

2-way flow control valve type DSJ

Product documentation



Operating pressure p_{\max} :	315 bar
Flow rate Q_{\min} :	1 lpm
Flow rate Q_{\max} :	21 lpm



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1**Overview of 2-way flow control valve type DSJ**

Flow control valves are a type of flow valve. They generate a set constant flow rate, largely independently of the load.

A 2-way flow control valve (dual lowering brake valve) type DSJ is used to limit flow rates in both flow directions independent of load pressure.

The valve is available for various flow rate ranges according to requirements. Flow rate towards F differs within a bandwidth of 20 to 30% relative to flow rate towards B across the entire pressure range. The various flow rate ranges are set at the factory at a pressure setting of 100 bar.

Features and benefits

- Oscillation damping and load-independent
- Compact screw-in valve

Intended applications

- General hydraulic systems
- Industrial vehicles
- Lifting equipment



2-way flow control valve type DSJ

2 Available versions

Circuit symbol



Ordering example

DSJ 1	C	-5
	2.1 "Version"	2.2 "Triggering flow rate"

Basic type and size

2.1 Version

Coding	Model	
C	Screw-in valve	
G	Housing version for direct in-line installation	
E		
F		

2.2 Triggering flow rate

Applies to both directions.

Coding	Flow rate Q (lpm)	Tolerance
Primary variants		
1.0	1.0 - 1.3	+30%
1.5	1.5 - 1.95	
2.5	2.5 - 3.25	
3.5	3.5 - 4.55	
5.0	5.0 - 6.5	
7.0	7,0 - 8,75	+25%
8.5	8.5 - 10.2	+20%
9.5	9.5 - 11.4	
10.5	10.5 - 12.6	
13.0	13.0 - 15.6	
15.0	15.0 - 18.0	
18.0	18,0 - 21,6	

Coding	Flow rate Q (lpm)	Tolerance
Other variants		
2.0	2.5 - 3.25	+30%
2.6	3.1 - 4.03	
4.5	5.0 - 6.5	
6.0	6.5 - 8.13	+25%
6.6	7.1 - 8.88	
8.3	8.8 - 10.56	+20%
9.0	9.5 - 11.4	
10.0	10.5 - 12.6	
12.4	12.9 - 15.48	
16.6	17,1 - 20,52	
16/50*	15,2 - 16,8	+/-5%
18/50*	18,0 - 21,6	+20%
21/50*	21,0 - 25,2	
5.0/180*	5,0 - 6,5	+30%

* Pressure setting differs from standard value

3 Parameters

3.1 General data

Designation	2-way flow control valve
Design	Flow control valve
Model	Screw-in valve, housing version for pipe connection
Material	Steel; internal function elements hardened and polished, housing version with ZINi coating
Installation position	As desired
Line connection	Pipe thread ISO 228-1 (see Chapter 4, "Dimensions")
Flow direction	As desired
Hydraulic fluid	Hydraulic fluid, according to DIN 51 524 Parts 1 to 3; ISO VG 10 to 68 according to DIN ISO 3448 Viscosity range: 4 - 1500 mm ² /s Optimal operating range: approx. 10 - 500 mm ² /s Also suitable for biologically degradable hydraulic fluids type HEPG (polyalkylene glycol) and HEES (synthetic ester) at operating temperatures up to approx. +70°C.
Cleanliness level	ISO 4406 <u>20/17/14</u>
Temperatures	Environment: approx. -40 to +80 °C, hydraulic fluid: -25 to +80 °C, pay attention to the viscosity range. Start temperature: down to -40°C is permissible (observe start viscosities) as long as the steady-state temperature is at least 20K higher during subsequent operation. Biologically degradable hydraulic fluids: note manufacturer specifications. With consideration for the seal compatibility, not above +70°C.

3.2 Weight

Valve C	= 30 g
Housing E, F, G	= 170 g

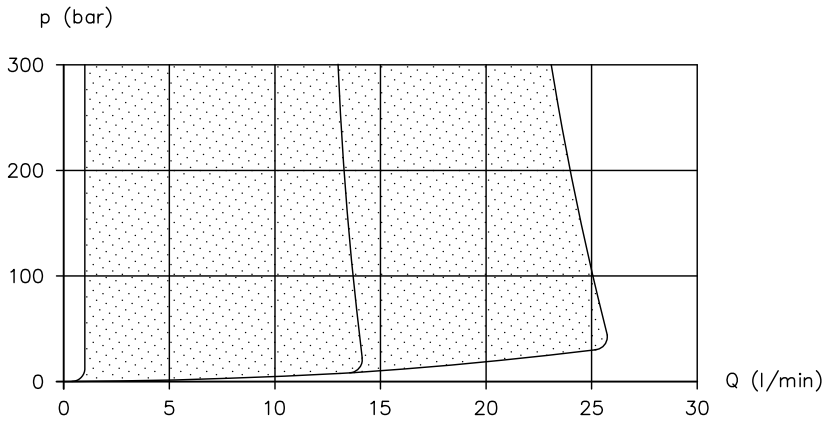
3.3 Pressure and volumetric flow

Operating pressure	$p_{\max} = 315 \text{ bar}$
Flow rate	$Q_{\max} = 21 \text{ lpm}$, $Q_{\min} = 1 \text{ lpm}$
Factory-set pressure setting	100 bar

3.4 Characteristic lines

Hydraulic fluid viscosity: approx. 60 mm²/s

Δp -Q characteristic lines

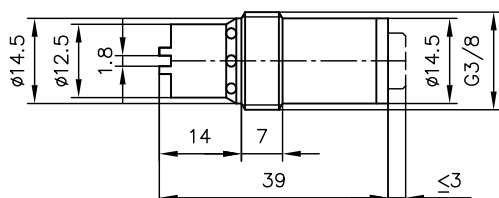


4 Dimensions

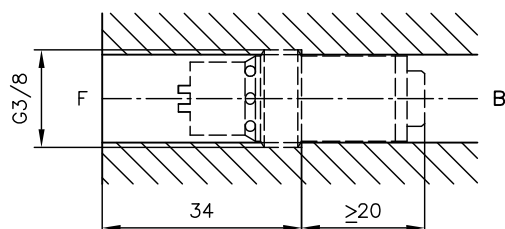
All dimensions in mm, subject to change.

4.1 Screw-in valve

DSJ 1 C



Mounting hole

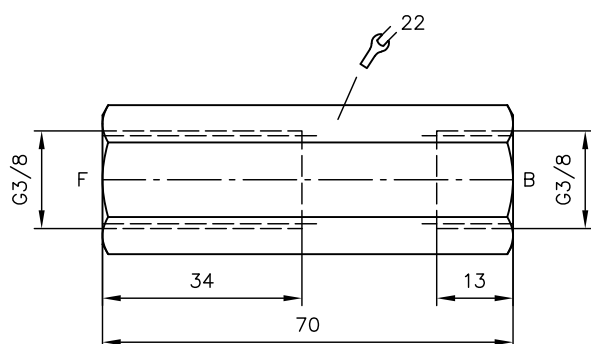


! DAMAGE

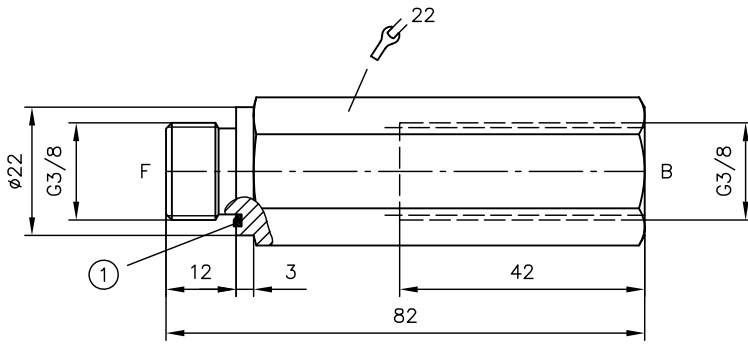
Max. tightening torque for screw-in valve in mounting holes and valve housings made on-site is 2 Nm.

4.2 Housing version

DSJ 1 G

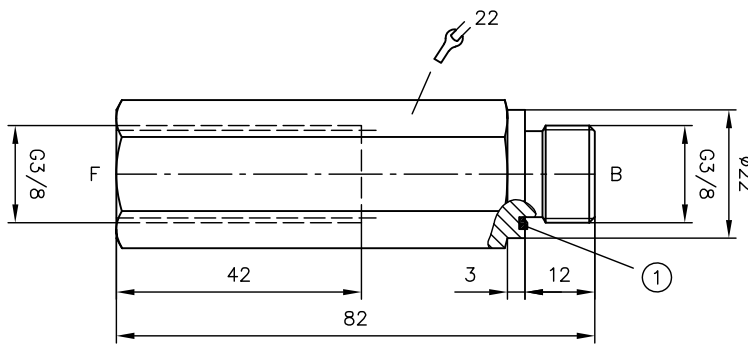


DSJ 1 E



- 1 Fitting seal DRV
100 147 - NB 650

DSJ 1 F



- 1 Fitting seal DRV
100 147 - NB 650

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.

5.3 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.

DAMAGE

- ▶ 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.

- Pay attention to the maximum operating pressure of the pump and the valves.
- 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

! DAMAGE

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).

References

Additional versions

- Flow control valve type SJ: D 7395
- Flow control valve type CSJ: D 7736
- Flow control valve (lowering brake valve) type SB and SQ: D 6920

