3.3

Pressure relief valve pilot operated

Type DB...K...L4X

Sizes 6 and 10
up to 315 bar
up to 100L/min

Contents

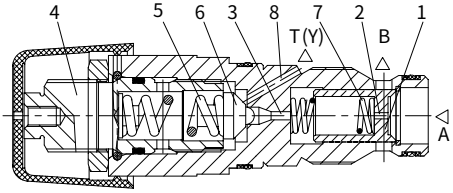
Features

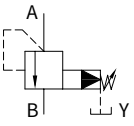
- Cartridge valve
- 4 pressure ratings
- 2 adjustment elements:
  - Rotary knob
  - Adjustable bolt with protective cap

Function and configuration

Pressure relief valves type DB..K.. are pilot operated pressure relief valves for installation in manifolds. They are 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 flows 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), the pilot poppet (6) opens. Fluid can flow from the spring loaded side of spool (1), 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.

Type DB10K2-L4X/Y...





Symbol

Ordering code

DB		K	– L4X /	Y		★

Pressure relief valve =DB

Nominal size 6 = 6
Nominal size 10 =10

Cartridge =K

Rotary knob =1
Sleeve with hexagon and protective cap =2

Further details in clear text

No code = NBR seals
V = FKM seals

Y = Pilot oil supply internal
Pilot oil drain external

5= Pressure adjustable up to 50bar
10= Pressure adjustable up to 100bar
20= Pressure adjustable up to 200bar
31.5= Pressure adjustable up to 315bar

L4X = Series L40 to L49
(L40 to L49: unchanged installation and connection dimensions)

Notes:
The pilot relief valves may have lower starting pressure and more flow, but have more internal leakage, If lower leakage is demanded, such as safety valve, it is recommended to choose direct operated pressure relief valves, DBD type.

Technical data

Size		6	10
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.setting pressure	bar	50; 100; 200; 315	
Max. flow-rate	L/min	to 60	to 100
Weight	kg	Approx. 0.22	Approx. 0.3

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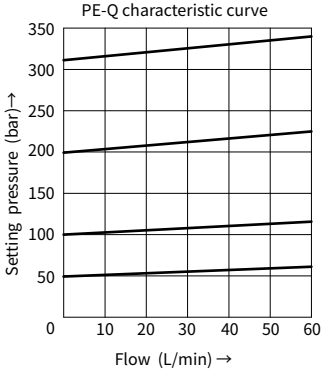
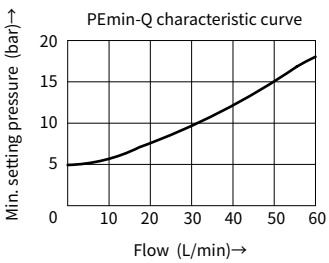
Characteristic curves (Measured at ϑ_{oil} =40°C ±5°C , using HLP46)

Size 6

PE-Q characteristic curve

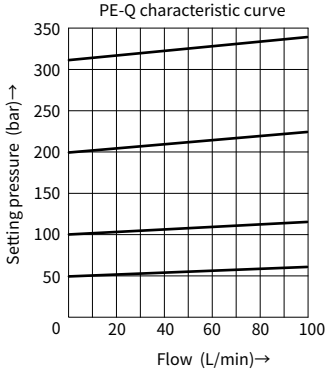


PEmin-Q characteristic curve

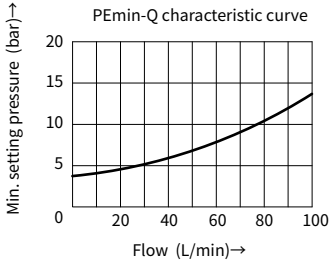


Size 10

PE-Q characteristic curve



PEmin-Q characteristic curve



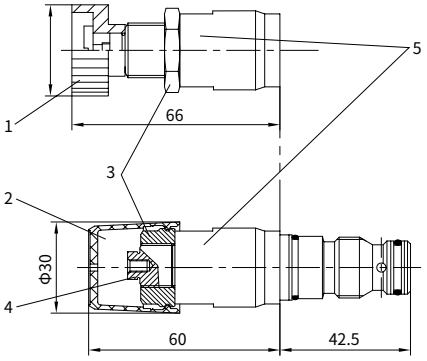
The curves are measured at zero back pressure.

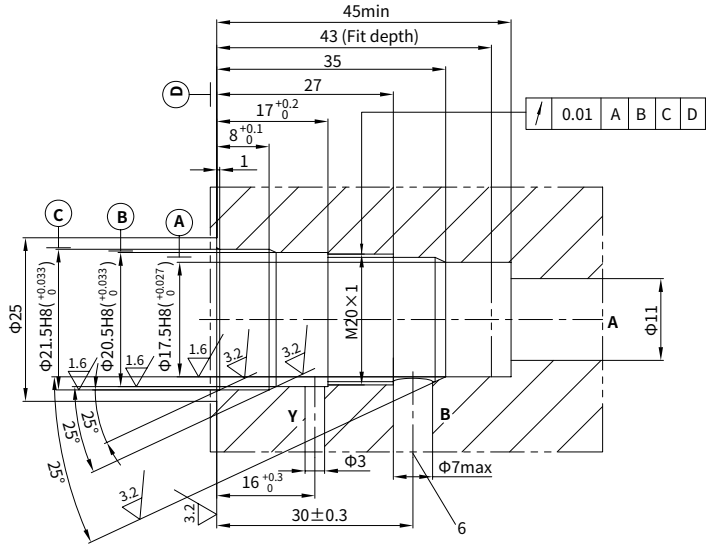
Unit dimensions

(Dimensions in mm)

·Type DB6K...-L4X/...

1 Adjustment element "1"
2 Adjustment element "2"
3 Nut for locking S=24
4 Internal hexagon screw S=10
5 External hexagon S=24
Tightening torque M_A = 50Nm
6 Port B arranged around circumference as required





Unit dimensions

(Dimensions in mm)

·Type DB10K..-L4X/...

1 Adjustment element "1"
2 Adjustment element "2"
3 Nut for locking S=24
4 Internal hexagon screw S=10
5 External hexagon S=30
Tightening torque M_A = 50Nm
6 Port B arranged around circumference as required