

Wafer, Lug and Flanged Type



Specification

Description : GVC Triple Eccentric Metal Seated butterfly valves suitable for bi-directional flow and bubble tight shut-off at full rated pressure with Direct Mount ISO table, adjustable gland packing, blow-out proof stem, pinned disc and solid metal or laminated seat.

Numbering System : Series TMW : Triple Eccentric WAFER type Metal seated butterfly Valve
 Series TML : Triple Eccentric LUG type Metal seated butterfly Valve
 Series TMF : Triple Eccentric FLANGED type metal seated butterfly Valve



WAFER
 Series TMW



LUG
 Series TML



FLANGED
 Series TMF

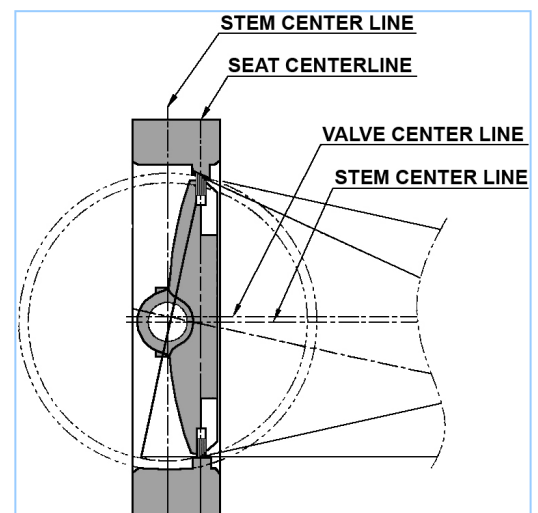
Face to Face : EN558, API 609, ISO 5752, AWWA, BS, JIS and KS

Fire Safe Design : In accordance with API 607

Production Range : Size : DN 50 - DN 3000 (2" - 120")
 Working Pressure : Up to 300 Bar (Depending on size)
 Working Temperature : -196°C to + 815°C

Pressure Classes : EN 1092-PN6, PN10, PN16, PN25, PN40 and PN63
 ISO 7005-PN6, PN10, PN16, PN20, PN25 and PN40
 ANSI/ASME B16.5/B16.47 Class 150#, 300#, 600#, 900#, 1500# and 2500#
 KS/JIS 5K, 10K, 16K, 20K, 30K, 40K and 63K

Sealing Design : Product Group T triple eccentric metal seated high pressure butterfly valves provide bi-directional bubble tight shut-off using triple eccentric disc geometry. The valve stem is off-set against the seat and the center line of the valve body. The seat edges are machined with a continuously changing slope from an angle on top of the oval seat ring to an angle at the opposite side. This geometry ensures that the seat ring stays clear of the seat until the final shut-off position which results in long seat life.



Specification

Seat Configurations : Metal to Metal seat

Various disc seals are available to comply with each temperature and pressure service application.

Solid metal seals are often used for temperatures above 510°C and up to 815°C or low temperature service.

The laminated metal seal (See drawing) consists of stainless steel with intermediate graphite or ceramic fibre layers.

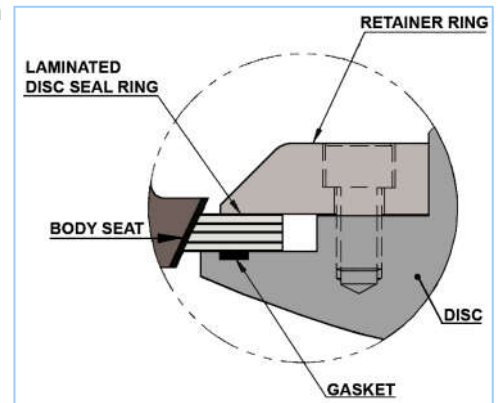
The laminated seal is secured to the disc with a bolt-on stainless steel retainer ring which makes it easily accessible for replacement.

The graphite laminated seal is suitable for temperatures between -40°C and 650°C in general.

The seal leakage meets API 598 or API 6D.

The solid metal seating valve can be operated in a temperature range of -196°C to +815°C.

Valves for cryogenic applications will be executed with extended stems (See Product Group L catalogue).



Cryogenic (LNG) Butterfly Valve



Laminated Seat



Solid Seat

Certification : CE/PED, ABS Design Assessment, BV / DNV / LRS / RMRS type approvals, marine class society certified foundries and materials, NACE MR0175 certified materials, GOST-R, ISO 15848 certified gland packing, Fire Safe design in accordance with API 607. TÜV SIL/PL certified. Please consult us for further information.

Operation : ISO 5211 top flange for direct mount of;

- Hand lever
- Manual Worm Gear
- Single or Double acting Pneumatic actuator
- Electric actuator
- Single or Double acting Hydraulic actuator



ISO 5211 Direct Mount

General Application : Triple Eccentric Metal Seated butterfly valves are designed for use in high pressure and high temperature applications in general. They are suitable for bi-directional flow and provide bubble tight shut-off at full rated pressure.

Typical Applications :

- Oil Refineries
- Conventional Power Plants
- (Petro) Chemical Plants
- Fire Safe Pipe Lines
- Nuclear Power Plants
- Cryogenic Services
- Exhaust Gas Pipe Lines & Steam Pipe Lines
- On board of FPSO's, FSO's, FDP SO's etc.
- Tank Terminals



Series



WAFER

- Series TMW

Size Range : DN 50 - DN 600 (2" - 24")

Pressure Classes : PN6 ~ PN63
ASME Class 150# ~ 2500#
JIS 5K ~ 40K

- Valve to be installed with long bolts
- Light weight
- 2 centering lugs
- Direct mount ISO table



LUG

- Series TML

Size Range : DN 50 - DN 1200 (2" - 48")

Pressure Classes : PN6 ~ PN63
ASME Class 150# ~ 2500#
JIS 5K ~ 40K

- Full threaded lugged holes
- End of line application (Fully rated)
- Ship side application
- Direct mount ISO table



FLANGED

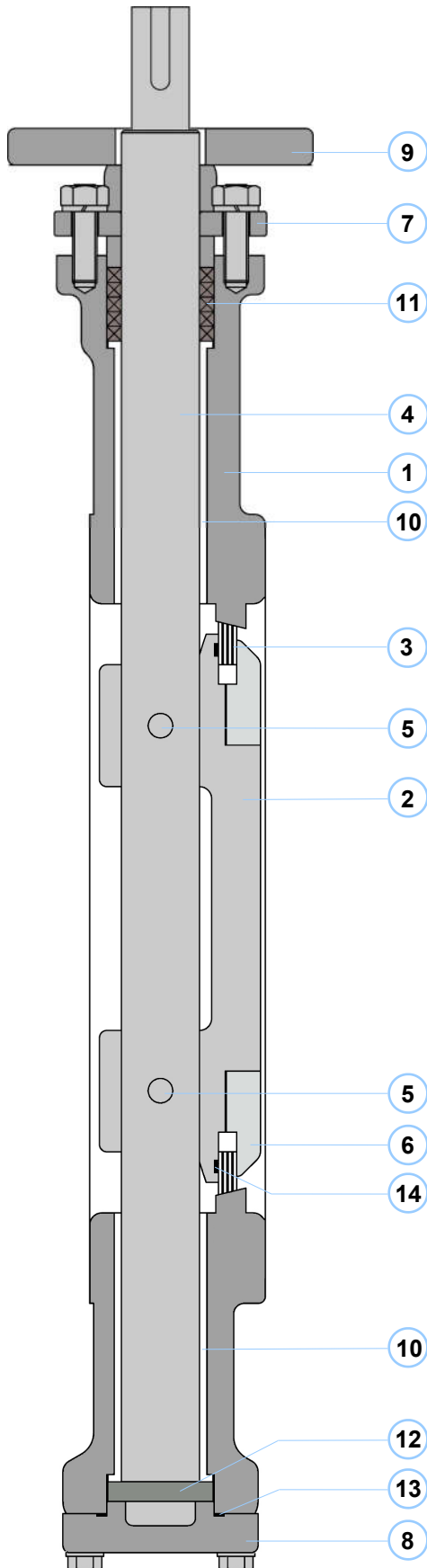
- Series TMF

Size Range : DN 50 - DN 3000 (2" - 120")

Pressure Classes : PN6 ~ PN63
ASME Class 150# ~ 2500#
JIS 5K ~ 40K

- Flanged connections
- End of line application (Fully rated)
- Shippside application
- Light weight alternative for gate or globe valve
- Direct mount ISO table

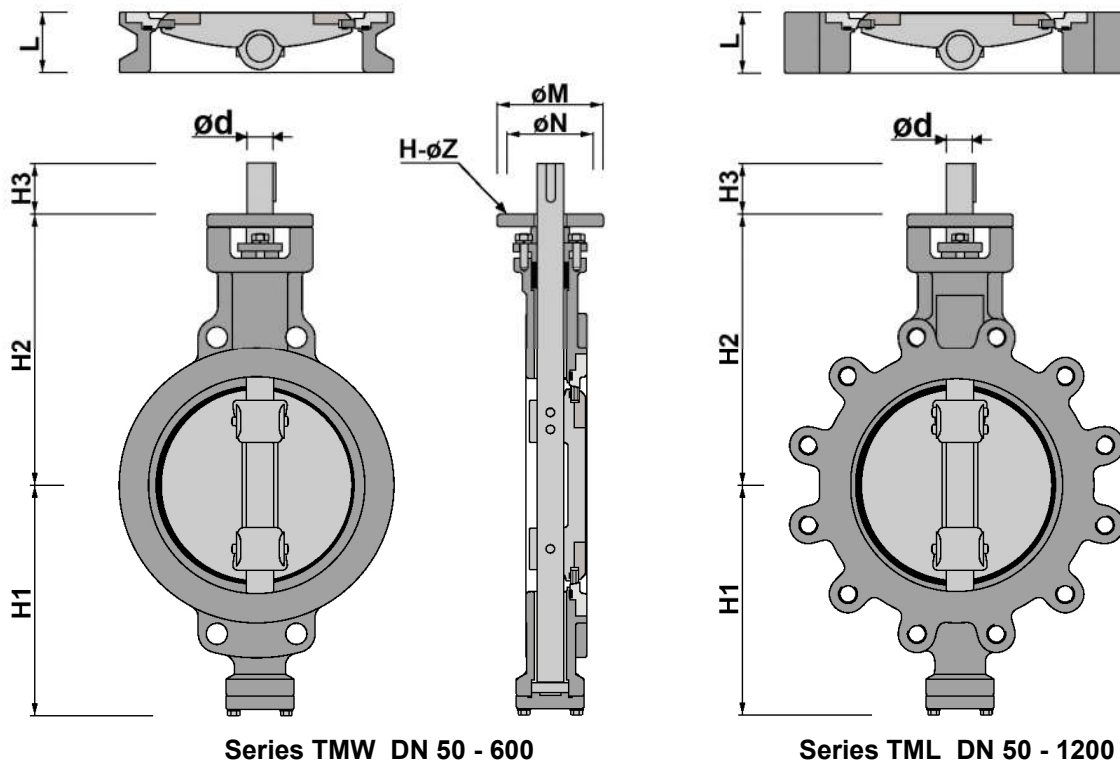
Materials and Parts



No	Part	Material
1	Body	<ul style="list-style-type: none"> • Carbon Steel • Stainless Steel • Aluminum Bronze • Ni-Aluminum Bronze • (Super) Duplex • Hastelloy • Monel • Titanium
2	Disc	<ul style="list-style-type: none"> • Carbon Steel • Stainless Steel • Aluminum Bronze • Ni-Aluminum Bronze • (Super) Duplex • Hastelloy • Monel • Titanium
3	Seat	<ul style="list-style-type: none"> • Stainless Steel + Laminated Graphite • Solid Stainless Steel • Solid Monel
4	Stem	<ul style="list-style-type: none"> • Stainless steel • Monel
5	Disc Pin	<ul style="list-style-type: none"> • Stainless Steel • Monel
6	Retainer Ring	• To suit body/disc material
7	Packing Gland	<ul style="list-style-type: none"> • Carbon Steel • Stainless Steel • (Ni) Aluminum Bronze
8	Bottom Cover	• To suit body material
9	ISO Mounting Table	• Carbon Steel
10	Stem Bearing	<ul style="list-style-type: none"> • Stainless Steel + Teflon • Stainless Steel + Bronze
11	Gland Packing	<ul style="list-style-type: none"> • Graphite • PTFE
12	Thrust Plate	<ul style="list-style-type: none"> • Stainless Steel + Teflon • Stainless Steel + Bronze
13	Bottom Cover Gasket	<ul style="list-style-type: none"> • Graphite • PTFE
14	Seat Gasket	<ul style="list-style-type: none"> • Graphite • PTFE

- Please consult us for exact material standard and grade
- Other materials and special demands upon request

Series TMW Wafer Type DN 50 - 600 and Series TML Lug Type DN 50 - 1200



Series TMW DN 50 - 600

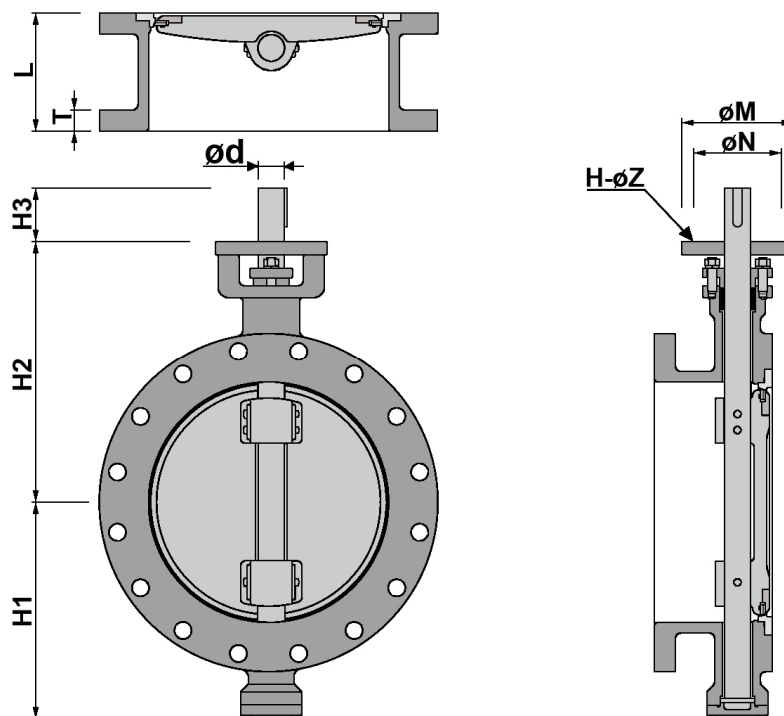
Series TML DN 50 - 1200

Dimensions DN 50 - 600, **DIN PN10, PN16, ANSI 150** [mm]

DN WAFER Series TMW	DN LUG Series TML	L API 609 Cat. B	H1	H2	Stem		Top Flange			
					Round		ISO 5211	N	M	nxo
					H3	d				
50	50	43	118	170	45	12	F07	70	90	4x9
65	65	46	129	177	45	12	F07	70	90	4x9
80	80	48	141	185	45	19	F07	70	90	4x9
100	100	54	161	200	45	19	F07	70	90	4x9
125	125	57	187	217	45	22	F07	70	90	4x9
150	150	57	203	240	45	22	F07	70	90	4x9
200	200	64	230	280	60	25	F10	102	125	4x12
250	250	71	270	320	60	32	F10	102	125	4x12
300	300	81	308	360	75	40	F14	140	175	4x18
350	350	92	340	390	75	40	F14	140	175	4x18
400	400	102	381	445	75	45	F14	140	175	4x18
450	450	114	407	490	100	50	F16	165	210	4x22
500	500	127	444	500	100	55	F16	165	210	4x22
550	550	154	484	530	100	65	F25	254	300	8x18
600	600	154	509	570	100	65	F25	254	300	8x18
—	650	210	545	645	120	85	F30	298	350	8x23
—	700	229	570	651	120	95	F30	298	350	8x23
—	750	230	600	684	120	100	F30	298	350	8x23
—	800	241	645	740	120	110	F30	298	350	8x23
—	900	241	699	769	150	120	F35	356	415	8x33
—	1000	300	770	870	150	140	F35	356	415	8x33
—	1100	350	835	930	150	160	F40	406	475	8x39
—	1200	350	898	995	220	180	F48	483	560	12x39

Flange dimensions according to ASME 150# - KS/JIS 5K, 10K, 16K - BS/DIN/ISO PN6, PN10, PN16

Series TMF flanged Type DN 50 - 3000

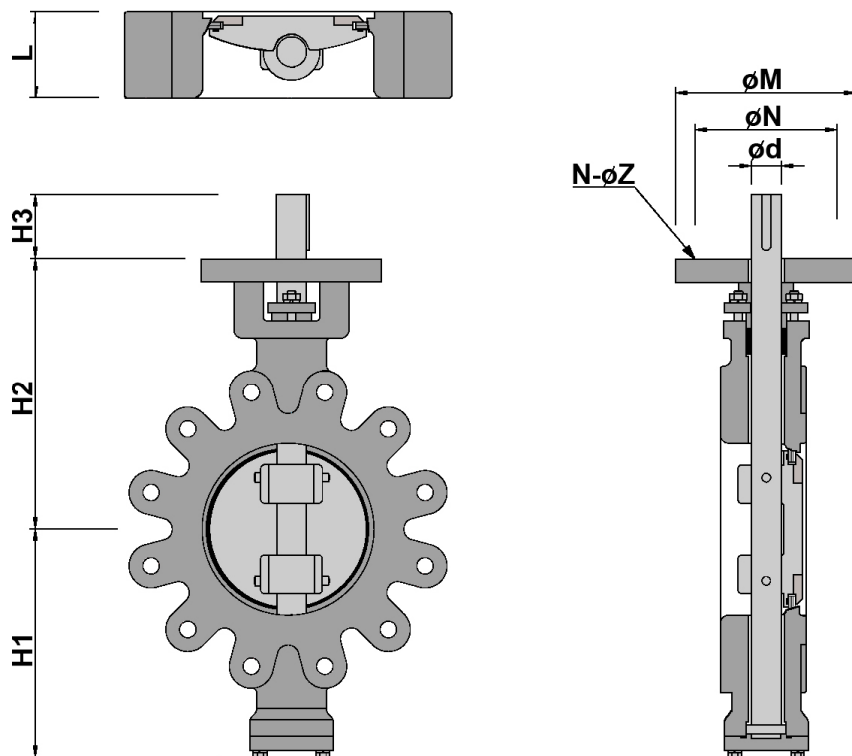


Dimensions DN 50 - 3000, **DIN PN10, PN16, ANSI 150** [mm]

DN	L API 609 Cat. B	H1	H2	Stem		Top Flange			
				Round		ISO 5211	N	M	nxo
				H3	d				
50	108	118	170	45	12	F07	70	90	4x9
65	112	129	177	45	12	F07	70	90	4x9
80	114	141	185	45	19	F07	70	90	4x9
100	127	161	200	45	19	F07	70	90	4x9
125	140	187	217	45	22	F10	102	125	4x12
150	140	203	240	45	22	F10	102	125	4x12
200	152	230	280	60	25	F10	102	125	4x12
250	165	270	320	60	32	F14	140	175	4x18
300	178	308	360	75	40	F14	140	175	4x18
350	190	340	390	75	40	F16	165	210	4x22
400	216	381	445	75	45	F16	165	210	4x22
450	222	407	490	100	50	F16	165	210	4x22
500	229	444	500	100	55	F16	165	210	4x22
600	267	509	570	100	65	F25	254	300	8x18
650	292	545	645	120	85	F30	298	350	8x23
700	292	570	651	120	95	F30	298	350	8x23
750	318	600	684	120	100	F30	298	350	8x23
800	318	645	740	120	110	F30	298	350	8x23
900	330	699	769	150	120	F35	356	415	8x33
1000	410	770	870	150	140	F35	356	415	8x33
1100	470	835	930	150	160	F40	406	475	8x39
1200	470	898	995	220	180	F48	483	560	12x39
1350	470	1050	1200	220	190	F48	483	560	12x39
1500	530	1105	1310	260	190	F60	603	686	20x39
1800	670	1270	1315	260	220	F60	603	686	20x39
2000	760	1340	1450	260	230	F60	603	686	20x39
2400	760	1622	1950	280	280	F60	603	686	20x39
3000	760	2005	2225	350	340	F60	603	686	20x39

Flange dimensions according to ASME 150# - KS/JIS 5K, 10K, 16K - BS/DIN/ISO PN6, PN10, PN16

Series TML-300# DN 80 - 1200 (Class 300#)

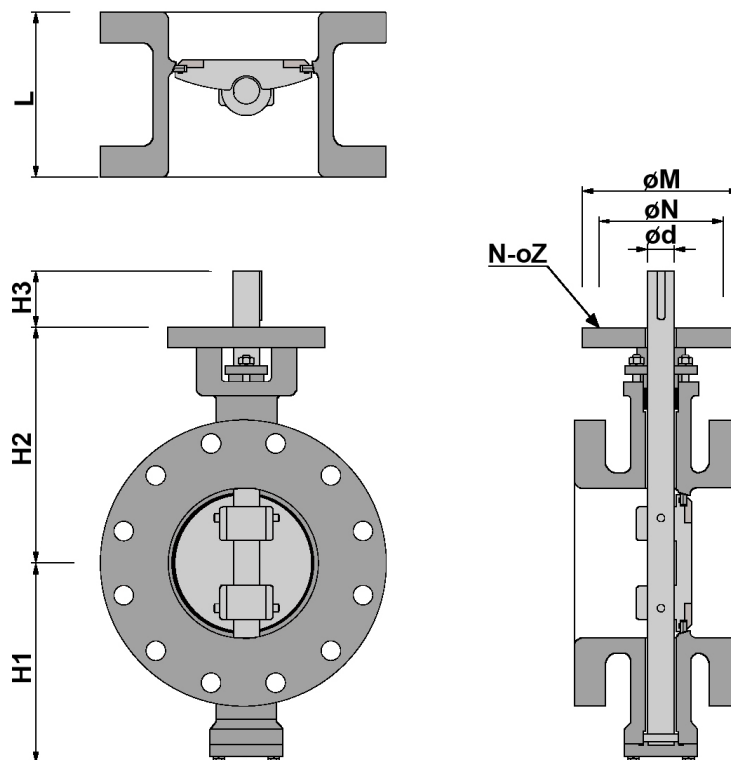


Dimensions DN 80 - 1200, **ANSI 300** [mm]

DN	L API 609 Cat. B	H1	H2	Stem		Top Flange			
				Round		ISO 5211	N	M	nxo
				H3	d				
80	48	151	191	45	22	F07	70	90	4x9
100	54	176	215	45	22	F07	70	90	4x9
125	57	191	228	45	22	F07	70	90	4x9
150	59	223	252	60	25	F10	102	125	4x12
200	73	251	305	75	35	F16	165	210	4x22
250	83	290	350	75	45	F16	165	210	4x22
300	92	340	380	100	55	F25	254	300	8x18
350	117	365	406	100	60	F25	254	300	8x18
400	133	415	486	100	70	F25	254	300	8x18
450	149	445	525	120	75	F30	298	350	8x23
500	159	473	585	120	90	F30	298	350	8x23
550	171	490	610	120	100	F30	298	350	8x23
600	181	550	657	150	110	F35	356	415	8x33
650	210	579	680	150	110	F35	356	415	8x33
700	229	632	728	180	120	F40	406	475	8x39
750	230	659	756	180	135	F40	406	475	8x39
800	241	700	800	180	140	F40	406	475	8x39
850	241	730	840	180	140	F40	406	475	8x39
900	241	770	885	220	150	F48	483	560	12x39
1000	300	800	915	220	170	F48	483	560	12x39
1100	350	840	980	260	200	F60	603	686	20x39
1200	350	900	1030	260	220	F60	603	686	20x39

Flange dimensions according to ASME 300# - KS/JIS 20K - BS PN25 - DIN PN25 - ISO PN20/PN25

Series TMF-300# Flanged Type DN 80 - 3000 (Class 300#)

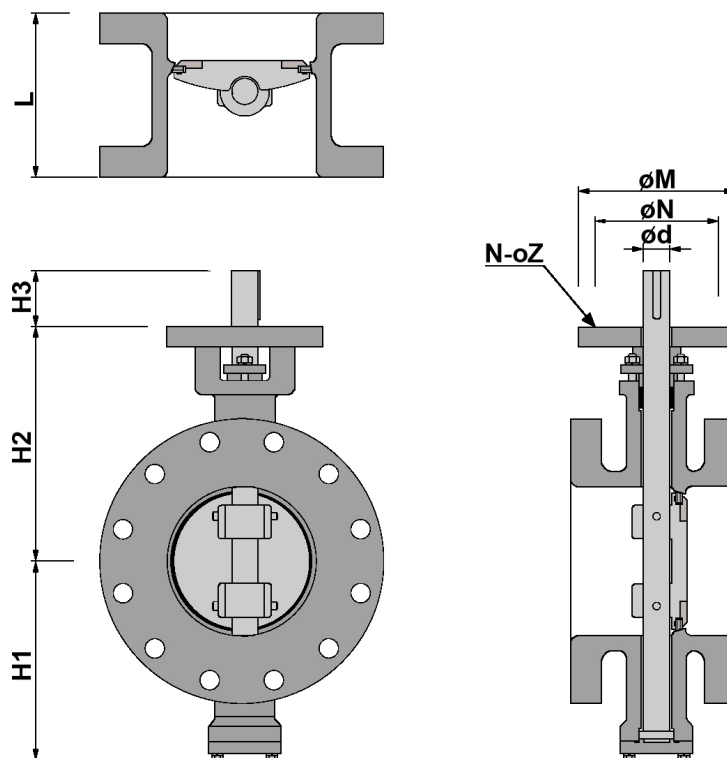


Dimensions DN 80 - 3000, **ANSI 300** [mm]

DN	L API 609 Cat. B	H1	H2	Stem		Top Flange			
				Round		ISO 5211	N	M	nxo
				H3	d				
80	180	151	191	45	22	F07	70	90	4x9
100	190	176	215	45	22	F07	70	90	4x9
125	210	191	228	45	22	F07	70	90	4x9
150	210	223	252	60	25	F10	102	125	4x12
200	230	251	305	75	35	F16	165	210	4x22
250	250	290	350	75	45	F16	165	210	4x22
300	270	340	380	100	55	F25	254	300	8x18
350	290	365	406	100	60	F25	254	300	8x18
400	310	415	486	100	70	F25	254	300	8x18
450	330	445	525	120	75	F30	298	350	8x23
500	350	473	585	120	90	F30	298	350	8x23
550	390	490	610	120	100	F30	298	350	8x23
600	390	550	657	150	110	F35	356	415	8x33
650	410	579	680	150	110	F35	356	415	8x33
700	430	632	728	180	120	F40	406	475	8x39
750	450	659	756	180	135	F40	406	475	8x39
800	470	700	800	180	140	F40	406	475	8x39
900	510	770	885	220	150	F48	483	560	12x39
1000	550	800	915	220	170	F48	483	560	12x39
1200	630	900	1030	260	220	F60	603	686	20x39
1300	650	939	1199	260	230	F60	603	686	20x39
1350	670	940	1200	260	240	F60	603	686	20x39
1400	680	970	1250	260	240	F60	603	686	20x39
1500	700	1081	1342	260	260	F60	603	686	20x39
2000	1250	1430	1600	260	320	F60	603	686	20x39
2400	1250	1622	1950	280	340	F60	603	686	20x39
3000	1250	2005	2225	350	400	F60	603	686	20x39

Flange dimensions according to ASME 300# - KS/JIS 20K - BS PN25 - DIN PN25 - ISO PN20/PN25

Series TMF-600# Flanged Type DN 100 - 2000 (Class 600#)

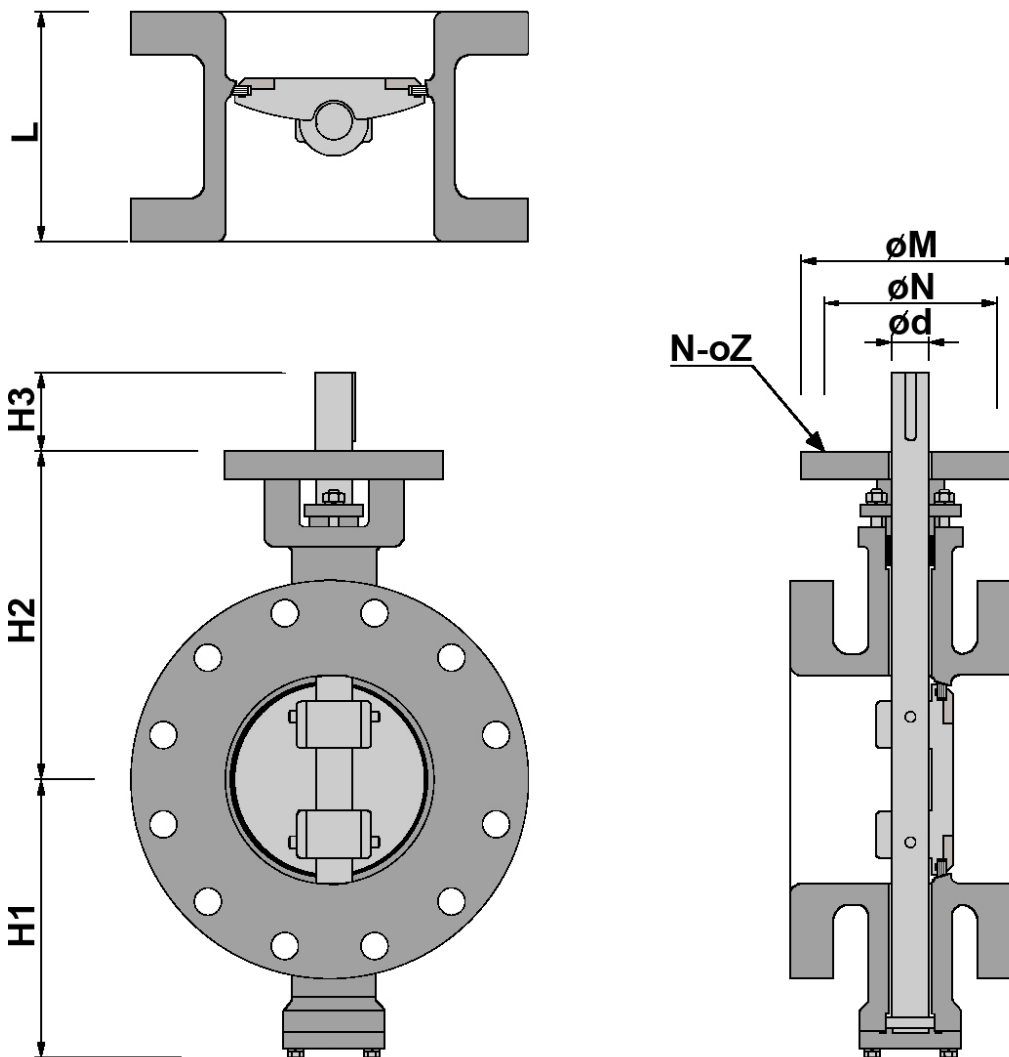


Dimensions DN 100 - 2000, **ANSI 600** [mm]

DN	L API 609 Cat. B	H1	H2	Stem		Top Flange			
				Round		ISO 5211	N	M	nxo
				H3	d				
100	190	212	257	100	28	F16	165	210	4x22
125	210	240	300	100	30	F16	165	210	4x22
150	210	280	330	100	35	F16	165	210	4x22
200	230	308	347	100	45	F25	254	300	8x18
250	250	355	420	120	55	F30	298	350	8x23
300	270	385	450	120	65	F30	298	350	8x23
350	290	425	490	120	75	F30	298	350	8x23
400	310	480	510	150	80	F35	356	415	8x33
450	330	520	610	150	100	F35	356	415	8x33
500	350	552	655	150	110	F35	356	415	8x33
600	390	600	730	220	110	F35	356	415	8x33
700	610	660	760	220	150	F48	483	560	12x39
750	610	690	795	220	150	F48	483	560	12x39
800	660	740	820	220	170	F48	483	560	12x39
900	711	780	870	260	180	F60	603	686	20x39
1000	811	840	930	260	220	F60	603	686	20x39
1200	900	1020	1240	280	270	F60	603	686	20x39
1300	960	1120	1350	330	300	F60	603	686	20x39
1350	980	1170	1420	350	310	F60	603	686	20x39
1400	1020	1200	1480	380	320	F80	800	1000	20x45
1500	1080	1340	1605	380	350	F80	800	1000	20x45
2000	1400	1690	1890	450	450	F80	800	1000	20x45

Flange dimensions according to ASME 600# - KS/JIS 40K - BS/DIN PN40 - ISO PN40/PN50

Series TMF-900# Flanged Type DN 100 - 1000 (Class 900#)

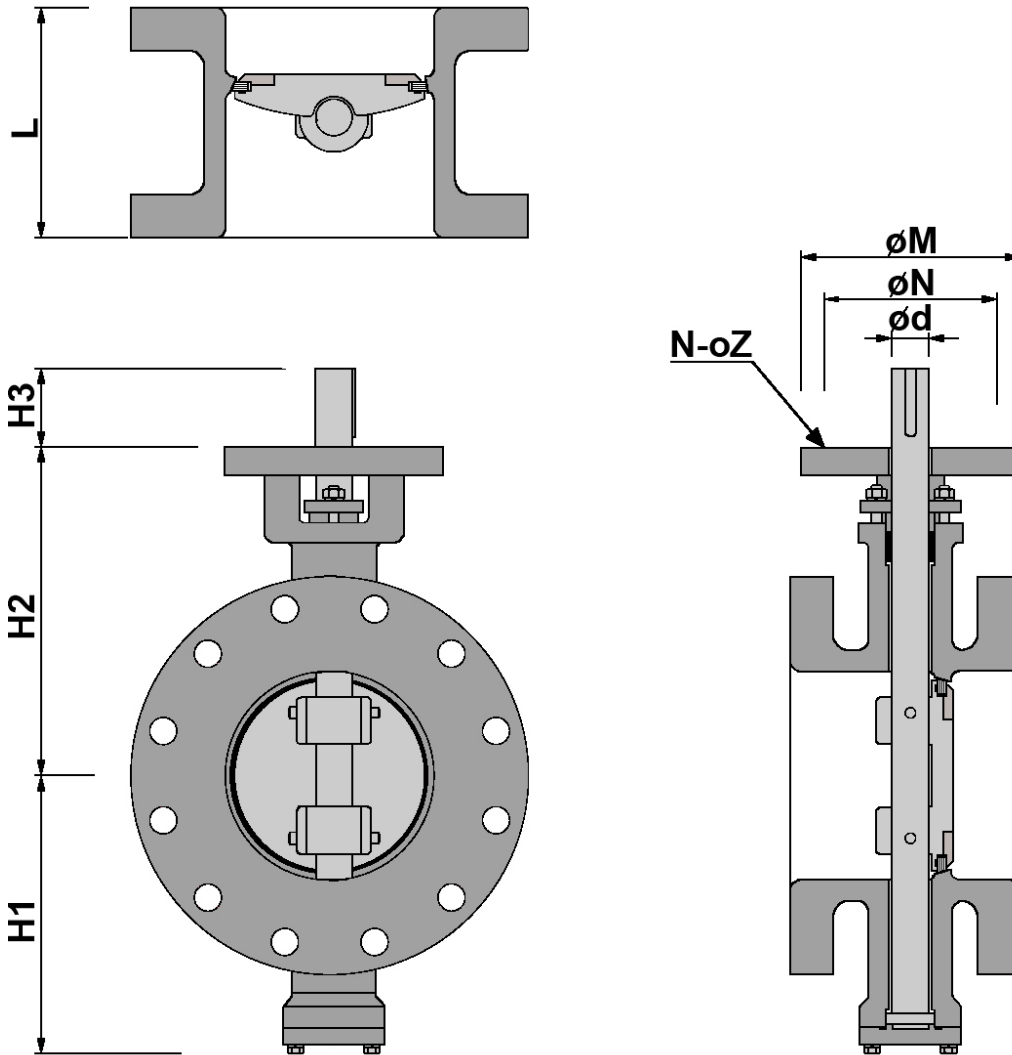


Dimensions DN 100 - 1000, **ANSI 900** [mm]

DN	L API 609 Cat. B	H1	H2	Stem		Top Flange			
				Round		ISO 5211	N	M	nxo
				H3	d				
100	200	210	250	75	30	F16	165	210	4x22
200	310	290	390	100	45	F25	254	300	8x18
250	350	370	450	100	55	F25	254	300	8x18
300	380	400	475	120	65	F30	298	350	8x23
350	400	430	515	150	80	F35	356	415	8x33
400	430	470	610	180	95	F40	406	475	8x39
450	460	545	660	180	110	F40	406	475	8x39
500	490	560	685	180	130	F40	406	475	8x39
600	530	670	790	220	150	F48	483	560	12x39
700	650	705	809	260	190	F60	603	686	20x39
750	700	730	843	260	210	F60	603	686	20x39
800	750	792	877	260	230	F60	603	686	20x39
900	850	834	919	260	260	F60	603	686	20x39
1000	950	907	1013	260	290	F60	603	686	20x39

Flange dimensions according to ASME 900# - DIN PN100 - ISO PN100

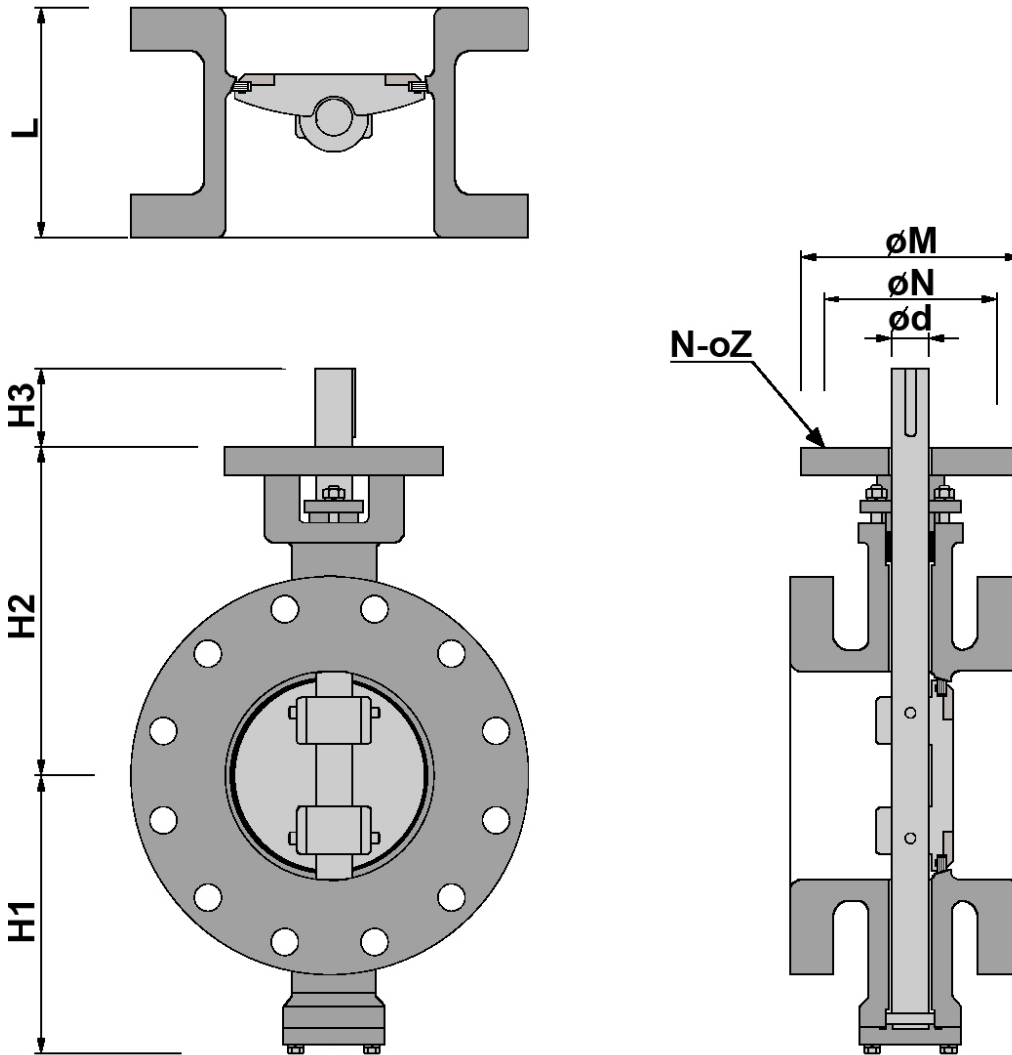
Series TMF-1500# Flanged Type DN 100 - 600 (Class 1500#)



Dimensions DN 100 - 600, **ANSI 1500** [mm]

DN	L API 609 Cat. B	H1	H2	Stem		Top Flange			
				Round		ISO 5211	N	M	nxo
				H3	d				
100	260	240	285	75	30	F16	165	210	4x22
150	300	290	360	75	40	F16	165	210	4x22
200	380	345	430	75	50	F25	254	300	8x18
250	460	470	490	120	70	F30	298	350	8x23
300	540	500	530	120	70	F30	298	350	8x23
350	581	565	610	180	100	F40	406	475	8x39
400	640	610	680	180	120	F40	406	475	8x39
450	710	660	770	180	140	F40	406	475	8x39
500	780	730	830	220	150	F48	483	560	12x39
600	890	850	980	260	170	F60	603	686	20x39

Series TMF-2500# Flanged Type DN 100 - 600 (Class 2500#)



Dimensions DN 100 - 600, **ANSI 2500** [mm]

DN	L API 609 Cat. B	H1	H2	Stem		Top Flange			
				Round		ISO 5211	N	M	nxo
				H3	d				
100	350	300	350	70	35	F16	165	210	4x22
150	500	350	430	70	45	F16	165	210	4x22
200	540	400	500	75	60	F25	254	300	8x18
250	560	530	560	150	75	F35	356	415	8x33
300	590	555	600	150	75	F35	356	415	8x33
350	660	625	700	200	100	F48	483	560	12x39
400	740	680	770	200	130	F48	483	560	12x39
450	820	730	860	220	160	F60	603	686	20x39
500	900	800	920	220	170	F60	603	686	20x39
600	1000	920	1060	250	200	F60	603	686	20x39

Product Group C
Concentric Rubber Lined Butterfly Valves



Product Group O
*Double Eccentric Replaceable Seat Ring
Type Butterfly Valves (Cargo Oil)*



Product Group H, F and M
High Performance Butterfly Valves



Product Group T
Triple Eccentric Metal Seated Butterfly Valves



Product Group E
Disc Seated Butterfly Valves



Product Group L
*Cryogenic Butterfly Valves (LPG, LNG)
Ball, Gate, Globe and Check Valves*



Product Group D
Damper Butterfly Valves

