EM300 SERIES

Rubber seat butterfly valve

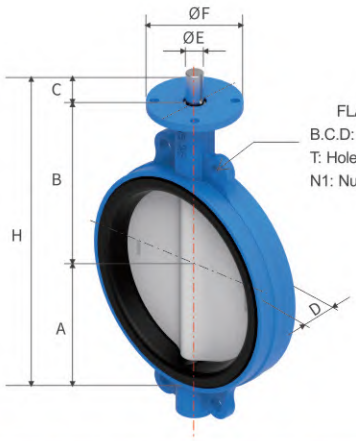
EM301/302 Series 2" – 12" (DN50~DN300)
14Bar(200PSI) / PN10 / PN16

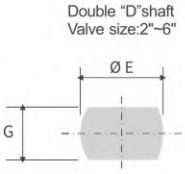
EM303/304 Series 14" – 28" (DN350~DN700)
10.3Bar(150PSI) / 14Bar (200PSI) / PN10&PN16

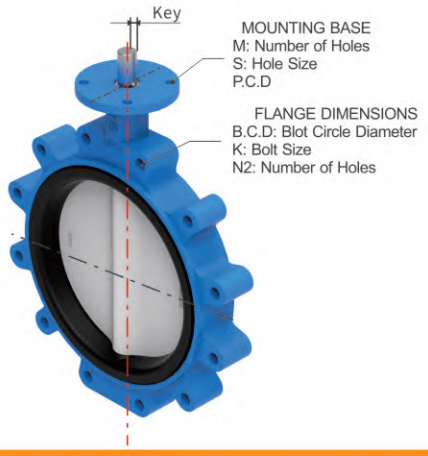
EM305/306 Series 28" – 72" (DN700~DN1800)
10.3Bar(150PSI) / PN10

Wafer, Lug, Double Flange
Handle / Gear/Pneumatic / Electric

EM300 Series Dimensions – (inch)







EM301/302Series : ASME B16.5 Class 150 , ASME B16.1 Class 125

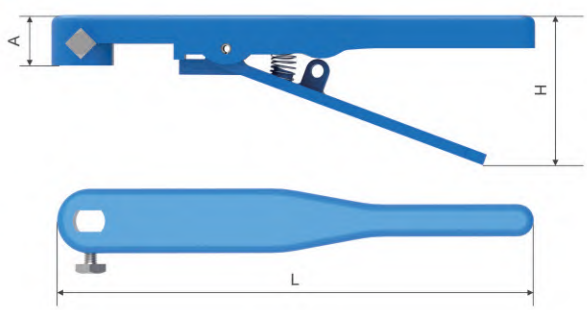
Size		A	B	C	D	ØE	ØF	G	H	Key	Flange Dimensions					Mounting Base		
Inch	DN										B.C.D	T	K	N1	N2	P.C.D	M	S
2	50	2.48	3.54	1.26	1.61	0.56	4.02	0.38	7.28	--	4.75	0.75	5/8-11UNC	4	4	3.25	4	0.44
2.5	65	2.01	6.02	1.26	1.75	0.56	4.02	0.38	9.29	--	5.50	0.75	5/8-11UNC	4	4	3.25	4	0.44
3	80	4.69	6.26	1.26	1.75	0.56	4.02	0.38	12.20	--	6.00	0.75	5/8-11UNC	4	4	3.25	4	0.44
4	100	4.25	7.01	1.26	2.01	0.63	4.02	0.44	12.52	--	7.50	0.75	5/8-11UNC	4	8	3.25	4	0.44
5	125	5.55	7.52	1.26	2.13	0.75	4.02	0.50	14.33	--	8.50	0.91	3/4-10UNC	4	8	3.25	4	0.44
6	150	5.59	7.99	1.26	2.13	0.75	4.02	0.50	14.84	--	9.50	0.91	3/4-10UNC	4	8	3.25	4	0.44
8	200	8.74	10.24	1.26	2.50	0.87	5.98	0.63	20.24	--	11.75	0.91	3/4-10UNC	4	8	5.00	4	0.56
10	250	8.27	10.75	2.00	2.50	1.13	5.98	--	21.02	0.25	14.25	0.98	7/8-9UNC	4	12	5.00	4	0.56
12	300	9.57	12.24	2.00	2.99	1.13	5.98	--	23.82	0.25	17.00	0.98	7/8-9UNC	4	12	5.00	4	0.56

EM303/304Series : ASME B16.5 Class 150 , ASME B16.1 Class 125

14	350	10.94	12.01	2.25	2.99	1.37	5.98	--	25.20	0.31	18.75	1.12	1-8UNC	4	12	5.00	4	0.56
16	400	12.24	12.99	2.25	4.02	1.63	5.98	--	27.48	0.31	21.25	1.12	1-8UNC	4	16	5.00	4	0.56
18	450	13.35	14.49	3.00	4.25	1.87	7.99	--	30.83	0.50	22.75	1.24	1 1/8-7UNC	4	16	6.50	4	0.83
20	500	15.87	14.57	3.00	5.00	2.12	7.99	--	33.43	0.50	25.00	1.24	1 1/8-7UNC	4	20	6.50	4	0.83
24	600	16.73	22.24	3.00	6.00	2.12	7.99	--	41.97	0.50	29.50	1.38	1 1/4-7UNC	4	20	6.50	4	0.83

Note: For more specific dimensions, more detailed drawings can be provided at the time of quotation. Based on the principle of continuous improvement, we will update the sample data from time to time. The final dimensions are based on the drawings.

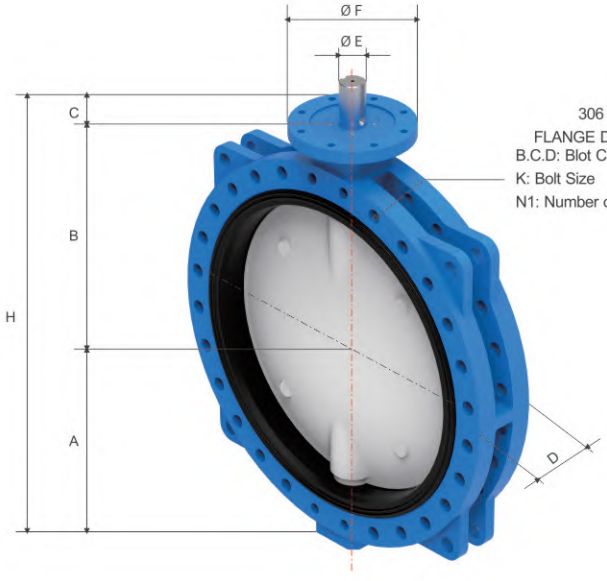
Handle Dimensions – (inch)

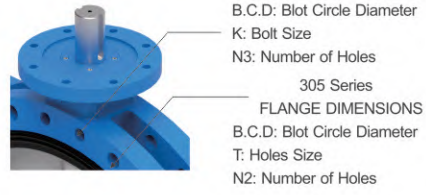


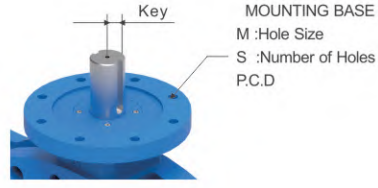
Model	Valve Size	A	H	L
H030	2"-3"	1.19	3.54	10.98
H040	4"	1.19	3.54	10.98
H060	5"-6"	1.19	3.54	10.98
H080	8"	1.25	4.06	14.96
H120	10"-12"	1.25	4.06	14.96

Note: The standard material for the handle is ductile iron, and the optional material 316 stainless steel can be used with a locking handle.

EM305/306 Series Dimensions – (inch)







ASME B16.1 Class 125, ASME B16.47 Class 150Series A

Size		A	B	C	D	ØE	ØF	H	Key	Flange Dimensions						Mounting Base		
										306 Series				305 Series				
Inch	DN									B.C.D	T	K	N1	N2	N3	P.C.D	M	S
28	700	20.28	22.05	4.00	6.50	2.50	11.81	46.32	5/8"	34.00	1.38	1 1/4 -7UNC	28	24	4	10.00	0.71	8
30	750	21.26	23.23	4.00	6.54	2.50	11.81	48.49	5/8"	36.00	1.38	1 1/4 -7UNC	28	24	4	10.00	0.71	8
36	900	25.87	28.35	4.61	7.95	3.15	13.78	58.82	7/8"	42.76	1.61	1 1/2 -6UNC	32	28	4	11.73	0.91	8
40	1000	29.33	31.10	5.31	8.50	3.50	13.78	65.75	1.0"	47.25	1.61	1 1/2 -6UNC	36	32	4	11.73	0.91	8
42	1050	30.35	32.09	5.31	9.88	3.50	13.78	67.76	1.0"	49.50	1.61	1 1/2 -6UNC	36	32	4	11.73	0.91	8
48	1200	33.46	36.22	5.98	10.87	4.33	16.34	75.67	1.25"	56.00	1.61	1 1/2 -6UNC	44	40	4	14.02	1.30	8
54	1350	37.60	40.35	6.50	15.00	5.51	16.34	84.45	1.5"	62.75	1.89	1 3/4 -5UNC	44	36	8	14.02	1.30	8
60	1500	40.94	44.29	6.50	15.00	6.50	18.70	91.73	1.75"	69.25	1.89	1 3/4 -5UNC	52	44	8	15.98	1.57	8
72	1800	47.48	50.39	10.00	17.99	7.50	22.05	107.87	2.0"	82.52	1.89	1 3/4 -5UNC	60	52	8	19.02	1.57	12

Note: For more specific dimensions, more detailed drawings can be provided at the time of quotation. Based on the principle of continuous improvement, we will update the sample data from time to time. The final dimensions are based on the drawings.

Valve Torque – (in-lbs)

Size		Lubrication			No Lubrication		
Inch	DN	0 psi	150 psi	200 psi	0 psi	150 psi	200 psi
2	50	97	133	168	133	177	221
2.5	65	106	159	212	142	212	283
3	80	124	212	266	168	283	354
4	100	292	327	398	381	434	522
5	125	398	504	593	522	664	770
6	150	558	735	867	726	965	1133
8	200	929	1257	1522	1212	1637	1982
10	250	1425	1947	2328	1859	2540	3027
12	300	1920	3354	4221	2496	4363	5487
14	350	310	4947	/	4124	6434	/
16	400	4726	6717	/	6142	8735	/
18	450	5089	9080	/	6620	11806	/
20	500	6275	14160	/	8160	16815	/
24	600	10142	17700	/	13187	23010	/
28	700	28940	46020	/	34727	55224	/
30	750	33630	61065	/	40356	73278	/
36	900	49560	79650	/	59472	95580	/
40	1000	76110	116820	/	91332	140184	/
42	1050	81774	144698	/	98129	173637	/
48	1200	117263	172575	/	140715	207090	/
54	1350	159123	238065	/	190948	285678	/
60	1500	237180	309750	/	284616	371700	/
72	1800	309750	432765	/	371700	611712	/

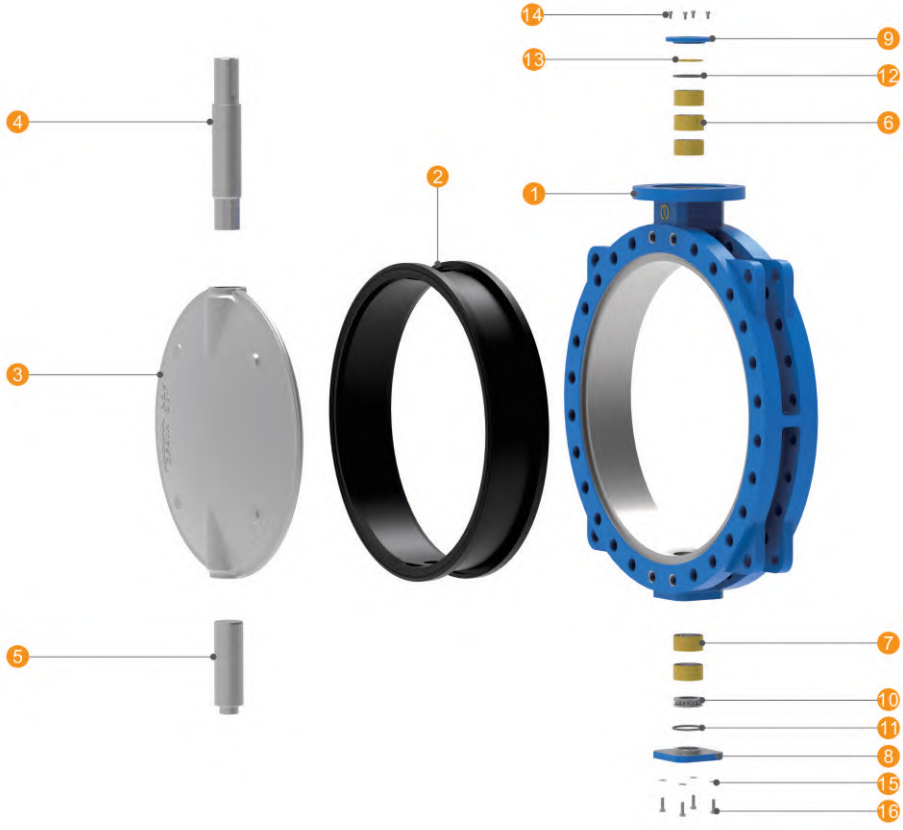
Note: For electric actuators, it is recommended to increase by at least 30%.

Cv Value

Valve Size	10°	20°	30°	40°	50°	60°	70°	80°	90°
2	0.8	7	16	27	43	61	84	114	144
2.5	1	11	24	43	67	107	163	223	282
3	2	15	35	61	96	154	267	364	461
4	3	27	62	109	171	274	496	701	841
5	5	43	98	170	268	428	775	1146	1376
6	6	56	129	225	354	567	1025	1542	1850
8	12	102	241	421	680	1081	1862	2842	3316
10	19	162	382	667	1076	1710	2948	4525	5430
12	27	235	555	1005	1594	2563	4393	6731	8077
14	34	299	756	1320	2149	3384	5939	8874	10538
16	45	397	1001	1749	2847	4483	7867	11761	13966
18	58	507	1281	2237	3643	5736	10065	14496	17214
20	72	632	1595	2786	4536	7144	12535	18812	22339
24	259	1028	2387	4244	6962	50700	18235	27186	33154
26	289	1141	2752	4890	7824	61000	19921	29700	36220
28	295	1324	3133	5399	8636	70200	22578	34683	41619
30	420	1652	3986	7080	11328	43800	28844	43003	52443
36	740	2775	5936	9790	15572	70200	40086	59667	77089
40	757	2971	6925	11862	19307	43800	50406	73990	90175
42	788	3302	7693	13370	20013	50247	51037	81057	99872
48	1023	4651	10365	17010	27242	70200	70431	108968	132888
54	1300	5336	12763	20189	35872	55996	83264	131357	167000
60	1480	6400	14500	24500	39400	63200	102000	154000	190000
72	1900	8220	18600	31500	50700	81200	131000	198000	244000

Note: CV is the volume of water flowing through a given limit or valve opening at a pressure drop of one (1) psi in U.S.G.P.M. at room temperature. It is recommended to control the angle between 25° and 70°)
The preferred opening angle for control valve sizes is 60° -65° . This chart is calculated and is for reference only.

Series 305/306 Series Parts List

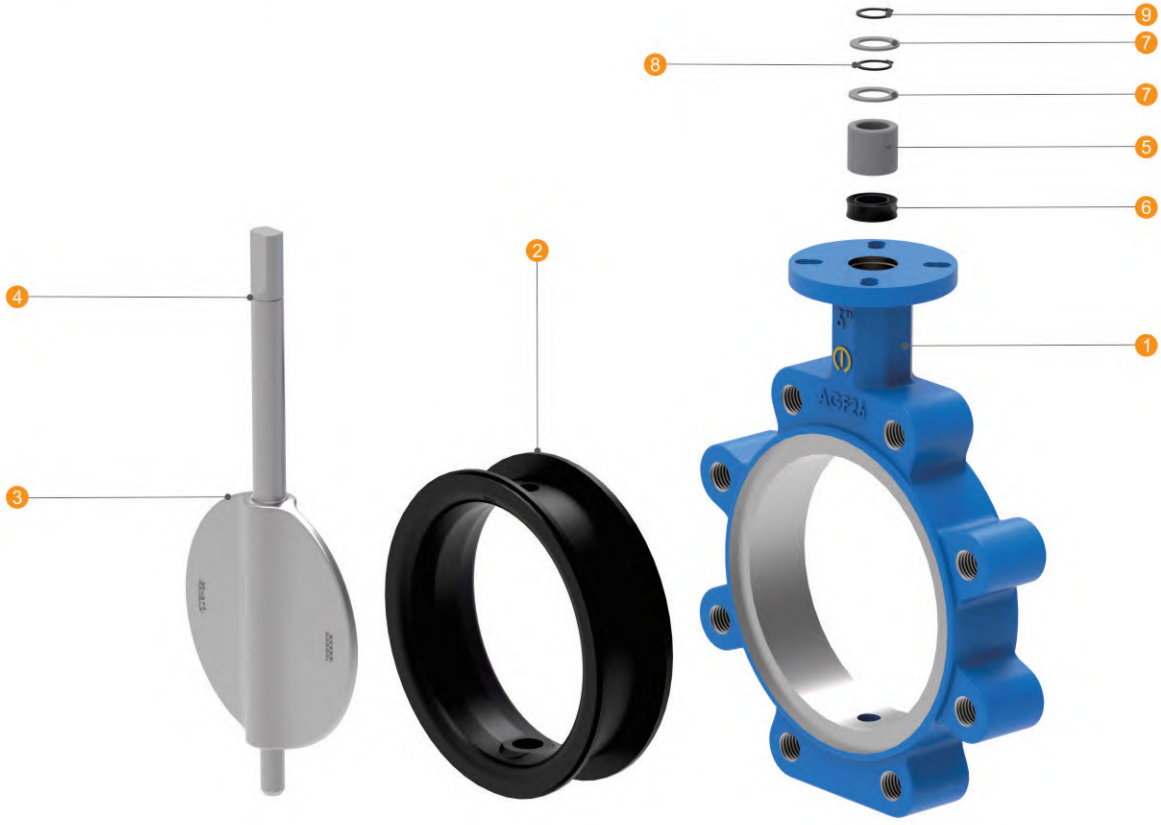


Parts list and materials (standard)

No.	Part Name	QTY	Material
1	Valve Body	1	Gr.65-45-12
2	Seat	1	EPDM
3	Valve Disc	1	Ductile iron + ENP
4	Upper Stem	1	431 Stainless Steel
5	Lower Stem	1	431 Stainless Steel
6	Upper Bushing	1 Set	Copper +PTFE
7	Lower Bushing	1Set	Copper +PTFE
8	Lower End Cap	1	1020 Steel
9	Upper End Cap	1	1020 Steel
10	Thrust Ball Bearing	1	Bearing Steel
11	Lower End Cap O-ring	1 Set	NBR
12	Upper End Cap O-ring	1 Set	NBR
13	Wear Ring	1	Copper
14	Upper End Cap Bolt	1 Set	Carbon Steel (Class 8.8)
15	Washer	1 Set	Carbon Steel
16	Lower End Cap Bolt	1 Set	Carbon Steel (Class 8.8)

Note: The EM305/306 series valves are available in a full range with replaceable seats and all components are interchangeable.

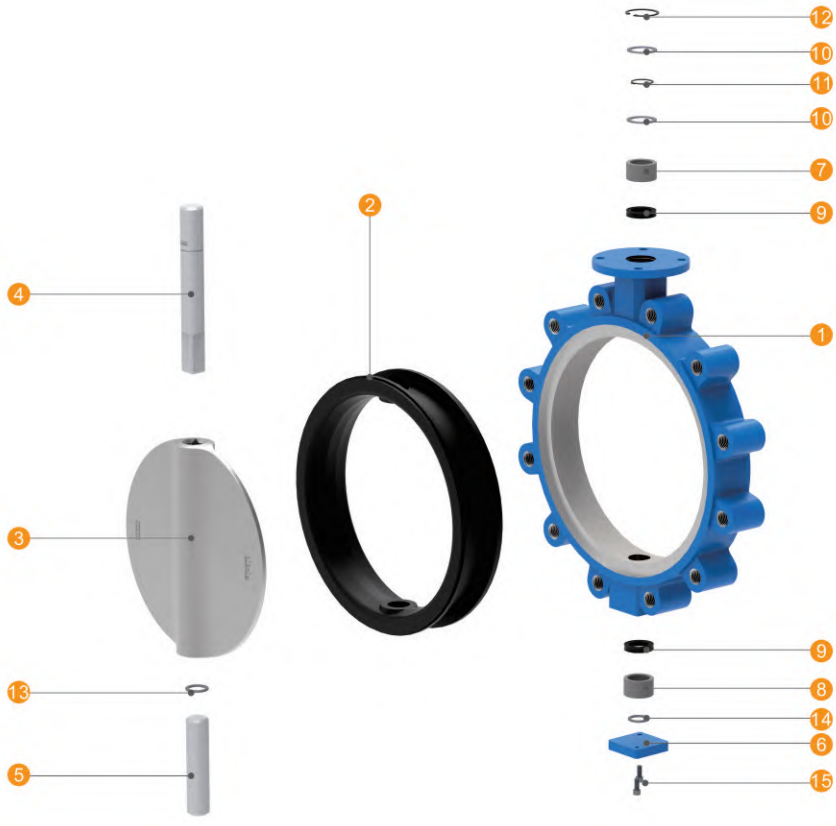
EM301/302 Series Parts List



Parts list and materials (standard)

No.	Part Name	QTY	Material
1	Valve Body	1	Gr.65-45-12
2	Seat	1	EPDM
3	Valve Disc	1	Ductile iron + ENP
4	Valve Stem	1	416 Stainless Steel
5	Bushing	1	PTFE + Graphite
6	V-packing	1	NBR
7	Gasket	2	Carbon Steel
8	Stem Retaining Ring	1	Carbon Steel
9	Valve Body Retaining Ring	1	Carbon Steel

EM303/304 Series Parts List



Parts list and materials (standard)

No.	Part Name	QTY	Material
1	Valve Body	1	Gr.65-45-12
2	Seat	1	EPDM
3	Valve Disc	1	Ductile Iron +ENP
4	Upper Stem	1	416 Stainless Steel
5	Lower Stem	1	416 Stainless Steel
6	End Cap	1	Gr.65-45-12
7	Upper Bushing	1	PTFE + Graphite
8	Lower Bushing	1	PTFE + Graphite
9	V-packing	1	NBR
10	Gasket	2	Carbon Steel
11	Stem Retaining Ring	1	Carbon Steel
12	Valve Body Retaining Ring	1	Carbon Steel
13	Valve Plate Gasket	1	Carbon Steel
14	Body Gasket	1	Carbon Steel
15	Bolt	1 Set	Carbon Steel

Manufacturing and design standards

Design Standard	EM Standard	API 609 Category-A MSS-SP-67 AWWA C504
	Selective configuration	BS 5155
End-to-End	EM Standard	API 609 Category-A ASME B16.10 Table 8 ISO 5752 Series 20
	Selective configuration	DIN 3202 Bs5155
Flange Connection	EM Standard	ASME B16.1 (Class 125) ASME B16.5 (CL150) ASME B16.47 Series A (CL150) MSS-SP-44 (CL150) AWWA C207 Class E
	Selective configuration	JIS B 2210 (10K , 16K) ISO7005-1 and DIN2501 (PN10 , Pn16)
Testing	EM Standard	API598 BS5155 FCI 70-2
	Selective configuration	JIS B 2203 , 2201 DIN3230

Optional Materials

Components	Material	ASTM No.	UNS No.
Body	Gray Iron Ductile Iron Carbon Steel 316 Stainless Steel	A126 Class B A536 Gr. 65-45-12 A216 WCB A351 CF8M	F33100 J030002 J92900
Disc	Aluminum Bronze Nylon Coated Ductile Iron 316 Stainless Steel 304 Stainless Steel C-276 Hastelloy C-22 Hastelloy Duplex Stainless Steel Austenitic Stainless Steel (254SMOTM) Alloy No. 20 M35-1 (Monel)	B148 A536 Gr. 65-45-12 A351 CF8M A351 CF8 B575 B494 CX2MW A995 Gr 5A A351 Grade CK3MCuN A351 CN7M A494	C95400/C95800 F33100 J92900 J92600 N10276 N26022 J93404 S31254
Shaft	304 Stainless Steel 316 Stainless Steel 416 Stainless Steel 431 304 Stainless Steel 17-4 PH Stainless Steel Duplex Stainless Steel Austenitic Stainless Steel (Al-6xN) Alloy No. 20 K400 (Monel)	A276 A276 A582 A276 A564 630 A479 A276 B462 SB-127	S30400 S31600 S41600 S43100 S17400 S31651 N05500 N08020
Seat	EPDM NBR Viton Neoprene		

Note: Please contact us for other material options.

EVER MARK

Product configuration code

301 20 7 7 3 8 DA 00

- 00 — Other
- DA — Operator/Actuator
- 8 — Seat
- 3 — Stem
- 7 — Valve disc
- 7 — Valve body
- 20 — Valve size
- 301 — Valve type

Valve type

301/303	Wafer type
302/304	Lug type
305	U-type(drilled hole)
306	U type(tapped)
309	Double flange

Valve size

2"	02	20"	20
2.5"	2B	24"	24
3"	03	28"	28
4"	04	30"	30
5"	05	36"	36
6"	06	40"	40
8"	08	42"	42
10"	10	48"	48
12"	12	54"	54
14"	14	60"	60
16"	16	72"	72
18"	18		

Valve Body

9	Ductile Iron
8	Grey Cast Iron
7	CF8M
6	WCB
5	Monel
4	Hastelloy C
3	Duplex Stainless Steel
2	Super Duplex Stainless Steel
1	Inconel
0	CF3M
L	CF8
M	CN7M

Valve Disc

9	Ductile Iron
8	CF8M
7	WCB
6	Nylon coating
5	Monel
4	Hastelloy C
3	Duplex Stainless Steel
2	Super Duplex Stainless Steel
1	Inconel
0	CF3M
L	CF8
M	CN7M

Stem

7	316
6	17-4PH(630)
5	416
4	Monel
3	Hastelloy C
2	Duplex Stainless Steel
1	Super Duplex Stainless Steel
0	Inconel
A	316L
L	304
M	Alloy 20

Seat

4	EPDM
3	NBR
2	Viton
1	Neoprene

Operator/Actuator

DA	Double Acting Pneumatic Actuator
SR	Spring Return Pnuematic Actuator
GA	Worm Gear
EA	Electric Actuator
HD	Handle

Other

00	No request
01	Low temperature
02	NSF-61/372
03	Special finishing

EVER MARK

Company Profile

Resilient Seated Butterfly Valve

Double Eccentric High Performance Butterfly Valve

Turbine Actuator

Pneumatic Actuator

EM300 SERIES

Rubber seat butterfly valve