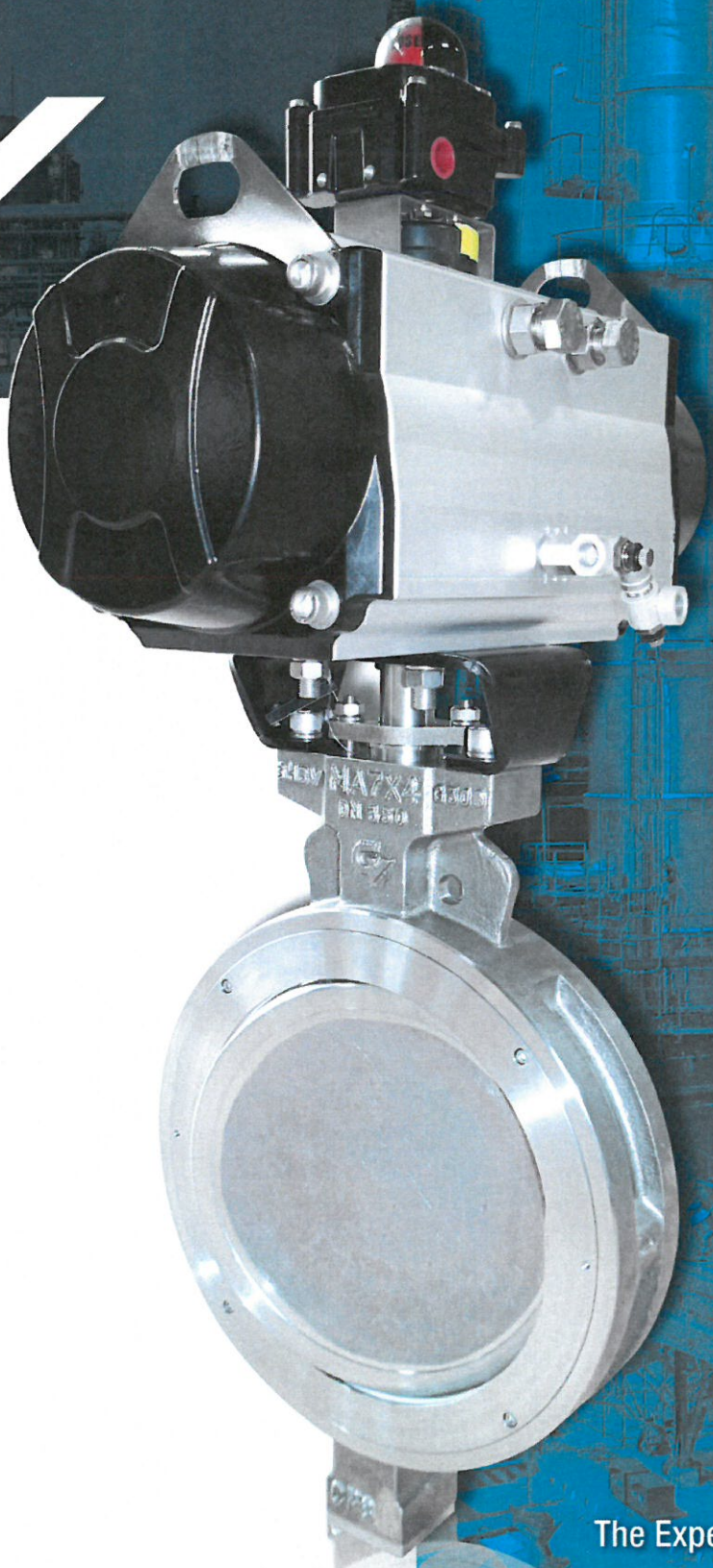
GMB GV Butterfly Valves

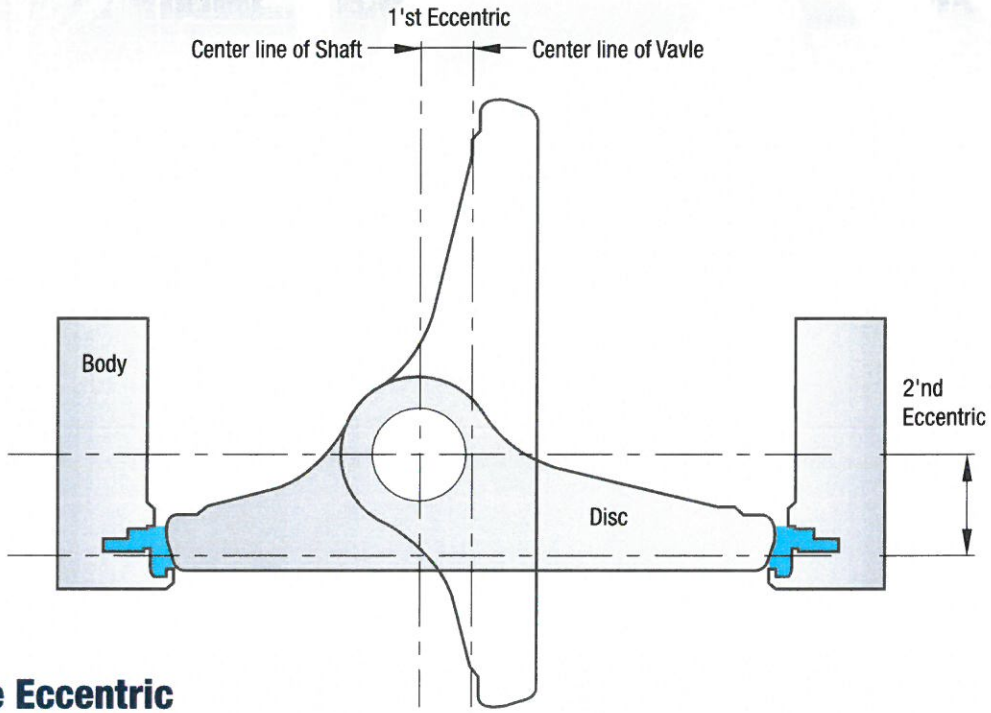
Double Eccentric High Performance

Global Manufacture Butterfly Valve



The Experience is the Quality

VALVE STRUCTURE



Double Eccentric

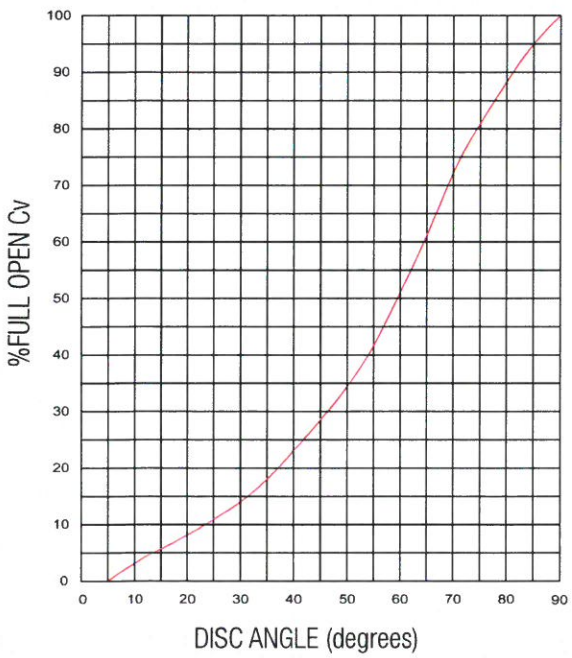
First eccentric

The rotation axis of the disc is moved away from the center-line of the valve body.
The purpose of this eccentric is to lift the disc quickly off and away from the seat ring in the body while decreasing the friction during operation.

Second eccentric

The rotation axis of the disc is moved back from the sealing surfaces of the disc.
The purpose of this eccentric is to have a continuous sealing surface on the disc.

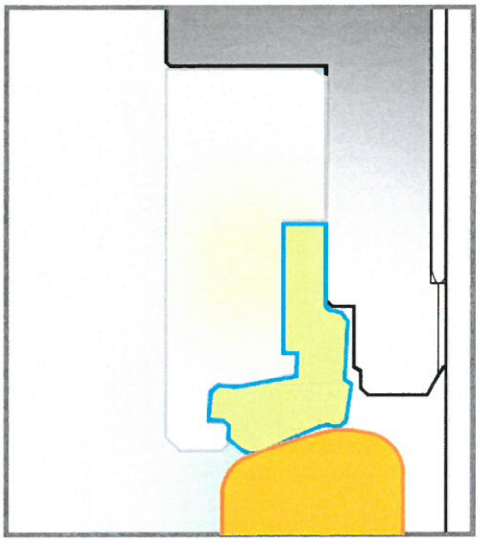
Flow Characteristics



Thpical Flow Characteristics

For control applications a wide variety of actuators and accessories can be provided.
At moderate pressure drop conditions, turn down approaching 100 to 1 can be achieved because of the camming action of the disc opening.
The disc lifts off the seat very quickly and an equal percentage control curve is produced between 15 degree and 75 degree of opening.

SEALING SYSTEM



RATING :
ASME CL. 150, 300, 600

SIZE RANGE :
DN 50(2") to DN 1200(48")

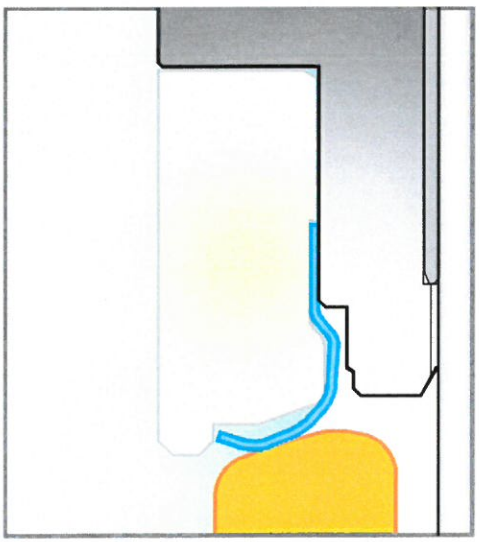
TEMP. RANGE :
-40 ℃(-40 ℉) to 250 ℃(480 ℉)

OPERATORS :
- Manual Lever, Worm gear
- Pneumatic, Electric actuation

APPLICATIONS :
- General & Petrochemical
- Oil Refinery Production
- Sugar, Paper & Gas Industry
- Shipbuilding

OPTIONS :
- Anti-static device
- Bonnet, Stem Extension
- Locking Device
- Material Selection for Anti-corrosion, High & Low temperature; Inconel, Monel, Titanium, Aluminum Bronze, Etc.

GVS designed for critical applications has proven reliability and efficiency in a wide range of applications.
The Double eccentric design minimizes the on-off torques at High Pressure, providing bubble tight shut-off.
Glass and Stainless steel are standard Materials of construction R.TFE seat.
Special requirements are available on request.



RATING
ASME CL. 150, 300, 600
JIS 10, 16, 20, 40
PN 10, 16, 25, 40, 64

SIZE RANGE
DN 50(2") to DN 900(36")

TEMP. RANGE
-50 ℃(-60 ℉) to 600 ℃(1200 ℉)

OPERATORS
- Manual Lever, Worm gear
- Pneumatic, Electric actuation

APPLICATIONS
- General & Petrochemical
- Oil Refinery Production
- Steel & Iron Mils
- Excellent performance in High pressure Steam
- Shipbuilding

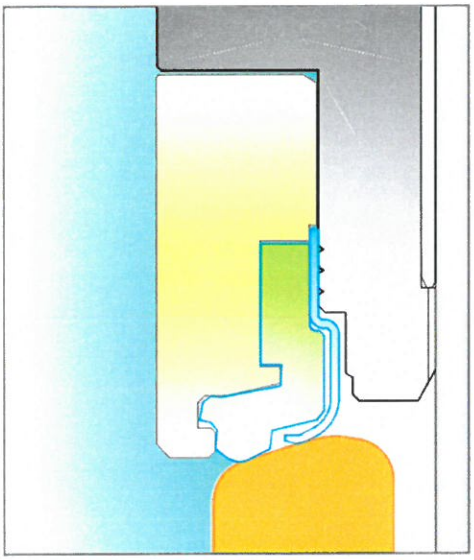
OPTIONS
- Stellite, ENP on Disc
- Anti-static device
- Bonnet, Stem Extension
- Locking Device
- Material Selection for Anti-corrosion, High & Low temperature; Inconel, Monel, Titanium, Aluminum Bronze, Etc.

GVM a precious metal seated Butterfly valve is well suited to Higher Temperature and pressure applications.
The double eccentric sealing system ensures low operating torques and positive sealing.
The wide selection of valve materials assures efficient performance in various applications.
All High performance butterfly valves are tested Hydraulically and Pneumatically to ensure secure perfect seating with 3'nd party verification available on request.

Features

· Bubble Tight shut-off of GVS · Low operating Torque · Compact design · Excellent Control characteristics
· Anti-blowout Shaft design · One piece Shaft design · Facile Maintenance

SEALING SYSTEM



RATING :
ASME CL. 150

SIZE RANGE :
DN 50(2") to DN 900(36")

TEMP. RANGE :
-40-40℃(-40℉) to 250℃(480℉)

OPERATORS :
- Manual Lever, Worm gear
- Pneumatic, Electric actuation

APPLICATIONS :
- General & Petrochemical
- Oil Refinery Production
- Steel and Iron Mils
- Excellent control characteristics
- Shipbuilding

OPTIONS :
- Anti-static device
- Bonnet, Stem Extension
- Locking Device
- Material Selection for Anti-corrosion, High & Low tem peature; Inconel, Monel, Titanium, Aluminum Bronze, Etc.

GVF design is combines the function of the **GVS** and the **GVM** while providing tight shutoff at nominal pressure and temperature rating.
GVF combined sealing system consists of a double R.TFE/Metal seat requiring minimal operating torques.
GVF operates reliably with the metal seat once the R.TFE is burnt out. This valve design provides consistent reliability for steam and hot air line applications among many others.

GMB GV Series - High Performance Butterfly Valves

Accordance to ASTM Standards.

Materials of Construction

Body & Disc Part

Carbon Steel	Stainless Steel	Duplex Stainless Steel	Low Alloy Steel	Alloy Steel	Aluminium Bronze
A216 Gr. WCB	A217 Gr. CA15	A890/995 Gr. 1B(CD4MCuN)	A217 Gr. WC6	A494 Gr. CW6MC	B148
A216 Gr. WCC	A351 Gr. CF8	A890/995 Gr. 4A(CD3MN)	A217 Gr. WC9	A351 Gr. CN7M	—
A352 Gr. LCB	A351 Gr. CF8M	A890/995 Gr. 5A(CE3MN)	A352 Gr. LC9	—	—
A352 Gr. LCC	A351 Gr. CG8M	—	—	—	—

Disc sealing surface Part

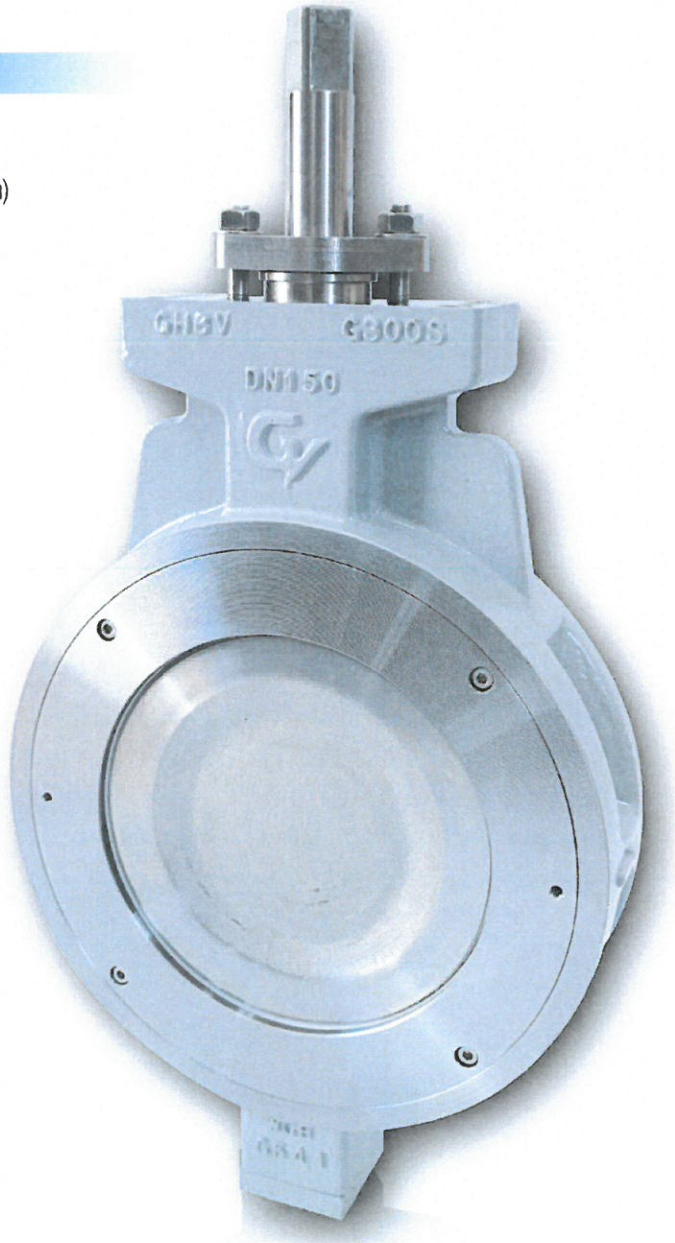
E.N.P.(Electroless Nickel Plating)
Stellite(Cobalt-chromium alloy : Grade 6 or 21)

Shaft Part

- ▸ Stainless Steel
  - · A276 Tp. 304
  - · A276 Tp. 316
  - · A276 UNS 31803
  - · A564 Tp. 630(17-4PH)
- ▸ Alloy
  - · B446(Inconel)
  - · B473(Alloy 20)
  - · B574(Hastelloy)

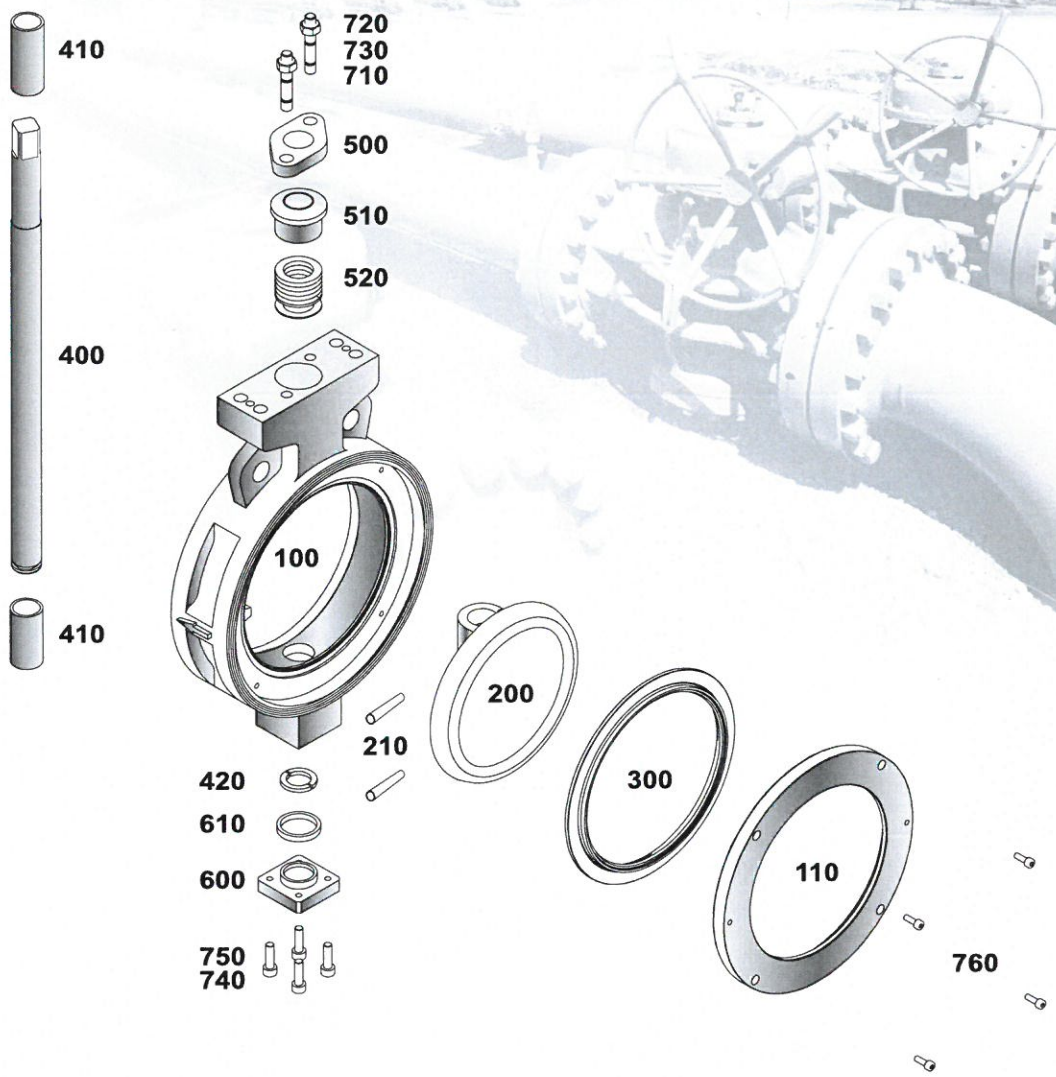
Seat Part

- ▸ Stainless Steel
  - · PTFE(Virgin Teflon)
  - · R.TFE(Reinforced Teflon)
  - · A240 Tp. 304
  - · A240 Tp. 316
  - · A240 UNS 31803
  - · Inconel
  - · Monel



The Experience is the Quality

MATERIAL LIST

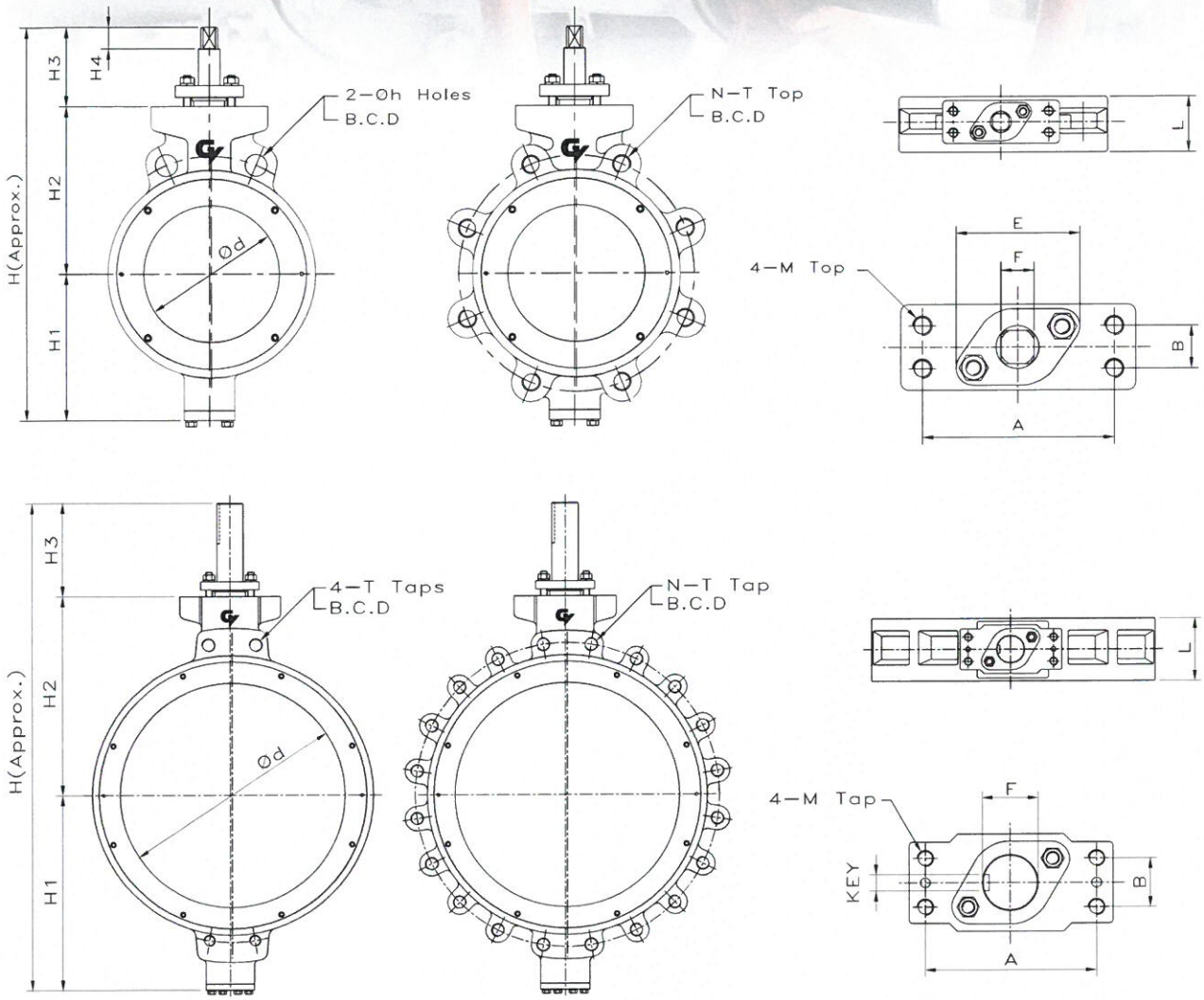


ITEM NO.	PART	CARBON STEEL	STAINLESS STEEL
100	Body	A216 Gr. WCB	A351 Gr. CF8
			A351 Gr. CF8M
110	Insert Ring	Carbon Steel	A240 Tp. 304
			A240 Tp. 316
200	Disc	A351 Gr. CF8	
		A351 Gr. CF8M	
210	Disc Pin	A276 Tp. 316	
300	Seat	PTFE	
		R.TFE	
		A240 Tp. 304	
		A240 Tp. 316	
		Inconel	
400	Shaft	A276 Tp. 304	A276 Tp. 304
		A276 Tp. 316	A276 Tp. 316
		17-4PH	Duplex
410	Shaft Bearing	A276 Tp. 316	

ITEM NO.	PART	CARBON STEEL	STAINLESS STEEL
420	Shaft Retainer	A276 Tp. 316	
430	Shaft Spacer	A240 Tp. 316	
500	Gland Flange	A351 Gr. CF8M	
510	Packing Gland	A276 Tp. 316	
520	Gland Packing	PTFE	
		Grafoil	
600	Bottom Plug	Carbon Steel	A351 Gr. CF8M
610	Bottom Packing	PTFE	
		Grafoil	
710	Stud Bolt	A193 Gr. B8	
720	Hex. Nut	A194 Gr. 8	
730	Spring Washer	A167 Tp. 304	
740	Hex. Bolt	A193 Gr. B8	
750	Spring Washer	A167 Tp. 304	
760	Wrench Bolt	A193 Gr. B8	

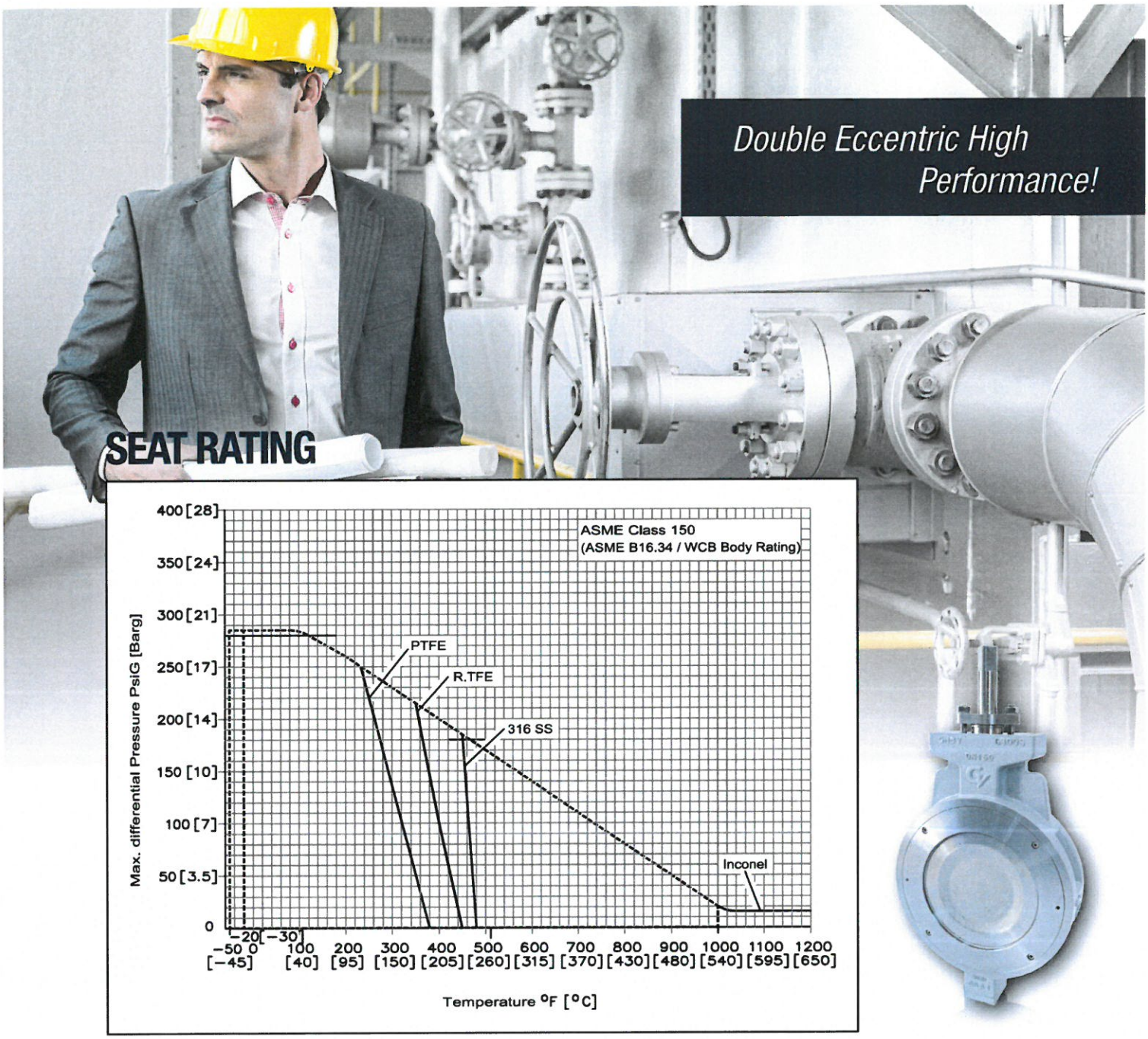
DIMENSION DATA

Valve Design : Acc. to API 609 & ASME B16.34



SIZE (inch)	H	H1	H2	H3	H4	Φd	F	A	B	M	L	Φh/T	KEY	B.C.D	N.T
2"	278	95	110	73	14	47	□10.9	80	22	M10	44	19.0	-	120.7	4-5/8"(11unc)
2.5"	311	110	124	77	18	63	□13.9	88	22	M10	46	19.0	-	139.7	4-5/8"(11unc)
3"	322	115	130	77	18	74	□13.9	88	22	M10	48	19.0	-	152.4	4-5/8"(11unc)
4"	344	120	147	77	18	95	□13.9	88	22	M10	54	19.0	-	190.5	8-5/8"(11unc)
5"	398	150	167	81	22	114	□16.9	98	26	M10	57	22.5	-	215.9	8-3/4"(11unc)
6"	403	150	172	81	22	140	□16.9	98	26	M10	57	22.5	-	241.3	8-3/4"(11unc)
8"	506	195	210	101	32	190	□18.9	114	28	M12	64	22.5	-	298.5	8-3/4"(11unc)
10"	581	230	250	101	32	237	□21.9	124	32	M12	71	25.5	-	362.0	12-7/8"(9unc)
12"	650	260	275	115	35	280	□26.9	158	36	M16	81	25.5	-	431.8	12-7/8"(9unc)
14"	723	290	315	118	38	317	□29.9	158	36	M16	92	28.5	-	476.3	12-1"(8unc)
16"	855	340	350	165	-	362	Φ41.9	180	46	M16	102	28.5	14x9-65L	539.8	16-1"(8unc)
18"	905	360	380	165	-	420	Φ45.9	180	46	M16	114	1 1/8"(8un)	14x9-65L	577.9	16-1 1/8"(8un)
20"	1040	400	430	210	-	470	Φ54.9	200	56	M20	127	1 1/8"(8un)	16x10-90L	635.0	20-1 1/8"(8un)
24"	1200	480	490	230	-	551	Φ64.9	210	60	M20	154	1 1/4"(8un)	20x12-100L	749.3	20-1 1/4"(8un)

The other dimensions on request


Double Eccentric High Performance!

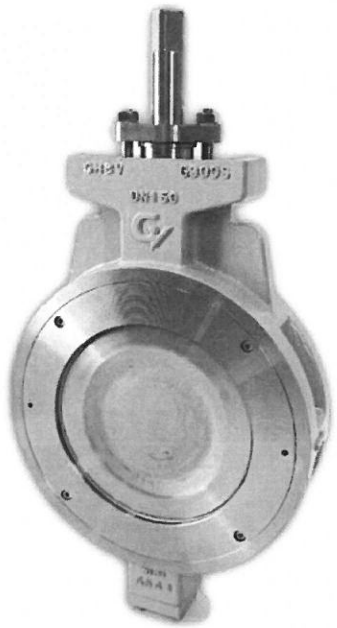
SEAT RATING

ASME Class 150
(ASME B16.34 / WCB Body Rating)
PTFE
R.TFE
316 SS
Inconel
Max. differential Pressure PsiG [Barg]
400 [28]
350 [24]
300 [21]
250 [17]
200 [14]
150 [10]
100 [7]
50 [3.5]
0
−20 [−30]
−50 0 100 200 300 400 500 600 700 800 900 1000 1100 1200
[−45] [40] [95] [150] [205] [260] [315] [370] [430] [480] [540] [595] [650]
Temperature °F [°C]

TORQUE TABLES

ASME Class 150

VALVE SIZE		GVS				GVF				GVM			
inch	mm	5 Bar	10 Bar	15 Bar	20 Bar	5 Bar	10 Bar	15 Bar	20 Bar	5 Bar	10 Bar	15 Bar	20 Bar
2"	50	18	19	21	22	30	32	33	34	40	44	45	46
2.5"	65	19	20	22	24	32	34	35	35	43	46	46	48
3"	80	20	22	23	27	34	35	36	38	46	48	50	50
4"	100	25	29	33	39	46	50	52	54	62	67	70	73
5"	125	34	39	42	55	54	62	64	68	73	82	87	92
6"	150	41	50	59	64	66	71	74	80	90	95	101	110
8"	200	68	95	100	116	105	116	129	142	146	161	179	196
10"	250	110	140	168	194	154	180	212	236	214	250	295	327
12"	300	152	200	247	294	193	249	304	365	268	345	422	506
14"	350	230	298	380	483	343	451	558	665	476	625	774	922
16"	400	333	453	576	756	440	616	726	858	616	862	1016	1201
18"	450	459	616	754	980	616	792	968	1188	862	1109	1355	1663
20"	500	588	928	1008	1408	704	924	1188	1452	1126	1478	1901	2323
22"	550	832	1152	1350	1728	988	1352	1690	2080	1338	1830	2288	2816
24"	600	1024	1408	1760	2112	1274	1664	2054	2496	1725	2253	2781	3379
26"	650	1224	1700	2108	2550	1658	2155	2763	3315	2160	2934	3600	4320
28"	700	1428	1938	2516	2992	2100	2707	3370	4144	2736	3528	4392	5400
30"	750	1768	2312	2856	3400	2321	3039	3812	4531	3024	3960	4968	5905
32"	800	2142	2788	3468	4216	2707	3536	4420	5250	3528	4608	5760	6840
34"	850	2534	3379	4224	5069	3432	4462	5434	6864	4320	5616	6840	8640
36"	900	2957	3872	4928	5843	4004	5148	6292	8008	5040	6480	7920	10080



• All Torques are in N.m

The other range is manufacture standard

ASME Class 300

VALVE SIZE		GVS						GVF						GVM					
inch	mm	10 Bar	20 Bar	25 Bar	35 Bar	40 Bar	50 Bar	10 Bar	20 Bar	25 Bar	35 Bar	40 Bar	50 Bar	10 Bar	20 Bar	25 Bar	35 Bar	40 Bar	50 Bar
2"	50	20	22	25	26	27	27	35	37	38	40	41	41	47	50	51	53	54	55
2.5"	65	22	25	28	29	30	31	37	38	40	41	42	44	49	51	53	55	56	59
3"	80	24	27	30	32	33	34	38	41	43	44	45	50	51	54	58	59	60	66
4"	100	31	39	45	47	49	54	54	59	63	68	74	79	72	78	84	90	99	105
5"	125	41	55	59	64	69	76	68	74	81	86	92	99	90	99	108	114	123	132
6"	150	54	60	76	83	88	93	77	88	99	106	113	122	102	117	132	141	150	162
8"	200	95	116	129	140	151	163	130	158	178	192	206	216	173	211	236	255	275	287
10"	250	149	209	231	257	273	305	202	264	307	331	350	374	268	351	408	440	466	497
12"	300	214	315	357	399	431	462	278	408	576	624	696	816	370	542	765	829	925	1084
14"	350	344	518	675	816	844	929	546	806	936	1040	1196	1300	670	989	1148	1275	1466	1594
16"	400	522	810	990	1080	1200	1320	774	1078	1381	1602	1823	1934	924	1287	1650	1914	2178	2310
18"	450	660	1050	1320	1440	1560	1680	995	1492	1879	2182	2486	2735	1188	1782	2244	2607	2970	3267
20"	500	987	1496	1760	1888	2080	2240	1250	1964	2499	2975	3392	3689	1571	2468	3142	3740	4264	4638
24"	600	1590	2384	2720	3060	3366	3604	1904	2856	3570	4284	4820	5355	2394	3590	4488	5386	6059	6732

ASME Class 600

VALVE SIZE		GVS						GVF						GVM					
inch	mm	10 Bar	35 Bar	55 Bar	70 Bar	80 Bar	100Bar	10 Bar	35 Bar	55 Bar	70 Bar	80 Bar	100Bar	10 Bar	35 Bar	55 Bar	70 Bar	80 Bar	100Bar
3"	80	25	37	54	62	67	74	42	68	81	88	97	104	56	90	108	117	128	138
4"	100	34	62	89	100	112	131	79	144	185	221	243	261	104	192	246	294	324	348
5"	125	46	74	116	135	154	174	104	185	252	311	342	396	138	246	336	414	456	528
6"	150	56	97	154	190	212	231	126	230	329	405	495	585	168	306	438	540	660	780
8"	200	83	165	264	326	371	454	192	394	624	768	864	912	255	523	829	1020	1148	1211
10"	250	139	265	454	557	660	701	331	672	960	1152	1296	1392	440	893	1275	1530	1721	1849
12"	300	244	488	743	866	969	1073	648	1056	1536	1896	2112	2352	861	1403	2040	2519	2805	3124
14"	350	387	765	1170	1414	1560	1706	832	1560	2236	2808	3120	3380	1020	1913	2741	3443	3825	4144
16"	400	528	1008	1612	1976	2184	2340	1188	2210	3039	3868	4310	4475	1419	2640	3630	4620	5148	5346
18"	450	744	1296	1760	2496	2704	2912	1437	2652	3868	4862	5415	6078	1716	3168	4620	5808	6468	7260
20"	500	936	1728	2600	3120	3640	3900	2083	3749	5355	7140	8330	8925	2618	4712	6732	8976	10472	11220
24"	600	1530	2805	4420	5304	6630	7183	3273	6545	9520	11305	12495	13685	4114	8228	11968	14214	15708	17207

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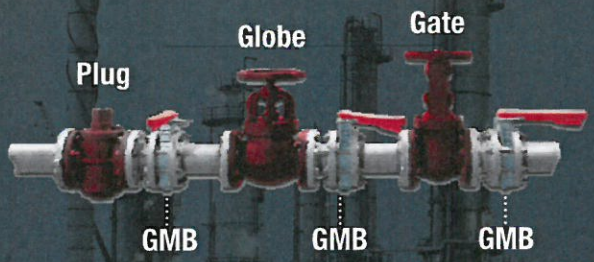

GMB VALVE
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Order Numbering System

Size	Type	Rating	Material			Surface	Actuator
			Body / Disc	Shaft	Seat		
☐☐	☐	☐☐	☐☐	☐	☐	☐	☐
2in. 02	Wafer W	ASME150 A1	WCB WB	304S.S 3	PTFE P	None N	Bare B
3in. 03	Lug L	ASME300 A3	WCC WC	316S.S 6	R.TFE R	E.N.P E	Lever L
4in. 04	Buttweld B	ASME600 A6	WC9 W9	17-4PH 63	304S.S 3	Stellite S	Gear G
6in. 06	Double Flanged D	JIS10K J1	LCB LB	SS2507 D	316S.S 6		Pneumatic P
8in. 08		JIS16K J16	CA15 CA	Monel M	Monel M		Electric E
10in. 10		JIS20K J20	CF8 8☐	Inconel I	Inconel I		
12in. 12		PN10 P1	CF8M 8M	Alloy20 A	Alloy20 A		
14in. 14		PN16 P16	Monel M☐		SS2205 S2		
16in. 16		PN20 P2	Inconel I☐		SS2507 S5		
18in. 18		PN40 P4	Alloy20 A☐				
20in. 20		PN64 P6					
24in. 24		PN100 P10					

Example

06	W	A1	WB/8M	6	P	N	B
6in	Wafer	ASME Cl.150	WCB/CF8M	316S.S	PTFE	None	BARE

※ For more information about the GV series. Please contact the GMB corporation.