

Size range: 2" - 12"



Profit check valves type FCV are swing-type valves that allow water flow in one direction. They have a fixed flange on the in- and outlet. The valves are designed to be used in fire protection sprinkler systems.

### Characteristics

- In- and outdoor use.
- Resilient seating with EPDM-rubber against a bronze ring.
- Gravity operated, swing check design.
- Flanged ends according to EN 1092-2/PN16 standard.
- Meets the AWWA C 508 standard.
- Including two plugged side-connections and one bottom drain connection.
- Eye bolt for lifting on bigger sizes (6"-12").
- Installation in vertical flow (upwards) and horizontal pipes is allowed.
- Very low pressure losses, even at high flow rates.
- Anti-corrosion protection: high grade polyester powder coating, RAL 3000, meets or exceed AWWA C 550 standards.
- Equipped with a maintenance hatch (maintenance set optional).

### Working pressure

20,7 barg / 300 psi

### Working temperature

+1°C to +87°C

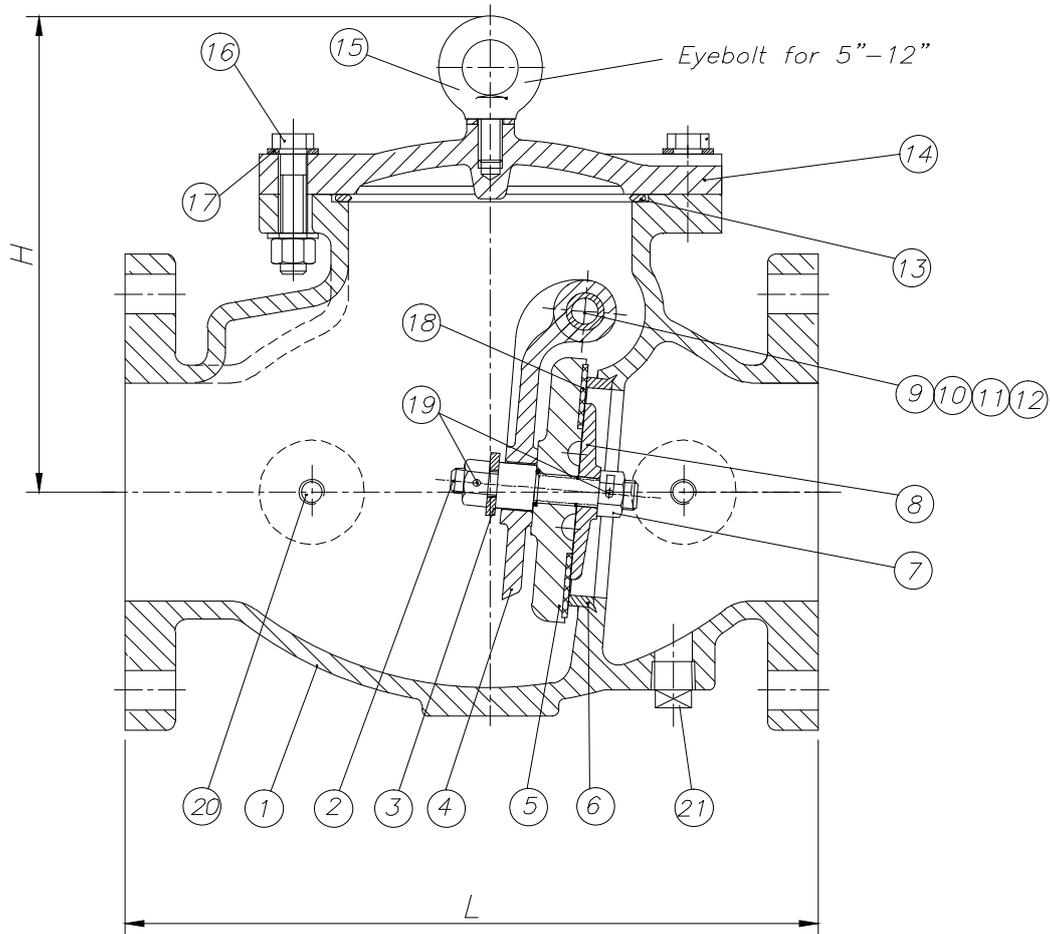
### Approvals

- FM approved to FM standard 1210
- UL 1091 listed
- EAC certified

### Material specifications

| Part N° | Component         | Material            | European standard | ASTM standard     |
|---------|-------------------|---------------------|-------------------|-------------------|
| 1       | Body              | Ductile cast iron   | EN-GJS-450-10     | A 536 gr 65-45-12 |
| 2       | Disc stud         | Stainless steel     | X5CrNi18-10       | F593 Grade 304    |
| 3       | Retainer washer   | Stainless steel     | X5CrNi18-10       | A 276 AISI 304    |
| 4       | Clapper arm       | Ductile cast iron   | EN-GJS-450-10     | A 536 gr 65-45-12 |
| 5       | Disc              | Ductile cast iron   | EN-GJS-450-10     | A 536 gr 65-45-12 |
| 6       | Body seat ring    | Bronze              | CuSn5Pb5Zn        | B62 C83600        |
| 7       | Nut               | Stainless steel     | X5CrNi18-10       | A 276 AISI 304    |
| 8       | Retainer plate    | Ductile cast iron   | EN-GJS-450-10     | A 536 gr 65-45-12 |
| 9       | Hinge pin         | Stainless steel     | X5CrNi18-10       | A 276 AISI 304    |
| 10      | Hinge bushing     | Brass               | CuZn36Pb3         | B16 C36000        |
| 11      | Hing pin plug     | Stainless steel     | X5CrNi18-10       | A 276 AISI 304    |
| 12      | Plug washer       | Red copper          | /                 | /                 |
| 13      | Cover gasket      | EPDM rubber         | /                 | D2000             |
| 14      | Cover             | Ductile cast iron   | EN-GJS-450-10     | A 536 gr 65-45-12 |
| 15      | Eye bolt & washer | Carbon steel        | Grade 4.6         | A 307 gr B        |
| 16      | Cover bolt & nut  | Carbon steel        | Grade 4.6         | A 307 gr B        |
| 17      | Washer            | Stainless steel     | X5CrNi18-10       | A 276 AISI 304    |
| 18      | Disc seat ring    | EPDM rubber         | /                 | D2000             |
| 19      | Split pin         | Stainless steel     | X5CrNi18-10       | A 276 AISI 304    |
| 20      | Plug ¼" (2x)      | Malleable cast iron | /                 | A 47 Grade 22010  |
| 21      | Drain plug        | Malleable cast iron | /                 | A 47 Grade 22010  |

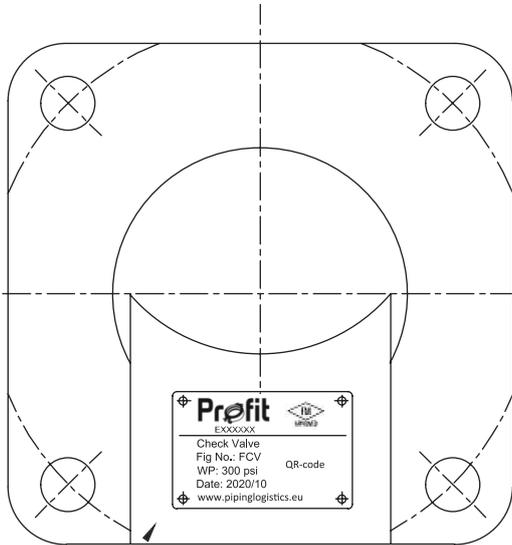
**Dimensions**



| Dimensions (mm / inch) |            |            |                |              |
|------------------------|------------|------------|----------------|--------------|
| Size                   | L          | H          | Plug B<br>BSPT | Weight<br>kg |
| 2"                     | 203 / 8,0  | 132 / 5,2  | 3/8"           | 10,50        |
| 2,5"                   | 254 / 10,0 | 145 / 5,7  | 1/2"           | 13,00        |
| 3"                     | 279 / 11,0 | 152 / 5,7  | 1/2"           | 24,00        |
| 4"                     | 330 / 13,0 | 175 / 6,9  | 1/2"           | 30,00        |
| 5"                     | 356 / 14,0 | 295 / 11,6 | 1/2"           | 39,00        |
| 6"                     | 406 / 16,0 | 300 / 11,8 | 3/4"           | 62,50        |
| 8"                     | 495 / 19,5 | 357 / 14,1 | 3/4"           | 103,00       |
| 10"                    | 559 / 22,0 | 401 / 15,8 | 3/4"           | 154,00       |
| 12"                    | 660 / 26,0 | 465 / 18,3 | 3/4"           | 241,00       |

**Marking**

**Body:**

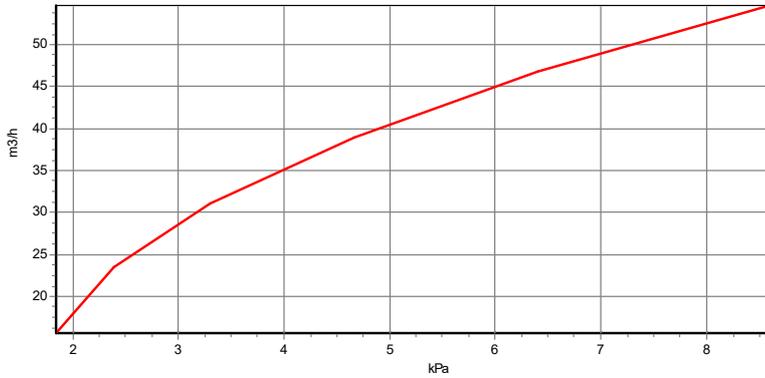


**Marking-plate:**

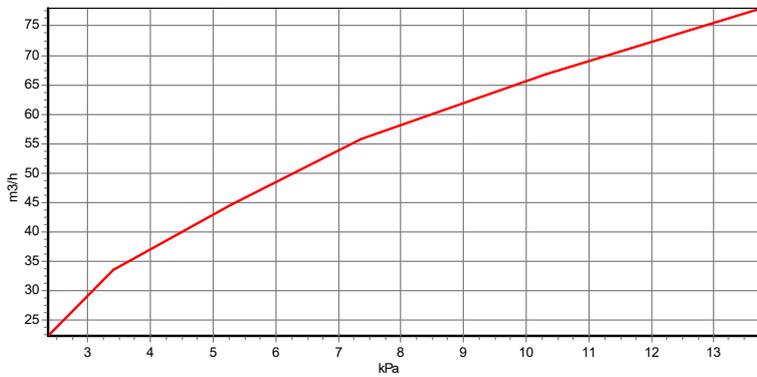


**Pressure drop charts**

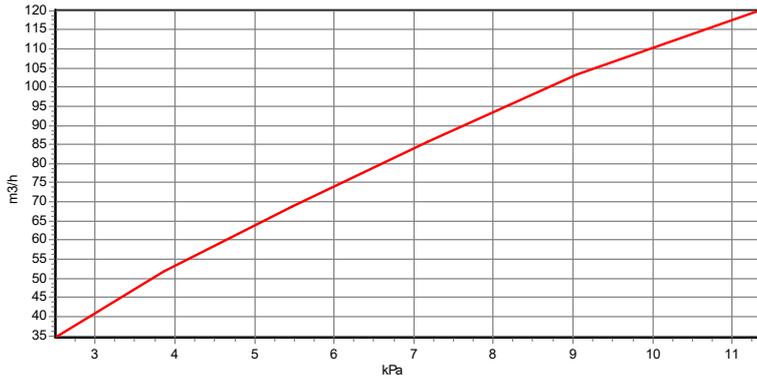
[DN50 Test report]



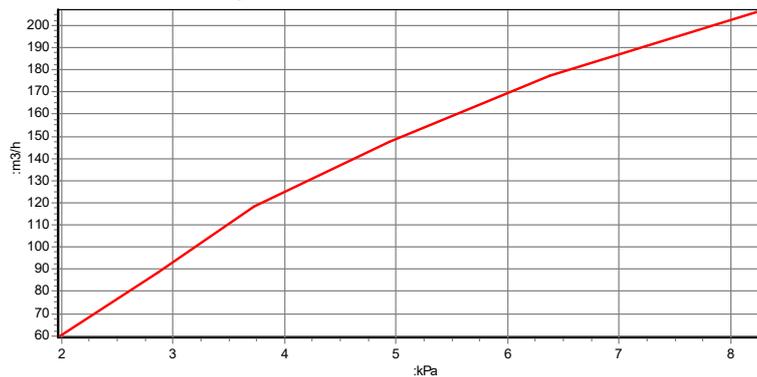
[DN65 Test report]



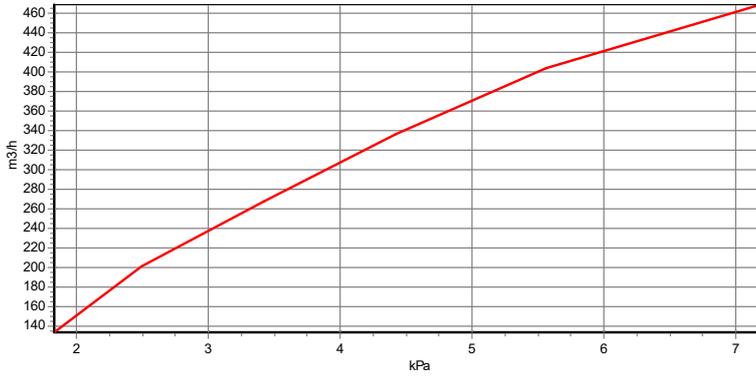
[DN80 Test report]



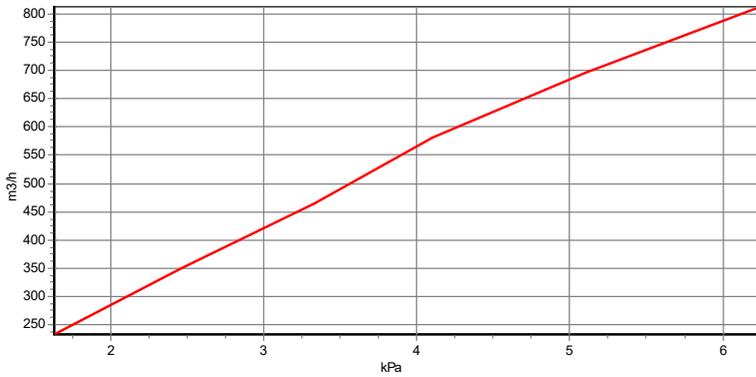
[DN100 Test report]



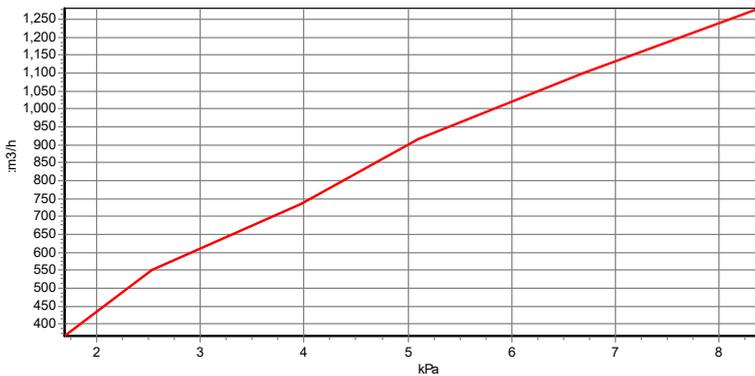
[DN150 Test report]



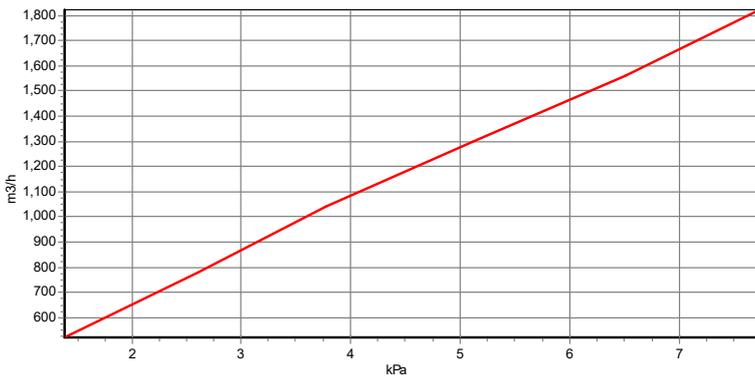
[DN200 Test report]



[DN250 Test report]



[DN300 Test report]



### Certifications

| Size   |      | FM                       |
|--------|------|--------------------------|
| DN 50  | 2"   | Up to 20,7 bar / 300 psi |
| DN 65  | 2,5" | Up to 20,7 bar / 300 psi |
| DN 80  | 3"   | Up to 20,7 bar / 300 psi |
| DN 100 | 4"   | Up to 20,7 bar / 300 psi |
| DN 125 | 5"   | Up to 20,7 bar / 300 psi |
| DN 150 | 6"   | Up to 20,7 bar / 300 psi |
| DN 200 | 8"   | Up to 20,7 bar / 300 psi |
| DN 250 | 10"  | Up to 20,7 bar / 300 psi |
| DN 300 | 12"  | Up to 20,7 bar / 300 psi |



### Storage and handling

- Upon receipt, carefully check complete the valve on any damage during shipment.
- Valves should unloaded carefully , they should not be lifted by using the waterway-passage through the valve. Heavy valves have an eye-bolt on top for lifting purposes. Do not drop the valve onto the ground.
- FCV valves must be stored indoor, protect the rubber seating from direct sunlight. When stored outside, protect the valve from weather conditions and avoid accumulation of water, dirt or debris.



### Installation

- Inspection before installation. Checklist:
  1. Check pressure rating of the valve is compatible with the service conditions. FCV valves may be installed with any schedule or pressure class of pipe that is listed or approved.
  2. Check that the standard of the piping flanges on both sides are drilled according the same standard (EN 1092/PN16) as the valve. Check that the facings of all flanges are free of dirt and / or mechanical damages.
  3. Check that the available length between the pipe-flanges matches the total length of the valve (+ 2x gasket-thickness).
  4. Verify that there are two gaskets available to install in between the flanges on both sides. Check the pressure / temperature rating of the gaskets.
  5. Check availability of correct bolts & nuts to complete both flange-connections.
  6. Check that the pipe-flanges are parallel.
  7. No need to lubricate the clapper-hinges or the rubber seating inside.

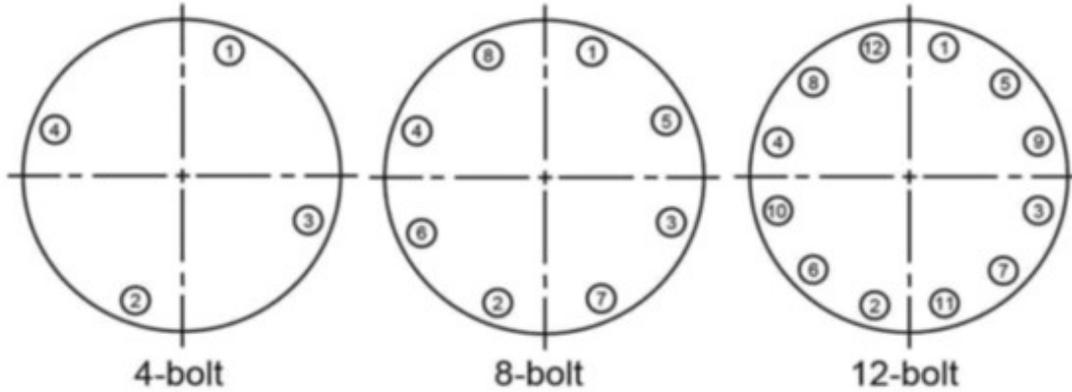
8. Check that valve-body and adjacent pipes are clean inside and that the grooves are clean and free of dust / debris.
  9. Pipework must be supported near the valve and pipes (flanges) must be well aligned so that no extra stress will be exerted on the valve-body during installation.
  10. To prolong the valve-life, we recommend to install the valve not closer than 5-6 x DN when installed downstream near fittings (bends, tees, reducers, pumps etc...)
  11. The valves have a flow direction to be respected at installation. There is a clear flow direction arrow on the body. In vertical pipes the flow **MUST** always be upwards. In horizontal pipes please locate the cover on the top.
  12. For retrofit replacements or repairwork: all pipes need to be depressurized and purged before starting the installation / repair.
  13. Personnel for the installation must be qualified for the task.
- Installation of the valve:
    1. Separate the 2 pipe-flanges and position the valve with the gaskets between the flanges.
    2. Relax the flanges and install all bolts and nuts handtight.
    3. Tighten now all bolts using the recommended torque value.  
For correct tightening please apply cross-over sequence.  
Bolt torque : please consult the gasket datasheet / supplier.

**Bolt dimensions for PN-16 bolt connections (EN 1092-PN16)**

| DN  | Number of bolts | Bolt-nut size mm | Bolt length mm |
|-----|-----------------|------------------|----------------|
| 50  | 4               | M 16             | 70             |
| 65  | 8 (or 4)        | M 16             | 70             |
| 80  | 8               | M 16             | 70             |
| 100 | 8               | M 16             | 70             |
| 125 | 8               | M 16             | 70             |
| 150 | 8               | M 20             | 90             |
| 200 | 12              | M 20             | 90             |
| 250 | 12              | M 24             | 100            |
| 300 | 16              | M 24             | 100            |

**BOLT TORQUE SEQUENCE**

(Bolt N°1 is the bolt closest to biggest gap between the 2 flanges)



Our advice =

- STEP 1 = 30%
- STEP 2 = 60%
- STEP 3 = 100%

**BOLT TORQUE** = depends on gasket type used and bolt material grade.



**Maintenance**

- FCV valves are basically installed maintenance-free. When a major problem of any kind occurs, please contact the technical dpt. of Piping Logistics.

**GENERAL INFO**

- Installers should be trained or experienced to install and understand the product.
- Read and understand all technical datasheets and installation instructions before attempting to install, remove or adjust any Profit piping products.
- Depressurise and drain the sprinkler installation system before attempting to install, remove or adjust any Profit piping products.
- Never work on piping-systems that are pressurised and / or filled with water.
- Profit reserves the right to change specifications, designs and / or standard equipment without notice and without incurring in any obligations.
- Use the necessary Personal Protection Equipment (PPE) to avoid personal injury (helmet, safety shoes and goggles, Profit gloves).



**Failure to follow these instructions could result in death or serious injury and property damage.**

**We advise to always store our products in closed and dry environments, the products do not need any specific maintenance once installed on an aboveground sprinkler installation.**

**REVISION TABLE**

| Date       | △ | Notes                                   |
|------------|---|---|
| 14/06/2024 | A | Page 1 - The approvals have been added. |
|            |   |   |