Обратные клапаны SV/SL
Технические характеристики

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SV/SL...type Hydraulic Operated Check Valve

SV / SL...4XJ...type

Sizes 10, 16, 20, 25, 32
Max. Working Pressure: 315 bar
Max. Flow: 550 L/min

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Features

- For sub-plate mounting,
  porting pattern conforms to DIN 24 340 Form D,
  ISO 5781
- For threaded connection
- With or without drain port
- With or without unloading function
- 4 cracking pressures

Function and configuration

SV and SL type valve is a hydraulic pilot operated check valve of poppet type design which may be opened to permit reverse flow. It is used for the isolation of operating circuits under pressure, to prevent a load from falling or creeping movements of hydraulically locked-in actuators. The valve consists of valve housing (1), poppet (2), compression spring (3), control spool (4) as well as a optional pre-opening ball poppet valve (5).

Type SV

The valve permits free-flow from A to B. In the reverse direction, the poppet (2) is held firmly on to its seat in addition to the spring force by the system pressure.

By applying pressure at control port X the control piston (4) is moved to the right. This lifts the poppet (2) from the seat, then fluid flows from B to A.

In order to ensure the valve opens due to the pressure applied to the control piston (4) a certain minimum pilot pressure is necessary.

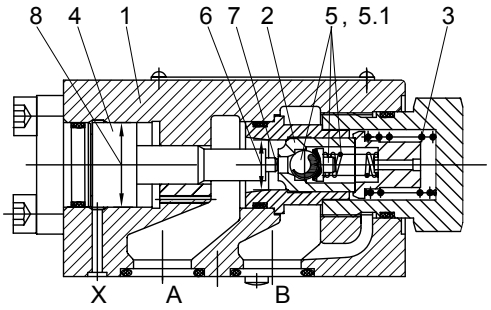
Type SV...A...and SL...A...

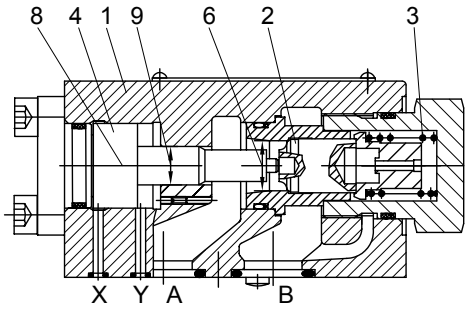
This valve has a additional decompression feature. When pressure is applied at control port X the control piston (4) is pushed to the right. The ball poppet(5.1) leaves first then the poppet (2) leaves from the seat. Now the valve may also have a flow from B to A.

Because of the pre-opening there is a dampened decompression of the fluid under pressure to avoid possible pressure shocks.

Type SL...

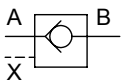
The function of this valve corresponse to the valve SV. The difference is the additional leakage port Y. The annular area of the control piston (4) is separated from port A. The pressure at port A only effects area A4 (9) of the control piston (4).



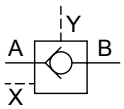


6 Area A1
7 Area A2
8 Area A3
9 Area A4

Symbols

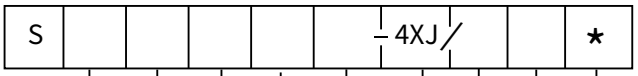


Symbols type SV
Type SV..PA.-4XJ/...
(without drain port, with pre-opening)



Symbols type SL
Type SL..PB.-4XJ/...
(with drain port, without pre-opening)

Specification



Further details in clear text

No code = NBR seals
V = FKM seals

For threaded connection
No code= Inch
2 = Metric

4XJ = Series 40J to 49J
(40J to 49J: unchanged installation and connection dimensions)

1= Cracking pressure: Size 10 = 1.5bar
Size16/20 = 2.5bar
Size25/32 = 2.5bar
2= Cracking pressure: Size10 =3bar
Size16/20 =5bar
Size25/32 =5bar
3= Cracking pressure: Size10 =6bar
Size16/20 =7.5bar
Size25/32 =8bar
4= Cracking pressure: =10bar

With pre-opening(standard version) =A
No pre-opening =B

Sub-plate mounting = P
Threaded connection = G

No leakage port = V
With leakage port = L

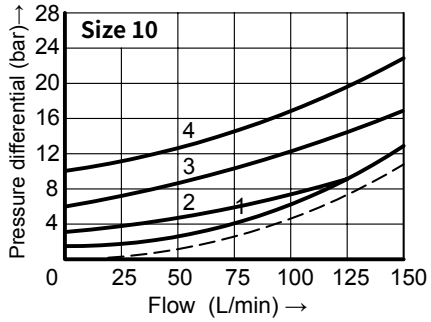
Type	SV		SL	
Connected port	G	P	G	P
Size	Code			
Size 10	=10	=10	=10	=10
Size 16	=15	-	=15	-
Size 20	=20	=20	=20	=20
Size 25	=25	-	=25	-
Size 32	=30	=30	=30	=30

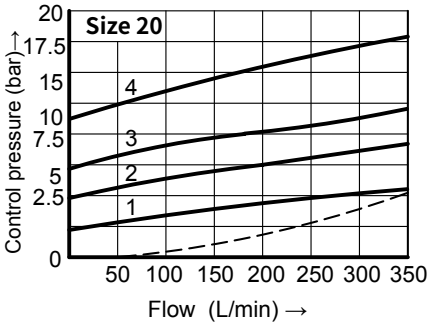
Technical data

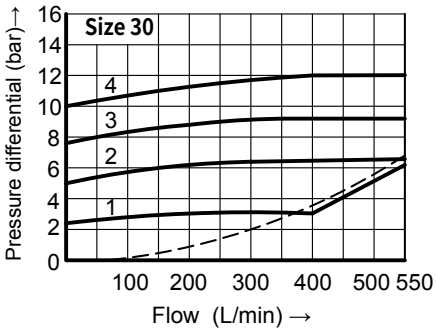
Nominal size			10	16	20	25	32
Weight	Sub plate mounting	kg	2.1		4.7		7.8
	Threaded connection	kg	2.5	5.7	5.7	10	10
Installation position			Optional				
Flow direction			From A to B free, from B to A through opening				
Operating pressrure		bar	To 315				
Port pilot pressure		bar	5 to 315				
Control capacity -Port X		cm^3	2.5	10.8	10.8	19.27	19.27
-Port Y(only type SL)		cm^3	2	9.6	9.6	17.5	17.5
Control area-area A1		cm^2	1.33	3.46	3.46	5.72	5.72
-area A2		cm^2	0.33	0.7	0.7	1.33	1.33
-area A3		cm^2	3.8	10.17	10.17	16.61	16.61
-area A4		cm^2	0.79	1.13	1.13	1.54	1.54
Viscosity range		mm^2/s	10 to 800				
Fluid temperature range		°C	-30 to +80 (NBR seal)				
			-20 to +80 (FKM seal)				
Fluid			Mineral oil suitable for NBR and FKM seal				
			Phosphate ester for FKM seal				
Degree of contamination			Maximum permissible degree of fluid contamination: Class 9. NAS 1638 or 20/18/15, ISO4406				

Characteristic curves (Measured at t=40°C ±5°C , using HLP46)

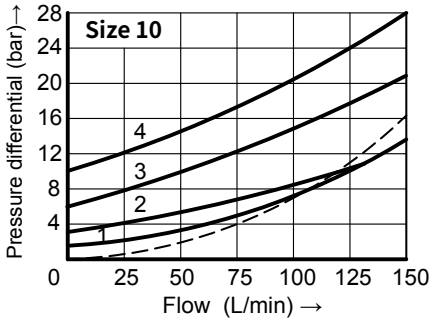
ΔP-Q curves – sub plate mounting

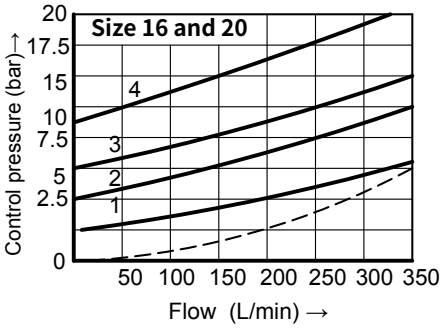


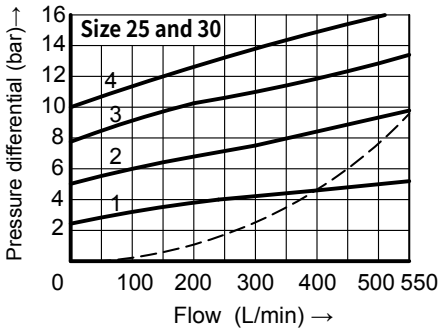




ΔP-Q curves – threaded connection





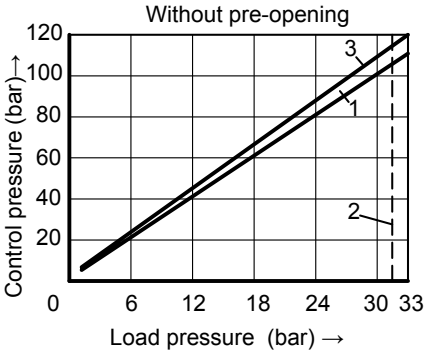


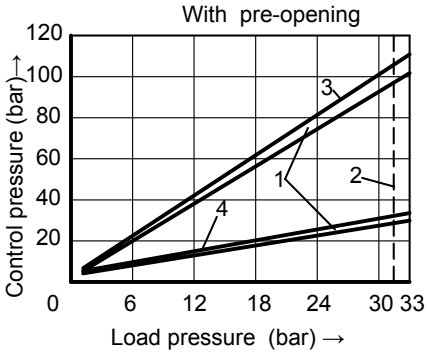
A to B Cracking pressure
1 1.5bar
2 3bar
3 6bar
4 10bar
- - -
B to A

A to B Cracking pressure
1 2.5 bar
2 5bar
3 7.5bar
4 10bar
- - -
B to A

A to B Cracking pressure
1 2.5bar
2 5bar
3 7.5bar
4 10bar
- - -
B to A

Control pressure-load pressure curves



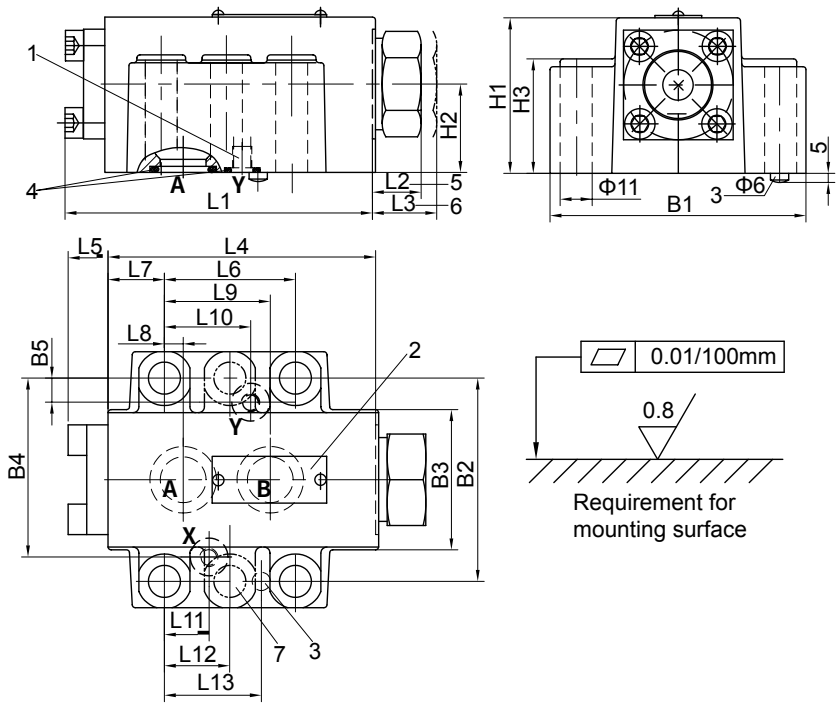


1 Tolerance range
2 Limit value
3 Poppet
4 Pre-opening ball poppet valve

Unit dimensions

(Dimensions in mm)

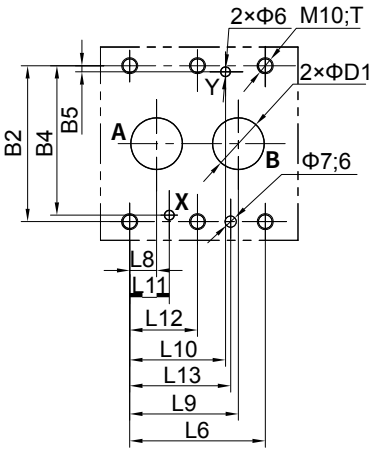
·sub-plate mounting valve



1 Port Y with valve type "SL" (with valve type "SV" this port is closed)
2 Name plate
3 Locating pin
4 O-rings

Size 10
-Ports A and B 17.12×2.62
- Ports X and Y 10×2.5 **Size 20**
-Ports A and B 24×3
-Ports X and Y 10×2.5 **Size 32**
- Ports A and B 34×3
- Ports X and Y 10×2.5

5 Valve with cracking pressure versions "1" and "2" (dimension L2)
6 Valve with opening pressure versions "3" and "4" (dimension L3)
7 6 valve mounting holes with type SV/SL 30



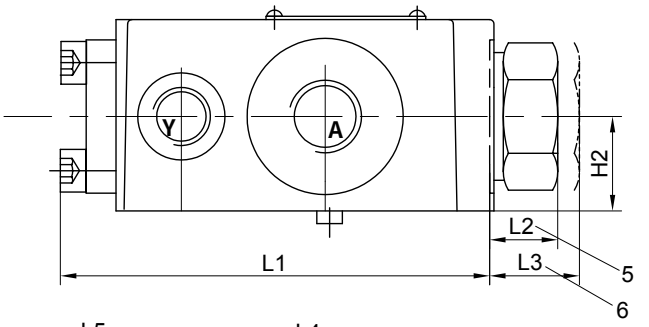
Type	Size	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10
SV	10	100.8	15.5	15.5	87.8	13	42.9	18.5	7.2	35.8	-
	20	135	17.7	47.7	117	18	60.3	27.5	11.1	49.2	-
	32	156.1	36.1	46.1	134	22.1	84.2	39	16.7	67.5	-
SL	10	100.8	15.5	15.5	87.8	13	42.9	18.5	7.2	35.8	21.5
	20	135	17.7	47.7	117	18	60.3	27.5	11.1	49.2	39.7
	32	156.1	36.1	46.1	134	22.1	84.2	39	16.7	67.5	59.5

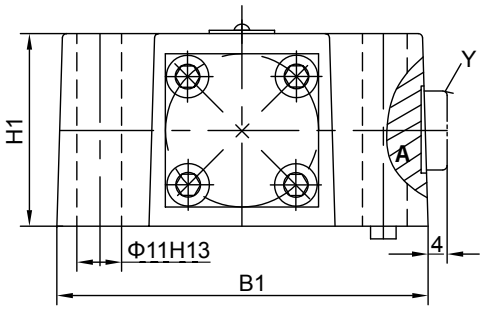
Type	size	L11	L12	L13	B1	B2	B3	B4	B5	H1	H2	H3	D1	T
SV	10	21.5	-	31.8	84	66.7	46	58.8	-	51	29	36	13	23
	20	20.6	-	44.5	100	79.4	63.5	73	-	70	37	55	22	24
	32	24.6	42.1	62.7	118	96.8	75	92.8	-	85	42.5	69	32	25
SL	10	21.5	-	31.8	84	66.7	46	58.8	7.9	51	29	36	13	23
	20	20.6	-	44.5	100	79.4	63.5	73	6.4	70	37	55	22	24
	32	24.6	42.1	62.7	118	96.8	75	92.8	3.8	85	42.5	69	30	25

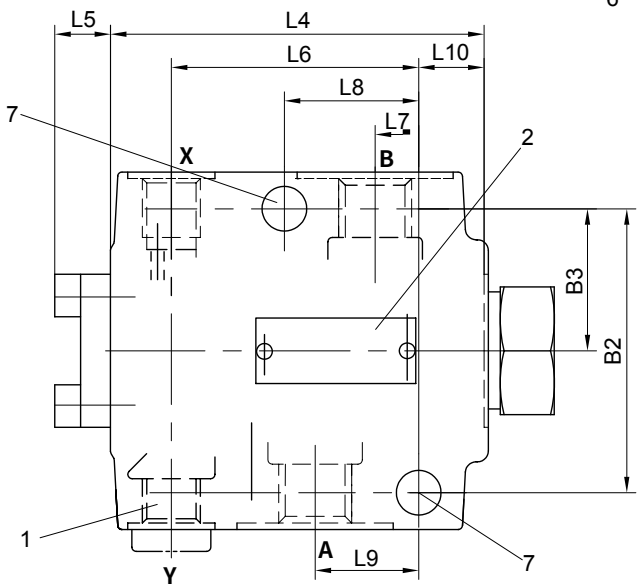
Unit dimensions

(Dimensions in mm)

·threaded connection valve







1 Port Y with valve type "SL" (with valve type "SV" this port is closed)
2 Name plate
5 Valve with cracking pressure versions "1" and "2" (dimension L2)
6 Valve with cracking pressure versions "3" and "4" (dimension L3)
7 2 valve mounting holes

Type	Size	Ports	
		A, B	X, Y
SV	10	G1/2 M22×1.5	G1/4 M14×1.5
	16	G3/4 M27×2	
	20	G1 M33×2	
	25	G11/4 M42×2	
	32	G11/2 M48×2	
SL	10	G1/2 M22×1.5	G1/4 M14×1.5
	16	G3/4 M27×2	
	20	G1 M33×2	
	25	G11/4 M42×2	
	32	G11/2 M48×2	

Type	Size	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	B1	B2	B3	H1	H2
SV	10	100.8	15.5	15.5	87.8	13	56.5	10.5	33.5	22.5	17.3	87	66.7	33.4	44	22
	16;20	133	17.7	47.7	115	18	74.5	17	50.5	36	27	105	79.4	39.7	68	34
	25;32	156.1	35.7	45.7	134	22.1	101	24	84	49	18	130	96.8	48.4	86	43
SL	10	100.8	15.5	15.5	87.8	13	56.5	10.5	33.5	22.5	17.3	87	66.7	33.4	44	22
	16;20	133	17.7	47.7	115	18	74.5	17	50.5	36	27	105	79.4	39.7	68	34
	25;32	156.1	35.7	45.7	134	22.1	101	24	84	49	18	130	96.8	48.4	86	43

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