PILOT OPERATED CHECK VALVE
Model : CI****

Description

Pilot Operated Check valve models **CI****** allow free flow in the direction from Port **A** to Port **B** and offer leak free closure in opposite direction.

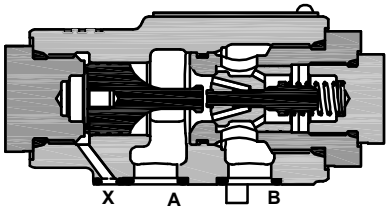
Reverse flow can be achieved by applying Pilot pressure to its Port **X**.

The pilot pressure required at Port **X** to achieve reverse flow from its closed position can be calculated using the formulae given in the Technical specifications.

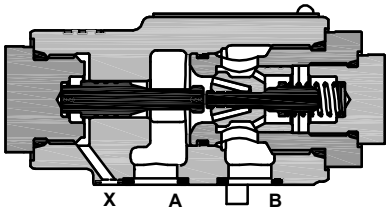
Generally, to achieve smooth decompression of oil in a hydraulic actuator prior to reverse flow, it is essential to keep the Pilot pressure as close to the calculated value as possible and the flow controlled.

Section

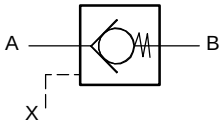
Body with A - Type piston



Body with B - Type piston



Hydraulic symbol



Technical specifications

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. :

Model :	CI10S	CI10T	CI20S	CI20T	CI30S	CI30T
in Kg :	1.9	2.2	3	3.3	5.8	6

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

	Type A	Type B
To open decompression poppet	$>P_A + P_B/16 + 0.5$	$>P_A/1.5 + P_B/4 + 2$
To open the main poppet	$>P_A/2 + P_B/2 + 0.5$	$>2P_B - P_A + 2$

Where, P_A = Pressure at Port **A** and P_B = Pressure at Port **B** , when the flow occurs.

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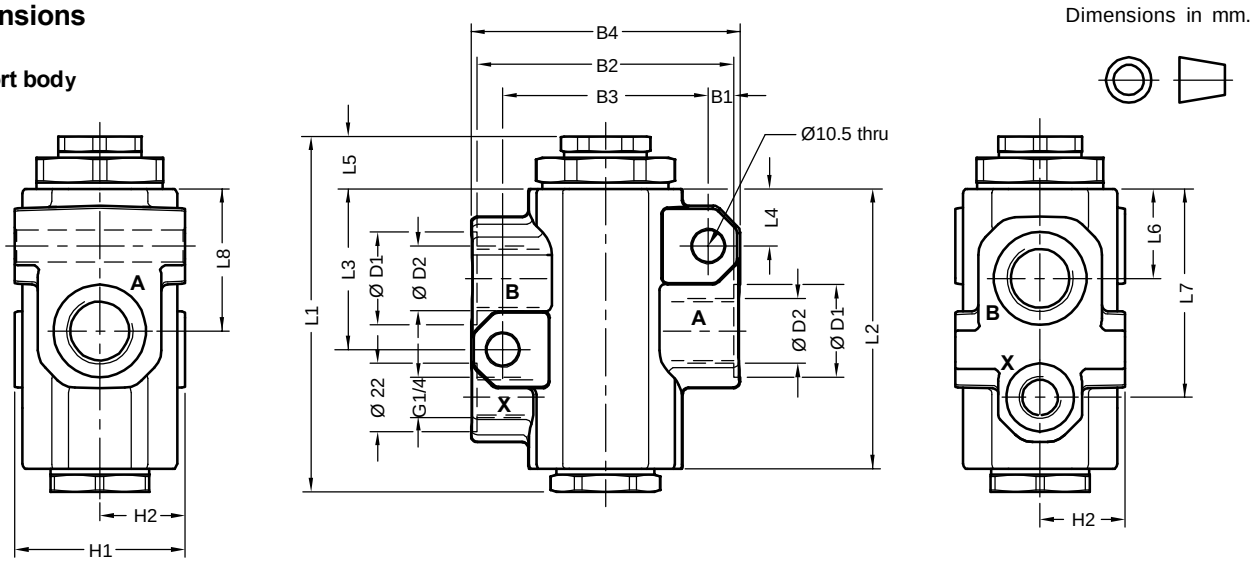
Unit dimensions

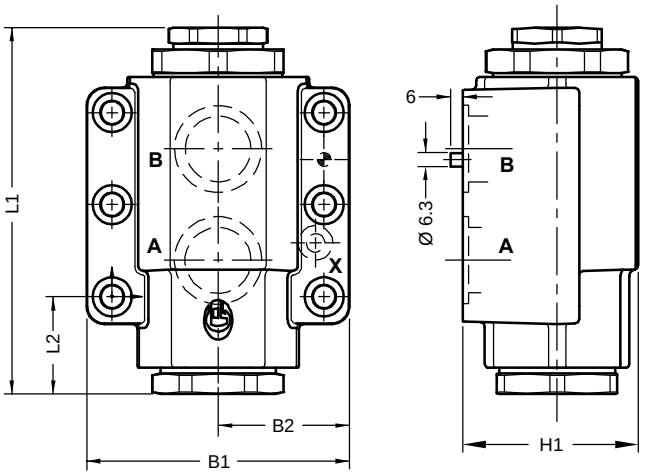
Dimensions in mm.

Threaded port body

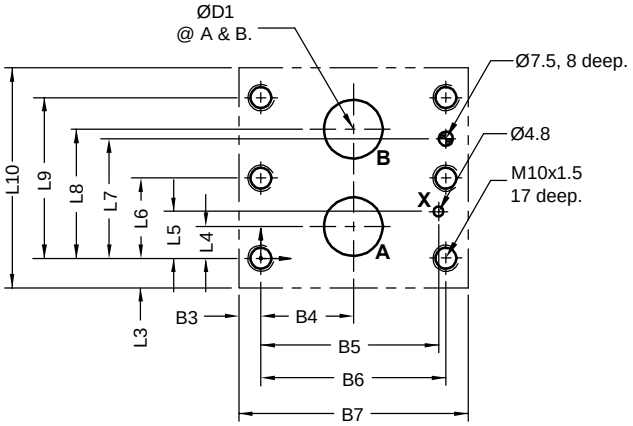


Size	L1	L2	L3	L4	L5	L6	L7	L8	B1	B2	B3	B4	H1	H2	ØD1	ØD2
10	115	90.5	52	18.5	17	29	67.5	46	8.3	83	66.5	87	55	27.5	30	G1/2
20	135	108.5	64	20	19	30.5	83	58	9.5	93	74	97	65	32.5	44	G1
30	167.5	133	88.5	15	22.5	35.5	105	69.5	9.5	116	97	120	80	40	60	G1 1/2

Sub-plate mounting body



Subplate mounting interface as per ISO 5781.



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	B7	H1	ØD1 max	Valve fixing S.H.C Screws Class 12.9	Tightening Torque Nm
10	115	38.5	18.5	7.1	21.4	---	31.8	35.7	42.9	80	90	45	9.2	33.3	58.7	66.7	85	51	13	M10 x 45L 4 nos	77
20	135	39.5	17.5	11.1	20.8	---	44.5	49.2	60.3	95	100	50	10.3	39.7	73	79.4	100	63	22	M10 x 50L 4 nos	
30	167.5	44.5	15.5	16.7	24.6	42.1	62.7	67.5	84.1	115	120	60	11.6	48.4	92.9	96.8	120	80	31	M10 x 65L 6 nos	

Ordering code

CI	10	T	A	—	13

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

Performance graph