# Pressure relief valve, direct operated

**RE 25710-D/06.14** 1/6
Replaces: 05.09

**Type DBD...SO156**

Size 4
Component series 1X
Maximum operating pressure 420 bar
Maximum flow 20 l/min


## Table of contents



## Features

- Screw-in cartridge
- It is used in applications with particularly high leak-tightness requirements
- Leakage-proof up to a maximum of 80% of the set opening pressure
- 2 adjustment types, optionally:
  - setscrew with internal hexagon
  - hand wheel

## Ordering code

| DBD | | 4 | K | 1X | | | | V | SO156 | * |
|---|---|---|---|---|---|---|---|---|---|---|

Pressure relief valve, direct operated = **DBD**

**Adjustment type**
Headless setscrew with internal hexagon = **S**
Hand wheel = **H**

Size 4 = **4**

Screw-in cartridge = **K**

Component series 10 to 19 (10 to 19: unchanged installation and connection dimensions) = **1X**

**Pressure rating**
Set pressure up to 50 bar = **50**
Set pressure up to 100 bar = **100**
Set pressure up to 200 bar = **200**
Set pressure up to 315 bar = **315**
Set pressure up to 420 bar = **420**

**– =** set to cracking pressure
**P =** set and sealed to cracking pressure

**e.g. 090 =** Cracking pressure 90 +5 bar
**Cracking pressure**

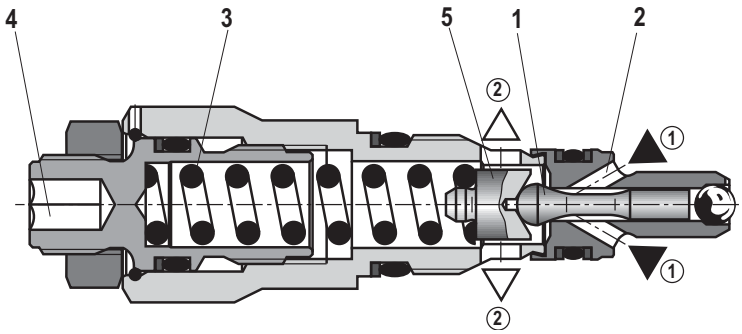
**V =** FKM seals
Seal material
Observe compatibility of seals with hydraulic fluid used! (Other seals upon request)

Further details in the plain text

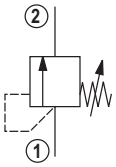
## Function, section, symbol

The pressure valve type DBD...SO156 is a direct operated pressure relief valve for the installation in block designs. It is used in applications with particularly high leak-tightness requirements for limiting a system pressure. The system pressure can be set via the adjustment type (4).

In the initial position the valve is closed. The pressure in the main port ① acts on the spring plate (5) via the control line (2) and poppet (1). If the pressure in the main port ① exceeds the value set at the compression spring (3), the poppet (1) opens and hydraulic fluid flows into the main port ②.




**Symbol**




① = Main port 1 (P)
② = Main port 2 (T)

## Technical data (For applications outside these parameters, please consult us!)

### General

| | | |
|---|---|---|
| Weight | kg | approx. 0.05 |
| Installation position | | any |
| Ambient temperature range | °C | -20 … +80 |

### Hydraulic

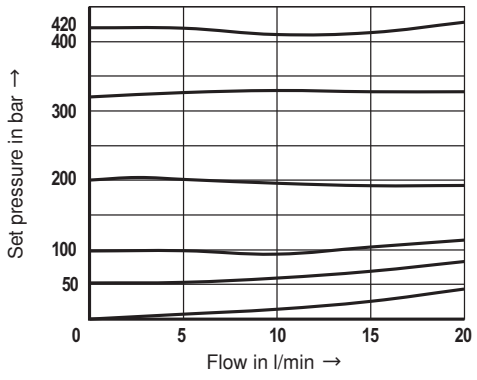
| | | |
|---|---|---|
| Maximum operating pressure | bar | 420 |
| Maximum flow | l/min | 20 |
| Hydraulic fluid | | Mineral oil (HL, HLP) according to DIN 51524; fast biodegradable hydraulic fluids according to VDMA 24568 (see also RE 90221); HETG (rape seed oil); HEPG (polyglycols); HEES (synthetic esters), other hydraulic fluids on request |
| Hydraulic fluid temperature range | °C | -20 … +80 |
| Viscosity range | $mm^2/s$ | 20 … 200 |
| Maximum admissible degree of contamination of the hydraulic fluid cleanliness class according to ISO 4406 (c) | | Class 20/18/15 [1] |

[1] The cleanliness classes stated for the components need to be maintained in hydraulic systems. Effective filtration prevents faults and at the same time increases the life cycle of the components.

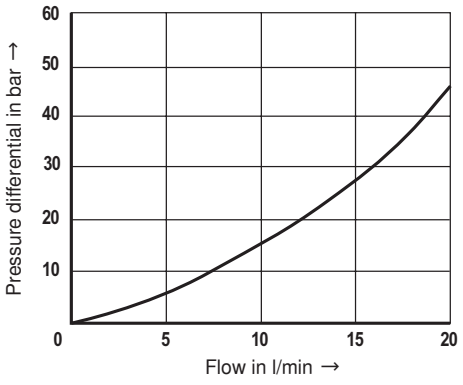
For the selection of the filters see www.boschrexroth.com/filter

## Characteristic curves (measured with HLP46, $\vartheta_{oil}$ = 40 ±5 °C)

**$p_E$-$q_V$-characteristic curves**



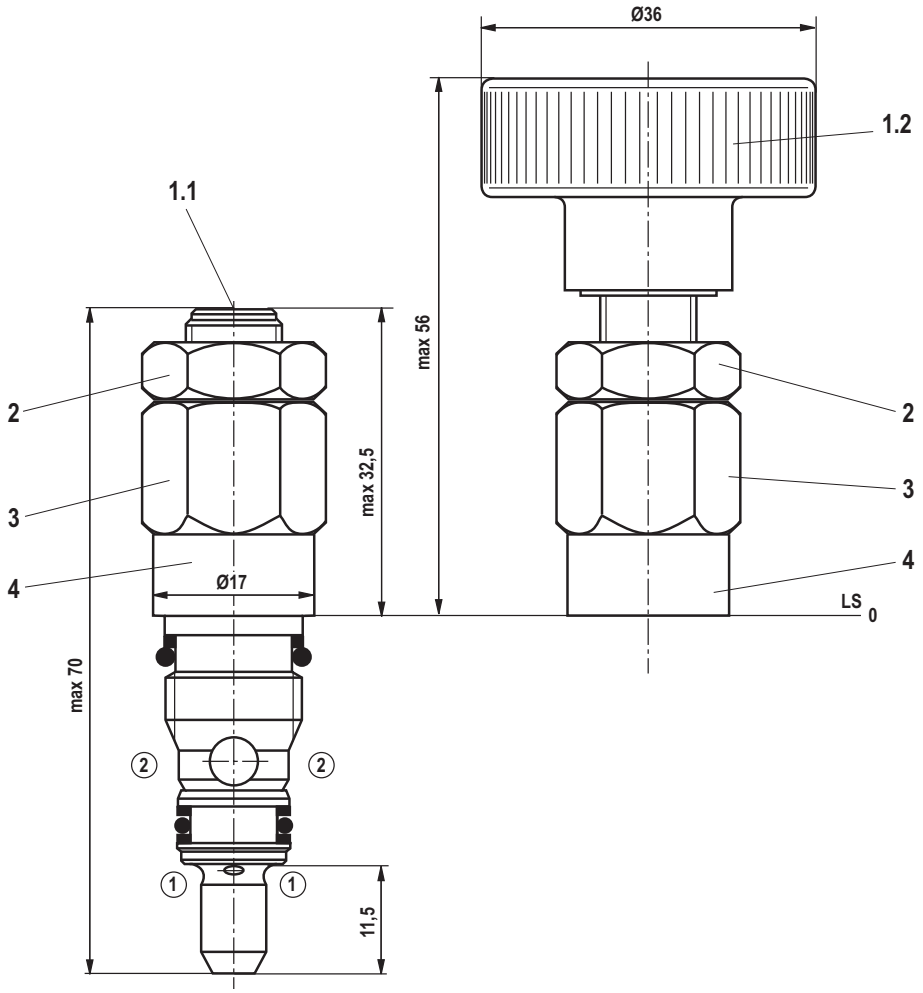

**$\Delta p$-$q_V$-characteristic curve**




**The characteristic curves apply to output pressure = 0 in the total flow range!**

**Definition cracking pressure:**
Pressure in bar at $q_V$ =0.95 +0.05 l/min

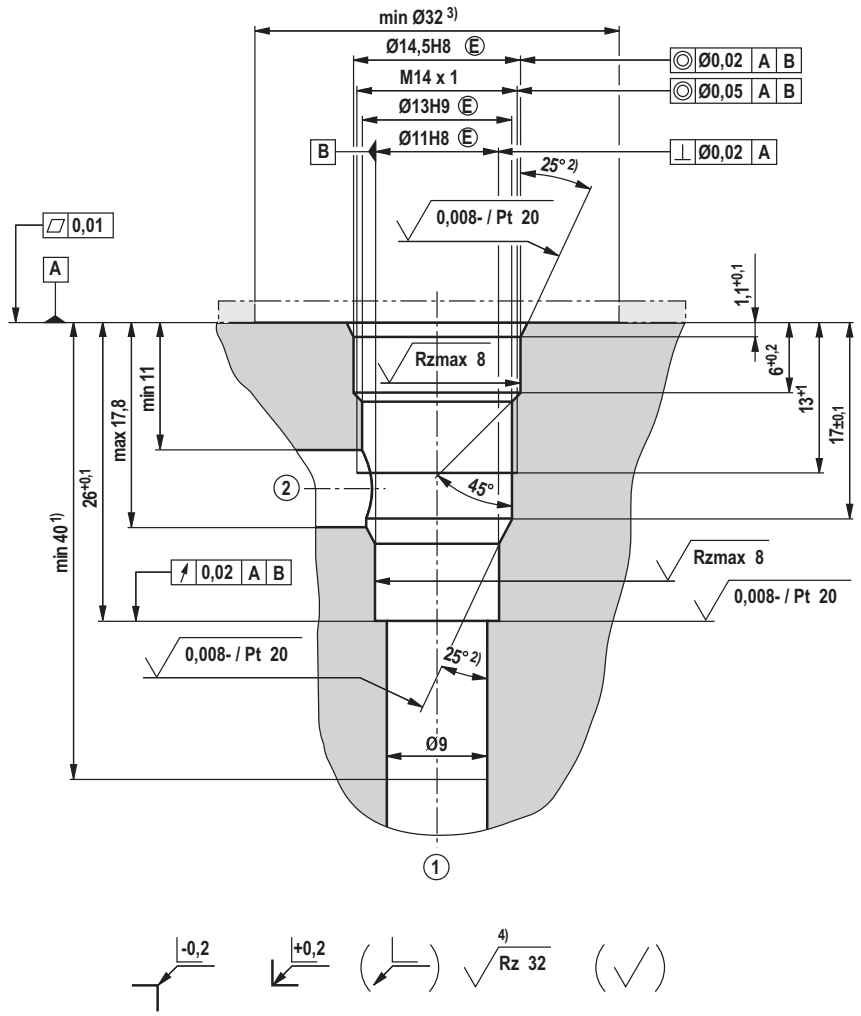
## **Unit dimensions** (dimensions in mm)




**1.1** Adjustment type "S", internal hexagon SW5
**1.2** Adjustment type "H", hand wheel
**2** Lock nut SW17
**3** Hexagon SW17, tightening torque when screwing in $M_A$ =23±2 Nm
**4** Impressed type designation

① = Main port 1 (P)
② = Main port 2 (T)
**LS** = Location shoulder

## Mounting cavity R/DBD . 4K; 2 main ports, thread M14 x 1
(dimensions in mm)







① = Main port 1 (P)
② = Main port 2 (T), optionally arrange at the circumference
**LS** = Location shoulder
Tolerance for all angles ±0.5°

1) Depth for moving parts
2) All seal ring insertion faces are rounded and free of burrs
3) With countersink
4) Visual inspection

**Standards:**

| | |
|---|---|
| Workpiece edges | DIN ISO 13715 |
| Form and position tolerance | DIN EN ISO 1101 |
| General tolerance for metal-cutting procedures | DIN ISO 2768-mK |
| Tolerance | DIN ISO 8015 |
| Surface condition | DIN EN ISO 1302 |

## Notes