RE 26076
Edition: 2019-09
Replaces: 04.07

rexroth
A Bosch Company

Pressure sequence valve, direct-operated

Type DZ 6 DP

K4297-9

- Size 6
- Component series 5X
- Maximum operating pressure 315 bar
- Maximum flow 60 l/min

Features

- For subplate mounting
- Porting pattern according to ISO 4401-03-02-0-05 (with or without locating hole)
- 5 pressure ratings
- 4 adjustment types, optionally:
  - Rotary knob
  - Grub screw with hexagon and protective cap
  - Lockable rotary knob with scale
  - Rotary knob with scale
- Check valve, optional

Contents

Ordering codes

01	02		03		04	05	06	07	08	09
DZ 6 DP		**–**	**5X**	**/**						*****

01	Pressure sequence valve, size 6, direct-operated	**DZ 6 DP**

Adjustment type

02	Rotary knob	**1**
	Grub screw with hexagon and protective cap	**2**
	Lockable rotary knob with scale [1]	**3**
	Rotary knob with scale	**7**

03	Component series 50 ... 59 (50 ... 59: unchanged installation and connection dimensions)	**5X**

Maximum sequencing pressure

04	25 bar	**25**
	75 bar	**75**
	150 bar	**150**
	210 bar	**210**
	315 bar	**315** [2]

Pilot oil flow

05	Internal pilot oil supply, internal pilot oil return	**no code**
	External pilot oil supply, internal pilot oil return	**X**
	Internal pilot oil supply, external pilot oil return	**Y**
	External pilot oil supply, external pilot oil return	**XY**

06	**With** check valve	**no code**
	Without check valve	**M**

Seal material (observe compatibility of seals with hydraulic fluid used, see page 4)

07	NBR seals	**no code**
	FKM seals	**V**

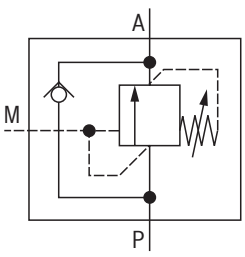
08	**Without** locating hole	**no code**
	With locating hole	**/60** [3]

09	Further details in the plain text	

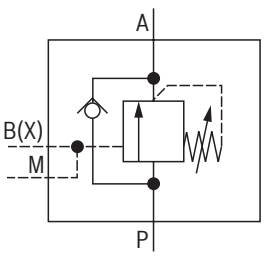
1) H-key with material no. **R900008158** is included in the scope of delivery.
2) Only with adjustment type "2" and without check valve
3) Locking pin ISO 8752-3x8-St, material no. **R900005694** (separate order)

Symbols

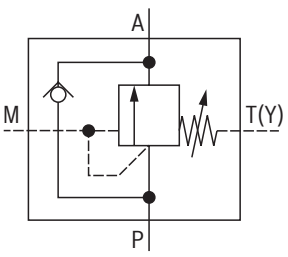
Version "no code"



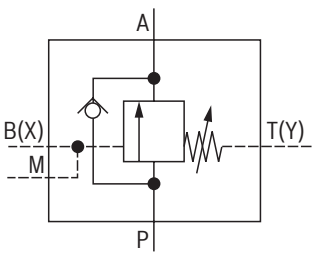
Version "X"



Version "Y"



Version "XY"

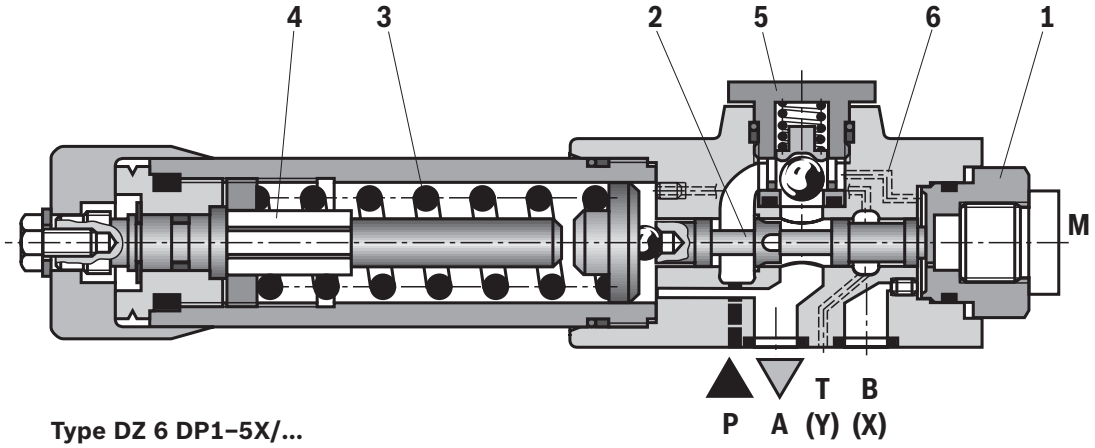


Function, section

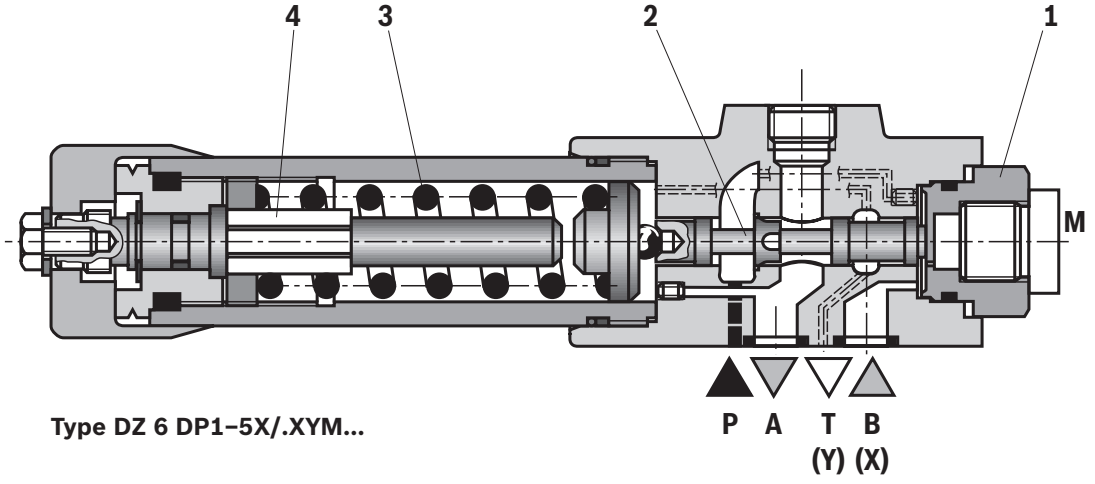
Valve type DZ 6 DP is a direct-operated pressure sequence valve. It is used for the pressure-dependent connection of a second system. The sequencing pressure is set via the adjustment type (4).
The compression spring (3) holds the control spool (2) in the initial position, the valve is blocked. The pressure in channel P is applied via the control line (6) at the spool face of the control spool (2) opposite the compression spring (3).
If the pressure in channel P reaches the set value of the compression spring (3), the control spool (2) is moved to the left and the connection from P to A is opened.
The system connected to channel A is connected without a pressure drop in channel P.

The control signal is received internally via the control line (6) from channel P or externally via port B (X).
Depending on the use of the valve, pilot oil return is realized externally via port T (Y) or internally via A.

☞ **Notice:**
With **internal** pilot oil return, the **set** cracking pressure is **increased** by the pressure in channel A.
A check valve (5) can be optionally installed for free hydraulic fluid return flow back from channel A to channel P.
A pressure gauge connection (1) enables control of the sequencing pressure at the valve.



Type DZ 6 DP1–5X/...



Type DZ 6 DP1–5X/.XYM...

Technical data

(For applications outside these values, please consult us!)

General		
Mass	kg	approx. 1.2
Installation position		any
Ambient temperature range	°C	–30 ... +80 (NBR seals) –20 ... +80 (FKM seals)

Hydraulic			
Maximum operating pressure	▶ Ports P, B (X)	bar	315
	▶ Port A		
	– External pilot oil return	bar	315
	– Internal pilot oil return	bar	160
	▶ Port T (Y)	bar	160
Maximum sequencing pressure (adjustable)		bar	25; 75; 150; 210; 315
Maximum flow		l/min	60
Hydraulic fluid			See table below
Hydraulic fluid temperature range		°C	–30 ... +80 (NBR seals) –20 ... +80 (FKM seals)
Viscosity range		mm^2/s	10 ... 800
Maximum admissible degree of contamination of the hydraulic fluid, cleanliness class according to ISO 4406 (c)			Class 20/18/15 [1)]

Hydraulic fluid		Classification	Suitable sealing materials	Standards	Data sheet
Mineral oils		HL, HLP, HLPD, HVLP, HVLPD	NBR, FKM	DIN 51524	90220
Bio-degradable	▶ Insoluble in water	HETG	FKM	ISO 15380	90221
		HEES	FKM		
	▶ Soluble in water	HEPG	FKM	ISO 15380	
Flame-resistant	▶ Water-free	HFDU (glycol base)	FKM	ISO 12922	90222
		HFDU (ester base)	FKM		
		HFDR	FKM		
	▶ Containing water	HFC (Fuchs: Hydrotherm 46M, Renosafe 500; Petrofer: Ultra Safe 620; Houghton: Safe 620; Union: Carbide HP5046)	NBR	ISO 12922	90223

☞ **Important notices on hydraulic fluids:**

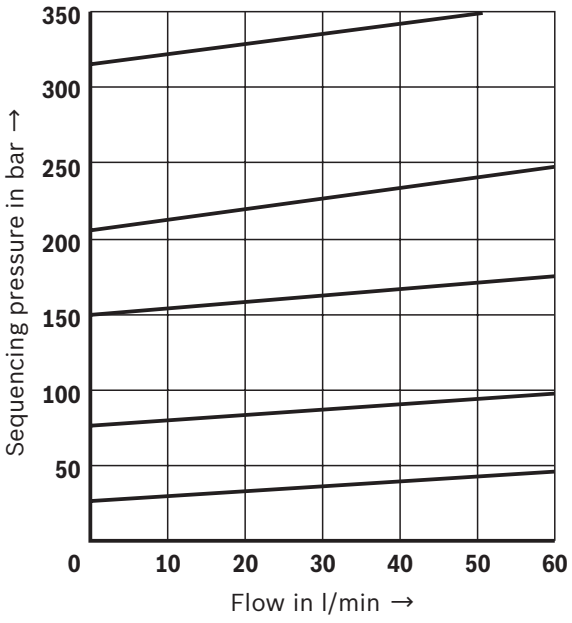
- ▶ For further information and data on the use of other hydraulic fluids, please refer to the data sheets above or contact us.
- ▶ There may be limitations regarding the technical valve data (temperature, pressure range, life cycle, maintenance intervals, etc.).
- ▶ The ignition temperature of the hydraulic fluid used must be 50 K higher than the maximum surface temperature.
- ▶ **Bio-degradable and flame-resistant – containing water:** If components with galvanic zinc coating (e.g. version "J3" or "J5") or parts containing zinc are used, small amounts of dissolved zinc may get into the hydraulic system and cause accelerated aging of the hydraulic fluid. Zinc soap may form as a chemical reaction product, which may clog filters, nozzles and solenoid valves – particularly in connection with local heat input.
- ▶ **Flame-resistant – containing water**: Due to increased cavitation tendency with HFC hydraulic fluids, the life cycle of the component may be reduced by up to 30% as compared to the use with mineral oil HLP. In order to reduce the cavitation effect, it is recommended - if possible specific to the installation - to back up the return flow pressure in ports T to approx. 20% of the pressure differential at the component.

1) The cleanliness classes specified for the components must be adhered to in hydraulic systems. Effective filtration prevents faults and simultaneously increases the life cycle of the components.
Available filters can be found at www.boschrexroth.com/filter.

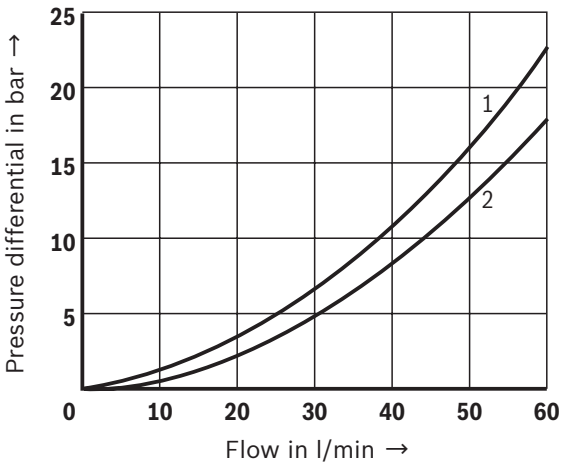
Characteristic curves

(measured with HLP46, ϑ_{oil} = 40 ±5 °C)

***p*-q_V characteristic curves**



***Δp*-q_V characteristic curves**

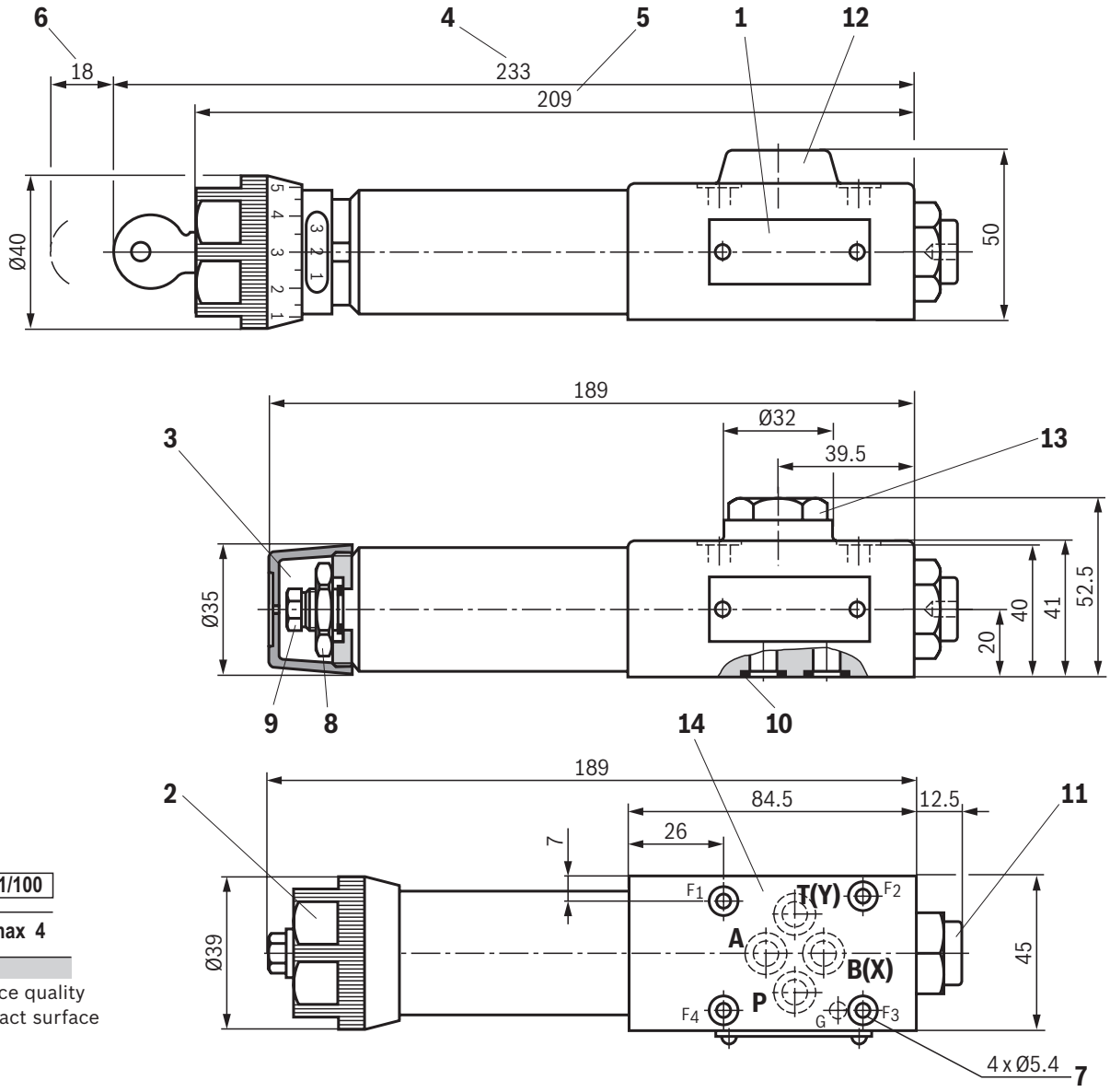


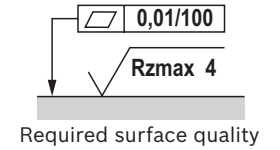
Notice:
The characteristic curves apply to the pressure at the valve output ***p*** = 0 bar across the entire flow range.

1 A to P, via check valve
2 P to A

Dimensions

(Dimensions in mm)





Required surface quality
of the valve contact surface

1 Name plate
2 Adjustment type "1"
3 Adjustment type "2"
4 Adjustment type "3"
5 Adjustment type "7"
6 Dimension required to remove the key
7 Valve mounting bores
8 Lock nut, wrench size 24
9 Hexagon, wrench size 10
10 Identical seal rings for ports A, B(X), P, T(Y)
11 Pressure gauge connection G1/4, 12 deep; internal hexagon, wrench size 6
12 Without check valve
13 With check valve
14 Porting pattern according to ISO 4401-03-02-0-05 (with or without locating hole; with locating hole for locking pin ISO 8752-3x8-St, material no. **R900005694**, separate order)

Subplates (separate order) with porting pattern according to ISO 4401-03-02-0-05 see data sheet 45100.

Valve mounting screws (separate order)
4 hexagon socket head cap screws
ISO 4762 - M5 x 50 - 10.9-flZn-240h-L
Friction coefficient μ_{total} = 0.09 ... 0.14,
tightening torque M_A = 7 Nm ± 10%,
material no. **R913000064**

Pipe thread (G..) according to ISO 228/1

Further information

▶ Subplates	Data sheet 45100
▶ Hydraulic fluids on mineral oil basis	Data sheet 90220
▶ Environmentally compatible hydraulic fluids	Data sheet 90221
▶ Flame-resistant, water-free hydraulic fluids	Data sheet 90222
▶ Flame-resistant hydraulic fluids - containing water (HFAE, HFAS, HFB, HFC)	Data sheet 90223
▶ Hydraulic valves for industrial applications	Operating instructions 07600-B
▶ Selection of filters	
▶ Information on available spare parts	