



DB/DBW...type (Solenoid) Pilot Relief Valve

DB/DBW...5XJ...type

DBT/DBWT...type (Solenoid) Remote Pressure Valve

DBT/DBWT...type

Sizes 10, 16, 20, 25, 32
Max. Working Pressure: 350 bar
Max. Flow: 650 L/min



Contents

| | |
|---------------------------------|-------|
| Function and configuration | 02 |
| Symbols | 03 |
| Technical data | 04 |
| Specification | 05 |
| Performance curves | 06 |
| Unit dimensions | 07-09 |
| Remote pressure adjusting valve | 10 |

Features

- For sub-plate mounting
- Porting pattern to DIN 24 340 form E and ISO 6264
- For threaded connection and installation in manifolds
- 5 pressure ratings
- Unloading operation via a built-on solenoid directional valve
- 4 adjustment versions
 - Knob
 - Adjusting bolt with protective cap
 - Lockable knob with scale
 - Knob with scale
- Optional switching shock damping (Only for DBW)

03

Function and configuration

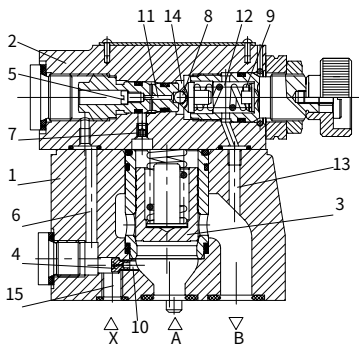
DB and DBW type valve is a pilot operated pressure relief valve, it is used to limit (DB) or limit and unload (DBW) pressure via solenoid operation. The pressure relief valves consist of main valve (1) with main spool cartridge (3) and pilot operated valve (2) with pressure adjustment elements.

· **Type DB pressure relief valves**

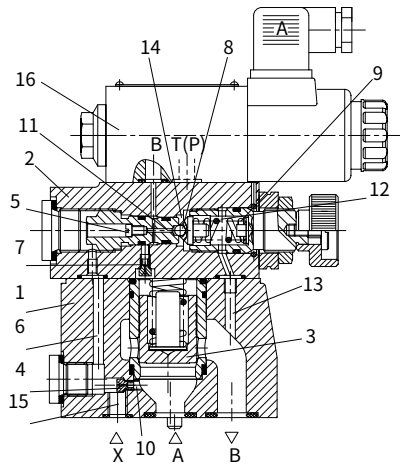
The pressure of channel A acts on the main spool (3), meanwhile, pressure is applied via control line (6) and (7) with orifice (4) and (5) on the spring loaded side of the main spool (3) and on the ball (8) in the pilot operated valve(2). If the pressure in channel A rises excess the setting value at the spring (9), the ball (8) opens against the spring (9). As for the internal control forms, signal is given by control oil (10) and (6) supplied by channel A. The oil from the spring loaded side of the main spool (3), via control line (7), orifice(11), and ball (8), then flows into spring chamber (12). Internal drain - type DB...5XJ...Y, oil flows via control line(14) into the tank. In virtue of the orifice (4) and (5), the pressure drop arises at the main spool (3), and the connection from port A to port B is open while theoperational pressure setting maintained stable. The pressure relief valve may unload or shift the different pressure (second rated pressure value) in virtue of external control port X (15).

· **Type DBW pressure relief valves**

The function of pressure relief valve type DBW is the same with pressure relief valve type DB, the difference is that valve type DBW operates unloading via a built-on directional valve(16).



Type DB pressure relief valves



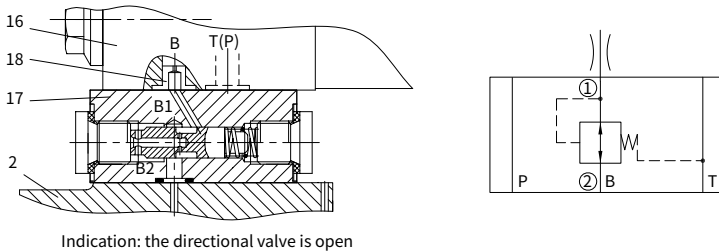
Type DBW pressure relief valves

Function and configuration

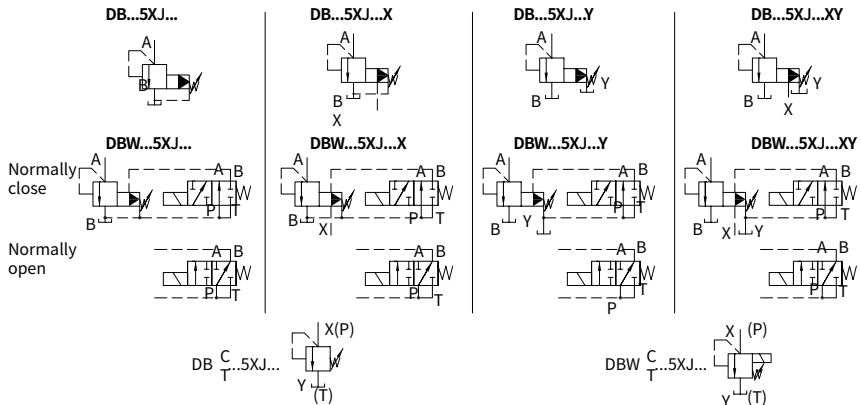
• Pressure relief valves with switching shock damping (sandwich) , type DBW../..S..R12

Switching shock damping (17), the connection from B2 to B1 opens with delay to avoid peak pressure spikes and decompression in the return line. It is fitted between pilot valve (2) and the directional valve (16).

The relief degree (decompression impact) is determined by the size of the orifice (18). Orifice $\varnothing 1.2\text{mm}$ is recommended.(ordering detail:...R12 ..).



Symbols



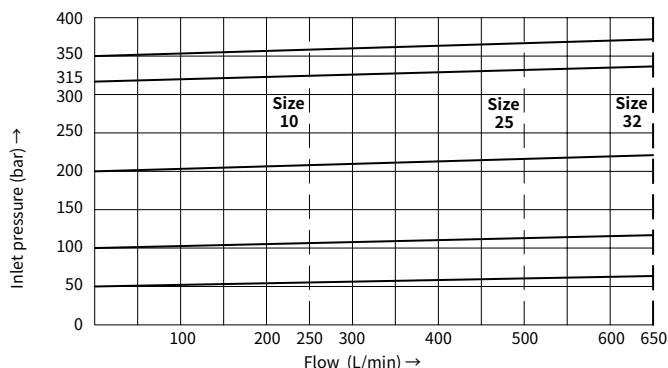
Technical data

| Fixing position | | | | Optional | | | | | |
|---|---------------------|-------------|-------|--|------------|------------|------------|------------|--|
| Weight | | | | DB...10 | DB...15 | DB...20 | DB...25 | DB...30 | |
| | Sub-plate mounting | DB | kg | Approx.3 | - | Approx.3.9 | - | Approx.5.3 | |
| | | DBW | kg | Approx.4.5 | - | Approx.5.4 | - | Approx.6.8 | |
| | | DBC | kg | Approx.1.2(Type DBWC add 1.5)kg | | | | | |
| | | DBC10 or 30 | kg | Approx.1.5(Type DBWC10 and 30 add 1.5)kg | | | | | |
| | Threaded connection | DB..G.. | kg | Approx.5.3 | Approx.5.2 | Approx.5.1 | Approx.5.9 | Approx.5.8 | |
| | | DBW..G.. | kg | Approx.6.8 | Approx.6.7 | Approx.6.6 | Approx.7.4 | Approx.7.3 | |
| Switching shock damping | | | kg | Approx.0.6 | | | | | |
| Technical parameters of directional valve | | | | Refer to the solenoid valvetype WE6,normally close use 3WE6A9,normally open use3WE6B9 | | | | | |
| Fluid | | | | Mineral oil - suitable for NRB and FRMseal | | | | | |
| | | | | phosphate ester-suitable for FKM seal | | | | | |
| Fluid temperature range | | | °C | -30 to +80 (NRB seal) | | | | | |
| | | | | -20 to +80 (FKM seal) | | | | | |
| viscosity range | | | mm²/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 | Port A,B,X,P | | bar | 350 | | | | | |
| | Port T (DB) | | bar | 315 | | | | | |
| Max. back pressure | Port Y | DB | bar | 315 | | | | | |
| | Port Y or T | DBW | bar | AC up to 160, DC up to 210 | | | | | |
| Max. setting pressure | | | bar | 50;100;200;315;350 | | | | | |
| Min. setting pressure | | | bar | Interrelated with Q(refer to the curve) | | | | | |
| Sizes | | | | 10 | 15 | 20 | 25 | 30 | |
| Max. flow-rate | sub-plate mounting | | L/min | 250 | - | 500 | - | 650 | |
| | threaded connection | | L/min | 250 | 500 | 500 | 500 | 650 | |

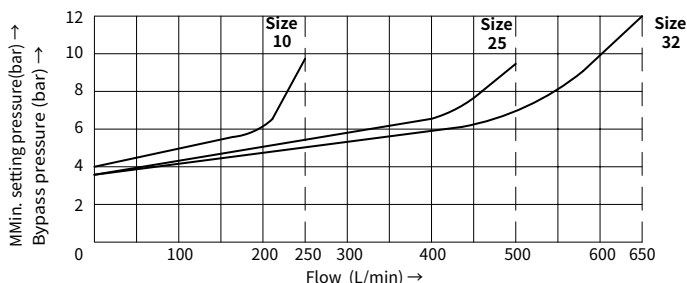
Performance curves (Measured at $t=40^{\circ}\text{C} \pm 5^{\circ}\text{C}$, using HLP 46) The

characteristic curves are measured with external pilot oil drain at zero pressure.
With internal pilot oil drain, the inlet pressure at port B should be added to the value presented as curves.

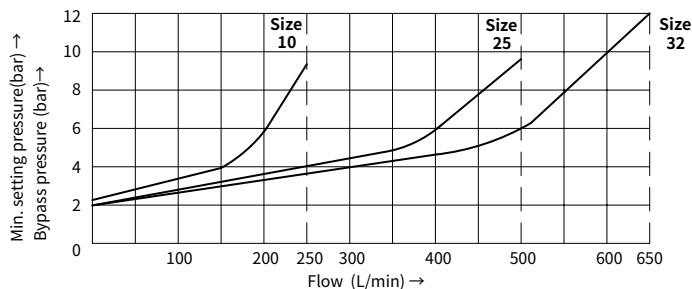
Inlet pressure in relation to the flow-rate



Minimum setting pressure and bypass pressure in relation to the flow-rate!
• Standard version



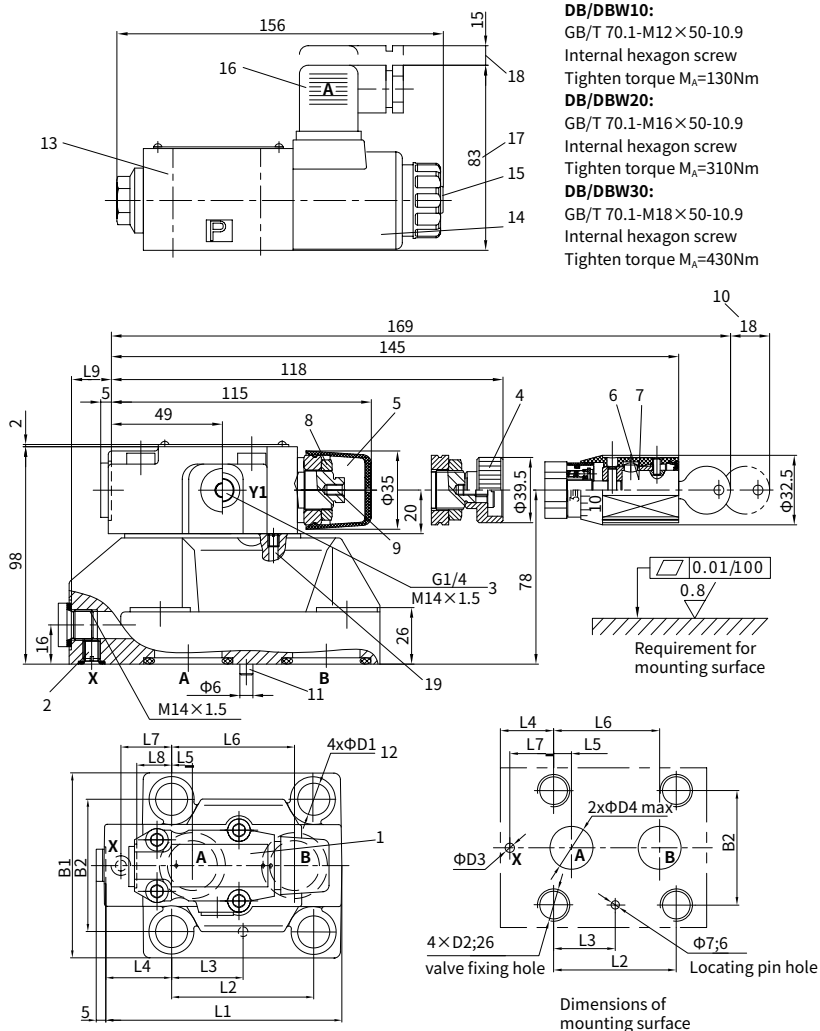
Minimum setting pressure and bypass pressure in relation to the flow-rate!
• Version "U"



Unit dimensions

(Dimensions in mm)

- **Sub-plate mounting**

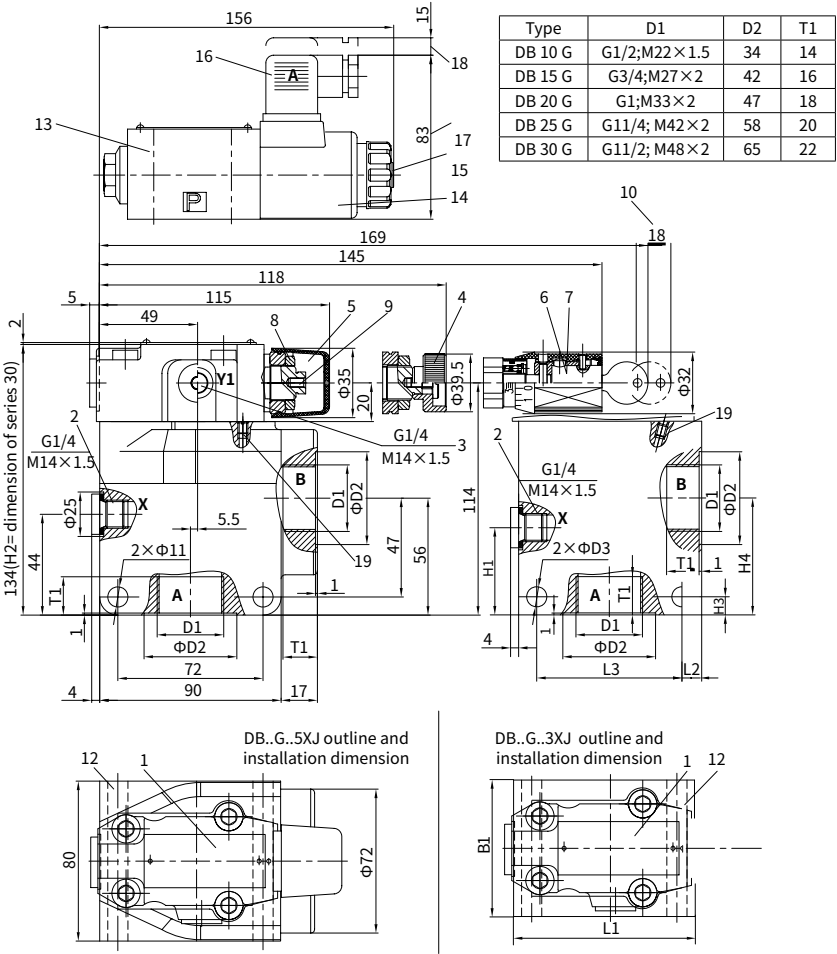


| Type | L1 | L2 | L3 | L4 | L5 | L6 | L7 | L8 | L9 | B1 | B2 | D1 | D2 | D3 | D4 | O-ring(A, B) | O-ring(X) |
|-----------|-------|------|------|------|------|------|------|------|------|-----|------|----|-----|----|----|--------------|-----------|
| DB/DBW 10 | 91 | 53.8 | 22.1 | 27.5 | 22.1 | 47.5 | 0 | 25.5 | 2 | 78 | 53.8 | 14 | M12 | 6 | 12 | 17.12×2.62 | 9.25×1.78 |
| DB/DBW 20 | 116 | 66.7 | 33.4 | 33.3 | 11.1 | 55.6 | 23.8 | 22.8 | 10.5 | 100 | 70 | 18 | M16 | 6 | 22 | 28.17×3.53 | 9.25×1.78 |
| DB/DBW 30 | 147.5 | 88.9 | 44.5 | 41 | 12.7 | 76.2 | 31.8 | 20 | 21 | 115 | 82.6 | 20 | M18 | 7 | 30 | 34.52×3.53 | 9.25×1.78 |

Unit dimensions

(Dimensions in mm)

• Threaded connection



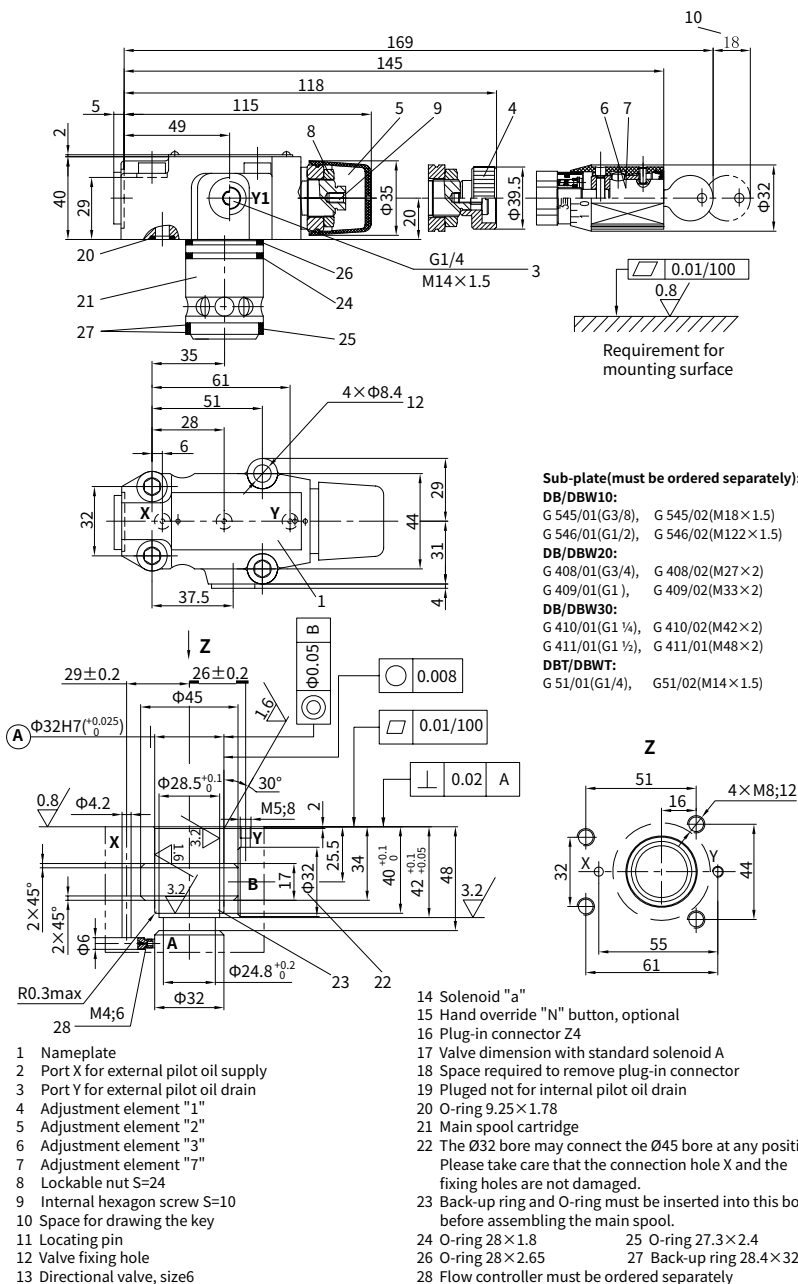
Outline and installation dimension of series 3XJ threaded connection valve:

| Type | B1 | D3 | H1 | H2 | H3 | H4 | L1 | L2 | L3 |
|---------|----|----|----|-----|----|----|-----|----|----|
| DB 10 G | 63 | 9 | 27 | 125 | 10 | 62 | 85 | 14 | 62 |
| DB 15 G | | | | | | 57 | | | |
| DB 20 G | | | | | | | | | |
| DB 25 G | 70 | 11 | 42 | 138 | 13 | 66 | 100 | 18 | 72 |
| DB 30 G | | | | | | | | | |

Unit dimensions

(Dimensions in mm)

• With main spool valve (DBC10 or 30) or without main spool valve (DBC, DBT)

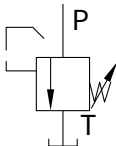


Remote pressure adjusting valve

•Specification

| | | | | | | | |
|---|-----|----|----|------|---|----------|--------------------------------|
| | DBT | G | 1 | 3XJ | / | | |
| Remote pressure valve | | | | | | | |
| Threaded connection | | =G | | | | No code= | NBR seals |
| Adjusting handle | | | =1 | | | V = | FKM seals |
| Series 30J to 39J (30J to 39J: unchanged installation and connection dimensions) | | | | =3XJ | | 100= | Max. secondary pressure 100bar |
| | | | | | | 315 = | Max. secondary pressure 315bar |

•Symbol



•Connection dimension

