

# Check valves type RC

for screwing into tapped holes

Version with housing for pipe connection

For restrictor check valves type BC with orifice, see pamphlet 6969 B

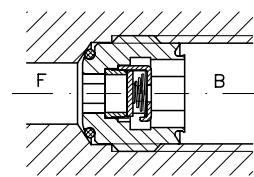
Pressure  $p_{max} = 700$  bar

Flow  $Q_{max} = 60$  lpm

## 1. General

These valves enable unrestricted flow in one direction and block the flow in the opposite direction. The valve housings are designed in such a way that they can be screwed into standard threaded boreholes with offset tap drill holes, drilled with conventional 118° drill point angles, and in both directions of operation. When being used in consumer circuits in which the accumulator effect, in conjunction with rapidly switching directional valves, could cause pressure and oil flow shocks (decompression) in the direction  $F \rightarrow B$ , throttle locations (corresponding, for example, to small flow boreholes) are to be fitted and designed in such a way that, when the pressure drop occurs at the start of decompression, no flow rate takes place which is greater than permissible.

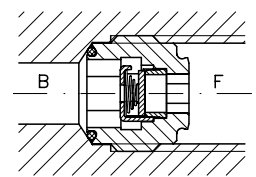
Valve blocks in screw-in direction



F — — B

Unrestricted flow →  
Blocked direction ←

Valve blocks counter-direction to screw thread



B — — F

Unrestricted flow ←  
Blocked direction →

## 2. Available versions, main data

Order example: **RC 2 E**

Table 1: Basic type, size

Cartridge	Coding	Thread size F and B	Pressure $p_{max}$ (bar)	Flow $Q_{max}$ (lpm)	
	<b>RC 1</b>	G 1/4 (A)	Standard, DIN ISO 228/1 (BSP) <sup>2)</sup>	700	20
	<b>RC 1/1</b> <sup>1)</sup>			700	35
	<b>RC 2</b>	G 3/8 (A)		500	60
	<b>RC 3</b>	G 1/2 (A)		700	20
	<b>RC 14</b>	M 14x1,5	with metric fine thread DIN 13 T6	700	35
	<b>RC 26</b>	M 16x1,5		700	35
	<b>RC 28</b>	M 18x1,5		700	35
	<b>RC 30</b>	M 20x1,5		500	60
<b>RC 32</b>	M 22x1,5		500	60	

Table 2: Version with housing for pipe connection

<b>G</b>			Pipe connection on both sides
<b>E</b>			Male thread on one side, shape B to DIN 3852, page 2
<b>F</b>			

<sup>1)</sup> RC 1/1 with increased open-up pressure; see also section 3 "Opening pressure"

<sup>2)</sup> G ... A Male thread  
G ... Female thread

### 3. Other characteristic data

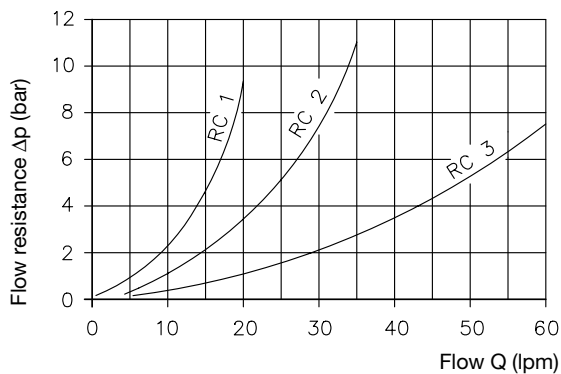
Nomenclature, design	Screw-in check valve
Installed position	Any; dep. on version with type RC .. G(E, F)
Flow direction	F → B Unrestricted flow B → F Blocked flow
Opening pressure	Serie 0.05 ... 0.07 bar Type RC 1/1 1.5 bar
Static overload capacity	> 2 x p <sub>max</sub>

Mass (weight)	Type	approx. (g)
	RC 1(14) and RC 1/1	6
	RC 2 (26, 28)	15
	RC 3 (30, 32)	25
	RC 1 (/1) G	75
	RC 2 (26, 28) G	105
	RC 3 (30, 32) G	170
	RC 1 (/1) E and F	60
	RC 2 (26, 28) E and F	85
	RC 3 (30, 32) E and R	145

Pressure fluid Hydraulic oil conforming DIN 51524 part 1 to 3: ISO VG 10 to 68 conforming DIN 51519.  
 Viscosity limits: min. approx. 4; max. approx. 1500 mm<sup>2</sup>/sec,  
 opt. operation approx. 10... 500 mm<sup>2</sup>/sec.  
 Also suitable are biologically degradable pressure fluids types HEPG (Polyalkylenglycol) and HEES (Synth. Ester) at service temperatures up to approx. +70°C.

Temperature Ambient: approx. -40 ... +80°C  
 Fluid: -25 ... +80°C, Note the viscosity range !  
 Permissible temperature during start: -40°C (observe start-viscosity!), as long as the service temperature is at least 20K (Kelvin) higher for the following operation.  
 Biologically degradable pressure fluids: Observe manufacturer's specifications. By consideration of the compatibility with seal material not over +70°C.

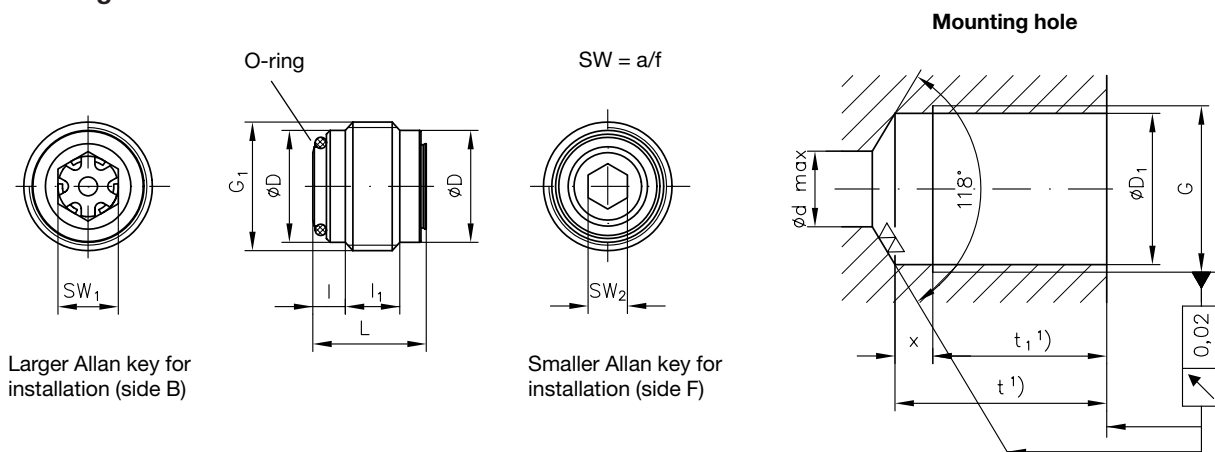
Δp-Q-curves



Oil viscosity during measurement 62 mm<sup>2</sup>/sec  
 At viscosities above approx. 500 mm<sup>2</sup>/sec, the Δp-values deviate more and more as they increase.

## 4. Unit dimensions

### Cartridge



Larger Allan key for installation (side B)

Smaller Allan key for installation (side F)

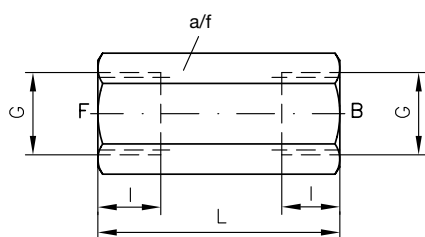
**Caution:** Do not apply box spanner with force, while inserting the Allan key, as this may cause damage to the internal valve components!

Type	G	G <sub>1</sub>	L	l	l <sub>1</sub>	D	D <sub>1</sub>	d	t	t <sub>1</sub>	x	a/f <sub>1</sub>	a/f <sub>2</sub>	O-ring NBR 90 Sh	Max. torque M <sub>A</sub> (Nm)
RC 1(/1)	G 1/4	G 1/4 A	13	3.5	6	11.6	11.8	8	25.5	22.5	3	8	4	9x1	9
RC 14	M 14x1.5					12.2	12.5								
RC 2	G 3/8	G 3/8 A	15	4.3	7.2	14.8	15.25	9	27	24	3	9	5	10x1.5	15
RC 26	M 16x1.5					14.2	14.5								
RC 28	M 18x1.5					16	16.5								
RC 3	G 1/2	G 1/2 A	18	5	8	18.5	19	12	32.5	28.5	3.5	12	8	14x1.5	40
RC 30	M 20x1.5			5.5	7	18.2	18.5								
RC 32	M 22x1.5			5	8	20	20.5								

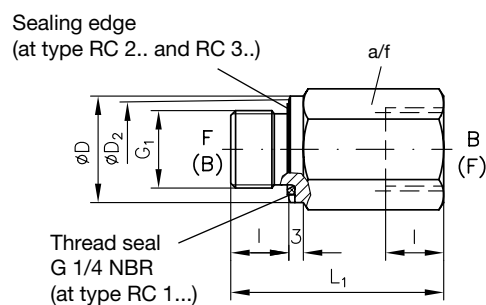
1) Dimensions t and t<sub>1</sub> are minimum values.  
The thread runout x may be smaller but cannot be larger than the value given in the table (fitting requirement)!

### Housing design

#### Type RC ... G



#### Type RC ... E and F



Type	G	G <sub>1</sub>	$\phi D$	D <sub>2</sub>	L	L <sub>1</sub>	l	a/f	Max. torque (Nm)
RC 1(/1)	G 1/4	G 1/4 A	19	---	46	43	12	19	40
RC 14	M 14x1.5			16					
RC 2	G 3/8	G 3/8 A	22	20,5	50	44	12	22	80
RC 26	M 16x1.5		22	20					
RC 28	M 18x1.5		24	22					
RC 3	G 1/2	G 1/2 A	26	24	56	52	14	27	150
RC 30	M 20x1.5		25	24					
RC 32	M 22x1.5		27	26					

G.. = BSPP

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