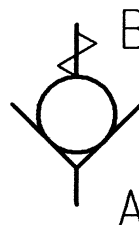


Check Valves, Size 04 ... 40

Spherical Poppet-type, Push-in Design, Invertible

Series RKVC ... 360 l/min, 350 bar (500 bar)



1 General

1.1 Product description

Series RKVC units are push-in check valve cartridges.

The valves prevent flow in the B → A direction (see symbol). In the opposite direction, there is a range of opening pressures from 0.2 to 2 bar.

The no-flow direction can be reversed by inverting the valve in its cavity.

The cavity is identical to that of the RVC valve.

The units are spring-closed spherical poppet valves with hardened body, poppet and seat. The properties of the sealing faces have been enhanced by mechanical processing.

External O-rings seal the leakage path between the valve and cavity wall.

The valves can be used for pressure relief in the opening direction, but only to a limited extent (consult Bucher Hydraulics for such applications).

1.2 Advantages

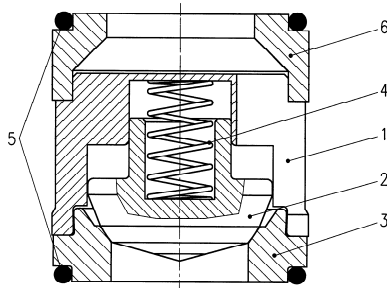
- Virtually leak-free
- High pressure rating
- Various opening pressures
- Interchangeable with RVC
- No-flow direction can be reversed
- Can be used as right-angle valve
- In conjunction with an ESH threaded mounting sleeve, can be used as a screw-in valve

2 Main characteristics

Designation	check valve / non-return valve
Design	spherical poppet design
Mounting method	push-in cartridge
Size	nominal 4...40 mm. See Table in section 5, Dimensions
Dimensions	see Table in section 5, Dimensions
Mounting attitude	unrestricted
No-flow direction	B → A (see symbol)
Operating pressure range	... 350 bar (for 500 bar, contact Bucher Hydraulics)
Opening pressure	0.2 ... 2 bar
Flow rate, Q max.	... 360 l/min
Fluid	HL and HLP hydraulic oils to DIN 51524
Temperature range	-30°C... +80°C
Viscosity range	10... 500 mm²/s (cSt)
Min. fluid cleanliness	18/14 to ISO 4406 / CETOP RP70H, 8...9 to NAS 1638

For applications outside these parameters, please contact Bucher Hydraulics.

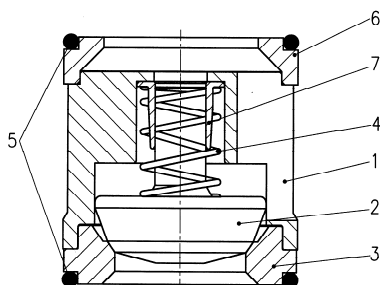
3 Schematic section 4 – 16 mm



4 Components

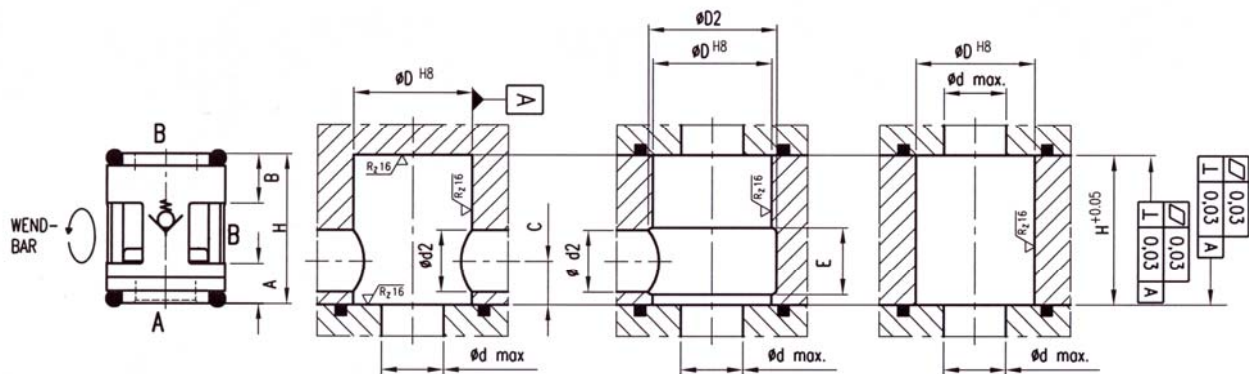
Item	Qty.	Description
1	1	Valve body
2	1	Valve poppet
3	1	Valve seat
4	1	Spring
5	2	O-ring
6	1	Press-fit ring

25 – 40 mm



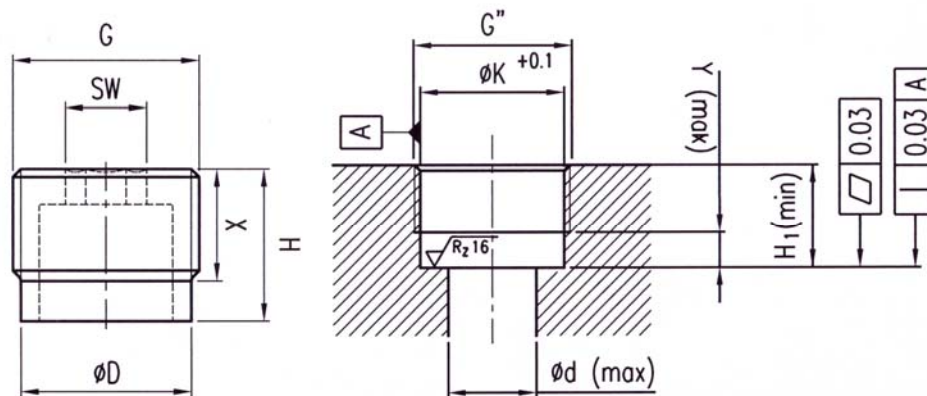
Item	Qty.	Description
1	1	Valve body
2	1	Valve poppet
3	1	Valve seat
4	1	Spring
5	2	O-ring
6	1	Press-fit ring
7	1	Guide bush

5 Dimensions



	Q Nom =Qmax (l/min)	ØD	ØD2	Ød	Ød2	A	B	C	E	H	2 pcs. O-ring
RKVC-04-...	8	8.5	11.0	4.0	5.0	3.4	5.0	6.75	5.6	13.5	6.2x1.0
RKVC-06-...	15	11.5	14.0	6.0	6.0	3.9	4.8	7.25	6.5	14.5	8.5x1.5
RKVC-08-...	30	15.0	18.0	8.0	9.0	3.9	5.5	8.50	9.5	17.0	12.0x1.5
RKVC-10-...	50	19.0	22.0	11.0	11.0	5.1	6.5	10.00	11.5	20.0	16.0x1.5
RKVC-16-...	80	24.5	28.0	15.0	14.0	5.1	6.5	11.50	14.5	23.0	20.0x2.0
RKVC-25-...	140	30.5	35.0	20.0	20.0	7.3	7.8	14.00	20.0	28.0	25.0x2.5
RKVC-32-...	240	39.5	46.0	28.0	28.0	11.0	8.0	21.0	28.0	42.0	34.0x2.5
RKVC-40-...	360	45.0	56.0	32.0	32.0	9.0	9.5	25.0	35.0	51.0	40.0x2.5

6 Dimensions of ESH mounting sleeve and REG-01 cavity



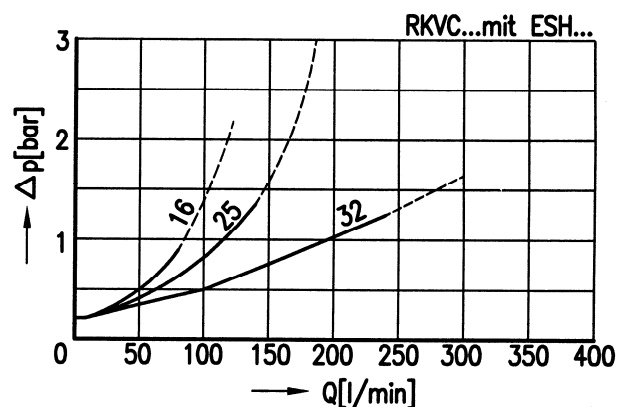
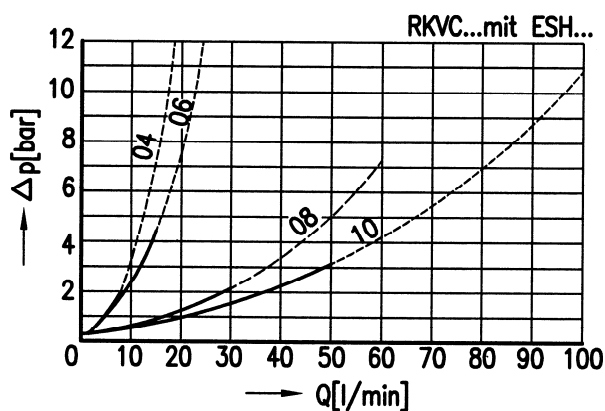
	G	ØD	ØK	Ød	H	X	Y	SW (A/F)	Tightening torque (Nm)	Use with
ESH-06	G1/4"	11.5	11.75	4.0	17.0	12.0	4.0	4	10	RKVC-04
ESH-08	G3/8"	14.9	15.25	6.0	18.5	12.5	5.0	6	20	RKVC-06
ESH-10	G1/2"	18.7	19.00	8.0	21.0	14.0	6.0	8	40	RKVC-08
ESH-16	G3/4"	24.2	24.50	11.0	25.0	17.0	7.0	10	80	RKVC-10
ESH-25	G1"	30.2	30.50	15.0	29.0	19.0	9.0	14	160	RKVC-16
ESH-32	G1 1/4"	39.0	39.50	20.0	34.0	22.0	11.0	19	250	RKVC-25
ESH-40	G1 1/2"	44.5	45.25	28.0	48.5	32.0	15	1)	350	RKVC-32
ESH-50	G2"	56.0	56.80	32	58.0	42.0	15	2)	450	RKVC-40

1) = use fitting tool type MKS-32

2) = use fitting tool type MKS 40

7 Performance graphs

measured with oil viscosity 33 mm²/s (cSt)



8 Ordering details

Model code key - Valve

Ex.

R K V C - - - -

Check valve, push-in type

K = spherical poppet

Nominal size

04

06

08

10

16

25

32

40

Opening pressure

0.2 bar

0.5 bar

1 bar

2 bar

Damping

Size 04, 06, 08, 10, 16 - damped

Size 10, 16 - undamped

Size 25, 32, 40

Z4

Z2

(blank)

O-rings

Nitrile

(blank)

Viton

V

Contact Bucher Hydraulics for further advice on:

- other opening pressures
- special materials
- customised designs

Model code key – ESH mounting sleeve

Ex.

E S H - -

ESH = threaded mounting sleeve

Thread

Whitworth pipe thread

Metrical thread

UNF-thread

G

M

U

Nominal size

06

08

10

16

25

32

40

50

9 Design and installation notes

The installation dimensions and tolerances must be maintained.

Referring to the free-flow direction, nozzles and orifices must not be situated directly before the check valve (see Data Sheet 170-P-059000-E).

When fitting the valve, take particular care to ensure that:

- the valve is firmly seated on the sealing surface, and that
- it neither projects out of the cavity, nor sits below the cavity surface by more than the tolerance H.

Recommendation: before installing the valve, fit the O-ring in the cavity.

Use the specified tightening torque when fitting the ESH threaded mounting sleeve. Special fitting tools are available for ESH-40 or larger.

10 Application notes

The maximum operating pressure must not be exceeded and any pressure peaks must be taken into consideration.

The specified nominal flow rate must not be exceeded.

In applications such as accumulator circuits, where sudden pressure can be applied to the valve in the free-flow direction, ensure that the specified flow ratings are not exceeded. In dynamic accumulator circuits, use the internally damped valves.

Buyers bear the sole responsibility for ensuring that the selected products are suitable for their applications. Buyers normally establish this by undertaking qualification programs on test stands, or by evaluating the performance of prototype machines or systems.

info.dah@ bucherhydraulics.com

www.bucherhydraulics.com

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