

Safety for Hydraulics

Pressure relief cartridge valve, series DVP 20 B



1 General description

- Protects the pump and/or actuator and system against over-pressure
- Direct acting, cartridge-type seat valve
- Various pressure ranges

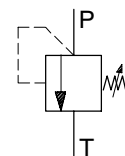
2 Advantages

- Zero leakage
- Very quiet operation thanks to integral damping spool
- Compact design means small space requirement
- Sealing in the axial direction is by means of an O-ring retained in a groove
- For ported bodies, consult Bucher Hydraulics

3 Application

For installation in manifold blocks

4 Symbol



5 Main characteristics



Important: for applications outside these parameters, consult Bucher Hydraulics

General characteristics	Description, value, unit
Type	direct-acting seat valve
Mounting method	screw-in cartridge
Ports	P, T = \varnothing 20 mm
Mounting attitude	unrestricted
Flow direction	P → T
Weight	0.96 kg

Hydraulic characteristics	Description, value, unit
Size	20
Nominal flow rate	see performance graphs ⇒ section 10
Max. pressure setting	450 bar (⇒ section 10)
Max. pressure at port T	50 bar
Hydraulic fluid	Mineral oil to DIN 51524 and DIN 51525 (HL/HLP). Other fluids - consult Bucher Hydraulics
Operating temperature range	-20°C...+80°C, for other temperatures consult Bucher Hydraulics
Temperature rating - seal materials Nitrile (standard) Nitrile (low temperature) Viton	-20°C...+80°C -50°C...+80°C -20°C...+200°C
Viscosity range min. viscosity max. viscosity	10 - 380 mm ² /s (cSt) recommended 2.8 mm ² /s (cSt) 1500 mm ² /s (cSt)
Filtration / Cleanliness class	NAS 1638 class 9, β 10 \geq 75 ISO 4406 class 18/15

Adjustment information



Important: any pressure in T is additive to the pressure setting.

Pressure range bar	Change in pressure per turn of the adjusting spindle bar
20-30	4.5
30-65	9.5
65-150	22
140-250	45
200-320	70
300-450	107

6 Safety information

- This valve must only be used for the purpose for which it has been designed
- It must be adjusted by qualified personnel only
- Before removing or disassembling the valve, all hydraulic pressure must be vented from the system - double check!
- The valve must not be opened without the express permission of the manufacturer

7 Installation information

- Protect seals from damage, and clean the cavity before fitting the valve
- Use the correct tightening torques (⇒ section 11)
- At commissioning, bleed all air from the hydraulic system

8 Pressure-adjustment information

(6 A/F hex. socket / 19 A/F lock nut)

Pressure increase → clockwise ↻

Pressure reduction → counter-clockwise ↻

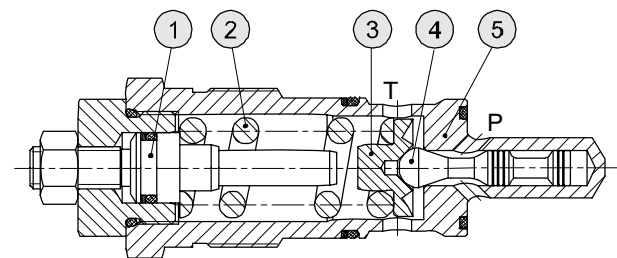
Rate of pressure change

→ dependent on pressure range

After making an adjustment, always secure the adjusting screw with the lock nut to prevent it from loosening (tightening torque 35 Nm)

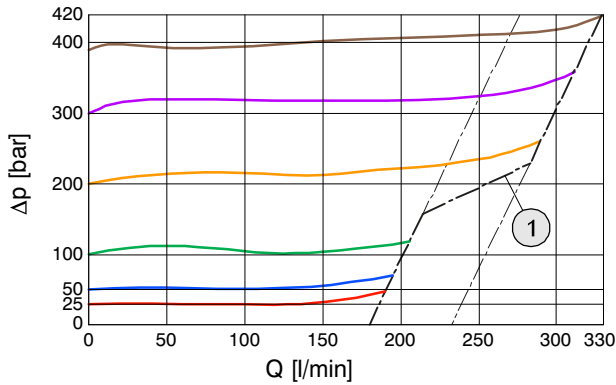
9 Functional description, sectional view

1. The system pressure can be continuously varied and set by means of the adjusting spindle (1). The spring (2) pushes the poppet (4) onto the seat (5). The pressure that is being limited acts on the right-hand end area of the poppet.
2. If the pressure in P rises above the value set by the spring (2), the poppet (4) is pushed against the spring (2) and opens.
3. In order to attain a flat characteristic and good pressure-adjustment resolution over the whole pressure range, the total pressure range has been subdivided into 6 smaller pressure ranges. Each pressure range corresponds to a particular spring that allows a certain maximum pressure to be set.



1	adjusting spindle
2	spring
3	spring retainer
4	poppet
5	seat

10 Performance graphs, examples of pressure settings



measured at 33 mm²/s (cSt)

1 Recommended maximum flow

11 Dimensions, mounting cavity

Important: bores T and P can be positioned anywhere around circumference.

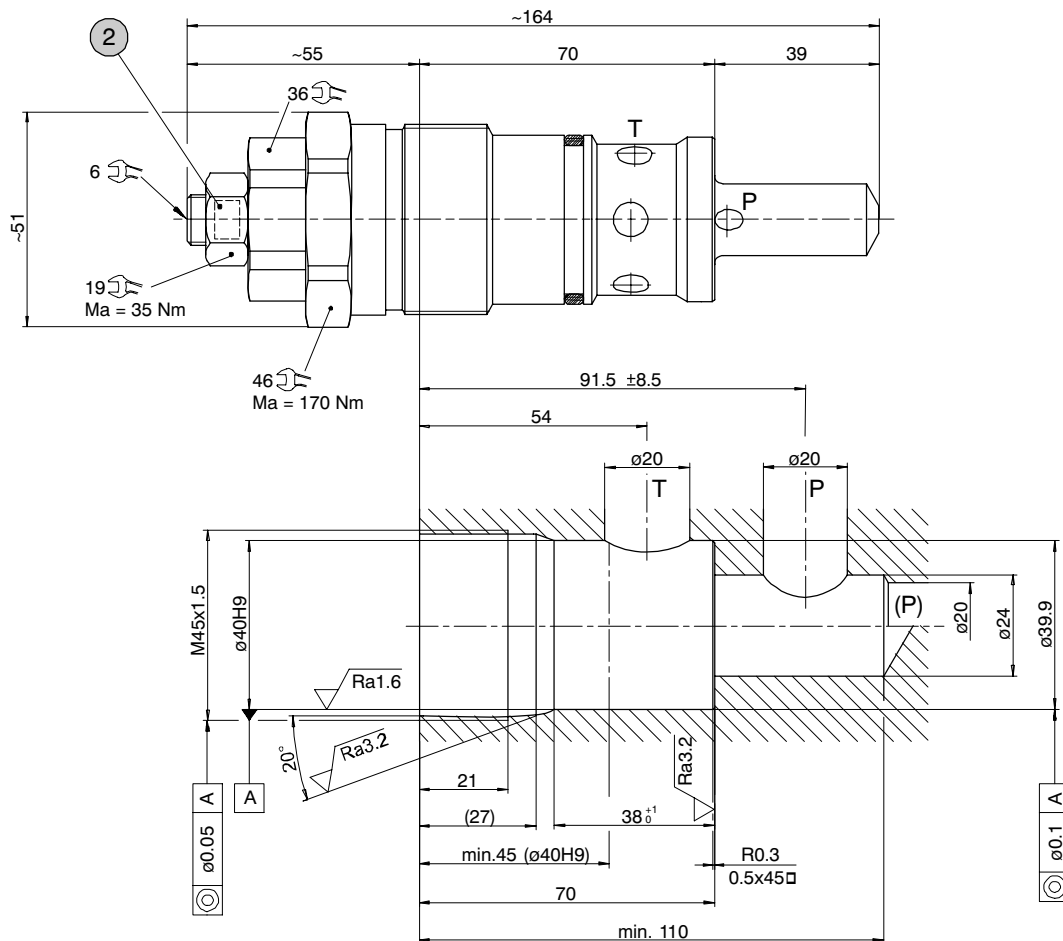
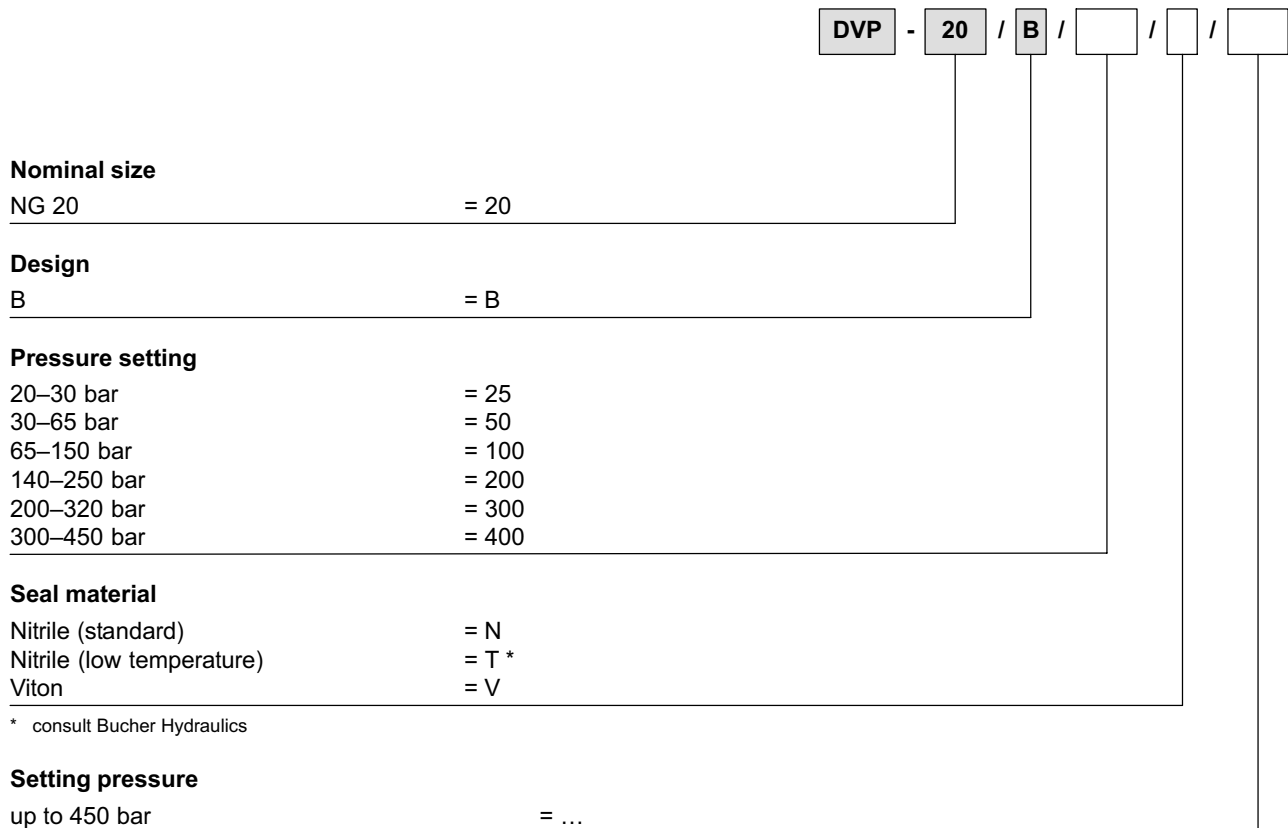


Fig. 1

2 Designation pressure setting [bar]

12 Model code key



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