

# Datasheet Collection. Flanged 2-Port and 3-Port Valves.

Datasheet „2-Port and 3-Port Valves, flanged“, Issue 0724

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## General information

### Intended Use

This product is intended to be used as specified by the manufacturer, described in the „Functional Description“ section. Local product regulations must be taken into consideration. Changes are not permitted.

### Disposal

Disposal must comply with local and current legislation. Prior to the assembly, maintenance and disassembly, the system must be depressurized, cooled down and emptied. Only authorized, trained and qualified personnel may perform activities of assembly, start-up, operation and disassembly of the equipment. Before disposal the valve must be dismantled into groups of structural components and delivered to authorized waste recycling organizations in order to preserve the environment. Local legislations must be obeyed when disposing of the components.

### Note

All schemes are symbolic and not exhaustive.

### Material

Pursuant to Article 33 of the REACH Regulation (EC No. 1907/2006), we are obliged to point out that the material lead is listed on the SVHC list and that all brass components manufactured in our products exceed 0.1% (w / w) lead (CAS: 7439-92-1 / EINECS: 231-100-4). Since lead is a component part of an alloy, actual exposure is not possible and therefore no additional information on safe use is necessary.



### Declaration of Conformity

HERZ Armaturen Ges.m.b.H hereby declares that the product F **4037** 01-41; F **4035** 01-52 is in compliance with the essential requirements and other relevant provisions of the directives 2014/68/EU, EN 60534 and EN 12516-2. The original of the conformity assessment is available upon request.

**Please note:** all diagrams are indicative in nature and do not claim to be complete.

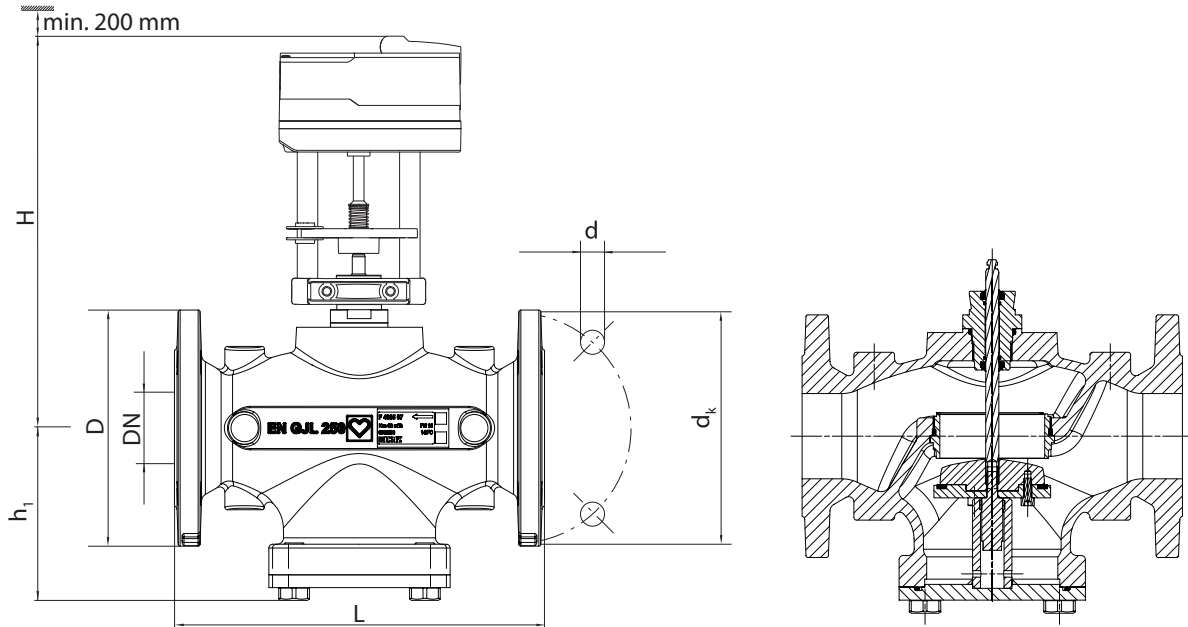
All specifications and statements within this brochure are according to information available at the time of printing and meant for informational purpose only. Herz Armaturen reserves the right to modify and change products as well as its technical specifications and/or its functioning according to technological progress and requirements. It is understood that all images of Herz products are symbolic representations and therefore may visually differ from the actual product. Colours may differ due to printing technology used. In case of any further questions don't hesitate to contact your closest HERZ Branch-office.

# HERZ-Two-Port-Flanged Valve

## F 4035 XX

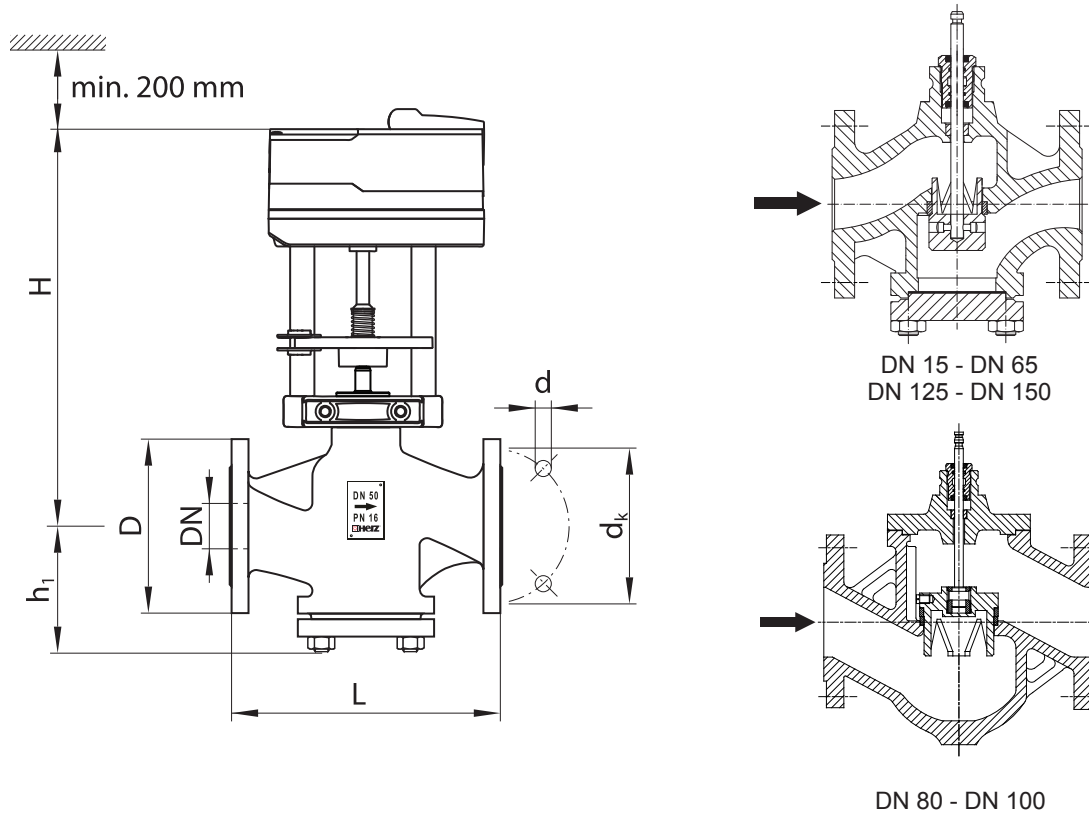
Datasheet „2-Port Valves, flanged“ PN 16 and PN 25

Dimensions in mm (PN16)



| Order Nr. PN 16 | DN  | Stroke [mm] | kvs | D   | L   | Number of flange bores | d   | dk | h <sub>1</sub> | H   | kg  |     |      |
|-----------------|-----|-------------|-----|-----|-----|------------------------|-----|----|----------------|-----|-----|-----|------|
| F 4035 01       | 15  | 10          | 1   | 95  | 130 | 4                      | 14  | 65 | 68             | 250 | 4,5 |     |      |
| F 4035 11       | 15  | 10          | 1,6 | 95  | 130 |                        |     | 65 | 68             | 250 | 4,5 |     |      |
| F 4035 21       | 15  | 10          | 2,5 | 95  | 130 |                        |     | 65 | 68             | 250 | 4,5 |     |      |
| F 4035 31       | 15  | 14          | 4   | 95  | 130 |                        |     | 65 | 68             | 250 | 4,5 |     |      |
| F 4035 03       | 25  | 20          | 6,3 | 115 | 160 |                        |     | 85 | 85             | 255 | 7,5 |     |      |
| F 4035 13       | 25  | 20          | 10  | 115 | 160 |                        |     | 85 | 85             | 255 | 7,5 |     |      |
| F 4035 04       | 32  | 20          | 16  | 140 | 180 |                        |     | 8  | 19             | 100 | 105 | 305 | 10,5 |
| F 4035 05       | 40  | 20          | 25  | 150 | 200 |                        |     |    |                | 110 | 115 | 315 | 11   |
| F 4035 16       | 50  | 20          | 40  | 165 | 230 |                        |     |    |                | 125 | 90  | 305 | 12,5 |
| F 4035 07       | 65  | 20          | 63  | 185 | 290 |                        |     |    |                | 145 | 135 | 315 | 20   |
| F 4035 08       | 80  | 20          | 100 | 200 | 310 | 160                    | 150 |    |                | 350 | 26  |     |      |
| F 4035 09       | 100 | 40          | 160 | 220 | 350 | 180                    | 160 |    |                | 480 | 38  |     |      |
| F 4035 10       | 125 | 40          | 250 | 250 | 400 | 210                    | 185 |    |                | 520 | 64  |     |      |
| F 4035 41       | 150 | 40          | 330 | 285 | 480 | 23                     | 240 |    |                | 180 | 525 | 77  |      |

☑ Dimensions in mm (PN25)



| Order Nr.<br>PN 25 | DN  | Stroke<br>[mm] | kvs | D   | L   | Number<br>of flange<br>bores | d   | d <sub>k</sub> | h <sub>1</sub> | H   | kg   |
|--------------------|-----|----------------|-----|-----|-----|------------------------------|-----|----------------|----------------|-----|------|
| F 4035 40          | 15  | 10             | 1   | 95  | 130 | 4                            | 14  | 65             | 68             | 250 | 4,5  |
| F 4035 51          | 15  | 10             | 1,6 | 95  | 130 |                              |     | 65             | 68             | 250 | 4,5  |
| F 4035 61          | 15  | 10             | 2,5 | 95  | 130 |                              |     | 65             | 68             | 250 | 4,5  |
| F 4035 71          | 15  | 14             | 4   | 95  | 130 |                              |     | 65             | 68             | 250 | 4,5  |
| F 4035 43          | 25  | 20             | 6,3 | 115 | 160 |                              |     | 85             | 85             | 255 | 7,5  |
| F 4035 53          | 25  | 20             | 10  | 115 | 160 |                              |     | 85             | 85             | 255 | 7,5  |
| F 4035 44          | 32  | 20             | 16  | 140 | 180 | 8                            | 19  | 100            | 105            | 305 | 10,5 |
| F 4035 45          | 40  | 20             | 25  | 150 | 200 |                              |     | 110            | 115            | 315 | 11   |
| F 4035 56          | 50  | 20             | 40  | 165 | 230 |                              |     | 125            | 125            | 320 | 12,5 |
| F 4035 47          | 65  | 40             | 63  | 185 | 290 |                              |     | 145            | 132            | 465 | 25   |
| F 4035 48          | 80  | 40             | 100 | 200 | 310 |                              |     | 160            | 105            | 510 | 34   |
| F 4035 49          | 100 | 40             | 160 | 235 | 350 |                              |     | 23             | 190            | 127 | 540  |
| F 4035 50          | 125 | 40             | 250 | 270 | 400 | 28                           | 220 | 170            | 505            | 65  |      |
| F 4035 52          | 150 | 40             | 330 | 300 | 480 |                              | 250 | 180            | 545            | 84  |      |

| PN16         |     |                                  |     | Leakage acc. to 12266-1 |
|--------------|-----|----------------------------------|-----|-------------------------|
| Order number | DN  | Differential pressure max. [bar] |     | Direct flow branch      |
| F 4035 01    | 15  | 4                                |     | ≤0.01%kvs               |
| F 4035 11    | 15  | 4                                |     |                         |
| F 4035 21    | 15  | 4                                |     |                         |
| F 4035 31    | 15  | 4                                |     |                         |
| F 4035 03    | 25  | 4                                |     |                         |
| F 4035 13    | 25  | 4                                |     |                         |
| F 4035 04    | 32  |                                  | 4   |                         |
| F 4035 05    | 40  |                                  | 4   |                         |
| F 4035 16    | 50  |                                  | 3   |                         |
| F 4035 07    | 65  |                                  | 1,5 |                         |
| F 4035 08    | 80  |                                  | 1,5 |                         |
| F 4035 09    | 100 |                                  | 2   |                         |
| F 4035 10    | 125 |                                  | 1   |                         |
| F 4035 41    | 150 |                                  | 1   |                         |

| PN25         |     |                                  |     | Leakage acc. to 12266-1 |
|--------------|-----|----------------------------------|-----|-------------------------|
| Order number | DN  | Differential pressure max. [bar] |     | Direct flow branch      |
| F 4035 40    | 15  | 4                                |     | ≤0.1%kvs                |
| F 4035 51    | 15  | 4                                |     |                         |
| F 4035 61    | 15  | 4                                |     |                         |
| F 4035 71    | 15  | 4                                |     |                         |
| F 4035 43    | 25  | 4                                |     |                         |
| F 4035 53    | 25  | 4                                |     |                         |
| F 4035 44    | 32  |                                  | 4   |                         |
| F 4035 45    | 40  |                                  | 4   |                         |
| F 4035 56    | 50  |                                  | 3   |                         |
| F 4035 47    | 65  |                                  | 2.5 |                         |
| F 4035 48    | 80  |                                  | 2.5 |                         |
| F 4035 49    | 100 |                                  | 2   |                         |
| F 4035 50    | 125 |                                  | 1   |                         |
| F 4035 52    | 150 |                                  | 1   |                         |

**☑ Technical data and material**

|                              |                              |
|------------------------------|------------------------------|
| Max. operating pressure      | 16 bar (PN16), 25 bar (PN25) |
| Min. operating temperature   | 5 °C                         |
| Max. operating temperature   | 150 °C                       |
| Valve curve characteristic   | equal percentage             |
| Type of connection           | Flanges (EN 1092-2)          |
| Valve body material for PN16 | EN-GJL-250 (EN 1561)         |
| Valve body material for PN25 | EN-GJS-400-18-LT (EN 1563)   |
|                              |                              |
| Sealing element material     | 70EPDM                       |
| Valve seat material          | WN1.4021                     |
| Valve cone material (PN16)   | WN1.4021/brass               |
| Valve cone material (PN25)   |                              |
| up to DN 50                  | WN1.4021                     |
| from DN 65 to DN 150         | EN-GJL-250/WN1.4021          |
| Stem material                | WN1.4404                     |

Water purity in accordance with the ÖNORM H 5195 and VDI 2035 standards.

The use of ethylene and propylene glycol in a mixture ratio of 25 - 50% by volume [%] is permitted.

**☑ Description**

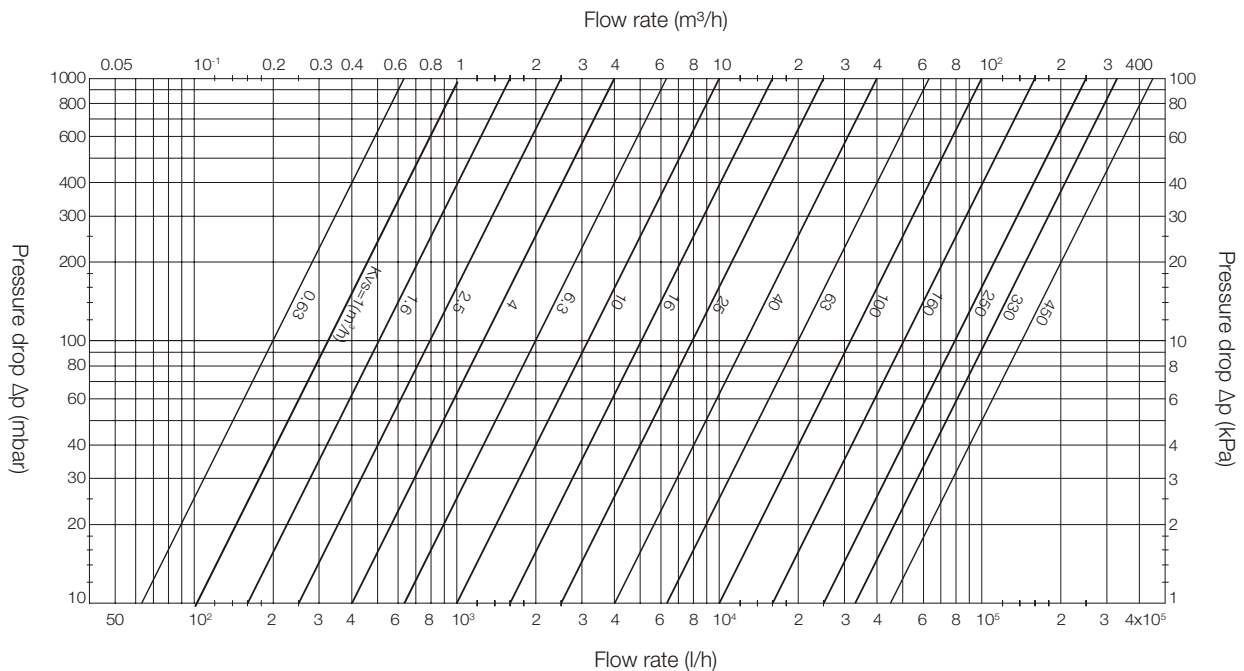
The two port flanged valve is primarily designed to control the flow of circulation water in district heating and HVAC systems, as well as for remote closing of heating pipelines. Circulation medium should be cold, warm and hot water in temperature range from 5°C to 150°C. The valve can be utilized in almost all heating, ventilation and air-conditioning systems and in industrial and technological processes. The valve curve is equal percentage. Regulation ratio (ratio between nominal and minimal flow coefficient) is 30:1. The selection of the two port flanged valve is according to the diagram of kvs values.

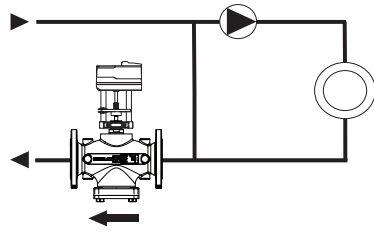
For PN16: Valve is closed when the stem is out. Valve is open when the stem is depressed.

For PN25, DN15-65 and DN125-150: Valve is closed when the stem is out. Valve is open when the stem is depressed.

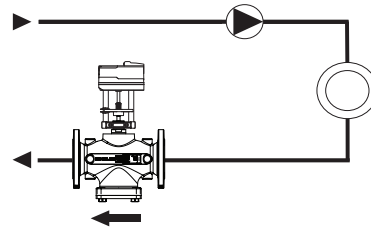
For PN25, DN80-100: Valve is open when the stem is out. Valve is closed when the stem is depressed.

**☑ Selection diagram**



**Application examples**

Valve in injection circuit

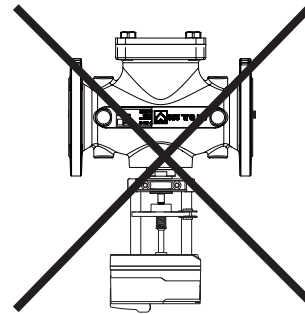
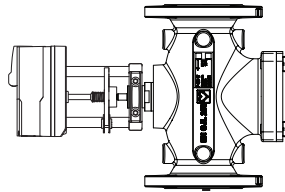
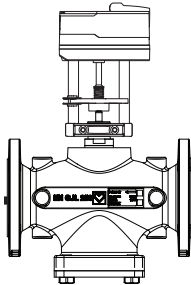


Valve in throttle circuit

**Installation**

The valve can be installed in all positions, from horizontal to vertical, except in vertical position with the actuator pointing downwards. The arrow on the valve body must match the direction of fluid flow through the valve. The valves must be installed for the correct application using clean fittings. A HERZ strainer (4111) should be fitted to prevent impurities during operation. Therefore an installation is recommended.

For installation, the local and international standards have to be followed.

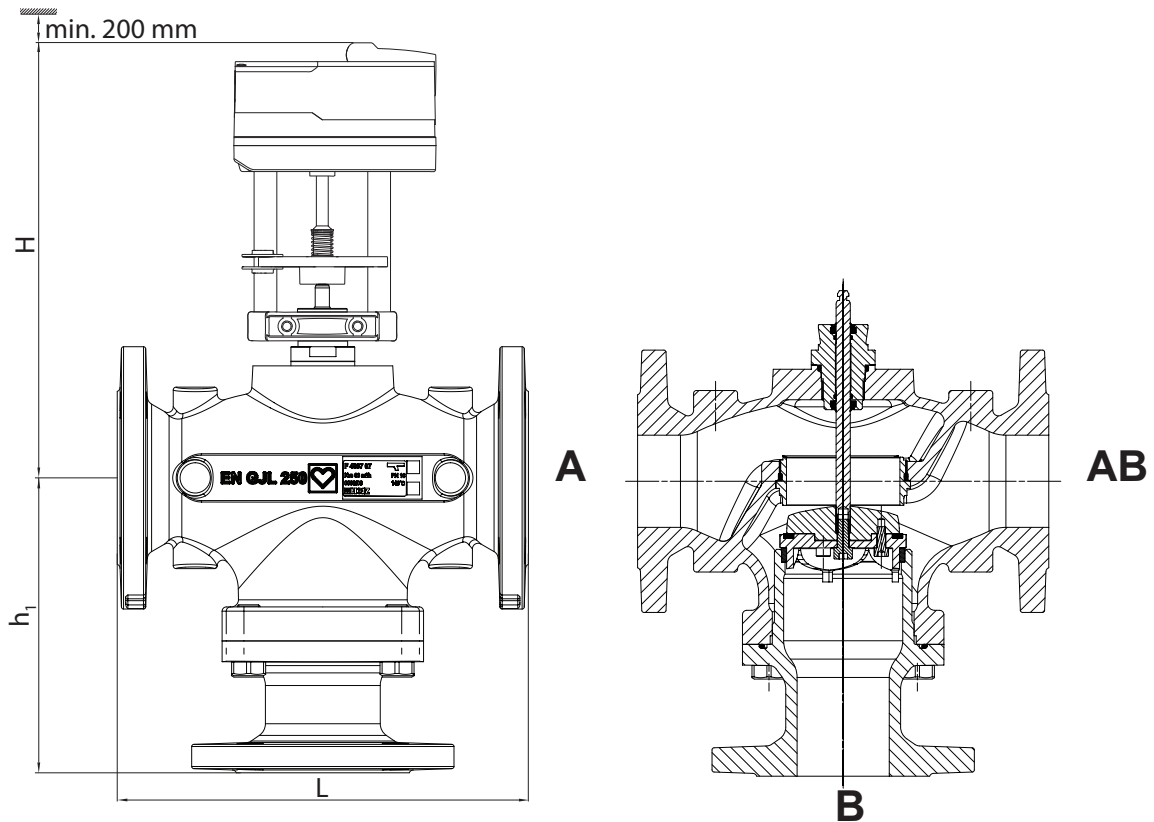


# HERZ-Three-Port-Flanged Valve

## F 4037 XX

Datasheet „3-Port-Valves, flanged“ PN16

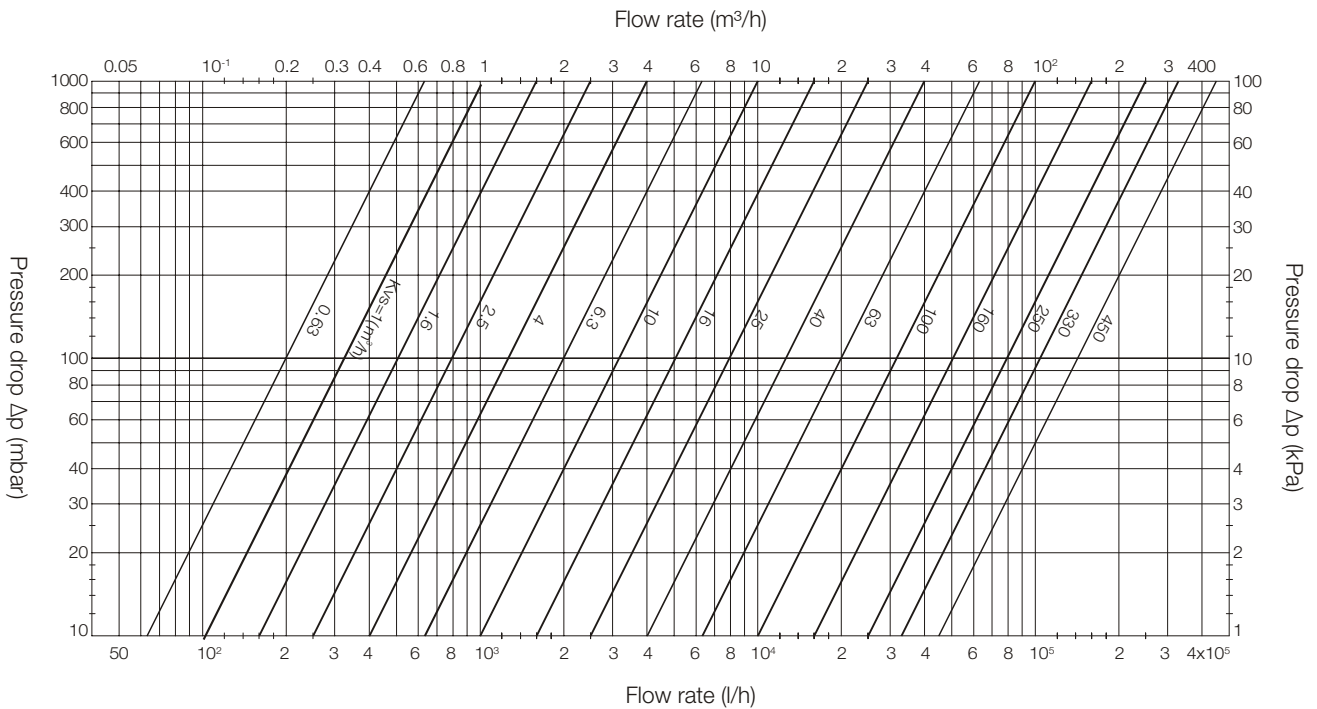
Dimensions in mm



| Order Nr. | DN  | Stroke [mm] | kvs | D   | L   | Number of flange bores | d   | dk  | h1  | H   | kg   |
|-----------|-----|-------------|-----|-----|-----|------------------------|-----|-----|-----|-----|------|
| F 4037 01 | 15  | 10          | 1   | 95  | 130 | 4                      | 14  | 65  | 110 | 250 | 5    |
| F 4037 11 | 15  | 10          | 1,6 | 95  | 130 |                        |     | 65  | 110 | 250 | 5    |
| F 4037 21 | 15  | 10          | 2,5 | 95  | 130 |                        |     | 65  | 110 | 250 | 5    |
| F 4037 31 | 15  | 14          | 4   | 95  | 130 |                        |     | 65  | 110 | 250 | 5    |
| F 4037 03 | 25  | 20          | 6,3 | 115 | 160 |                        |     | 85  | 121 | 255 | 8    |
| F 4037 13 | 25  | 20          | 10  | 115 | 160 |                        |     | 85  | 121 | 255 | 8    |
| F 4037 04 | 32  | 20          | 16  | 140 | 180 | 8                      | 19  | 100 | 142 | 305 | 11,5 |
| F 4037 05 | 40  | 20          | 25  | 150 | 200 |                        |     | 110 | 149 | 315 | 13   |
| F 4037 16 | 50  | 20          | 40  | 165 | 230 |                        |     | 125 | 167 | 305 | 16   |
| F 4037 07 | 65  | 20          | 63  | 185 | 290 |                        |     | 145 | 208 | 315 | 25   |
| F 4037 08 | 80  | 20          | 100 | 200 | 310 |                        |     | 160 | 233 | 350 | 31   |
| F 4037 09 | 100 | 40          | 160 | 220 | 350 |                        |     | 180 | 262 | 480 | 46   |
| F 4037 10 | 125 | 40          | 250 | 250 | 400 | 210                    | 268 | 520 | 72  |     |      |
| F 4037 41 | 150 | 40          | 330 | 285 | 480 | 23                     | 240 | 261 | 525 | 91  |      |

| PN16         |     |   |     |     | Leakage acc. to 12266-1 |                |
|--------------|-----|---|-----|-----|-------------------------|----------------|
| Order number | DN  | Usage as mixing valve<br>Differential pressure max. [bar] |     |     | Direct flow branch      | By-pass branch |
| F 4037 01    | 15  | 4,0   |     |     | ≤0.1%kvs                | ≤0.5%kvs       |
| F 4037 11    | 15  | 4,0   |     |     |                         |                |
| F 4037 21    | 15  | 4,0   |     |     |                         |                |
| F 4037 31    | 15  | 4,0   |     |     |                         |                |
| F 4037 03    | 25  | 4,0   |     |     |                         |                |
| F 4037 13    | 25  | 4,0   |     |     |                         |                |
| F 4037 04    | 32  |   | 4,0 |     | ≤0.01%kvs               |                |
| F 4037 05    | 40  |   | 4,0 |     |                         |                |
| F 4037 16    | 50  |   | 3,0 |     |                         |                |
| F 4037 07    | 65  |   | 1,5 |     |                         |                |
| F 4037 08    | 80  |   | 1,0 |     |                         |                |
| F 4037 09    | 100 |   |     | 2,0 |                         |                |
| F 4037 10    | 125 |   |     | 0.9 |                         |                |
| F 4037 41    | 150 |   |     | 0.9 |                         |                |

Selection diagram





### ☑ Technical data and material

|                             |                  |
|-----------------------------|------------------|
| Max. operating pressure     | 16 bar (PN 16)   |
| Min. operating temperature  | 5 °C             |
| Max. operating temperature  | 150 °C           |
| Valve curves characteristic | equal percentage |

|                          |                     |
|--------------------------|---------------------|
| Type of connection       | Flanges (EN 1092-2) |
| Valve body material      | EN-GJL-250          |
| Sealing element material | 70EPDM              |
| Valve seat material      | WN1.4021            |
| Valve cones material     | WN1.4021/brass      |
| Stem material            | WN1.4404            |

Water purity in accordance with the ÖNORM H 5195 and VDI 2035 standards.

The use of ethylene and propylene glycol in a mixture ratio of 25 - 50% by volume [%] is permitted.

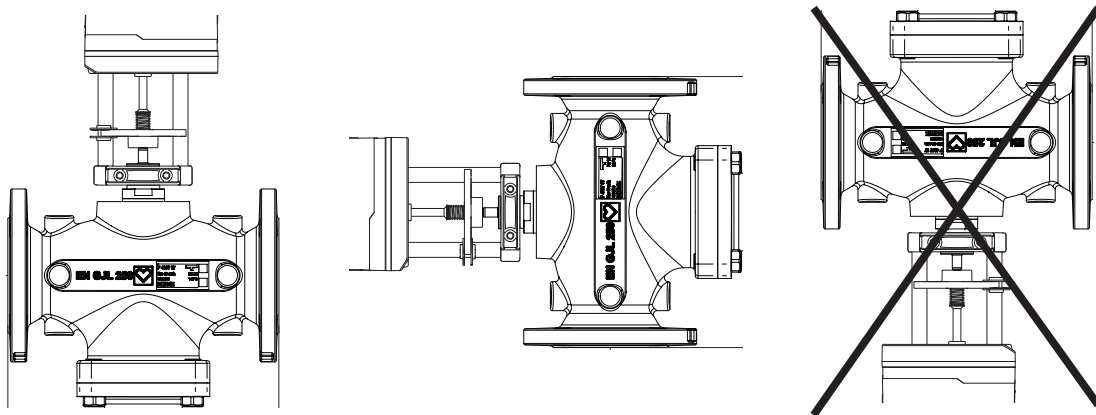
### ☑ Description

The three port flanged valve is designed to control the flow rate of circulation water in pipelines. Valve stem with cone is moved by acting of electric actuator controlled by microprocessor controller. Circulation medium could be cold, warm and hot water in temperature range from 5°C up to 150°C.

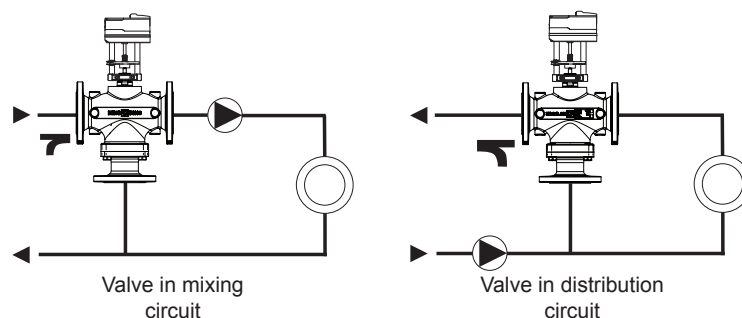
The valve is utilized in almost all heating, ventilation and air-conditioning systems and in industrial and technological processes. The three port flanged valve is used as a mixing valve and in the case when it should change water circulation from one pipeline to another. The valve curve is equal percentage. Regulation ratio (ratio between nominal and minimal flow coefficient) is 30:1. Selection of three-way flanged valve is according to diagram of kvs values.

### ☑ Installation

The valve can be installed in all positions, from horizontal to vertical, except in vertical position with the actuator pointing downwards. The arrow on the valve body must match the direction of fluid flow through the valve. The valves must be installed for the correct application using clean fittings. A HERZ strainer (4111) should be fitted to prevent impurities during operation. Therefore an installation is recommended. For installation, the local and international standards have to be followed.



### ☑ Application examples



Selection matrix

In order to select a right actuator please refer to the selection matrix.

| Order number (actuator) |     |      | F 7712 90           | F 7712 95          | F 7712 81            | F 7712 91           | F 7712 96          | F 7712 82            | 1 7712 32          | F 7712 92           | F 7712 98          | F 7712 84           |
|-------------------------|-----|------|---------------------|--------------------|----------------------|---------------------|--------------------|----------------------|--------------------|---------------------|--------------------|---------------------|
| Actuator type           |     |      | 24 V,<br>continuous | 24 V,<br>2-3 Point | 230 V,<br>2, 3 Point | 24 V,<br>continuous | 24 V,<br>2-3 Point | 230 V,<br>2, 3 Point | 24 V,<br>2-3 Point | 24 V,<br>continuous | 24 V,<br>2-3 Point | 230 V,<br>2-3 Point |
| Order number            | DN  | T °C | 500 N,<br>15 mm     | 500 N,<br>15 mm    | 500 N,<br>15 mm      | 1000 N,<br>20 mm    | 1000 N,<br>20 mm   | 1000 N,<br>20 mm     | 2500 N,<br>40 mm   | 2500 N,<br>40 mm    | 2500 N,<br>40 mm   | 2500 N,<br>40 mm    |
| F 4035 01               | 15  | 150  | direct assembly     | direct assembly    | direct assembly      |                     |                    |                      |                    |                     |                    |                     |
| F 4035 40               |     |      |                     |                    |                      |                     |                    |                      |                    |                     |                    |                     |
| F 4035 11               | 15  | 150  | direct assembly     | direct assembly    | direct assembly      |                     |                    |                      |                    |                     |                    |                     |
| F 4035 51               |     |      |                     |                    |                      |                     |                    |                      |                    |                     |                    |                     |
| F 4035 11               | 15  | 150  | direct assembly     | direct assembly    | direct assembly      |                     |                    |                      |                    |                     |                    |                     |
| F 4035 61               |     |      |                     |                    |                      |                     |                    |                      |                    |                     |                    |                     |
| F 4035 31               | 15  | 150  | direct assembly     | direct assembly    | direct assembly      |                     |                    |                      |                    |                     |                    |                     |
| F 4035 71               |     |      |                     |                    |                      |                     |                    |                      |                    |                     |                    |                     |
| F 4035 03               | 25  | 150  | direct assembly     | direct assembly    | direct assembly      |                     |                    |                      |                    |                     |                    |                     |
| F 4035 43               |     |      |                     |                    |                      |                     |                    |                      |                    |                     |                    |                     |
| F 4035 13               | 25  | 150  | direct assembly     | direct assembly    | direct assembly      |                     |                    |                      |                    |                     |                    |                     |
| F 4035 53               |     |      |                     |                    |                      |                     |                    |                      |                    |                     |                    |                     |
| F 4035 04               | 32  | 150  |                     |                    |                      | direct assembly     | direct assembly    | direct assembly      |                    |                     |                    |                     |
| F 4035 44               |     |      |                     |                    |                      |                     |                    |                      |                    |                     |                    |                     |
| F 4035 05               | 40  | 150  |                     |                    |                      | direct assembly     | direct assembly    | direct assembly      |                    |                     |                    |                     |
| F 4035 45               |     |      |                     |                    |                      |                     |                    |                      |                    |                     |                    |                     |
| F 4035 16               | 50  | 150  |                     |                    |                      | direct assembly     | direct assembly    | direct assembly      |                    |                     |                    |                     |
| F 4035 56               |     |      |                     |                    |                      |                     |                    |                      |                    |                     |                    |                     |
| F 4035 07               | 65  | 150  |                     |                    |                      | direct assembly     | direct assembly    | direct assembly      |                    |                     |                    |                     |
| F 4035 47               |     |      |                     |                    |                      |                     |                    |                      |                    | direct assembly     | direct assembly    | direct assembly     |
| F 4035 08               | 80  | 150  |                     |                    |                      | direct assembly     | direct assembly    | direct assembly      |                    |                     |                    |                     |
| F 4035 48               |     |      |                     |                    |                      |                     |                    |                      |                    | direct assembly     | direct assembly    | direct assembly     |
| F 4035 09               | 100 | 150  |                     |                    |                      |                     |                    |                      | direct assembly    | direct assembly     | direct assembly    | direct assembly     |
| F 4035 49               |     |      |                     |                    |                      |                     |                    |                      |                    |                     |                    |                     |
| F 4035 10               | 125 | 150  |                     |                    |                      |                     |                    |                      | direct assembly    | direct assembly     | direct assembly    | direct assembly     |
| F 4035 50               |     |      |                     |                    |                      |                     |                    |                      |                    |                     |                    |                     |
| F 4035 41               | 150 | 150  |                     |                    |                      |                     |                    |                      | direct assembly    | direct assembly     | direct assembly    | direct assembly     |
| F 4035 52               |     |      |                     |                    |                      |                     |                    |                      |                    |                     |                    |                     |
| F 4037 01               | 15  | 150  | direct assembly     | direct assembly    | direct assembly      |                     |                    |                      |                    |                     |                    |                     |
| F 4037 11               | 15  | 150  | direct assembly     | direct assembly    | direct assembly      |                     |                    |                      |                    |                     |                    |                     |
| F 4037 21               | 15  | 150  | direct assembly     | direct assembly    | direct assembly      |                     |                    |                      |                    |                     |                    |                     |
| F 4037 31               | 15  | 150  | direct assembly     | direct assembly    | direct assembly      |                     |                    |                      |                    |                     |                    |                     |
| F 4037 03               | 25  | 150  | direct assembly     | direct assembly    | direct assembly      |                     |                    |                      |                    |                     |                    |                     |
| F 4037 13               | 25  | 150  | direct assembly     | direct assembly    | direct assembly      |                     |                    |                      |                    |                     |                    |                     |
| F 4037 04               | 32  | 150  |                     |                    |                      | direct assembly     | direct assembly    | direct assembly      |                    |                     |                    |                     |
| F 4037 05               | 40  | 150  |                     |                    |                      | direct assembly     | direct assembly    | direct assembly      |                    |                     |                    |                     |
| F 4037 16               | 50  | 150  |                     |                    |                      | direct assembly     | direct assembly    | direct assembly      |                    |                     |                    |                     |
| F 4037 07               | 65  | 150  |                     |                    |                      | direct assembly     | direct assembly    | direct assembly      |                    |                     |                    |                     |
| F 4037 08               | 80  | 150  |                     |                    |                      | direct assembly     | direct assembly    | direct assembly      |                    |                     |                    |                     |
| F 4037 09               | 100 | 150  |                     |                    |                      |                     |                    |                      | direct assembly    | direct assembly     | direct assembly    | direct assembly     |
| F 4037 10               | 125 | 150  |                     |                    |                      |                     |                    |                      | direct assembly    | direct assembly     | direct assembly    | direct assembly     |
| F 4037 41               | 150 | 150  |                     |                    |                      |                     |                    |                      | direct assembly    | direct assembly     | direct assembly    | direct assembly     |