Prefill valve

Type SF

RE 20482
Edition: 2012-09
Replaces: 09.07

K4917

- Size 125 ... 500
- Component series 4X
- Maximum operating pressure 350 bar *[5076 psi]*
- Flow up to 50000 l/min *[13209 US gpm]* (***Δp*** = 0.3 bar)

Features

- Pilot operated check valve, with or without pre-decompression
- Flange connection
- Tank installation
- Cartridge valve without control open spool (check valve)
- Reduced switching noises due to damping measures
- Rotatable low-pressure connection (housing)
- Inductive position switch, optional
- Higher operating pressures, upon request

Contents

Ordering code

01	02	03	04	05	06	07	08	09	10	11
SF				**–**	**1**	**–**	**4X**	**/**					*****

01	Prefill valve	**SF**

02	Size 125	**125**
	Size 150	**150**
	Size 200	**200**
	Size 250	**250**
	Size 300	**300**
	Size 350	**350**
	Size 400	**400**
	Size 500 (only version "A" and "B")	**500**

Type of connection

03	Flange connection	**A**
	Tank installation	**B**
	Screw-in cartridge valve without control spool (check valve)	**K**

04	**Without** pre-decompression	**0**
	With pre-decompression	**1**

Spring feedback of the main poppet

05	Cracking pressure ≈0.2 bar *[≈2.9 psi]*	**1**

06	Component series 40 to 49 (40 to 49: unchanged installation and connection dimensions)	**4X**

Spool position monitoring

07	**Without** position switch	**no code**
	With inductive position switch, position monitoring "open", with connector plug (only version "A0")	**Q2G24Z**

Seal material

08	NBR seals	**no code**
	(Other seals upon request)	

Connection thread

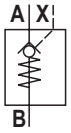
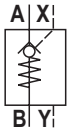
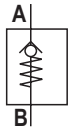
09	Pipe thread according to ISO 228/1	**no code**

Special version

10	Standard	**no code**
	Operating pressure 420 bar (restricted size selection, please contact us)	**SO102**
	Operating pressure 500 bar (restricted size selection, please contact us)	**SO104**

11	Further details in the plain text	

Symbols

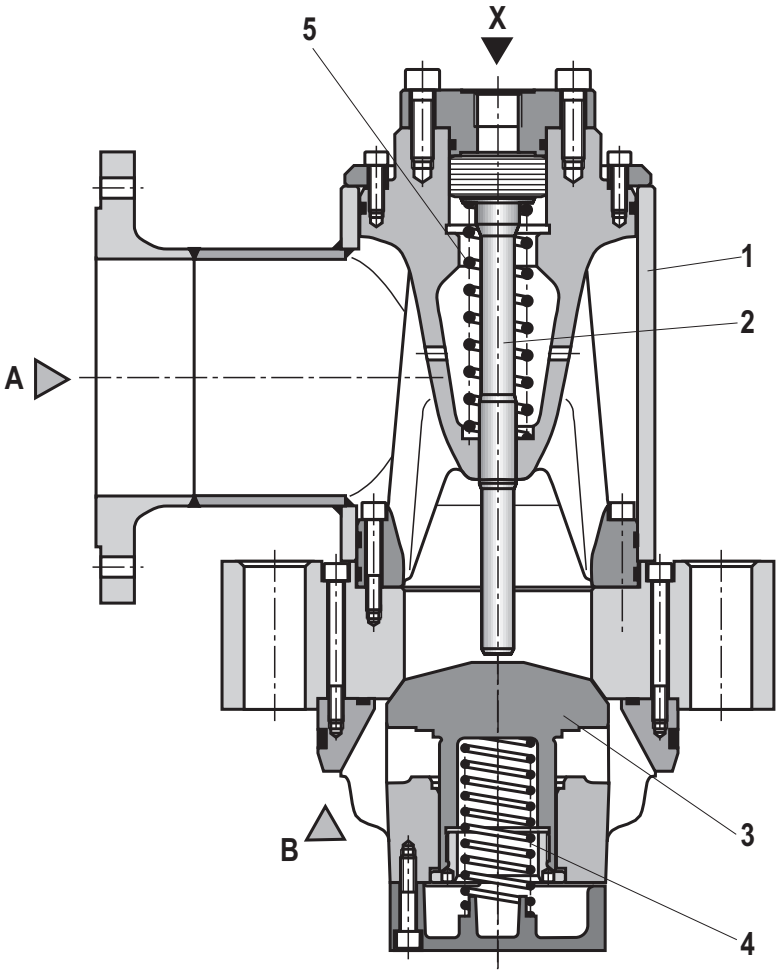
Version "**A**" and **"B"** (size 125 to 400)	Version "**A**" and **"B"** (size 500)	Version "**K**" (size 125 to 400)
		

Function, sections: without pre-decompression "0"

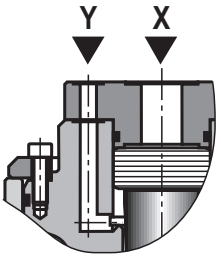
The valve of type SF is a pilot operated check valve. It is used for the leakage oil-free isolation of pressurized working circuits, primarily pressing cylinders. Due to its aerodynamic design and the relatively low amount of closing force of the compression spring (4) at the main poppet, it is particularly suitable for the pulling function and for filling e.g. the main cylinder at presses during the fast closing movement.
The valve basically comprises of a continuously rotatable housing (1), control spool (2), main poppet (3) and the compression springs (4) and (5).

The valve allows for free flow from A to B. In the opposite direction, the main poppet (3) is held on the seat by the compression spring (4) and the pressure available at port B. The pressure at the control port X pushes the control spool (2) downwards, against the compression spring (5), and pushes the main poppet (3) off the seat. Now, the valve can also be flown through in the opposite direction. The opening time can be influenced by throttling the pilot oil supply.
The structural set-up corresponds to the principle of modular systems, i.e. all versions are based on the basic valve.

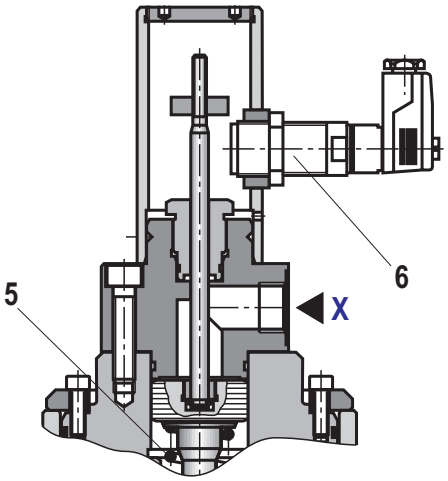
Inductive position switch (only version "A0")
The position switch (6) reports the opened position of the prefill valve (switching point: cracking pressure > 40 %).



Type SF . .0-1-4X/...



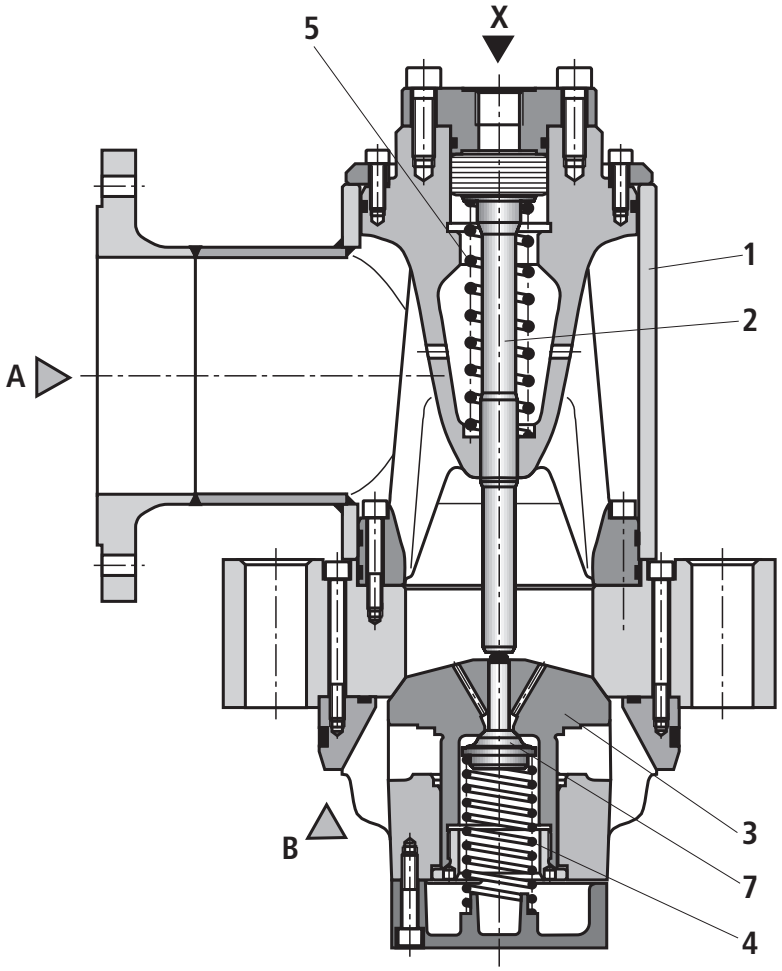
Type SF 500 .0-1-4X/...



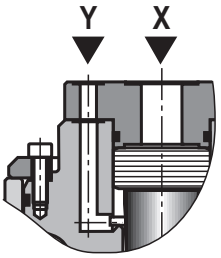
Type SF . A0-1-4X/Q2G24Z

Function, sections: with pre-decompression "1"

The function of this version basically corresponds to the version without pre-decompression.
The valve basically comprises of a continuously rotatable housing (1), control spool (2), main poppet (3), pilot poppet (7) and the compression springs (4) and (5).
In case of pressure at the control port X, the control spool (2) only opens the pilot poppet (7) first. This guarantees shock-free decompression of the compressed hydraulic fluid.
The opening time can be influenced by throttling the pilot oil supply.
The structural set-up corresponds to the principle of modular systems, i.e. all versions are based on the basic valve.



Type SF . .1-1-4X/...



Type SF 500 .1-1-4X/...

Technical data

(For applications outside these parameters, please consult us!)

general									
Size		Size	125	150	200	250	300	350	400	500
Weight	– Version "A"	kg *[lbs]*	75 *[165]*	135 *[298]*	185 *[408]*	365 *[805]*	625 *[1377]*	1200 *[2646]*	1580 *[3483]*	3400 *[7496]*
	– Version "B"	kg *[lbs]*	60 *[132]*	105 *[231]*	145 *[320]*	295 *[650]*	545 *[1202]*	1000 *[2205]*	1400 *[3087]*	3100 *[6834]*
	– Version "K"	kg *[lbs]*	45 *[99]*	90 *[198]*	105 *[231]*	205 *[452]*	355 *[783]*	670 *[1477]*	950 *[2094]*	–
Installation position			any							

hydraulic			
Maximum operating pressure	– Port A	bar *[psi]*	16 *[232]*
	– Port B, X and Y	bar *[psi]*	350 *[5076]*
Cracking pressure [1]		bar *[psi]*	≈0.2 *[≈2.9]*
Hydraulic fluid			see table below
Hydraulic fluid temperature range (at the valve working ports)		°C *[°F]*	–30 ... +80 *[–22 ... +176]*
Viscosity range		mm^2/s *[SUS]*	10 ... 800 *[45 ... 3720]*
Maximum permitted degree of contamination of the hydraulic fluid - cleanliness class according to ISO 4406 (c)			Class 20/18/15 [2]

Hydraulic fluid		**Classification**	**Suitable sealing materials**	**Standards**
Mineral oils and related hydrocarbons		HL, HLP, HVLP	NBR, FKM [3]	DIN 51524
Bio-degradable	– insoluble in water	HETG	NBR, FKM [3]	VDMA 24568
		HEES	FKM [3]	
	– soluble in water	HEPG	FKM [3]	VDMA 24568
Flame-resistant	– water-free	HFDU, HFDR	FKM [3]	ISO 12922
		HFC	NBR	ISO 12922

☞ **Important information on hydraulic fluids!**

- For more information and data on the use of other hydraulic fluids refer to data sheet 90220 or contact us!
- **Flame-resistant and bio-degradable:** There may be limitations regarding the technical valve data (temperature, pressure range, life cycle, maintenance intervals, etc.)!

1) Pressure differential at the main poppet for overcoming the spring force.

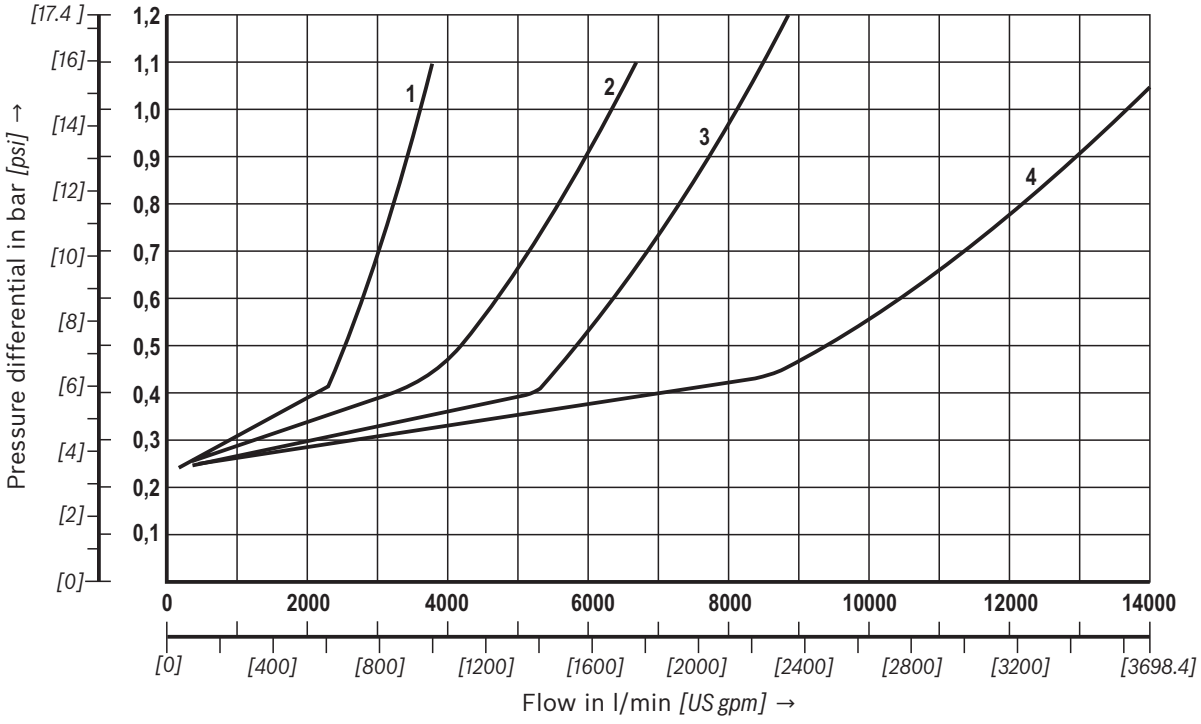
2) The cleanliness classes specified for the components must be adhered to in hydraulic systems. Effective filtration prevents faults and at the same time increases the life cycle of the components.
For the selection of the filters see www.boschrexroth.com/filter.

3) Upon request

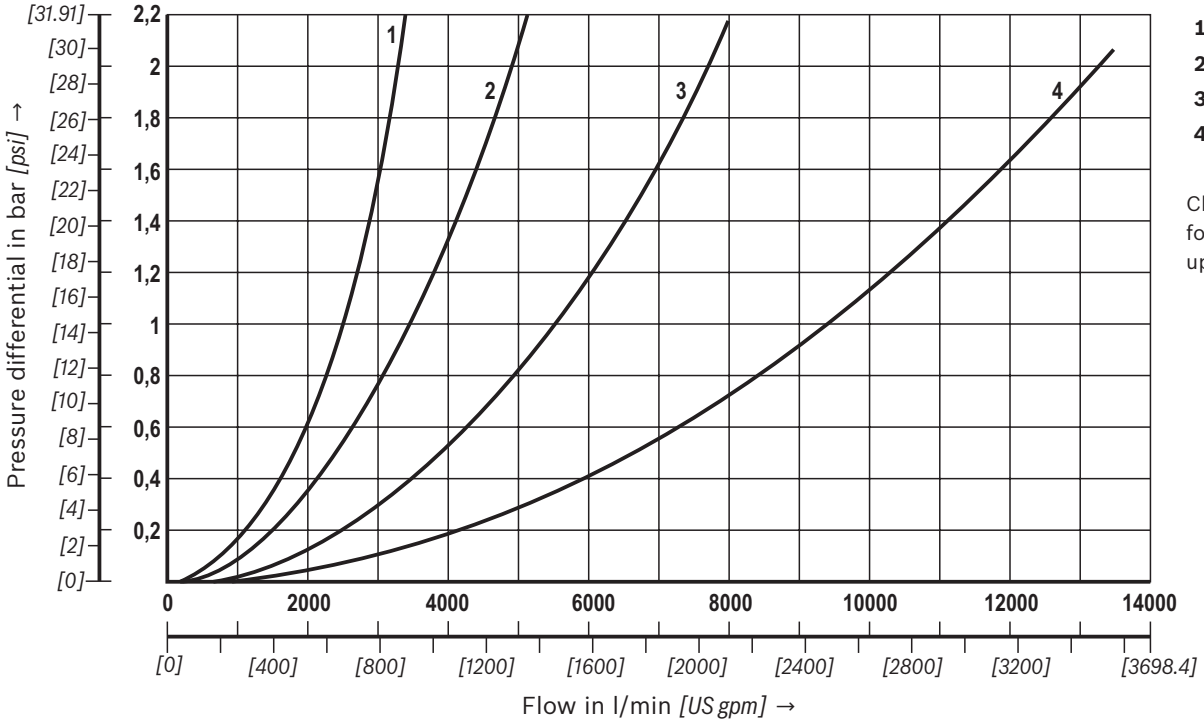
Characteristic curves

(measured with HLP46, ϑ_{Oil} = 40 ± 5 °C *[104 ± 9 °F]*)

Δp-q_V characteristic curves – size 125 ... 250 (A → B)



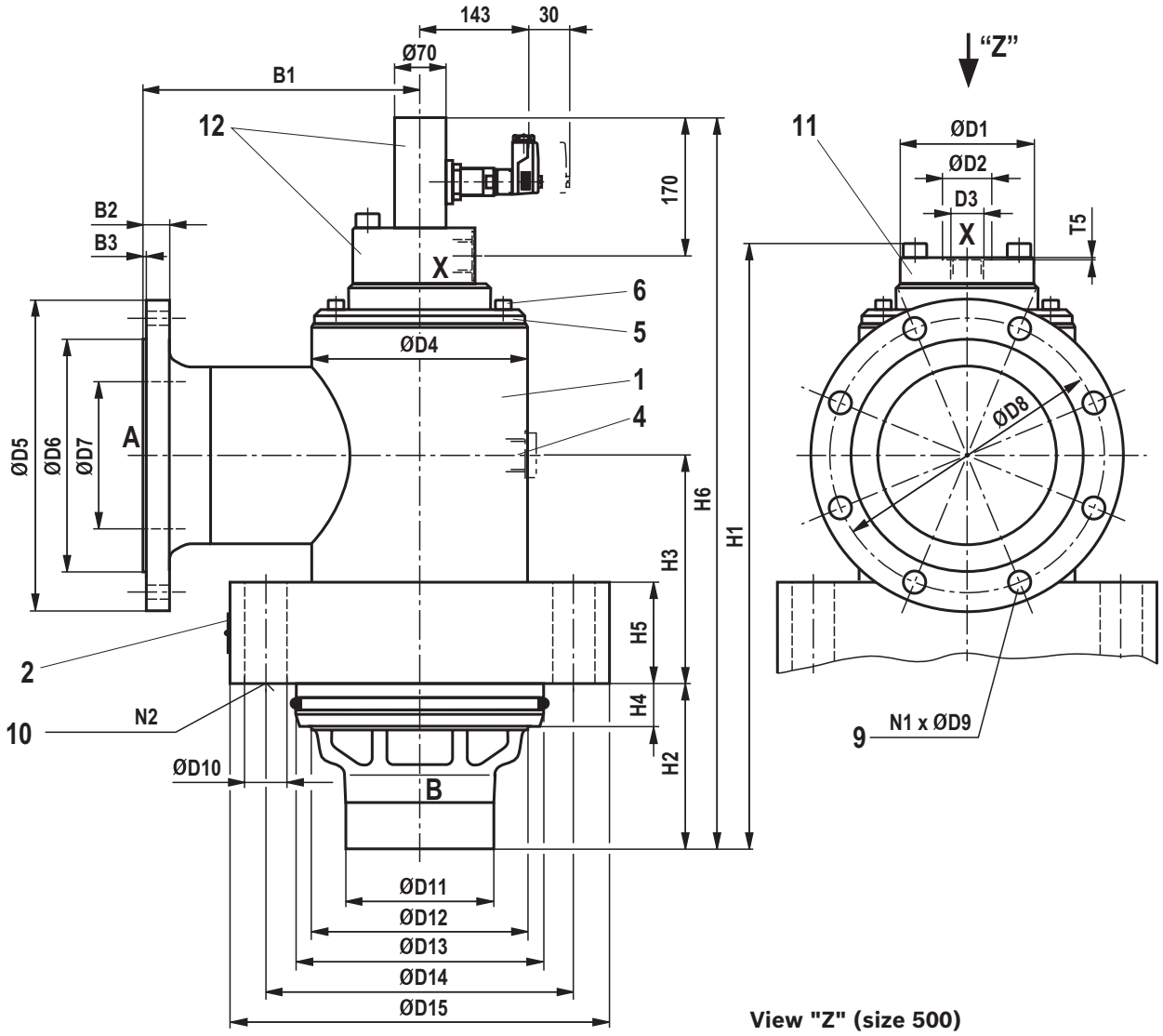
Δp-q_V characteristic curves – size 125 ... 250 (B → A)



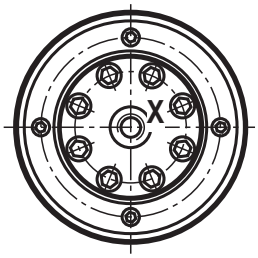
1 Size 125
2 Size 150
3 Size 200
4 Size 250

Characteristic curves for size 300 to 500 upon request!

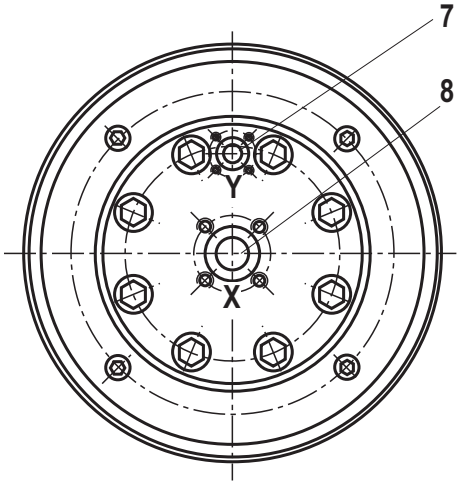
Unit dimensions: Version "A", flange connection
(dimensions in mm *[inch]*)



View "Z" (size 125 ... 400)



View "Z" (size 500)



Modification of the type of connection from "A" into "B"

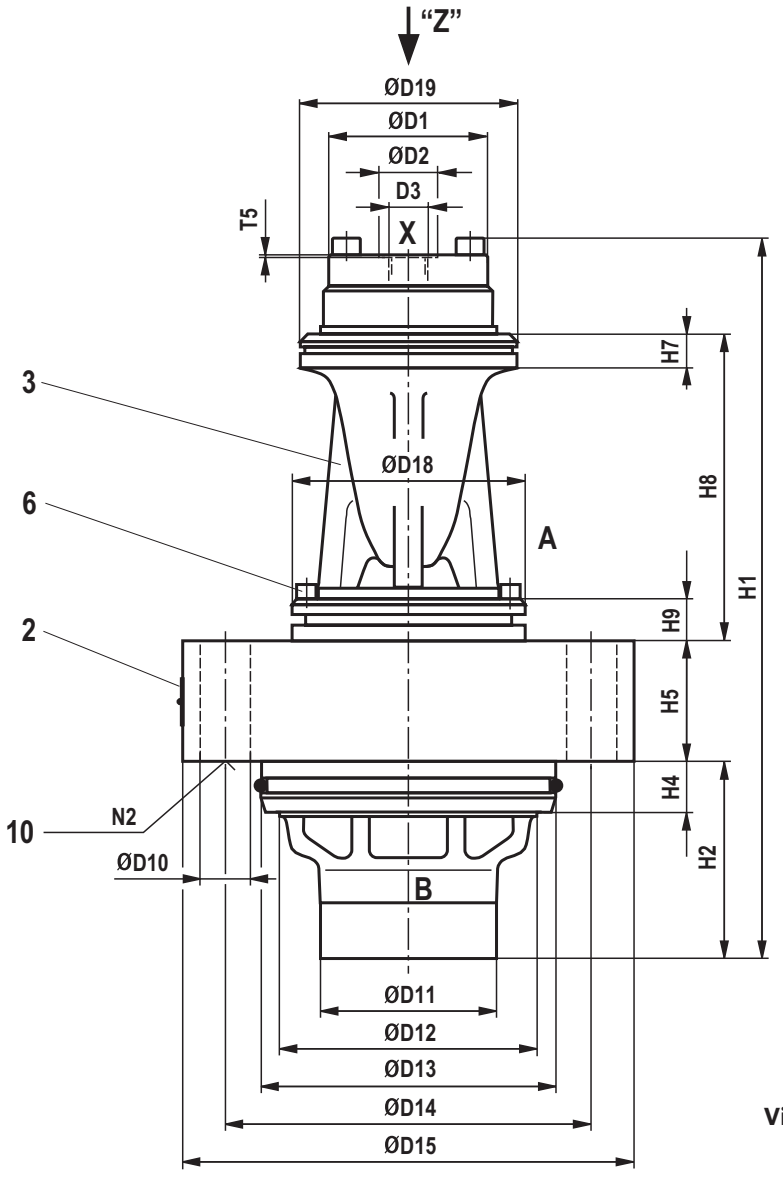
- 1. Loosen the mounting screws (6)
- 2. Remove the ring (5)
- 3. Remove the housing (1)

Rotating the housing (1)

- 1. Loosen the mounting screws (6)
- 2. Rotating the housing (1)
- 3. Tighten the mounting screws (6)

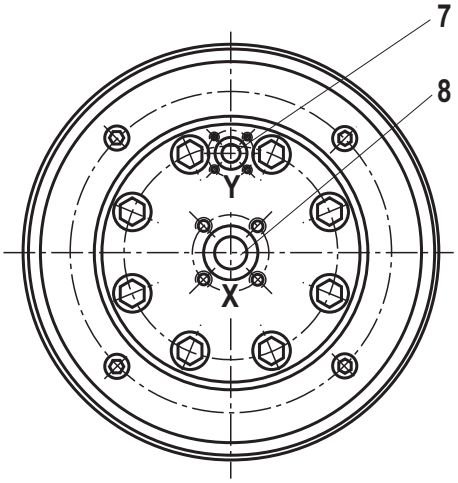
Dimensional tables see page 9.
Installation bore see page 11.
Item explanations and valve mounting screws see page 12.

Unit dimensions: Version "B", tank installation
(dimensions in mm *[inch]*)



View "Z" (size 125 ... 400)

View "Z" (size 500)



Dimensional tables see page 9.
Installation bore see page 11.
Item explanations and valve mounting screws see page 12.

Modification from type of connection "B" into type of connection "K"

- ▶ 1. Loosen the mounting screws (6)
- ▶ 2. Remove the control cylinder (3)

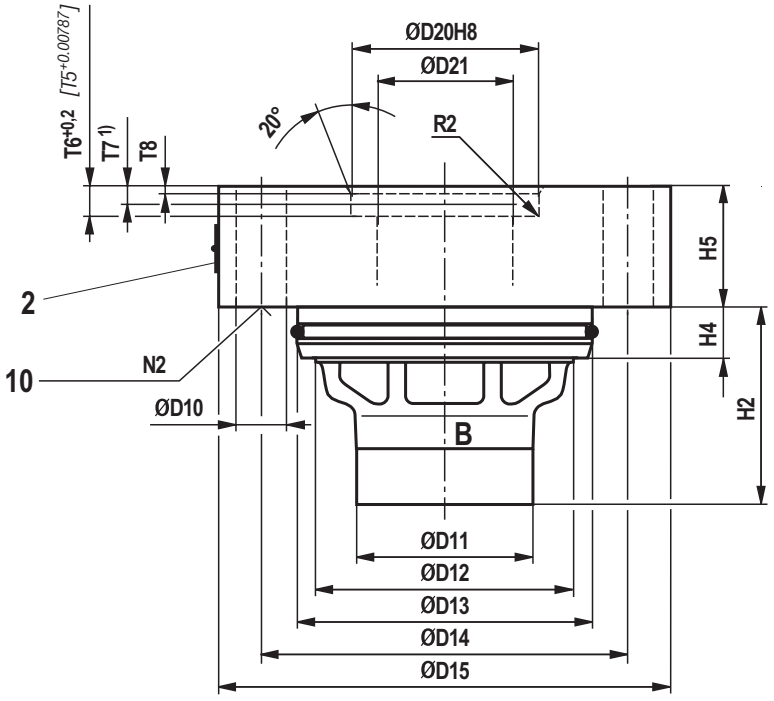
Unit dimensions: Version "A" and "B"
(dimensions in mm *[inch]*)

Size	B1	B2	B3	ØD1	ØD2	D3	ØD4	ØD5	ØD6	ØD7
125	210 *[8.27]*	22 *[0.87]*	3 *[0.118]*	110 *[4.33]*	42 *[1.65]*	G3/4	178 *[7.01]*	250 *[9.84]*	188 *[7.40]*	132 *[5.2]*
150	250 *[9.84]*	22 *[0.87]*	3 *[0.118]*	130 *[5.12]*	42 *[1.65]*	G3/4	229 *[9.02]*	285 *[11.22]*	212 *[8.35]*	159 *[6.26]*
200	275 *[10.83]*	24 *[0.95]*	3 *[0.118]*	150 *[5.91]*	47 *[1.85]*	G1	273 *[10.75]*	340 *[13.39]*	268 *[10.55]*	207 *[8.15]*
250	330 *[12.99]*	26 *[1.02]*	3 *[0.118]*	190 *[7.48]*	58 *[2.28]*	G1 1/4	356 *[14.02]*	405 *[15.94]*	320 *[12.6]*	260 *[10.24]*
300	380 *[14.96]*	28 *[1.10]*	4 *[0.158]*	225 *[8.86]*	58 *[2.28]*	G1 1/4	419 *[16.5]*	460 *[18.11]*	378 *[14.88]*	310 *[12.2]*
350	440 *[17.32]*	30 *[1.18]*	4 *[0.158]*	275 *[10.83]*	65 *[2.56]*	G1 1/2	508 *[20]*	520 *[20.47]*	438 *[17.24]*	340 *[13.39]*
400	530 *[20.87]*	32 *[1.26]*	4 *[0.158]*	320 *[12.6]*	65 *[2.56]*	G1 1/2	572 *[22.52]*	580 *[22.83]*	490 *[19.29]*	390 *[15.35]*
500	620 *[24.41]*	34 *[1.34]*	4 *[0.158]*	398 *[15.67]*	–	–	802 *[31.57]*	715 *[28.15]*	610 *[24.02]*	492 *[19.37]*

Size	ØD8	ØD9	ØD10	ØD11	ØD12	ØD13	ØD14	ØD15	ØD18	ØD19
125	210 *[8.27]*	18 *[0.71]*	33 *[1.3]*	120 *[4.72]*	175 *[6.89]*	200 *[7.87]*	250 *[9.84]*	310 *[12.2]*	159 *[6.26]*	156 *[6.14]*
150	240 *[9.45]*	22 *[0.87]*	40 *[1.58]*	145 *[5.71]*	220 *[8.66]*	250 *[9.84]*	310 *[12.2]*	380 *[14.96]*	200 *[7.87]*	195 *[7.68]*
200	295 *[11.61]*	22 *[0.87]*	40 *[1.58]*	155 *[6.1]*	265 *[10.43]*	290 *[11.42]*	350 *[13.78]*	420 *[16.54]*	235 *[9.25]*	230 *[9.06]*
250	355 *[13.98]*	26 *[1.02]*	46 *[1.81]*	180 *[7.09]*	350 *[13.78]*	380 *[14.96]*	445 *[17.52]*	530 *[20.87]*	315 *[12.4]*	310 *[12.2]*
300	410 *[16.14]*	26 *[1.02]*	46 *[1.81]*	220 *[8.66]*	420 *[16.54]*	450 *[17.72]*	525 *[20.67]*	610 *[24.02]*	375 *[14.76]*	370 *[14.57]*
350	470 *[18.5]*	26 *[1.02]*	55 *[2.17]*	295 *[11.61]*	515 *[20.28]*	550 *[21.65]*	640 *[25.2]*	750 *[29.53]*	455 *[17.91]*	450 *[17.72]*
400	525 *[20.67]*	30 *[1.18]*	68 *[2.68]*	345 *[13.58]*	600 *[23.62]*	625 *[24.61]*	720 *[28.35]*	850 *[33.46]*	530 *[20.87]*	525 *[20.67]*
500	650 *[25.59]*	33 *[1.3]*	68 *[2.68]*	450 *[17.72]*	770 *[30.31]*	800 *[31.5]*	940 *[37.01]*	1070 *[42.13]*	750 *[29.53]*	745 *[29.33]*

Size	H1	H2	H3	H4	H5	H6	H7	H8	H9	T5	N1	N2
125	490 *[19.29]*	136 *[5.35]*	185 *[7.28]*	35 *[1.38]*	80 *[3.15]*	*515* *[20.28]*	25 *[0.98]*	207 *[8.15]*	28 *[1.10]*	1 *[0.0394]*	8	12
150	604 *[23.78]*	160 *[6.3]*	220 *[8.66]*	35 *[1.38]*	90 *[3.54]*	*603* *[23.74]*	26 *[1.02]*	248 *[9.76]*	31 *[1.22]*	1 *[0.0394]*	8	12
200	695 *[27.36]*	180 *[7.09]*	255 *[10.04]*	35 *[1.38]*	100 *[3.94]*	*671* *[26.42]*	27 *[1.06]*	298 *[11.73]*	36 *[1.42]*	1 *[0.0394]*	12	15
250	835 *[32.87]*	240 *[9.45]*	320 *[12.6]*	55 *[2.16]*	120 *[4.72]*	*756* *[29.76]*	38 *[1.5]*	379 *[14.92]*	44 *[1.73]*	1 *[0.0394]*	12	18
300	1085 *[42.72]*	305 *[12.01]*	390 *[15.35]*	55 *[2.16]*	160 *[6.3]*	*935* *[36.81]*	38 *[1.5]*	442 *[17.4]*	59 *[2.32]*	1 *[0.0394]*	12	24
350	1259 *[49.57]*	360 *[14.17]*	460 *[18.11]*	55 *[2.16]*	200 *[7.87]*	*1045* *[41.14]*	50 *[1.97]*	500 *[19.69]*	60 *[2.36]*	1 *[0.0394]*	16	24
400	1463 *[57.6]*	423 *[16.65]*	510 *[20.08]*	55 *[2.16]*	210 *[8.27]*	*1195* *[47.05]*	63 *[2.48]*	577 *[22.72]*	80 *[3.15]*	1 *[0.0394]*	16	20
500	1750 *[68.9]*	700 *[27.56]*	600 *[23.62]*	55 *[2.16]*	250 *[9.84]*	*1290* *[50.79]*	70 *[2.76]*	686 *[27.01]*	90 *[3.54]*	2 *[0.0787]*	20	24

Unit dimensions: Version "K", cartridge valve without control spool
(dimensions in mm *[inch]*)



1) Depth of fit

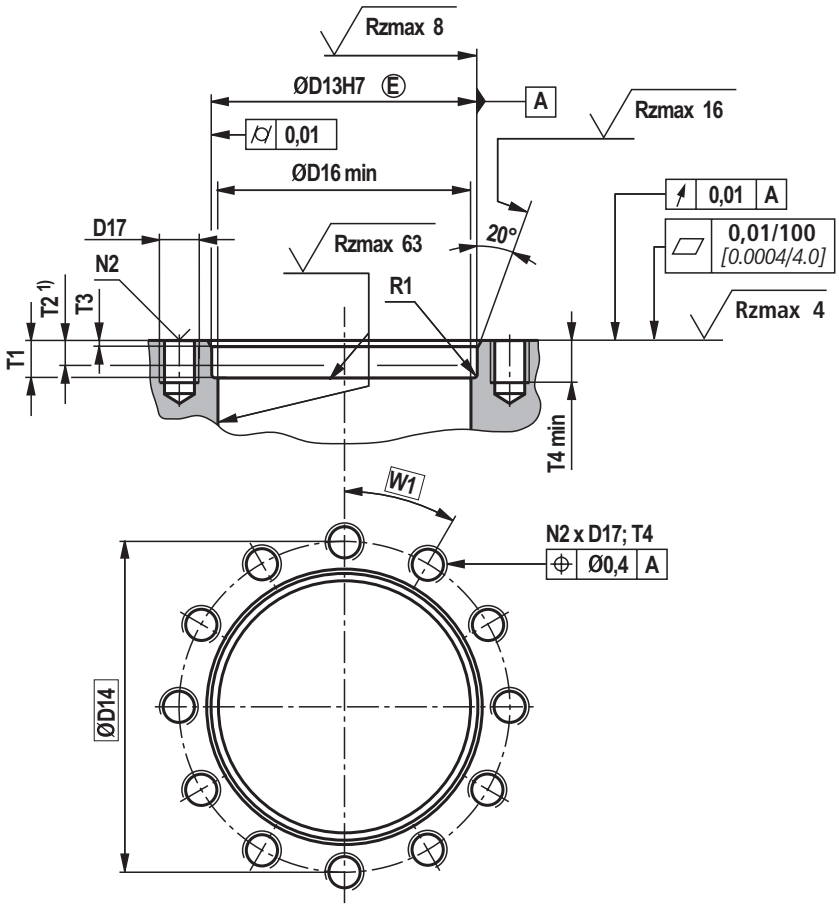
Dimensional tables see page 9.
Installation bore see page 11.
Item explanations and valve mounting screws see page 12.

Size	ØD10	ØD11	ØD12	ØD13	ØD14	ØD15	ØD20	ØD21
125	33 *[1.3]*	120 *[4.72]*	175 *[6.89]*	200 *[7.87]*	250 *[9.84]*	310 *[12.2]*	130 *[5.12]*	105 *[4.13]*
150	40 *[1.58]*	145 *[5.71]*	220 *[8.66]*	250 *[9.84]*	310 *[12.2]*	380 *[14.96]*	160 *[6.3]*	130 *[5.12]*
200	40 *[1.58]*	155 *[6.1]*	265 *[10.43]*	290 *[11.42]*	350 *[13.78]*	420 *[16.54]*	185 *[7.28]*	155 *[6.1]*
250	46 *[1.81]*	180 *[7.09]*	350 *[13.78]*	380 *[14.96]*	445 *[17.52]*	530 *[20.87]*	250 *[9.84]*	206 *[8.11]*
300	46 *[1.81]*	220 *[8.66]*	420 *[16.54]*	450 *[17.72]*	525 *[20.67]*	610 *[24.02]*	300 *[11.81]*	255 *[10.04]*
350	55 *[2.17]*	295 *[11.61]*	515 *[20.28]*	550 *[21.65]*	640 *[25.2]*	750 *[29.53]*	350 *[13.78]*	305 *[12.01]*
400	68 *[2.68]*	345 *[13.58]*	600 *[23.62]*	625 *[24.61]*	720 *[28.35]*	850 *[33.46]*	400 *[15.75]*	355 *[13.98]*

Size	H2	H4	H5	T6	T7	T8	R2	N2
125	136 *[5.35]*	35 *[1.38]*	80 *[3.15]*	14 *[0.551]*	12 *[0.472]*	3 *[0.118]*	0.5 *[0.0197]*	12
150	160 *[6.3]*	35 *[1.38]*	90 *[3.54]*	14 *[0.551]*	12 *[0.472]*	3 *[0.118]*	0.5 *[0.0197]*	12
200	180 *[7.09]*	35 *[1.38]*	100 *[3.94]*	14 *[0.551]*	12 *[0.472]*	3 *[0.118]*	0.5 *[0.0197]*	15
250	240 *[9.45]*	55 *[2.16]*	120 *[4.72]*	21 *[0.827]*	19 *[0.748]*	4.5 *[0.177]*	1.6 *[0.063]*	18
300	305 *[12.01]*	55 *[2.16]*	160 *[6.3]*	21 *[0.827]*	19 *[0.748]*	4.5 *[0.177]*	1.6 *[0.063]*	24
350	360 *[14.17]*	55 *[2.16]*	200 *[7.87]*	30 *[1.181]*	27 *[1.063]*	8 *[0.315]*	1.6 *[0.063]*	24
400	423 *[16.65]*	55 *[2.16]*	210 *[8.27]*	30 *[1.181]*	27 *[1.063]*	6 *[0.236]*	1.6 *[0.063]*	20

Installation bore

(dimensions in mm *[inch]*)



Size	ØD13	ØD14	ØD16	D17 2)	R1	T1	T2	T3	T4	N2	W1
125	200 *[7.87]*	250 *[9.84]*	180 *[7.09]*	M30	3 *[0.118]*	37 *[1.46]*	26 *[1.02]*	5 *[0.196]*	40 *[1.58]*	12	30°
150	250 *[9.84]*	310 *[12.2]*	230 *[9.06]*	M36	3 *[0.118]*	37 *[1.46]*	26 *[1.02]*	5 *[0.196]*	60 *[2.36]*	12	30°
200	290 *[11.42]*	350 *[13.78]*	270 *[10.63]*	M36	3 *[0.118]*	37 *[1.46]*	26 *[1.02]*	5 *[0.196]*	50 *[1.97]*	15	24°
250	380 *[14.96]*	445 *[17.52]*	355 *[13.98]*	M42	5 *[0.197]*	57 *[2.24]*	42 *[1.65]*	8 *[0.315]*	60 *[2.36]*	18	20°
300	450 *[17.72]*	525 *[20.67]*	425 *[16.73]*	M42	5 *[0.197]*	57 *[2.24]*	42 *[1.65]*	8 *[0.315]*	75 *[2.95]*	24	15°
350	550 *[21.65]*	640 *[25.2]*	520 *[20.47]*	M52	5 *[0.197]*	57 *[2.24]*	42 *[1.65]*	8 *[0.315]*	80 *[3.15]*	24	15°
400	625 *[24.61]*	720 *[28.35]*	605 *[23.82]*	M64	5 *[0.197]*	57 *[2.24]*	42 *[1.65]*	8 *[0.315]*	95 *[3.74]*	20	18°
500	800 *[31.5]*	940 *[37.01]*	785 *[30.91]*	M64	5 *[0.197]*	60 *[2.36]*	45 *[1.77]*	10 *[0.394]*	110 *[4.33]*	24	15°

1) Depth of fit

2) In earlier data sheet versions, fine threads were moreover specified. Please note when selecting the mounting screws!

Notice!

Design of the valve mounting face (e. g. pressing cylinders, bearing structures, etc.) must be sufficiently rigid! The prefill valve must not be loaded by bending!

Unit dimensions

1 Housing with low-pressure flange, continuously rotatable
2 Name plate
3 Control cylinder
4 Connection G1 1/2 (draining, only size 500); tightening torque M_A = 300 Nm ±10 %
5 Ring
6 Mounting screws; tightening torque see table on the right
7 Port Y; connection flange upon request
8 Port X; connection flange upon request
9 **N1** Number of the flange mounting screens evenly arranged at the circumference (type of connection "A")
10 **N2** Number of the valve mounting screws evenly arranged at the circumference (see below)
11 Version "without position switch"
12 Version "Q2G24Z"

Size	Tightening torques M_A in Nm ±10 % (6)
125	25
150	51
200	51
250	87
300	215
350	215
400	430
500	110

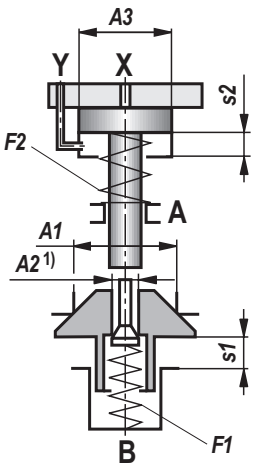
Valve mounting screws (separate order)
For reasons of stability, exclusively use the following valve mounting screws:

Size	Quantity (N2)	Dimension [2]	Tightening torque M_A in Nm *[ft-lbs]* ±5 % **Hexagon socket head cap screw ISO 4762 - 10.9-flZn-...** (or DIN 912 - 10.9) [1]
125	12	M30 x 120	1400 *[1033]*
150	12	M36 x 150	2600 *[1918]*
200	15	M36 x 150	2600 *[1918]*
250	18	M42 x 180	4500 *[3319]*
300	24	M42 x 220	4500 *[3319]*
350	24	M52 x 280	8500 *[6269]*
400	20	M64 x 300	16000 *[11801]*
500	24	M64 x 350 [3]	20000 *[14751]*

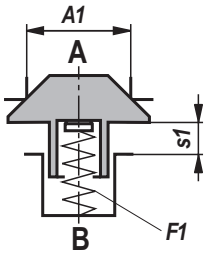
[1] Friction coefficient μ_{total} = 0.09 to 0.14
[2] In earlier data sheet versions, fine threads were moreover specified. Please note when designing the mounting bores or when revising existing constructions!
[3] Assembly with washers (washer ISO 7089-64-300 HV, not included in the scope of delivery).

Poppet geometry and determination of the minimum pilot pressure

Version "A" and "B"



Version "K"



A1 = Effective area of the main poppet
A2 = Effective area of the pilot poppet
A3 = Effective area of the control spool
s1 = Stroke of the main poppet
s2 = Stroke of the control spool
F1 = Spring force of the valve spring
F2 = Spring force of the compression spring of the control spool

$V_{st\,X}$ = Pilot oil volume for opening the valve
$V_{st\,Y}$ = Pilot oil volume for closing the valve
p_{St} = Pilot pressure at port X
p_B = System pressure at port B

$$\text{Unchecking ratio} = \frac{\text{Pilot pressure } p_{St}}{\text{System pressure } p_B}$$

Size	*A1* in cm² *[inch²]*	*A2* 1) in cm² *[inch²]*	*A3* in cm² *[inch²]*	*s1* in mm *[inch]*	*s2* in mm *[inch]*	*F1* in N *[lbs]*	*F2* in N *[lbs]*	$V_{st\,X}$ in cm³ *[inch³]*	$V_{st\,Y}$ in cm³ *[inch³]*	Unchecking ratio 2)	Unchecking ratio 3)
125	101.0 *[15.66]*	2.5 *[0.388]*	24.6 *[3.81]*	28 *[1.10]*	25 *[0.98]*	220 – 360 *[49.5 – 80.9]*	780 – 2340 *[175 – 526]*	62 *[3.78]*	–	4.1	0.1
150	153.9 *[23.86]*	3.8 *[0.589]*	38.5 *[5.97]*	35 *[1.38]*	29 *[1.14]*	350 – 570 *[78.7 – 128]*	1530 – 3550 *[344 – 798]*	112 *[6.83]*	–	4.0	0.1
200	216.4 *[33.54]*	4.9 *[0.759]*	50.3 *[7.8]*	42 *[1.66]*	34 *[1.34]*	490 – 760 *[110.2 – 170.8]*	1920 – 4540 *[432 – 1021]*	171 *[10.44]*	–	4.3	0.1
250	373.3 *[57.86]*	9.6 *[1.488]*	95.0 *[14.73]*	53 *[2.09]*	41 *[1.61]*	870 – 1430 *[87 – 143]*	4160 – 7260 *[935 – 1632]*	390 *[23.8]*	–	3.9	0.1
300	572.6 *[88.75]*	13.9 *[2.16]*	143.1 *[22.18]*	63 *[2.48]*	48 *[1.89]*	1490 – 2630 *[335 – 591]*	6080 – 11040 *[1367 – 2482]*	687 *[41.92]*	–	4.0	0.1
350	826.6 *[128.12]*	21.2 *[3.29]*	213.8 *[33.14]*	78 *[3.07]*	58 *[2.28]*	2180 – 3880 *[490 – 872]*	9490 – 15600 *[2133 – 3507]*	1240 *[75.67]*	–	3.9	0.1
400	1158.0 *[179.49]*	32.2 *[4.99]*	314.2 *[48.7]*	93 *[3.66]*	68 *[2.68]*	3310 – 6230 *[744 – 1401]*	13900 – 22570 *[3125 – 5074]*	2136 *[130.4]*	–	3.7	0.1
500	1948.0 *[301.94]*	49.0 *[7.59]*	490.9 *[76.09]*	140 *[5.51]*	100 *[3.94]*	6520 – 13800 *[1466 – 3102]*	–	4909 *[299.6]*	1767 *[107.8]*	4.0	0.1

1) Is omitted for version "without pre-decompression" (SF ...0...)
2) Without pre-decompression
3) With pre-decompression

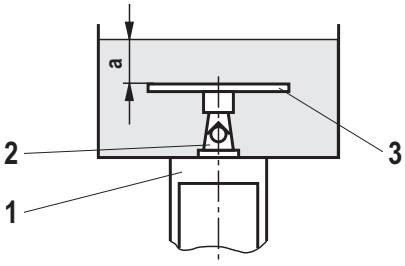
Calculation example type SF 300 ...;
p_B = 30 bar
p_{St} = 4.0 x 30 bar = 120 bar

Flow in l/min *[US gpm]* (A to B) for the different cases of application (***Δp*** = 0.3 bar)

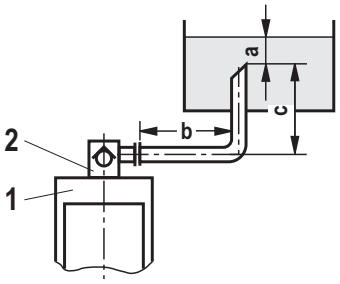
Size	125	150	200	250	300	350	400	500
Case of application 1	2500 *[660]*	3900 *[1030]*	5600 *[1479]*	10000 *[2642]*	15600 *[4121]*	22480 *[5939]*	30600 *[8084]*	50000 *[13209]*
Case of application 2	2500 *[660]*	3900 *[1030]*	5600 *[1479]*	10000 *[2642]*	14000 *[3698]*	19050 *[5033]*	24880 *[6573]*	40000 *[10567]*
Case of application 3	1700 *[449]*	2440 *[645]*	4340 *[1147]*	6775 *[1790]*	9750 *[2576]*	13280 *[3508]*	17340 *[4581]*	28000 *[7397]*
Case of application 4	1470 *[388]*	2120 *[560]*	3770 *[996]*	5890 *[1556]*	8480 *[2240]*	11540 *[3049]*	15080 *[3984]*	25000 *[6604]*
Case of application 5	590 *[156]*	850 *[1910]*	1510 *[399]*	2360 *[624]*	3400 *[898]*	4620 *[1221]*	6050 *[1598]*	upon request

Notice!
An underdimensioned prefill valve and/or an underdimensioned line leads to gas leaks from the hydraulic fluid with corresponding consequences and often to long-term damage at the cylinder seals. For boundary areas, please ask us!

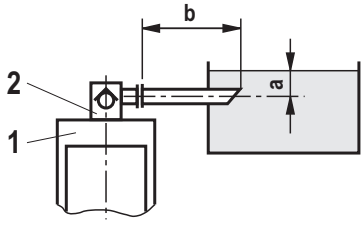
Case of application 1



Case of application 2

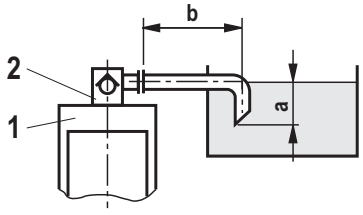


Case of application 3

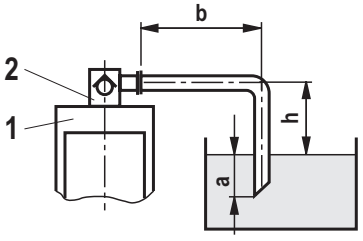


Size of the filling tank
at least 1.5 x cylinder content

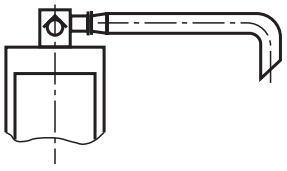
Case of application 4



Case of application 5



Information on case of application 1 to 5



For limit areas, please ask us.
It is often enough, to select a pipeline which is one size larger.

1 Cylinder

2 Prefill valve

3 This sheet is not included in the scope of delivery. With smaller tank dimensions and minimum hydraulic fluid level (a), it prevents the formation of tunnels.

a Min. 300 mm *[11.81 inch]* with extended cylinder

b up to 1000 mm *[39.37 inch]* with the specified maximum flows

c h ≤ 500 mm *[19.69 inch]*

h 300 mm *[11.81 inch]* ≤ h < 500 mm *[19.69 inch]*

More information

▶ Prefill valve, actively switchable	Data sheet 20473
▶ Hydraulic fluids on mineral oil basis	Data sheet 90220
▶ Sales information – Serial overview of the prefill valves	Data sheet 20482-01-V
▶ General product information on hydraulic products	Data sheet 07008
▶ Assembly, commissioning and maintenance of industrial valves	Data sheet 07300
▶ Inductive position switch, type Q2	Data sheet upon request
▶ Selection of the filters	www.boschrexroth.com/filter