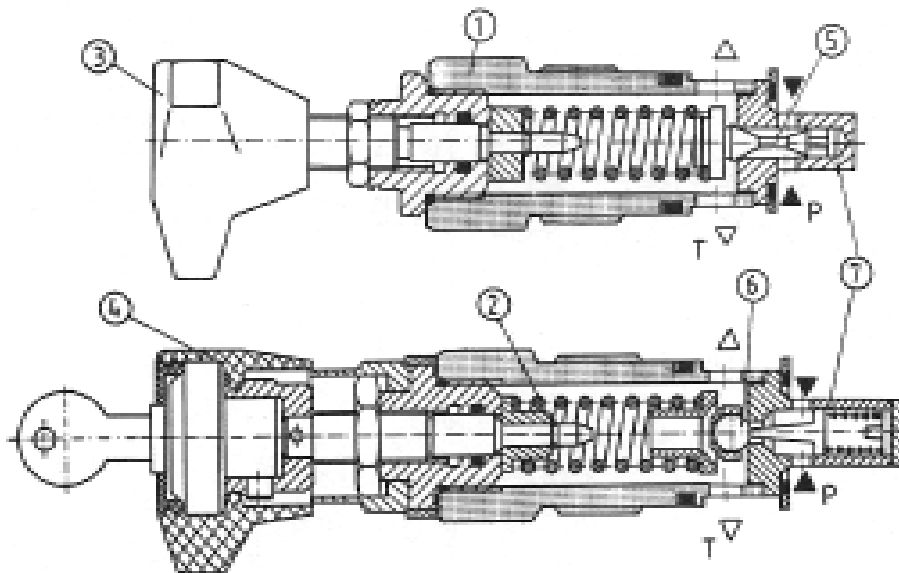


Pressure relief valves serve to limit maximum pressure in a whole hydraulic system or in a specified part of it. Direct operated pressure relief valves DBD are available, according to anticipated mounted method, as cartridge valves, for threaded connections and for subplate mounting.



### 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 65 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 ).

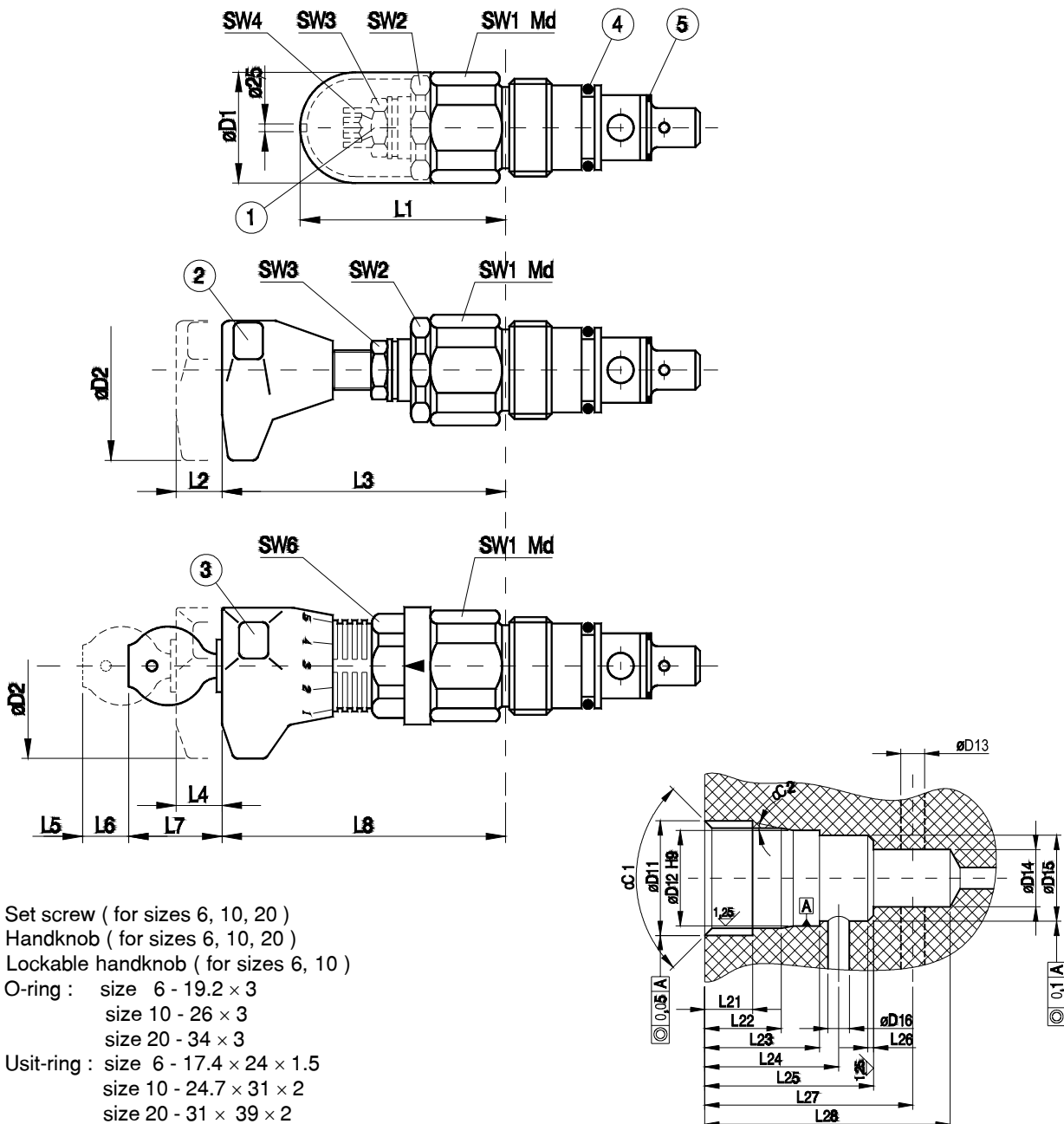
A dumping element ( 7 ) is used to eliminate vibration of the valve.

## TECHNICAL DATA

Hydraulic fluid	Mineral oil or phosphate ester		
Nominal fluid viscosity	37 mm <sup>2</sup> /s at the temperature of 328 K		
Viscosity range	2.8 to 380 mm <sup>2</sup> /s		
Optimum working temperature ( fluid in a tank )	313 - 328 K		
Fluid temperature range	243 - 343 K		
Required fluid filtration	16 μm		
Recommended fluid filtration	10 μm		
Maximum operating pressure	Size 6	Size 10	Size 20
	40 MPa	63 MPa	40 MPa

## OVERALL AND CONNECTION DIMENSIONS

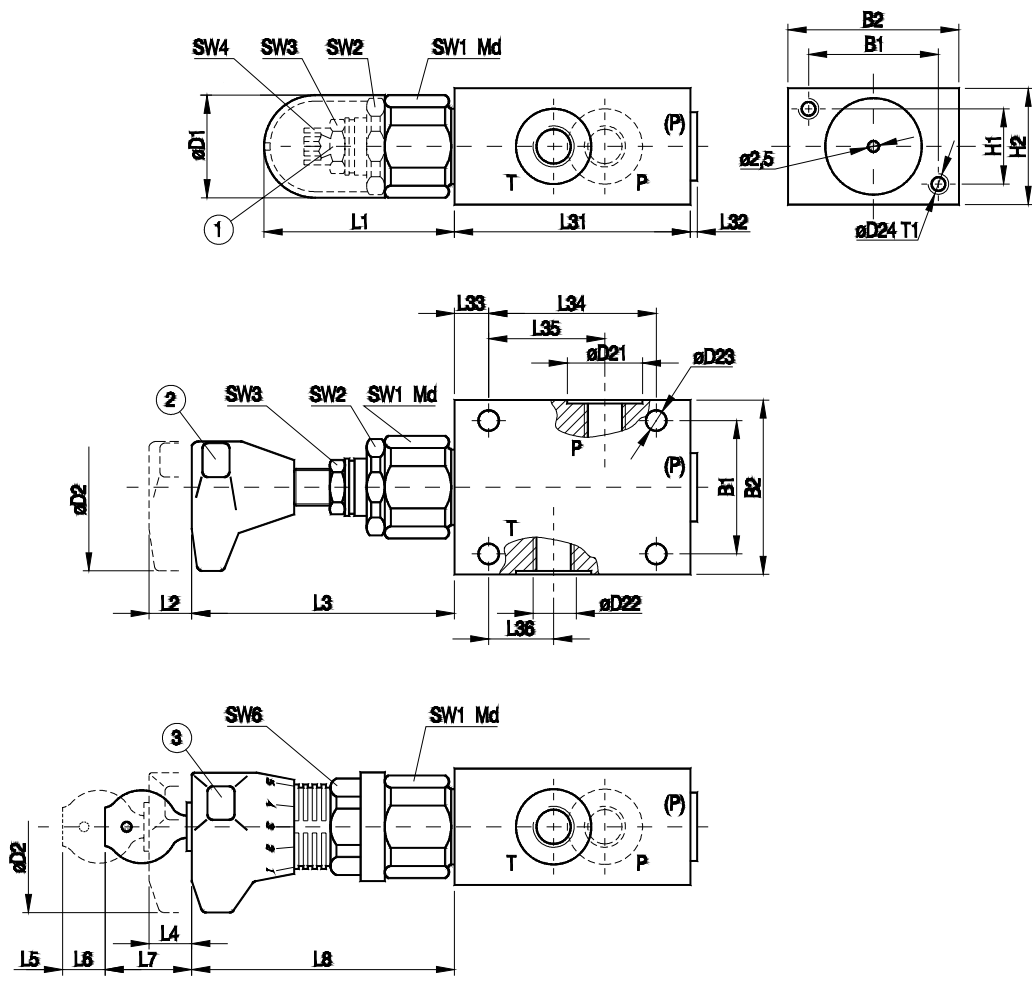
Cartridge version



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

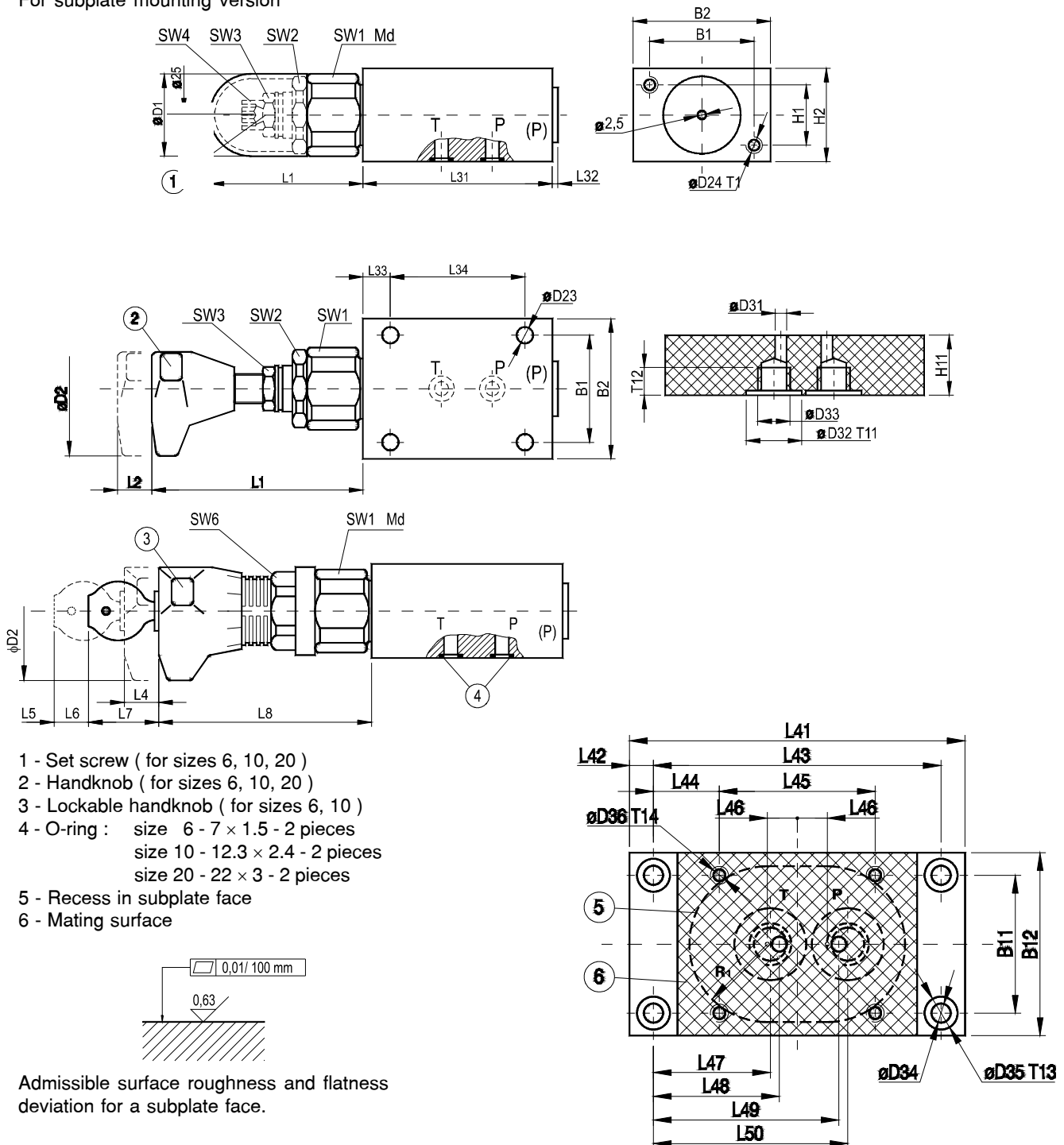


- 1 - Set screw ( for sizes 6, 10, 20 )
- 2 - Handknob ( for sizes 6, 10, 20 )
- 3 - Lockable handknob ( for sizes 6, 10 )

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

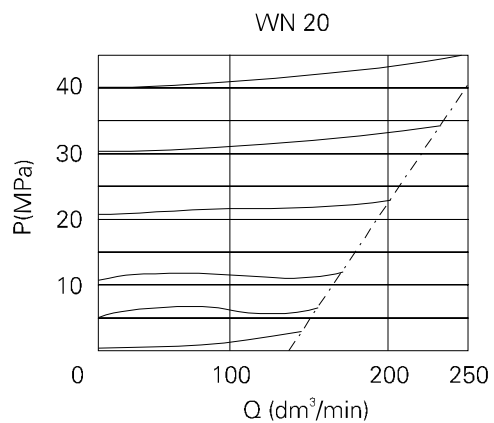
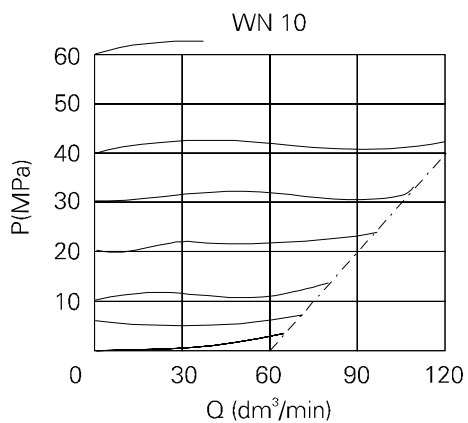
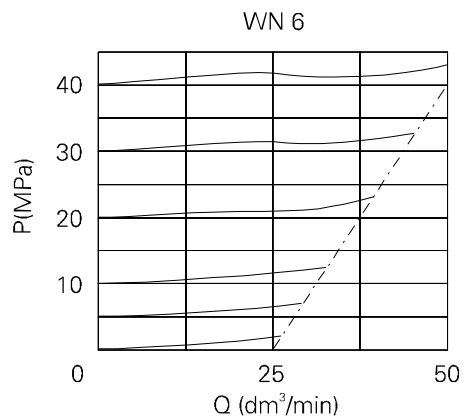
L42	L43	L44	L45	L46	L47	L48	L49	L50	T11	T12	T13	T14	R1
8	94	22	55	10	39	42	62	65	1	15	9	15	25
10	115	27.5	70	12.5	40.5	48.5	72.5	80.5	1	16	9	15	30
15	140	20	100	20	42	54	85	97	1	20	13	22	40

	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	

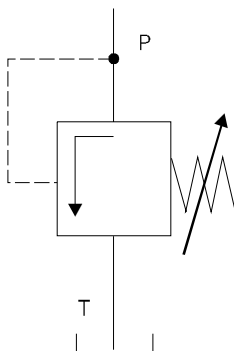
Note : Subplate and mounting bolts must be ordered separately.

**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

Orders coded in the way showed below should be forwarded to the manufacturer.

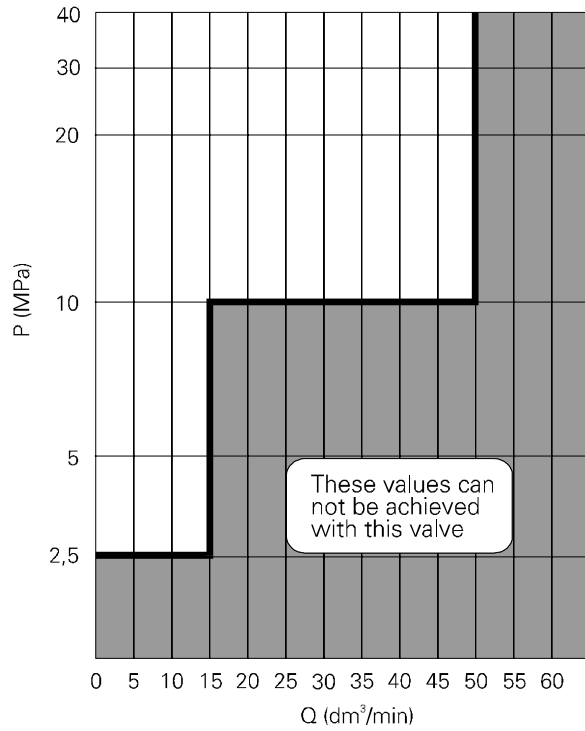
<b>DBD</b>				/		*
<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p><b>Adjustment method</b></p> <p>Set screw = S</p> <p>Handknob = H</p> <p>Lockable hand knob = A ( for sizes 6 and 10 only )</p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p><b>Nominal size</b></p> <p>Size 6 = 6</p> <p>Size 10 = 10</p> <p>Size 20 = 20</p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p><b>Mounting method</b></p> <p>Cartridge version = K</p> <p>For threaded connection = G</p> <p>For subplate mounting = P</p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p><b>Series number</b></p> <p>13 = 13</p> <p>( 10 - 19 ) - installation and connection dimensions remain unchanged</p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p><b>Operating pressure range</b></p> <p>up to 2.5 MPa = 25</p> <p>up to 5 MPa = 50</p> <p>up to 10 MPa = 100</p> <p>up to 20 MPa = 200</p> <p>up to 31.5 MPa = 315</p> <p>up to 40 MPa = 400</p> <p>up to 63 MPa = 630 ( for size 10 only )</p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p><b>Sealing</b></p> <p>Fluids on mineral oil base = with no code</p> <p>Fluids on phosphate-ester base = V</p> </div> <div style="border: 1px solid black; padding: 5px;"> <p>Further requirements in clear text ( to be agreed with the manufacturer )</p> </div>						

Coding example : DBD S 6 K 13/400

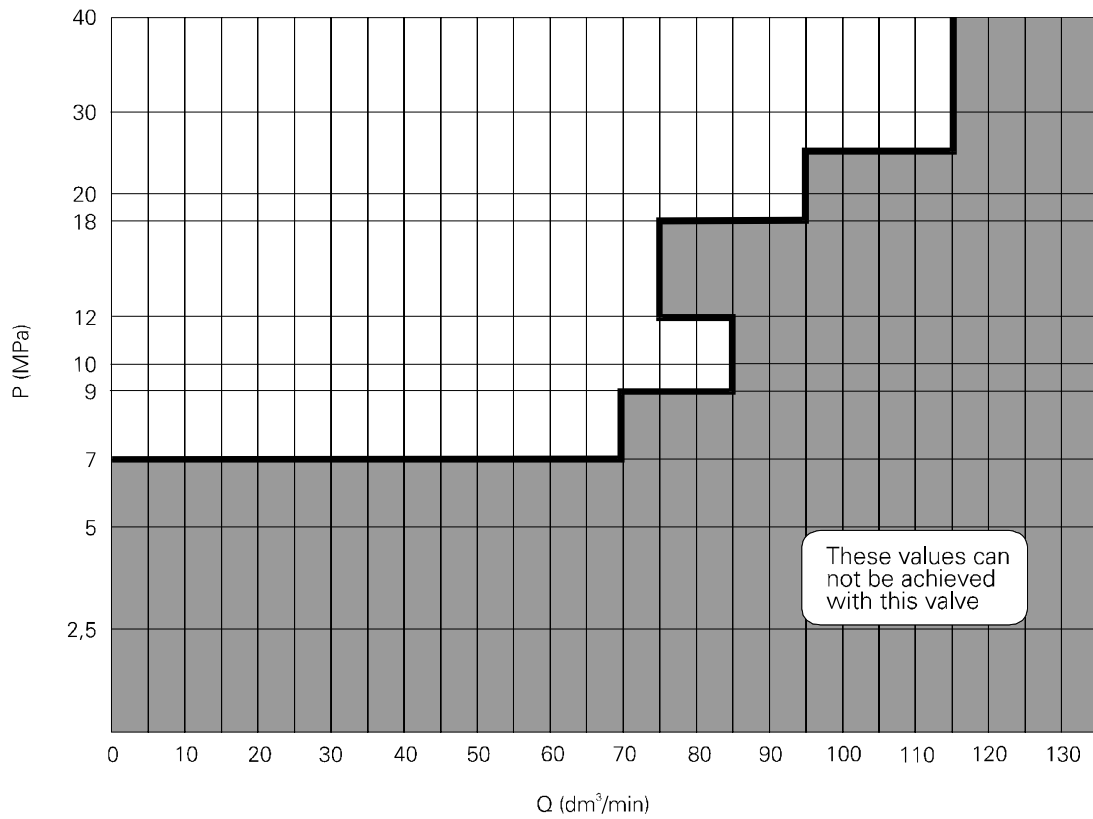
**Version DBD... used as a safety valve DBD6.../C and DBD10.../C with CE approval as per Pressure Directive 97/23/WE**

**Flow curves**

Size 6



Size 10



## HOW TO ORDER

Orders coded in the way showed below should be forwarded to the manufacturer.



### Nominal size

Nominal size 6	= 6
Nominal size 10	= 10

Set pressure

### Mounting method

Cartridge version	= K
For threaded connection	= G
For subplate mounting	= P

### Series number

13	= 13
( 10 - 19 ) - installation and connection dimensions remain unchanged	

### Caution !

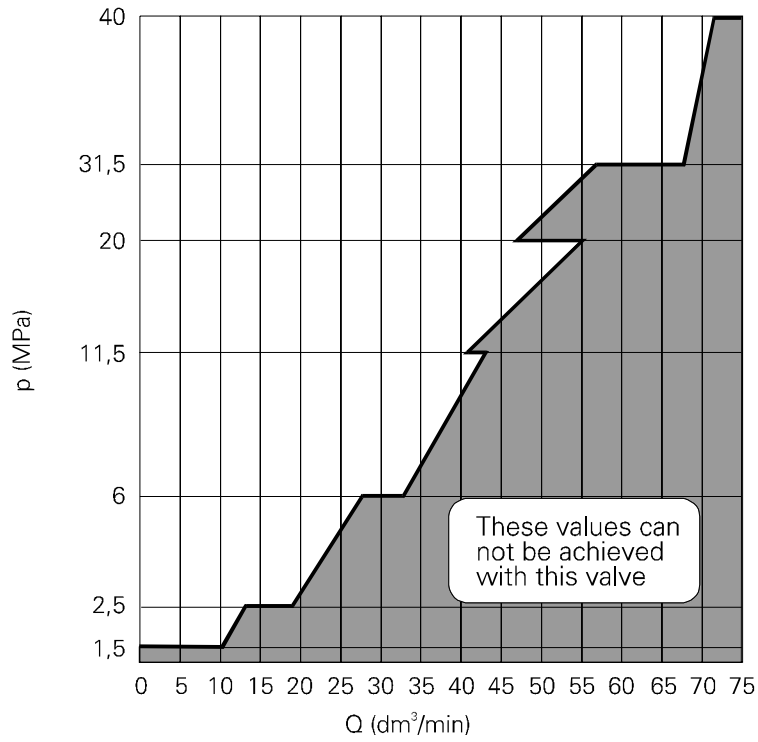
The valve made as the safety valve DBDS.../C is proper for working fluid mineral oil type HLP40+HLP60 ( 50% of each ) that is for fluid from group 2 as per art. 9 point 2.2 of Directive 07/23/WE.

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

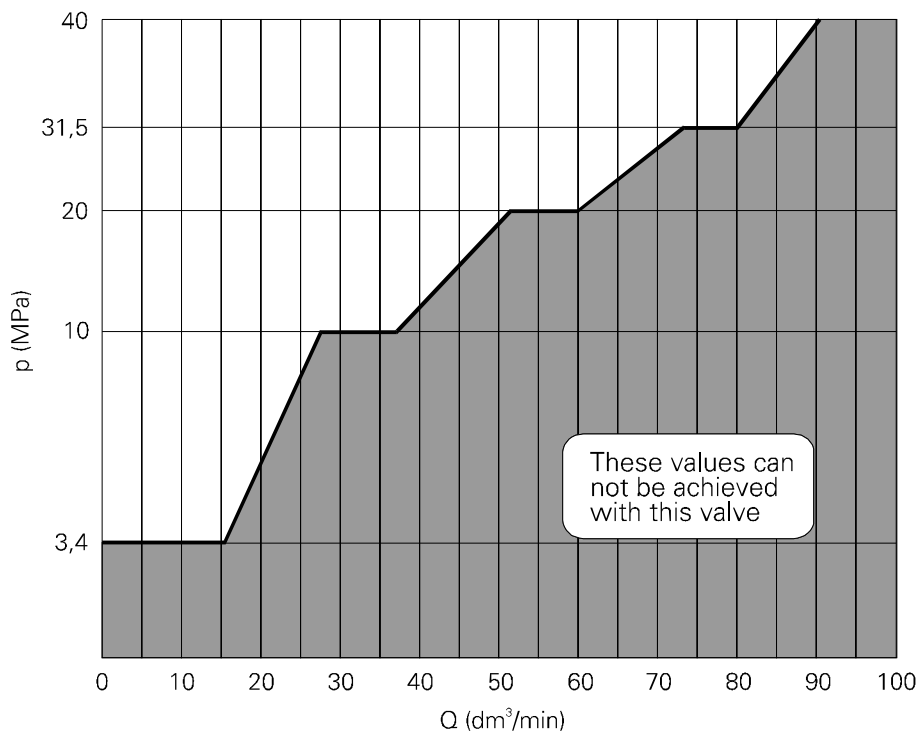
# Version DBD... as a safety valve DBD6.../JV and DBD10.../JV meeting requirements UDT

## Flow curves

Size 6

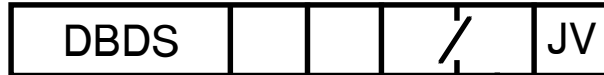


Size 10



## HOW TO ORDER

Orders coded in the way showed below should be forwarded to the manufacturer.



<b>Nominal size</b>	
Nominal size 6	= 6
Nominal size 10	= 10

Set pressure
--------------

<b>Mounting method</b>	
Cartridge version	= K
For threaded connection	= G
For subplate mounting	= P

<b>Series number</b>	
13	= 13
( 10 - 19 ) - installation and connection dimensions remain unchanged	

### Valve designation according to UDT

Nominal size 10      UDT.02.97.6.C    
 Nominal size 6      UDT.02.97.5.C

- Pressure set [ bar ]  
 Flow rate [ dm<sup>3</sup>/min ]

Nominal size 6			Nominal size 10		
Pressure range { bar }	Pressure ( P ) { bar }	Flow ( W ) { dm <sup>3</sup> / min }	Pressure range { bar }	Pressure ( P ) { bar }	Flow ( W ) { dm <sup>3</sup> / min }
5 ÷ 25	15	10,6	34 ÷ 55	34	16,5
	20	12,15		40	17,78
	25	13,7		50	19,92
25 ÷ 60	25	18,6	55 ÷ 100	55	21
	30	20		70	23,43
	40	22,96		90	26,68
	50	25,87		100	28,3
	60	28,8			
60 ÷ 115	60	31,8	100 ÷ 200	100	36,7
	80	36,28		130	41,29
	100	40,76		160	45,88
	115	44,1		200	52
115 ÷ 200	115	42	200 ÷ 315	200	60
	140	45,95		240	65,28
	160	49,11		280	70,56
	180	52,27		300	73,12
	200	55,4		315	75,2
200 ÷ 315	200	47,1	315 ÷ 400	315	80,3
	240	51,26		330	82,08
	280	55,42		360	85,65
	315	59,1		380	88,04
315 ÷ 400	315	66		400	90,4
	340	68,47			
	380	72,43			
	400	74,4			

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