

Series	Description	Size													Mounting			Page
		1/8	1/4	3/8	1/2	3/4	1	06	10	16	25	32	Subplate	Screw-in	Slip-in			
	Parker Standard DIN / ISO																	
<b>Shuttle valves</b>																		
SSR																		6-2
<b>Check valves, direct operated</b>																		
RK / RB																		6-4
CS																		6-7
SPZBE																		6-9
SPV / SPZ																		6-11
C4V																		6-13
<b>Check valves, pilot operated</b>																		
CPS																		6-16
C4V																		6-18
<b>2/2 way seat valves</b>																		
D4S																		6-21
<b>Accessories</b>																		
	Plugs																	6-31

More check valves are presented in the following chapters:

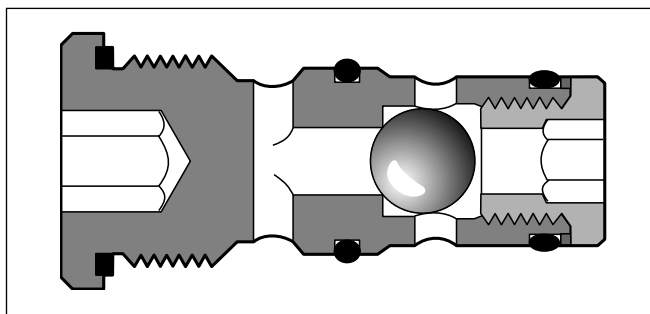
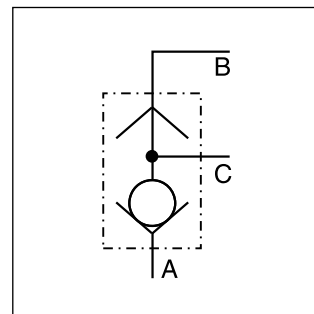
- Chapter 7: Sandwich Valves
- Chapter 8: Slip-In Cartridge Valves
- Chapter 9: SAE Flange Valves
- Chapter 10: Valves for Pipe Mounting

**Characteristics / Ordering Code**

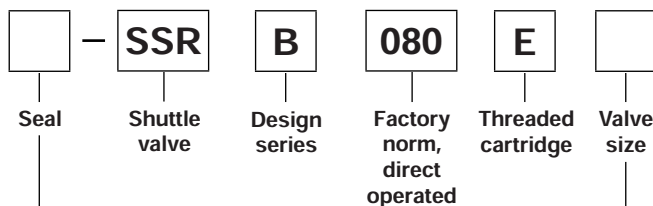
The shuttle valve series SSR is designed as a threaded cartridge valve. All parts are assembled in one unit and easy to mount.

**Features**

- Little space required
- Leak-free
- Easy assembly



**6** Ordering code



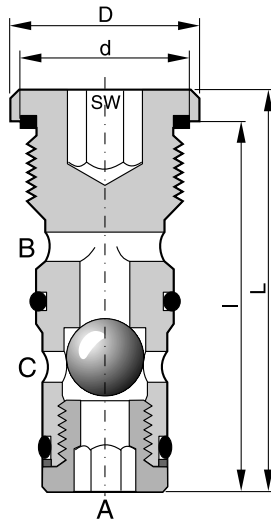
Code	Seal
omit	<b>NBR</b>
V	FPM

Code	Size
<b>06</b>	<b>NG06</b>
<b>10</b>	<b>NG10</b>

**Bold letters =**  
Short-term availability

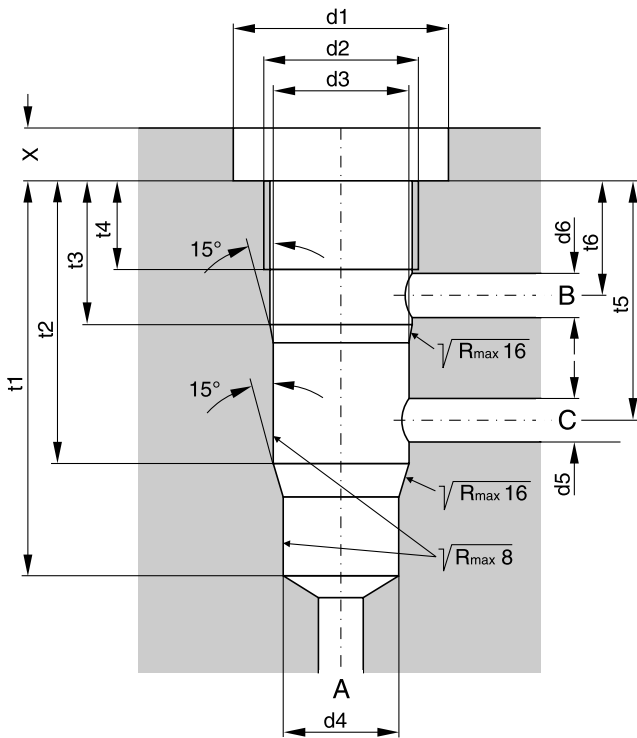
**Technical data**

General			
Design		Threaded cartridge valve	
Mounting position		Unrestricted	
Ambient temperature		[°C] -40 ... +60	
Nominal size		NG06	NG10
Weight		[kg] 0.5	0.8
Hydraulic			
Flow direction		See symbols	
Fluid		Hydraulic oil as per DIN 51524 ... 51525	
Viscosity, recommended permitted		[cSt] / [mm²/s] 30 ... 80	[cSt] / [mm²/s] 20 ... 380
Fluid temperature		[°C] -20 ... +60	
Filtration		ISO 4406 (1999); 18/16/13	
Nominal pressure		[bar] 350	
Flow		[l/min] 40	60



Dimensions	NG06	NG10
D	24	34
L	50	74
d	M18x1.5	M24x1.5
I	45	66
SW	8	12
Tightening torque <sup>1)</sup> [Nm] ± 15 %	40	65

**Mounting cavity**



Dimensions	NG06	NG10
d1	25	35
d2	M18 x 1.5	M24 x 1.5
d3 <sup>H7</sup>	16	22
d4 <sup>H7</sup>	14	20
d5 <sub>max.</sub>	6	9
d6 <sub>max.</sub>	6	9
t1	45	68
t2	32	51
t3	16	20
t4	10	15
t5	27.5	40
t6	12	13.5

**Seal kits**

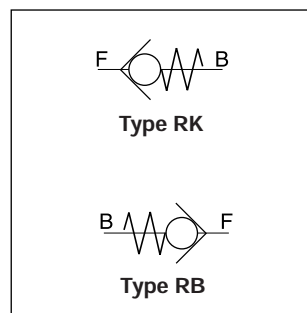
NG	NBR seals	FPM seals
06	SK-SSRB0E06	SK-SSRB0E06V
10	SK-SSRB0E10	SK-SSRB0E10V

<sup>1)</sup> Please note the material specification for tightening torque in chapter 12, "accessories"

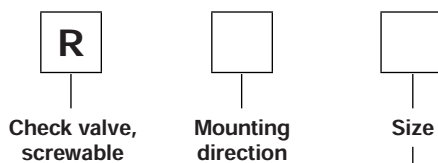
**Characteristics / Ordering Code**

The check valves series RK and RB are designed to go into simple, threaded cavities. The connection is O-ring sealed on the 118° shoulder in the mounting cavity.

The valve body is supplied as a unit, with a spring loaded, hardened and polished semisphere of stainless bearing steel inside. The seat is also hardened and ground.



**Ordering code**



Code	Mounting direction
<b>K</b>	<b>in the blocked direction</b>
<b>B</b>	<b>in open flow direction</b>

Code	Flow [l/min]	Thread
<b>0</b> <sup>1)</sup>	<b>10</b>	<b>G1/8A</b>
<b>1</b>	<b>20</b>	<b>G1/4A</b>
<b>2</b>	<b>50</b>	<b>G3/8A</b>
<b>3</b>	<b>80</b>	<b>G1/2A</b>

**Bold letters = Short-term availability**

<sup>1)</sup> Only series RK available

**Technical data**

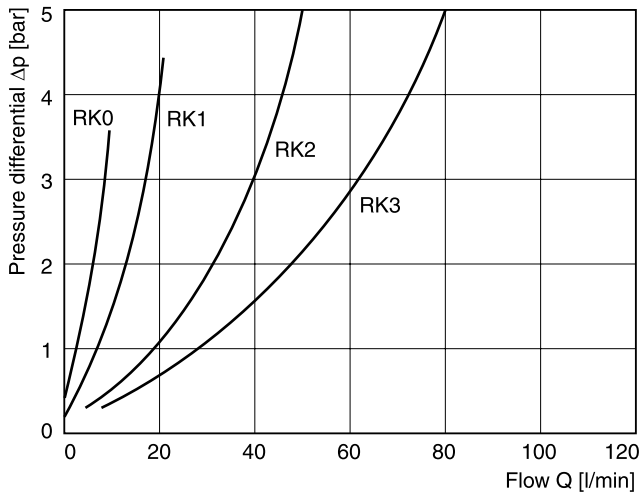
Series design with pipe thread

Code	RK0	RK1	RK2	RK3	RB1	RB2	RB3
Flow [l/min]	10	20	50	80	20	50	80
Operating pressure [bar]	700	700	700	500	700	700	500
Opening pressure [bar]	0.15	0.18	0.2	0.25	0.15	0.07	0.17
Thread (DIN ISO 228/1)	G1/8A	G1/4A	G3/8A	G1/2A	G1/4A	G3/8A	G1/2A
Tightening torque* ±20 % [Nm]	10	15	20	40	15	20	40
Weight [g]	5	5	15	15	5	15	20
Mounting position	unrestricted						
Fluid	Hydraulic oil in accordance with DIN 51524...51525						
Viscosity permitted [cSt]/[mm²/s]	4...1500 ; opt. 10...500 viscosity recommended						
Temperatures [°C]	Ambient and oil -40...+80, observe viscosity range						

\* In case of strong vibration, it is recommended to secure the mounting threads.

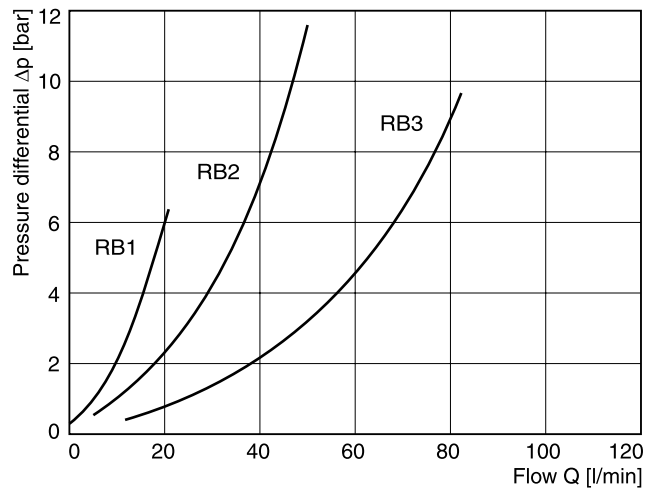
**$\Delta p/Q$  performance curves**

**Type RK**



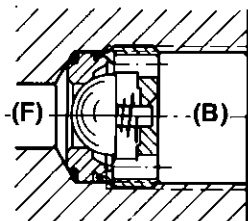
All characteristic curves measured with HLP46 at 50 °C.

**Type RB**



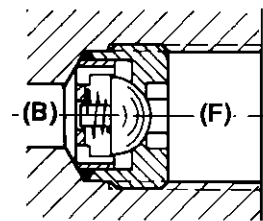
**Mounting direction**

**Type RK**



Screwed in, in the blocked direction

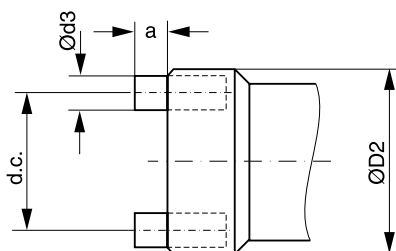
**Type RB**



Screwed in, in the open flow direction

**Mounting tool**

**Type RK**

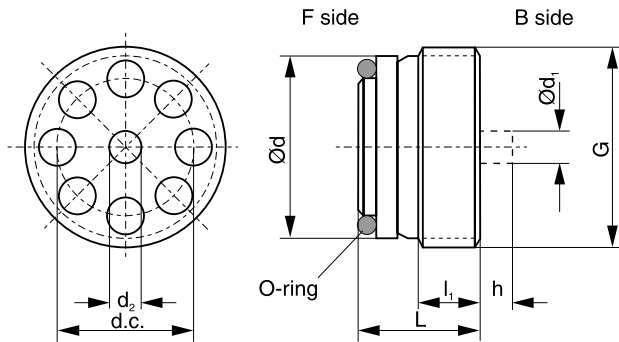


Type	Ordering number	$D_2$	$a$	$d_3$
RK0	5005216	8.6	2	1.5
RK1	5005217	11.5	2.5	2
RK2	5005218	15	2	2.5
RK3	5005219	18.8	4	3.5

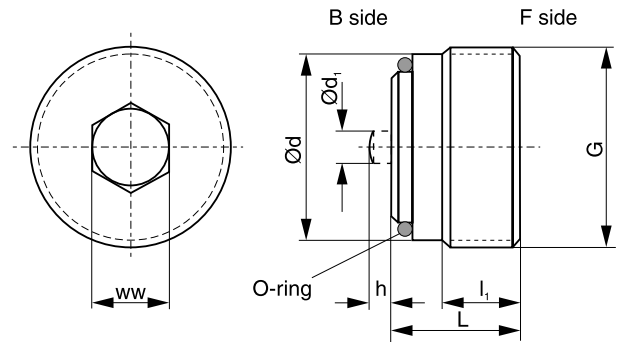
**Dimensions**

**Threaded Check Valves  
Series RK, RB**

**Type RK**



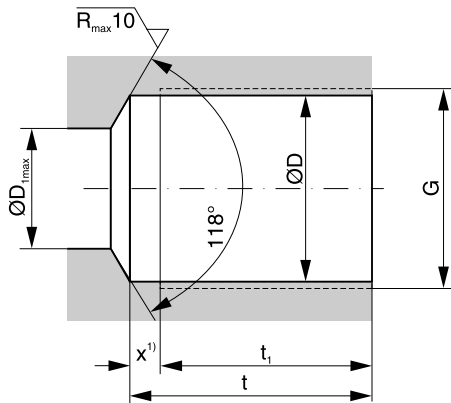
**Type RB**



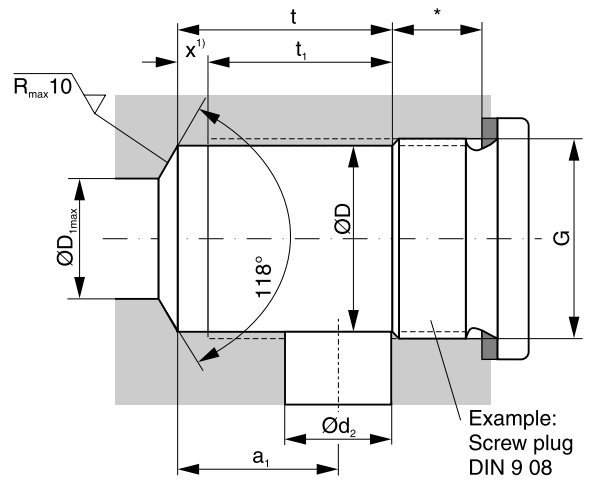
Type	Thread	L	l <sub>1</sub>	d	d <sub>1</sub>	d <sub>2</sub>	h	d.c.	O-ring
RK0	G1/8A	7.2	4	8.6	1.8	1.6	1.3	6.8	6x1
RK1	G1/4A	9	4.5	11.5	2.4	2.2	1.5	8.8 <sub>-0.1</sub>	9x1
RK2	G3/8A	11	6	15	3.2	3	2.5	11	11x1.5
RK3	G1/2A	13	7.5	18.5	4	3.8	3	14.2 <sub>-0.1</sub>	14x1.5

Type	Thread	L	l <sub>1</sub>	d	d <sub>1</sub>	h	ww	O-ring
RB1	G1/4A	9.8	5	11.6	2	1.3	5	9x1
RB2	G3/8A	11.5	7.0	15	2.8	2	6	11x1.5
RB3	G1/2A	13.15	7.5	18.5	3.2	2.5	8	14x1.5

**Type RK**



**Type RB**



Type	Thread	D	D <sub>1</sub>	t	t <sub>1</sub> <sup>2)</sup>	x <sup>1)</sup>
RK0	G1/8	8.7	5	16	13.7	2.3
RK1 and RB1	G1/4	11.8	8	22	19	3
RK2 and RB2	G3/8	15.25	9	24.5	21.5	3
RK3 and RB3	G1/2	19	12	29	25.5	3.5

Type	Thread	D	D <sub>1</sub>	t	t <sub>1</sub> <sup>2)</sup>	x <sup>1)</sup>	a <sub>1</sub>	d <sub>2</sub>
RK0	G1/8	8.7	5	12.3	10	2.3	9.5	5
RK1 and RB1	G1/4	11.8	8	14	11	3	11	6
RK2 and RB2	G3/8	15.25	9	17	14	3	13	8
RK3 and RB3	G1/2	19	12	22	18.5	3.5	16	12

**Mounting cavity**

- for connecting in combination with tube fitting
- for internal line channels

\* Required depth depending on type of screw plug, connecting plate etc. used.

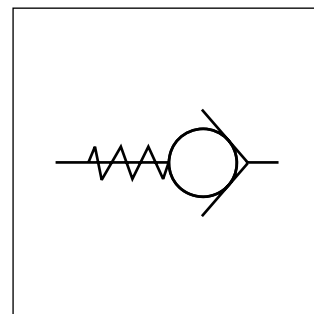
1) Thread runout x must be maintained. It may be smaller, but not larger (requirement for a perfect seal using the O-ring).

2) Fully cut-out thread

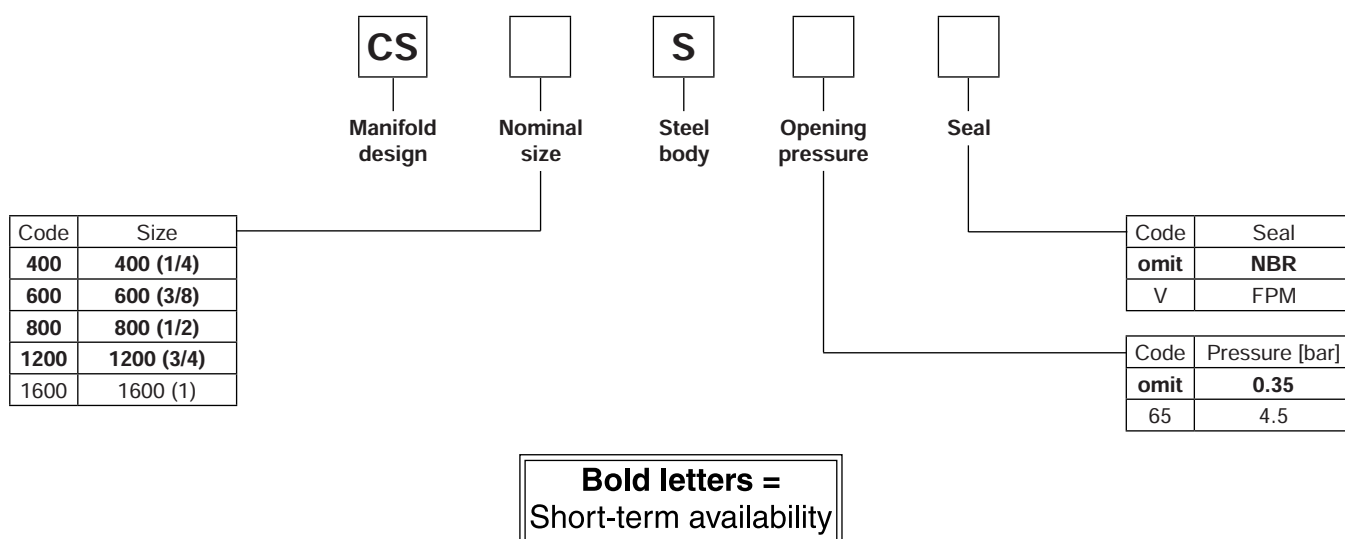
Characteristics / Ordering Code

Manatrol check valves of the series CS for subplate mounting provide free flow in one direction and block flow in the counter direction.

Specific Manatrol poppets and poppet guides ensure reliable functional integrity even at high flow rates and/or pulsations.



Ordering code

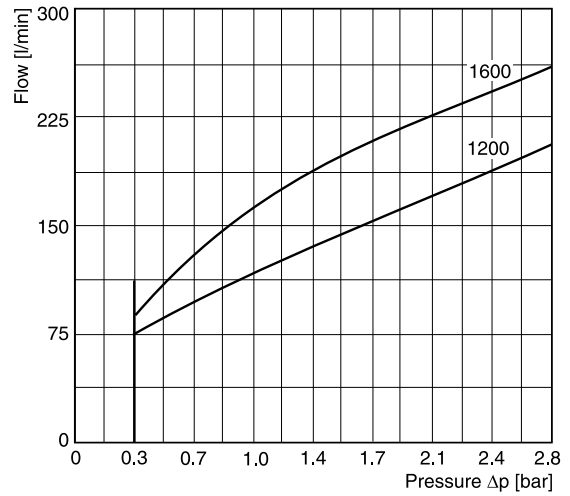
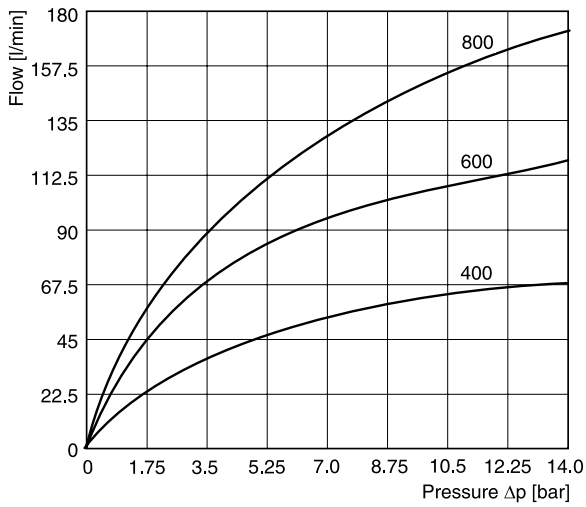


6

Technical data

Size		400	600	800	1200	1600
Operating pressure	[bar]	210	210	210	210	210
Pressure drop $\Delta p$	[bar]	10	10	10	1	1
Flow	[l/min]	65	110	155	112	160
MTTF <sub>D</sub> value	[years]	150				

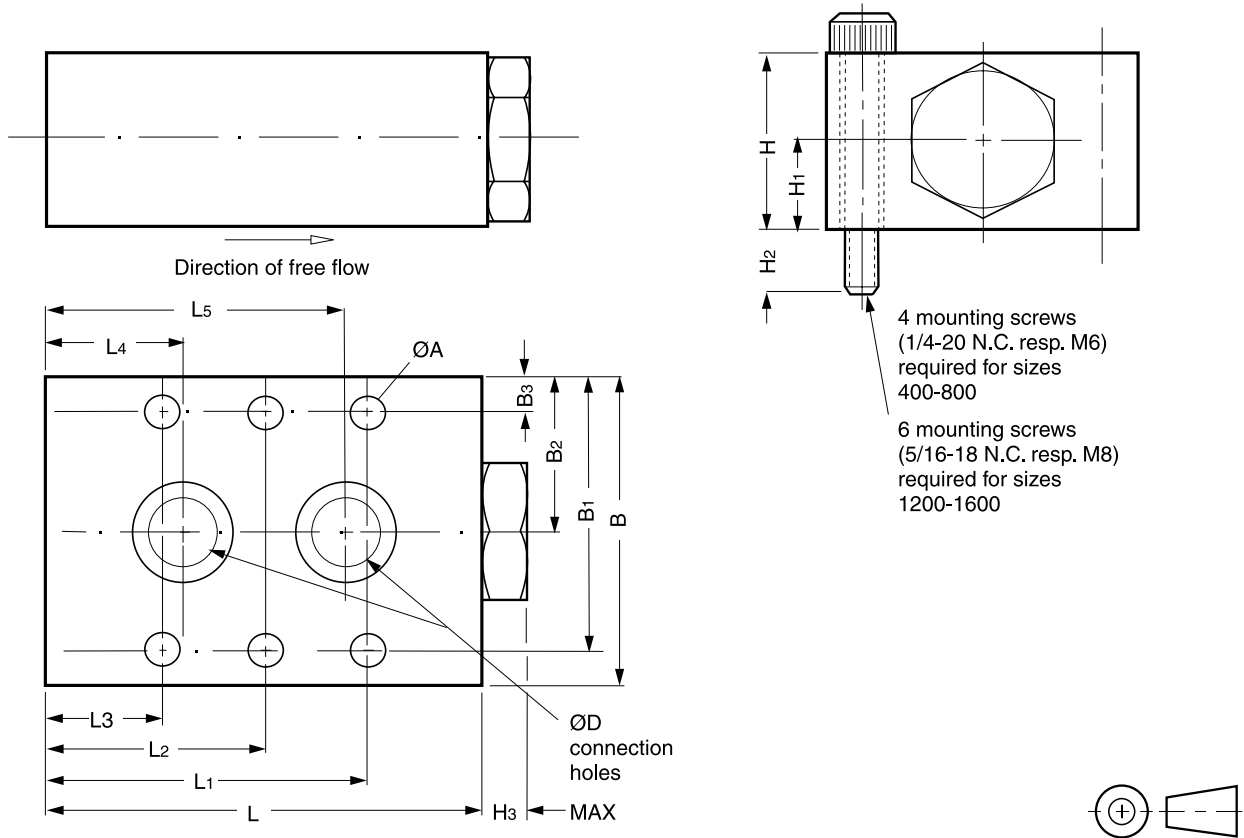
**Δp/Q performance curves**



All characteristic curves measured with HLP46 at 50 °C.

**6**

**Dimensions**



Size	ØD	ØA	L	L1	L2	L3	L4	L5	B3	B2	B1	B	H	H1	H2	H3	Weight [kg]
CS 400S	7.1	6.35	63.5	49.0	-	14.2	19.1	44.5	5.3	22.1	38.9	44.5	22.1	10.9	9.9	7.9	0.5
CS 600S	10.2	6.35	69.9	51.6	-	18.0	22.1	47.5	6.4	25.4	44.5	50.8	25.4	12.7	13.0	8.1	0.7
CS 800S	11.9	6.35	80.7	59.4	-	21.3	25.4	55.6	6.4	28.4	50.8	57.2	31.8	15.7	13.2	8.1	1.0
CS 1200S	17.3	8.5	103.9	89.9	51.8	13.7	25.1	79.2	7.9	34.8	61.7	69.9	44.5	22.1	14.5	10.7	2.3
CS 1600S	22.1	8.5	127.0	111.0	63.5	15.7	34.8	91.9	7.9	38.1	68.1	76.2	50.8	25.4	14.5	10.7	3.5



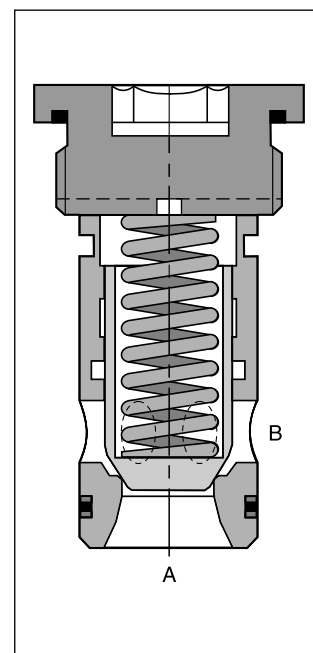
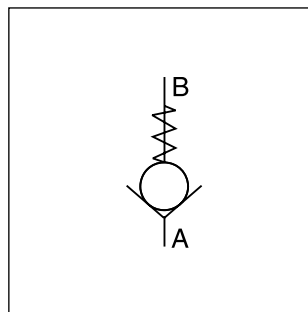
Characteristics / Ordering Code

The check valves series SPZBE are slip-in cartridge valves. The function unit is fixed inside the manifold by a hexagonal plug with slot.

The design is based on CE series with same poppet and sleeve. The different mounting cavity has to be considered.

Features

- Little space required
- Leak-free from port B to A
- 4 different opening pressures



Ordering code

	-	<b>SP</b>	<b>Z</b>	<b>BE</b>	<b>1010</b>	<b>E</b>		
Seal		Check valve	Flow direction A to B	Design series, screwed cover	Factory norm, poppet, direct operated	Slip-in valve	Valve size	Opening pressure

Code	Seal
<b>omit</b>	<b>NBR</b>
V	FPM

Code	Size
<b>16</b>	<b>NG16</b>
<b>25</b>	<b>NG25</b>
<b>32</b>	<b>NG32</b>

Code	Pressure [bar]
L	0.1
<b>N</b>	<b>0.5</b>
S	1.6
U	4.0

**Bold letters =**  
Short-term availability

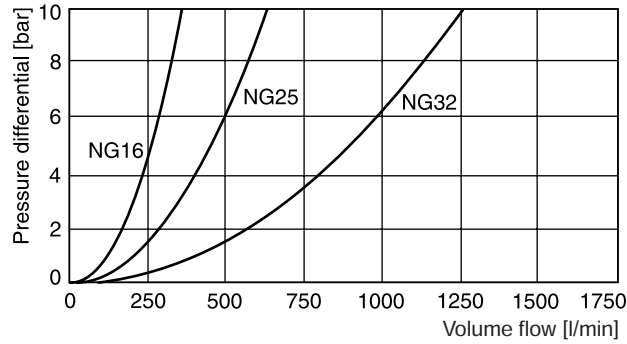
6

Technical data

General			
Design	Threaded cartridge valve		
Nominal size	NG16	NG25	NG32
Mounting position	Optional		
Ambient temperature	[°C]	-40 ... +60	
MTTF <sub>D</sub> value	[years]	150	
Weight	[kg]	0.25	0.5
1.2			
Hydraulic			
Flow direction	Port A to B		
Fluid	Hydraulic oil according to DIN 51524 ...51525		
Viscosity, recommended	[cSt] / [mm²/s]	30 ... 80	
permitted	[cSt] / [mm²/s]	20 ... 380	
Fluid temperature	[°C]	-20 ... +60	
Filtration	ISO 4406 (1999); 18/16/13		
Nominal pressure	[bar]	350	
Opening pressure	[bar]	0.1; 0.5; 1.6 and 4.0	
Flow	[l/min]	250	450
900			

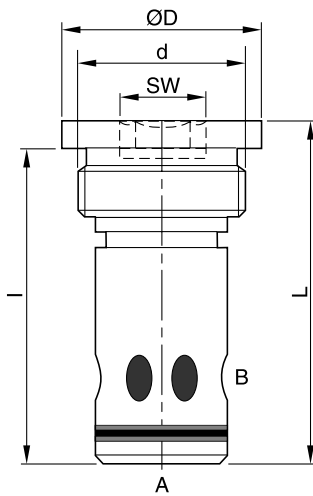
SPZBE UK.INDD CM 28.08.13

**Δp/Q performance curves**



All characteristic curves measured with HLP46 at 50 °C.

**Dimensions**

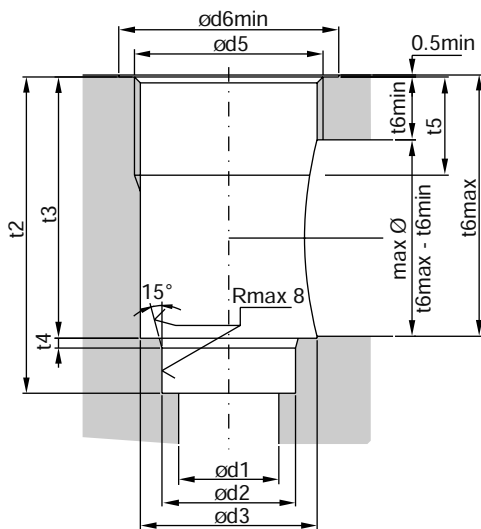


Dimensions	NG16	NG25	NG32
D	40	55	72
L	72.5	89	109.5
d	M33x2	G1½"	G2"
l	66	80.5	99.5
SW	17	24	32
Tightening torque <sup>1)</sup> [Nm] ± 15 %	225	300	550

**Springs**

Spring Type	Ordering Number		
	NG16	NG25	NG32
L 0.1 bar	45051368	45051375	45051376
N 0.5 bar	45051369	45051374	45051377
S 1.6 bar	45051370	45051372	45051378
U 4.0 bar	45051371	45051373	45051379

**Mounting cavity**



Size	NG16	NG25	NG32
d1	18	25.5	36
d2 <sup>H7</sup>	25	34	45
d3	31	45	57
d5	M33x2	G1½"	G2"
d6 <sub>min</sub>	41	56	73
t2 <sup>+0.1</sup>	66	80.5	99.5
t3	53	66.5	84.5
t4	2	2.5	2.5
t5	21	25	30
t6 <sub>min</sub>	16	16	24
t6 <sub>max</sub>	52.5	66	84

**Seal kits**

NG	NBR seals	FPM seals
16	SK-SPZBE10E16	SK-SPZBE10E16V
25	SK-SPZBE10E25	SK-SPZBE10E25V
32	SK-SPZBE10E32	SK-SPZBE10E32V

<sup>1)</sup> Please note the material specification for tightening torque in chapter 12, "accessories"

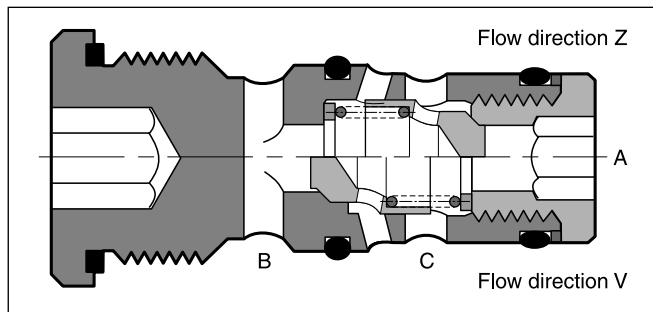
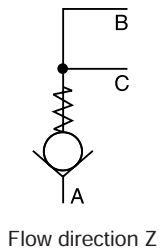
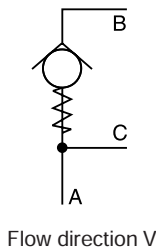
The check valve series SPV and SPZ are designed as threaded cartridge valves. All parts are assembled in one unit and easy to mount.

**Features**

- Little space required
- Leak-free
- Easy assembly



**Ports**



**Ordering code**

Seal — **SP** Check valve
Flow direction
**B**
**030**
**E**
Valve size
**M**
Spring 0.3 bar

Code	Seal
<b>omit</b>	<b>NBR</b>
V	FPM

Code	Flow direction
<b>V</b>	<b>Port B → A and C</b>
<b>Z</b>	<b>Port A → B and C</b>

**Bold letters =  
Short-term availability**

Code	Size
<b>06</b>	<b>NG06</b>
<b>10</b>	<b>NG10</b>

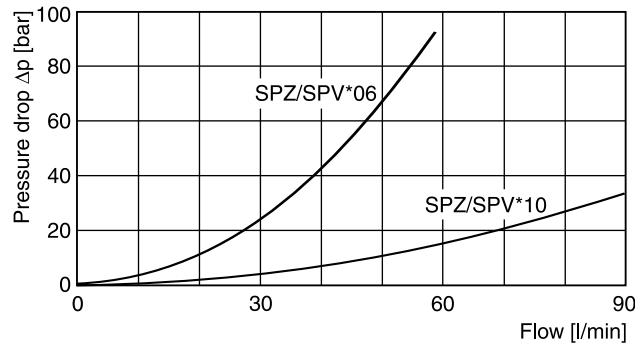
**Technical data**

General	
Design	Threaded cartridge valve
Nominal size	NG06 NG10
Mounting position	Unrestricted
Ambient temperature	[°C] -40 ... +60
Weight	[kg] 0.5 0.8
Hydraulic	
Flow direction	See symbols
Fluid	Hydraulic oil according to DIN 51524...51525
Viscosity, permitted	[cSt] / [mm²/s] 20 ... 380
Viscosity, recommended	[cSt] / [mm²/s] 30 ... 80
Fluid temperature	[°C] -20 ... +60
Filtration	ISO 4406 (1999); 18/16/13
Nominal pressure	[bar] 350
Opening pressure	[bar] 0.3
Flow	[l/min] 40 60

SPV-SPZ UK.INDD CM 28.08.13

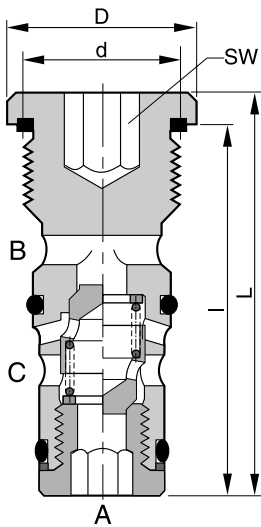


**Δp/Q performance curve**



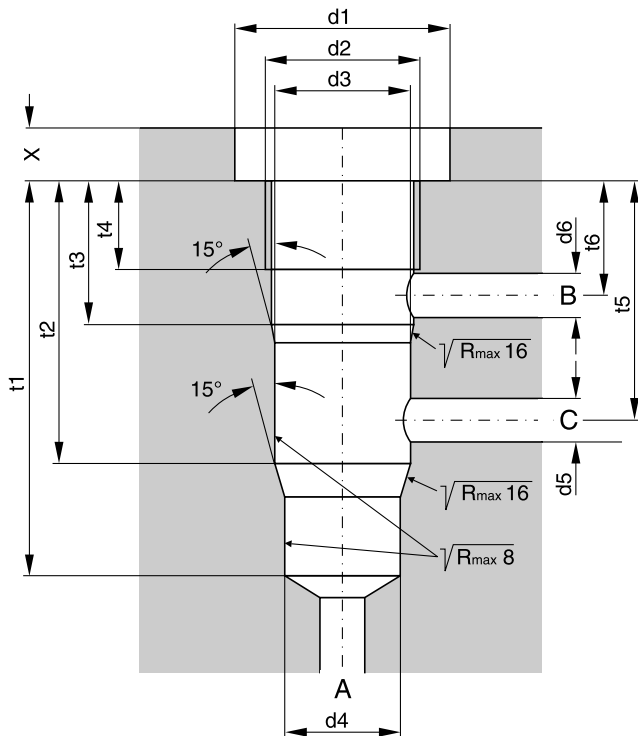
Characteristic curves measured with HLP46 at 50 °C.

**Dimensions**



Dimensions	NG06	NG10
D	24	34
L	50	74
d	M18x1.5	M24x1.5
l	45	66
SW	8	12
Tightening torque <sup>1)</sup> [Nm] ± 15 %	40	65

**Mounting cavity**



Dimensions	NG06	NG10
d1	25	35
d2	M18 x 1.5	M24 x 1.5
d3 <sup>H7</sup>	16	22
d4 <sup>H7</sup>	14	20
d5 <sub>max.</sub>	6	9
d6 <sub>max.</sub>	6	9
t1	45	68
t2	32	51
t3	16	20
t4	10	15
t5	27.5	40
t6	12	13.5

**Seal kits**

NG	NBR seals	FPM seals
06	SK-SPV/ZB0E06	SK-SPV/ZB0E06V
10	SK-SPV/ZB0E10	SK-SPV/ZB0E10V

<sup>1)</sup> Please note the material specification for tightening torque in chapter 12, "accessories"

Characteristics / Ordering Code

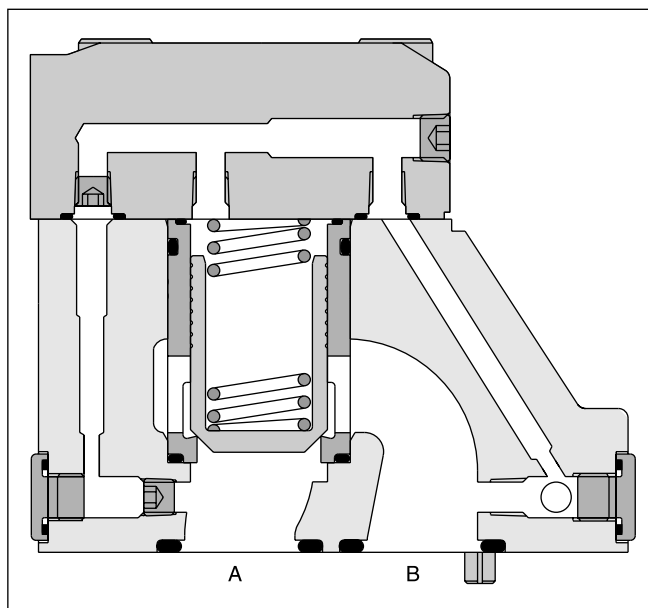
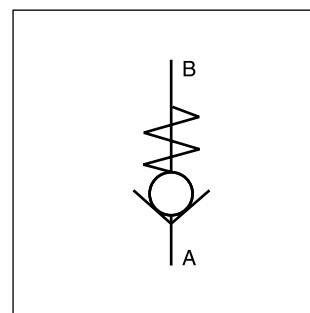
Direct operated check valves C4V allow free flow from A to B. The counter direction is blocked. The C4V series are equipped with a leak-free seat type cartridge.

Function

The pressure arising in port A lifts the poppet from the valve seat and releases the flow to B. In the counter direction, the spring and the pressure on top of the cartridge hold the poppet onto the seat and block the flow.



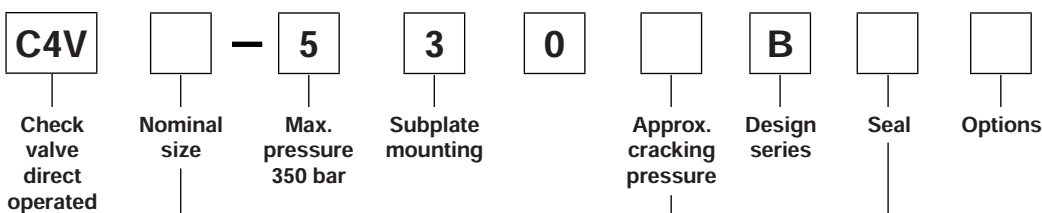
C4V06



C4V10

6

Ordering code



Code	Nominal size
03	NG10
06	NG25
10	NG32

Code	Seal
1	NBR
5	FPM

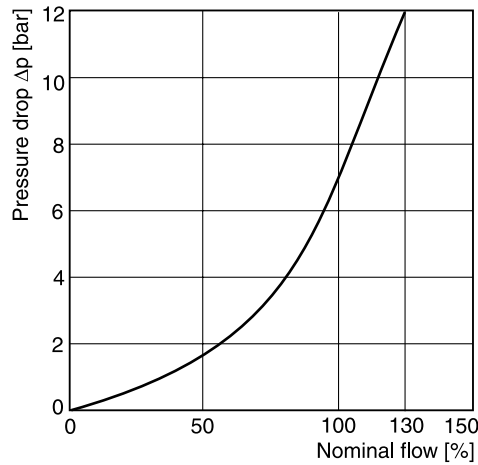
Code	Approx. cracking pressure [bar]	
	C4V03	C4V06/10
1	2.8	3.5
2	0.5	0.5
3	0.3	0.3
4	2.2	2.2
5	—	9.0
6	1.2	1.2
7	3.0	—

**Technical data**

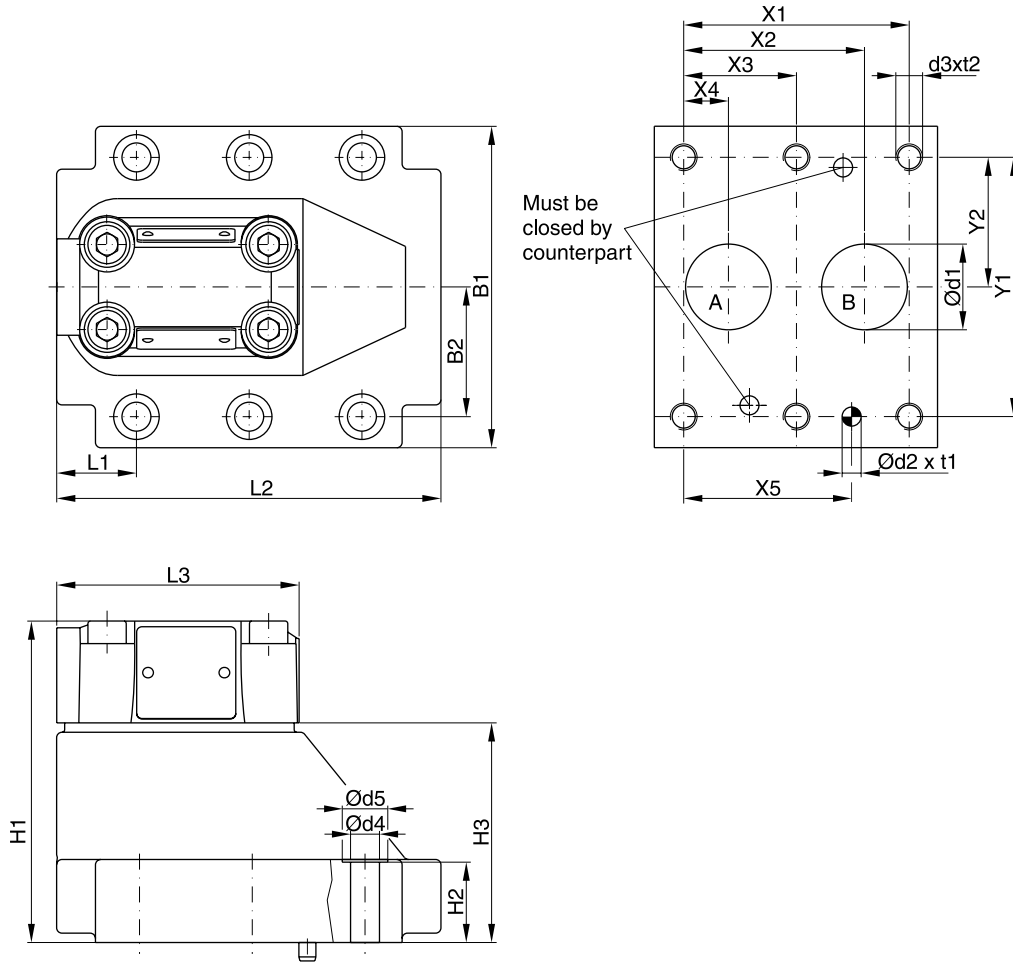
General				
Nominal size		NG10	NG25	NG32
Subplate mounting	ISO 5781			
Mounting position	unrestricted			
Ambient temperature	[°C]	-20...+80		
MTTF <sub>D</sub> value	[years]	150		
Weight	[kg]	2.8	4.6	6.1
Hydraulic				
Max. operating pressure	[bar]	350		
Nominal flow	[l/min]	150	270	450
Fluid	Hydraulic oil according to DIN 51524 ...51525			
Viscosity,	permitted	[cSt] / [mm <sup>2</sup> /s]	20...380	
	recommended	[cSt] / [mm <sup>2</sup> /s]	30...50	
Fluid temperature	permitted	[mm <sup>2</sup> /s]	-20...+70	
	recommended	[mm <sup>2</sup> /s]	30...50	
Filtration	ISO 4406 (1999); 18/16/13			

**6**

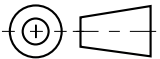
**Δp/Q performance curve**



Characteristic curve measured with HLP46 at 50 °C.



**6**



NG	ISO-code	x1	x2	x3	x4	x5	y1	y2	B1	B2	H1	H2	H3	L1	L2
10	5781-06-07-0-00	42.9	35.8	-	7.2	31.8	66.7	33.4	87.3	33.4	83	21	45	29	94.8
25	5781-08-10-0-00	60.3	49.2	-	11.1	44.5	79.4	39.7	105	39.7	109.5	29	71.5	34.7	126.8
32	5781-10-13-0-00	84.2	67.5	42.1	16.7	62.7	96.8	48.4	120	48.4	120	29	82	30.6	144.3

Tolerance for all dimensions ±0.2

NG	ISO-code	d1max	d2	t1	d3	t2	d4	d5
10	5781-06-07-0-00	15	7.1	8	M10	16	10.8	17
25	5781-08-10-0-00	23.4	7.1	8	M10	18	10.8	17
32	5781-10-13-0-00	32	7.1	8	M10	20	10.8	17

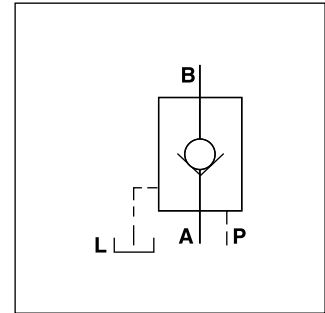
NG	ISO-code	Bolt kit			Kit		Surface finish
					NBR	FPM	
10	5781-06-07-0-00	BK 505	4x M10 x 35 ISO 4762-12.9	63 Nm ±15 %	S26-58507-0	S26-58507-5	
25	5781-08-10-0-00	BK 485	4x M10 x 45 ISO 4762-12.9	63 Nm ±15 %	S26-58475-0	S26-58475-5	
32	5781-10-13-0-00	BK 506	6x M10 x 45 ISO 4762-12.9	63 Nm ±15 %	S26-58508-0	S26-58508-5	

C4V UK.INDD CM 29.05.13

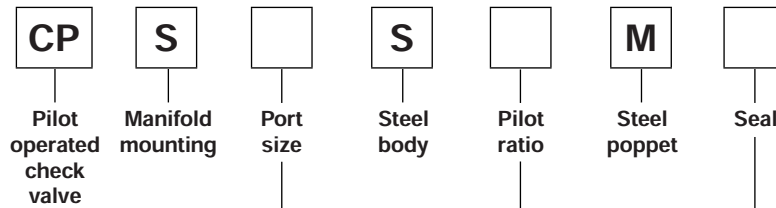
**Characteristics / Ordering Code**

Pilot operated check valves of the series CPS allow free flow in one direction (A to B).

The counter-flow direction (B to A) is blocked. By applying pilot pressure, the poppet can be lifted from its seat against the pressure in port B. Thus flow in the counter-direction is also possible. There are 1 and 2 stage poppets available with pilot ratios of 5 : 1 and 40 : 1, to suit different operating conditions. The CPS needs to be externally drained via port L.



**Ordering code**



Code	Port size
<b>600</b>	<b>600 (3/8")</b>
<b>1200</b>	<b>1200 (3/4")</b>

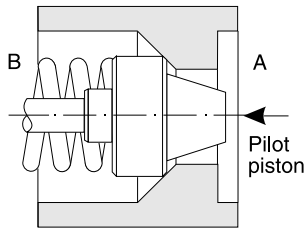
Code	Seal
<b>omit</b>	<b>NBR</b>
V	FPM

Code	Ratio	Stage
<b>5</b>	<b>5:1</b>	<b>1</b>
40	40:1	2

**Bold letters = Short-term availability**

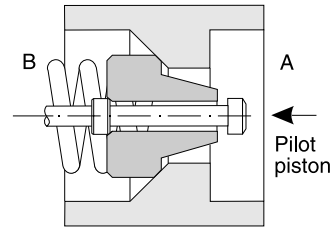
**Pilot ratios**

**Poppet 1 stage**



Surface ratio 5 : 1 (pilot spool: poppet surface) for quick response time without decompression.

**Poppet 2 stage**



Surface ratio 40 : 1 (pilot spool: decompression pin surface) for low shock or oscillation performance from decompression.

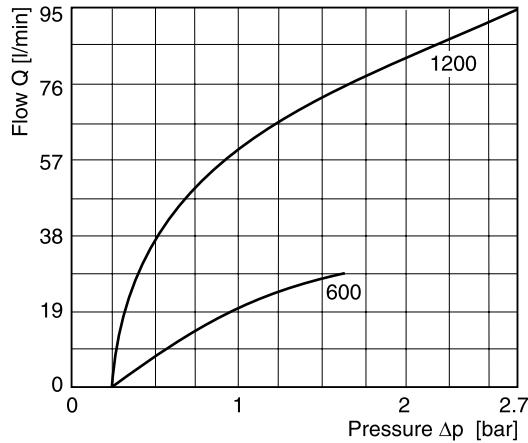
**Technical data**

Size		600	1200
Max. operating pressure	[bar]	210	210
Max. pilot pressure	[bar]	210	70
Flow Q <sub>max</sub> at Δp 2.7 bar	[l/min]	30	95
Weight	[kg]	4	7

6

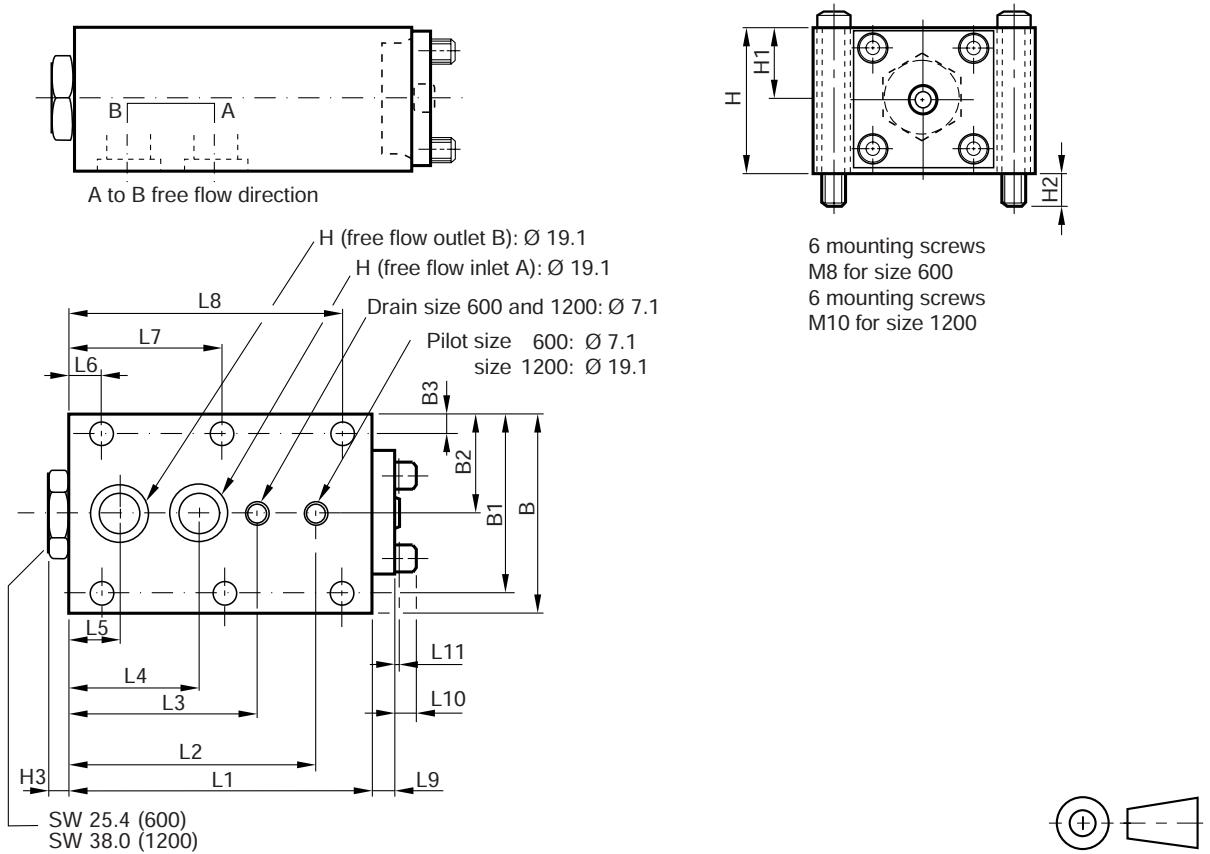


$\Delta p/Q$  performance curves



All characteristic curves measured with HLP46 at 50 °C.

Dimensions



6

Size	L3	L2	L1	L9	L11	H	H1	H2	H3	L10	L8	L7	L6	B3	B2	B1	B	$\varnothing H$	L5	L4
CPS600S	76.2	101.6	120.7	10.7	1.0	50.8	25.4	12.7	7.9	-	108.0	60.2	12.7	8.6	38.1	67.3	76.2	11.2	21.3	53.3
CPS1200S	93.7	127.0	152.4	11.4	1.0	63.5	31.8	12.7	10.2	7.9	136.4	76.2	15.7	10.2	50.8	91.2	101.6	19.1	25.4	63.5

**Characteristics**

Hydraulically pilot operated check valves C4V allow free flow from A to B. The counter-flow direction is blocked.

When pressure is applied to control port X, the ring chamber flow from B to A is released.

Up to four different pilot control ratios are available (see ordering code).

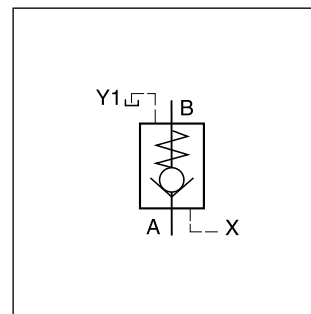
**Function**

When no pressure is applied to the X-port, the flow from B to A is blocked, because the pressure in B is also in effect on top of the poppet.

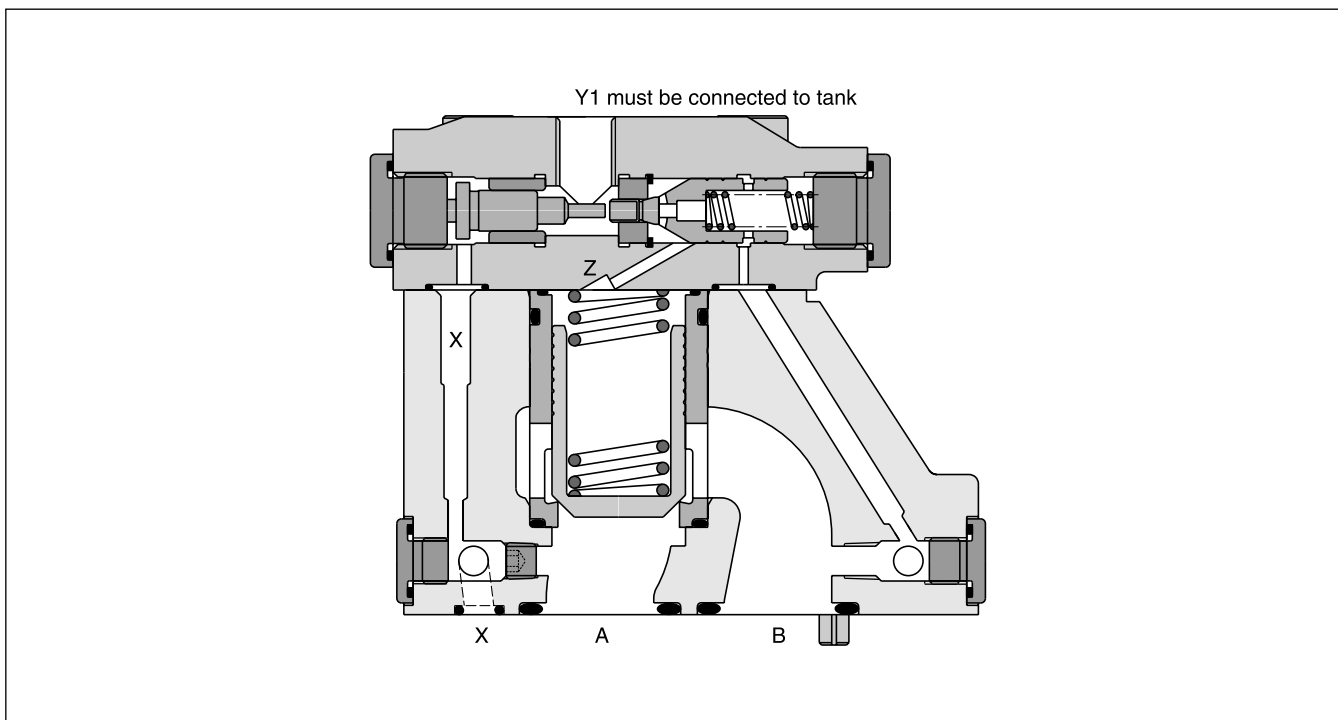
Pressurizing the X port relieves the area on top of the poppet to the drain port and allows flow from B to A.

The seat design of the SVL valve series provides leak-free separation of port A and B in the closed position.

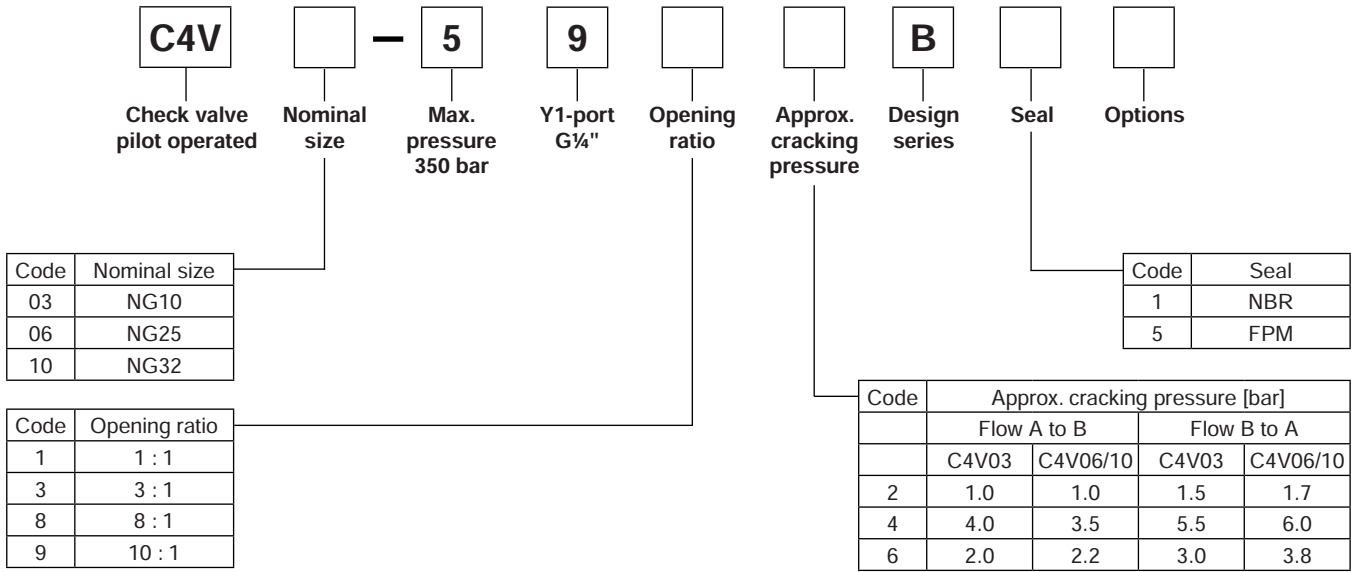
Valves with position control are available on request.



6



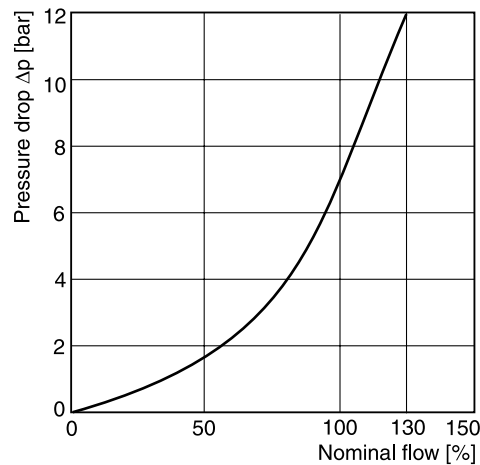
**Ordering code**



**Technical data**

General				
Nominal size		NG10	NG25	NG32
Subplate mounting		ISO 5781		
Mounting position		Unrestricted		
Ambient temperature	[°C]	-20...+80		
MTTF <sub>D</sub> value	[years]	150		
Weight	[kg]	2.8	4.6	6.1
Hydraulic				
Max. operating pressure	[bar]	350		
Nominal flow	[l/min]	150	270	450
Fluid		Hydraulic oil according to DIN 51524 ...51525		
Viscosity,	recommended	[cSt] / [mm²/s]	30...50	
	permitted	[cSt] / [mm²/s]	20...380	
Fluid temperature	recommended	[°C]	30...50	
	permitted	[°C]	-20...+70	
Filtration		ISO 4406 (1999); 18/16/13		

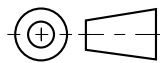
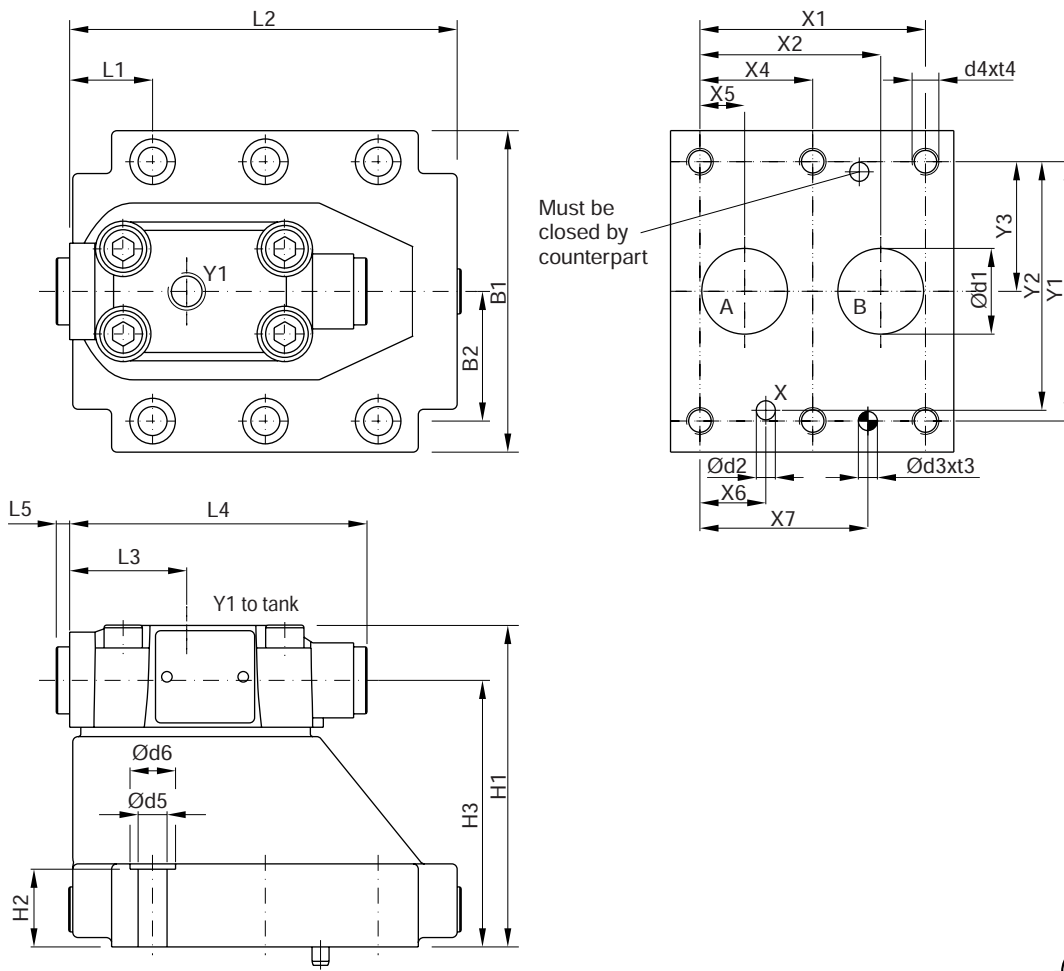
**Δp/Q flow curve**



Characteristic curve measured with HLP46 at 50 °C.

C4V pilot oper. UK.INDD CM 18.07.13

**Dimensions**



6

NG	ISO-code	x1	x2	x3	x4	x5	x6	x7	y1	y2	y3	y4	y5	y6
10	5781-06-07-0-00	42.9	35.8	-	-	7.2	21.5	31.8	66.7	58.8	33.4	-	-	-
25	5781-08-10-0-00	60.3	49.2	-	-	11.1	20.6	44.5	79.4	73	39.7	-	-	-
32	5781-10-13-0-00	84.2	67.5	-	42.1	16.7	24.6	62.7	96.8	92.8	48.4	-	-	-

Tolerance for all dimensions ±0.2

NG	ISO-code	B1	B2	H1	H2	H3	H4	H5	H6	L1	L2	L3	L4	L5	L6
10	5781-06-07-0-00	87.3	33.4	83	21	62.5	-	-	-	29.4	95.2	43.7	111	5	-
25	5781-08-10-0-00	105	39.7	109.5	29	89	-	-	-	35.1	127.2	43.7	111	5	-
32	5781-10-13-0-00	120	48.4	120	29	99.5	-	-	-	31	144.7	43.7	111	5	-

NG	ISO-code	d1max	d2max	d3	t3	d4	t4	d5	d6
10	5781-06-07-0-00	15	7	7.1	8	M10	16	10.8	17
25	5781-08-10-0-00	23.4	7.1	7.1	8	M10	18	10.8	17
32	5781-10-13-0-00	32	7.1	7.1	8	M10	20	10.8	17

NG	ISO-code	Bolt kit			Kit		Surface finish
					NBR	FPM	
10	5781-06-07-0-00	BK 505	4x M10 x 35 ISO 4762-12.9	63 Nm ±15 %	S26-58507-0	S26-58507-5	
25	5781-08-10-0-00	BK 485	4x M10 x 45 ISO 4762-12.9	63 Nm ±15 %	S26-58475-0	S26-58475-5	
32	5781-10-13-0-00	BK 506	6x M10 x 45 ISO 4762-12.9	63 Nm ±15 %	S26-58508-0	S26-58508-5	

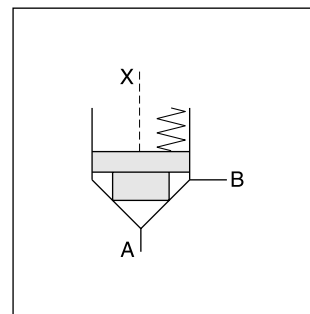
C4V pilot oper. UK.INDD CM 18.07.13

**Characteristics**

Seat valves series D4S are designed for directional control functions. A large variety of poppets, springs and covers – including shuttle valves, stroke limiters, solenoid valves (VV01) and position control – allow to design individual hydraulic solutions for nominal flow up to 600 l/min.

A complete program of 2/2-way seat valves is offered under Parker brand:

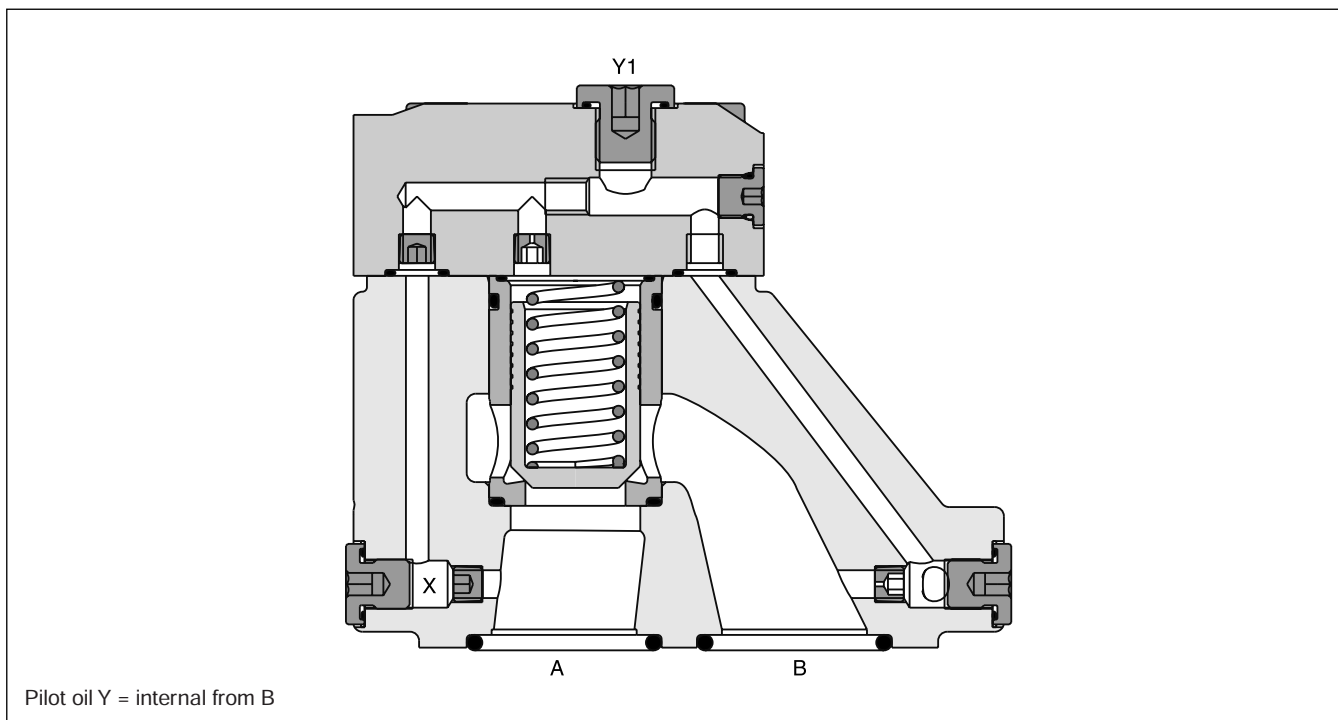
- subplate mounted valves    series D4S    chapter 6
- SAE flange valves            series D5S    chapter 9
- slip-in cartridges            series CAR    on request



**Features**

- Subplate mounting according to ISO 5781
- Leak-free seat valve design
- Numerous pilot options
- 6 poppet types
- D4S03 - NG10
- D4S06 - NG25
- D4S10 - NG32

**D4S10-9DC**



Ordering Code



**Seat valve**   **Nominal size**   **Subplate mounting ISO 6264, Y1 port G¼"**   **Pilot connection**   **Cap version**   **Sleeve**   **Spool type**   **Spring**   **Switching type**   **Solenoid voltage**   **Design series**   **Seals**   **Options**

Code	Nominal size
03	NG10
06	NG25
10	NG32

Code	Pilot oil line in body	A-X B-Y	
		A-X	B-Y
1	internal from A	●	○
2	external from X	●	○
A <sup>1)</sup>	internal from A	●	●
B	external from X	●	●
C	internal from A + B	●	●
D	internal from B	●	●
G	external from Y	●	●

Code	Ports	X	Y	Z	X-Y	Y1	VV01
Standard							
1	Pilot oil = pilot drain	○	●	●	○	●	—
C	Pilot oil = pilot drain	●	○	●	○	●	—
With solenoid valve (VV01)							
2	Ext. PD from cap	○	○	●	●	○	●
5	Ext. to subplate	○	○	●	●	●	○
6	Internal pilot drain	○	○	●	●	●	○
With stroke limiter (not for D4S03)							
3	Pilot oil = pilot drain	●	●	—	—	—	—
4	Pilot oil = pilot drain	●	●	—	—	—	—

○ open bore   ● closed bore   ● orifice Ø 1.2

Code	Sleeve
1	AA = 95 %, AB = 5 %
3	AA = 60 %, AB = 40 %

Code	Size	Poppet type	Sleeve
1	03, 06, 10	With closed bottom and 15° chamfer (pZ max. = pA + 20 bar)	1
2	03	With 0.8 dia. orifice at the bottom and 15° chamfer	1
	06, 10	With 1.2 dia. orifice at the bottom and 15° chamfer	1
4	03, 06, 10	With closed bottom and 45° chamfer	1, 3
A <sup>2)</sup>	06, 10	Safety spool (for position control only)	3
B <sup>2)</sup>	06, 10	Throttle spool, 10° chamfer	3
C <sup>2)</sup>	06, 10	Throttle spool, 3° chamfer	3

Code	Spring (approx. cracking pressure [bar])					
	Sleeve Code 1		Sleeve Code 3			
	A → B		A → B		B → A	
	D5S03	D5S06/10	D5S03	D5S06/10	D5S03	D5S06/10
1	2.8	3.5	6.5	6.5	9.5	11.0
2	0.5	0.5	1.0	1.0	1.5	1.7
3	0.3	0.3	0.6	0.6	0.9	1.0
4	2.2	2.2	4.0	3.5	5.5	6.0
5	—	9.0	—	16.0	—	28.0
6	1.2	1.2	2.0	2.2	3.0	3.8
7	3.0	—	8.0	—	12.0	—

Code	Options
omit	Standard
013	Cover for end position control

Code	Seals
1	NBR
5	FPM

Code	Solenoid voltage
omit	Standard w/o vent function
G0R	12 V=
G0Q	24 V=
GAR <sup>4)</sup>	98 V=
GAG <sup>4)</sup>	205 V=
W30	110 V / 50 Hz 120 V / 60 Hz
W31	230 V / 50 Hz 240 V / 60 Hz

Code	Switching type	
omit	Standard w/o vent function	
09	VV01 with manual override	de-energized: power comp. open
10	VV01 without manual override	de-energized: power comp. open
11	VV01 with manual override	de-energized: power comp. closed
12	VV01 without manual override	de-energized: power comp. closed
CA	Shuttle valve	
DA	Shuttle valve	
CB	VV01 code 09 and shuttle valve code CA	
CD	VV01 code 11 and shuttle valve code CA	
DB	VV01 code 09 and shuttle valve code DA	
DD	VV01 code 11 and shuttle valve code DA	
BH	VV01 code 10 and shuttle valve code CA and position control <sup>3)</sup> with amplifier	
BK	VV01 code 12 and shuttle valve code CA and position control <sup>3)</sup> with amplifier	
BN	VV01 code 10 and shuttle valve code DA and position control <sup>3)</sup> with amplifier	
BQ	VV01 code 12 and shuttle valve code DA and position control <sup>3)</sup> with amplifier	
BC	VV01 code 10 and position control <sup>3)</sup> with amplifier	
BE	VV01 code 12 and position control <sup>3)</sup> with amplifier	
BA	Position control <sup>3)</sup> with amplifier	
BF	Position control <sup>3)</sup> with amplifier and shuttle valve code CA	
BL	Position control <sup>3)</sup> with amplifier and shuttle valve code DA	

<sup>1)</sup> With VV01 only.  
<sup>2)</sup> Springs 2, 3 and 6 only.  
<sup>3)</sup> Position control for D4S06/10 only. Spring 2 or 4. Spool A and sleeve 3. Valve open: proximity switch damped.  
<sup>4)</sup> To be used in combination with rectifier plugs at 120 VAC/230 VAC power supply.

Examples see end of chapter

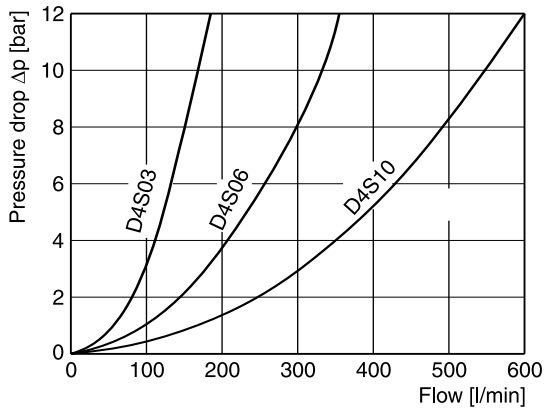
General		NG10	NG25	NG32				
Size								
Mounting interface	Subplate mounting according to ISO 6264							
Mounting position	unrestricted							
Ambient temperature	[°C]	-20...+50						
MTTF <sub>D</sub> value	[years]	150						
Weight	[kg]	2.7	4.5	6.0				
Hydraulic								
Operating pressure	[bar]	Ports A, B up to 350; Port Y 140 (with VV01)						
Nominal flow	[l/min]	180	360	600				
Fluid	Hydraulic oil according to DIN 51524...51525							
Fluid temperature	[°C]	-20...+80						
Viscosity permitted	[cSt] / [mm <sup>2</sup> /s]	10...650						
Viscosity recommended	[cSt] / [mm <sup>2</sup> /s]	30						
Filtration	ISO 4406 (1999); 18/16/13							
Electrical (solenoid)								
Duty ratio	100 % ED; CAUTION: coil temperature up to 150 °C possible							
Protection class	IP65 in accordance with EN 60529 (with correctly mounted plug-in connector)							
Code		G0R	G0Q	GAR	GAG	W30	W31	
Supply voltage	[V]	12 V =	24 V =	98 V =	205 V =	110 at 50 Hz 120 at 60 Hz	230 at 50 Hz 240 at 60 Hz	
Tolerance supply voltage	[%]	±10	±10	±10	±10	±5	±5	
Current consumption	hold	[A]	2.72	1.29	0.33	0.13	0.6 / 0.55	0.3 / 0.27
	in rush	[A]	2.72	1.29	0.33	0.13	2.5 / 2.4	1.25 / 1.2
Power consumption	hold	[W]	32.7	31	31.9	28.2	70 / 70 VA	70 / 70 VA
	in rush	[W]	32.7	31	31.9	28.2	280 / 290 VA	280 / 290 VA
Solenoid connection	Connector as per EN175301-803, solenoid identification as per ISO 9461							
Wiring min.	[mm <sup>2</sup> ]	3 x 1.5 recommended						
Wiring length max.	[m]	50 recommended						

**6**

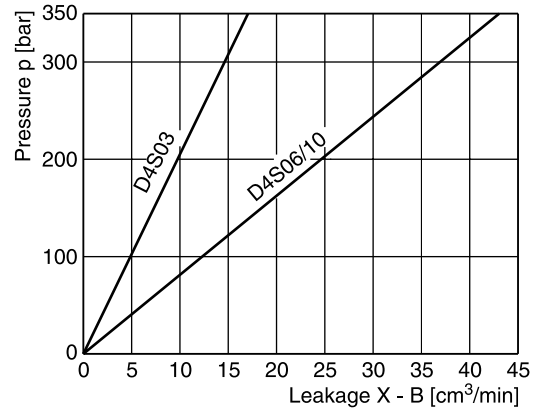
**D4S pilot configuration**

D4S direct operated	D4S with vent valve VV01	VV01
		<p>de-energized open</p> <p>de-energized closed</p>

$\Delta p/Q$  performance curves



Leakage



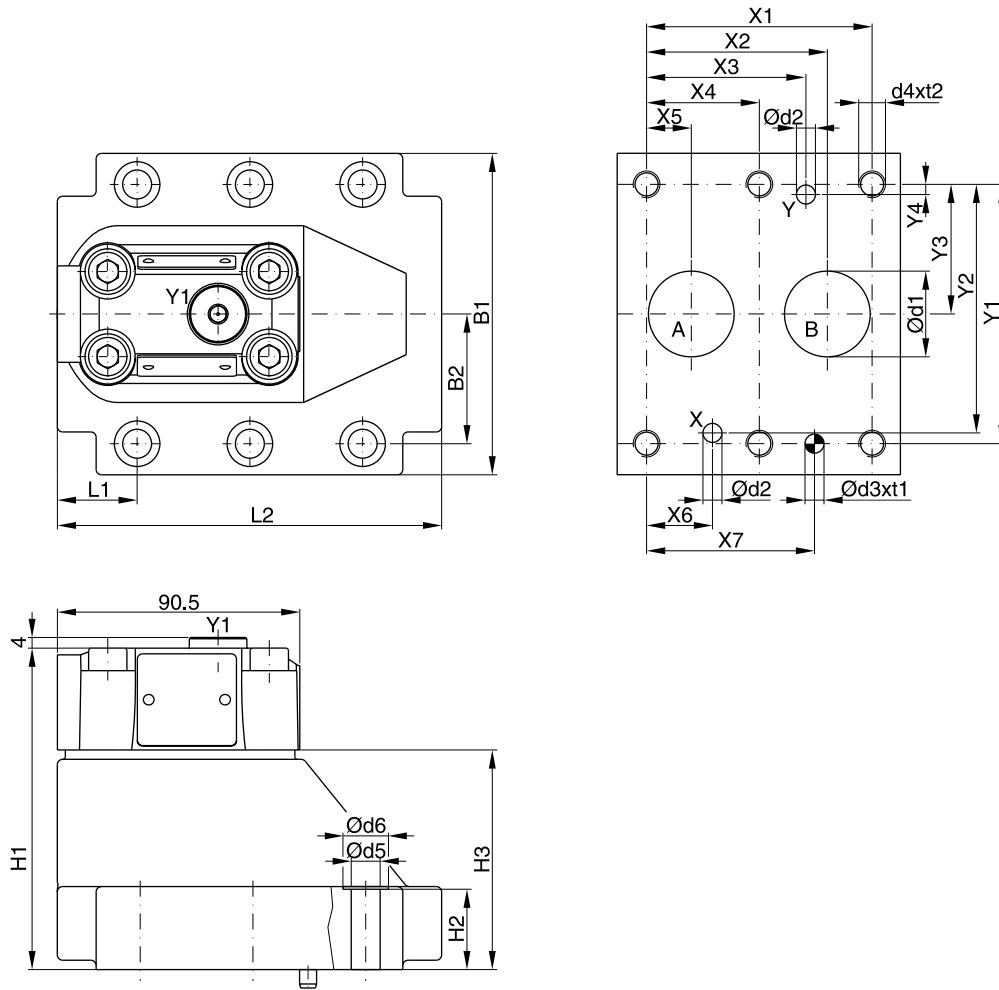
All characteristic curves measured with HLP46 at 50 °C.

6

Selection of Cartridges

Sleeve 1, poppet 1 Z	Sleeve 1, poppet 2 Z	Sleeve 1, poppet 4 Z	Sleeve 3, poppet 4 Z	Sleeve 3, poppet A Z	Sleeve 3, poppet B/C Z
A	A	A	A	A	A
1 : 1.05 $A_A = 0.95 A_C$ $A_B = 0.05 A_C$ 15° chamfer	1 : 1.05 $A_A = 0.95 A_C$ $A_B = 0.05 A_C$ 15° chamfer orifice	1 : 1.05 $A_A = 0.95 A_C$ $A_B = 0.05 A_C$ 45° chamfer	1 : 1.67 $A_A = 0.6 A_C$ $A_B = 0.4 A_C$ 45° chamfer	1 : 1.67 $A_A = 0.6 A_C$ $A_B = 0.4 A_C$ 45° chamfer safety spool	1 : 1.67 $A_A = 0.6 A_C$ $A_B = 0.4 A_C$ 45° chamfer throttle spool



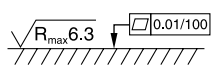




**6**

NG	ISO-code	X1	X2	X3	X4	X5	X6	X7	Y1	Y2	Y3	Y4
10	6264-06-09-*.97	42.9	35.8	21.5	-	7.2	21.5	31.8	66.7	58.8	33.4	7.9
25	6264-08-13-*.97	60.3	49.2	39.7	-	11.1	20.6	44.5	79.4	73	39.7	6.4
32	6264-10-17-*.97	84.2	67.5	59.5	42.1	16.7	24.6	62.7	96.8	92.8	48.4	3.8

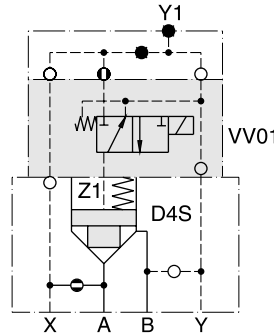
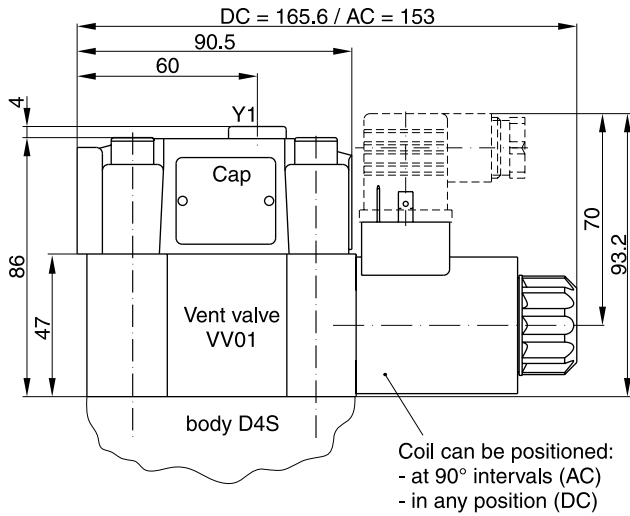
NG	ISO-code	B1	B2	H1	H2	H3	L1	L2	D1	D2	D3	t1	D4	t2	D5	D6
10	6264-06-09-*.97	87.3	33.35	83	21	45	29	94.8	15	7	7.1	8	M10	16	10.8	17
25	6264-08-13-*.97	105	39.7	109.5	29	71.5	34.7	126.8	23.4	7.1	7.1	8	M10	18	10.8	17
32	6264-10-17-*.97	120	48.4	120	29	82	30.6	144.3	32	7.1	7.1	8	M10	20	10.8	17

NG	ISO-code	Bolt kit			Kit		Surface finish
					NBR	FPM	
10	6264-06-07-*.97	BK 505	4x M10 x 35 ISO 4762-12.9	63 Nm ±15 %	S26-58507-0	S26-58507-5	
25	6264-08-11-*.97	BK 485	4x M10 x 45 ISO 4762-12.9	63 Nm ±15 %	S26-58475-0	S26-58475-5	
32	6264-10-15-*.97	BK 506	6x M10 x 45 ISO 4762-12.9	63 Nm ±15 %	S26-58508-0	S26-58508-5	

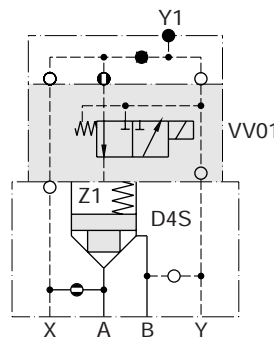
D4S UK.INDD CM 29.05.13

Dimensions

Dimensions D4S with VV01



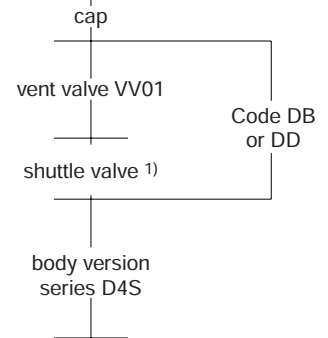
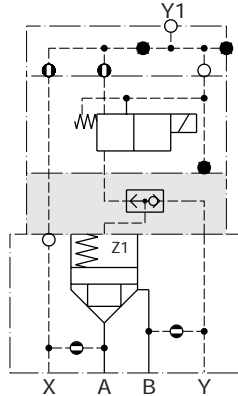
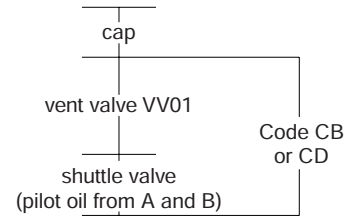
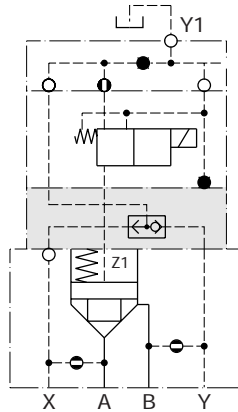
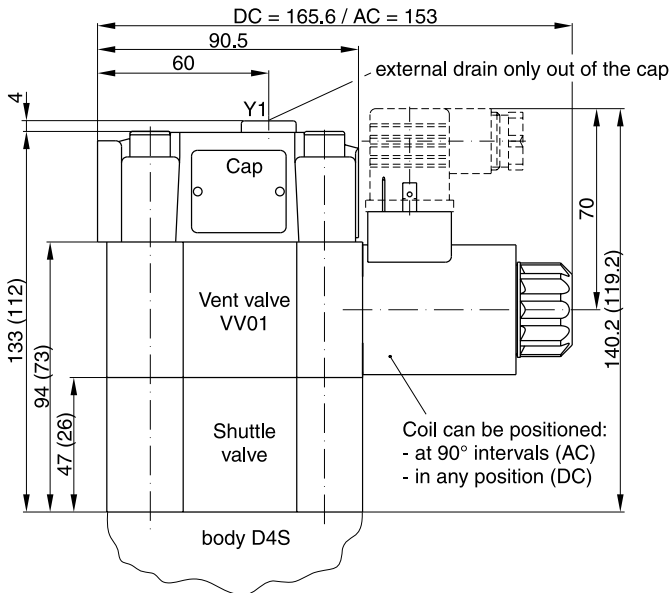
with manual override      without manual override  
D4S...09/10  
Solenoid energized:  
D4S blocked  
Solenoid de-energized:  
Flow from A-B or B-A



with manual override      without manual override  
D4S...11/12  
Solenoid energized:  
Flow from A-B or B-A  
Solenoid de-energized:  
D4S blocked

6

Dimensions D4S with shuttle valve

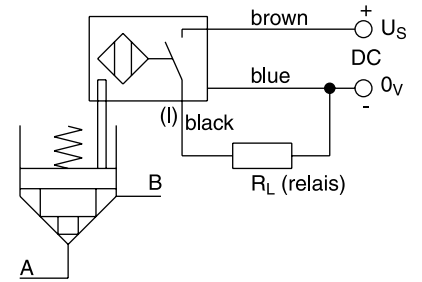
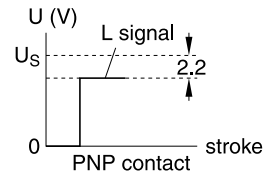
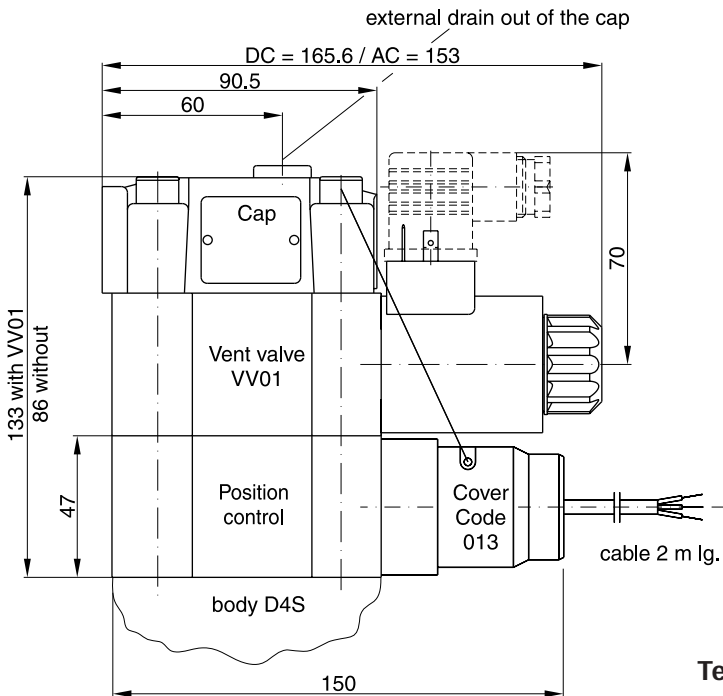


( ) Dimensions in brackets are for version VV01 with shuttle valve code DB or DD.

<sup>1)</sup> Pilot oil from A and B, from B to A check valve function.

**Dimensions**

**Dimensions D4S position control**



**Position control by proximity switch (incl. amplifier)**

Valve open: proximity switch activated.

This proximity switch is pressure proof and has no wear-ing parts.

**Note**

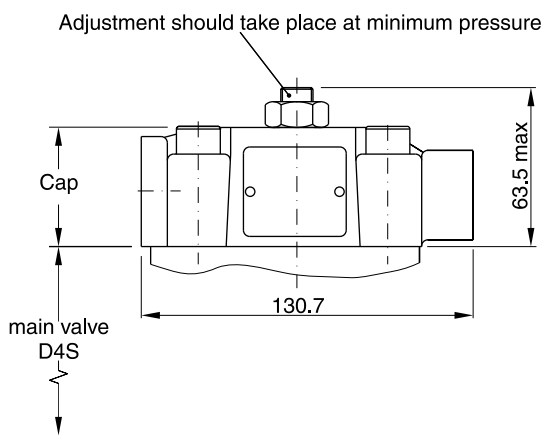
Position control for D4S06 and D4S10 only.

**Technical data (proximity switch)**

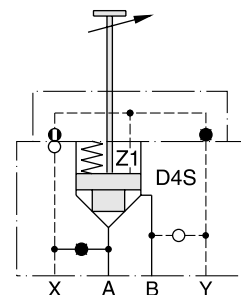
Function		PNP, contact
Supply voltage (Us)	[VDC]	10...30
Supply voltage ripple	[%]	≤ 10
Current consumption	[mA]	max. 8
Residual voltage L-signal	[V]	Us - 2.2 at I <sub>max</sub>
Output current (I)	[mA]	≤ 200
Protection class		IP67
Ambient temperature	[C°]	-25...+70
Wire cross section	[mm <sup>2</sup> ]	3 x 0.5

**6**

**Dimensions D4S stroke limiter**



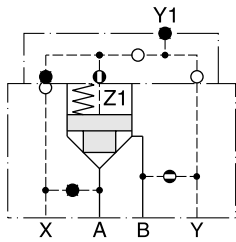
Example: D4S<sup>06</sup><sub>10</sub>-233B.



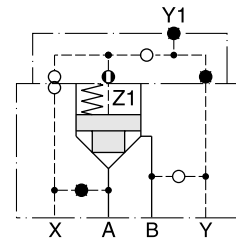
Note:

Stroke limiter not for use with D4S03, vent valve VV01, shuttle valve and position control.

D4S direct operated

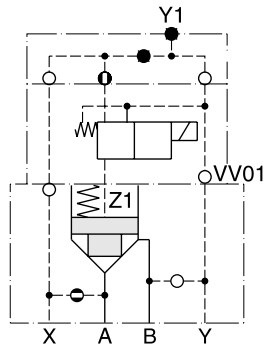


D4S...-DC  
Pilot oil Y = internal from B



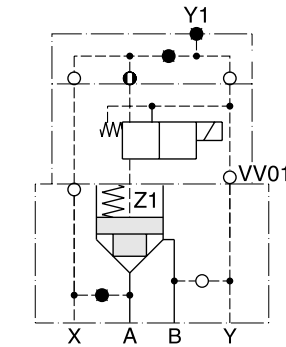
D4S...-21  
Pilot oil X = external

D4S with VV01



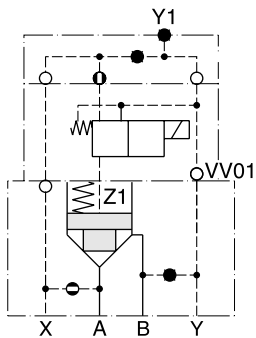
D4S...-16... } with VV01  
09  
10  
11  
12

Pilot oil X = internal from A  
Drain Y = internal to B



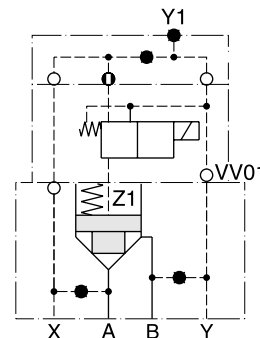
D4S...-26... } with VV01  
09  
10  
11  
12

Pilot oil X = external  
Drain Y = internal to B



D4S...-A5... } with VV01  
09  
10  
11  
12

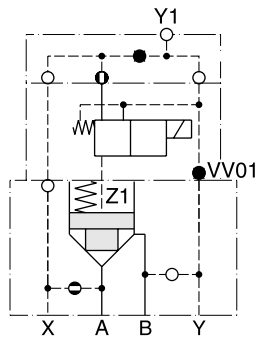
Pilot oil X = internal from A  
Drain Y = external to subplate



D4S...-B5... } with VV01  
09  
10  
11  
12

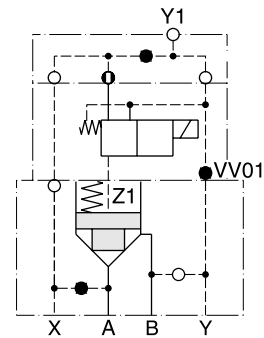
Pilot oil X = external  
Drain Y = external to subplate

D4S with VV01



D4S...12... } with VV01  
09  
10  
11  
12

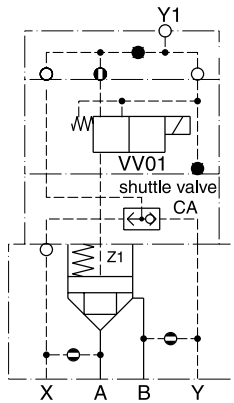
Pilot oil X = internal from A  
Drain Y1 = external out of the cap



D4S...22... } with VV01  
09  
10  
11  
12

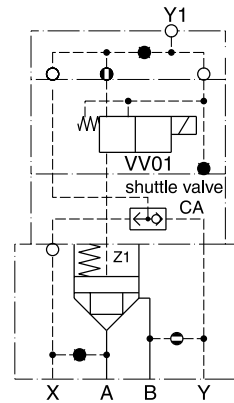
Pilot oil X = external  
Drain Y1 = external out of the cap

D4S with shuttle valve



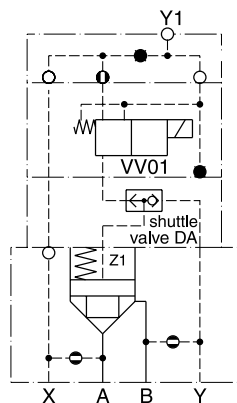
D4S...C2... } with shuttle valve CA  
CB }  
CD } and VV01

Pilot oil = internal from A and B  
Drain Y1 = external out of the cap



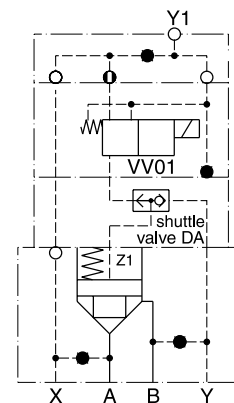
D4S...D2... } with shuttle valve CA  
CB }  
CD } and VV01

Pilot oil = internal from B and  
external from X  
Drain Y1 = external out of the cap



D4S...C2... } with shuttle valve DA  
DB }  
DD } and VV01

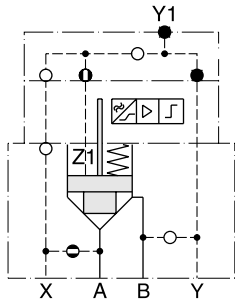
Pilot oil = internal from A and B  
(B-A = Check valve function)  
Drain Y1 = external out of the cap



D4S...B2... } with shuttle valve DA  
DB }  
DD } and VV01

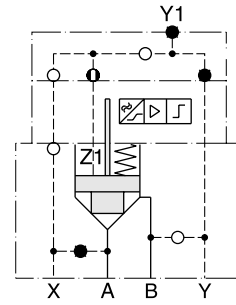
Pilot oil = external from X and Y  
Drain Y1 = external out of the cap

D4S with position control



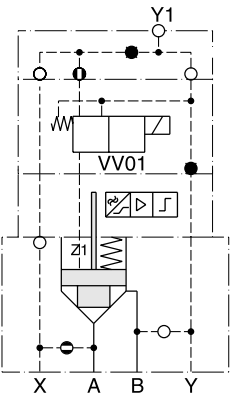
D4S...113A.BA  
(with position control)

Pilot oil X = internal from A



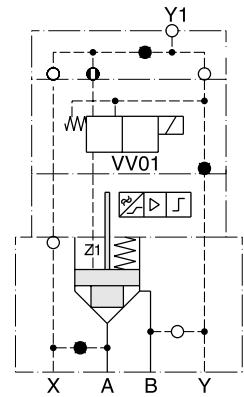
D4S...213A.BA  
(with position control)

Pilot oil X = external



D4S...123A. BC } with position control  
BE } and VV01

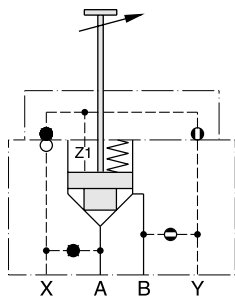
Pilot oil X = internal from A  
Drain Y1 = external out of the cap



D4S...223A. BC } with position control  
BE } and VV01

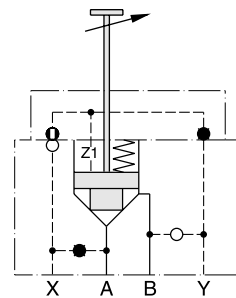
Pilot oil X = external  
Drain Y1 = external out of the cap

D4S with stroke limiter



D4S...D434. with stroke limiter  
Pilot oil Y = internal from B

Note: for D4S06 and D4S10 only



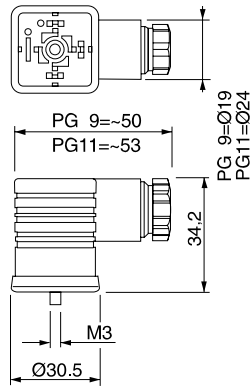
D4S...233B. with stroke limiter  
Pilot oil X = external

Note: for D4S06 and D4S10 only

6

Description	Threaded cable joint	Body colour coding	Figures switching	Order no.
Plug DIN 43650, design type AF, protection class IP 65 Voltages up to 250 V	PG 9	black, B grey, A	Fig. 1	<b>5001710</b> <b>5001711</b>
	PG11	black, B grey, A	Fig. 1	<b>5001716</b> <b>5001717</b>

Fig. 1



For other plugs see chapter 2, "Accessories"