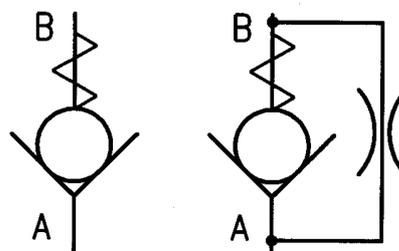


**Check Valves, Size 04 ... 25**  
**Plate-type, Push-in Design, Invertible**  
**Series RVC ... 140 l/min, 350 bar (500 bar)**



**1 General**

**1.1 Product description**

Series RVC units are push-in check valve cartridges.

The valve 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 RKVC valve.

The units are spring-closed plate valves with hardened body, seat and valve plate. The sealing faces are diamond-lapped.

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

A "metered check" function can be easily created by providing an orifice in the centre of the valve plate.

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**

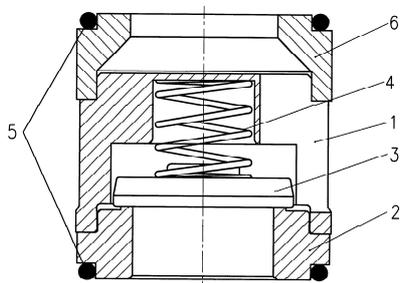
- Virtually leak-free
- High pressure rating
- Various opening pressures
- Particularly suitable for use as make-up check valves
- Interchangeable with RKVC
- Option: metered flow in the no-flow direction through an orifice
- No-flow direction can be reversed
- In conjunction with an ESH threaded mounting sleeve, can be used as a screw-in valve

**2 Main characteristics**

Designation	check valve / non-return valve
Design	guided plate design
Mounting method	push-in cartridge
Size	nominal 4 ... 25 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 for all sizes
Flow rate, Q max	... 140 l/min
Fluid	HL and HLP hydraulic oils to DIN 51524
Temperature range	-30°C ... +80°C
Viscosity range	10... 500 mm <sup>2</sup> /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.

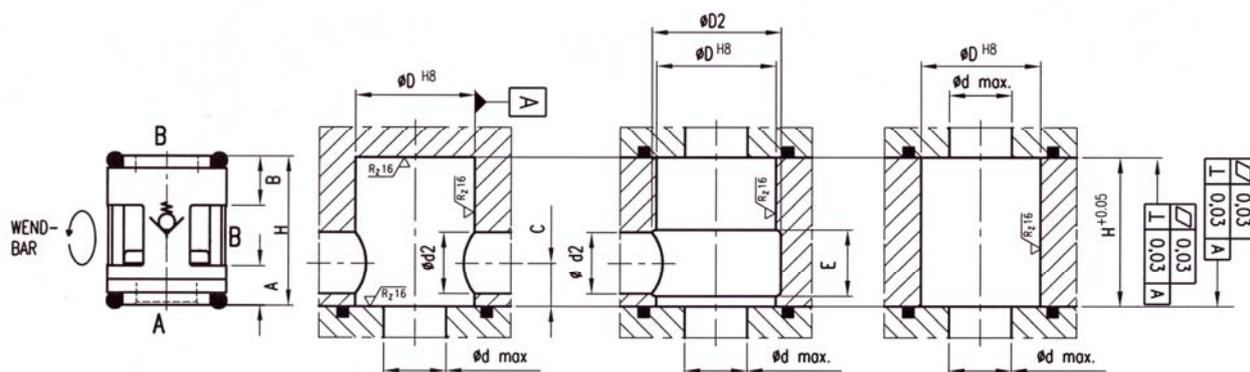
**3 Schematic section**



**4 Components**

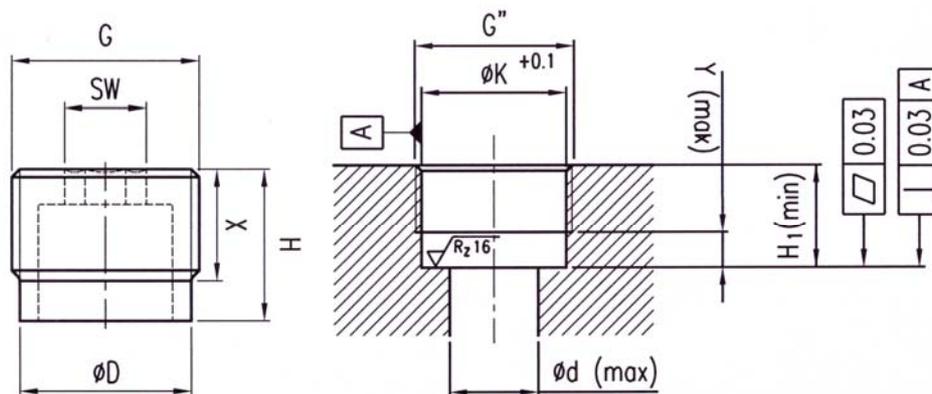
Item	Qty.	Description
1	1	Valve body
2	1	Valve seat
3	1	Valve plate
4	1	Spring
5	2	O-ring
6	1	Press-fit ring

**5 Dimensions**



	Q Nom =Qmax (l/min)	ØD	ØD <sub>2</sub>	Ød	Ød <sub>2</sub>	A	B	C	E	H	I *)	2 pcs. O-Ring
RVC-04-...	8	8.5	11.0	4.0	5.0	3.4	5.0	6.8	5.6	13.5	1.4	6.2 x 1.0
RVC-06-...	15	11.5	14.0	6.0	6.0	3.9	4.8	7.3	6.5	14.5	1.4	8.5 x 1.5
RVC-08-...	30	15.0	18.0	8.0	9.0	3.9	5.5	8.5	9.5	17.0	1.4	12.0 x 1.5
RVC-10-...	50	19.0	22.0	11.0	11.0	5.1	6.5	10.0	11.5	20.0	1.4	16.0 x 1.5
RVC-16-...	80	24.5	28.0	15.0	14.0	5.1	6.5	11.5	14.5	23.0	1.4	20.0 x 2.0
RVC-25-...	140	30.5	35.0	20.0	20.0	7.3	7.8	14.0	20.0	28.0	1.3	25.0 x 2.5

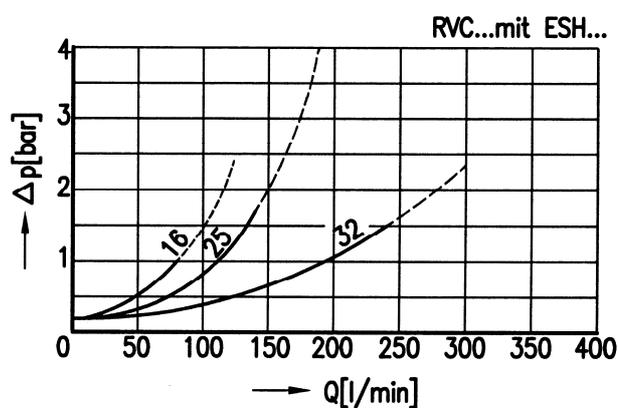
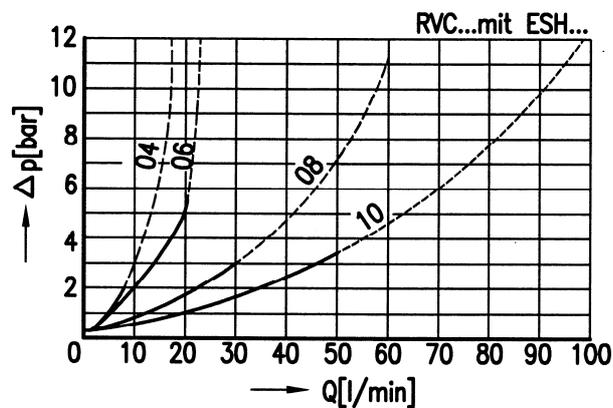
**6 Dimensions of ESH mounting sleeve and REG-01 cavity**



	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	RVC-04
ESH-08	G3/8"	14.9	15.25	6.0	18.5	12.5	5.0	6	20	RVC-06
ESH-10	G1/2"	18.7	19.00	8.0	21.0	14.0	6.0	8	40	RVC-08
ESH-16	G3/4"	24.2	24.50	11.0	25.0	17.0	7.0	10	80	RVC-10
ESH-25	G1"	30.2	30.50	15.0	29.0	19.0	9.0	14	160	RVC-16
ESH-32	G1 1/4"	39.0	39.50	20.0	34.0	22.0	11.0	19	250	RVC-25

**7 Performance graphs**

measured with oil viscosity 33 mm<sup>2</sup>/s (cSt)



## 8 Ordering details

Model code key - Valve

Ex.

R V C - [ ] - [ ] - [ ] - [ ]

Check valve, push-in type

### Nominal size

04  
06  
08  
10  
16  
25

### Opening pressure

0.2 ... 0.3 bar

1 bar

2 bar

03

1

2

### Orifice diameter

No orifice: (blank)

0.4 mm D04

0.5 mm D05

0.6 mm D06

0.8 mm D08

1.0 mm D10

1.2 mm D12

1.5 mm D15

2.0 mm D20

2.5 mm D25

### O-rings

Nitrile

Viton

NBR

V

Contact Bucher Hydraulics for further advice on:

- Other opening pressures
- Other orifice diameters
- 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

## 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 the cavity.

Use the specified tightening torque when fitting the valve.

## 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 RKVC 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.