# Check valve, pilot-to-open

**RE 18117-01/02.10** 1/8
Replaces: 04.07

**Type KED** (High Performance)

Component size 2
Component series A
Maximum operating pressure 350 bar
Maximum flow 120 l/min


## Table of contents



## Features

- Cartridge valve
- Mounting cavity R/T-22A
- For installation into blocks
- Leak-free closure in one direction
- Pilot-to-open
- Various cracking pressures, on request
- Vented

## Ordering code

| KED | 0 | R | 2 | D | A | / | H | V | * |
|---|---|---|---|---|---|---|---|---|---|

Check valve, pilot-to-open

**Type of adjustment element**
Without adjustment element **= 0**

**Pressure range**
350 bar **= R**

Component size **= 2**

**Cracking pressure**
**D =** 2 bar (other cracking pressures on request)

**A =** Component series

**H =** High Performance and mounting cavity R/T-22A (see page 6)

**Seal material**
**V =** FKM seals (other seals on request)
Attention! Observe compatibility of seals with hydraulic fluid used!

Further details in clear text

## Standard types

| Type | Material number |
|---|---|
| KED0R2D**A**/HV | R901098783 |

**Further standard types and components can be found in the EPS (standard price list).**

## Function, section, symbol

### General

Cartridge valves of type KED are pilot-to-open check valves of poppet design without regulating function. They can be opened in the direction of checking.

They basically consist of housing (1), poppet (2), compression spring (3) and pilot spool (4).

These valves are used to isolate pressurised working circuits, to prevent loads from lowering in the case of pipe rupture or creeping movements of hydraulically isolated actuators

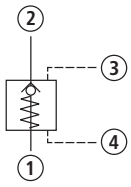
### Function

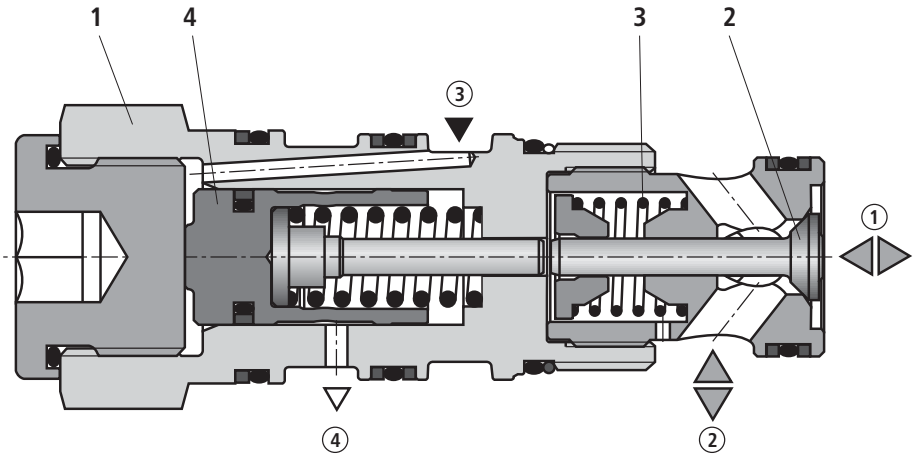
Cartridge valves of type KED allow a free flow from main port ② to main port ①. In the opposite direction, poppet (2) is held on its seat by the spring force of compression spring (3) and additionally by the system pressure. As main port ③ is pressurized, the sealed pilot spool (4) is shifted to the right. This causes poppet (2) to be pushed from its seat. The spring side of pilot spool (4) is always connected to main port ④. Now, fluid can also flow through the valve from main port ① to ②.

To allow reliable opening of the valve via pilot spool (4), a certain minimum pilot pressure is required (see characteristic curve on page 5).

To prevent malfunction, main port ④ (leakage port) must not be blocked.

### Symbol




① = Main port 1 (B)
② = Main port 2 (A)
③ = Main port 3 (X)
④ = Main port 4 (Y)

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

### General

| | | |
|---|---|---|
| Weight | kg | 0.44 |
| Installation position | | Optional |
| Ambient temperature range | °C | –40 to +110 |

### Hydraulic

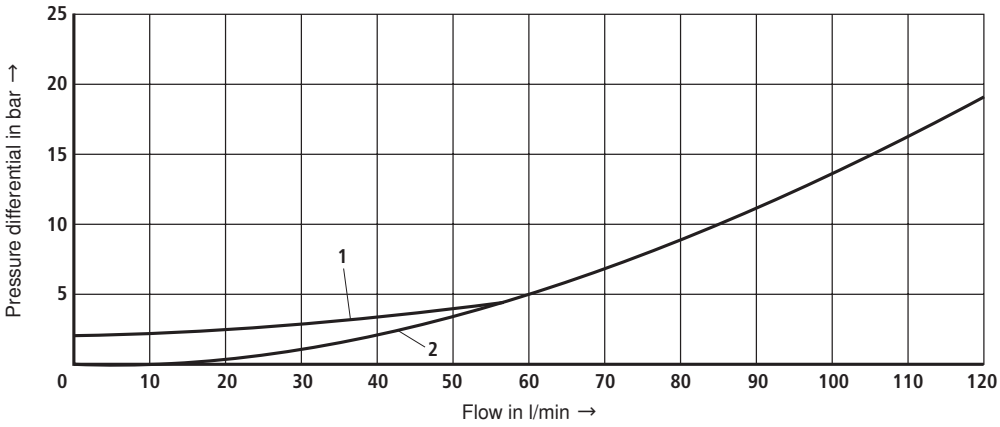
| | | | |
|---|---|---|---|
| Max. operating pressure | – Main ports ①, ②, ④ | bar | 350 |
| Maximum pilot pressure | – Main port ③ | bar | 350 |
| Maximum flow | | l/min | 120 |
| Hydraulic fluid | | | Mineral oil (HL, HLP) to DIN 51524; fast bio-degradable hydraulic fluids to VDMA 24568 (see also data sheet 90221); HETG (rape seed oil); HEPG (polyglycols); HEES (synthetic esters); other hydraulic fluids on request |
| Hydraulic fluid temperature range | | °C | –40 to +110 |
| Viscosity range | | $mm^2/s$ | 2.8 to 500 |
| Permissible max. degree of contamination of the hydraulic fluid - cleanliness class to ISO 4406 (c) | | | Class 20/18/15 [1)] |
| Maximum leakage | | $cm^3/min$ | < 0.05 |
| Opening ratio | | | 2.5:1 |

[1)] he cleanliness class stated for the components must be adhered too in hydraulic systems. Effective filtration prevents faults from occurring and at the same time increases the component service life.

For the selection of filters see catalogue sheets 50070, 50076, 50081, 50086, 50087 and 50088.

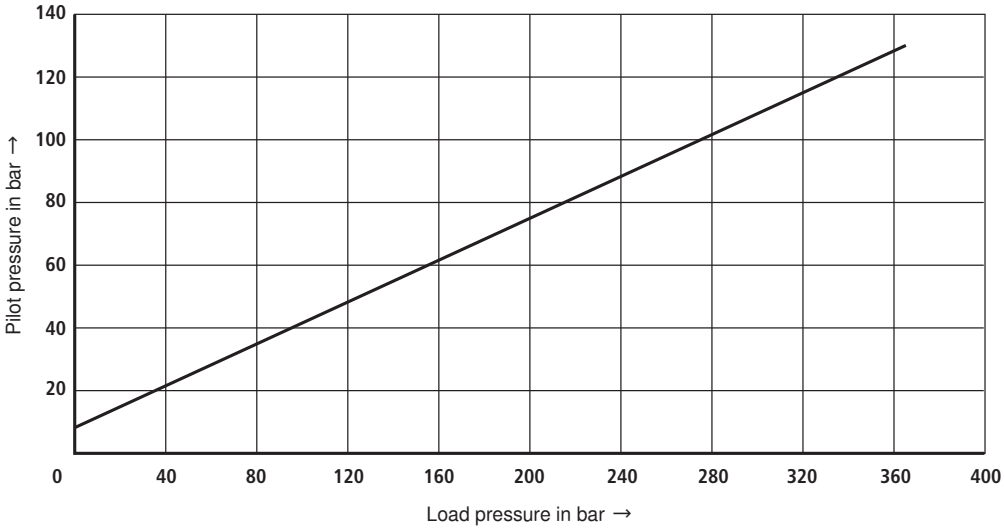
## Characteristic curves (measured with HLP46, $\vartheta_{oil}$ = 40 °C ± 5 °C)

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

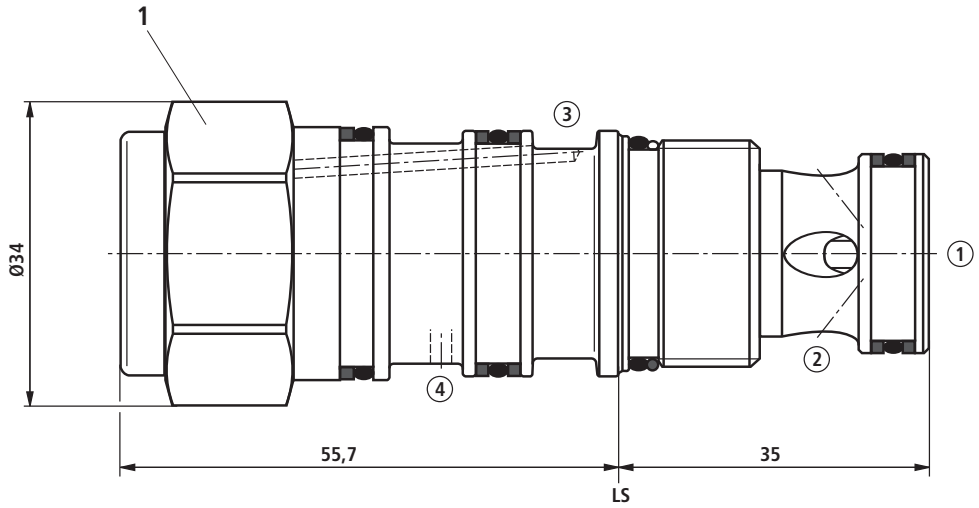



| | |
|---|---|
| **1** | 2 → 1 |
| **2** | 1 → 2 |

**Pilot pressure/load pressure characteristic curve**



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

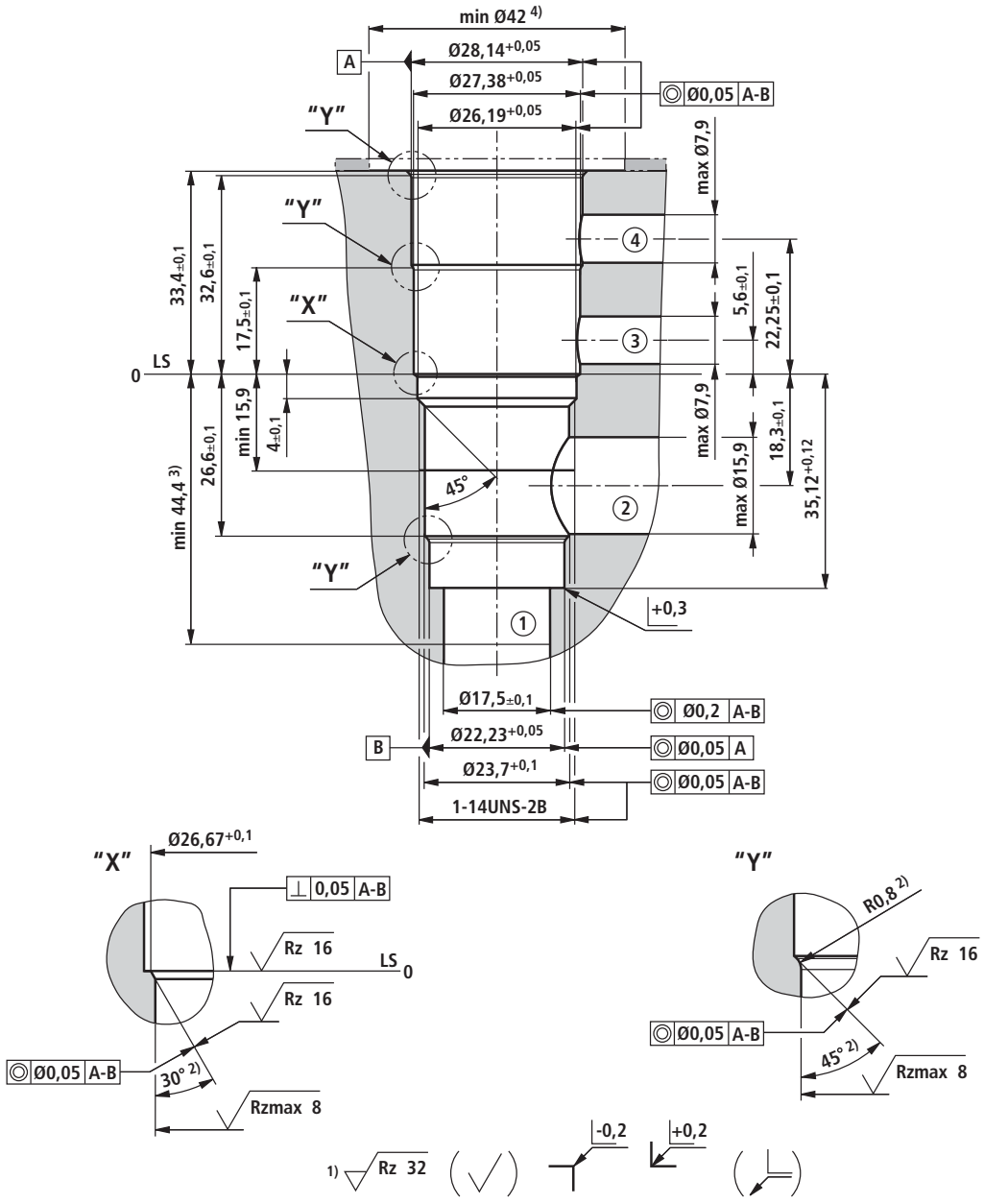



**1** 30 A/F, tightening torque $M_T = 100^{+10}$ Nm

① = Main port 1 (B)
② = Main port 2 (A)
③ = Main port 3 (X)
④ = Main port 4 (Y)
**LS** = Location shoulder

## Mounting cavity R/T-22A; 4 main ports; thread 1-14UNS-2B

(dimensions in mm)

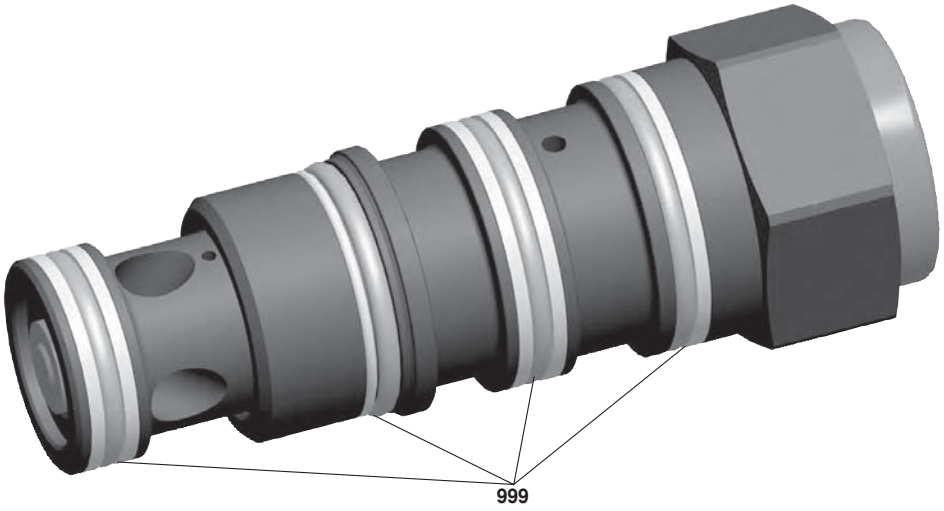



1) Deviating from T-22A
2) All seal ring insertion faces are rounded and free from burrs
3) Depth for moving parts
4) with countersink

① = Main port 1 (B)
② = Main port 2 (A)
③ = Main port 3 (X)
④ = Main port 4 (Y)
**LS** = Location shoulder

Tolerance for all angles ±0.5°

## Available individual components




| Item | Designation | Material no. |
|---|---|---|
| 999 | Valve seal kit | R961003252 |