

Data sheet

Underground ball valves - DE Valves for pre-insulation

Description



DE Valves underground ball valves are designed for district heating systems and other closed loop water systems where the water is treated to avoid internal corrosion. Having a fully welded body, the valves meet the requirements for valves used in district heating and district cooling systems and offer the highest degree of security.

The valve design makes them ideal for underground installation due to:

- the valve body design makes them resistant to high axial forces and ensures a controlled operating torque;
- designed flow in the valve is optimized. This means increased capacity, reduced flow resistance and thus lower pump energy cost;
- optimal tightness and long lifetime due to design and material selection in ball seal and stem seal (Carbon reinforced PTFE);
- the valves are maintenance free

Main data:

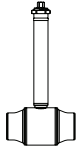
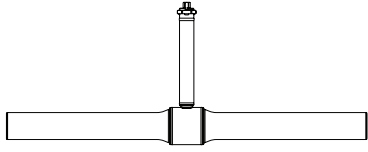
- DN 20-600
- $k_{vs} = 15-37500 \text{ m}^3/\text{h}$
- PN 25
- Temperature: 0 ... 180 °C
- Medium: Circulation water / glycolic water up to 50 %
- Min. storage and transport temperature: -40 °C

Approvals and norms:


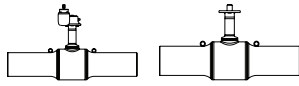
- 100 % final inspection. Leak and shell test as well as dimension and functionality test is performed on each and every valve according to applicable standard (EN 12266 part 1 P10-P11-P12 & part 2 F20).
- Designed, produced and tested according to EN488:2011

Assortment
US WW

Reduced Bore with hexagon stem

		 Short		 Long	
DN	PN	Length (mm)	Code No.	Length (mm)	Code No.
20	25	150	90020534	1500	90020584
25		230	90025534	1500	90025584
32		260	90032534	1500	90032584
40		260	90040534	1500	90040584
50		300	90050534	1500	90050584
65		300	90065534	1500	90065584
80		300	90080534	1500	90080584
100		290	90100534	1500	90100584
125		315	90125534	1500	90125584
150		340	90150534	1500	90150584
200		390	90200534	1500	90200584
250		530	90250534	1500	90250584
300		660	90300534	1800	90300584
350		760	90350534	-	-

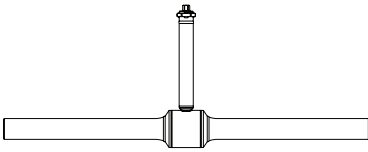
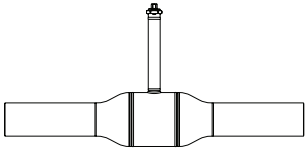
Reduced Bore DE Valves-US WW welding with gear flange / worm and bevel gear

		 Short			 Long		
DN	PN	Length (mm)	Code No.		Length (mm)	Code No.	
			Valve with worm and bevel gear	Valve with gear flange		Valve with worm and bevel gear	Valve with gear flange
125	25	-	-	-	1500	90125884	90125084
150					1500	90150884	90150084
200					1500	90200884	90200084
250					1500	90250884	90250084
300					1800	90300884	90300084
350		760	90350834	90350034	2200	90350884	90350084
400		820	90400834	90400034	2200	90400884	90400084
450		1220	90450834	90450034	2200	90450884	90450080
500		1220	90500834	90500034	2200	90500884	90500084
600		1500	90600834	90600034	2200	90600884	90600084

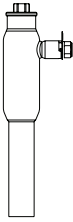
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Ordering (continued)
US WW

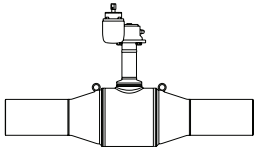
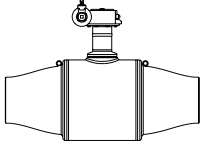
Full Bore with hexagon stem

			
DN	PN	Length (mm)	Code No.
25	25	1500	70025584
32		1500	70032584
40		1500	70040584
50		1520	70050584
65		1510	70065584
80		1550	70080584
			
DN	PN	Length (mm)	Code No.
100	25	1500	70100515
125		1500	70125515
150		1500	70150515
200		1500	70200515
250		1800	70250518

Service / air vent valves-

		
DN	Length (mm)	Code No.
20	410	97020079
25	410	97025079
32	410	97032079
40	410	97040079
50	500	97050079
65	500	97065079
80	500	97080079
100	500	97100079

Full Bore DE Valves-US FB WW welding with worm bevel gear

			
DN	PN	Length (mm)	Code No.
125	25	1500	70125815
150		1500	70150815
200		1500	70200815
250		1800	70250818
300		1800	70300818
			
DN	PN	Length (mm)	Code No.
400	25	1700	70400817

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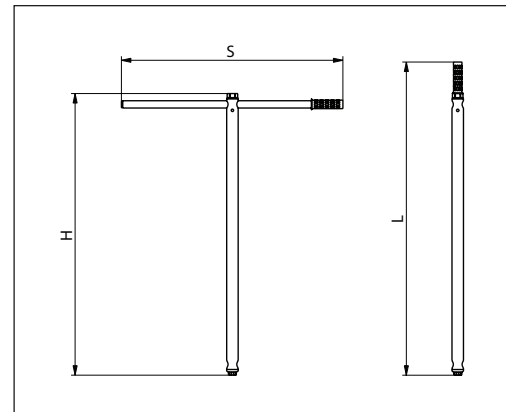
Ordering (continued)

Accessories **T-key**

Length	H	S	Code No.
mm			
1140	1040	820	80200143
1640	1540		80200543

For operation of DE Valves ball valves for underground installation with hexagon stem.

The T-key has a 19mm hexagon connection on one side and 27mm hexagon connection on the other side. It is used for operation of underground ball valves with hexagon stem up to DN200 reduced bore or DN150 full bore. It is also used to operate worm bevel gears.



Technical data
Reduced bore

DN		20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
K _{v5} value	m ³ /h	15	34	52	96	184	200	470	640	1080	1900	2300	5100	9100	7000	10400	26300	23700	14300
Max. Axial Load	kN	41	60	86	99	139	177	228	332	408	547	804	1116	1484	1632	2098	2364	2631	3564
Nominal pressure	PN	25																	
Temp. range	°C	0 ... 180																	
Medium		Circulation water / glycolic water up to 50 %																	

Full bore

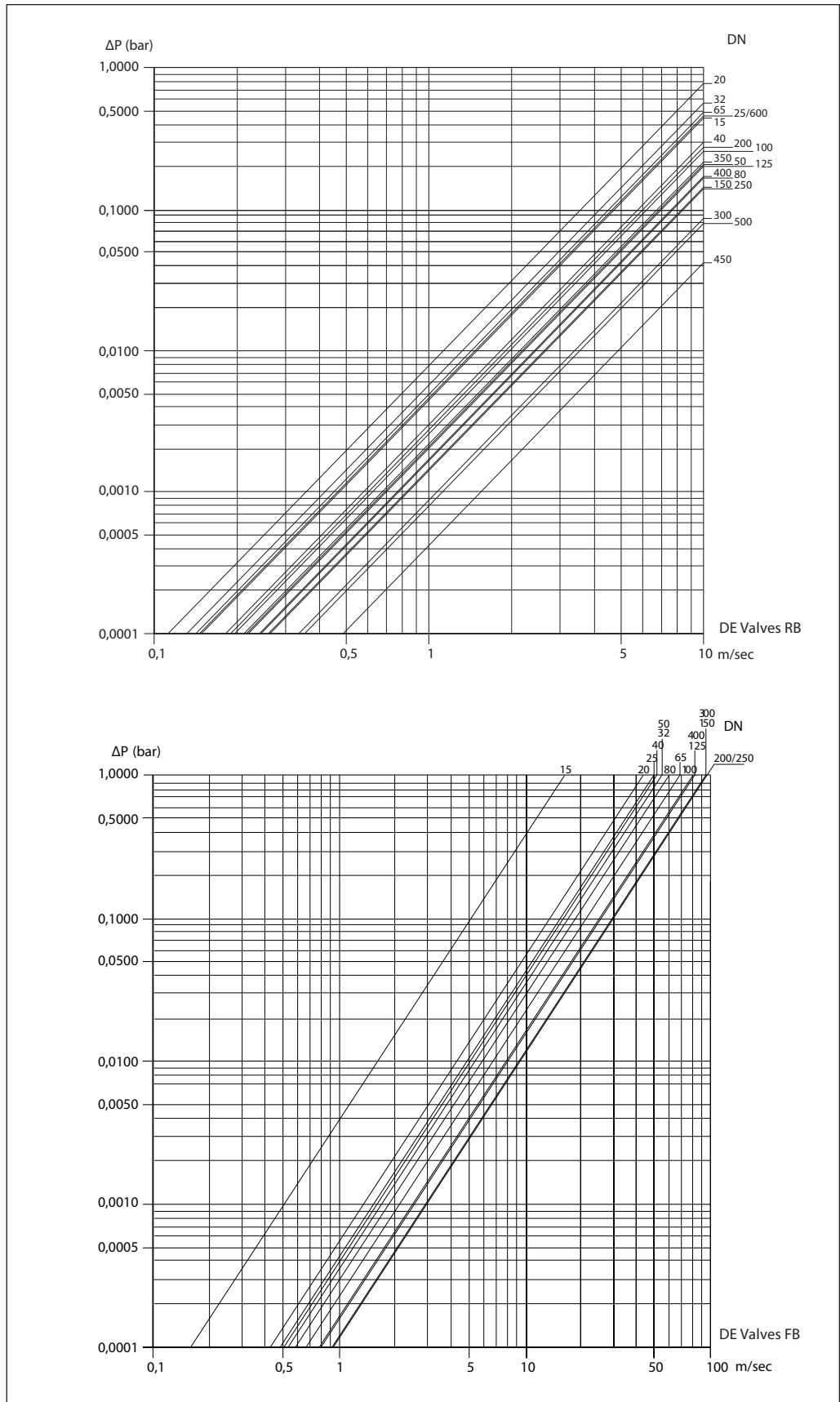
DN		25	32	40	50	65	80	100	125	150	200	250	300	400
K _{v5} value	m ³ /h	90	160	235	395	820	1100	2300	3700	6100	11000	17500	24000	37500
Max. Axial Load	kN	60	86	99	139	177	228	332	408	547	804	1116	1484	2098
Nominal pressure	PN	25												
Temp. range	°C	0 ... 180												
Medium		Circulation water / glycolic water up to 50 %												

Material

Shell (Valve body)	Weldable mild steel* e.g. P235GH / Mat. no. 1.0345 (~ St. 37.0)
Welding ends	Weldable mild steel* e.g. P235GH / Mat. no. 1.0345 (~ St. 37.0)
Valve Stem	Acid proof steel* e.g. X2CrNiMo17122 (EN 10272) / W.nr. 1.4404 (~ AISI 316L)
Stem extension pipe	Acid proof steel* e.g. X2CrNiMo17132 (EN 10217-7) / W.nr. 1.4404 (~ AISI 316L)
Ball	Stainless steel e.g. X5CrNi18-10 (EN 10088) / W.nr. 1.4301 (~ AISI 304)
Seat rings	Carbon reinforced PTFE
Stem sealings	Carbon reinforced PTFE
Gear box	Cast iron with stainless steel trim

Designed, produced and tested according to EN488:2011

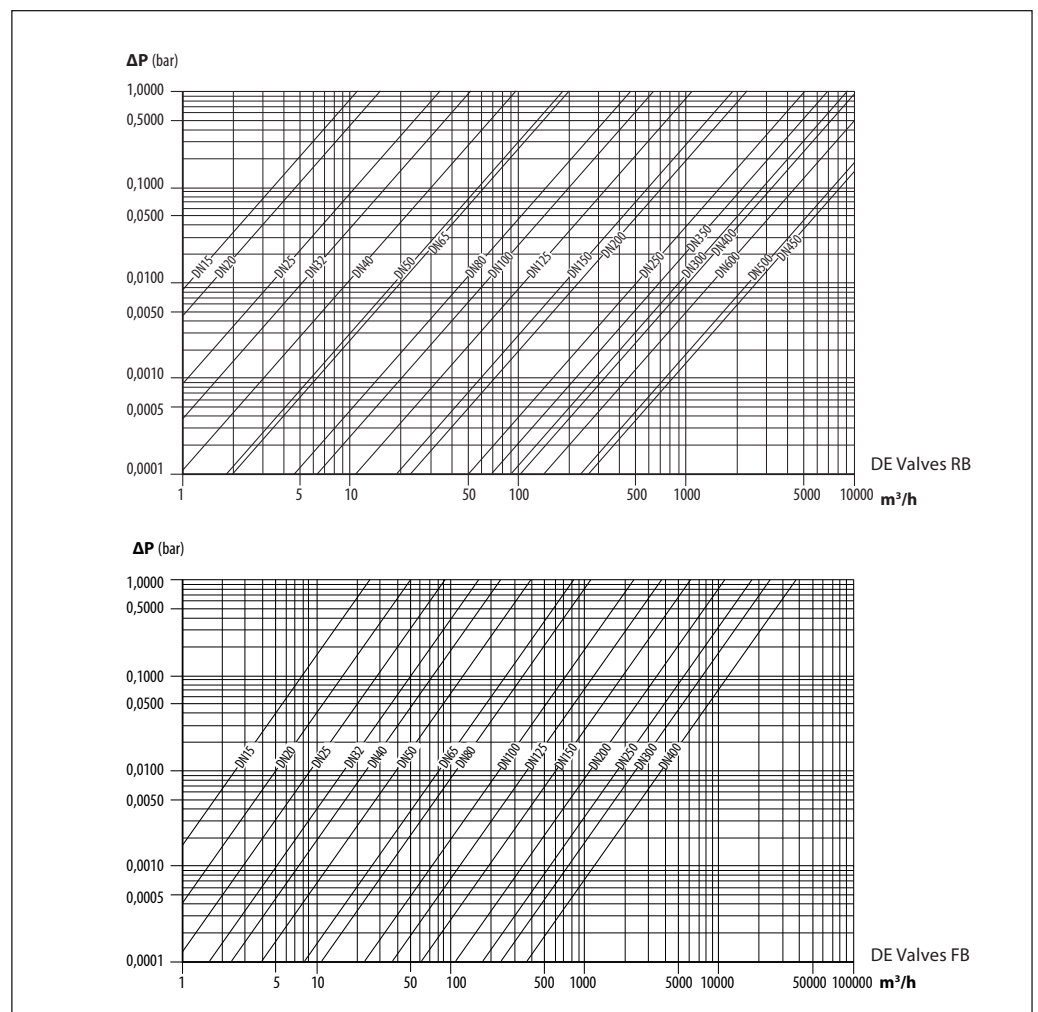
Technical data
Pressure drop/velocity



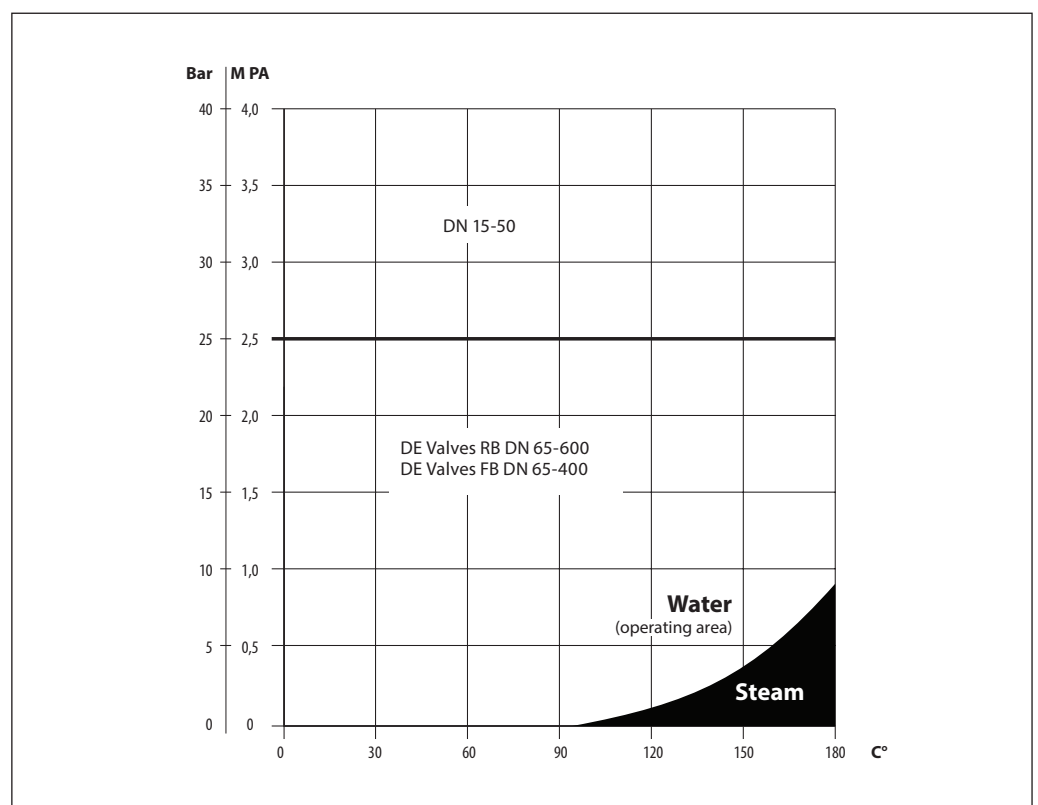
DE Valves RB = reduced bore
DE Valves FB = full bore

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Technical data (continued)
Pressure drop/flow

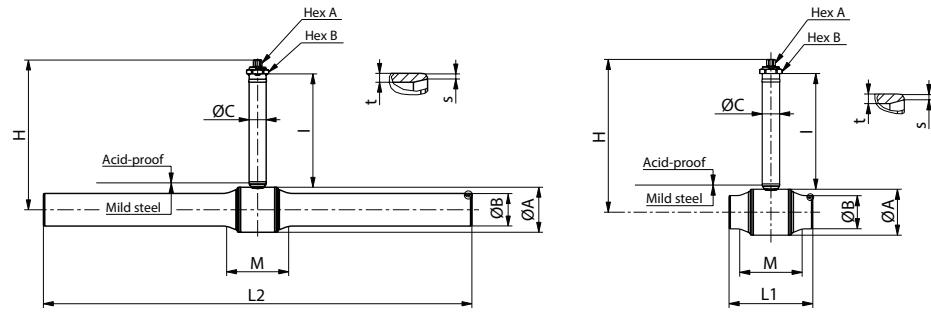


Pressure/temperature



Dimensions

DE Valves-US WW welding

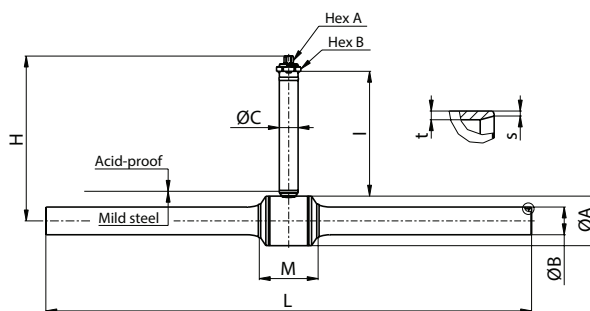


DN	L1	L2	M	ØA	ØB	t	s	H	I	ØC	Hex A	Hex B	Weight	
													L1	L2
mm													kg	
20	230	1500	90	48,3	26,9	4	3,2	480	435	48,3	19	-	3,4	6,5
25	230		90	48,3	33,7	4	3,2	480	435	48,3	19	-	3,4	7,5
32	260		100	60,3	42,4	4,5	3,2	485	430	48,3	19	-	4,5	9,5
40	260		110	76,1	48,3	5	3,2	495	435	48,3	19	-	5,4	11,4
50	300		120	88,9	60,3	5	3,2	500	435	48,3	19	-	6,3	16
65	300		150	114,3	76,1	5	3,2	505	430	48,3	19	-	8,1	19,6
80	300		180	133	88,9	5,6	3,2	515	430	48,3	19	-	9,8	23,6
100	290		250	159	114,3	6,3	3,6	525	400	60,3	27	70	15,6	36,1
125	315		270	193,7	139,7	6,3	4	545	395	60,3	27	70	22,7	46,2
150	340		290	219,1	168,3	7,1	4,5	565	410	60,3	50	70	34	63,9
200	390	340	273	219,1	8	4,5	585	395	60,3	50	90	49	70,5	
250	530	480	355,6	273	8	5	625	375	88,9	36	90	110	165	
300	660	1800	610	457	323,9	8	5,6	665	350	101,6	50	90	198	269
350	760	-	525	457	355,6	8	5,6	665	350	101,6	50	90	210	-

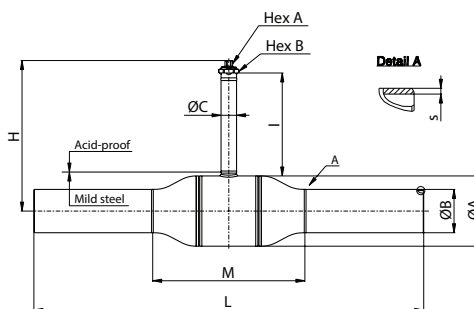
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Dimensions (continued)

DE Valves-US FB WW welding



DN	L	M	ØA	ØB	t	s	H	I	ØC	Hex A	Hex B	Weight (kg)
25	1500	125	60,3	33,7	4	2,6	485	430	48,3	19	-	8
32	1500	135	76,1	42,4	4,5	2,6	495	430	48,3	19	-	9
40	1500	140	88,9	48,3	5	2,6	500	430	48,3	19	-	11
50	1520	150	114,3	60,3	5	2,9	505	430	48,3	19	-	16
65	1525	180	133	76,1	5	2,9	515	425	48,3	19	-	20
80	1560	200	159	88,9	5,6	3,2	525	400	60,3	27	70	32

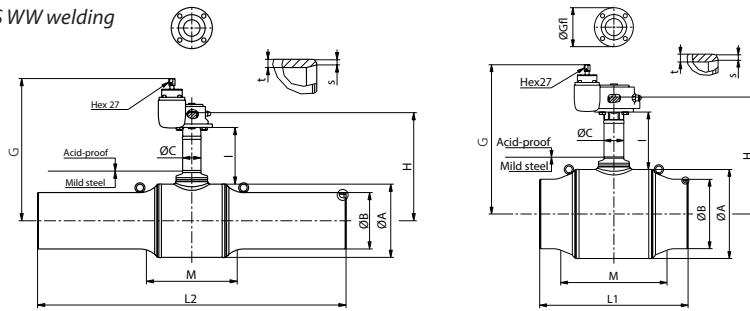


DN	L	M	ØA	ØB	s	H	I	ØC	Hex A	Hex B	Weight (kg)
100	1500	455	193,7	114,3	3,6	545	395	60,3	27	70	36
125	1500	515	219,1	139,7	4	565	405	60,3	27	70	52
150	1500	610	273	168,3	4,5	585	400	60,3	27	70	75
200	1500	745	355,6	219,1	4,5	625	375	88,9	36	90	151
250	1800	1100	457	273	5	665	345	101,6	50	90	260

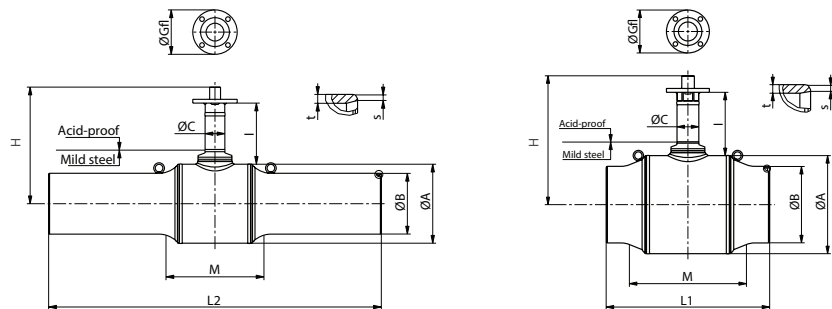
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Dimensions (continued)

DE Valves-US WW welding



DN	L1	L2	M	ØA	ØB	t	s	H	G	I	ØC	ØGfl	Weight		
													L1	L2	
(mm)														kg	
125		1500	270	193,7	139,7	6,3	3,6	375	545	220	60,3	150		72	
150		1500	290	219,1	168,3	7,1	4	395	565	225	60,3	150		90	
200	-	1500	340	273	219,1	8	4,5	455	625	260	60,3	150	-	97	
250		1500	480	355,6	273	8	5	525	690	275	88,9	200		191	
300		1800	610	457	323,9	8	5,6	600	765	295	101,6	200		315	
350	760	2200	525	457	355,6	8	5,6	600	765	295	101,6	200	245	300	
400	820	2200	715	521	406,4	8,8	6,3	645	800	300	139,7	300	355	420	
450	1225	2200	1130	711	457	10	6,3	780	905	305	168,3	300	800	900	
500	1220	2200	1130	711	508	11	6,3	780	905	305	168,3	300	815	895	
600	1500	2200	1130	711	610	12,5	7,1	780	905	305	168,3	300	910	985	

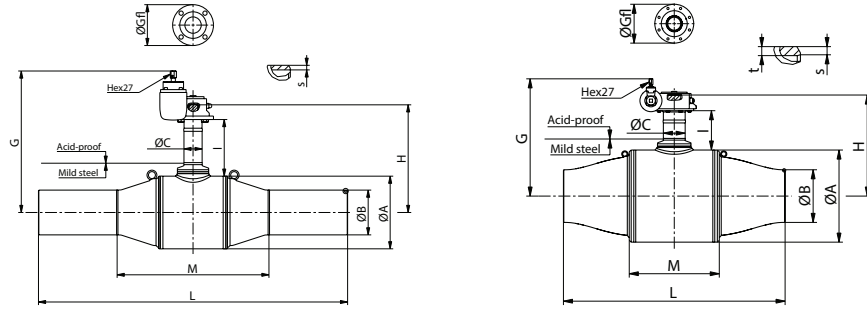


DN	L1	L2	M	ØA	ØB	t	s	H	I	ØC	ØGfl	Weight	
												L1	L2
mm												kg	
125		1500	270	193,7	139,7	6,3	3,6	375	220	60,3	150		45
150		1500	290	219,1	168,3	7,1	4	395	225	60,3	150		62
200	-	1500	340	273	219,1	8	4,5	455	260	60,3	150	-	70
250		1500	480	355,6	273	8	5	525	275	88,9	200		165
300		1800	610	457	323,9	8	5,6	600	295	101,6	200		270
350	760	2200	525	457	355,6	8	5,6	600	295	101,6	200	220	255
400	820	2200	715	521	406,4	8,8	6,3	645	300	139,7	300	340	375
450	1225	2200	1130	711	457	10	6,3	780	305	168,3	300	770	830
500	1220	2200	1130	711	508	11	6,3	780	305	168,3	300	770	825
600	1500	2200	1130	711	610	12,5	7,1	780	305	168,3	300	840	915

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Dimensions (continued)

DE Valves-US FB WW welding

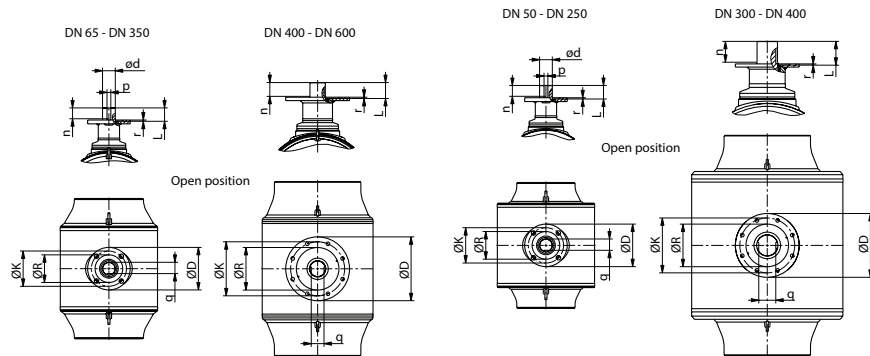


DN 125-300

DN 400

DN	L	M	ØA	ØB	t	s	H	I	ØC	G	ØGfl	Weight (kg)
	mm											
125	1500	515	219,1	139,7	-	4,0	400	230	60,3	565	150	81
150	1500	610	273	168,3	-	4,5	460	265	60,3	625	150	105
200	1500	745	355,6	219,1	-	4,5	525	285	88,9	690	200	177
250	1800	1110	457	273	-	5,0	600	295	101,6	765	200	304
300	1800	1235	521	323,9	-	5,6	645	295	139,7	800	300	426
400	1705	695	711	406,4	8,8	6,3	780	305	168,3	905	300	895

Valve top and gear flange



Reduced bore

Full bore

DN	Gear flange	L	d	n	p	q	r
		mm					
125	F10/F12	50	30	46	8	26	4
150		50	30				
200		50	30				
250	F16	60	50	48	14	44,5	5
300		65	60	51	18	53,2	6
350	65	60					
400	F25	75	75	60	20	60	6
450		115	100				
500		115	100	91	28	80	
600		115	100				

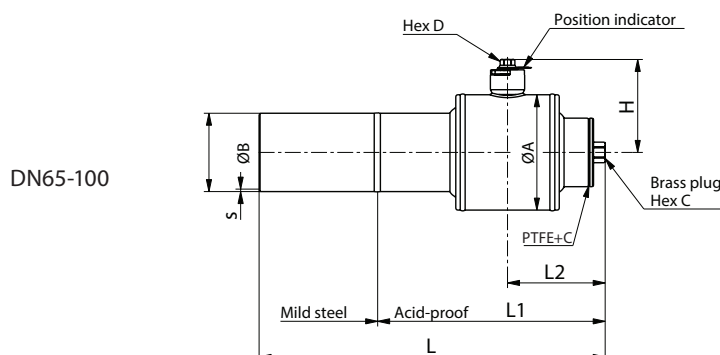
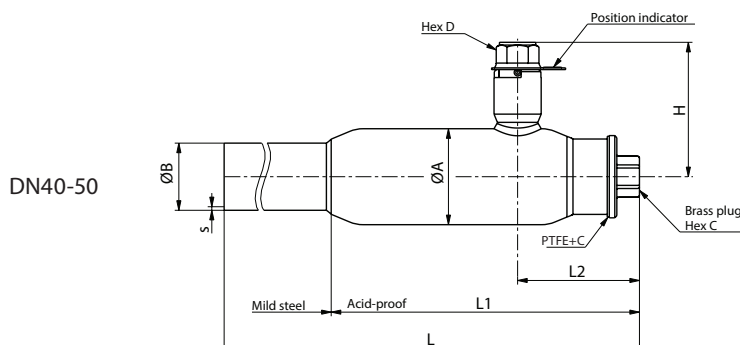
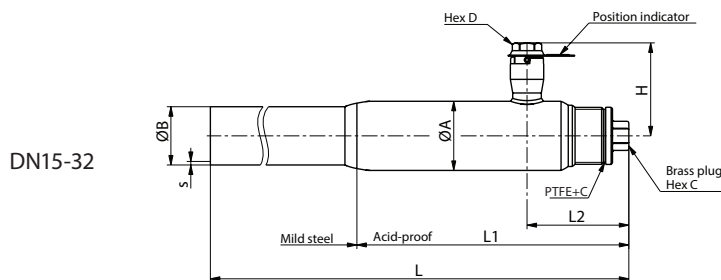
DN	Gear flange	L	d	n	p	q	r
		mm					
125	F10/F12	50	30	46	8	26	4
150		50	30				
200	F16	50	30	48	14	44,5	5
250		60	50	51	18	53,2	
300	F25	65	60	60	20	60	6
350		65	60	91	28	80	
400		75	75				
450	-	115	100	-	-	-	-
500		115	100				
600		115	100				

Gear flange	No. of bolt holes	Diameter of bolt holes	D	K	R
			mm		
F10	4	11	125	102	70
F12		13	150	125	85
F16		21	210	165	130
F25	8	17	300	254	200
F30		21	350	298	230

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Dimensions (continued)

Service / Air vent valves



DN	L	L1	L2	ØA	ØB	s	H	Hex C	Hex D	Weight (kg)
20	410	195	65	42,4	26,9	2,6	55	19	19	1,8
25	410	190	70	48,3	33,7	2,6	60	19	19	1,9
32	410	195	70	51	42,4	2,6	65	19	19	2,1
40	410	225	90	70	48,3	2,6	100	27	27	3,1
50	500	230	100	76,1	60,3	2,9	105	27	27	4,1
65	500	280	105	114,3	76,1	2,9	115	19	19	6,5
80	500	310	130	133	88,9	3,2	125	19	19	8,6
100	500	330	140	168,3	114,3	3,6	140	19	19	14,5

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