

PRE-FILL EXHAUST VALVE - FPV



Sandwich Type | Pilot Operated | NG50 - NG200*

Specification/ Technical Data

Maximum Pressure	315 bar
Maximum Flow	5,200 LPM
Max. Internal Leakage	0.3ml/min
Cracking Pressure	0.125 bar
Design	Sandwich
Min. Pilot Pressure	10 bar
Body Material	SG Iron
Media	Mineral Oil
Oil Temperature Range	+10 to 80°C
Oil Viscosity	ISO VG 46-100
Oil Cleanliness (ISO 4406)	20/18 /15
Orientation	Any
Weight (approx)	3.5 - 85 Kg

Note: Refer PVF for Flange mounted version or PVT for Tank mounted version

* Consult factory for NG 300 and NG400 sizes

Ordering Information

Basic Code	Sandwich	FPV
Size	NG 050...200	50...200
Decomp.	Standard	No code
Cracking Pr.	0.125 bar	No code
Seal MOC	Viton	No code
Version		2x



Pre-fill valves are check valves with hydraulic (pilot) release function. They are also referred to as exhaust valves and are generally installed between a cylinder and oil reservoir in hydraulic presses and injection moulding machines where high speed operation is required. The use of these valves enables the manufacturer to use a smaller capacity pump and motor and at the same time achieve the expected cycle time of the equipment.

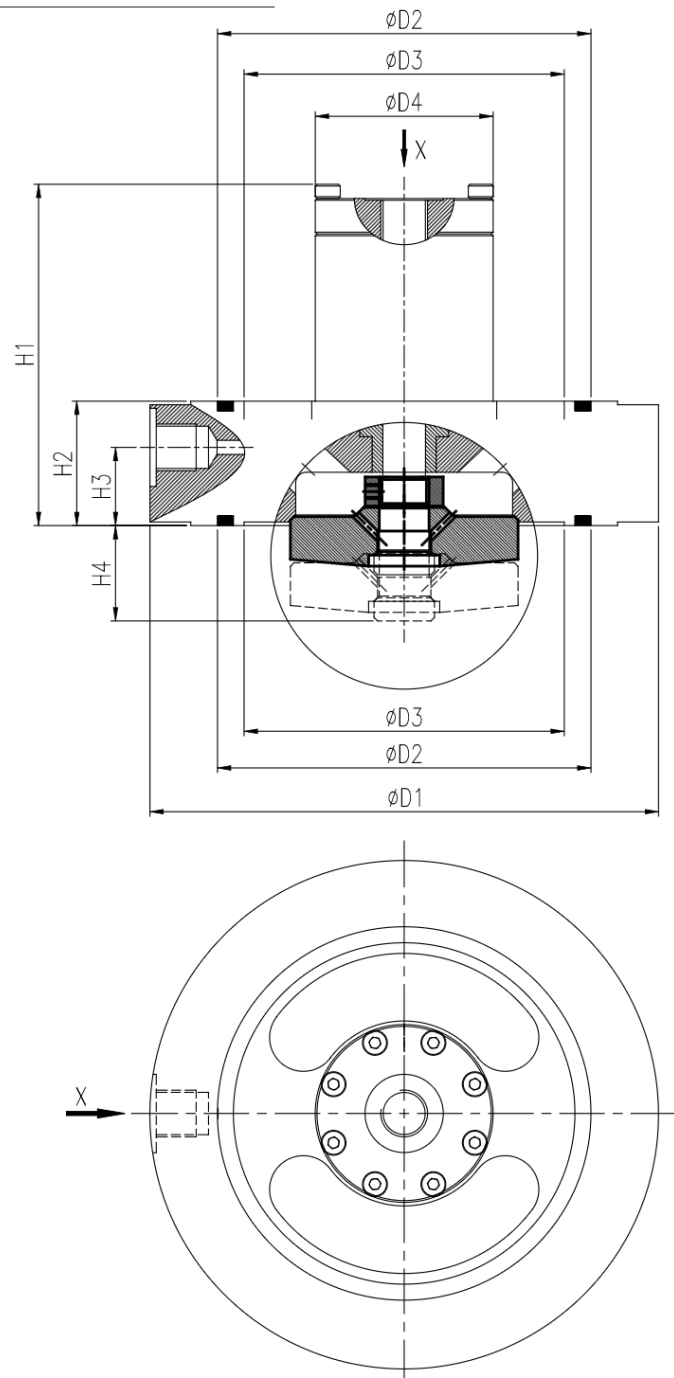
During the high speed forward stroke of cylinder, the pre-fill valves pulls a large amount of oil from the reservoir needed to fill the cylinder and the main pump-motor now sized optimally is used to achieve the required pressure. During pressurisation, the valve closes completely and prevents reverse oil flow. For the return stroke, the valve is opened by supplying a pilot pressure that opens the path back to reservoir and retract the cylinder. The decompression feature is built-in to the valve to enable controlled pressure release.

FPV valves have a unique sandwich design that enables the valve to be mounted between sandwich flanges and comes with decompression feature as standard across the range up to NG 200.

Nominal Size	Nominal Flow lpm at 0.3bar ΔP	Max. Flow lpm at 0.4bar ΔP	Weight Kg
NG 050	200	400	3.5
NG 063	250	450	4
NG 080	400	750	7
NG 100	600	1400	12
NG 125	1000	2200	20
NG 160	1500	3200	40
NG 200	2500	5200	85

For optimal performance flow at 0.3bar ΔP to be considered

Size NG 50 - NG 200

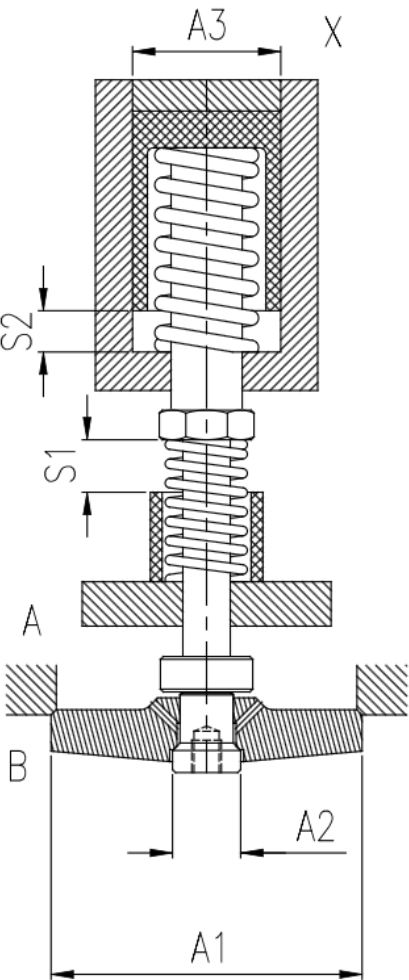


The unused pilot port X should be plugged.

Size	FPV 50	FPV 63	FPV 80	FPV 100	FPV 125	FPV 160	FPV 200
X	1/4" BSP	1/4" BSP	1/4" BSP	3/8" BSP	3/8" BSP	1/2" BSP	3/4" BSP
Ø D1	135	143	169	212	247	310	420
Ø D2	105	105	135	160	190	242	326
Ø D3	90	90	118	130	170	210	295
Ø D4	50	50	56	72	88	120	148
H1 (Max)	100	100	108	148	178	248	300
H2	35	35	42	53	60	80	110
H3	22	22	27	36	42	55	75
H4	27	27	29	38	43	60	87
Rectangular Ring	105x98x3.2	105x98x3.2	135x124.5x4.75	160x150x4.75	190x179x4.75	242x225x6	326x308x7.25

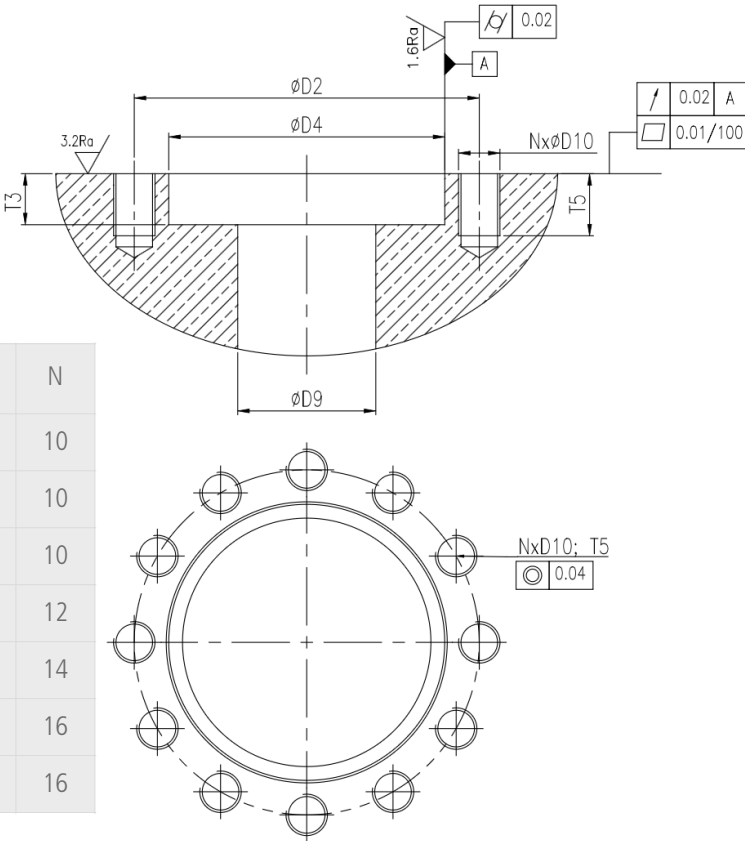
All dimensions in mm

Poppet Design



Size	Area A1 cm ²	Area A2 cm ²	Area A3 cm ²	S1 mm	S2 mm	Opening Pilot Vol. cm ³	Pilot Area Ratio
FPV 50	32.1	2.26	9.62	13	10	9.6	3.8
FPV 63	32.1	2.26	9.62	13	10	9.6	3.8
FPV 80	59.4	3.14	12.56	15	10	12.5	4.1
FPV 100	86.5	4.00	19.50	22	14	27.5	4.9
FPV 125	126.5	5.00	33.00	29	20	66.5	6.7
FPV 160	208.5	10.00	63.50	30	25	160.0	6.3
FPV 200	346.0	18.00	95.00	53	50	475.0	5.2

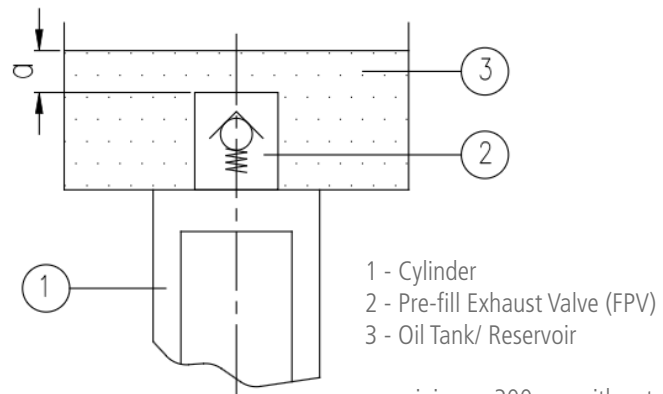
Interface Dimension on Cylinder



Spares List

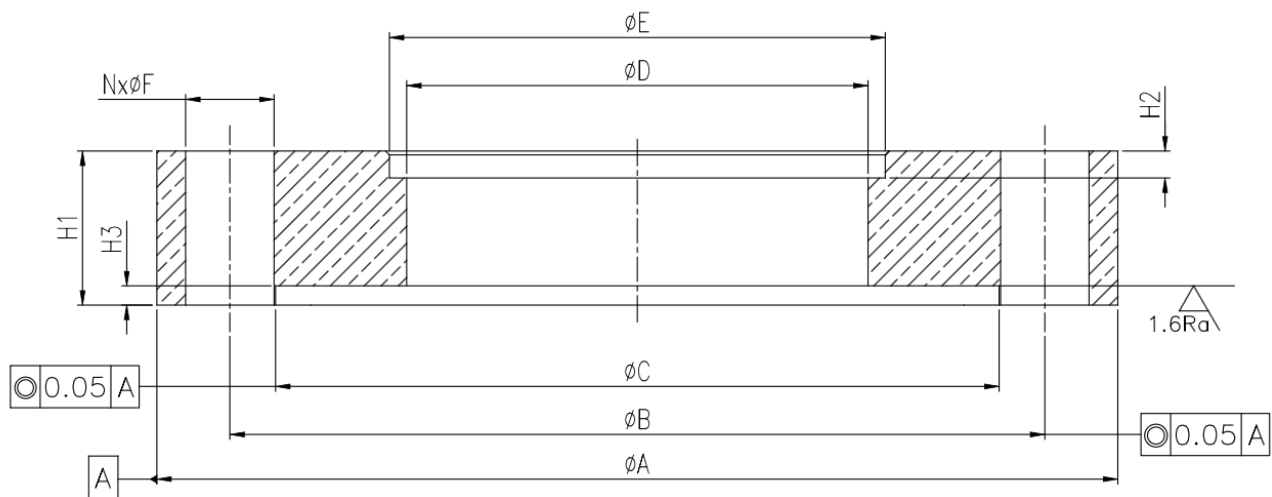
Seal Kit NG050	SSVFPV0502x
Seal Kit NG063	SSVFPV0632x
Seal Kit NG080	SSVFPV0802x
Seal Kit NG100	SSVFPV1002x
Seal Kit NG125	SSVFPV1252x
Seal Kit NG160	SSVFPV1602x
Seal Kit NG200	SSVFPV2002x

Installation Guidelines



a - minimum 300mm with extended cylinder
b - maximum 1000mm with retracted cylinder

Suction Flange Dimension (Not Supplied with Valve)



Valve Size	Ø A	Ø B	Ø C	Ø D	Ø E	Ø F	H1	H2	H3	N	Mounting Bolt	Tightening Torque
FPV 50	185	156	135.5	86	89	18	30	5	4	10	M16 x 90L	210 Nm
FPV 63	190	162	143.2	86	89	18	30	5	4	10	M16 x 90L	210 Nm
FPV 80	225	192	169.2	108	115	22	35	7	5	10	M20 x 110L	400 Nm
FPV 100	280	240	212.2	140	169	26	40	7	5	12	M24 x 130L	660 Nm
FPV 125	315	275	247.2	160	169	26	45	7	5	14	M24 x 140L	660 Nm
FPV 160	395	344	310.2	210	220	32	60	8	5	16	M30 x 180L	1400 Nm
FPV 200	520	460	420.2	300	325	38	70	10	5	16	M36 x 240L	2300 Nm

Suction Flanges are not part of supply scope
Do not use Spring washers or plain washers
Use hardened washers (if required)
Use Gr. 12.9 mounting bolts

All dimensions in mm

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