PILOT OPERATED CHECK VALVE
Model : CI****

A Polyhydron Group Company

Description

Pilot operated Check valves model **CI****** allow free flow in the direction from Port **A** to Port **B** and offer leakage free closure in opposite direction.
Reverse flow can be achieved by applying pilot pressure to their Port **X**.
The intensity of pilot pressure required to keep the valve open during reverse flow depends upon the valve model, pressure at Port **A** and pressure existing at the Port **B** when the reverse flow starts. Pilot pressure can be calculated using formulae given below.

In most cases, smooth decompression and opening of the valve for flow from Port **B** to Port **A** can be effectively achieved by controlling pressure and flow to the Pilot Port **X**. However, in certain cases it is necessary to decompress the oil in the cylinder first before admitting the oil in the cylinder for the return stroke for smooth reversal.

Section

Body with A - Type piston

Body with B - Type piston
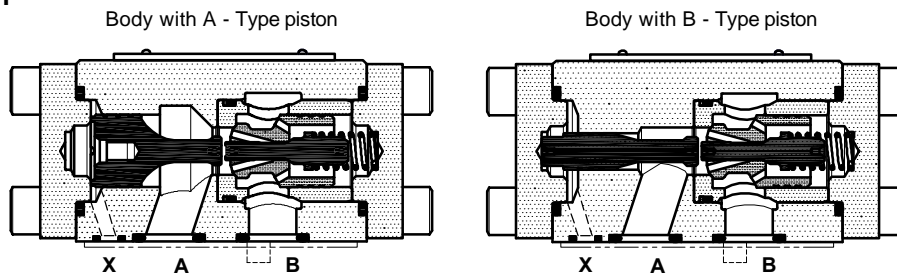
Hydraulic symbol
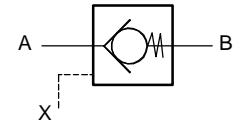
Technical specifications

			Type A	Type B
Construction	:	Seat type valve, with decompression facility.		
Mounting style	:	Threaded port or subplate mounting.		
Mounting interface	:	Sub-plate mounting - As per ISO 5781.		
		Threaded port body - Factory standard.		
Mounting position	:	Optional.		
Flow direction	:	Free flow from A to B.		
	:	Piloted flow from B to A.		
Cracking pressure	:	1 bar.		
Working pressure	:	315 bar for Ports A, B and X.		
Area ratios	:		**Type A**	**Type B**
		Pilot piston : Decomp. poppet	16 : 1	4 : 1
		Pilot piston : Main poppet	2 : 1	1 : 2
Hydraulic medium	:	Mineral oil.		
Temperature range	:	-20°C to + 80°C.		
Viscosity range	:	10 cSt to 380 cSt.		
Fluid cleanliness required	:	ISO 4406 20/18/15 or better.		

Max. flow handling capacity :

Size	:	10	20	30
l/min	:	80	160	350

Mass approx. :

Size	:	10	20	30
in Kg	:	2.5	4.0	8.5

Formulae for Pilot pressure required to open the valve for flow from Port B to Port A

	Type A	Type B	where,
To open decompression spool	$>P_A + P_B/16 + 0.5$	$>P_A/1.5 + P_B/4 + 2$	P_A = Pressure at Port **A**.
To open the main poppet	$>P_A/2 + P_B/2 + 0.5$	$>2P_B - P_A + 2$	P_B = Pressure at Port **B** when the flow occurs.

Unit dimensions

Dimensions in mm.

Threaded port body
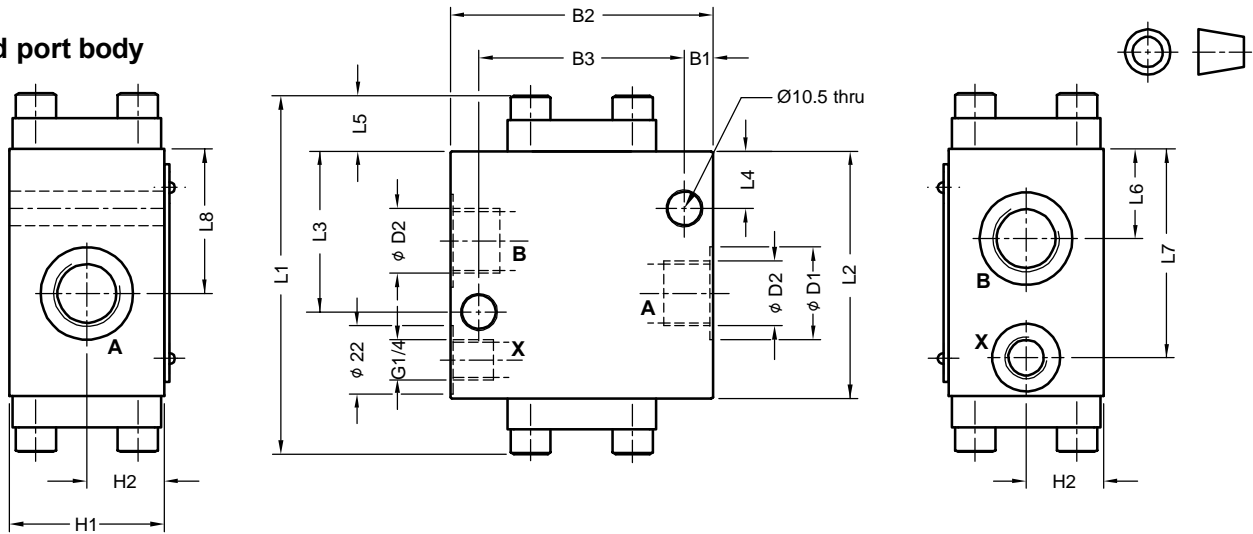
Size	L1	L2	L3	L4	L5	L6	L7	L8	B1	B2	B3	H1	H2	ØD1	ØD2
10	116	80	52	18.5	18	29	68	46	9.3	85	66.5	50	25	30	G1/2
20	135	95	64	20	20	30.5	83	58	10.5	95	74	58	29	44	G1
30	173	115	89	15.5	29	36	105	70	11.5	120	97	80	37	60	G1 1/2

Sub-plate mounting body
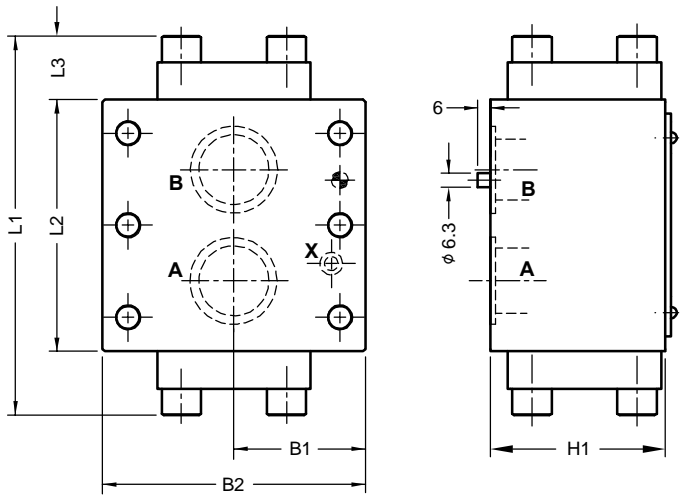
Subplate mounting interface as per ISO 5781.

ØD1 @ A & B.
Ø7.5, 8 deep.
Ø4.8
M10x1.5 15 deep.
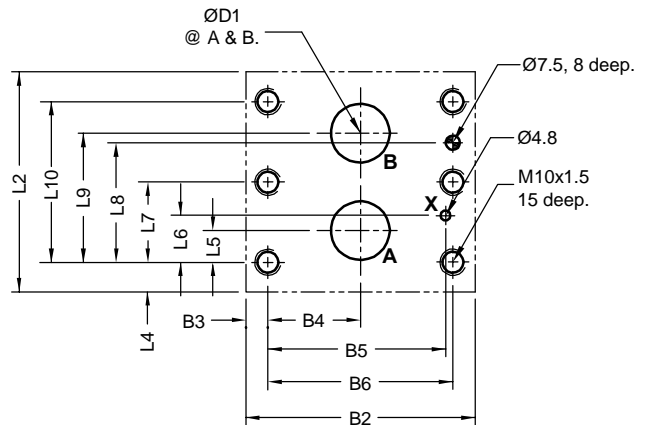
Note: Valve fixing S.H.C Screws are not in scope of supply.

Size	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	B1	B2	B3	B4	B5	B6	H1	D1 max	Valve fixing S.H.C Screws Class 12.9	Tightening Torque Nm
10	116	80	18	18.5	7.1	21.4	---	31.8	35.7	42.9	42.5	85	9.2	33.3	58.7	66.7	50	13	M10 x 60L 4 nos	
20	135	95	20	17.5	11.1	20.8	---	44.5	49.2	60.3	50	100	10.3	39.7	73	79.4	58	22	M10 x 70L 4 nos	77
30	173	115	29	15.5	16.7	24.6	42.1	62.7	67.5	84.1	60	120	11.6	48.4	92.9	96.8	80	31	M10 x 90L 6 nos	

Ordering code

CI | 10 | T | A | 12

Pilot operated check valve internal drain

Port size

Threaded body	Subplate mounting	Size
G1/2	Ø 13 max	**10**
G1	Ø 22 max	**20**
G1 1/2	Ø 31 max	**30**

Design code subjected to Change . installation dimensions remain same for design code 09 thru 19.

A	Pilot piston : Decomp poppet = 16:1 Pilot piston : Main poppet = 2:1
B	Pilot piston : Decomp poppet = 4:1 Pilot piston : Main poppet = 1:2

S	Subplate mounting body
T	Threaded port body