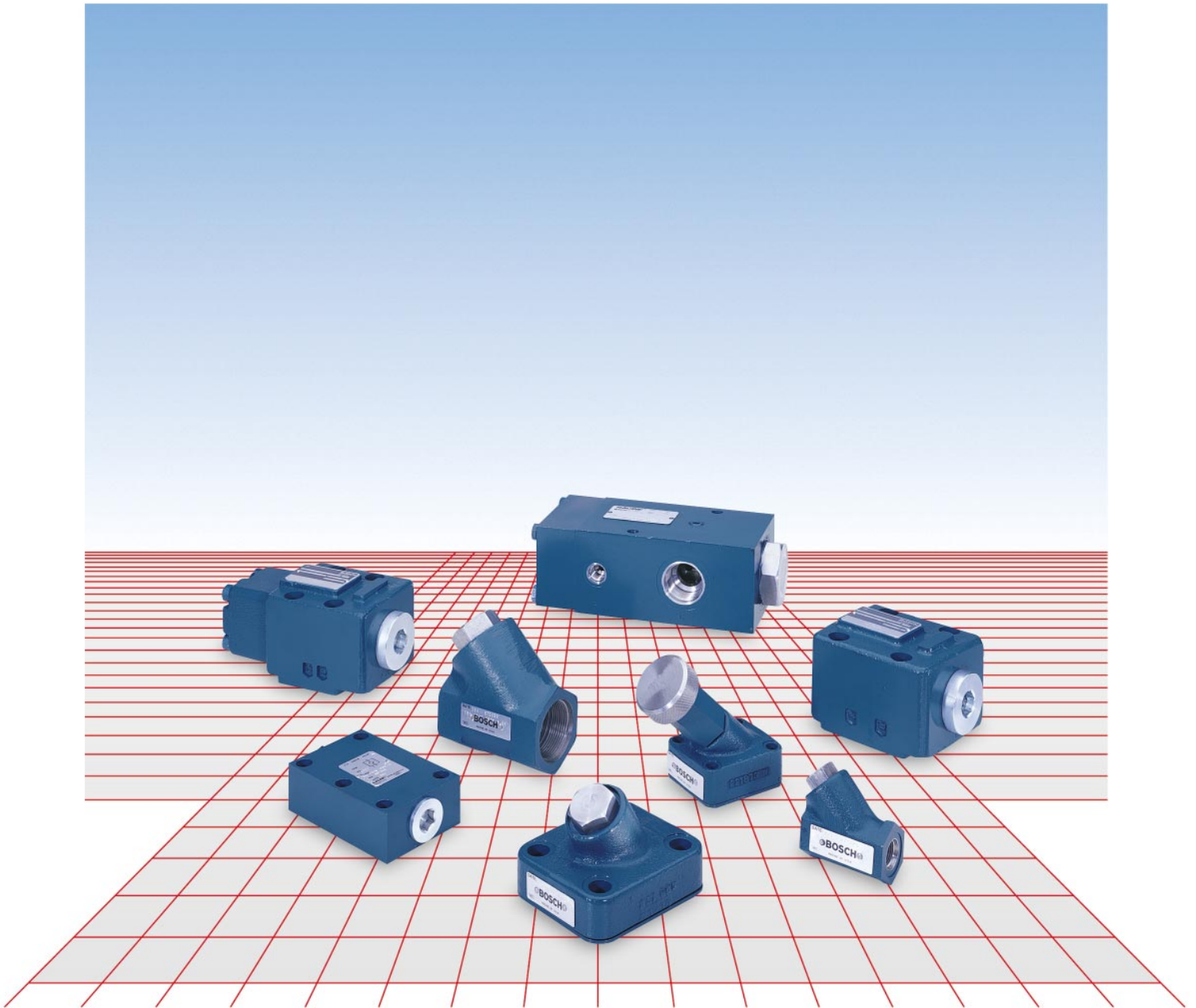




BOSCH



Check Valves

Index

Check Valves 3000 PSI to 200 GPM Inline Mounted Subplate Mounted SAE #6 - #32	Page 2
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Adjustable Resistance Check Valves 3000 PSI to 200 GPM Inline Mounted Subplate Mounted	Page 7
Pilot Operated 4600 PSI Subplate Mounted D03	Page 10
Pilot Operated 3000 PSI to 80 GPM Blocking Type Inline Mounted Subplate Mounted	Page 12
Pilot Operated 3000 PSI Subplate Mounted Inline Mounted	Page 15
Pilot Operated 4600 PSI NG10, NG25, & NG32 Subplate Mounted	Page 19
Accessories Subplates & Bolt Kits	Page 22

Check Valves

3000 PSI to 200 GPM
 Inline Mounted
 Subplate Mounted
 SAE #6 - #32

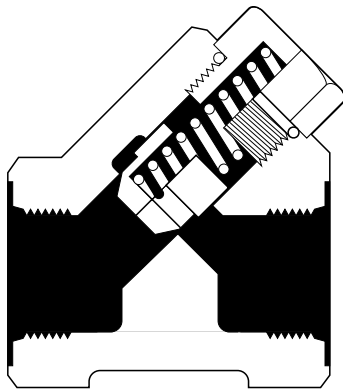


Specifications

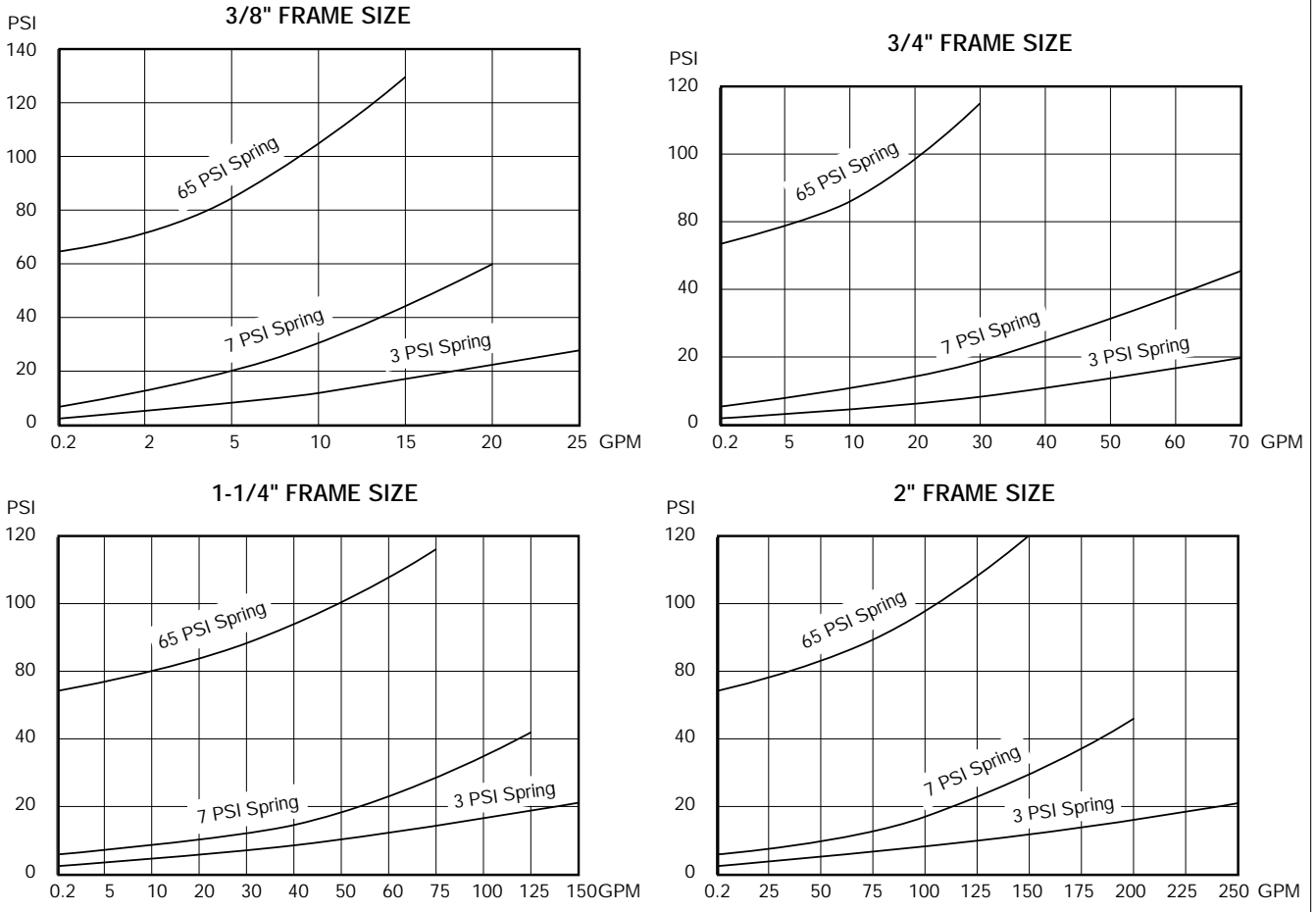
Valve function	Check valve, poppet type
Mounting type	Inline and subplate
Mounting position	Not restricted
Fluid	Mineral-oil or fluid HFA/B/C/D
Viscosity	60. . . 2500 SUS (10. . . 500 cst)
Fluid-temperature	-13 to 176°F (-25 to 80°C)
Filtration	Contamination class 10, according to NAS 1638 can be realized with filter $\beta_{25} = 75$
Seals	Viton
Cracking pressure	3, 7, & 65 PSI
Max. operating pressure	3000 PSI (210 Bar)
Max. flow	See performance charts

Valve Weight

Frame Size	Port SAE	Inline mounted
3/8"	6	1.5 lbs (0.68 kg)
3/4"	8, 10, 12	3.3 lbs (1.50 kg)
1-1/4"	16, 20	6.1 lbs (2.77 kg)
2"	24, 32	25.0 lbs (11.34 kg)

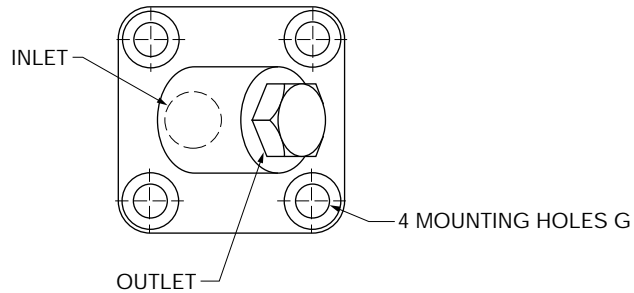


Performance Characteristics



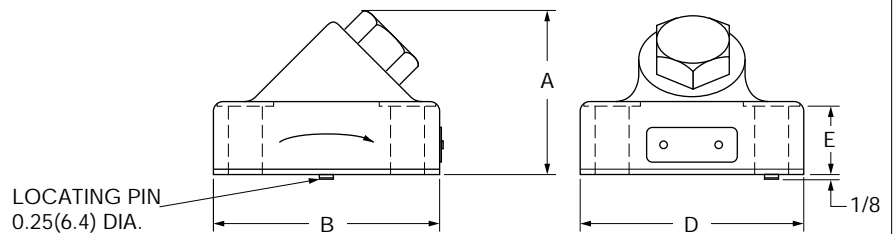
Dimensional Data - Subplate Mounted

Locations of ports, mounting holes & locating pin shown on subplate detail. Page 24
Seal plate & seals supplied.



INCHES
(MILLIMETERS)

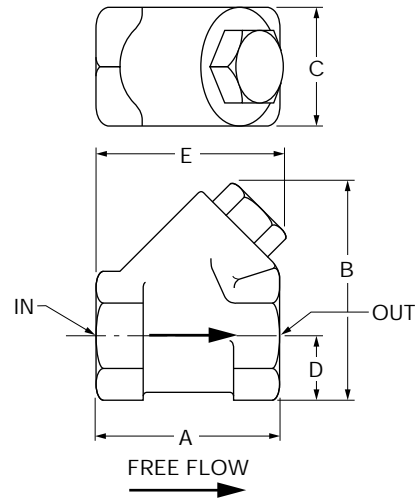
NOTE:
UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE NOMINAL



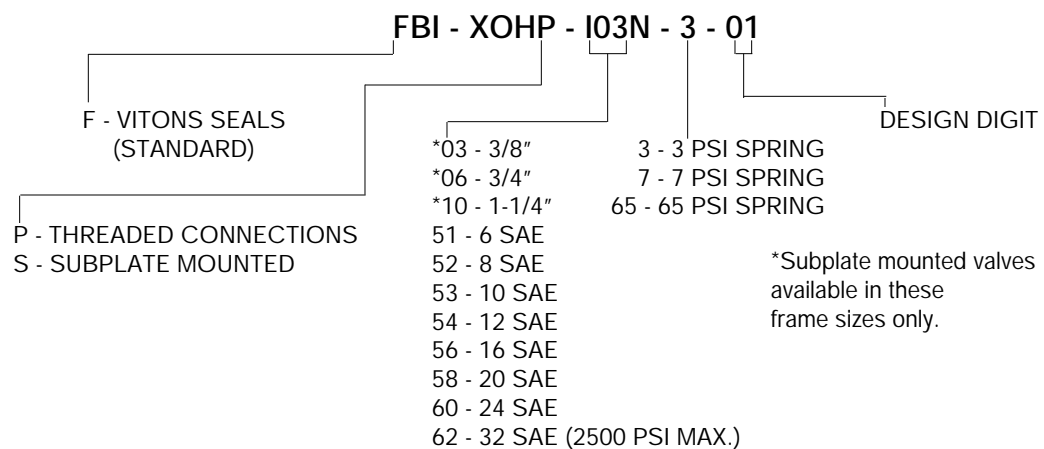
Frame Size	A	B	D	E	G DIA.
3/8"	2 - 17/32	3.00 (76.2)	2.50 (63.5)	1.19 (30.2)	0.41 (10.3)
3/4"	3 - 1/8	4.44 (112.7)	3.81 (96.8)	1.19 (30.2)	0.66 (16.7)
1-1/4"	3 - 21/32	5.00 (127.0)	5.00 (127.0)	1.56 (39.7)	0.78 (19.8)

Dimensional Data - Inline Mounted

Valve Size	A	B	C	D	E
6 SAE	2-19/32	2-27/32	1-1/2	7/8	2-7/8
8, 10, 12 SAE	3-7/16	3-21/32	1-7/8	1-3/32	3-9/16
16, 20 SAE	3-31/32	4-25/32	2-1/2	1-15/32	4-3/16
24, 32 SAE	6-1/2	7-5/16	4	2-5/16	6-5/8



How To Order

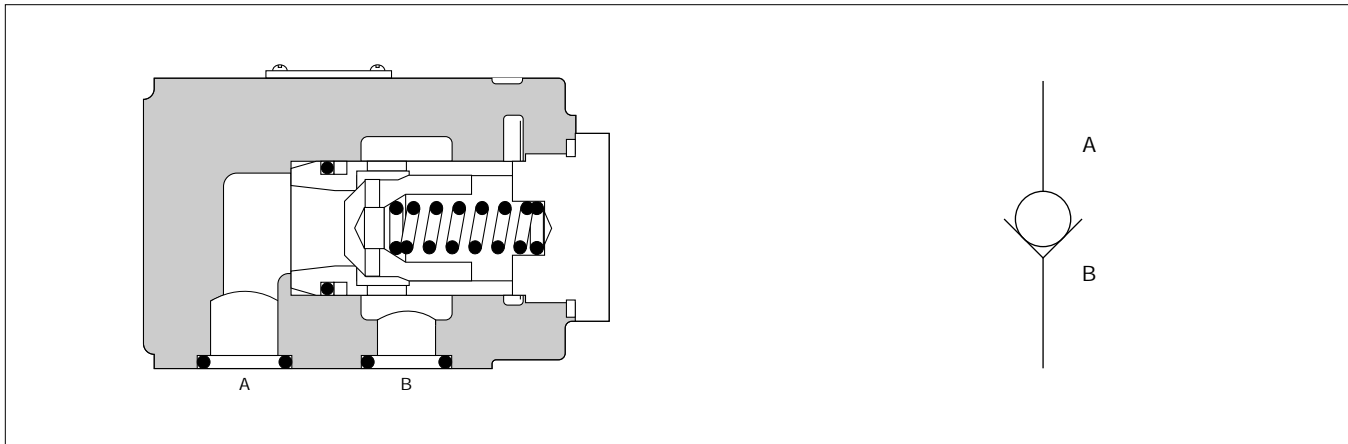


Check Valves

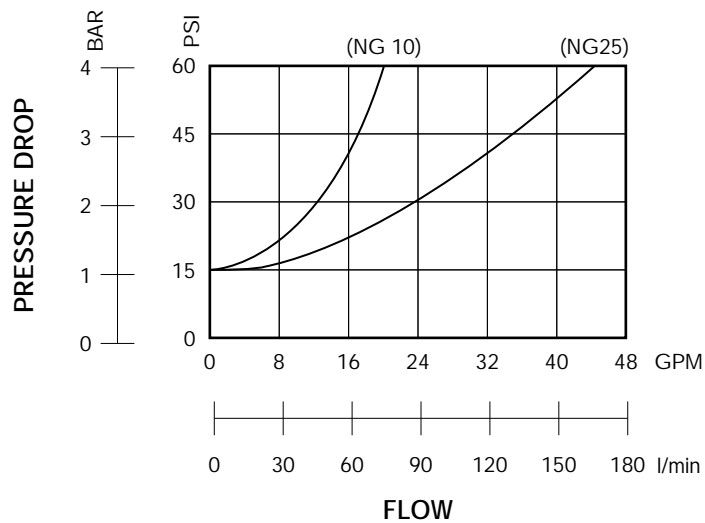
**4600 PSI
Subplate Mounted
NG10 & NG25**



Specifications	
Valve function	Check valve, poppet type
Mounting type	Subplate
Mounting position	Not restricted
Fluid	Mineral-oil or fluid HFA/B/C/D
Viscosity	60 . . . 2500 SUS (10 . . . 500 cst)
Fluid-temperature	-13 to 176°F (-25 to 80°C)
Filtration	Contamination class 10, according to NAS 1638 can be realized with filter $\beta_{25} = 75$
Seals	Buna
Cracking pressure	15 PSI (1 bar)
Max. operating pressure	4600 PSI (315 bar)
Max. flow	See performance curve



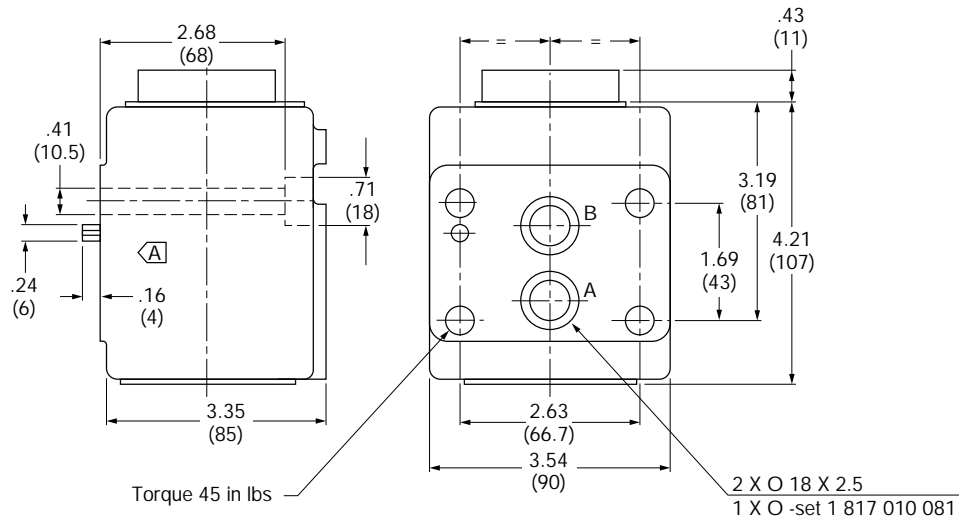
Performance Characteristics



PERFORMANCE CURVES

Fluid viscosity
164 SUS (35cSt)

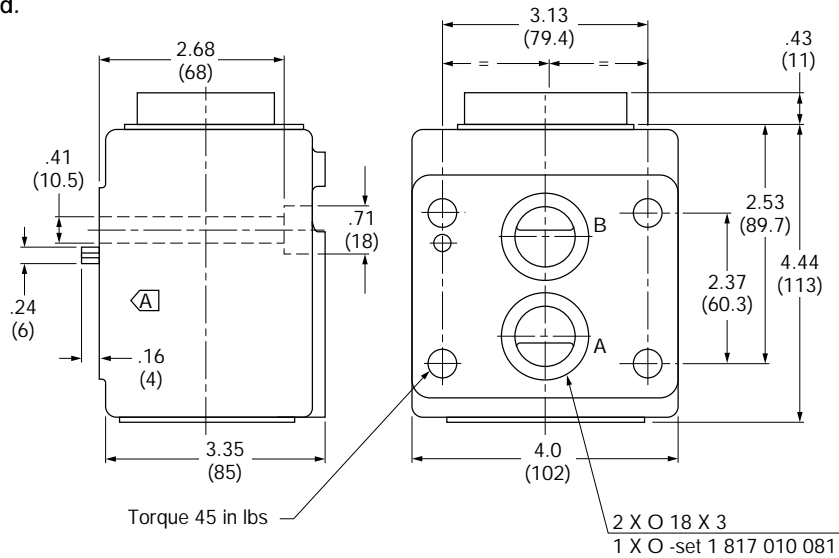
Dimensional Data



Locations of ports, mounting holes & locating pin shown on subplate detail.

Page 22

Seal plate & seals supplied.



How To Order

NG10 - 0 811 000 020

NG25 - 0 811 001 020

Check Valves

3000 PSI to 200 GPM
Adjustable resistance
Inline mounted
Subplate mounted



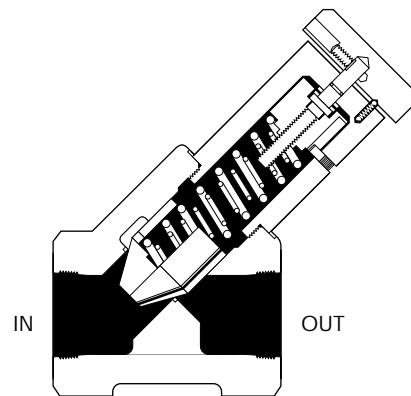
Specifications	
Valve function	Check valve, poppet type
Mounting type	Inline and subplate
Mounting position	Not restricted
Fluid	Mineral-oil or fluid HFA/B/C/D
Viscosity	60. . . 2500 SUS (10. . . 500 cst)
Fluid-temperature	-13 to 176°F (-25 to 80°C)
Filtration	Contamination class 10, according to NAS 1638 can be realized with filter $\beta_{25} = 75$
Seals	Viton
Max. operating pressure	3000 PSI (210 Bar)
Max. flow	See performance charts

Adjustment Sensitivity (AVERAGE)	
SIZE	PSI
3/8"	22 (1.5 bars)
1/2" & 3/4"	18 (1.2 bars)
1" & 1-1/4"	29 (2.0 bars)
1-1/2" & 2"	13 (0.9 bars)

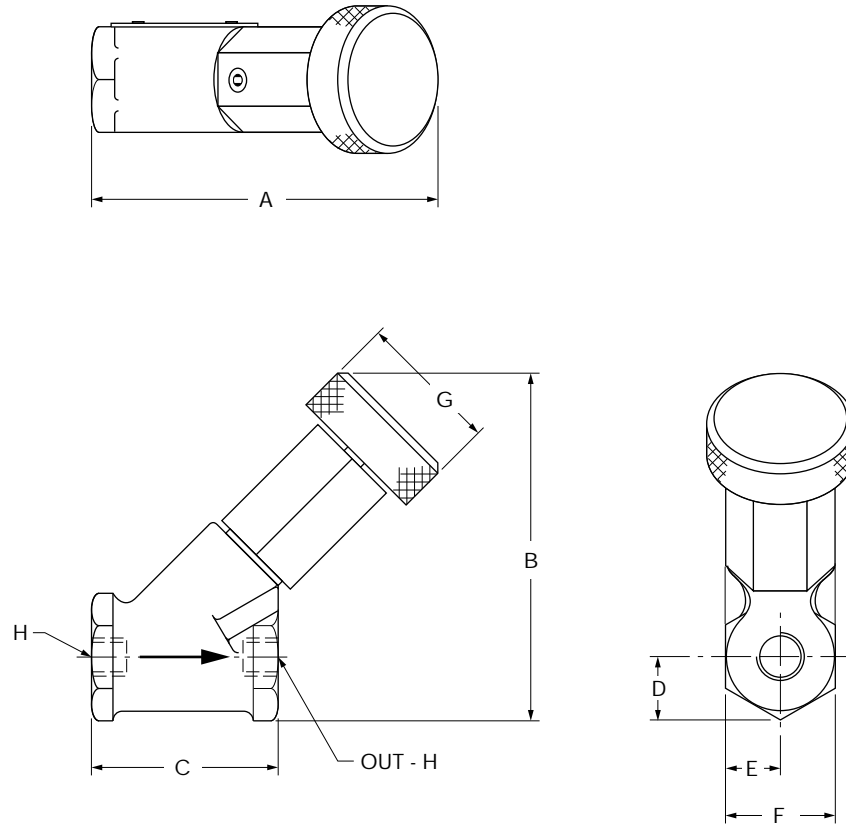
Adjustment Torque (MAXIMUM)	
SIZE	POUND-IN (NM)
3/8"	20 (2.26)
1/2" & 3/4"	25 (2.82)
1" & 1-1/4"	30 (3.39)
1-1/2" & 2"	75 (8.47)

Valve Weight			
Frame Size	Port SAE	Inline mounted	Subplate Mounted
3/8"	6	2 lbs (0.91 kg)	3 lbs (1.36 kg)
3/4"	8, 10, 12	4 lbs (1.81 kg)	6 lbs (2.72 kg)
1-1/4"	16, 20	7 lbs (3.18 kg)	12 lbs (5.44 kg)
2"	24, 32	30 lbs (13.61 kg)	

Leakage at 3000 PSI (nominal)			
Frame Size			
3/8"	3/4"	1-1/4"	2"
1 CIPM	2 CIPM	3 CIPM	5 CIPM



Dimensional Data - Inline Mounted



INCHES
(MILLIMETERS)

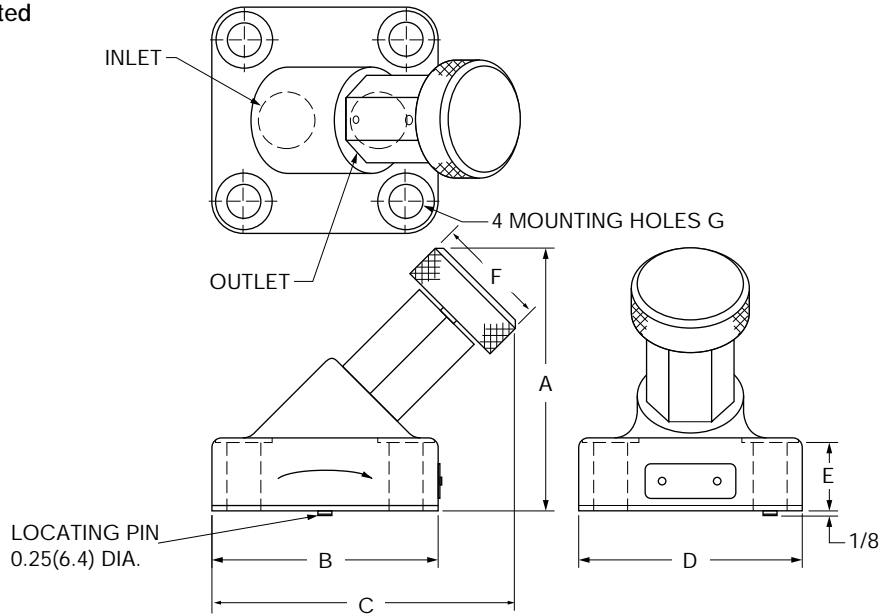
NOTE:
UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE NOMINAL

FRAME SIZE	A	B	C	D	E	F	G	H-S.A.E.
3/8"	4.84 (123.0)	4.80 (121.9)	2.59 (65.8)	0.88 (22.4)	0.76 (19.3)	1.59 (40.4)	2.00 (50.8)	6
3/4"	4.41 (112.0)	5.47 (138.9)	3.47 (88.1)	1.08 (27.4)	0.94 (23.8)	1.95 (49.5)	2.38 (60.5)	8,10,12
1-1/4"	5.72 (145.3)	6.31 (160.3)	4.00 (101.6)	1.45 (36.8)	1.25 (31.8)	2.57 (65.3)	2.38 (60.5)	16,20
2"	10.44 (265.2)	11.03 (280.2)	6.56 (166.6)	2.30 (58.4)	2.00 (50.8)	4.07 (103.4)	3.75 (95.3)	24,32

Dimensional Data - Subplate Mounted

INCHES
(MILLIMETERS)

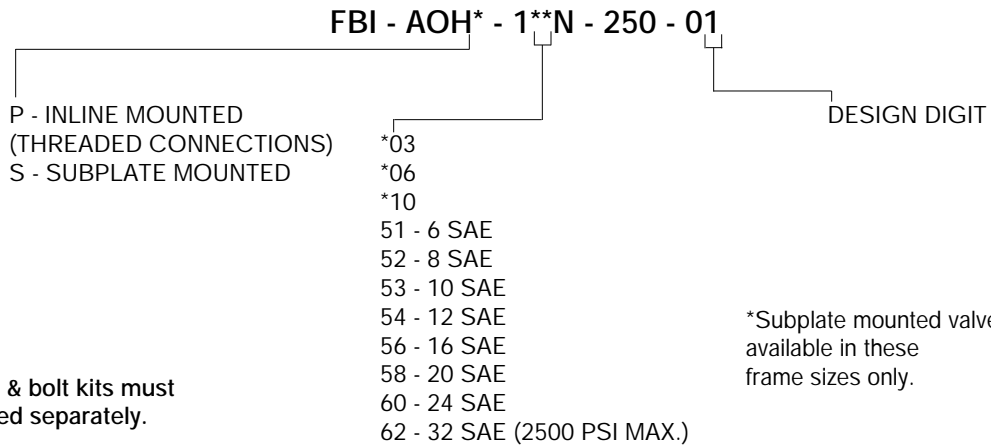
NOTE:
UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE NOMINAL



Frame Size	A	B	C	D	E	G DIA.
3/8"	4.50 (114.3)	3.00 (76.2)	4.72 (119.9)	2.50 (63.5)	1.19 (80.2)	0.41 (10.3)
3/4"	5.28 (134.1)	4.44 (112.7)	4.97 (126.2)	3.81 (96.8)	1.19 (30.2)	0.66 (16.7)
1-1/4"	5.25 (133.3)	5.00 (127.0)	6.09 (154.8)	5.00 (127.0)	1.56 (39.7)	0.78 (19.8)

Locations of ports, mounting holes & locating pin shown on subplate detail.
Page 24
Seal plate & seals supplied.

How To Order

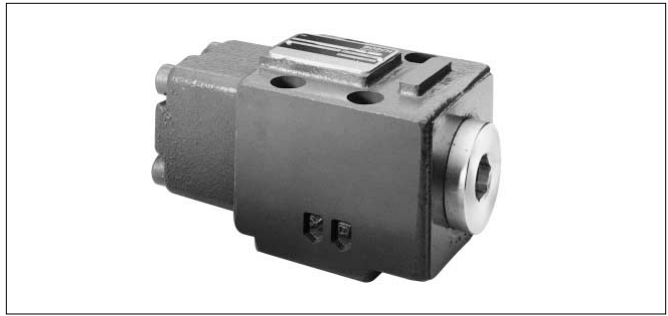


Subplates & bolt kits must
be specified separately.

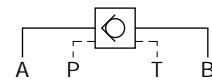
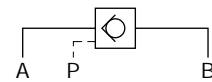
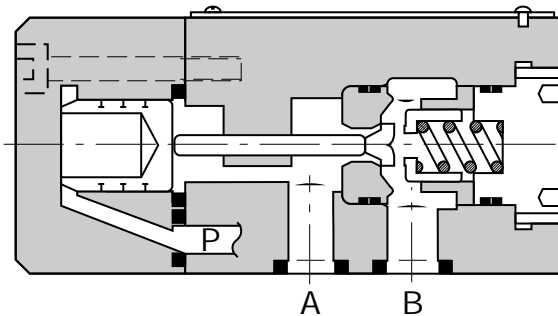
*Subplate mounted valves
available in these
frame sizes only.

Pilot Operated

4600 PSI
Subplate Mounted D03

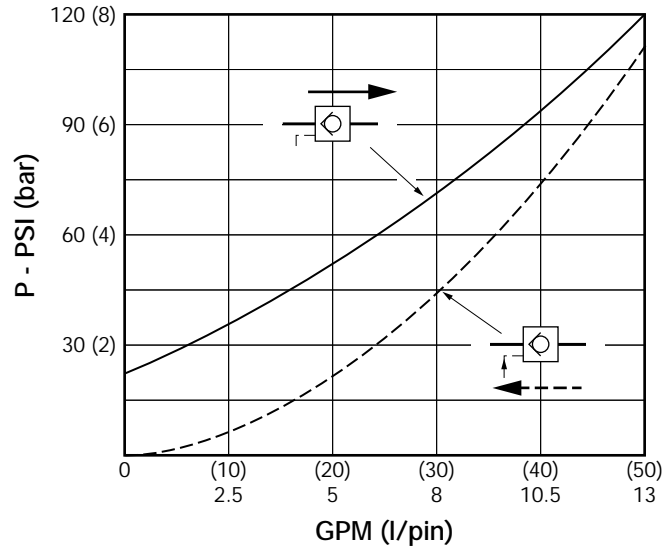


Specifications	
Valve function	Pilot operated check valve
Mounting type	Subplate D03 (NG 6), ISO 4401
Mounting position	Not restricted
Fluid	Mineral-oil or fluid HFA/B/C/D
Viscosity	60. . . 2500 SUS (10. . . 500 cst)
Fluid-temperature	-13 to 176°F (-25 to 80°C)
Filtration	Contamination class 10, according to NAS 1638 can be realized with filter $\beta_{25} = 75$
Seals	Viton
Ratio	3.5:1
Max. operating pressure	4600 PSI (315 bar)
Max. flow	13 GPM (50 l/min.)
Weight	2.9 lbs. (1.3kg)

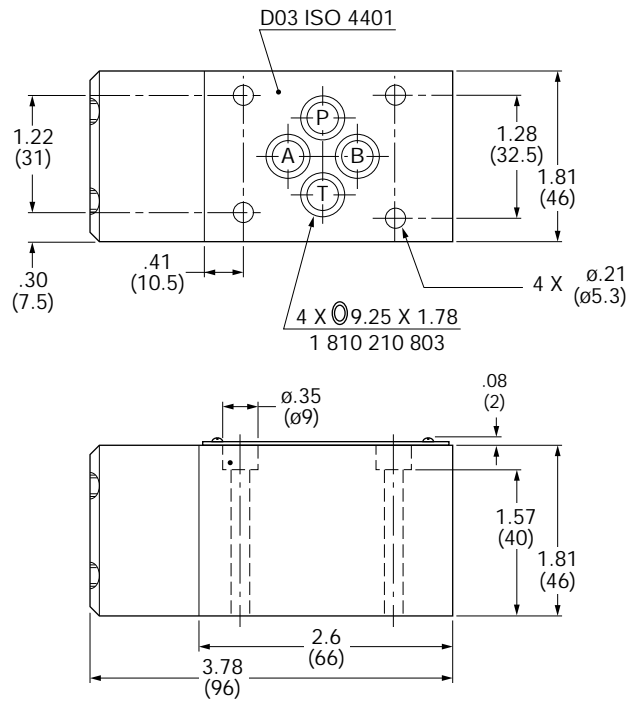


Performance Characteristics

V - 35 MM²/S



Dimensional Data



How To Order

0 811 013 200 - Standard P.O. Check

0 811 013 201 - Blocking P.O. Check

Pilot Operated**3000 PSI to 80 GPM****Blocking Type****Inline Mounted****Subplate Mounted**

Specifications	
Valve function	Blocking pilot operated check valve
Mounting type	Subplate or inline
Mounting position	Not restricted
Fluid	Mineral-oil or fluid HFA/B/C/D
Viscosity	60. . . 2500 SUS (10. . . 500 cst)
Fluid-temperature	-13 to 176°F (-25 to 80°C)
Filtration	Contamination class 10, according to NAS 1638 can be realized with filter $\beta_{25} = 75$
Seals	Viton
Max. operating pressure	3000 PSI (210 bar)
Max. flow	See performance charts

Decompression Ratios

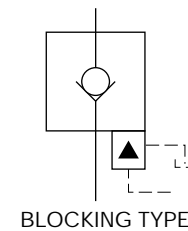
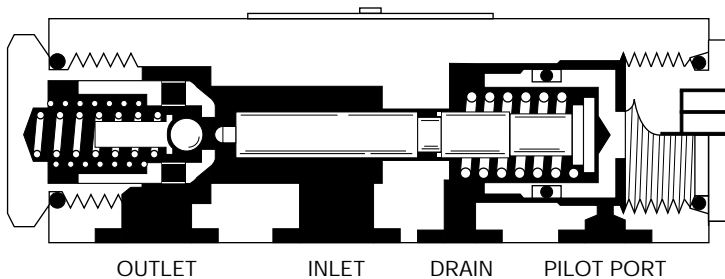
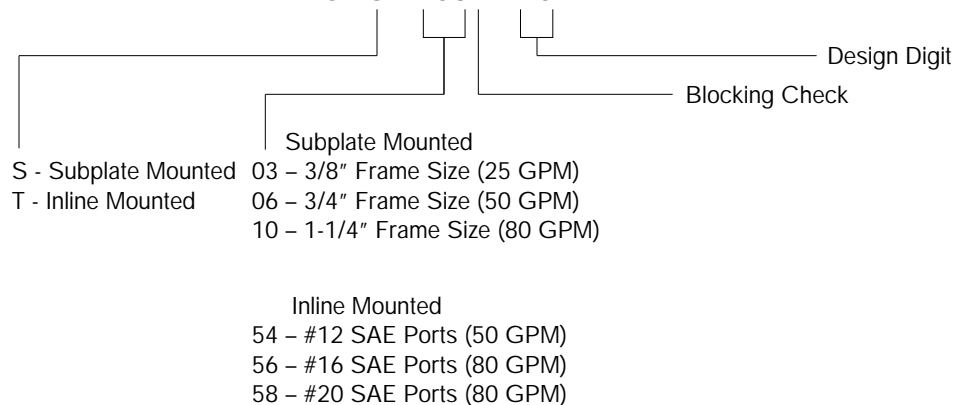
SIZE	
3/8"	25:1
3/4"	36:1
1-1/4"	11.6:1

Opening Ratios

3/8"	2:25:1
3/4"	3:1
1-1/4"	2:1

Weight - (Approx.)

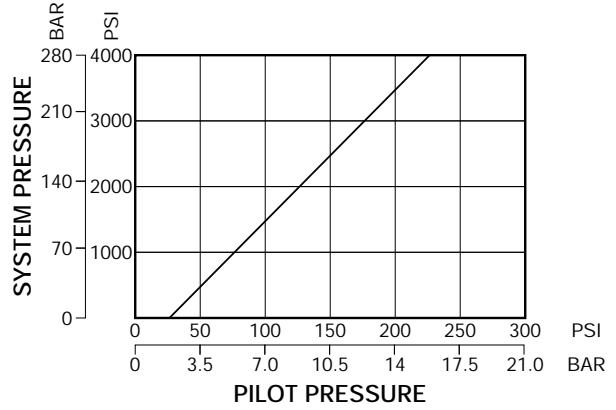
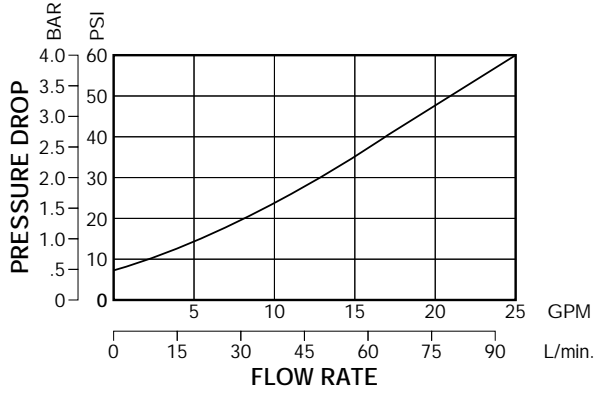
3/8"	5 lbs. 7 oz. (2.47 kg)
3/4"	13 lbs. 12 oz. (6.24 kg)
1-1/4"	30 lbs. 12 oz. (13.95 kg)

**How To Order****FB1 - POHS - 103X - 20**

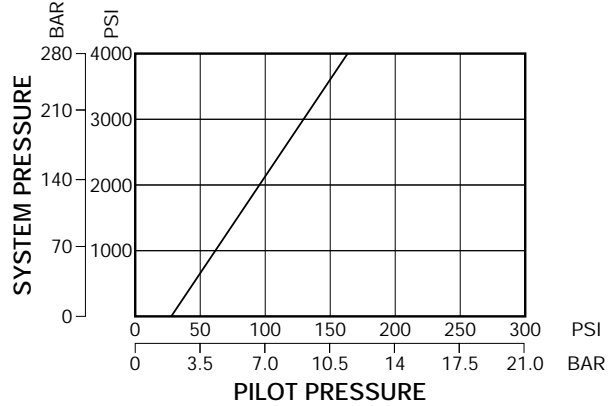
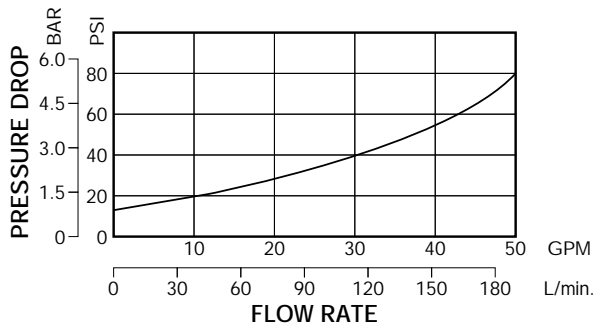


Performance Characteristics

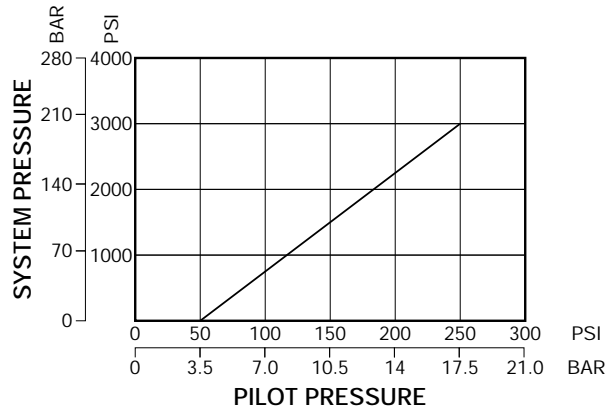
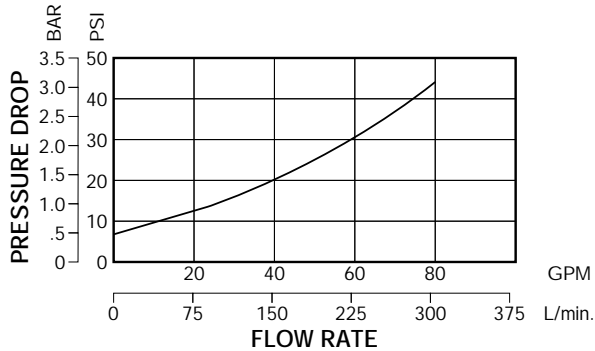
3/8" CHECK VALVE



3/4" CHECK VALVE



1-1/4" CHECK VALVE

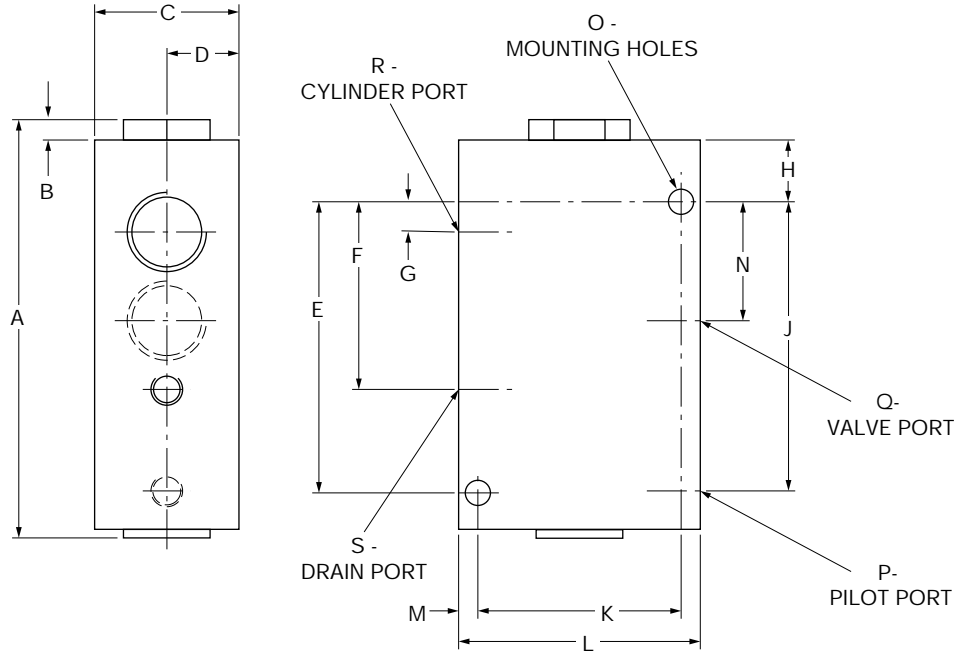


Data plotted at an oil temperature of 120°F (49°C) using oil with a viscosity of 100 SUS (21cSt) at 150°F (66°C).

Dimensional Data - Inline Mounted

INCHES
(MILLIMETERS)

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE NOMINAL



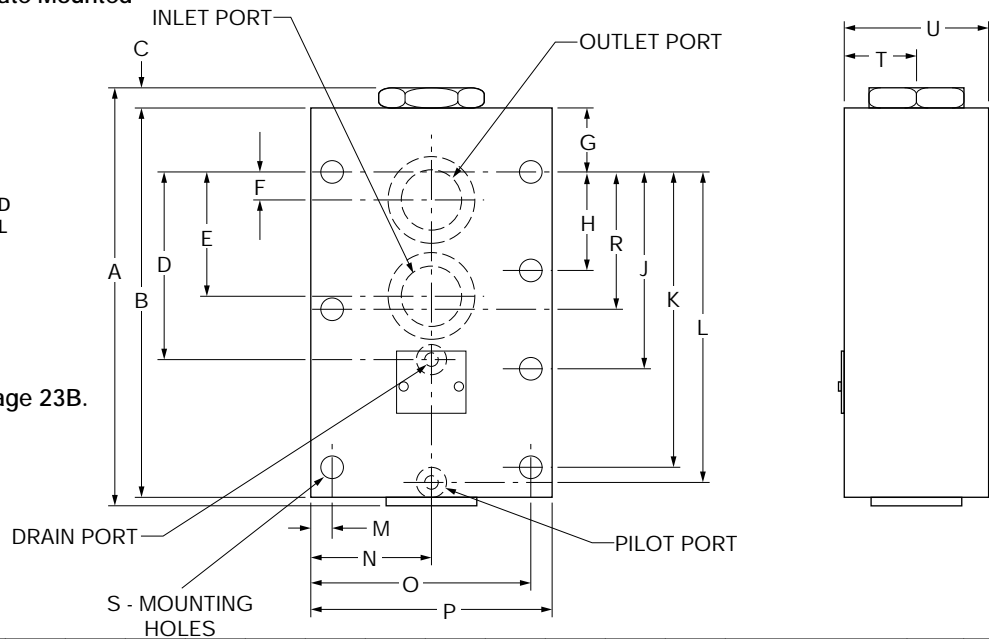
Frame Size	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	Code	Frame Size
3/4"	7.19 (182.6)	0.53 (13.5)	2.00 (50.8)	1.00 (25.4)	4.75 (120.7)	3.06 (77.8)	0.38 (9.5)	1.25 (31.8)	4.44 (112.8)	3.19 (81)	4.00 (101.6)	0.41 (10.4)	1.88 (47.6)	0.41 (10.3)						3/4"
1-1/4"	8.78 (223.1)	.63 (16)	3.00 (76.2)	1.50 (38.1)	6.00 (152.4)	3.81 (96.8)	0.55 (14.3)	1.31 (33.3)	5.97 (151.6)	4.25 (108)	5.00 (127.0)	0.38 (9.5)	2.49 (63.3)	0.47 (11.9)	#6 SAE	#12 SAE	#12 SAE	#6 SAE	54	1-1/4"
															#6 SAE	#20 SAE	#20 SAE	#6 SAE	58	

Dimensional Data - Subplate Mounted

INCHES
(MILLIMETERS)

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE NOMINAL

Subplate detail shown on page 23B.
Seal plate & seals supplied.



Valve Size	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	R	S	T	U
3/8"	5.06 (128.6)	4.62 (117.5)	0.28 (7.1)	2.50 (63.5)	1.61 (40.9)	0.34 (8.7)	0.38 (9.5)	3.75 (98.4)	3.50 (88.9)	0.34 (8.6)	1.50 (38.1)	2.65 (67.3)	3.00 (76.2)	1.88 (47.6)	5 holes, 0.34 (8.7) Dia	0.75 (19.1)	1.50 (38.1)
3/4"	7.19 (182.6)	6.50 (165.1)	0.53 (13.5)	3.06 (77.8)	1.88 (47.6)	0.38 (9.5)	1.25 (31.8)	4.75 (120.7)	4.19 (106.4)	0.41 (10.4)	2.00 (50.8)	3.60 (91.4)	4.00 (101.6)	2.38 (60.3)	5 holes, 0.41 (10.3) Dia	1.00 (25.4)	2.00 (50.8)
1-1/4"	8.56 (217.6)	8.00 (203.2)	0.41 (10.4)	3.81 (96.8)	2.49 (63.2)	0.55 (14.3)	1.31 (33.3)	2.00 (50.8)	4.00 (101.6)	6.00 (152.4)	6.28 (159.5)	0.38 (9.5)	2.50 (63.5)	4.62 (117.5)	5.00 (127.0)	...	6 holes, 0.47 (11.9) Dia	1.50 (38.1)	3.00 (76.2)

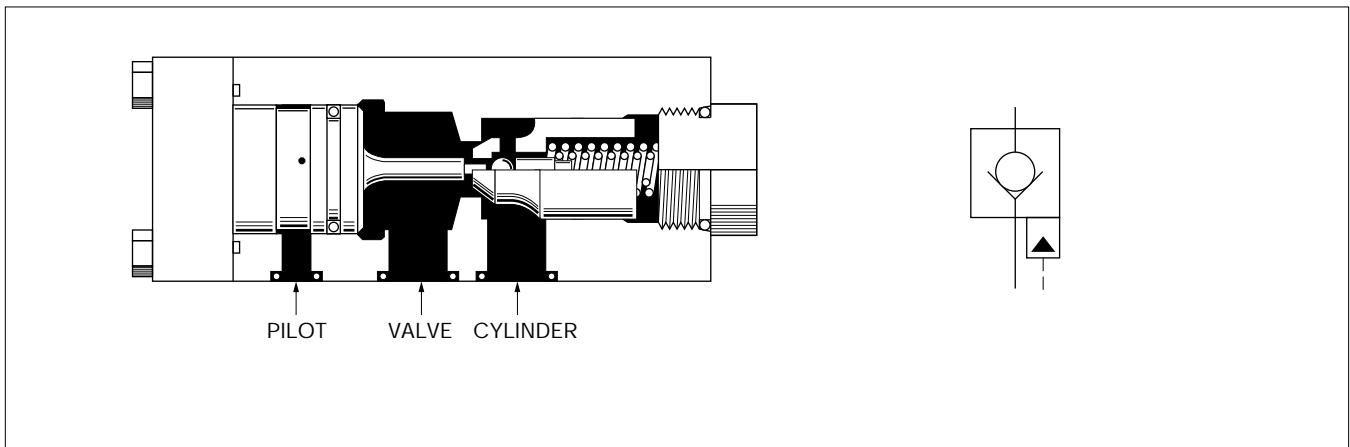
Pilot Operated

3000 PSI
Subplate Mounted
Inline Mounted



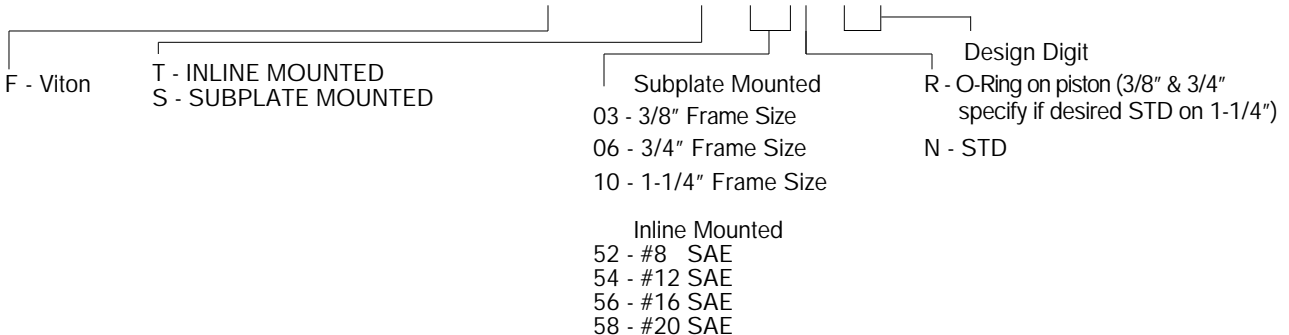
Specifications	
Valve function	Pilot operated check valve
Mounting type	Subplate or inline
Mounting position	Not restricted
Fluid	Mineral-oil or fluid HFA/B/C/D
Viscosity	60. . . 2500 SUS (10. . . 500 cst)
Fluid-temperature	-13 to 176°F (-25 to 80°C)
Filtration	Contamination class 10, according to NAS 1638 can be realized with filter $\beta_{25} = 75$
Seals	Viton
Ratio	Opening 5:1 Decompression 40:1
Max. operating pressure	3000 PSI (20)
Max. flow	See performance charts

Weight - (Approx.) -	
3/8" Size	15 lbs. (6.8 kg)
3/4" Size	25 lbs. (11.3 kg)
1-1/4" Size	34 lbs. (15.4 kg)

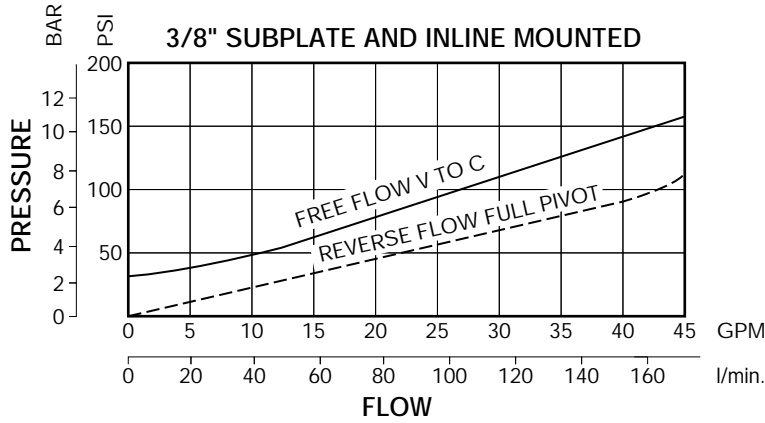


How To Order

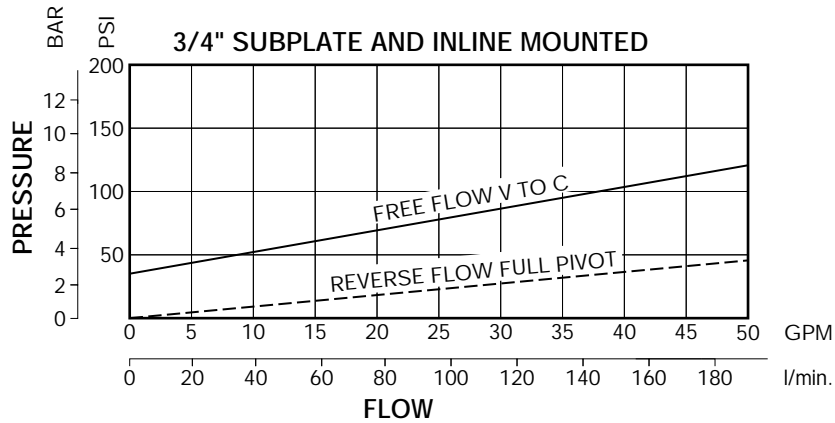
FB1 - POHS - 103N - 20



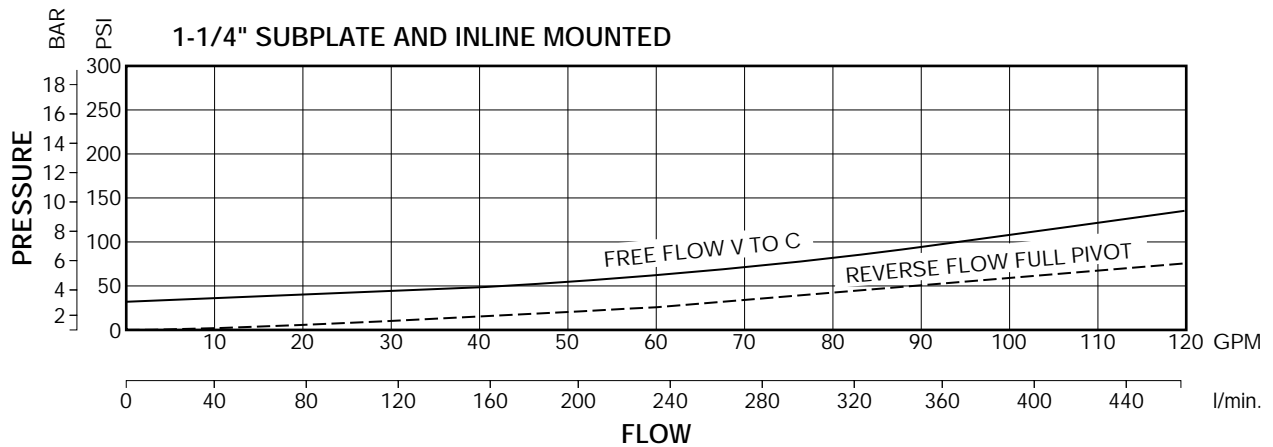
Performance Characteristics



Performance Characteristics



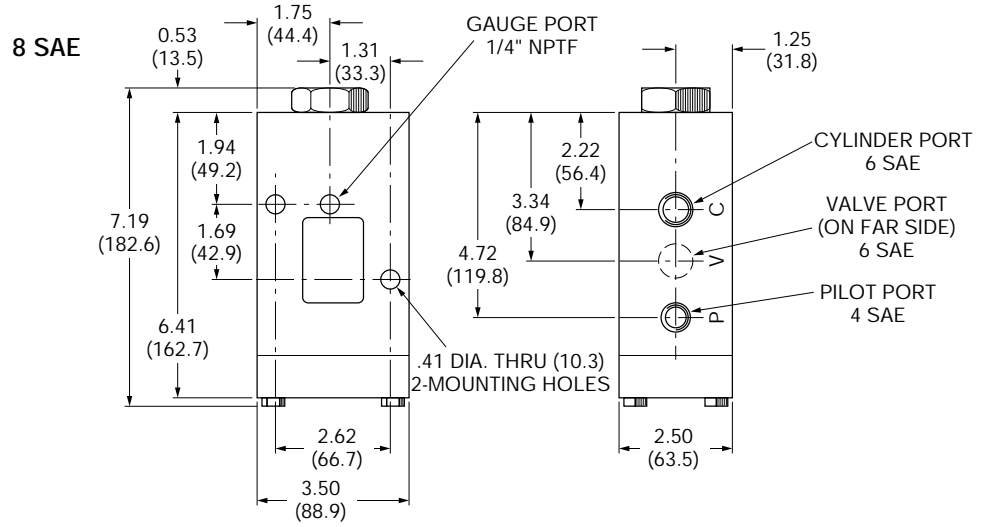
Performance Characteristics



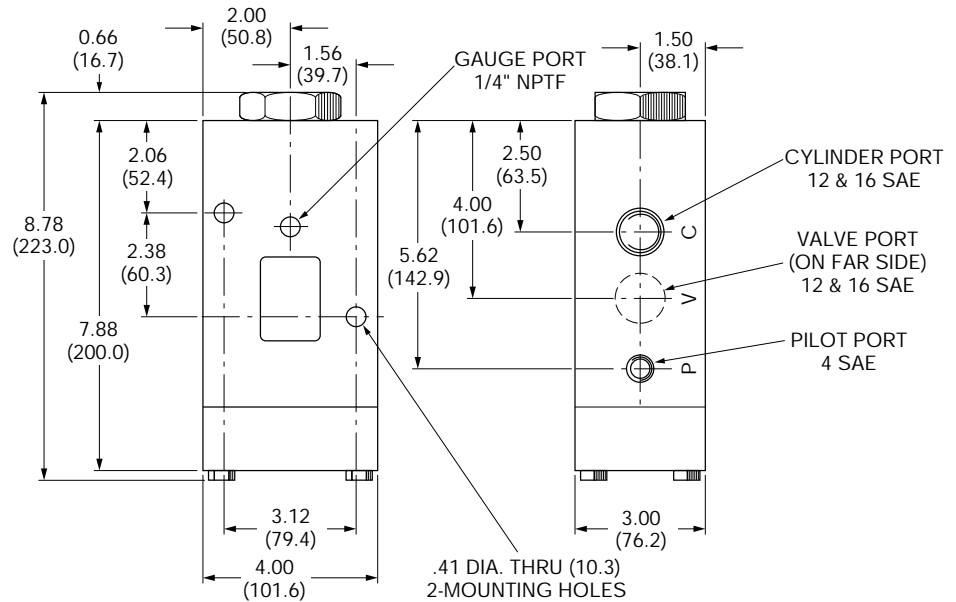
Dimensional Data

INCHES
(MILLIMETERS)

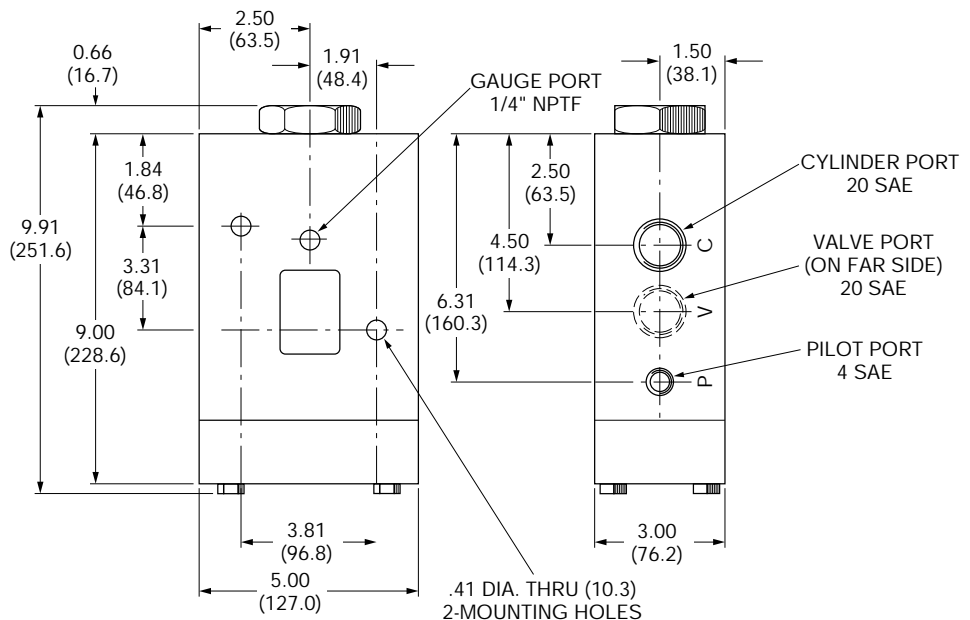
NOTE:
UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE NOMINAL



**12 SAE
16 SAE**

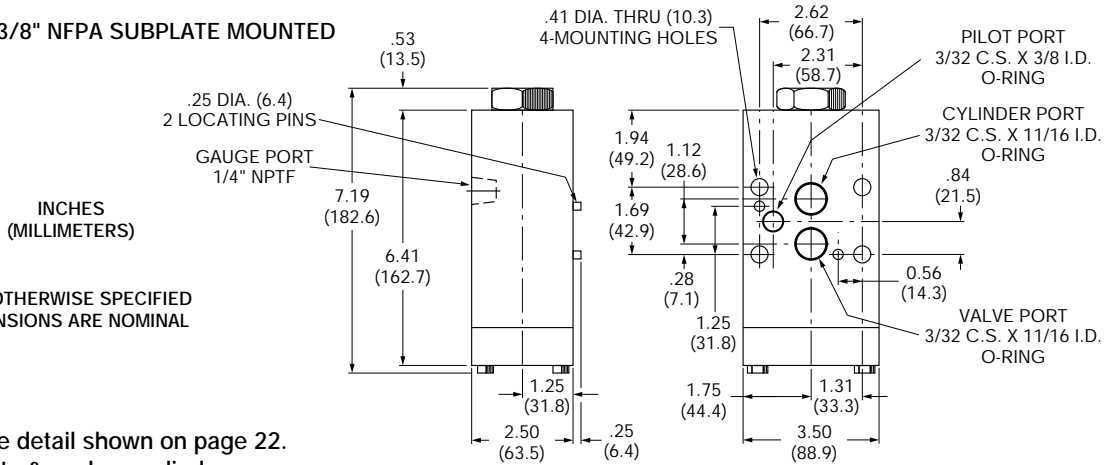


20 SAE



Dimensional Data

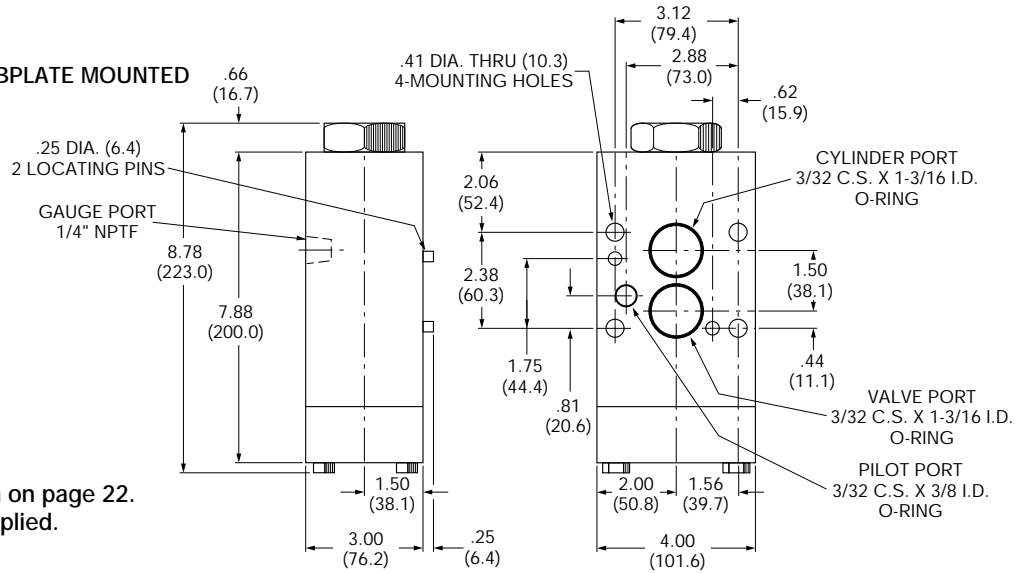
3/8" NFPA SUBPLATE MOUNTED



NOTE:
UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE NOMINAL

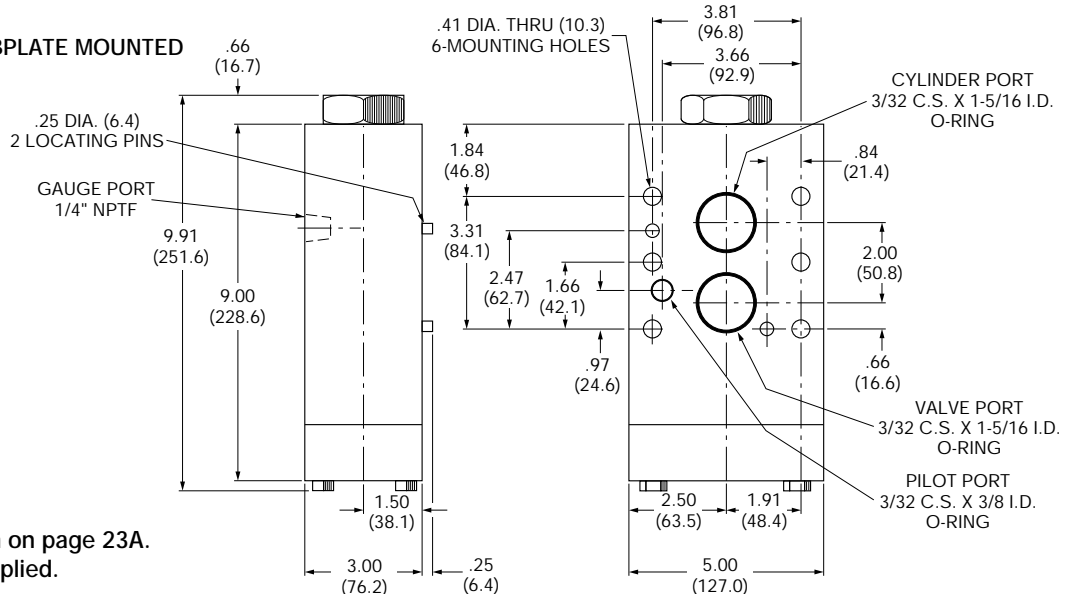
Subplate detail shown on page 22.
Seal plate & seals supplied.

3/4" NFPA SUBPLATE MOUNTED



Subplate detail shown on page 22.
Seal plate & seals supplied.

1-1/4" NFPA SUBPLATE MOUNTED

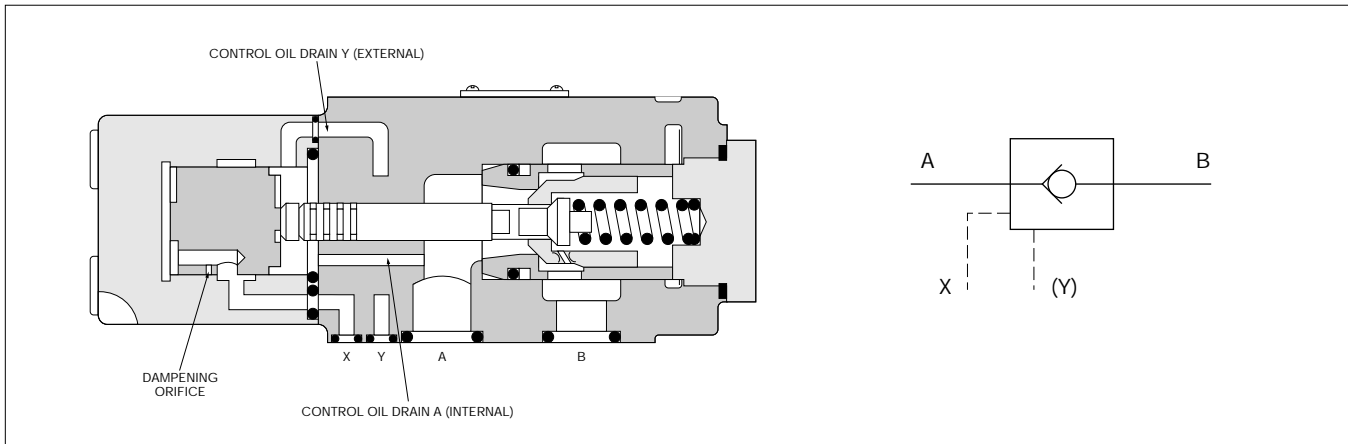


Subplate detail shown on page 23A.
Seal plate & seals supplied.

Pilot Operated

**4600 PSI
NG 10, NG 25, & NG 32
Subplate Mounted**

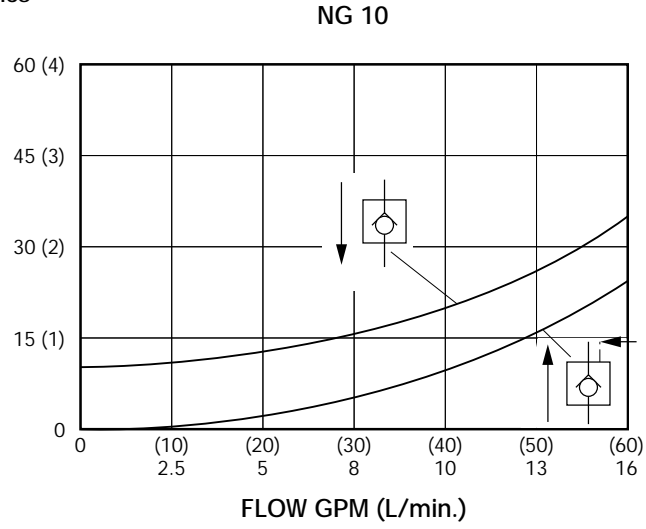
Specifications	
Valve function	Pilot operated or blocking check valve
Mounting type	Subplate
Mounting position	Not restricted
Fluid	Mineral-oil or fluid HFA/B/C/D
Viscosity	60. . . 2500 SUS (10. . . 500 cst)
Fluid-temperature	-13 to 176°F (-25 to 80°C)
Filtration	Contamination class 10, according to NAS 1638 can be realized with filter $\beta_{25} = 75$
Seals	Viton
Ratio	14:1 Decompression
Max. operating pressure	4600 PSI (315 bar)
Max. flow	See performance charts



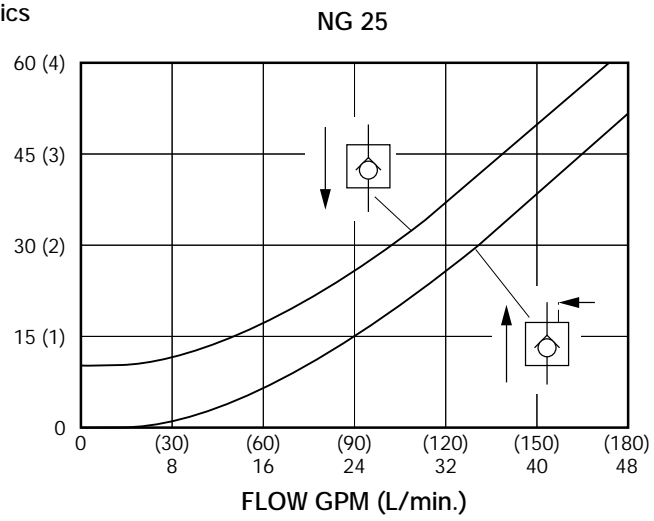
How To Order

10	Pilot-operated	internal	N	0 811 020 021
		external	N	0 811 020 020
25	Pilot-operated	internal	N	0 811 021 021
		external	N	0 811 021 020
32	Pilot-operated	int.drain	N	0 811 022 021
		ext.drain	N	0 811 022 020

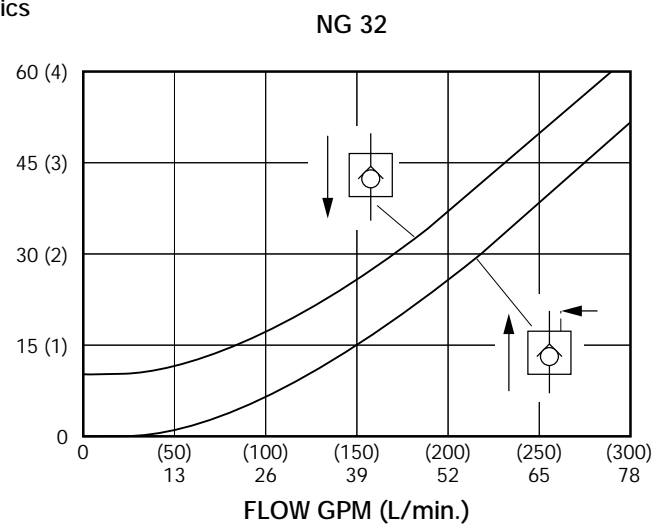
Performance Characteristics
NG 10



Performance Characteristics
NG 25

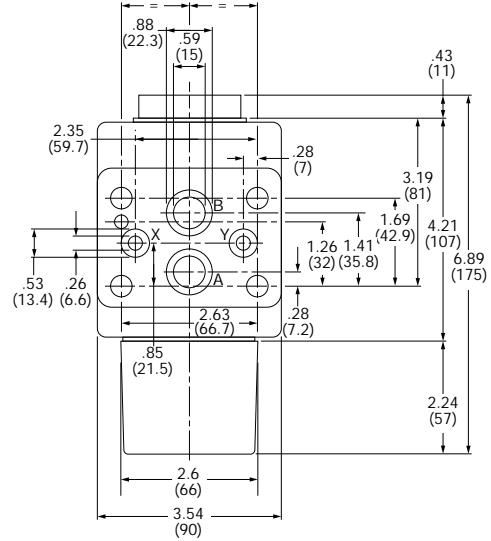
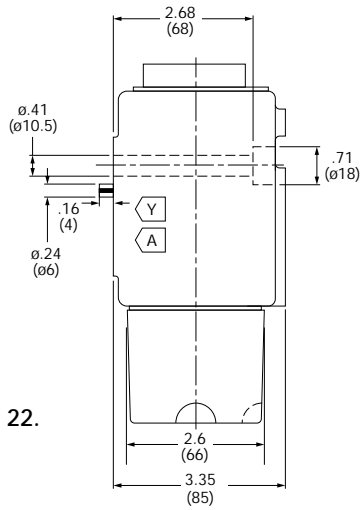


Performance Characteristics
NG 32



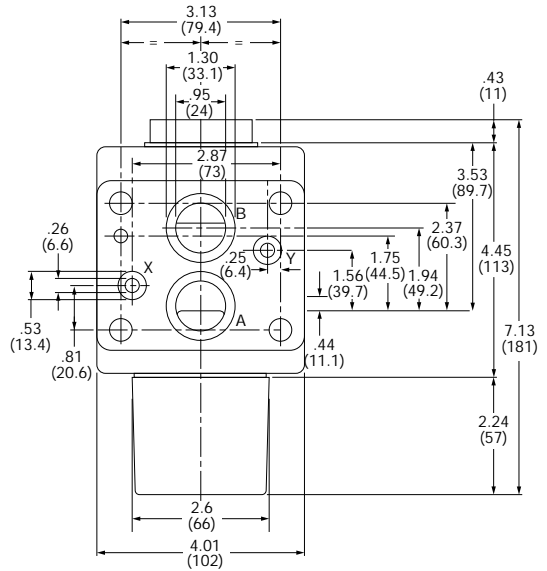
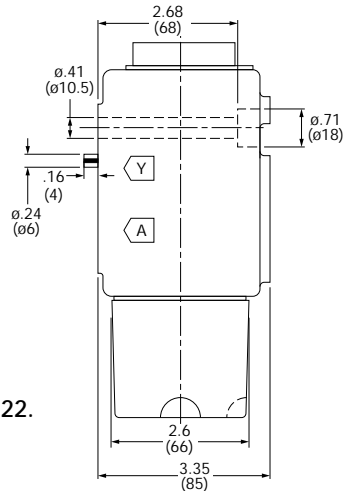
Dimensional Data

NG 10 CHECK VALVE



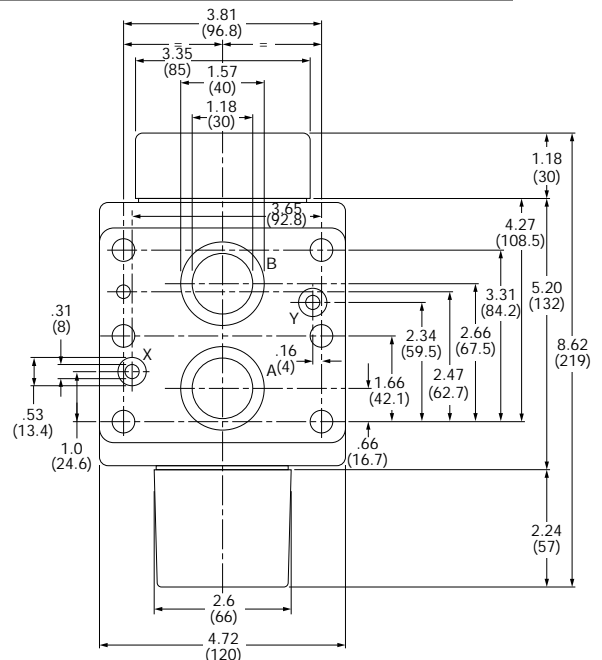
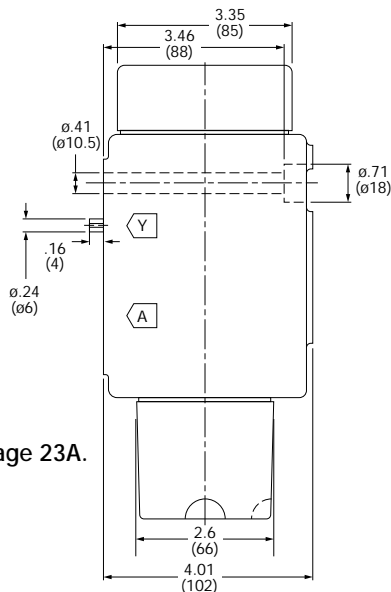
Subplate detail shown on page 22.
Seal plate & seals supplied.

NG 25 CHECK VALVE



Subplate detail shown on page 22.
Seal plate & seals supplied.

NG 32 CHECK VALVE

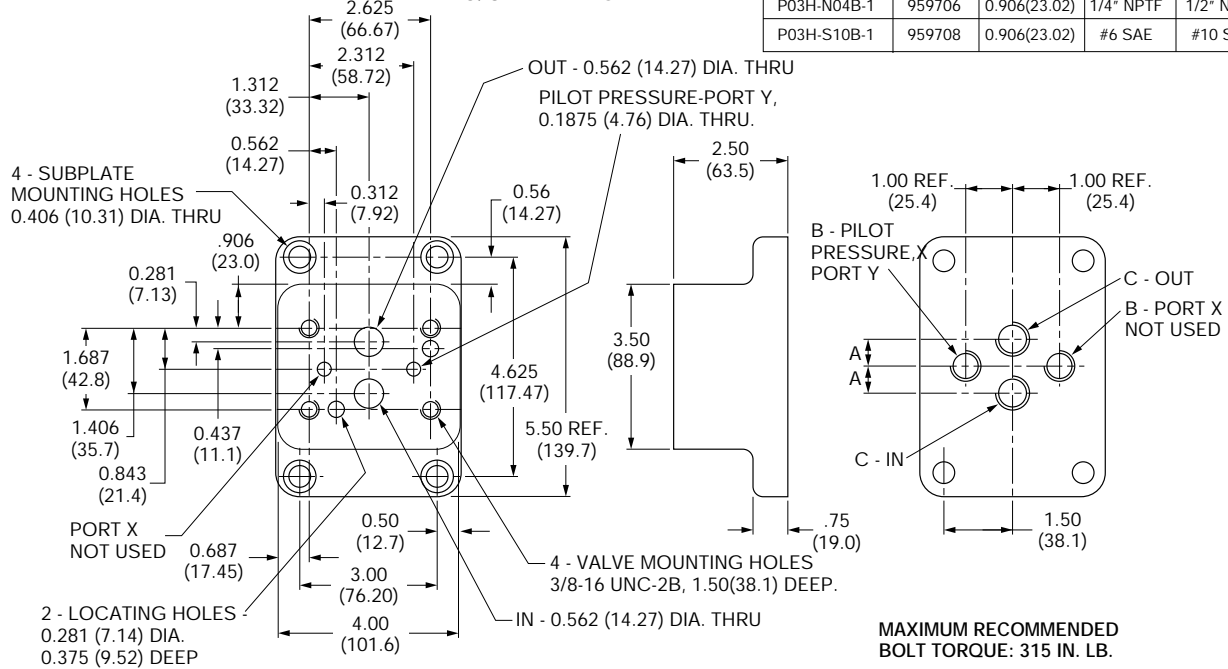


Subplate detail shown on page 23A.
Seal plate & seals supplied.

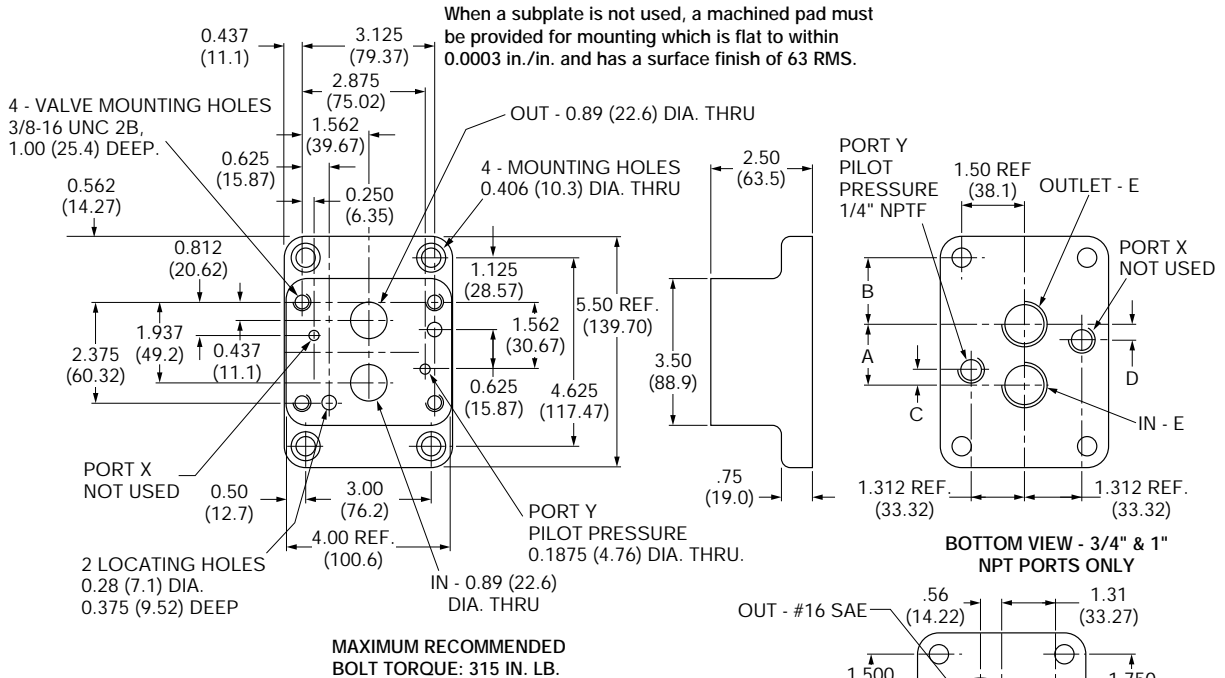
Dimensional Data

**SUBPLATES
3/8" FRAME SIZE**

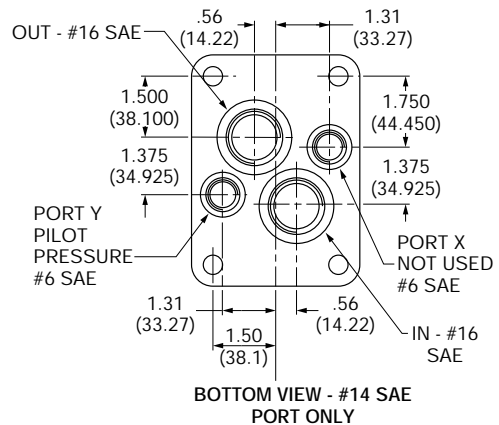
Model	Part No.	A	B	C
P03H-N03B-1	959705	0.562(14.3)	1/4" NPTF	3/8" NPTF
P03H-N04B-1	959706	0.906(23.02)	1/4" NPTF	1/2" NPTF
P03H-S10B-1	959708	0.906(23.02)	#6 SAE	#10 SAE



**SUBPLATES
3/4" FRAME SIZE**



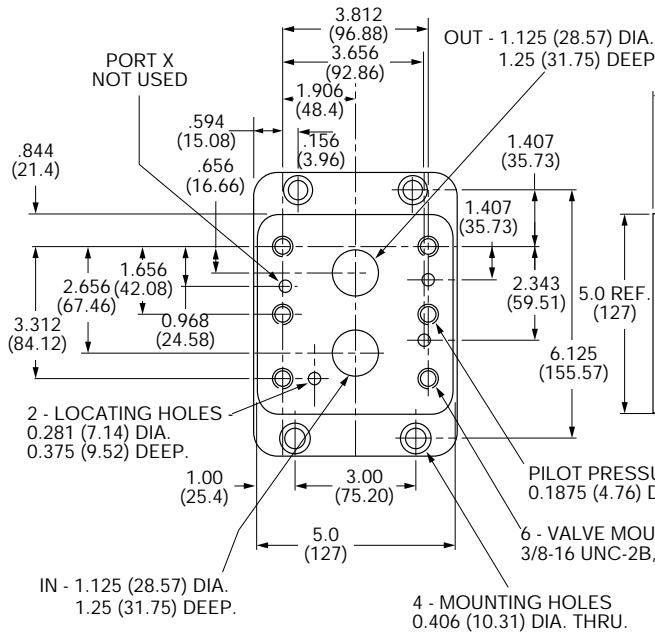
Model	Part No.	A	B	C	D	E
P06H-N06B-1	959709	1.50 (38.1)	1.562 (39.67)	0.375 (9.52)	0.375 (9.52)	3/4" NPT
P06H-N08B-1	959710	1.75 (44.4)	1.438 (36.52)	0.50 (12.7)	0.50 (12.7)	1" NPT
P06H-S16B-1	959751	-	-	-	-	#16 SAE



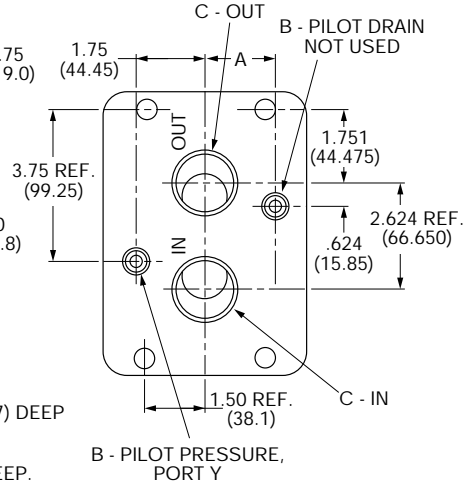
Dimensional Data

23A

**SUBPLATES
1-1/4" FRAME SIZE**

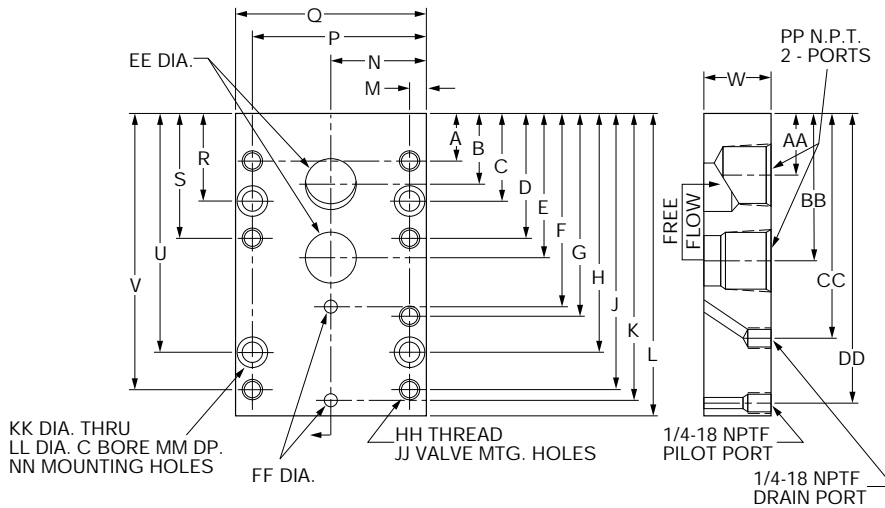


Model	Part No.	A	B	C
P10H-N10B-1	959712	1.75(44.45)	1/4" NPTF	1-1/4" NPTF
P10H-N12B-1	959713	1.75(44.45)	1/4" NPTF	1-1/2" NPTF
P10H-S20B-1	959714	1.593(40.46)	#6 SAE	#20 SAE



23B

SUBPLATE



INCHES
(MILLIMETERS)

NOTE:
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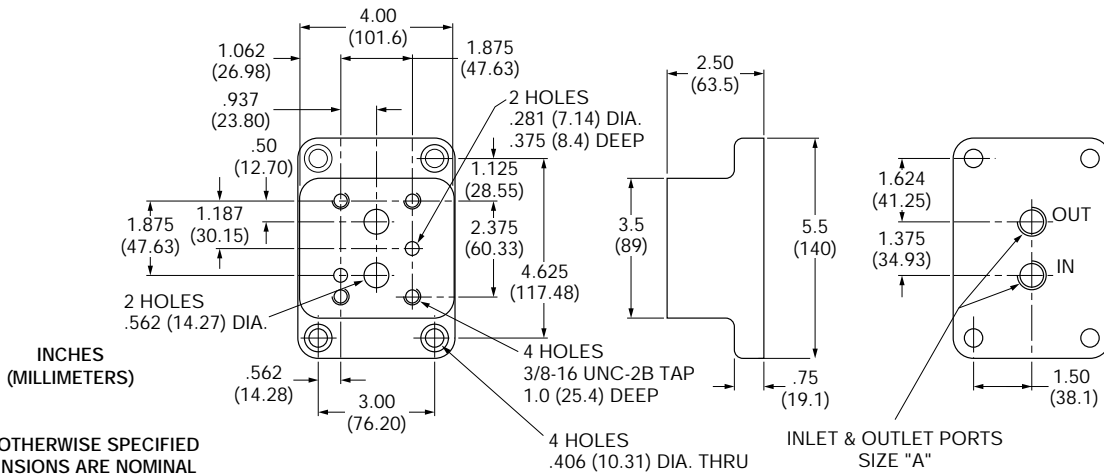
AA	BB	CC	DC	EE	FF	HH	JJ	KK	LL	MM	NN	PP
0.72 (18.3)	1.98 (50.3)	2.88 (73.0)	3.88 (98.4)	0.50 (12.7)	0.28 (7.1)	5/16-18	5 5	0.34 (8.6)	0.50 (12.7)	0.38 (9.5)	2 2	3/8-18
1.62 (41.3)	3.12 (79.4)	4.31 (109.5)	5.44 (138.1)	0.81 (20.6)	0.28 (7.1)	3/8-16	5 5	0.41 (10.4)	0.59 (15.1)	0.41 (10.4)	2 2	3/4-14
1.31 (33.3)	3.80 (96.5)	5.81 (147.6)	7.59 (192.9)	1.25 (31.8)	0.25 (6.4)	7/16-14	6 6	0.47 (11.9)	0.69 (17.5)	0.50 (12.7)	4 4	1-1/4-11-1/2

Part No.	Valve Size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	U	V	W
360889	3/8"	0.38 (9.5)	0.72 (18.3)	---	---	1.98 (50.3)	2.88 (73.0)	---	3.38 (85.7)	4.12 (104.8)	3.88 (98.4)	4.62 (117.5)	0.34 (8.6)	1.50 (38.1)	2.65 (67.3)	3.00 (76.2)	1.12 (28.6)	2.25 (57.2)	---	4.12 (104.8)	1.12 (28.6)
360890	3/4"	1.25 (31.8)	1.62 (41.3)	---	---	3.12 (79.4)	4.31 (109.5)	---	5.00 (127.0)	6.00 (152.4)	5.44 (138.1)	6.50 (165.1)	10.4 (265.1)	50.8 (1290.5)	91.3 (2318.1)	101.6 (2580.1)	57.2 (1452.1)	92.1 (2338.1)	---	6.00 (152.4)	1.25 (31.75)
360891	1-1/4"	1.31 (33.3)	1.86 (47.2)	2.31 (59.1)	3.31 (84.1)	3.80 (96.5)	5.12 (130.2)	5.31 (134.9)	6.31 (160.3)	7.31 (185.7)	7.59 (192.9)	8.00 (203.2)	0.38 (9.7)	2.50 (63.5)	4.62 (117.3)	5.00 (127.0)	2.31 (58.7)	---	6.31 (160.3)	7.31 (185.7)	1.75 (44.4)

Dimensional data

3/8" FRAME SIZE

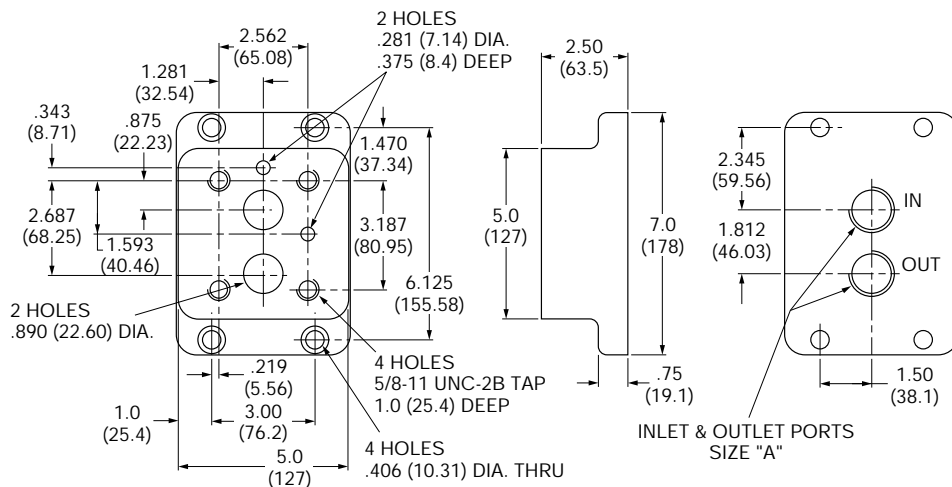
MODEL NO.	Part No.	A
C03H-S10B-I	959733	#10 SAE



NOTE:
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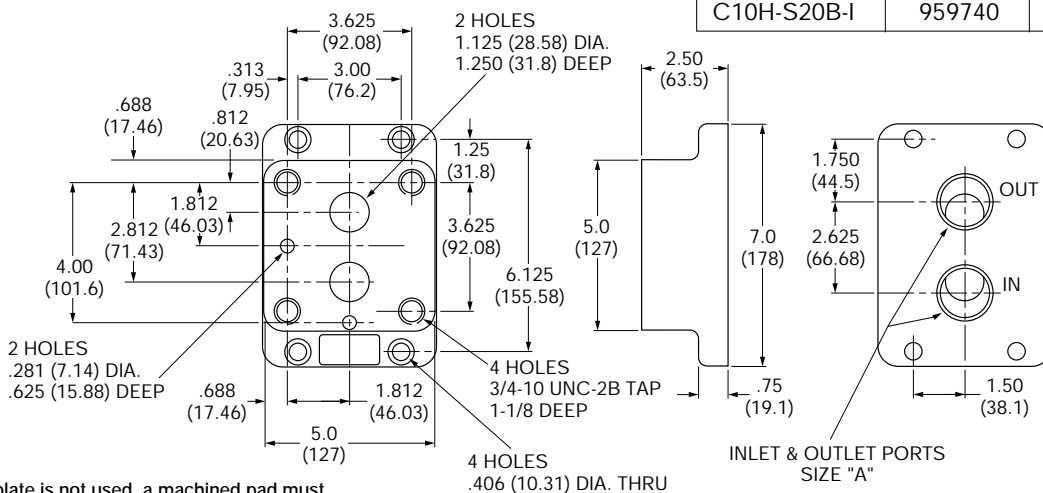
3/4" FRAME SIZE

MODEL NO.	Part No.	A
C06H-S16B-I	959748	#16 SAE



1-1/4" FRAME SIZE

MODEL NO.	Part No.	A
C10H-S20B-I	959740	#20 SAE



When a subplate is not used, a machined pad must be provided for mounting which is flat to within 0.0003 in./in. and has a surface finish of 63 RMS.

9 535 233 163
ATUS AKY 009/1 (5.96)

ROBERT BOSCH FLUID POWER CORPORATION
P.O. BOX 2025
RACINE, WISCONSIN 53401-2025 U.S.A.
Phone (414)554-7100, Fax (414)554-7117



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