

# Flow valve

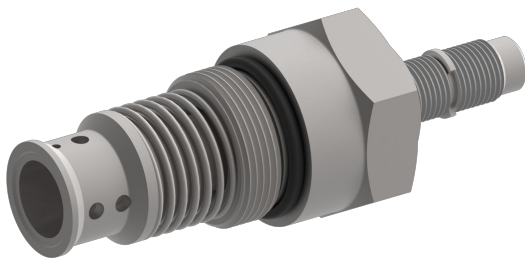
## Throttle check valve

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$Q_{\max} = 42 \text{ gpm}$ ,  $p_{\max} = 5000 \text{ psi}$

direct acting, spool type, mechanically adjustable

Type series: MDR2-10F-...-A



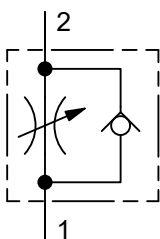
- Screw-in cartridge valve
- For cavity DF
- All external parts with zinc-nickel plating according to DIN EN ISO 19598
- Same cavity for NG6 and NG10
- Self-locking adjustment spindle with lock nut
- Self-cleaning throttle point

### Description

Series MDR2-... throttle check valves are size 10 screw-in units with an M20 x 1.5 mounting thread. They are designed as semi-cartridges and have an integral bypass check valve. The flow rate in direction 1 to 2 can be adjusted using the adjusting screw. In flow direction 2 to 1, the throttle function is bypassed because the flow passes through the check valve. The valve design ensures automatic self-cleaning during

reverse flow. All external parts of the screw-in valve are zinc-nickel plated and are thus suitable for use in the harshest operating environments. These 2-way flow control cartridges are used in mobile and industrial applications. If you intend to manufacture your own cavities, please refer to the section "Related data sheets".

### Symbol



## Technical data

General characteristics	Description, value, unit
Function group	Flow valve
Function	Throttle check valve
Design	Screw-in cartridge valve
Controls	mechanically adjustable
Characteristic	direct acting, spool type
Construction size	NG 10
Thread size	M20×1,5
Mounting attitude	unrestricted
Weight	0.39 lb
Cavity acc. factory standard	For cavity DF
Tightening torque steel	37 ft·lb
Tightening torque aluminium	37 ft·lb
Tightening torque tolerance	± 10 %
Minimum ambient temperature	- 22 °F
Maximum ambient temperature	+ 176 °F
Surface protection	All external parts with zinc-nickel plating according to DIN EN ISO 19598
Sealing material	see ordering code
Seal kit order number	NBR: DS-546-N / FKM: DS-546-V

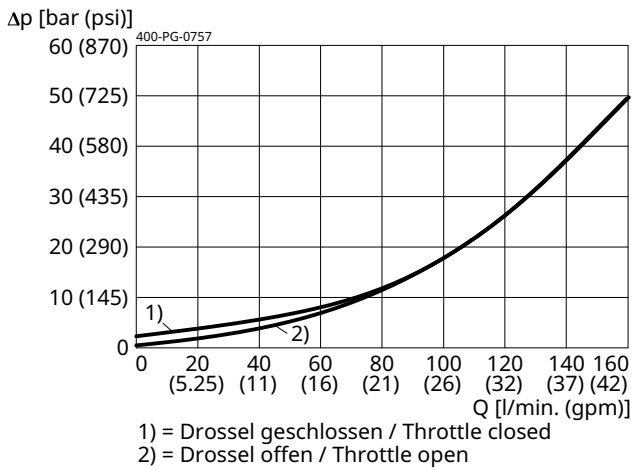
Hydraulic characteristics	Description, value, unit
Maximum operating pressure	5000 psi
Maximum flow rate	42 gpm
Restriction of the flow rate	NG 6 = 21 gpm
Flow direction	see symbol
Hydraulic fluid	mineral-based or synthetics with lubricating properties. HL and HLP mineral oil according to DIN 51 524; other fluids on request!
Minimum fluid temperature	- 22 °F
Maximum fluid temperature	+ 176 °F
Viscosity range	10 ... 500 mm <sup>2</sup> /s (cSt)
Recommended viscosity range	15 ... 250 mm <sup>2</sup> /s (cSt)
Minimum fluid cleanliness (cleanliness class according to ISO 4406:1999)	class 20/18/15
Definition of cracking pressure for check valve	0,7

## Performance graphs

measured with oil viscosity 33.0 mm<sup>2</sup>/s (cSt)

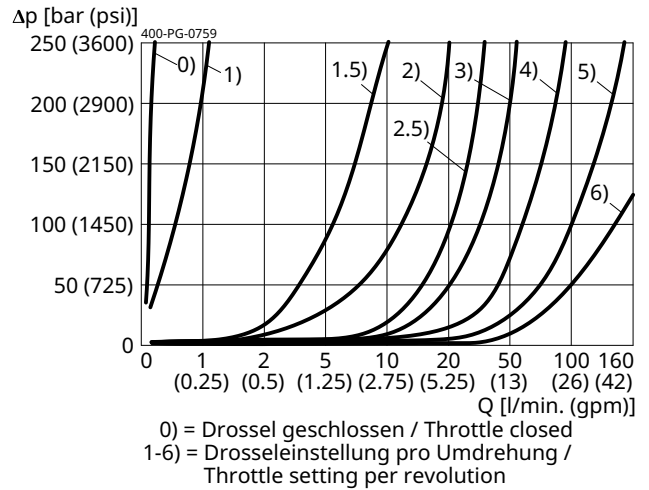
$p = f(Q)$  Pressure-flow rate

Measured via check valve



$Q = f(I:\Delta p)$  Flow rate adjustment

Measured with supply channel 1 and 2 = 0.39" At constant throttle settings

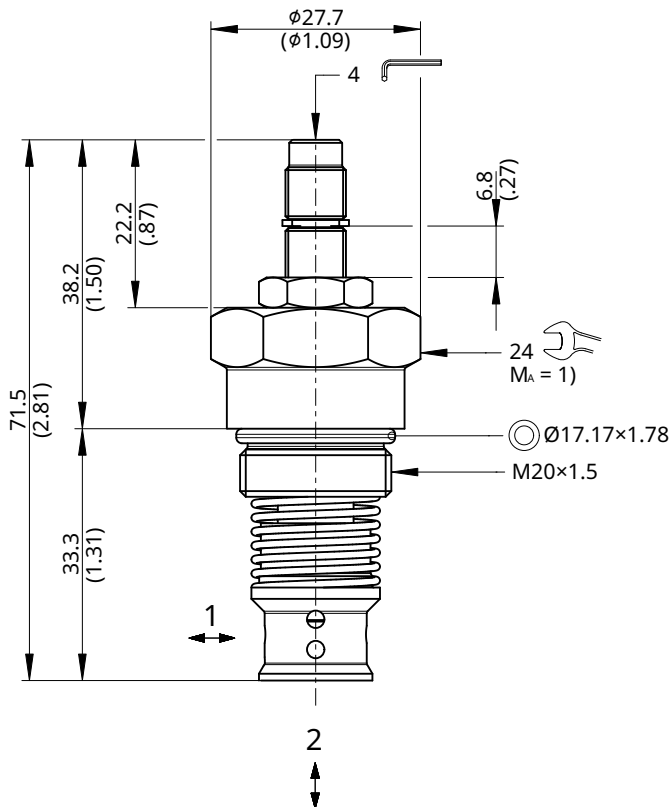


## Dimensions and sectional view

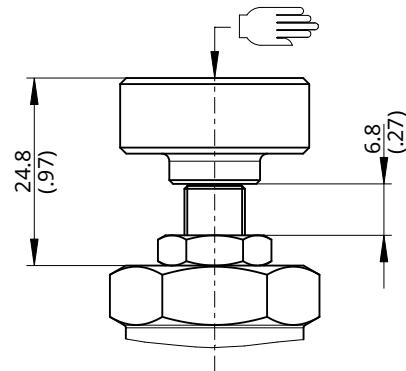
Beispiel für die Masseinheit:  
Exampel for the dimensional units:

0.79 = 0.79 mm millimeter  
(.031) = 0.031" inch

Version "S": Einstellschraube mit Innensechskant (Standard)  
Version "S": adjustment screw with internal hexagon (standard)



Version "H": Einstellschraube mit Handrad  
Version "H": adjustment screw with handknob



## Installation information



### ATTENTION!

Only qualified personnel with mechanical skills may carry out any maintenance work. Generally, the only work that should ever be undertaken is to check, and possibly replace, the seals. When changing seals, oil or grease the new seals thoroughly before fitting them.



### IMPORTANT!

1) When fitting the screw-in cartridge valve, use the specified tightening torque. The value can be found in the chapter "Technical data".



### NOTE!

The seals are not available individually. The seal kit order number can be found in the chapter "Technical data".

## Ordering code

	Ex.	M	D	R	2	-	10	F	-	0.7	-	S	-	N	A	1
M	=	flow-regulating valve														
D	=	direct acting														
R	=	check valve function														
2	=	2-way/2-position function														
10	=	nominal size 10														
F	=	cavity type DF														
0.7	=	Check valve opening pressure 0.7 bar / 10psi														
S	=	adjustment screw with internal hexagon														
		(standard)														
H	=	adjustment screw with handknob														
N	=	NBR (nitril-butadien-rubber / BUNA) seals														
		(standard)														
V	=	FKM (fluorocarbon rubber / VITON) seals														
		(special seals on request)														
A ... Q	=	standard model according to valid data sheet														
Z ... R	=	special model (on request)														
1 ... 9	=	technical design no. (omit by ordering)														

## Related data sheets

Reference	Description
<a href="#">400-P-040011</a>	Form tools
<a href="#">400-P-060131</a>	Cavity DF

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