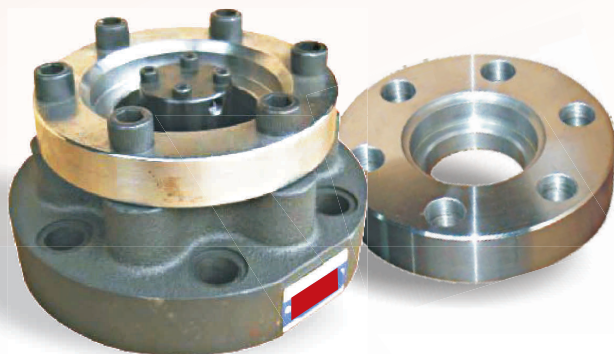


Pre-fill valves

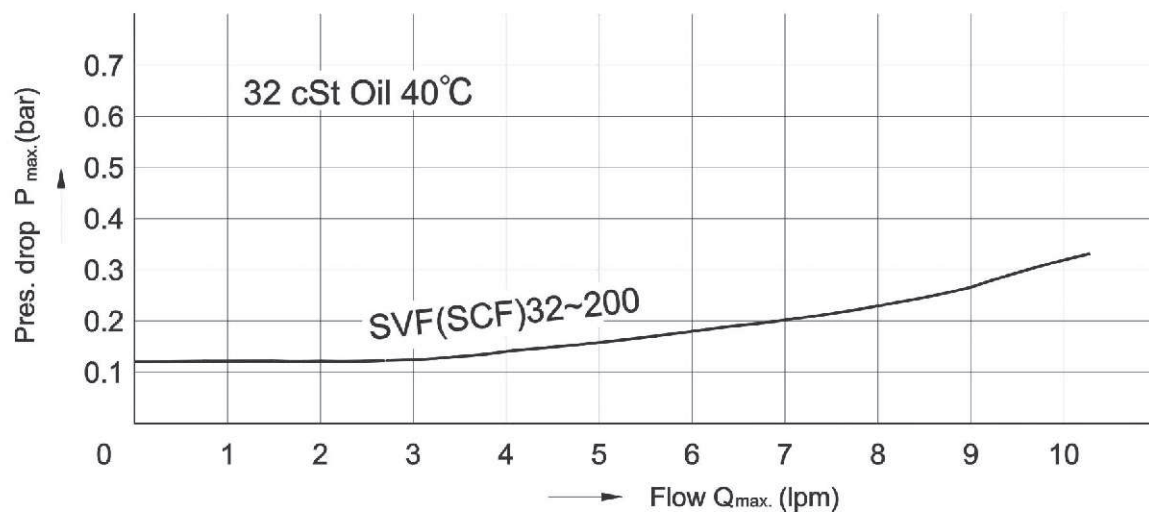


PRE-FILL VALVES (Flange-clamped type)

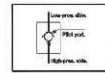
Specifications:

Model	Flow Q _{max.}	Pres. P _{max.}	Pilot Ratio	Flange bolts		Pipe Size	Weight
	lpm (USgpm)	bar (PSI)	P control /P cyl.	Number	Nor. Dia.		kg(lb)
SVF- 32-21C	160(42.27)	400 (5,800)	3.6	4	M16	2B	1.3(2.86)
SVF- 50-21C	400(105.98)		3.8	6	M16/M24*	3B	2.9(6.39)
SVF- 63-21C	630(166.44)		4.2	8	M16/M24*	3.5B/4B	4.5(9.91)
SVF- 80-21C	1,000(264.19)		4.3	8	M16/M24*	4B	6.2(13.66)
SVF-100-21C	1,600(422.70)		4.3	8	M22/M30*	5B	12.3(27.09)
SVF-125-21C	2,500(660.48)		4.3	12	M24/M30*	8B	23.0(50.66)
SVF-160-21C	4,000 (1,056.76)	250 (3,600)	4.2	16	M30	10B	50.0(110.13)
SVF-200-21C	7,000 (1,849.33)		4.1	20	M30	12B	130.0(286.34)
Note: * For working pressure up to 400 bar (5,800PSI)							
SCF- 32-22C	160(42.27)	250 (3,600)	3.6	4	M16	2B	1.3(2.86)
SCF- 50-22C	400(105.98)		3.8	6	M16	3B	2.9(6.39)
SCF- 63-22C	630(166.44)		4.2	8	M16	3.5B/4B	4.5(9.91)
SCF- 80-22C	1,000(264.19)		4.3	8	M16	4B	6.2(13.66)
SCF-100-22C	1,600(422.70)		4.3	8	M22	5B	12.3(27.09)
SCF-125-22C	2,500(660.48)		4.3	12	M24	8B	23.0(50.66)

Flow Curve:



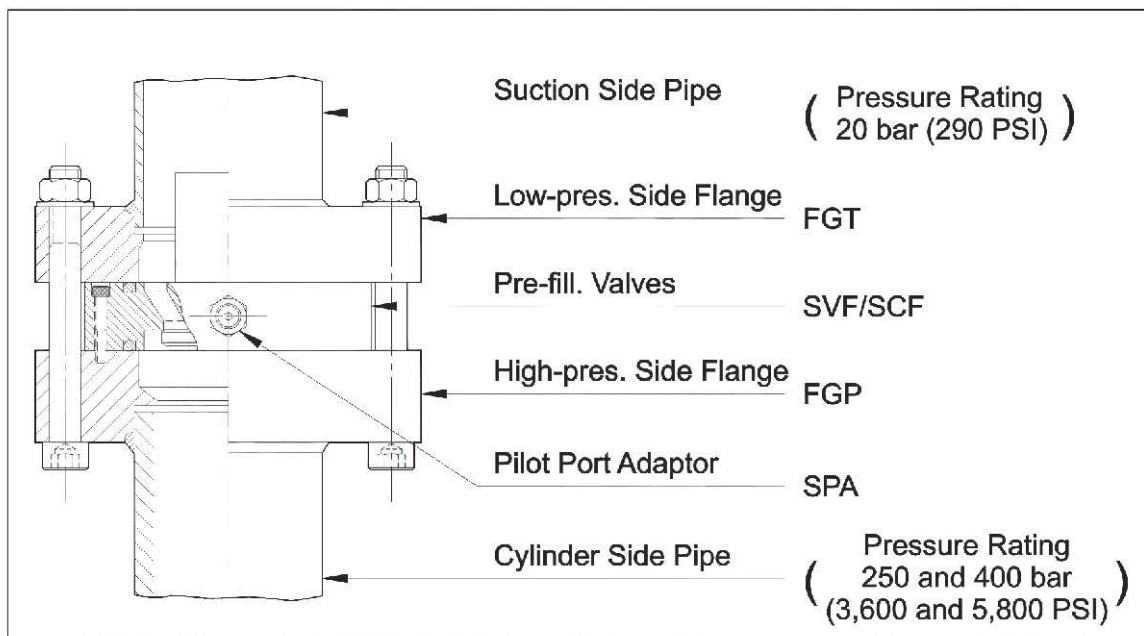
PRE-FILL VALVES (Flange-clamped type)



SYMBOL

Features:

- Small size , and easy to install.
- Low pressure loss with high flow capacity.
- Compact and robust.
- Steel body with steel components.
available with 8 models for selection options.
- Ductile iron body with steel Components.
available with 6 models for selection options.
- Good for directly intergrated onto the cylinder cap side.



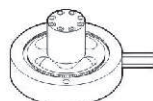
Pre-fill valve

Ordering Code

SVF - 100 - 21C

① ② ③

- ① Series
SVF-Steel body
SCF-Ductile iron body
- ② Size
SVF- 32~200
SCF- 32~125
- ③ Design Number
SVF- 21C
SCF- 22C



Pipe Flange

Ordering Code

FGP - 100 - 2 - M22 / 5B

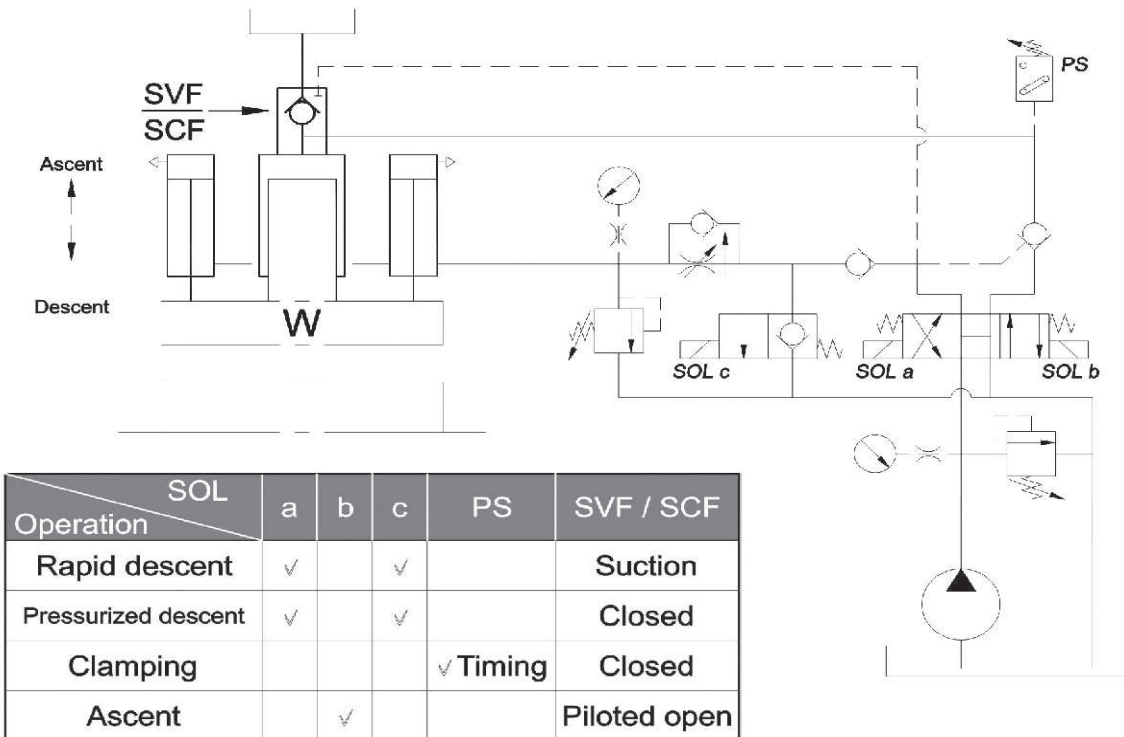
① ② ③ ④ ⑤

- ① Series
FGP-High-pres. side flange
FGT-Low-pres. side flange
- ② Size
- ③ Pressure range
2: 250 bar (3,600 PSI)
4: 400 bar (5,800 PSI)
- ④ Normal bolt diameter
- ⑤ Normal pipe diameter



PRE-FILL VALVES (Flange-clamped type)

For reference:



Example for model selection:

Given

1. Main cylinder dia.: 350mm.
2. Ascending cylinder: 2-B $\phi 63 \times R \phi 35$ (mm).
3. Weight of platen: 1500kg.
4. Pump capacity: 25 lpm (6 USgpm).

Analysis

Area of main cylinder: 961.625 cm^2

Two ascending cylinder area: 43.081 cm^2

Ascent speed: 580 cm/min (96.6 mm/sec).

Flow thru pre-fill valve to tank : 558 lpm (135 USgpm).

Selectable model: SVF-63-21C

or SCF-63-22C

The induced pressure in ascending cylinder is 36 bar (520 PSI).

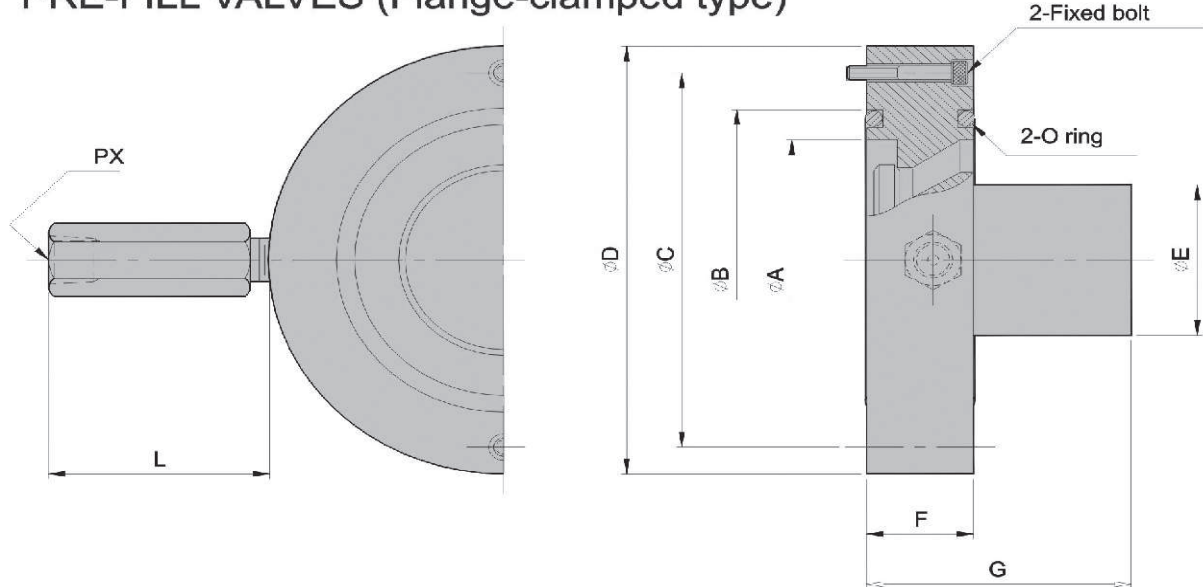
For a free descending operation, the flow capacity.

630 lpm (152 USgpm) for SVF(SCF)-63, will allow a descending speed at 650 cm/min (108 mm/sec).

DIMENSIONS

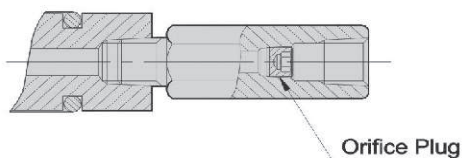
MILLIMETERS(INCHES)

PRE-FILL VALVES (Flange-clamped type)



Model	ø A	ø B	ø C	ø D	ø E	ø F	ø G	L	PX	Fixed Bolt	O-ring
SVF-32,SCF-32	48 (1.89)	63 (2.48)	—	82 (3.23)	32 (1.26)	28 (1.10)	55 (2.17)	62 (2.44)	PT1/4"	—	1517-6
SVF-50,SCF-50	72 (2.83)	90 (3.54)	112 (4.41)	128 (5.04)	45 (1.77)	29 (1.14)	72 (2.83)			M 4X30	G 85
SVF-63,SCF-63	87 (3.43)	105 (4.13)	125 (4.92)	143 (5.63)	50 (1.97)	33.5 (1.32)	84 (3.31)			M 5X35	G 95
SVF-80,SCF-80	108 (4.25)	130.5 (5.14)	150 (5.91)	169 (6.65)	57 (2.24)	38.5 (1.52)	100 (3.94)			M 5X40	G120
SVF-100,SCF-100	130 (5.12)	155 (6.10)	185 (7.28)	212 (8.35)	70 (2.76)	44 (1.73)	122 (4.80)			M 6X45	G145
SVF-125,SCF-125	170 (6.69)	200 (7.87)	226 (8.90)	248 (9.76)	89 (3.50)	51 (2.01)	155 (6.10)			M 6X60	G185
SVF-160,SCF-160	218 (8.58)	250 (9.84)	284 (11.18)	310 (12.20)	120 (4.72)	70 (2.76)	233 (9.17)	70 (2.76)	PT3/8"	M 8X70	G235
SVF-200,SCF-200	272 (10.71)	310 (12.20)	355 (13.98)	390 (15.35)	145 (5.71)	95 (3.74)	268 (10.55)	85 (3.35)	PT1/2"	M10X95	G295

Pre-fill Valves Pilot Port adaptor



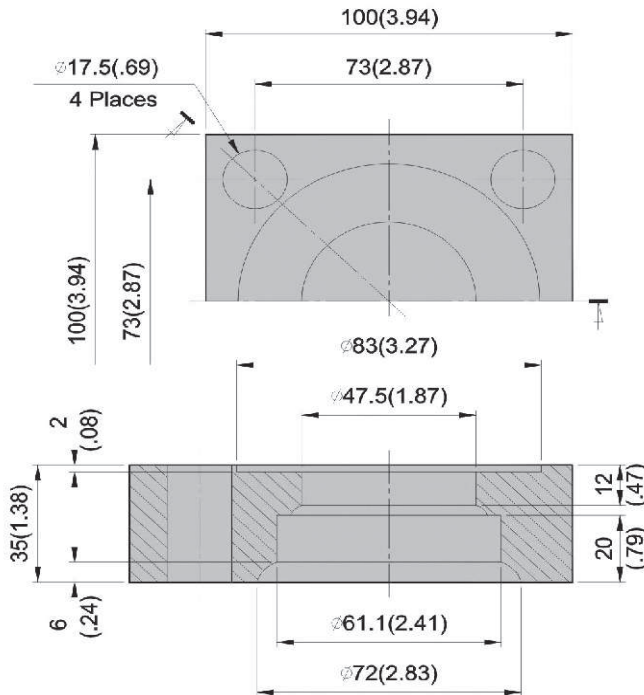
Model	Orifice	Plug
SVF(SCF)-32,50	ø0.7(.03)	PT1/8"
SVF(SCF)-63	ø0.8(.03)	
SVF(SCF)-80	ø1.0(.04)	
SVF(SCF)-100	ø1.2(.05)	
SVF(SCF)-125,160	ø1.5(.06)	
SVF(SCF)-200	ø1.8(.07)	PT1/8"

DIMENSIONS

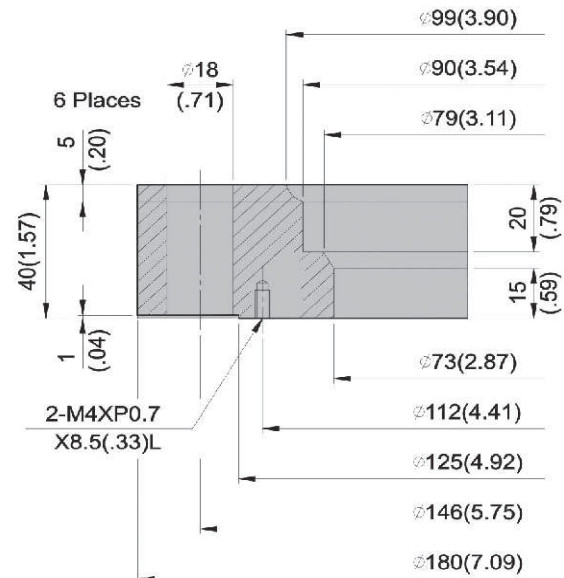
MILLIMETERS(INCHES)

FLANGES (pre-fill valves) 250 bar (3,600 PSI)

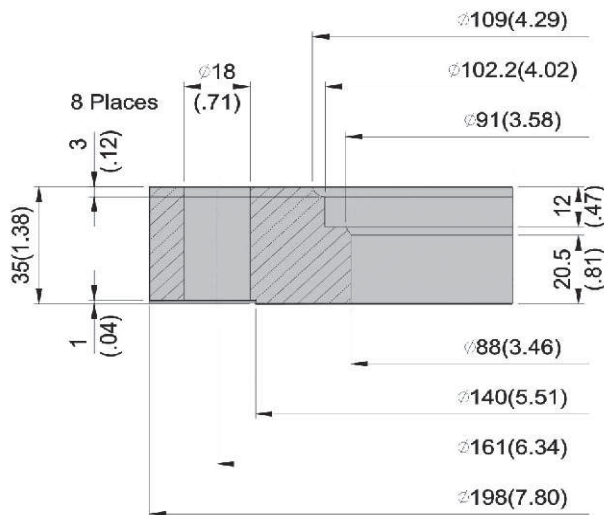
FGP(FGT)-32-2-M16/2B



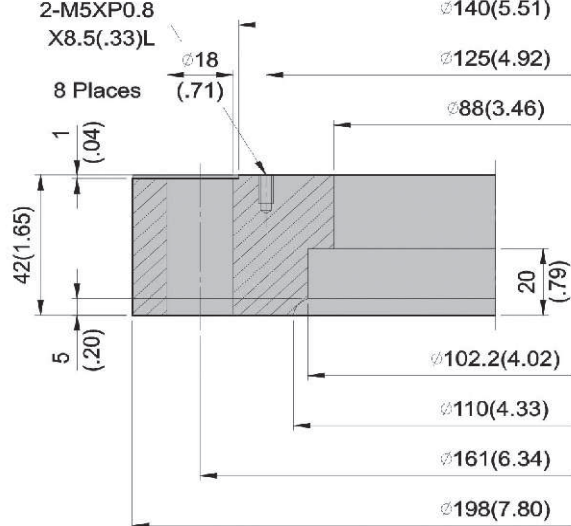
FGP(FGT)-50-2-M16/3B



FGT-63-2-M16/3.5B



FGP-63-2-M16/3.5B



Pipe thickness Calculation: $t = P \cdot D / 2 \cdot S$

t: Thickness (Inches)

P: Pressure(PSI)

D: Pipe diameter (Inches)

S: Tensile stress(PSI)

Seamless steel pipe 18000PSI

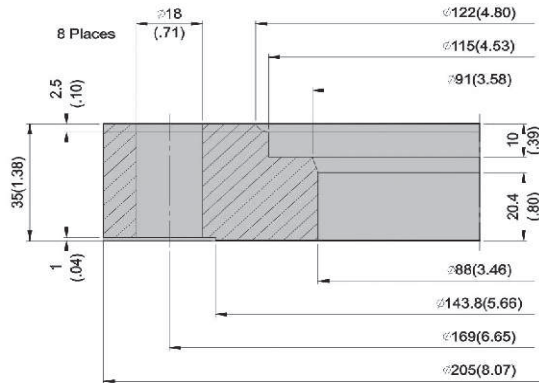
Welded steel pipe 18000PSI*80%

DIMENSIONS

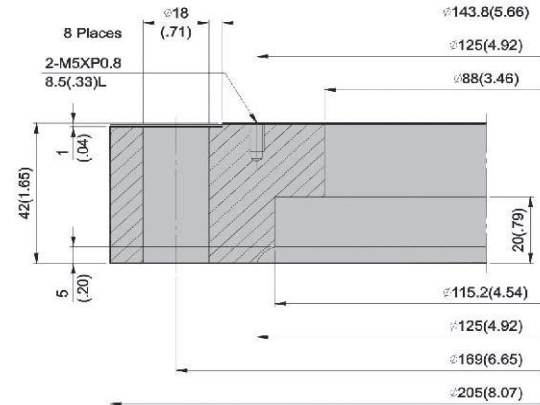
MILLIMETERS(INCHES)

FLANGES (pre-fill valves) 250 bar (3,600 PSI)

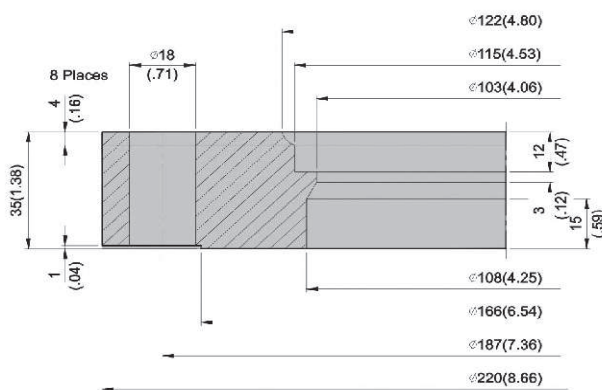
FGT-63-2-M16/4B



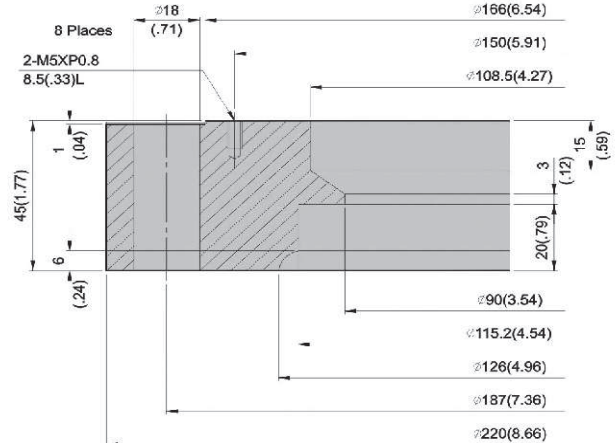
FGP-63-2-M16/4B



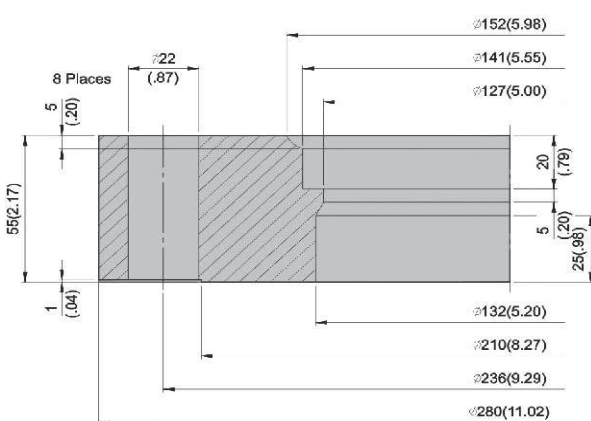
FGT-80-2-M16/4B



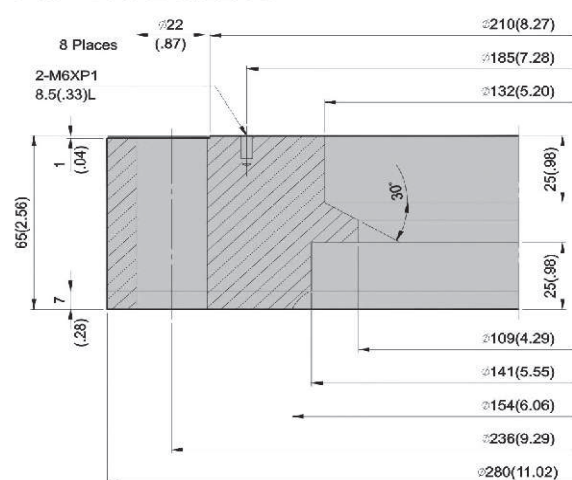
FGP-80-2-M16/4B



FGT-100-2-M22/5B



FGP-100-2-M22/5B

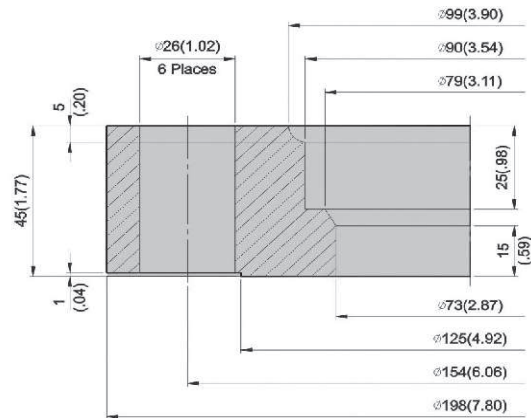


DIMENSIONS

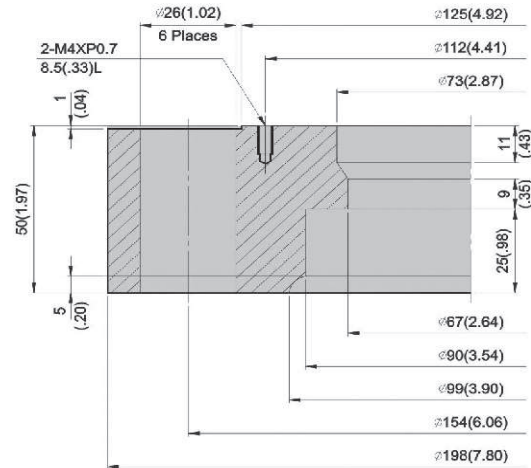
MILLIMETERS(INCHES)

FLANGES (pre-fill valves) 250 bar (3,600 PSI)

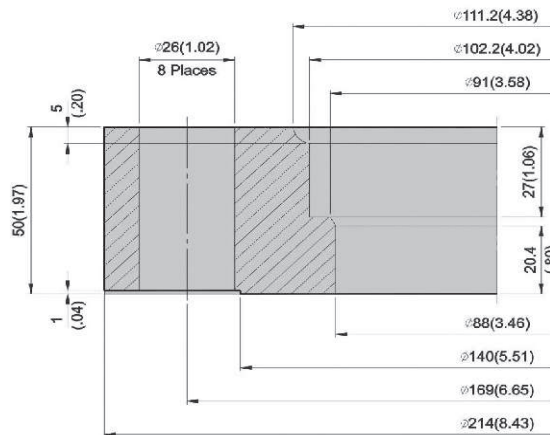
FGT-50-4-M24/3B



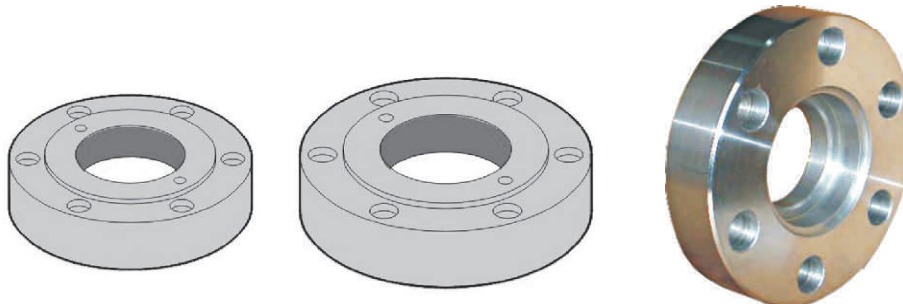
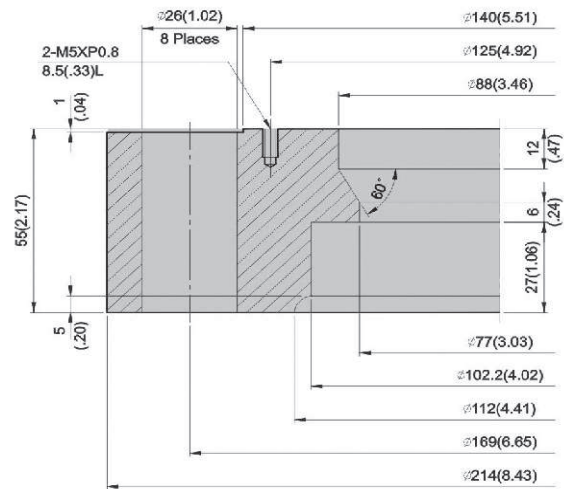
FGP-50-4-M24/3B



FGT-63-4-M24/3.5B



FGP-63-4-M24/3.5B

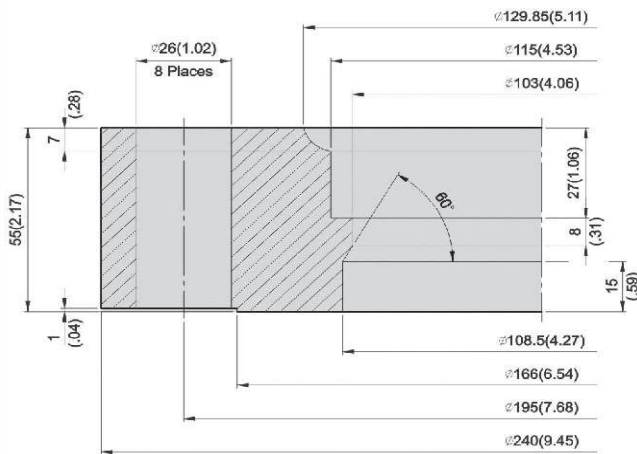


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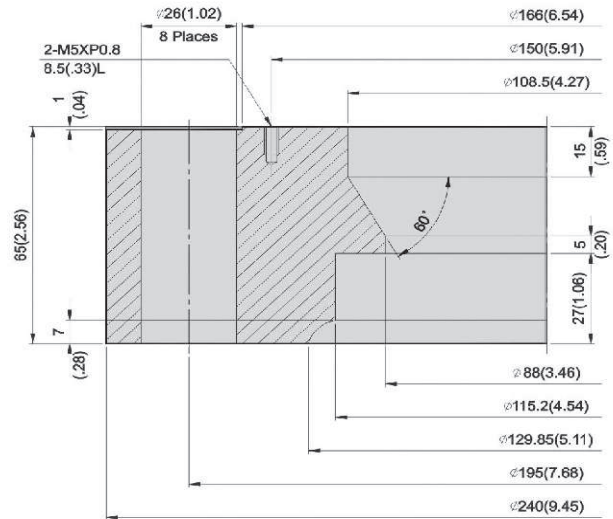
MILLIMETERS(INCHES)

FLANGES (pre-fill valves) 400 bar (5,800 PSI)

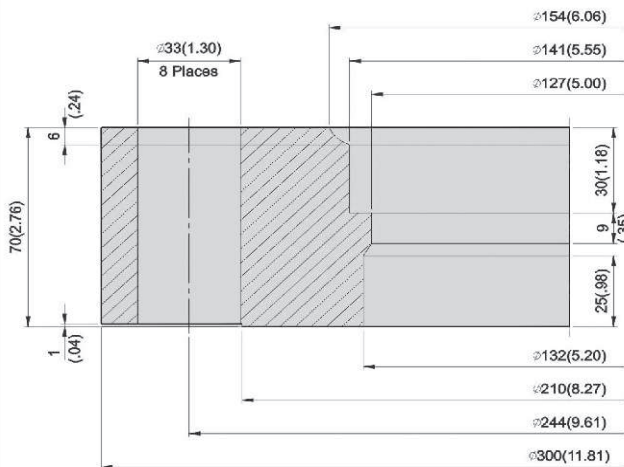
FGT-80-4-M24/4B



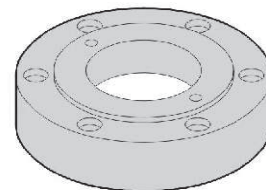
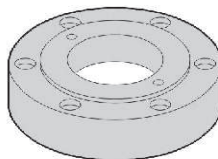
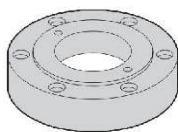
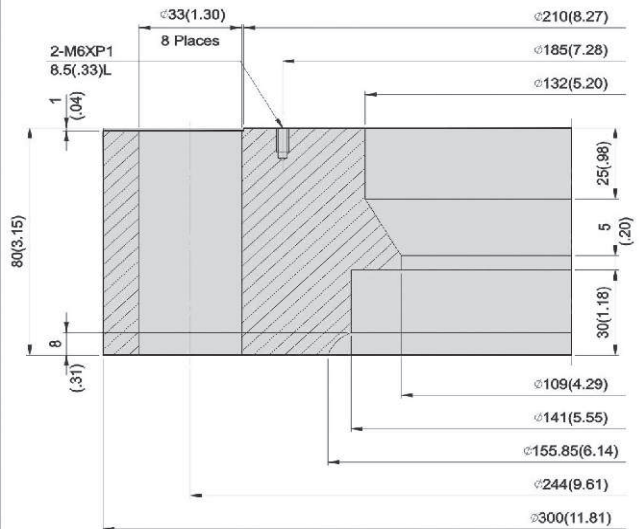
FGP-80-4-M24/4B



FGT-100-4-M30/5B



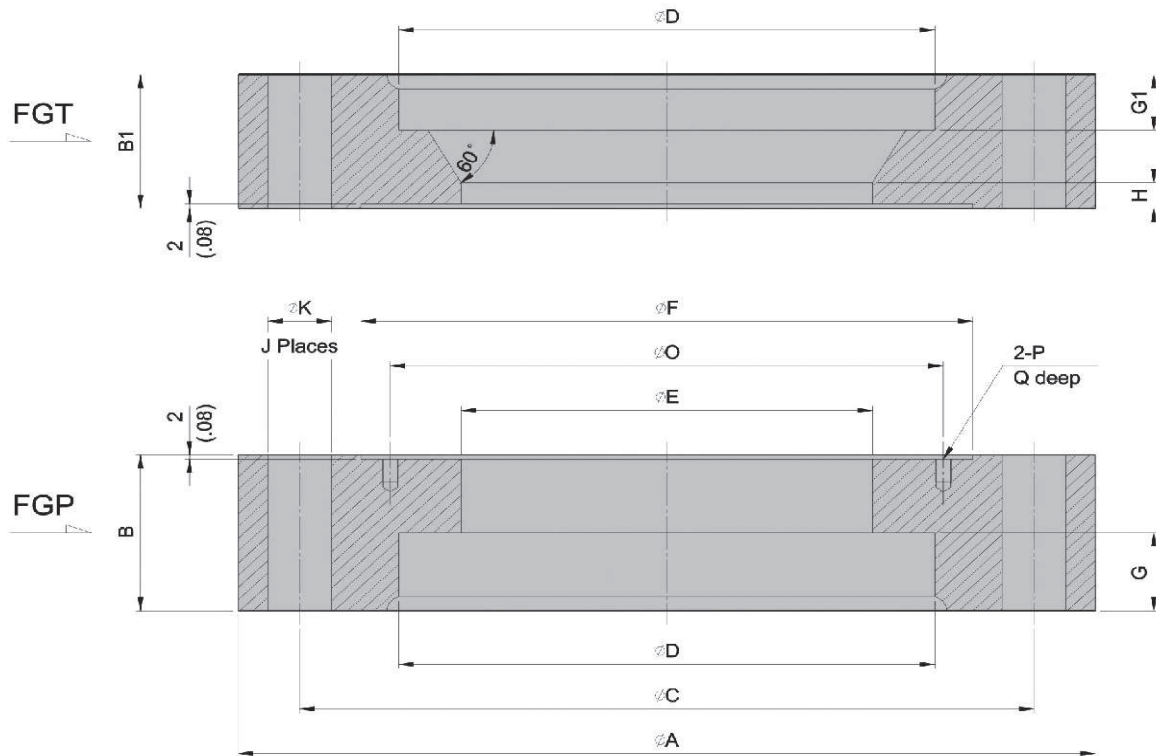
FGP-100-4-M30/5B



DIMENSIONS

MILLIMETERS(INCHES)

FLANGES (pre-fill valves) 250 & 400 bar (3,600 & 5,800 PSI)



Model	ϕA	$\frac{B}{B1}$	ϕC	ϕD	ϕE	ϕF	$\frac{G}{G1}$	H	J	K	O	P	Q
FGP-125-2-M24	350	70	300	219	168	250	35	11.5	12	26	226	M6	10
FGT-125-2-M24	(13.78)	60	(11.81)	(8.62)	(6.61)	(9.84)	25	(.45)	(.47)	(1.02)	(8.90)		(.39)
FGP-125-4-M30	354	90	300	219	168	250	50	22.3	12	33	226	M6	10
FGT-125-4-M30	(13.94)	80	(11.81)	(8.62)	(6.61)	(9.84)	30	(.88)	(.47)	(1.30)	(8.90)		(.39)
FGP-160-2-M30	422	90	367	270	218	312	40	28.8	16	33	284	M8	15
FGT-160-2-M30	(16.61)	80	(14.45)	(10.63)	(8.58)	(12.28)	30	(1.13)	(.63)	(1.30)	(11.18)		(.59)
FGP-200-2-M30	510	100	442	321	270	392	40	33.8	20	33	355	M8	15
FGT-200-2-M30	(20.08)	90	(17.40)	(12.64)	(10.63)	(15.43)	35	(1.33)	(.79)	(1.30)	(13.98)		(.59)

DIMENSIONS

MILLIMETERS(INCHES)

PF Series PRE-FILL VALVES (Flange-clamped type)

■ Ordering Code

PF - 80 - FT - 20

Design No:
20

Flange Kits
FPT: With P,T Port Flanges
FP: With P Port Flanges
FT: With T Port Flanges

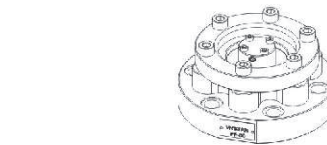
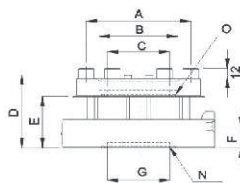
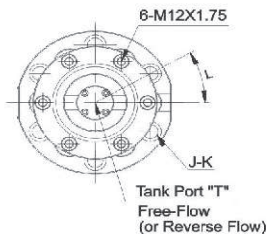
Valve Size
80: 3" 125: 5"
90: 3-1/2" 150: 6"
100: 4"

Series No.
Pre-fill Valves (Flange-clamped type)

■ Ratings

Series No.	Size	Model	Max. Pres. bar	Cracking Pres.	Max. Flow lpm	Weight kg
PF Type Pre-Fill Valves	3"	PF-80	400	0.12	400	8
	3-1/2"	PF-90	400	0.12	650	11.5
	4"	PF-100	400	0.12	1000	14.5
	5"	PF-125	400	0.12	1600	23
	6"	PF-150	400	0.12	2500	27

PF-80



The PF pre-fill valves are hydraulic pilot operated check valves for a fast filling and discharging of cylinders. They allow the flow from IN (tank) to OUT (cylinder) stopping the reverse flow if the pilot pressure is not supplied through port PP. They are available in different sizes, for in-line mounting or with flange for direct assembling to the cylinder.

■ Attachment Soc. Hd. Cap Screw FP Flange Mounting

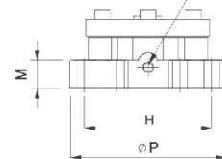
Model	Soc. Hd. Cap Screw	Weight
PF-80	M16x55Lx6pc	6.5
PF-90	M18x65Lx6pc	9
PF-100	M20x70Lx6pc	14.5
PF-125	M20x80Lx12pc	25.2
PF-150	M20x95Lx16pc	28

FT Flange Mounting

Model	Soc. Hd. Cap Screw	Weight
PF-80	M12x40Lx6pc	2.3
PF-90	M12x40Lx6pc	2.8
PF-100	M12x40Lx6pc	2.8
PF-125	M12x50Lx6pc	4
PF-150	M16x50Lx8pc	8

Cylinder Port "P"
Free-Flow
(or Reverse Flow)

Pp: Pilot Port
PT 1/4"



Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
PF-80	120 (4.72)	90 (3.54)	71 (2.79)	92 (3.62)	65 (2.55)	27 (1.06)	72 (2.83)	146 (5.74)	PT1/4	6 (.23)	17.5 (.68)	30 (1.18)	33 (1.29)	G80	G85	180 (7.08)
PF-90	135 (5.31)	101.5 (3.99)	89 (3.50)	119 (4.68)	72 (2.83)	27 (1.06)	88 (3.46)	165 (6.49)	PT1/4	6 (.23)	17.5 (.68)	30 (1.18)	42 (1.65)	G100	G100	200 (7.87)
PF-100	148 (5.82)	115.5 (4.54)	108 (4.25)	133 (5.23)	74 (2.91)	32 (1.25)	106 (4.17)	191 (7.51)	PT1/4	6 (.23)	17.5 (.68)	30 (1.18)	44 (1.73)	G115	G115	230 (9.05)
PF-125	175 (6.88)	141 (5.13)	130.5 (5.13)	165 (6.49)	85 (3.34)	43 (1.69)	130 (5.11)	230 (9.05)	PT1/4	12 (.47)	22 (.87)	15 (.59)	52 (2.04)	G140	G140	270 (10.6)
PF-150	200 (7.87)	167 (6.57)	155 (6.10)	204 (8.03)	105 (4.13)	45 (1.77)	168 (6.61)	260 (10.2)	PT3/8	16 (.62)	22 (.87)	11.25 (.44)	64 (2.51)	G180	G180	300 (11.8)