



**01 - 09.7**  
07.20.GB

# CHECK VALVES CHECK CLOSING VALVES

## ZV 200





# ZV 226, 236 ZV 227, 237

Check valves and  
Check closing valves

**DN 15 - 200**  
**PN 16, 25 a 40**

**Check valves ZV 2xx are self-acting shut-off valves for application at long-lasting and maintenance-free operation.**

**Valves 2x7:** between the valve body and cover a spiral-wound gasket is used. A seat sealing is available in several material options - see „The valve complete specification No.” table for more details.

check valves  
**ZV 2xx P**

check closing valves  
**ZV 2xx E**

These valves are closed by back pressure and by a spring with the assistance of the plug weight. Opening overpressure is 0,05 - 0,1 bar.

check valves  
**ZV 2xx T**

check closing valves  
**ZV 2xx F**

These valves 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.

Check valves **ZV 2xx P, T**  
meet ČSN EN 16767 (12/2016)

Check closing valves **ZV 2xx E, F**  
meet ČSN EN 13709 (12/2010).

## 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

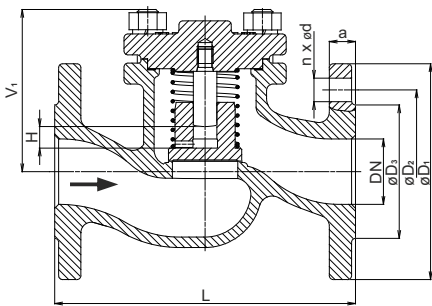
The valves are designed for mounting in a horizontal pipeline by the bonnet or hand wheel upward. In case of hand wheel it is also recommended to ensure enough space for hand wheel operation (execution ZV 2x6 E, F). Flow direction is always to under the plug and is indicated by the arrow on the body.

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 (GP240GH)	Stainless steel 1.4581 (GX5CrNiMoNb19-11-2)
Seat material	1.0619+CrNiMoTi	1.4581+CrNiMoTi
Plug material	1.4028	1.4571
Stem material	1.4305	1.4305
Pin material	1.4021	1.4305
Spring material	1.4310	
Operating temp. range	-10 až +400°C *)	
Connection	Type B1 (raised-faced), Type F (female), Type D (groove), Type E (male), Type C (tongue) acc. to ČSN-EN 1092-1 (11/2018) Face to face dimensions acc. to ČSN-EN 558 (9/2017)	
Type of plug	Disc	
Kvs values	4,3 to 570 m <sup>3</sup> /h	
Leakage rate	For closing function - rate A (only execution ZV 2x6 E,F) acc. to ČSN-EN 12266-1 (10/2012) 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)	

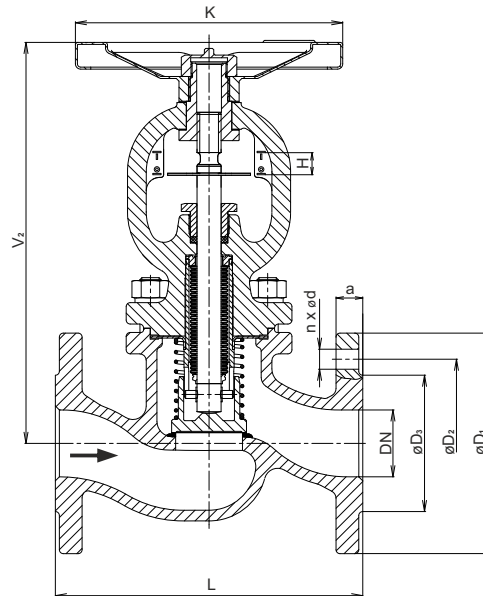
\*) other temperature execution is possible after agreement with producer

## Dimensions and weights for the valves ZV 2x6

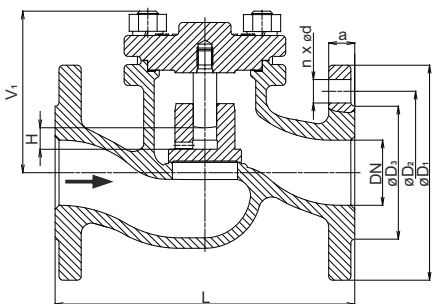
DN	PN 16					PN 25					PN 40					H	L	V <sub>1</sub>	V <sub>2</sub>	K	ZV 2x6	ZV 2x6			
	ØD <sub>1</sub>	ØD <sub>2</sub>	ØD <sub>3</sub>	Ød	n	a	ØD <sub>1</sub>	ØD <sub>2</sub>	ØD <sub>3</sub>	Ød	n	a	ØD <sub>1</sub>	ØD <sub>2</sub>	ØD <sub>3</sub>						Ød	n	a	m <sub>1</sub>	m <sub>2</sub>
	[mm]	[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]		[mm]	[mm]	[mm]	[mm]	[mm]	[kg]	[kg]			
15	95	65	45	14	4	16	95	65	45	14	4	16	95	65	45	14	4	16	6	130	75	195	125	3	4.5
20	105	75	58	14	4	18	105	75	58	14	4	18	105	75	58	14	4	18	6	150	75	195	125	4	5
25	115	85	68	14	4	18	115	85	68	14	4	18	115	85	68	14	4	18	6	160	75	195	125	4.5	6
32	140	100	78	18	4	18	140	100	78	18	4	18	140	100	78	18	4	18	10	180	91	225	150	7.5	9
40	150	110	88	18	4	18	150	110	88	18	4	18	150	110	88	18	4	18	10	200	91	225	150	8	10
50	165	125	102	18	4	20	165	125	102	18	4	20	165	125	102	18	4	20	16.5	230	124	305	200	13.5	17.5
65	185	145	122	18	4	22	185	145	122	18	4	22	185	145	122	18	4	22	16.5	290	125	305	200	17	21
80	200	160	138	18	8	24	200	160	138	18	8	24	200	160	138	18	8	24	25	310	175	385	300	28	35
100	220	180	158	18	8	24	235	190	162	22	8	24	235	190	162	22	8	24	25	350	176	385	300	40	50
125	250	210	188	18	8	26	270	220	188	26	8	26	270	220	188	26	8	26	40	400	260	530	400	71	85
150	285	240	212	22	8	28	300	250	218	26	8	28	300	250	218	26	8	28	40	480	260	530	400	95	115
200	340	295	268	22	12	24	360	310	278	26	12	30	375	320	285	30	12	34	50	600	270	730	400	221	240



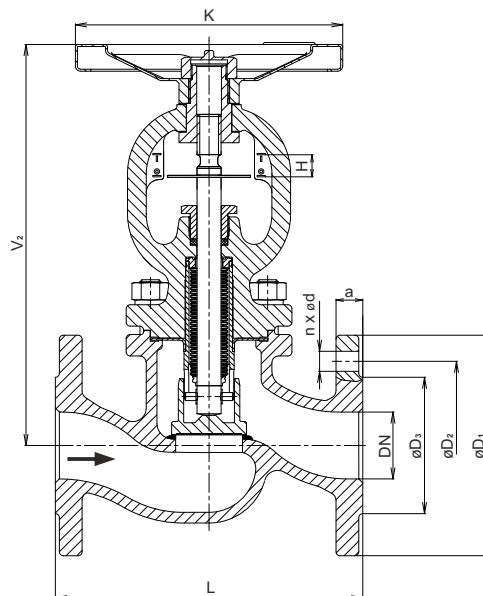
ZV 2x6 P



ZV 2x6 E



ZV 2x6 T



ZV 2x6 F

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

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

Ordering example: ZV 226 P11 40/400-050

### The valve complete specification No. for ordering ZV 2x7

		XX	XXX	XXXX	XX	/	XXX	-	XXX
<b>1. Valve</b>	Check valve, direct	ZV							
<b>2. Type</b>	Check valve made of cast steel 1.0619		227						
	Check valve of stainless steel 1.4581		237						
<b>3. Function</b>	Check valve with spring						P		
	Check valve without spring						T		
	Check closing valve with spring						E		
	Check closing valve without spring						F		
<b>4. Connection</b>	Raised-raised flange (see note)						1		
	Female flange						2		
	Groove flange						3		
	Male flange						7		
	Tongue flange						8		
<b>5. Body / bonnet material</b>	Cast steel 1.0619 / Cast steel 1.0619						1		
	Stainless steel 1.4581 / Stainless steel 1.4581						8		
<b>6. Seat material plug / body</b>	CrNiMoTi / CrNiMn - execution ZV 237						0		
	13Cr / CrNiMn - execution ZV 227						1		
	CrNiMoTi / Stellite 6 - execution ZV 237						2		
	Stellite 6 / Stellite 6 - execution ZV 2x7						5		
	13Cr / Stellite 6 - execution ZV 2x7						8		
<b>7. Nominal pressure PN</b>	PN 16						16		
	PN 25						25		
	PN 40						40		
<b>8. Max. temperature °C</b>	400 °C							400	
<b>9. Nominal size DN</b>	DN 15 to 200								XXX

Ordering example: ZV 227 P112 40/400-050

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

DN	Kvs [m <sup>3</sup> /h]	z	$\Delta p_{\max}$ 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	4.00
200	570.0	7.9	4.00

### Max. permissible pressure values acc. to ČSN 12516-1 [MPa]

Material	PN	Temperature [°C]								
		RT <sup>1)</sup>	100	150	200	250	300	350	375	400
Cast steel 1.0619 (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 (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



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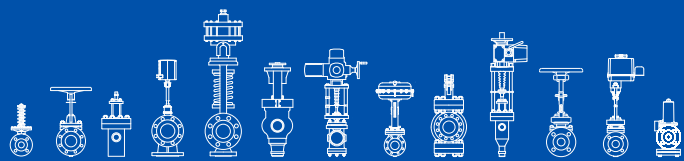
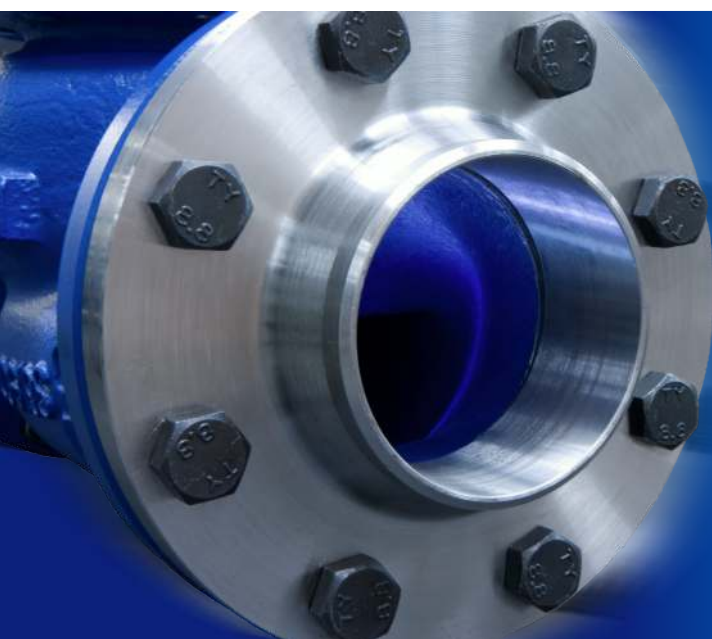
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