



DBK...type Cartridge Pilot Relief Valve

DB20K...1XJ...type

Size 20

Max. Working Pressure: 315 bar

Max. Flow: 300 L/min



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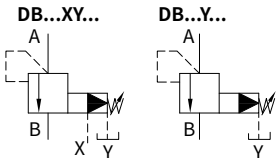
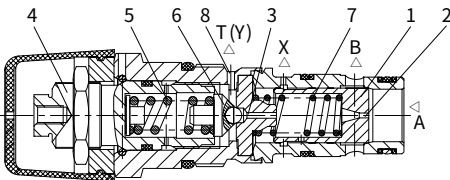
Features

- Cartridge valve
- 4 pressure ratings
- 4 adjustment elements:
 - Rotary knob
 - Adjustable bolt with protective cap
 - Lockable rotary knob with scale
 - Rotary knob with scale

Function and configuration

DB...K...type pressure valve is pilot operated pressure relief valves for installation in manifolds. It is used to limit the pressure in a hydraulic system. The system pressure is set via adjustment element (4). At static position, the valves are closed. Pressure in port A acts on the spool (1). Pressure fluid is passed through orifice (2) to the spring loaded side of the spool (1) and through orifice (3) to the pilot poppet (6). If the pressure in port A rises beyond the value setting at spring (5), then the pilot poppet (6) opens. Fluid can flow from the spring loaded side of spool (1), through the orifice (3)and channel (8) into port T(Y). The pressure drop moves spool (1) to open the connection from A to B, while the setting pressure at spring (5) is maintained. Pilot oil returns from the two spring chambers via port T(Y) externally.

DB20K2-1XJ/...XY



Symbols

Specification

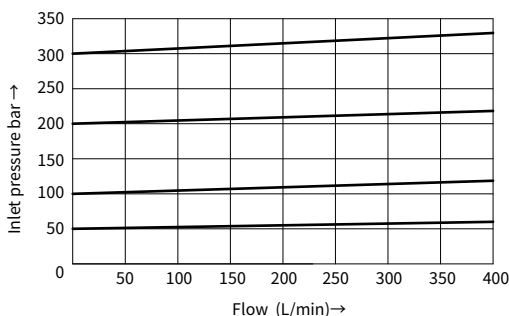
DB		20	K		- 1XJ /					*
Pressure relief valve =DB										Further details in clear text
Nominal size 20		=20								No code = NBR seals
										V = FKM seals
Cartridge			=K							Y = Pilot oil supply internal
Rotary knob				=1						and drain external
Adjustable bolt with protective cap				=2						XY = Pilot oil supply
Lockable rotary knob with scale				=3						and drain external
Rotary knob with scale				=7						
Series 10J to 19J				=1XJ						50 = Pressure adjustable up to 50bar
(10J to 19J : unchanged installation and connection dimensions)										100 = Pressure adjustable up to 100bar
										200 = Pressure adjustable up to 200bar
										315 = Pressure adjustable up to 315bar

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
Max.operating pressure		bar	315
Max. back pressure	Port Y	bar	250
Max.adjustable pressure		bar	50;100;200;315
Max. flow-rate		L/min	To 400
Weight		kg	Approx.0.35

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

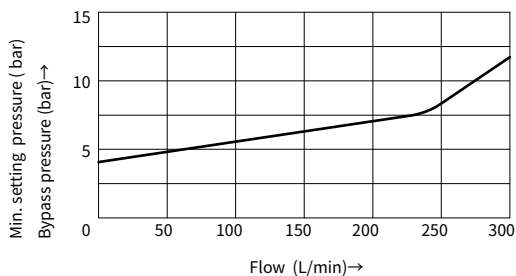
Inlet pressure in relation to the flow-rate



The curves are measured with external pilot oil drain at zero pressure.

With internal pilot oil drain the inlet pressure will increase with pressure at port B.

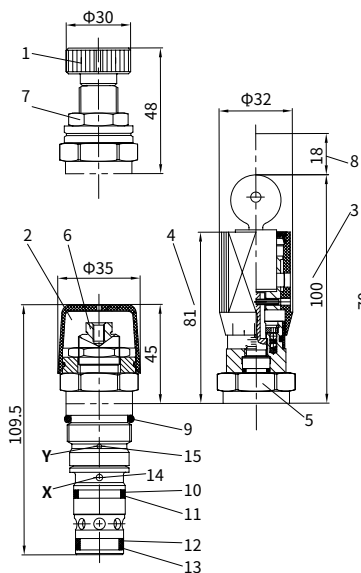
Min. setting pressure and bypass pressure in relation to the flow-rate



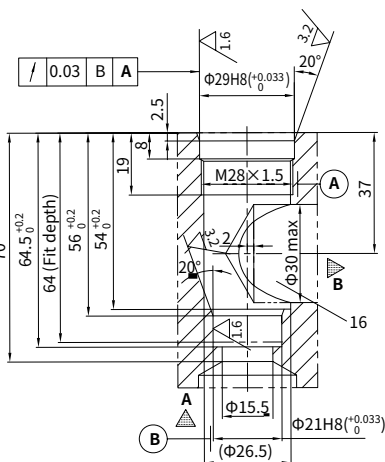
The curves are valid for outlet pressure $P_B=0$

Unit dimensions

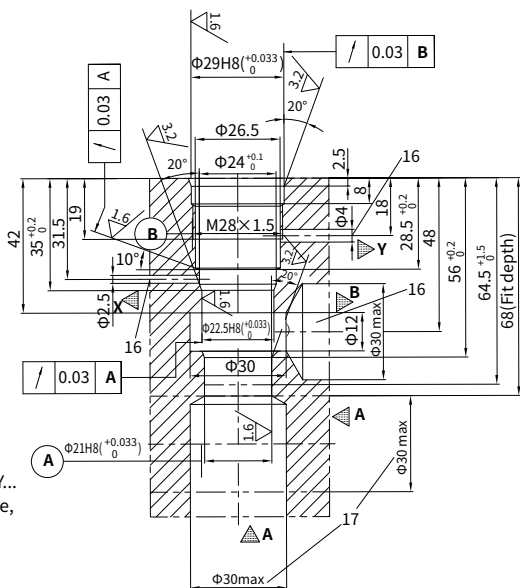
(Dimensions in mm)



Fixing holes for cartridge Y
(pilot oil supply internal and drain external)



Fixing holes for cartridge XY
(pilot oil supply external and drain external)



- 1 Adjustment element "1"
- 2 Adjustment element "2"
- 3 Adjustment element "3"
- 4 Adjustment element "7"
- 5 Nut for locking S=22
- 6 Internal hexagon screw S=10
- 7 External hexagon S=30
Tightening torque $M_A = 50\text{Nm}$
- 8 Space required to remove the key
- 9 O-ring 25×2.65
- 10 O-ring 17×1.8
- 11 Back-ring $22.5 \times 19.7 \times 1.1$
- 12 2 Back-ring $21 \times 16.2 \times 1.1$
- 13 O-ring 18×1.8
- 14 Port X used only for
DB20K...1XJ/XY...
- 15 Port Y used for
DB20K...1XJ/XY...and
DB20K...1XJ/Y...
- 16 Port X, T and B arranged around
circumference used for DB20K...1XJ/XY...
Port B arranged around circumference,
used for DB20K...1XJ/Y...
- 17 Hole A, optional