

Direct Operated Relief Valve

Model: DBD...1XJ



- ◆ Size 6 to 30
- ◆ Maximum working pressure 630 bar
- ◆ Maximum working flow 330 L/min

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Features

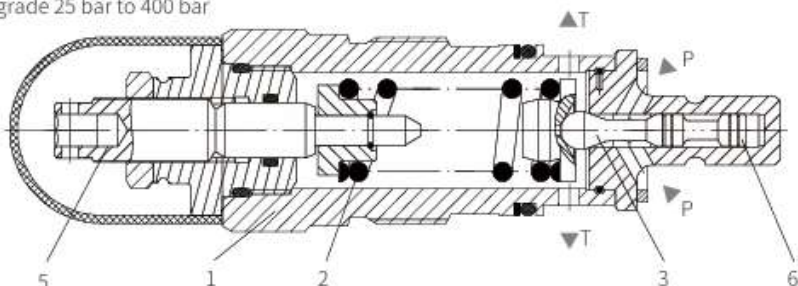
- Inserted cartridge
- Threaded connection
- Subplate mounting
- 3 pressure adjustment elements
 - Inner hexagon adjusting screw with protective cap
 - Adjusting handle
 - Adjusting handle with lock

Function description, sectional drawing

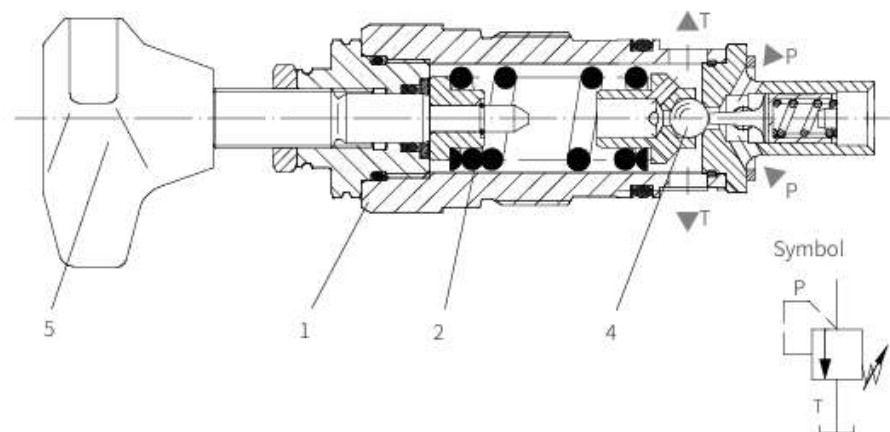
The DBD pressure relief valve is direct operated, it is used to limit the pressure of hydraulic system.

The valve is composed of valve sleeve (1), spring (2), poppet spool (3) with damping (pressure grade 25 to 400 bar) or ball spool (4) (pressure grade 630bar) and pressure adjustment element (5). The system pressure can be set infinitely by the adjustment element (5). The spring (2) pushes the poppet spool (3) onto the valve seat. The channel P is connected to the system and system pressure affect on the area of poppet (or ball) spool.

Model DBDS...K...1XJ/...
Pressure grade 25 bar to 400 bar



Model DBDH...K...1XJ/...
Pressure grade 630 bar (poppet valve, only for size 10)



If the pressure in channel P rises in excess of 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 poppet spool (3) is limited by a pin(6).

In order to gain the accurate setting value within the whole pressure range, the pressure scope is divided into 7 pressure ratings, and every pressure rating has a corresponding spring which may be set maximum pressure.

Models and specifications

DBD 1X J

direct operated relief valve

	Size							
adjustment elements	6	8	10	15	20	25	30	
inner hexagon adjusting screw with protective cap	●	●	●	●	●	●	●	= S
Adjusting handle	●	●	●	●	●	●	●	= H
Adjusting handle with lock	●	●	●	●	●	—	—	= A
size (connection)	=6 G1/4	=8 G3/8	=10 G1/2	=15 G3/4	=20 G1	=25 G1 1/4	=30 G1 1/2	= 10
connection type								
inserted cartridge	●	—	●	—	●	—	●	= K
threaded connection	●	●	●	●	●	●	●	= G
subplate mounting	●	—	●	—	●	—	●	= P

10 to 19 series
(10 to 19 series installation and connection size unchanged)

= 1X

Rekith

= J

pressure grade
setting pressure up to 25 bar
setting pressure up to 50 bar
setting pressure up to 100 bar
setting pressure up to 200 bar
setting pressure up to 315 bar
setting pressure up to 400 bar
setting pressure up to 630 bar

●	●	●	●	●	●	●	●	= 25
●	●	●	●	●	●	●	●	= 50
●	●	●	●	●	●	●	●	= 100
●	●	●	●	●	●	●	●	= 200
●	●	●	●	●	●	●	●	= 315
●	●	●	●	●	●	—	—	= 400
—	—	●	—	—	—	—	—	= 630

G thread
metric thread (only for G type)

= no code

= 2

sealing material
NBR seals
FKM seals
(consult for other seals)

= no code

= V

more information in text

● = available

Technical parameters

Overview						
Size		6 and 8	10	15 and 20	25 and 30	
Installation position		Optional				
Environment temperature range		°C	-30 to +80 (NBR seal) -20 to +80 (FKM seal)			
Minimum strength of valve body material		The selection of valve body material has been included in the safety factor in all condition (e.g. referenced pressure strength, thread strength and tightening torques.)				
Hydraulic						
Maximum working pressure		-inlet port bar	400	630	400	315
		-outlet port bar	315	315	315	315
Maximum flow rate (standard valve)		See characteristic curve				
Oil fluid		Mineral oil (HL, HLP) ²⁾ in accordance with DIN 51524; Fast living organisms degraded oil according to VDMA 24568; HETG (Rapeseed oil) ²⁾ HEPG(Polyethylene glycol) ²⁾ HEES (synthetic ester) ²⁾				
Oil temperature range		°C	-30 to +80 (NBR seal) -20 to +80 (FRM seal)			
Viscosity range		mm ² /s	10 to 800			
Cleanliness of oil		The maximum allowable pollution level of oil is ISO4406 Class 20/18/15 ³⁾				

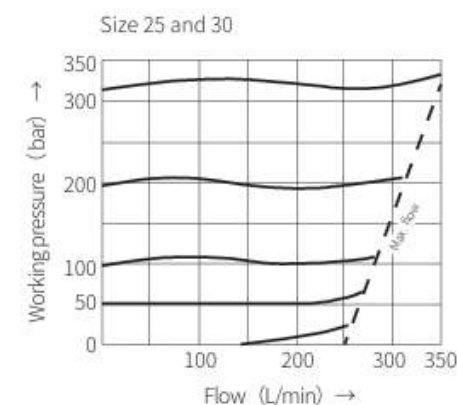
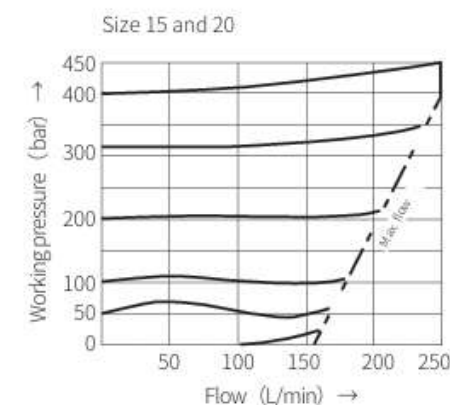
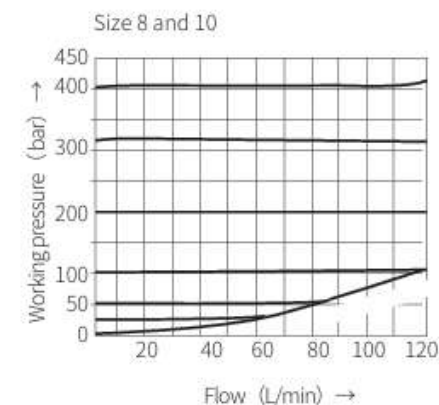
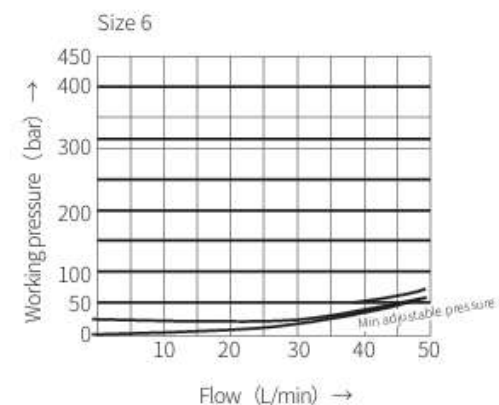
¹⁾ For NBR seal and FKM seal

²⁾ Only for FKM seal

³⁾ The oil must meet the cleanliness degree requested by the components in the hydraulic system. Effect oil filtration can prevent failure and increase the service life of the components.

Characteristic curve

(Measured when using HLP46, $\vartheta_{oil} = 40^\circ\text{C} \pm 5^\circ\text{C}$)



Note:

- This characteristic curve is valid for outlet pressure = 0 over the entire flow range, but no related to the pressure drop in the housing when measuring.
- The characteristic curve is valid only under the environment and temperature conditions. It is necessary to consider that the characteristic curve is affected by changes in boundary conditions.

- This characteristic curve is associated with the given pressure grade (e.g. 200 bar). The more the setting pressure value differs from the nominal pressure rating (e.g. < 200 bar), the pressure increases with the relief flow increases.