

Series TC Butterfly Valve

Design Feature

Industrial valves normally require wider temperature and pressure ranges, which conventional resilient seated butterfly valve can not comply, this have led to development of metal seated butterfly valve. NEWAYTC series butterfly valve is triple off-set design which has a advantage of light weight, compact design and cost effective and low operation torque and can replace traditional gate, globe & ball valve in most of industries application.



Products Range:

Size:	3" ~ 48"
Rating:	ANSI 150lb ~ 600lb
Temperature Range:	-196°C ~ +550°C
Body Materials:	Cast steel, Stainless steel, Alloy steel Duplex steel.
Disc Sealing:	PTFE, Graphite laminated
End Connection:	Wafer, Lug, Double Flange



Typical application:

- Petrochemical plant
- Refinery
- Offshore platform
- Power plant
- LNG
- Steel Mills



NEWAY TC series butterfly valve is true metal to metal seated design, featured with quarter turn, bi-directional & zero leakage. Because of no Teflon, Viton or other soft seal material used, it is inherently fire safe and can completely eliminate the traditional elastomeric seating butterfly valve leakage problem due to seat aging or deformation, consequently wear. Wide range of available body material selection make this series of valve not only good for isolation service but also ideal for most of process and control application.

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Design Feature

One-Piece shaft

Anti-blowout proof design, provide positive maximum strength.

Mounting pad

designed per ISO 5211, easily installation of hand levers, gear box, pneumatic or electric actuators.

Low emission packing

Advanced braided (top and bottom) plus 3-4 dieformed graphite packing rings ensure less 20ppm on fugitive emission.

Disc seat design

Allows field replaceable without special tools.

Laminated Seal

PTFE or Graphite plus metal layers, provide an elastic tight seal. Also fire-safe is assured.

Long-length bearing

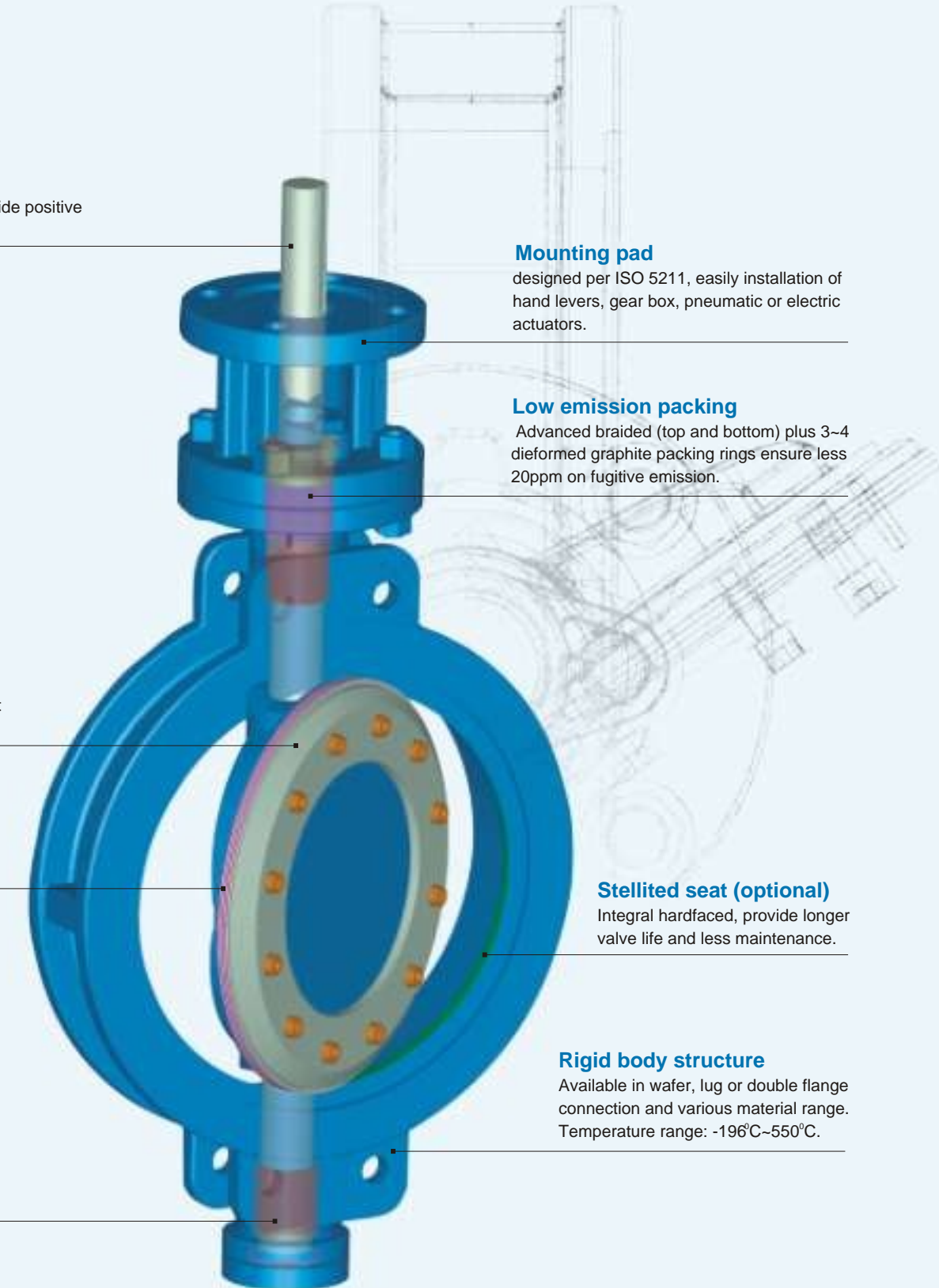
Fine-machined and hardened (Nickel-plated) to reduce the stem friction and ensure lower torque.

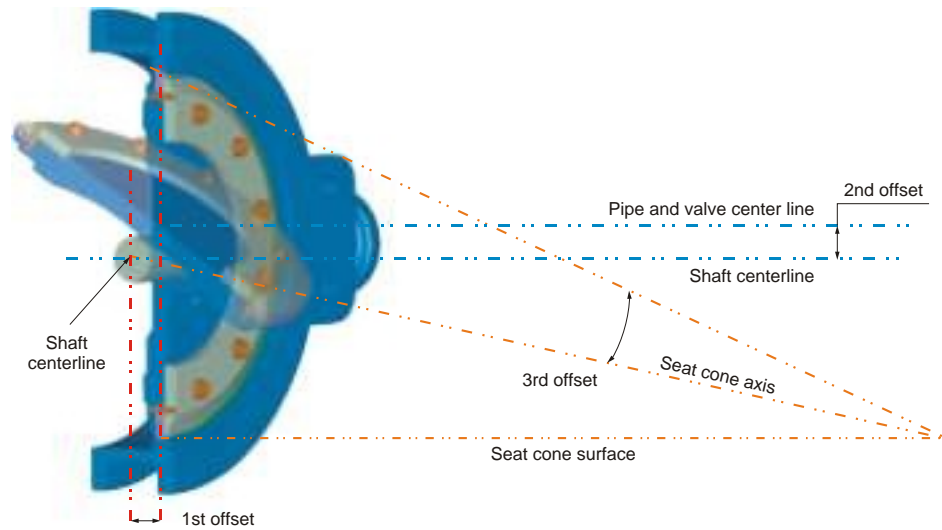
Stellited seat (optional)

Integral hardfaced, provide longer valve life and less maintenance.

Rigid body structure

Available in wafer, lug or double flange connection and various material range. Temperature range: -196°C-550°C.



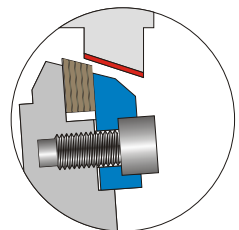


Triple Offset Frictionless Design

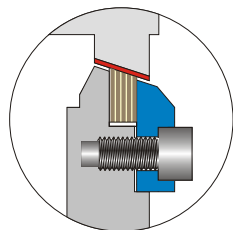
1st offset: Shaft rotation center is offset from the centerline of valve seat, provide a completed sealing contact between disc and seat.

2nd offset: Shaft rotation center is offset from centerline of valve body, greatly reduce the friction between disc and seat during valve closing and opening.

3rd offset: Seat cone center is offset from the valve centerline, completely eliminate the mechanical friction between disc and seat. It is a torque seated, process pressure aided frictionless seal valve, ideally suitable for metal seated valves on high temperature, high pressure and firesafe application.



Before seating



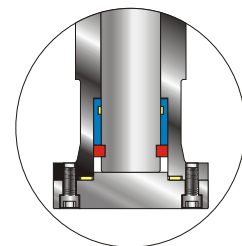
After seating

Laminated Disc Seal

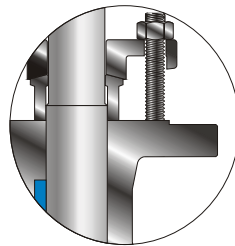
Laminated sealing is mounted in the disc, easily for maintenance and replacement. It consists of 3~5 flexible graphite or PTFE layers self adhere with fine machined stainless seal ring, no need traditional phenol resin adhere joint, There is a reasonable clearance between disc seal and disc, provide a floating resilient seal and self centering tight seal both in low & high temperature application. Conical angle & streamline profile of this laminated disc is optimized by computer finite element analysis to eliminate any potential jamming as well as give a greater Cv.

Zero Leakage

Disc-Seat sealing was achieved by torque force evenly loaded on disc laminated seal edge, which has resilient function to assure Zero Leakage in both hydrostatic or air test per API 598.



Internally retained



Externally retained

Anti-blowout shaft.

Internally & Externally retained, double times blowout proof stem design per API 609.

Internal: Lower end shaft is grooved with Hemicycle Ring, prevent stem blowout.

External: Shaft is designed with an integral collar and was blowout prevented by gland follower.

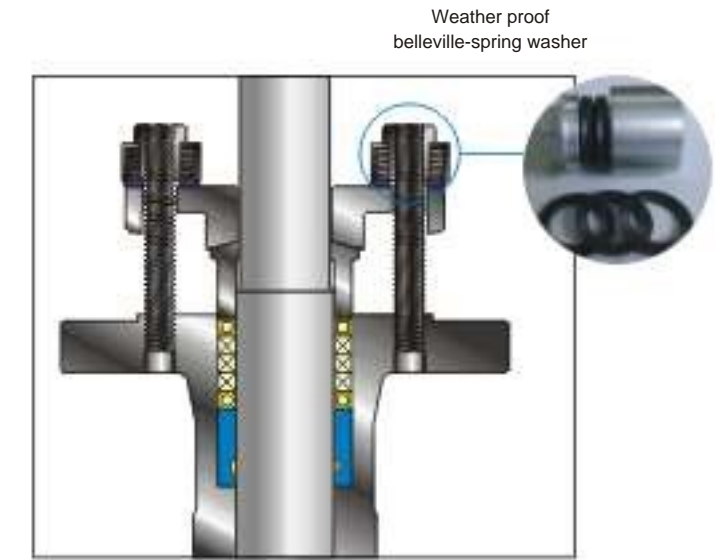
Inherent Fire Safe

Neway triple offset butterfly valves are all metal construction and sealing, it is inherently fire safe design. Fire safe tests to API 607 were successfully performed in Neway Research & Development laboratory.

Low Emission Shaft Seal

Neway standard emission control is 20 PPM

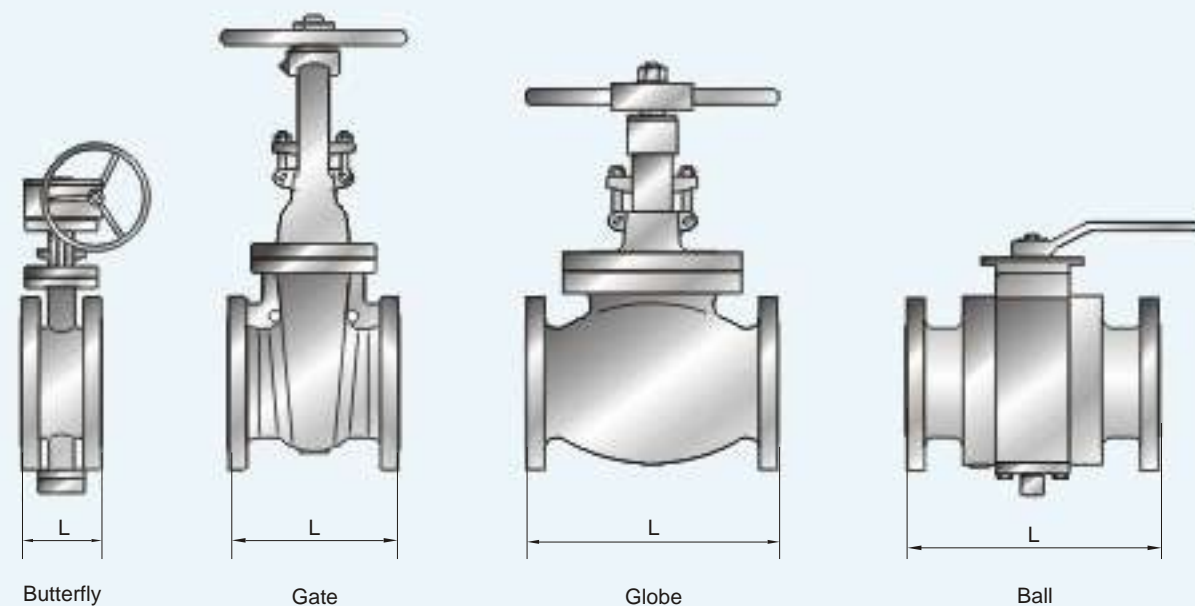
- Shaft is fully guided by shaft bearing & gland follower to avoid any side jiggle due to line pressure thrust.
- The packing set is pre-compressed and is a combination of braided graphite rings top and bottom with die formed flexible graphite rings between.
- Controlled shaft & stuffing box finish with Ra0.4~Ra0.8 on shaft and Ra3.2 on stuffing box which allow a better holding of packing ring and results in a better shaft sealing performance.
- Optional Live Loaded gland flange is available for providing constant packing compression to reduce fugitive emission from shaft seal.
- Optional shaft seal design per Shell MESC 77/312 & TA-Luft is also available upon request.



Compact & light Design

NEWAY series TC butterfly valve was designed per API 609, due to its compact & light design. It is an economical replacement for gate, globe and ball valves. Below is a comparison table based on a NEWAY design 6" valve.

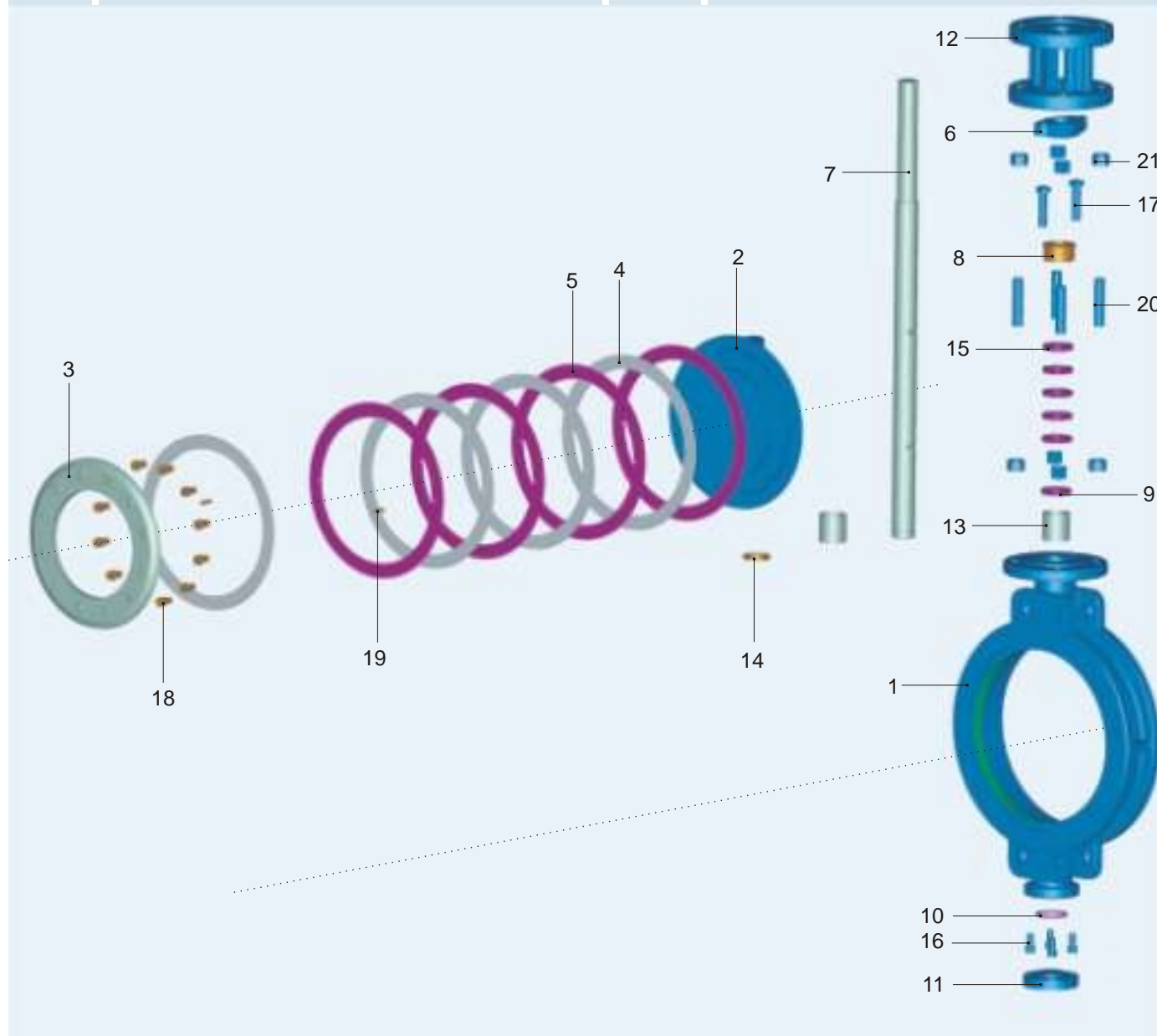
	150LB				300LB				600LB			
	Butterfly	Gate	Globe	Ball	Butterfly	Gate	Globe	Ball	Butterfly	Gate	Globe	Ball
Face to Face (mm)	140	267	406	394	140	403	445	403	210	559	559	559
Weight (kg)	68	77	100	190	118	144	168	211	201	234	284	248



Series TC Butterfly Valve

Material Specifications

No	Part	No	Part
1	Body	12	Yoke
2	Disc	13	Bearing
3	Disc Retaining Ring	14	Hemicycle Ring
4	Steel Seal Ring	15	Packing
5	Seal Ring	16	Screw
6	Gland Flange	17	Gland bolt
7	Shaft	18	Disc Screw
8	Gland	19	Disc Pin
9	Spacer Ring	20	Body Stud
10	Gasket	21	Body Nut
11	End Cover		



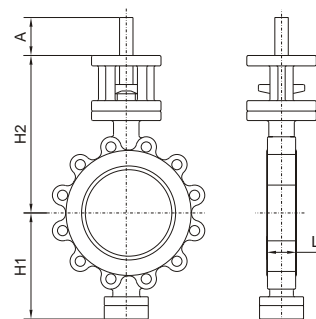
Series TC Butterfly Valve

Material Specifications

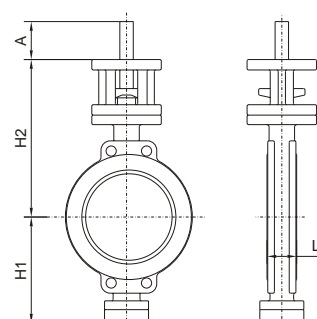
No	Part	Standard	Stainless steel
1	Body	ASTM A216-WCB/316 overlay	ASTM A351-CF8M
2	Disc	ASTM A216-WCB	ASTM A351-CF8M
3	Disc Retaining Ring	ASTM A182-F316	ASTM A182-F316
4	Steel Seal Ring	ASTM A182-F316	ASTM A182-F316
5	Seal Ring	Graphite/PTFE	Graphite/PTFE
6	Gland Flange	ASTM A216-WCB	ASTM A351-CF8
7	Shaft	ASTM A182-F316	ASTM A182-F316
8	Gland	ASTM A182-F316	ASTM A182-F316
9	Spacer Ring	ASTM A182-F316	ASTM A182-F316
10	Gasket	316SS+Graphite	316SS+Graphite
11	End Cover	ASTM A105	ASTM A182-F316
12	Yoke	ASTM A216-WCB	ASTM A351-CF8M
13	Bearing	ASTM A182-F316/Cr plated	ASTM A182-F316/Cr plated
14	Hemicycle Ring	ASTM A182-F316	ASTM A182-F316
15	Packing	Graphite/PTFE	Graphite/PTFE
16	Screw	ASTM A193-B7	ASTM A193-B8
17	Gland bolt	ASTM A193-B7	ASTM A193-B8
18	Disc Screw	S.S.	S.S.
19	Disc Pin	S.S.	S.S.
20	Body Stud	ASTM A193-B7	ASTM A193-B8
21	Body Nut	ASTM A194-2H	ASTM A194-8

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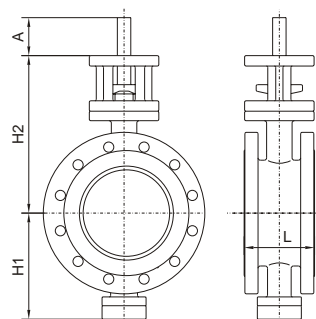
Dimensions & Weights



Lugged type



Wafer type



Double Flanged Type

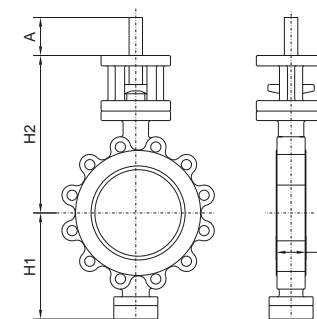
Class 150LB

Dimensions (mm)

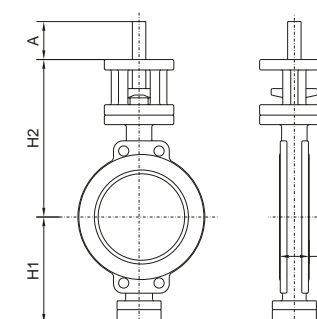
Valves Size					L			Weight (kg)		
inch	mm	H1	H2	A	Lug	Wafer	Flanged	Lug	Wafer	Flanged
3"	80	157	239	45	48	48	114	27	26	41
4"	100	179	280	45	54	54	127	29	27	50
6"	150	194	310	45	57	57	140	37	32	68
8"	200	230	330	75	64	64	152	63	60	112
10"	250	280	380	80	71	71	165	85	78	148
12"	300	310	450	100	81	81	178	137	123	221
14"	350	340	500	110	92	92	190	200	174	297
16"	400	365	510	110	102	102	216	276	229	370
18"	450	436	640	135	114	114	222	329	288	435
20"	500	450	660	150	127	127	229	480	410	589
24"	600	530	820	170	154	154	267	673	585	827
28"	700	600	903	170	165	165	292	1212	1098	1476
30"	750	630	930	170	190	190	318	1496	1364	1634
32"	800	696	967	175	190	190	318	1806	1640	2005
36"	900	760	1105	175	203	203	330	2116	1917	2506
40"	1000	830	1175	175	216	216	410	2681	2425	3347
42"	1050	860	1210	175	229	229	410	2811	2573	3620
48"	1200	960	1320	200	254	254	470	3940	3484	5077

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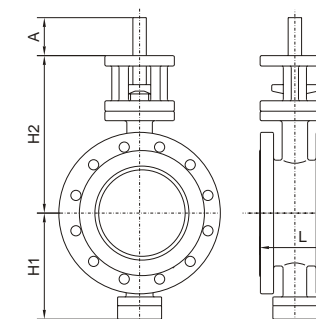
Dimensions & Weights



Lugged type



Wafer type



Double Flanged Type

Class 300LB

Dimensions (mm)

Valves Size					L			Weight (kg)		
inch	mm	H1	H2	A	Lug	Wafer	Flanged	Lug	Wafer	Flanged
3"	80	157	239	45	48	48	114	31	26	50
4"	100	179	280	45	54	54	127	35	27	67
6"	150	220	356	60	59	59	140	65	50	118
8"	200	260	420	80	73	73	152	90	81	156
10"	250	310	430	90	83	83	165	141	133	207
12"	300	345	480	100	92	92	178	206	187	337
14"	350	370	450	110	117	117	190	395	279	495
16"	400	390	550	120	133	133	216	469	368	604
18"	450	490	705	130	149	149	222	718	494	864
20"	500	520	750	140	159	159	229	825	607	971
24"	600	590	910	150	181	181	267	1271	901	1455

Class 600LB

Dimensions (mm)

Valves Size					L			Weight (kg)
inch	mm	H1	H2	A	Lug	Wafer	Flanged	Flanged
3"	80	184	280	65	54	54	180	57
4"	100	205	300	80	64	64	190	108
6"	150	260	415	120	78	78	210	201
8"	200	290	450	130	102	102	230	300
10"	250	360	500	140	117	117	250	463
12"	300	390	570	150	140	140	270	601
14"	350	410	590	160	155	155	290	673
16"	400	470	650	170	178	178	310	1055
18"	450	560	800	180	200	200	330	1196
20"	500	600	830	190	216	216	350	1542
24"	600	650	1050	250	232	232	390	2310