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

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, petrochemical, pulp and paper, semiconductor (UPW), foundries and mining.

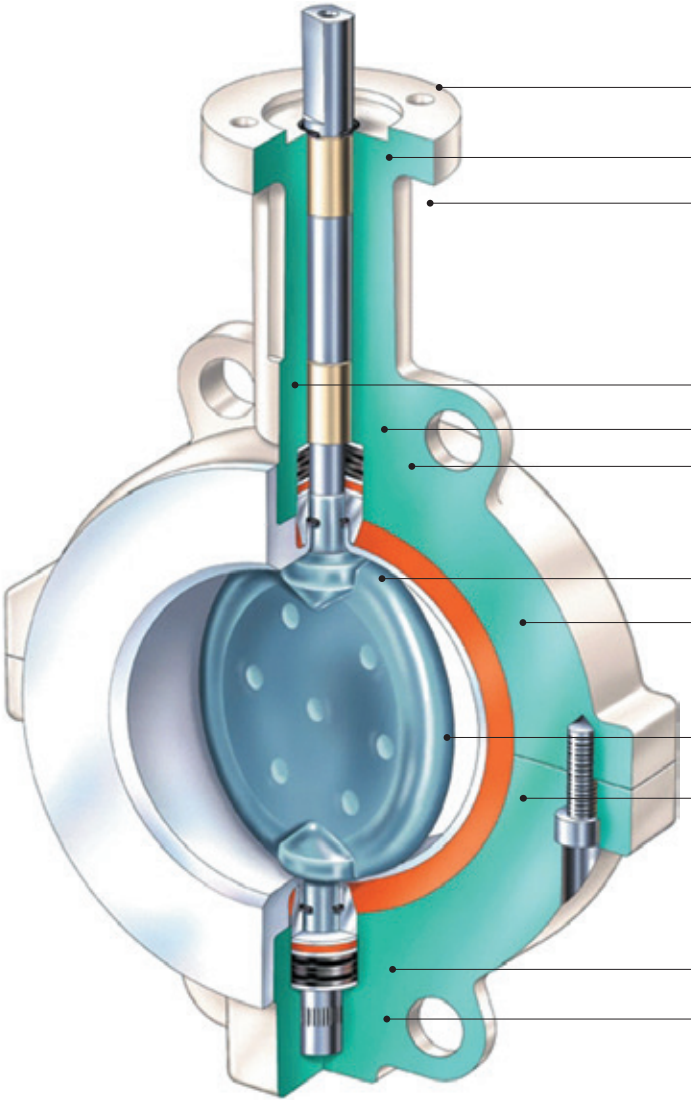
TECHNICAL DATA

Pressure (psi):	145 (NPS 1½ - 24) 87 (NPS 28, 32 and 36) 36 (NPS 30)
Temperature (°F):	-40 to +392
Sizes (NPS):	1½ - 36
Flange accommodation:	DIN PN 10/(16) ANSI 150, JIS 10K

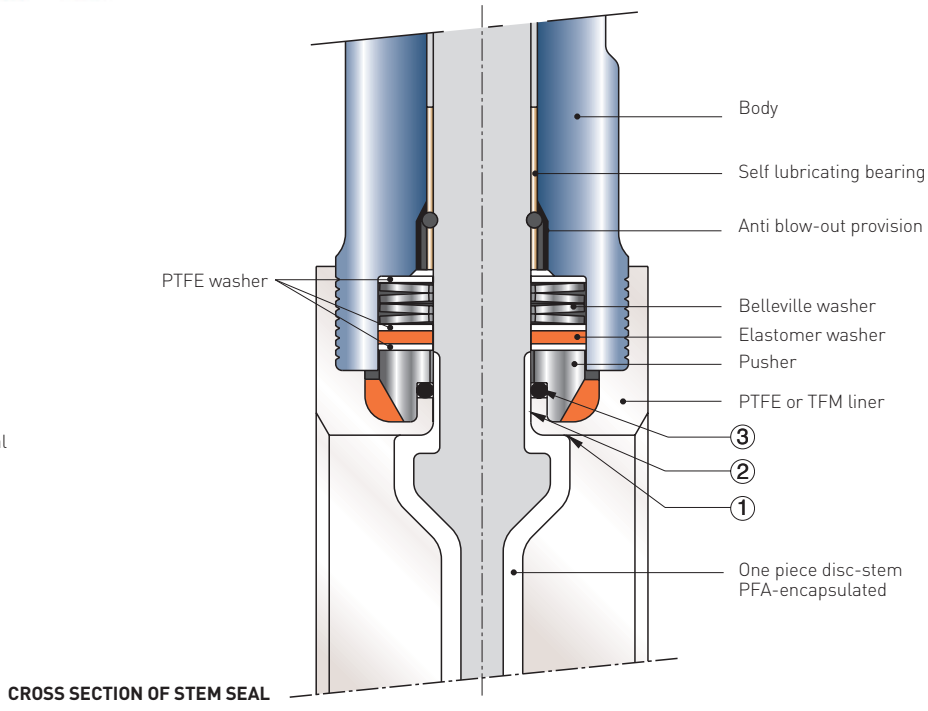
Bubble tight shut-off in both directions, in accordance with EN-12266-1 leakrate A (UHMWPE leakrate B).

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 0.12 inch molded PFA providing high C_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 have been performed successfully with pressures less than 0.003 psi absolute.
- 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.



- Top flange according to ISO 5211, simplifies the actuator mounting.
- Conductive Iglidur bearing.
- Split body made of ductile iron (ASTM) with polyester coating.
- Integral body locating holes to ensure perfect centering of the valve between flanges.
- Self lubricating bearings.
- An upper and lower set of Belleville disc springs exert uniform loading through the pusher, pressing the PTFE liner and the shoulder of the disc hub together resulting in a leak free mechanical stem seal.
- One piece disc-stem allows a thinner wafer, resulting in a higher C_v value.
- Resilient elastomer back-up pads provide uniform pressure to the circumference of the disc ensuring a bubble tight valve under all operating conditions.
- Precision PFA encapsulation, 0.12 inch thick, bonded and interlocked to the one piece disc-stem. Suitable for full vacuum at full rated temperature.
- Precision machined high density PTFE liner made from virgin PTFE or TFM.
- Self lubricating bottom bearing.



CROSS SECTION OF STEM SEAL

NOTES

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

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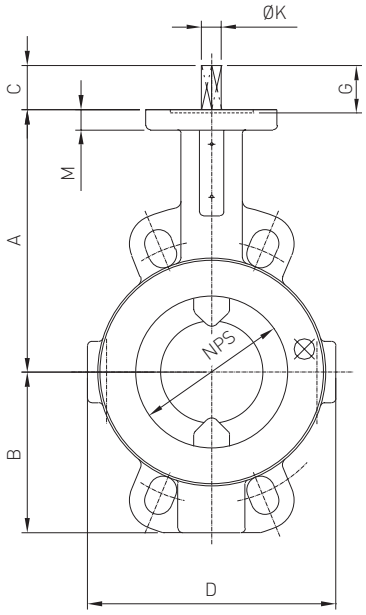
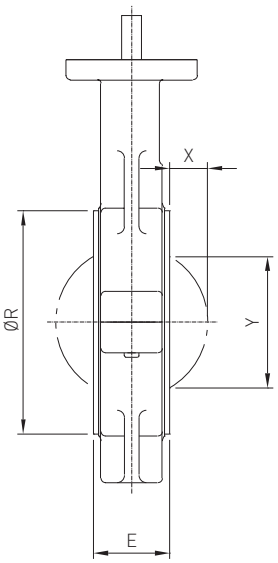
NEOTECHA NEOSEAL LINED BUTTERFLY VALVES

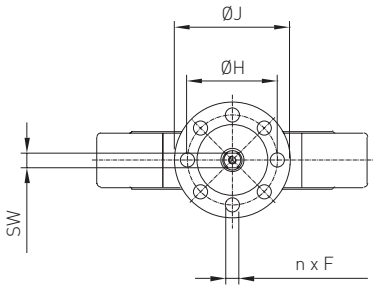
WAFER AND LUGGED (CODE NR. NSA .....) NPS 1½ - 12

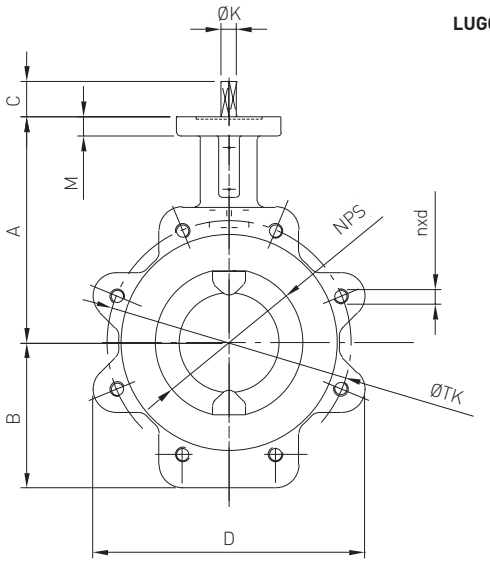
NeoSeal with Neotecha shaft connection



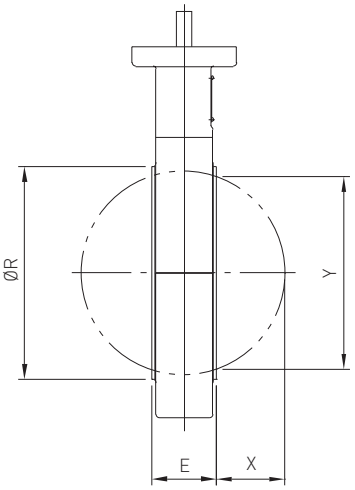
WAFER VERSION







LUGGED VERSION



VALVE DIMENSIONS WAFER AND LUGGED (inch)

		Overall dimensions																		Wide FTF **		Weight (lbs)	
			W*	L*		W*	L*																
S [1]	Type	A	B	B	C	D	D	E	n x F	M	G	øH	øJ	øK	øR	S	X	Y	N/SW	E	Y	W*	L*
1½	F05	4.33	1.97	2.17	1.02	4.25	5.71	1.30	8 x ø0.28	0.55	1.06	1.97	2.56	0.55	3.15	1.22	0.14	0.91	▢ 0.39	-	-	4.2	5.3
2	F05	5.31	2.56	2.56	1.02	5.12	6.30	1.69	8 x ø0.28	0.55	1.06	1.97	2.56	0.55	3.74	1.50	0.20	1.22	▢ 0.39	-	-	6.2	7.5
2½	F07	5.91	3.35	3.35	1.06	5.67	6.93	1.81	4 x ø0.35	0.55	1.10	2.76	3.54	0.55	4.72	1.61	0.45	2.05	▢ 0.39	-	-	10.4	9.3
3	F07	6.30	3.68	3.68	1.14	6.10	7.40	1.81	4 x ø0.35	0.55	1.18	2.76	3.54	0.55	5.20	1.61	0.73	2.72	▢ 0.39	2.52	2.09	10.4	13.4
4	F07	7.09	4.45	4.13	1.14	7.09	8.27	2.05	4 x ø0.35	0.55	1.18	2.76	3.54	0.55	6.02	1.77	1.04	3.58	▢ 0.39	2.52	3.23	12.6	17.4
5	F07	7.68	5.12	4.92	1.81	8.31	9.21	2.20	4 x ø0.35	0.67	1.85	2.76	3.54	0.71	7.20	1.97	1.40	4.49	▨ 0.55/0.55	2.76	CF	19.2	23.4
6	F07	8.27	5.51	5.51	1.81	9.45	10.59	2.20	4 x ø0.35	0.67	1.85	2.76	3.54	0.79	8.23	1.97	1.91	5.63	▨ 0.63/0.63	2.99	5.24	25.6	29.8
8	F10	9.45	6.89	6.69	0.83	12.20	14.17	2.36	4 x ø0.43	0.79	0.87	4.02	4.92	0.94	10.20	2.20	2.81	7.72	▨ 0.75/0.75	3.50	7.28	46.3	51.4
10	F12	10.83	8.07	8.07	0.91	13.78	17.13	2.68	8 x ø0.51	0.79	0.94	4.92	5.91	1.10	12.17	2.52	3.60	9.57	▨ 0.87/0.87	4.49	8.90	69.4	70.8
12	F12	12.20	9.84	9.84	1.10	16.54	19.69	3.07	8 x ø0.51	0.79	1.14	4.92	5.91	1.38	14.33	2.91	4.39	11.54	▨ 1.06/1.06	4.49	11.06	99.2	110.0

NOTES

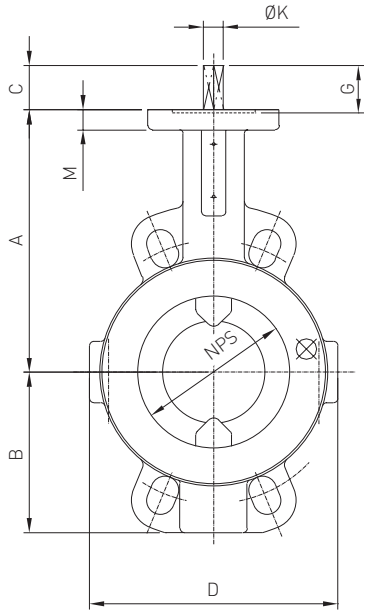
Slotted locating holes for wafer and lugged version according following flange accommodation:
Lugged DIN PN 10/16 (NPS 1½ - 6), DIN PN 10 (NPS 8 - 12),
ANSI 150 (NPS 1½ - 12), JIS 10 K (NPS 1½ - 6).

** Optional wide FTF according EN 558-1/15 (column 16).
W* Wafer
L* Lugged
(1) Size (NPS)

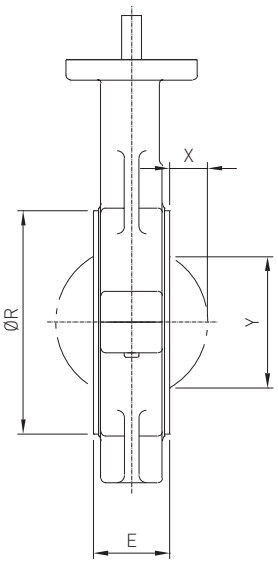
NEOTECHA NEOSEAL LINED BUTTERFLY VALVES

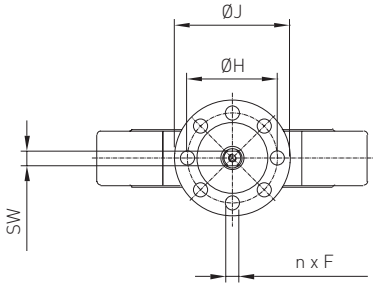
WAFER AND LUGGED (CODE NR. NSD .....) NPS 1½ - 12

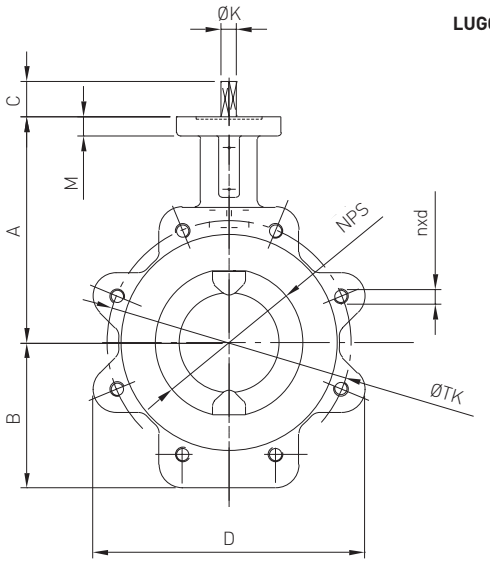
Optional NeoSeal with flat head shaft connection



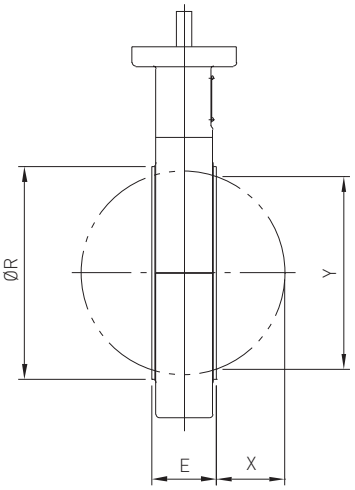
WAFER VERSION







LUGGED VERSION



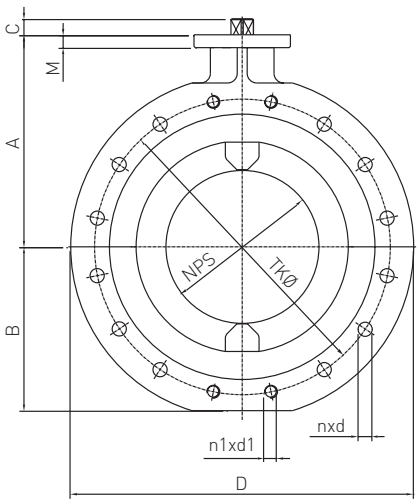
VALVE DIMENSIONS WAFER AND LUGGED (inch)

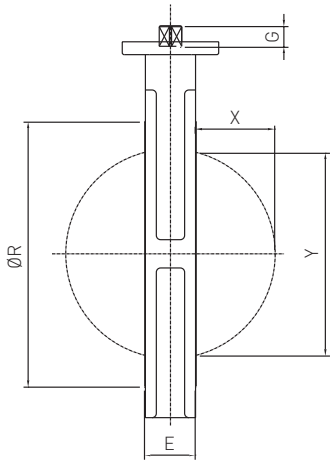
		Overall dimensions																	Wide FTF **		Weight (lbs)	
			W*	L*		W*	L*															
S [1]	Type	A	B	B	C	D	D	E	n x F	M	G	øH	øJ	øK	øR	S	X	Y	N/SW	E	Y	W*	L*
1½	F05	4.33	1.97	2.17	0.98	4.25	5.71	1.30	8 x ø0.28	0.55	1.02	1.97	2.56	0.48	3.15	1.22	0.14	0.91	▢ 0.32	-	-	4.2	5.3
2	F05	5.31	2.56	2.56	0.98	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	▢ 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	▢ 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	▢ 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	▢ 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	▢ 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	▢ 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	▢ 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	▢ 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	▢ 1.06	4.49	11.06	99.2	110.0

NOTES

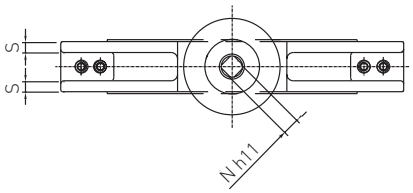
Slotted locating holes for wafer and lugged version according following flange accommodation:
Lugged DIN PN 10/16 (NPS 1½ - 6), DIN PN 10 (NPS 8 - 12),
ANSI 150 (NPS 1½ - 12), JIS 10 K (NPS 1½ - 6).

** Optional wide FTF according EN 558-1/15 (column 16).
W* Wafer
L* Lugged
(1) Size (NPS)

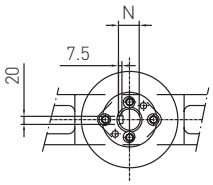




NPS 14 - 24

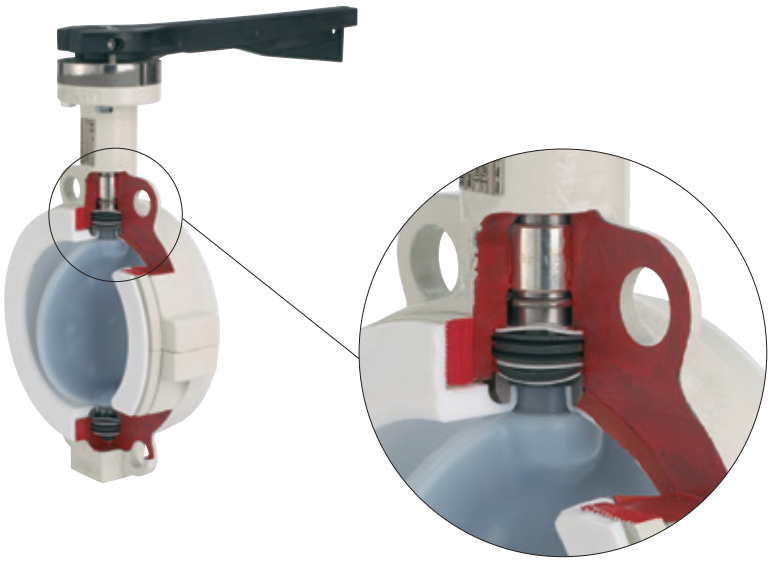


NPS 28 - 36



VALVE DIMENSIONS DOUBLE FLANGED (inch)

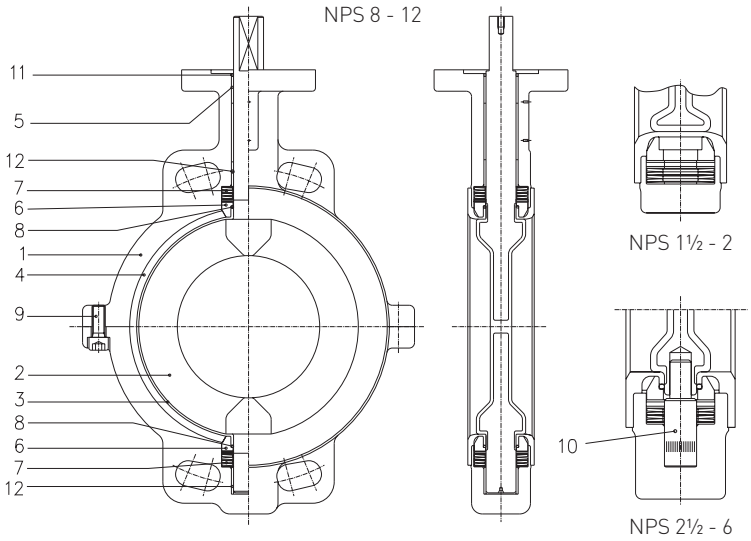
Size		Overall dimensions													PN 10		Wide FTF		Weight
(NPS)	Type	A	B	C	D	E	G	M	N	øR	X	Y	S	TKø	nxd	n1xd1	E	Y	(lbs)
14	F12	13.39	10.04	1.06	21.02	3.07	1.26	0.87	⍁1.06/1.06	16.22	4.96	12.64	0.67	18.75	8x1.125	4x1	5.00	11.97	132
16	F14	14.96	11.42	1.42	23.50	4.02	1.65	0.98	⍁1.42/1.42	18.70	5.87	15.24	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	26.89	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	28.66	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	30.71	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	34.61	1.38	42.75	24x1.62	8x1.5	-	-	1940



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.

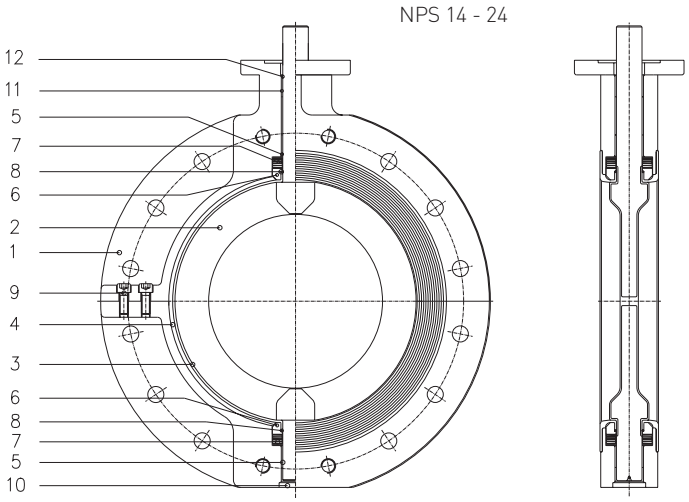
WAFER AND LUGGED



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
10	Pivot pin	Stainless steel
11	O-ring	FKM
12	Bearing	DU (Steel/PTFE)

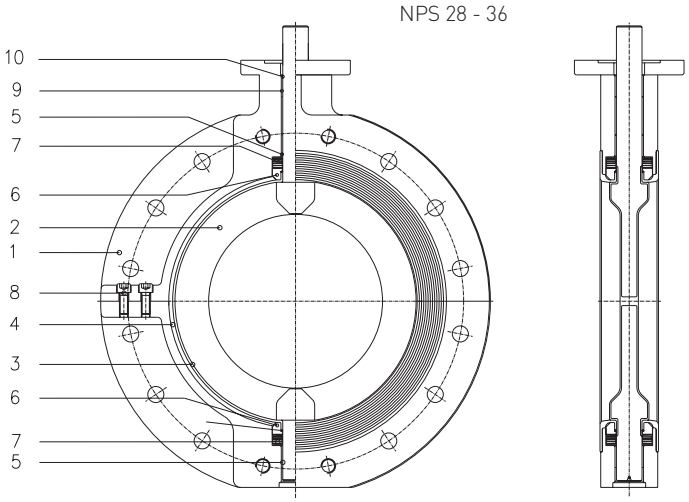
DOUBLE FLANGED



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 A2-70
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 polyester 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

C_V VALUES

	Size (NPS)														
Disc opening	**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

1. Rated C_V = the volume of water in USGPM that will pass through a given valve opening at a pressure drop of 1 psi.
2. Sizes NPS 28 - 36: contact factory.

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

	Size (NPS)									
Disc material	**1.5**	**2**	**2.5**	**3**	**4**	**5**	**6**	**8**	**10**	**12**
PFA [1]	885	885	1416	1416	1593	2301	3204	5576	8408	11329
UHMWPE [2]	885	885	1416	1416	1416	2213	3204	5576	8408	11329
SS [3]	885	885	1195	1328	1328	2168	3204	5532	7966	11506

NOTES

* Hastelloy and titanium: contact factory
(1) PFA covered
(2) UHMWPE covered
(3) Stainless steel
Contact factory size range ≥ NPS 28

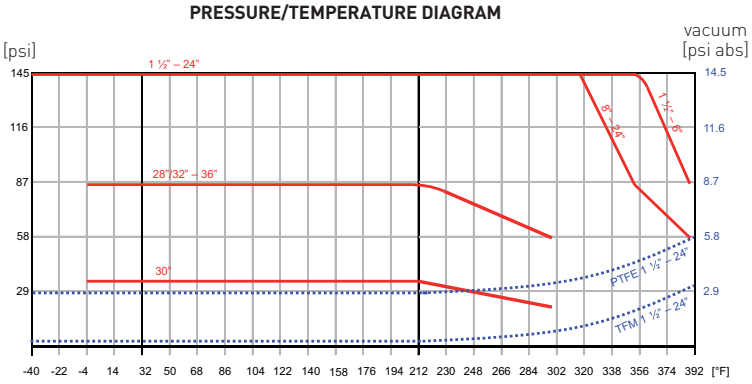
MAXIMUM ALLOWABLE SHAFT TORQUES NSD TOP SHAFT CONNECTION (lbs.inch) *

	Size (NPS)														
Disc material	**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

PRESSURE/TEMPERATURE DIAGRAM



UHMWPE limited to 176°F

DYNAMIC TORQUE FACTORS F_T FOR IMPERIAL UNITS

	Size (NPS)														
Disc opening	**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: contact factory.

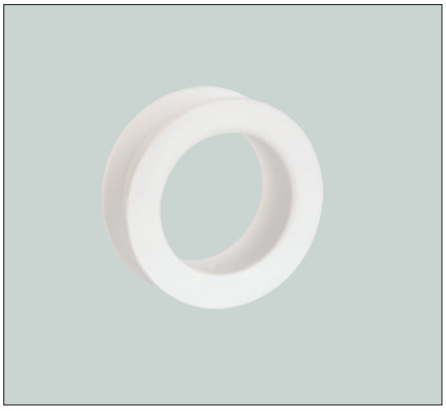
SIZING TORQUES (AT MAX. ALLOWABLE PRESSURE DIFFERENTIAL) (lbs.inch)

	Size (NPS)														
Disc/seat material	**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

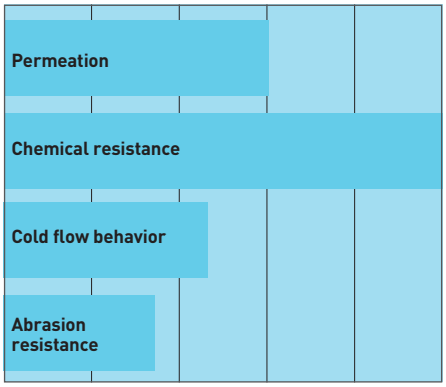
I PFA / PTFE or TFM
II UHMWPE / UHMWPE
III SS 1.4581 or 1.4462 / UHMWPE
IV SS 1.4581 / PTFE or TFM
V SS 1.4462 / PTFE or TFM
VI Hastelloy / PTFE or TFM

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 (contact your sales representative).



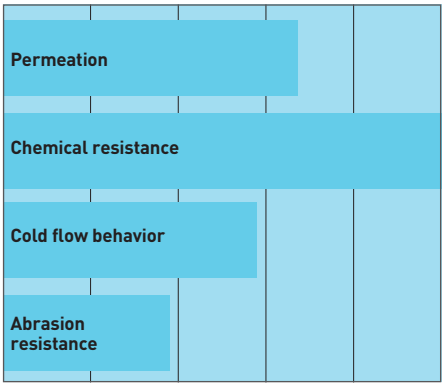
PTFE seat liners
Isostatically molded virgin PTFE with a minimum thickness of 0.12". PTFE high density liners have a high specific gravity of at least 2.16 gr/cm^3.

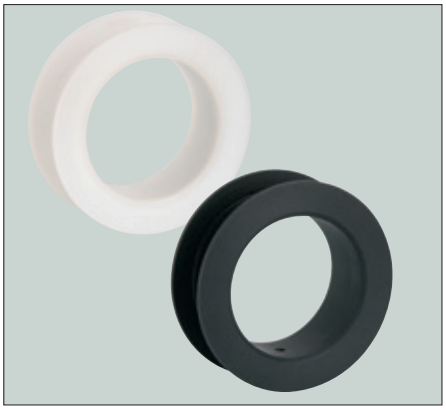
Operating temperature:	-40°F to +392°F
Size range:	NPS 1½ - 36 (DN 40-900)
Virgin PTFE:	FDA approved



PFA and PFA conductive
Injection molded PFA with a minimum thickness of 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.

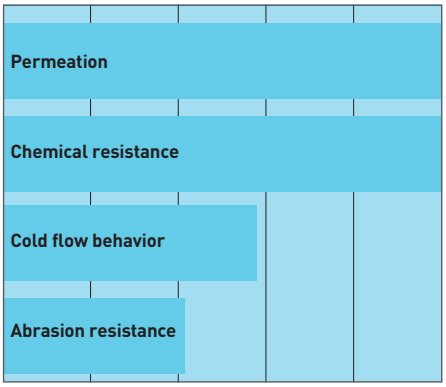
Operating temperature:	-40°F to +392°F
Size range:	NPS 1½ - 36 (DN 40-900)
Virgin PFA:	FDA approved
Conductive PFA:	Not FDA approved

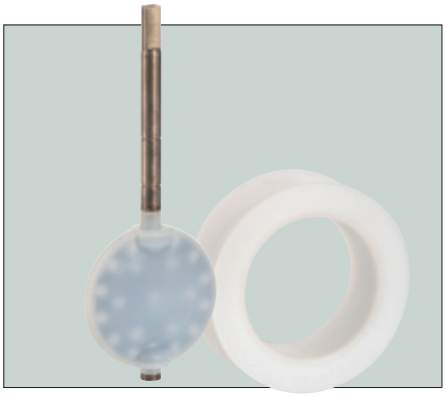




TFM and TFM conductive seat liners
TFM (or enhanced PTFE) has a significantly lower melt viscosity than PTFE, resulting in better particle fusion during the sintering process. TFM has the ultimate resistance against permeation and an improved resistance against cold flow. Conductive TFM is available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

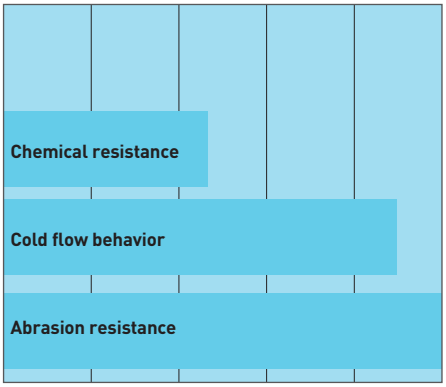
Operating temperature:	-40°F to +392°F
Size range:	NPS 1½ - 36 (DN 40-900)
Virgin TFM:	FDA approved
Conductive TFM:	FDA approved





UHMWPE
Seat liner and disc cover made of ultra high molecular weight polyethelyne with a minimum thickness of 0.12" thickness on all wetted surfaces. 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°F to +176°F
Size range:	NPS 1½ - 24 (DN 40-600)
UHMWPE:	FDA approved



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

SELECTION GUIDE

Example	NSD	6	N01	W	M4	B	00
Type							
NSD NeoSeal [1]							
NSA NeoSeal [2]							
Sizes (NPS)							
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 ANSI 150							
10 DIN PN 10							
16 DIN PN 16							
A1 ANSI 150							
Operation [3]							
B Bare shaft							
Variant							
00 Standard							
For other variants, contact factory							

NOTES

For definitive variant, please contact your local sales office.

(1) NeoSeal compatible to ISO 5211 drive by flat head shaft connection (and standard trim).

(2) NeoSeal with traditional Neotecha shaft connection.

(3) Topplate selection size NPS 14 - 24: 5 with F12 top flange, 6 with F14 top flange and 7 with F16 top flange.

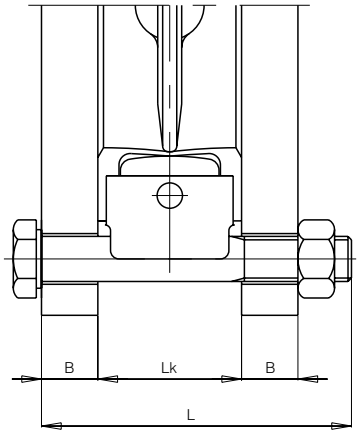
VALVE MATERIAL SELECTION

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

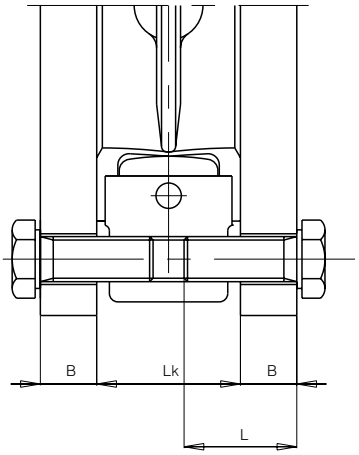
VALVE MATERIAL LIST

Part name	Material	DIN designation	DIN mat. no.	Sizes (NPS)	Remarks
Body	Ductile iron	EN-GJS 400-18U-LT-Z (GGG40.3)	0.7043	1½ - 24	Heat treated coating: 2-components polyester powder, RAL 9002
		EN-GJS-400-18	0.7043	28 - 36	Epoxy coated RAL 9002
Disc	PFA covered	ASTM A747	1.4542	1½ - 12	FDA 21CFR177.1550
	PFA covered	St 52-3	1.0570	14 - 24	FDA 21CFR177.1550
	PFA covered		1.4301	28 - 36	
	Conductive PFA covered	ASTM A747	1.4542	1½ - 12	
	Conductive PFA covered	St 52-3	1.0570	14 - 24	
	Stainless steel	GX 5 CrNiMoNb 19 11	1.4581	2½, 5	
	Stainless steel	X 2 CrNiMo N22 53	1.4462	1½ - 12	Except NPS 2½ and NPS 5
	Stainless steel	X 2 CrNiMo 17 13 2	1.4404	14 - 24	
	Stainless steel	X 2 CrNiMo 17 12 2	1.4404	28 - 36	
	UHMWPE covered	ASTM A747	1.4542	1½ - 24	FDA 21CFR177.1520
Shaft	PFA covered	ASTM A747	1.4542	1½ - 12	FDA 21CFR177.1550
	PFA covered	X17 CrNi 16 2	1.4057	14 - 24	FDA 21CFR177.1550
	PFA covered	X 2 CrNiMo 17 12 2	1.4404	28 - 36	FDA 21CFR177.1550
	Stainless steel	ASTM A747	1.4542	1½ - 12	Except NPS 2½
	Stainless steel	GX 5 CrNiMoNb 19 11	1.4581	2½	
	Stainless steel	X 2 CrNiMo 17 13 2	1.4404	18, 24	
	Stainless steel	X 2 CrNiMo N22 53	1.4462	14, 16, 20	
Seat	PTFE			1½ - 36	FDA 21CFR177.1550
	UHMWPE covered			1½ - 24	FDA 21CFR177.1520
	TFM 1600			1½ - 24	FDA 21CFR177.1550
	TFM 6221 conductive			1½ - 36	FDA 21CFR177.1550
	TFM 1700			28 - 36	FDA 21CFR177.1550
Body screws	Stainless steel	X 5 CrNi 18 10	1.4301		A2-70
Top spring	Spring steel	50 CrV 4	1.8159		DIN 17222
	Spring steel	50 CrV 4	1.8159		DIN 17222
O-rings	FKM			1½ - 36	
Seat backing	Silicone			1½ - 36	
	FKM			1½ - 36	
Top bearing	Iglidur X (Thermoplast)			1½ - 24	ST/PTFE 28 - 36
Bottom bearing	Steel/ PTFE conductive				

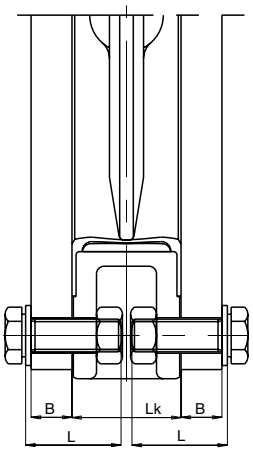
REQUIRED FLANGE BOLTS



WAFER



LUGGED



DOUBLE FLANGE

WAFER **ANSI 150**

Valve size (NPS)	Face to face length Lk	Flange thickness B	No. of 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	⅝" x 3¾"
2½	1.81	⅞"	4	5.50	⅝" x 4"
3	1.81	15/16"	4	6.00	⅝" x 4½"
4	2.01	15/16"	8	7.50	⅝" 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	1⅛"	8	11.75	¾" x 5½"
10	2.76	13/16"	12	14.25	⅞" x 6"
12	3.15	1¼"	12	17.00	⅞" x 7"

LUGGED **ANSI 150**

Valve size (NPS)	Face to face length Lk	Flange thickness B	No. of bolt holes	PCD	Bolt size L (UNC)
1½	1.38	11/16"	4	3.88	½" x 1⅛"
2	1.69	¾"	4	4.75	⅝" x 1⅜"
2½	1.81	⅞"	4	5.50	⅝" x 1⅝"
3	1.81	15/16"	4	6.00	⅝" x 1⅝"
4	2.01	15/16"	8	7.50	⅝" x 1⅝"
5	2.20	15/16"	8	8.50	¾" x 1⅞"
6	2.20	1"	8	9.50	¾" x 1⅞"
8	2.44	1⅛"	8	11.75	¾" x 2"
10	2.76	13/16"	12	14.25	⅞" x 2¼"
12	3.15	1¼"	12	17.00	⅞" x 2¼"

DOUBLE FLANGE **ANSI 150**

Valve size (NPS)	Face to face length Lk	Flange thickness B	No. of bolt holes	PCD	Bolt size L (UNC)
14	3.15	13/8"	12	18.75	1" x 2½"
16	4.09	17/16"	16	21.25	1" x 3"
18	4.49	19/16"	16	22.75	1⅛" x 3¼"
20	5.00	111/16"	20	25.00	1⅛" x 3¼"
24	6.18	17/8"	20	29.50	1¼" x 3½"

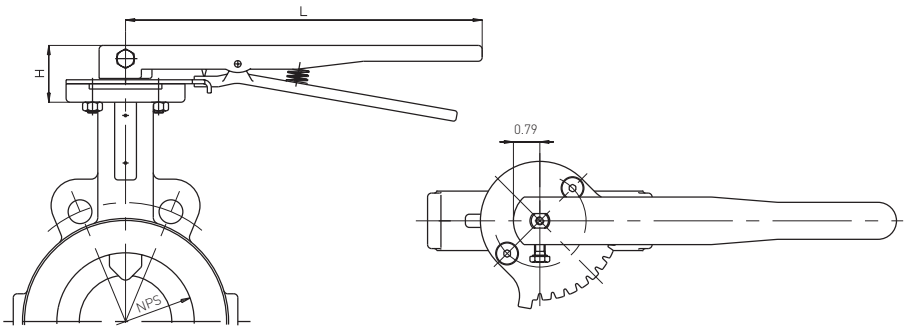
NOTE: Sizes NPS 28 - 36: contact factory.

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.

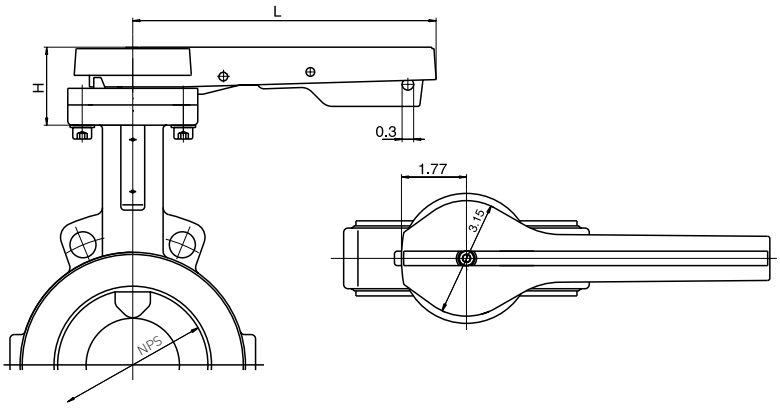
TYPE C



DIMENSIONS (inch)

Size (NPS)	Handle lever Type C L	Type C H	Type Z L	Type Z H
1½	10.51	1.81	8.27	2.01
2	10.51	1.81	8.27	2.01
2½	10.51	1.81	8.27	2.13
3	10.51	1.81	8.27	2.13
4	10.51	1.81	8.27	2.13
5	14.02	1.93	11.81	2.13
6	14.02	2.13	11.81	2.13

TYPE Z

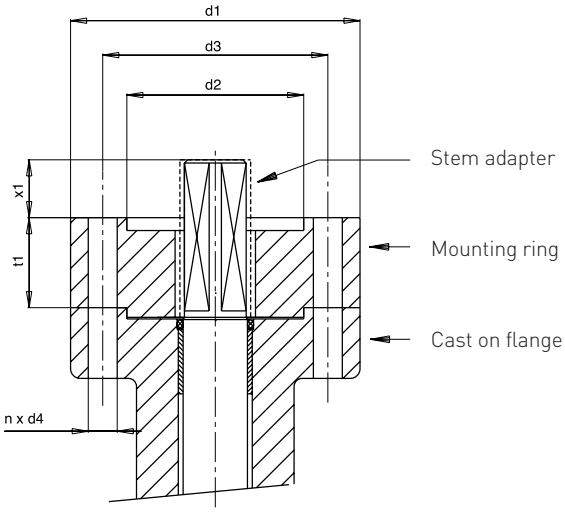


HANDLE LEVER MATERIAL LIST

Part name	Material	DIN designation	DIN mat.no	Remarks
Type C				
Handle bar	Ductile iron	EN-GJS-400-15 (GGG 40)	0.7040	
Handle lever	Ductile iron	EN-GJS-400-15 (GGG 40)	0.7040	
Spring	Stainless steel	X 5 CrNiMo 17 12 2	1.4401	
Groove pin	Stainless steel	X 10 CrNiS 18 9	1.4305	
Throttling plate	Stainless steel	X 5 CrNI 18 10	1.4301	
Handle screw	Stainless steel	X 5 CrNI 18 10	1.4301	
Screw	Stainless steel	X 5 CrNI 18 10	1.4301	
Type Z				
Handle bar	Technopolymer			
Nut	Stainless steel	X 5 CrNiMo 17 13 3	1.4436	
Spring	Stainless steel	X 12 CrNi 17 7	1.4310	
Short handle	Stainless steel	X 5 CrNi 18 8	1.4301	
Plate	Investment cast	G-X 6 CrNi 18 6	1.4308	
Screw	Stainless steel	DIN 912		Zn-plated
Spring pin	Stainless steel	X 5 CrNi 18 8	1.4301	

Mounting ring for NSA
Required when an actuator acc. ISO 5211 with the same flange size is to be mounted.
Not required for an actuator or gear with a hollow shaft and the same flange size.

MOUNTING RING

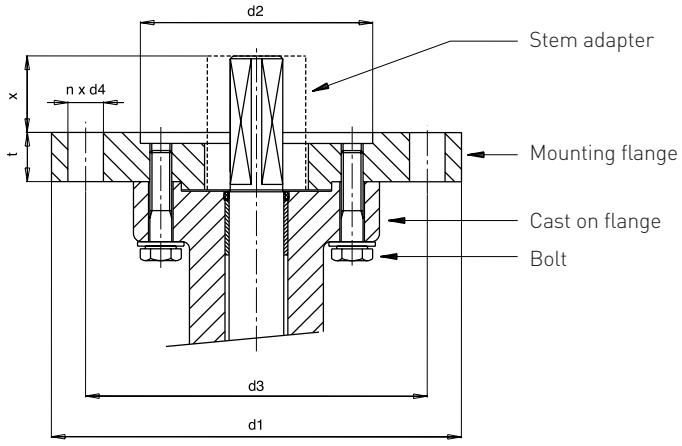


ISO-DIMENSIONS

ISO-no.	d1	d2	d3	n * d4
F05	2.56	1.38	1.97	4 x 0.28
F07	3.54	2.17	2.76	4 x 0.35
F10	4.92	2.76	4.02	4 x 0.43
F12	5.91	3.35	4.92	4 x 0.51
F14	6.89	3.94	5.51	4 x 0.67
F16	8.27	5.12	6.5	4 x 0.87
F25	11.81	7.87	10	8 x 0.67
F30	13.78	9.06	11.73	8 x 0.87

Mounting flange for NSA
Three oversized mounting flanges per size valve are available to direct mount a larger actuator acc. ISO 5211 complete with all hardware.

MOUNTING FLANGE



STANDARD MOUNTING FLANGE

					Optional oversizes mounting flange											
Valve size (NPS)	Cast on flange	x_1	t_1	Stem adapter	Oversize flange [1] #1	x	t	Stem adapter	Oversize flange [1] #2	x	t	Stem adapter	Oversize flange [1] #3	x	t	Stem adapter
1½	F05	0.55	0.63	0.55/0.55	F07	0.67	0.63	0.67/0.67	F10	0.75	0.71	0.87/0.87	F12	0.83	0.79	1.06/1.06
2	F05	0.55	0.63	0.55/0.55	F07	0.67	0.63	0.67/0.67	F10	0.75	0.71	0.87/0.87	F12	0.83	0.79	1.06/1.06
2½	F07	0.63	0.71	0.67/0.67	F10	0.79	0.71	0.87/0.87	F12	0.87	0.79	1.06/1.06	F14	1.18	0.55	1.42/1.42
3	F07	0.71	0.71	0.67/0.67	F10	0.87	0.71	0.87/0.87	F12	0.94	0.79	1.06/1.06	F14	1.26	0.55	1.42/1.42
4	F07	0.71	0.71	0.67/0.67	F10	0.87	0.71	0.87/0.87	F12	0.94	0.79	1.06/1.06	F14	1.26	0.55	1.42/1.42
5	F07	0.71	1.10	0.67/0.67	F10	0.87	0.94	0.87/0.87	F12	0.79	1.02	1.06/1.06	F14	1.10	0.71	1.42/1.42
6	F07	0.71	1.10	0.67/0.67	F10	0.87	0.94	0.87/0.87	F12	0.79	1.02	1.06/1.06	F14	1.10	0.71	1.42/1.42

NOTE
(1) All oversized flanges and adapters are subject to a surcharge.