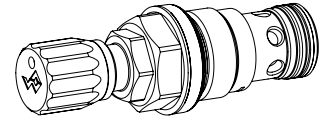


Pressure relief cartridge

- ◆ pilot operated
- ◆ $p_{max} = 400 \text{ bar}$
- ◆ $p_{Nmax} = 350 \text{ bar}$
- ◆ $Q_{max} = 230 \text{ l/min}$

M33 x 2
ISO 7789



DESCRIPTION

Pilot operated pressure relief valve in screw-in cartridge construction for cavity according to ISO 7789. High flow capacity, very sensitively adjustable. If the pressure in P (1) exceeds the adjusted value of the valve, the excessive pressure is drained to T (2). Rapid switching with low hysteresis and excellent stability over the whole flow range. The small clearance of the hardened spool ensures a low leakage volume flow.

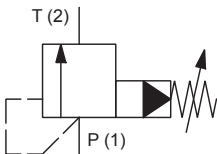
APPLICATION

These valves are used for limiting the operating pressure in the hydraulic system. The screw-in cartridge is perfectly suitable for installation in control blocks. For machining the cartridge cavity in steel and aluminum blocks, cavity tools are available (hire or purchase). Please refer to the data sheets in register 2.13.

Attention! Not to be used in applications with periodically changing flow direction.



SYMBOL



ACTUATION

| | |
|------------------|--|
| Actuation | Adjustment spindle M8 x 1 |
| Execution | S = blockable key adjustment D = blockable knob adjustment Optionally: K = lockable adjustment G = star handle adjustment → see Data sheet 2.0-50 |
| Actuation angle | $\alpha_b = 1800^\circ$ (5 rotations) |
| Actuation stroke | $S_b = 5 \text{ mm}$ |

TYPE CODE

| | | | | | | | | | | | | |
|----------------------------------|--------------|--------------------------|-----|---|--|------|---|--|---|--|---|--|
| Pressure relief valve | | | B | V | | PM33 | - | | - | | # | |
| Pilot operated | | | | | | | | | | | | |
| Type of adjustment | Key | <input type="checkbox"/> | S | | | | | | | | | |
| | Control Knob | <input type="checkbox"/> | D | | | | | | | | | |
| | Cover | <input type="checkbox"/> | A | | | | | | | | | |
| Screw-in cartridge M33 x 2 | | | | | | | | | | | | |
| Nominal pressure range p_N | 160 bar | <input type="checkbox"/> | 160 | | | | | | | | | |
| | 350 bar | <input type="checkbox"/> | 350 | | | | | | | | | |
| Sealing material | NBR | <input type="checkbox"/> | | | | | | | | | | |
| | FKM (Viton) | <input type="checkbox"/> | D1 | | | | | | | | | |
| Design index (subject to change) | | | | | | | | | | | | |

2.1-550

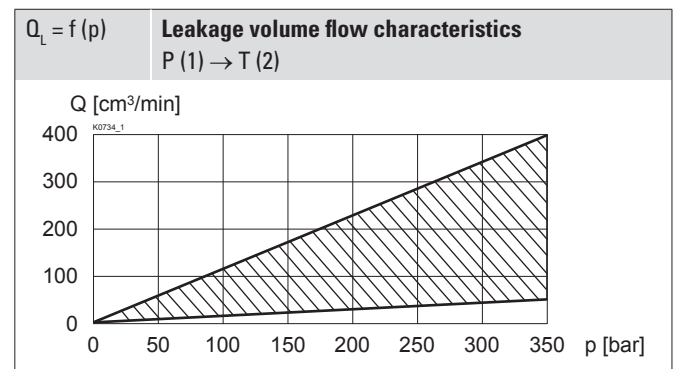
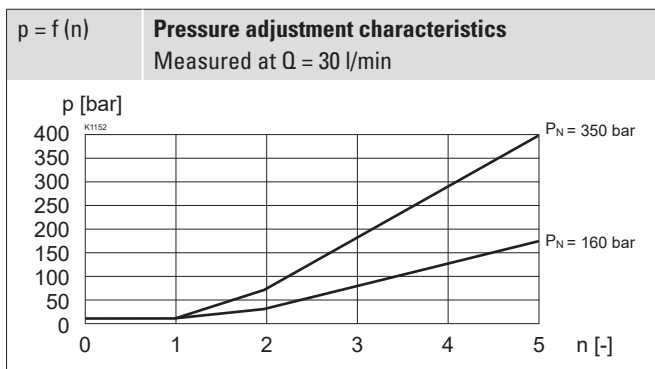
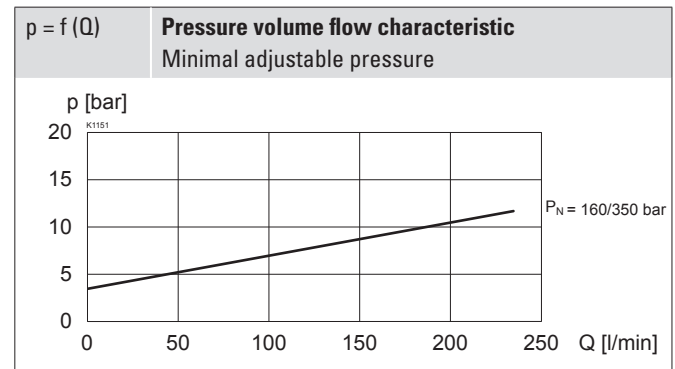
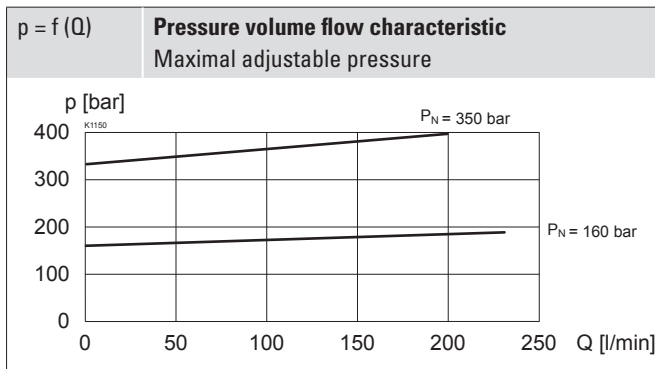
GENERAL SPECIFICATIONS

| | |
|---------------------|--|
| Designation | Pressure relief valve |
| Construction | Pilot operated |
| Mounting | Screw-in cartridge construction |
| Nominal size | M33 x 2 according to ISO 7789 |
| Actuation | Manually |
| Ambient temperature | -25...+90 °C |
| Weight | 0,37 kg key adjustment 0,38 kg control knob adjustment 0,44 kg cover |
| MTTFd | 150 years |

HYDRAULIC SPECIFICATIONS

| | |
|--------------------------|--|
| Working pressure | $p_{max} = 400$ bar |
| Tank pressure | $p_{Tmax} p_P + 20$ bar |
| Nominal pressure range | $p_N = 160$ bar, 350 bar |
| Minimum pressure | See characteristics |
| Volume flow range | $Q = 0,2...230$ l/min |
| Leakage oil | See characteristics |
| Fluid | Mineral oil, other fluid on request |
| Viscosity range | 12 mm ² /s...320 mm ² /s |
| Temperature range fluid | -25...+90 °C (NBR) -20...+90 °C (FKM) |
| Contamination efficiency | Class 18 / 16 / 13 |
| Filtration | Required filtration grade $\beta_{6...10} \geq 75$, see data sheet 1.0-50 |

PERFORMANCE SPECIFICATIONS

 Oil viscosity $\nu = 30$ mm²/s

SEALING MATERIAL

NBR or FKM (Viton) as standard, choice in the type code

SURFACE TREATMENT

- ◆ The cartridge body is zinc-nickel coated
- ◆ The control knob is made of plastic

STANDARDS

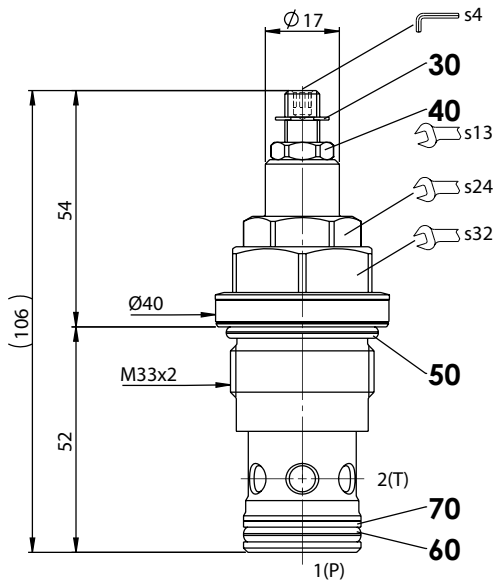
| | |
|--------------------------|----------|
| Cartridge cavity | ISO 7789 |
| Contamination efficiency | ISO 4406 |

INSTALLATION NOTES

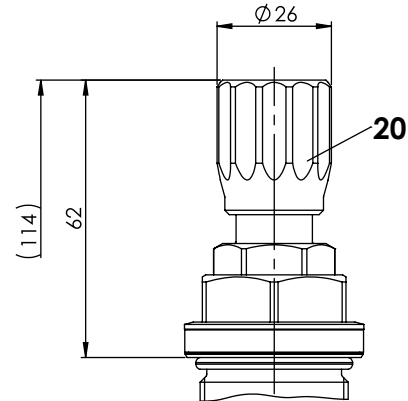
| | |
|-------------------|----------------------------------|
| Mounting type | Screw-in cartridge M33 x 2 |
| Mounting position | Any, preferably horizontal |
| Tightening torque | $M_D = 80$ Nm screw-in cartridge |

DIMENSIONS

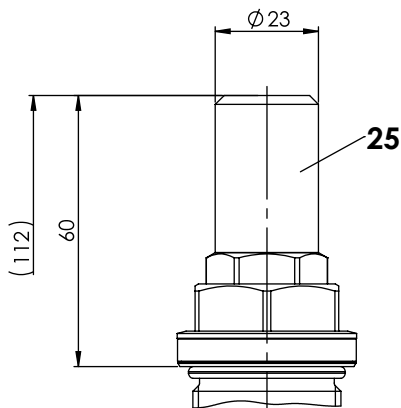
Key adjustment «S»



Control knob adjustment «D»

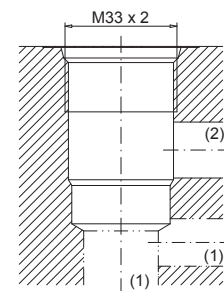


Cover «A»



HYDRAULIC CONNECTION

Cavity drawing according to ISO 7789-33-02-0


Note!


For detailed cavity drawing and cavity tools see data sheet 2.13-1041

PARTS LIST

| Position | Article | Description |
|----------|----------|-------------------------|
| 20 | 114.2224 | Control knob |
| 25 | 032.0611 | Cover rd 23 / 3 x 35 |
| 30 | 193.1061 | Retainer rd 6 DIN 6799 |
| 40 | 153.1402 | Hexagon nut 0,5d M8 x 1 |
| - | 251.3228 | Seal kit |

Seal kit consisting of

| | | |
|----|-------------|--------------------|
| 50 | O-ring | ID 29,82 x 2,62 |
| 60 | O-ring | ID 21,89 x 2,62 |
| 70 | Backup ring | rd 22,5 x 27 x 1,4 |

ACCESSORIES

| | |
|-----------------------------------|--------------------|
| Verstellarten für Schraubpatronen | Data sheet 2.0-50 |
| Threaded body | Data sheet 2.9-200 |
| Technical explanations | Data sheet 1.0-100 |
| Hydraulic fluids | Data sheet 1.0-50 |
| Filtration | Data sheet 1.0-50 |