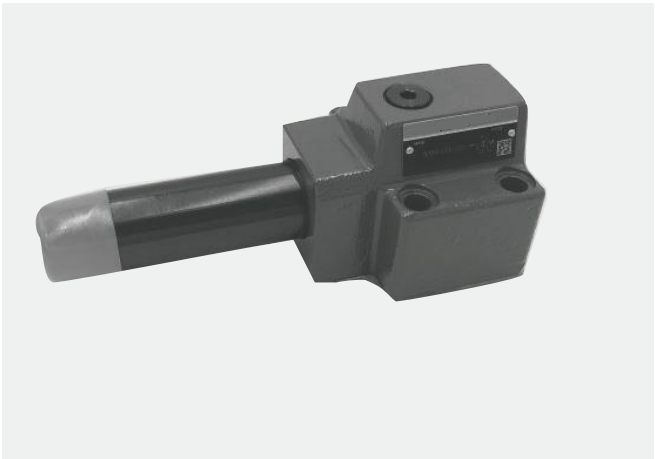
Direct Operated Pressure Reducing Valve

Model: DR10DP...4X



- Size 10
- Maximum working pressure 210 bar
- Maximum working flow 80 L/min

Contents

Features

- 4 pressure ratings
- 2 adjustment elements
  rotary knob
  internal hexagon screw with protective cap
- With pressure gauge connection
- Check valve, optional

Function description, sectional drawing

The DR10DP valve is a 3-way direct operated pressure reducing valve and has relief function of reducing pressure to ensure a stable of the secondary pressure. It is used to reduce the pressure of circuit, the secondary pressure is set via the adjusting element (1).

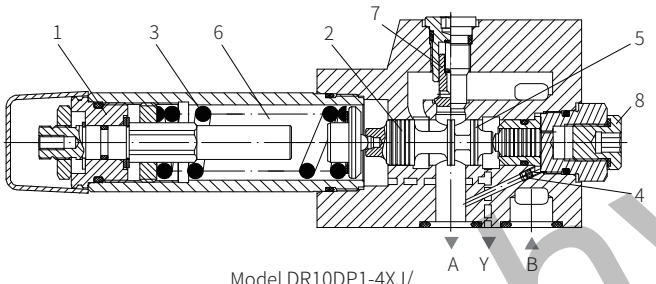
At rest, the valve is normally open, the fluid can flow freely from port B to port A.The pressure at port A acts on the plunger(9) of compression spring(3) via control line (4). When the pressure in port A exceeds the setting value of the compression spring (3), the control spool (2) moves into the control position and the pressure at port A remains constant. The control oil are supplied internally from port A via the control line (4).

If the pressure at port A continues to increase due to external forces acts on the actuator, the control spool (2) will still move towards the compression spring (3), then the port A is connected to the oil tank via the shoulder (5) at the control spool (2). The sufficient oil flows back to the tank to prevent further pressure increase.

The leakage oil externally drain from the spring chamber (6) via channel T (Y).An optional check valve (7) allows the oil to flow freely from port A to port B.

A pressure gauge connection (8) allows for the control of the secondary pressure. The oil in the spring chamber (6) is drained external to the oil tank via port Y.

An optional check valve (7) allows the oil to flow freely from port A to port P, and the pressure gauge connection (1) is used for secondary pressure monitoring of the valve.



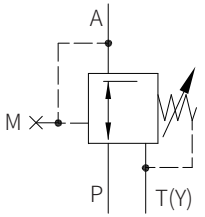
Model DR10DP1-4XJ/

Models and specifications

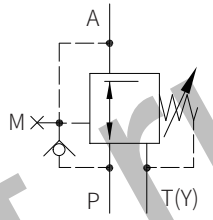
DR10DP | — | 4X | / | Y | | *

- direct operated pressure reducing valve size 10 =10
- adjusting element
  - rotary knob =1
  - internal hexagon screw with protective cap =2
- 40 to 49 series =4X
  (40 to 49 series: installation and connection size unchanged)
- maximum secondary pressure 25bar =25
- maximum secondary pressure 75bar =75
- maximum secondary pressure 150bar =150
- maximum secondary pressure 210bar =210
- Y= pilot oil supply internal, pilot oil drain external
- M= without check valve; No code= with check valve
- sealing material
  - No code= NBR seals
  - V= FKM seals
  - (consult for other seals)
- more information in text

Functional symbols



YM type
Without check valve
Pilot oil supply internal
Pilot oil drain external



Y type
With check valve
Pilot oil supply internal
Pilot oil drain external

Technical parameters

Installation position			Optional
Environment temperature range		°c	-30 to +50 (NBR seal)
		°c	-20 to +50 (FKM seal)
Weight		Kg	
Hydraulic			
Nominal pressure		bar	210
Maximum working pressure	Port B	bar	315
Maximum secondary pressure	Port A	bar	25; 75; 150; 210
Maximum backpressure	Port Y	bar	160
Maximum flow		L/min	80
Medium			Mineral oil (HL, HLP)[1] in accordance with DIN51524; Fast living organisms degraded oil according to VDMA 24568; HETG (Rapeseed oil)[1]; HEPG (Polyethyleneglycol)[2] ; HEES (Synthetic Fats)[2]
Hydraulic oil temperature range		°c	-30 to +80 (NBR seal)
		°c	-20 to +80 (FKM seal)
Viscosity range		mm^2/s	10 to 800
Cleanliness of oil[3]			The maximum allowable pollution level of oil is ISO4406 Class 20/18/15

1) For NBR seal and FKM seal.

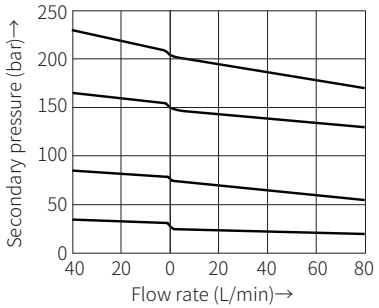
2) Only for FKM seal.

3) The oil must meet the cleanliness degree requested by the components in the hydraulic system. Effective oil filtration can prevent failure and increase the service life of the components.

Characteristic curve

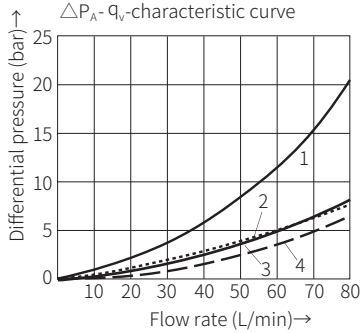
(Measured when using HLP46, ϑ_{oil}=40°C ± 5°C)

△P_A- q_v-characteristic curve



A to Y | B to A

△P_A- q_v-characteristic curve



Note:
When the setting pressure is low, the characteristic curve remains within the corresponding pressure level range.

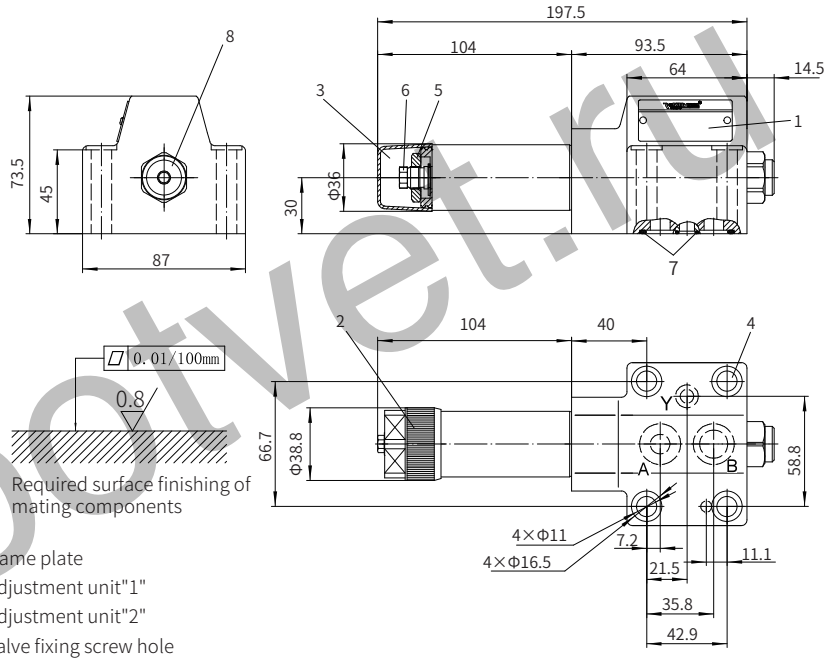
The characteristic curves are valid for an outlet pressure = 0 over the entire flow range!

1 A to Y (minimum pressure differential)
2 B to A (minimum pressure differential)
3 △P only via check valve
4 △P only via check valve and completely opened control cross-section

Component size

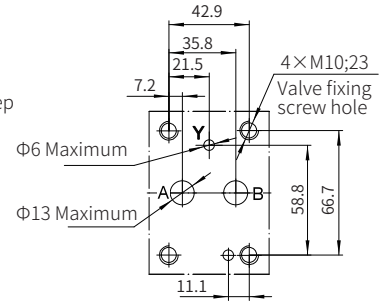
Size unit: mm

Model **DR10DP…-4XJ/…**



Required surface finishing of mating components

1 Name plate
2 Adjustment unit"1"
3 Adjustment unit"2"
4 Valve fixing screw hole
5 Locknut S=24
6 Internal hexagon adjusting screw S=10
7 O ring 17.12x2.62 (for port P, A, B, T)
O ring 8.75x1.8 (for port P, A, B, T)
8 Pressure gauge connection: G1/4 or M14x1.5, 12 deep



Valve fixing screw
M10x60-10.9 grade GB/T70.1-2000
Tightening torque M_A=60Nm

It must be ordered separately
if connection subplate is needed.
Subplate type:
G460/01 (G3/8"); G460/02 (M18x1.5)
G461/01 (G1/2"); G461/02 (M22x1.5)