

Your Distributor:



Blindeisenweg 31 • D-41468 Neuss • Tel.: +49 2131 / 15 39 28-0 • Fax: +49 2131 / 15 39 28-99 • info@fergo.biz • www.fergo.biz



**01 - 09.7**

**10.14.GB**

## Check valves and Check closing valves ZV 226 a ZV 236





# ZV 226 ZV 236

## Check valves and Check closing valves DN 15 to 200, PN 16, 25 and 40

### Description

Check valves ZV 226 are self-acting shut-off valves for application at long-lasting and maintenance-free operation. Check valves type ZV 2x6 P,T meet ČSN EN 14341 (02/2007) and check valves with closing function type ZV 2x6 E,F meet ČSN EN 13709 (12/2010).

Valves in execution ZV 226 P are closed by back pressure and by a spring with the assistance of the plug weight. Opening overpressure is 0,05 - 0,1 bar.

Valves in execution ZV 226 T are closed by back pressure only with the assistance of the plug weight.

Valves in execution ZV 2x6 E, F are check closing valves with bellows which ensures a hermetic tightness to environment and in addition it is added with a safety packing made of graphite. The hand wheel is non-rising which enables an application in unaccess-ible places.

Valves in execution ZV 2x6 E are closed by back pressure and by a spring with the assistance of the plug weight. Opening overpressure is 0,05 - 0,1 bar.

Valves in execution ZV 2x6 F are closed by back pressure only with the assistance of the plug weight.

### Application

Check valves ZV 2x6 are self-acting reverse shut-off valves designed especially for applications in warm-water and steam circuits in power plants, heating plants, heat exchange stations, heat transferring stations and common heating applications.

### Process media

The valves ZV 2x6 are suitable to use for water, steam and other liquids and gases which are compatible with used material of the valve body and inner parts.

### Installation

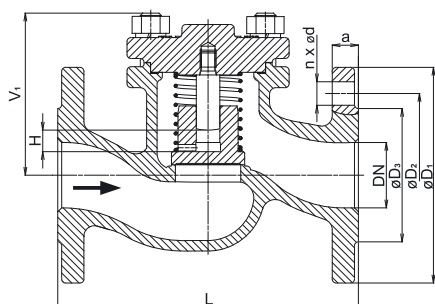
The valves are designed for mounting in a horizontal pipeline by the bonnet or hand wheel upward. In case of hand wheel it is also recommended to ensure enough space for hand wheel operation. Flow direction is always to under the plug and is indicated by the arrow on the body.

### Technical data

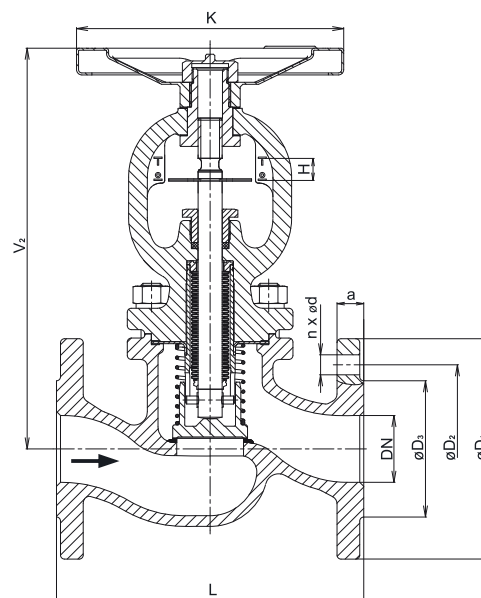
| Series                      | ZV 226                                                                                                                                                                              | ZV 236                                      |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| Type of valve               | Check valve                                                                                                                                                                         |                                             |
| Nominal size range          | DN 15 to 200                                                                                                                                                                        |                                             |
| Nominal pressure            | PN 16, 25 and 40                                                                                                                                                                    |                                             |
| Body material               | Cast steel 1.0619                                                                                                                                                                   | Stainless steel 1.4581 (GX5CrNiMoNb19-11-2) |
| Plug material               | Stainless steel 1.4028                                                                                                                                                              | Stainless steel 1.4571                      |
| Material pin                | Stainless steel 1.4021                                                                                                                                                              | Stainless steel 1.4305                      |
| Spring material             | Stainless steel 1.4310                                                                                                                                                              |                                             |
| Operating temperature range | -10 to +400°C                                                                                                                                                                       |                                             |
| Connection                  | Type B1 (raised-faced), Type F (female), Type D (groove), Type E (male), Type C (tongue)<br>acc. to ČSN-EN 1092-1 (7/2014)<br>Face to face dimensions acc. to ČSN-EN 558-1 (3/1997) |                                             |
| Type of plug                | Disc                                                                                                                                                                                |                                             |
| Kvs values                  | 4,3 to 570 m³/h                                                                                                                                                                     |                                             |
| Leakage rate                | For closing function - rate A (only execution ZV 2x6 E,F) acc. to ČSN-EN 12266-1 (10/2012)<br>For backward function - rate C (all executions) acc. to ČSN-EN 12266-1 (10/2012)      |                                             |
| Packing                     | Bellows with safety graphite packing (execution ZV 2x6 E,F)                                                                                                                         |                                             |

## Dimensions and weights for the ZV 226 / 236

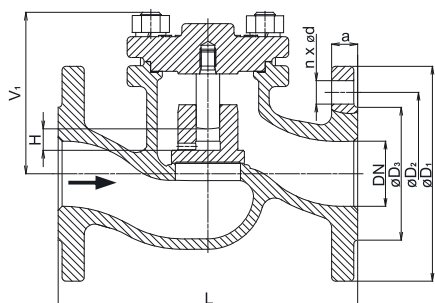
|     | PN 16           |                 |                 |    |   |    | PN 25           |                 |                 |    |    |   | PN 40           |                 |                 |    |   |    |      |     |                |                |     |                | ZV 2x6 P,T     | ZV 2x6 E,F |
|-----|-----------------|-----------------|-----------------|----|---|----|-----------------|-----------------|-----------------|----|----|---|-----------------|-----------------|-----------------|----|---|----|------|-----|----------------|----------------|-----|----------------|----------------|------------|
| DN  | øD <sub>1</sub> | øD <sub>2</sub> | øD <sub>3</sub> | ød | n | a  | øD <sub>1</sub> | øD <sub>2</sub> | øD <sub>3</sub> | ød | n  | a | øD <sub>1</sub> | øD <sub>2</sub> | øD <sub>3</sub> | ød | n | a  | H    | L   | V <sub>1</sub> | V <sub>2</sub> | K   | m <sub>1</sub> | m <sub>2</sub> |            |
|     | mm              | mm              | mm              | mm |   | mm | mm              | mm              | mm              |    | mm |   | mm              | mm              | mm              | mm |   | mm | mm   | mm  | mm             | mm             | mm  | mm             | kg             | kg         |
| 15  | 95              | 65              | 45              | 14 | 4 | 16 | See PN 40       |                 |                 |    |    |   | 95              | 65              | 45              | 14 | 4 | 16 | 6    | 130 | 75             | 195            | 125 | 3              | 4,5            |            |
| 20  | 105             | 75              | 58              |    |   | 18 |                 |                 |                 |    |    |   | 150             | 4               | 5               |    |   |    |      |     |                |                |     |                |                |            |
| 25  | 115             | 85              | 68              |    |   | 18 |                 |                 |                 |    |    |   | 160             | 4.5             | 6               |    |   |    |      |     |                |                |     |                |                |            |
| 32  | 140             | 100             | 78              |    |   | 18 |                 |                 |                 |    |    |   | 180             | 7.5             | 9               |    |   |    |      |     |                |                |     |                |                |            |
| 40  | 150             | 110             | 88              |    |   | 18 |                 |                 |                 |    |    |   | 200             | 8               | 10              |    |   |    |      |     |                |                |     |                |                |            |
| 50  | 165             | 125             | 102             | 18 | 4 | 20 | See PN 40       |                 |                 |    |    |   | 165             | 125             | 102             | 18 | 8 | 20 | 16.5 | 230 | 124            | 305            | 200 | 13.5           | 17,5           |            |
| 65  | 185             | 145             | 122             |    |   | 22 |                 |                 |                 |    |    |   | 290             | 125             | 17              |    |   | 21 |      |     |                |                |     |                |                |            |
| 80  | 200             | 160             | 138             |    |   | 24 |                 |                 |                 |    |    |   | 310             | 175             | 28              |    |   | 35 |      |     |                |                |     |                |                |            |
| 100 | 220             | 180             | 158             |    |   | 24 |                 |                 |                 |    |    |   | 350             | 176             | 40              |    |   | 50 |      |     |                |                |     |                |                |            |
| 125 | 250             | 210             | 188             |    |   | 26 |                 |                 |                 |    |    |   | 400             | 260             | 530             |    |   | 71 |      | 85  |                |                |     |                |                |            |
| 150 | 285             | 240             | 212             | 22 | 8 | 28 | See PN 40       |                 |                 |    |    |   | 300             | 250             | 218             | 26 | 8 | 28 | 40   | 480 | 260            | 530            | 400 | 95             | 115            |            |
| 200 | 340             | 295             | 268             |    |   | 30 |                 |                 |                 |    |    |   | 375             | 320             | 285             |    |   | 30 |      | 12  | 34             | 50             |     | 600            | 270            | 730        |



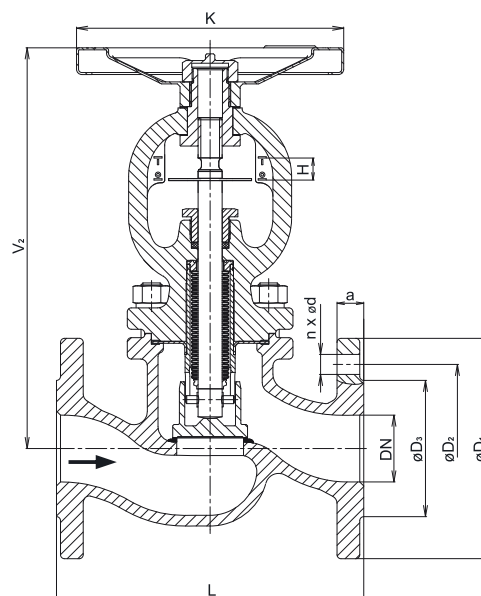
ZV 2x6 P



ZV 2x6 E



ZV 2x6 T



ZV 2x6 F

## The valve complete specification No. for ordering ZV 2x6

|                           |                                                 | XX | XXX | XXX | XX | / | XXX | - | XXX |
|---------------------------|-------------------------------------------------|----|-----|-----|----|---|-----|---|-----|
| 1. Valve                  | Check valve, direct                             | ZV |     |     |    |   |     |   |     |
| 2. Type                   | Check valve made of cast steel 1.0619           |    | 226 |     |    |   |     |   |     |
|                           | Zpětný ventil of stainless steel 1.4581         |    | 236 |     |    |   |     |   |     |
| 3. Function               | Check valve with spring                         |    |     | P   |    |   |     |   |     |
|                           | Check valve without spring                      |    |     | T   |    |   |     |   |     |
|                           | Check closing valve with spring                 |    |     | E   |    |   |     |   |     |
|                           | Check closing valve without spring              |    |     | F   |    |   |     |   |     |
| 4. Connection             | Raised-raised flange (See note)                 |    |     | 1   |    |   |     |   |     |
|                           | Female flange                                   |    |     | 2   |    |   |     |   |     |
|                           | Groove flange                                   |    |     | 3   |    |   |     |   |     |
|                           | Male flange                                     |    |     | 7   |    |   |     |   |     |
|                           | Tongue flange                                   |    |     | 8   |    |   |     |   |     |
| 5. Body / bonnet material | Cast steel 1.0619 / Cast steel 1.0619           |    |     | 1   |    |   |     |   |     |
|                           | Stainless steel 1.4581 / Stainless steel 1.4581 |    |     | 8   |    |   |     |   |     |
| 6. Nominal pressure PN    | PN 16                                           |    |     |     | 16 |   |     |   |     |
|                           | PN 25                                           |    |     |     | 25 |   |     |   |     |
|                           | PN 40                                           |    |     |     | 40 |   |     |   |     |
| 7. Max. temperature °C    | 400°C                                           |    |     |     |    |   | 400 |   |     |
| 8. Nominal size DN        | DN 15 to 200                                    |    |     |     |    |   |     |   | XXX |

Ordering example: **ZV 226 P11 40/400-050**

## Kvs, differential pressure values and loss coefficient ζ (zeta)

| DN  | Kvs [m³/h] | ζ   | Δp <sub>max</sub> [MPa] |
|-----|------------|-----|-------------------------|
| 15  | 4.3        | 4.5 | 4.00                    |
| 20  | 7.0        | 5.2 | 4.00                    |
| 25  | 11.0       | 5.2 | 4.00                    |
| 32  | 17.5       | 5.5 | 4.00                    |
| 40  | 27.0       | 5.6 | 4.00                    |
| 50  | 47.0       | 4.5 | 4.00                    |
| 65  | 68.0       | 6.2 | 4.00                    |
| 80  | 116.0      | 4.9 | 4.00                    |
| 100 | 162.0      | 6.1 | 4.00                    |
| 125 | 250.0      | 6.2 | 4.00                    |
| 150 | 364.0      | 6.1 | 2.00                    |
| 200 | 570.0      | 7.9 | 4.00                    |

## Max. permissible pressure values [MPa]

| Material                                       | PN | Temperature [°C] |      |      |      |      |      |      |      |      |
|------------------------------------------------|----|------------------|------|------|------|------|------|------|------|------|
|                                                |    | RT <sup>1)</sup> | 100  | 150  | 200  | 250  | 300  | 350  | 375  | 400  |
| Cast steel 1.0619<br>(GP240GH)                 | 16 | 1,56             | 1,36 | 1,27 | 1,13 | 1,04 | 0,94 | 0,88 | 0,86 | 0,84 |
|                                                | 25 | 2,44             | 2,13 | 1,98 | 1,78 | 1,62 | 1,47 | 1,37 | 1,35 | 1,32 |
|                                                | 40 | 3,9              | 3,31 | 3,17 | 2,84 | 2,6  | 2,35 | 2,19 | 2,16 | 2,11 |
| Stainless steel 1.4581<br>(GX5CrNiMoNb19-11-2) | 16 | 1,59             | 1,44 | 1,33 | 1,25 | 1,17 | 1,10 | 1,06 | 1,05 | 1,02 |
|                                                | 25 | 2,49             | 2,25 | 2,08 | 1,95 | 1,84 | 1,72 | 1,66 | 1,63 | 1,60 |
|                                                | 40 | 3,98             | 3,60 | 3,33 | 3,13 | 2,94 | 2,75 | 2,65 | 2,61 | 2,56 |

<sup>1)</sup> -10°C to 50°C