3.9

Pressure reducing valve direct operated

Type DR5DP...10

Size 5
up to 315 bar
up to 15 L/min

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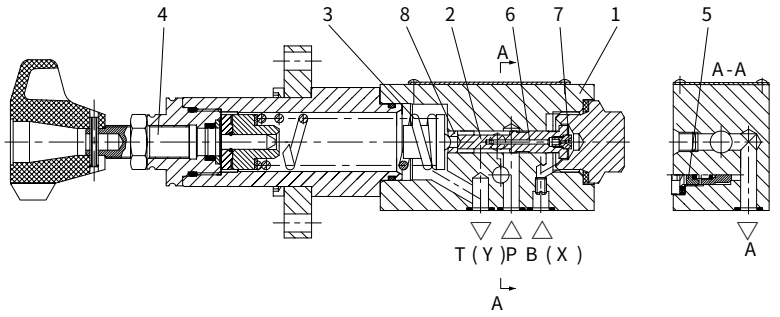
Features

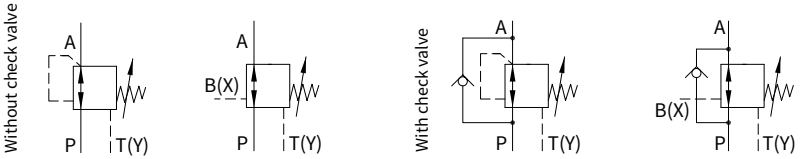
- Direct operated structure
- Porting pattern to DIN 24 340 form A and ISO4401
- 5 pressure ratings
- 2 adjustment elements:
  • Rotary knob
  • Adjustable bolt with protective cap,
- Check valve, optional

Function and configuration

The valve type DR5DP is a 3-way direct operated pressure reducing valve with a pressure relief function on the secondary side.
It is used to reduce the system pressure. The secondary pressure is set by the pressure adjustment element (4).
At static position, the valve is normally open and the pressure fluid flows unhindered from port P to port A. The pressure in port A acts at the spool area opposite to the compression spring (3) via the control line (6) and the spray nozzle(7). When the pressure in port A get the value setting at compression spring (3), the control spool (2) moves into the control position and keeps the setting pressure in port A constant. The internal control oil is taken from port A, or from external by port X. If the pressure in port A still increases due to external forces on the actuator, the control spool (2) moves still further towards the compression spring (3).This causes a flow path to be opened via control land(8) on the control spool (2). Sufficient fluid then flows back to tank to prevent any further pressure rise.
Fluid in spring chamber always drained to tank externally via port Y. For free return flow from port A to port P an optional check valve(5) can be fitted.



Symbols



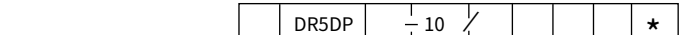
Version YM
Pilot oil supply
internal and
drain external

Version XYM
Pilot oil supply
external and
drain external

Version Y
Pilot oil supply
internal and
drain external

Version XY
Pilot oil supply
external and
drain external

Ordering code



Without plate fixing flange
(Standard version)=No code
With plate fixing flange =F

Direct operated pressure
reducing valve nominal size 5

Rotary knob =1
Adjustable bolt with protective cap =2

Series 10 = 10

Notes :315bar only for version without check valve

Further details in
clear text

No code = NBR seals
V = FKM seals

No code = With check valve
M = Without check valve

Y = Pilot oil supply internal
Oil drain external

XY = Pilot oil supply external
Oil drain external

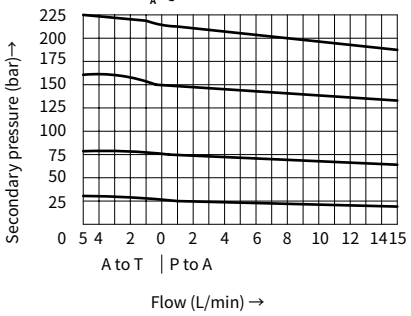
2.5 = Max. secondary pressure 25 bar
7.5 = Max. secondary pressure 75 bar
15 = Max. secondary pressure150 bar
21 = Max. secondary pressure 210 bar
31.5 = Max. secondary pressure 315 bar

Technical data

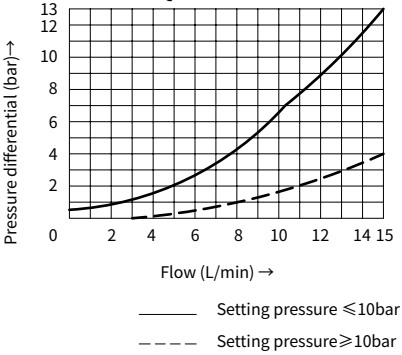
Fluid			Mineral oil suitable for NBR and FKM seal
			Phosphate ester for FKM seal
Fluid temperature range		°C	-30 to +80 (NBR seal)
			-20 to +80 (FKM seal)
Viscosity range		mm^2/s	10 to 800
Degree of contamination			Maximum permissible degree of fluid contamination: Class 9. NAS 1638 or 20/18/15, ISO4406
Max.operating pressure	Port P	bar	315
Max.secondary pressure	Port A	bar	25; 75; 150; 210; 315 (without check valve)
Max.backing pressure	PortT(Y)	bar	60
Max. flow-rate		L/min	15
Weight		kg	Approx.1.4

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

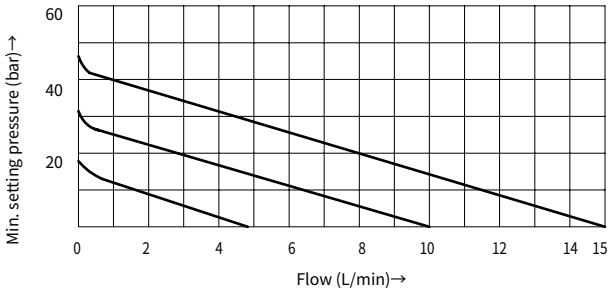
P_A-Q characteristic curve



ΔP-Q characteristic curve



P_{Amin}-Q characteristic curve

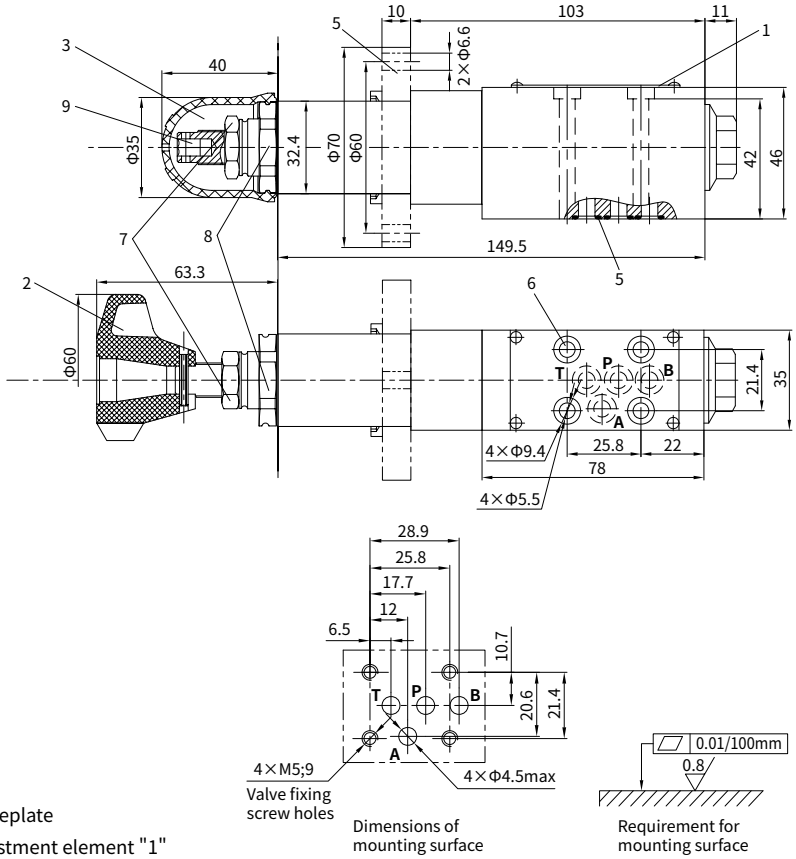


P_{Amin}-Q Characteristic curve shows the flow-rate in relation to the adjustable min. pressure rating from P to A.

For instance:
pressure is 25 bar and flow-rate is 10L/min,
adjusts the pressure of port A to 20bar,
when the secondary pressure increases to 23bar,
the flow-rate trends to zero.

Unit dimensions

(Dimensions in mm)



1 Nameplate
2 Adjustment element "1"
3 Adjustment element "2"
4 Plate fixing flange
5 O-ring 7×1.5 (P, T, A, B)
6 Valve fixing holes
7 Lockable nut S=19
8 External hexagon screw S=30
9 Internal hexagon screw S=6

It must be ordered separately, if connection plate is needed
Type: G 115/01A (G1/4) G 115/02A (M14×1.5)

Valve fixing screws:
GB/T 70.1-M5×50 -10.9, internal hexagon screw
Tightening torque M_A =9Nm