



PREFILL AND EXHAUST VALVE PV 40 TO PV 80

ENGINEERING

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Ref. No. P04905

Release 12/2002

Description

Seat type construction.

Allows free flow from it's port A to port B.

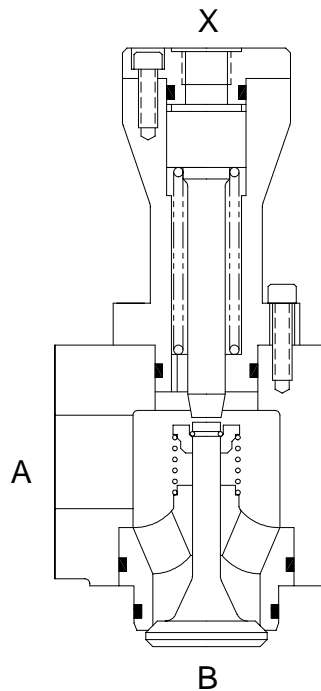
Flow from port B to port A can be had by applying pilot pressure to it's port X.

Model with decompression feature opens in two stages progressively, allowing smooth and rapid exhaust of the compressed oil.

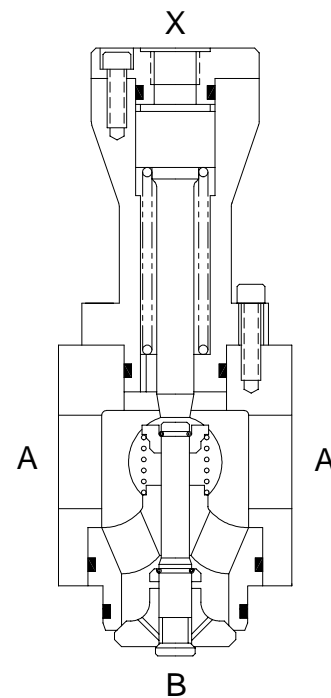
Opening and closing time of the valve can be influenced by providing Throttle / Check Valves in the X port line.



Section

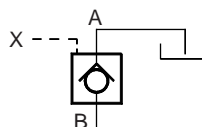


Prefill valve without decompression feature



Prefill valve with decompression feature
(Model suitable for mounting inside the oil tank).

Hydraulic symbol



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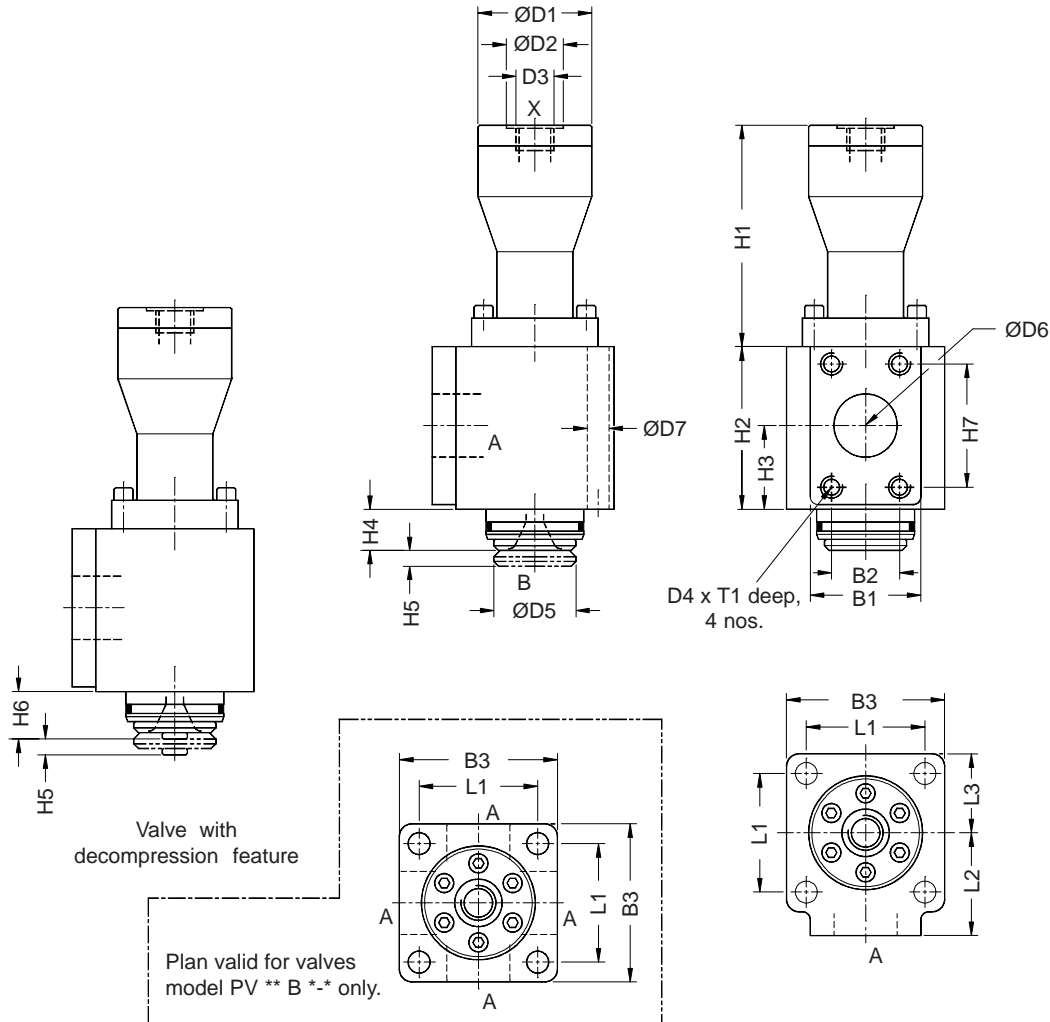
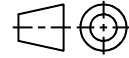
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Unit Dimensions

Valve with flange port at A

Dimensions in mm.



Size	Mass kg.	B1	B2	B3	ØD1	ØD2	D3	D4	ØD5	ØD6	ØD7	H1	H2	H3	H4	H5	H6	H7	L1	L2	L3	T1
40	9	70	43	100	72	30	G1/2	M12	52	40	18	127	103	53	26	10	30	78	75	65	50	18
50	14	100	51	120	87	30	G1/2	M12	67	50	22	157	113	58	32.5	12	37.5	89	90	75	60	18
63	25	115	62	145	105	30	G1/2	M16	82	63	26	186	139	71.5	34	15	40	106.5	105	90	72.5	25
80	45.5	115	62	180	132	36	G3/4	M16	102	76	33	237	160	77.5	36	20	43	106.5	130	102	90	25



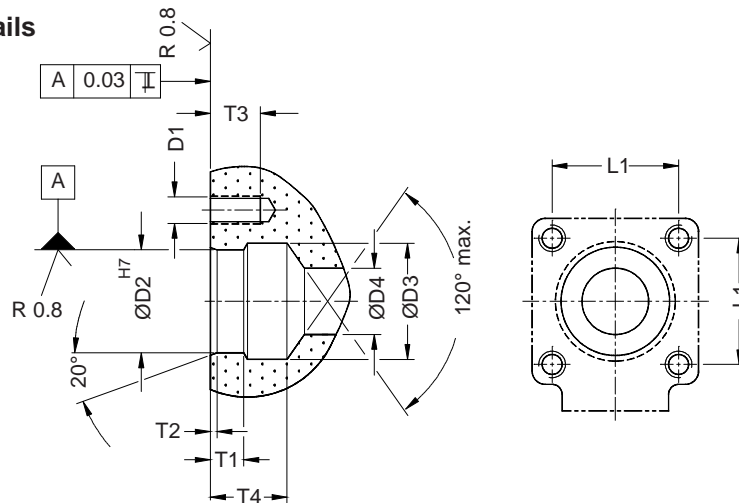
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Mounting cavity details



Size	D1	ØD2 ^{H7}	ØD3	ØD4	L1	T1	T2	T3	T4 min.	Valve fixing H.S.C. Screw	Tightening Torque (Nm)
40	M16	62	66	40	75	20	4	27	46	M16 x 130 L, 4 nos.	290
50	M20	80	84	50	90	25	5	27	57	M20 x 140 L, 4 nos.	570
63	M24	95	104	63	105	25	5	42	64	M24 x 180 L, 4 nos.	980
80	M30	115	130	80	130	30	5	65	76	M30 x 200 L, 4 nos.	1960

Technical specification

Construction

Mounting type

Mounting position

Flow direction

Operating pressure

Cracking pressure

Pilot pressure required to have flow from port B to port A

Poppet type, Pilot operated.

Inside oil tank mounting or flanged A port. Special machined cavity for port B.

Optional.

Free flow from port A to port B.
Piloted flow from port B to port A.

For port A 16 bar, B and X 315 bar.
0.2 bar

$P_x > [(P_b - P_a) \times 2] + 8$ bar
to open main poppet of the valve.
 $P_x > [(P_b - P_a) \div 5] + 8$ bar
to open decompression poppet of the valve.
[Not applicable for the valve without decompression feature.]

Where P_x = Pilot pressure at port X (bar)
 P_a = Pressure at port A (bar)
 P_b = Pressure at port B (bar)

Pilot Volume

Size	40	50	63	80
cm ³	10.9	21.3	38.9	77.6

Flow handling capacity (Nominal) l/min.

Size	At an average velocity of oil through the valve (m/sec)							
	0.5	1	1.5	2	2.5	3	3.5	4
40	38	76	114	152	190	228	260	304
50	59	118	177	236	295	354	413	472
63	93	186	279	372	465	508	651	744
80	152	304	456	608	760	912	1064	1216

Note : Recommended oil velocity during prefilling must be equal to or less than 2 m/sec.

Oil velocity during pre-filling (suction) ..

Hydraulic medium

Viscosity range

Working temperature range

Fluid cleanliness requirement

Mass

Refer figure below.

Mineral oil
10 to 380 Cst.
-20 °C to +70 °C.
As per ISO code 16/13 or better.
Refer individual table.



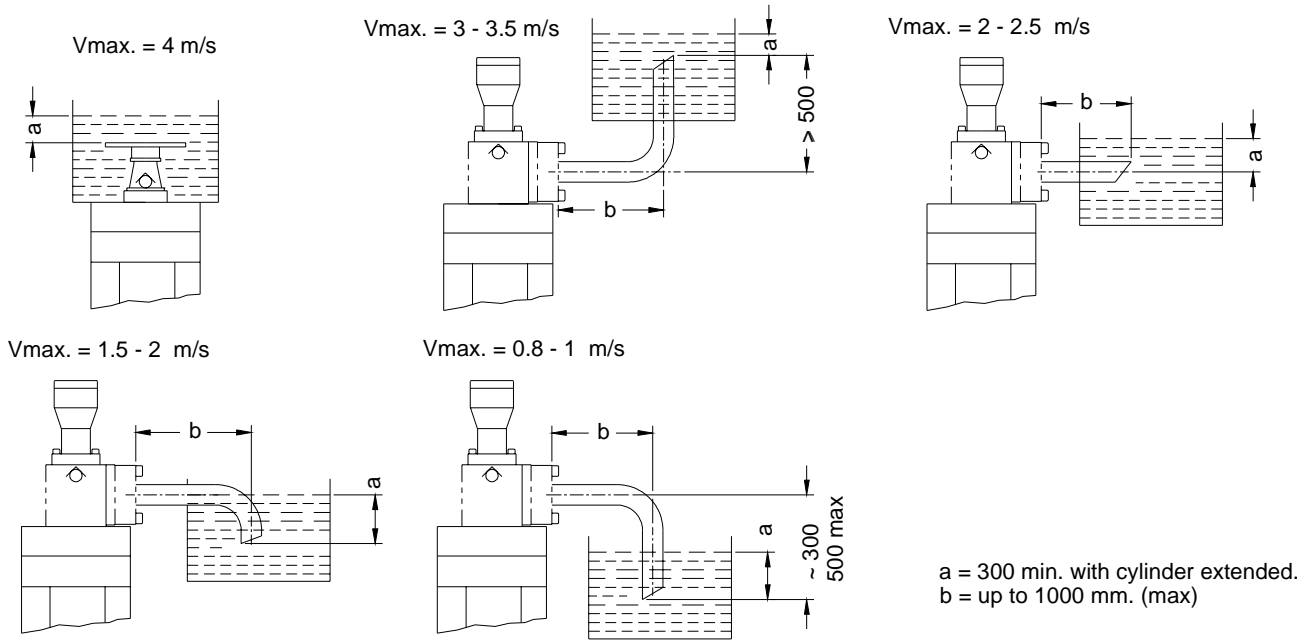
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Oil velocity during prefilling (suction) for different arrangements :



Ordering code

PV 63 A 1 10

Prefill and Exhaust valve

Size 40, 50, 63, 80

Mounting Style

Flange port at A	A
For mounting inside the oil tank	B

Design code subject to change. Installation dimensions remain same for design code 10 thru 19

Pilot Operation

0	Without decompression feature
1	With decompression feature

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Subject to revision.



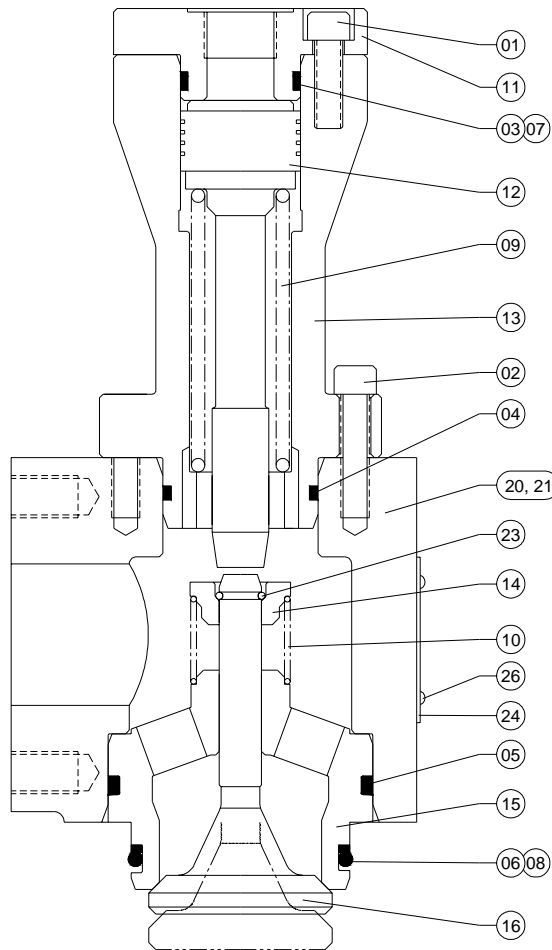
PREFILL AND EXHAUST VALVE PV 40 TO PV 80

SERVICE

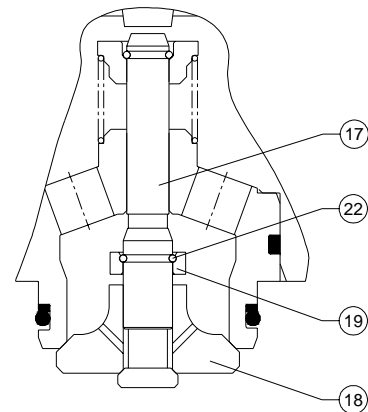
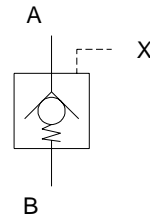
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Sectional view and Part List



HYDRAULIC SYMBOL



Sl.No	Description	Qty	PV 40		PV 50		PV 63		PV 80	
			Size	Item No.	Size	Item No.	Size	Item No.	Size	Item No.
1	S.H. Capscrew	06	M8 x 20L	54101	M10 x 20L	54201	M12 x 25L	54301	M16 x 30L	
2	S.H. Capscrew	06	M8 x 30L	54102	M10 x 40L	54202	M12 x 50L	54302	M16 x 60L	54402
*3	O'ring (Nitrile)	01	Ø28 x 3	54103	Ø38 x 3	54203	Ø48 x 3	54303	Ø59 x 4	54403
*4	O'ring (Nitrile)	01	Ø38 x 3	54104	Ø48 x 3	54204	Ø59 x 4	54304	Ø72 x 4	54404
*5	O'ring (Nitrile)	01	Ø67 x 4	54105	Ø87 x 4	54205	Ø100 x 5	54305	Ø120 x 5	54405
*6	O'ring (Nitrile)	01	Ø54 x 4	54106	Ø72 x 4	54206	Ø87 x 4	54306	Ø105 x 5	54406
*7	Backup Ring (Teflon)	01	Ø30 x Ø34 x 2	54107	Ø40 x Ø44 x 2	54207	Ø49.5 x Ø54 x 2	54307	Ø61 x Ø67 x 2	54407
*8	Backup Ring (Teflon)	01	Ø56 x Ø62 x 2	54108	Ø74 x Ø80 x 2	54208	Ø88.8 x Ø95 x 2	54308	Ø107.5 x Ø115 x 2	54408
#9	Pilot Spring	01		54109		54209		54309		54409
#10	Suction Spring	01		54110		54210		54310		54410
11	Cover	01		54111		54211		54311		54411
12	Pilot Piston	01		54112		54212		54312		54412
13	Housing	01		54113		54213		54313		54413
14	Spring Retainer	01		54114		54214		54314		54414
15	Valve Seat	01		54115		54215		54315		54415
16	Poppet	01		54116		54216		54316		54416
17	Decomp. Poppet	01		54117		54217		54317		54417
18	Main Poppet	01		54118		54218		54318		54418
19	Stroke Limiter	01		54119		54219		54319		54419
20	Body	01		54120		54220		54320		54420
21	Body Tank mounting	01		54121		54221		54321		54421
#22	Spring Ring	01		00083		00086				
#23	Spring Ring	01		00081		00084		00087		00089
24	Label	01		54124		54224		54324		54424
25	Plastic Plug	01		00023		00023		00023		00024
26	Rivet	04		00001		00001		00001		00001

Note : * Recommended seal kit. * & # Recommended spare kit. While ordering the individual spares / spare kit / seal kit, give part no. and complete details of model code as on the label.