

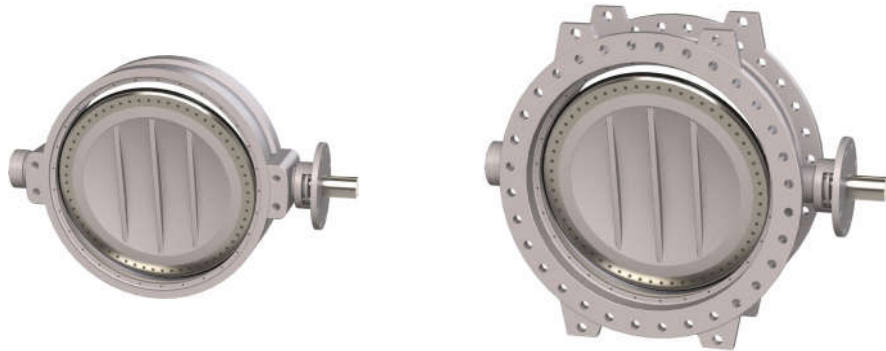
## *Wafer and Flanged Type*



## Specification

Description : GVC double eccentric disc seated butterfly valves suitable for bi-directional flow and bubble tight shut-off at full rated pressure with Direct Mount ISO table, adjustable gland packing, blow-out proof stem and replaceable disc seat with soft seal.

Numbering System : Series EWR : Double Eccentric WAFER Disc Seated type butterfly Valve  
 Series EFR : Double Eccentric FLANGED Disc Seated type butterfly Valve



WAFER  
 Series EWR

FLANGED  
 Series EFR

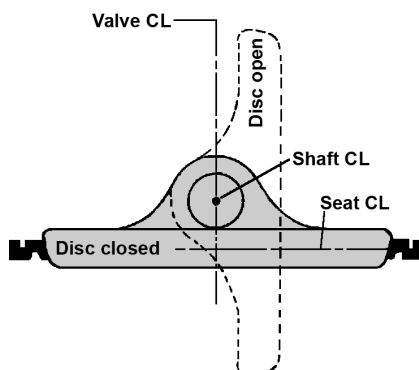
Face to Face : In accordance with KS/JIS, BS, AWWA and DIN standards

Production Range : Size : DN 80 - DN 4000 (3" - 160")  
 Working Pressure : 0 to 40 Bar  
 Working Temperature : -20°C to + 200°C

Pressure Classes : EN 1092-PN6, PN10, PN16, PN25 and PN40  
 ISO 7005-PN6, PN10, PN16, PN20, PN25, PN40  
 AWWA C207 Class D and E  
 BS 4501/ISO 2084-PN6, PN10, PN16, PN25, PN30 and PN40  
 ANSI/ASME 125LBS (B16.1), 150 LBS (B16.5) and 300LBS (B16.5)  
 KS/JIS 5K, 10K, 20K and 42K

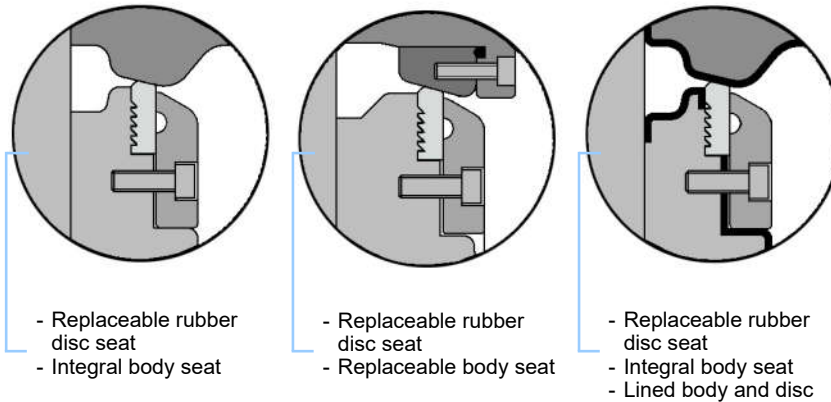
Sealing Design : The disc seated butterfly valves are available in eccentric (single offset) and double eccentric (double offset [=standard]) design. In the eccentric (single offset) design the "Shaft CL" is in line with the "Valve CL" and is offset with the "Seat CL" as shown in below drawing. In the double eccentric design (double offset) the "Shaft CL" is also offset from the "Valve CL", for further explanation please check our Product Group H catalogue.

- The Product Group E butterfly valves sealing design have the following characteristics;
- Unbroken circular seats on the disc and in the body
  - Easy replaceable seat by dismantling of the retainer ring only, simple maintenance
  - Wide variety of seat materials available making the Product Group E butterfly valves suitable for a wide range of corrosive media applications when the proper seat material is chosen.



## Specification

### Seat Configurations :



Materials : - Nodular Cast Iron  
- Cast Steel  
- Stainless Steel  
- Ni-Aluminium  
- Others on request

Certification : CE/PED, GOST-R.  
Please consult us for further information.

Operation : ISO 5211 top flange for direct mount of;

- Hand lever
- Manual Worm Gear
- Single or Double acting Pneumatic actuator
- Electric actuator
- Single or Double acting Hydraulic actuator



ISO 5211 Direct Mount

General Application : Product Group E double eccentric disc seated butterfly valves are basically designed according to AWWA C-504, AWWA C-516, BS 5155, JIS B2064, KSB 2333. They are available in a wide variety of materials and can be manufactured up to size DN4000 (160") and used for pressures up to 40 bar making them suitable for applications such as power plant cooling water pipe lines, waterworks, desalination plants etc. The disc seated butterfly valves are suitable for bi-directional flow and provide bubble tight shut-off. They are constructed with a 2 piece shaft system for low pressure loss (High KV-values), are mounted with self lubricating bearings and operate at low torque values.

Typical Applications : - Water works  
- Power plant cooling water pipe lines  
- Heating and Ventilation applications  
- District heating and cooling  
- Desalination Plants  
- Chemical and Petro chemical plants  
- Shipbuilding  
- Pump Isolation  
- Salt water service  
- Sea water service



Product Group E Series EFR in Large Pipe Line Applications

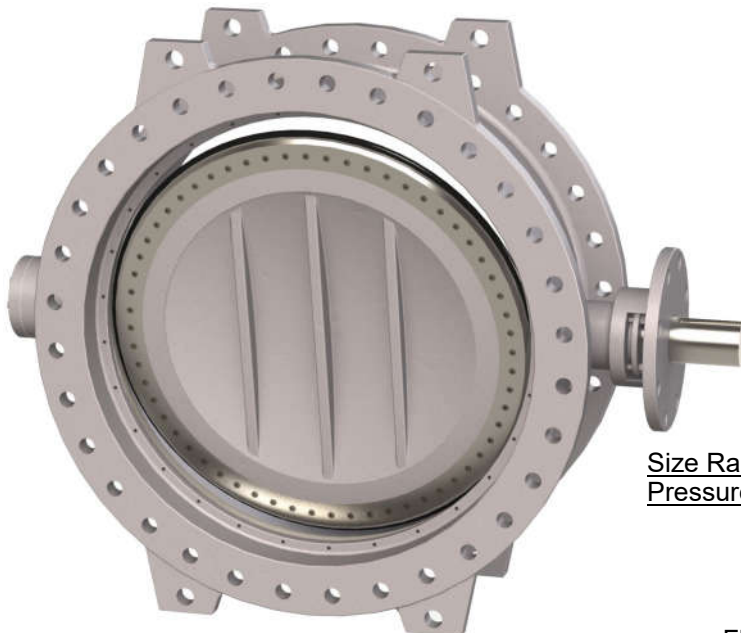
## Series



### WAFER: Series EWR

Size Range : DN 80 - DN 2000 (3" - 80")  
Pressure Classes : PN6, PN10, PN16, PN25 and PN40  
ANSI/ASME 125, 150 and 300LBS  
JIS 10K, 16K, 20K and 42K  
AWWA C207 Class D, E

- 4 threaded lugged holes
- Upper and lower high strength centering lugs
- Light weight
- Direct mount ISO table
- Standard in double eccentric design

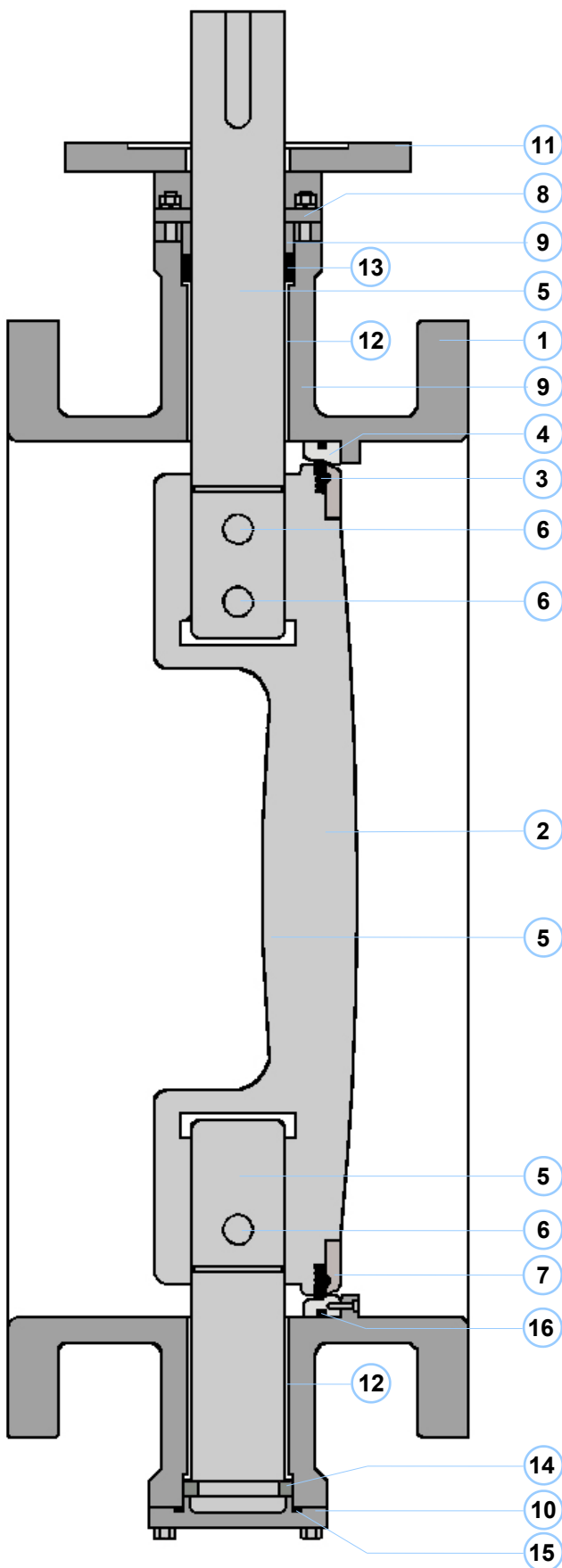


### FLANGED: Series EFR

Size Range : DN 80 - DN 4000 (2" - 160")  
Pressure Classes : PN6, PN10, PN16, PN25 and PN40  
ANSI/ASME 125, 150 and 300LBS  
JIS 10K, 16K, 20K and 42K  
AWWA C207 Class D, E

- Flanged connections
- End of line application (Fully rated)
- Suitable for large diameter piping
- Direct mount ISO table
- Standard in double eccentric design

**Materials and Parts**

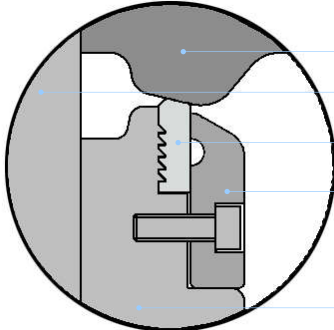


No	Part	Material
1	Body	<ul style="list-style-type: none"> <li>• Ductile Iron</li> <li>• Rubber Lined</li> <li>• Cast Steel</li> <li>• Stainless Steel</li> <li>• Ni-Alubronze</li> </ul>
2	Disc	<ul style="list-style-type: none"> <li>• Ductile Iron</li> <li>• Rubber Lined</li> <li>• Cast Steel</li> <li>• Stainless Steel</li> <li>• Ni-Alubronze</li> </ul>
3	Disc Seat	• NBR, EPDM, Viton
4	Body Seat	<ul style="list-style-type: none"> <li>• Integral with body</li> <li>• Stainless Steel Replaceable</li> <li>• Ni-Alubronze Replaceable</li> </ul>
5	Stem	<ul style="list-style-type: none"> <li>• SS304, 316, 316L, 630 (17-4Ph)</li> <li>• Super Duplex</li> <li>• Monel</li> </ul>
6	Disc Pin	• Stainless Steel
7	Retainer Ring	<ul style="list-style-type: none"> <li>• Stainless Steel</li> <li>• Ni-Alubronze</li> <li>• Carbon Steel</li> </ul>
8	Packing Gland	<ul style="list-style-type: none"> <li>• Ductile Iron</li> <li>• Cast Steel</li> <li>• Stainless Steel</li> <li>• Ni-Alubronze</li> </ul>
9	Gland Ring	<ul style="list-style-type: none"> <li>• Bronze</li> <li>• Stainless Steel</li> </ul>
10	Bottom Cover	<ul style="list-style-type: none"> <li>• Ductile Iron</li> <li>• Cast Steel</li> <li>• Stainless Steel</li> <li>• Ni-Alubronze</li> </ul>
11	ISO Mounting Table	<ul style="list-style-type: none"> <li>• Ductile Iron</li> <li>• Cast Steel</li> <li>• Stainless Steel</li> <li>• Ni-Alubronze</li> </ul>
12	Stem Bearing	• SS, Bronze, Oil less Bearing
13	Gland V-packing	• NBR, EPDM, Viton
14	Thrust Plate	• Bronze, Stainless Steel
15	Bottom O-ring	• NBR, EPDM, Viton
16	Body Seat O-ring	• NBR, EPDM, Viton

• Please consult us for exact material standard and grade  
 • Other materials and special demands upon request

## Seat Configurations

### Replaceable rubber disc seat & Integral body seat



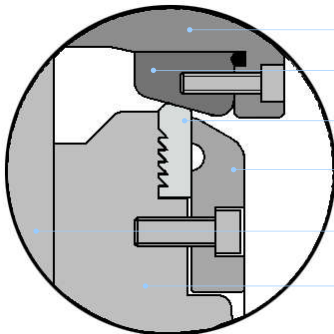
Body  
 Stem  
 Disc Seat  
 Retainer Ring  
 Disc

Materials (Other materials on request)

- EPDM, NBR, Viton

- Replaceable disc seat
- Suitable rubber seat can be chosen depending on the characteristics of the fluid.
- Rubber seat can be replaced without removing the valve from the pipeline.

### Replaceable rubber disc seat & Replaceable body seat



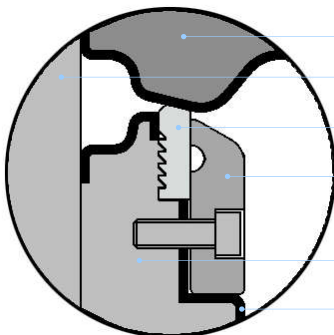
Body  
 Body Seat  
 Disc Seat  
 Retainer Ring  
 Stem  
 Disc

Materials (Other materials on request)

- EPDM, NBR, Viton

- Replaceable rubber disc seat
- Replaceable metal body seat
- Suitable rubber seat can be chosen depending on the characteristics of the fluid.
- Rubber disc seat and metal body seat can be replaced without removing the valve from the pipeline.

### Replaceable rubber disc seat & Integral body seat & Lined body and disc



Body  
 Stem  
 Disc Seat  
 Retainer Ring  
 Disc  
 Lining / Coating

Materials (Other materials on request)

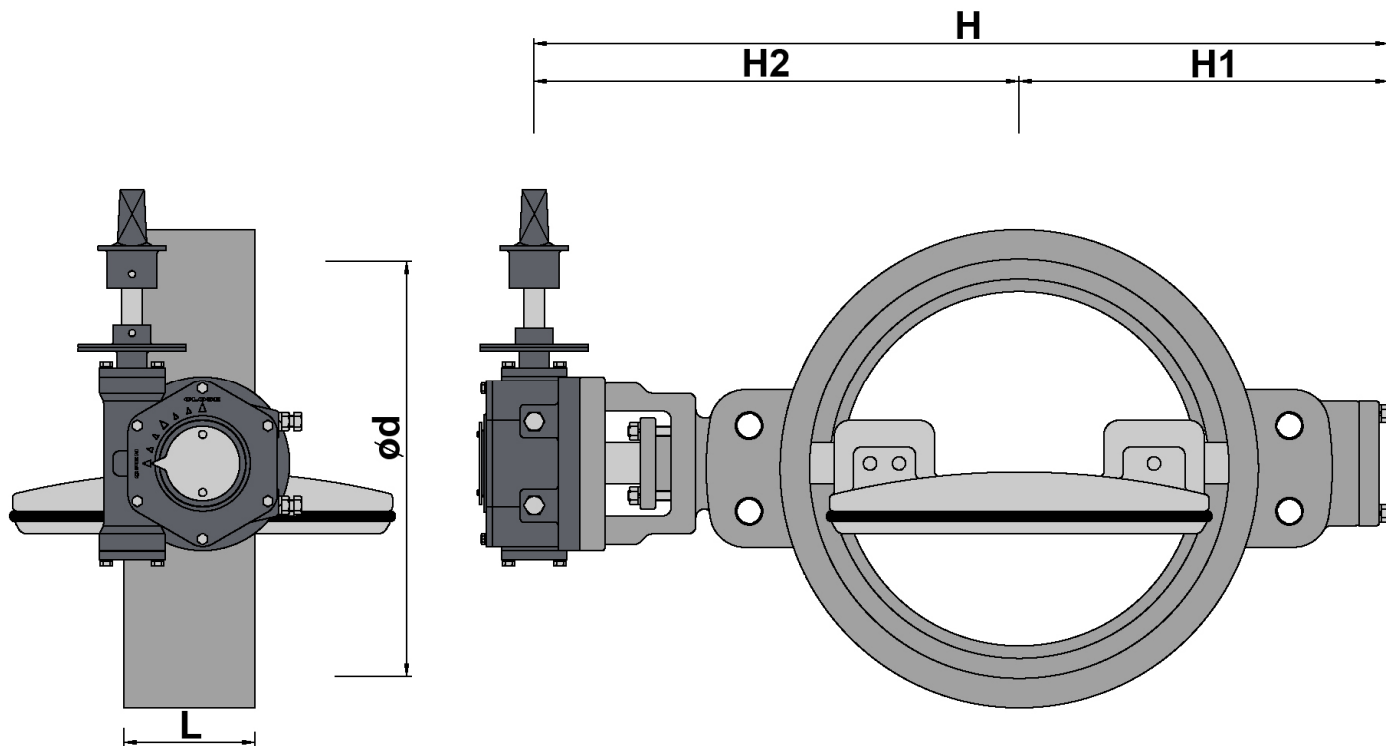
- EPDM, NBR, Viton

- Replaceable rubber disc seat, Integral body seat
- Suitable rubber seat can be chosen depending on the characteristics of the fluid.
- Rubber disc seat can be replaced without removing the valve from the pipeline.
- Corrosion protection by special lining or coating on body and disc.

## Valve Testing

Test	AWWA Series	Other Series
Hydrostatic Shell Test	1.5 x maximum service pressure	2.0 x maximum service pressure
Hydrostatic Seat Test	1.1 x maximum service pressure	maximum service pressure

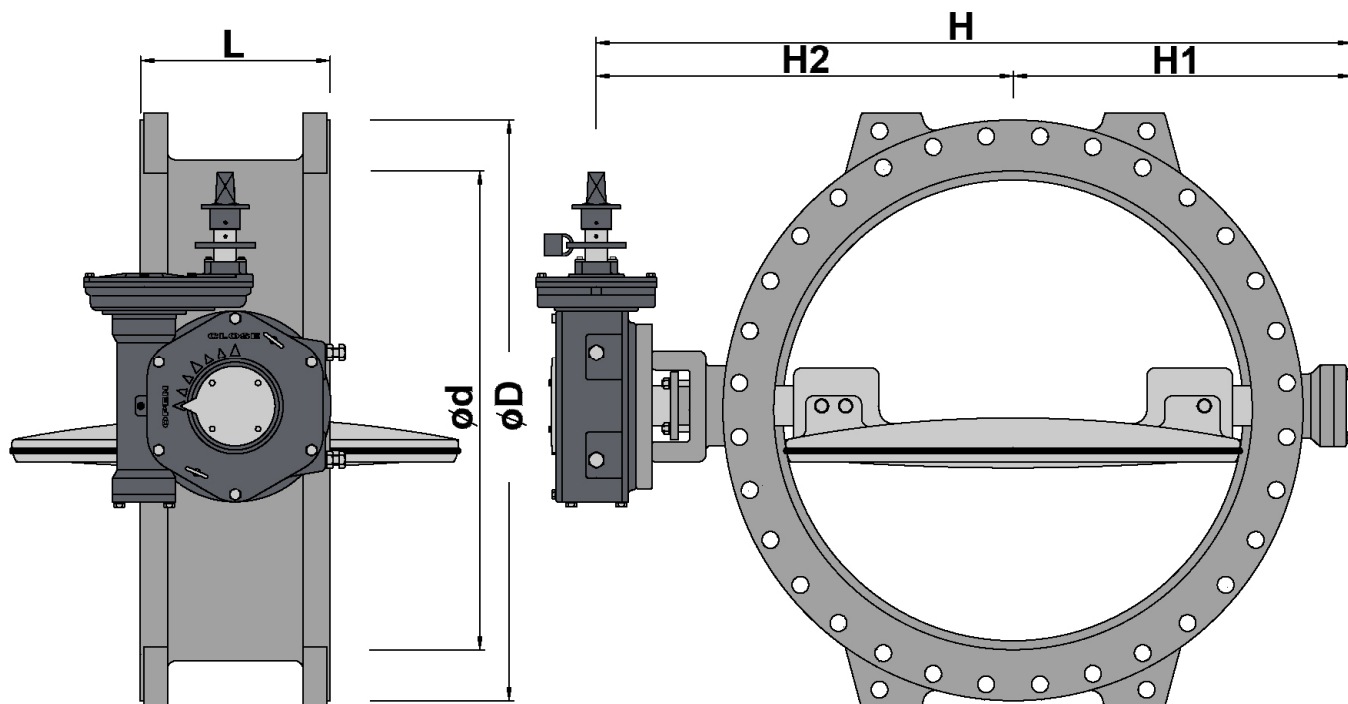
Series EWR Wafer Type DN 80 - 2000



Dimensions DN 80 - 1000 [mm]

SIZE		d	L	H	H1	H2	APPROX WEIGHT [Kg]
DN	Inch						
80	3"	80	64	375	150	225	12
100	4"	100	64	392	160	232	15
125	5"	125	70	445	175	270	18
150	6"	150	76	473	185	288	25
200	8"	200	89	584	235	349	36
250	10"	250	114	622	255	367	56
300	12"	300	114	733	305	428	68
350	14"	350	127	779	330	449	93
400	16"	400	140	829	350	479	121
450	18"	450	152	934	410	524	144
500	20"	500	152	1045	445	600	160
550	22"	550	152	1130	490	640	228
600	24"	600	178	1245	545	700	284
650	26"	650	178	1290	565	725	327
700	28"	700	229	1330	590	740	388
750	30"	750	229	1365	615	750	430
800	32"	800	241	1410	640	770	550
900	36"	900	241	1545	680	865	680
1000	40"	1000	300	1715	770	945	810
1100	44"	1100	300	1860	820	1040	940
1200	48"	1200	350	1945	875	1070	1225
1300	52"	1300	350	2080	925	1155	1315
1350	54"	1350	350	2120	650	1170	1430
1400	56"	1400	390	2205	1015	1190	1560
1500	60"	1500	390	2390	1075	1315	1650
1600	64"	1600	440	2550	1160	1390	1770
1650	66"	1650	440	2615	1190	1425	1980
1800	72"	1800	490	2795	1230	1565	2200
2000	80"	2000	540	2970	1355	1615	2330

Series EFR Flanged Type DN 80 - 4000



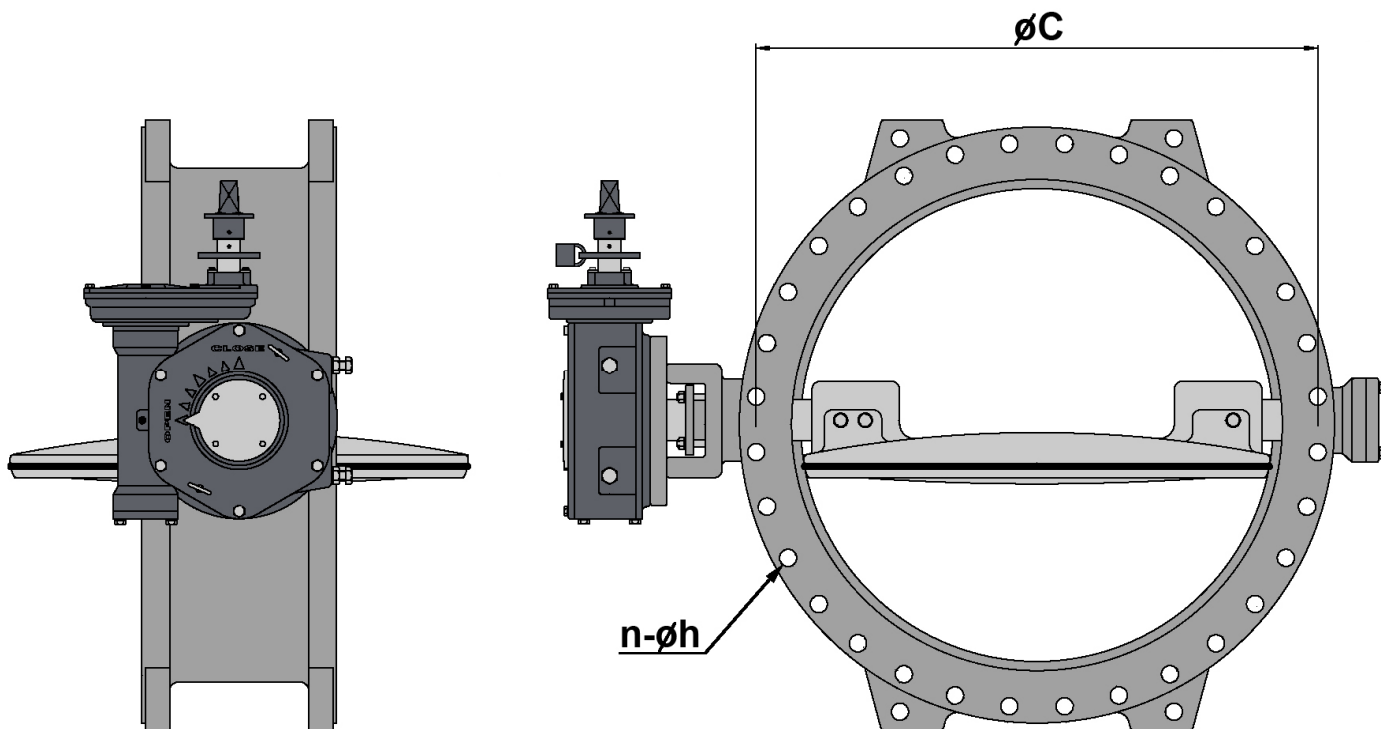
Dimensions DN 80 - 4000 [mm]

SIZE		d	L			H	H1	H2	APPROX WEIGHT [Kg]
DN	Inch		AWWA C504	BS5155 (Short)	BS5155 (Long)				
80	3"	80	127	114	180	375	150	225	19
100	4"	100	127	127	190	392	160	232	25
125	5"	125	127	140	200	445	175	270	35
150	6"	150	127	140	210	473	185	288	52
200	8"	200	152	152	230	584	235	349	70
250	10"	250	203	165	250	622	255	367	84
300	12"	300	203	178	270	733	305	428	117
350	14"	350	203	190	290	779	330	449	148
400	16"	400	203	216	310	829	350	479	203
450	18"	450	203	222	330	934	410	524	265
500	20"	500	203	229	350	1045	445	600	391
600	24"	600	203	267	390	1245	545	700	620
700	28"	700	305	292	430	1330	590	740	813
800	32"	800	305	318	470	1410	640	770	1140
900	36"	900	305	330	510	1545	680	865	1302
1000	40"	1000	305	410	550	1715	770	945	1540
1100	44"	1100	305	410	550	1860	820	1040	1720
1200	48"	1200	381	470	630	1945	875	1070	2100
1300	52"	1300	381	470	630	2080	925	1155	2400
1400	56"	1400	381	530	710	2205	1015	1190	3350
1500	60"	1500	381	530	710	2390	1075	1315	3746
1600	64"	1600	381	600	790	2550	1160	1390	5200
1800	72"	1800	457	670	870	2795	1230	1565	6700
2000	80"	2000	457	760	950	2970	1355	1615	7800
2100	84"	2100	457	760	950	3110	1430	1680	8900
2400	96"	2400	650	760	950	4085	1970	2115	14800
2800	112"	2800	650	760	950	4230	2050	2180	24000
3000	120"	3000	760	760	950	4310	2100	2210	31000
3500	140"	3500	760	800	1350	5460	2700	2760	40100
4000	160"	4000	900	900	1350	6210	3200	3010	48500

Sizes DN550 (22"), DN650 (26"), DN750 (30"), DN1350 (54"), DN1650 (66") on request



Series EFR Flanged Type DN 80 - 4000



Flange Dimensions

SIZE		150 LBS			300 LBS			(EN) PN10			(EN) PN16			(EN) PN25		
DN	Inch	øC	n	h	øC	n	h	øC	n	h	øC	n	h	øC	n	h
80	3"	152.4	4	5/8"	168.1	8	3/4"	160	8	M16	160	8	M16	160	8	M16
100	4"	190.5	8	5/8"	200.2	8	3/4"	180	8	M16	180	8	M16	190	8	M20
125	5"	215.9	8	3/4"	235.0	8	3/4"	210	8	M16	210	8	M16	220	8	M24
150	6"	241.3	8	3/4"	269.7	12	3/4"	240	8	M20	240	8	M20	250	8	M24
200	8"	298.5	8	3/4"	330.2	12	7/8"1	295	8	M20	295	12	M20	310	12	M24
250	10"	362.0	12	7/8"	387.4	16	1"	350	12	M20	355	12	M24	370	12	M27
300	12"	431.8	12	7/8"	450.9	16	1 1/8"	400	12	M20	410	12	M24	430	16	M27
350	14"	476.3	12	1"	514.4	20	1 1/8"	460	16	M20	470	16	M24	490	16	M30
400	16"	539.8	16	1"	571.5	20	1 1/4"	515	16	M24	525	16	M27	550	16	M33
450	18"	577.9	16	1 1/8"	628.7	24	1 1/4"	565	20	M24	585	20	M27	600	20	M33
500	20"	635.0	20	1 1/8"	685.8	24	1 1/4"	620	20	M24	650	20	M30	660	20	M33
600	24"	749.3	20	1 1/4"	812.8	24	1 1/2"	725	20	M27	770	20	M33	770	20	M36
700	28"	863.6	28	1 1/4"	939.8	28	1 5/8"	840	24	M27	840	24	M33	875	24	M39
800	32"	977.9	28	1 1/2"	1054.1	28	1 7/8"	950	24	M30	950	24	M36	990	24	M45
900	36"	1085.9	32	1 1/2"	1168.4	32	2"	1050	28	M30	1050	28	M36	1090	28	M45
1000	40"	1200.2	36	1 1/2"	1155.7	32	1 5/8"	1160	28	M33	1170	28	M39	1210	28	M52
1100	44"	1314.5	40	1 1/2"	1263.6	32	1 3/4"	1270	28	M36	1310	32	M52	1315	32	M52
1200	48"	1422.4	44	1 1/2"	1371.6	32	1 7/8"	1380	32	M36	1390	32	M45	1420	32	M52
1300	52"	1536.7	44	1 3/4"	1479.6	32	2"	1420	32	M36	1470	32	M52	1500	32	M52
1400	56"	1651	48	1 3/4"	1600.2	28	1 1/4"	1590	36	M39	1590	36	M45	1640	36	M52
1500	60"	1759.0	52	1 3/4"	1701.8	32	2 1/4"	1700	40	M42	1750	36	M56	1750	36	M56
1600	64"	1930.4	52	1 3/4"	1820	32	2 1/4"	1820	40	M45	1820	40	M52	1860	40	M56
1800	72"	2095.5	60	1 3/4"	2160	36	2 1/2"	2020	44	M45	2020	44	M52	2070	44	M64
2000	80"	2425.7	62	2"	2250	36	2 1/2"	2230	48	M45	2230	48	M56	2300	48	M64
2100	84"	2425.7	64	2"	2500	40	2 5/8"	2340	48	M45	2340	48	M45	2530	48	M64
2400	96"	2755.9	68	2 1/4"	3120	44	2 5/8"	2650	56	M52	2650	56	M52	3160	56	M64

Sizes DN550 (22"), DN650 (26"), DN750 (30"), DN1350 (54"), DN1650 (66"), DN>2400 (96") on request

## Double Eccentric Disc Seated Butterfly Valve Torque Table

SIZE		WORKING PRESSURE (bar)			
		5 bar	10 bar	16 bar	25 bar
DN	Inch	Nm	Nm	Nm	Nm
80	3"	19.5	26.0	35.1	50.7
100	4"	26.0	50.7	67.6	89.7
125	5"	40.3	74.1	89.7	141
150	6"	57.2	115	151	205
200	8"	108	216	284	433
250	10"	229	457	604	727
300	12"	354	704	929	1160
350	14"	485	961	1265	1657
400	16"	678	1339	1763	2434
450	18"	981	1934	2546	3555
500	20"	1310	2581	3399	4677
550	22"	1633	3210	4223	5857
600	24"	2047	4012	5278	7262
650	26"	2634	5155	6780	9224
700	28"	3136	6122	8049	11301
750	30"	3696	7193	9453	13670
800	32"	4316	8376	11000	16002
900	36"	5752	11092	14551	21837
1000	40"	7469	14312	18756	29404
1100	44"	10654	20408	26736	38692
1200	48"	13435	25574	33472	53928
1300	52"	17088	32391	42364	65713
1400	56"	20638	38877	50789	83206
1500	60"	24379	45598	66070	110762
1600	64"	28875	53658	77932	128266
1650	66"	35580	65947	86288	133325
1800	72"	41814	77072	102290	169519
2000	80"	54519	99050	136446	224110
2100	84"	65728	119316	154868	269133
2200	88"	74646	134670	175532	289352
2400	96"	95025	169340	219803	363510
2500	100"	108986	193586	245920	404928
2800	112"	148416	258461	338349	683348
3000	120"	185377	320187	416306	844799
3400	136"	243563	366225	820100	1317448
4000	160"	441072	796578	1227589	1981187

Product Group C  
*Concentric Rubber Lined Butterfly Valves*



Product Group O  
*Double Eccentric Replaceable Seat Ring  
Type Butterfly Valves (Cargo Oil)*



Product Group H  
*High Performance Butterfly Valves*



Product Group T  
*Triple Eccentric Metal Seated Butterfly Valves*



Product Group E  
*Disc Seated Butterfly Valves*



Product Group L  
*Cryogenic Butterfly Valves (LPG, LNG)  
Ball, Gate, Globe and Check Valves*



Product Group D  
*Damper Butterfly Valves*

