



WARREN MORRISON
UK LTD



DOUBLE FLANGED DOUBLE ECCENTRIC
BUTTERFLY VALVE
TAD SERIES

Warren-Morrison Valves

Established in 1949 in the United Kingdom, Warren-Morrison UK Ltd. has been manufacturing its own unique range of industrial valves and actuators for over 70 years. Benefitting from our own internal rubber mould department, machine shop and development and test facilities, we maintain total control over production and quality through continuous 'in process inspection'. Our dedication towards future development has continued to ensure our market position as a select industrial valve and accessories manufacturer and supplier.

Warren-Morrison Butterfly Valves:

The Warren Morrison TAD Series Double Flanged Double Eccentric Butterfly Valve is a well-engineered valve to suit various industries and applications from oil and gas, water treatment, HVAC, petrochemical, power and others. Designed to meet fully rated PN 16 up to 48". TAD series butterfly valves are tested for Zero leakage bubble tight shut off.

Butterfly Valves Features:

- Extended body neck allows for ease of insulation material if required.
- Advanced bushing and double eccentric design to reduce friction and achieve low torque to suit smaller sizes of operators.
- Uni-directional fully rated PN 10/ PN 16 standard for all sizes up to 48". For PN 25 please consult factory.
- Bi-directional can be provided as an option.
- End of service applications.
- Designed to meet ISO 5211 for direct mounting of actuators and gearboxes.
- Different Materials for stem and seat to suit a wide range of industries.
- Various paint options available upon request.
- Compatibility to International Standards, BS EN 593 design standard / EN 558 / ISO 5752 Series 14 face to face. For series 13 please consult factory.
- Larger sizes available upon request.
- Valves are suitable for both horizontal and vertical installation.

Body. Single piece body with integral actuator mounting flange to ISO 5211 standard. TAD has a raised face flanged design as standard. Holes are drilled to fit between PN10, PN16, ASME 150, and ASME B16.47 with ease. Lifting lugs are available for sizes 10" and larger.

Disc and Body Seal. The resilient disc of the TAD butterfly series is available in a variety of soft materials with options of EPDM, Buna-N and Viton. TAD Butterfly unique disc seal design sets on the disc and is fixed by the retaining ring bolts. The body seal of the TAD butterfly is made with options of SS 304 and SS 316.

Disc. TAD butterfly disc is machined to reduce the torque of the valve. The disc is machined internally to suit the shaft.

Stem. TAD butterfly valve has a dual piece shaft design to enhance the strength and reduce the torque. Stem is machined matching the internal of the disc to secure continuous operation.

O-ring stem seal arrangement.

Warren-Morrison TAD series double flanged double eccentric butterfly valves are designed for longer life span and reliability. Considering these factors, the butterfly valves employ a highly sophisticated O-ring seal arrangement. These seals are completely engineered in-house to ensure continuous and reliable performance. In regular valves, wear and tear causes the possibility of leakage through the stem. The primary function of the seal is to prevent leakage propagating from the stem.

Advanced bushing design

To eliminate the effect of side thrusts, the stem is properly supported by Warren-Morrison advanced bushing design. This acts as a controlled location guide for the proper operation of the valve. Support is provided throughout the full rotation of the valve and actuator side thrusts to minimise wear and tear.



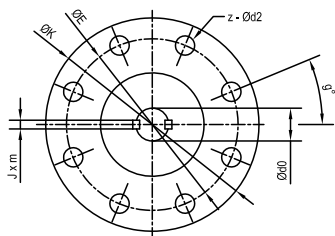
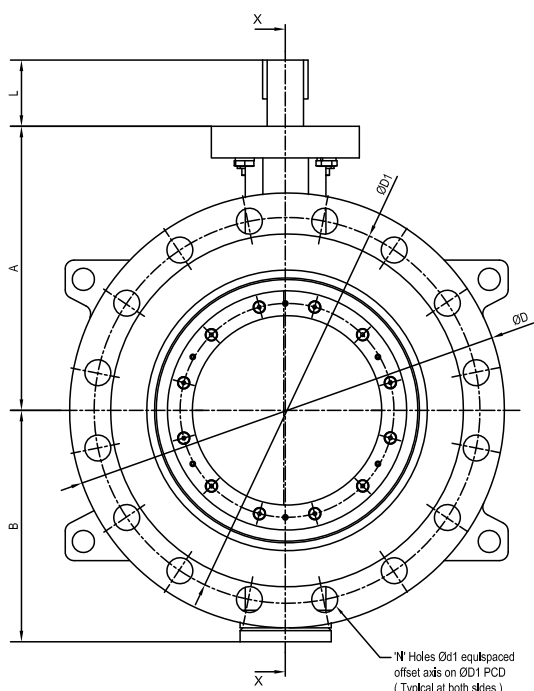
Parts List

Sl. No.	Description	Sl. No.	Description
1	Gland	10	Hexagon Bolt
2	Gland Bolt	11	Disc Seal
3	Packing	12	Body
4	Bushing	13	Body Seal
5	Retainer	14	Bushing
6	Taper Pin	15	Double Open Ring
7	Top Stem	16	Bottom Cover
8	Bottom Stem	17	Hexagon Bolt
9	Disc	18	O-ring

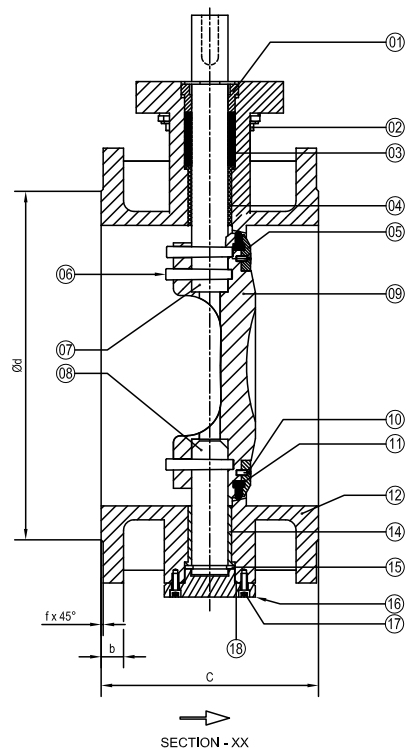
Seating Unseating Torque (N-m) for TAD Series Valves

Size		Pressure Drop (N-m)		
IN	mm	16Bar	10Bar	0Bar
4"	100	125	107	49
6"	150	243	201	99
8"	200	450	365	198
10"	250	650	504	248
12"	300	900	693	496
14"	350	1275	1028	731
16"	400	2075	1789	1140
18"	450	2838	2242	1426
20"	500	3841	3150	1612
24"	600	6072	4914	3100
28"	700	10140	8302	3720
32"	800	11812	9903	5208
36"	900	12937	10659	6820
40"	1000	24843	20008	9672
48"	1200	40037	32766	13640

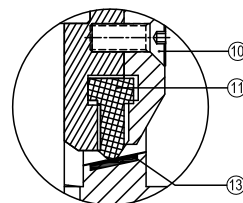
Dimensions and Weight



TOP FLANGE - ISO5211



SECTION - XX



Size		A	B	C	UPPER FLANGE					J x m	Ød0	L	f
IN	mm				ISO 5211	K	E	z-Ød2	g°				
4"	DN100	170	130	190	F07	92	70	4-10	45°	5x1	16	39	3
6"	DN150	205	160	210	F10	125	102	4-12	45°	6x1	20	47	3
8"	DN200	250	198	230	F10	125	102	4-12	45°	8x1	25	47	3
10"	DN250	280	230	250	F10	125	102	4-12	45°	8x1	30	50	3
12"	DN300	310	250	270	F12	150	125	4-14	45°	10x1	34	50	3
14"	DN350	345	285	290	F14	175	140	4-18	45°	12x1	40	50	4
16"	DN400	390	320	310	F14	175	140	4-18	45°	14x1	45	50	4
18"	DN450	420	360	330	F14	175	140	4-18	45°	14x1	45	50	4
20"	DN500	460	400	350	F16	210	165	4-22	45°	16x1	52	70	4
24"	DN600	540	462	390	F16	210	165	4-22	45°	16x2	55	90	5
28"	DN700	590	515	430	F25	300	254	8-18	22.5°	18x2	65	90	5
32"	DN800	665	575	470	F25	300	254	8-18	22.5°	20x2	70	100	5
36"	DN900	715	625	510	F25	300	254	8-18	22.5°	22x2	80	100	5
40"	DN1000	815	685	550	F25	300	254	8-18	22.5°	25x2	92	146	5
48"	DN1200	940	815	630	F30	350	298	8-22	22.5°	28x2	100	146	5

Size		150 LB					PN 10					PN 16					Weight (Kg)
IN	mm	ØD	ØD1	N-Ød1	Ød	b	ØD	ØD1	N-Ød1	Ød	b	ØD	ØD1	N-Ød1	Ød	b	
4"	DN100	229	190.5	8-19	157	22.3	220	180	8-19	156	18	220	180	8-19	156	18	24
6"	DN150	279	241.5	8-22	215.9	23.9	285	240	8-23	211	19	285	240	8-23	211	19	41
8"	DN200	343	298.5	8-22	269.9	27	340	295	8-23	266	20	340	295	12-23	266	20	51
10"	DN250	406	362	12-26	323.8	28.6	405	350	12-23	319	22	405	355	12-28	319	22	84
12"	DN300	483	432	12-26	381	30.2	455	400	12-23	370	24	455	410	12-28	370	24	151
14"	DN350	533	476.5	12-29	412.8	33.4	520	460	16-23	429	26.5	520	470	16-28	429	26.5	178
16"	DN400	597	540	16-29	469.9	35	565	515	16-28	480	24	580	525	16-31	480	28	199
18"	DN450	635	578	16-32	533.4	38	615	565	20-28	530	24.5	640	585	20-31	548	30	223
20"	DN500	699	635	20-32	584.2	41.3	670	620	20-28	582	26.5	715	650	20-34	609	31.5	316
24"	DN600	813	749.5	20-35	692.2	46.1	780	725	20-31	682	30	840	770	20-37	720	36	484
28"	DN700	927	863.5	24-35 & 4-1 1/4"-7UNC	800	71.5	895	840	24-31	794	32.5	910	840	24-37	794	39.5	574
32"	DN800	1060	978	24-42 & 4-1 1/2"-6UNC	914	81	1015	950	24-34	901	35	1025	950	24-41	901	43	701
36"	DN900	1168	1086	28-42 & 4-1 1/2"-6UNC	1022	90	1115	1050	28-34	1001	37.5	1125	1050	28-41	1001	46.5	908
40"	DN1000	1289	1200	32-42 & 4-1 1/2"-6UNC	1124	90	1230	1160	28-37	1112	40	1255	1170	28-44	1112	50	1225
48"	DN1200	1511	1422.5	40-42 & 4-1 1/2"-6UNC	1359	108	1455	1380	32-41	1328	45	1485	1390	32-50	1328	53.5	1859

* Alternative standard for face to face dimensions are available upon request (Consult factory).



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