



CENTRIC Butterfly Valve

RUBBER SEATED
VF - 7 Series

*LEVER · GEAR · PNEUMATIC
ELECTRIC OPERATED*

ALLOWABLE PRESSURE

*1.5" - 12.0" : 230 psig
14.0" - 40.0" : 150 psig*



**INVESTMENT CAST
STAINLESS STEEL BODY**

1.5" - 24" (40mm - 600mm)



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VALUE

Value in Valving

DESIGN DETAILS AND SPECIFICATIONS

VF-730 (WAFER TYPE)
VF-733 (LUG TYPE)
VF-737 (FLANGE TYPE)

FACE TO FACE: Valve body designed to meet ISO 5752 table 5 short.

TOP WORKS:

24" and below, valve mounting flange and stem shall be per ISO 5211.

28" and above, valve mounting flange per ISO 5211, stem shall be round keyed.

FLANGE REQUIREMENT:

VF-730, VF-733: ANSI 125/150. BS Table E. JIS 10K. DIN PN10. DIN PN16.

All wafers have locating holes for ease of installation.

VF-737: ANSI 150. JIS10K. DIN PN10. DIN PN16

PRESSURE RATING:

Bi-directional bubble-tight shut off to 16bar (230psi)-----1.5"~12.0"
10bar (150psi)-----14.0"~40.0"

and tested to 110% of full rating 18bar (260psi)-----1.5"~12.0"
11bar (160psi)-----14.0"~40.0"

SHELL TESTING:

The body strength can stand 150% of full rating.

24bar (340psi)-----1.5"~12.0"
15bar (220psi)-----14.0"~40.0"

INSTALLATION INSTRUCTIONS:

The valve is designed for use between all types of flat or raised face flanges.

DO NOT USE FLANGE GASKETS. The butterfly valve design eliminates the need for gaskets. For proper installation, the space between flanges must be sufficient to permit valve insertion without disturbing the rubber liner flange seal. Note that the disc sealing edge is 45° from the flat of the shaft, but inline with the scribed line. Rotate the stem to position the disc within the body, place the valve between flanges and hand-tighten the bolts. **SLOWLY OPEN** the valve counterclockwise to check for adequate disc clearance. **RETURN THE DISC TO 10% OPEN POSITION** and cross tighten all bolts, again check for adequate disc clearance.

STEM RETAINING MECHANISM:

The stem is retained in the body by means of a special "Q" type design when the valve size is under 14.0", and hence the stem can be removed from the body and disc without any special tools.

*Unless you intend to disassemble the valve, do not position the disc in the 135° position.

Anti-Condensed: (On customer's requirement)

Cv Values-Valve Sizing Coefficient.

Size		Disc Angle (Open Degree)								
mm	inch	10°	20°	30°	40°	50°	60°	70°	80°	90°
40	1 1/2	0.8	2.8	8.1	16.6	26	42	69	95	132
50	2	1.3	4.4	11.9	25.7	44	70	117	154	226
65	2 1/2	2.3	8.8	21.3	41	71	111	219	281	369
80	3	2.9	11.5	30	56	97	147	250	395	497
100	4	4.4	17	46	84	139	259	422	709	846
125	5	7.6	28	73	138	254	461	701	1214	1454
150	6	12	48	111	205	381	634	1021	1474	2175
200	8	22	75	193	358	670	1164	1833	2703	3655
250	10	33	118	287	528	978	1711	2636	3810	5566
300	12	40	151	365	720	1330	2486	3800	5839	8258
350	14	55	191	456	930	1753	3010	4657	6726	9733
400	16	73	270	594	1260	2308	3956	6300	9476	13406
450	18	88	300	727	1413	2709	4592	7407	11085	15926
500	20	121	405	1005	1980	3611	6257	9960	15338	21935
600	24	163	578	1349	2795	5225	8846	13976	21163	29504
700	28	223	771	1959	3772	7008	12471	20407	29477	43081
750	30	238	819	2079	4001	7434	13229	21649	31271	45703
800	32	301	1138	2693	5304	9635	16524	26935	36987	53814
900	36	385	1466	3452	6859	12648	21275	34815	50185	71421
1000	40	597	2245	5214	9309	15788	25669	42120	63939	80583
1050	42	687	2411	5352	9826	16665	27095	44459	67490	85058
1100	44	823	3082	7109	10230	19436	30924	50837	79709	92686
1200	48	1134	4256	9481	16591	25865	41321	67652	105788	124357

Cv value denotes the flow rate in US gallon/min for water at 70° F under a pressure differential 1 psig. When required $K_v = C_v/1.17$

Expected Seating/ Unseating Torque (in Lbs)

Size		Lubricating (Non-corrosive) ΔP (psig)				Dry (Non-Lubricating) ΔP (psig)			Reduced Disc Diameter P (90 psig)	
mm	inch	45	90	150	230	45	90	150	Lubricating	Dry
40	1 1/2	133	151	169	204	169	186	204	93	118
50	2	133	151	169	204	169	186	204	93	118
65	2 1/2	159	177	195	231	195	213	239	112	136
80	3	248	275	301	363	301	337	372	174	211
100	4	328	363	399	478	399	443	496	229	279
125	5	540	602	673	806	673	744	823	378	471
150	6	1027	1124	1239	1363	1116	1222	1346	719	781
200	8	1514	1682	1868	2239	1868	2071	2301	1060	1308
250	10	2434	2709	3009	3611	3009	3346	3717	1705	2108
300	12	3372	3744	4160	4992	4160	4620	5133	2362	2914
350	14	4824	5355	5948		5948	6611	7346	3379	4166
400	16	6443	7160	7957		7957	8842	9824	4514	5574
450	18	8072	8965	9965		9966	11072	12302	5654	6981
500	20	10045	11160	12399		12399	13780	15311	7037	8686
600	24	11727	13027	14479		14479	16090	17877	8215	10143
700	28	20701	23002	25559		25559	23400	31560	14502	17905
750	30	23081	25648	28497		28497	31666	35179	16169	19964
800	32	26621	29577	32860		32860	36507	40560	18649	23020
900	36	33878	36639	42826		41826	46472	51631	23733	26301
950	38	39073	43542	58499		48233	53543	62835		
1000	40	45047	50268	67437		55578	62039	83279	28755	35501
1050	42								33765	41682
1100	44								34124	42135
1200	48								43015	53108

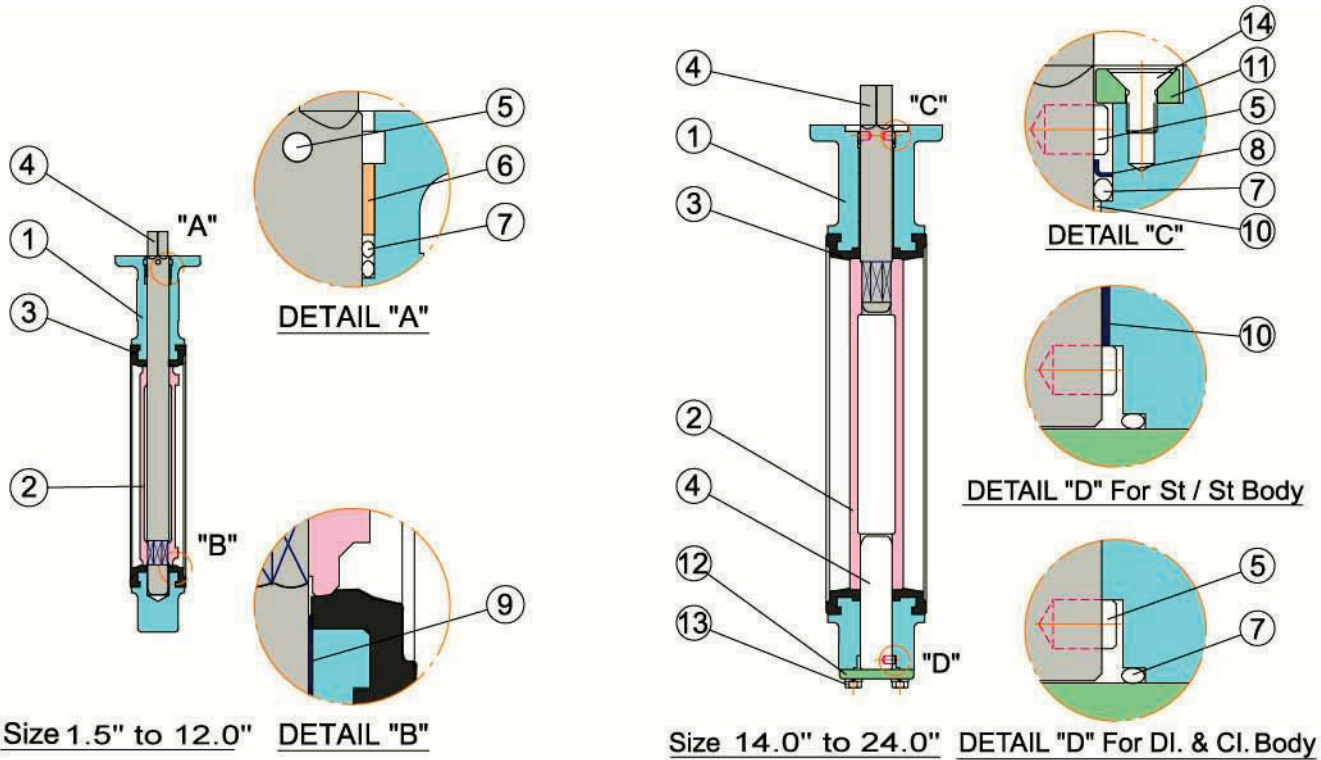
To Use The Torque Chart, Note The Following

- 1) Seating/Unseating torque values above include friction bearing torque for stated Δ P.
- 2) Do not apply a safety factor to above torque values when determining actuator output torque requirement.

MATERIALS

1.5"~24.0"

VF-730 (WAFFER TYPE)
VF-733 (LUG TYPE)
VF-737 (FLANGE TYPE)



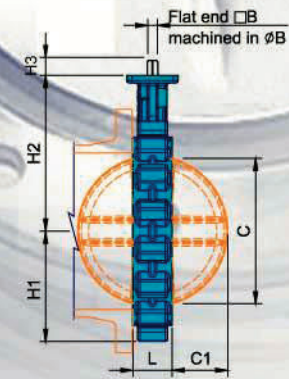
No.	Name	Materials	Specifications		Remark
			JIS	ASTM	
1	Body	CAST IRON	FC 200	A126 CI. B	
		DUCTILE IRON	FCD 400	A395	
		STAINLESS STEEL	SCS 13A	A351 Gr. CF8	
			SCS 14A	A351 Gr. CF8M	
2	DISC	DUCTILE IRON	FCD 400	A395	Nylon 11 coated
		STAINLESS STEEL	SCS 13A	A351 Gr. CF8	
			SCS 14A	A351 Gr. CF8M	
		ALU-BRONZE	ALBC2	B148 C95400	
3	SEAT	NBR (NITRILE)			-10° ~ 80C° (14° ~ 176°F)
		EPDM			-20° ~ 120C° (-4° ~ 248°F)
		WHITE EPT		100PSIG MAX	-20° ~ 140C° (-4° ~ 284°F)
		NEOPRENE (CR)			0° ~ 80C° (32° ~ 176°F)
		SILICON		100PSIG MAX	-20° ~ 180C° (-4° ~ 356°F)
		HYPALON (CSM)			-20° ~ 135C° (-4° ~ 275°F)
		VITON		100PSIG MAX	-18° ~ 204C° (-0.4° ~ 400°F)
4	STEM	STAINLESS STEEL	SUS 410	A 182 Gr. F6A	
			SUS 304	A 182 Gr. F304	
			SUS 316	A 182 Gr. F316	
5	PIN	STAINLESS STEEL	SUS 304	A 182 Gr. F304	
6	BUSHING	DELTRIN			
7	O-RING	NBR (NITRILE)			
8	THRUST RING	STAINLESS STEEL	SUS 304	A 240 Gr. 304	
9	BUSHING	BRONZE	BC6	B62	For cast iron and ductile iron body
10	BUSHING	RTFE+STAINLESS STEEL	RTFE+SUS316	RTFE+A240 Gr. 316	For stainless steel body
11	UPPER COVER	CAST IRON	FC 200	A126 CI. B	For cast iron and ductile iron body
		STAINLESS STEEL	SCS 13A	A351 Gr. CF8	For stainless steel body
12	BOTTOM COVER	CAST IRON	FC 200	A126-B	For cast iron and ductile iron body
		STAINLESS STEEL	SCS 13A	A351 Gr. CF8	For stainless steel body
13	BOLT	STEEL			
14	BOLT	STEEL			

DIMENSIONS

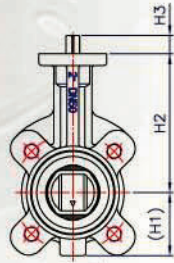
VF-733 LUG TYPE

1.5"~24.0"

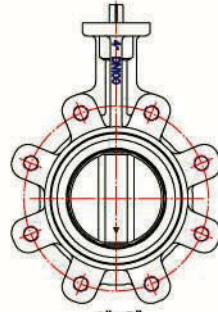
PRESSURE RATING:
1.5"~12.0" 230psig
14.0"~24.0" 150psig



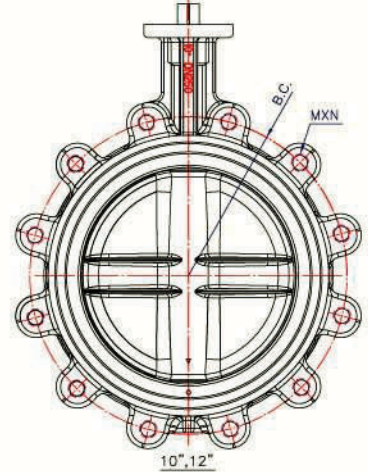
Size 1.5" to 12"



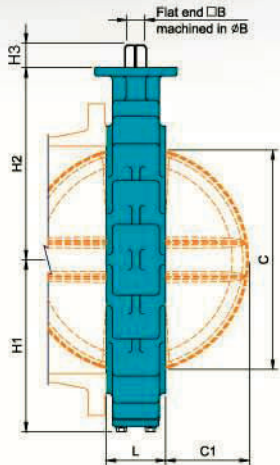
1.5"~3"



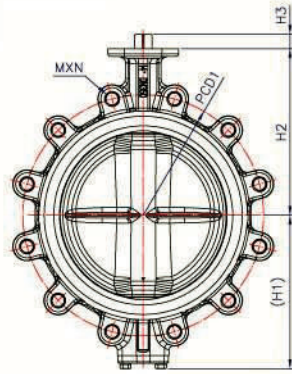
4"~8"



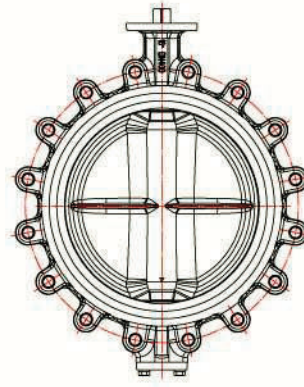
10", 12"



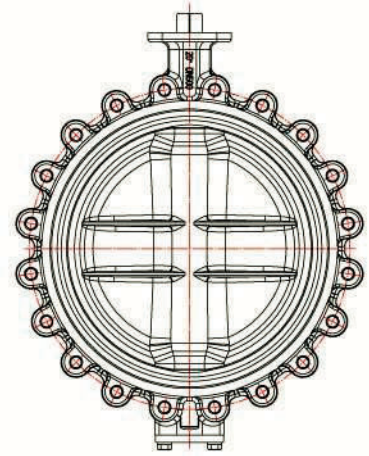
Size 14" to 24"



14"



16", 18"

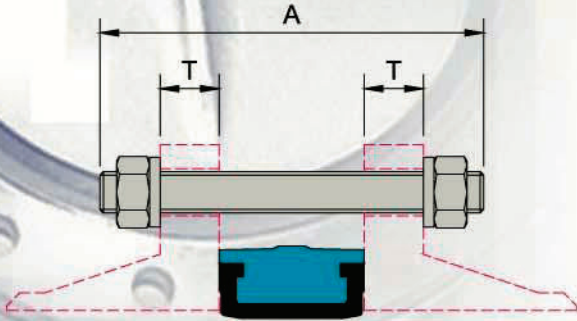


20", 24"

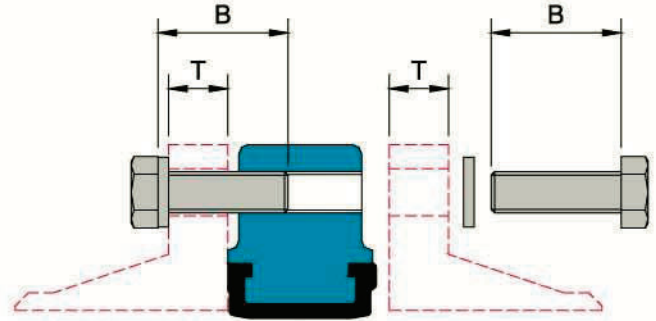
Size		Face to Face L	Mounting Flange (ISO-5211)			Shaft End			Disc Clearance		Weight lbs		
mm	inch		H1	H2	B.C.	Type	PCD	øB	□B	H3		C	C1
40	1 1/2	1.30	2.36	4.72	3.88	FO7	2.76	0.55	0.43	0.75	1.34	0.28	4.84
50	2	1.69	2.56	5.63	4.75	FO7	2.76	0.55	0.43	0.75	1.54	0.31	7.48
65	2 1/2	1.81	2.80	6.10	5.50	FO7	2.76	0.55	0.43	0.75	2.17	0.51	8.80
80	3	1.81	3.03	6.38	6.00	FO7	2.76	0.55	0.43	0.75	2.72	0.75	9.90
100	4	2.05	3.50	7.13	7.50	FO7	2.76	0.55	0.43	0.75	3.58	1.06	16.72
125	5	2.20	4.41	7.76	8.50	FO7	2.76	0.71	0.55	0.75	4.53	1.42	20.90
150	6	2.20	4.84	8.27	9.50	FO7	2.76	0.71	0.55	0.75	5.51	1.85	22.88
200	8	2.36	5.91	9.45	11.75	F10	4.02	0.87	0.67	0.94	7.32	2.68	38.50
250	10	2.68	7.05	11.26	14.25	F10	4.02	0.98	0.75	0.94	9.41	3.54	58.30
300	12	3.07	8.50	12.17	17.00	F10	4.02	1.10	0.87	0.94	11.34	4.37	95.70
350	14	3.07	11.93	12.95	18.75	F12/14	4.92/5.51	1.38	1.06	1.14	12.80	5.04	127.60
400	16	4.02	13.19	14.21	21.25	F12/14	4.92/5.51	1.38	1.06	1.14	14.76	5.63	178.20
450	18	4.49	14.29	14.47	22.75	F14/16	5.51/6.50	1.89	1.42	1.50	16.65	6.38	242.00
500	20	5.00	15.63	16.81	25.00	F14/16	5.51/6.50	1.89	1.42	1.50	18.62	7.17	341.00
600	24	6.06	18.07	19.37	29.50	F16	6.50	2.36	1.81	1.89	22.05	8.43	470.80

BOLTING FOR INSTALLATION

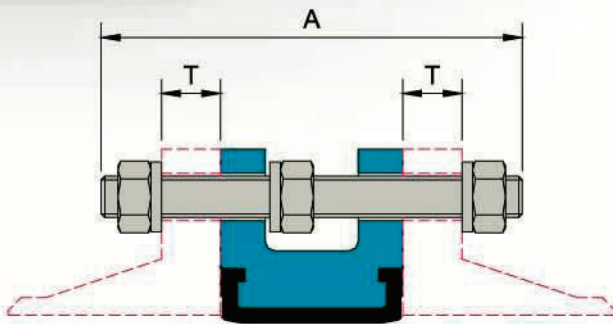
VF-730 (WAFFER TYPE)
VF-733 (LUG TYPE)
VF-737 (FLANGE TYPE)



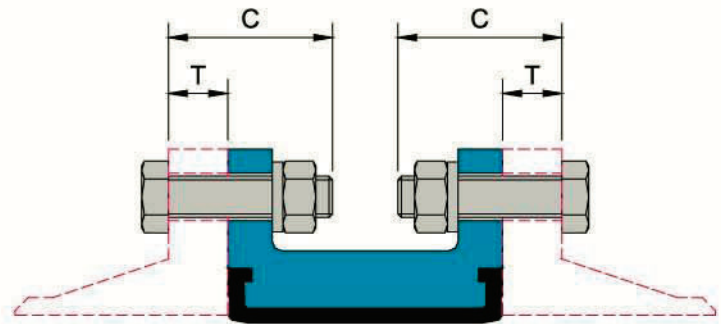
VF-730 WAFFER TYPE
1.5" to 36.0"



VF-733 FULL LUG TYPE
1.5" to 24.0"



VF-737 FLANGE TYPE
20.0"

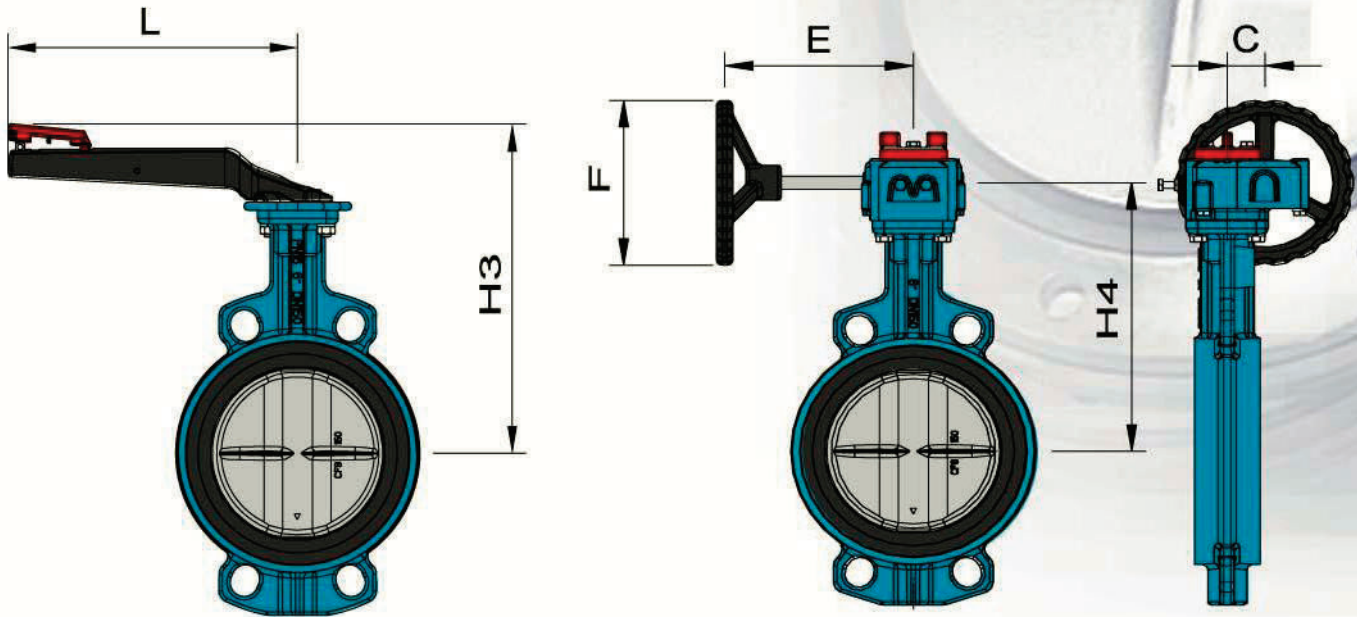


VF-737 FLANGE TYPE
24.0" to 40.0"

Size		PN10					PN16					ASME B 16.50 CLASS 150 ASME B 16.47 CLASS 150 SERIES A				JIS 10K					
mm	inch	Bolt Size	A	B	C	T	Bolt Size	A	B	C	T	Bolt Size	A	B	C	T	Bolt Size	A	B	C	T
40	1 1/2	M16	115	35		18	M16	115	35		18	1/2 - 12X4	4.1	1.38		0.71	M16	110	35		16
50	2	M16	130	40		20	M16	130	40		20	5/8 - 11X4	4.9	1.57		0.75	M16	120	40		116
65	2 1/2	M16	130	45		20	M16	130	45		20	5/8 - 11X4	5.3	1.77		0.87	M16	125	45		18
80	3	M16	130	45		20	M16	130	45		20	5/8 - 11X4	5.5	1.77		0.94	M16	125	45		18
100	4	M16	140	50		22	M16	140	50		22	5/8 - 11X8	5.7	1.97		0.94	M16	135	45		18
125	5	M16	145	50		22	M16	145	50		22	3/4 - 10X8	6.1	2.17		0.94	M20	145	55		20
150	6	M20	160	55		24	M20	160	55		24	3/4 - 10X8	6.3	2.17		0.98	M20	155	55		22
200	8	M20	165	55		24	M20	160	55		24	3/4 - 10X8	6.7	2.36		1.1	M20	160	55		22
250	10	M20	175	60		26	M24	180	60		26	7/8 - 9X12	7.3	2.56		1.18	M22	175	60		24
300	12	M20	185	60		26	M24	195	70		28	7/8 - 9X12	7.9	2.76		1.26	M22	185	60		24
350	14	M20	185	60		26	M24	200	70		30	1 - 8X12	8.5	2.95		1.38	M22	185	65		26
400	16	M24	220	65		26	M27	235	80		32	1 - 8X16	9.7	3.15		1.46	M24	225	70		28
450	18	M24	235	70		28	M27	265	85		40	1 1/8 - 8X16	10	3.35		1.57	M24	240	70		30
500	20	M24	250	70		28	M30	290	100		44	1 1/8 - 8X20	11	3.54		1.69	M24	250	70		30
600	24	M27	295	80	100	34	M33	345	110	130	54	1 1/4 - 8X20	13	3.94	4.72	1.89	M30	295	80	100	32
700	28	M27	295		100	30	M33	325		120	38		15		5.91	2.8	M30	310		110	34
750	30											1 1/4 - 8X28	17		5.91	2.95	M30	335		110	36
800	32	M30	330		110	32	M36	355		120	38		18		6.69	3.19	M30	335		110	36
900	36	M30	345		110	34	M36	370		130	40	1 1/2 - 8X32	19		7.09	3.54	M30	355		120	38
950	38												19		7.28	3.43					
1000	40	M33	365		125	34	M39	395		140	42		19		7.48	3.54	M36	385		135	40

LEVER & GEAR OPERATED

VF-730 (WAFER TYPE)
VF-733 (LUG TYPE)
VF-737 (FLANGE TYPE)



Size		Operator Series No.	Lever Operator		Gear Operator				Handwheel Turns ON/OFF	Mounting Flange (ISO 5211)	
mm	inch		H3	L	H4	C	E	F		N	Type
40	1 1/2	L 7A	7.68	7.87						F07	2.76
		C 07			6.18	1.61	6.1	5.91	10		
50	2	L 7A	8.58	7.87						F07	2.76
		C 07			7.09	1.61	6.1	5.91	10		
65	2 1/2	L 7A	9.06	7.87						F07	2.76
		C 07			7.56	1.61	6.1	5.91	10		
80	3	L 7A	9.33	7.87						F07	2.76
		C 07			7.83	1.61	6.1	5.91	10		
100	4	L 7A	10.08	7.87						F07	2.76
		C 07			8.58	1.61	6.1	5.91	10		
125	5	L 7B	10.71	9.84						F07	2.76
		C 07			9.21	1.61	6.1	5.91	10		
150	6	L 7B	11.22	9.84						F07	2.76
		C 07			9.72	1.61	6.1	5.91	10		
200	8	L10	12.76	13.98						F10	4.02
		C10			11.06	2.48	7.68	7.87	9		
250	10	L 10	14.57	13.98						F10	4.02
		C 10			12.87	2.48	7.68	7.87	9		
300	12	L 10	15.47	13.98						F10	4.02
		C 10			13.78	2.48	7.68	7.87	9		
350	14	C 12			14.57	2.4	9.13	12.2	9	F12	4.92
400	16	C 12			15.82	2.4	9.13	12.2	9	F12	4.92
450	18	C 14			17.52	3.19	11.02	15.75	13	F14	5.51
500	20	C 14			18.86	3.19	11.02	15.75	13	F14	5.51
600	24	A2			21.57	4.84	12.09	15.75	17.5	F16	6.5
700	28	A2			24.37	4.84	12.09	15.75	17.5	F16	6.5
750	30	A3+S3			28.74	6.3	14.57	15.75	52	F25	10
800	32	A3+S3			30.51	6.3	14.57	15.75	52	F25	10
900	36	A3+S3			31.69	6.3	14.57	15.75	52	F25	10
950	38	A3+S3			34.41	6.3	14.57	15.75	52	F25	10
1000	40	A4+S4			37.2	7.76	18.54	23.62	90	F30	11.73