



Range DN: 50 ~ 2000
NPS: 2" ~ 80"



Range PN: 6 ~ 100
Class: 150 ~ 600



PED 97/23/EC
PED 2014/68/EU



TR TS 10/11,
12/11, 32/11



CERTIFICATE
EN 12 569



CERTIFICATE
API 607, 6FA

Operating temperature: - 196 °C ~ + 550 °C

Connection into piping: Flanged, WAFER, LUG, welded ends, combined execution



DESCRIPTION

TE BTF (Triple-offset eccentric) BUTTERFLY valves are controlled shut-off valves. They are designed to stop or allow the flow of the medium by external operation, either manually or via the installed actuator. The medium can flow in one direction only. These valves are designed and manufactured to ensure maximum service life and reliability.

MATERIAL SPECIFICATION

TE BTF BUTTERFLY valves are made from carbon, alloy and stainless steels. The material type can be adjusted according to the customer's request to optimally suit the operating conditions.

APPLICATION

TE BTF BUTTERFLY valves are suitable for various liquids, gases and steam.

BASIC STANDARDS FOR DESIGN

Basic design

API 609

Pressure-temperature rating

EN 12 516 - 1, ANSI B16.34

Testing

EN 12 266 - 1, 2

Face-to-face dimensions

EN 558, EN 12 982, ANSI B16.10

Dimensions of the welded ends

EN 12 627, ANSI B16.25

Top Flange dimensions

EN ISO 5211

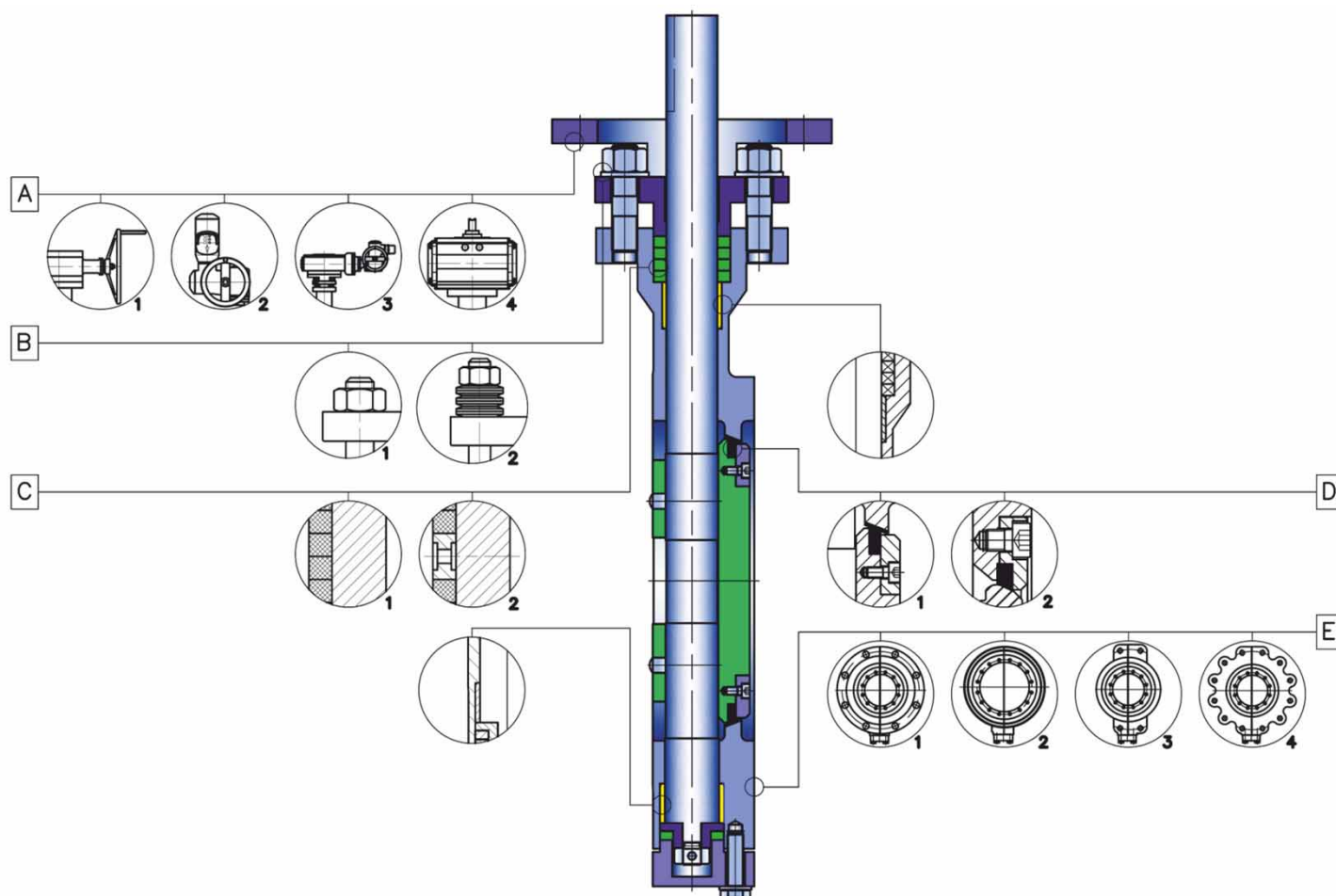
Flange dimensions

EN 1092 - 1, ANSI B16.47
EN 1759 - 1

Special

NACE MR-0175

STRUCTURAL DESIGN



A - Control

- by gearbox
- by electric actuator
- by electric actuator with gear box
- by pneumatic actuator

B - Gland compression

- for valve operation with cyclic changes in pressure or at high pressures and temperatures, gland compression by means of Belleville springs, which ensure a constant pre-stress in packing, is preferred.

C - Execution of gland

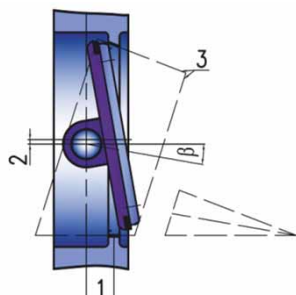
- standard
- double stem packing with lantern ring – shall be chosen in accordance with working conditions.

D - Seat Execution

- the tightness of the closure is ensured by a sealing ring, consisting of layers of stainless steel and graphite. The sealing ring can be placed on disc or embedded in the body seat area.

E - Connection to piping

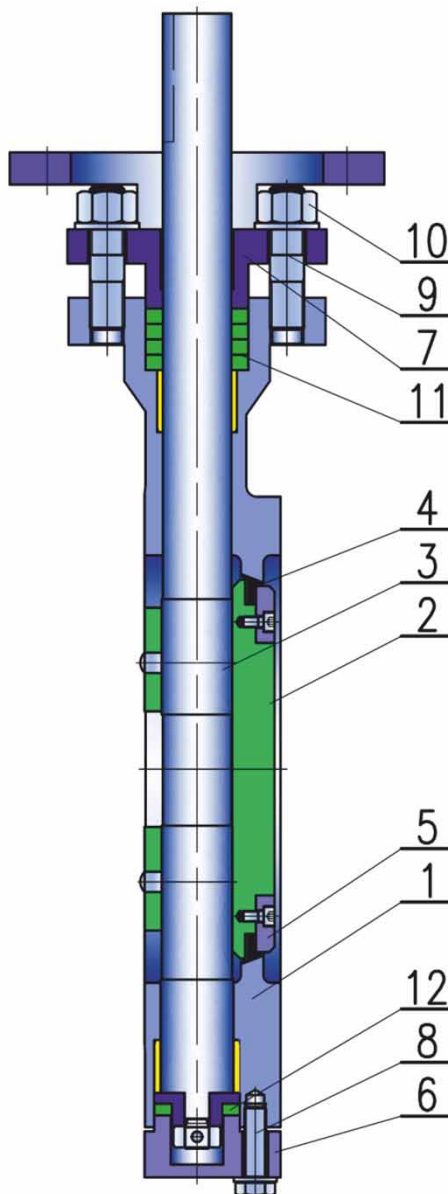
- Flanged
- LUG or WAFER execution
- Welded
 - with welded ends according to client's requirement



Principle of seating

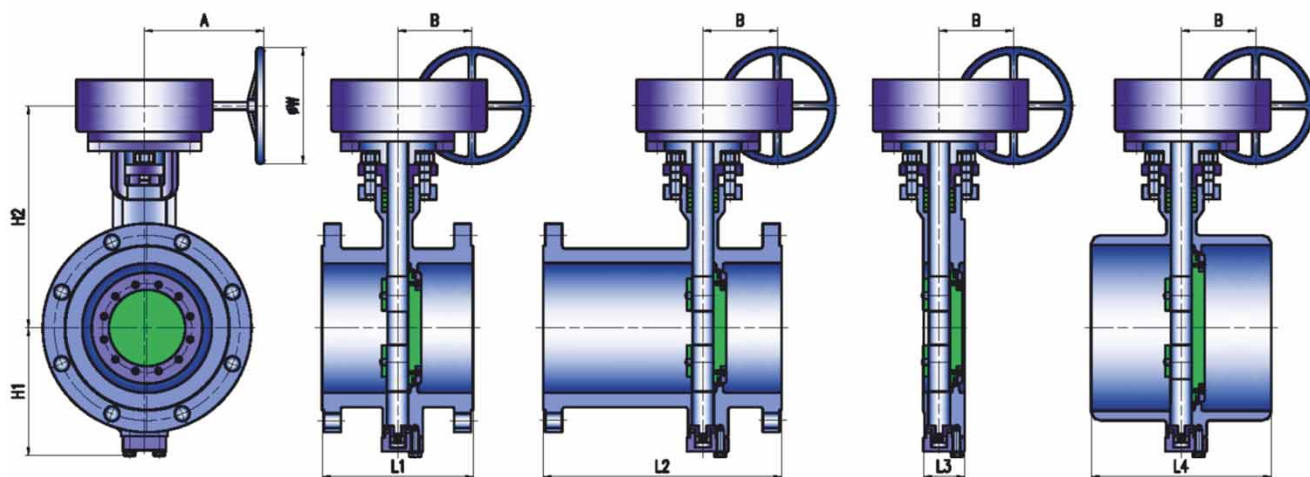
The principle of seating of triple-offset butterfly valves is based on the design of double-offset butterfly valves where the axis of the stem does not coincide with the axis of the seat and with the axis of the pipeline. The triple eccentricity is given by angle β . In view of this combination of eccentricity the immediate adherence or detachment of the sealing surfaces occurs during the disk movement. As a result, the friction between the seat and the disk during the whole disk movement (90°) is completely eliminated and mechanical wear is decreased. These characteristics improve dramatically the sealing ability and service life of these valves

MATERIAL SPECIFICATION



Pos.	Designation	WCB	LCC	LCB	WC6	WC9	C5	C12	CF8 / 304	CF8M / 316
1	Body	A216 WCB	A352 LCC	A352 LCB	A217 WC6	A217 WC9	A217 C5	A217 C12	A351 CF8	A351 CF8M
2	Disc	A216 WCB	A352 LCC	A352 LCB	A217 WC6	A217 WC9	A217 C5	A217 C12	A351 CF8	A351 CF8M
3	Stem	AISI 420	AISI 420	AISI 420	AISI 420	AISI 420	AISI 420	AISI 420	A182 F304	A182 F316
4	Seat	AISI 430 + graphite	AISI 430 + graphite	AISI 430 + graphite	AISI 430 + graphite	AISI 430 + graphite	AISI 430 + graphite	AISI 430 + graphite	AISI 304 + graphite	AISI 316 + graphite
5	Retaining ring	A216 WCB	A352 LCC	A352 LCB	A217 WC6	A217 WC9	A217 C5	A217 C12	A351 CF8	A351 CF8M
6	Bottom cover	A216 WCB	A352 LCC	A352 LCB	A217 WC6	A217 WC9	A217 C5	A217 C12	A351 CF8	A351 CF8M
7	Gland flange	A216 WCB	A352 LCC	A352 LCB	A217 WC6	A217 WC9	A217 C5	A217 C12	A351 CF8	A351 CF8M
8	Bolt	A193 B7	A320 L7	A320 L7	A193 B16	A193 B16	A193 B16	A193 B16	A193 B8	A193 B8M
9	Bolt	A193 B7	A320 L7	A320 L7	A193 B16	A193 B16	A193 B16	A193 B16	A193 B8	A193 B8M
10	Nut	A194 2H	A194 4	A194 4	A194 B8M	A194 B8M	A194 2H	A194 2H	A194 8	A194 8M
11	Gland packing	graphite								
12	Gasket	graphite								

DIMENSIONS



STANDARD FLANGED - DF

WITH LONGER BUILD LENGTH
FLANGED - DFL

LUG and WAFER
TYPE

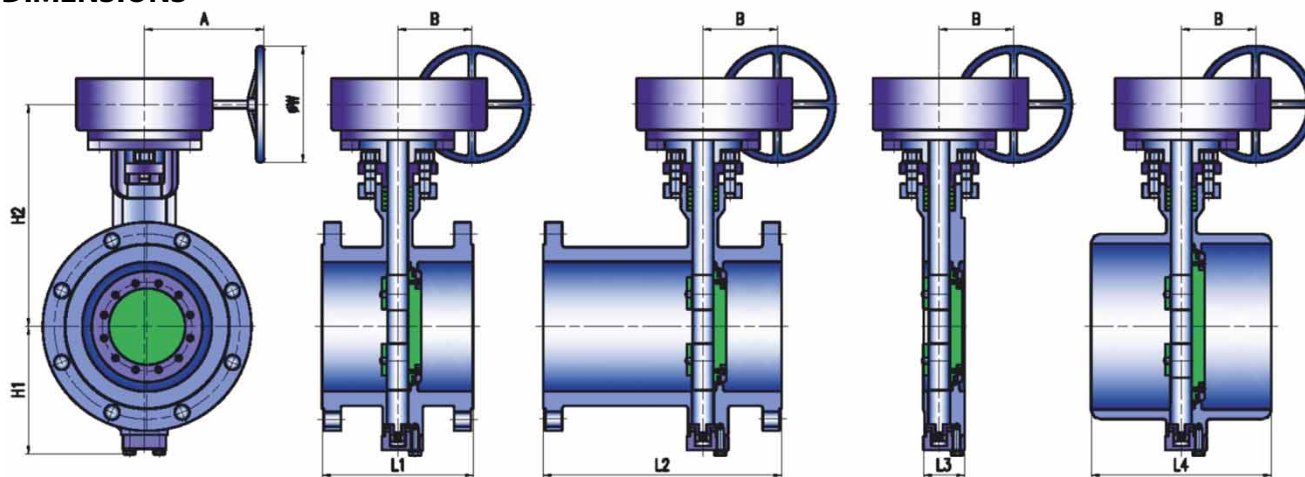
WELDED - BW

Diameter		CLASS 150									(kg)				
NPS	DN	L1	L2	L3	L4	H1	H2	A	B	W	DF	DFL	LUG	WAFER	BW
2	50	108	178	43	150	60	162	214	67	250	26	-	22	24	23
2 1/2	65	112	191	46	170	80	178	214	67	250	26	-	22	24	25
3	80	114	203	50	180	90	186	214	67	250	27	30	22	24	27
4	100	127	229	54	190	100	217	214	67	250	31	34	29	25	32
5	125	140	254	60	200	113	233	214	67	250	40	44	31	27	35
6	150	140	267	60	210	130	263	214	67	250	49	54	32	27	40
8	200	152	292	64	230	206	355	243	97	300	80	88	62	44	63
10	250	165	330	71	250	233	388	243	97	300	106	119	93	60	82
12	300	178	356	81	270	262	420	243	97	300	138	158	99	85	107
14	350	190	381	92	290	296	454	380	88	500	182	192	131	126	145
16	400	216	406	102	310	334	528	380	105	600	230	261	146	174	189
18	450	222	432	114	330	364	553	440	123	500	287	324	180	232	239
20	500	229	457	127	350	415	608	475	140	600	362	415	229	311	308
24	600	267	508	152	390	484	682	520	165	600	510	581	247	467	442
26	650	267	559	154	390	530	707	510	159	600	600	677	653	561	523
28	700	292	610	167	430	574	757	544	217	600	730	841	615	693	642
30	750	318	610	177	470	630	936	658	169	700	846	947	796	825	746
32	800	318	660	190	470	643	837	658	169	700	970	1079	830	933	855
34	850	318	711	196	510	665	969	658	169	700	1186	1275	908	1144	1053
36	900	330	711	203	510	700	995	696	285	700	1337	1475	1071	1288	1184
40	1000	410	762	219	550	796	1021	696	285	700	1690	1867	1419	1614	1487
48	1200	470	-	254	-	860	1174	696	285	700	2200	-	1845	-	-

TRIPLE ECCENTRIC BUTTERFLY VALVES

TYPE **TE BTF**

DIMENSIONS



STANDARD FLANGED - DF

WITH LONGER BUILD LENGTH
FLANGED - DFL

LUG and WAFER
TYPE

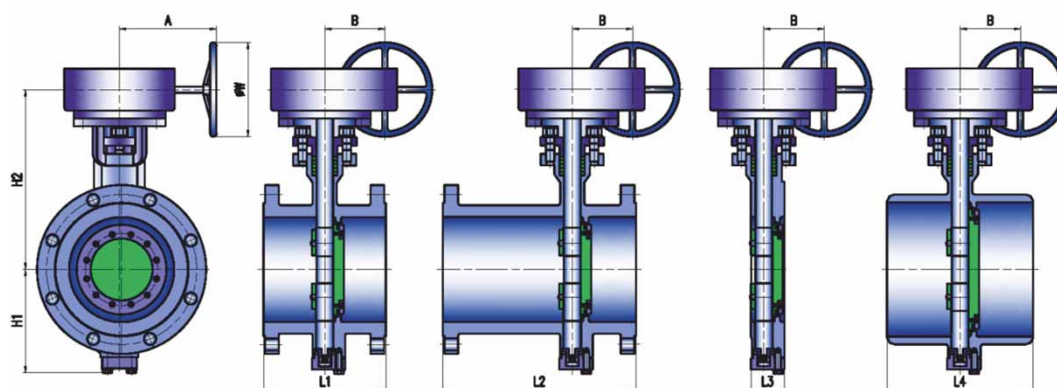
WELDED - BW

Diameter		CLASS 300									(kg)				
NPS	DN	L1	L2	L3	L4	H1	H2	A	B	W	DF	DFL	LUG	WAFER	BW
2	50	108	216	43	150	60	162	214	67	250	27	-	24	24	23
2 1/2	65	112	241	46	170	80	178	214	67	250	27	-	26	24	27
3	80	114	282	50	180	90	186	214	67	250	28	30	27	26	33
4	100	127	305	54	190	100	217	214	67	250	37	42	27	26	41
5	125	140	381	59	200	113	233	214	67	250	56	63	33	31	50
6	150	140	403	60	210	130	263	243	97	300	68	77	50	42	71
8	200	152	419	73	230	206	355	243	97	300	95	110	80	65	99
10	250	165	457	83	250	233	388	380	105	600	140	163	127	112	144
12	300	178	502	92	270	262	420	440	123	500	207	267	177	132	197
14	350	190	762	117	290	296	454	475	140	600	298	369	148	198	279
16	400	216	838	133	310	334	528	510	156	600	375	508	318	270	357
18	450	222	914	149	330	364	553	510	159	600	464	652	402	292	450
20	500	229	991	162	350	415	608	544	217	600	552	777	499	402	559
24	600	267	1143	184	390	484	682	673	293	700	887	1255	877	617	873
26	650	267	1245	210	390	530	707	670	293	700	1115	1587	1065	1005	1123
28	700	292	1346	229	430	574	757	696	285	700	1320	1917	1270	1170	1326
30	750	318	1397	300	470	630	936	673	245	700	1390	2230	1610	1345	1549
32	800	-	-	-	-	660	1000	673	245	700	1475	-	-	-	-
Diameter		CLASS 600									(kg)				
NPS	DN	L1	L2	L3	L4	H1	H2	A	B	W	DF	DFL	LUG	WAFER	BW
2	50	150	-	43	150	60	162	195	63	160	27	-	-	16	23
2 1/2	65	170	-	46	170	80	178	195	63	160	28	-	-	26	25
3	80	180	356	54	180	135	286	214	67	250	40	42	28	28	30
4	100	190	432	64	190	190	385	214	67	250	70	74	47	33	46
5	125	200	508	70	200	205	422	243	97	300	100	105	60	47	71
6	150	210	559	78	210	235	470	243	97	300	128	134	90	70	79
8	200	230	660	102	230	267	468	380	88	500	210	221	130	127	100
10	250	250	787	117	250	300	556	440	123	500	355	373	290	202	200
12	300	270	838	140	270	345	590	475	140	600	435	457	369	260	300
14	350	290	889	155	290	385	624	510	156	600	560	588	500	331	394
16	400	310	991	178	310	420	653	520	134	600	741	778	660	427	498
18	450	330	1092	200	330	475	709	658	169	700	900	945	830	544	600
20	500	350	1194	216	350	525	874	658	169	700	1244	1306	1150	665	750
24	600	390	1397	232	390	610	999	673	245	700	1800	1890	1610	175	1050

TRIPLE ECCENTRIC BUTTERFLY VALVES

TYPE **TE BTF**

DIMENSIONS



STANDARD FLANGED - DF

WITH LONGER BUILD LENGTH
FLANGED - DFL

LUG and WAFER
TYPE

WELDED - BW

Diameter	PN 6, 10, 16									(kg)			PN 25, 40									(kg)		
	L1	L2	L3	H1	H2	A	B	W	DF	WAF	BW	L1	L2	L3	H1	H2	A	B	W	DF	WAF	BW		
50	108	43	150	60	162	140	63	160	24	16	23	108	43	150	60	162	195	63	160	28	22	23		
65	112	46	170	80	178	140	63	160	26	20	25	112	46	170	80	178	195	63	160	30	22	25		
80	114	50	180	90	186	140	63	160	30	22	27	114	64	180	90	186	195	63	160	32	22	27		
100	127	54	190	100	195	140	63	160	38	29	34	127	64	190	100	217	195	63	160	40	29	34		
125	140	60	200	113	208	140	63	160	45	31	41	142	70	200	113	233	250	63	200	48	31	41		
150	140	60	210	130	240	140	63	160	48	32	43	142	76	210	130	263	250	63	300	51	32	43		
200	152	64	230	205	260	150	84	160	74	62	81	152	89	230	203	355	20	84	300	95	62	81		
250	165	71	250	235	295	150	84	200	114	93	102	165	114	250	233	388	280	84	300	120	93	102		
300	178	81	270	275	340	200	108	200	148	99	132	178	114	270	262	420	315	108	300	156	99	132		
350	190	92	290	309	383	200	108	250	183	131	155	190	127	290	296	454	315	108	400	193	131	155		
400	216	102	310	356	427	240	152	300	215	146	193	216	140	310	334	528	320	152	400	227	146	193		
500	229	127	350	427	499	300	168	400	337	229	330	229	152	350	415	608	320	168	400	355	229	330		
600	267	152	390	484	574	500	216	450	511	347	460	267	178	390	474	682	500	216	450	538	347	460		
700	292	167	430	574	643	500	216	450	905	615	830	292	229	430	574	757	500	216	450	953	615	830		
800	318	190	670	643	700	500	216	450	1221	830	1100	318	241	670	653	837	500	216	450	1286	830	1100		
900	330	203	710	700	796	630	320	630	1576	1071	1450	330	241	710	700	935	630	320	630	1659	1074	1450		
1000	410	219	750	735	860	630	320	630	2090	1419	1910	410	300	750	796	1021	630	320	630	2200	1419	1910		
1200	470	254	790	860	885	630	320	630	2227	1845	1977	-	-	-	-	-	-	-	-	-	-	-		

Diameter	PN 63									(kg)			PN 100									(kg)		
	L1	L2	L3	H1	H2	A	B	W	DF	WAF	BW	L1	L2	L3	H1	H2	A	B	W	DF	WAF	BW		
50	108	54	150	60	162	195	63	160	40	16	16	108	54	150	60	162	195	63	160	40	16	16		
65	112	54	170	80	178	195	63	160	48	26	20	112	54	170	80	178	195	63	160	48	26	20		
80	114	57	180	90	186	195	63	160	51	33	22	114	57	180	90	186	195	63	160	51	36	22		
100	127	64	190	100	217	195	63	160	95	40	29	127	64	190	100	217	195	63	160	95	45	29		
125	140	70	200	113	233	250	63	200	120	52	31	140	70	200	113	233	250	63	200	120	60	31		
150	140	76	210	130	263	250	63	300	156	60	32	140	76	210	130	263	250	63	300	156	78	32		
200	152	95	230	206	355	280	84	300	193	120	62	152	95	230	206	355	280	84	300	193	140	62		
250	165	108	250	233	388	280	84	300	227	198	93	165	108	250	233	388	280	84	300	227	210	93		
300	178	143	270	262	420	315	108	300	355	280	99	178	143	270	262	420	315	108	300	355	292	99		

TYPE DESIGNATION

TE BTF C E M1 PN or CLASS/S

<p>C CONNECTION INTO PIPE</p> <ul style="list-style-type: none"> 1 Flanged 2 Welded 0L Type "LUG" 0W Type "WAFER" 	<p>E CONTROL</p> <ul style="list-style-type: none"> 1 Hand lever 2 Gearbox + hand wheel 3 Electric actuator 4 Gearbox + electric actuator 5 Pneumatic actuators 6 Hydraulic actuator 9 Without control 	<p>M₁ BODY MATERIAL</p> <ul style="list-style-type: none"> 0 Stainless steel 2 Cast steel alloy 3 Forged steel alloy 4 Forged carbon steel 5 Cast carbon steel LT Carbon steel for low temperatures
<p>S SPECIAL EXECUTION</p> <ul style="list-style-type: none"> As Antistatic execution DL Long building length DT Bi-directional tightness 		



Standard butterfly valves of type TE BTF with this design provide tightness in only one direction (in the direction of the arrow on the body). If it is also necessary to ensure tightness in the opposite direction, this requirement should be specified in the order.