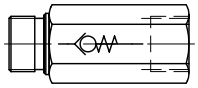
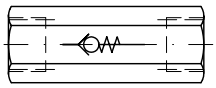
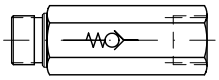
Check Valve Type B

Pressure p_{max} = 500 bar
Flow Q_{max} = 160 lpm

1. General

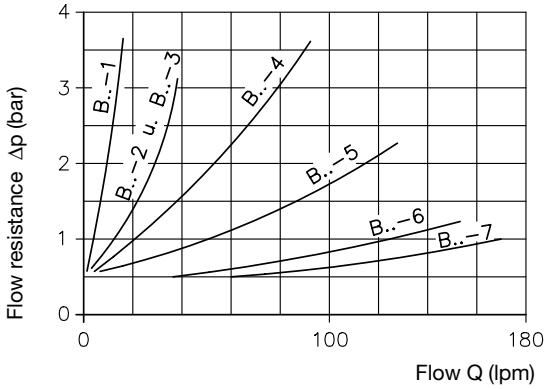
Check valves block the flow in one direction whilst permitting free flow in the opposite direction (DIN ISO 1219-1).

2. Available versions, main data

				Pressure p_{max} (bar)	Flow Q_{max} (lpm)
Coding and main data	**B 1 - 1**	**B 2 - 1**	**B 3 - 1**	500	15
	B 1 - 2	**B 2 - 2**	**B 3 - 2**		20
	B 1 - 3	**B 2 - 3**	**B 3 - 3**		30
	B 1 - 4	**B 2 - 4**	**B 3 - 4**		45
	B 1 - 5	**B 2 - 5**	**B 3 - 5**		75
	B 1 - 6	**B 2 - 6**	**B 3 - 6**		120
	B 1 - 7	**B 2 - 7**	**B 3 - 7**		160

Design	Spring-loaded, leakage free ball seated valve
Mounting	Type B 1 and B 3 with tapped journal, type B 2 is for in-line installation
Installed position	Arbitrarily
Mass (weight)	See unit dimensions in sect. 3
Pressure fluid	Hydraulic oil conforming DIN 51 514 part 1 to 3: ISO VG 10 to 68 conforming DIN 51 519. Viscosity limits: min. approx. 4, max. approx. 1500 mm^2/s; optimal operation approx. 10 ... 500 mm^2/s. 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 viscosity range Permissible temperature during start: -40°C (Note Start-viscosity!), as long as the service temperature is at least 20K higher for the following operation. Biological degradable pressure fluids: Note manufacturers information. Due the seals compatibility not above +70°C.
Opening pressure	approx. 0.4 to 0.5 bar B 2-2 and B 3-2 also available with an opening pressure of 3 bar (order coding e.g. B 2-2 - 3 bar)

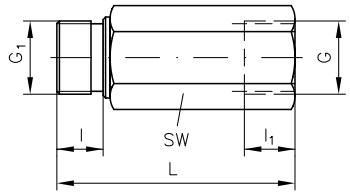
Δp-Q-Characteristic

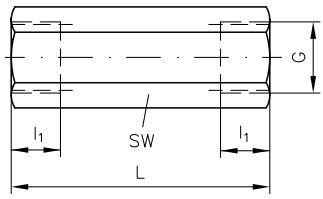


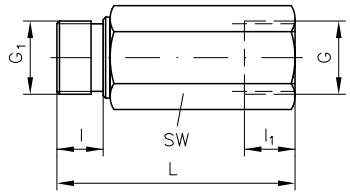
Oil viscosity during measurement approx. 30 mm^2/s

3. Unit dimensions

SW = a/f







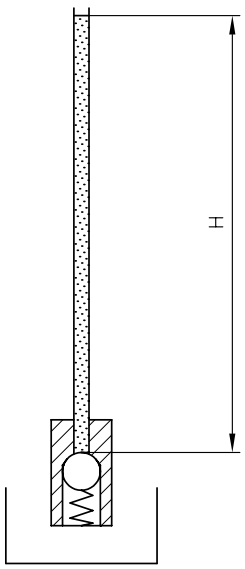
Type	Ports DIN ISO 228/1 (BSPP) G	G1	L	l	l1	SW	Mass (weight) approx. (kg)
B 1-1	G 1/4	G 1/4 A	50	12	12	19	0.1
B 1-2	G 3/8	G 3/8 A	58	12	13	24	0.2
B 1-3	G 1/2	G 1/2 A	60	12	16	27	0.2
B 1-4	G 3/4	G 3/4 A	70	16	16	36	0.4
B 1-5	G 1	G 1 A	94	18	20	41	0.7
B 1-6	G 1 1/4	G 1 1/4 A	110	20	23	55	1.3
B 1-7	G 1 1/2	G 1 1/2 A	115	22	25	60	1.5
B 2-1	G 1/4	--	55	--	12	19	0.1
B 2-2	G 3/8	--	62	--	12	24	0.2
B 2-3	G 1/2	--	70	--	16	27	0.2
B 2-4	G 3/4	--	77	--	16	36	0.4
B 2-5	G 1	--	102	--	20	41	0.7
B 2-6	G 1 1/4	--	120	--	23	55	1.5
B 2-7	G 1 1/2	--	122	--	24	60	1.8
B 3-1	G 1/4	G 1/4 A	60	12	12	19	0.1
B 3-2	G 3/8	G 3/8 A	67	12	13	24	0.2
B 3-3	G 1/2	G 1/2 A	66	12	14	27	0.2
B 3-4	G 3/4	G 3/4 A	58	16	16	36	0.3
B 3-5	G 1	G 1 A	114	18	21	41	0.8
B 3-6	G 1 1/4	G 1 1/4 A	130	20	23	55	1.7
B 3-7	G 1 1/2	G 1 1/2 A	136	22	25	60	2.0

All dimensions in mm, subject to change without notice !

4. Note for installation

Check valves at return pipe ends

If the check valves are installed as final elements in return pipes, e.g. to prevent running empty of the pipes, they are capable of maintaining a head of oil
H = 4 meter.
However, bearing in mind the tolerances on the spring preload, only about 75% of this load should be assumed in calculations.

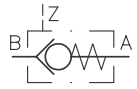


Hydraulic pilot operated check valves type RH

with central, favourable-flow design

Pressure p_{max} = 700 bar
Flow Q_{max} = 160 lpm

Symbol



1. General

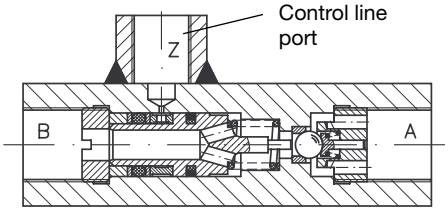
These devices belong to the category of stop valves according to DIN ISO 1219-1, with blocked flow A → B, and free flow B → A . The blocked flow direction A → B can be re-opened by a hydraulic control system.

Application:

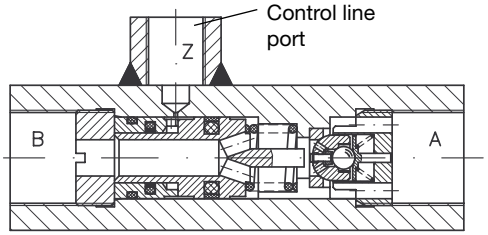
- Shutting off zero leakage hydraulic cylinders, when used together with directional spool valves (design related leakage)
- Return flow aid, when the return flow of cylinders with uneven area ratio exceeds the perm. flow rate of the connected directional valve.
- Hydraulically-actuated drain or circulation valve

These valves are available both with and without hydraulic pre-relief

The designs without pre-relief have a ball as valve element, which relatively quickly clears the full flow cross section area after deblocking. These valves are suited for most standard applications. An orifice in the control ports dampens the progression movement of the deblocking piston, adequately suppressing pressure surges (decompression shocks). If, despite this, such surges do occur during the test run, the use of a control line wound onto the throttle coil will provide such additional damping as may be necessary.



Designs with pre-relief are fitted with a spherically-ground valve piston instead of the ball (performing the function of a seated valve), plus a small, integrated ball check valve. When deblocking takes place, this ball check valve is forced up even before the valve piston opens, and clears an orifice area to provide surge-free decompression of the consumer volume. These valves are used mostly for high pressure and large consumer volume applications. The pre-relief effect is more effective, i.e. gentler, the lower the opening speed of the control piston becomes. This is achieved in this case too, as required, by means of a control line designed as a throttle coil. For further details, see section 3.1. (Maintaining the pressure).



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2. Types available, characteristic data

Coding, main data

Basic type	with pre-relief	Pressure p_{max} (bar)	Flow Q_{max} aprox. (lpm)	Control volumes approx. (cm^3)	Ports DIN ISO 228/1 (BSPP) A, B	Ports DIN ISO 228/1 (BSPP) Z	Mass (weight) approx. (kg)
RH 1	**---**	700	15	0.15	G 1/4	G 1/4	0.4
RH 2	**---**		35	0.22	G 3/8		0.4
RH 3	**RH 3 V**	500	55	0.4	G 1/2		0.6
RH 4	**RH 4 V**		100	1	G 3/4		1.3
RH 5	**RH 5 V**		160	1.8	G 1		1.8

Design: Spring-loaded ball seated valve, zero leakage

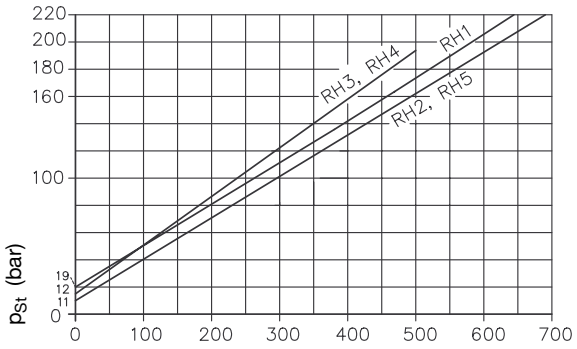
Mounting: Any, in the pipe work

Installed position: Any

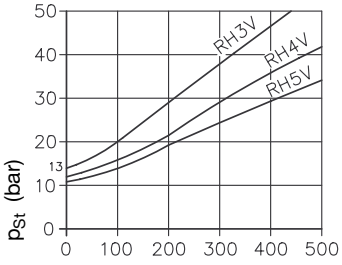
Surface coating: zinc galvanized

Control pressure p_{St} (bar)

For deblocking (p_B = 0 bar)



For deblocking the pre-relief



p_A (bar) Pressure at connection A →

to hold open: $p_{St} = p_B + \Delta p + k$

p_B (bar) = Pressure on side B

Δp (bar) = Back pressure A → B according to Δp-Q curve

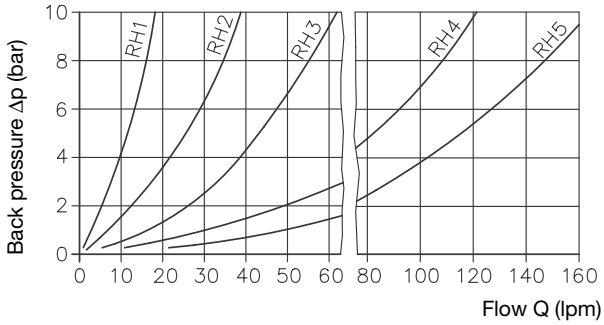
= 10 at RH 1 and RH 2
7 at RH 3(V)
8 at RH 4(V) and RH 5(V)

Pressure fluid: Hydraulic oil conforming DIN 51514 part 1 to 3: ISO VG 10 to 68 conforming DIN 51519.
Viscosity limits: min. approx. 4, max. approx. 1500 mm^2/s;
opt. operation approx. 10... 500 mm^2/s.
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 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: Apply to flow direction B → A and deblocked direction A → B
Opening pressure B → A 0.2 ... 0.3 bar

Oil viscosity during measurement 60mm^2/s

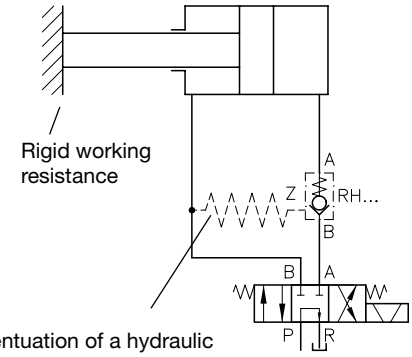


With viscosities exceeding approx. 500 mm^2/s, a greater Δp rise must be taken into account with the smaller types (RH 1...RH3).

3. Function modes

- **Maintaining the pressure**

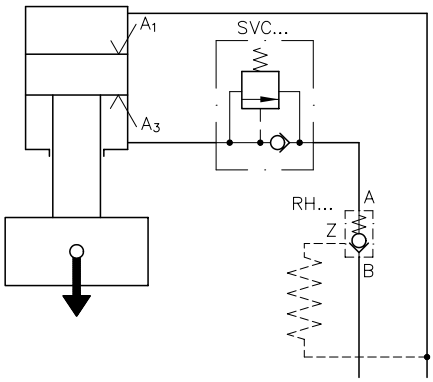
Preventing a pressure loss at the pressurized cylinder side when directional spool valves with design related leakage are used. To avoid decompression shock, which can occur in particular with large pressurized oil volumes if deblocking takes place suddenly, an orifice is provided in the control port. If this throttling effect is inadequate due to special operating conditions, then a suitable large control line wound onto the throttle coil can be used to reduce the decompression shock. The primary hydraulic pre-relief on types RH. . .V only takes effect if the control line is designed as described in the form of a throttle coil, and is thus capable of slowing down the switching speed sufficiently.



Control line attentuation of a hydraulic throttle coil
(2.. .4m hydraulic pipe 6 x 1.5 or 6 x 2)

- **Holding raised loads**

In cases involving upright cylinders or cylinders hanging downwards in particular, the weight of the load may cause a piston speed equal to or greater than that determined by the pump delivery flow. The effect of this may be that the control pressure required to keep the system open, as shown in sect. 2.1, cannot be built up. The result of this is valve flutter due to periodic opening and closing. Depending on the load conditions, this can be remedied by exploiting the dampening effect of the control line (as shown in sect. 3.1) or by braking the load by means of a sequence valve (e.g. type SVC...to pamphlet 7000/1) or a throttle valve (type RD to pamphlet 2570). See also pamphlet 7100 for special load retention valves. Caution: There is a risk that, with cylinders working down wards, in certain circumstances pressure rises may occur on the load side which exceed the load pressure until the stop valve actuates. The reason for this is that the control pressure adds to the load side pressure in a ratio A1/A3. If necessary, our Technical Department should be consulted for recommendations aimed at avoiding this.

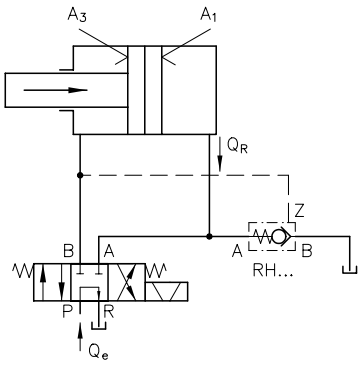


- **Return relief**

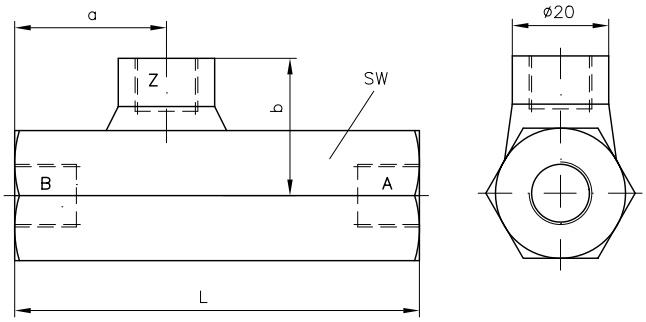
This is used if the return flow $Q_R = Q_e \frac{A_1}{A_3}$

the directional valve becomes too great when the piston moves in.

The most favourable dimension for the stop valve is determined by taking the flow resistance value Δp for A $\rightarrow$ R from the directional valve data sheet, which would occar at Q_e. Then look for the Δp-Q-characteristic for the RH valve on the reverse side of the page which most closely approximates the Δp value (A $\rightarrow$ B) already found at the flow rate Q_R - Q_e.



4. Unit dimensions



Type	Ports DIN ISO 228/1 (BSPP)					
	A, B	Z	L	a	b	a/f
RH 1	G 1/4	G 1/4	84	31.5	27	24
RH 2	G 3/8		90	32	28.5	27
RH 3 (V)	G 1/2		100	36.5	31	32
RH 4 (V)	G 3/4		126	45	35.5	41
RH 5 (V)	G 1		143	52	38	46

All dimensions are in mm. Subject to change without notice !

Check valves type RC

for screwing into tapped holes

Version with housing for pipe connection

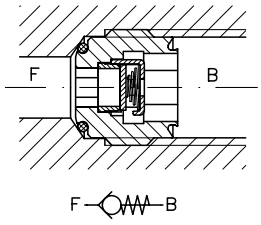
For restrictor check valves type BC with orifice, see pamphlet 6969 B

Pression p_{max} = 700 bar
Flow Q_{max} = 60 lpm

1. General

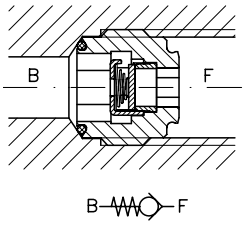
These valves enable unrestricted flow in one direction and block the flow in the opposite direction. The valve housings are designed in such a way that they can be screwed into standard threaded boreholes with offset tap drill holes, drilled with conventional 118° drill point angles, and in both directions 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→B, throttle locations (corresponding, for example, to small flow boreholes) are to be fitted and designed in such a way that, when the press, drop occurs at the start of decompression, no flow rate takes place which is greater than permissible.

Valve blocks in screw-in direction



Unrestricted flow →
Blocked direction ←

Valve blocks counter-direction to screw thread



Unrestricted flow ←
Blocked direction →

2. Available versions, main data

Order example: **RC 2 E**

Table 1: Basic type, size

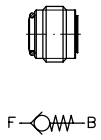
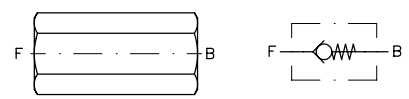
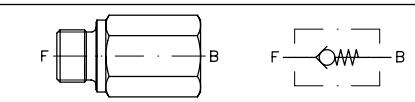
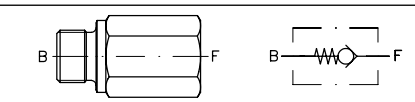
Cartridge	Coding	Thread size F and B		Pressure p_{max} (bar)	Flow Q_{max} (lpm)
	**RC 1** **RC 1/1** [1]	G 1/4 (A)	Standard, DIN ISO 228/1 (BSPP) [2]	700	20
	RC 2	G 3/8 (A)		700	35
	RC 3	G 1/2 (A)		500	60
F B	**RC 14**	M 14x1,5	with metric fine thread DIN 13 T6	700	20
	RC 26	M 16x1,5		700	35
	RC 28	M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

Table 2: Version with housing for pipe connection

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

[1] RC 1/1 with increased open-up pressure; see also section 3 "Opening pressure"

[2] G ... A Male thread
G ... Female thread

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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_{max}

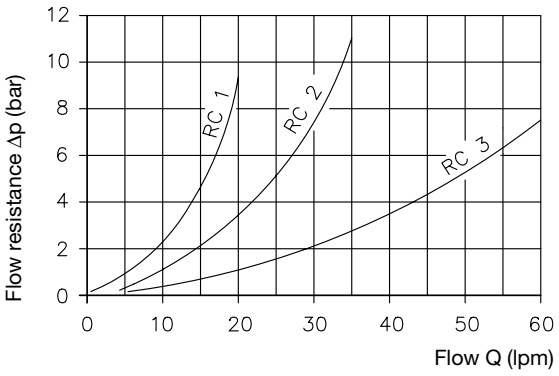
Mass (weight)

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 mm²/sec,
opt. operation approx. 10... 500 mm²/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

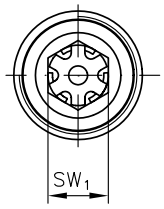


Oil viscosity during measurement 62 mm²/sec

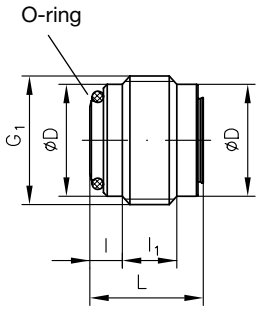
At viscosities above approx. 500 mm²/sec, the Δp-values deviate more and more as they increase.

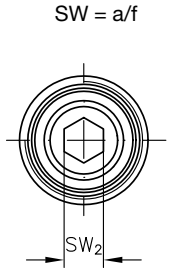
4. Unit dimensions

Cartridge



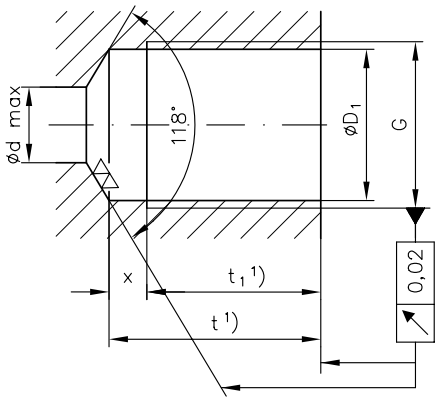
Larger Allan key for installation (side B)





Smaller Allan key for installation (side F)

Mounting hole



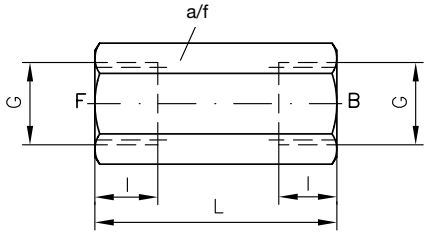
Caution: Do not apply box spanner with force, while inserting the Allan key, as this may cause damage to the internal valve components!

Type	G	G1	L	l	l1	D	D1	d	t	t1	x	a/f1	a/f2	O-ring NBR 90 Sh	Max. torque M_A (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								

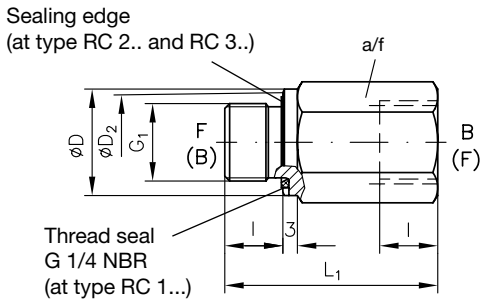
1) Dimensions t and t1 are minimum values.
The thread runout x may be smaller but cannot be larger than the value given in the table (fitting requirement)!

Housing design

Type RC ... G



Type RC ... E and F



Type	G	G1	ØD	D2	L	L1	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		42			
RC 2	G 3/8	G 3/8 A	22	20,5	50	44	12	22	80
RC 26	M 16x1.5		22	20				22	
RC 28	M 18x1.5		24	22				24	
RC 3	G 1/2	G 1/2 A	26	24	56	52	14	27	150
RC 30	M 20x1.5		25	24				27	
RC 32	M 22x1.5		27	26				30	

G.. = BSPP

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

Cartridge check valve type RK and RB

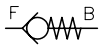
Flow Q_{max} = 120 lpm
Pressure p_{max} = 700 bar

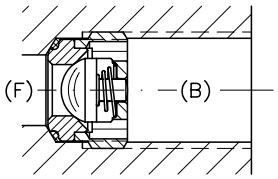
1. General

These check valve are screwed into single offset threaded boreholes. The housings are sealed by means of O-rings at the shoulder formed by the 118° drill point angles.
The valve housing is made up of two parts, which are connected to each other by flanging (RK) or by compression (RB), and between which is located a spring-loaded, hardened and polished hemisphere made of NIRO-rolling bearing steel. The valve seat part is likewise hardened and ground.

Type RK...

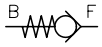
Installed in blocking direction

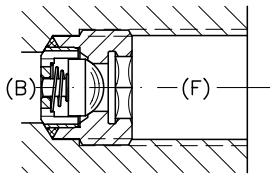




Type RB...

Installed in free flow direction





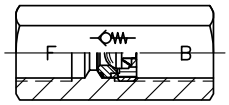
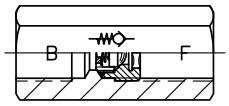
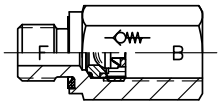
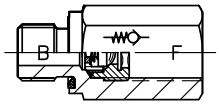
2. Available versions, main data

Examples: **RK 2** Srew-in version
RB 2 G Housing design

Table 1: Basic type, size

Flow rate approx. (lpm)		10	20	50	80	120
Pressure	(bar)	700	700	700	500	500
Standard, with pipe thread DIN ISO 228/1 (BSPP)	Coding	**RK 0 RB 0**	**RK 1 RB 1**	**RK 2 RB 2**	**RK 3 RB 3**	**RK 4 RB 4**
	Thread	G 1/8 A	G 1/4 A	G 3/8 A	G 1/2 A	G 3/4 A
Version with metric fine thread DIN 13 T6	Coding	**--- ---**	**RK 14 RB 14**	**RK 28 RB 28**	**RK 32 RB 32**	**RK 47 RB 47**
	Thread	---	M 14x1.5	M 18x1.5	M 22x1.5	M 27x2
Starting torque -10% (Nm)		8	15	20	40	80
		If strong shocks or vibrations are expected within the system in which the valves are fitted, it is advisable, as a precautionary measure, to prevent the valves from loosening by securing them with Loctite ® when they are screwed into the boreholes provided.				
Opening pressure approx. (bar)	RK..	0.05	0.18	0.20	0.25	0.1
	RB..	0.05	0.15	0.07	0.17	0.1

Table 2: Version with housing intended for inline installation

Suited for	Coding	Illustration
RK	**G**	
RB	**G**	
RK	**E**	
RB	**F**	

Note: RK (RB) 47 not available with housing

Installed position	Any
Hydraulic fluid	Fluids acc. to DIN 51524 table 1 to 3; ISO VG 10 to 68 acc. to DIN 51519 Viscosity range: min. approx. 4; max. approx. 1500 mm^2/s Optimal operation range: approx. 10 ... 500 mm^2/s Also suitable are biologically degradable pressure fluids of the type HEPG (Polyalkylenglycol) and HEES (synth. Ester) at operation temperatures up to approx. +70°C.
Temperature	Ambient: approx. -40 ... +80°C Fluid: -25 ... +80°C, pay attention to the viscosity range! Start temperature down to -40°C are allowable (Pay attention to the viscosity range during start!), as long as the operation temperature during subsequent running is at least 20K higher. Biological degradable pressure fluids: Pay attention to manufacturer's information. With regard to the compatibility with sealing materials do not exceed +70°C.

HAWE HYDRAULIK
HAWE HYDRAULIK GMBH & CO. KG
STREITFELDSTR. 25 • 81673 MÜNCHEN

2.1 Further data

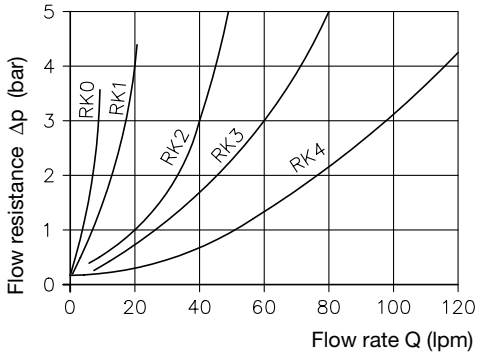
Mass (weight) approx. (g)

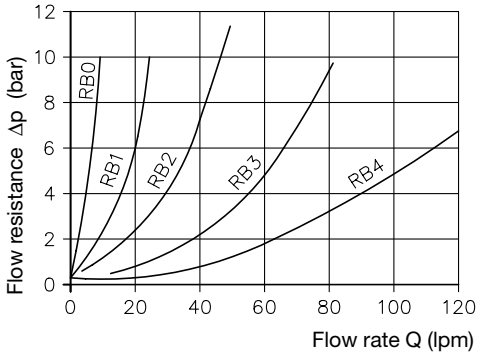
Type	RK 0	RK 1 RK 14	RK 2 RK 28	RK 3 RK 32	RK 4 RK 47	RB 0	RB 1 RB 14	RB 2 RB 28	RB 3 RB 32	RB 4 RB 47
Screw-in version	3	5	15	15	35	3	5	15	20	40

Type		RK 0 RB 0	RK 1.. RB 1..	RK 2.. RB 2..	RK 3.. RB 3..	RK 4.. RB 4..
Version with housing	RK(RB) ... G	30	75	105	160	340
	RK ... E RB ... F	30	60	85	140	300

Δp-Q curve

Viscosity during the measuring approx. 50 mm²/s



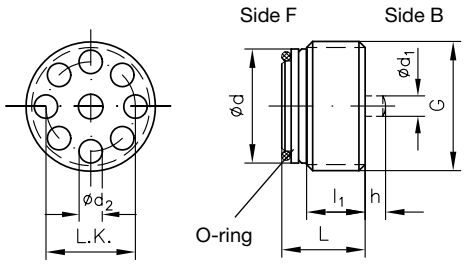


3. Dimensions of units

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

3.1 Screw-in version

Type RK...

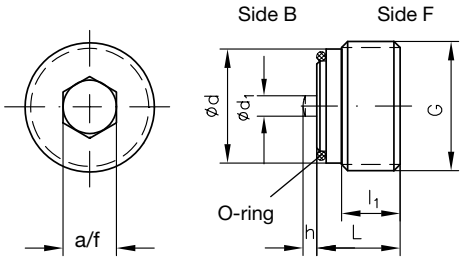


Type	G	L	l1	d	d1	d2	h	L.K.	O-ring NBR 90 Sh
RK 0	G 1/8 A x)	7.2	3.8	8.6	2	1.5	1.3	6.8	6x1
RK 1	G 1/4 A x)	9	4.5	11.5	2.6	2.2	1.5	$8.8_{-0,1}$	9x1
RK 14	M 14x1.5								
RK 2	G 3/8 A x)	11.2	6.5	15	3.4	3	2.5	11	11x1,5
RK 28	M 18x1.5								
RK 3	G 1/2 A x)	13.5	8	18.5	4.3	3.8	3.0	$14.2_{-0,1}$	14x1,5
RK 32	M 22x1.5								
RK 4	G 3/4 A x)	17.5	10	24	5.8	4.6	3.5	18.5	18.77x1.78
RK 47	M 27x2								

Torque see sect. 2, table 1!

x) G... ≙ BSPP

Type RB...

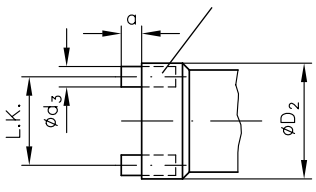


Type	G	L	l1	d	d1	h	a/f	O-ring NBR 90 Sh
RB 0	G 1/8 A x)	7.9	4.5	8.6	1.7	1.3	5	6x1
RB 1	G 1/4 A x)	10.3	5	11.6	2.2	1.3	7	9x1
RB 14	M 14x1.5							
RB 2	G 3/8 A x)	11.7	7	15	3	2	6	11x1,5
RB 28	M 18x1.5							
RB 3	G 1/2 A x)	13.2	7.5	18.5	3.4	2.5	8	14x1,5
RB 32	M 22x1.5							
RB 4	G 3/4 A x)	17.05	10	24	5.8	3.8	12	18.77x1.78
RB 47	M 27x2							

Torque see sect. 2, table 1!

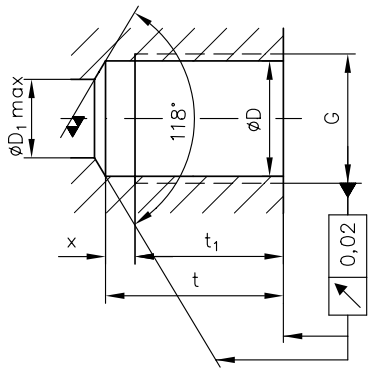
Fitting tool
for type RK
(Not available from HAWE)

Recommended: 4 pcs. at the circumference



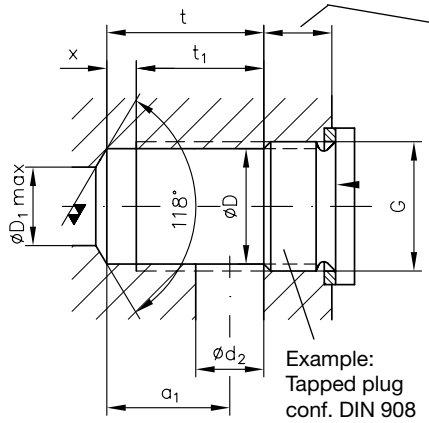
Type	D2	a	d3	L.K.
RK 0	8.6	2	1.2	6.8
RK 1, RK 14	11.5	2.5	1.8	$8.8_{-0,1}$
RK 2, RK 28	15	2	2.5	11
RK 3, RK 32	18.8	4	3	$14.2_{-0,1}$
RK 4, RK 47	24	4	4	18.5

Mounting holes:
for external line connection via pipe fittings



Type	G	D	D_1	t	t_1 2)	x 1)
RK 0 and RB 0	G 1/8 3)	8.7	5	16.5	14.2	2.3
RK 1 and RB 1	G 1/4 3)	11.8	8	22	19	3
RK 14 and RB 14	M 14x1.5	12.5				
RK 2 and RB 2	G 3/8 3)	15.25	9	24.5	21.5	3
RK 28 and RB 28	M 18x1.5	16.5				
RK 3 and RB 3	G 1/2 3)	19	12	29	25.5	3.5
RK 32 and RB 32	M 22x1.5	20.5				
RK 4 and RB 4	G 3/4 3)	24.5	16	35	31	4
RK 47 and RB 47	M 27x2	25				

for internal ducts



Required depth depends on the tapped plug, cover plate etc. to be used

Type	G	D	D_1	t	t_1 2)	x 1)	a_1	d_2
RK 0 and RB 0	G 1/8 3)	8.7	5	11	8.7	2.3	9	4
RK 1 and RB 1	G 1/4 3)	11.8	8	14	11	3	11	6
RK 14 and RB 14	M 14x1.5	12.5						
RK 2 and RB 2	G 3/8 3)	15.25	9	17	14	3	13	8
RK 28 and RB 28	M 18x1.5	16.5						
RK 3 and RB 3	G 1/2 3)	19	12	22	18.5	3.5	16	12
RK 32 and RB 32	M 22x1.5	20.5						
RK 4 and RB 4	G 3/4 3)	24.5	16	28	24	4	21	14
RK 47 and RB 47	M 27x2	25						

1) Thread run-out x is a must. It may be shorter but not longer (precondition for perfect seal via the O-ring)

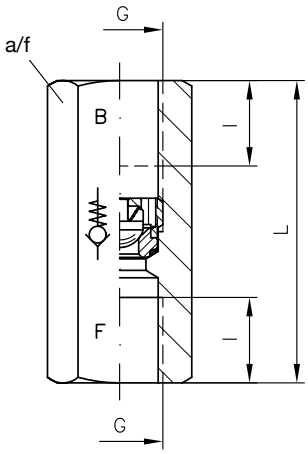
2) Fully cut-out thread

3) G... ≙ BSPP

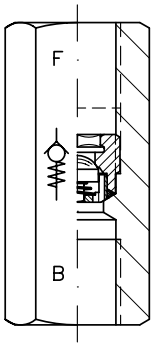
3.2 Housing design

Housing G

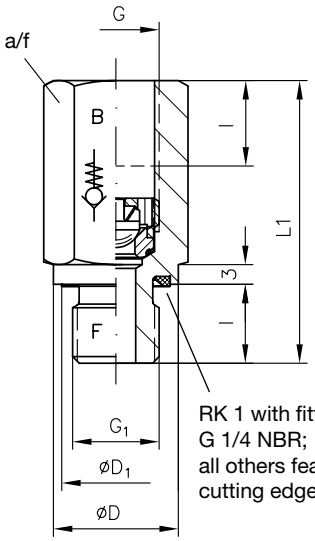
Type RB



Type RK

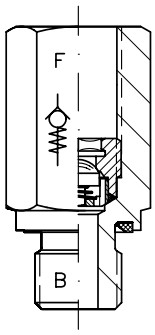


Housing E



RK 1 with fitting seal G 1/4 NBR; all others feature a cutting edge

Housing F



For missing data see housing E

Type	G	G1	∅D	D1	L	L1	l	a/f	Torque (Nm)
RK 0, RB 0	G 1/8 x)	G 1/8 A x)	14	12.5	30	28	8	14	20
RK 1, RB 1	G 1/4 x)	G 1/4 A x)	19	---	46	42	12	19	40
RK 14, RB 14	M 14x1.5		19	16	46	42	12	19	40
RK 2, RB 2	G 3/8 x)	G 3/8 A x)	22	20.5	50	44	12	22	80
RK 28, RB 28	M 18x1.5		24	22	50	44	12	24	80
RK 3, RB 3	G 1/2 x)	G 1/2 A x)	26	24	56	52	14	27	150
RK 32, RB 32	M 22x1.5		27	26	56	52	14	30	150
RK 4, RB 4	G 3/4 x)	G 3/4 A x)	32	30	65	60	16	36	200

x) G... ≙ BSPP