



NEOTECHA NEOSEAL LINED BUTTERFLY VALVES

WAFER, LUGGED AND DOUBLE FLANGED

A PTFE lined solution according ISO 5752/5 short (EN 558-1/T5) with various corrosion resistant disc materials



FEATURES

- The pressure to keep the two sealing surfaces of the stem seal together is provided by an upper and lower set of Belleville springs resulting in a superior stem seal, which is TA-Luft / VDI 2440 approved.
- The elastomer back-up pads behind the liner ensure a tight fit around the disc, for a bubble tight shut-off.
- The liner provides a wide flange sealing surface.
- A one piece thin disc stem lined with 3 mm molded PFA providing high K_v values.
- The liner and disc are the only two valve parts in contact with the medium.
- Primary shaft sealing by preloaded contact between disc and liner hub.
- Secondary shaft seal by oversizing the shaft diameter in relation to the shaft hole in the liner.
- The liner and disc are molded and machined to close tolerances to provide:
 - low torque
 - less stress and deformation during opening and closing
- Vacuum tests with helium with pressures less than 20 Pa absolute (0.2 mbarA).
- Optional TFM lining available for extremely demanding applications.
- Integral body locating holes to ensure perfect centering of the valve.
- Actuator flange and stem dimensions acc. ISO 5211.
- Anti blow-out proof shaft.

GENERAL APPLICATION

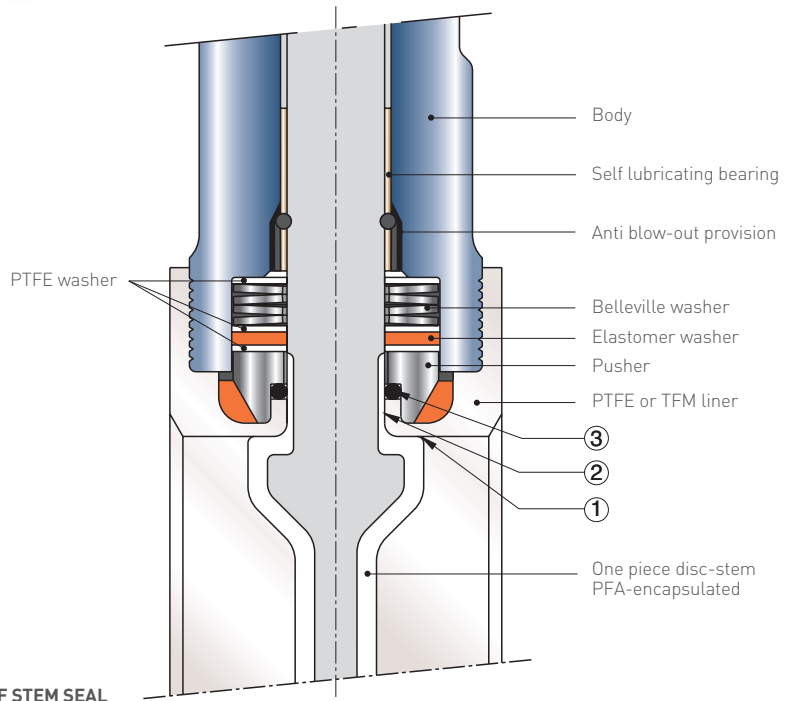
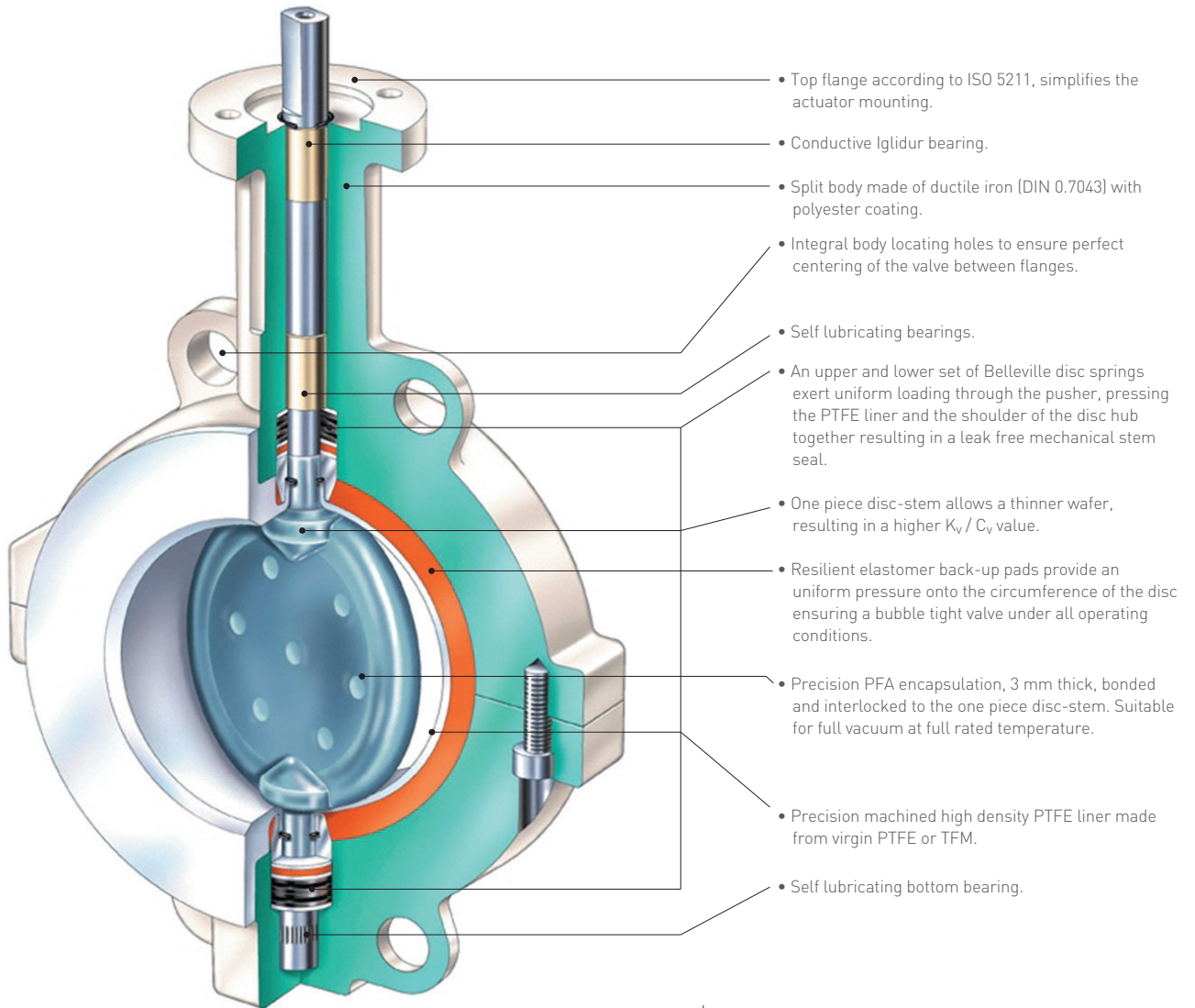
The valves are ideally suited for corrosive applications, requiring reliable performance, tight shutoff, constant torque and no maintenance. The valves successfully handle a multitude of corrosive applications in industries such as chemical, petro-chemical, pulp and paper, semiconductor (UPW), foundries and mining.

TECHNICAL DATA

Sizes: DN 40 - 900 (NPS 1½ - 36)
 Pressure: 10 bar (DN 40 - 600) / 145 psi (NPS 1½ - 24)
 6 bar (DN 700, DN 800 and DN 900) / 87 psi (NPS 28, 32 and 36)
 2.5 bar (DN 750) / 36 psi (NPS 30)
 Temperature: -40°C to +200°C (-40°F to +392°F)
 Flange accommodation: DIN PN 10/(16)
 ASME 150, JIS 10K
 Bubble tight shut-off in both directions, in accordance with EN-12266-1 leakrate A (UHMWPE leakrate B).

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NOTES

- ① Primary seal: spring loaded mechanical seal
- ② Secondary seal: radial lip seal
- ③ FKM equalizer

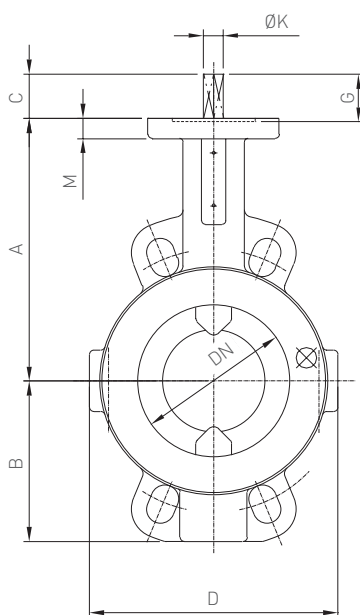
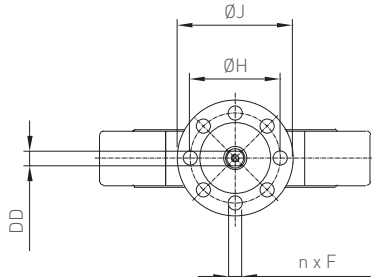
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CROSS SECTION OF STEM SEAL

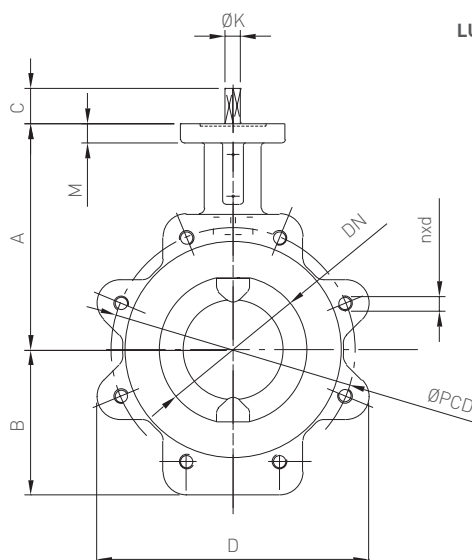
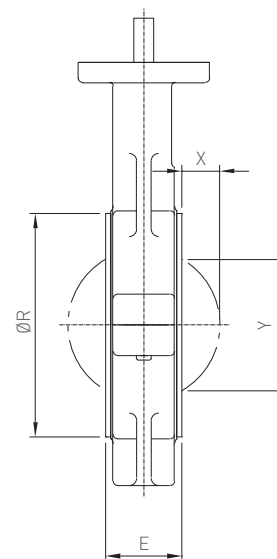
NEOTECHA NEOSEAL LINED BUTTERFLY VALVES

WAFER AND LUGGED/FLAT HEAD SHAFT CONNECTION/DN 40-300 - METRIC DATA

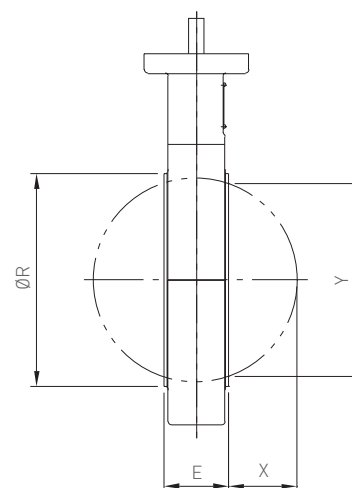
NeoSeal with flat head shaft connection



WAFER VERSION



LUGGED VERSION



VALVE DIMENSIONS WAFER AND LUGGED (mm)

Size (DN)	Type	Overall dimensions																	Wide FTF **		Weight (kg)		
		A	B	B	C	D	D	E	n x F	M	G	øH	øJ	øK	øR	S	X	Y	N/DD	E	Y	W*	L*
40	F05	110	50.0	55.0	25	108	145	33	8 x Ø7	14	26	50	65	12	80	31	3.5	23	Ø 8	-	-	1.9	2.4
50	F05	135	65.0	65.0	25	130	160	43	8 x Ø7	14	26	50	65	12	95	38	5.0	31	Ø 8	-	-	2.8	3.4
65	F07	150	85.0	85.0	30	144	176	46	4 x Ø9	14	31	70	90	15	120	41	11.5	52	Ø 11	-	-	4.7	4.2
80	F07	160	93.5	93.5	30	155	188	46	4 x Ø9	14	31	70	90	15	132	41	18.5	69	Ø 11	64	53	4.7	6.1
100	F07	180	113.0	105.0	30	180	210	52	4 x Ø9	14	31	70	90	15	153	45	26.5	91	Ø 11	64	82	5.7	7.9
125	F07	195	130.0	125.0	30	211	234	56	4 x Ø9	17	31	70	90	18	183	50	35.5	114	Ø 14	70	CF	8.7	10.6
150	F07	210	140.0	140.0	30	240	269	56	4 x Ø9	17	31	70	90	20	209	50	48.5	143	Ø 14	76	133	11.6	13.5
200	F10	240	175.0	170.0	50	310	360	60	4 x Ø11	20	51	102	125	25	259	56	71.5	196	Ø 18	89	185	21.0	23.3
250	F12	275	205.0	205.0	50	350	435	68	8 x Ø13	20	51	125	150	30	309	64	91.5	243	Ø 22	114	226	31.5	32.1
300	F12	310	250.0	250.0	50	420	500	78	8 x Ø13	20	53	125	150	30	364	74	111.5	293	Ø 22	114	281	45.0	49.9

NOTES

Slotted locating holes for wafer and lugged version according following flange accommodation:
 Lugged DIN PN 10/16 (DN 40-150), DIN PN 10 (DN 200-300), ASME 150 (DN 40-300), JIS 10 K (DN 40-150).

FTF = Face to face

** Optional wide FTF according EN 558-1/15 (column 16).

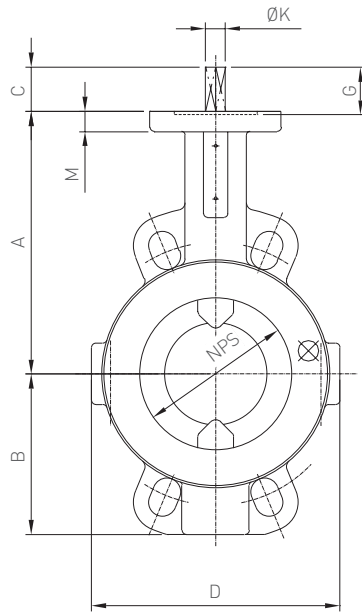
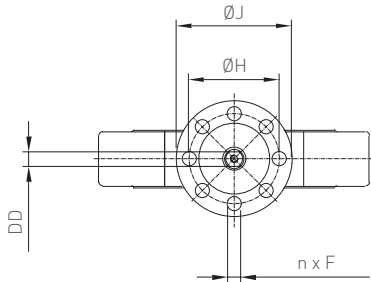
W* Wafer

L* Lugged

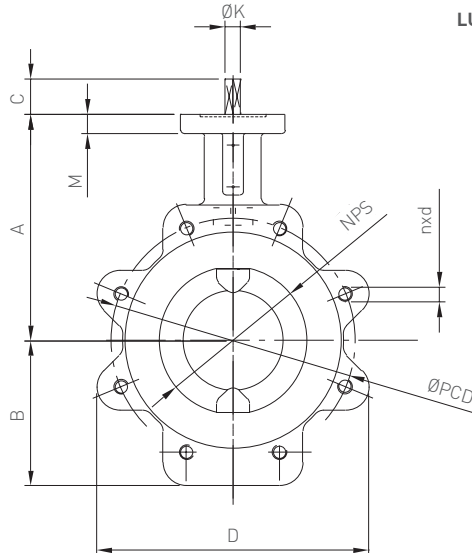
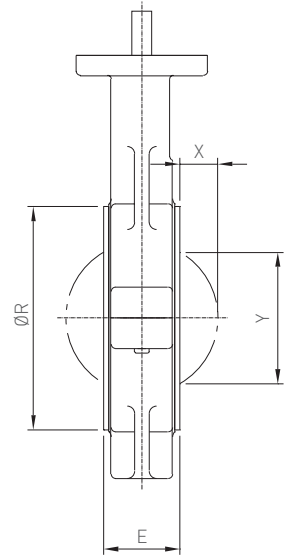
NEOTECHA NEOSEAL LINED BUTTERFLY VALVES

WAFER AND LUGGED/FLAT HEAD SHAFT CONNECTION/NPS 1½-12 - IMPERIAL DATA

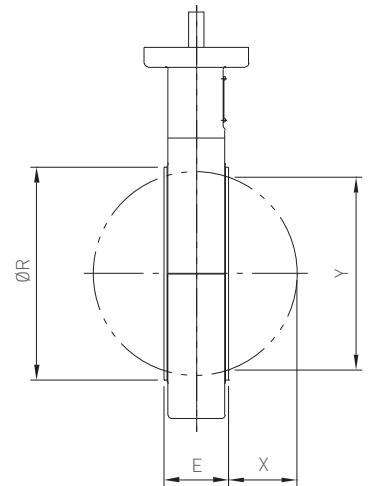
NeoSeal with flat head shaft connection



WAFER VERSION



LUGGED VERSION



VALVE DIMENSIONS WAFER AND LUGGED (inch)

S ⁽¹⁾ Type	Overall dimensions							n x F	M	G	ØH	ØJ	ØK	ØR	S	X	Y	N/DD	Wide FTF **		Weight (lbs)	
	A	B	B*	C	D	D*	E												E	Y	W*	L*
1½ F05	4.33	1.97	2.17	0.98	4.25	5.71	1.30	8 x ø0.28	0.55	1.02	1.97	2.56	0.48	3.15	1.22	0.14	0.91	Ø 0.32	-	-	4.2	5.3
2 F05	5.31	2.56	2.56	0.98	5.12	6.30	1.69	8 x ø0.28	0.55	1.02	1.97	2.56	0.48	3.74	1.50	0.20	1.22	Ø 0.32	-	-	6.2	7.5
2½ F07	5.91	3.35	3.35	1.18	5.67	6.93	1.81	4 x ø0.35	0.55	1.22	2.76	3.54	0.59	4.72	1.61	0.45	2.05	Ø 0.43	-	-	10.4	9.3
3 F07	6.30	3.68	3.68	1.18	6.10	7.40	1.81	4 x ø0.35	0.55	1.22	2.76	3.54	0.59	5.20	1.61	0.73	2.72	Ø 0.43	2.52	2.09	10.4	13.4
4 F07	7.09	4.45	4.13	1.18	7.09	8.27	2.05	4 x ø0.35	0.55	1.22	2.76	3.54	0.59	6.02	1.77	1.04	3.58	Ø 0.43	2.52	3.23	12.6	17.4
5 F07	7.68	5.12	4.92	1.18	8.31	9.21	2.20	4 x ø0.35	0.67	1.22	2.76	3.54	0.71	7.20	1.97	1.40	4.49	Ø 0.55	2.76	CF	19.2	23.4
6 F07	8.27	5.51	5.51	1.18	9.45	10.59	2.20	4 x ø0.35	0.67	1.22	2.76	3.54	0.79	8.23	1.97	1.91	5.63	Ø 0.55	2.99	5.24	25.6	29.8
8 F10	9.45	6.89	6.69	1.97	12.20	14.17	2.36	4 x ø0.43	0.79	2.01	4.02	4.92	0.99	10.20	2.20	2.81	7.72	Ø 0.71	3.50	7.28	46.3	51.4
10 F12	10.83	8.07	8.07	1.97	13.78	17.13	2.68	8 x ø0.51	0.79	2.01	4.92	5.91	1.18	12.17	2.52	3.60	9.57	Ø 0.87	4.49	8.90	69.4	70.7
12 F12	12.20	9.84	9.84	1.97	16.54	19.69	3.07	8 x ø0.51	0.79	2.09	4.92	5.91	1.18	14.33	2.91	4.39	11.54	Ø 0.87	4.49	11.06	99.2	110.0

NOTES

Slotted locating holes for wafer and lugged version according following flange accommodation:

Lugged DIN PN 10/16 (NPS 1½ - 6), DIN PN 10 (NPS 8 - 12), ASME 150 (NPS 1½ - 12), JIS 10 K (NPS 1½ - 6).

1. Size (NPS) FTF = Face to face

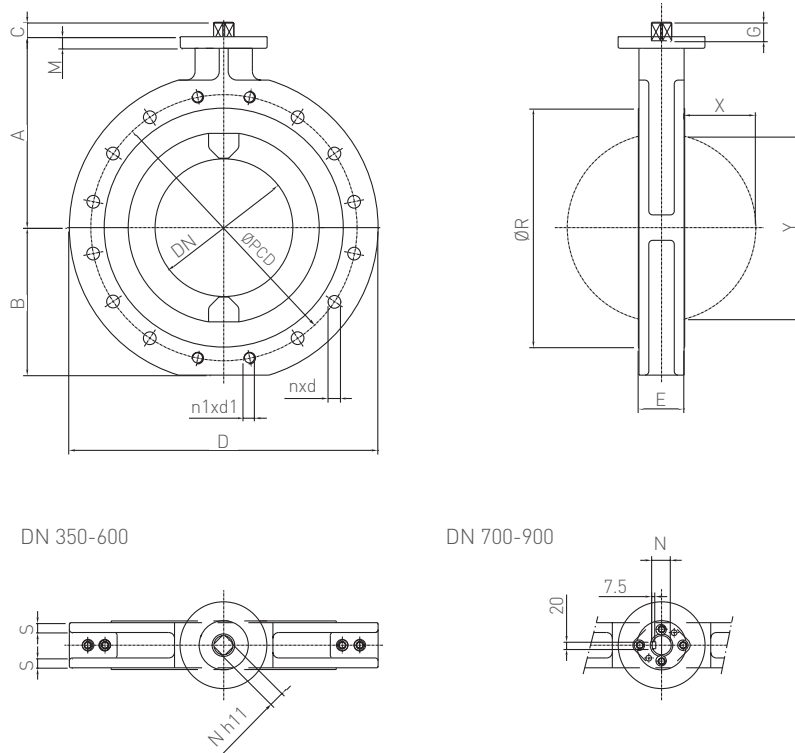
** Optional wide FTF according EN 558-1/15 (column 16).

W* Wafer

L* Lugged

NEOTECHA NEOSEAL LINED BUTTERFLY VALVES

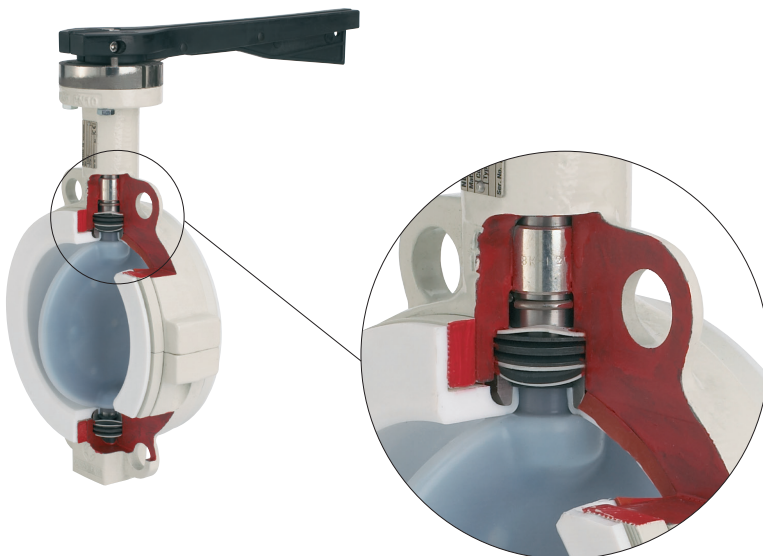
DOUBLE FLANGED DN 350-900 - METRIC DATA



VALVE DIMENSIONS DOUBLE FLANGED (mm)

Size (DN)	Type	Overall dimensions											PN 10		Wide FTF		Weight (kg)		
		A	B	C	D	E	G	M	N	ØR	X	Y	S	ØPCD	nxd	n1xd1		E	Y
350	F12	340	255	27	534	78	32	22	27/27	412	126.0	321	17	460	12x22	4xM20	127	304	60
400	F14	380	290	36	597	102	42	25	36/36	475	149.0	387	19	515	12x26	4xM24	140	374	88
450	F14	400	310	36	635	114	42	25	∅ 36/36	525	162.0	423	21	565	16x26	4xM24	152	411	105
500	F16	430	350	36	700	127	43	25	∅ 36/36	578	186.5	484	23	620	16x26	4xM24	152	476	145
600	F16	510	420	46	813	154	53	25	∅ 46/46	680	218.0	570	30	725	16x30	4xM27	178	563	235
700	F16	605	482	80	930	165	-	-	∅ 72	780	268.0	684	30	840	20x30	4xM27	-	-	423
750	F16	630	489	90	970	190	-	-	∅ 60	840	280.0	726	31	-	20x30	4xM27	-	-	383
800	F25	658	558	110	1060	190	-	-	∅ 80	887	305.0	781	30	950	20x33	4xM30	-	-	670
900	F30	710	612	128	1160	203	-	-	∅ 98	1000	349.0	877	35	1050	24x33	4xM30	-	-	880

FTF = Face to face

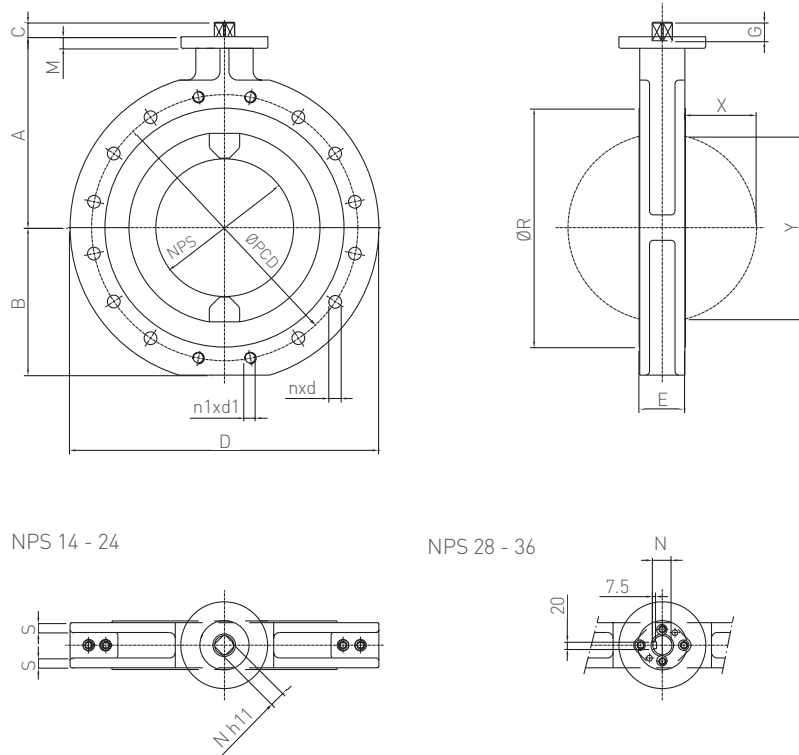


Wide face-to-face dimension according EN 558-1/15 column 16

Optional the NeoSeal is available in a wide face-to-face version according EN 558-1/15 column 16 (the former DIN 3202 K3) in order to allow installation in piping systems having thick internal linings which reduce the internal pipe diameter. By using the NeoSeal wide face-to-face version, the disc chord dimension Y is reduced to prevent contact between the disc and the pipe. Typically, full bore PTFE spacers are used to eliminate interference between the disc and I.D. of the pipe, however, spacers can introduce additional emission paths, maintenance issues due to cold flow, and thermal expansion and contraction. The wide face to face NeoSeal eliminates the need for PTFE spacers thus minimizing emissions to atmosphere and maintenance.

NEOTECHA NEOSEAL LINED BUTTERFLY VALVES

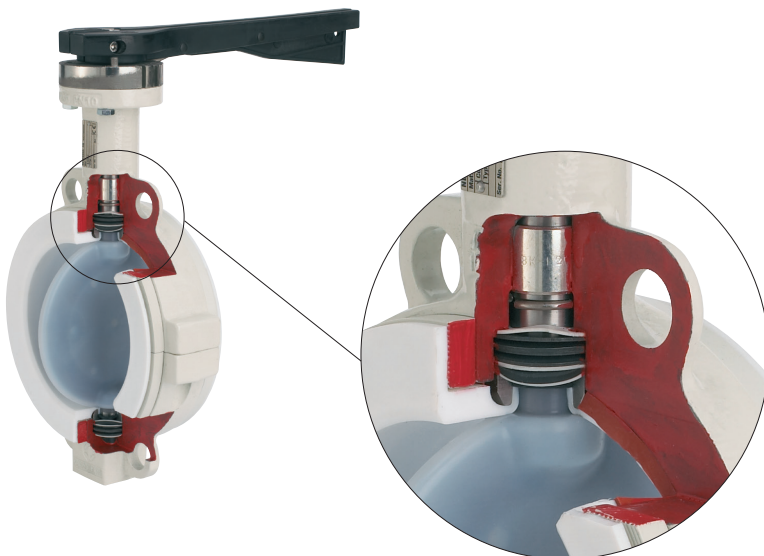
DOUBLE FLANGED NPS 14-36 - IMPERIAL DATA



VALVE DIMENSIONS DOUBLE FLANGED (inch)

Size (NPS)	Type	Overall dimensions													PN 10		Wide FTF		Weight (lbs)
		A	B	C	D	E	G	M	N	øR	X	Y	S	øPCD	nxd	n1xd1	E	Y	
14	F12	13.39	10.04	1.06	21.02	3.07	1.26	0.87	1.06/1.06	16.22	4.96	12.64	0.67	18.75	8x1.125	4x1	5.00	11.97	132
16	F14	14.96	11.42	1.42	23.50	4.02	1.65	0.98	1.42/1.42	18.70	5.87	15.24	0.75	21.25	12x1.125	4x1	5.51	14.72	194
18	F14	15.75	12.20	1.42	25.00	4.49	1.65	0.98	1.42/1.42	20.67	6.38	16.65	0.83	22.75	12x1.25	4x1.125	5.98	16.18	231
20	F16	16.93	13.78	1.42	27.56	5.00	1.69	0.98	1.42/1.42	22.76	7.34	19.06	0.91	25.00	16x1.25	4x1.125	5.98	18.74	320
24	F16	20.08	16.54	1.81	32.01	6.06	2.09	0.98	1.81/1.81	26.77	8.58	22.44	1.18	29.50	16x1.375	4x1.25	7.01	22.17	518
28	F16	23.82	18.98	3.15	36.61	6.50	-	-	ø2.83	30.71	10.55	26.93	1.18	34.00	24x1.38	4x1.25	-	-	933
30	F16	24.80	19.25	3.54	38.19	7.48	-	-	ø2.36	33.07	11.02	28.58	1.22	36.00	24x1.38	4x1.25	-	-	844
32	F25	25.91	21.97	4.33	41.73	7.48	-	-	ø3.15	34.92	12.01	30.75	1.18	38.50	24x1.62	4x1.5	-	-	1477
36	F30	27.95	24.09	5.04	45.67	7.99	-	-	ø3.86	39.37	13.74	34.53	1.38	42.75	24x1.62	8x1.5	-	-	1940

FTF = Face to face



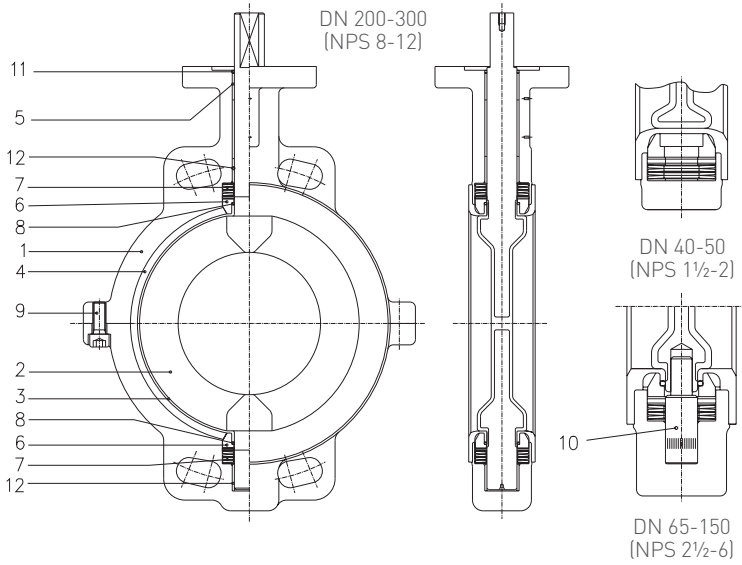
Wide face-to-face dimension according EN 558-1/15 column 16

Optional the NeoSeal is available in a wide face-to-face version according EN 558-1/15 column 16 (the former DIN 3202 K3) in order to allow installation in piping systems having thick internal linings which reduce the internal pipe diameter. By using the NeoSeal wide face-to-face version, the disc chord dimension Y is reduced to prevent contact between the disc and the pipe. Typically, full bore PTFE spacers are used to eliminate interference between the disc and I.D. of the pipe, however, spacers can introduce additional emission paths, maintenance issues due to cold flow, and thermal expansion and contraction. The wide face to face Neoseal eliminates the need for PTFE spacers thus minimizing emissions to atmosphere and maintenance.

NEOTECHA NEOSEAL LINED BUTTERFLY VALVES

PARTS LIST

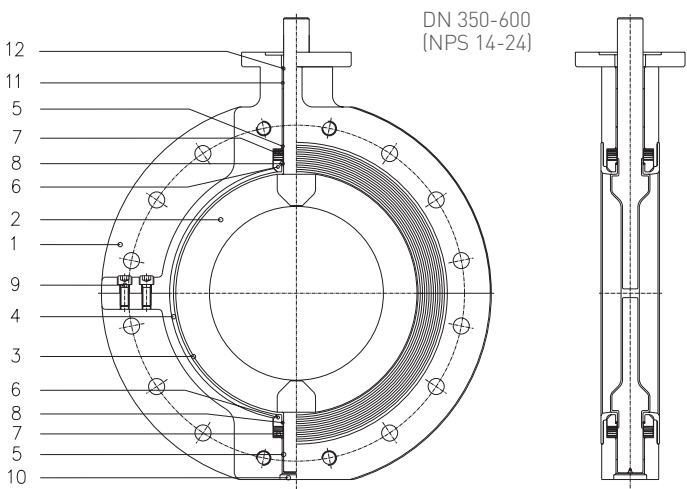
WAFER AND LUGGED



PARTS LIST

Pos.	Part	Material
1	Two piece body	Ductile iron polyester coated
2	One piece disc stem	PFA encapsulated stainless steel
3	Liner	Virgin PTFE
4	Elastomer back-up	Silicone or FKM
5	Bearing	Iglidur X (Thermoplast)
6	Pusher	Stainless steel
7	Belleville washer	Spring steel
8	O-ring	FKM
9	Int. Hex screw	Stainless steel A4-70
10	Pivot pin	Stainless steel
11	O-ring	FKM
12	Bearing	DU (Steel/PTFE)

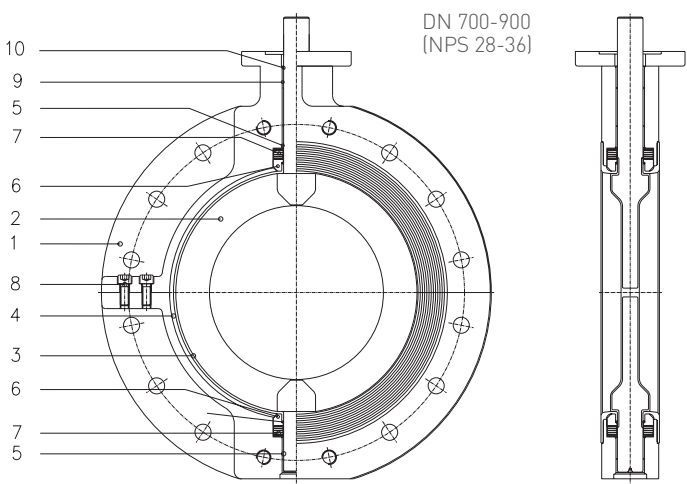
DOUBLE FLANGED



PARTS LIST

Pos.	Part	Material
1	Two piece body	Ductile iron polyester coated
2	One piece disc stem	PFA encapsulated carbon steel
3	Liner	Virgin PTFE
4	Elastomer back-up	Silicone or FKM
5	Bearing	DU (Steel/PTFE conductive)
6	Pusher	Stainless steel
7	Belleville washer	Spring steel
8	O-ring	FKM
9	Int. hex screw	Stainless steel A4-70
10	Plug	Steel zinc plated
11	Bearing	Iglidur X (Thermoplast)
12	O-ring	FKM

DOUBLE FLANGED



PARTS LIST

Pos.	Part	Material
1	Two piece body	Ductile iron epoxy coated
2	One piece disc stem	PFA encapsulated stainless steel
3	Liner	Virgin PTFE
4	Elastomer back-up	Silicone or FKM
5	Bearing	DU (Steel/PTFE conductive)
6	Pusher	Steel nickel plated
7	Belleville washer	Spring steel
8	Int. hex screw	Stainless steel A2-70
9	Bearing	DU/Steel
10	O-ring	FKM

NEOTECHA NEOSEAL LINED BUTTERFLY VALVES

VALVE DATA - METRIC DATA

K_v VALUES

Disc opening	Size (DN)														
	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
25°	1	3	5	7	12	21	56	101	172	250	302	452	521	789	974
30°	2	4	8	13	25	41	84	151	258	378	561	756	968	1221	1633
35°	4	8	16	24	45	73	134	240	352	537	750	1054	1398	1789	2496
40°	7	13	29	33	60	97	181	323	478	746	1037	1397	1786	2256	3217
45°	10	18	41	50	90	146	245	435	609	1007	1423	1852	2495	3104	4201
50°	14	27	61	69	125	203	296	525	836	1264	1814	2291	3127	3948	5413
55°	18	36	80	95	170	276	395	700	1103	1585	2314	3312	4231	5210	7036
60°	23	48	107	125	225	364	503	891	1353	2035	2938	3959	5060	6396	8764
65°	29	63	141	164	295	477	610	1080	1727	2810	3756	5124	6214	8498	12047
70°	37	78	175	222	400	647	803	1422	2131	3320	4621	6229	7962	10053	13795
75°	43	91	203	292	525	848	1130	2000	2821	4874	6024	8670	11054	13521	18406
80°	47	97	217	347	625	1009	1482	2622	3485	5416	7559	10186	13032	16449	22683
85°	50	102	228	381	685	1106	1723	3050	3846	6067	8221	11023	14023	17531	25301
90°	53	105	235	411	741	1196	1973	3492	4170	6102	8693	11647	14893	18807	25777

NOTES

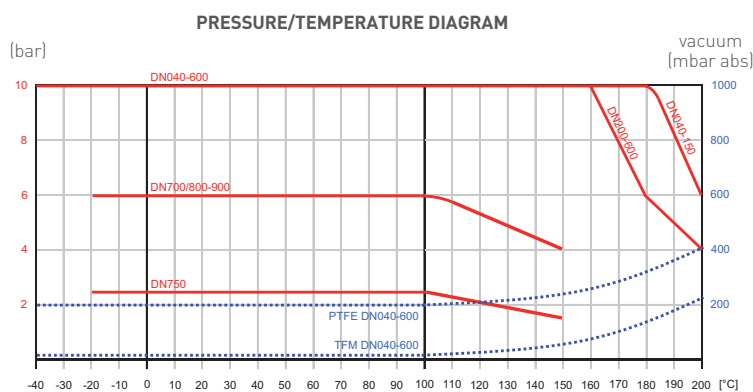
- Rated K_v = the volume of water in m³/hr that will pass through a given valve opening at a pressure drop of 1 bar.
- Sizes DN 700-900 (please contact your sales representative).

MAXIMUM ALLOWABLE SHAFT TORQUES NSD TOP SHAFT CONNECTION (Nm) *

Disc material	Size (DN)														
	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
PFA	90	90	200	200	200	350	480	900	1500	1500	1300	2800	2800	2800	4000
UHMWPE	90	90	200	200	200	350	480	900	1500	1500	1300	2800	2800	2800	4000
SS 1.4581 **	45	45	100	150	150	260	340	450	1200	1280	-	-	-	-	-
SS 1.4462 **	90	90	140	150	150	280	390	775	1200	1300	1000	2150	2150	2150	4000

NOTES

- * Hastelloy and titanium: contact factory
- ** Stainless steel



UHMWPE limited to 80°C

NOTE

NeoSeal butterfly valves are generally not allowed for end-of-line service. Please contact the factory for further advice about your specific application if end-of-line service is required.

NEOTECHA NEOSEAL LINED BUTTERFLY VALVES

VALVE DATA - IMPERIAL DATA

C_v VALUES

Disc opening	Size (NPS)														
	1.5	2	2.5	3	4	5	6	8	10	12	14	16	18	20	24
25°	1	3	6	8	14	24	65	117	199	289	349	523	602	912	1126
30°	2	5	9	15	29	47	97	175	298	437	649	874	1119	1412	1888
35°	5	9	18	28	52	84	155	277	407	621	867	1218	1616	2068	2886
40°	8	15	34	38	69	112	209	373	553	862	1199	1615	2065	2608	3719
45°	12	21	47	58	104	169	283	503	704	1164	1645	2141	2884	3588	4857
50°	16	31	71	80	145	235	342	607	966	1461	2097	2649	3615	4564	6258
55°	21	42	92	110	197	319	457	809	1275	1832	2675	3829	4891	6023	8134
60°	27	55	124	145	260	421	582	1030	1564	2353	3397	4577	5850	7394	10132
65°	34	73	163	190	341	551	705	1249	1997	3249	4342	5924	7184	9824	13927
70°	43	90	202	257	462	748	928	1644	2464	3838	5342	7201	9205	11622	15948
75°	50	105	235	338	607	980	1306	2312	3261	5635	6964	10023	12779	15631	21279
80°	54	112	251	401	723	1166	1713	3031	4029	6261	8739	11776	15066	19016	26223
85°	58	118	264	440	792	1279	1992	3526	4446	7014	9504	12743	16212	20267	29250
90°	61	121	272	475	857	1383	2281	4037	4821	7054	10050	13465	17217	21742	29800

NOTES

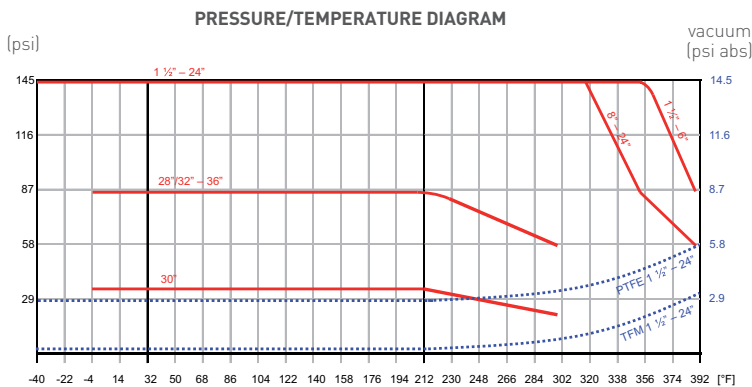
- Rated C_v = the volume of water in USGPM that will pass through a given valve opening at a pressure drop of 1 psi.
- Sizes NPS 28 - 36 (please contact your sales representative).

MAXIMUM ALLOWABLE SHAFT TORQUES NSD TOP SHAFT CONNECTION (lbs.inch) *

Disc material	Size (NPS)														
	1.5	2	2.5	3	4	5	6	8	10	12	14	16	18	20	24
PFA	797	797	1770	1770	1770	3098	4248	7966	13276	13276	11506	24782	24782	24782	35403
UHMWPE	797	797	1770	1770	1770	3098	4248	7966	13276	13276	11506	24782	24782	24782	35403
SS 1.4581 **	398	398	885	1328	1328	2301	3009	3983	10621	11329	-	-	-	-	-
SS 1.4462 **	797	797	1239	1328	1328	2478	3452	6859	10621	11506	8851	19029	19029	19029	35403

NOTES

- * Hastelloy and titanium: contact factory
- ** Stainless steel



UHMWPE limited to 176°F

NOTE

NeoSeal butterfly valves are generally not allowed for end-of-line service. Please contact the factory for further advice about your specific application if end-of-line service is required.

NEOTECHA NEOSEAL LINED BUTTERFLY VALVES

VALVE DATA - METRIC DATA

DYNAMIC TORQUE FACTORS F_T FOR METRIC UNITS

Disc opening	Size (DN)														
	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
10°	-	-	-	-	-	-	-	1.7	0.4	8.1	-	-	-	-	-
15°	-	0.1	0.1	0.3	0.5	1.0	1.7	4.0	7.8	13.5	8.6	12.8	18.2	25.0	43.2
20°	-	0.1	0.2	0.5	0.9	1.8	3.0	7.2	14.1	24.3	21.4	32.0	45.6	62.5	108.0
25°	0.1	0.2	0.4	0.7	1.4	2.7	4.7	11.2	21.9	37.8	42.9	64.0	91.1	125.0	216.0
30°	0.1	0.3	0.6	1.1	2.1	4.1	7.1	16.8	32.8	56.7	64.3	96.0	136.7	187.5	324.0
35°	0.2	0.4	0.8	1.5	3.0	5.9	10.1	24.0	46.9	81.0	94.3	140.8	200.5	275.0	475.2
40°	0.2	0.5	1.1	2.1	4.1	8.0	13.8	32.8	64.1	110.7	124.3	185.6	264.3	362.5	626.4
45°	0.4	0.7	1.5	2.8	5.4	10.5	18.2	43.2	84.4	145.8	171.5	256.0	364.5	500.0	864.0
50°	0.5	0.9	1.9	3.6	7.0	13.7	23.6	56.0	109.4	189.0	235.8	352.0	501.2	687.5	1188.0
55°	0.6	1.1	2.5	4.6	9.0	17.6	30.4	72.0	140.6	243.0	321.6	480.0	683.4	937.5	1620.0
60°	0.7	1.5	3.3	6.1	12.0	23.4	40.5	96.0	187.5	324.0	415.9	620.8	883.9	1212.5	2095.2
65°	0.9	1.9	4.1	7.7	15.0	29.3	50.6	120.0	234.4	405.0	544.5	812.8	1157.3	1857.5	2743.2
70°	1.3	2.5	5.5	10.2	20.0	39.1	67.5	160.0	312.5	540.0	733.2	1094.4	1558.2	2317.5	3693.6
75°	1.7	3.4	7.4	13.8	27.0	52.7	91.1	216.0	421.9	729.0	1050.4	1568.0	2232.6	3062.5	5292.0
80°	1.9	3.9	8.5	15.9	31.0	60.5	104.6	248.0	484.4	837.0	1346.3	2009.6	2861.3	3925.0	6782.4
85°	1.3	2.5	5.5	10.2	20.0	39.1	67.5	160.0	312.5	540.0	913.2	1363.2	1941.0	2662.5	4600.8
90°	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTES

1. Dynamic operating torque formula:

$$T_D = F_T \times \Delta p$$

T_D = Dynamic torque (Nm)

Δp = Pressure drop across disc at desired disc-opening (bar)

F_T = Dynamic torque factor (see table)

2. The above mentioned dynamic torque includes all frictional resistances.

3. The dynamic torque is tending to close the disc.

4. Sizes DN 700-900 (please contact your sales representative).

SIZING TORQUES (AT MAX. ALLOWABLE PRESSURE DIFFERENTIAL) (Nm)

Disc/seat material	Size (DN)														
	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
I	18	20	25	45	60	85	140	190	320	420	500	550	620	680	950
II	30	35	50	60	85	120	175	330	390	500	750	880	1000	1200	1450
III	30	35	45	55	80	115	170	250	350	460	600	700	800	930	1200
IV	25	30	40	50	75	110	160	220	320	420	540	600	680	750	1050
V	25	30	40	50	75	110	160	220	320	420	540	600	680	750	1050
VI	25	30	40	50	75	110	160	220	320	420	540	600	680	750	1050

NOTES

I PFA / PTFE or TFM

II UHMWPE / UHMWPE

III SS 1.4581 or 1.4462 / UHMWPE

IV SS 1.4581 / PTFE or TFM

V SS 1.4462 / PTFE or TFM

VI Hastelloy / PTFE or TFM

1. The charted maximum sizing operating torque is the sum of all friction and resistance for opening and closing of the disc against the indicated pressure differential.

2. The effect of dynamic torque is not considered in tabulation.

3. In sizing operators it is not necessary to include safety-factors.

4. Sizes DN 700-900 (please contact your sales representative).

5. For silicone free version please use 1.7 torque multiplier.

NEOTECHA NEOSEAL LINED BUTTERFLY VALVES

VALVE DATA - IMPERIAL DATA

DYNAMIC TORQUE FACTORS F_T FOR IMPERIAL UNITS

Disc opening	Size (NPS)														
	1.5	2	2.5	3	4	5	6	8	10	12	14	16	18	20	24
10°	-	-	-	-	-	-	-	1.0	0.2	4.9	-	-	-	-	-
15°	-	0.1	0.1	0.2	0.3	0.6	1.0	2.4	4.8	8.2	5.2	7.8	11.1	15.2	26.3
20°	-	0.1	0.1	0.3	0.5	1.1	1.8	4.4	8.6	14.8	13.0	19.5	27.8	38.1	65.9
25°	0.1	0.1	0.2	0.4	0.9	1.6	2.9	6.8	13.4	23.0	26.2	39.0	55.5	76.2	131.7
30°	0.1	0.2	0.4	0.7	1.3	2.5	4.3	10.2	20.0	34.6	39.2	58.5	83.4	114.3	197.6
35°	0.1	0.2	0.5	0.9	1.8	3.6	6.2	14.6	28.6	49.4	57.5	85.9	122.3	167.7	289.8
40°	0.1	0.3	0.7	1.3	2.5	4.9	8.4	20.0	39.1	67.5	75.8	113.2	161.2	221.0	382.0
45°	0.2	0.4	0.9	1.7	3.3	6.4	11.1	26.3	51.5	88.9	104.6	156.1	222.3	304.9	526.8
50°	0.3	0.5	1.2	2.2	4.3	8.4	14.4	34.1	66.7	115.2	143.8	214.6	305.6	419.2	724.4
55°	0.4	0.7	1.5	2.8	5.5	10.7	18.5	43.9	85.7	148.2	196.1	292.7	416.7	571.6	987.8
60°	0.4	0.9	2.0	3.7	7.3	14.3	24.7	58.5	114.3	197.6	253.6	378.5	539.0	739.3	1277.6
65°	0.5	1.2	2.5	4.7	9.1	17.9	30.9	73.2	142.9	247.0	332.0	495.6	705.7	1132.6	1672.7
70°	0.8	1.5	3.4	6.2	12.2	23.8	41.2	97.6	190.5	329.3	447.1	667.3	950.1	1413.1	2252.2
75°	1.0	2.1	4.5	8.4	16.5	32.1	55.5	131.7	257.3	444.5	640.5	956.1	1361.3	1867.4	3226.8
80°	1.2	2.4	5.2	9.7	18.9	36.9	63.8	151.2	295.4	510.4	820.9	1225.4	1744.7	2393.3	4135.6
85°	0.8	1.5	3.4	6.2	12.2	23.8	41.2	97.6	190.5	329.3	556.8	831.2	1183.5	1623.5	2805.4
90°	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTES

1. Dynamic operating torque formula:

$$T_D = F_T \times \Delta p$$

T_D = Dynamic torque (Lbf.inch)

Δp = Pressure drop across disc at desired disc-opening (psi)

F_T = Dynamic torque factor (see table)

2. The above mentioned dynamic torque includes all frictional resistances.

3. The dynamic torque is tending to close the disc.

4. Sizes NPS 28 - 36 (please contact your sales representative).

SIZING TORQUES (AT MAX. ALLOWABLE PRESSURE DIFFERENTIAL) (lbs.inch)

Disc/seal material	Size (NPS)														
	1.5	2	2.5	3	4	5	6	8	10	12	14	16	18	20	24
I	159	177	221	398	531	752	1239	1682	2832	3717	4425	4868	5487	6019	8408
II	266	310	443	531	752	1062	1549	2921	3452	4425	6638	7789	8851	10621	12834
III	266	310	398	487	708	1018	1505	2213	3098	4071	5310	6196	7081	8231	10621
IV	221	266	354	443	664	974	1416	1947	2832	3717	4779	5310	6019	6638	9293
V	221	266	354	443	664	974	1416	1947	2832	3717	4779	5310	6019	6638	9293
VI	221	266	354	443	664	974	1416	1947	2832	3717	4779	5310	6019	6638	9293

NOTES

I PFA / PTFE or TFM

II UHMWPE / UHMWPE

III SS 1.4581 or 1.4462 / UHMWPE

IV SS 1.4581 / PTFE or TFM

V SS 1.4462 / PTFE or TFM

VI Hastelloy / PTFE or TFM

1. The charted maximum sizing operating torque is the sum of all friction and resistance for opening and closing of the disc against the indicated pressure differential.

2. The effect of dynamic torque is not considered in tabulation.

3. In sizing operators it is not necessary to include safety-factors.

4. Sizes NPS 28 - 36 (please contact your sales representative).

5. For silicone free version please use 1.7 torque multiplier.

NEOTECHA NEOSEAL LINED BUTTERFLY VALVES

LINING MATERIALS



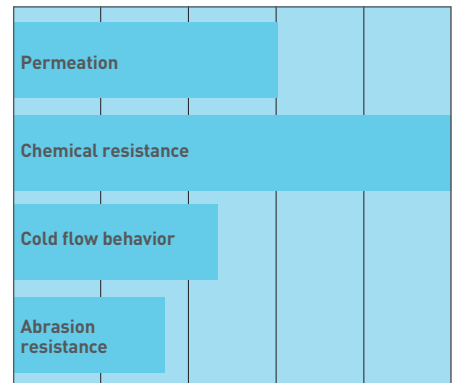
PTFE seat liners

Isostatically molded virgin PTFE with a minimum thickness of 3 mm/0.12". PTFE high density liners have a high specific gravity of at least 2.16 gr/cm³.

Operating temperature: -40°C to +200°C
(-40°F to +392°F)

Size range: DN 40-900
(NPS 1½ - 36)

Virgin PTFE: FDA approved



Poor

Outstanding



PFA and PFA conductive

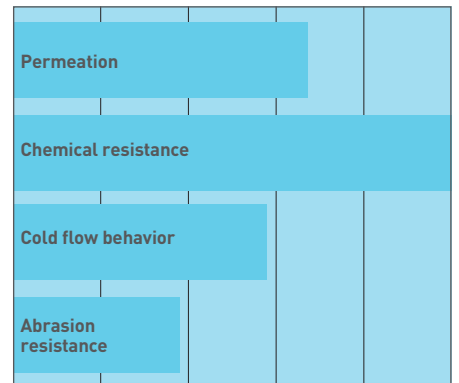
Injection molded PFA with a minimum thickness of 3 mm/0.12". Neotecha has a track record of more than 25 years of PFA injection molding technology, which is essential to obtain the know how to eliminate internal stresses in the PFA lining and achieve a perfect bonding between PFA and the metal surface.

Operating temperature: -40°C to +200°C
(-40°F to +392°F)

Size range: DN 40-900
(NPS 1½ - 36)

Virgin PFA: FDA approved

Conductive PFA: Not FDA approved



Poor

Outstanding



TFM and TFM conductive seat liners

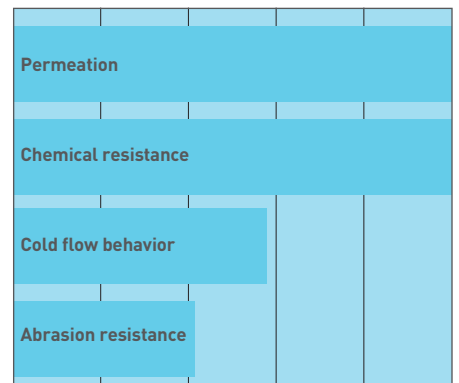
TFM (or enhanced PTFE) has a significantly lower melt viscosity than PTFE, resulting in better particle fusion during the sintering process. TFM has the ultimate resistance against permeation and an improved resistance against cold flow. Conductive TFM is available to prevent harmful electrostatic discharge.

Operating temperature: -40°C to +200°C
(-40°F to +392°F)

Size range: DN 40-900
(NPS 1½ - 36)

Virgin TFM: FDA approved

Conductive TFM : FDA approved

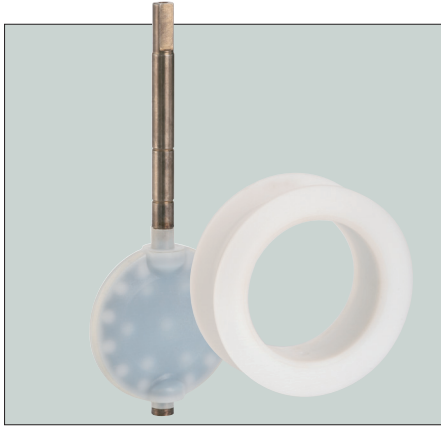


Poor

Outstanding

NEOTECHA NEOSEAL LINED BUTTERFLY VALVES

LINING MATERIALS



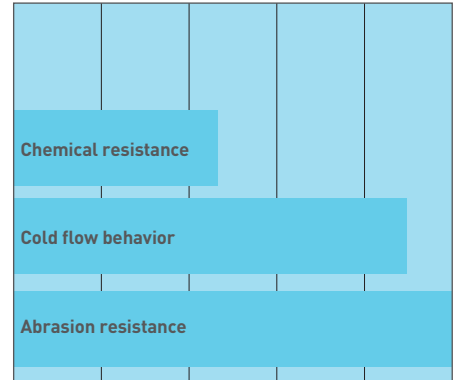
UHMWPE

Seat liner and disc cover made of ultra high molecular weight polyethylene with a minimum thickness of 3 mm/0.12". This material provides maximum abrasion and wear resistance and a high impact resistance. It makes UHMWPE the ideal choice for highly abrasive chemical applications.

Operating temperature: -40°C to +80°C
(-40°F to +176°F)

Size range: DN 40-600
(NPS 1½ - 24)

UHMWPE: FDA approved



Poor

Outstanding

Special liners for high purity applications

Neotecha is also able to offer special treated PTFE, PFA and TFM liners for the production of valves used in high purity applications in the semiconductor industry and pharmaceutical industry. For this purpose we use liners with an extremely smooth lining surface and of a superior purity. Valves which are used for this service are ultrasonically washed to stringent cleaning standards, assembled and tested in our in-house clean room. These valves are packed in vacuum sealed double bags for protection during transport and handling before installation. Based on this special process Neotecha is able to supply valves for ultra pure water (UPW) applications without the need for any additional cleaning on site.

Other lining materials are available on request.



Valve assembly in clean room

NEOTECHA NEOSEAL LINED BUTTERFLY VALVES

MATERIAL SELECTION

SELECTION GUIDE

Example:	NSD	150	N01	W	M4	B	00
Type							
NSD	NeoSeal compatible to ISO 5211						
Sizes DN (NPS)	40 - 900 (1½ - 30)						
Trim number	See valve material selection table						
Body							
W	Wafer						
L	Lugged						
F	Double flanged						
Flange standard							
M4	Multi drilled PN 10/16 ASME 150						
10	DIN PN 10						
16	DIN PN 16						
A1	ASME 150						
Operation							
B	Bare shaft						
4	F10 top flange (default for DN 200)						
Variant							
00	Standard						
For other variants, contact factory							

NOTES

For definitive variant, please contact your local sales office.

VALVE MATERIAL SELECTION

Trim number	Body	Disc	Shaft	Seat	Seat backing	Sizes DN (NPS)	Remarks
N01	Ductile iron	PFA	Stainless steel	PTFE	Silicone	40-900 (1½ - 36)	
N02	Ductile iron	PFA	Stainless steel	PTFE	FKM	40-900 (1½ - 36)	
N5D	Ductile iron	Conductive PFA	Stainless steel	Conductive TFM	Silicone	40-900 (1½ - 36)	
N5E	Ductile iron	Conductive PFA	Stainless steel	Conductive TFM	FKM	40-900 (1½ - 36)	
N07	Ductile iron	Stainless steel	Stainless steel	PTFE	Silicone	40-900 (1½ - 36)	
N08	Ductile iron	Stainless steel	Stainless steel	PTFE	FKM	40-900 (1½ - 36)	
N6D	Ductile iron	Stainless steel	Stainless steel	Conductive TFM	Silicone	40-900 (1½ - 36)	
N6E	Ductile iron	Stainless steel	Stainless steel	Conductive TFM	FKM	40-900 (1½ - 36)	
N13	Ductile iron	Polished stainless steel	Stainless steel	PTFE	Silicone	40-900 (1½ - 36)	
N14	Ductile iron	Polished stainless steel	Stainless steel	PTFE	FKM	40-900 (1½ - 36)	
N5M	Ductile iron	Polished stainless steel	Stainless steel	Conductive TFM	Silicone	40-900 (1½ - 36)	
N5N	Ductile iron	Polished stainless steel	Stainless steel	Conductive TFM	FKM	40-900 (1½ - 36)	
N81	Ductile iron	Stainless steel	Stainless steel	UHMWPE	Silicone	40-600 (1½ - 24)	NSA / NSD
N42	Ductile iron	UHMWPE	Stainless steel	UHMWPE	Silicone	40-600 (1½ - 24)	NSA only
N52	Ductile iron	PFA	Stainless steel	TFM	Silicone	40-900 (1½ - 36)	
N53	Ductile iron	PFA	Stainless steel	TFM	FKM	40-900 (1½ - 36)	
N1R	Ductile iron	Titanium	Titanium	PTFE	Silicone	40-900 (1½ - 36)	Contact factory
N1S	Ductile iron	Titanium	Titanium	PTFE	FKM	40-900 (1½ - 36)	Contact factory

NEOTECHA NEOSEAL LINED BUTTERFLY VALVES

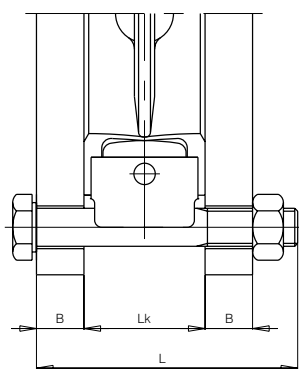
MATERIAL SELECTION

VALVE MATERIAL LIST

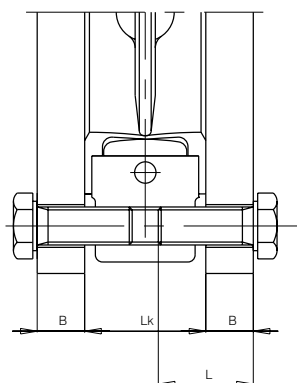
Part name	Material	DIN designation	DIN mat. no.	Sizes DN (NPS)	Remarks
Body	Ductile iron	EN-GJS 400-18U-LT-Z (GGG40.3)	0.7043	040-600 (1½-24)	Heat treated coating: 2-components polyester powder, RAL9002
	Ductile iron	EN-GJS 400-18	0.7043	700-900 (28-36)	Epoxy coated RAL9002
Disc	PFA covered	ASTMA747	1.4542	040-300 (1½ - 24)	FDA 21CFR177.1550
	PFA covered	St 52-3	1.0570	350-600 (14-24)	FDA 21CFR177.1550
	PFA covered	St 52-3	1.0577	700-900 (28-36)	-
	Conductive PFA covered	ASTMA747	1.4542	040-300 (1½ - 12)	-
	Conductive PFA covered	St 52-3	1.0570	350-600 (14-24)	-
	Stainless steel	X 2 CrNiMo N22 53	1.4462	040-600 (1½ - 24)	-
	Stainless steel	X 2 CrNiMo 17 12 2	1.4404	700-900 (28-36)	-
	UHMWPE covered	ASTMA747	1.4542	040-300 (1½-24)	FDA 21CFR177.1550
	UHMWPE covered	St 52-3	1.0570	350-600 (14-24)	FDA 21CFR177.1550
Shaft	PFA covered	ASTMA747	1.4542	040-300 (1½-12)	FDA 21CFR177.1550
	PFA covered	X17 CrNi 16 2	1.4057	350-600 (14-24)	FDA 21CFR177.1550
	PFA covered	X 2 CrNiMo 17 12 2	1.4404	700-900 (28-36)	FDA 21CFR177.1550
	Conductive PFA covered	ASTMA747	1.4542	040-300 (1½-12)	-
	Conductive PFA covered	St 52-3	1.0570	350-600 (14-24)	-
	Stainless steel	ASTMA747	1.4542	040-300 (1½-12)	-
	Stainless steel	X 2 CrNiMo N22 53	1.4462	350-600 (14-24)	-
	UHMWPE covered	ASTMA747	1.4542	040-300 (1½-12)	FDA 21CFR177.1550
	UHMWPE covered	X17 CrNi 16 2	1.4057	350-600 (14-24)	FDA 21CFR177.1550
Seat	PTFE	-	-	040-900 (1½-36)	FDA 21CFR177.1550
	UHMWPE	-	-	040-600 (1½-24)	FDA 21CFR177.1520
	TFM1600	-	-	040-600 (1½-24)	FDA 21CFR177.1550
	TFM6221 conductive	-	-	040-900 (1½-36)	FDA 21CFR177.1550
	TFM1700	-	-	700-900 (28-36)	FDA 21CFR177.1550
Body screws	Stainless steel	X 5 CrNiMo 17 12 2	1.4401	-	A4-70
	Stainless steel	X 5 CrNi 18 10	1.4301	-	A2-70
Top spring	Spring steel	50 CrV 4	1.8159	-	DIN 17222
O-rings	FKM	-	-	040-900 (1½-36)	-
Seat backing	EPDM	-	-	040-600 (1½-24)	-
	FKM	-	-	040-900 (1½-36)	-
	Silicone	-	-	040-900 (1½-36)	-
Top bearing	Iglidur X (Thermoplast)	-	-	040-900 (1½-36)	ST/PTFE 700-900
Bottom bearing	Steel/PTFE conductive	-	-	-	-

NEOTECHA NEOSEAL LINED BUTTERFLY VALVES

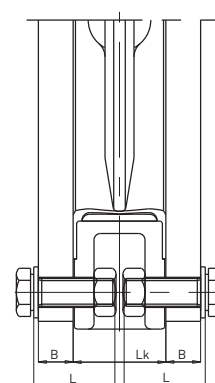
REQUIRED FLANGE BOLTS - METRIC DATA



WAFER



LUGGED



DOUBLE FLANGE

WAFER

Valve size (DN)	FTF Lk	PN 10 EN 1092-1				PN 16 EN 1092-1				ASME 150			
		B ⁽¹⁾	Bolt holes	PCD	Bolt size L	B ⁽¹⁾	Bolt holes	PCD	Bolt size L	B ⁽¹⁾	Bolt holes	PCD	Bolt size L (UNC)
40	35	18	4	110	M16x80	18	4	110	M16x80	0.69"	4	3.88"	0.5" x 3.25"
50	43	18	4	125	M16x100	18	4	125	M16x100	0.75"	4	4.75"	0.625" x 3.75"
65	46	18	4	145	M16x100	18	4	145	M16x100	0.87"	4	5.50"	0.625" x 4"
80	46	20	8	160	M16x100	20	8	160	M16x100	0.94"	4	6.00"	0.625" x 4.5"
100	51	20	8	180	M16x110	20	8	180	M16x110	0.94"	8	7.50"	0.625" x 4.5"
125	56	22	8	210	M16x120	22	8	210	M16x120	0.94"	8	8.50"	0.75" x 5"
150	56	22	8	240	M20x120	22	8	240	M20x120	1.00"	8	9.50"	0.75" x 5"
200	62	24	8	295	M20x130	24	12	295	M20x130	1.12"	8	11.75"	0.75" x 5.5"
250	70	26	12	350	M20x140	26	12	355	M24x140	1.19"	12	14.25"	0.875" x 6"
300	80	26	12	400	M20x150	28	12	410	M24x150	1.25"	12	17.00"	0.875" x 7"

LUGGED

Valve size (DN)	FTF Lk	PN 10 EN 1092-1				PN 16 EN 1092-1				ASME 150			
		B ⁽¹⁾	Bolt holes	PCD	Bolt size L	B ⁽¹⁾	Bolt holes	PCD	Bolt size L	B ⁽¹⁾	Bolt holes	PCD	Bolt size L (UNC)
40	35	18	4	110	M16x30	18	4	110	M16x30	0.69"	4	3.88"	0.5" x 1.125"
50	43	18	4	125	M16x35	18	4	125	M16x35	0.75"	4	4.75"	0.625" x 1.375"
65	46	18	4	145	M16x35	18	4	145	M16x35	0.87"	4	5.50"	0.625" x 1.625"
80	46	20	8	160	M16x35	20	8	160	M16x35	0.94"	4	6.00"	0.625" x 1.625"
100	51	20	8	180	M16x40	20	8	180	M16x40	0.94"	8	7.50"	0.625" x 1.625"
125	56	22	8	210	M16x45	22	8	210	M16x45	0.94"	8	8.50"	0.75" x 1.875"
150	56	22	8	240	M20x45	22	8	240	M20x45	1.00"	8	9.50"	0.75" x 1.875"
200	62	24	8	295	M20x50	-	-	-	-	1.12"	8	11.75"	0.75" x 2"
250	70	26	12	350	M20x55	-	-	-	-	1.19"	12	14.25"	0.875" x 2.25"
300	80	26	12	400	M20x60	-	-	-	-	1.25"	12	17.00"	0.875" x 2.25"

DOUBLE FLANGE

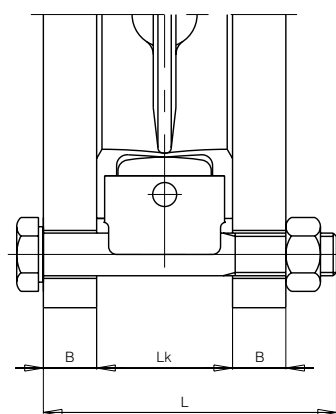
Valve size (DN)	FTF Lk	PN 10 EN 1092-1				PN 16 EN 1092-1				ASME 150			
		B ⁽¹⁾	Bolt holes	PCD	Bolt size L	B ⁽¹⁾	Bolt holes	PCD	Bolt size L	B ⁽¹⁾	Bolt holes	PCD	Bolt size L (UNC)
350	80	26	16	460	M20x50	-	-	-	-	1.37"	12	18.75"	1" x 2.5"
400	104	26	16	515	M24x65	-	-	-	-	1.44"	16	21.25"	1" x 3"
450	114	28	20	565	M24x65	-	-	-	-	1.56"	16	22.75"	1.125" x 3.25"
500	127	28	20	620	M24x65	-	-	-	-	1.69"	20	25.00"	1.125" x 3.25"
600	157	28	20	725	M27x80	-	-	-	-	1.87"	20	29.50"	1.25" x 3.5"
700	165	30	24	840	18xM27x310 ⁽²⁾	-	-	-	-	2.81"	28	34.00"	22x1.25"x16" ⁽²⁾
700	-	-	-	-	12xM27x70	-	-	-	-	-	-	-	12x1.25"x4.5"
750	190	-	-	-	-	-	-	-	-	2.94"	28	36.00"	22x1.25"x18" ⁽²⁾
750	-	-	-	-	-	-	-	-	-	-	-	-	12x1.25"x4.5"
800	190	32	24	950	18xM30x350 ⁽²⁾	-	-	-	-	3.19"	28	38.50"	22x1.5"x18" ⁽²⁾
800	-	-	-	-	12xM30x70	-	-	-	-	-	-	-	12x1.5"x5"
900	203	34	28	1050	22xM33x370 ⁽²⁾	-	-	-	-	3.56"	32	42.75"	26x1.5"x19.5" ⁽²⁾
900	-	-	-	-	12xM36x80	-	-	-	-	-	-	-	12x1.5"x5"

FTF = Face to face

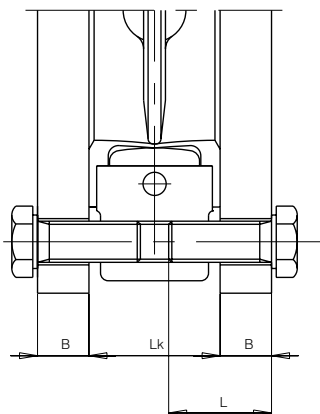
1. Pipe flange thickness 2. Required studs

NEOTECHA NEOSEAL LINED BUTTERFLY VALVES

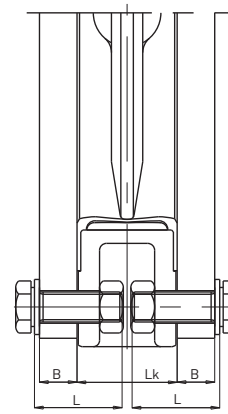
REQUIRED FLANGE BOLTS - IMPERIAL DATA



WAFER



LUGGED



DOUBLE FLANGE

WAFER

ASME 150

Valve size (NPS)	Face to face length Lk	Flange thickness B	Bolt holes	PCD	Bolt size L (UNC)
1½	1.38	11/16"	4	3.88	½" x 3¼"
2	1.69	¾"	4	4.75	5/8" x 3¾"
2½	1.81	7/8"	4	5.50	5/8" x 4"
3	1.81	15/16"	4	6.00	5/8" x 4½"
4	2.01	15/16"	8	7.50	5/8" x 4½"
5	2.20	15/16"	8	8.50	¾" x 5"
6	2.20	1"	8	9.50	¾" x 5"
8	2.44	1 1/8"	8	11.75	¾" x 5½"
10	2.76	1 3/16"	12	14.25	7/8" x 6"
12	3.15	1 ¼"	12	17.00	7/8" x 7"

LUGGED

ASME 150

Valve size (NPS)	Face to face length Lk	Flange thickness B	Bolt holes	PCD	Bolt size L (UNC)
1½	1.38	11/16"	4	3.88	½" x 1 1/8"
2	1.69	¾"	4	4.75	5/8" x 1 3/8"
2½	1.81	7/8"	4	5.50	5/8" x 1 5/8"
3	1.81	15/16"	4	6.00	5/8" x 1 5/8"
4	2.01	15/16"	8	7.50	5/8" x 1 5/8"
5	2.20	15/16"	8	8.50	¾" x 1 7/8"
6	2.20	1"	8	9.50	¾" x 1 7/8"
8	2.44	1 1/8"	8	11.75	¾" x 2"
10	2.76	1 3/16"	12	14.25	7/8" x 2 ¼"
12	3.15	1 ¼"	12	17.00	7/8" x 2 ¼"

DOUBLE FLANGE

ASME 150

Valve size (NPS)	Face to face length Lk	Flange thickness B	Bolt holes	PCD	Bolt size L (UNC)
14	3.15	1 3/8"	12	18.75	1" x 2 ½"
16	4.09	1 7/16"	16	21.25	1" x 3"
18	4.49	1 9/16"	16	22.75	1 1/8" x 3 ¼"
20	5.00	1 11/16"	20	25.00	1 1/8" x 3 ¼"
24	6.18	1 7/8"	20	29.50	1 ¼" x 3 ½"

Note: sizes NPS 28 - 36: contact factory.

RECOMMENDED BOLT TORQUES FOR INSTALLATION

Valve size (NPS)	Torque (in/lbs)	Valve size (NPS)	Torque (in/lbs)
1½	177	10	885
2	310	12	1018
2½	398	14	1240
3	443	16	1505
4	487	18	1682
5	575	20	1947
6	620	24	2478
8	841	-	-

Note: sizes NPS 28 - 36: contact factory.

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