# PRESSURE RELIEF VALVE

Manual control – tube connection (NG 6)
Mounting made front plate with flange
Pilot-operated - 315 bar - 40 l/min

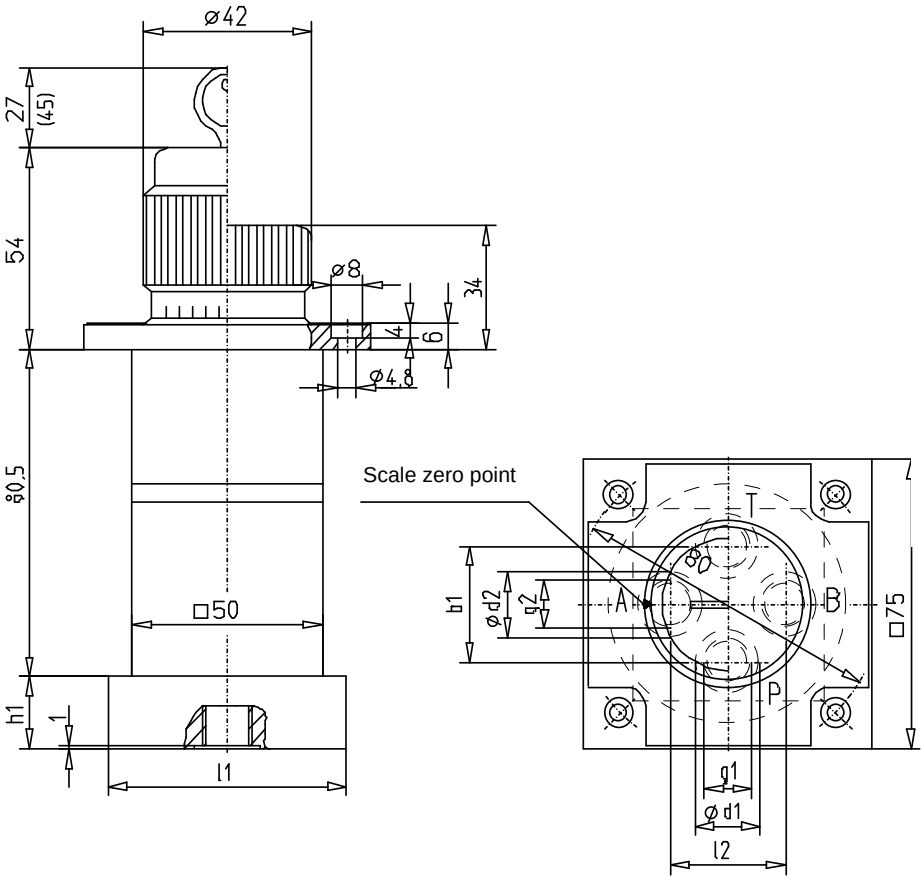
**Type**

# 61 D

Pressure relief valve control limits a continuous variable pressure in the inlet stream.

## FEATURES

- Scaled control knob, setting angle 325°
- Control knob can be locked optionally - VW-locking E 10
- 4 setting volume flow ranges
- minimum set pressure for all pressure setting ranges 7 bar
- with control port for remote control or unloading pressure and with internal or external control oil drain as an option
- tube connection: screw plug holes - to DIN 3852 T.2
- Standard sealing elastomer Viton (FKM)




| Dimension (mm) | | | | |
|---|---|---|---|---|
| | By port value | | | |
| code | 2 | | 3 | 4 |
| g1 * | G 1/4 | | G 3/8 | G1/2 |
| g2 * | — | G 1/4 | G 1/4 | G1/4 |
| ø d1 | 19 | | 23 | 27 |
| ø d2 | — | 19 | 19 | 19 |
| b1 | 29 | 28 | 28 | 39 |
| h1 | 20 | 25 | 25 | 30 |
| l1 | □ 50 | ø 70 | ø 70 | ø 70 |
| l2 | — | 28 | 45 | 49 |
| | Weight (kg) | | | |
| | 1,9 | 2,1 | 2,1 | 2,3 |

*DIN / ISO / 228 / 1

## ORDER INFORMATION

The delivery scope includes for the "**S**"-model one safety key.

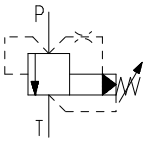
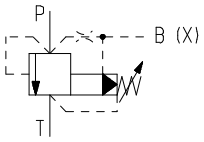
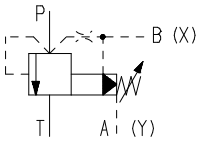
**Name**

| Pressure relief valve | 61 | D | S | 315 | X | 4 | M ... |
|---|---|---|---|---|---|---|---|

**Type series**
**Series code letter**
**Actuation:** control knob without lock = **without Code**
control knob with lock = **S**
**Rated setting pressure:** in bar **70; 140; 210; 315**
**valve variant control oil drain** (see symbol)
without external control oil drain = **without code**
with control oil drain „B" = **X**
with control oil drain „B" and „A" **= XY**
**valve option: connector size** for **P** and **T**
**2**= G1/4**; 3**= G3/8**; 4**= G1/2
(control oil drain G1/4 )
**Supplementary data for spezial models**

## CHARATERISTICS

### 1. General

| | | | |
|---|---|---|---|
| Symbol |  |  |  |
| Types | 61D | 61D...X | 61D..XY |
| Design | two stage: | pilot control<br>main control | = seat valve<br>= piston-type valve |
| Mounting position | any | | |
| Direction of volume flow | P to T | | |
| Ambient temperature | -20℃ to +80℃ | | |

### 2. Hydraulic characteristics

| | |
|---|---|
| Rated pressure ≙ max. Pressure | connection P; B = 315 bar<br>connection T = 315 bar with external oil control eductior<br>connection T = 70 bar with internal oil control eduction<br>connection A = 70 bar |
| Setting pressure range | 7 - 70 bar; 7 - 140 bar; 7 - 210 bar; 7 - 315 bar |
| Volume flow range | 30 l/min |
| Pressure volume flow operation | see Fig. 1 and 2 |
| Hydraulic fluid | Hydraulic oil according to DIN 51 524 (1,2) |
| Hydraulic fluid range | -20℃ to +70℃ |
| Viscosity range | 5 - 350 $mm^2/s$ |
| Control volume flow | approx. 350 $cm^3/min$ |
| Contamination level/ filtering | General permit table class 16/13 according to ISO 4406 or 7 according to NAS 1638 (recommended filter: minimum retaining rate $\beta_{5-10} \geq 75$) |

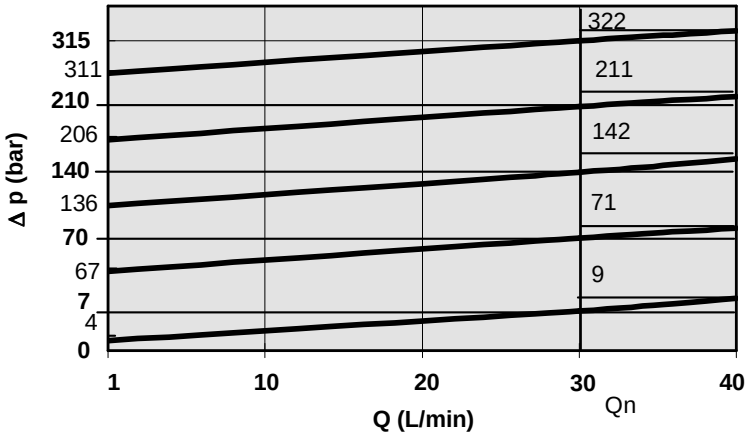
### 3. Type of actuation

manual via control knob

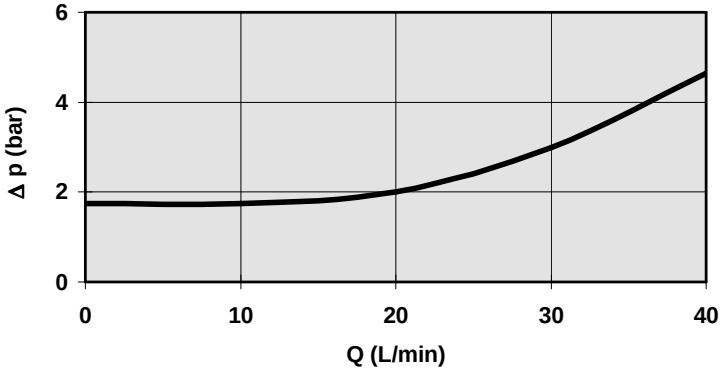
| | |
|---|---|
| Setting angle | 325° |
| Controlling torque | approx. 40 Ncm |

## CHARACTERISTICS

**Pressure flow signal function**
**Δp-Q-characteristics; Δp=f (Q)**
Fig. 1 shows the volume flow dependency by the different adjustment pressure controlling and the minimum setting pressure range. (external oil control eduction and without pressure to the tank). By using an internal oil control eduction increases the adjustment pressure by the pressure at connector T.




**Δp-Q characteristics**; Δp= f (Q)
Fig. 2 shows the pressure loss over the valve at relieved connector B.



# Valve description

## 1. Valve

The valve consists of two stages. It mainly consists of the main control part, and a pilot valve. The pressure can be controlled continuously by means of the scaled control knob. By using the control knob which is coupled with an elevating screw is spring-loaded and pre-stressed. The force acts via a screw drive, spring-loaded and a valve cone upon the pilot valve cone against the hydraulic force of the hydraulic liquid in the control piston in the main valve as reference pressure. The resulting pressure is stamped onto the control piston in the main valve as reference pressure. The control piston takes up the function of a pressure balance controlling the pressure within the hydraulic circuit in accordance with the pilot control pressure.

The valve is equipped with four ports, the main ports P and T for inlet and outlet plus the control ports B and alternatively A. Via port A (Y), the pilot control oil is drained. In order to avoid valve vibrations we recommend to make the control oil return to the tank separately; without exerting pressure and without interference. Port B (X) allows for the external valve relief on the hand and for remote control on the other hand. **The port must be closed if this function is not required**. In case of vibration of the system this port can be using by magnification the control oil volume so that the dampening characteristics change. With valve-variable Y the is exhausted the control oil over port T.

## 2. Materials

The valve components are made of structural steel. The external valve parts are bronzed or galvanized. The flange of the mounting made front is bronzed and decorated with an aluminium orifice. All wear parts are hardened. The control knob is made of aluminium, with a plastic core and the lock cylinder is made of brass.

For applications in excess of the given specification, please contact Schiedrum.

All specified parameters are partially based on long user's experience and partly on measurements made in laboratories. The data are typical of the valve and can deviate in series. All measurements were carried out on a test stand with an oil viscosity of 36mm²/sec and a filter mesh of < 10 µm. All data given here should be used as description of the product only and they are not to understand as warranty in the sense of law.