



# 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

### Contents

Function and configuration	02
Specification	03
Technical data	03
Characteristic curves	04
Unit dimensions	05-07

### 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

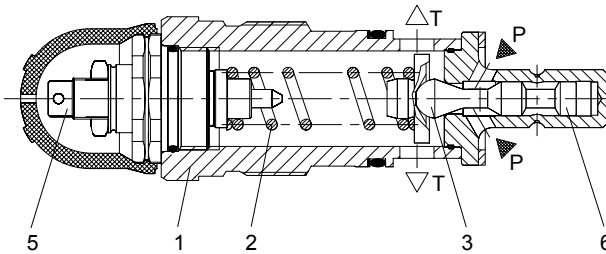
## Function and configuration

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.

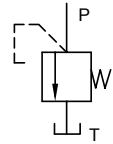
If the pressure in channel P exceeds the value set at the spring (2), the poppet spool (3) or ball spool (4) will opens against the spring (2), the oil flows from channel P to channel T. The stroke of the spool is limited by embossing (6). To gain accurate setting value within the whole pressure range, 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

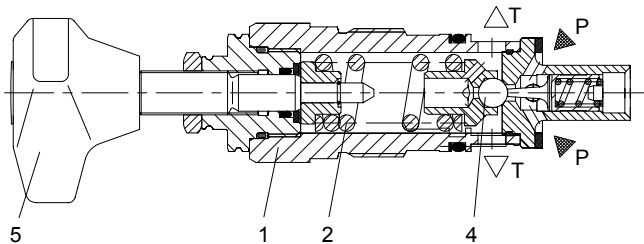


### Symbol



### Type DBDH10K. 10J/...

pressure rating 630bar (ball valve, only size 10)



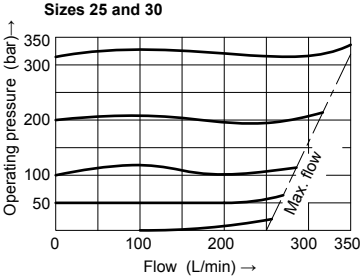
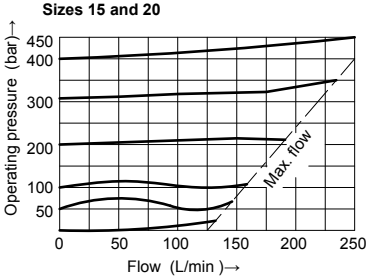
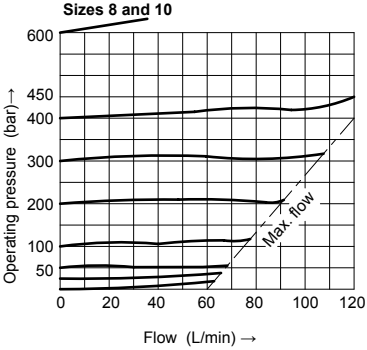
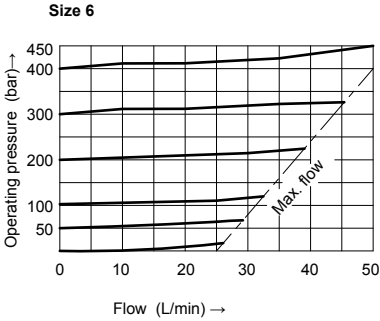
## Specification

DBD					10	/		*	
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	6					
	8=	8	-	-					
	10=	10	10	10					
	15=	15	-	-					
	20=	20	20	20					
	25=	25	-	-					
30=	30	30	30						
Connection version								=K	
Inserted cartridge								=G	
Threaded connection								=P	
Sub-plate mounting									
								10J=	
								10J series	
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	630 =	630bar	630 =	630bar			

## 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 <sup>2</sup> /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			

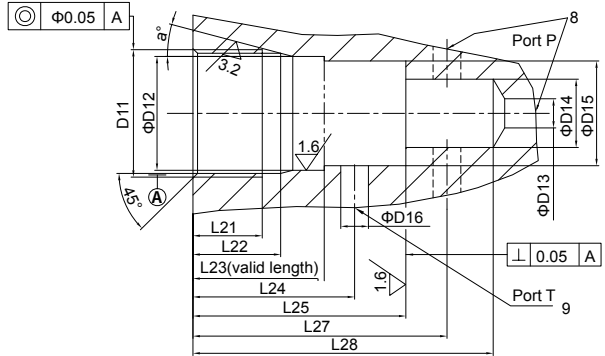
**Performance curves** (Measured at  $t=40^{\circ}\text{C} \pm 5^{\circ}\text{C}$ , using HLP46)



# Unit dimensions

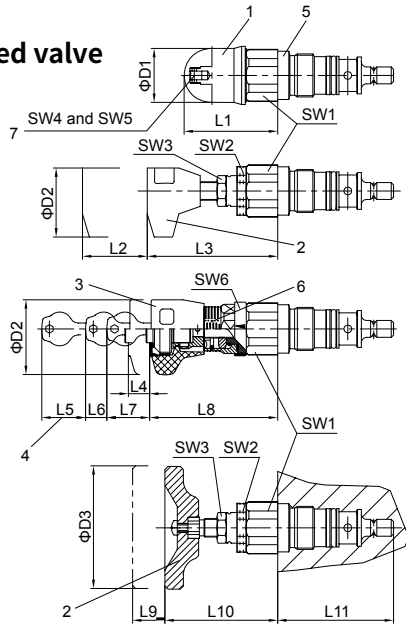
(Dimensions in mm)

## • 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

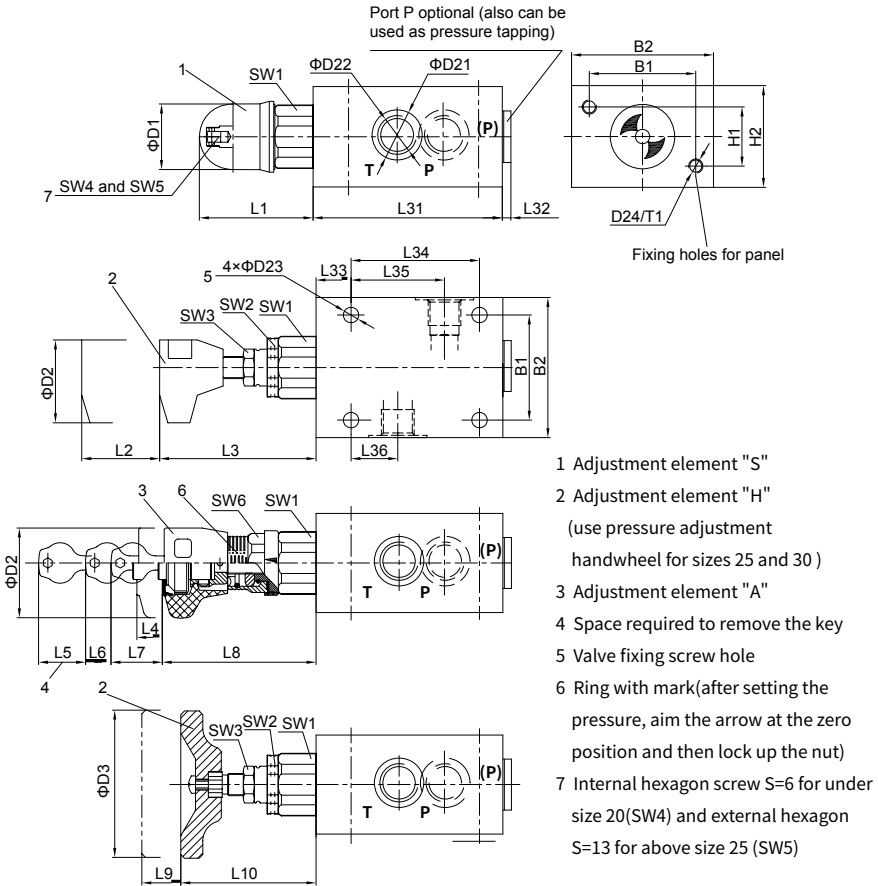


Size	Weight(kg)	D1	D2	D3	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	SW1	Torque(Nm)	SW2	SW3	SW4	SW5	SW6			
6	Approx.0.4	34	60	-	72	11	88	11	20	11	30	83	-	-	64	32	80	19	6	-	-	30			
10	Approx.0.5	38			68		79					77					79						75	150	30
20	Approx.1	48			65		77					106					46						250	36	
30	Approx.2.3	63			80		83					-					-						-	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	45	54	70	91.5±8.5					110	20						
30	M60×2		55H9	30	38.75	54.9	30	23	29		60	84	113.5±11.5					140							

# Unit dimensions

(Dimensions in mm)

## • Threaded connection valve

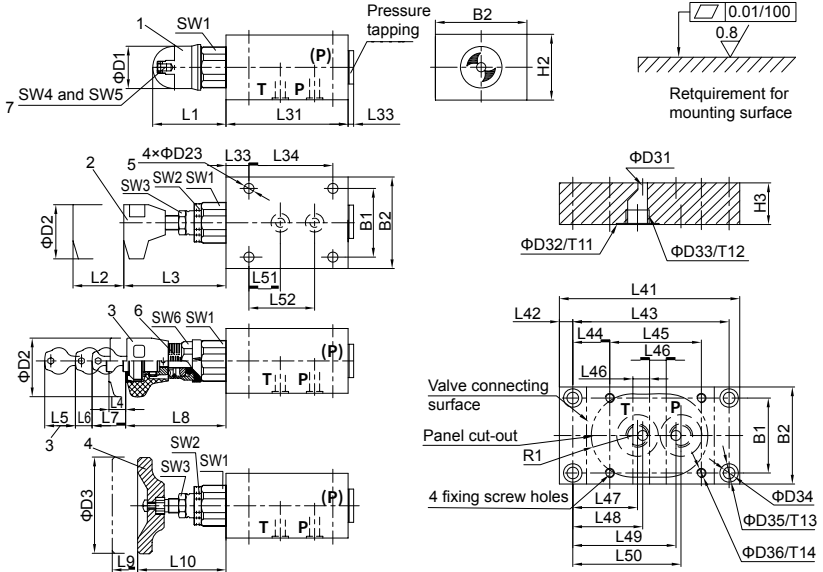


Size	Weight(kg)	B1	B2	D1	D2	D3	D21	D22				D23	D24	L1	L2	L3	L4					
6	Approx.1.6	45	60	34			25	G1/4; M14×1.5				6.6	M6	72		83						
(8)+10	Approx.3.7	60	80	38	60	-	(28)34	G3/8 M18×1.5; G1/2 M22×1.5				9	M8	68	11	79						
(15)+20	Approx.6.9	70	100	48			(42)47	G3/4 M27×2; G1 M33×2						65		77						
(25)+30	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							25	40	10
(8)+10				79			100	(2)3		70	49	21	36	30		6	-	30		40	60	
(15)+20							135	(3)4		100	65	34	46	36	19					50	70	20
(25)+30					11	56	180	4	25	130	85	35	60	46		-	13	-		60	90	25

# Unit dimensions

(Dimensions in mm)

## • Sub-plate mounting valve



- 1 Adjustment element "S"
- 2 Adjustment element "H" (Sizes 25 and 30 use pressure adjustment handwheel)

- 3 Adjustment element "A"
- 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			6.6	40	72		83					83			80	2	15	55			
10	Approx. 3.7	60	80	38	60	-		60	68	11	79					79	-	-	100	3		70			
20	Approx. 7.1	70	100	48			9	70	65		77								135	4	20	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									
36	30	19	6	-	30	6	G300/1	Approx. 1.5	6	25	G1/4					7	11	25	110						
32						10	(G301/1)G302/1	Approx. 2	10	(28)34	(G3/8) G										135				
46	36					20	(G303/1)G304/1	Approx. 5.5	(15)20	(42)47	(G3/4) G1											170			
60	46					-	13	-	30	(G305/1)G306/1	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				15										
M8	10	115	27.5	70	12.5	40.5	48.5	72.5	80.5	21	45	1	(15)16	9	15	25+2									
	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							