

## 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)

# Function and configuration

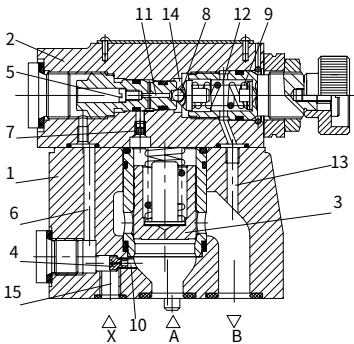
DB and DBW type valve is a pilot operated pressure relief valve, it is used to limit (DB) or limit and unload (DBW) pressure via solenoid operation. The pressure relief valves consist of main valve (1) with main spool cartridge (3) and pilot operated valve (2) with pressure adjustment elements.

## • Type DB pressure relief valves

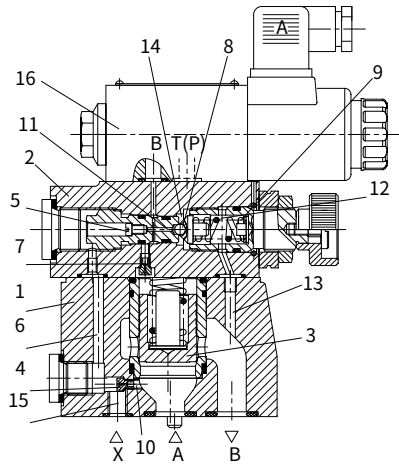
The pressure of channel A acts on the main spool (3), meanwhile, pressure is applied via control line (6) and (7) with orifice (4) and (5) on the spring loaded side of the main spool (3) and on the ball (8) in the pilot operated valve(2). If the pressure in channel A rises excess the setting value at 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 the operational 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



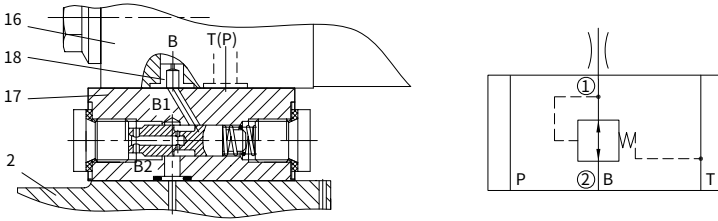
Type DBW pressure relief valves

# Function and configuration

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

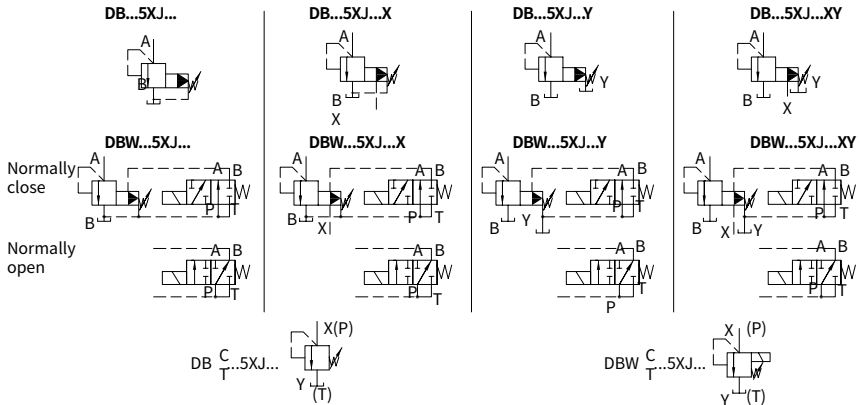
Switching shock damping (17), the connection from B2 to B1 opens with delay to avoid peak pressure spikes and decompression in the return line. It is fitted between pilot valve (2) and the directional valve (16).

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 ..).



Indication: the directional valve is open

## Symbols



## Technical data

Fixing position			Optional					
Weight	Sub-plate mounting	DB	kg	DB...10	DB...15	DB...20	DB...25	DB...30
		DBW	kg	Approx.3	-	Approx.3.9	-	Approx.5.3
		DBC	kg	Approx.4.5	-	Approx.5.4	-	Approx.6.8
		DBC10 or 30	kg	Approx.1.2(Type DBWC 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		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					
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	

# Specification



Without directional

valve= No code

With directional valve=W

Pressure relief valve,

pilot operated = No code

Pilot operated valve = C

( without main spool cartridge,  
no mark for nom. size)

Pilot operated valve with main

spool cartridge = C

(marked with size 10 or 30)

Remote pressure

adjusting valve =T<sup>1)</sup>

( no mark for nom. size)

Nominal size	Connection mode	
	sub-plate mounting	Threaded connection
	Marked	
10	=10	=10(G1/2)
16		=15(G3/4)
20	=20	=20(G1)
25		=25(G1 1/4)
32	=30	=30(G1 1/2)

For DBW:

Normally closed =A

(load breakaway, unload electrified)

Normally open =B

(contrary to the above)

Sub-plate mounting = -

Threaded connection = G

Rotary Knob =1

Adjusting bolt with protective cap =2

Lockable knob with scale =3

Knob with scale =7

Series 50J to 59J =5XJ

(50J to 59J: unchanged installation and connection dimensions)

1) DBT/DBWT type is as same as DBC/DBWC, except that the small hole against the main valve hole is plugged.

Further details in clear text

No code = NBR seals  
V = FKM seals

Only for port Y1 in pilot valve of threaded connection or sub-plate mounting  
No code = Inch thread  
2= Metric thread

Only DBW./...S...:

R12= orifice Ø1.2 mm in port B of directional valve

Only DBW:

Z4 = Electrical plug without lamp  
Z5L = Electrical plug with lamp

Only DBW:

N = With hand override

Only DBW:

G24 = 24V DC

W220-50 = 220V AC, 50Hz

W120-60 = 120V AC, 60Hz

(Other voltage refer to type WE6)

Only DBW:

6E= With high performance directional spool valve

No code= Without switching shock damping

S = With switching shock damping (only with type DBW)

No code= Standard version

U = Valve for lower opening pressure (not for version without main spool cartridge and not suitable for 350bar )

No code = Pilot oil supply and drain internal

X = Pilot oil supply external and drain internal

Y = Pilot oil supply internal and drain external

XY = Pilot oil supply and drain external

50 =

Pressure adjustable up to 50 bar

100 =

Pressure adjustable up to 100 bar

200=

Pressure adjustable up to 200 bar

315 =

Pressure adjustable up to 31.5 bar

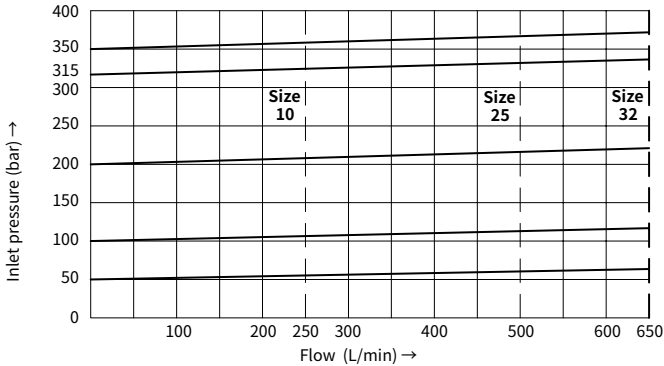
350 =

Pressure adjustable up to 350 bar

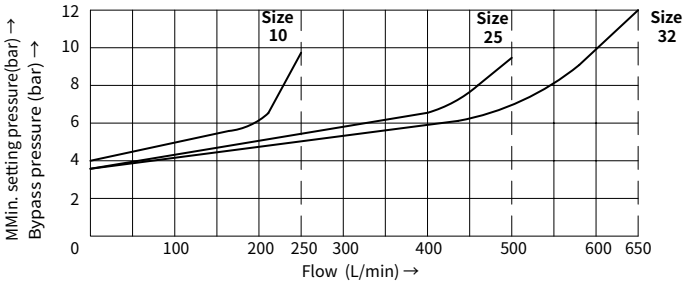
## Performance curves (Measured at $t=40^{\circ}\text{C} \pm 5^{\circ}\text{C}$ , using HLP 46) The

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.

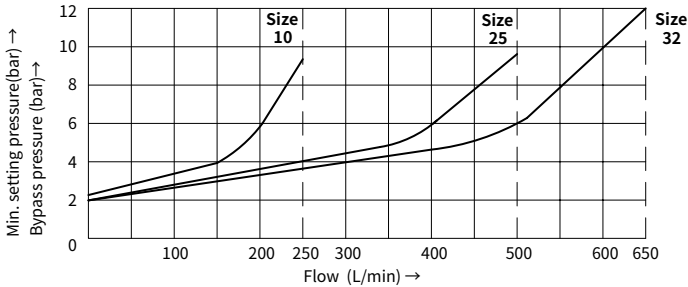
**Inlet pressure in relation to the flow-rate**



**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"











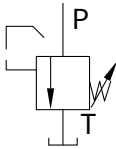
# Remote pressure adjusting valve

## • Specification

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

03

## • Symbol



## • Connection dimension

