



VR DN 15÷80
PP-H

Check valve

VR

DN 15÷80

The VR is an angle seat check valve with weighted PP-H piston that allows the passage of fluid in one direction only.

CHECK VALVE

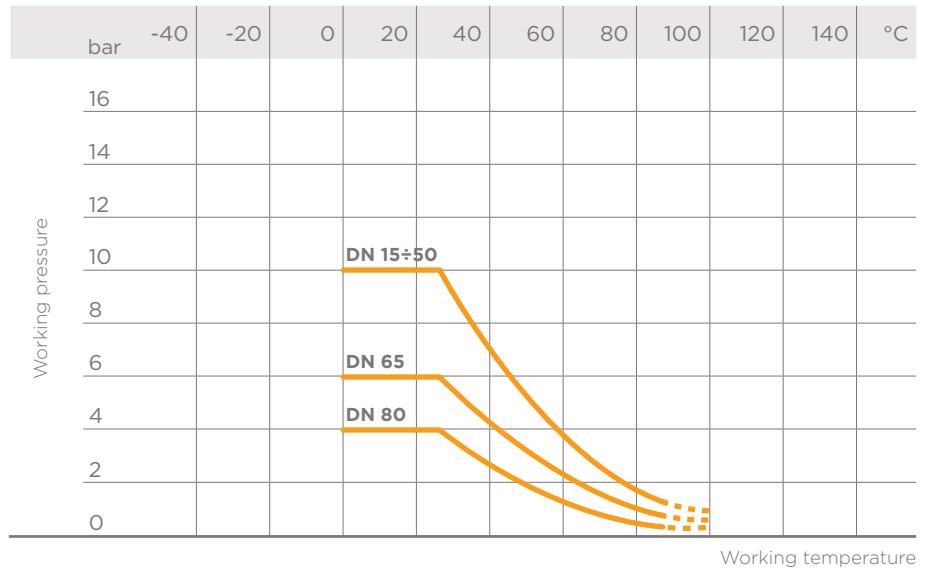
- Connection system for weld, threaded and flanged joints
- **No metal parts in contact with the fluid**
- **Piston with counterweight** able to work with high intensity fluid
- Limited pressure drop. Only minimum back pressure is required for the hermetic seal
- **Valve material compatibility (PP-H)** with water conveyance, drinking water and other food substances according to **current regulations**
- Can be maintained with the valve body installed

| Technical specifications | |
|----------------------------|--|
| Construction | Angle seat check valve |
| Size range | DN 15 ÷ 80 |
| Nominal pressure | DN 15÷50: PN 10 with water at 20° C DN 65: PN 6 with water at 20° C DN 80: PN 4 with water at 20° C |
| Temperature range | 0 °C ÷ 100 °C |
| Coupling standards | Welding: EN ISO 15494. Can be coupled to pipes according to EN ISO 15494 Thread: ISO 228-1, DIN 2999 Flanging system: ISO 7005-1, EN 1092-1, EN ISO 15494, EN 558-1, DIN 2501, ANSI B16.5 cl.150 |
| Reference standards | Construction criteria: EN ISO 16137, EN ISO 15494 Test methods and requirements: ISO 9393 Installation criteria: DVS 2202-1, DVS 2207-11, DVS 2208-1, UNI 11318 |
| Valve material | PP-H |
| Seal material | EPDM or FPM |

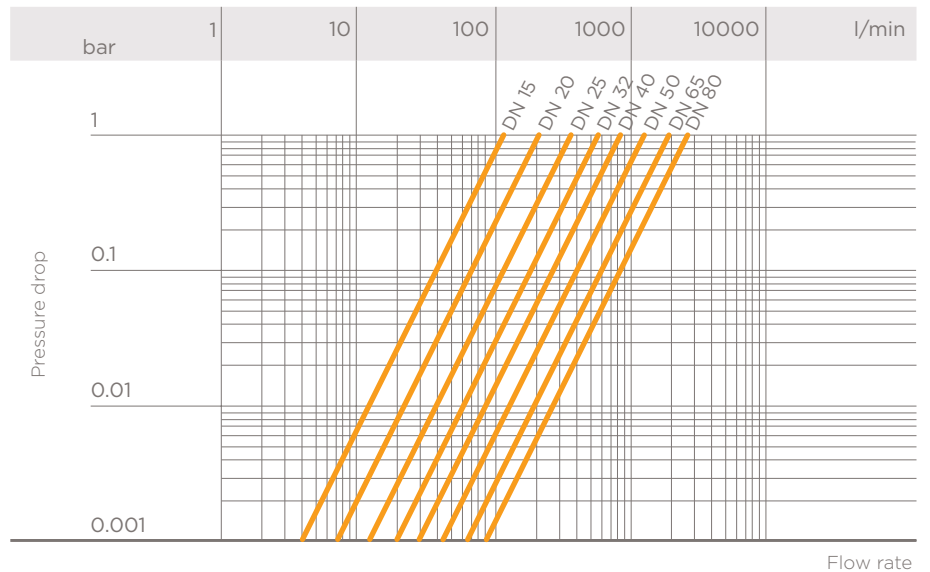
TECHNICAL DATA

PRESSURE VARIATION ACCORDING TO TEMPERATURE

For water and non-hazardous fluids with regard to which the material is classified as CHEMICALLY RESISTANT. In other cases, a reduction of the nominal pressure PN is required (25 years with safety factor).



PRESSURE DROP GRAPH



K_v100 FLOW COEFFICIENT

The K_v100 flow coefficient is the Q flow rate of litres per minute of water at a temperature of 20°C that will generate $\Delta p = 1$ bar pressure drop at a certain valve position.

The K_v100 values shown in the table are calculated with the valve completely open.

| DN | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 |
|--------------------|-----|-----|-----|-----|-----|------|------|------|
| K _v 100 | 110 | 205 | 375 | 560 | 835 | 1300 | 1950 | 2600 |

MINIMUM PRESSURE REQUIRED TO LIFT THE PISTON

| DN | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|
| bar | 0.008 | 0.009 | 0.014 | 0.017 | 0.018 | 0.021 | 0.022 | 0.022 |

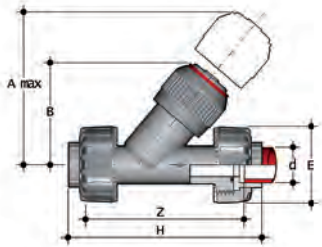
MINIMUM SEALING PRESSURE (PISTON IN CLOSED POSITION)

| DN | 15 | 20 | 25 | 32 | 40 | 50 | 65 | 80 |
|---------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| mm H ₂ O | 150 | 200 | 350 | 350 | 350 | 350 | 350 | 350 |

The figures refer to the seals that are not worn.

The information in this leaflet is provided in good faith. No liability will be accepted concerning technical data that is not directly covered by recognised international standards. FiP reserves the right to carry out any modification. Products must be installed and maintained by qualified personnel.

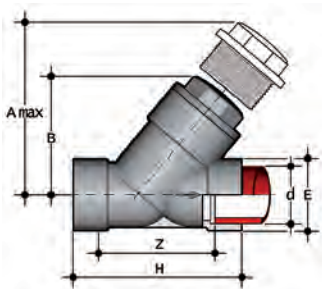
DIMENSIONS



VRUIM

Check valve with female union ends for socket welding, metric series

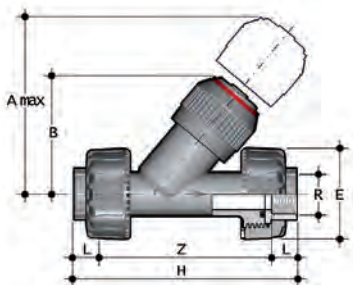
| d | DN | PN | A max | B | E | H | Z | g | EPDM Code | FPM Code |
|----|----|----|-------|-----|-----|-----|-----|------|-----------|-----------|
| 20 | 15 | 10 | 125 | 71 | 55 | 138 | 109 | 165 | VRUIM020E | VRUIM020F |
| 25 | 20 | 10 | 145 | 83 | 65 | 157 | 125 | 227 | VRUIM025E | VRUIM025F |
| 32 | 25 | 10 | 165 | 94 | 74 | 179 | 143 | 380 | VRUIM032E | VRUIM032F |
| 40 | 32 | 10 | 190 | 109 | 86 | 205 | 164 | 645 | VRUIM040E | VRUIM040F |
| 50 | 40 | 10 | 210 | 119 | 99 | 244 | 197 | 915 | VRUIM050E | VRUIM050F |
| 63 | 50 | 10 | 240 | 143 | 120 | 294 | 239 | 1555 | VRUIM063E | VRUIM063F |



VRIM

Check valve with female ends for socket welding, metric series

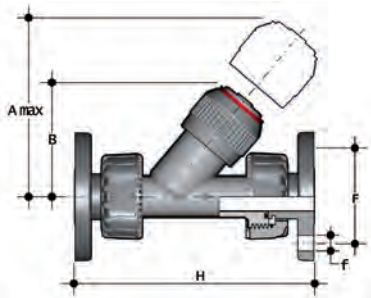
| d | DN | PN | A max | B | E | H | K | Z | g | EPDM Code | FPM Code |
|----|----|----|-------|-----|-----|-----|-----|-----|------|-----------|----------|
| 75 | 65 | 6 | 300 | 176 | 103 | 241 | 96 | 179 | 2450 | VRIM075E | VRIM075F |
| 90 | 80 | 4 | 325 | 192 | 115 | 260 | 105 | 189 | 3130 | VRIM090E | VRIM090F |



VRUFM

Check valve with BSP threaded female union ends

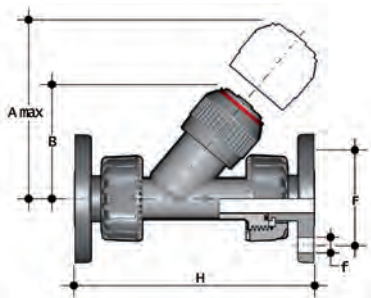
| d | DN | PN | A max | B | E | H | Z | g | EPDM Code | FPM Code |
|--------|----|----|-------|-----|-----|-----|-----|------|-----------|-----------|
| 1/2" | 15 | 10 | 125 | 71 | 55 | 143 | 113 | 165 | VRUFM012E | VRUFM012F |
| 3/4" | 20 | 10 | 145 | 83 | 65 | 160 | 127 | 227 | VRUFM034E | VRUFM034F |
| 1" | 25 | 10 | 165 | 94 | 74 | 183 | 145 | 380 | VRUFM100E | VRUFM100F |
| 1 1/4" | 32 | 10 | 190 | 109 | 86 | 214 | 171 | 645 | VRUFM114E | VRUFM114F |
| 1 1/2" | 40 | 10 | 210 | 119 | 99 | 235 | 192 | 915 | VRUFM112E | VRUFM112F |
| 2" | 50 | 10 | 240 | 143 | 120 | 285 | 234 | 1555 | VRUFM200E | VRUFM200F |



VRUOM

Check valve with union ends and fixed flanges, drilled EN/ISO/DIN PN10/16

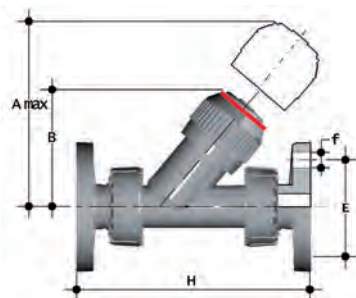
| d | DN | PN | A max | B | F | f | H | g | EPDM Code | FPM Code |
|----|----|----|-------|-----|-----|----|-----|------|-----------|-----------|
| 20 | 15 | 10 | 125 | 72 | 65 | 14 | 163 | 265 | VRUOM012E | VRUOM012F |
| 25 | 20 | 10 | 145 | 84 | 75 | 14 | 193 | 327 | VRUOM034E | VRUOM034F |
| 32 | 25 | 10 | 165 | 95 | 85 | 14 | 211 | 480 | VRUOM100E | VRUOM100F |
| 40 | 32 | 10 | 190 | 111 | 100 | 18 | 244 | 795 | VRUOM114E | VRUOM114F |
| 50 | 40 | 10 | 210 | 120 | 110 | 18 | 277 | 1065 | VRUOM112E | VRUOM112F |
| 63 | 50 | 10 | 240 | 139 | 125 | 18 | 331 | 1705 | VRUOM200E | VRUOM200F |



VRUOAM

Check valve with union ends and fixed flanges, drilled ANSI B16.5 cl.150 #FF

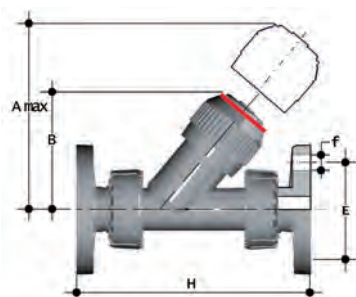
| Size | DN | PN | A max | B | F | f | H | g | EPDM Code | FPM Code |
|--------|----|----|-------|-----|-----|----|-----|------|------------|------------|
| 1/2" | 15 | 10 | 125 | 72 | 60 | 16 | 175 | 265 | VRUOAM012E | VRUOAM012F |
| 3/4" | 20 | 10 | 145 | 84 | 70 | 16 | 214 | 327 | VRUOAM034E | VRUOAM034F |
| 1" | 25 | 10 | 165 | 95 | 79 | 16 | 237 | 480 | VRUOAM100E | VRUOAM100F |
| 1 1/4" | 32 | 10 | 190 | 111 | 89 | 16 | 253 | 795 | VRUOAM114E | VRUOAM114F |
| 1 1/2" | 40 | 10 | 210 | 120 | 98 | 16 | 289 | 1065 | VRUOAM112E | VRUOAM112F |
| 2" | 50 | 10 | 240 | 139 | 121 | 19 | 333 | 1705 | VRUOAM200E | VRUOAM200F |



VROM

Check valve with fixed flanges, drilled EN/ISO/DIN PN10/16

| d | DN | PN | A max | B | F | f | H | g | EPDM Code | FPM Code |
|----|----|----|-------|-----|-----|----|-----|------|-----------|----------|
| 75 | 65 | 6 | 300 | 176 | 145 | 18 | 356 | 5990 | VROM075E | VROM075F |
| 90 | 80 | 4 | 325 | 192 | 160 | 18 | 404 | 7230 | VROM090E | VROM090F |



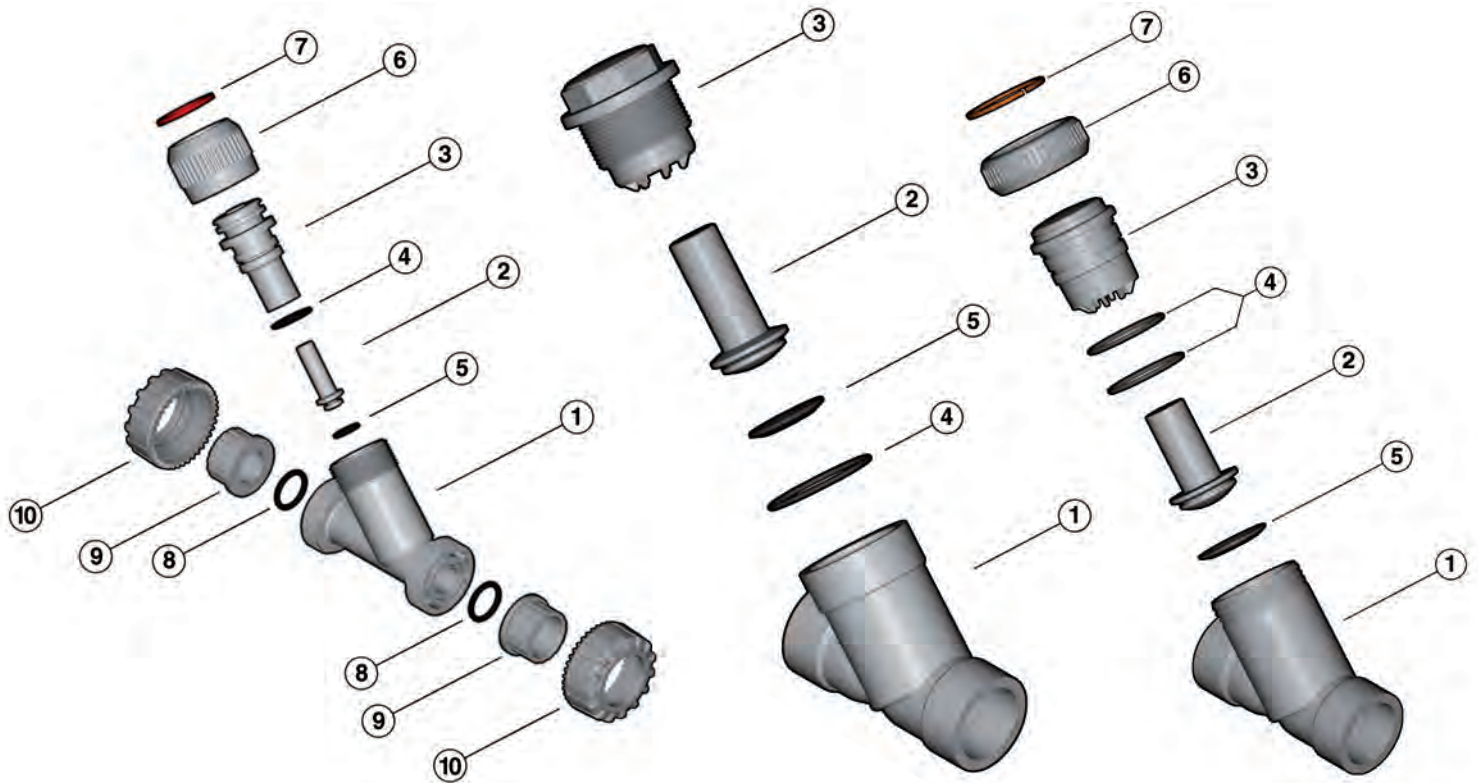
VROAM

Check valve with fixed flanges, drilled ANSI B16.5 cl.150 #FF

| d - Size | DN | PN | A max | B | F | f | H | g | EPDM Code | FPM Code |
|-------------|----|----|-------|-----|-------|----|-----|------|-----------|-----------|
| 75 - 2" 1/2 | 65 | 6 | 300 | 176 | 139.7 | 18 | 356 | 5595 | VROAM075E | VROAM075F |
| 90 - 3" | 80 | 4 | 325 | 192 | 152.4 | 18 | 404 | 6385 | VROAM090E | VROAM090F |

COMPONENTS

EXPLODED VIEW



DN 15÷50

DN 65÷80

DN 100

- 1 • Body (PP-H - 1)
- 2 • Piston (PP-H - 1)
- 3 • Bonnet (PP-H - 1)
- 4 • O-Ring (EPDM or FPM - 1/2)*

- 5 • Piston flat gasket (EPDM or FPM - 1)*
- 6 • Union nut (PP-H - 1)
- 7 • Retaining ring (PP-H - 1)

- 8 • Socket seal O-Ring (EPDM or FPM - 2)*
- 9 • End connector (PP-H - 2)*
- 10 • Union nut (PP-H - 2)

* Spare parts

The material of the component and the quantity supplied are indicated between brackets

DISASSEMBLY

DN 15÷50 (fig. A)

- 1) Isolate the valve from the fluid flow.
- 2) Unscrew the union nut (6) and separate the bonnet (3) from the body (1).
- 3) Remove the piston (2) and flat gasket (5).
- 4) Remove the retaining ring (7) and separate the union nut (6) from the bonnet (3).
- 5) Remove the O-Ring from the bonnet (4).

DN 65÷80 (fig. B)

- 1) Isolate the valve from the fluid flow.
- 2) Unscrew the bonnet (3) from the body (1).
- 3) Remove the O-Ring (4) from its seating in the body (1).
- 4) Remove the piston (2) and relative flat gasket (5).

ASSEMBLY

DN 15÷50 (fig. A)

- 1) Insert the O-Ring (4) in its seating in the bonnet (3).
- 2) Insert the bonnet (3) in union nut (6) and fix the two components using the retaining ring (7).
- 3) Insert the piston (2) complete with flat gasket (5) in the bonnet (3), then fit the bonnet on the body (1).
- 4) Screw the union nut (6) on the body (1).

DN 65÷80 (fig. B)

- 1) Insert the piston (2) complete with flat gasket (5) in the bonnet (3).
- 2) Insert the bonnet O-ring (4) in the body (1) seating.
- 3) Screw the bonnet (3) to the body (1).



Note: maintenance operations can be carried out with the valve body installed. During assembly, it is advisable to lubricate the rubber seals. Mineral oils are not recommended for this task as they react aggressively with EPDM rubber.

Fig. A

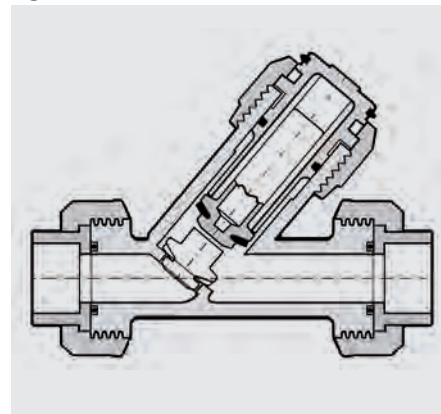
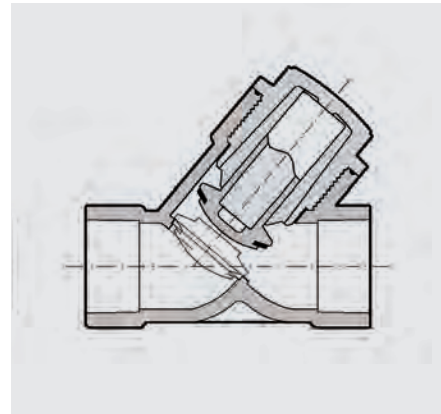


Fig. B



INSTALLATION

- 1) The check valve can be installed on vertical or horizontal axis pipes. The bonnet (3) must however always be turned upwards as the piston works by gravity.
- 2) If the valve is installed in a vertical position, if the connection is solvent welded, make sure that the solvent cement does not enter inside the body, as this would damage the seating of the seal.
- 3) Install the valve such that the arrow stamped on the body indicates the direction of fluid flow .

WARNINGS

- Do not use compressed air or other gases to test thermoplastic lines.

