



Application

Double-eccentric butterfly valves are industrial valves, which are designed to fully open or close the passage of the working medium flowing through a pipeline. They can also be used for flow-control purposes. However, a 100% tightness of the valve cannot be guaranteed in a long-term use for control purposes.

Working medium

- waste and service water
- drinking water
- hot water
- steam
- non-aggressive liquids and gases
(natural gas, CO-gas, petroleum products, etc.)

Butterfly valves is possible to deliver with surface protection which is done by coverage with plastic material (rilsan, halar). This surface protection together with the use of stainless steel material is widening the usage of butterfly valves for chemically aggressive or abrasive media and sea water.

Maximum working temperature

A maximum working temperature of the butterfly valve depends on the packing material used.

Technical description

Double eccentricity (Fig. A)

1. the operating shaft axis is eccentric to the packing axis of the disc
2. the operating shaft axis is eccentric to the flow axis

Disc is clamped on the operating shaft and pivot, which are pivoted in self-lubricated friction bearings (Fig. B).

The shaft is sealed by gland packing (Fig. B).

The pivot is sealed by flat gasket.

The gasket bears on the conical area of the stainless steel seat, and is together with the disc pushed by the media pressure onto the conical seat, and by this is an absolute tightness reached (Fig. C). The tightness is restricted when the media flow is from the opposite side. To see the tightness grade is upon request.

For DN 80-125 is the major packing ring attached in the body by the thrust ring. In the „closed“ position, the disc is pushed against the seat by its conical area due to the pressure caused by the working medium, which ensures a total tightness in that direction (Fig. D). For all the valve variants, however, the valve tightness is limited in the opposite flow direction. For the leakage class in opposite direction please contact manufacturer.

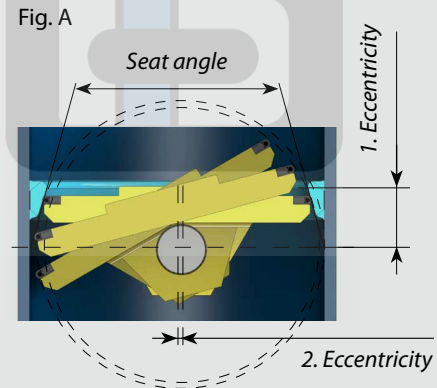
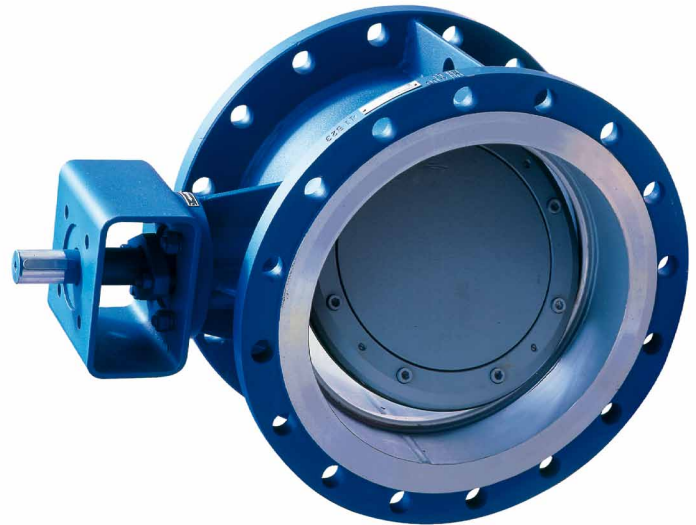


Fig. B

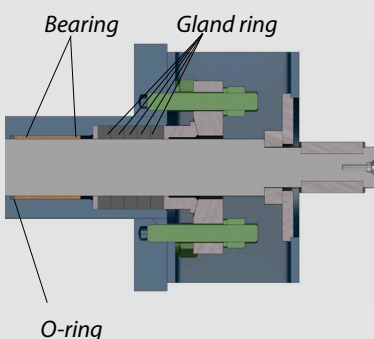


Fig. C

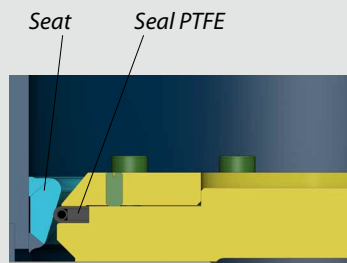
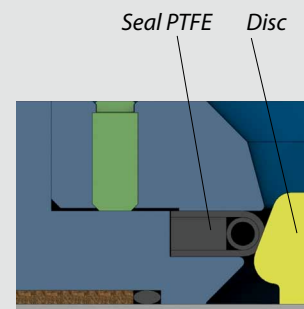


Fig. D





Operation

- manual gear-box
- electric actuator
- pneumatic or hydraulic actuator
- remote control from stand
- lever with a counterweight for closing the valve
- hydraulic cylinder for opening the valve

Testing

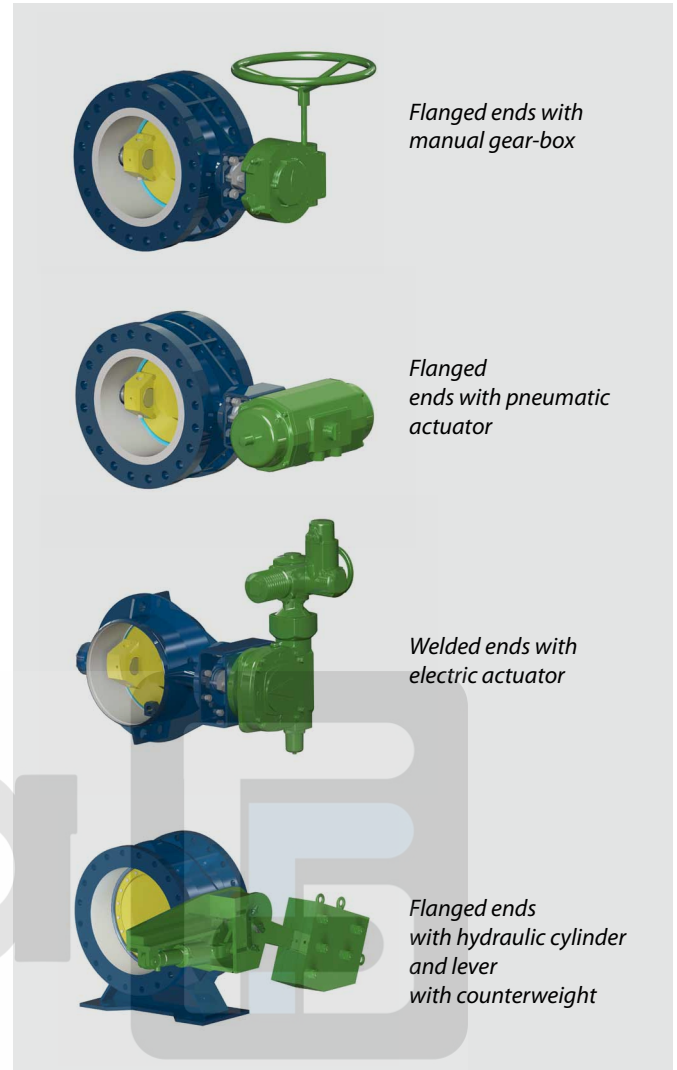
The valves are tested according to EN 12 266-1/ISO 5208.

Connection to piping

- **flanged ends** acc. to EN 1092-1, face to face dimensions acc. to EN 558-1, Series 14
- **wafer type** acc. to EN 1092-1, face to face dimensions acc. to EN 558-1, Series 16
- **welded ends** acc. to EN 12 627, eventually acc. to the customer's requirement face to face dimension acc. to EN 12 982, Series 14 Other face to face and connecting dimensions are acc. to the customer's requirement, e.g. ANSI, GOST.

Installation

The butterfly valves can be mounted into horizontal, vertical or inclined pipeline so that the arrow stamped on the valve body corresponds with the direction of the tightness (arrow points from higher pressure to lower when the disc is closed), and the rotating axe of the disc is in a horizontal position. The bolt type at the pivot area is also very important. When there is a butterfly valve with electric actuator it is important to abide the actuator's manufacturer.



Production range

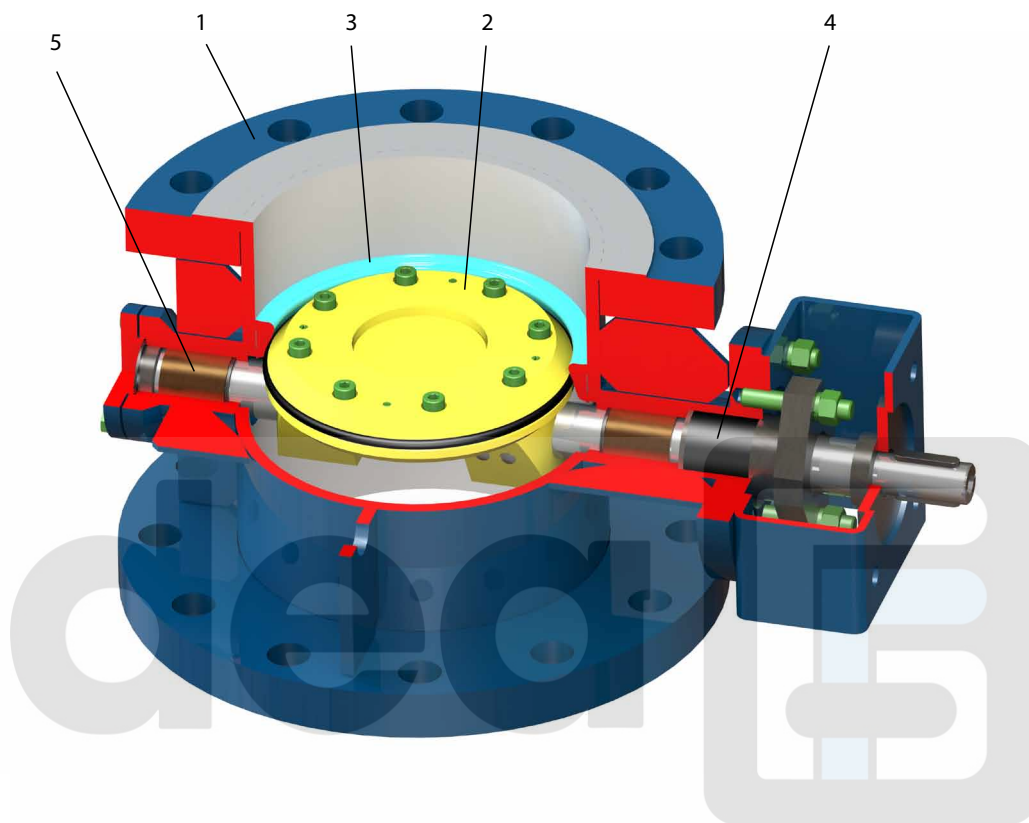
DN	Flanged ends						Welded ends						Wafer type						Wafer type design metal x metal					
	PN						PN						PN						PN					
	2,5	6	10	16	25	40	2,5	6	10	16	25	40	2,5	6	10	16	25	40	6	10	16	25	40	
80																								
100																								
125																								
150		*	*	*	*	*		*	*	*	*	*		*	*	*	*	*		*	*	*	*	*
200		*	*	*	*	*		*	*	*	*	*		*	*	*	*	*		*	*	*	*	*
250		*	*	*	*	*		*	*	*	*	*		*	*	*	*	*		*	*	*	*	*
300		*	*	*	*	*		*	*	*	*	*		*	*	*	*	*		*	*	*	*	*
350		*	*	*	*	*		*	*	*	*	*		*	*	*	*	*		*	*	*	*	*
400		*	*	*	*	*		*	*	*	*	*		*	*	*	*	*		*	*	*	*	*
500		*	*	*	*	*		*	*	*	*	*		*	*	*	*	*		*	*	*	*	*
600		*	*	*	*	*		*	*	*	*	*		*	*	*	*	*		*	*	*	*	*
700		*	*	*	*	*		*	*	*	*	*		*	*	*	*	*		*	*	*	*	*
800		*	*	*	*	*		*	*	*	*	*		*	*	*	*	*		*	*	*	*	*
1000		*	*	*	*	*		*	*	*	*	*		*	*	*	*	*		*	*	*	*	*
1200	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1400	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
1600	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
2000	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

Rubber sealed butterfly valves with double-eccentricity type L32.7 are produced in the same production range as type L32.6.



DN 150-2000 • PN 2,5-40 • Tmax +250 °C
 Design: PTFE seal
 DN 150-1200 • PN 2,5-40 • Tmax +350 °C
 Design: metal x metal seal

Connection: EN 1092-1 FLANGED ENDS
 EN 12 627 WELDED ENDS



Material

Position	Component	Standard acc. to EN		Material variants acc. to EN		Material variants acc. to ASTM		
		Carbon steel		Stainless steel		Carbon steel		Stainless steel
		-29°C - +250°C*	-46°C - +25,0°C*	-50°C - +250°C*		-29°C - +250°C*	-46°C - +250°C*	-50°C - +250°C*
1	Body	1.0577,1.0425	1.0566	1.4541		A105	A350LF2	A182 F316
2	Disc	1.0577,1.0425	1.0566	1.4541		A105	A350LF2	A182 F316
3	Seat	1.4541, 1.4301	1.4541, 1.4301	1.4541, 1.4301		A182 F304	A182 F304	A182 F316
4	Shaft	1.4021	1.4021	1.4541,1.4571		A182 F6	A182 F6	A182 F316
5	Pivot	1.4021	1.4021	1.4541,1.4571		A182 F6	A182 F6	A182 F316

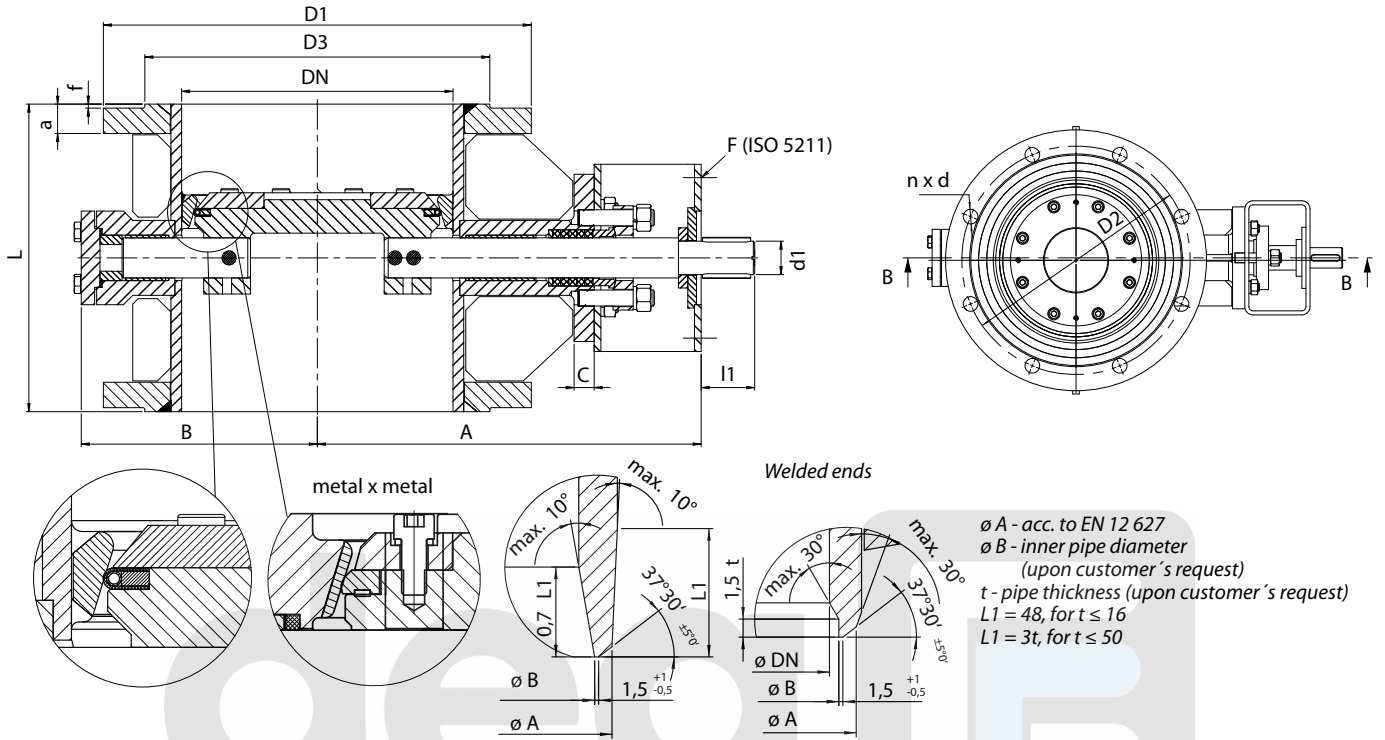
*Temperature application depends on the seal of valve and pressure-temperature material characteristic.

Seal	Identification	Working temperature
Soft seal	PTFE + 15% C, graphite with stainless steel ring and spring NBR nitrile-butadien rubber EPDM ethylene-propylene rubber FPM fluorine rubber VITON GF	from -50 °C to +250 °C from -20 °C to + 80 °C from -40 °C to +130 °C from -20 °C to +180 °C from -20°C to +180°C
Metal x metal seal	Metal (undivided or lamellar)	from -40 °C to +350 °C



DN 150-2000 • PN 2,5-40 • Tmax +250 °C
 Design: PTFE seal
 DN 150-1200 • PN 2,5-40 • Tmax +350 °C
 Design: metal x metal seal

Connection: EN 1092-1 FLANGED ENDS
 EN 12 627 WELDED ENDS



PN 2,5

DN	A	B	C	L*	F	d1	l1	Flanged ends							
								D1	D2	D3	a	f	d	n	kg
1200	1180	800	30	630	25	75	110	1375	1320	1280	40	2	30	32	1250
1400	1150	890	30	710	25	80	110	1575	1520	1480	44	2	30	36	1640
1600	1270	1100	30	790	25	100	145	1790	1730	1690	48	2	30	40	2840
2000	1500	1300	35	950	30	140	165	2190	2130	2090	54	2	30	48	4680

PN 6

DN	A	B	C	L*	F	d1	l1	Flanged ends							
								D1	D2	D3	a	f	d	n	kg
150	253	146	15	210	10	25	40	265	225	202	20	2	18	8	39
200	290	180	15	230	10	25	40	320	280	258	22	2	18	8	45
250	320	210	20	250	12	30	40	375	335	312	24	2	18	12	54
300	335	230	20	270	12	30	50	440	395	365	24	2	22	12	82
350	360	260	20	290	12	35	50	490	445	415	26	2	22	12	118
400	400	295	20	310	12	35	50	540	495	465	28	2	22	16	164
500	510	360	25	350	14	40	70	645	600	570	30	2	22	20	240
600	560	415	25	390	16	50	85	755	705	670	32	2	26	20	370
700	600	460	25	430	16	50	70	860	810	775	32	2	26	24	520
800	770	530	25	470	16	50	90	975	920	880	34	2	30	24	710
1000	830	660	30	550	25	80	110	1175	1120	1080	36	2	30	28	1090
1200	1030	800	30	630	25	80	110	1405	1340	1295	40	2	33	32	1310
1400	1150	890	30	710	30	100	110	1630	1560	1510	44	2	36	36	1700
1600	1300	1100	35	790	40	140	145	1830	1760	1710	48	2	36	40	3300
2000	1500	1300	35	950	40	160	165	2265	2180	2125	54	2	42	48	4800

* face to face dimensions for welded ends are in compliance with flange connections (can be different upon customer's request)

Pipe dimensions øD x t (øD – outside pipe diameter; t – the pipe thickness) for welding are given by customer.



DN 150-2000 • PN 2,5-40 • Tmax +250 °C

Design: PTFE seal

DN 150-1200 • PN 2,5-40 • Tmax +350 °C

Design: metal x metal seal

Connection:  EN 1092-1 FLANGED ENDS

 EN 12 627 WELDED ENDS

PN 10

DN	A	B	C	L*	F	d1	l1	Flanged ends							
								D1	D2	D3	a	f	d	n	kg
150	253	146	15	210	10	25	40	285	240	212	24	2	22	8	40
200	290	180	15	230	10	25	40	340	295	268	24	2	22	8	45
250	320	210	20	250	12	30	40	395	350	320	26	2	22	12	60
300	335	230	20	270	12	30	50	445	400	370	26	2	22	12	80
350	360	260	20	290	12	35	50	505	460	430	28	2	22	16	100
400	400	295	20	310	12	35	50	565	515	482	32	2	26	16	140
500	510	360	25	350	14	40	70	670	620	585	38	2	26	20	235
600	560	415	25	390	16	50	85	780	725	685	42	2	30	20	365
700	620	485	25	430	16	65	90	895	840	800	42	2	30	24	505
800	700	550	25	470	16	70	90	1015	950	905	44	2	33	24	700
1000	850	680	30	550	25	80	110	1230	1160	1110	44	2	36	28	1090
1200	940	760	30	630	25	100	140	1455	1380	1330	46	2	39	32	1280
1400	1280	980	40	710	40	140	145	1675	1590	1535	48	2	42	36	2790
1600	1620	1080	40	790	40	140	165	1915	1820	1760	58	2	48	40	3690
2000	1820	1350	40	950	40	160	240	2325	2230	2170	64	2	48	48	3990

PN 16

DN	A	B	C	L*	F	d1	l1	Flanged ends							
								D1	D2	D3	a	f	d	n	kg
150	253	146	15	210	10	25	40	285	240	212	24	2	22	8	46
200	265	175	15	230	10	25	40	340	295	268	26	2	22	12	46
250	315	205	20	250	12	30	50	405	355	320	29	2	26	12	62
300	350	245	20	270	12	35	50	460	410	378	32	2	26	12	95
350	380	275	20	290	12	40	50	520	470	438	35	2	26	16	127
400	455	310	25	310	14	40	70	580	525	490	38	2	30	16	174
500	520	375	25	350	16	50	90	715	650	610	46	2	33	20	255
600	620	435	30	390	25	65	90	840	770	725	52	2	36	20	392
700	670	490	30	430	25	70	110	910	840	795	52	2	36	24	550
800	750	565	30	470	25	85	130	1025	950	900	54	2	39	24	745
1000	865	700	30	550	25	100	140	1255	1170	1115	54	2	42	28	1260
1200	1000	810	35	630	35	100	160	1485	1390	1330	58	2	48	32	1700
1400	1280	980	40	710	40	140	220	1685	1590	1530	58	2	48	36	2890
1600	1620	1080	40	790	40	160	240	1930	1820	1750	64	2	56	40	4030

PN 25

DN	A	B	C	L*	F	d1	l1	Flanged ends							
								D1	D2	D3	a	f	d	n	kg
150	253	146	15	210	10	25	50	300	250	218	30	2	26	8	53
200	290	185	20	230	12	25	50	360	310	278	32	2	26	12	55
250	325	225	20	250	12	30	60	425	370	335	35	2	30	12	71
300	350	250	20	270	12	35	75	485	430	395	38	2	30	16	109
350	440	295	25	290	14	40	80	555	490	450	42	2	33	16	155
400	475	330	25	310	16	50	80	620	550	505	46	2	36	16	208
500	535	395	30	350	25	55	110	730	660	615	56	2	36	20	298
600	660	460	30	390	25	70	110	845	770	720	68	2	39	20	525
700	690	505	30	430	25	85	110	960	875	820	68	2	42	24	640
800	805	580	30	470	30	100	140	1085	990	930	70	2	48	24	860
1000	1000	800	35	550	35	120	160	1320	1210	1140	70	2	56	28	1500
1200	1150	910	40	630	40	140	220	1530	1420	1350	70	2	56	32	2290
1400	1280	980	40	710	40	160	240	1755	1640	1560	76	2	62	36	3690

* face to face dimensions for welded ends are in compliance with flange connections (can be different upon customer's request)

Pipe dimensions $\varnothing D \times t$ ($\varnothing D$ – outside pipe diameter; t – the pipe thickness) for welding are given by customer.



DN 150-2000 • PN 2,5-40 • Tmax +250 °C
 Design: PTFE seal
 DN 150-1200 • PN 2,5-40 • Tmax +350 °C
 Design: metal x metal seal

Connection: EN 1092-1 FLANGED ENDS
 EN 12 627 WELDED ENDS

PN 40

DN	A	B	C	L*	F	d1	l1	Flanged ends							
								D1	D2	D3	a	f	d	n	kg
150	200	150	20	210	12	27	45	300	250	218	28	2	26	8	87
200	230	205	25	230	14	35	60	375	320	285	34	2	30	12	102
250	270	255	25	250	14	40	70	450	385	345	38	2	33	12	133
300	305	280	25	270	14	45	100	515	450	410	42	2	33	16	205
350	355	315	25	290	16	55	110	580	510	465	46	2	36	16	275
400	380	340	30	310	25	60	110	660	585	535	50	2	39	16	400
500	450	425	30	350	25	70	120	755	670	615	57	2	42	20	530
600	535	510	35	390	30	85	140	890	795	735	72	2	48	20	940
700	580	550	35	430	30	100	140	995	900	840	76	2	48	24	1150
800	715	670	35	470	35	120	160	1140	1030	960	79	2	56	24	1550

* face to face dimensions for welded ends are in compliance with flange connections (can be different upon customer's request)

Pipe dimensions $\varnothing D \times t$ ($\varnothing D$ – outside pipe diameter; t – the pipe thickness) for welding are given by customer.



Butterfly valve L32.7 DN 3500 - install in the hydropower plant in Rendalen in Norway.