



**NW** NEWAY

# Double Offset Butterfly Valves

*Complete Solutions for Engineered Valves*



**NEWAY VALVE**

Cat. No.: E-DOV-2011-WIP

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## Complete Solutions for Industrial Valves

As one of the leading valve manufacturers in the world, Neway specializes in the development of innovative designs through intensive research and development programs along with a commitment to excellence and engineering in manufacturing valve solutions for all industries.

Neway's main product lines include gate, globe, check, butterfly, and ball valves with quality innovative designs that are recognized by many global users and EPCs. These products have been installed throughout the world in gas, oil, refining, chemical, and marine, power generation, and pipeline transmission industrial applications.

## Neway's Facilities

Neway's management structure is based on multi-plant manufacturing. We currently operate one R&D center, two valve assembly plants, and four specialized foundries in China. Our newest assembly plant was recently expanded in 2013, and it now covers nearly 35,000 square meters. Additionally, we have opened two overseas assembly plants in Mexico and Saudi Arabia.

Neway runs the most advanced manufacturing and management systems available. Our R&D software includes ANSYS, fe-safe, CF-Design, and SolidWorks. We are one of the few valve manufacturers performing Enterprise Resource Planning (ERP) using SAP ERP software in addition to utilizing automatic inventory management systems. Our in-house testing capabilities include fire-safe, cryogenic, high pressure gas and fugitive emission testing. These processes ensure that our products are safe, reliable, and environmentally-friendly.

Neway's goal is to occupy leading market positions through collaboration with value-adding business partners worldwide. In the last few years, Neway successively established new subsidiaries in Brazil, Dubai, Europe, Singapore, and the USA along with nearly 80 distributors around the world.

## Quality Assurance

Neway is dedicated to the pursuit of having zero defect valves leave our facility. We perform active Six Sigma quality management to continually enhance process control management based on advanced statistical data analysis. Neway's industrial certificates include ISO 9001, CEIPED, TA-Luft, API 6A, API 6D, ABS, API Q1 and Fire Safe approvals.

# Quality Commitment

ISO 9001

API 6D



API 6A



Neway recognizes the important role a high quality valve plays in the safety and health of personnel as well as the protection of property. Neway concentrates its effort to provide customers with consistent products designed, manufactured, inspected, and tested in accordance with our customers' specifications at a competitive price in accordance with international standards.



CE/PEP



Industry standards do not always consider all possible parameters when selecting valve products. Various decision making parameters such as special service fluids or external environments in which the valves operate are often not covered in standards and can negatively affect the valve's performance. Therefore, we recommend that our customers communicate with our engineering department about any specific question for their valve application. Using our experience in providing valves for various industries and media types, our valve optimization program continuously strives to provide valves that withstand deterioration in service and ensure proper valve selection that will remain operational during its intended commission lifetime.

TA Luft



ABS



API 591

Fire Safe Test



# How to Order

## Figure Numbers



Neway figure numbers are designed to cover essential features. When ordering, please show the figure number and a detailed description to avoid misunderstanding any of your requirements.

### ① Valve Size

in	2	2-1/2	3	4	5	6	8	10	12	14
mm	50	65	80	100	125	150	200	250	300	350
in	16	18	20	24	28	30	32	36	40	48
mm	400	450	500	600	700	750	800	900	1000	1200

### ② Double Offset Butterfly Valve Type

Symbol	Type
TB	Rubber Seat Design
TBT	PTFE Seat Design, Non Fire-Safe
TBF	PTFE+Metal Seat Design, Fire-Safe

### ③ ANSI Class

Code	1	3	6
Class(LB)	150	300	600

### ④ End Connection

Symbol	Type
R	Double Flange
W	Wafer
L	Lug

### ⑤ Operator

G	Gear operator
M	Motor actuator
P	Pneumatic actuator

### ⑥ Body Material

Material	ASTM Ref.
WCB	A216 Grade WCB
LCB	A352 Grade LCB
LCC	A352 Grade LCC
CF8M	A351 Grade CF8M
CF8	A351 Grade CF8
CF3M	A351 Grade CF3M
CF3	A351 Grade CF3

### ⑦ Trim Code

First Number		Second Number		Third Number		Fourth Number	
Stem		Disc		Seat		Packing	
Code	Material	Code	Material	Code	Material	Code	Material
1	F416	1	QT450-10	1	EPDM	AA	GRAPHITE
2	F304	2	CF8	2	NBR	AB	PTFE
3	F316	3	CF8M	3	BUNA-N		
4	MONEL K500	4	MONEL	4	VITON		
5	17-4PH	5	QAL9-4	5	PTFE		
6	F6a	6	WCB	6	NEOPRENE		
7	F316L	7	CA15	7	HYPALON		
8	F304L	8	F53	8	316+PTFE		

Note: Other materials are available upon request.

# Double Offset Butterfly Valve

## Design Features

Industrial valves require wider temperature and pressure ranges that conventional butterfly valves can not achieve. This has driven the development of a high performance butterfly valve. Neway double offset series butterfly valves offer a light weight, compact, and cost effective design with the advantage of a low operating torque.



## Product Range:

<b>Size:</b>	2" - 48"
<b>Rating:</b>	ANSI 150LB - 600LB
<b>Body Materials:</b>	Carbon Steel, Stainless Steel, Alloy Steel, Duplex Steel
<b>Seat:</b>	NBR, EPDM, VITON, PTFE, RPTFE
<b>End Connection:</b>	Wafer, Lug, Double Flange

## Typical Applications:

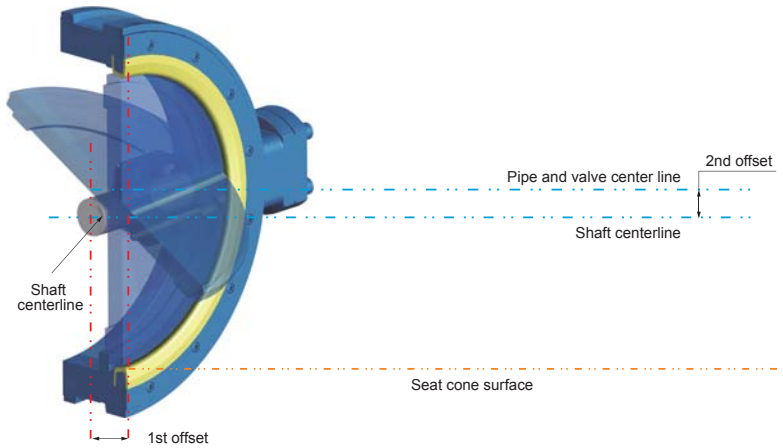
- Petrochemical
- Refinery
- Offshore platform
- Power Plant
- LNG
- Steel Mills
- Commercial
- Pulp and Paper
- Hydrocarbon Process
- Industrial



The double offset shaft and disc arrangement provides camming action to the disc which disengages from the seat with minimal rotation. This design minimizes the wear points at the top and bottom of the seat typically seen on conventional butterfly valves.

# Double Offset Butterfly Valve

## Design Features



## Double Offset Frictionless Design

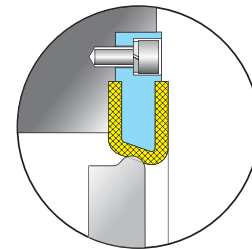
1<sup>st</sup> offset: Shaft is positioned downstream from the centerline of the seat.

2<sup>nd</sup> offset: Shaft is off center from the vertical axis of the seat.

## Seat Structure

### 1. Double Offset Rubber Seat Butterfly Valve

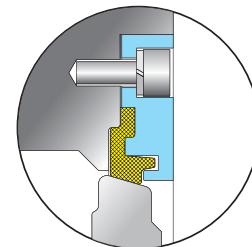
The NBR seat is sulfured into the framework to improve sealing performance. The disc surface has a conical design to reduce the contact area and frictional force in order to extend the usage life. The valve seat can also be replaced or repaired easily.



RUBBER

### 2. Double Offset PTFE Seat Butterfly Valve

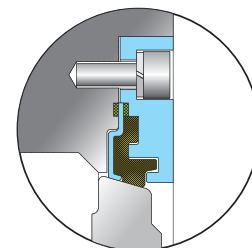
A surplus of material between the PTFE Seat and Disc ensures a reliable seal in a low pressure environment. In high pressure situations, the force of the medium pushes against the seat contacting the sealing surface for a stronger seal. The disc surface has a conical design to reduce frictional force. The valve seat can also be replaced or repaired easily.



PTFE/RPTFE

### 3. Double Offset Fire Safe PTFE Butterfly Valve

Fire Safe valve seat with dual seal includes a primary PTFE seat insert and metal seat. In the event that the PTFE insert is destroyed, the secondary metal seat provides an effective shut-off. The DOV fire safe certificate is approved by Lloyd's Register.

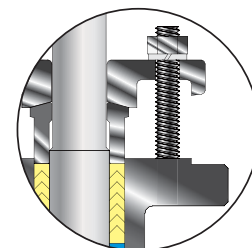


PTFE FIRE

## Shaft Retention

### Externally retained, double blowout proof stem design as API 609

External: Shaft is designed with an integral collar and gland follower to prevent blowouts.



Externally retained

## Zero Leakage

Disc-Seat sealing is achieved by evenly loading torque force onto the disc's laminated seal edge, and assures zero leakage in both hydrostatic and air tests per API 598.

# Double Offset Butterfly Valve

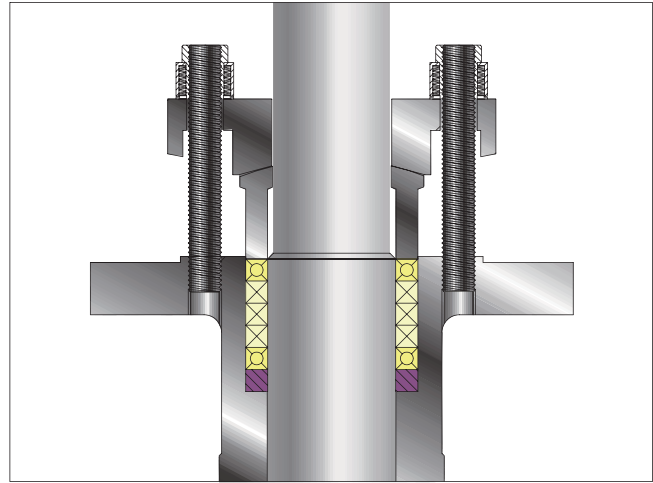
## Design Features

### Low Emission Shaft Seal

Neway can supply packing that limits fugitive emission rates down to 20 ppm\*

- The shaft is fully guided by a shaft bearing and gland follower to avoid any side load due to line pressure thrust.
- The packing set is a pre-compressed combination of braided graphite rings and die formed flexible graphite rings.
- The controlled Ra0.4-Ra0.8 finish of the shaft and Ra1.6 finish of the stuffing box result in optimum packing and shaft sealing performance.
- Optional: Live Loaded gland flange is available to provide constant packing compression to reduce fugitive emissions.
- Optional: Shaft seal designs are available per Shell MESC 77/312 & TA-Luft.

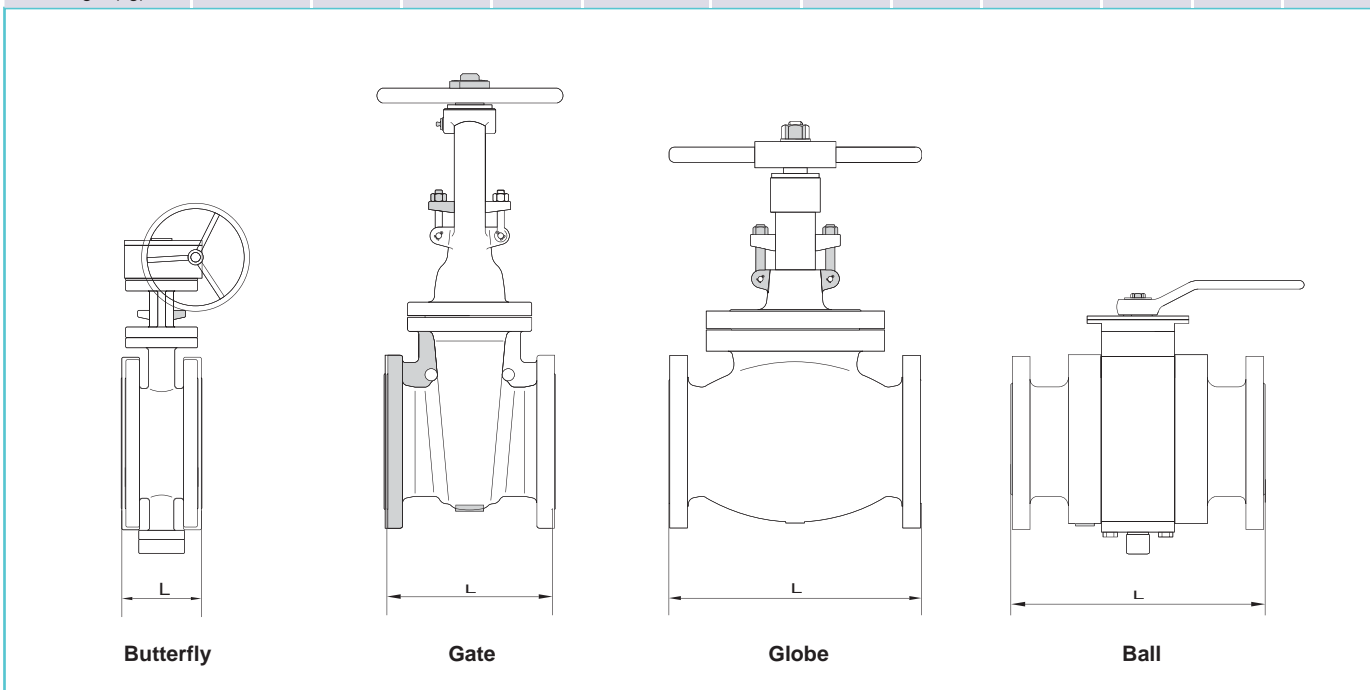
\*20 ppm per the ISO 15848 sniffing method with helium gas.



### Compact & Light Design

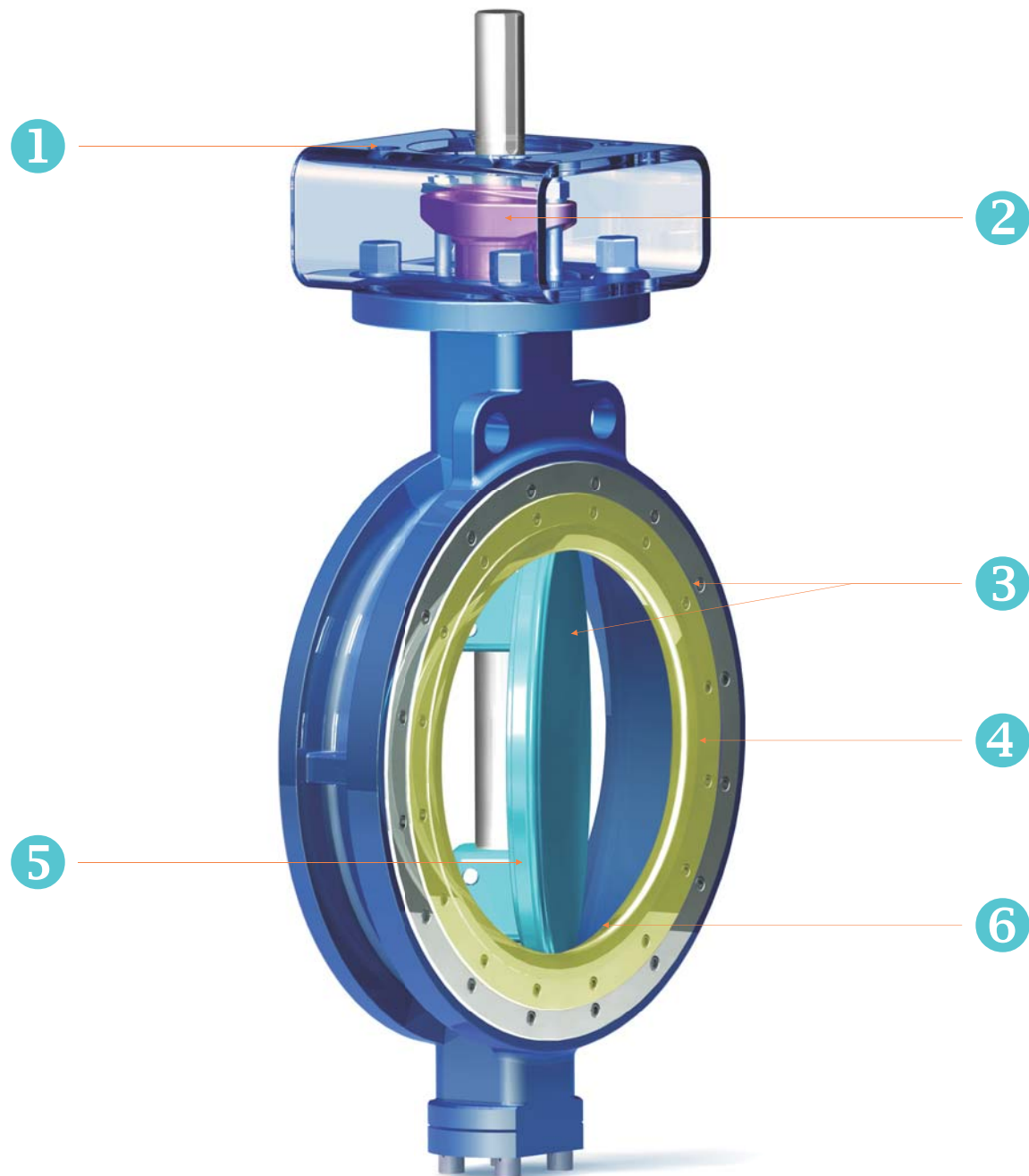
The Neway Double Offset Butterfly Valve is designed per API 609. Due to its compact and light design, it is an economical substitute for gate, globe, and ball valves. Below is a comparison table based on Neway 6" valve.

Class	150LB				300LB				600LB			
Valve Type	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)	21	77	100	190	34	144	168	211	87	234	284	248



# Double Offset Butterfly Valve

## Design Features



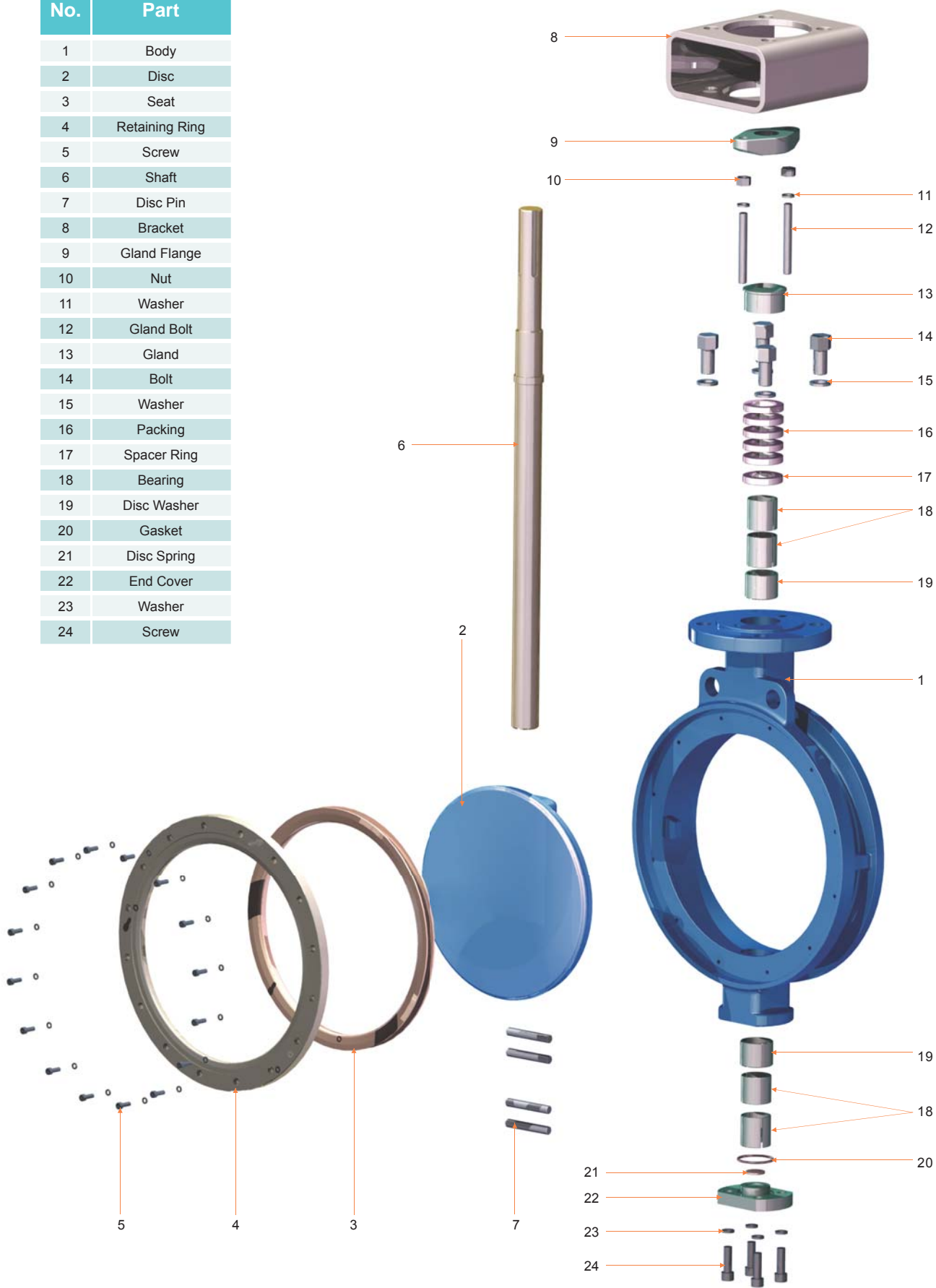
- ① ISO 5211 Top Flange
- ② In addition to standard, durable V-ring packing, you can also choose from optional graphite high temperature packing or emissions control packing.
- ③ Bi-Directional, Shut off performance
- ④ Seat Options: Rubber, PTFE, RPTFE, or Fire Safe PTFE
- ⑤ The double offset operating principle minimizes seat wear and lowers operating torque to improve durability.
- ⑥ Positive sealing is mechanically achieved and does not rely on line pressure assistance.



# Double Offset Butterfly Valve

## Material Specifications

No.	Part
1	Body
2	Disc
3	Seat
4	Retaining Ring
5	Screw
6	Shaft
7	Disc Pin
8	Bracket
9	Gland Flange
10	Nut
11	Washer
12	Gland Bolt
13	Gland
14	Bolt
15	Washer
16	Packing
17	Spacer Ring
18	Bearing
19	Disc Washer
20	Gasket
21	Disc Spring
22	End Cover
23	Washer
24	Screw



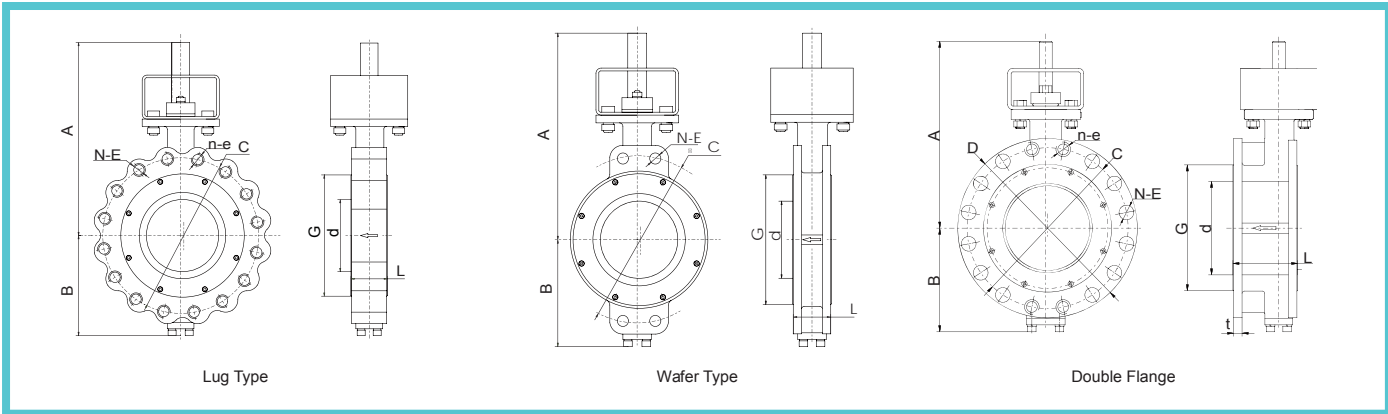
# Double Offset Butterfly Valve

## Material Specifications

No.	Part	Standard	Stainless Steel
1	Body	ASTM A216-WCB	ASTM A351-CF8M
2	Disc	ASTM A351-CF8M	ASTM A351-CF8M
3	Seat	NBR/EPDM/PTFE	NBR/EPDM/PTFE
4	Retaining Ring	ASTM A105N	ASTM A182-F316
5	Screw	S.S.	S.S.
6	Shaft	17-4PH	17-4PH
7	Disc Pin	17-4PH	17-4PH
8	Bracket	Carbon Steel	Carbon Steel
9	Gland Flange	ASTM A216-WCB	ASTM A351-CF8
10	Nut	ASTM A194-2H	ASTM A194-8
11	Washer	Carbon Steel	S.S.
12	Gland Bolt	ASTM A193-B7	ASTM A193-B8
13	Gland	ASTM A182-F316	ASTM A182-F316
14	Bolt	ASTM A193-B7	ASTM A193-B8
15	Washer	Carbon Steel	S.S.
16	Packing	NBR/PTFE/Graphite	NBR/PTFE/Graphite
17	Spacer Ring	ASTM A182-F316	ASTM A182-F316
18	Bearing	ASTM A182-F316 with PTFE/Graphite	ASTM A182-F316 with PTFE/Graphite
19	Disc Washer	ASTM A182-F316	ASTM A182-F316
20	Gasket	NBR/PTFE/Graphite	NBR/PTFE/Graphite
21	Disc Spring	PTFE/316	PTFE/316
22	End Cover	ASTM A105N	ASTM A182-F316
23	Washer	Carbon Steel	S.S.
24	Screw	ASTM A193-B7	ASTM A193-B8

# Double Offset Butterfly Valve

## Dimensions & Weight



## Class 150LB

### LUG TYPE

Size		d		G		C		N	E	n	e	L		A		B		Weight	
in	mm	in	mm	in	mm	in	mm					in	mm	in	mm	in	mm	kg	lbs
2	50	2.01	51	3.62	92	4.75	120.7	4	5/8-11	*	*	1.69	43	7.64	194	3.15	80	6	12.79
3	80	3.39	86	5.00	127	6.00	152.5	4	5/8-11	*	*	1.81	46	8.43	214	3.15	80	9	19.40
4	100	4.33	110	6.18	157	7.50	190.5	8	5/8-11	*	*	2.13	54	9.17	233	3.94	100	12	26.01
5	125	5.16	131	7.32	186	8.50	216	8	3/4-10	*	*	2.24	57	10.39	264	4.69	119	16	34.83
6	150	6.14	156	8.35	212	9.51	241.5	8	3/4-10	*	*	2.24	57	11.02	280	5.31	135	14	30.86
8	200	7.99	203	10.63	270	11.75	298.5	8	3/4-10	*	*	2.52	64	12.20	310	7.48	190	32	69.44
10	250	10.00	254	12.76	324	14.25	362	12	7/8-9	*	*	2.80	71	13.94	354	9.84	250	48	104.72
12	300	12.01	305	15.00	381	17.01	432	12	7/8-9	*	*	3.19	81	17.72	450	11.42	290	70	153.22
14	350	13.27	337	16.26	413	18.74	476	12	1-8	*	*	3.62	92	18.90	480	11.81	300	102	224.87
16	400	15.24	387	18.50	470	21.24	539.5	16	1-8	*	*	4.02	102	19.88	505	13.39	340	144	317.46
18	450	17.24	438	20.98	533	22.76	578	16	1-1/8-8	*	*	4.49	114	23.62	600	14.96	380	188	414.46
20	500	19.25	489	22.99	584	25.00	635	16	1-1/8-8	4	1-1/8-8	5.00	127	29.13	740	15.35	390	244	537.92
24	600	23.27	591	27.24	692	29.51	749.5	16	1-1/4-8	4	1-1/4-8	6.06	154	33.86	860	18.50	470	378	833.33
28	700	27.24	692	30.00	762	31.30	795	36	3/4-10	4	3/4-10	6.50	165	34.02	864	19.09	485	486	1071.43
30	750	29.25	743	32.01	813	33.31	846	37	3/4-10	7	3/4-10	7.48	190	37.20	945	20.35	517	655	1444.00
32	800	30.75	781	34.02	864	35.43	900	41	3/4-10	7	3/4-10	7.48	190	39.37	1000	21.14	537	755	1664.46
36	900	34.49	876	38.27	972	39.76	1010	39	7/8-9	5	7/8-9	7.99	203	41.38	1051	24.02	610	820	1807.76
40	1000	38.43	976	42.52	1080	44.11	1120.5	40	1-8	4	1-8	8.50	216	48.03	1220	26.93	684	1054	2324.07
48	1200	45.98	1168	50.75	1289	52.56	1335	39	1-1/8-8	5	1-1/8-8	10.00	254	53.94	1370	31.50	800	1849	4077.05

## Class 150LB

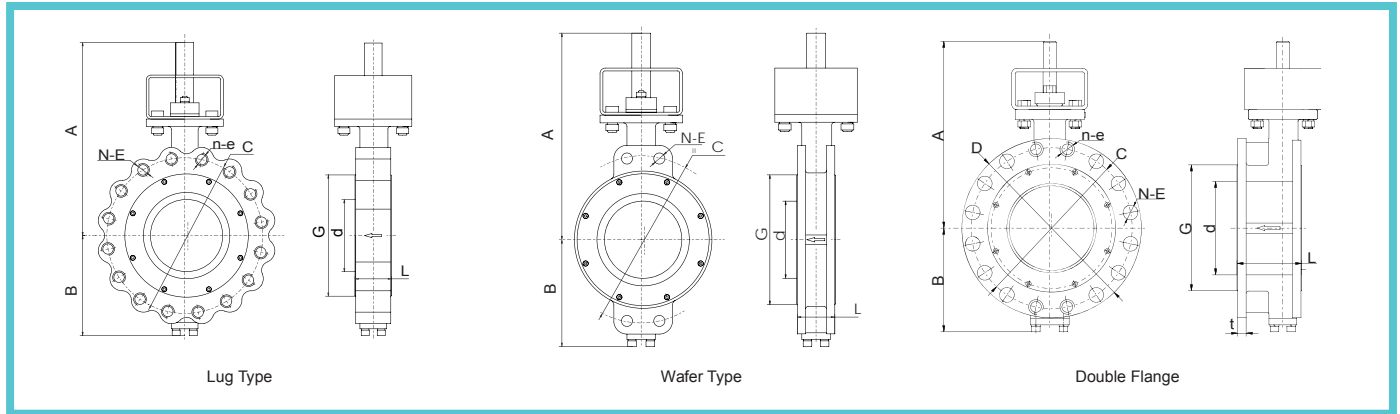
### WAFER TYPE

Size		d		G		C		N	E	L		A		B		Weight			
in	mm	in	mm	in	mm	in	mm			in	mm	in	mm	in	mm	kg	lbs		
2	50	2.01	51	3.62	92	4.75	120.7	2	φ19	1.69	43	6.30	160	3.15	80	4	8.38		
3	80	3.39	86	5.00	127	6.00	152.5	2	φ19	1.81	46	7.09	180	3.15	80	7	14.99		
4	100	4.33	110	6.18	157	7.50	190.5	2	φ19	2.13	54	7.87	200	3.94	100	10	21.60		
5	125	5.16	131	7.32	186	8.50	216	2	φ22	2.24	57	9.25	235	4.69	119	14	30.42		
6	150	6.14	156	8.50	216	9.51	241.5	2	φ22	2.24	57	9.92	252	5.31	135	11	24.25		
8	200	7.99	203	10.63	270	11.75	298.5	2	φ22	2.52	64	11.54	293	7.48	190	25	54.01		
10	250	10.00	254	12.76	324	14.25	362	2	φ25	2.80	71	13.27	337	9.84	250	39	84.88		
12	300	12.01	305	15.00	381	17.01	432	2	φ25	3.19	81	14.69	373	11.42	290	51	111.33		
14	350	13.27	337	16.26	413	18.74	476	2	φ29	3.62	92	20.51	521	11.81	300	80	176.37		
16	400	15.24	387	18.50	470	21.24	539.5	4	φ29	4.02	102	21.85	555	13.39	340	104	229.28		
18	450	17.24	438	20.98	533	22.76	578	4	φ32	4.49	114	24.41	620	14.96	380	153	337.30		
20	500	19.25	489	22.99	584	25.00	635	4	1-1/8	5.00	127	26.50	673	15.35	390	192	423.28		
24	600	23.27	591	27.24	692	29.51	749.5	4	1-1/4-8	6.06	154	30.39	772	18.50	470	288	634.92		
28	700	27.24	692	30.00	762	0.00	795	4	φ22	6.50	165	36.81	935	19.09	485	340	749.56		
								4	3/4-10										
30	750	29.25	743	32.01	813	0.00	846	2	φ22	7.48	190	39.09	993	20.35	517	510	1124.34		
								6	3/4-10										
32	800	30.75	781	37.95	964	0.00	900	1	φ22	7.48	190	39.37	1000	21.14	537	595	1311.73		
								7	3/4-10										
36	900	34.49	876	38.27	972	39.76	1010	8	7/8-9	7.99	203	43.82	1113	24.02	610	680	1499.12		
40	1000	38.42	976	42.52	1080	0.00	1120.5	4	φ29	8.50	216	48.03	1220	26.93	684	1054	1973.48		
								4	1-8										
48	1200	45.98	1168	50.74	1289	0.00	1335	3	φ32	10.00	254	53.94	1370	31.50	800	1849	3397.91		
								5	1-1/8-8										

Note: 1. Flange dimensions for valves 26" and larger are according to ASME B16.47 B Series.

# Double Offset Butterfly Valve

## Dimensions & Weight



### Class 150LB

### DOUBLE FLANGE

Size		d		D		G		C		N	E	n	e	L		t		A		B		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm					in	mm	in	mm	in	mm	in	mm	kg	lbs
2	50	2.01	51	5.91	150	3.62	92	4.75	120.7	4	φ19	*	*	4.25	108	0.75	19	6.30	160	3.15	80	8	17.20
3	80	3.39	86	7.48	190	5.00	127	6.00	152.5	4	φ19	*	*	4.49	114	0.94	24	7.09	180	3.15	80	12	26.01
4	100	4.33	110	9.06	230	6.18	157	7.50	190.5	4	φ19	4	5/8-11	5.00	127	0.94	24	7.87	200	4.13	105	16	34.61
5	125	5.16	131	10.04	255	7.32	186	8.50	216	4	φ22	4	3/4-10	5.51	140	0.94	24	9.25	235	4.69	119	21	46.08
6	150	6.14	156	11.02	280	8.50	216	9.51	241.5	4	φ22	4	3/4-10	5.51	140	1.00	25.4	9.92	252	5.31	135	21	46.30
8	200	7.99	203	13.58	345	10.63	270	11.75	298.5	4	φ22	4	3/4-10	5.98	152	1.13	28.6	11.54	293	7.48	190	54	117.95
10	250	10.00	254	15.94	405	12.76	324	14.25	362	8	φ25	4	7/8-9	6.50	165	1.18	30	13.27	337	9.84	250	82	181.00
12	300	12.01	305	19.09	485	15.00	381	17.01	432	8	φ25	4	7/8-9	7.01	178	1.26	32	14.69	373	11.42	290	136	298.94
14	350	13.27	337	21.06	535	16.26	413	18.74	476	8	φ29	4	1-8	7.48	190	1.38	35	20.51	521	11.81	300	151	332.23
16	400	15.24	387	23.43	595	18.50	470	21.24	539.5	12	φ29	4	1-8	8.50	216	1.44	36.6	21.85	555	13.39	340	213	469.80
18	450	17.24	438	25.00	635	20.98	533	22.76	578	12	φ32	4	1-1/8-8	8.74	222	1.56	39.7	24.41	620	14.96	380	313	690.04
20	500	19.25	489	27.56	700	22.99	584	25.00	635	16	φ32	4	1-1/8-8	9.02	229	1.69	43	26.50	673	15.35	390	386	850.97
24	600	23.27	591	32.09	815	27.24	692	29.51	749.5	16	φ35	4	1-1/4-8	10.51	267	1.88	47.3	30.39	772	18.50	470	552	1216.93
28	700	27.24	692	32.95	837	30.00	762	31.30	795	34	φ22	6	1/4	11.50	292	1.75	44.5	36.81	935	19.09	485	578	1274.25
30	750	29.25	743	34.92	887	32.01	813	33.31	846	37	φ22	7	3/4-10	12.52	318	1.75	44.5	39.09	993	20.35	517	798	1759.26
32	800	30.75	781	37.05	941	34.02	864	35.43	900	40	φ22	8	3/4-10	12.52	318	1.81	46	39.37	1000	21.14	537	929	2048.06
36	900	34.49	876	41.61	1057	38.27	972	39.76	1010	39	φ25	5	7/8-9	12.99	330	2.05	52	43.82	1113	24.02	610	1015	2237.65
40	1000	38.43	976	46.26	1175	42.52	1080	44.11	1120.5	37	φ29	7	1-8	16.14	410	2.19	55.6	48.03	1220	26.93	684	1441	3177.41
48	1200	45.98	1168	54.80	1392	50.75	1289	52.56	1335	40	φ32	4	1-1/8-8	18.50	470	2.56	65	53.94	1370	31.50	800	2502	5516.91

### Class 300LB

### LUG TYPE

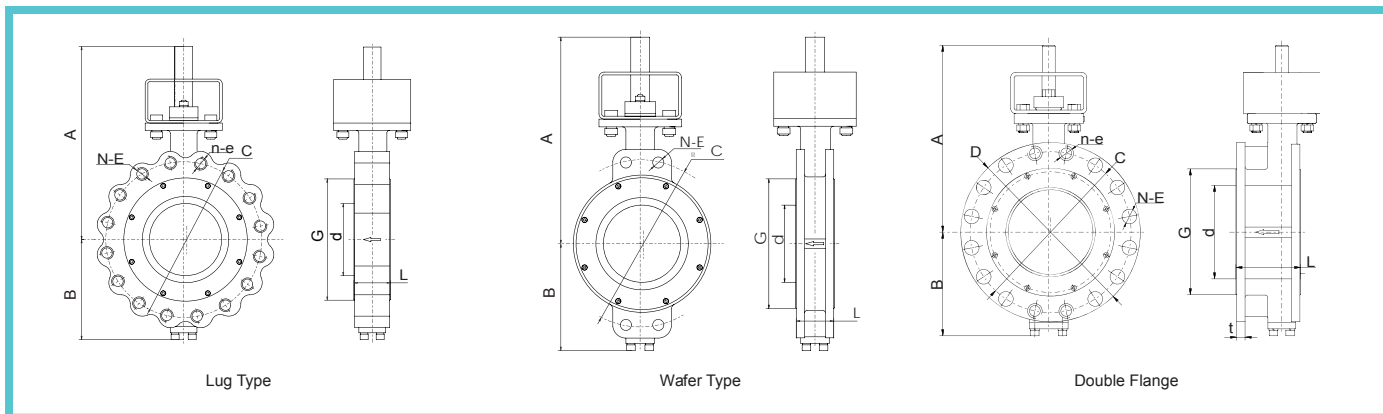
Size		d		G		C		N	E	n	e	L		A		B		Weight	
in	mm	in	mm	in	mm	in	mm					in	mm	in	mm	in	mm	kg	lbs
2	50	1.73	44	3.62	92	5.00	127	8	5/8-11	*	*	1.69	43	6.30	160	3.15	80	10	21.60
3	80	3.39	86	5.00	127	6.63	168.5	8	3/4-10	*	*	1.89	48	7.44	189	3.86	98	13	28.22
4	100	4.33	110	6.18	157	7.87	200	8	3/4-10	*	*	2.13	54	8.19	208	4.33	110	16	34.83
5	125	5.00	127	7.32	186	9.25	235	8	3/4-10	*	*	2.32	59	9.17	233	5.04	128	19	40.78
6	150	5.98	152	8.50	216	10.63	269.9	12	3/4-10	*	*	2.32	59	9.92	252	5.87	149	24	51.81
8	200	7.99	203	10.63	270	12.99	330	12	7/8-9	*	*	2.87	73	12.64	321	9.25	235	45	98.10
10	250	10.00	254	12.76	324	15.24	387	12	1-8	4	1-8	3.27	83	15.47	393	11.42	290	49	108.02
12	300	12.01	305	15.00	381	17.76	451	12	1-1/8-8	4	1-1/8-8	3.62	92	17.91	455	12.01	305	74	163.14
14	350	13.27	337	16.26	413	20.26	514.5	16	1-1/8-8	4	1-1/8-8	4.61	117	25.51	648	13.70	348	194	427.69
16	400	15.28	388	18.50	470	22.50	571.5	16	1-1/4-8	4	1-1/4-8	5.24	133	30.12	765	14.37	365	245	540.12
18	450	17.01	432	20.98	533	24.74	628.5	20	1-1/4-8	4	1-1/4-8	5.87	149	28.94	735	16.34	415	393	866.40
20	500	19.02	483	22.99	584	27.01	686	20	1-1/4-8	4	1-1/4-8	6.26	159	33.23	844	16.93	430	490	1080.25
24	600	22.99	584	27.24	692	32.01	813	20	1-1/2-8	4	1-1/2-8	7.13	181	37.89	962.5	19.72	501	834	1838.62

Note: 1. Flange dimensions for valves 26" and larger are according to ASME B16.47 B Series.



# Double Offset Butterfly Valve

## Dimensions & Weight



## Class 300LB

### WAFER TYPE

Size		d		G		C		N	E	L		A		B		Weight	
in	mm	in	mm	in	mm	in	mm			in	mm	in	mm	in	mm	kg	lbs
2	50	1.73	44	3.62	92	5.00	127	2	φ19	1.69	43	6.30	160	3.15	80	6	12.79
3	80	3.39	86	5.00	127	6.63	168.5	2	φ22	1.89	48	7.44	189	3.46	88	9	20.17
4	100	4.33	110	6.18	157	7.87	200	2	φ22	2.13	54	8.19	208	4.13	105	11	25.24
5	125	5.00	127	7.32	186	9.25	235	2	φ22	2.32	59	9.17	233	5.04	128	14	29.76
6	150	5.98	152	8.50	216	10.63	269.9	2	φ22	2.32	59	9.92	252	5.87	149	18	38.58
8	200	7.99	203	10.63	270	12.99	330	4	φ25	2.87	73	12.64	321	7.68	195	33	71.65
10	250	10.00	254	12.76	324	15.24	387	4	1-8	3.27	83	15.47	393	11.42	290	26	57.32
12	300	12.01	305	15.00	381	17.76	451	4	1-1/8-8	3.62	92	17.91	455	12.01	305	40	88.18
14	350	13.27	337	16.26	413	20.26	514.5	4	1-1/8-8	4.61	117	25.51	648	13.70	348	125	275.57
16	400	15.28	388	18.50	470	22.50	571.5	4	1-1/4-8	5.24	133	30.12	765	14.37	365	139	306.44
18	450	17.01	432	20.98	533	24.74	628.5	4	1-1/4-8	5.87	149	28.94	735	16.34	415	252	555.56
20	500	19.02	483	22.99	584	27.01	686	4	1-1/4-8	6.26	159	33.23	844	16.93	430	284	626.10
24	600	22.99	584	27.24	692	32.01	813	4	1-1/2-8	7.13	181	37.89	962.5	19.72	501	509	1122.13

## Class 300LB

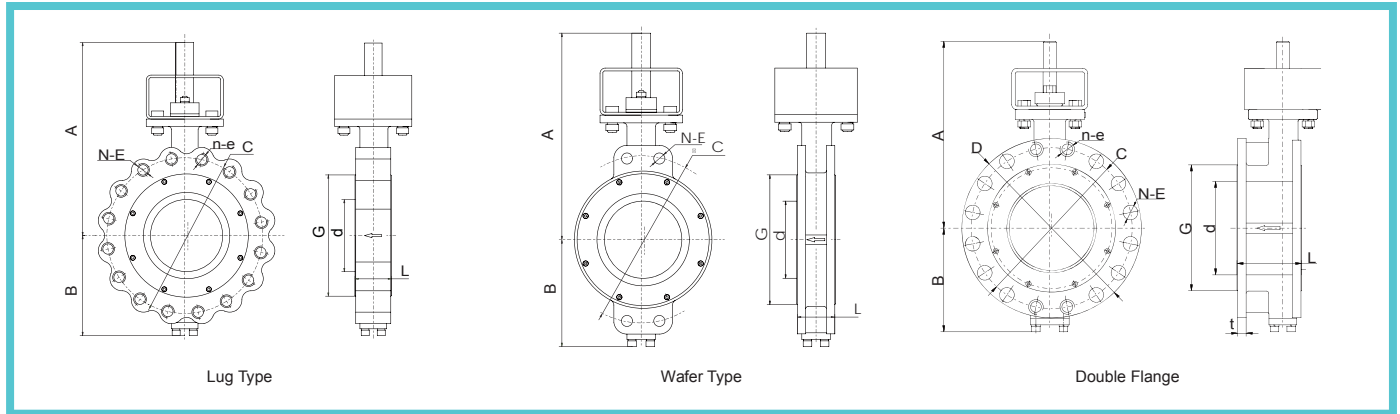
### DOUBLE FLANGE

Size		d		D		G		C		N	E	n	e	L		t		A		B		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm					in	mm	in	mm	in	mm	in	mm	kg	lbs
2	50	1.73	44	6.50	165	3.62	92	5.00	127	4	φ19	4	5/8-11	4.25	108	0.88	22.3	6.30	160	3.15	80	13	28.22
3	80	3.39	86	8.27	210	5.00	127	6.63	168.5	4	φ22	4	3/4-10	4.49	114	1.12	28.5	7.44	189	3.86	98	17	37.48
4	100	4.33	110	10.04	255	6.18	157	7.87	200	4	φ22	4	3/4-10	5.00	127	1.25	31.8	9.09	231	4.33	110	21	46.08
5	125	5.00	127	11.02	280	7.32	186	9.25	235	4	φ22	4	3/4-10	5.51	140	1.38	35	10.20	259	5.04	128	28	60.63
6	150	5.98	152	12.60	320	8.50	216	10.63	269.9	8	φ22	4	3/4-10	5.51	140	1.44	36.6	10.87	276	5.87	149	34	74.96
8	200	7.99	203	14.96	380	10.63	270	12.99	330	8	φ25	4	7/8-9	5.98	152	1.62	41.2	13.39	340	9.25	235	63	138.45
10	250	10.00	254	17.52	445	12.76	324	15.24	387	12	φ29	4	1-8	6.50	165	1.88	47.8	16.22	412	11.42	290	73	160.27
12	300	12.01	305	20.47	520	15.00	381	17.76	451	12	φ32	4	1-1/8-8	7.01	178	2.00	50.8	18.07	459	12.01	305	108	237.21
14	350	13.27	337	22.99	584	16.26	413	20.26	514.5	16	φ32	4	1-1/8-8	7.48	190	2.12	53.9	23.62	600	13.70	348	264	581.13
16	400	15.28	388	25.51	648	18.50	470	22.50	571.5	16	φ35	4	1-1/4-8	8.50	216	2.25	57.2	31.14	791	14.37	365	335	739.20
18	450	17.01	432	27.99	711	20.98	533	24.74	628.5	20	φ35	4	1-1/4-8	8.74	222	2.38	60.5	31.81	808	16.34	415	533	1173.94
20	500	19.02	483	30.51	775	22.99	584	27.01	686	20	φ35	4	1-1/4-8	9.02	229	2.50	63.5	31.06	789	16.93	430	674	1485.01
24	600	22.99	584	35.98	914	27.24	692	32.01	813	20	φ41	4	1-1/2-8	10.51	267	2.75	69.9	34.21	869	19.72	501	1121	2471.34

Note: 1. Flange dimensions for valves 26" and larger are according to ASME B16.47 B Series.

# Double Offset Butterfly Valve

## Dimensions & Weight



## Class 600LB LUG TYPE

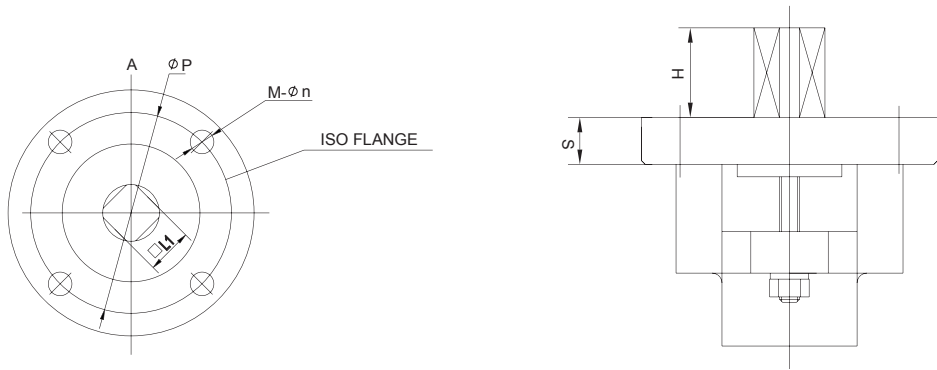
Size		d		G		C		N	E	n	e	L		A		B		Weight	
in	mm	in	mm	in	mm	in	mm					in	mm	in	mm	in	mm	kg	lbs
3	80	3.46	88	5.00	127	6.61	168	8	3/4-10	*	*	2.13	54	11.93	303	4.02	102	14	30.87
4	100	4.49	114	6.18	157	8.50	216	8	7/8-9	*	*	2.52	64	13.68	347.5	4.88	124	35	77.18
6	150	6.46	164	8.50	216	11.50	292	10	1-8	2	1-8	3.07	78	18.70	475	6.54	166	70	154.35
8	200	7.87	200	10.63	270	13.74	349	8	1-1/8-8	4	1-1/8-8	4.02	102	18.98	482	10.08	256	90	198.45
10	250	9.76	248	12.76	324	17.01	432	12	1-1/4-8	4	1-1/4-8	4.61	117	25.63	651	12.17	309	162	357.21
12	300	11.75	298.5	15.00	381	19.25	489	16	1-1/4-8	4	1-1/4-8	5.51	140	26.22	666	13.70	348	218	480.69

## Class 600LB WAFER TYPE

Size		d		G		C		N	E	L	A	B		Weight			
in	mm	in	mm	in	mm	in	mm			in	mm	in	mm	in	mm	kg	lbs
3	80	3.46	88	5.00	127	6.61	168	4	3/4-10	2.13	54	11.93	303	4.02	102	11	24.26
4	100	4.49	114	6.18	157	8.50	216	4	7/8-9	2.52	64	13.68	347.5	4.88	124	20	44.10
6	150	6.46	164	8.50	216	11.50	292	4	1-8	3.07	78	18.70	475	6.54	166	50	110.25
8	200	7.87	200	10.63	270	13.74	349	4	1-1/8-8	3.54	90	18.98	482	10.08	256	70	154.35
10	250	9.76	248	12.76	324	17.01	432	4	1-1/4-8	6.38	162	25.63	651	12.13	308	112	246.96
12	300	11.75	298.5	15.00	381	19.25	489	4	1-1/4-8	8.58	218	26.22	666	13.70	348	163	359.42

## Class 600LB DOUBLE FLANGE

Size		d		D		G		C		N	E	n	e	L		t	A		B		Weight		
in	mm	in	mm	in	mm	in	mm	in	mm					in	mm	in	mm	in	mm	in	mm	kg	lbs
3	80	3.46	88	8.27	210	5.00	127	6.61	168	4	φ22	4	3/4-10	7.09	180	1.50	38.2	11.93	303	4.02	102	24	52.92
4	100	4.49	114	10.75	273	6.18	157	8.50	216	8	φ25	*	*	7.48	190	1.75	44.5	13.70	348	4.88	124	49	108.05
6	150	6.46	164	14.02	356	8.50	216	11.50	292	10	φ29	2	1-8	8.27	210	2.13	54.1	18.70	475	6.54	166	100	220.50
8	200	7.87	200	16.50	419	10.63	270	13.74	349	8	φ32	4	1-1/8-8	9.06	230	2.44	62	18.98	482	10.08	256	126	277.83
10	250	9.76	248	20.00	508	12.76	324	17.01	432	12	φ35	4	1-1/4-8	9.84	250	2.75	69.9	25.63	651	12.17	309	220	485.10
12	300	11.75	298.5	22.01	559	15.00	381	19.25	489	16	φ35	4	1-1/4-8	10.63	270	2.88	73.1	26.22	666	13.70	348	305	672.53



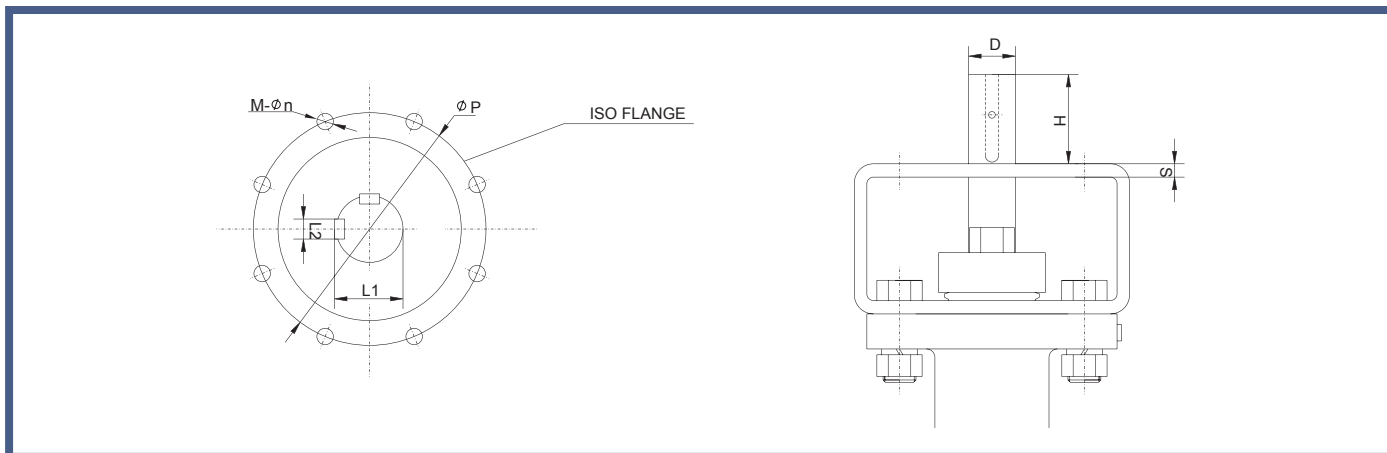
### Class 150LB

Size		H		S		ISO	L1		P		M-n
in	mm	in	mm	in	mm		in	mm	in	mm	
2	50	0.63	16	0.43	11	F07	0.43	11	2.76	70	4-9.5
3	80	0.63	16	0.51	13	F10	0.55	14	4.02	102	4-11
4	100	0.75	19	0.51	13	F10	0.67	17	4.02	102	4-11
5	125	0.83	21	0.51	13	F10	0.75	19	4.02	102	4-11
6	150	0.83	21	0.51	13	F10	0.75	19	4.02	102	4-11
8	200	0.94	24	0.59	15	F12	0.87	22	4.92	125	4-14
10	250	1.14	29	0.59	15	F12	1.06	27	4.92	125	4-14
12	300	1.14	29	0.79	20	F14	1.06	27	5.51	140	4-18

### Class 300LB

Size		H		S		ISO	L1		P		M-n
in	mm	in	mm	in	mm		in	mm	in	mm	
3	80	0.63	16	0.51	13	F10	0.55	14	4.02	102	4-11
4	100	0.94	24	0.51	13	F10	0.67	17	4.02	102	4-11
5	125	1.02	26	0.51	13	F10	0.75	19	4.02	102	4-11
6	150	1.02	26	0.51	13	F10	0.75	19	4.02	102	4-11
8	200	1.38	35	0.59	15	F12	1.06	27	4.92	125	4-14
10	250	1.38	35	0.98	25	F16	1.26	32	6.50	165	4-22
12	300	1.57	40	0.98	25	F16	1.42	36	6.50	165	4-22

## Top Flange Datasheet



### Class 150LB

Size		D		H		S		L1		L2		ISO	P		M-n
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		in	mm	
14	350	1.38	35	3.74	95	0.39	10	1.50	38	0.39	10	F16	6.50	165	4-22
16	400	1.57	40	4.09	104	0.39	10	1.69	43	0.47	12	F16	6.50	165	4-22
18	450	1.81	46	4.09	104	0.39	10	1.95	49.5	0.55	14	F25	10.00	254	8-18
20	500	1.97	50	4.09	104	0.47	12	2.11	53.5	0.55	14	F25	10.00	254	8-18
24	600	2.36	60	4.13	105	0.47	12	2.52	64	0.71	18	F25	10.00	254	8-18
28	700	2.95	75	7.28	185	0.47	12	3.13	79.5	0.79	20	F30	11.73	298	8-22
30	750	3.15	80	7.28	185	0.47	12	3.35	85	0.87	22	F30	11.73	298	8-22
32	800	3.35	85	7.28	185	0.47	12	3.54	90	0.87	22	F30	11.73	298	8-22
36	900	3.54	90	7.48	190	1.57	40	3.74	95	0.98	25	F35	14.02	356	8-33
40	1000	3.94	100	8.27	210	1.57	40	4.17	106	1.10	28	F35	14.02	356	8-33
48	1200	4.72	120	9.25	235	1.97	50	5.00	127	1.26	32	F40	15.98	406	8-39

### Class 300LB

Size		D		H		S		L1		L2		ISO	P		M-n
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		in	mm	
14	350	1.97	50	4.49	114	0.47	12	2.11	53.5	0.55	14	F25	10.00	254	8-18
16	400	2.17	55	4.92	125	0.47	12	2.32	59	0.63	16	F25	10.00	254	8-18
18	450	2.36	60	4.92	125	0.47	12	2.52	64	0.71	18	F25	10.00	254	8-18
20	500	2.76	70	5.71	145	0.47	12	2.93	74.5	0.79	20	F30	11.73	298	8-22
24	600	3.15	80	7.28	185	0.47	12	3.35	85	0.87	22	F30	11.73	298	8-22

### Class 600LB

Size		D		H		S		L1		L2		ISO	P		M-n
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		in	mm	
3	80	0.98	25	1.97	50	0.31	8	1.10	28	0.31	8	F10	4.02	102	4-11
4	100	1.10	28	2.60	66	0.31	8	1.22	31	0.31	8	F12	4.92	125	4-14
6	150	1.38	35	3.70	94	0.39	10	1.50	38	0.39	10	F16	6.50	165	4-22
8	200	1.57	40	4.06	103	0.39	10	1.69	43	0.47	12	F16	6.50	165	4-22
10	250	1.97	50	4.76	121	0.47	12	2.11	53.5	0.55	14	F25	10.00	254	8-18
12	300	2.36	60	4.76	121	0.47	12	2.52	64	0.71	18	F25	10.00	254	8-18



### Class 150LB

Valve Size		Disc Opening Angle								
inch	mm	10°	20°	30°	40°	50°	60°	70°	80°	90°
3	80	3	13	21	30	47	68	96	137	182
4	100	7	30	49	69	110	159	225	319	425
6	150	19	82	135	192	304	439	624	884	1178
8	200	36	158	260	368	583	843	1198	1695	2260
10	250	62	272	446	632	1001	1447	2056	2910	3880
12	300	89	388	637	903	1429	2066	2936	4155	5540
14	350	113	496	814	1154	1827	2641	3752	5310	7080
16	400	136	595	978	1386	2193	3171	4505	6375	8500
18	450	183	799	1313	1861	2946	4260	6053	8565	11420
20	500	253	1106	1817	2575	4076	5893	8374	11850	15800
24	600	355	1554	2553	3619	5728	8281	11766	16650	22200
28	700	472	2065	3393	4809	7611	11004	15635	22125	29500
30	750	621	2717	4464	6328	10016	14480	20575	29115	38820
32	800	691	3024	4968	7042	11146	16114	22896	32400	43200
36	900	845	3696	6072	8606	13622	19694	27984	39600	52800
40	1000	1098	4802	7889	11182	17699	25588	36358	51450	68600
48	1200	1728	7560	12420	17604	27864	40284	57240	81000	108000

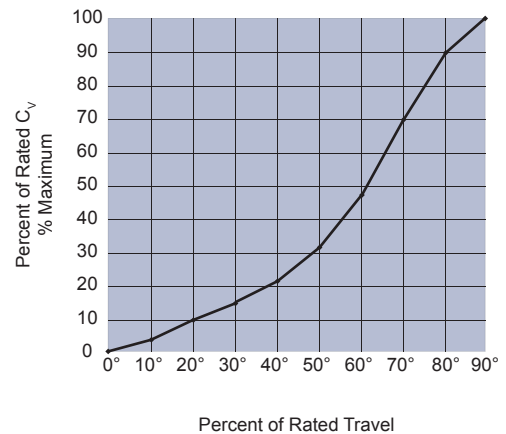
### Class 300LB

Valve Size		Disc Opening Angle								
inch	mm	10°	20°	30°	40°	50°	60°	70°	80°	90°
3	80	6	16	24	36	52	76	113	146	162
4	100	15	37	55	80	117	172	256	329	365
6	150	39	98	147	215	313	460	685	880	978
8	200	65	163	245	359	522	766	1141	1467	1630
10	250	124	310	465	682	992	1457	2170	2790	3100
12	300	182	456	684	1003	1459	2143	3192	4104	4560
14	350	205	512	768	1126	1638	2406	3584	4608	5120
16	400	269	672	1008	1478	2150	3158	4704	6048	6720
18	450	352	880	1320	1936	2816	4136	6160	7920	8800
20	500	460	1150	1725	2530	3680	5405	8050	10350	11500
24	600	647	1618	2427	3560	5178	7605	11326	14562	16180

### Class 600LB

Valve Size		Disc Opening Angle								
inch	mm	10°	20°	30°	40°	50°	60°	70°	80°	90°
3	80	6	16	23	34	50	73	109	140	156
4	100	10	26	39	57	82	121	180	231	257
6	150	29	72	108	159	231	340	506	651	723
8	200	53	132	199	291	424	622	927	1192	1324
10	250	81	201	302	443	644	946	1409	1812	2013
12	300	112	279	418	614	892	1311	1952	2510	2789
14	350	159	399	598	877	1276	1873	2790	3587	3986
16	400	201	502	753	1105	1607	2361	3516	4521	5023
18	450	225	562	843	1237	1799	2642	3935	5059	5621
20	500	317	793	1190	1745	2538	3727	5551	7137	7930
24	600	461	1152	1728	2534	3686	5414	8064	10368	11520

$C_v$  Curve



**Notes:**

- Definition:  
 $C_v$ : The volume of water in gpm at 15°C that will pass through a valve with a differential pressure of 1 PSI.  
 $K_v$ : The volume of water in m<sup>3</sup>/hr at 15°C that will pass through a valve with a differential pressure of 1 bar.
- $C_v = 1.155 K_v$

# Engineering Data

## TB Type Operating Torque

### Class 150LB (Shaft Upstream)

Size		100 PSI(0.7 MPa)		150 PSI(1.0 MPa)		200 PSI(1.4 MPa)		285 PSI(1.97 MPa)	
		N.m.	Ft-Lbs	N.m.	Ft-Lbs	N.m.	Ft-Lbs	N.m.	Ft-Lbs
2	50	42	31	42	31	43	32	44	32
3	80	51	38	55	41	61	45	68	50
4	100	80	59	89	66	101	74	117	86
5	125	121	89	134	99	151	111	175	129
6	150	175	129	196	145	224	165	263	194
8	200	311	229	351	259	405	299	481	355
10	250	464	342	532	392	622	459	749	552
12	300	681	502	789	582	932	687	1132	835
14	350	978	721	1130	833	1332	982	1615	1191
16	400	1299	958	1508	1112	1787	1318	2178	1606
18	450	1647	1215	1931	1424	2310	1704	2840	2095
20	500	2424	1788	2820	2080	3349	2470	4090	3017
24	600	3716	2741	4377	3228	5258	3878	6491	4788
28	700	5612	4139	6579	4852	7867	5802	9671	7133
30	750	6592	4862	7766	5728	9331	6882	11522	8498
32	800	7520	5546	8881	6550	10695	7888	13235	9762
36	900	9191	6779	10986	8103	13380	9869	16732	12341
40	1000	15155	11178	16653	12283	18650	13756	21640	15961
48	1200	24452	18035	27319	20149	31141	22968	36876	27198

### Class 300LB (Shaft Upstream)

Size		220 PSI(1.5 MPa)		290 PSI(2.0 MPa)		435 PSI(3.0 MPa)		580 PSI(4.0 MPa)	
		N.m.	Ft-Lbs	N.m.	Ft-Lbs	N.m.	Ft-Lbs	N.m.	Ft-Lbs
3	80	85	63	93	69	107	79	122	90
4	100	104	77	119	88	149	110	179	132
5	125	179	132	203	150	249	184	296	218
6	150	216	159	253	187	328	242	402	296
8	200	558	412	628	463	766	565	905	667
10	250	904	667	1025	756	1266	934	1508	1112
12	300	1364	1006	1570	1158	1982	1462	2395	1766
14	350	1699	1253	1253	924	2569	1895	3149	2323
16	400	2284	1685	1684	1242	6545	4827	4386	3235
18	450	2196	1620	2151	1586	4617	3405	5752	4242
20	500	5291	3902	3902	2878	7680	5664	9273	6839
24	600	7852	5791	5790	4270	11784	8691	14405	10625

**Note:** 1. Torques shown are calculated at ambient temperature, a minimum safety factor of 1.2~1.5 is recommended for actuator sizing.  
 2. Torque for TB series valve with NBR seat and shaft up stream at specified pressure.

## TBT Type Operating Torque

### Class 150LB (Shaft Downstream)

Size		100 PSI(0.7 MPa)		150 PSI(1.0 MPa)		200 PSI(1.4 MPa)		285 PSI(1.97 MPa)	
		N.m.	Ft-Lbs	N.m.	Ft-Lbs	N.m.	Ft-Lbs	N.m.	Ft-Lbs
2	50	18	13	19	14	21	15	23	17
3	80	28	21	31	23	34	25	38	28
4	100	44	33	49	36	56	41	65	48
5	125	67	49	74	55	84	62	97	72
6	150	97	72	109	80	124	92	146	108
8	200	173	127	195	144	225	166	267	197
10	250	258	190	296	218	346	255	416	307
12	300	378	279	438	323	518	382	629	464
14	350	543	401	628	463	740	546	897	662
16	400	722	532	838	618	993	732	1210	892
18	450	915	675	1073	791	1283	946	1578	1164
20	500	1347	993	1567	1156	1861	1372	2272	1676
24	600	2065	1523	2432	1794	2921	2155	3606	2660
28	700	3118	2300	3655	2696	4371	3224	5373	3963
30	750	3662	2701	4314	3182	5184	3823	6401	4721
32	800	4178	3081	4934	3639	5942	4382	7353	5423
36	900	5106	3766	6103	4502	7433	5483	9295	6856
40	1000	7800	5753	9200	6786	11000	8113	13700	10105

### Class 300LB Shaft Downstream

Size		220 PSI(1.5 MPa)		290 PSI(2.0 MPa)		435 PSI(3.0 MPa)		580 PSI(4.0 MPa)		740 PSI(5.1 MPa)	
		N.m.	Ft-Lbs	N.m.	Ft-Lbs	N.m.	Ft-Lbs	N.m.	Ft-Lbs	N.m.	Ft-Lbs
3	80	47	35	51	38	59	44	68	50	76	56
4	100	58	42	66	49	83	61	99	73	118	87
5	125	100	74	113	83	138	102	164	121	193	142
6	150	120	89	141	104	182	134	224	165	269	198
8	200	310	229	349	257	426	314	503	371	588	433
10	250	502	370	569	420	704	519	838	618	985	727
12	300	758	559	872	643	1101	812	1330	981	1582	1167
14	350	944	696	1105	815	1427	1053	1750	1290	2104	1552
16	400	1269	936	1502	1108	1969	1453	2436	1797	2950	2176
18	450	1620	1195	1935	1427	2565	1892	3195	2357	3888	2868
20	500	2940	2168	3382	2494	4267	3147	5151	3799	6125	4517
24	600	4362	3217	5090	3754	6547	4829	8003	5903	9605	7084

### Class 600LB Shaft Downstream

Size		580 PSI(4.0 MPa)		725 PSI(5.0 MPa)		870 PSI(6.0 MPa)		1160 PSI(8.0 MPa)		1508 PSI(10.0 MPa)	
		N.m.	Ft-Lbs	N.m.	Ft-Lbs	N.m.	Ft-Lbs	N.m.	Ft-Lbs	N.m.	Ft-Lbs
3	80	119	88	126	93	134	99	150	111	164	121
4	100	183	135	198	146	212	156	242	178	272	201
5	125	294	217	315	232	335	247	375	277	415	306
6	150	365	269	400	295	430	317	500	369	568	419
8	200	685	505	750	553	816	602	945	697	1076	794
10	250	1135	837	1245	918	1355	999	1570	1158	1790	1320
12	300	2070	1527	2300	1696	2525	1862	2975	2194	3430	2530

**Note:** 1. Torques shown are calculated at ambient temperature, a minimum safety factor of 1.2~1.5 is recommended for actuator sizing.  
 2. Torque for TBT series valve with NBR seat and shaft up stream at specified pressure.

# Engineering Data

## TBF Type Operating Torque

### Class 150LB (Shaft Downstream)

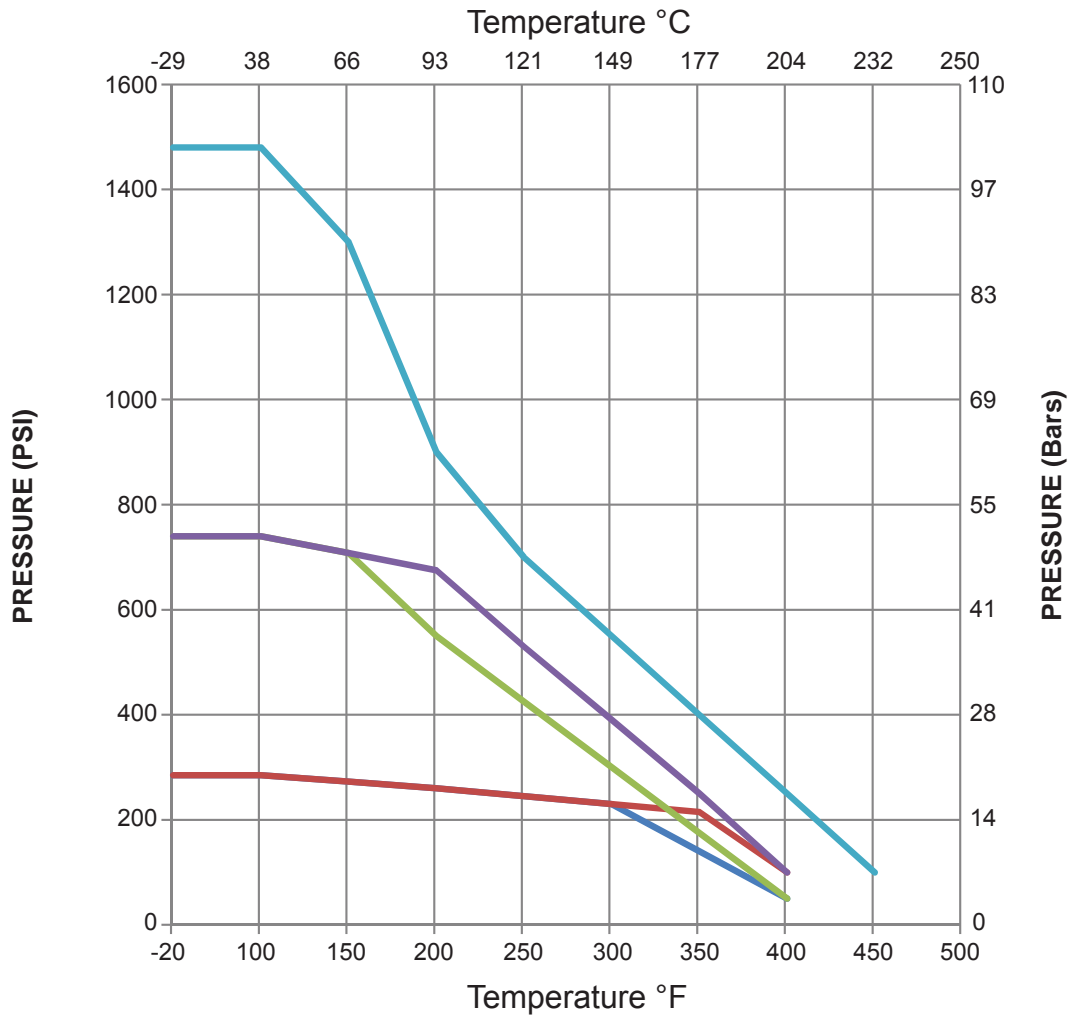
Size		100 PSI(0.7 MPa)		150 PSI(1.0 MPa)		200 PSI(1.4 MPa)		285 PSI(1.97 MPa)	
		N.m.	Ft-Lbs	N.m.	Ft-Lbs	N.m.	Ft-Lbs	N.m.	Ft-Lbs
2	50	22	16	23	17	25	18	28	21
3	80	42	31	46	34	51	38	57	42
4	100	66	49	74	55	84	62	98	72
5	125	101	74	111	82	126	93	146	108
6	150	145	107	163	120	186	137	219	162
8	200	259	191	293	216	337	249	401	296
10	250	387	285	443	327	519	383	624	460
12	300	568	419	657	485	776	572	944	696
14	350	815	601	941	694	1110	819	1346	993
16	400	1082	798	1257	927	1489	1098	1815	1339
18	450	1372	1012	1609	1187	1925	1420	2367	1746
20	500	2020	1490	2350	1733	2791	2059	3408	2514
24	600	3097	2284	3648	2691	4382	3232	5409	3989
28	700	4677	3450	3655	2696	6556	4835	8059	5944
30	750	5493	4051	5482	4043	7776	5735	9602	7082
32	800	6267	4622	6471	4773	8913	6574	11030	8135
36	900	7659	5649	9155	6752	11150	8224	13943	10284

### Class 300LB (Shaft Downstream)

Size		220 PSI(1.5 MPa)		290 PSI(2.0 MPa)		435 PSI(3.0 MPa)		580 PSI(4.0 MPa)		740 PSI(5.1 MPa)	
		N.m.	Ft-Lbs	N.m.	Ft-Lbs	N.m.	Ft-Lbs	N.m.	Ft-Lbs	N.m.	Ft-Lbs
3	80	71	52	77	57	89	66	101	74	115	85
4	100	86	63	99	73	124	91	149	110	176	130
5	125	150	111	169	125	208	153	246	181	289	213
6	150	180	133	211	156	273	201	335	247	404	298
8	200	465	343	523	386	639	471	754	556	882	651
10	250	753	555	854	630	1055	778	1257	927	1478	1090
12	300	1137	839	1309	965	1652	1218	1996	1472	2373	1750
14	350	1416	1044	1657	1222	2141	1579	2624	1935	3156	2328
16	400	1903	1404	2253	1662	2954	2179	3655	2696	4425	3264
18	450	2430	1792	2903	2141	3848	2838	4793	3535	5833	4302
20	500	4409	3252	5073	3742	6400	4720	7727	5699	9187	6776
24	600	6543	4826	7635	5631	9820	7243	12004	8854	14407	10626

**Note:** 1. Torques shown are calculated at ambient temperature, a minimum safety factor of 1.2~1.5 is recommended for actuator sizing.  
 2. Torque for TBF series valve with NBR seat and shaft up stream at specified pressure.





- PTFE  
(150LB)
- RPTF  
(150LB)
- PTFE  
(300LB)
- RPTFE  
(300LB)
- RPTFE  
(600LB)

### Seat materials for Double Offset Butterfly Valve

The ratings above are for soft seal components. Please consult ASME b16.34 for Body and Disc Pressure/Temperature ratings.

# NEWAY Manufacturing Plants

## NEWAY Huashan Plant

Main Products: Ball Valve  
Covers area: 33,000 sqm  
Workshop: 21,000 sqm

**Founded in 2003**



## NEWAY Taishan Plant

Main Products: Gate Valve, Globe Valve, Check Valve, Forged Steel Valve, Butterfly Valve  
Covers area: 160,000 sqm  
Workshop: 92,000 sqm

**Founded in 2006**



## NEWAY Foundry (Suzhou)

Main Products: Sand Casting  
Covers area: 112,500 sqm  
Workshop: 98,000 sqm

**Founded in 2008**



## NEWAY Foundry (Suzhou)

Main Products: Sand Casting  
Covers area: 45,000 sqm  
Workshop: 25,000 sqm

**Founded in 2003**



## NEWAY Foundry (Dafeng)

Main Products: Lost wax investment casting  
Covers area: 46,000 sqm  
Workshop: 12,000 sqm

**Founded in 2004**



## NEWAY Foundry (Dafeng)

Main Products: Lost wax investment casting  
Covers area: 40,000 sqm  
Workshop: 20,000 sqm

**Founded in 2008**



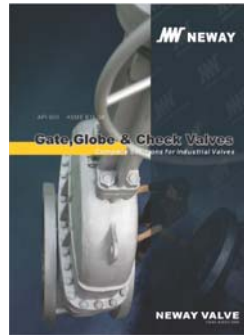
Seller will replace without charge or refund the purchase price of products which prove to be defective in material or workmanship; provided that the product is properly installed and is used in the service for which the Seller recommends it and that the written claim, specifying the alleged defect, is presented to the Seller within 18 months from the date of shipment or 12 months after installation, whichever occurs first. Seller shall in no event bear any labor, equipment, engineering or other costs incurred in connection with any repairs or replacement. The warranty stated in this paragraph is in lieu of all other warranties, either expressed or implied. With respect to warranties, this paragraph states the Buyer's exclusive remedy and seller's exclusive liability.



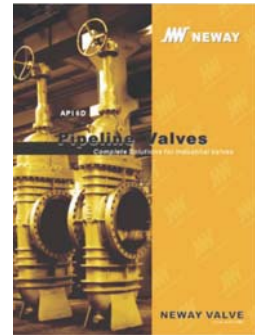
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Cat.no.:E-FBV



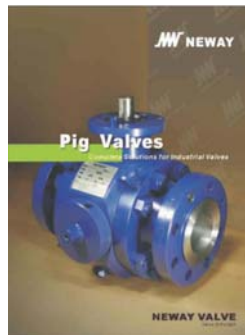
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Cat.no.:E-PLV



Cat.no.:E-BFV



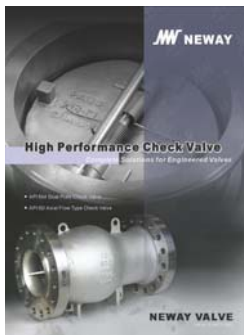
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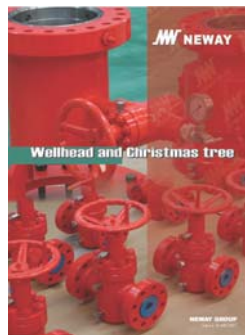
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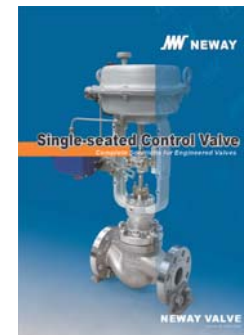
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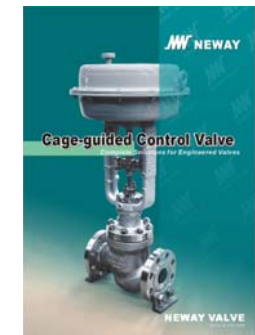
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Cat.no.:E-WE



Cat.no.:E-CSS



Cat.no.:E-CSC

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