



DBD... type Direct Operated Relief Valve



DBD...10J...type

Sizes 6, 8, 10, 15, 20, 25, 30
Max. Working Pressure: 630 bar
Max. Flow: 330 L/min

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Features

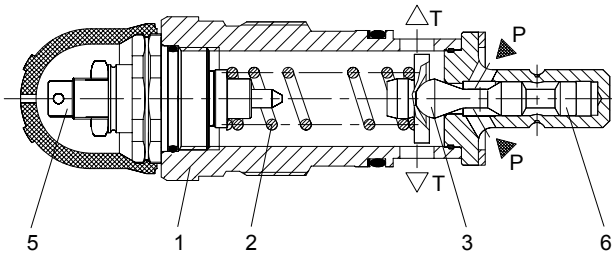
- 3 connected versions
- Inserted cartridge
- Threaded connection
- Sub-plate mounting
- 7 pressure ratings
- 25, 50, 100, 200, 315, 400 and 630 bar
- 3 adjustment versions
- Adjusting bolt with protective cap
- Regulating handle
- Lockable regulating handle

Function and configuration

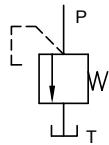
DBD type pressure relief valve is direct operated, it used for limiting a system pressure. The valve comprises the sleeve (1), spring (2), poppet spool with damping (3) (pressure stages 25 to 400 bar) or ball spool (4) (pressure stage 630 bar) and pressure adjustment element (5). The system pressure may be set infinitely by the adjustment element. The spring (2) presses poppet spool (3) onto the valve seat. The channel P is connected to the system and the system pressure affect on the area of poppet (or ball) spool.

If the pressure in channel P exceeds the value set at the spring (2), the poppet spool (3) or ball spool (4) will opens against the spring (2), the oil flows from channel P to channel T. The stroke of the spool is limited by embossing (6). To gain accurate setting value within the whole pressure range, the pressure scope is divided into 7 pressure ratings, and every rating has a corresponding spring which may be set maximum pressure.

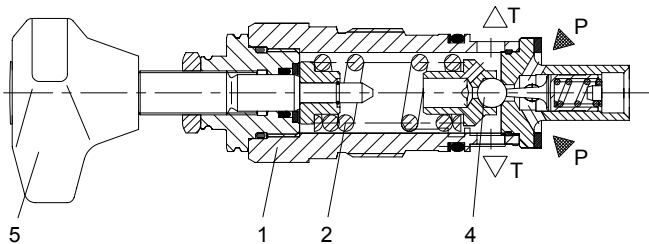
Type DBDS...K. 10J/...
pressure stages 25 to 400bar



Symbol



Type DBDH10K. 10J/...
pressure rating 630bar (ball valve, only size 10)



Specification

	DBD				10J ✓ /		★		
Direct operated relief valve									Further details in clear text
Adjusting bolt with protective cap =S									No code = NBR seals
Regulating handle =H									V = FKM seals
Lockable regulating handle (up to size 10) =A									For threaded connection valve
									No code= Inch
									2= Metric

Connection	G	K	P
Nominal size	6=	6	6
	8=	8	-
	10=	10	10
	15=	15	-
	20=	20	20
	25=	25	-
	30=	30	30

Size	10	6,8,15 and 20	25 and 30
Pressure ratings (up to...)	25 = 25bar	25 = 25bar	25 = 25bar
	50 = 50bar	50 = 50bar	50 = 50bar
	100 = 100bar	100 = 100bar	100 = 100bar
	200 = 200bar	200 = 200bar	200 = 200bar
	315 = 315bar	315 = 315bar	315 = 315bar
	400 = 400bar	400 = 400bar	400 = 400bar
	630 = 630bar		

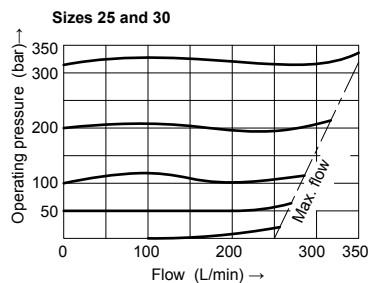
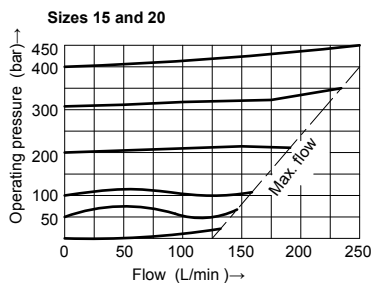
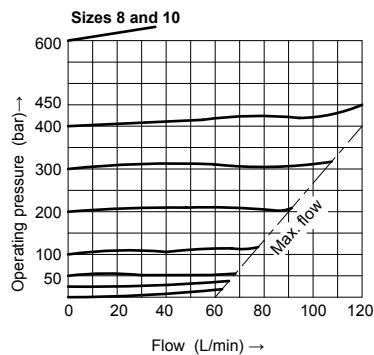
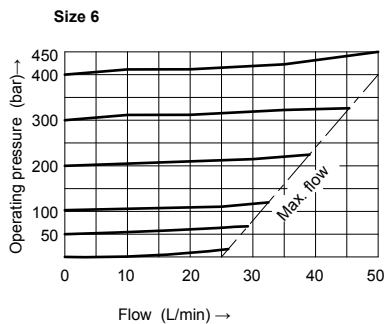
Connection version	
Inserted cartridge	=K
Threaded connection	=G
Sub-plate mounting	=P

10J=
10J series

Technical data

Fluid		Mineral oil suitable for NBR and FKM seal			
		Phosphate ester for FKM seal			
Fluid temperature range	°C	-30 to +80 (NBR seal)			
		-20 to +80 (FKM seal)			
Viscosity range	mm ² /s	10 to 800			
Degree of contamination		Maximum permissible degree of fluid contamination: Class 9. NAS 1638 or 20/18/15, ISO4406			
Nominal size		6 and 8	10	15 and 20	25 and 30
Operating pressure range	Inlet bar	Up to 400	up to 630	up to 400	up to 315
	Outlet bar	315			
Max. flow-rate		L/min See the Characteristic curve			

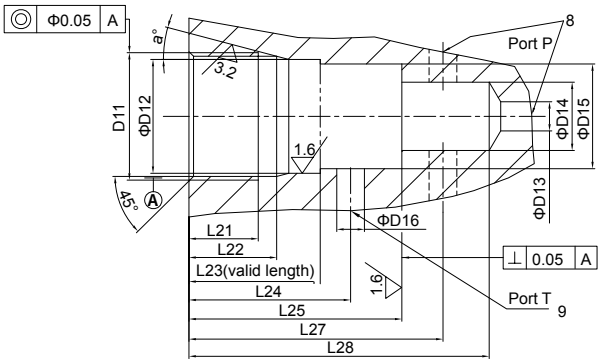
Performance curves (Measured at $t=40^{\circ}\text{C} \pm 5^{\circ}\text{C}$, using HLP46)



Unit dimensions

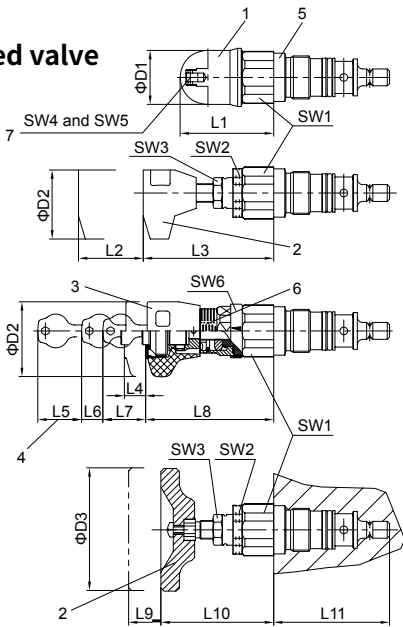
(Dimensions in mm)

• Cartridge cavity



- 1 Adjustment element "S"
- 2 Adjustment element "H"
(use pressure
adjustment handwheel for
sizes 25 and 30)
- 3 Adjustment element "A"
- 4 Space required to remove the key
- 5 Steel seal (type, size)
- 6 Ring with mark
(after setting the pressure,
aim the arrow at the zero
position and then lock up the nut)
- 7 Internal hexagon screw S=6 for
under size 20(SW4) and external
hexagon S=13 for above size 25 (Sw5)
- 8 Port P arranged optionally around
periphery or bottom
- 9 Port T arranged optionally
around periphery

• Inserted valve

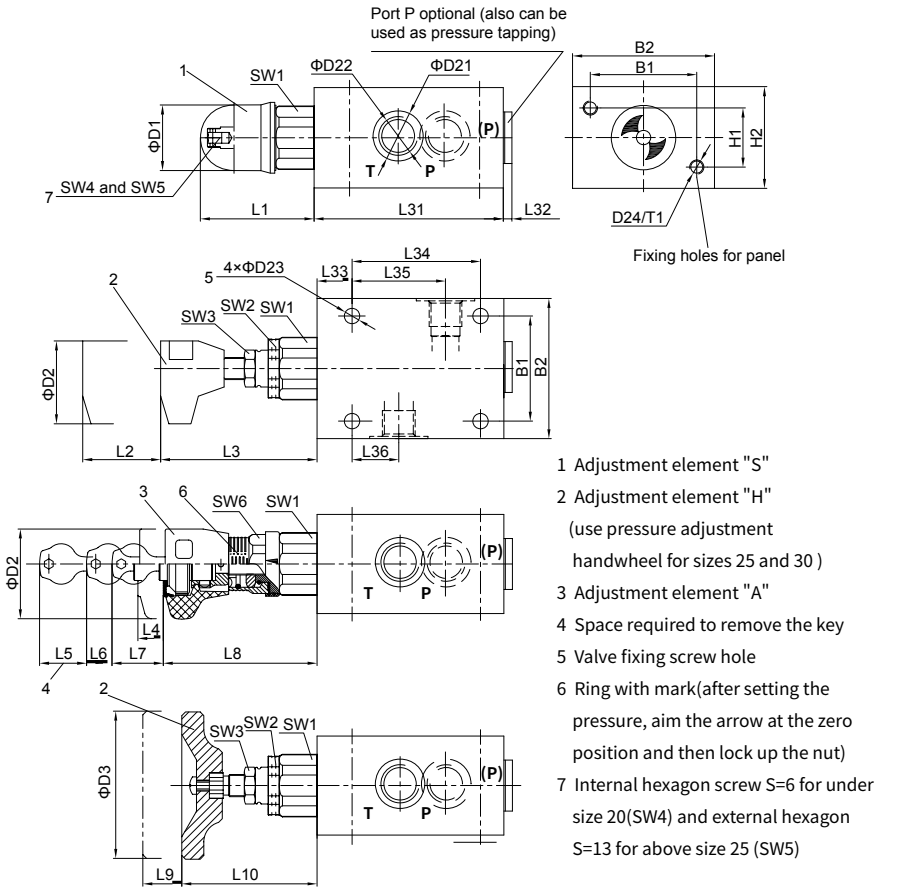


Size	Weight(kg)	D1	D2	D3	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	SW1	Torque(Nm)	SW2	SW3	SW4	SW5	SW6	
6	Approx.0.4	34			72		88					83	-	-	64	32	80	30	19	6	-	-	30
10	Approx.0.5	38	60	-	68	11	79					79			75	36	150	30					
20	Approx.1	48			65		77					77			106	46	250	36					
30	Approx.2.3	63	-	80	83	-	-	-	-	-	-	-	11	56	131	60	450	46					
Size	D11				D12	D13	D14	D15		D16	L21	L22	L23	L24	L25	L27				L28			α
6	M28×1.5				25H9		6	15	24.9		6	15	19	39	35	45	56.5±5.5				65		15
10	M35×1.5				32H9		10	18.5	31.9		10	18	23	35	41	52	67.5±7.5				80		
20	M45×1.5				40H9		20	24	39.9		20	21	27		54	70	91.5±8.5				110		20
30	M60×2				55H9		30	38.75	54.9		30	23	29	45	60	84	113.5±11.5				140		

Unit dimensions

(Dimensions in mm)

• Threaded connection valve



Size	Weight(kg)	B1	B2	D1	D2	D3	D21	D22						D23	D24	L1	L2	L3	L4			
6	Approx.1.6	45	60	34			25	G1/4; M14×1.5						6.6	M6	72		83	11			
(8)+10	Approx.3.7	60	80	38	60	-	(28)34	G3/8 M18×1.5; G1/2 M22×1.5						9	M8	68	11	79				
(15)+20	Approx.6.9	70	100	48			(42)47	G3/4 M27×2; G1 M33×2								65		77		-		
(25)+30	Approx.15.2	100	130	63	-	80	(56)61	G1 1/4 M42×2; G1 1/2 48×2						11	M10	83	-	-				
Size	L5	L6	L7	L8	L9	L10	L31	L32	L33	L34	L35	L36	SW1	SW2	SW3	SW4	SW5	SW6	H1	H2	T1	
6	20	11	30	83			80	2	15	55	40	20	32	30		19	6	-	30	25	40	10
(8)+10				79	-	-	100	(2)3		70	49	21	36							40	60	
(15)+20	-	-	-				135	(3)4	20	100	65	34	46	36						50	70	20
(25)+30				-	11	56	180	4	25	130	85	35	60	46	60					90	25	

(Dimensions in mm)

The technical drawings illustrate various valve connection types and their mounting requirements:

- 1. SW4 and SW5:** A side view showing a valve with a pressure tapping point. Dimensions include $\phi D1$, $L1$, $L31$, $L33$, T , P , and (P) . A top view shows dimensions $B2$ and $H2$.
- 2. SW3, SW2, SW1:** A side view showing a valve with multiple connections. Dimensions include $\phi D2$, $L2$, $L3$, $L33$, $L34$, $L51$, $L52$, $B1$, and $B2$.
- 3. SW6, SW1:** A side view showing a valve with a pressure tapping point. Dimensions include $\phi D2$, $L5$, $L6$, $L7$, $L8$, T , P , and (P) .
- 4. SW2, SW3, SW1:** A side view showing a valve with multiple connections. Dimensions include $\phi D3$, $L9$, $L10$, T , P , and (P) .
- Retquirement for mounting surface:** A detail showing a mounting surface with a flatness tolerance of $0.01/100$ and a chamfer of 0.8 .
- Valve connecting surface and Panel cut-out:** A detailed view of the valve connection area. Dimensions include $\phi D31$, $\phi D32/T11$, $\phi D33/T12$, $H3$, $L41$, $L42$, $L43$, $L44$, $L45$, $L46$, $L47$, $L48$, $L49$, $L50$, $B1$, $B2$, $R1$, $\phi D34$, $\phi D35/T13$, and $\phi D36/T14$.

- | | |
|---|---|
| 1 Adjustment element "S" | 3 Adjustment element "A" |
| 2 Adjustment element "H"(Sizes 25 and 30 use pressure adjustment handwheel) | 4 Space required to remove the key |
| | 5 Valve fixing screw hole |
| | 6 Ring with mark(after setting the pressure, aim the arrow at the zero position and then lock up the nut) |
| | 7 Internal hexagon screw S=6 for under size 20(SW4) and external hexagon S=13 for above size 25 (SW5) |

Size	O-ring (P and T)	Dimension of pressure tapping	Valve fixing hole (GB/T70.1-10.9)	Torque(Nm)
6	8.75×1.8	G1/4	M6×50	Approx.10
10	12.3×2.4	G1/2	M8×70	Approx.25
20	22×3	M27×2	M8×90	
30	34×3	M42×2	M10×110	Approx.50

Size	Weight(kg)	B1	B2	D1	D2	D3	D23	H2	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L31	L32	L33	L34	
6	Approx. 1.6	45	60	34	60	-	6.6	40	72	11	83	11	20	11	30	83	-	-	80	2	15	55	
10	Approx. 3.7	60	80	38			9	60	68		79					79			-	100	3	20	70
20	Approx. 7.1	70	100	48			70	65	77		-					135			4	100			
30	Approx. 15.7	100	130	63	-	80	11	90	83	-	-	-	-	-	-	-	11	56	180	4	25	130	
SW1	SW2	SW3	SW4	SW5	SW6	Size	Sub-plate type		Weight(kg)		D31	D32	D33			D34	D35	H3	L41				
32	30	19	6	-	30	6	G300/1		Approx. 1.5		6	25	G1/8			7	11	25	110				
36						10	G301/1		Approx. 2		10	(28)34	(G3/4) G	11.5	17.5	40	135						
46						20	G303/1		Approx. 5.5		(15)20	(42)47	(G3/4) G1				170						
60						46	30	G305/1		Approx.8		30	(56)61				(G1 1/4) G11/2	190					
D36	L42	L43	L44	L45	L46	L47	L48	L49	L50	L51	L52	T11	T12	T13	T14	R1							
M6	8	94	22	55	10	39	42	62	65	20	40	1	15	9	15	25+2							
M8	10	115	27.5	70	12.5	40.5	48.5	72.5	80.5	21	45		(15)16										
	15	140	20	100	20	(45)42	54	85	(94)97	34	65		20				13	(12)22	40+3				
M10	12.5	165	17.5	130	22.5	42	52.5	102.5	(113)117	35	85	24	11.5	22	55+4								