Guva

Guva Flow Control

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H.P. Butterfly Valves

F220/230/260 Series

01 Guva
H.P. Butterfly Valves

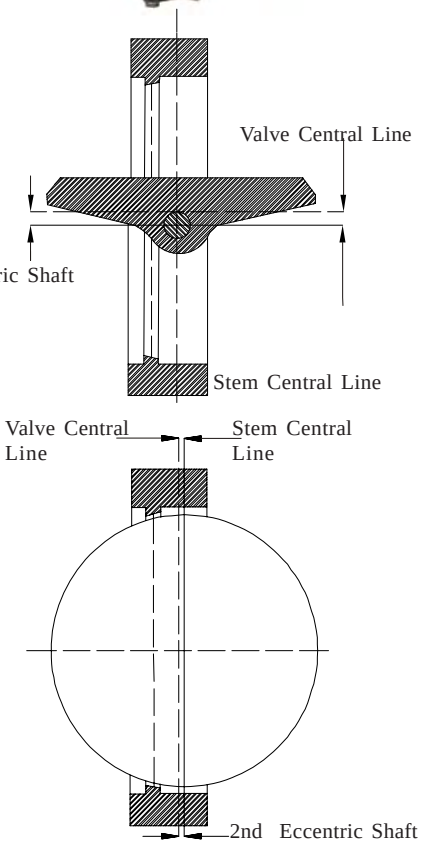
Guva, is a leading manufacturer of international specialized value and fluid control equipment. They have the professional research institutes and manufacture plants in USA, Europe and Asia. The products are used widely throughout demanding markets, including power generation, petrochemical, steal, light industry, environmental protection and water.

F220 ANSI CLASS 150
F230 ANSI CLASS 300
F260 ANSI CLASS 600
DN65-DN600(2-1/2"--24")

Standard wafer & lug valve

Features:

- Field-proven flexible PTFE seat design
- No additional metal parts required to maintian tightness
- Lip-seal design compensates for temperature and pressure changes
- Longer service life with less maintenance
- Tight shut-off in either direction
- No seat/disc contact in the open or intermediate position
- Eliminates wear points at top and bottom of seats for higher cycle life;Reduces torque requirements,allowing for smaller operators
- Equipped with a retaining ring at the top of the shaft to prevent movement of the top portion of the shaft past the compression ring if for any reason the shaft should break within the valve
- Simply remove body insert and replace seat - disasembly of disc and shaft is not required
- Superior control characteristics,inherent flow characteristic is modified equal percentage,wide rangeability



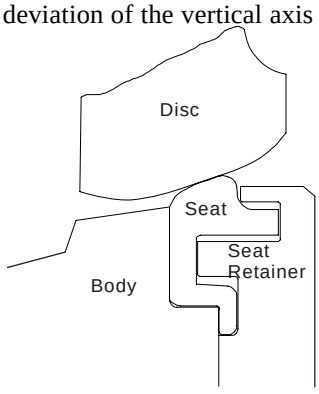
Eccentric shaft design

Eccentric shaft design is one of the design features of H.P.butterfly valve·s excellent performance. Two planes of the eccentric shaft: deviate from the butterfly board central line and behind the butterfly plant sealed plane. Eccentric shaft design makes the rolling butterfly board like a cam break away from the seat backwards, completely eliminated the wear spots in the top and bottom of seat normally. Breaking away from seat, the butterfly board just can rolling along a 90° eccentric arc.

Double eccentric design

Double eccentric design can help to reduce the wear and tear of the seat, and ensure that the two-way gas seal function of the entire pressure range. When the valve board in the open position, the eccentric board will produce a function similar to a cam, and without too much tension, they can pull the board open.

The first eccentric is the stem, which is installed in the downstream of the medium flow direction, deviated from the center of seat. The second eccentric is the deviation of the vertical axis between the stem and seat.

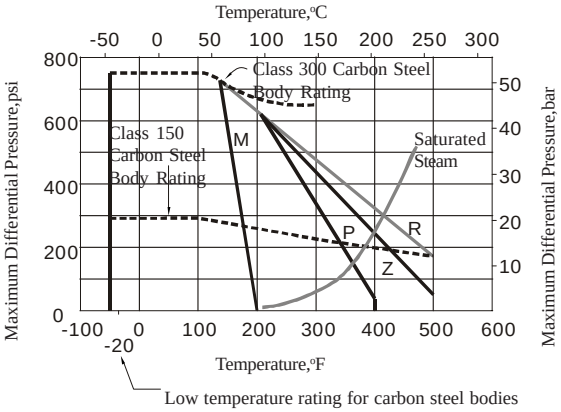


Seat Features

- Serrations in the seat retainer and body recess secure the seat assembly in place regardless of disc position.
- The full-faced retainer is bolted to the body,locking the seat in the correct position.The seat is secured even without the mating flange.
- The closely confined and well supported seat is energized by the disc and line pressure.The higher the pressure,the tighter the seal.
- Line media is sealed to zero leakage in both directions.
- The seat is self-adjusting for wear and temperature changes.
- Seat replacement is extremily easy - just remove the seat retainer,rotate the disc into the closed position and place a new seat assembly in the machined recess of the body. This simple procedure will not disturb the disc or stem.

H.P. Butterfly Valves

Pressure / Temperature



P-PTFE R-FILLED PTFE SEAT Z-FIRE-TITE M-UHMW Polyethylene

NOTE:
These ratings are a conservative guide for general service.Previous experience in a process or new developments and alternative seat materials may permit applications at ratings above those shown.Please consult our home office for specific recommendations.

Cv is defined as the volume of water in U.S.G.P.M that will flow through a given restriction or valve opening with a pressure drop of one(1)p.s.i. at room temperature. Recommended control angles are between 25° - 70° open.Preferred angle for control valve sizing is 60° - 65° open.

Valve Sizing Coefficient(Cv VALVES)

ANSI 150 F220/F221 Series

Valve Size		Disc Position(Degree)								
mm	ins	90°	80°	70°	60°	50°	40°	30°	20°	10°
65	21/2	155	130	100	72	48	36	15	10	3
80	3	190	175	156	125	85	53	30	15	4.8
100	4	390	376	330	245	180	118	65	34	10
125	5	785	668	512	355	243	140	75	40	15
150	6	1365	1063	764	496	318	232	128	80	34
200	8	2780	2190	1612	1048	665	450	275	160	70
250	10	4285	3439	2426	1615	1065	685	440	239	100
300	12	6635	5342	3733	2518	1615	1066	685	376	148
350	14	7638	6130	4288	2925	1885	1246	800	439	180
400	16	9780	7855	5536	3680	2415	1518	1035	566	235
450	18	10478	9125	6872	5085	3502	2244	1175	470	175
500	20	13490	11735	8780	6496	4480	2780	1516	628	195
600	24	19780	17130	12760	9600	6615	3865	2225	915	235
650	26	20100	17000	12750	9550	6580	3900	2150	900	240
700	28	27800	23700	18000	13450	9250	5500	3000	1260	280
750	30	32100	27150	20750	15000	10500	6550	3500	1500	305
800	32	33800	29000	22200	16450	11300	7000	3750	1600	330
850	34	34000	29150	22300	16600	11400	7200	3800	1610	340
900	36	48400	41000	31600	22800	16500	10500	5300	2100	450

ANSI 300 F230/F231 Series

Valve Size		Disc Position(Degree)								
mm	ins	90°	80°	70°	60°	50°	40°	30°	20°	10°
65	21/2	155	130	100	80	48	35	15	8	3
80	3	190	175	148	125	85	60	30	15	4.8
100	4	368	355	308	255	156	120	65	32	10
125	5	786	660	520	348	242	135	65	40	15
150	6	985	880	700	518	362	225	125	75	25
200	8	1980	1705	1348	936	613	410	235	118	50
250	10	2642	2230	1721	1180	761	500	310	142	60
300	12	4025	3380	2565	1673	1120	695	405	235	90
350	14	5350	4680	3100	2570	1500	910	500	270	100
400	16	7780	6515	4560	2955	1820	1178	710	408	185
450	18	9550	8010	6155	4518	3128	1965	1055	416	95
500	20	11050	9550	7290	5355	3700	2315	1238	538	110
600	24	17960	15120	11385	8585	5890	3685	2050	810	180
750	30	28800	24350	18800	13500	8000	6200	3150	1300	300
900	36	44600	38000	28900	20600	14550	9000	4500	1600	400

ANSI 600 F260/F261 Series

Valve Size		Disc Position(Degree)								
mm	ins	90°	80°	70°	60°	50°	40°	30°	20°	10°
80	3	160	155	128	100	59	45	10	8	3
100	4	288	263	202	156	90	63	45	30	5
150	6	835	770	588	430	256	186	135	65	16
200	8	1515	1330	1028	765	465	330	200	75	20
250	10	2185	1955	1550	1080	710	485	320	136	35
300	12	3080	2775	2185	1536	1028	665	422	185	50
350	14	3870	3310	2385	1581	1085	748	417	215	75
400	16	5050	4160	2830	1925	1180	788	470	255	90
450	18	6100	4995	3865	2825	1880	1235	648	276	135
500	20	8060	6875	5275	3915	2660	1735	960	365	140
600	24	11080	9250	6985	5230	3575	2220	1235	485	175
750	30	15000	13000	10000	8400	5100	2800	1650	600	200

H.P. Butterfly Valves

SEATING/UNSEATING TORQUES(NM)

ANSI 150 F220/F221 Series Standard

Valve Size		System Pressure △P(MPa)							
		Less Than1.0		1.0-1.4		1.4-1.7		1.7-2.0	
mm	ins	Retainer Upstream	Retainer Downstream	Retainer Upstream	Retainer Downstream	Retainer Upstream	Retainer Downstream	Retainer Upstream	Retainer Downstream
65	2½	19	23	21	27	24	32	24	34
80	3	21	25	24	29	25	34	26	36
100	4	31	36	34	42	36	47	36	52
125	5	62	73	72	90	80	106	82	118
150	6	78	92	87	108	93	124	95	136
200	8	145	169	158	192	169	220	177	237
250	10	271	316	298	373	319	425	324	463
300	12	395	463	452	565	497	667	514	7 34
350	14	610	712	669	836	723	960	751	1073
400	16	S70	1028	1021	1277	1141	1525	1186	1695
450	18	1345	1582	1537	1921	1695	2260	1740	2486
500	20	1729	2034	1932	2407	2090	2791	2135	3051
600	24	2785	3277	3127	3909	3390	4531	3480	4971
650	26	2785	3277	3127	3090	3390	4531	3480	4971
700	28	3938	4632	4248	5310	5005	6689	5028	7175
750	30	4514	5310	4854	6067	5740	7649	5932	8474
800	32	5084	5988	5514	6892	6508	8677	6644	9491
850	34	5084	5988	5514	6892	6508	8677	6644	9491
900	36	6101	7231	7321	9152	8304	11073	8700	12428

ANSI 300 F230/F231 Series Standard

Valve Size		System Pressure △P(MPa)							
		Less Than 1.0		1.0- 2.4		2.4 - 3.8		3.8 - 5.1	
mm	ins	Retainer Upstream	Retainer Downstream	Retainer Upstream	Retainer Downstream	Retainer Upstream	Retainer Downstream	Retainer Upstream	Retainer Downstream
65	21/2	19	23	33	41	43	58	53	76
80	3	21	25	35	43	45	60	55	78
100	4	31	36	47	60	62	82	79	113
125	5	62	73	113	141	157	209	203	288
150	6	96	113	149	186	194	260	237	339
200	8	179	209	280	350	365	486	418	599
250	10	316	373	497	621	644	859	791	1130
300	12	430	565	750	938	975	1299	1186	1695
350	14	825	972	1211	1514	15479	2068	1740	2486
400	16	1345	1582	1943	2429	2463	3277	3005	4293
450	18	1729	2034	2440	3051	3062	4079	3559	5084
500	20	2305	2712	3322	4147	4180	5570	4824	6892
600	24	3649	4293	5152	6440	6497	8666	7513	10734
750	30	7683	9039	11479	14349	14575	19433	16609	23727
900	36	11428	13445	16270	20337	20337	27116	22936	32766

The values in Torque Charts for standard valves are for normal, wet media applications. Note that seating/unseating torque is always lower with the seat retainer installed upstream.If the media is lubricious, such as oil. the values in the Torque Charts should be multiplied by 0.9. If the media is abrasive or diyand thus a severe application, the valves in charts should be multiplied by 1.3. For firesafe valves, the operating torque should be taken directly from the charts, with due consideration for the location of the seat retainer. No reduction or multiplication factors should be used to determine torque of firesafe valves. These torque figures are seating and unseating torques. Dynamic torques should also be determined in the event dynamic torques are greater than the seating/unseating torques.

ANSI 150 F220B/F221B Series Fire Safe

Valve Size		System Pressure △P(MPa)							
		Less Than 1.0		1.0-1.4		1.4-1.7		1.7-2.0	
mm	ins	Retainer Upstream	Retainer Downstream	Retainer Upstream	Retainer Downstream	Retainer Upstream	Retainer Downstream	Retainer Upstream	Retainer Downstream
65	21/2	77	81	78	87	79	92	80	95
80	3	85	90	86	94	87	98	88	102
100	4	96	102	99	111	101	119	103	124
125	5	160	169	166	184	169	198	181	209
150	6	188	198	191	212	203	226	215	237
200	8	294	316	304	333	311	350	323	362
250	10	441	475	463	512	460	549	497	576
300	12	734	780	746	830	757	830	780	915
350	14	1390	1469	1424	1582	1491	1751	1537	1921
400	16	1717	1808	1785	1989	1842	2169	1844	2305
450	18	2034	2147	2135	2373	2147	2542	2169	2712
500	20	2463	2599	2542	2825	2689	3164	3254	4067
600	24	3503	3728	3864	4293	4226	4971	5694	7118

ANSI 300 F230B/F231B Series Fire Safe

Valve Size		System Pressure △P(MPa)							
		Less Than 1.0		1.0- 2.4		2.4 - 3.8		3.8 - 5.1	
mm	ins	Retainer Upstream	Retainer Downstream	Retainer Upstream	Retainer Downstream	Retainer Upstream	Retainer Downstream	Retainer Upstream	Retainer Downstream
65	21/2	77	81	88	97	97	114	99	124
80	3	88	90	97	107	106	124	108	136
100	4	96	102	122	136	144	169	154	192
125	5	160	169	234	260	298	350	325	407
150	6	226	237	295	328	356	418	389	4466
200	8	339	356	437	486	528	621	560	701
250	10	780	825	1037	1152	1248	1469	1356	1695
300	12	1181	1243	1491	1661	1767	2079	1898	2373
350	14	2039	2147	2440	2712	2497	2938	3774	3164
400	16	3005	3164	3864	4293	4226	4971	4429	5536

ANSI 600 F260/F261 Series Standard

Valve Size		System Pressure △P(MPa)							
		Less Than1.0		1.0-4.1		4.1-7.2		7.2-10.1	
mm	ins	Retainer Upstream	Retainer Downstream	Retainer Upstream	Retainer Downstream	Retainer Upstream	Retainer Downstream	Retainer Upstream	Retainer Downstream
80	3	45	54	79	98	102	136	113	164
100	4	96	108	145	181	179	237	215	305
150	6	164	192	289	362	390	520	463	655
200	8	395	463	651	813	859	1141	1107	1582
250	10	802	938	1085	1356	1525	2034	1898	2712
300	12	1141	1333	1265	1582	2202	2938	2373	3390
300	14	1345	1582	2169	2712	2802	3728	3390	4858
400	16	1582	1864	3209	4011	3898	5197	5141	7344
450	18	1830	2147	3887	4858	5536	7344	7276	10395
500	20	2407	2825	5152	6440	7457	9943	9830	14010
600	24	7494	4406	8022	10056	10621	14123	13897	19772
750	30	8022	9378	15479	19433	20337	27116	24518	35025

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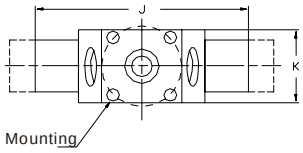
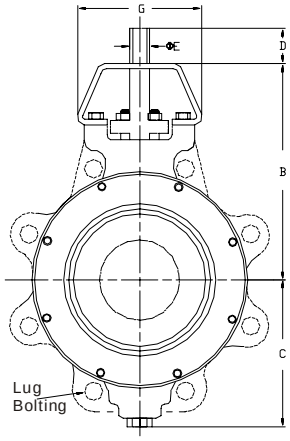
H.P. Butterfly Valves



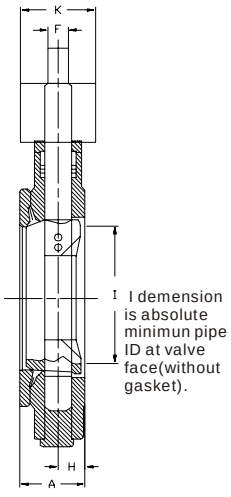


ANSI 150 F220 Series

UNIT:mm

F221 Series Weights:kg

Valve Size		A	B	C	D	E	F	G	H	I	Mounting Data			J	K	Lug Bolting Data			Wafer	Lug
mm	ins										PCD	No. Hole	Hole Dia.			PCD	No. Hole	Threads UNC-2B		
65	21/2	48	162	97	32	16	11	111	20	58	70	4	9.6	121	64	140	4	5/8-11	6	6
80	3	48	168	104	32	16	11	111	20	73	70	4	9.6	133	64	152	4	5/8-11	7	7
100	4	52	191	120	32	16	11	in	19	94	70	4	9.6	171	64	191	8	5/8-11	9	10
125	5	57	191	129	32	19	13	130	24	122	70	4	9.6	191	114	216	8	3/4-10	12	15
150	6	57	203	141	32	19	13	130	24	149	70	4	9.6	219	114	241	8	3/4-10	15	21
200	8	61	241	176	32	22	16	130	24	198	125	4	13.5	273	114	298	8	3/4-10	21	24
250	10	70	273	217	51	30	22	155	27	248	125	4	13.5	332	114	362	12	7/8-9	36	43
300	12	78	311	259	51	30	22	155	29	298	125	4	13.5	394	114	432	12	7/8-9	56	62
350	14	95	368	304	51	35	10x10	197	36	328	125	4	13.5	445	165	476	12	1-8	94	103
400	16	104	451	329	64	50	12x10	264	42	373	165	4	20.5	503	165	540	16	1-8	142	156
450	18	117	508	359	64	50	12x10	264	47	422	165	4	20.5	544	165	578	16	1 1/8-8	182	200
500	20	128	578	388	102	64	15.8x15.8	264	52	470	165	4	20.5	601	165	635	20	1 1/8-8	239	274
600	24	152	635	463	102	76	19x19	391	62	572	254	8	17.0	711	298	749	20	1 1/4-8	369	422
650	26	165	635	488	102	76	19x19	391	71	568	254	8	17.0	749	298	806	24	1 1/4-8	440	581
700	28	165	679	522	152	76	19x19	391	71	672	254	8	17.0	823	298	864	28	1 1/4-8	506	590
750	30	191	730	543	133	89	22.3x15.8	495	79	719	298	8	20.5	876	343	914	28	1 1/4-8	669	789
800	32	191	762	568	133	88.9	22.3x15.8	495	82	767	298	8	20.5	956	343	978	28	1 1/2-8	748	934
850	34	197	762	606	133	89	22.3x15.8	495	85	765	298	8	20.5	1006	343	1029	32	1 1/2-8	857	1061
900	36	210	838	642	133	88.9	22.8x15.8	495	92	864	298	8	20.5	1033	343	1086	32	1 1/2-8	889	1179

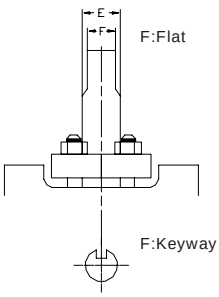


ANSI 300 F230 Series

UNIT:mm

F231 Series Weights:kg

Valve Size		A	B	C	D	E	F	G	H	I	Mounting Data			J	K	Lug Bolting Data			Wafer	Lug
mm	ins										PCD	No. Hole	Hole Dia.			PCD	No. Hole	Threads UNC-2B		
65	21/2	48	162	97	32	16	11	111	20	58	70	4	10	121	64	149	8	3/4-10	6	7
80	3	48	168	104	32	16	11	111	20	73	70	4	10	133	64	168	8	3/4-10	7	8
100	4	52	191	120	32	16	11	111	19	94	70	4	10	171	64	200	8	3/4-10	9	10
125	5	57	203	130	32	19	13	130	24	122	70	4	10	210	114	235	8	3/4-10	15	18
150	6	61	222	159	32	22	16	130	25	146	125	4	13	226	114	270	12	3/4-10	18	24
200	8	72	254	192	51	30	22	155	28	192	125	4	13	278	114	330	12	7/8-9	31	40
250	10	83	289	238	51	35	10x10	155	33	240	125	4	13	337	114	387	16	1-8	51	65
300	12	92	343	277	51	35	10x10	197	36	287	125	4	13	395	165	451	16	1 1/8-8	78	98
350	14	118	464	318	64	50	12x10	264	54	289	165	4	21	455	165	515	20	1 1/8-8	149	201
400	16	136	533	358	102	64	15.8x15.8	264	64	363	165	4	21	506	165	572	20	1 1/4-8	206	269
450	18	152	533	392	102	64	15.8x15.8	391	67	381	254	8	17	559	298	629	24	1 1/4-8	274	388
500	20	161	565	427	102	76	19x19	391	74	419	254	8	17	612	298	686	24	1 1/4-8	354	476
600	24	182	667	503	133	89	22.2x15.8	495	86	525	298	8	21	734	343	813	24	1 1/2-8	572	780
750	30	228	819	594	133	114	25.4x19	610	111	681	356	8	32	892	406	997	28	1 3/4-8	1025	1365
900	36	271	821	689	152	127	31.8x22.2	610	133	842	356	8	32	1067	406	1168	32	2-8	1506	1996



Keyway is applicable on valve:
ANSI 150 350mm and above
ANSI 300 250mm and above
ANSI 600 200mm and above

ANSI 600 F260 Series

UNIT:mm

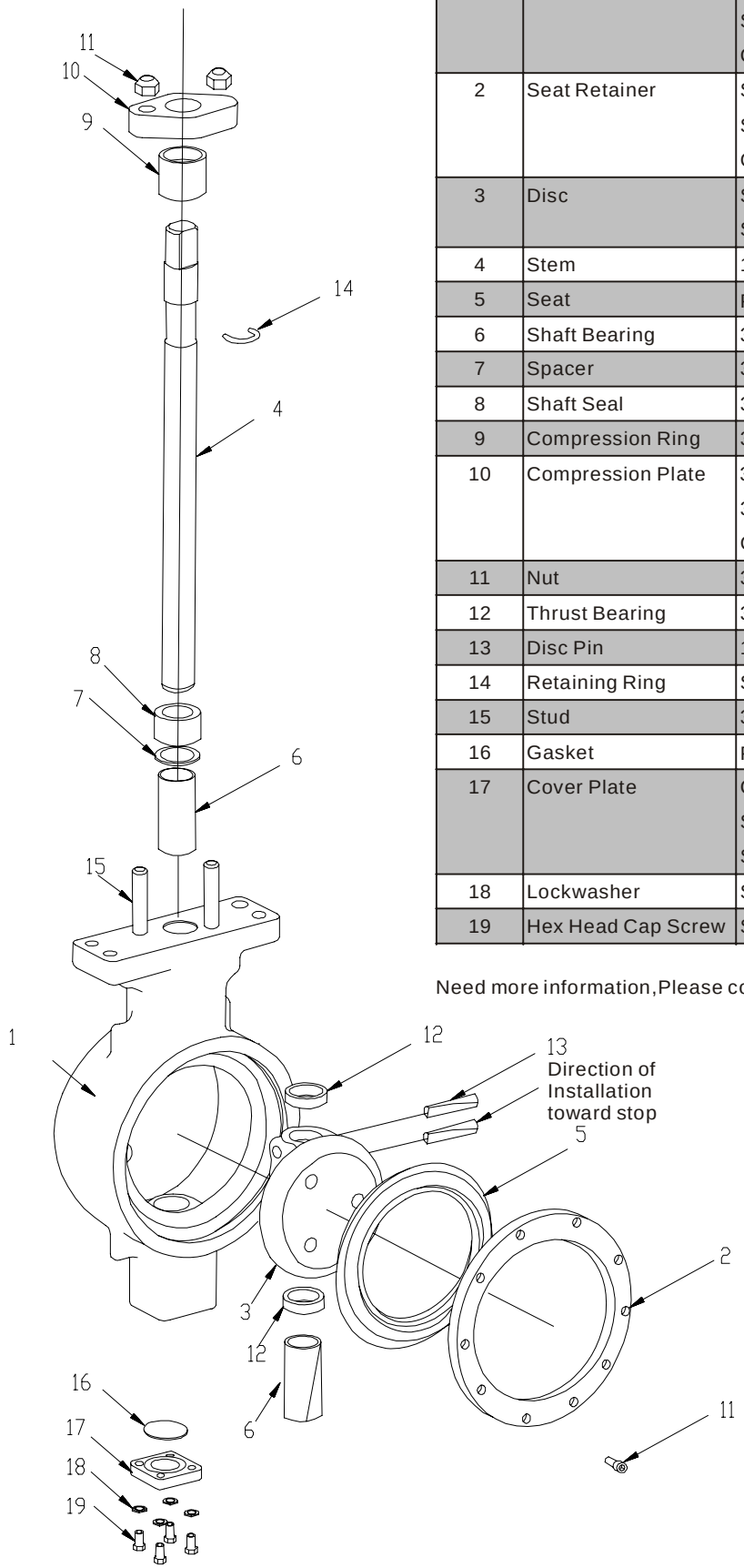
F261 Series Weights:kg

Valve Size		A	B	C	D	E	F	G	H	I	Mounting Data			J	K	Lug Bolting Data			Wafer	Lug
mm	ins										PCD	No. Hole	Hole Dia.			PCD	No. Hole	Threads UNC-2B		
80	3	56	178	145	32	19	13	130	23	70	70	4	10	147	114	168	8	3/4-10	11	14
100	4	70	216	179	32	22	16	130	29	90	125	4	13	178	114	216	8	7/8-9	19	26
150	6	85	248	218	51	30	22	155	38	137	125	4	13	248	114	292	12	1-8	36	54
200	8	107	311	274	51	35	10x10	197	48	175	165	4	21	300	165	349	12	1 1/8-8	70	103
250	10	122	432	371	64	50	12x10	264	55	216	165	4	21	358	165	432	16	1 1/4-8	127	181
300	12	140	464	399	64	50	12x10	264	64	257	165	4	21	418	165	489	20	1 1/4-8	175	248
350	14	155	502	444	102	64	15.8x15.8	391	74	276	254	8	17	458	298	527	20	1 3/8-8	249	340
400	16	178	552	493	102	76	19x19	391	87	321	254	8	17	518	298	603	20	1 1/2-8	341	499
450	18	197	603	535	133	89	22.3x15.8	495	91	371	298	8	21	588	843	654	20	1 5/8-8	494	667
500	20	216	654	590	133	102	25.4x19	495	98.6	416	298	8	21	639	343	724	24	1 5/8-8	617	839
600	24	232	787	704	152	127	31.7x22.3	610	100	505	356	8	32	746	406	838	24	1 7/8-8	980	1315
750	30	286	914	800	152	152	38.1x25.4	660	127	673	406	8	38	914	475	1022	28	2-8	1588	2132

Materials Of Contruction

Part No.	Part Name	Materials
1	Body	Stainless Steel ASTM A351 GR CF8 Stainless Steel ASTM A351 GR CF8M Carbon Steel ASTM A216 GR WCB/A516 Gr70
2	Seat Retainer	Stainless Steel ASTM A351 CF8 Stainless Steel ASTM A351 CF8M/A240-316 Carbon Steel ASTM A216 GR WCB/A516 Gr70
3	Disc	Stainless Steel ASTM A351 GR CF8 Stainless Steel ASTM A351 GR CF8M
4	Stem	17-4P.H. ASTM A564-630
5	Seat	PTFE、FILLED PTFE (RPTFE)
6	Shaft Bearing	316 S/S FILLED PTFE(RPTFE)
7	Spacer	316 S/S
8	Shaft Seal	316 S/S ASTM 276-316
9	Compression Ring	316 S/S ASTM 276-316
10	Compression Plate	316 S/S ASTM A351 GR CF8 316 S/S ASTM A351 GR CF8M Carbon Steel ASTM A216 GR WCB/A516 Gr70
11	Nut	316 S/S
12	Thrust Bearing	316 S/S
13	Disc Pin	17-4P.H. ASTM A564-630
14	Retaining Ring	Stainless Steel
15	Stud	316 S/S ASTM A193-B8M
16	Gasket	PTFE、Flexible Graphite
17	Cover Plate	Carbon Steel ASTM A216 GR WCB/A516 Gr70 Stainless Steel ASTM A351 GR CF8 Stainless Steel ASTM A351 GR CF8M
18	Lockwasher	Stainless Steel
19	Hex Head Cap Screw	Stainless Steel

Need more information,Please contact with GUVA manufacturers and leaders



ORDERING INFORMATION

(H. P. Butterfly Valve)ORDERING FIGURE NO. CODE SYSTEM					
Valve Size	I TYPE	II Body Material	III Seat	IV Disc	V Method of Actuation
2 1/2 3 4 5 6 8 10 12 14 16 18 20 24 26 28 30 36	F220(B)/F221(B) F230(B)/F231(B) F260(B)/F261(B) (B)-Fire Safe	CS-Carbon Steel S4-304Stainless Steel S6-316Stainless Steel AB-Aluminum Bronze	P-PTFE R-RPTFE	S4-304Stainless Steel S6-316Stainless Steel AB-Aluminum Bronze	O-None H-Handle GA-Gear Actuator PA-Pneumatic Actuator EA-Electric Actuator

Ex: To order 6″ Size Type F220 316Stainless Steel with RPTFE Seat, 316Stainless Steel Disc, Pneumatic Actuator as Method of actuation , The figure nunber should be written as follows: 6-F220-S6-R-S6-PA

(1)	(2)	(3)	(4)	(5)	(6)
6	F220	S6	R	S6	PA
Size	I	II	III	IV	V

Need more information, Consult GUVA manufacturers and Factories.

CONCEPT OF VALVE SIZING COEFFICIENT(Cv VALUES)

While vave sizes will ordinarily be determined by pipe size in the system,it is frequently necessary to calculate the sizing valve required to assure accurate throttling or control.

The valve sizing constants(Cv) given in the table below represent the liquid flow in gallons per minute of water for a 1psig pressure drop across the valve.

$$C_v = Q\sqrt{\frac{G}{\Delta P}}$$

Q: Flow in gallons per minute(gpm)
G: Specific Gravity liquid(Water:1.0)
ΔP: Pressure drop across valve(psi)

Some UNITS to Refer...

1″=25.4mm
1psi=6.895KPa=0.06895bar
1Ib.in=0.11298NM
1GPM(water)=63X10^{-6}m^3/s
1FPS=0.3048m/s

Ex:To find valve size(fully open) for a flow of 6,000 gpm of liquid with a specific gravity of 1,when the valve pressure drop is 5 psi:

$$6000\sqrt{\frac{1}{5}} = 6000 \times 2.236 = 2683$$

Refer to Cv table before(Page 2),You can choose a size 8",Class150 F220 with a Cv of 2780;Also, You can calculate one of them(Cv、 ΔP、G、Q),if you know other three.

All the instructions, technical information and specifications in this article are only suitable for general application. As for the special requirements material selection you need, please consult GUVA manufacturer.

Guva International, Inc

Guva® U.S. Valves and Flow Controls Manufacturers

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