

TRIPLE OFFSET TYPE

TRIPLE OFFSET DESIGN PRINCIPLES

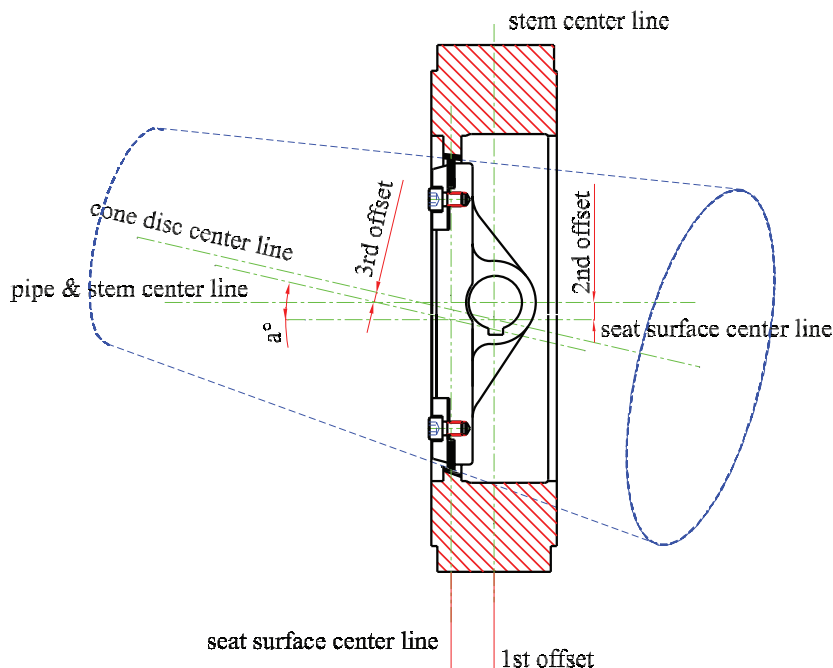
Triple offset metal seat butterfly valve provide a bi-directional and bubble-tight shutoff which is attributed to the geometry of triple offset seat.

The valve stem is offset by seat (1st offset) and the valve seat surface center line is offset against the center line of pipe (2nd offset) and the conical axis is offset by valve center line (3rd offset: inclined cone). The 3rd offset completely eliminates rubbing.

The seat surfaces of body and seal ring in triple offset valve contact with the inclined “cone-in-cone” and this design requires excellent sealing and seat part durability by slight wedging effect.

In addition, the angle of contact between body and seal ring has a good sealing performance by low torque because the angle travels the initial torque from actuator to seat parts without any loss by jamming.

This valve is characteristic of concentric, offset and double offset construction with remarkable sealing performance and seat part durability, and moreover it is hardly needed to repair.



CHARACTERISTICS AND MERITS

- Excellent durability of seat part and low operating torque by non-rubbing characteristics with triple offset construction.
- Bi-directional zero leakage service by resilient metal sealing and torque seating.
- Unrestricted selection of face to face dimensions for API, ASME(ANSI), BS, ISO, etc. and perfect interchangeability of gate, ball, plug, high performance butterfly, and other VALVE.
- Low emission by quarter turn construction and good performance at automation by virtue of low operating torque and low cost.

DESIGN FEATURE

- Designed in accordance with ASME B 16.34 or other customer requirements.
- Fire safe design

STANDARD

OPTION

FACE TO FACE DIMENSIONS

WAFER AND LUG TYPE

- | | |
|---|--|
| <ul style="list-style-type: none"> • API 609 Table 2./ MSS-SP-68 Table 1
Class 150 & 300 : 3"~ 24"
Class 600 : 3"~ 12" | <ul style="list-style-type: none"> • ISO 5752 Table 5
Class 150 & 300 : 28"~ 48"
Class 600 : 14"~ 24" |
|---|--|

DOUBLE FLANGE

- | | |
|---|---|
| <ul style="list-style-type: none"> • ISO 5752 Table 4, BS 5155 Table 6 (short)
Class 150 & 300 : 3"~ 24"
ISO 5752 Table 4, BS 5155 Table 6 (long)
Class 600 : 3"~12" | <ul style="list-style-type: none"> • ISO 5752 Table 4, BS 5155 Table 6 (short)
Class 150 & 300 : 28"~ 80"
ISO 5752 Table 4, BS 5155 Table 6 (long)
Class 150 & 300 : 3"~ 80"
Class 600 : 14"~24" • ASME B16.10
Class 150 & 300 : 3"~ 24"
Class 600 : 3"~24" |
|---|---|

BUTT WELDING

- ISO 5752 Table 4, BS 5155 Table 6(long)
Class 150 & 300 : 3"~ 80"
Class 600 : 3"~24"

END FLANGE

- | | |
|---|--|
| <ul style="list-style-type: none"> • ASME B16.5 : Class 150, 300,600
JIS B2210 : 10K, 16K, 20K, 30K, 40K
DIN, ISO PN10, PN16, PN20, PN25, PN40 | <ul style="list-style-type: none"> • ASME B16.47 series A : Class 150, 300
MSS-SP-44 : Class 150, 300, 600
BS 3293 : Class 150, 300 |
|---|--|

OPERATING

- | | |
|--|---|
| <ul style="list-style-type: none"> • MAUNAL WORM GEAR | <ul style="list-style-type: none"> • ELECTRIC, PNEUMATIC & HYDRAULIC
ACTUATOR LOCK LEVER |
|--|---|

MOUNTING FLANGE

- ISO 5211

TESTING

- | | |
|---|---|
| <ul style="list-style-type: none"> • API 598 | <ul style="list-style-type: none"> • MSS-SP-61, ANSI B16.104 |
|---|---|

BODY

- The valve body shall be one piece cast or fabrication.
- The body can be supplied with different types of materials in wafer, lug, or flanged and butt welding end connections to satisfy all installation requirements.

BODY SEAT

- The valve seat shall be integrated with the body.
- Stellite or stainless steel shall be applied on the seating surface of valve body.
- The valve seat is designed for inclined cone to ensure non-rubbing, non-jamming, bi-directional shutoff, and zero leakage.

DISC

- The valve disc shall be the same material as the valve body. It is supported by laminated seal ring, which is kept in place by seat retainer ring bolted to the disc and can be replaced easily.
- The spiral wound gasket shall be provided between laminated seal ring and disc.

SEAL RING (LAMINATED)

- The seal ring shall be resilient stainless steel lamella alternated by graphite, aramid fiber & ceramic fiber layers.
- The surface contacting between seal ring and body seat is an inclined cone type and the inclined angle generates a slight wedging effect.
- With a seat retainer ring bolted to the disc, the seal ring is fixed to disc not too tightly to be replaced easily.

STEM

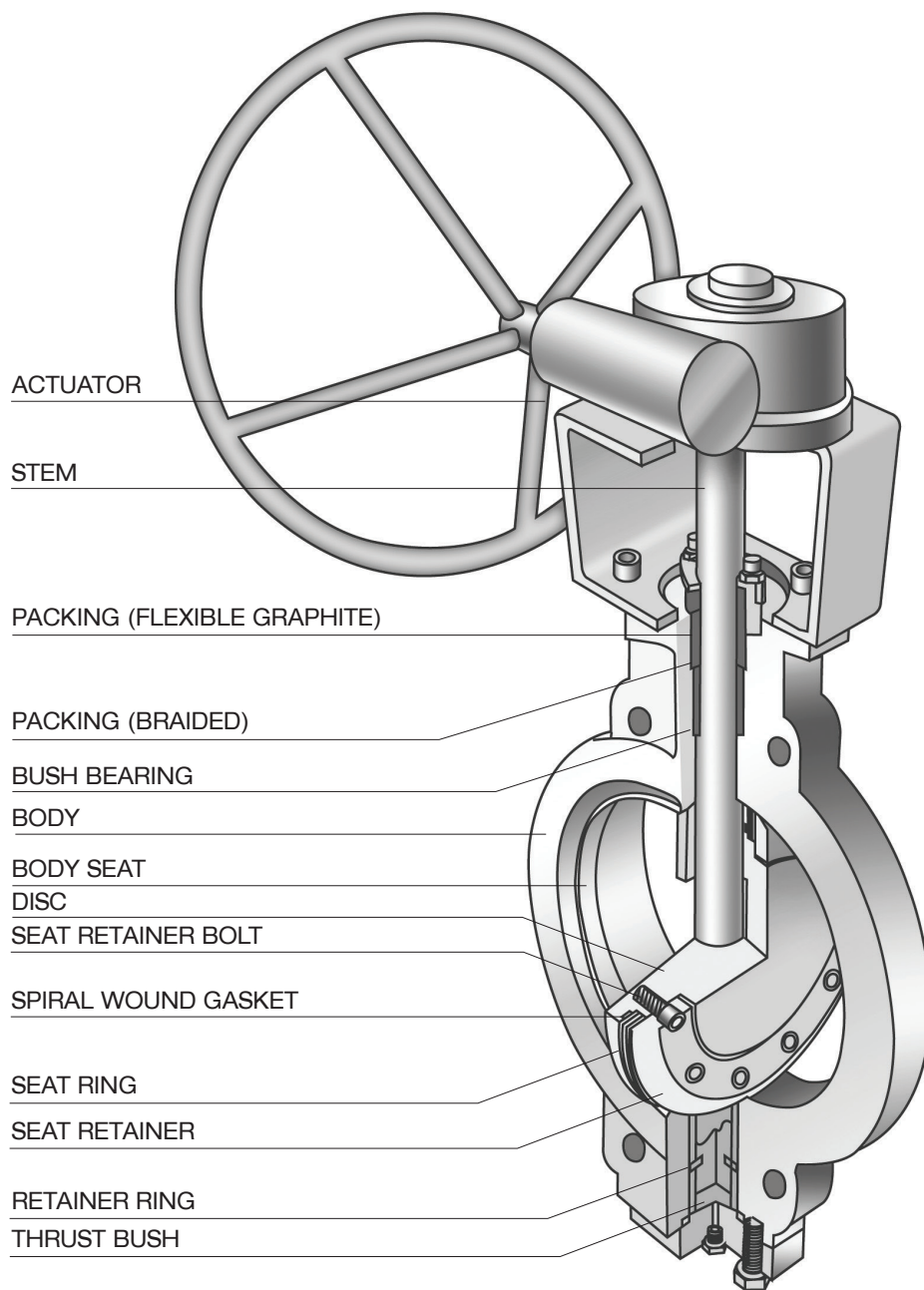
- The stem shall be stainless steel and one piece & two pieces construction.
- The stem shall be fixed to the disc by pin or in combination of pin and key. It can be protected by internal thrust bush and bush bearing.
- The thrust bush and bush bearing shall be provided to locate the valve disc in a proper position.
- The retainer ring shall be installed to avoid blowing out the stem.

PACKING

- The packing shall be consist of two braided rings in the top and bottom of valve and three die formed graphite rings in the middle.
- The lantern ring may be provided as required by customer.

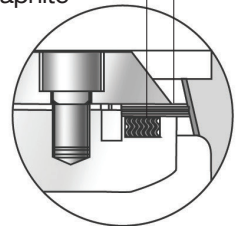
ACTUATORS

- All valve shall be self-locking manual gear operation type which is served as standard.
- Electric, pneumatic or hydraulic actuator may be provided as required by customer.

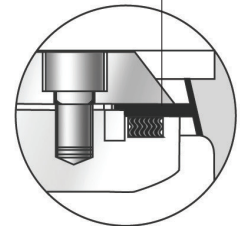


SEAT RING
316SS+Graphite Laminated

SPIRAL WOUND GASKET
316SS+Graphite



SEAT RING (Solid metal)
316SS+Nitr



STANDARD MATERIAL LIST

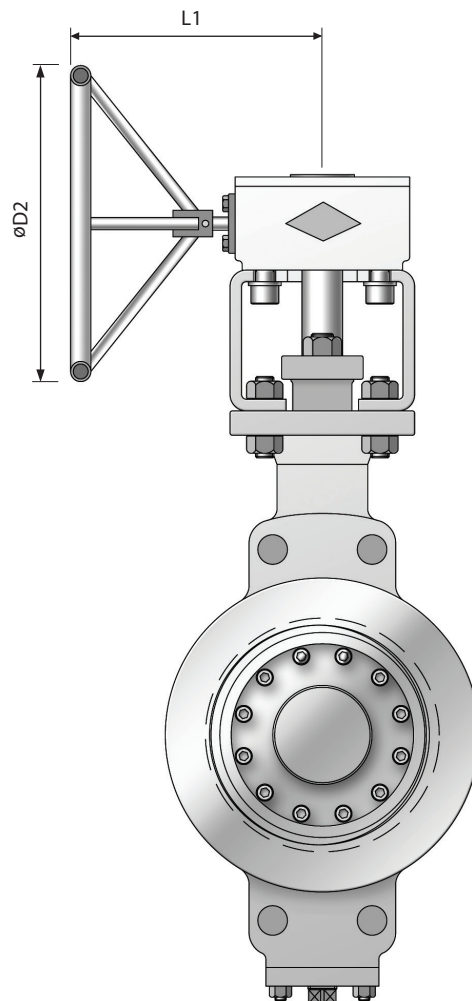
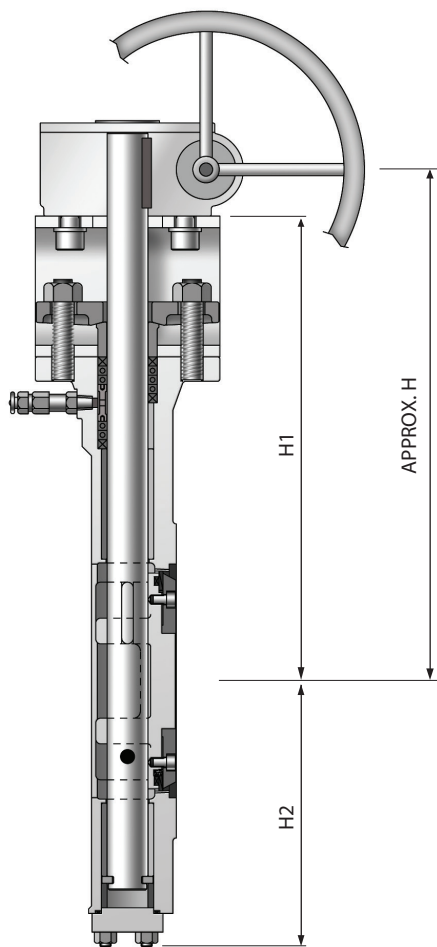
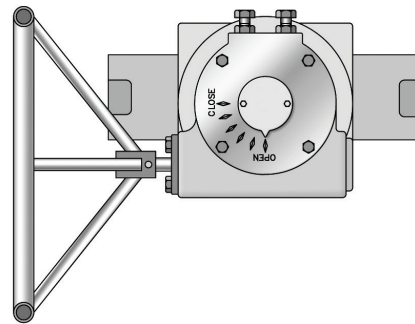
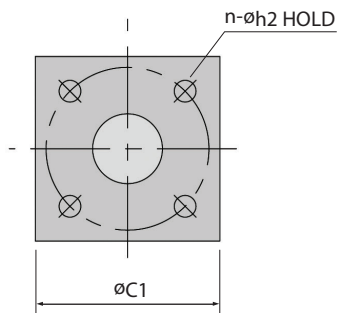
MATERIAL ACCORDING TO ASTM

	NO.	PART NAME	MATERIAL		
S T A N D A R D	1	BODY	A216 - WCB	A217 - WC9	A351 - CF8M
	2	SEAT SURFACE	STELLITE.6 Faced	STELLITE NO.6 Faced	STELLITE.6 Faced
	3	DISC	A217 - CA15	A217 - CA15	A351 - CF8M
	4	STEM	A479 - 410	A479 - 410	A564 - 630
	5	RETAINER RING	A479 - 410	A479 - 410	A479 - 316+Hcr
	6	PACKING	Graphite	Graphite	Graphite
	7	PACKING GLAND	A576 - 1020 + Cr	A479 - 410	A479 - 316
	8	GLAND FLANG	A105 or A576 - 1020(S20C)	A105 or A576 - 1020(S20C)	A351 - CF8
	9	GLAND BOLT	A193 - B7	A193 - B7	A193 - B8
	10	GLAND NUT	A194 - 2H	A194 - 2H	A194 - 8
	11	BUSH BEARING	A479 - 304 + Nitr.	A479 - 304 + Nitr.	A479 - 316 + Hcr. Plating
	12	KEY	A479 - 410	A479 - 410	A564 - 630
	13	SEAL RING	316 SS + GRAPHITE	316 SS + GRAPHITE	316 SS + GRAPHITE
	14	TAPER PIN	410 SS	410 SS	A564 - 630
	15	YOKE	A576 - 1020(S20C)	A576 - 1020(S20C)	A576 - 1020 + Zn. Plating
	16	YOKE BOLT	A193 - B7	A193 - B7	A193 - B8
	17	YOKE NUT	A194 - 2H	A194 - 2H	A194 - 8
	18	MOUNTING BOLT	A193 - B7 or EQ.	A193 - B7 or EQ.	A193 - B7+Hcr or EQ.
	19	SPRING WASHER	STEEL	STEEL	304 SS
	20	KEY	A576 - 1045	A576 - 1045	A576 - 1045
	21	GEAR BOX	DUCTILE	DUCTILE	DUCTILE
	22	CAP	A576 - 1020(S20C)	A240 - 304	A240 - 316
	23	GASKET(CAP)	304 SS + GRAPHITE	304 SS + GRAPHITE	316 SS + GRAPHITE
	24	THRUST BUSH	A479 - 410	A479 - 410	A479 - 316
	25	SEAT RETAINER	304SS	304SS	A240 - 316
	26	RETAINER BOLT	A193 - B8	A193 - B8	A193 - B8M
	27	BUSH BEARING	A479 - 304 + Nitr	A479 - 304 + Nitr	A479 - 316 + Hcr. Plating
	28	GASKET	304 SS + GRAPHITE	304 SS + GRAPHITE	316 SS + GRAPHITE
	29	HANDWHEEL	A53	A53	A53
	30	CAP BOLT	A193 - B7	A193 - B16	A193 - B8
	31	CAP NUT	A194 - 2H	A194 - 4	A194 - 8
	32	SEAL RING PIN	A479 - 304	A479 - 304	A479 - 316
	33	SPACER	A479 - 304	A479 - 304	A479 - 316
O P T I O N	2	SEAT SURFACE	STELLITE NO.6 Faced Duplex SS + GRAPHITE	STELLITE NO.6 Faced Duplex SS + GRAPHITE	STELLITE NO.6 Faced Duplex SS + GRAPHITE
	13	SEAL RING	316 SS + ARAMID 316 SS + CERAMIC A564 - 630 or 316SS + Nitr.	316 SS + ARAMID 316 SS + CERAMIC A564 - 630 or 316SS + Nitr.	316 SS + ARAMID 316 SS + CERAMIC A564 - 630 or 316 S + Nitr.
	34	LANTERN RING	304SS	410 SS	316 SS
	35	PLUG	A105	410 SS	316 SS
	40	GREASE FITTING	CARBON STEEL + Cr. Plating	316 SS	316 SS
		DRAIN PLUG	A105	410 SS	316 SS

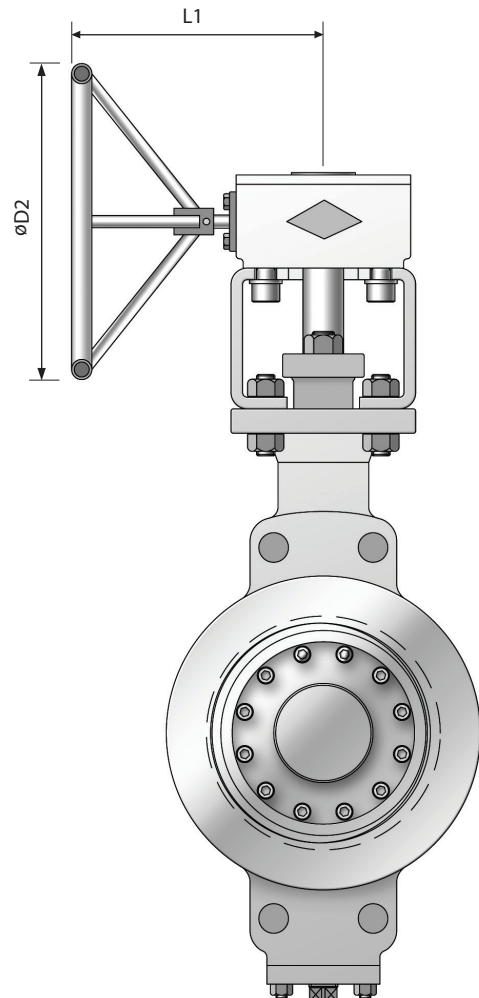
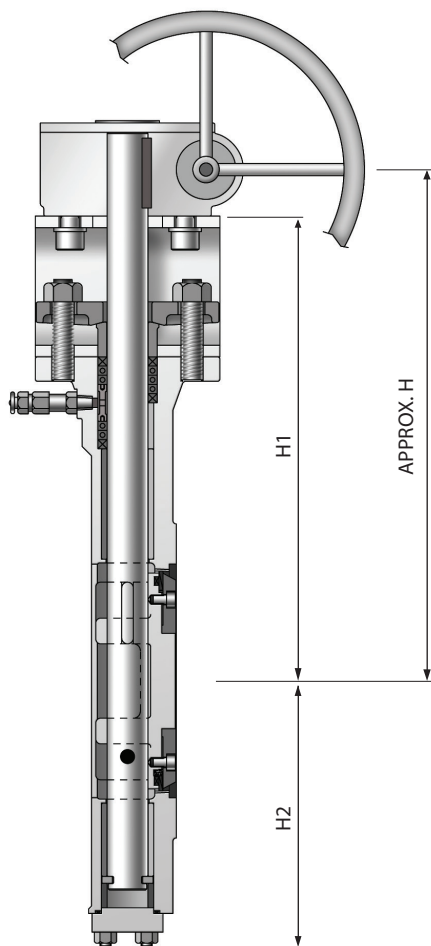
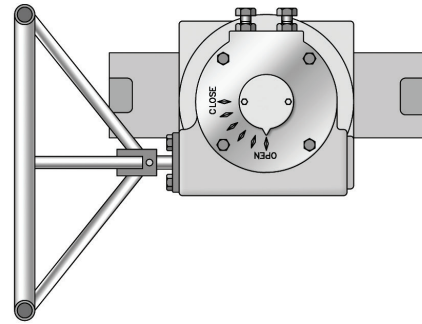
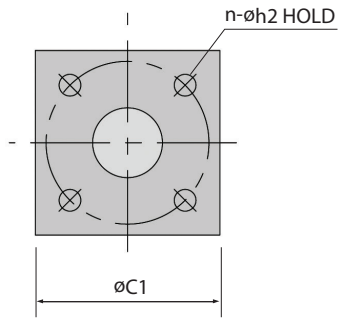
• NOTE

1. Nitr : Hardened by Nitriding, HCr : Hard Cr. Plating, ENP. : Electroless Nickel Plating
2. CLASS 150 & 300 : 316 SS Faced & Integral
CLASS 600 & OVER : STELLITE NO.6 Faced
3. RECOMMEND SPARE PARTS : PART NO.6, 13, 23, 28

TOB VALVE-WAFER TYPE-OUTDRAWING



TOB VALVE - WAFER TYPE



TOB VALVES - WATER TYPE - DIMENSIONS

UNIT : mm

CLASS 150

SIZE		L	FLANGE DIMENSION									MOUNTING BASE				Weight (Kg)
Inch	mm		C	h	a	h1	H	H1	H2	D2	L1	TYPE	C1	n	h2	
3	80	48	152.4	-	-	19.1	252	228	142	200	165	F07	70	4	9	21
4	100	54	190.5	-	-	19.1	274	250	162	200	165	F07	70	4	9	27
5	125	57	215.9	-	-	22.2	290	266	170	200	165	F07	70	4	9	32
6	150	57	241.3	-	-	22.2	320	296	179	200	165	F07	70	4	9	35
8	200	64	298.4	-	-	22.2	384	344	210	300	270	F10	102	4	11	53
10	250	71	361.9	-	-	25.4	434	394	243	300	270	F10	102	4	11	74
12	300	81	431.8	-	-	25.4	520	470	287	400	335	F14	140	4	18	95
14	350	92	476.3	-	-	28.6	544	494	316	400	335	F14	140	4	18	131
16	400	102	539.7	-	-	28.6	646	578	349	500	375	F16	165	4	22	165
18	450	114	577.8	-	-	31.8	663	595	381	500	375	F16	165	4	22	230
20	500	127	635.0	1 1/8-8	28.6	-	698	630	412	500	375	F16	165	4	22	280
24	600	154	749.3	1 1/4-8	31.8	-	813	743	475	600	485	F25	254	8	18	450

CLASS 300

SIZE		L	FLANGE DIMENSION									MOUNTING BASE				Weight (Kg)
Inch	mm		C	h	a	h1	H	H1	H2	D2	L1	TYPE	C1	n	h2	
3	80	48	168.2	-	-	22.2	252	228	142	200	165	F07	70	4	9	21
4	100	54	200.0	-	-	22.2	274	250	162	200	165	F07	70	4	9	27
5	125	59	234.9	-	-	22.2	310	295	170	300	270	F10	102	4	11	38
6	150	59	269.8	-	-	22.2	375	336	199	300	270	F10	102	4	11	45
8	200	73	330.2	-	-	25.4	450	400	227	400	335	F14	140	4	18	72
10	250	83	387.3	1-8	25.4	-	499	449	265	400	335	F14	140	4	18	135
12	300	92	450.8	1 1/8-8	28.6	-	562	497	302	500	375	F16	165	4	22	148
14	350	117	514.3	1 1/8-8	28.6	-	616	551	328	500	375	F16	165	4	22	208
16	400	133	571.5	1 1/4-8	31.8	-	676	606	367	600	485	F25	254	8	18	298
18	450	149	628.6	1 1/4-8	31.8	-	711	641	402	600	485	F25	254	8	18	382
20	500	159	685.8	1 1/4-8	31.8	-	796	721	432	700	520	F30	298	8	22	450
24	600	181	812.8	1 1/2-8	38.1	-	914	837	530	700	515	F30	298	8	22	680

CLASS 600

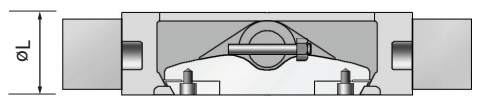
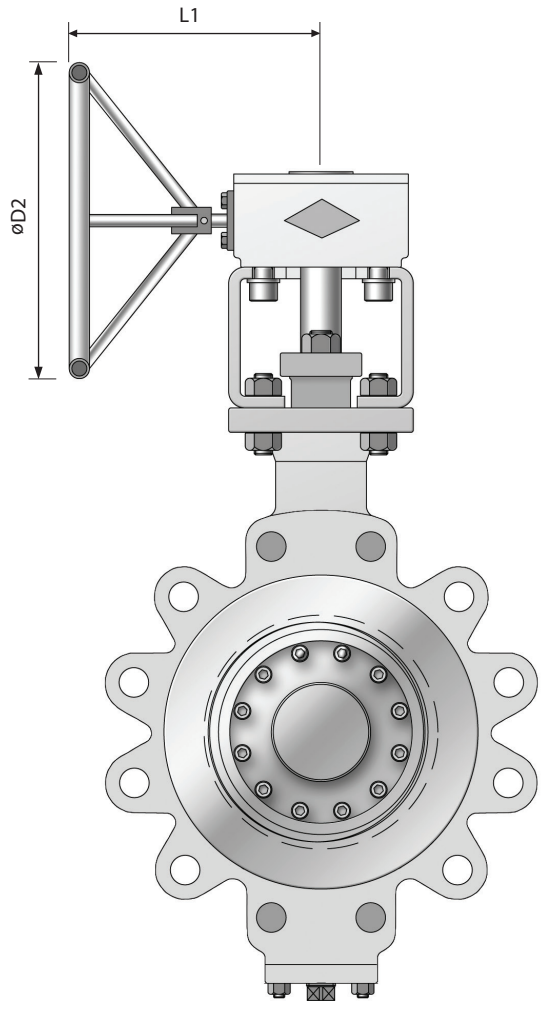
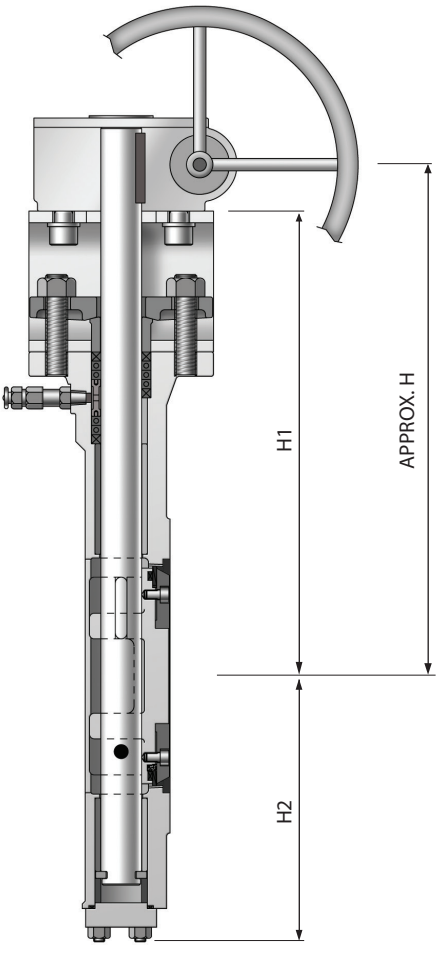
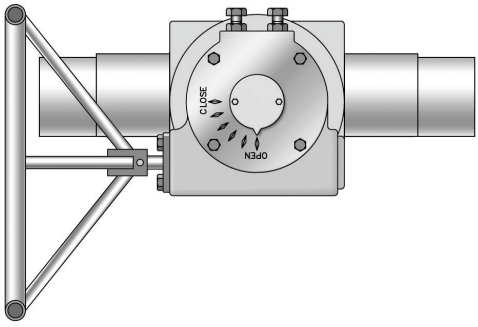
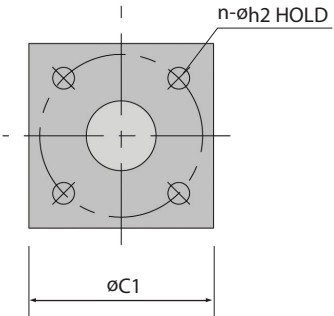
SIZE		L	FLANGE DIMENSION									MOUNTING BASE				Weight (Kg)
Inch	mm		C	h	a	h1	H	H1	H2	D2	L1	TYPE	C1	n	h2	
3	80	54	168.2	-	-	22.2	289	249	148	200	270	F07	70	4	9	29
4	100	64	215.9	-	-	25.4	370	320	180	300	335	F10	102	4	11	38
5	125	78	266.7	-	-	28.6	405	355	195	400	335	F14	140	4	18	55
6	150	78	292.1	1-8	25.4	-	420	370	225	400	335	F14	140	4	18	75
8	200	102	349.2	1 1/8-8	28.6	-	490	425	225	500	375	F16	165	4	22	136
10	250	117	431.8	1 1/4-8	31.8	-	545	480	310	500	375	F16	165	4	22	200
12	300	140	488.9	1 1/4-8	31.8	-	630	560	330	600	485	F25	254	8	18	295

※ NOT SPECIFIED CLASS AND SIZE, PLEASE CONTACT TO SALES DEPARTMENT

• NOTE

1. VALVE DESIGN : ASME B16.34
2. FACE TO FACE DIMENSION : API 609 (WAFFER TYPE)
3. END FLANGE DIMENSION : ASME B16.5

TOB VALVE-LUG TYPE



TOB VALVES - LUG TYPE - DIMENSIONS

UNIT : mm

CLASS 150

SIZE		L	FLANGE DIMENSION				MOUNTING BASE						Weight (Kg)			
Inch	mm		C	h	a	n1	H	H1	H2	D2	L1	TYPE		C1	n	h2
3	80	48	152.4	5/8-11	15.8	4	252	228	142	200	165	F07	70	4	9	23
4	100	54	190.5	5/8-11	15.8	8	274	250	162	200	165	F07	70	4	9	30
5	125	57	215.9	3/4-10	19.1	8	290	266	170	200	165	F07	70	4	9	36
6	150	57	241.3	3/4-10	19.1	8	320	316	179	200	165	F07	70	4	9	39
8	200	64	298.4	3/4-10	19.1	8	384	344	208	300	270	F10	102	4	11	59
10	250	71	361.9	7/8-9	22.2	12	434	394	241	300	270	F10	102	4	11	83
12	300	81	431.8	7/8-9	22.2	12	520	470	267	400	335	F14	140	4	18	110
14	350	92	476.3	1-8	25.4	12	544	494	316	400	335	F14	140	4	18	153
16	400	102	539.7	1-8	25.4	16	643	578	349	500	375	F16	165	4	22	193
18	450	114	577.8	1 1/8-8	28.6	16	660	595	381	500	375	F16	165	4	22	258
20	500	127	635.0	1 1/8-8	28.6	20	695	630	412	500	375	F16	165	4	22	318
24	600	154	749.3	1 1/4-8	31.8	20	813	743	475	600	485	F25	254	8	18	507

CLASS 300

SIZE		L	FLANGE DIMENSION				MOUNTING BASE						Weight (Kg)			
Inch	mm		C	h	a	n1	H	H1	H2	D2	L1	TYPE		C1	n	h2
3	80	48	168.2	3/4-10	19.1	8	252	228	142	200	165	F07	70	4	9	24
4	100	54	200.0	3/4-10	19.1	8	274	250	162	200	165	F07	70	4	9	32
5	125	59	234.9	3/4-10	19.1	8	319	295	170	300	270	F10	102	4	11	44
6	150	59	269.8	3/4-10	19.1	12	375	336	199	300	270	F10	102	4	11	52
8	200	73	330.2	7/8-9	22.2	12	450	400	227	400	335	F14	140	4	18	83
10	250	83	287.3	1-8	25.4	16	499	449	265	400	335	F14	140	4	18	151
12	300	92	450.8	1 1/8-8	28.6	16	562	497	302	500	375	F16	165	4	22	172
14	350	117	514.3	1 1/8-8	28.6	20	616	551	328	500	375	F16	165	4	22	249
16	400	133	571.5	1 1/4-8	31.8	20	616	606	367	600	375	F25	254	8	18	352
18	450	149	628.6	1 1/4-8	31.8	24	711	641	402	600	485	F25	254	8	18	449
20	500	159	685.8	1 1/4-8	31.8	24	798	721	432	700	520	F30	298	8	22	534
24	600	181	812.8	1 1/2-8	38.1	24	914	837	530	700	515	F30	298	8	22	812

CLASS 600

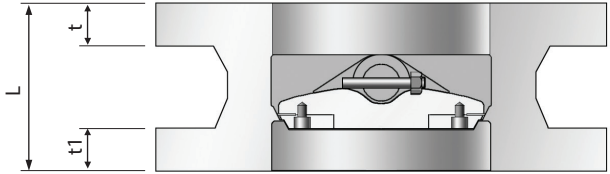
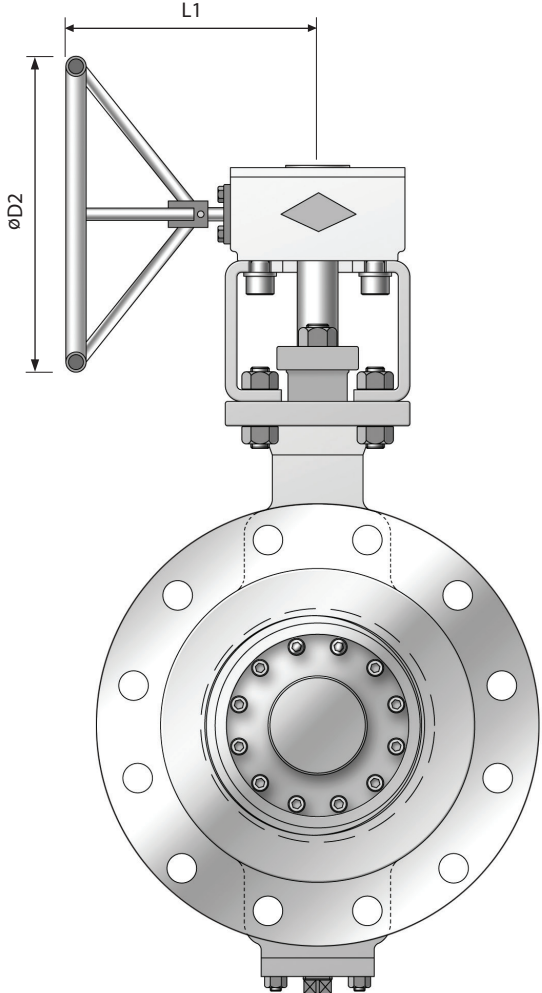
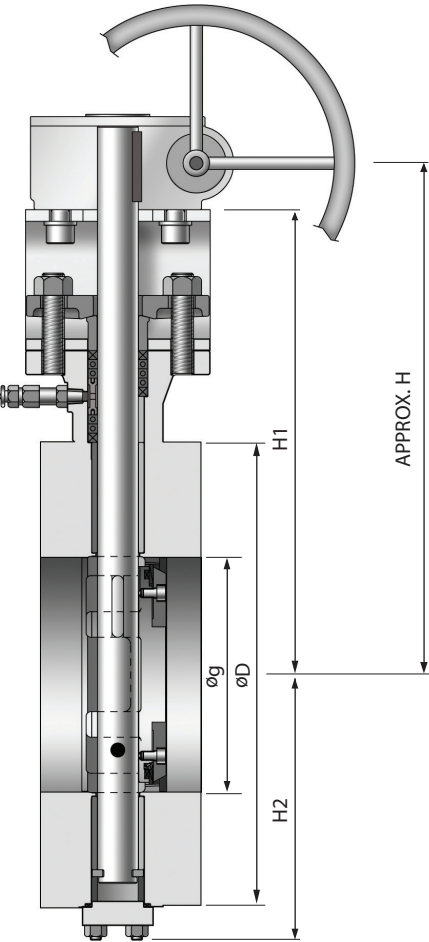
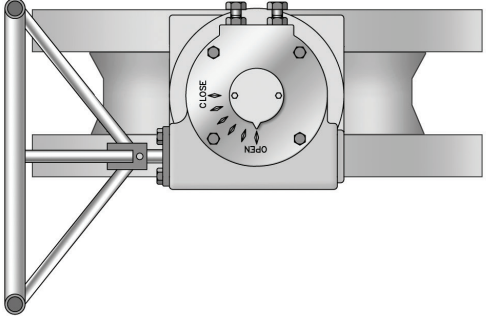
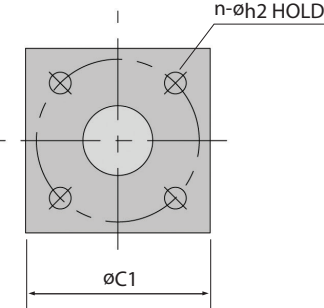
SIZE		L	FLANGE DIMENSION				MOUNTING BASE						Weight (Kg)			
Inch	mm		C	h	a	n1	H	H1	H2	D2	L1	TYPE		C1	n	h2
3	80	54	168.2	3/4-10	19.1	4	289	249	150	300	270	F10	102	4	11	32
4	100	64	215.9	7/8-9	22.2	4	370	320	181	400	335	F14	140	4	14	45
5	125	78	266.7	1-8	25.4	4	405	355	210	400	335	F14	140	4	18	67
6	150	78	292.1	1-8	25.4	8	420	370	223	400	335	F14	140	4	18	88
8	200	102	349.2	1 1/8-8	28.6	8	490	425	255	500	375	F16	165	4	22	157
10	250	117	431.8	1 1/4-8	31.8	12	545	475	309	600	485	F25	254	8	18	237
12	300	140	488.9	1 1/4-8	31.8	16	630	560	330	600	485	F25	254	8	18	343

※ NOT SPECIFIED CLASS AND SIZE, PLEASE CONTACT TO SALES DEPARTMENT

• NOTE

1. VALVE DESIGN : ASME B16.34
2. FACE TO FACE DIMENSION : API 609 (LUG TYPE)
3. END FLANGE DIMENSION : ASME B16.5

TOB VALVE - DOUBLE FLANGE TYPE



TOB VALVES - DOUBLE FLANGE(SHORT) TYPE - DIMENSIONS

UNIT : mm

CLASS 150

SIZE		L	FLANGE DIMENSION									MOUNTING BASE					Weight (Kg)			
Inch	mm		D	g	C	t	h	a	n1	h1	H	H1	H2	D2	L1	TYPE		C1	n	h2
3	80	114	191	127.0	152.4	19.1	5/8-11	15.8	4	19.1	252	228	142	200	165	F07	70	4	9	27
4	100	127	229	157.2	190.5	24.0	5/8-11	15.8	8	19.1	274	250	162	200	165	F07	70	4	9	35
5	125	140	254	185.7	215.9	24.0	3/4-10	19.1	8	22.2	319	295	170	200	165	F07	70	4	9	41
6	150	140	279	215.9	241.3	25.4	3/4-10	19.1	8	22.2	340	316	179	200	165	F07	70	4	9	45
8	200	152	343	269.7	298.4	28.5	3/4-10	19.1	8	22.2	384	344	208	300	270	F10	102	4	11	68
10	250	165	406	323.9	361.9	30.3	7/8-9	22.2	12	25.4	434	394	241	300	270	F10	102	4	11	97
12	300	178	483	381.0	431.8	31.8	7/8-9	22.2	12	25.4	520	470	267	400	335	F14	140	4	18	133
14	350	190	533	412.8	476.3	35.1	1-8	25.4	12	28.6	544	494	316	400	335	F14	140	4	18	188
16	400	216	597	469.9	539.7	36.6	1-8	25.4	16	28.6	643	578	349	500	375	F16	140	4	22	238
18	450	222	635	533.4	577.8	39.7	1 1/8-8	28.6	16	31.8	660	595	381	500	375	F16	165	4	22	302
20	500	229	699	584.2	635.0	43.0	1 1/8-8	28.6	20	31.8	695	630	412	500	375	F16	165	4	22	380
24	600	267	813	692.2	749.3	47.8	1 1/4-8	31.8	20	35.1	813	743	473	600	485	F25	254	8	18	599

CLASS 300

SIZE		L	FLANGE DIMENSION									MOUNTING BASE					Weight (Kg)			
Inch	mm		D	g	C	t	h	a	n1	h1	H	H1	H2	D2	L1	TYPE		C1	n	h2
3	80	114	210	127.0	168.2	28.5	3/4-10	19.1	8	22.2	252	228	142	200	165	F07	70	4	9	27
4	100	127	254	157.2	200.0	31.8	3/4-10	19.1	8	22.2	274	250	162	200	165	F07	70	4	9	35
5	125	140	279	185.7	234.9	35.0	3/4-10	19.1	8	22.2	319	295	170	300	270	F10	102	4	11	52
6	150	140	318	215.9	269.8	36.6	3/4-10	19.1	12	22.2	375	336	199	300	270	F10	102	4	11	63
8	200	152	381	269.7	330.2	41.2	7/8-9	22.2	12	25.4	450	400	227	400	335	F14	140	4	18	101
10	250	165	445	323.9	387.3	47.8	1-8	25.4	16	28.6	499	449	265	400	335	F14	140	4	18	176
12	300	178	521	381.0	450.8	50.8	1 1/8-8	28.6	16	31.8	562	497	302	500	375	F16	165	4	22	210
14	350	190	584	412.8	514.3	53.9	1 1/8-8	28.6	20	31.8	616	551	328	500	375	F16	165	4	22	315
16	400	216	648	469.9	571.5	57.2	1 1/4-8	31.8	20	35.1	616	606	367	600	485	F25	254	8	18	440
18	450	222	711	533.4	628.6	60.5	1 1/4-8	31.8	24	35.1	711	641	402	600	485	F25	254	8	18	558
20	500	229	775	584.2	685.8	63.5	1 1/4-8	31.8	24	35.1	798	721	432	700	520	F30	298	8	22	670
24	600	267	914	692.2	812.8	69.9	1 1/2-8	38.1	24	41.2	914	837	530	700	515	F30	298	8	22	1025

CLASS 600

SIZE		L	FLANGE DIMENSION									MOUNTING BASE					Weight (Kg)			
Inch	mm		D	g	C	t	h	a	n1	h1	H	H1	H2	D2	L1	TYPE		C1	n	h2
3	80	180	210	127.0	168.2	31.8	3/4-10	19.1	8	22.2	289	265	148	200	165	F07	70	4	9	37
4	100	190	273	157.2	215.9	38.1	7/8-9	22.2	8	25.4	370	330	180	300	270	F10	102	4	11	55
5	125	200	330	185.7	266.7	44.5	1-8	25.4	8	28.6	405	355	195	400	335	F14	140	4	18	86
6	150	210	356	215.9	292.1	47.8	1-8	25.4	12	28.6	420	370	225	400	335	F14	140	4	18	109
8	200	230	419	269.7	349.2	55.7	1 1/8-8	28.6	12	31.8	490	425	255	500	375	F16	165	4	22	192
10	250	250	508	323.9	431.8	63.5	1 1/4-8	31.8	16	35.1	545	480	310	500	375	F16	165	4	22	296
12	300	270	559	381.0	488.9	66.6	1 1/4-8	31.8	20	35.1	630	560	330	600	485	F25	254	8	18	421

※ NOT SPECIFIED CLASS AND SIZE, PLEASE CONTACT TO SALES DEPARTMENT

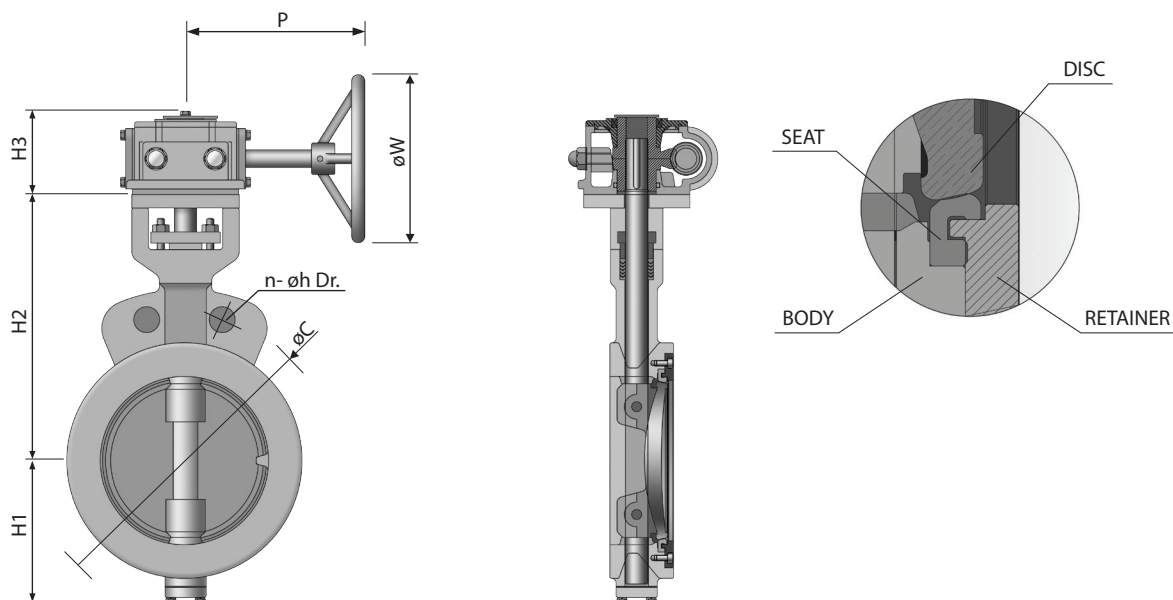
• NOTE

1. VALVE DESIGN : ASME B16.34
2. FACE TO FACE DIMENSION : ISO 5752 (SHORT TYPE)
3. END FLANGE DIMENSION : ASME B16.5

DOUBLE ECCENTRIC TYPE

High-Performance Type Butterfly Valve

- Extension of seat durability for double eccentricity (materialization row abrasion of seat)
- Easy changing seat and parts due to standard for all structures (reduce maintenance cost)



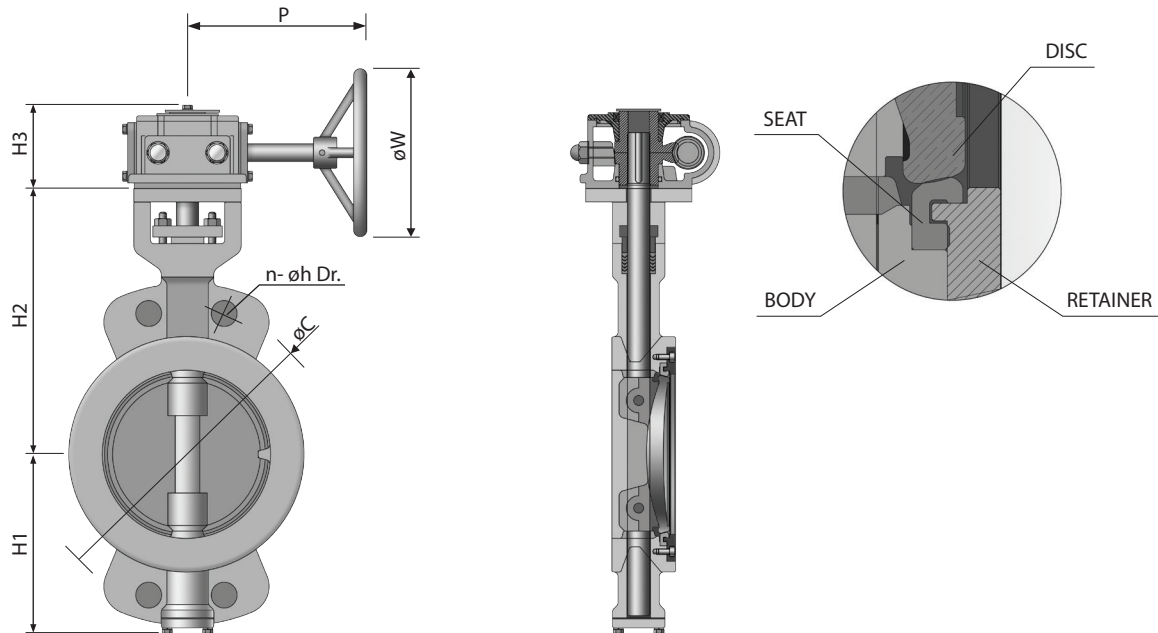
STANDARD MATERIAL SPECIFICATIONS

NO.	PART NAME	MATERIAL		
1	BODY	A216 WCB	A351 CF3M	B148 C95800
2	DISC	A351 CF8	A351 CF3M	B148 C95800
3	SEAT	PTFE	PTFE	PTFE
4	SHAFT	A276 304	A276 316L	A276 316
5	RETAINER BOLT	A193 Gr. B8	S.S 316L	A193 Gr. B8M
6	UPPER BUSH	316S.S+PTFE	316S.S+PTFE	316S.S+PTFE
7	LOWER BUSH	316S.S+PTFE	316S.S+PTFE	316S.S+PTFE
8	RETAINER	A240 304	A240 316L	A240 316
9	DISC PIN	A276 304	A276 316L	A276 316
10	PACKING GLAND	B584C83600	B584C83600	B584C83600
11	PACKING	TEFLON	TEFLON	TEFLON
12	END COVER	A36	A240 316L	B148C95800
13	GASKET	GRAPHITE	GRAPHITE	GRAPHITE
14	BRACKET	A36	A36	A36
15	GEAR BOX	ASS'Y	ASS'Y	ASS'Y
16	HAND WHEEL	A126CLB	A126CLB	A126CLB

DIMENSION AND WEIGHT

UNIT : mm

SIZE	2 1/2	3	4	5	6	
Ød	65	80	100	125	150	
L	46	48	54	56	57	
FLANGE RATING	ØC	139.7	152.4	190.5	215.9	241.3
	n-øh Dr.	4-Ø19	4-Ø19	8-Ø19	8-Ø22.3	8-Ø23
H1	75	83	94	95	127	
H2	167	177	195	218	237	
H3	75	75	75	75	75	
P	170	170	170	170	170	
ØW	150	150	150	150	150	



STANDARD MATERIAL SPECIFICATIONS

NO.	PART NAME	MATERIAL		
1	BODY	A216 WCB	A351 CF3M	B148 C95800
2	DISC	A351 CF8	A351 CF3M	B148 C95800
3	SEAT	PTFE	PTFE	PTFE
4	SHAFT	A276 304	A276 316L	A276 316
5	RETAINER BOLT	A193 Gr. B8	S.S 316L	A193 Gr. B8M
6	UPPER BUSH	316S.S+PTFE	316S.S+PTFE	316S.S+PTFE
7	LOWER BUSH	316S.S+PTFE	316S.S+PTFE	316S.S+PTFE
8	RETAINER	A240 304	A240 316L	A240 316
9	DISC PIN	A276 304	A276 316L	A276 316
10	PACKING GLAND	B584C83600	B584C83600	B584C83600
11	PACKING	TEFLON	TEFLON	TEFLON
12	END COVER	A36	A240 316L	B148 C95800
13	GASKET	GRAPHITE	GRAPHITE	GRAPHITE
14	BRACKET	A36	A36	A36
15	GEAR BOX	ASS'Y	ASS'Y	ASS'Y
16	HAND WHEEL	A126CLB	A126CLB	A126CLB

DIMENSION AND WEIGHT

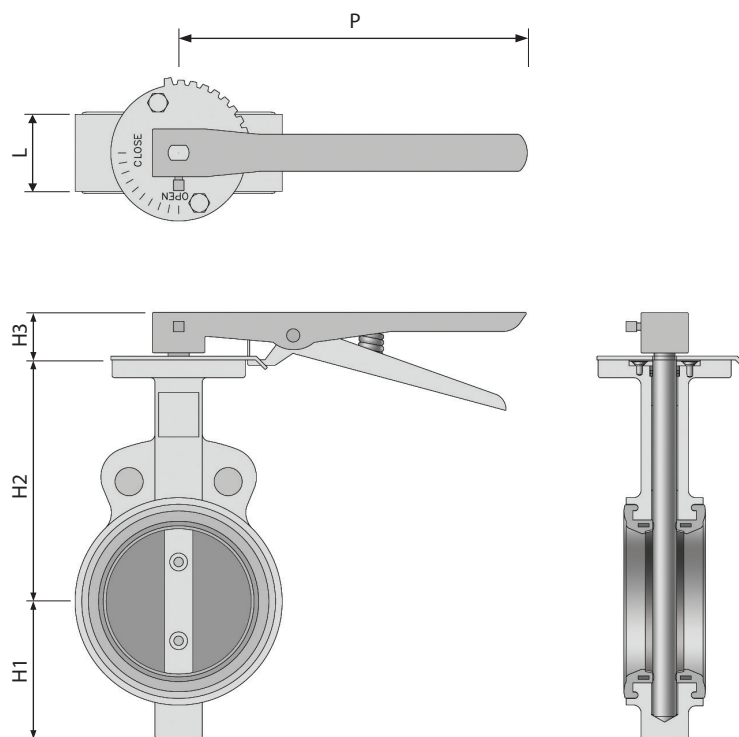
UNIT : mm

SIZE	8	10	12	14	16	18	20	22	24	
Ød	200	250	300	350	400	450	500	550	600	
L	64	71	81	92	102	114	127	154	154	
FLANGE RATING	ØC	298.5	362.0	431.8	476.3	539.7	577.9	635.0	692.1	749.3
	n-Øh Dr.	8-Ø22.3	12-Ø25.4	12-Ø25.4	-	-	-	-	-	-
	n-h TAP	-	-	-	12-1"	16-1"	16-1 1/8"	20-1 1/8"	20-1 1/4"	20-1 1/4"
H1	196	237	264	305	345	372	420	440	471	
H2	295	337	360	331	461	489	565	628	654	
H3	100	100	100	109	109	126	126	142	142	
P	200	200	200	270	270	290	290	330	330	
ØW	250	250	250	310	310	390	390	390	390	

CONCENTRIC TYPE

Rubber Seat Butterfly Valve (Concentric Design)

- We intend from ceaseless technical development effort to zero leakage ratio and minimize valve torque. We manufacture to be used on optimum condition to various actuator of "pneumatic" etc.

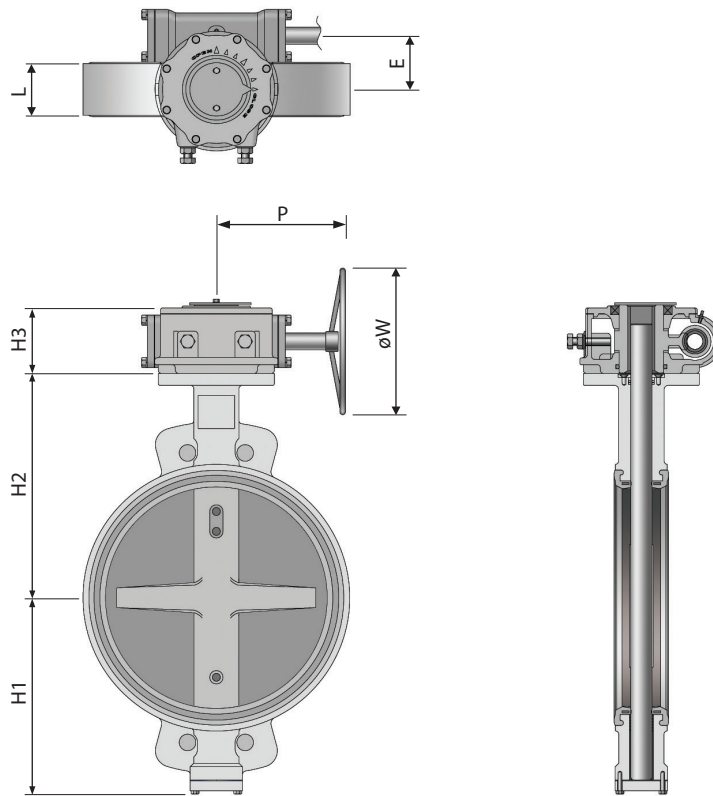


STANDARD MATERIAL SPECIFICATIONS

NO.	PART NAME	MATERIAL		
1	BODY	A216 WCB	A351 CF3M	B148 C95800
2	DISC	A351 CF8	A351 CF3M	B148 C95800
3	SEAT	EPDM	VITON	EPDM
4	SHAFT	A276 410	A276 316L	MONEL K500
5	DISC BOLT	A193 B8	S.S 316L	MONEL K500
6	PACKING	NBR	VITON	NBR
7	PACKING GLAND	A36	A240 316	A240 316
8	GLAND BOLT	A193 B7	A193 B8M	A193 B8M
9	LEVER	A36	S.S 304	S.S 304
10	INDICATOR	A36	S.S 304	S.S 304
11	LEVER BOLT	A193 B7	A193 B8M	A193 B8M

DIMENSION AND WEIGHT

SIZE	UNIT : mm					
	2	2 1/2	3	4	5	6
L	43	46	46	52	56	56
H1	58	65	78	93	116	128
H2	130	142	150	163	176	185
H3	34	34	34	34	34	34
P	233	233	262	262	262	262
WEIGHT(Kg)	4.5	5.5	6.0	6.5	8.5	10



STANDARD MATERIAL SPECIFICATIONS

NO.	PART NAME	MATERIAL		
1	BODY	A216 WCB	A351 CF3M	B148 C95800
2	DISC	A351 CF8	A351 CF3M	B148 C95800
3	SEAT	EPDM	VITON	EPDM
4	SHAFT	A276 410	A276 316L	MONEL K500
5	DISC BOLT	A193 B8	S.S 316L	MONEL K500
6	PACKING	NBR	VITON	NBR
7	PACKING GLAND	A36	A240 316	A240 316
8	GLAND BOLT	A193 B7	A193 B8M	A193 B8M
9	END COVER	A36	A240 316L	B148 C95800
10	END COVER BOLT	A193 B7	A193 B8M	A193 B8M
11	GASKET	GRAPHITE	GRAPHITE	GRAPHITE
12	GEAR BOX	ASS'Y	ASS'Y	ASS'Y
13	HANDLE	A126 B	A126 B	A126 B
14	GEAR BOX BOLT	A193 B7	A193 B8M	A193 B8M

DIMENSION AND WEIGHT

UNIT : mm

SIZE	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	22	24
L	43	46	46	52	56	56	60	68	78	78	102	114	127	154	154
H1	58	65	78	93	116	128	155	231	267	297	332	350	394	430	455
H2	130	142	150	163	176	185	230	267	310	338	375	390	422	460	495
H3	29	29	29	29	29	29	45	36	36	45	45	45	55	55	65
P	150	150	150	150	150	150	200	200	200	270	270	270	290	290	330
E	44	44	44	44	44	44	65	65	65	80	80	80	85	85	103
ØM	150	150	150	150	150	150	250	250	250	310	310	310	390	390	390
WEIGHT(Kg)	6.5	7.0	7.5	8.5	10.5	11.5	15.5	31	42	50	93	110	165	230	300