Rexroth
Bosch Group

Pressure reducing valve, direct operated

RA 26564/02.03 **1**/6
Replaces: 06.98

Model DR 6 DP

Nominal size 6
Series 5X
Maximum operating pressure 315 bar (4600 PSI)
Maximum flow 60 L/min (16 GPM)

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Features

- Subplate mounting:
  Mounts on standard ISO 5781-**03**, NFPA/ANSI **P 03**
- For subplates see catalog sheet RE 45 052
  (separate order)
- Five pressure stages
- Four adjustment elements:
  - Rotary knob,
  - Set screw with hexagon and protective cap,
  - Lockable rotary knob with scale,
  - Rotary knob with scale
- Check valve, optional

Ordering details

DR 6 DP | – 5X / | Y | | / | *

Direct operated pressure reducing valve NS 6

Adjustment element
- Rotary knob **= 1**
- Set screw with hexagon and protective cap **= 2**
- Lockable rotary knob with scale [1] **= 3**
- Rotary knob with scale **= 7**

Series 50 to 59 (50 to 59: unchanged installation and connection dimensions) **= 5X**

- Max. secondary pressure 25 bar (365 PSI) **= 25**
- Max. secondary pressure 75 bar (1090 PSI) **= 75**
- Max. secondary pressure 150 bar (2175 PSI) **= 150**
- Max. secondary pressure 210 bar (3050 PSI) **= 210**
- Max. secondary pressure 315 bar (4600 PSI) [2] **= 315**

Y = Internal pilot oil supply External pilot oil drain

No code = With check valve
M = Without check valve

No code = NBR seals
V = FKM seals
(other seals on request)
⚠ **Attention!**
The compatibility of the seals and pressure fluids must be taken into account!

Gauge port connection
No code = BSP thread
12 = SAE thread

Further details in clear text

[1] H-key with Material No. **R900008158** is included within the scope of supply

[2] Only with adjustment element “2” and without check valve

Standard types

Type	Material No.
DR 6 DP2-5X/25Y	**R000465254**
DR 6 DP2-5X/25YM	**R000472470**
DR 6 DP2-5X/75Y	**R000413241**
DR 6 DP2-5X/75YM	**R000450964**

Type	Material No.
DR 6 DP2-5X/150Y	**R000413242**
DR 6 DP2-5X/150YM	**R000472020**
DR 6 DP2-5X/210Y	**R000413243**
DR 6 DP2-5X/210YM	**R000455316**

Functional description, cross-section, symbol

The valve type DR 6 DP is a 3-way direct operated pressure reducing valve with a pressure relief function in the secondary circuit.

It is used to reduce the system pressure. The secondary pressure is set by the pressure adjustment element (4).

At rest, the valve is normally open and the pressure fluid can flow unhindered from port P to port A. The pressure in port A is at the same time, via the control line (6), present at the spool area opposite to the compression spring (3). When the pressure in port A exceeds the pressure level set at compression spring (3), the control spool (2) moves into the control position and holds the set pressure in port A constant.

The control and pilot oil are taken from port A via control line (6).

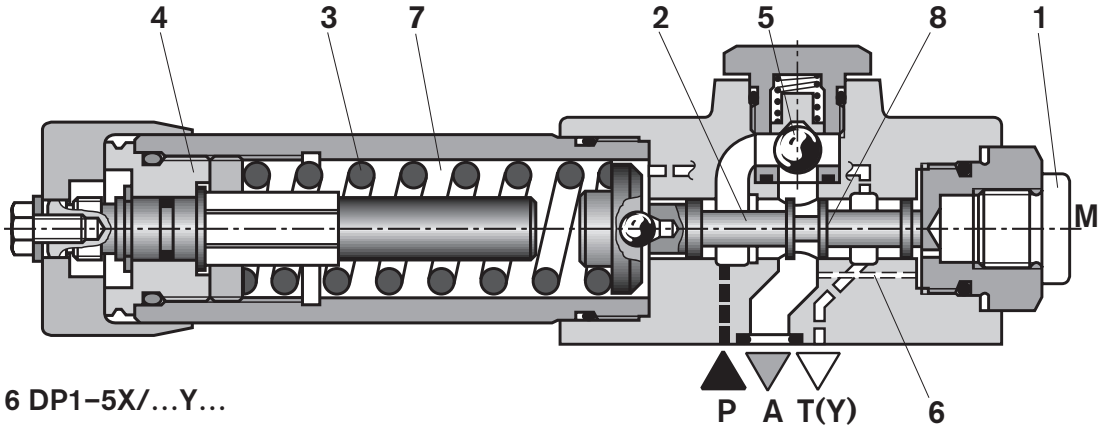
If the pressure in port A increases due to external forces on the actuator, then the control spool (2) moves still further towards the compression spring (3).

This causes a flow path to be opened at port A via control land (8) on the control spool (2) to the tank. Sufficient pressure fluid then flows to tank to prevent any further rise in pressure.

The spring chamber (7) is always drained to tank externally via port T (Y).

For free return flow, from port A to port P, an optional check valve (5) can be fitted.

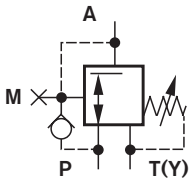
A pressure gauge port (1), permits the secondary pressure at the valve to be monitored.



Type DR 6 DP1–5X/…Y…

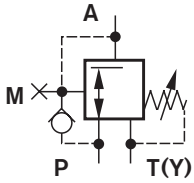
Version “YM”

Internal pilot oil supply
external pilot oil drain
without check valve



Version “Y”

Internal pilot oil supply
external pilot oil drain
with check valve



Technical data (for applications outside these parameters, please consult us!)

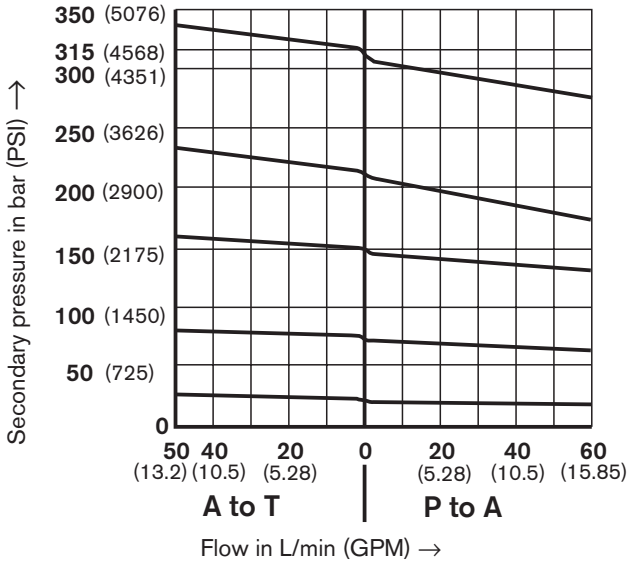
General

Installation			Optional
Ambient temperature range		°C (°F)	–30 to +80 (-22 to 176) with NBR seals
			–20 to +80 (-4 to 176) with FKM seals
Weight		kg (lbs)	1.2 (2.6)
Hydraulic			
Max. operating pressure	Port P	bar (PSI)	315 (4600)
Max. secondary pressure	Port A	bar (PSI)	25, 75, 150, 210, 315 (365; 1090; 2175; 3050)
Max. back pressure	Port T (Y)	bar (PSI)	160 (2320)
Max. flow		L/min (GPM)	60 (16)
Pressure fluid			Mineral oil (HL, HLP) to DIN 51 524 [1]; Fast bio-degradable pressure fluids to VDMA 24 568 (also see RE 90 221); HETG (rape seed oil) [1]; HEPG (polyglycols) [2]; HEES (synthetic ester) [2]; Other pressure fluids on request
Cleanliness class to ISO code			Maximum permissible degree of contamination of the pressure fluid is to ISO 4406 (C) class 20/18/15 [3]
Pressure fluid temperature range		°C (°F)	–30 to +80 (-22 to 176) with NBR seals –20 to +80 (-4 to 176) with FKM seals
Viscosity range		mm^2/s (SUS)	10 to 800 (60 to 3710)

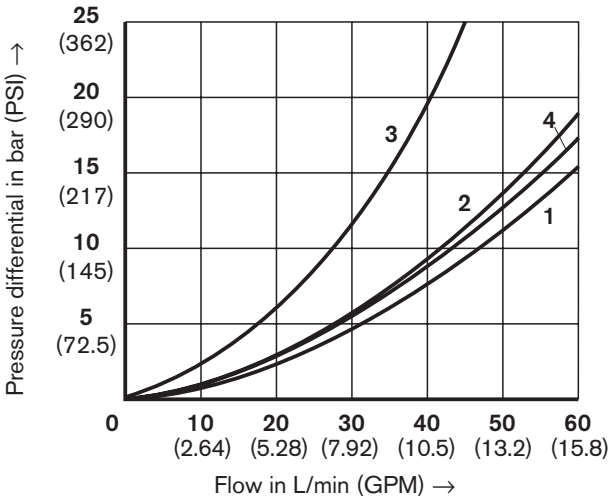
1) Suitable for NBR and FKM seals
2) Only suitable for FKM seals
3) The cleanliness class stated for the components must be adhered to in hydraulic systems. Effective filtration prevents faults from occurring and at the same time increases the component service life.
For the selection of filters see catalogue sheets RE 50 070, RE 50 076 and RE 50 081.

Characteristic curves – measured with HLP46, $\vartheta_{oil} = 40\ °C \pm 5\ °C$ (104 °F ±41 °F)

p_A–q_V characteristic curves



Δp–q_V characteristic curves

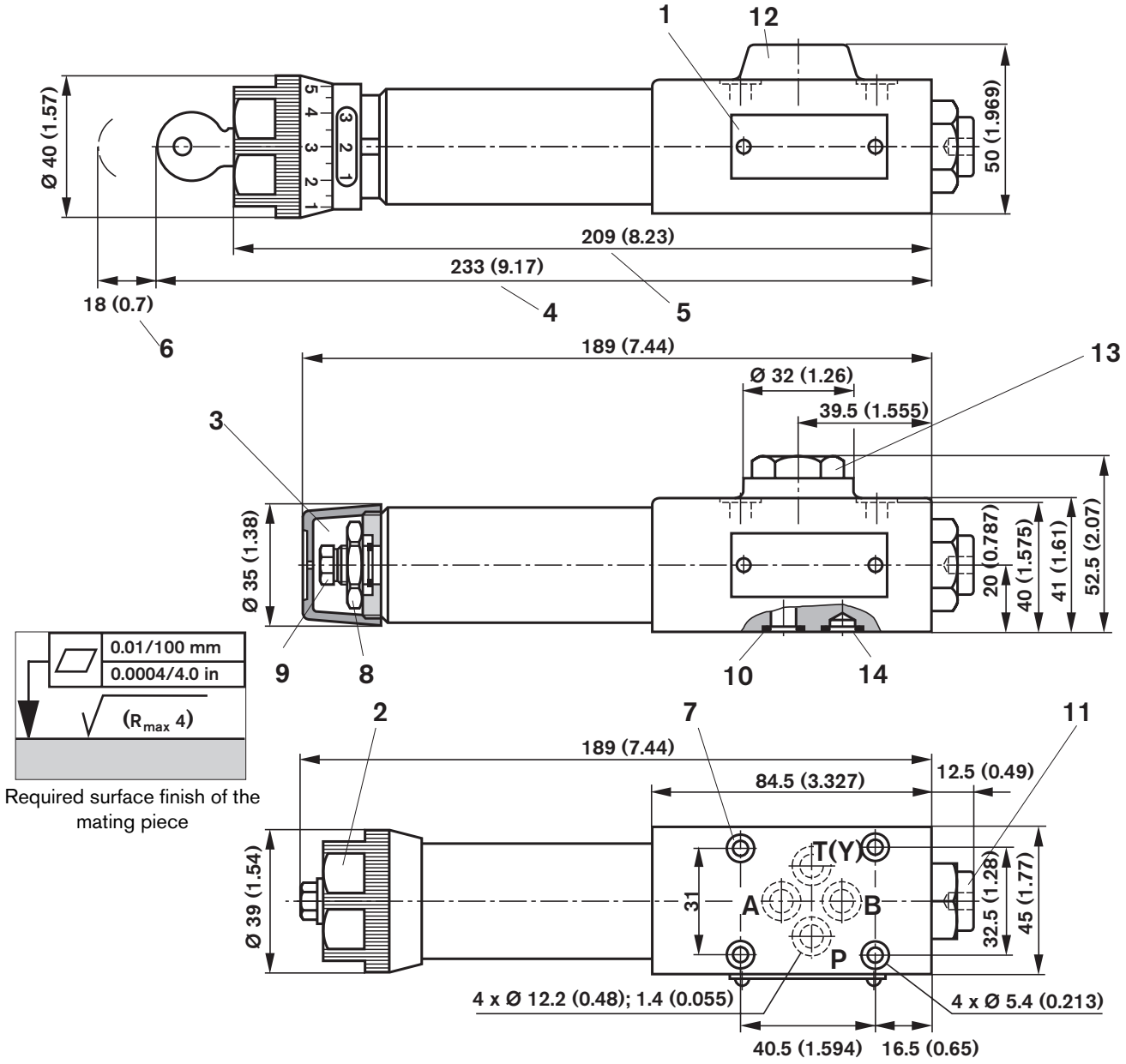


Note:
The curve characteristics remain, with a lower set pressure, the same in relation to the pressure rating.

The characteristic curves for the pressure relief function are valid for the outlet pressure = zero over the entire flow range!

1 P to A (min. pressure differential)
2 A to T (Y) (min. pressure differential)
3 Δp only over the check valve
4 Δp over the check valve and fully open control cross-section

Unit dimensions – dimensions in millimeters (inches)



Required surface finish of the mating piece

1 Name plate
2 Adjustment element “1”
3 Adjustment element “2”
4 Adjustment element “3”
5 Adjustment element “7”
6 Space required to remove the key
7 Valve fixing holes
8 Lock nut 24A/F
9 Hexagon 10A/F
10 Identical seal rings for ports A, B, P, T(Y)
11 Pressure gauge port G 1/4; 12 (SAE-4; 7/16-20) deep; internal hexagon 6A/F
12 Without check valve
13 With check valve
14 Port B has no function

Subplates G 341/01, G 1/4
G 314/12 (SAE-4; 7/16-20)
G 342/01, G 3/8
G 342/12 (SAE-6; 9/16-18)
G 502/01, G 1/2
G 502/12 (SAE-8; 3/4-16)
to catalogue sheet RE 45 052 and

Valve fixing screws
4 of M5 x 50 DIN 912 - 10.9 (10-24 UNC x 2”),
Tightening torque $M_A = 8.9$ Nm (6,56 lb-ft)
Must be ordered separately.

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

Notes

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