

## Application

Single-eccentric butterfly valves are industrial valves, which are designed to fully open or close a 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 valve 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

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

## Technical description

**Single eccentricity** (Fig. A) - the operating shaft axis is eccentric to the packing axis

- easy replacement of gasket
- gasket is not interrupted on the circumference by shaft

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

**Shaft** is sealed by O-ring (Fig. B).

**The pivot** is sealed by flat gasket (Fig. C).

**The sealing** bears on the conical area of the 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). To see the tightness grade in the opposite direction please contact manufacturer.

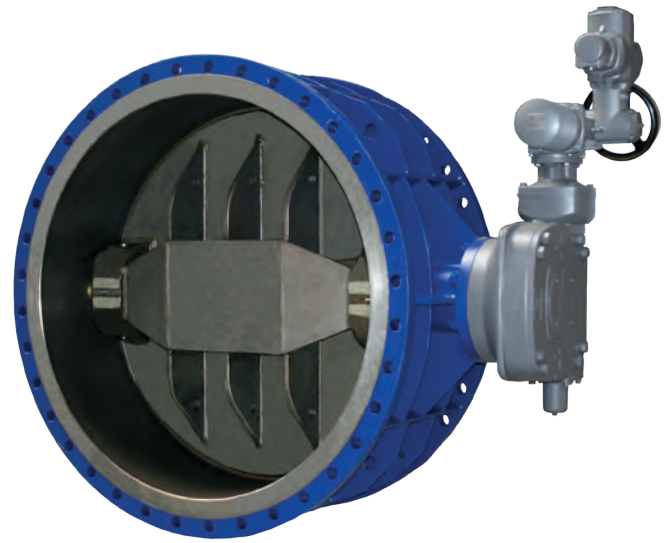


Fig. A

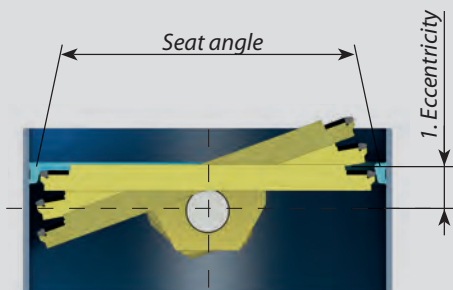


Fig. B

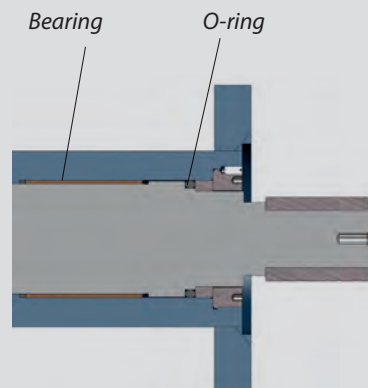
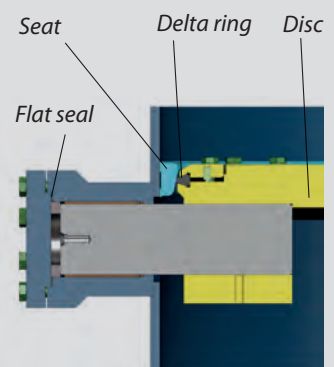


Fig. C





## Operation

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

## Testing

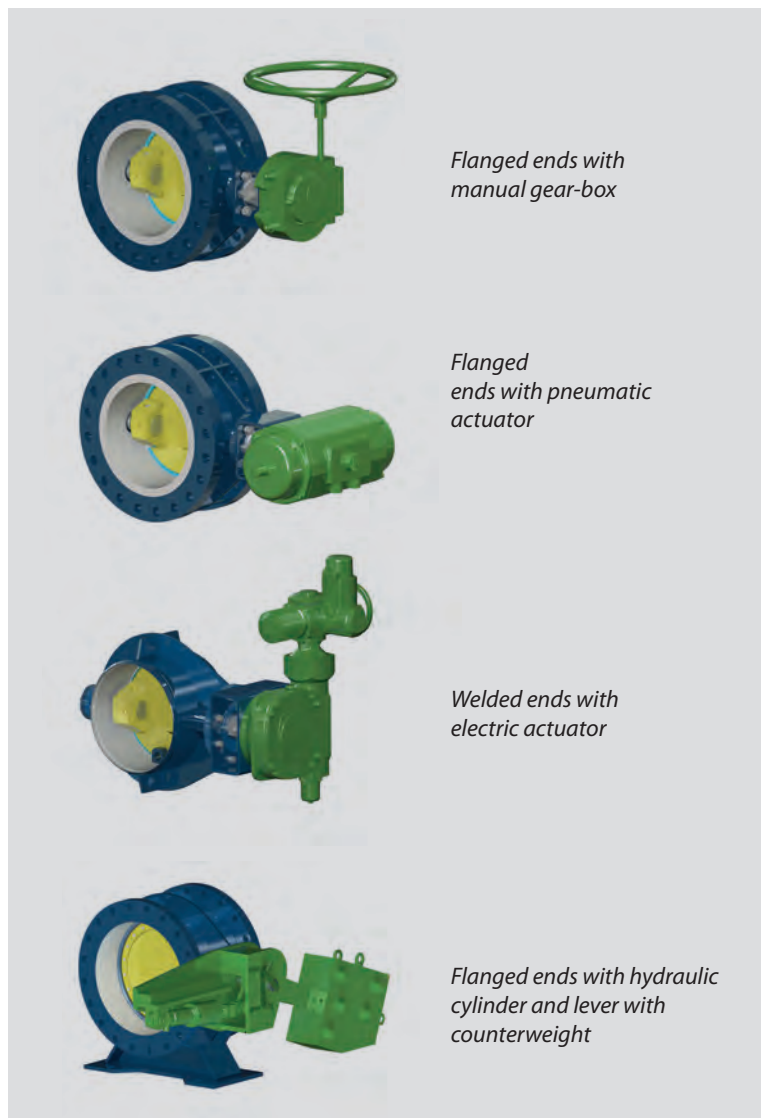
The valves are tested according to EN 12 266-1/ISO 5208.

## Connection to piping

- **flanged ends** acc. to EN 1092-1, DIN 2501, face to face dimensions acc. to EN 558-1, Series 14
  - **wafer Type** acc. to EN 1092-1, DIN 2501, 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.



*Flanged ends with manual gear-box*

*Flanged ends with pneumatic actuator*

*Welded ends with electric actuator*

*Flanged ends with hydraulic cylinder and lever with counterweight*

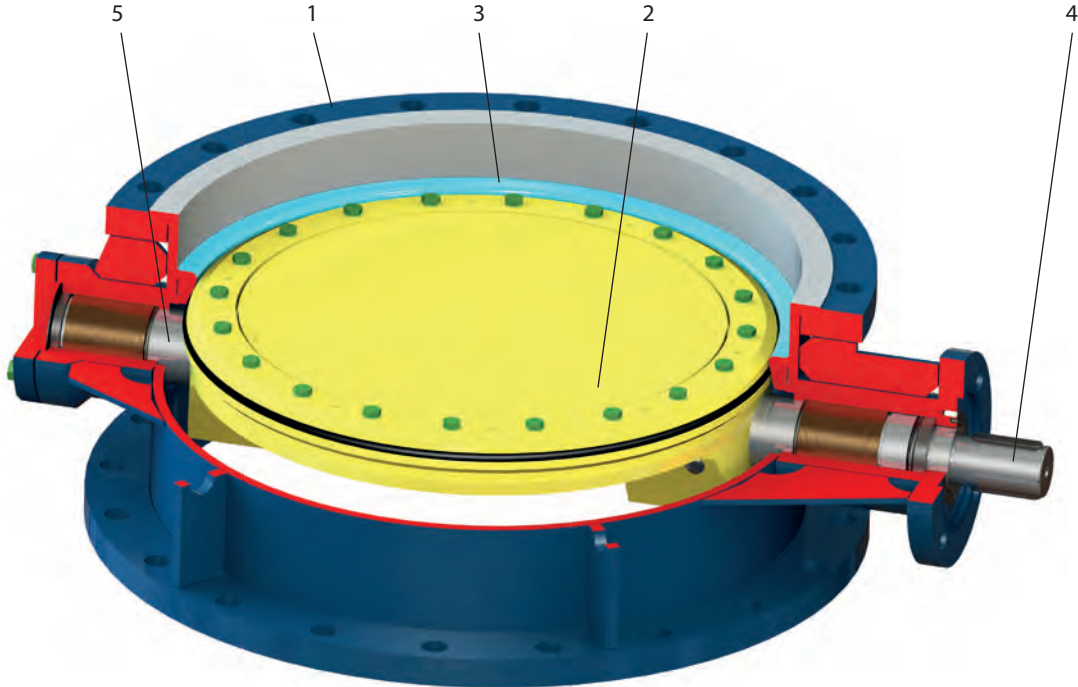
## Production range

DN	Flanged ends					Wafer type					Welded ends				
	PN					PN					PN				
	2,5	6	10	16	25	2,5	6	10	16	25	2,5	6	10	16	25
150		.	.	.	.		.	.	.	.		.	.	.	.
200		.	.	.	.		.	.	.	.		.	.	.	.
250		.	.	.	.		.	.	.	.		.	.	.	.
300		.	.	.	.		.	.	.	.		.	.	.	.
350		.	.	.	.		.	.	.	.		.	.	.	.
400		.	.	.	.		.	.	.	.		.	.	.	.
500		.	.	.	.		.	.	.	.		.	.	.	.
600		.	.	.	.		.	.	.	.		.	.	.	.
700		.	.	.	.		.	.	.	.		.	.	.	.
800		.	.	.	.		.	.	.	.		.	.	.	.
1000		.	.	.	.		.	.	.	.		.	.	.	.
1200	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
1400	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
1600	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2000	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2200	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2400	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Other dimensions (up to DN 3500) can be offered upon request.

DN 150-2400 • PN 2,5-25 • Tmax 180 °C

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



## Material

Position	Component	Standard acc. to EN	EN		ASTM		
		Carbon steel		Stainless steel	Carbon steel		Stainless steel
		-29 °C - +180 °C*	-40 °C - +180 °C*	-40 °C - +180 °C*	-29 °C - +180 °C*	-40 °C - +180 °C*	-40 °C - +180 °C*
1	Body	1.0577, 1.0425	1.0566	1.4541	A105	A350 LF2	A182 F316
2	Disc	1.0577, 1.0425	1.0566	1.4541	A105	A350 LF2	A182 F316
3	Seat	1.4541, 1.4301	1.4541, 1.4301	1.4541	A182 F304	A182 F304	A182 F316
4	Shaft	1.4021 + QT700	1.4021 + QT700	1.4541	A182 F6	A182 F6	A182 F316
5	Pivot	1.4021 + QT700	1.4021 + QT700	1.4541	A182 F6	A182 F6	A182 F316

\* The thermal use of the valve depends on the pressure-temperature characteristic of the material - see further information in this catalog.

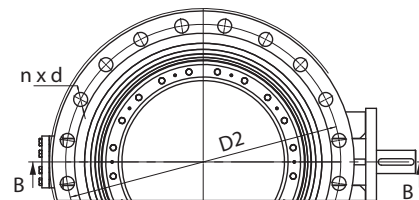
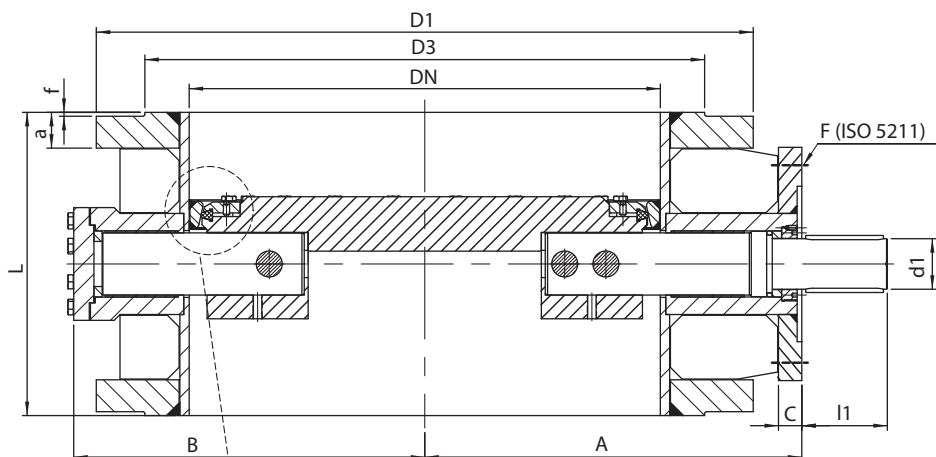
## Recommended seal resistance

Elastomer	Identification	Working medium	Working temperature
Nitrile-butadien rubber	NBR	Water, air, engine and gear oils, petrol, mineral oils, heating gases, non-aggressive gases	from -20 °C to +80 °C
Ethylene-propylene rubber	EPDM	Drinking water, hot water, steam, diluted acids and alkalis, air; unsuitable for oils and fats	from -40 °C to +130 °C
Fluorine rubber	FPM	Mineral oils, petroleum products, coke and blast furnace gas, the highest chemical resistance of all elastomers (rubber); unsuitable for hot steam and water	from -20 °C to +140 °C
	VITON GF	Hot water and steam	from -20 °C to +180 °C

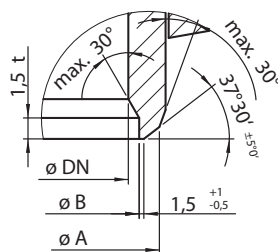


DN 150-2400 • PN 2,5-25 • Tmax 180 °C

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



Welded ends



ø A - acc. to EN 12 627  
 ø B - inner pipe diameter (upon customer's request)  
 t - pipe thickness (upon customer's request)

## PN 2,5

DN	A	B	C	L*	F	d1	l1	Flanged ends							
								D1	D2	D3	a	f	d	n	kg
1200	810	780	30	630	25	65	110	1375	1320	1280	40	2	30	32	1100
1400	910	890	30	710	25	65	110	1575	1520	1480	44	2	30	36	1300
1600	1110	1080	30	790	30	100	130	1790	1730	1690	48	2	30	40	2400
2000	1325	1290	35	950	35	140	165	2190	2130	2090	54	2	30	48	4670
2200	1650	1450	40	1030	40	150	200	2405	2340	2295	58	2	33	52	9000
2400	1770	1600	40	1110	40	160	200	2605	2540	2495	62	2	33	56	11900

## PN 6

DN	A	B	C	L*	F	d1	l1	Flanged ends							
								D1	D2	D3	a	f	d	n	kg
150	150	142	15	210	10	25	40	265	225	202	20	2	18	8	27
200	185	175	15	230	10	25	40	320	280	258	22	2	18	8	37
250	240	210	20	250	12	30	40	375	335	312	24	2	18	12	54
300	255	245	20	270	12	30	50	440	395	365	24	2	22	12	72
350	290	260	20	290	12	35	50	490	445	415	26	2	22	12	110
400	320	295	20	310	12	35	50	540	495	465	28	2	22	16	155
500	380	365	25	350	14	40	65	645	600	570	30	2	22	20	230
600	480	450	25	390	16	50	70	755	705	670	32	2	26	20	300
700	500	470	25	430	16	50	70	860	810	775	32	2	26	24	470
800	575	530	25	470	16	50	80	975	920	880	34	2	30	24	650
1000	690	660	30	550	25	80	110	1175	1120	1080	36	2	30	28	1040
1200	810	780	30	630	30	80	110	1405	1340	1295	40	2	33	32	1240
1400	920	890	30	710	35	100	110	1630	1560	1510	44	2	36	36	2200
1600	1110	1080	35	790	35	140	145	1830	1760	1710	48	2	36	40	2800
2000	1330	1290	35	950	40	140	165	2265	2180	2125	54	2	42	48	4750
2200	1700	1450	40	1030	40	160	200	2475	2390	2335	60	2	42	52	9700
2400	1810	1600	40	1110	48	178	240	2685	2600	2545	70	2	42	56	12500

\* 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 150-2400 • PN 2,5-25 • Tmax 180 °C

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	150	142	15	210	10	25	40	285	240	212	24	2	22	8	30
200	185	175	15	230	10	25	40	340	295	268	24	2	22	8	45
250	240	210	20	250	12	30	40	395	350	320	26	2	22	12	60
300	255	245	20	270	12	30	50	445	400	370	26	2	22	12	80
350	290	265	20	290	12	35	50	505	460	430	28	2	22	16	100
400	320	295	20	310	12	35	50	565	515	482	32	2	26	16	140
500	380	365	25	350	14	40	65	670	620	585	38	2	26	20	235
600	430	410	25	390	16	50	80	780	725	685	42	2	30	20	365
700	535	485	25	430	16	65	80	895	840	800	42	2	30	24	505
800	595	575	25	470	25	70	90	1015	950	905	44	2	33	24	700
1000	700	680	30	550	30	80	110	1230	1160	1110	44	2	36	28	1090
1200	790	760	30	630	30	100	130	1455	1380	1330	46	2	39	32	1280
1400	1040	980	40	710	40	140	145	1675	1590	1535	48	2	42	36	2500
1600	1380	1080	40	790	40	140	165	1915	1820	1760	58	2	48	40	3600
2000	1580	1350	40	950	40	160	200	2325	2230	2170	64	2	48	48	4900

## PN 16

DN	A	B	C	L*	F	d1	l1	Flanged ends							
								D1	D2	D3	a	f	d	n	kg
150	150	142	15	210	10	25	40	285	240	212	24	2	22	8	30
200	185	175	15	230	10	25	40	340	295	268	26	2	22	12	42
250	240	210	20	250	12	30	50	405	355	320	29	2	26	12	65
300	255	245	20	270	12	35	50	460	410	378	32	2	26	12	90
350	290	265	20	290	12	40	50	520	470	438	35	2	26	16	120
400	330	310	25	310	14	40	60	580	525	490	38	2	30	16	165
500	395	370	25	350	16	50	80	715	650	610	46	2	33	20	245
600	480	445	30	390	25	65	90	840	770	725	52	2	36	20	425
700	520	490	30	430	25	70	110	910	840	795	52	2	36	24	530
800	595	570	30	470	25	85	110	1025	950	900	54	2	39	24	650
1000	710	700	30	550	30	100	130	1255	1170	1115	54	2	42	28	1205
1200	830	805	35	630	35	100	160	1485	1390	1330	58	2	48	32	1580
1400	1040	980	40	710	40	140	200	1685	1590	1530	58	2	48	36	3100
1600	1380	1080	40	790	40	160	200	1930	1820	1750	64	2	56	40	3920

## PN 25

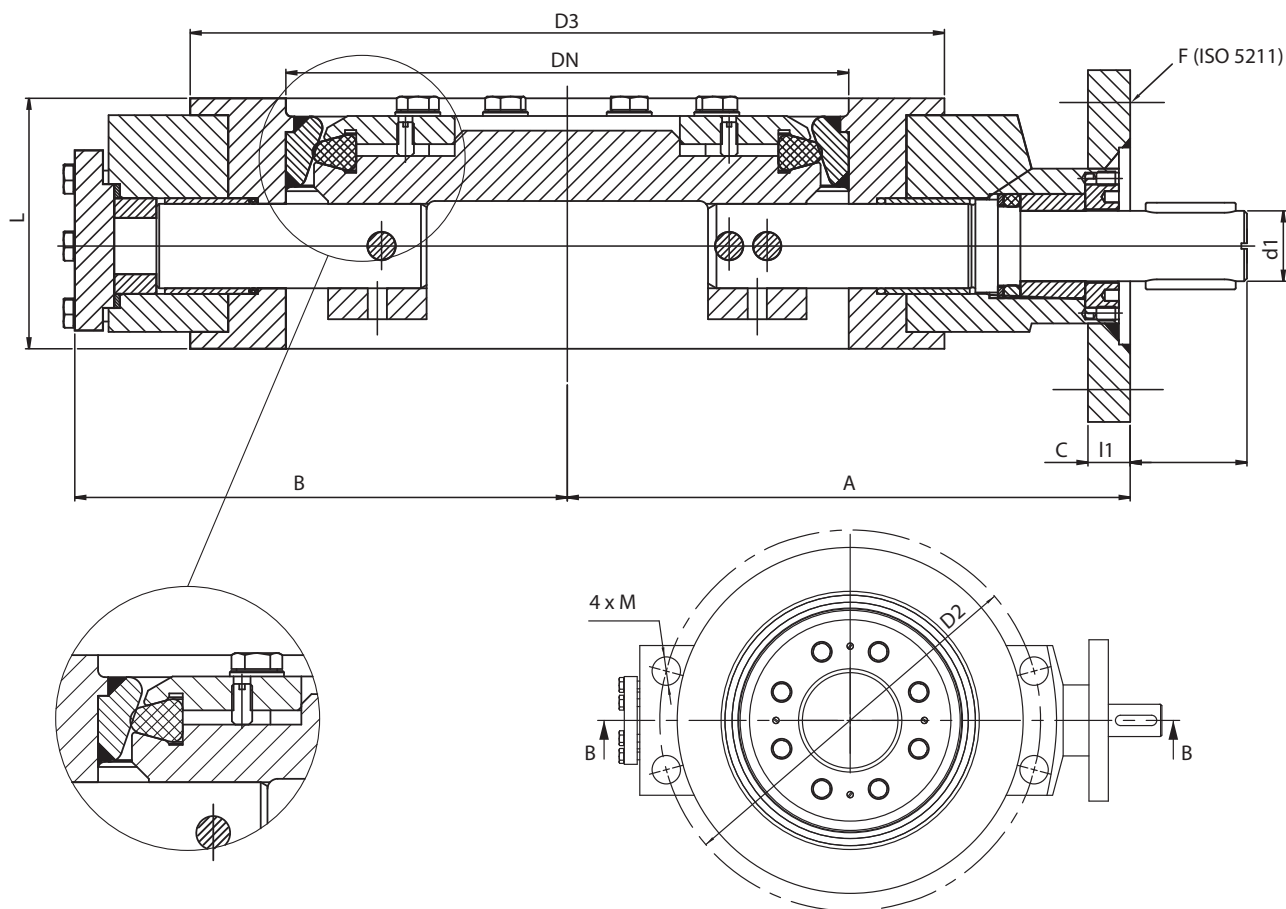
DN	A	B	C	L*	F	d1	l1	Flanged ends							
								D1	D2	D3	a	f	d	n	kg
150	150	142	15	210	10	25	50	300	250	218	30	2	26	8	34
200	210	185	20	230	12	25	50	360	310	278	32	2	26	12	55
250	230	220	20	250	12	30	50	425	370	335	35	2	30	12	71
300	270	250	20	270	14	35	50	485	430	395	38	2	30	16	109
350	320	295	25	290	14	40	60	555	490	450	42	2	33	16	155
400	350	330	25	310	16	50	80	620	550	505	46	2	36	16	208
500	425	395	30	350	25	55	110	730	660	615	56	2	36	20	285
600	485	455	30	390	25	65	110	845	770	720	68	2	39	20	525
700	530	505	30	430	25	85	110	960	875	820	68	2	42	24	640
800	610	580	30	470	30	100	130	1085	990	930	70	2	48	24	860
1000	840	790	35	550	35	120	160	1320	1210	1140	70	2	56	28	1500
1200	915	875	40	630	40	140	200	1530	1420	1350	70	2	56	32	2300
1400	1040	980	40	710	40	160	200	1755	1640	1560	76	2	62	36	3600

\* 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 2,5-25 • Tmax 180 °C

Connection:  EN 1092-1 WAFER TYPE



## PN 2,5

DN	A	B	C	L	F	D2	D3	d1	M	l1	kg
1200	810	780	30	350	25	1320	1280	65	M27	110	900
1400	920	890	30	390	25	1520	1480	65	M27	110	1050
1600	1110	1080	35	440	30	1730	1690	100	M27	130	2000
2000	1330	1290	35	540	35	2130	2090	140	M27	165	4200

## PN 6

DN	A	B	C	L	F	D2	D3	d1	M	l1	kg
150	169	144	15	76	10	225	202	25	-	40	16
200	195	170	15	89	10	280	258	25	-	40	27
250	240	200	20	114	12	335	312	30	M16	40	52
300	270	235	20	114	12	395	365	30	M20	50	65
350	330	265	20	127	12	445	415	35	M20	50	89
400	370	310	20	140	12	495	465	35	M20	50	110
500	375	355	25	152	14	600	570	40	M20	65	195
600	430	410	25	178	16	705	670	50	M24	70	280
700	480	460	25	229	16	810	775	50	M24	70	390
800	575	530	25	241	16	920	880	50	M27	80	550
1000	690	555	30	300	25	1120	1080	80	M27	110	820
1200	810	780	30	350	30	1340	1295	80	M30	110	1240
1400	930	900	30	390	35	1560	1510	100	M33	110	2000
1600	1110	1080	35	440	35	1760	1710	140	M33	145	2710
2000	1330	1290	50	540	40	2180	2125	140	M39	165	5130

Depth of the thread ("M") in the body is corresponds to the thread dimension.





DN 150-2000 • PN 2,5-25 • Tmax 180 °C

Connection:  EN 1092-1 WAFER TYPE

## PN 10

DN	A	B	C	L	F	D2	D3	d1	M	l1	kg
150	169	144	15	76	10	240	212	25	-	40	17
200	200	175	15	89	10	295	268	25	-	40	48
250	240	210	20	114	12	350	320	30	M20	40	54
300	270	235	20	114	12	400	370	30	M20	50	68
350	330	265	20	127	12	460	430	35	M20	50	92
400	370	310	20	140	12	515	482	35	M24	50	115
500	375	355	25	152	14	620	585	40	M24	65	200
600	430	410	25	178	16	725	685	50	M27	80	290
700	530	485	25	229	16	840	800	65	M27	80	415
800	595	575	25	241	25	950	905	70	M30	90	640
1000	700	680	30	300	30	1160	1110	80	M33	110	835
1200	790	760	30	350	30	1380	1330	100	M36	130	1260
1400	1070	980	40	390	40	1590	1535	140	M39	145	2300
1600	1400	1080	40	440	40	1820	1760	140	M45	165	2720
2000	1430	1350	40	540	40	2230	2170	160	M45	200	4310

## PN 16

DN	A	B	C	L	F	D2	D3	d1	M	l1	kg
150	169	144	15	76	10	240	212	25	-	40	17
200	200	175	15	89	10	295	268	25	M20	40	51
250	240	210	20	114	12	355	320	30	M24	50	57
300	270	245	20	114	12	410	378	35	M24	50	72
350	300	275	20	127	12	470	438	40	M24	50	95
400	370	310	25	140	14	525	490	40	M27	60	120
500	420	370	25	152	16	650	610	50	M30	80	215
600	480	450	30	178	25	770	725	65	M33	90	310
700	515	485	30	229	25	840	795	70	M33	110	435
800	600	565	30	241	25	950	900	85	M36	110	600
1000	715	695	30	300	30	1170	1115	100	M39	130	1100
1200	830	805	30	350	35	1390	1330	100	M45	160	1300
1400	1070	980	40	390	40	1590	1535	140	M45	200	2800
1600	1400	1080	40	440	40	1820	1760	160	M52	200	4400

## PN 25

DN	A	B	C	L	F	D2	D3	d1	M	l1	kg
150	169	144	15	76	10	250	218	25	-	50	19
200	215	185	20	89	12	310	278	25	M24	50	56
250	260	220	20	114	12	370	335	30	M27	50	62
300	280	250	20	114	14	430	395	35	M27	50	80
350	325	295	25	127	14	490	450	40	M30	60	110
400	380	325	25	140	16	550	505	50	M33	80	170
500	420	380	30	152	25	660	615	55	M33	110	260
600	500	460	30	178	25	770	720	65	M36	110	380
700	540	505	30	229	25	875	820	85	M39	110	500
800	645	610	30	241	30	990	930	100	M45	130	770
1000	870	800	35	300	35	1210	1140	120	M52	160	1390
1200	940	880	40	350	40	1420	1350	140	M52	200	1480
1400	1070	980	40	390	40	1640	1560	160	M56	200	3100

Depth of the thread ("M") in the body is corresponds to the thread dimension.