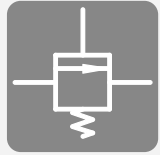


Pressure-controlled shut-off valve type CDSV

Product documentation



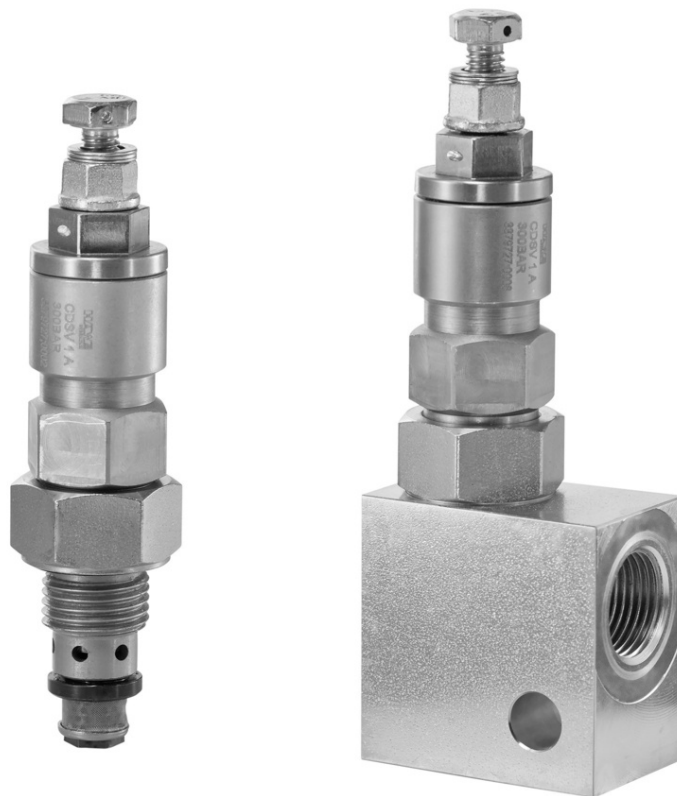
Screw-in valve

Operating pressure p_{\max} :

600 bar

Flow rate Q_{\max} :

8 l/min



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1**Overview of pressure-controlled shut-off valve type CDSV**

Pressure valves are used to control or limit the system pressure in a plant or to switch in response to a signal pressure.

The pressure-controlled shut-off valve type CDSV is a type of pressure valve and is designed as a ball seated valve with integrated check valve. It blocks the flow in load line B with zero leakage when the set pressure value is reached or exceeded. The valve opens again when the pressure on the inflow side A drops below the set value. The set value for the pressure is defined by the spring tension.

The pressure-controlled shut-off valve type CDSV can be screwed in and can be integrated into manifolds. The necessary mounting holes are straightforward to make. The valve type CDSV is used as a pressure gauge protection valve, for example.

Features and advantages

- Zero-leakage
- Pressure settings up to 600 bar
- Connection blocks available

Intended applications

- Industrial hydraulics
- Mobile hydraulics
- Test benches
- To protect pressure gauges



Pressure-controlled shut-off valve type CDSV

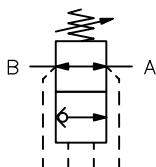


Pressure-controlled shut-off valve type CDSV with single connection block

2 Available versions

2.1 Screw-in valve (basic version)

Circuit symbol



Ordering example

| | | | |
|--------|---|------|--|
| CDSV 1 | A | -1/4 | -400 |
| | | | Pressure setting (bar) |
| | | | 2.2 "Version with single connection block" |
| | | | Pressure range 2.1.1 "Basic type and size" |
| | | | 2.1.1 "Basic type and size" |

2.1.1 Basic type and size

| Type | Flow rate Q_{max} (l/min) | Pressure range (bar) | | | |
|--------|--------------------------------|----------------------|-----------|-----------|---------|
| | | A | B | C | D |
| CDSV 1 | 8 | 100 to 600 | 30 to 230 | 10 to 100 | 3 to 30 |

2.2 Version with single connection block

| Coding | Description | Circuit symbol |
|--------|-----------------------|----------------|
| -M10x1 | Pipe connection M10x1 | |
| -1/4 | Pipe connection G 1/4 | |
| -3/8 | Pipe connection G 3/8 | |

3.1 General data

| | |
|------------------------------|--|
| Designation | Pressure-controlled shut-off valve |
| Design | Ball seated valve |
| Model | Screw-in valve, valve for pipe connection |
| Material | <ul style="list-style-type: none"> ▪ Screw-in valve: Steel; zinc-nickel coated ▪ Connection blocks: Steel; electrogalvanised ▪ Hardened and ground functional inner parts |
| Tightening torque | see Chapter 4, "Dimensions" |
| Installation position | any |
| Flow direction | <ul style="list-style-type: none"> ▪ Operating direction A → B ▪ Return flow B → A |
| Hydraulic fluid | <p>Hydraulic fluid, according to DIN 51 524 Parts 1 to 3; ISO VG 10 to 68 according to DIN ISO 3448</p> <p>Viscosity range: 4 - 1500 mm²/s</p> <p>Optimal operating range: approx. 10 - 500 mm²/s</p> <p>Also suitable for biologically degradable hydraulic fluids type HEPG (polyalkylene glycol) and HEES (synthetic ester) at operating temperatures up to approx. +70°C.</p> |
| Cleanliness level | <p>ISO 4406</p> <hr style="width: 25%; margin-left: 0;"/> <p>21/18/15...19/17/13</p> |
| Temperatures | <p>Environment: approx. -40 to +80 °C, hydraulic fluid: -25 to +80 °C, pay attention to the viscosity range.</p> <p>Start temperature: down to -40 °C is permissible (take account of the start viscosities!), as long as the steady-state temperature is at least 20 K higher during subsequent operation.</p> <p>Biologically degradable hydraulic fluids: note manufacturer specifications. With consideration for the seal compatibility, not above +70°C.</p> |

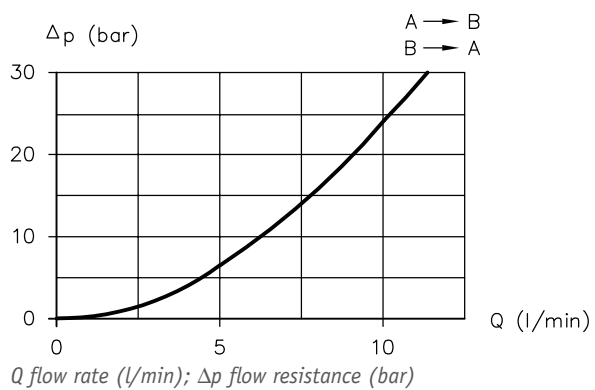
3.2 Weight

| | |
|-------------------------|---------|
| Type | |
| CDSV 1.. | = 140 g |
| Connection block | |
| -1/4 | = 400 g |
| -3/8 | = 400 g |
| -M10x1 | = 400 g |

3.3 Characteristic lines

Viscosity of the hydraulic fluid approx. 60 mm²/s

Δp -Q characteristic line

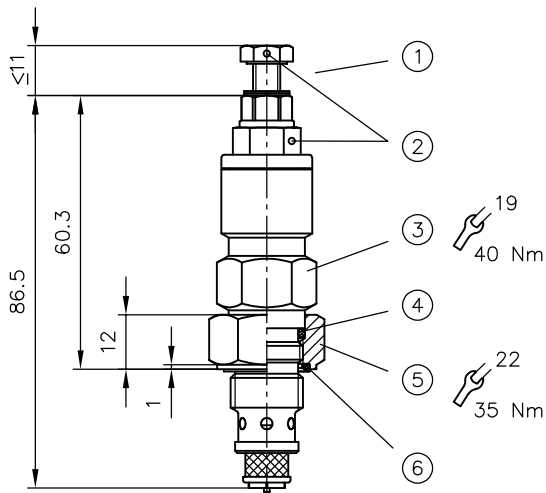


4 Dimensions

All dimensions in mm, subject to change.

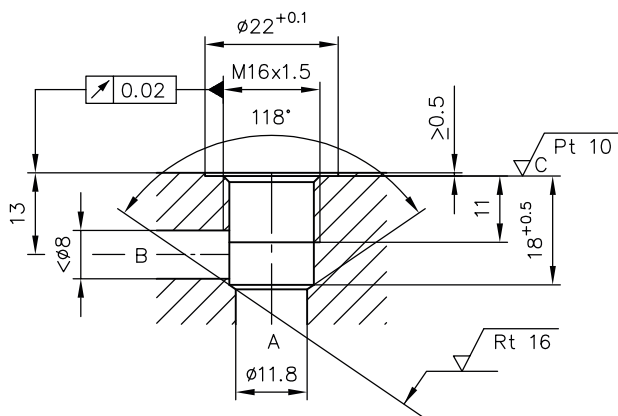
4.1 Screw-in valve

CDSV 1..



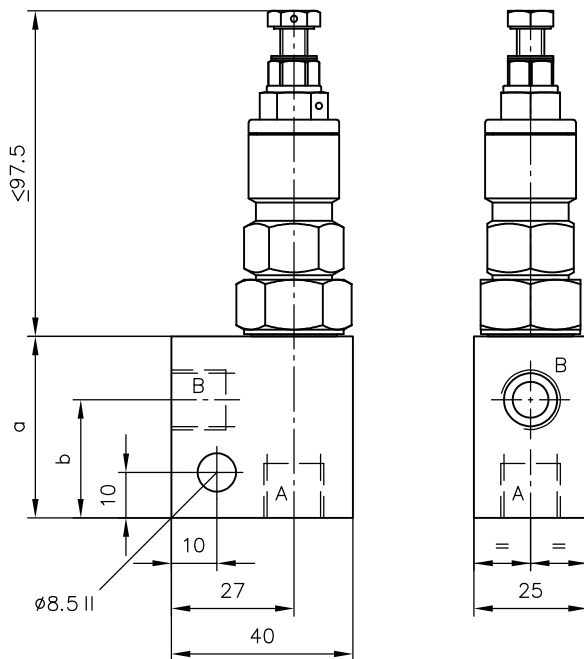
- 1 Pressure adjustment
- 2 Sealing option
- 3 Valve
- 4 O-ring 14x1.78 AU 90 Sh
- 5 Sealing nut
- 6 KANTSEAL DKAR00016-N90

Mounting hole



4.2 Version with single connection block

Coding -1/4, -3/8, -M10x1

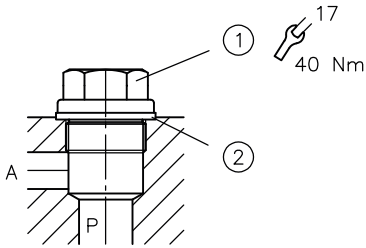


| Coding | Ports A and B | a | b |
|--------|---------------|----|------|
| -1/4 | G 1/4 | 40 | 26 |
| -3/8 | G 3/8 | 40 | 26 |
| -M10x1 | M10x1 | 42 | 28.5 |

4.3 Tapped plugs

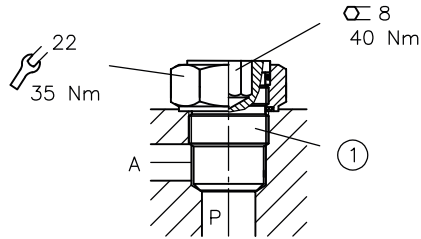
The mounting holes can be sealed with tapped plugs if necessary; for example, if the assembly of standardised basic bodies is to be carried out with or without screw-in valves as required.

Passage open



- 1 Tapped plug M16x1.5
- 2 Sealing ring A16.7x22x2

Passage closed



- 1 Tapped plug and locking tapped plug complete

Order number 7712 003

| Type and size | Passage open | | | | Passage blocked | | | | |
|---------------|--------------|-----|------------------------|--------------|---|------------|------------------------|----------------------|------------------------|
| | Tapped plug | | | Sealing ring | Tapped plug and locking tapped plug, complete | | | | |
| | DIN 910 | SW4 | Tightening torque (Nm) | DIN 7603-Cu | Drawing no. | Screw part | | Lock and sealing nut | |
| | | | | | | SW5 | Tightening torque (Nm) | SW6 | Tightening torque (Nm) |
| CDSV 1.. | M16x1.5 | 17 | 40 | A16.7x22x2 | Z 7712 003 | 8 | 40 | 22 | 35 |

5 Installation, operation and maintenance information

Observe the document B 5488 "General operating instructions for assembly, commissioning, and maintenance."

5.1 Intended use

This product is intended exclusively for hydraulic applications (fluid technology).

The user must observe the safety measures and warnings in this document.

Essential requirements for the product to function correctly and safely:

- ▶ All information in this documentation must be observed. This applies in particular to all safety measures and warnings.
- ▶ The product must only be assembled and put into operation by specialist personnel.
- ▶ The product must only be operated within the specified technical parameters described in detail in this document.
- ▶ All components must be suitable for the operating conditions when using an assembly.
- ▶ The operating instructions for the components, assemblies and the specific complete system must also always be observed.

If the product can no longer be operated safely:

1. Remove the product from operation and mark it accordingly.
 - ✓ It is then not permitted to continue using or operating the product.

5.2 Assembly information

The product must only be installed in the complete system with standard and compliant connection components (screw fittings, hoses, pipes, fixtures etc.).

The product must be shut down correctly prior to disassembly (in particular in combination with hydraulic accumulators).



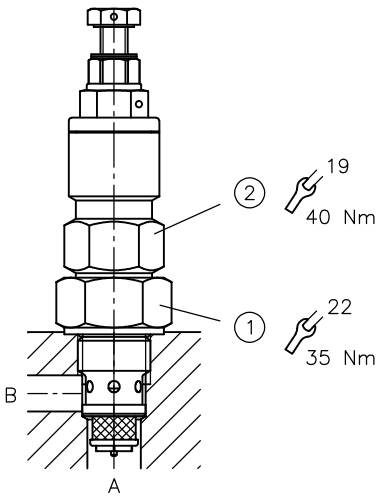
DANGER

Sudden movement of the hydraulic drives when disassembled incorrectly

Risk of serious injury or death

- ▶ Depressurise the hydraulic system.
- ▶ Perform safety measures in preparation for maintenance.

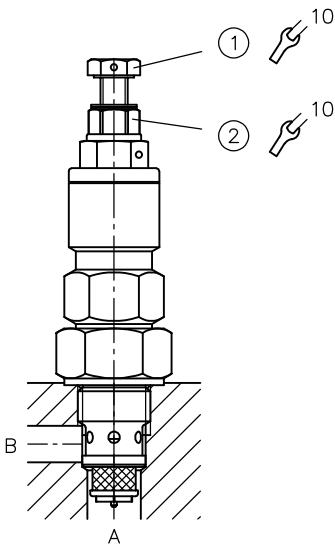
5.2.1 Screwing in the screw-in valve (basic version)



- 1 Lock and sealing nut
- 2 Valve

1. Before screwing in the valve, loosen the lock and sealing nut until the travel stop. Do not fully undo the lock nut, as the lock nut fixes the set screw in position. The flow rate is set using the set screw.
2. Screw in the valve and tighten to the specified torque. The metallic sealing of the inlet to the outlet is formed between the facial sealing edge of the valve and the shoulder of the stepped bore in the basic body.
3. Tighten the lock and sealing nut to the specified torque.

5.2.2 Adjusting the pressure setting



- 1 Adjusting screw
- 2 Lock nut

| Pressure range | Δp (bar) per 1 revolution |
|----------------|-----------------------------------|
| D | 6.4 |
| C | 23 |
| B | 50 |
| A | 135 |

NOTICE
Turn clockwise to increase pressure.

5.2.3 Creating the mounting hole

see Chapter 4, "Dimensions".

5.3 Operating instructions

Observe product configuration and pressure/flow rate.

The statements and technical parameters in this document must be strictly observed.

The instructions for the complete technical system must also always be followed.

! NOTICE

- ▶ Read the documentation carefully before usage.
- ▶ The documentation must be accessible to the operating and maintenance staff at all times.
- ▶ Keep documentation up to date after every addition or update.

! CAUTION

Overloading components due to incorrect pressure settings.

Risk of minor injury. Parts may burst or fly off, and uncontrolled leakage of hydraulic fluid.

- Pay attention to the maximum operating pressure of the pump, valves and fittings.
- Always monitor the pressure gauge when setting and changing the pressure.

Purity and filtering of the hydraulic fluid

Fine contamination can significantly impair the function of the product. Contamination can cause irreparable damage.

Examples of fine contamination include:

- Swarf
- Rubber particles from hoses and seals
- Dirt due to assembly and maintenance
- Mechanical debris
- Chemical ageing of the hydraulic fluid

! NOTICE

New hydraulic fluid from the manufacturer may not have the required purity.

Damage to the product is possible.

- ▶ Filter new hydraulic fluid to a high quality when filling.
- ▶ Do not mix hydraulic fluids. Always use hydraulic fluid that is from the same manufacturer, of the same type, and with the same viscosity properties.

For smooth operation, pay attention to the cleanliness level of the hydraulic fluid (cleanliness level see Chapter 3, "Parameters").

Additionally applicable document: [D 5488/1](#) oil recommendations

5.4 Maintenance information

Check regularly (at least once a year) by visual inspection whether the hydraulic connections are damaged. If external leakages are found, shut down and repair the system.

Clean the surface of the device regularly (at least once a year) (dust deposits and dirt).

Check that the product is securely fastened in the mounting hole at regular intervals, but at least once per year.

References

Additional versions

- Druckabhängiges Schließventil Typ DSV: D 3990
- Pressure valve type CMV, CMVZ, CSV and CSVZ: D 7710 MV
- Pressure-controlled shut-off valve type CNE: D 7710 NE
- Throttle valve and shut-off valve CAV: D 7711
- Check valve type CRK, CRB and CRH: D 7712
- Throttle valve and throttle check valve type CQ, CQR and CQV: D 7713
- Flow control valve type CSJ: D 7736
- Pressure-reducing valve type CDK: D 7745

