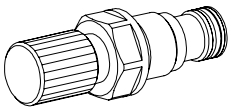
**Pressure relief valve**
**Screw-in cartridge**
- **Direct operated**
- **$Q_{max}$ = 1 l/min**
- **$p_{max}$ = 400 bar**
- **$p_{N\,max}$ = 350 bar**

# M18x1,5
ISO 7789



## DESCRIPTION
Directly operated pressure relief valve in screw-in cartridge construction with M18x1,5 thread for cavity to ISO 7789. The valve is available with three different types of adjustment: Key ad-justment "S" and control knob adjustment "D", both of which are fixed, and version "K" which is lockable. Key adjustment "S" is also avail-able with cover, see data sheet 2.0-50. 3 pres-sure stages, 63, 160 and 350 bar are available as standard. The steel cartridge body is zinc coated and thus protected against rust, and the aluminium control knob is clear anodised. These lend this quality product a clean appearance.

## FUNCTION
The adjustment mechanism keeps the poppet spool in its end position by means of a coil spring. When the set operating pressure has been reached, the poppet spool opens and connects the protected line with the return to the tank. This means that the pressure oc-curring in P is relieved to T until the spring force returns the valve spool to its end position.

## APPLICATION
For hydraulic systems with very low flow to limit the operating pressure by diverting the flow of the oil from the protected line P (1) to the outlet/ tank line T (2). The screw cartridges are very well suited for installation in systemes for pilot operated pressure. Cavity tools are available for making the receptacle bores in steel and aluminium (Hire or purchase). Please refer to the data sheets in register 2.13.
**Attention**: Should therefore not be utilized anymore in applications with periodically chan-ging direction of flow.

## CONTENTS


## TYPE CODE

B S ☐ PM18 - ☐ - Z36 # ☐

| | | | |
|---|---|---|---|
| Pressure relief valve | | | |
| Directly operated<br>Poppet seat spool | | | |
| Types of adjustment: | screw | S | |
| | knob | D | |
| | locking knob | K | |
| | cap | A | |
| Screw-in cartridge M18x1,5 | | | |
| Nominal pressure ranges: | $p_N$ = 63 bar | 63 | |
| | $p_N$ = 160 bar | 160 | |
| | $p_N$ = 350 bar | 350 | |
| Description for pilot operated cartridge | | | |
| Design-Index (Subject to change) | | | |

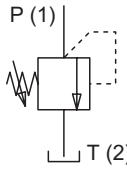
## GENERAL SPECIFICATIONS

| | |
|---|---|
| Description | Directly operated pressure relief valve |
| Construction | Screw-in cartridge for cavity acc. to ISO 7789 |
| Mounting | Screw-in thread M18x1,5 |
| Ambient temperature | -20…+50°C |
| Mounting position | any |
| Fastening torque | $M_D$ = 30 Nm |
| Weight | m = 0,10 kg (screw)<br>m = 0,11 kg (knob)<br>m = 0,21 kg (locking knob) |

## HYDRAULIC SPECIFICATIONS

| | |
|---|---|
| Fluid | Mineral oils, other fluids on request |
| Contamination efficiency | ISO 4406:1999,<br>class 20/18/14…21/19/15<br>(recommended filter gauge ß 10...25≥75)<br>see data sheet 1.0-50/2 |
| Viscosity range | 12 mm²/s…320 mm²/s |
| Fluid temperature | -20...+70°C |
| Peak pressure | $p_{max}$ = 400 bar |
| Nominal pressure ranges | $p_N$ = 63 bar, 160 bar, 350 bar |
| Minimum pressure | see curve |
| Maximum volume flow | $Q_{max}$ = 1 l/min |
| Leak volume flow | max. 4 drops/min |

## SYMBOL

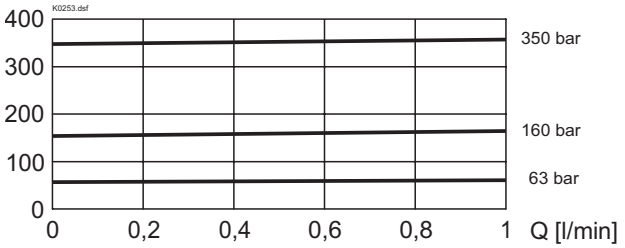



## MECHANICAL ACTUATION
3 types of adjustments:

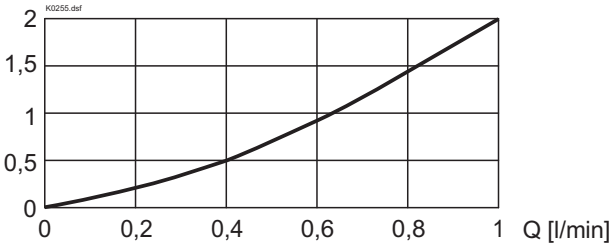
| | | |
|---|---|---|
| S | = | Screw adjustment by means of a screw driver |
| D | = | Knob adjustment, fixed |
| K | = | Locking knob adjustment |
| Actuation stroke $S_b$ | = | 5 mm |
| Actuation angle $\alpha_b$ | = | 1800° (5 revolutions) |

**CHARACTERISTICS** Oil viscosity $\upsilon$ = 30 mm²/s

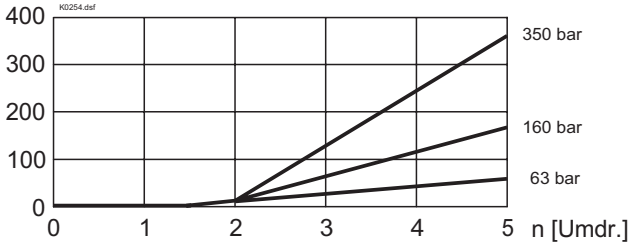
p = f (Q) Pressure volume flow characteristics
p [bar] (Maximal adjustable pressure)




p = f (Q) Pressure volume flow characteristics
p [bar] (Minimal adjustable pressure)

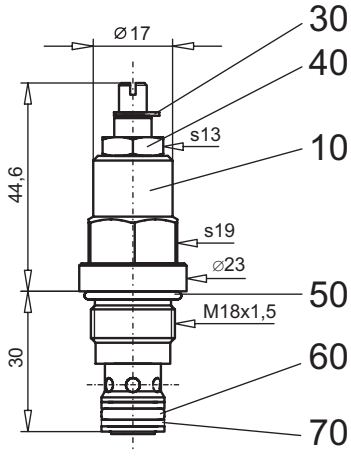



p = f (n) Pressure adjustment characteristics
p [bar] (at Q = 0,1 l/min)

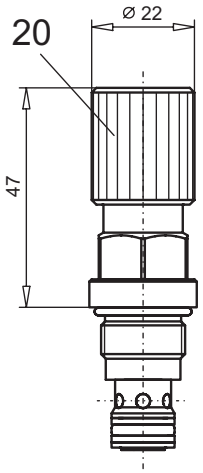



**DIMENSIONS**

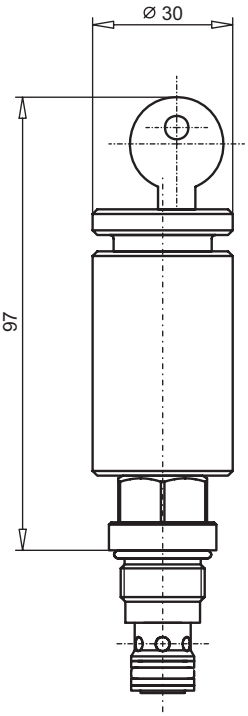
Screw adjustment "S"



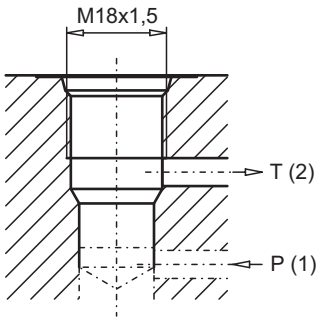

Knob adjustment "D"




Locking knob adjustment "K"




Cavity drawing acc. to
ISO 7789–18–02–0–98




For detailed cavity drawing and cavity tools see data sheet no. 2.13-1001.

**PARTS LIST**

| Position | Article | Description |
|---|---|---|
| 10 | 592.11.. | BS.PM18-...-Z36 pre mounted |
| 20 | 114.2217 | Knob |
| 30 | 193.1050 | Safety plate RD5 DIN 6799 |
| 40 | 153.1402 | Hexagonal nut 0,5D M8x1 |
| 50 | 160.2156 | O-ring ID 15,60x1,78 |
| 60 | 160.2093 | O-ring ID 9,25x1,78 |
| 70 | 049.3137 | Back up ring RD 10,6x13,5x1 |

Technical explanation see data sheet 1.0-100E