

01 - 09.8

07.09

**Check valves
ZV 116 and ZV 216 LDM**



ZV 116 ZV 216



**Check valves
DN 15 to 300
PN 16, 25**

Description

Check valves ZV x16 are self-acting shut-off valves for application at long-lasting and maintenance-free operation. Valves meet the ČSN EN 12334 (03/2002).

Valves in execution ZV x16 P are closed by back pressure with spring with weight of plug assistance, Opening overpressure is 0,05 - 0,1 bar. Valves in execution ZV x16 T are closed by back pressure only with weight of plug assistance.

Application

The valve is designed for application as self-acting reverse shut-off valve. In the valve is not warranted 100% of tightness in closed position, therefore in the case of higher tightness request is necessary to install into pipeline the shut off valve. The valves are especially designed for applications in hot-water and steam circuits in power plants, heating plants, heat exchange stations, heat transferring stations and common heating applications.

Process media

The valves ZV x16 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

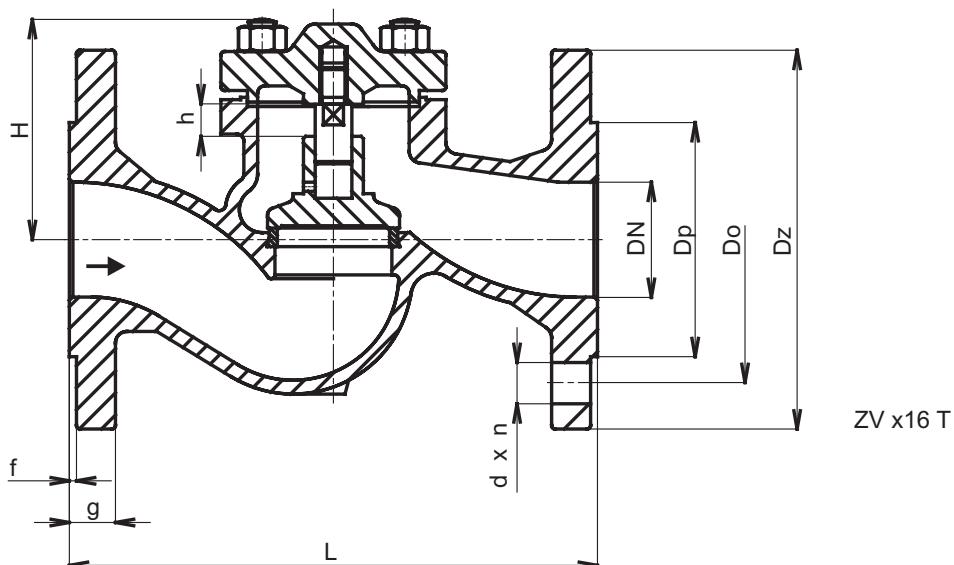
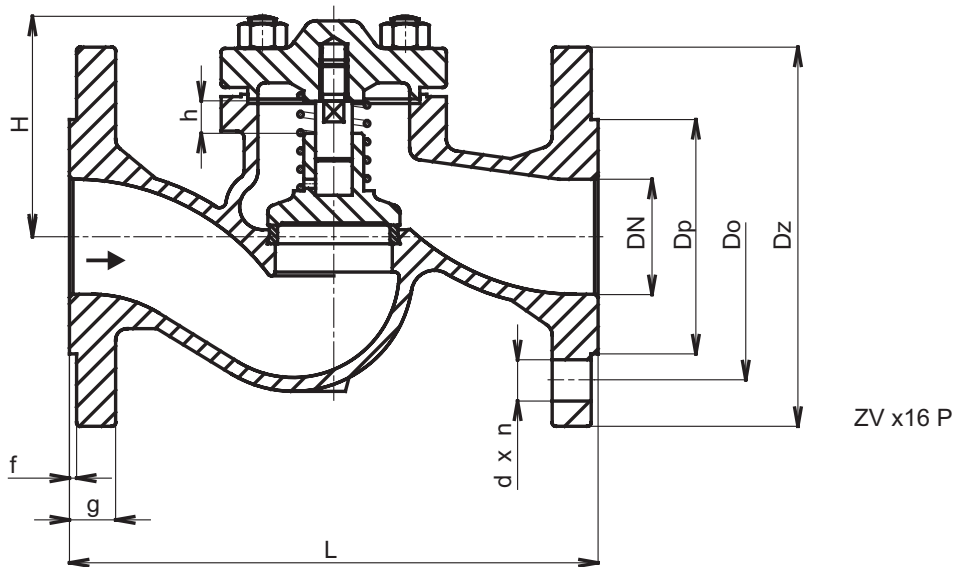
The valves are designed for mounting in a horizontal pipeline by the bonnet upwards, flow direction is always to under the plug and is determined by the arrow on the body.

Technical data

| Series | ZV 116 | ZV 216 |
|-----------------------------|---|-----------------------------|
| Type of valve | Check valve | |
| Nominal size range | DN 15 to 300 | DN 15 to 200 |
| Nominal pressure | PN 16 | PN 25 |
| Body material | Grey cast iron EN-JL1040 | Nodular cast iron EN-JS1025 |
| Plug material | Stainless steel 1.4028 | |
| Seat material | Stainless steel 1.4006 | |
| Stem material | Stainless steel 1.4021 | |
| Spring material | Stainless steel 1.4057 | |
| Sealing material | Graphite | |
| Operating temperature range | +2°C to +300°C | +2°C to +350°C |
| Connection | Flanges Type B1 (raised-faised) acc. to ČSN-EN 1092-2, Face to face dimensions acc. to ČSN-EN 558, serie 1 | |
| Type of plug | Disc | |
| Kvs values | 5,9 to 1460 m ³ /h | |
| Leakage rate | Acc. to ČSN-EN 12334 (03/2002) | |

Dimensions and weights for the ZV x16

| DN | PN 16 | | | | | | PN 25 | | | | | | PN 16, PN 25 | | | | | | | |
|-----|----------------|----------------|----------------|----|----|-----|----------------|----------------|----------------|----|----|-----|--------------|-----|-----|----|-----|-----|----|------|
| | D _z | D _p | D _o | d | n | g | D _z | D _p | D _o | d | n | g | H | L | h | f | m | | | |
| | mm | mm | mm | mm | | mm | mm | mm | mm | mm | | mm | mm | mm | mm | mm | kg | | | |
| 15 | 95 | 46 | 65 | 14 | 4 | 14 | 95 | 46 | 65 | 14 | 4 | 14 | 56 | 130 | 5 | 2 | 3 | | | |
| 20 | 105 | 56 | 75 | | | 16 | 105 | 56 | 75 | | | 16 | 16 | 150 | | | 4 | | | |
| 25 | 115 | 65 | 85 | | | 18 | 115 | 65 | 85 | | | 18 | 18 | 160 | 4.5 | | | | | |
| 32 | 140 | 76 | 100 | | | 150 | 76 | 100 | 150 | | | 84 | 110 | 180 | 7.5 | | | | | |
| 40 | 150 | 84 | 110 | 19 | 8 | 20 | 165 | 99 | 125 | 19 | 8 | 19 | 89 | 200 | 11 | 3 | 8 | | | |
| 50 | 165 | 99 | 125 | | | 22 | 165 | 99 | 125 | | | 20 | 185 | 118 | 145 | | 96 | 230 | 14 | 13.5 |
| 65 | 185 | 118 | 145 | | | 24 | 200 | 132 | 160 | | | 22 | 235 | 156 | 190 | | 104 | 290 | 17 | 17 |
| 80 | 200 | 132 | 160 | | | 26 | 270 | 184 | 220 | | | 24 | 300 | 211 | 250 | | 124 | 310 | 21 | 28 |
| 100 | 220 | 156 | 180 | 23 | 8 | 30 | 360 | 274 | 310 | 19 | 8 | 20 | 174 | 400 | 32 | 3 | 40 | | | |
| 125 | 250 | 184 | 210 | | | 32 | 270 | 184 | 220 | | | 20 | 197 | 480 | 38 | | 71 | | | |
| 150 | 285 | 211 | 240 | | | 12 | 300 | 211 | 250 | | | 22 | 248 | 600 | 50 | | 95 | | | |
| 200 | 340 | 266 | 295 | | | 12 | 360 | 274 | 310 | | | 22 | 248 | 600 | 50 | | 221 | | | |
| 250 | 405 | 319 | 355 | 23 | 12 | 32 | --- | --- | --- | 19 | 12 | 22 | 333 | 730 | 65 | 4 | 95 | | | |
| 300 | 460 | 370 | 410 | | | 32 | --- | --- | --- | | | --- | --- | 375 | 800 | | 95 | 221 | | |



The valve complete specification No. for ordering ZV x16

| | | XX | XXX | XXX | XX | / | XXX | - | XXX |
|------------------------|---------------------------------------|----|-----|-----|----|---|-----|---|-----|
| 1. Valve | Check valve, direct | ZV | | | | | | | |
| 2. Type | Check valve made of grey cast iron | | 116 | | | | | | |
| | Check valve made of nodular cast iron | | 216 | | | | | | |
| 3. Function | Check valve with spring | | | P | | | | | |
| | Check valve without spring | | | T | | | | | |
| 4. Connection | Raised-faised flange | | | 1 | | | | | |
| 5. Material body | Grey cast iron EN-JL1040 | | 116 | 3 | | | | | |
| | Nodular cast iron EN-JS1025 | | 216 | 4 | | | | | |
| 6. Nominal pressure PN | PN 16 | | 116 | | 16 | | | | |
| | PN 25 | | 216 | | 25 | | | | |
| 7. Max. temperature °C | 300°C | | 116 | | | | 300 | | |
| | 350°C | | 216 | | | | 350 | | |
| 8. Nominal size DN | DN 15 to 300 | | 116 | | | | | | XXX |
| | DN 15 to 200 | | 216 | | | | | | XXX |

Ordering example: **ZV 216 P14 25/350-065**

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

| DN | Kvs [m ³ /h] | ζ | Δp_{\max} [MPa] | |
|-----|-------------------------|---------|-------------------------|-------|
| | | | PN 16 | PN 25 |
| 15 | 5.9 | 2.3 | 1.6 | 2.5 |
| 20 | 7.4 | 4.7 | | |
| 25 | 13.0 | 3.7 | | |
| 32 | 18.0 | 5.2 | | |
| 40 | 30.0 | 4.5 | | |
| 50 | 41.0 | 5.9 | | |
| 65 | 79.0 | 4.6 | | |
| 80 | 115.0 | 4.9 | | |
| 100 | 181.0 | 4.9 | | |
| 125 | 225.0 | 7.7 | | |
| 150 | 364.0 | 6.1 | | |
| 200 | 690.0 | 5.4 | 1.4 | 1.4 |
| 250 | 1010 | 6.1 | 1.6 | --- |
| 300 | 1460 | 6.1 | | |

Max. permissible pressure values [MPa]

| Material | PN | Temperature [°C] | | | | | |
|---|----|------------------|------|------|------|------|------|
| | | 120 | 150 | 200 | 250 | 300 | 350 |
| Grey cast iron EN-JL1040 (EN-GJL-250) | 16 | 1.60 | 1.44 | 1.28 | 1.12 | 0.96 | --- |
| Nodular cast iron EN-JS1025 (EN-GJS-400-18-LT) | 25 | 2.50 | 2.43 | 2.30 | 2.18 | 2.00 | 1.75 |