Pilot operated check valve type SV/SL...30B

Sizes 10 to 30 up to 31.5MPa up to 400 L/min

LONG LI HYDRAULIC

Features:
- check valve controlled by fluid
- For subplate mounting, Mounting pattern to DIN 24 340
-Subplate or screw threaded connection
-With or without leakage port
-With or without pre-opening
-Type with pre-openin9, dampened decompression
-3 opening pressures

Functional description, section

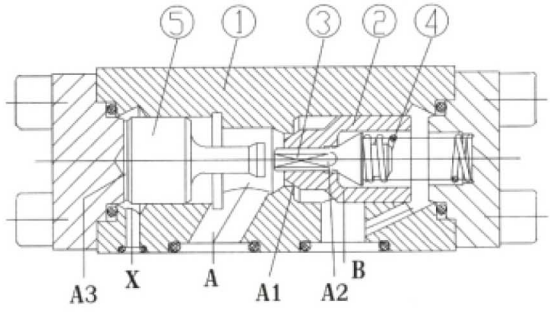
SV and SL valves are hydraulic pilot operated check valves in poppet type design which may be opened to allow flow in either direction.These valves are used for the isolation of operating circuits under pressure, as safeguard against the lowering of a load when a line break occurs or against creeping movements of hydraulically locked-in actuators. Basically these valves consist of housing (1), poppet (2),compression spring (3), control spool (4) as well as a pre-opening, as poppet valve (5), optionally.The valve enables free flow from A to B, in the counter direction the poppet (2) is held on its seat by the system pressure,additionally to the spring force.Through the pressure connection at control port X the control piston (4) is moved to the right. This pushes the poppet (2) from the seat. Now the valve may also have a flow from B to A In order to ensure the proper opening of the valve via the control piston(4)a certain minimum control pressure is necessary

Type SV..A.. and SL..A.. (with pre-opening, section 1)

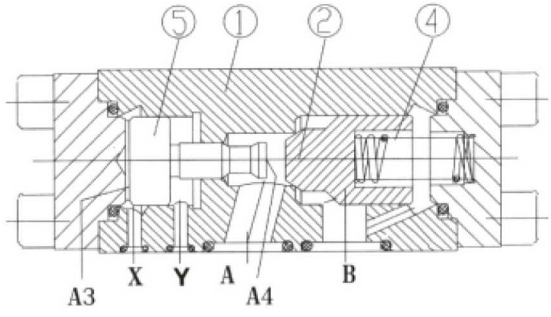
This valve has a additional pre-opening. Through pressure connection at control port X the control piston (4) is pushed to the right.This first pushes the poppet (5) and then the poppet (2) from the seat. Now the valve may also have a flow from B to A Because of the pre-opening there is a dampened decony8sdioR of the fluid under pressure. Through this possible pressure shocks are avoided.

Type SL-.. (with leakage port, section 2)

The function of this valve is principally the same as the valve SV.The difference is the additional leakage port Y. With this the annulus area of the control piston (4) is separated from port A The pressure present at port A only effects area A4 of the control piston (4).



SV...PA(pre-opening)



SL...PB(without pre-opening)

Type	A1 (cm^2)	A2 (cm^2)	A3 (cm^2)	A4 (cm^2)
SV/SL10	1.1 3	0.28	3.15	0.50
SV/SL20	3.14	0.78	9.62	1.13
SV/SL30	5.30	1.33	15.9	1.54

Ordering details

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Without drain port =V
With drain port =L

Style	SV		SL	
Connection	G	P	G	P

Ordering code

Size10	=10	=10	=10	=10
Size15	=15	–	=15	–
Size20	=20	=20	=20	=20
Size25	=25	–	=25	–
Size30	=30	=30	=30	=30

Plate installation =P
Thread connection =G

A= with pilot valve
B= without pilot valve

1= Cracking pressure
2=
3=

30= Series 30
(30 to 39:unchanged installation and connection dimensions)

No code = Mineral oil
V = Phospate ester

Further details in clear text

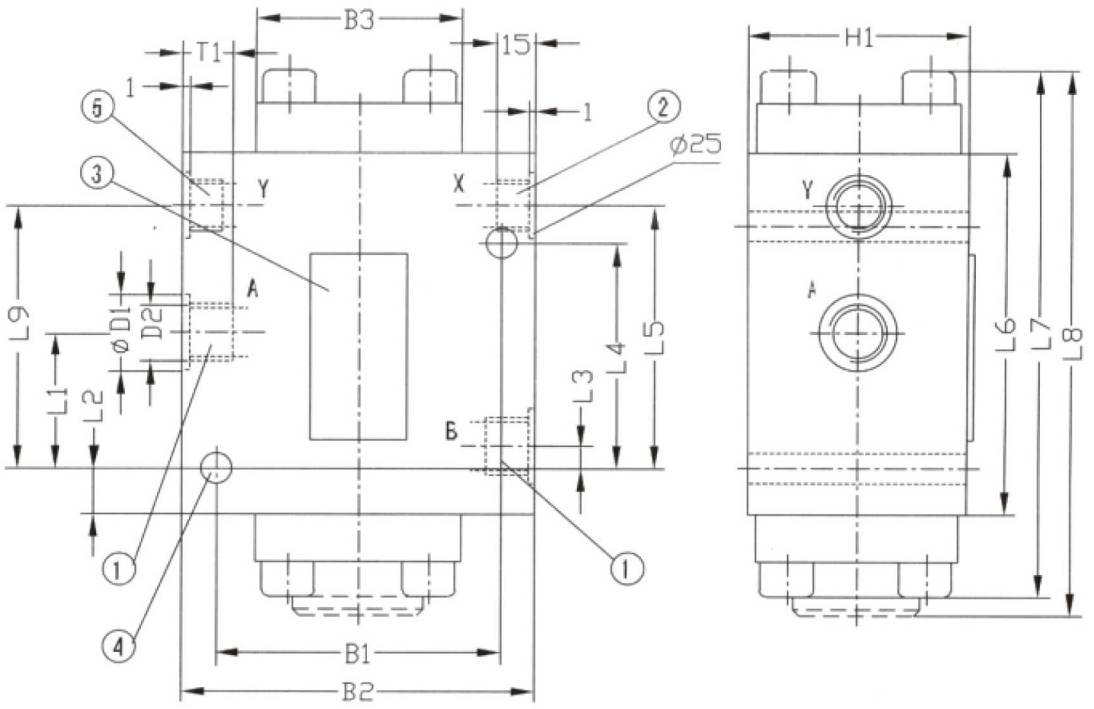
Technical data

Type	SV10	SL10	SV15、20	SI15、20	SV25、30	SI25、30
Control volume–port X	2.2		8.7		17.5	
Control volume–port Y	–	1.9	–	7.7	–	15.8
Direction of flow	From A to B free, from B to A when pilot operated					
Max. operating pressure	to 31.5					
Control pressure	0.5 ~ 31.5					
Pressure fluid	Mineral oil or Phospate ester					
Temperature range	–30~+80					
Viscosity range	2.8 ~ 500					
Weight	SV10	SL10	SV15.20	SL15.20	SV25.30	SL25.30
	2.5		4.0	4.5	8.0	

Unit dimensions

Dimensions in mm

Threaded connection valve

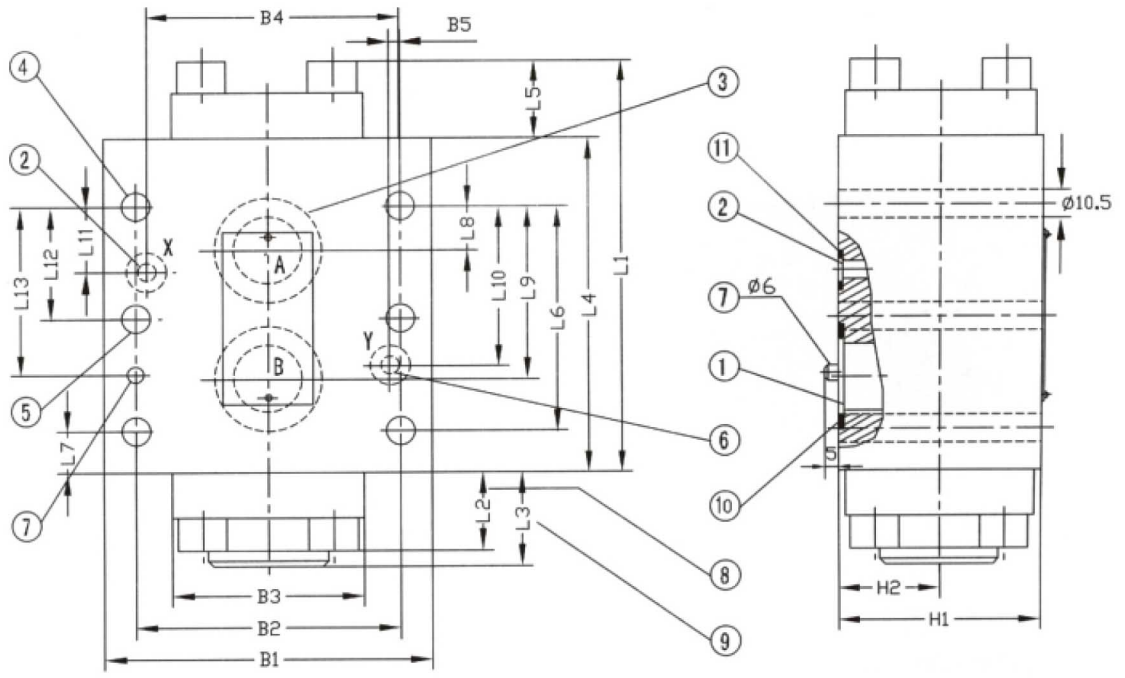


Type		B1	B2	B3	ΦD1	D2
SV	10	66.5	85	40	34	G1/2"orM22X1.5.
	15	79.5	100	55	42	G3/4"orM27X2
	20	79.5	100	55	47	G1"orM33X2
	25	97	120	70	56	G11/4"orM42X2
	30	97	120	70	61	G11/2"orM48X2
SL	10	66.5	85	40	34	G1/2"orM22X1.5
	15	79.5	100	55	42	G3/4"orM27X2
	20	79.5	100	55	47	G1"orM33X2
	25	97	120	70	56	G11/4"orM42X2
	30	97	120	70	61	G11/2"orM48X2

1、Port A and B
2、Port X，G1/4"orM14X1.5
3、Name plate
4、Valve fixing holes Φ10.5
5、Port Y，G1/4"orM14X1.5
* Valve with cracking pressure “1” and “2” (dimension L7)
* Valve with cracking pressure “3” (dimension L8)

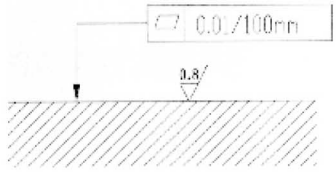
Type		H1	L1	L2	L3	L4	L5	L6	L7	L8	L9	T1
SV	10	42	27.5	18.5	10.5	33.5	49	80	116	116	–	14
	15	57	36.5	17.5	13	50.5	67.5	95	135	146	–	16
	20	57	36.5	17.5	13	50.5	67.5	95	135	146	–	18
	25	75	54.5	15.5	20.5	73.5	89.5	115	169	179	–	20
	30	75	54.5	15.5	20.5	73.5	89.5	115	169	179	–	22
SL	10	42	22.5	18.5	10,5	33.5	49	80	116	116	51.5	14
	15	57	30.5	17.5	13	50.5	72.5	100	140	151	72.5	16
	20	57	30.5	17.5	13	50.5	72.5	100	140	151	72.5	18
	25	75	51	15.5	20	84	99.5	125	179	189	99.5	20
	30	75	51	15.5	20	84	99.5	125	179	189	99.5	22

Subplate mounting valve



1. Ports A and B
2. Port X
3. Name plate
4. 4 fixing holes with type SV/SL 20 SV/SL 10 valve
5. 6 fixing holes with type SV/SL 30 valve
6. Port Y with valve "SL"
   (with type valve "SV" this port is closed)
7. Fixing pin
8. Valve with cracking pressure "1" and "2" (dimension L2)
9. Valve with cracking pressure "3" (dimension L3)
10. O-ring
    For port A and B
    O-ring 15 × 3(Size 10)
    O-ring 24 × 3(Size 20)
    O-ring 34 × 3(Size 30)
11. For port X and Y
    O-ring 10 × 2.5
    (Size 1 0,20,30)

Required surface finish of mating piece



Type	Size	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10
SV	10	98	18	18	80	18	43	18.5	7.2	35.8	–
	20	115	20	31	95	20	60.5	17.3	11.1	49.2	–
	30	144	29	35	115	29	84	15.5	16.5	67,5	–
SL	1 0	98	18	18	80	18	43	18.5	7.2	35.8	21.5
	20	115	20	31	100	20	60.5	17.3	11.1	49.2	39.7
	30	144	29	35	125	29	84	15.5	16.5	67.5	59.5

Type	Size	L11	L12	L13	B1	B2	B3	B4	B5	H1	H2
SV	1 0	21.5	–	$32\ ^{0}_{-0.3}$	85	66.5	40	58.5	–	42	21
	20	20.6	–	$44.5^{0}_{-0.2}$	100	79.5	55	73	–	57	28.5
	30	24,5	42	$63\ ^{0}_{-0.3}$	120	97	70	92.8	–	75	37.5
SL	1 0	21.5	–	$32\ ^{0}_{-0.3}$	85	66.5	40	58.5	7.9	42	21
	20	20.6	–	$44.5^{0}_{-0.2}$	100	79.5	55	73	6.4	57	28.5
	30	24.5	42	$63\ ^{0}_{-0.3}$	120	97	70	92.8	3.8	75	37.5

Valve fixing screw (included in goods)
Size 10
4-M10 × 50-10.9(G B/T70.1-2000)
Screw torque MA=75Nm

Size 20
4-M10 × 70-10.9 (GB/T70.1-2000)
Screw torque MA=75Nm

Size 30
6-M10 × 85-10.9(G B/T70.1-2000)
Screw torque MA=75Nm
Subplate
Size 10 G460/01(G3/8"),G460/02(M18 x1.5)
G461/01(G1/2"), G461/02(M22 × 2)
Size 20 G412/01(G3/4"),G412/02(M27 × 2)
G413/01(G1"), G413/02(M33 × 2)
Size 30 G414/01(G11/4"),G414/02(M42 × 2)
G415/01(G11/2"),G415/02(M48 × 2)