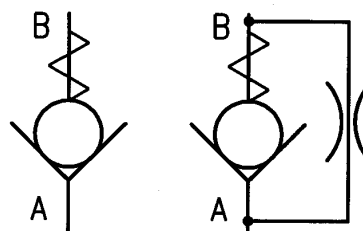


Check Valves, Size 04 ... 25

Plate-type, Screw-in Design

Series RVE ... 140 l/min, 350 bar (500 bar)



1 General

1.1 Product description

Series RVE units are screw-in check valves with mounting threads ranging from G 1/8" to G 1". For other thread forms, contact Bucher Hydraulics.

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

The cavities are identical to those used by the RKVG valve (REG-02 cavity only) and RKVE valve (REG-01 & REG-02).

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

An external O-ring seals the leakage path between the valve and cavity wall. Please note that the two types of cavity use different O-ring sizes!

Additional exists a variant with a metallic sealing edge for the cavity type RGE-02 (size 04 to 16).

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
- Compact construction
- Various opening pressures
- Particularly suitable for use as make-up check valves
- Option: metered flow in the no-flow direction through an orifice

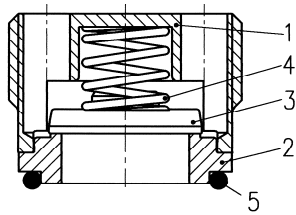
2 Main characteristics

| | |
|--------------------------|---|
| Designation | check valve / non-return valve |
| Design | guided plate design |
| Mounting method | screw-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 range | 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 ² /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

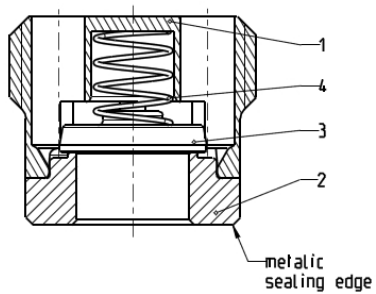
Size 04 – 25 (REG-01 and REG-02)



4 Components

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

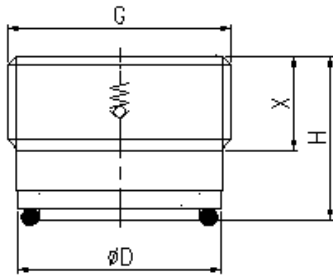
Size 04 – 16 (REG-02)



| Item | Qty. | Description |
|------|------|-------------|
| 1 | 1 | Valve body |
| 2 | 1 | Valve seat |
| 3 | 1 | Valve plate |
| 4 | 1 | Spring |

5 Dimensions

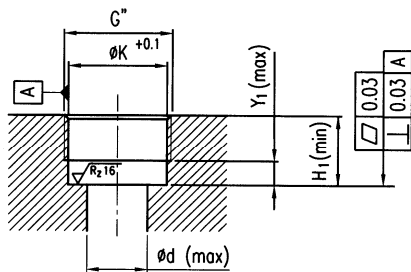
5.1 Valve



| | Q Nom =Qmax (l/min) | G | ØD | H | X | O-ring for cavity type REG-01 | O-ring for cavity type REG-02 | Tightening torque OR (Nm) | Tightening torque DK118 (Nm) | Pin spanner Type |
|------------|---------------------------|-------|------|------|------|-------------------------------------|-------------------------------------|------------------------------------|---------------------------------------|------------------------|
| RVE-04-... | 8 | G1/8" | 8.5 | 10.0 | 5.0 | 6.2 x 1.0 | 6 x 0.8 | 3 | 8 | M-04 |
| RVE-06-... | 15 | G1/4" | 11.5 | 11.3 | 5.0 | 8.5 x 1.5 | 8 x 1.25 | 7 | 20 | M-06 |
| RVE-08-... | 30 | G3/8" | 14.9 | 13.3 | 7.0 | 12 x 1.5 | 12 x 1.0 | 15 | 25 | M-08 |
| RVE-10-... | 50 | G1/2" | 18.7 | 15.9 | 8.5 | 16 x 1.5 | 16 x 1.0 | 30 | 40 | M-10 |
| RVE-16-... | 80 | G3/4" | 24.2 | 18.9 | 10.0 | 20 x 2.0 | 20 x 1.5 | 60 | 60 | M-16/MKS-16 |
| RVE-25-... | 140 | G1" | 30.2 | 23.0 | 12.5 | 25 x 2.5 | - | 120 | - | M-25/MKS-25 |

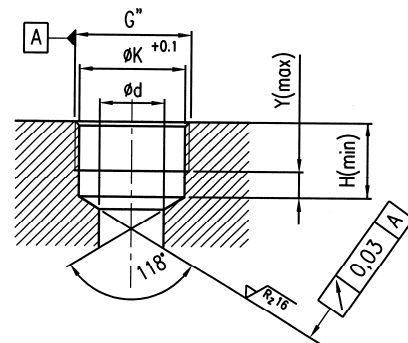
5.2 Cavity

5.21 Cavity type REG-01



| | G | $\varnothing K$ | $\varnothing d$ | Y_1 | H_1 |
|------------|-------|-----------------|-----------------|-------|-------|
| RVE-04-... | G1/8" | 8.70 | 4.0 | 4.0 | 10.0 |
| RVE-06-... | G1/4" | 11.75 | 6.0 | 5.0 | 11.5 |
| RVE-08-... | G3/8" | 15.25 | 8.0 | 5.0 | 13.5 |
| RVE-10-... | G1/2" | 19.00 | 11.0 | 6.0 | 16.0 |
| RVE-16-... | G3/4" | 24.50 | 15.0 | 7.0 | 19.0 |
| RVE-25-... | G1" | 30.50 | 20.0 | 10.0 | 23.0 |

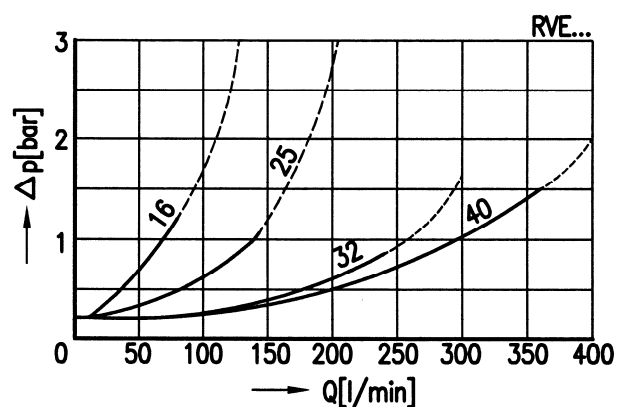
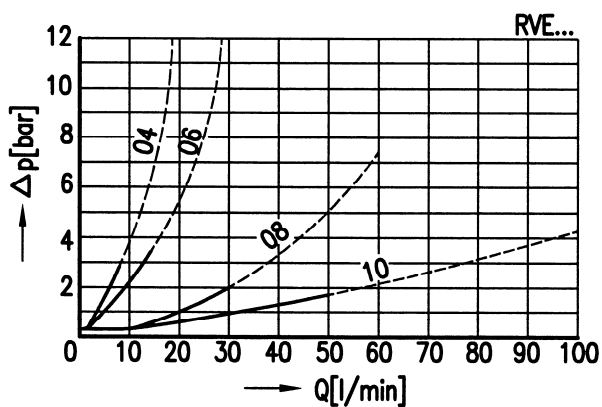
5.22 Cavity type REG-02



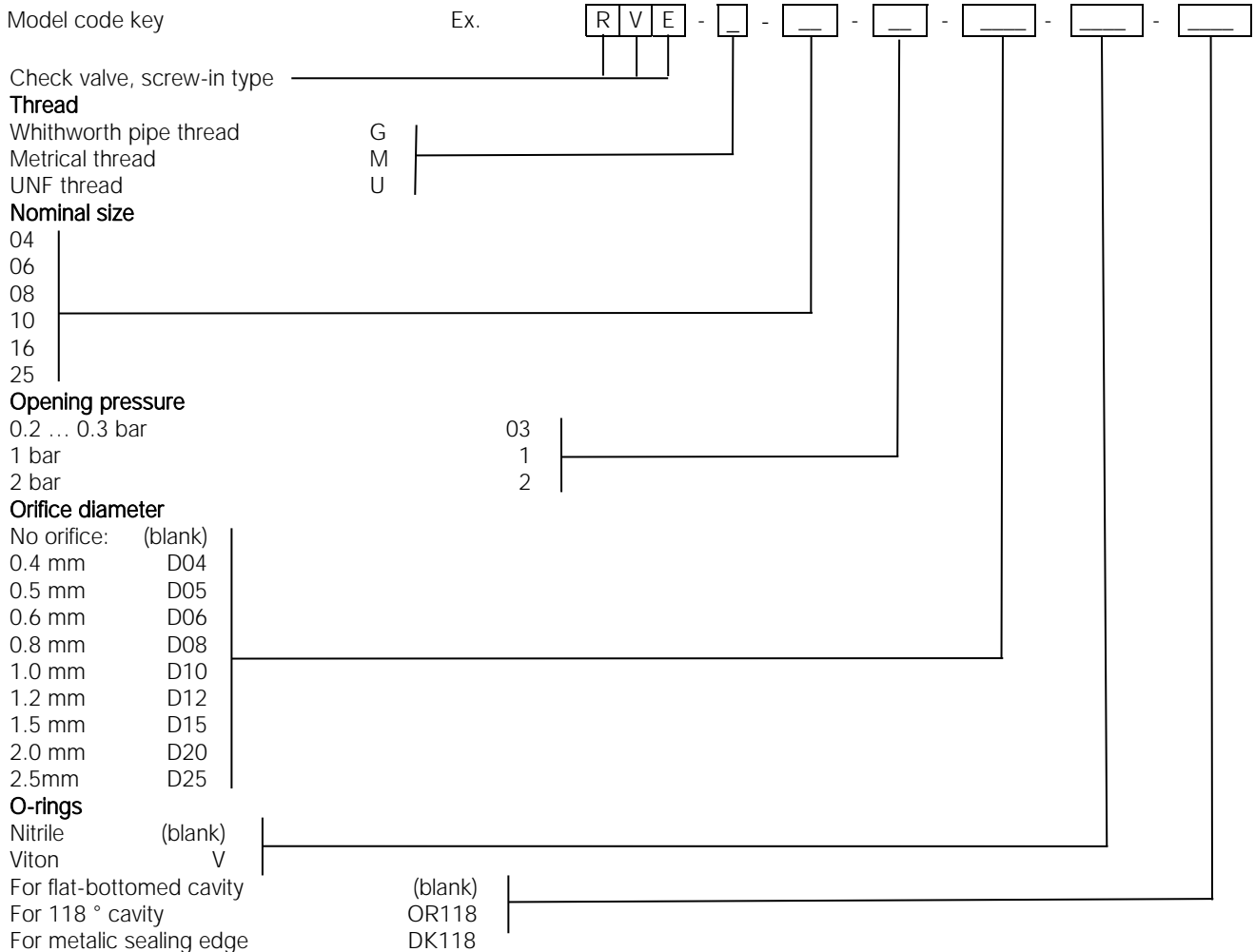
| | G | $\varnothing K$ | OR118 | | DK118 | |
|------------|-------|-----------------|-----------------|-----------------|-------|------|
| | | | $\varnothing d$ | $\varnothing d$ | Y | H |
| RVE-04-... | G1/8" | 8.70 | 4.0 | 6.0 | 2.5 | 10.0 |
| RVE-06-... | G1/4" | 11.75 | 6.0 | 8.0 | 4.0 | 11.5 |
| RVE-08-... | G3/8" | 15.25 | 8.0 | 11.5 | 4.0 | 13.5 |
| RVE-10-... | G1/2" | 19.00 | 11.0 | 15.5 | 4.5 | 16.0 |
| RVE-16-... | G3/4" | 24.50 | 15.0 | 20.0 | 6.0 | 19.0 |

6 Performance graphs

measured with oil viscosity $33 \text{ mm}^2/\text{s}$ (cSt)



7 Ordering details



Contact Bucher Hydraulics for further advice on:

- other opening pressures
- other orifice diameters
- special materials
- customised designs

8 Design and installation notes

The installation dimensions and tolerances must be maintained.

Use the specified tightening torque when fitting the valve.

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, but that
- valve components are not deformed by the use of excessive force

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

We offer form tools for hire or sale.

Special fitting tools (pin spanners) are available for sale.

9 Application notes

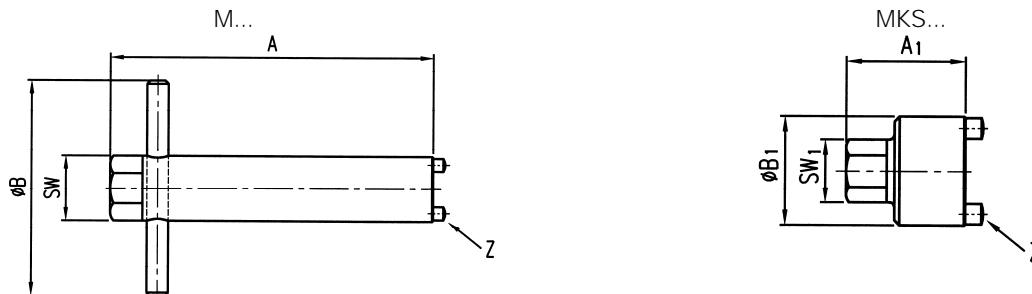
The maximum operating pressure must not be exceeded and any pressure peaks must be taken into consideration.

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 RKVE 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.

10 Pin spanners



| | A | A ₁ | ØB | ØB ₁ | SW (A/F) | SW ₁ (A/F) | Z (dia.) |
|-----------|-----|----------------|----|-----------------|----------|-----------------------|----------|
| M04 | 90 | - | 50 | - | 7 | - | 3 |
| M06 | 105 | - | 60 | - | 10 | - | 3 |
| M08 | 120 | - | 70 | - | 13 | - | 4 |
| M10 | 135 | - | 90 | - | 17 | - | 4 |
| M16/MKS16 | 150 | 35 | 90 | 24 | 22 | 14 | 4 |
| M25/MKS25 | 150 | 37 | 90 | 30 | 27 | 19 | 3 |

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