Pressure reducing valve, direct operated

RE 26564/05.11 1/8
Replaces: 02.03

Type DR 6 DP


H7743

Size 6
Component series 5X
Maximum operating pressure 315 bar *[4568 psi]*
Maximum flow 60 l/min *[15.9 US gpm]*

Table of contents

Features

- For subplate mounting
- Porting pattern according to DIN 24340 form A
- Porting pattern according to ISO 4401-03-02-0-05 and NFPA T3.5.1 R2-2002 D03 (**with** locating hole)
- 4 adjustment types for pressure adjustment, optionally:
  - Rotary knob
  - Setscrew with hexagon and protective cap
  - Lockable rotary knob with scale
  - Rotary knob with scale
- 5 pressure ratings
- Check valve, optional

- More informatio:
  - Subplates Data sheet 45052

Ordering code

DR 6 DP	–5X/	Y				*

Pressure reducing valve, direct operated, size 6

Adjustment type

Rotary knob	**= 1**
Setscrew with hexagon and protective cap	**= 2**
Lockable rotary knob with scale	**= 3** [1]
Rotary knob with scale	**= 7**

Component series 50 to 59 **= 5X**
(50 to 59: Unchanged installation and connection dimensions)

Maximum secondary pressure 25 bar *[362 psi]*	**= 25**
Maximum secondary pressure 75 bar *[1088 psi]*	**= 75**
Maximum secondary pressure 150 bar *[2175 psi]*	**= 150**
Maximum secondary pressure 210 bar *[3046 psi]*	**= 210**
Maximum secondary pressure 315 bar *[4568 psi]*	**= 315** [2]

Y = Pilot oil supply internal, leakage oil discharge external

No code =	With check valve
M =	Without check valve

Seal material

No code =	NBR seals
V =	FKM seals
	(other seals upon request)

Attention!
Observe compatibility of seals with hydraulic fluid used!

No code =	Without locating hole
/60 [3] **=**	With locating hole
/62 =	With locating hole and locating pin ISO 8752-3x8-St

Further details in the plain text

[1] H-key with Material no. **R900008158** is included in the delivery.

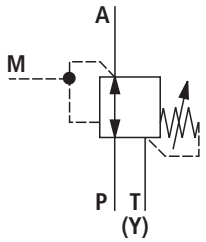
[2] Only with adjustment type "2" and without check valve

[3] Locating pin ISO 8752-3x8-St, Material no. **R900005694** (separate order)

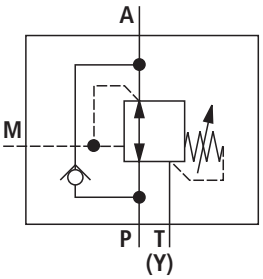
Standard types and standard units are contained in the EPS (standard price list).

Symbols

Version "M"
without check valve



"No code" version
with check valve



Function, section

The valve type DR 6 DP is a direct operated pressure reducing valve in 3-way design, i.e. with pressure limitation of the secondary circuit.

It is used to reduce a system pressure. The secondary pressure is set via the adjustment type (4).

In the initial position the valve is open. Hydraulic fluid can flow from channel P to channel A without obstructions. Via the pilot line (6), the pressure in channel A is applied to the spool face vis-à-vis the compression spring (3). If the pressure in channel A rises above the value set at the compression spring (3), the control spool (2) moves into the control position and holds the set pressure in channel A constant.

Signal and pilot oil are provided internally, via the control line (6) by channel A.

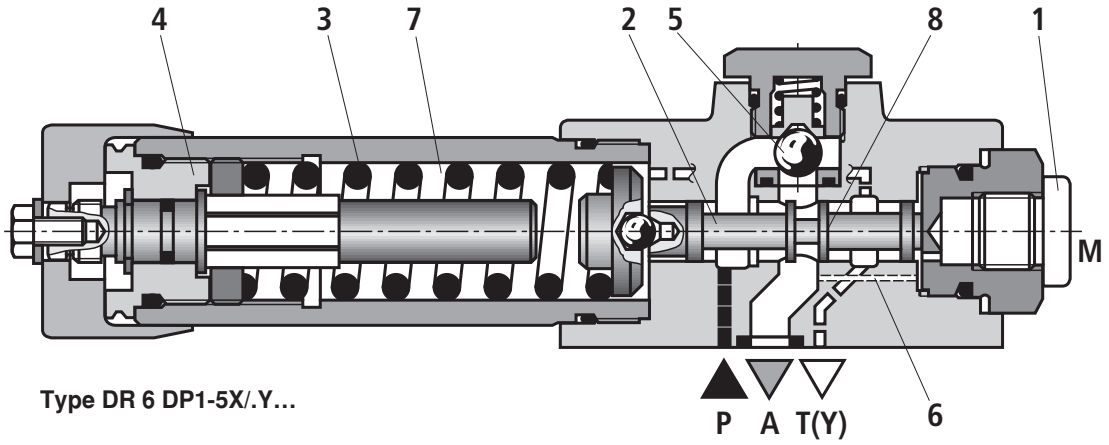
If the pressure in channel A continues to increase due to external forces at the actuator, it moves the control spool (2) further against the compression spring (3).

Thus, channel A is, via the control edge (8) at the control spool (2), connected with channel T(Y). Hydraulic fluid flows to the tank until the pressure can only increase slightly.

The leakage oil drain from the spring chamber (7) is always realized externally, via channel T(Y).

For the free flow back from channel A to channel P, you can optionally install a check valve (5).

A pressure gauge connection (1) allows for the control of the secondary pressure.



Type DR 6 DP1-5X/.Y…

Technical Data (For applications outside these parameters, please consult us!)

general

Weight	kg *[lbs]*	1.2 *[2.64]*
Installation position		Any
Ambient temperature range	°C *[°F]*	–30 to +80 *[–22 to +176]* (NBR seals) –20 to +80 *[–4 to +176]* (FKM seals)

hydraulic

Maximum operating pressure	– Port P	bar *[psi]*	315 *[4568]*
Maximum secondary pressure	– Port A	bar *[psi]*	25; 75; 150; 210; 315 *[362; 1088; 2175; 3046; 4568]*
Maximum backpressure	– Port T (Y)	bar *[psi]*	160 *[2320]*
Maximum flow		l/min *[US gpm]*	60 *[15.9]*
Hydraulic fluid			See table below
Hydraulic fluid temperature range		°C *[°F]*	–30 to +80 *[–22 to +176]* (NBR seals) –20 to +80 *[–4 to +176]* (FKM seals)
Viscosity range		mm^2/s *[SUS]*	10 to 800 *[60 to 3710]*
Maximum permitted 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
Mineral oils and related hydrocarbons		HL, HLP, HLPD	NBR, FKM	DIN 51524
Environmentally compatible	– Insoluble in water	HETG	NBR, FKM	ISO 15380
		HEES	FKM	
	– Soluble in water	HEPG	FKM	ISO 15380
Flame-resistant	– Water-free	HFDU, HFDR	FKM	ISO 12922
	– Water-containing	HFC (Fuchs Hydrotherm 46M, Petrofer Ultra Safe 620)	NBR	ISO 12922

☞ **Important information on hydraulic fluids!**

– For more information and data on the use of other hydraulic fluids refer to data sheet 90220 or contact us!

– There may be limitations regarding the technical valve data (temperature, pressure range, service life, maintenance intervals, etc.)!

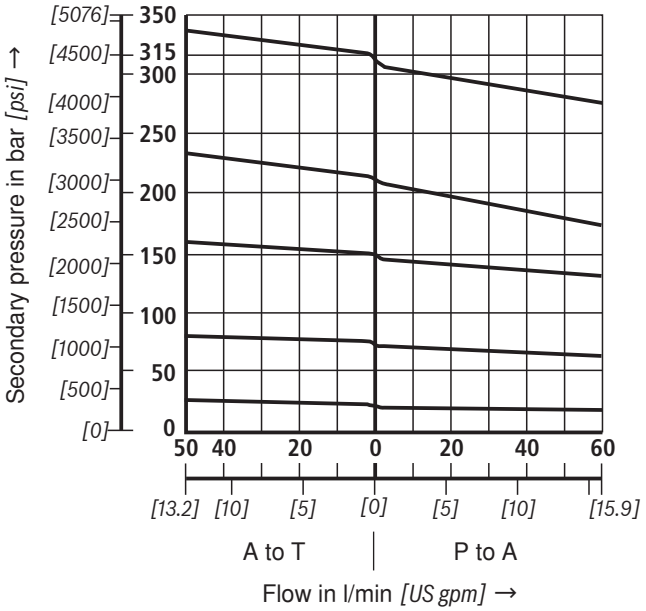
– **Flame-resistant – water-containing**:
  - Maximum operating pressure 210 bar
  - Maximum hydraulic fluid temperature 60 °C
  - Expected service life as compared to HLP hydraulic oil 30 % to 100 %

[1)] The cleanliness classes specified for the components must be adhered to in hydraulic systems. Effective filtration prevents faults and at the same time increases the service life of the components.

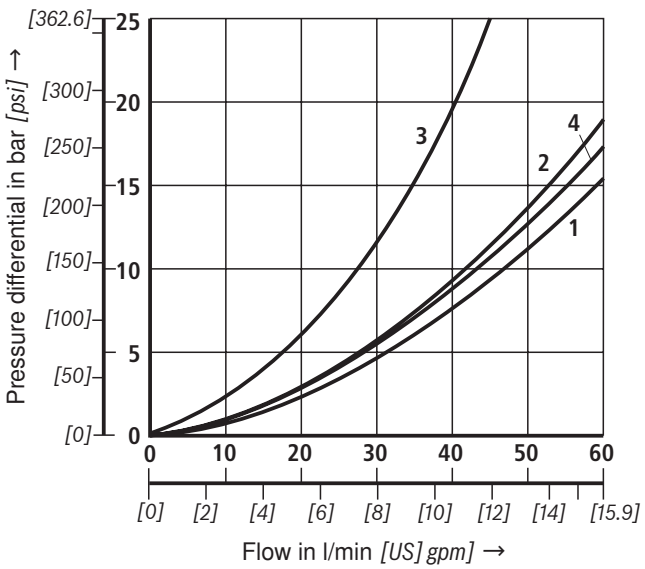
For the selection of the filters see www.boschrexroth.com/filter.

Characteristic curves (measured with HLP46, ϑ_{Oil} = 40 ± 5 °C *[104 ± 9 °F]*)

p_A-q_V characteristic curves



Δp-q_V characteristic curves



☞ **Note!**

With lower pressures set, the curve development is maintained according to the pressure rating.

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

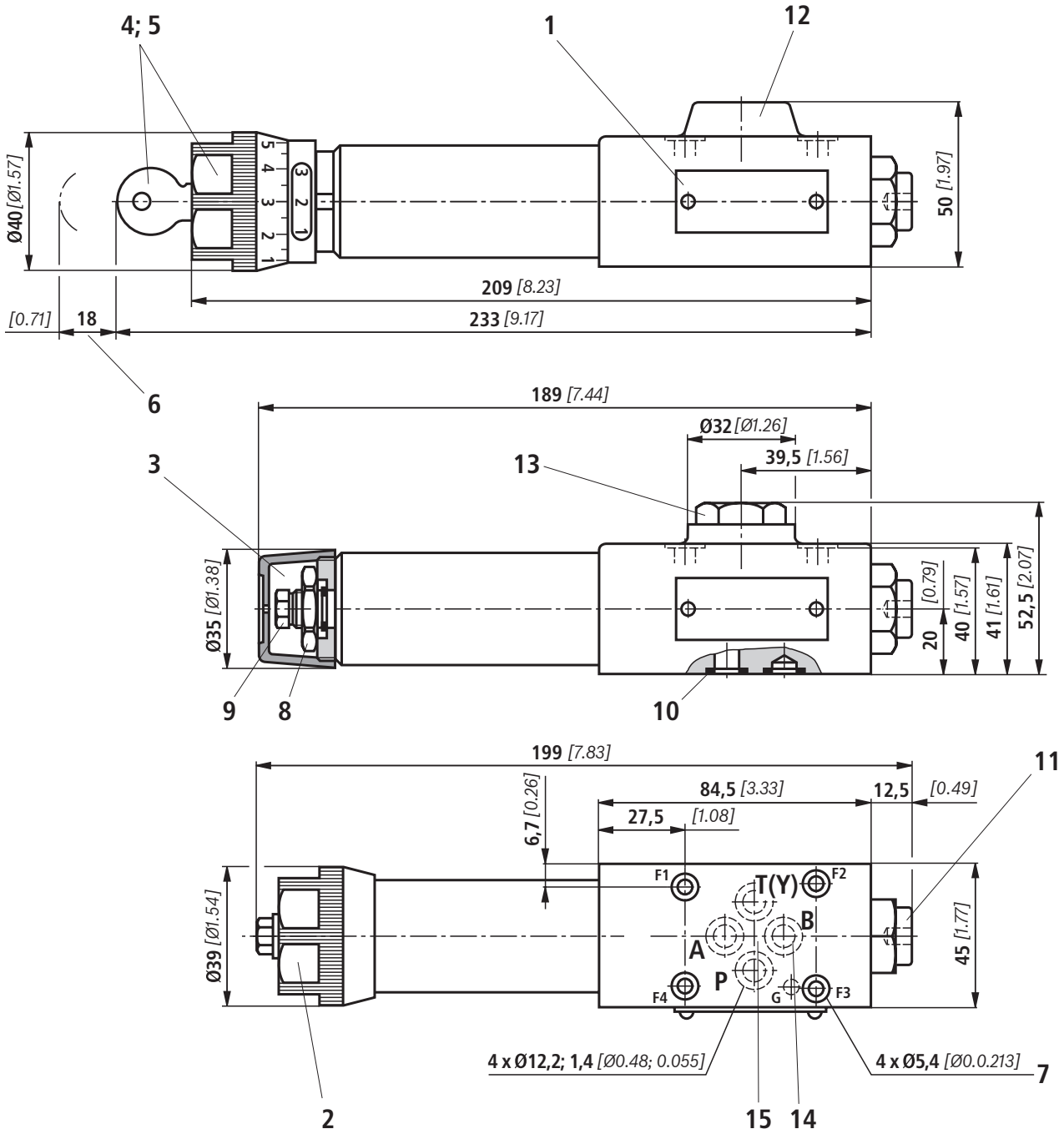
1 P to A (minimum pressure differential)

2 A to T(Y) (minimum pressure differential)

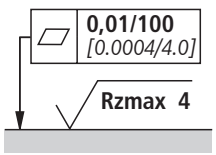
3 Δp only via check valve

4 Δp via check valve and completely opened control cross-section

Unit dimensions (dimensions in mm *[inch]*)



Explanations of items, valve mounting screws and **sub-plates** see page 7.



Required surface quality of the valve mounting face

Unit dimensions

1 Name plate
2 Adjustment type "1"
3 Adjustment type "2"
4 Adjustment type "3"
5 Adjustment type "7"
6 Space required to remove the key
7 Valve mounting bores
8 Lock nut SW24
9 Hexagon SW10
10 Identical seal rings for ports A, B, P, T(Y)
11 Pressure gauge connection G1/4, 12 deep. Internal hexagon SW6
12 Without check valve
13 With check valve
14 Port B without function
15 Porting pattern according to DIN 24340 form A (**without** locating hole), or ISO 4401-03-02-0-05 and NFPA T3.5.1 R2-2002 D03 (**with** locating hole for locating pin ISO 8752-3x8-St, Material no. **R900005694**, separate order)

Subplates according to data sheet 45052 (separate order)

(**without** locating hole)	G 341/01 (G1/4)
	G 342/01 (G3/8)
	G 502/01 (G1/2)
(**with** locating hole)	G 341/60 (G1/4)
	G 342/60 (G3/8)
	G 502/60 (G1/2)

Valve mounting screws (separate order)

4 hexagon socket head cap screws metric ISO 4762 - M5 x 50 - 10.9-flZn-240h-L
with friction coefficient μ_{total} = 0.09 to 0.14,
Tightening torque M_A = 7 Nm ±10 %,
Material no. **R913000064**

4 hexagon socket head cap screws UNC 10-24 UNC x 2" (on request)