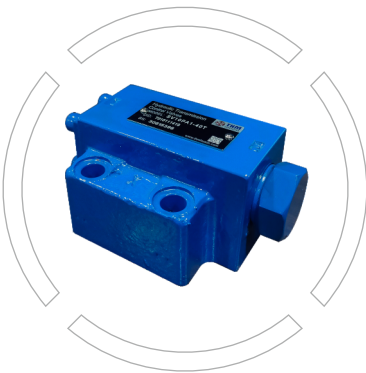


SV & SL

Pilot Operated Check Valves
Sizes 10, 20
Max pressure up to 315 bar
Max flow up to 350 l/min



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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-opening, dampened decompression
- 4 opening pressures
- Porting pattern to Din 24 340 form A, ISO 4401 and CETOP-RP 121H

Function, Section and Symbol

The SV and SL valves are hydraulic pilot operated check valves of poppet type design which may be opened to permit flow in the reverse direction.

These valves are used for the isolation of operating circuits which are under pressure, i.e. as a safe guard against the lowering of a load when a line break occurs or against creeping movements of hydraulically locked actuators. The valve basically comprises of the housing (1), the poppet (2), a compression spring (3), the control spool (4) as well as an optional decompression feature as a ball poppet valve (5).

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 to pilot connection X, the control spool (4) is moved to the right. This lifts poppet (2) off its seat, now the valve also permits free-flow from B to A.

In order to ensure that the valve opens due to pressure applied to the control spool (4), a certain minimum pilot pressure is required.

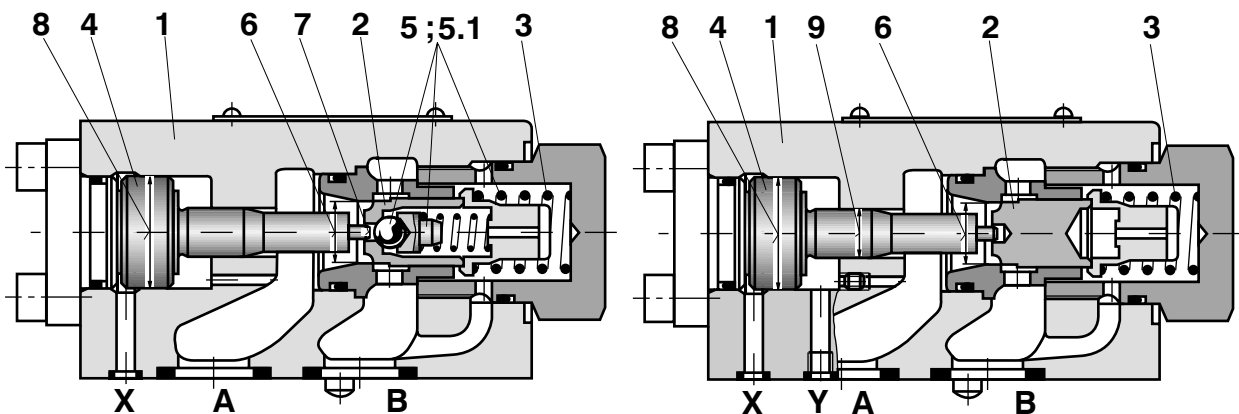
Types SV..A.. and SL..A.. (with decompression, section 1)

This valve is fitted with an additional decompression feature. When pressure is applied to port X, the control spool (4) is moved to the right. This firstly lifts the ball (5.1) and then the poppet (2) off their seats. The valve now permits flow from B to A. Because of the decompression feature there is a dampened decompression of the pressurised fluid. Due to this possible pressure shocks are avoided.

Type SL... (with drain connection, section 2)

In principle, the function of this valve corresponds to that of the type SV.

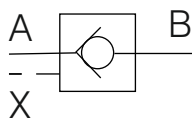
The difference lies in the additional drain port Y. Here, the annular area of the control spool (4) is separated from the port A. Pressure present in port A acts only on area A4 (9) of the control spool (4).



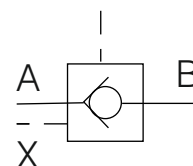
Type SV..PA (without leakage port, with pre-opening)

Type SL..PB (with leakage port, without pre-opening)

Type SV



Type SL





Ordering code

	S	L	10	P	A	1	40T		*
Hydraulic Control Check Valve	= S								
Without leakage port	= V								
With leakage port	= L								
Size									
Size 10			= 10						
Size 20			= 20						
Plate mounting				= P					
Thread connection				= G					
With pre opening					= A				
Without pre opening					= B				
Cracking pressure					{	= 1			
See Curve A to B						= 2			
						= 3			
						= 4			
Series							= 40T		
Sealing material									
Mineral oil								= No code	
phosphate ester								= V	
Other Details in clear text									

Technical data

Size			10	20
Maximum flow		L/min	150	350
Maximum working pressure		bar	315 bar	
Control pressure		bar	5 to 315 bar	
Control Volume	Port X	cm³	2.5	10.8
	Port Y	cm³	2.0	9.6
Control areas	Area A1	cm²	1.33	3.46
	Area A2	cm²	0.33	0.7
	Area A3	cm²	3.8	10.17
	Area A4	cm²	0.79	1.13
Pressure fluid			Mineral oil (HL, HLP) to DIN 51 524 ¹⁾ ; Fast bio-degradable pressure fluids to VDMA 24 568; HETG (rape seed oil) ¹⁾ ; HEPG (polyglycols) ²⁾ ; HEES (synthetic ester) ²⁾ ; other pressure fluids on request	
Pressure fluid temperature range		°C	-30 to +80 (NBR Seals) -20 to +80 (FKM Seals)	
Viscosity range		mm²/s	2.8 to 500	
Weight	Subplate mounting	Kg	1.8	4.7
	Threaded connection	Kg	2.1	5.4

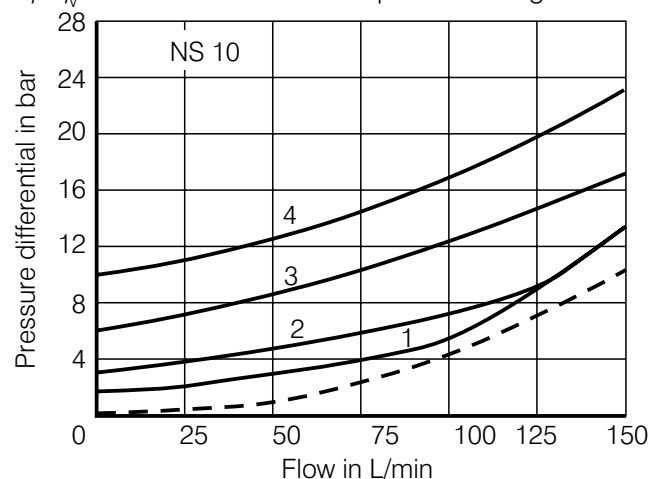
1) Suitable for NBR and FKM seals

2) Only suitable for FKM seals

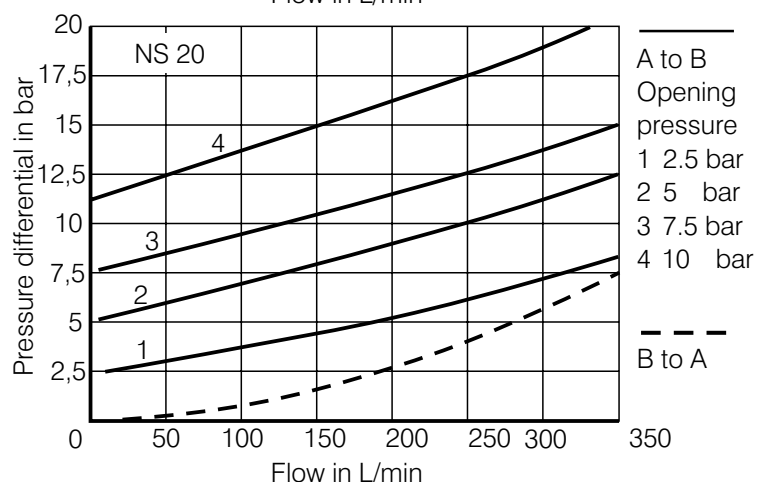
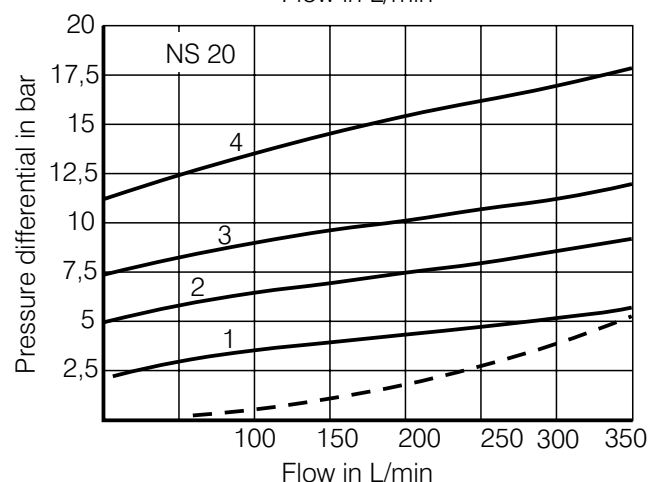
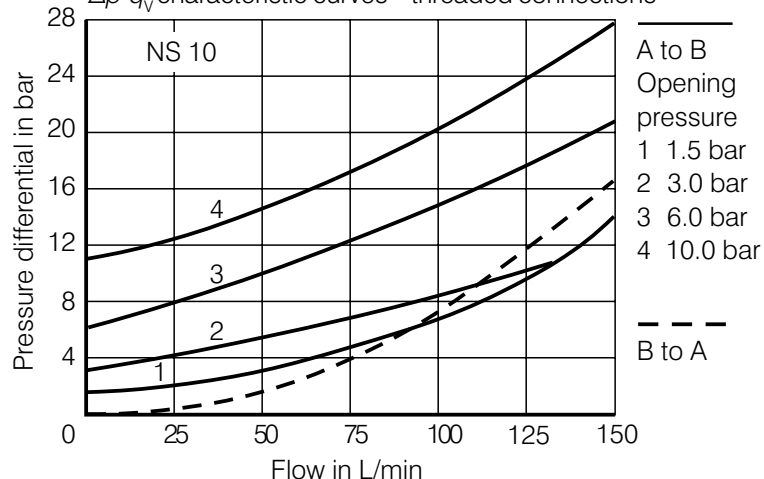


Characteristic Curves

Δp - q_v -characteristic curves – subplate mounting

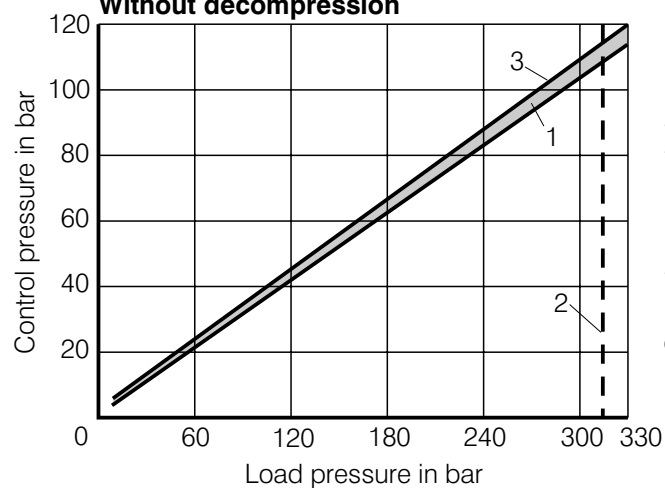


Δp - q_v -characteristic curves – threaded connections

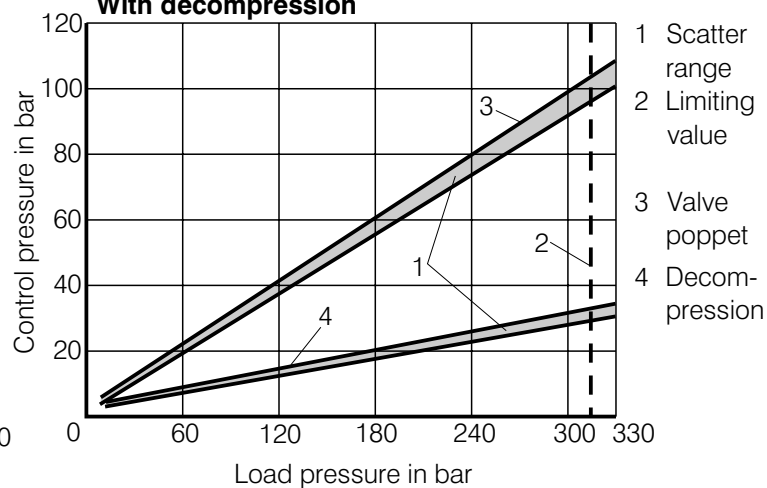


Control pressure-load pressure-characteristic curves

Without decompression



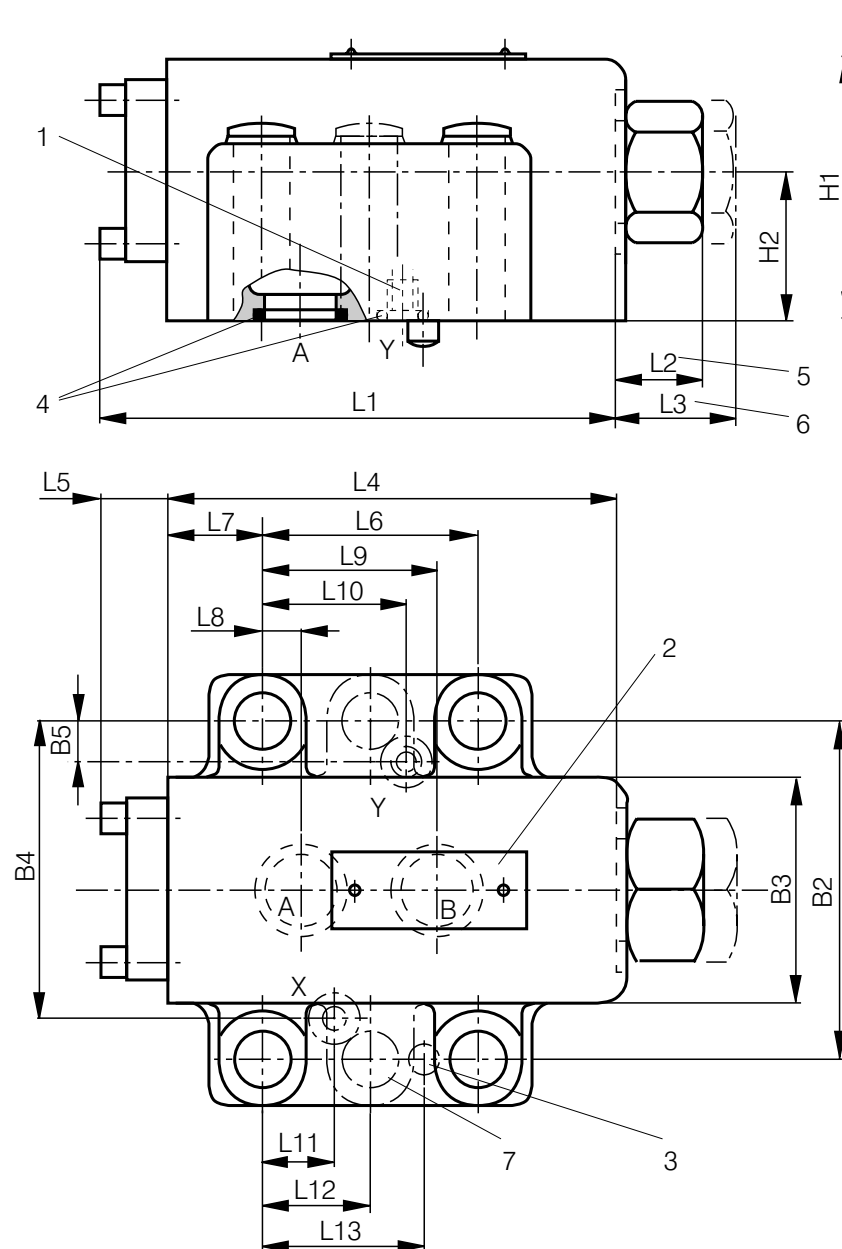
With decompression





Unit Dimensions for Subplate Mounting

(Dimensions in mm)



1 Port Y with valve type "SL"
(with valve type "SV" this port is plugged)

2 Name plate

3 Locating pin

4 Seal rings

NS 10

– Same seal rings for ports A and B

– Same seal rings for ports X and Y

NS 20

– Same seal rings for ports A and B

– Same seal rings for ports X and Y

5 Valve with opening pressure
versions "1" and "2" (dimension L2)

6 Valve with opening pressure
versions "3" and "4" (dimension L3)

7 6 valve fixing holes for type SV/SL 30
Subplates

NS 10 G 460/01 (G 3/8)

G 461/01 (G 1/2)

NS 20 G 412/01 (G 3/4)

G 413/01 (G 1)

Valve fixing screws

NS 10

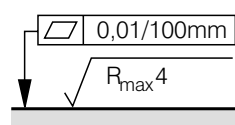
4 off M10 x 50 DIN 912-10.9;

MA = 75 Nm

NS 20

4 off M10 x 70 DIN 912-10.9;

MA = 75 Nm



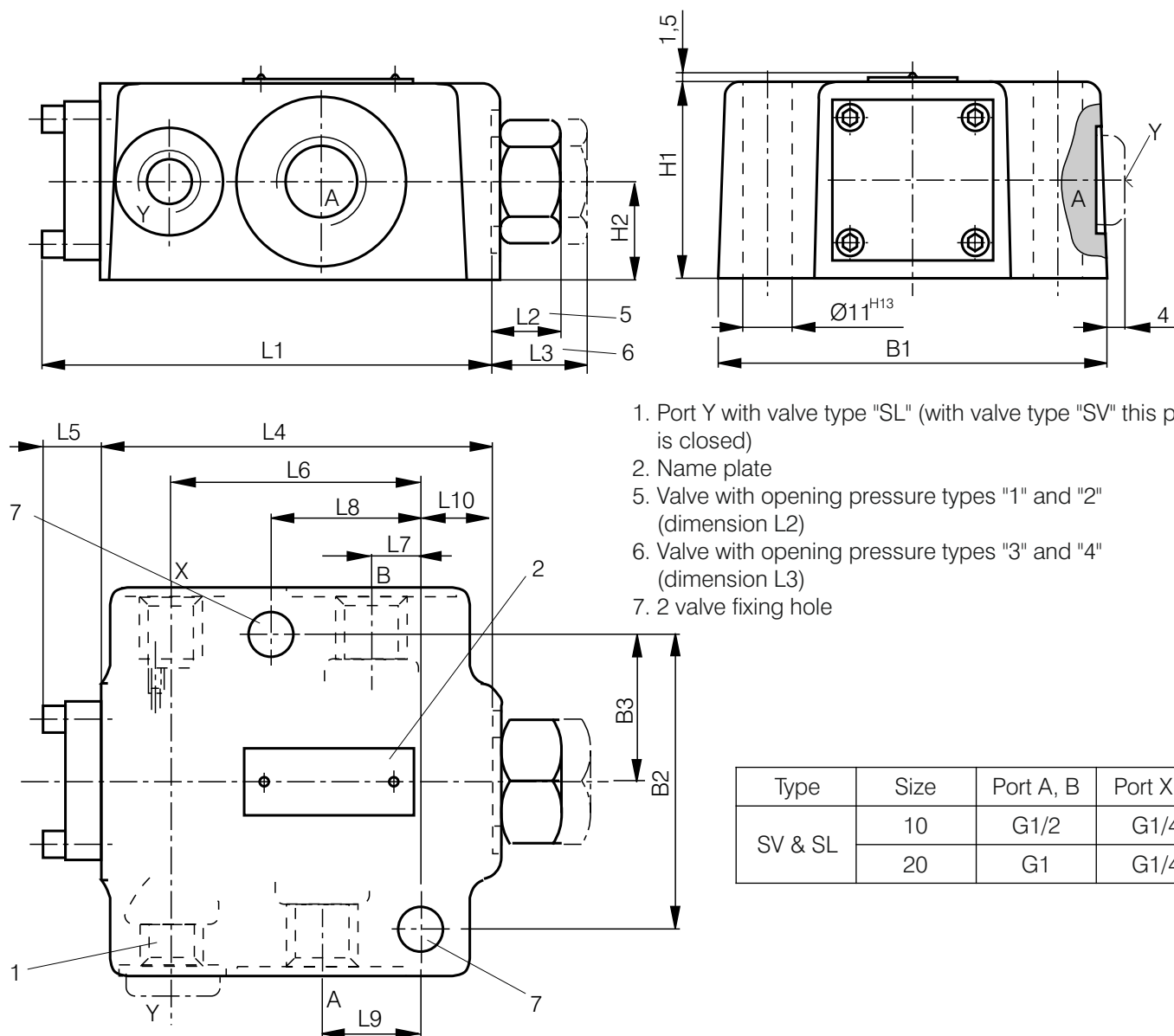
Required surface finish of the
mating piece

Type	Size	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13	B1	B2	B3	B4	B5	H1	H2	H3
SV	10	100.8	15.5	15.5	87.8	13	42.9	18.5	7.2	35.8	-	21.5	-	31.8	84	66.7	44	58.8	-	51	29	36
	20	135	17.7	47.7	117	18	60.3	27.5	11.1	49.2	-	20.6	-	44.5	100	79.4	61	73	-	70	37	55
SL	10	100.8	15.5	15.5	87.8	13	42.9	18.5	7.2	35.8	21.5	21.5	-	31.8	84	66.7	44	58.8	7.9	51	29	36
	20	135	17.7	47.7	117	18	60.3	27.5	11.1	49.2	39.5	20.6	-	44.5	100	79.4	61	73	6.4	70	37	55



Unit Dimensions for Subplate Mounting

(Dimensions in mm)



Type	Size	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	B1	B2	B3	H1	H2
SV & 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
	20	133	17.7	47.7	115	18	74.5	17	50.5	36	27	105	79.4	39.7	68	34

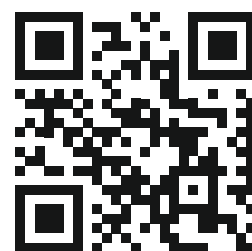


The specified data is for product description purposes only and may not be deemed to be guaranteed unless expressly confirmed in the contract.



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