

# Throttles and restrictor check valves type ED, RD, and RDF

Throttles type ED, RD, and RDF are flow valves. They are used in hydraulic circuits to control the flow of single and double acting actuators.

The two smaller sizes (type ED and RD) are a combination of slotted and annular gap design to improve adjustability. The larger sizes feature an annular gap design only. The restrictor check valves type RDF make use of an orifice for throttling.

A shim, which is very sensitive to the slightest flow, functions as the check valve in restrictor check valves type RD and RDF.

The type ED valves are pure throttles.



<b>Nomenclature:</b>	Throttle Restrictor check valves
<b>Design:</b>	Individual valve for pipe mounting Screw-in valve
<b>Adjustability:</b>	Manually adjustable (handle, adjusting knob) Tool adjustable
<b><math>P_{max}</math>:</b>	500 ... 630 bar
<b><math>Q_{max}</math>:</b>	12 ... 130 lpm

## Basic types and general parameters

Basic type and size <sup>1)</sup>	Flow $Q_{max}$ (lpm) <sup>2)</sup>	Oper. pressure $P_{max}$ (bar)	Tapped ports (BSPP)	Symbol
ED 11..				<b>ED</b>
RD 11..	12		G 1/4	
RDF 11/..				
ED 21..				<b>RD</b>
RD 21..	30		G 3/8	
RDF 21/..				
ED 31..				<b>RDF</b>
RD 31..	60	500	G 1/2	
RDF 31/..				
ED 41..				<b>RDF</b>
RD 41..	80		G 3/4	
RDF 41/..				
ED 51..				<b>RDF</b>
RD 51..	130		G 1	

<sup>1)</sup> The throttle diameter with type RDF can be only altered by replacing the orifice. Depending on size, diameters between 0.6 and 4 mm are available.

<sup>2)</sup> These figures correspond to completely opened throttle and represent a back pressure of approx. 50 bar (throttled direction of flow)

## Order examples

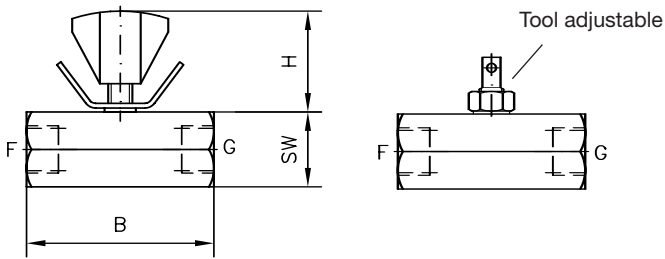
**ED 31 K**  
Throttle type ED, size 31,  
tool adjustable (K)

**RD 11**  
Restrictor check valve type RD, size 11,  
throttle is manually adjustable

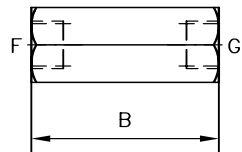
**RDF 41/1,4**  
Restrictor check valve type RDF, size 41,  
with a throttle diameter of 1.4 mm

**Dimensions**

**Type ED... and RD...**



**Type RDF...**



Basic type	H	B	SW	m (g)
ED 11..	23.5			
RD 11..	23.5	52	a/f 24	180
RDF 11/..	-			
ED 21..	24			
RD 21..	24	52	a/f 27	215
RDF 21/..	-			
ED 31..	32.5			
RD 31..	32.5	62	a/f 32	340
RDF 31/..	-			
ED 41..	41			
RD 41..	41	72	a/f 41	655
RDF 41/..	-			
ED 51..	46.5			
RD 51..	46.5	82	a/f 46	835
RDF 51/..	-			

All dimensions are in mm, and subject to change without notice !

**Further information**

- Throttle and restrictor check valves type ED, RD, RDF D 7540
- Restrictor check valves type Q, QR, QV D 7730
- Fine throttle type FG D 7275
- Restrictor check valves type BC D 6969 B
- type BE D 7555 B

- Orifice inserts type EB D 6465
- See also section "Devices for special applications" (Devices up to 700 bar)

For page and section of the devices additionally listed, see type index