

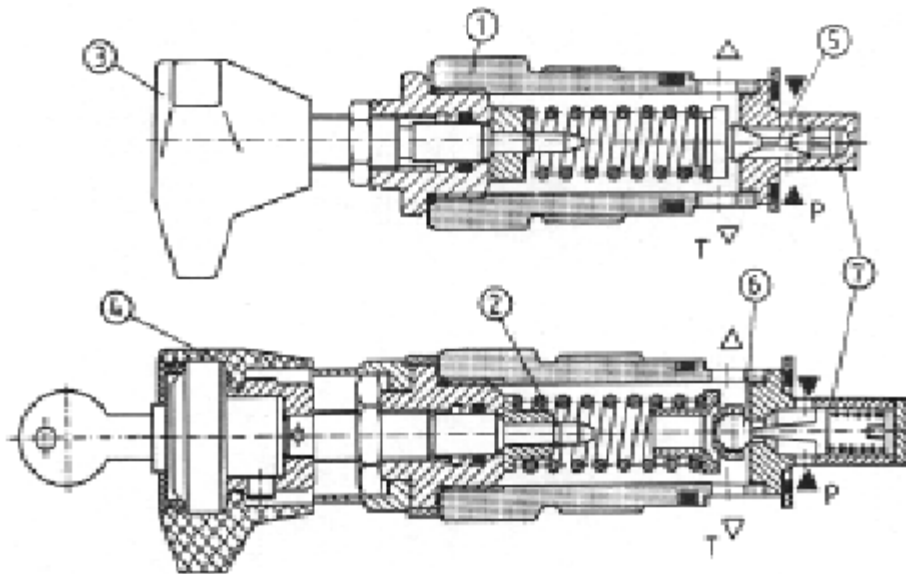
### APPLICATION

Pressure relief valves serve to limit maximum pressure in a whole hydraulic system or in a specified part of it.

Direct operated pressure relief valves type DBD are available, according to anticipated mounted method, as cartridge valves, for threaded connections and for subplate mounting.



### DESCRIPTION OF OPERATION



A moveable poppet ( 5 ) - in the valves for pressure up to 40 MPa and a ball ( 6 ) - in the valves size 10 for pressure up to 63 MPa represent the operating element. Cracking pressure setting is made by variation of the tension of spring ( 2 ) by means of a handknob ( 3 ),

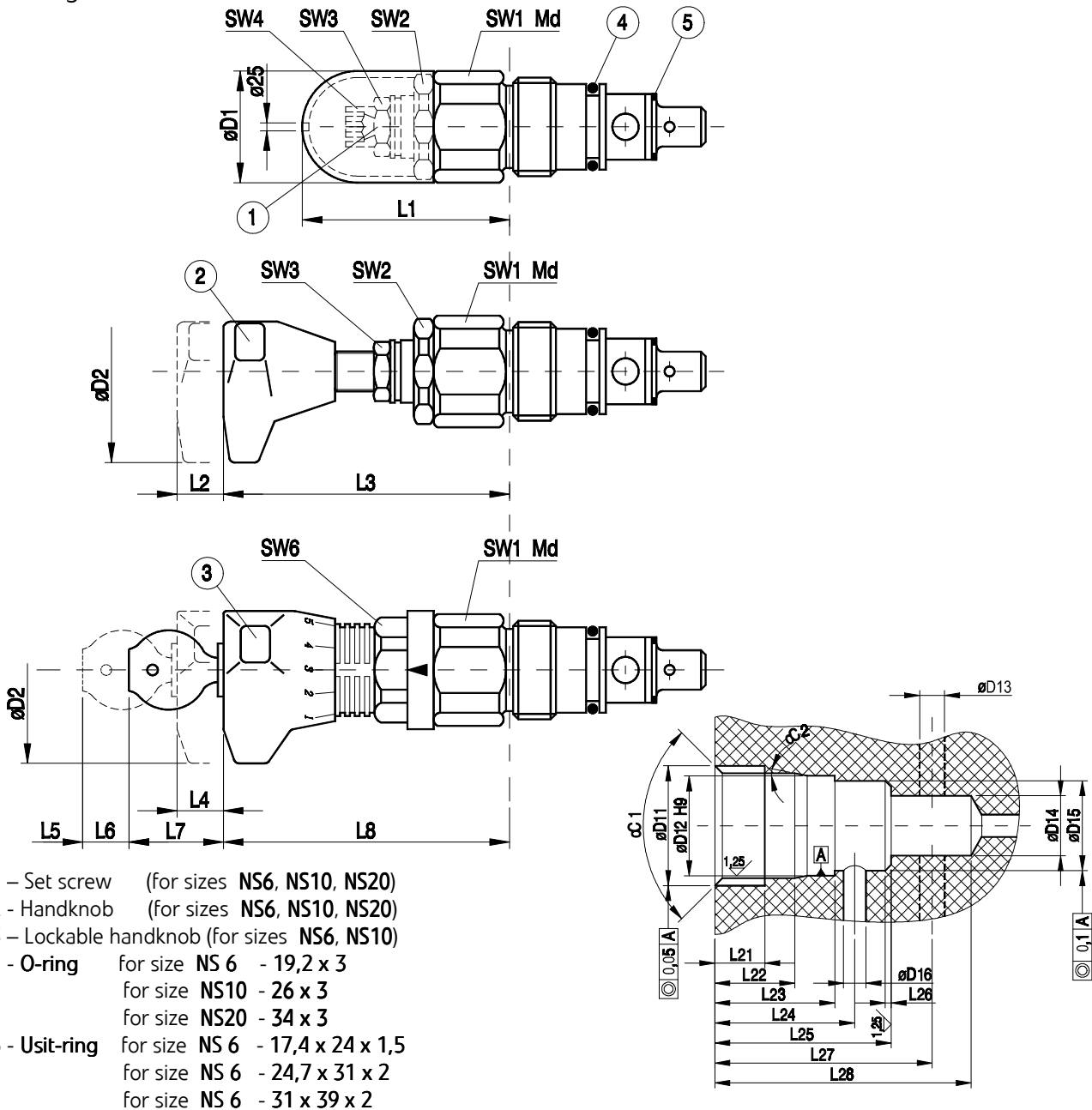
lockable handwheel ( 4 ) or set screw. Various ranges of pressure adjustment correspond to specific springs ( exchangeable ). A dumping element ( 7 ) is used to eliminate vibration of the valve.

## TECHNICAL DATA

Hydraulic fluid	mineral oil or phosphate ester		
Nominal fluid viscosity	37 mm <sup>2</sup> /s at temperature 55 °C		
Viscosity range	2,8 up to 380 mm <sup>2</sup> /s		
Fluid temperature range (in a tank)	recommended	40 °C up to 55 °C	
	max	-20 °C up to +70 °C	
Ambient temperature range	- 20 °C up to +70 °C		
Maximum operating pressure	NS6	NS10	NS20
	40 MPa	63 MPa	40 MPa
Maximum pressure in port T	31,5 MPa		
Required filtration	up to 16 µm		
Recommended filtration	up to 10 µm		

## OVERALL AND CONNECTION DIMENSIONS

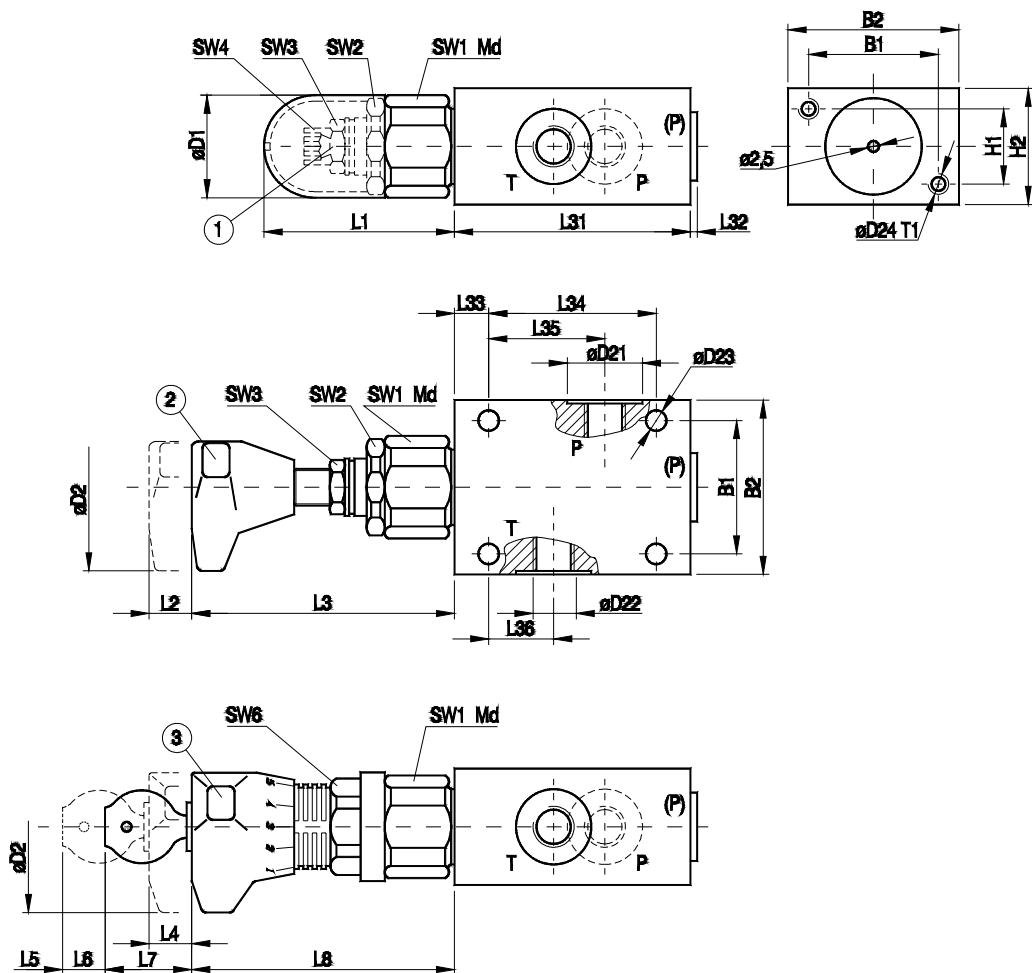
Cartridge version



Valve	Weight [kg]	D1	D2	L1	L2	L3	L4	L5	L6	L7	L8	SW1	Md [Nm]	SW2	SW3	SW4	SW6
Size 6	0.4	34	60	72	11	20	11	20	11	30	94	32	80	30	19	6	3
Size 10	0.5	38	60	68	11	79	11	20	11	30	90	36	140	30	19	6	30
Size 20	1	48	60	65	11	77	-	-	-	-	-	46	170	36	19	6	-

Seat	D11	D1	D1	D14	D15	D1	L21	L22	L23	L24	L25	L26	L27	L28	$\alpha_1$	$\alpha_2$
Size 6	M28x1.5	25	6	15	24.9	6	15	19	30	35	45	0.5x45°	56.5±5	65	90	15
Size 10	M35x1.5	32	10	18.5	31.9	10	18	23	35	41	52	0.5x45°	67.5±7	80	90	15
Size 20	M45x1.5	40	20	24	39.9	20	21	27	45	54	70	0.5x45°	91.5±8	110	90	20

Cartridge version

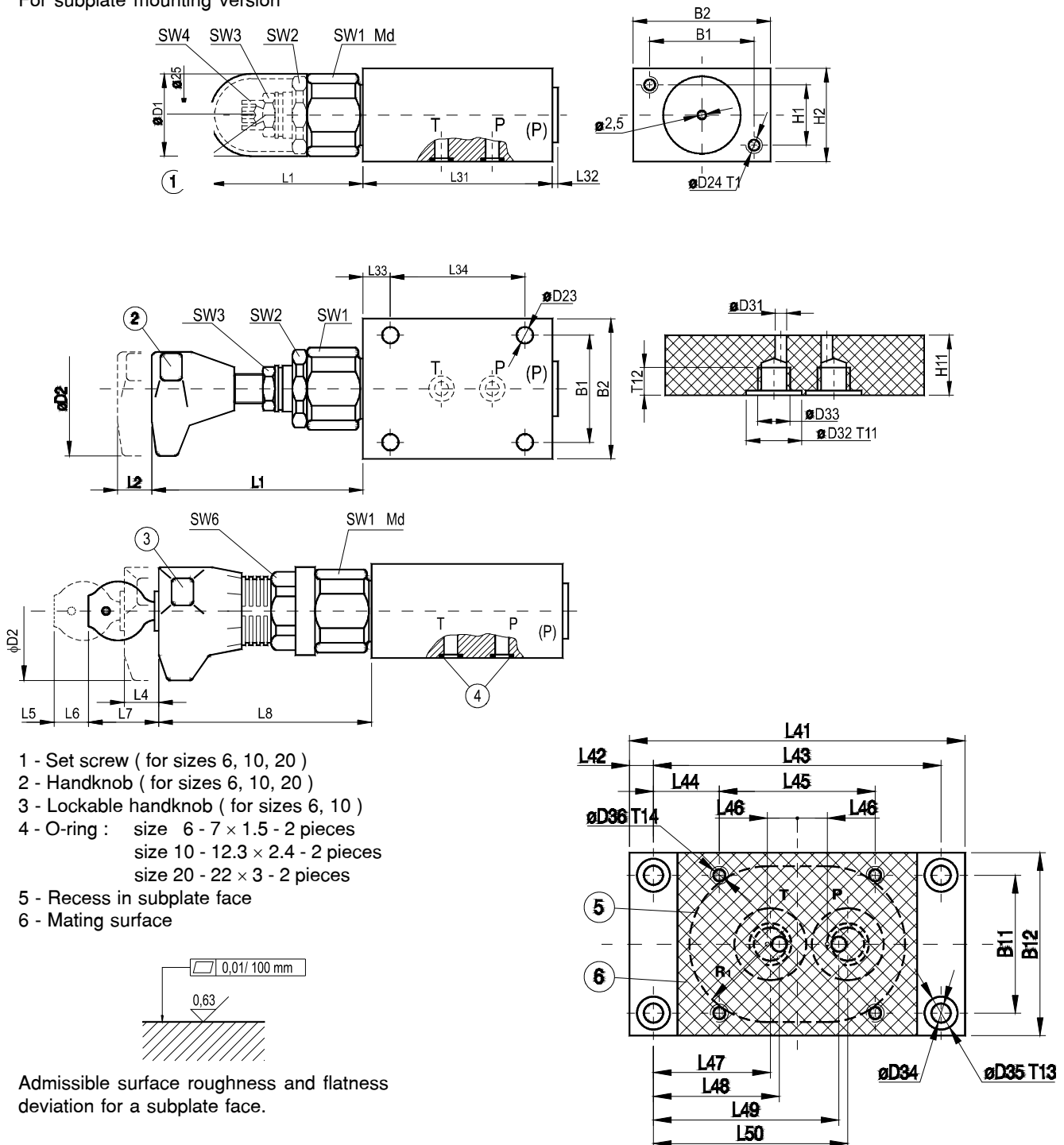


- 1 - Set screw ( for sizes 6, 10, 20 )
- 2 - Handknob ( for sizes 6, 10, 20 )
- 3 - Lockable handknob ( for sizes 6, 10 )

Valve	B1	B2	D1	D2	D21	D22	L23	L24	H1	H2	L1	L2	L3	L4	L5
Size 6	45	60	34	60	25	G1/4	6.6	M6	25	40	72	11	83	11	20
Size 10	60	80	38	60	34	G1/2	9	M8	40	60	68	11	79	11	20
Size 20	70	100	48	60	47	G1	9	M8	50	70	65	11	77	-	-

Valve	L6	L7	L8	L31	L32	L33	L34	L35	L36	SW1	SW2	SW3	SW4	SW6	T1	Weight
Size 6	11	30	94	80	3	15	55	40	20	32	30	19	6	30	10	1.6 kg
Size 10	11	30	90	100	4	20	70	49	21	36	30	19	6	11	20	3.7 kg
Size 20	-	-	-	135	5.5	20	100	65	34	46	36	19	6	-	20	7.0 kg

For subplate mounting version



Valve	B1	B2	D1	D2	D23	D24	H1	H2	L1	L2	L3	L4	L5
Size 6	60	45	34	60	6.6	M6	25	40	72	11	83	11	20
Size 10	80	60	38	60	9	M8	40	60	68	11	79	11	20
Size 20	100	70	48	-	9	M8	50	70	65	11	77	-	-

L6	L7	L8	L31	L32	L33	L34	SW1	SW2	SW3	SW4	SW6	T1	Weight (kg)
11	30	94	80	3	15	55	32	30	19	6	30	10	1.6
11	30	90	100	4	20	70	36	30	19	6	30	20	3.7
11			135	5.5	20	100	46	36	19	6		20	7.0

Subplate	Type	Weight	B11	B12	D31	D32	D33	D34	D35	D36	H11	L41
Size 6	G300/01	1.5	45	60	6	25	G1/4	7	11	M6	25	110
Size 10	G302/01	2.0	60	80	10	34	G1/2	7	11	M8	25	135
Size 20	G304/01	5.5	70	100	20	47	G1	11.5	17.5	M8	40	170

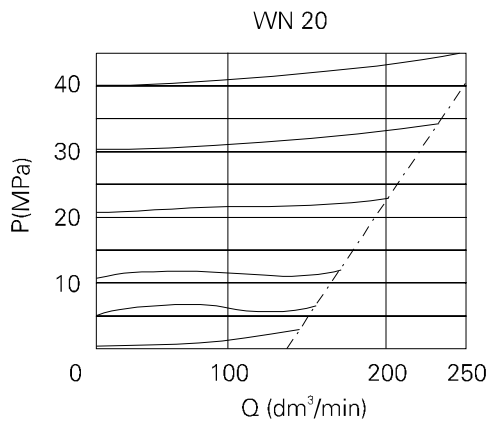
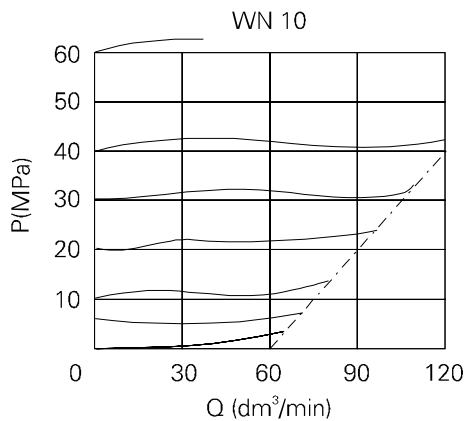
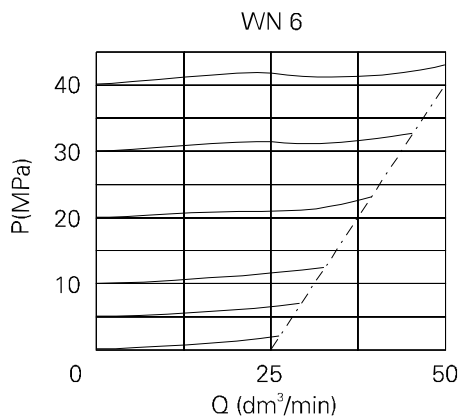
L42	L43	L44	L45	L46	L47	L48	L49	L50	T11	T12	T13	T14	R1
8	94	22	55	10	39	42	62	65	1	15	9	15	25
10	115	27.5	70	12.5	40.5	48.5	72.5	80.5	1	16	9	15	30
15	140	20	100	20	42	54	85	97	1	20	13	22	40

	Bolts mounting the valve	Torque ( Nm )	Standard
Size 6	M6 x 50 - 10.9	10	PN - 74 / M-82302 (DIN 912)
Size 10	M8 x 70 - 10.9	25	
Size 20	M8 x 90 - 10.9	25	

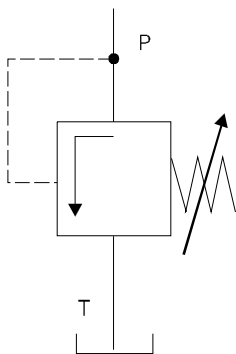
Note : Subplate and mounting bolts must be ordered separately.

**PERFORMANCE CURVES**, measured at  $\nu = 41 \text{ mm}^2/\text{s}$  and  $T = 323 \text{ K}$

Operating pressure in flow-function.



**SCHEMES**



## HOW TO ORDER

<b>DBD</b>				/			★
<b>Adjustment method</b> Set screw = S Hand knob = H Lockable hand knob (for sizes NS6, NS10 only) = A							
<b>Nominal size (NS)</b> NS6 = 6 NS10 = 10 NS20 = 20							
<b>Mounting method</b> Cartridge version = K For threaded connection = G For subplate mounting = P							
<b>Series number</b> (10-19) - connection and installation dimensions unchanged = 1X series 13 = 13							
<b>Operating pressure range</b> up to 2,5 MPa = 25 up to 5 MPa = 50 up to 10 MPa = 100 up to 20 MPa = 200 up to 31,5 MPa = 315 up to 40 MPa = 400 up to 63 MPa = 630 (for size NS10 only)							
<b>Sealing</b> NBR (for fluids on mineral oil base) = no designation FPM (for fluids on phosphate ester base) = V							
Further requirements in clear text (to be agreed with the manufacturer)							

### NOTES:

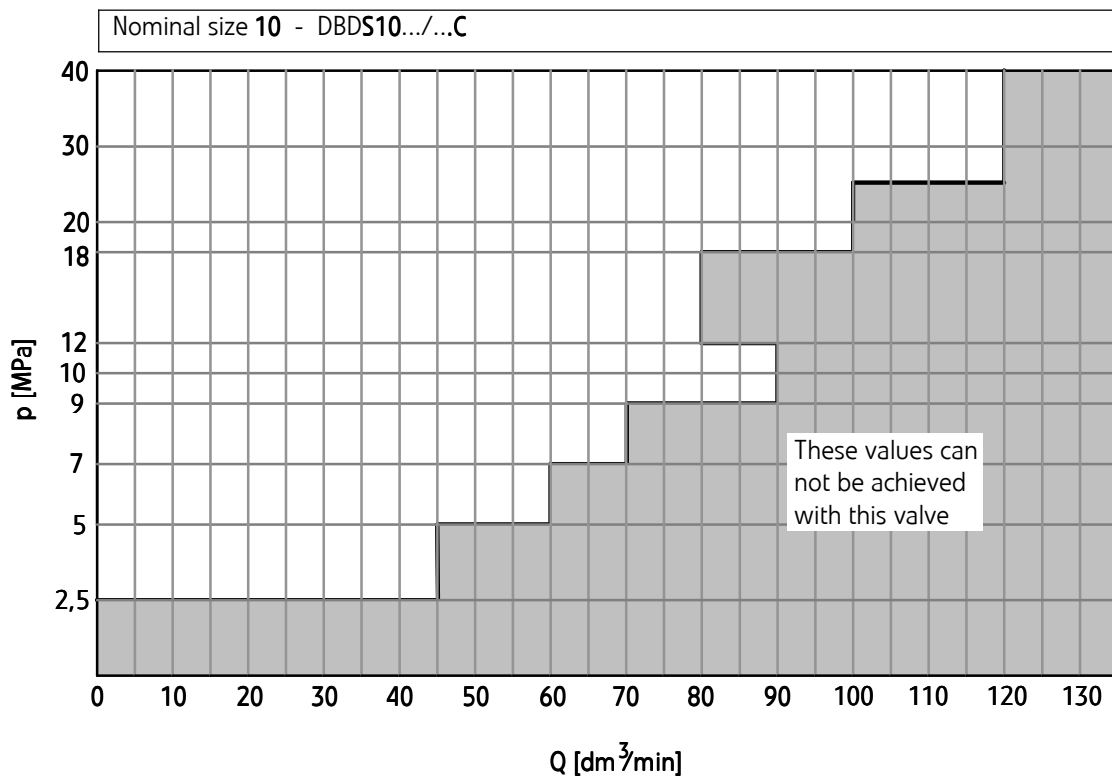
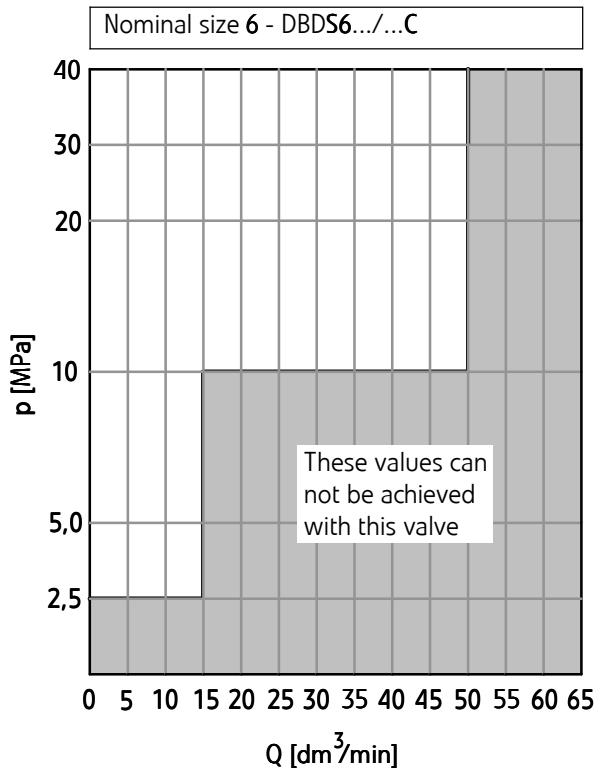
The valve should be ordered according to the above coding.  
 Coding example: DBD S6 K 13/400

**Valve type DBD... used as a safety valve  
DBDS6.../...C and DBDS10.../...C with CE approval  
per Pressure Directive 97/23/WE**

**PERFORMANCE CURVES**

measured at viscosity  $\nu = 41 \text{ mm}^2/\text{s}$  and temperature  $t = 50^\circ\text{C}$

Flow curves p - Q





## HOW TO ORDER

<b>DBDS</b>				/		<b>C</b>
<b>Nominal size (NS)</b>						
NS6	= 6					
NS10	= 10					
<b>Mounting method</b>						
Cartridge version	= K					
For threaded connection	= G					
For subplate mounting	= P					
<b>Series number</b>						
(10-19) - connection and installation dimensions unchanged	= 1X					
series 13	= 13					
<b>Set pressure</b>						
<b>Sealing</b>						
NBR (for fluids on mineral oil base)	= no designation					
FPM (for fluids on phosphate ester base)	= V					

### NOTE:

The valve should be ordered according to the above coding.

### CAUTION !

The valve made as safety valve **DBDS.../...C** is proper for working fluid mineral oil type HLP40 + HLP60 (50% of each) that is for fluid from **group 2 as per art. 9 point 2.2 of Directive 97/23/WE.**

Drain line must be upressurized (free flow to a tank)

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