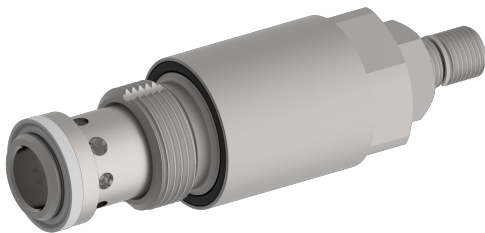


# Pressure valve

## Relief function

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$Q_{\max} = 140 \text{ l/min}$ ,  $p_{\max} = 350 \text{ bar}$   
pilot operated, spool type, mechanically adjustable  
Type series: DVPA-1C-10-...



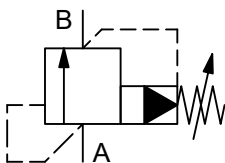
- Screw-in cartridge valve
- For cavity DC
- All external parts with zinc-nickel plating according to DIN EN ISO 19598
- Installation in threaded port body type DC-12
- Seated pilot stage
- Very stable operation
- Sensitive adjustment

### Description

These two-stage pressure-relief valves, series DVPA-1C-..., are size 10, screw-in cartridge valves with a seated pilot stage and an M24×1.5 mounting thread. They are designed on the proven sliding-spool principle. The spring chamber is internally drained to the secondary connection. The secondary connection should be preferably drained to the tank without pressure. To obtain a reliable pressure setting over the entire pressure range, the overall pressure range is

divided into different pressure levels. These valves are mainly used in certain mobile and industrial applications to limit the system pressure. The pressure is set by means of an adjusting spindle. All external parts of the screw-in valves are zinc-nickel plated and are thus suitable for use in the harshest operating environments. For installation and further information, please refer to the section related data sheets.

### Symbol



## Technical data

| General characteristics      | Description, value, unit                                                  |
|------------------------------|---------------------------------------------------------------------------|
| Function group               | Pressure valve                                                            |
| Function                     | Relief function                                                           |
| Design                       | Screw-in cartridge valve                                                  |
| Controls                     | mechanically adjustable                                                   |
| Characteristic               | pilot operated, spool type                                                |
| Construction size            | NG 10                                                                     |
| Thread size                  | M24×1,5                                                                   |
| Mounting attitude            | unrestricted                                                              |
| Weight                       | 0.23 kg                                                                   |
| Cavity acc. factory standard | For cavity DC                                                             |
| Tightening torque steel      | 65 Nm                                                                     |
| Tightening torque aluminium  | 65 Nm                                                                     |
| Tightening torque tolerance  | ± 10 %                                                                    |
| Minimum ambient temperature  | - 30 °C                                                                   |
| Maximum ambient temperature  | + 80 °C                                                                   |
| Surface protection           | All external parts with zinc-nickel plating according to DIN EN ISO 19598 |
| Sealing material             | see ordering code                                                         |
| Seal kit order number        | NBR: DS-216-N / FKM: DS-216-V                                             |

| Hydraulic characteristics                                                   | Description, value, unit                                                                                                |
|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Maximum operating pressure                                                  | 350 bar                                                                                                                 |
| Maximum flow rate                                                           | 140 l/min                                                                                                               |
| Flow direction                                                              | see symbol                                                                                                              |
| Hydraulic fluid                                                             | HL and HLP mineral oil according to DIN 51 524; other fluids on request!                                                |
| Minimum fluid temperature                                                   | - 30 °C                                                                                                                 |
| Maximum fluid temperature                                                   | + 80 °C                                                                                                                 |
| Viscosity range                                                             | 10 ... 650 mm <sup>2</sup> /s (cSt)                                                                                     |
| Recommended viscosity range                                                 | 15 ... 250 mm <sup>2</sup> /s (cSt)                                                                                     |
| Minimum fluid cleanliness<br>(cleanliness class according to ISO 4406:1999) | class 20/18/15                                                                                                          |
| Pressure adjustment range                                                   | pressure range L: 1 turn = ca. 13 bar<br>pressure range M: 1 turn = ca. 38 bar<br>pressure range N: 1 turn = ca. 65 bar |



### ATTENTION!

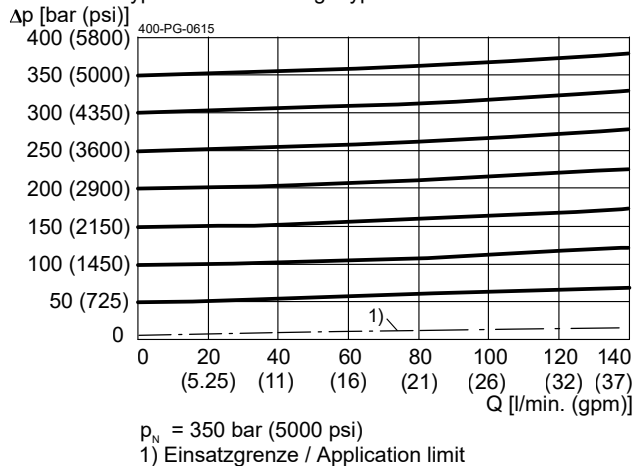
If there is pressure at the secondary connection, this is added to the set pressure value.

## Performance graphs

measured with oil viscosity 33.0 mm<sup>2</sup>/s (cSt)

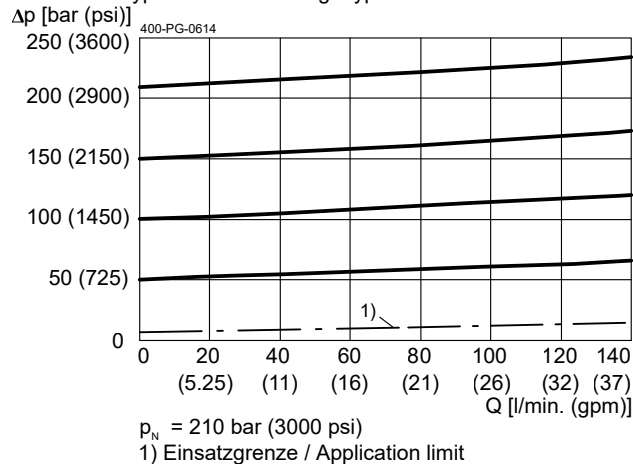
$\Delta p = f(Q)$  Pressure drop-flow rate characteristic

Druckstufe Typ N / Pressure range type N



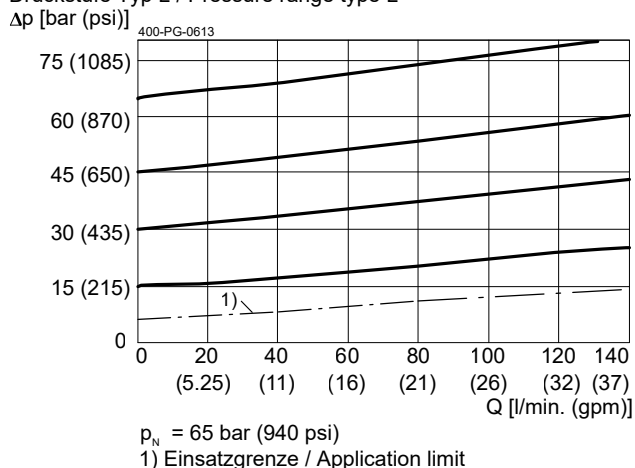
$\Delta p = f(Q)$  Pressure drop-flow rate characteristic

Druckstufe Typ M / Pressure range type M



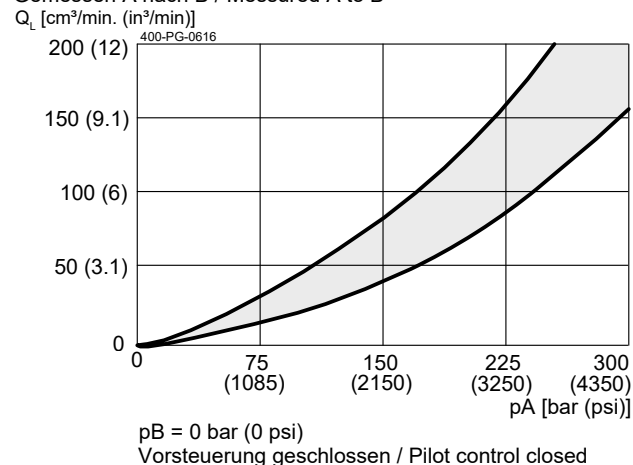
$\Delta p = f(Q)$  Pressure drop-flow rate characteristic

Druckstufe Typ L / Pressure range type L



$Q_L = f(p_A)$  Leakage flow rate

Gemessen A nach B / Measured A to B

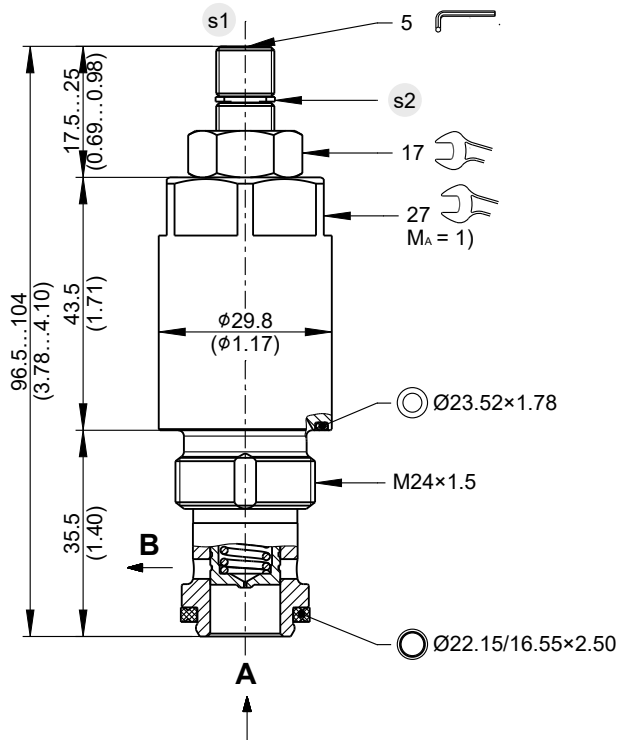


## Dimensions and sectional view

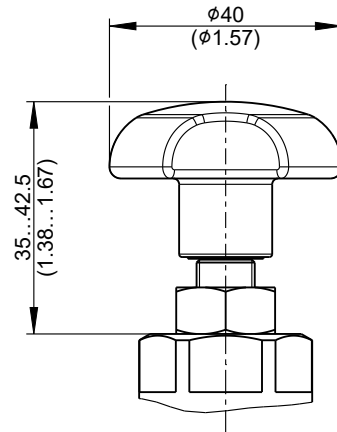
**Beispiel für die Masseinheit:  
Exampel for the dimensional units:**

0.79 = 0.79 mm millimeter  
(.031) = 0.031" inch

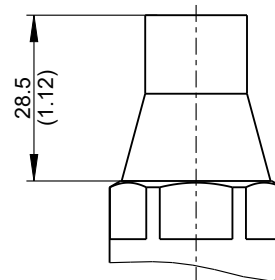
Version "S": Einstellschraube mit Innensechskant (Standard)  
Version "S": adjustment screw with internal hexagon (standard)



Version "H": Einstellschraube mit Handrad  
Version "H": adjustment screw with handknob



Einstellschraube mit Sicherungskappe  
adjustment screw with tamper-proof cap



## Installation information

**NOTE!**  
1) When fitting the screw-in cartridge valve, use the specified tightening torque. The value can be found in the chapter "Technical data".

**NOTE!**  
Set the required pressure with the adjusting screw (s1). After you have set the valve, lock the adjusting screw (s1) with the lock nut.

**NOTE!**  
Valve settings can be sealed by fitting the tamper-proof cap. To fit the cap, the snap ring (s2) has to be removed. Subsequent adjustment is only possible by destroying the tamper-proof cap.

**NOTE!**  
The seals are not available individually. The seal kit order number can be found in the chapter "Technical data".

**ATTENTION!**  
Only qualified personnel with mechanical skills may carry out any maintenance work. Generally, the only work that should ever be undertaken is to check, and possibly replace, the seals. When changing seals, oil or grease the new seals thoroughly before fitting them.

## Ordering code

|         |     |                                                                          |   |   |   |   |   |   |   |    |   |   |   |   |   |   |
|---------|-----|--------------------------------------------------------------------------|---|---|---|---|---|---|---|----|---|---|---|---|---|---|
|         | Ex. | D                                                                        | V | P | A | - | 1 | C | - | 10 | - | S | N | N | - | — |
| D       | =   | pressure-control valve                                                   |   |   |   |   |   |   |   |    |   |   |   |   |   |   |
| V       | =   | pilot operated                                                           |   |   |   |   |   |   |   |    |   |   |   |   |   |   |
| P       | =   | cartridge design                                                         |   |   |   |   |   |   |   |    |   |   |   |   |   |   |
| A ... Q | =   | standard model according to valid data sheet                             |   |   |   |   |   |   |   |    |   |   |   |   |   |   |
| Z ... R | =   | special model (on request)                                               |   |   |   |   |   |   |   |    |   |   |   |   |   |   |
| 1       | =   | Control type 1 (Internal control oil outlet to the secondary connection) |   |   |   |   |   |   |   |    |   |   |   |   |   |   |
| C       | =   | cavity type DC                                                           |   |   |   |   |   |   |   |    |   |   |   |   |   |   |
| 10      | =   | nominal size 10                                                          |   |   |   |   |   |   |   |    |   |   |   |   |   |   |
| S       | =   | adjustment screw with internal hexagon <b>(standard)</b>                 |   |   |   |   |   |   |   |    |   |   |   |   |   |   |
| H       | =   | adjustment screw with hand knob                                          |   |   |   |   |   |   |   |    |   |   |   |   |   |   |
| N       | =   | pressure range 10...350 bar (normal spring)                              |   |   |   |   |   |   |   |    |   |   |   |   |   |   |
| M       | =   | pressure range 10...210 bar (medium spring)                              |   |   |   |   |   |   |   |    |   |   |   |   |   |   |
| L       | =   | pressure range 10...65 bar (light spring)                                |   |   |   |   |   |   |   |    |   |   |   |   |   |   |
| N       | =   | NBR (nitril-butadien-rubber / BUNA) seals <b>(standard)</b>              |   |   |   |   |   |   |   |    |   |   |   |   |   |   |
| V       | =   | FKM (fluorocarbon rubber / VITON) seals<br>(special seals on request)    |   |   |   |   |   |   |   |    |   |   |   |   |   |   |
| 1 ... 9 | =   | technical design no. (omit by ordering)                                  |   |   |   |   |   |   |   |    |   |   |   |   |   |   |



### IMPORTANT!

When required, the tamper-proof cap (the adjustment seal) must be ordered separately in plain language.

## Related data sheets

| Reference                    | Description              |
|------------------------------|--------------------------|
| <a href="#">400-P-040011</a> | Form tools               |
| <a href="#">400-P-060111</a> | Cavity DC                |
| <a href="#">400-P-740101</a> | Threaded port body DC-12 |

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