

**Type K01 / K91**

DN 10 - 100  
PN 63 - 400

## Globe / Control Valve

Butt-Welded, Flanged

### Data Sheet

Edition: EN 9 / 2015

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### Application

- Shut-off valve K01 or throttling valve K91 with (linear) characteristics
- **Fluids**  
Water, steam, gases and other fluids based on material selection
- **Industry**  
Power engineering, chemical industry, nuclear power
- **Environments**  
Normal, tropical, explosive, seismic

### Technical description

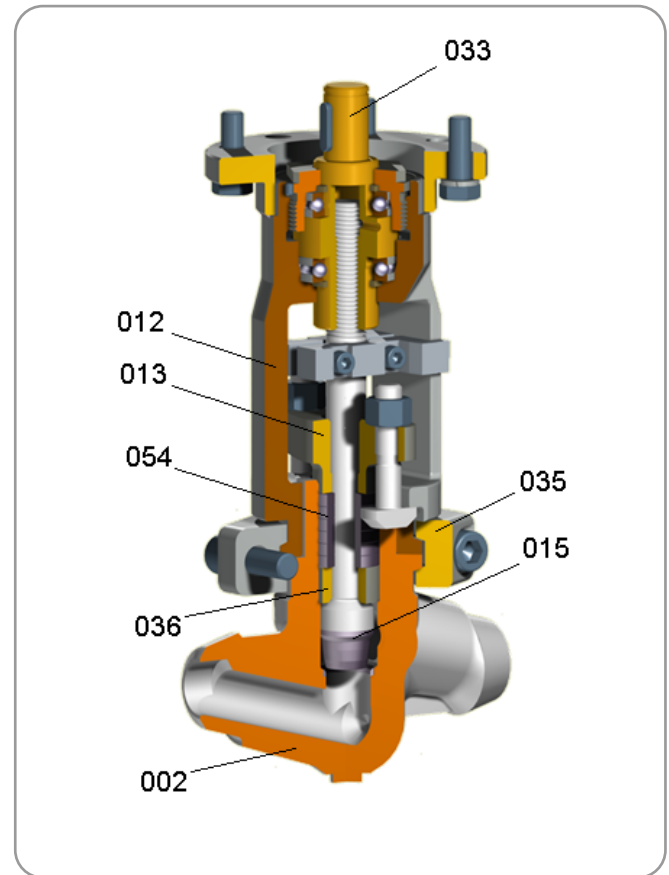
- Body is die forging with separate body and cast yoke
- Body seat is hard welded
- Plug with stem and sealing surface of hard weld alloy are integral
- For flanged valves, flanges are welded to the body
- For control valves, the pressure gradient for liquids (i.e. the pressure difference at the inlet and outlet side) is to 5 MPa; expansion ratio (i.e. the ratio of outlet pressure to inlet) for steam and gas is greater or equal to 0.7
- Shut-off valves can be operated in position open – close; throttling valve can be operated also in an intermediate position

### Testing

- Valves are pressure tested with water, steam or air for strength and tightness in accordance with working parameters and material according to EN 12266-1
- Min. pressure for the strength testing is 1,5 x PN

### Operation

- Hand wheel (with locking device, if required)
- Electric actuator or pneumatic actuator
- Remote control
- Bevel gear



### Installation

- Valves may be installed in any position, direction of flow under the plug
- Valves K01 can be installed for flow above the plug, if needed

### Connection

- Butt - welded and flanged type according to ČSN, EN, DIN, ANSI, GOST or according to customer request

### Materials of main parts

Pos.	Name	Material
002	<b>Body</b>	11 416, P250GH (C22.8), 15 128, 10CrMo9-10, 11CrMo9-10, 13CrMoV4-5, 14MoV6-3, 16Mo3
005	<b>Flange</b>	(15Mo3), X10CrMoVNb9-1, 15NiCuMoNb5-6-4, X6CrNiTi18-10, 08X18H10T
	<b>Seat</b>	Type Stellite 6 (TYP C1111)
013	<b>Bonnet</b>	42 2828 (GS-17CrMoV5 11)
015	<b>Shaft</b>	X22CrMoV12-1, 14X17H2
	<b>Hardfacing</b>	Type Stellite 6 (TYP C1111)
035	<b>Sleeve</b>	42 2828 (GS-17CrMoV5 11)
036	<b>Back seat</b>	X6CrNiTi18-10, 08X18H10T
054	<b>Packing ring</b>	Expanded graphite – density 1,7 g/cm <sup>3</sup>
012	<b>Yoke</b>	42 2828 (GS-17CrMoV5 11)
033	<b>Stem nut</b>	423046, CuAl10Fe3Mn2, CuAl10Fe5Ni5-C

**Operating data**

Material of body	PN	Working pressure MPa / Working temperature °C											
		200	250	300	350	400	450	500	520	540	560	580	600
<b>P250GH (C22.8)</b> (W.Nr. 1.0460)	<b>63</b>	6,3	5,7	4,9	4,2	3,3	2,5	-	-	-	-	-	-
	<b>100</b>	10,0	9,0	7,8	6,7	5,2	4,0	-	-	-	-	-	-
	<b>160</b>	16,0	14,4	12,5	10,7	8,3	6,4	-	-	-	-	-	-
	<b>250</b>	25,0	22,5	19,6	16,7	13,0	10,0	-	-	-	-	-	-
	<b>320</b>	32,0	28,8	25,0	21,3	16,7	12,8	-	-	-	-	-	-
	<b>400</b>	40,0	35,9	31,3	26,7	20,9	16,0	-	-	-	-	-	-
<b>11416</b>	<b>63</b>	6,3	5,9	5,2	4,3	3,8	2,5	-	-	-	-	-	-
	<b>100</b>	10,0	9,4	8,2	6,8	6,0	4,0	-	-	-	-	-	-
	<b>160</b>	16,0	15,0	13,2	10,9	9,6	6,4	-	-	-	-	-	-
	<b>250</b>	25,0	23,5	20,6	17,1	14,9	10,0	-	-	-	-	-	-
	<b>320</b>	32,0	30,1	26,3	21,9	19,1	12,8	-	-	-	-	-	-
	<b>400</b>	40,0	37,6	32,9	27,4	23,9	16,0	-	-	-	-	-	-
<b>15NiCuMoNb5</b> (W.Nr. 1.6368)	<b>63</b>	6,3	6,3	6,3	6,3	6,3	6,3	-	-	-	-	-	-
	<b>100</b>	10,0	10,0	10,0	10,0	10,0	10,0	-	-	-	-	-	-
	<b>160</b>	16,0	16,0	16,0	16,0	16,0	16,0	-	-	-	-	-	-
	<b>250</b>	25,0	25,0	25,0	25,0	25,0	25,0	-	-	-	-	-	-
	<b>320</b>	32,0	32,0	32,0	32,0	32,0	32,0	-	-	-	-	-	-
	<b>400</b>	40,0	40,0	40,0	40,0	40,0	40,0	-	-	-	-	-	-
<b>16Mo3 (15Mo3)</b> (W.Nr. 1.5415)	<b>63</b>	6,3	6,3	5,5	5,3	5,1	4,9	3,4	2,2	-	-	-	-
	<b>100</b>	10,0	10,0	8,7	8,4	8,1	7,8	5,4	3,4	-	-	-	-
	<b>160</b>	16,0	16,0	13,9	13,4	13,0	12,5	8,6	5,5	-	-	-	-
	<b>250</b>	25,0	25,0	21,7	21,0	20,3	19,6	13,5	8,6	-	-	-	-
	<b>320</b>	32,0	32,0	27,8	26,9	26,0	25,0	17,3	10,9	-	-	-	-
	<b>400</b>	40,0	40,0	34,8	33,6	32,5	31,3	21,6	13,7	-	-	-	-
<b>13CrMo4-5</b> (W.Nr. 1.7335)	<b>63</b>	6,3	6,3	6,3	6,3	6,0	5,7	5,0	3,4	2,2	1,5	-	-
	<b>100</b>	10,0	10,0	10,0	10,0	9,6	9,0	7,9	5,4	3,5	2,3	-	-
	<b>160</b>	16,0	16,0	16,0	16,0	15,3	14,4	12,7	8,7	5,7	3,7	-	-
	<b>250</b>	25,0	25,0	25,0	25,0	23,9	22,5	19,9	13,6	8,8	5,8	-	-
	<b>320</b>	32,0	32,0	32,0	32,0	30,6	28,8	25,4	17,4	11,3	7,4	-	-
	<b>400</b>	40,0	40,0	40,0	40,0	38,3	35,9	31,8	21,8	14,1	9,3	-	-
<b>11CrMo9-10</b> (W.Nr. 1.7383)	<b>63</b>	6,3	6,3	6,3	6,3	6,3	6,3	4,9	3,8	2,8	2,1	1,6	1,2
	<b>100</b>	10,0	10,0	10,0	10,0	10,0	10,0	7,8	6,0	4,5	3,4	2,6	2,0
	<b>160</b>	16,0	16,0	16,0	16,0	16,0	16,0	12,5	9,6	7,2	5,4	4,1	3,2
	<b>250</b>	25,0	25,0	25,0	25,0	25,0	25,0	19,6	14,9	11,3	8,4	6,4	4,9
	<b>320</b>	32,0	32,0	32,0	32,0	32,0	32,0	25,0	19,1	14,5	10,8	8,2	6,3
	<b>400</b>	40,0	40,0	40,0	40,0	40,0	40,0	31,3	23,9	18,1	13,4	10,2	7,9
<b>10CrMo9-10</b> (W.Nr. 1.7380)	<b>63</b>	6,3	6,3	6,3	6,3	6,3	6,0	4,9	3,8	2,8	2,1	1,6	1,2
	<b>100</b>	10,0	10,0	10,0	10,0	10,0	9,6	7,8	6,0	4,5	3,4	2,6	2,0
	<b>160</b>	16,0	16,0	16,0	16,0	16,0	15,3	12,5	9,6	7,2	5,4	4,1	3,2
	<b>250</b>	25,0	25,0	25,0	25,0	25,0	23,9	19,6	14,9	11,3	8,4	6,4	4,9
	<b>320</b>	32,0	32,0	32,0	32,0	32,0	30,6	25,0	19,1	14,5	10,8	8,2	6,3
	<b>400</b>	40,0	40,0	40,0	40,0	40,0	38,3	31,3	23,9	18,1	13,4	10,2	7,9
<b>14MoV6-3</b> (W.Nr. 1.7715)	<b>63</b>	6,3	6,3	6,3	6,3	6,3	6,3	6,3	5,4	4,1	3,1	-	-
	<b>100</b>	10,0	10,0	10,0	10,0	10,0	10,0	10,0	8,6	6,6	5,0	-	-
	<b>160</b>	16,0	16,0	16,0	16,0	16,0	16,0	16,0	13,8	10,5	8,0	-	-
	<b>250</b>	25,0	25,0	25,0	25,0	25,0	25,0	25,0	21,6	16,4	12,5	-	-
	<b>320</b>	32,0	32,0	32,0	32,0	32,0	32,0	32,0	27,6	21,0	16,0	-	-
	<b>400</b>	40,0	40,0	40,0	40,0	40,0	40,0	40,0	34,6	26,2	19,9	-	-
<b>15128</b>	<b>63</b>	6,3	6,3	6,3	6,3	6,3	6,3	6,2	4,8	3,7	2,8	2,2	1,6
	<b>100</b>	10,0	10,0	10,0	10,0	10,0	10,0	9,8	7,6	5,9	4,5	3,5	2,6
	<b>160</b>	16,0	16,0	16,0	16,0	16,0	16,0	15,7	12,2	9,4	7,2	5,6	4,2
	<b>250</b>	25,0	25,0	25,0	25,0	25,0	25,0	24,5	19,0	14,6	11,3	8,7	6,5
	<b>320</b>	32,0	32,0	32,0	32,0	32,0	32,0	31,4	24,3	18,7	14,5	11,1	8,3
	<b>400</b>	40,0	40,0	40,0	40,0	40,0	40,0	39,2	30,4	23,4	18,1	13,9	10,4

Material of body	PN	Working pressure MPa / Working temperature °C											
		200	250	300	350	400	450	500	520	540	560	580	600
<b>X10CrMoVNb9-1</b> (W.Nr. 1.4903)	<b>63</b>	6,3	6,3	6,3	6,3	6,3	6,3	6,3	6,3	6,3	5,5	4,4	3,4
	<b>100</b>	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	8,7	7,0	5,4
	<b>160</b>	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	13,9	11,1	8,7
	<b>250</b>	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	25,0	21,7	17,4	13,6
	<b>320</b>	32,0	32,0	32,0	32,0	32,0	32,0	32,0	32,0	32,0	27,8	22,3	17,4
	<b>400</b>	40,0	40,0	40,0	40,0	40,0	40,0	40,0	40,0	40,0	34,8	27,8	21,8
<b>X6CrNiTi18-10</b> (W.Nr. 1.4541)	<b>63</b>	6,1	5,4	5,0	4,7	4,6	4,4	4,3	4,3	4,3	4,3	3,9	3,1
	<b>100</b>	9,7	8,5	7,9	7,5	7,2	7,0	6,9	6,9	6,9	6,8	6,2	5,0
	<b>160</b>	15,5	13,6	12,6	12,1	11,6	11,2	11,0	11,0	11,0	10,9	9,9	8,0
	<b>250</b>	24,2	21,3	19,7	18,8	18,1	17,5	17,2	17,2	17,1	17,1	15,5	12,5
	<b>320</b>	31,0	27,3	25,2	24,1	23,2	22,4	22,1	22,1	21,9	21,9	19,8	16,0
	<b>400</b>	38,7	34,1	31,5	30,1	29,0	28,1	27,6	27,5	27,4	27,4	24,8	19,9
<b>08X18H10T</b>	<b>63</b>	6,0	5,6	5,4	5,0	4,8	4,5	4,1	3,8	3,5	3,1	2,8	2,5
	<b>100</b>	9,5	8,8	8,5	7,9	7,7	7,1	6,6	6,0	5,5	5,0	4,5	4,0
	<b>160</b>	15,2	14,1	13,6	12,7	12,2	11,4	10,5	9,6	8,8	8,0	7,2	6,5
	<b>250</b>	23,8	22,0	21,3	19,9	19,1	17,8	16,4	15,0	13,7	12,5	11,3	10,1
	<b>320</b>	30,4	28,2	27,3	25,4	24,5	22,8	21,0	19,3	17,5	15,9	14,4	12,9
	<b>400</b>	38,0	35,2	34,1	31,8	30,6	28,5	26,2	24,1	21,9	19,9	18,1	16,2

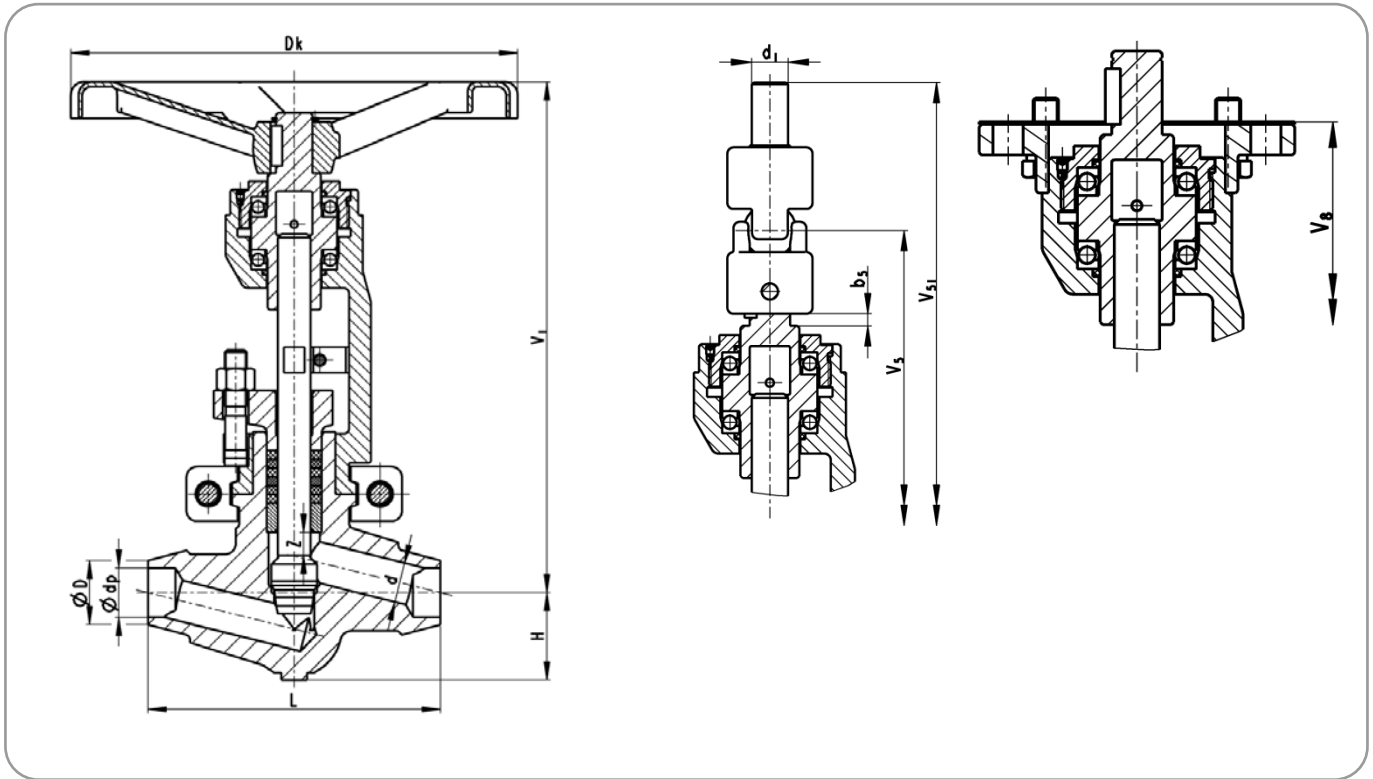
### Loss and orifice flow coefficients

Loss coefficients  $\xi$  of shut-off valves and orifice flow coefficients  $K_v$  of control valves and direction of flow under the plug:

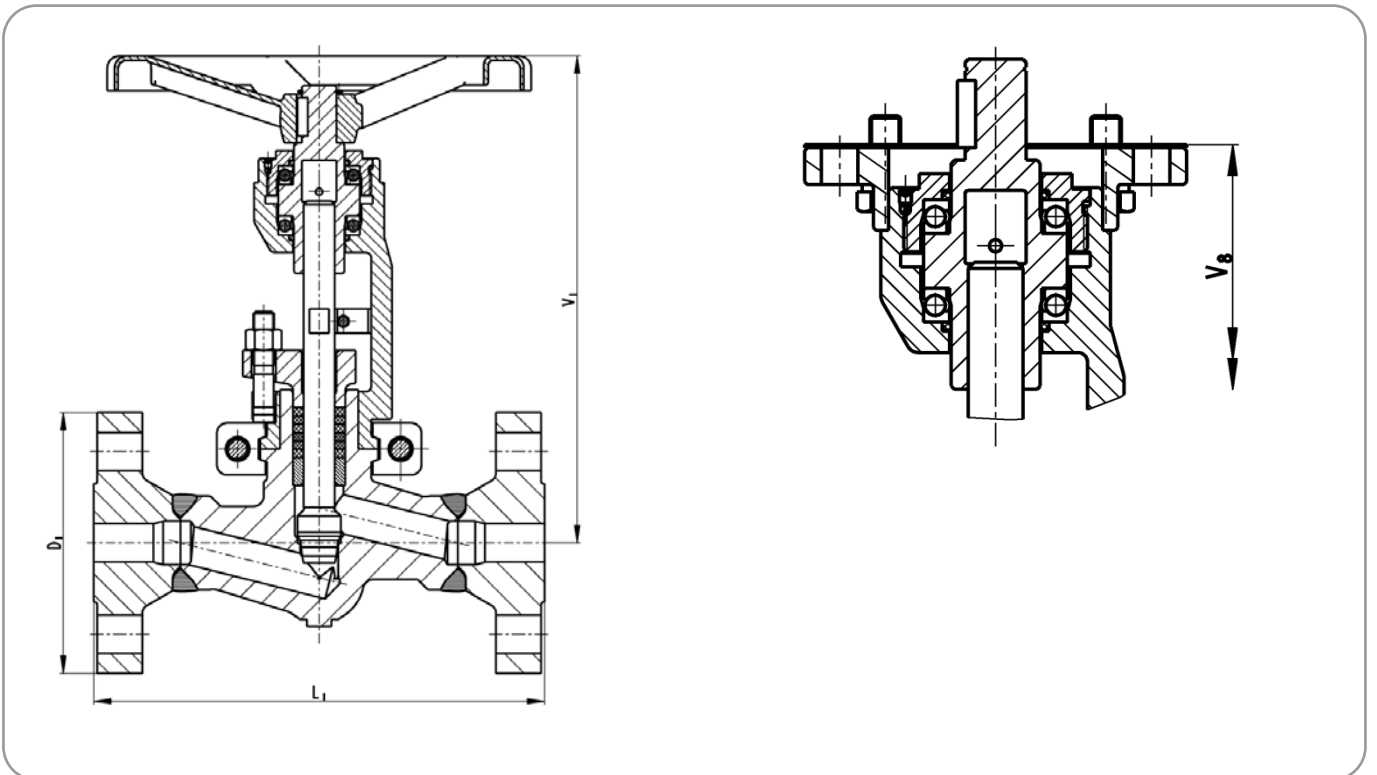
DN		Dimensions		Loss coefficients of shut-off valves $\xi$	Orifice flow coefficients $K_v$ of control valves $m^3 \cdot \text{hod}^{-1}$
mm	"	d	dp		
10, 15	3/8	10,5	12	6,43	2,33
	1/2				
	3/4	13,5	17	10,97	3,25
	1				
20, 25	3/4	19	21	6,88	5,36
	1				
	1 <sup>1</sup> / <sub>4</sub>	22	28	10,13	6,98
	1 <sup>1</sup> / <sub>2</sub>				
32, 40	1 <sup>1</sup> / <sub>4</sub>	28	31	7,17	10,92
	1 <sup>1</sup> / <sub>2</sub>				
	2	32	39	9,90	11,21
50	1 <sup>1</sup> / <sub>2</sub>	35	39	7,12	15,27
	2				
	2 <sup>1</sup> / <sub>2</sub>	43	49	12,14	19,37
80, 100/80	1/4	35	39	7,12	15,27
	3				
	4	43	49	12,14	19,37

**Dimensions**

Hand wheel, butt-welded type, DN 10 – 100, PN 100 – 400



Hand wheel, flanged type, DN 10 – 100, PN 63 – 400



DN	PN	D mm	dp mm	L mm	Z mm	H mm	Hand wheel			Operation by ISO 5210			Remote control				
							D <sub>k</sub> mm	V <sub>1</sub> mm	m kg	OVL.	V <sub>8</sub> mm	m kg	d <sub>1</sub> mm	V <sub>5</sub> mm	V <sub>51</sub> mm	b <sub>5</sub> mm	m kg
10	100	14	10	150	12	34	200	234	5,2	F10/E	193	6	18	236	309	6	5,7
	160		10														
	250		9														
	320		8														
	400		7														
15	100	22	17	150	12	34	200	234	5,2	F10/E	193	6	18	236	309	6	5,7
	160		16														
	250		15														
	320		15														
	400	27	17														
20	100	27	23	160	16	48	250	280	8,6	F10/E	235	9	18	281	354	10	8,9
	160		21														
	250	30	20														
	320		18														
	400		17														
25	100	35	28	160	16	48	250	280	8,6	F10/E	235	9	18	281	354	10	8,9
	160		26														
	250		24														
	320		24														
	400	43	28														
32	100	43	36	210	20	66	400	376	20	F10/E F14/E	356 314	27 20	29	379	484	1,5	19,6
	160		34														
	250		31														
	320		28														
	400		27														
40	100	49	41	210	20	66	400	376	21,1	F10/E F14/E	356 314	27 20	29	379	484	1,5	19,6
	160		39														
	250		36														
	320		35														
	400	61	39														
50	100	61	52	250	36	83	500	450	33,2	F10/E F14/E	429 384	40 32	29	451	556	6	31,2
	160		49														
	250	64	45														
	320		45														
	400		49														
65/50	100	77	66	250	36	83	500	450	33,2	F10/E F14/E	429 384	40 32	29	451	556	6	31,2
	160		62														
	250		56														
	320		52														
	400		48														
80 100/80	100	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	160																
	250																
	320																
	400																

Notes: Dimensions of butt-welded type are by ČSN EN 131075, in case of requirement of another standard (EN, DIN, ANSI, GOST) the dimensions could be different.

\*) Nominal values on customer request.

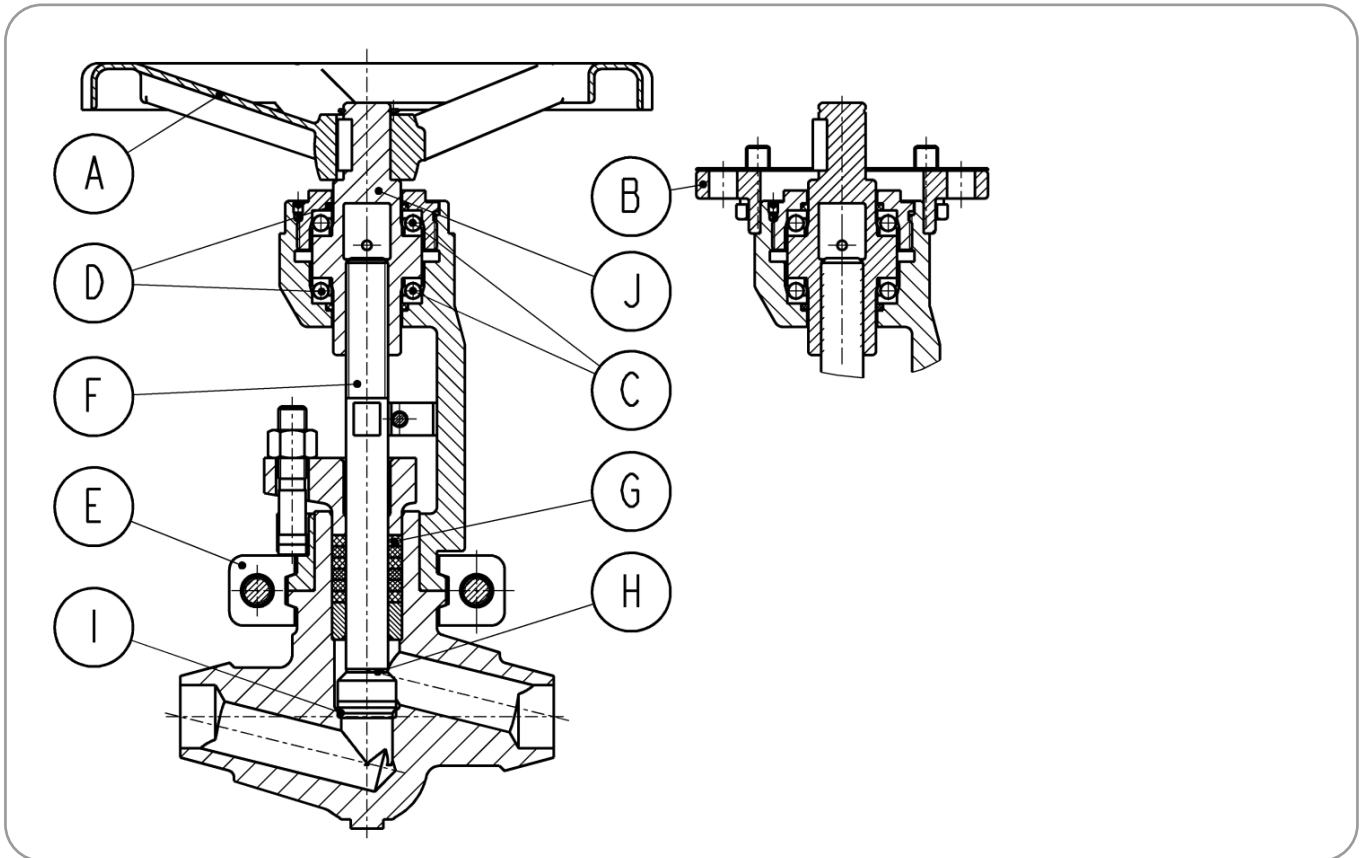


DN	PN	D <sub>1</sub> mm	L1 mm	V <sub>1</sub> mm		V <sub>8</sub> mm		m kg	
				Hand wheel	ISO 5210	Hand wheel	ISO 5210	Hand wheel	ISO 5210
10	63-160	100	210	234	193	7,4	8,2	9,5	10,3
	250	125	230						
	320	125	230						
	400	125	260						
15	63-160	105	210	234	193	7,6	8,4	10,2	11
	250	130	230						
	320	130	230						
	400	145	260						
20	63-100	130	230	280	235	12,6	13		
25	63-160	140	230	280	235	13,9	14,3	15,8	16,2
	250	150	260						
	320	160	260						
	400	180	300						
32	63-100	155	260	376	F10/E - 356	26,4	33,4		
40	63-100	170	260	376	F10/E - 356 (F14/E - 314)	28,1	35,1 (28,1)	28,8	35,8 (28,8)
	160	170	260						
	250	185	300						
	320	195	300						
	400	220	350						
50	63	180	300	450	F10/E - 429 (F14/E - 384)	42,3	49,1 (41,1)	43,8	50,6 (42,6)
	100	195	300						
	160	195	300						
	250	200	350						
	320	210	350						
	400	235	400						
65/50	63	205	340	450	F10/E - 429 (F14/E - 384)	44,4	51,2 (43,2)	46,9	53,7 (45,7)
	100	220	340						
	160	220	340						
	250	230	400						
	320	255	400						
	400	290	450						
80 100/80	63	*	*	*	*	*	*	*	*
	100								
	160								
	250								
	320								

Notes: Dimensions of flanged type are by ČSN EN 1092-1, in case of requirement of another standard (EN, DIN, GOST) the dimensions could be different

\*) Nominal values on customer request

### Advantages of construction



<b>A</b>	<b>Non-rising hand wheel:</b> Advantage in case of lack of space
<b>B</b>	<b>Identical connection for actuators and gears according to ISO 5210:</b> Possibility to use control elements of different producers
<b>C</b>	<b>Stem nut placed in two rolling bearings:</b> Facilitate the operation
<b>D</b>	<b>Dust rings:</b> Protected space of the bearings against dirt
<b>E</b>	<b>Socket of the connection „body – yoke“:</b> Enables fast mounting and dismounting
<b>F</b>	<b>Shaft rising, non-turning:</b> Reliable sealing of shaft in gland
<b>G</b>	<b>Stem gland packing, expanded graphite:</b> Reliable sealing, ecology
<b>H</b>	<b>Shaft with plug made of one piece:</b> Enables dismounting of yoke, incl. gland
<b>I</b>	<b>Sealing surfaces hardfaced:</b> Long-term life time, resistance against wearing-out
<b>J</b>	<b>Stem nut in one design:</b> Enables the change of operation type without dismounting of stem nut