

V
VALUE
VALVE USA
Value in Valving

High Performance Butterfly Valves

Double Eccentric, PTFE / Metal Seated **VF-91/92/93 Series**

LEVER · GEAR · PNEUMATIC
ELECTRIC OPERATED.

ALLOWABLE PRESSURE:

ANSI CLASS 150 PN25

SIZE: DN 65(2.5") - 1200(48")



VALUE VALVES CO., LTD.
www.bvcusa.com

Scope

The specification covers the design and testing of high performance double eccentric design butterfly valves.

Applicable Standards

The following standards shall apply

ANSI B16.5 :	Pipe Flanges and Flanged Fittings (24"size and smaller)
ANSI B16.34 :	Valves-Flanged and Butt welding End.
ANSI/FCI 70-2 :	Control Valve Seat leakage.
MSS SP-25 :	Standard Marking System for Valves, Fittings, Flanges and Unions
MSS SP-61 :	Pressure Testing of Steel Valves
MSS SP-68 :	High Pressure-Offset Seat Butterfly Valves
API 598 :	Valve Inspection and Testing
API 609 :	Butterfly Valves, Lug-Type and Wafer-Type
API 607 :	Fire Test for Soft-seated Quarter-turn Valves
PED :	Pressure Equipment Directive Module H
ISO 5208 :	Inspection regulation of valve
ISO 5211 :	Part-turn actuator attachment
ISO 5752 :	Face-to-Face and center-to-face dimensions
ISO 9001 :	Quality assurance system

Design Features

1. Valves are high performance with offset seat and double eccentric disc design.
2. Valve seats are designed for full pressure, bi-directional sealing.
3. Valve is equipped with upper and lower low friction bearings.
4. One-Piece shaft design equipped with Blow-Out Proof and Anti-Static devices.
5. Patented Seat Retainer Ring fixed without bolts and offering complete uninterrupted seal face.
6. Valve has integral body stop to prevent over travel

Inspection and test

1. Valves shall be hydrostatically shell tested as per ANSI B16.34 - MSS SP-61 - API 598 - and ISO 5208
2. Valves shall be seat tested per MSS SP-61 or ISO 5208 No leakage is permitted for resilient seated valves. And allowable leakage of metal seated valves are as per ANSI/FCI 70-2.
3. API 598 testing available upon request.
4. Valves with other than 17-4PH stems, tested to MSS SP-61 or ISO 5208 only.

Materials

1. Stainless steel valves shall be constructed from materials below :
 Body-ASTM A351 CF8 or CF8M
 Disc-ASTM A351 CF8 or CF8M
2. Carbon steel valves shall be constructed from materials below
 Body-ASTM A105 or A216 WCB
 Disc-ASTM A351 CF8 or CF8M
3. Stem material shall be one of the following ASTM A564 Type 630 (17-4PH)
 A182 F304 or F316

Construction Details

Stem (10) - One-Piece design with ISO 5211 square drive.

Packing (7) - Multiply Rows of Teflon Chevron.

Retainer (4) - Patented design of square thread, ensures an un-interrupted sealing face. Flange face equipped with 125 - 200AARH finish and is compatible with both flat and spiral wound gaskets.

Integral Disc stop (1) - To prevent disc from over travel.

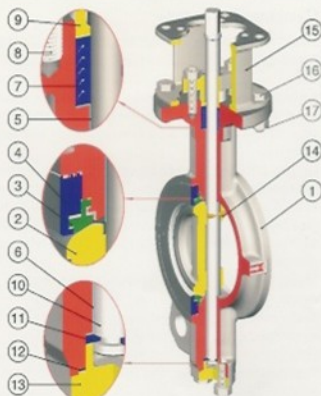
Teflon Seat (3) - Pressure assisted to give Bi - directional bubble tight shut off at all pressures. (Valve must be installed with retaining ring upstream for dead end service.)

Thrust Ring (11) - Anti blow out shaft and Anti static design.

Bearings (5&6) - Upper and Lower bearings are constructed of PTFE impregnated 316 SS.

Yoke (15) - Investment Cast, per ISO 5211.

Fugitive Emissions Packing System is available on customer required.



No.	Name	Materials	Specification		Remark
			JIS	ASTM	
1	BODY	CARBON STEEL	SC480	A216 Gr. WCB	
		STAINLESS STEEL	SCS 13A	A351 Gr. CF8	
			SCS 14A	A351 Gr. CF8M	
			SCS 16A	A351 Gr. CF3M	
2	DISC	STAINLESS STEEL	SCS 13A	A351 Gr. CF8	Disc edge has to be hard chrome plated when equipped RTFE seat
			SCS 14A	A351 Gr. CF8M	
			SCS 16A	A351 Gr. CF3M	
3	TEFLON SEAT	PTFE			-29 °C ~ 160 °C
		PTFE +15%GLASS	RTFE		-29 °C ~ 180 °C
		PTFE+15%GRAPHITE	RTFE		-29 °C ~ 210 °C
4	RETAINER	STAINLESS STEEL	SCS 13A	A351 Gr. CF8	
			SCS 14A	A351 Gr. CF8M	
			SCS 16A	A351 Gr. CF3M	
5	BUSHING	PTFE+316SS			
6	BUSHING	PTFE +316SS			
7	PACKING	PTFE			-29 °C ~ 160 °C
8	STUD	PTFE +15%GRAPHITE			-29 °C ~ 210 °C
9	GLAND	STAINLESS STEEL	SUS 304	A193 Gr. B8	
			SCS 13A	A351 Gr. CF8	
			SCS 14A	A351 Gr. CF8M	
			SCS 16A	A351 Gr. CF3M	
10	STEM	STAINLESS STEEL	SUS 410	A182 Gr. F6a	Stem has to be hard chrome plated when equipped with PTFE + Graphite gland packing
			SUS 304	A182 Gr. F304	
			SUS 316	A182 Gr. F316	
			SUS 630	A564 Gr. 630	
11	THRUST RING	STAINLESS STEEL	XM-19	A479 Gr. XM-19	
12	SEAL	PTFE	SUS 316	A240 Gr. 316	
13	BOTTOM COVER	STAINLESS STEEL	SCS 13A	A351 Gr. CF8	
			SCS 14A	A351 Gr. CF8M	
			SCS 16A	A351 Gr. CF3M	
			CARBON STEEL	A216 Gr. WCB	
14	PIN	DUCTILE IRON	SCS 316	A182 Gr. F316	
			FCD 450	A536 Gr. 65-45-12	
15	YOKE	CARBON STEEL	SC480	A216 Gr. WCB	For 24" valve only Regular Option
			SCS 13A	A351 Gr. CF8	
16	BOLT	STAINLESS STEEL	SUS 304	A193 Gr. B8	
17	NUT	STAINLESS STEEL	SUS 304	A194 Gr. 8	

Construction Details

Stem (10) - One-Piece design with ISO 5211 square drive.
Packing (7) - Graphite packing ensures no leakage during fire.

Retainer (4) - Patented design of square thread, ensures an un-interrupted sealing face. Flange face equipped with 125 - 200 AARH finish and is compatible with both flat and spiral wound gaskets.

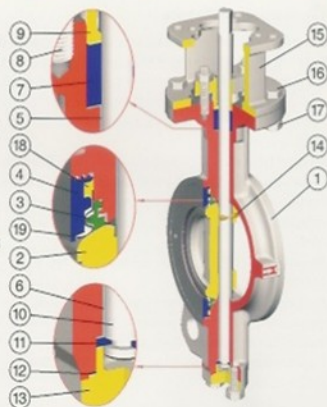
Integral Disc stop (1) - To prevent disc from over travel.
Firesafe Seat (3&19) - Bi - directional soft seat(3) design for zero leakage in normal operation and a metal-to-metal seal(19) after fire, meets "Fire-safe" requirement. (Valve must be installed with retaining ring upstream for dead end service.)

Thrust Ring (11) - Anti blow out shaft and Anti static design.

Bearings (5&6) - Upper and Lower bearings are constructed of PTFE impregnated 316 SS.

Yoke (15) - Investment Cast, per ISO 5211.

Fugitive Emissions Packing System is available on customer required.



No.	Name	Materials	Specification		Remark
			JIS	ASTM	
1	BODY	CARBON STEEL	SC480	A216 Gr. WCB	
		STAINLESS STEEL	SCS 13A	A351 Gr. CF8	
			SCS 14A	A351 Gr. CF8M	
			SCS 16A	A351 Gr. CF3M	
2	DISC	STAINLESS STEEL	SCS 13A	A351 Gr. CF8	Disc edge equipped with hard chrome plated -29°C ~ 160°C 15% Glass fibre contained -29°C ~ 180°C 15% Graphite contained -29°C ~ 210°C
			SCS 14A	A351 Gr. CF8M	
			SCS 16A	A351 Gr. CF3M	
3	FIRE-SAFE SEAT	PTFE			
		RPTFE			
		RPTFE			
4	RETAINER	STAINLESS STEEL	SCS 13A	A351 Gr. CF8	
			SCS 14A	A351 Gr. CF8M	
			SCS 16A	A351 Gr. CF3M	
5	BUSHING	PTFE+316SS			
6	BUSHING	PTFE+316SS			
7	PACKING	GRAPHITE			
8	STUD	STAINLESS STEEL	SUS 304	A193 Gr. B8	
9	GLAND	STAINLESS STEEL	SCS 14A	A351 Gr. CF8	
			SCS 16A	A351 Gr. CF3M	
			SUS 410	A182 Gr. F6a	
			SUS 304	A182 Gr. F304	
10	STEM	STAINLESS STEEL	SUS 316	A182 Gr. F316	Stem equipped with hard chrome plated
			SUS 630	A564 Gr. 630	
			XM-19	A479 Gr. XM-19	
			SUS 316	A240 Gr. 316	
11	THRUST RING	STAINLESS STEEL	SUS 316	A240 Gr. 316	
12	SEAL	GRAPHITE			
13	BOTTOM COVER	STAINLESS STEEL	SCS 13A	A351 Gr. CF8	
			SCS 14A	A351 Gr. CF8M	
			SCS 16A	A351 Gr. CF3M	
			SC480	A216 Gr. WCB	
14	PIN	DUCTILE IRON	FCD 450	A536 Gr. 65-45-12	For 24" valve only
15	YOKE	CARBON STEEL	SC480	A216 Gr. WCB	Regular Option
		STAINLESS STEEL	SCS 13A	A351 Gr. CF8	
16	BOLT	STAINLESS STEEL	SUS 304	A193 Gr. B8	
17	NUT	STAINLESS STEEL	SUS 304	A194 Gr. 8	
18	PACKING	GRAPHITE			
19	METAL SEAT	STAINLESS STEEL	SUS 316	A240 Gr. 316	Nitrided

Construction Details

Stem (10) - One-Piece design with ISO 5211 square drive.

Packing (7) - Graphite packing suit for high temperature service.

Retainer (4) - Patented design of square thread, ensures an un-interrupted sealing face. Flange face equipped with 125 - 200 AARH finish and is compatible with both flat and spiral wound gaskets.

Integral Disc stop (1) - To prevent disc from over travel.

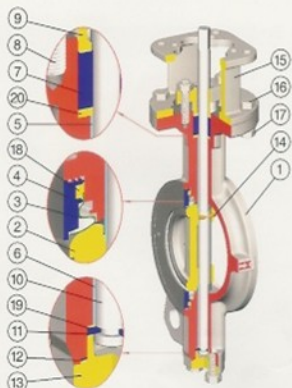
Metal Seat (3) - Bi-direction self sealing metal seat design for leakage rated at Class IV per ANSI FCI 70-2 or better. (Retaining ring fixed at upstream when dead end service.)

Thrust Ring (11) - Anti blow out shaft and Anti static design.

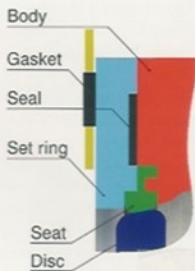
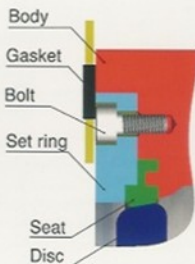
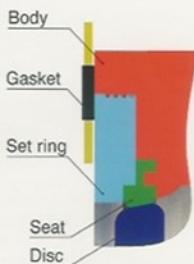
Bearings (5&6) - Upper and Lower bearings are constructed of 316 SS Nitrided.

Yoke (15) - Investment Cast, per ISO 5211.

Fugitive Emissions Packing System is available on customer required.



No.	Name	Materials	JIS	Specification	ASTM	Remark
1	BODY	CARBON STEEL	SC480		A216 Gr. WCB	
		STAINLESS STEEL	SCS 13A		A351 Gr. CF8	
			SCS 14A		A351 Gr. CF8M	
			SCS 16A		A351 Gr. CF3M	
2	DISC	STAINLESS STEEL	SCS 13A		A351 Gr. CF8	Disc edge equipped with hard chrome plated
			SCS 14A		A351 Gr. CF8M	
			SCS 16A		A351 Gr. CF3M	
			SUS 316		A240 Gr. 316	Nitrided
3	METAL SEAT	STAINLESS STEEL	SCS 13A		A351 Gr. CF8	
			SCS 14A		A351 Gr. CF8M	
			SCS 16A		A351 Gr. CF3M	
			SUS 316		A182 Gr. F316	Nitrided
4	RETAINER	STAINLESS STEEL	SCS 13A		A351 Gr. CF8	
			SCS 14A		A351 Gr. CF8M	
			SCS 16A		A351 Gr. CF3M	
			SUS 316		A182 Gr. F316	Nitrided
5	BUSHING	STAINLESS STEEL	SUS 316		A182 Gr. F316	
		STAINLESS STEEL	SUS 316		A182 Gr. F316	
		GRAPHITE				
		STAINLESS STEEL	SUS 304		A193 Gr. B8	
6	BUSHING	STAINLESS STEEL	SCS 13A		A351 Gr. CF8	
			SCS 14A		A351 Gr. CF8M	
			SUS 410		A182 Gr. F66	
			SUS 304		A182 Gr. F304	
7	PACKING	STAINLESS STEEL	SUS 316		A182 Gr. F316	
			SUS 630		A564 Gr. 630	
			XM-19		A479 Gr. XM-19	
			SUS 316		A240 Gr. 316	
8	STUD	STAINLESS STEEL	SCS 13A		A351 Gr. CF8	
			SCS 14A		A351 Gr. CF8M	
			SCS 16A		A351 Gr. CF3M	
			SC480		A216 Gr. WCB	
9	GLAND	STAINLESS STEEL	SUS 316		A182 Gr. F316	
			SUS 630		A564 Gr. 630	
			XM-19		A479 Gr. XM-19	
			SUS 316		A240 Gr. 316	
10	STEM	STAINLESS STEEL	SCS 13A		A351 Gr. CF8	
			SCS 14A		A351 Gr. CF8M	
			SCS 16A		A351 Gr. CF3M	
			SUS 316		A182 Gr. F316	
11	THRUST RING	STAINLESS STEEL	SCS 13A		A351 Gr. CF8	
			SCS 14A		A351 Gr. CF8M	
			SCS 16A		A351 Gr. CF3M	
			SUS 316		A182 Gr. F316	
12	SEAL	STAINLESS STEEL	SCS 13A		A351 Gr. CF8	
			SCS 14A		A351 Gr. CF8M	
			SCS 16A		A351 Gr. CF3M	
			SUS 316		A182 Gr. F316	
13	BOTTOM COVER	STAINLESS STEEL	SCS 13A		A351 Gr. CF8	
			SCS 14A		A351 Gr. CF8M	
			SCS 16A		A351 Gr. CF3M	
			SUS 316		A182 Gr. F316	
14	PIN	CARBON STEEL	SC480		A216 Gr. WCB	
		STAINLESS STEEL	SUS 316		A182 Gr. F316	
		DUCTILE IRON	FCI 450		A536 Gr. 65-45-12	
		CARBON STEEL	SC480		A216 Gr. WCB	
15	YOKE	STAINLESS STEEL	SCS 13A		A351 Gr. CF8	
		STAINLESS STEEL	SUS 304		A193 Gr. B8	
		STAINLESS STEEL	SUS 304		A194 Gr. 8	
16	BOLT	STAINLESS STEEL	SCS 13A		A351 Gr. CF8	
			SUS 304		A193 Gr. B8	
			SUS 304		A194 Gr. 8	
17	NUT	STAINLESS STEEL	SCS 13A		A351 Gr. CF8	
			SUS 304		A193 Gr. B8	
			SUS 304		A194 Gr. 8	
18	PACKING	STAINLESS STEEL	SUS 316		A182 Gr. F316	
			SUS 630		A564 Gr. 630	
			XM-19		A479 Gr. XM-19	
			SUS 316		A240 Gr. 316	
19	WASHER	STAINLESS STEEL	SCS 13A		A351 Gr. CF8	
			SCS 14A		A351 Gr. CF8M	
			SCS 16A		A351 Gr. CF3M	
			SUS 316		A182 Gr. F316	
20	WASHER	STAINLESS STEEL	SCS 13A		A351 Gr. CF8	
			SCS 14A		A351 Gr. CF8M	
			SCS 16A		A351 Gr. CF3M	
			SUS 316		A182 Gr. F316	



Value's Patented Design

Special twin thread design between Body and Retainer offers

1. Wider sealing face between flanges.
2. 100% sealing between retainer and body.
3. When the valve is in closed position for extended periods of time, the encapsulated seat will not cold flow.

Conventional Design

1. Seat retainers often double as a flange surfaces complicating the flange gasketing.
2. Conventional designs require Retainer Ring bolts. These bolts often interfere with spiral wound gaskets causing leaks.
3. Some valves often allow for cold flowing when the valve is in the closed position for long periods of time.

NOTE: Retaining ring must be upstream for dead end serv.

CV-values

Size	Valve Open Degree									
	10°	20°	30°	40°	50°	60°	70°	80°	90°	
2.5"	65	11	27	40	60	83	106	133	140	
3"	80	2	50	73	110	154	200	250	260	
4"	100	4	80	120	180	250	320	400	420	
5"	125	7	140	200	300	430	590	680	720	
6"	150	11	230	340	510	710	910	1140	1200	
8"	200	20	390	560	850	1190	1520	1900	2000	
10"	250	30	600	870	1310	1840	2360	2940	3100	
12"	300	40	920	1330	2000	2800	3600	4500	4750	
14"	350	55	1130	1640	2500	3500	4500	5500	5850	
16"	400	75	1600	2300	3500	4900	6300	7850	8300	
18"	450	95	2000	2900	4400	6100	7900	9900	10400	
20"	500	125	2700	3900	5900	8200	10500	13000	13800	
24"	600	200	4400	6300	9500	13300	17000	21300	22500	

SEAT RATING (psig)

Temperature		Class 150	
°F	°C	PTFE	RPTFE
-20 to 100	-29 to 38	285	285
150	66	273	273
200	93	260	260
250	121	245	245
300	149	230	230
350	177	140	215
400	204	50	100
450	232	0	0



TORQUE CHART

ANSI CLASS 150LB
ISO PN10-PN25
JIS 10K - 16K - 20K

VF-910 / 913 Torque Data (" Lbs) Including 30% Safety Factor

Size		Pressure Differential (psid)					
		0	70	142	213	285	355
2.5	65	26	44	87	174	260	347
3	80	44	87	174	260	391	521
4	100	87	174	347	434	564	694
5	125	174	391	564	781	954	1128
6	150	391	607	824	1040	1300	1561
8	200	607	954	1300	1605	1865	2081
10	250	1128	1561	2168	2602	3036	3470
12	300	1734	2602	3469	4336	5030	5638
14	350	2602	4770	6939	8673	10407	11708
16	400	3903	6071	8673	10408	12142	13877
18	450	5204	7806	10841	13010	14744	16912
20	500	7372	10408	13010	15178	18213	20815
24	600	15178	20815	27320	32957	37728	41197

VF-920 / 923 Fire Safe Torque Data (" Lbs) Including 30% Safety Factor

Size		Pressure Differential (psid)					
		0	70	142	213	285	355
2.5	65	260	347	434	607	694	781
3	80	434	434	607	694	781	867
4	100	607	607	694	867	1127	1301
5	125	1214	1214	1388	1474	1561	1735
6	150	1735	1735	1995	2342	2602	2949
8	200	2082	2082	2602	3122	3729	4250
10	250	2428	2428	3036	3643	4597	5204
12	300	3469	3469	4857	6071	7632	8933
14	350	6418	6418	7372	8760	10581	12576
16	400	7459	7459	9107	10668	12142	13877
18	450	8500	8500	10928	12576	13877	15611
20	500	10408	10408	13877	17346	21683	25152
24	600	13010	13010	16045	21683	27754	34692

VF-930 / 933 Metal Seated Torque Data (" Lbs) Including 30% Safety Factor

Size		Pressure Differential (psid)					
		0	70	142	213	285	355
2.5	65	347	434	694	867	1127	1301
3	80	434	607	781	1041	1214	1474
4	100	694	867	1041	1388	1561	1908
5	125	867	1127	1214	1474	1735	1995
6	150	1214	1388	1474	1561	1821	2168
8	200	1821	2255	2602	2949	3296	3643
10	250	2168	2515	2862	3122	3469	3903
12	300	3122	3469	4423	5204	5984	6938
14	350	4337	5984	7459	8760	10841	12576
16	400	5637	7285	9020	11015	13010	15178
18	450	6938	8586	10581	13270	15004	16912
20	500	9540	10408	13877	17346	21683	25152
24	600	11275	13010	16045	21683	27754	34692



VF-910/920/930 WAFER TYPE DIMENSION

ANSI CLASS 150
ISO PN10-PN25
JIS 10K · 16K · 20K



Size 65-80 (2.5"-3")



Size 100-125 (4"-5")



Size 150-300 (6"-12")



Size 350-500 (14"-20")

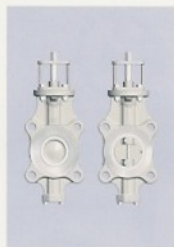


Size 600 (24")

Unit: inch

Size inch	Face to Face L	Dimensions							Mounting flange (ISO 5211)				Shaft end				Weight LBS.
		H1	H2	H3	φD	φD1	C	C1	Valve		Yoke		φB		φB	B1	
									Type	φM	Type	M1					
2.5	1.81	4.33	4.92	2.36	4.25	2.48	2.45	0.59	F07	3.54	F07	F05	2.76	0.55	0.43	0.71	10
3	1.85	5.04	5.51	2.76	4.96	3.07	3.07	0.87	F10	4.92	F10	F07	4.02	0.71	0.55	0.91	15
4	2.09	5.91	6.18	2.76	6.02	3.74	3.66	0.96	F10	4.92	F10	F07	4.02	0.71	0.55	0.91	20
5	2.24	6.42	6.69	2.76	7.24	4.65	4.72	1.42	F10	4.92	F10	F07	4.02	0.87	0.67	0.91	26
6	2.20	6.93	7.28	2.76	8.35	5.63	5.87	1.97	F10	4.92	F10	F07	4.02	0.87	0.67	0.91	30
8	2.44	8.11	8.66	3.15	10.55	7.39	7.72	2.76	F12	5.91	F12	F10	4.90	0.98	0.75	1.10	48
10	2.68	9.37	10.24	3.15	12.83	9.27	9.57	3.54	F12	5.91	F12	F10	4.92	1.10	0.87	1.10	70
12	3.07	10.59	11.42	3.94	14.76	11.10	11.38	4.17	F14	6.89	F14	F12	6.30	1.38	1.06	1.48	106
14	3.073.62	12.05	12.83	3.94	16.38	12.68	12.95	4.92	F14	6.89	F14	F12	6.30	1.42	1.06	1.48	145
16	4.02	13.46	14.57	4.72	18.74	14.61	14.84	5.51	F16	8.27	F16	F14	7.68	1.89	1.42	1.85	236
18	4.49	14.57	15.55	4.72	21.02	16.46	16.65	6.18	F16	8.27	F16	F14	7.68	1.89	1.42	1.85	286
20	5.00	15.71	16.93	4.72	23.15	18.35	18.54	6.97	F16	8.27	F16	F14	7.68	2.36	1.81	2.20	359
24	6.06	17.91	19.29	5.91	27.24	22.44	22.52	8.27	F25	11.81	F25	F16	11.81	2.36	1.81	2.20	612

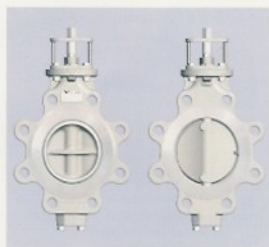
Pipe limit size > C



Size 65~80 (2.5~3")



Size 100~125 (4~5")



Size 150~200 (6~8")



Size 250~350 (10~14")



Size 400~450 (16~18")

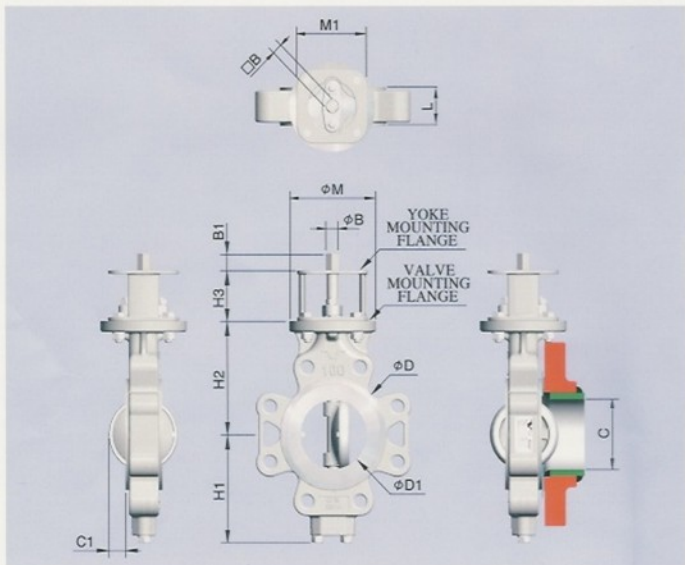


Size 500~600 (20~24")

Unit: inch

Size	Face to Face	Dimensions								Mounting flange (ISO 5211)				Shaft end				Weight
										Valve		Yoke						
		H1	H2	H3	φD	φD1	C	C1	Type	φM	Type	M1	φB	□B	B1	LBS.		
2.5	1.81	4.33	4.92	2.36	4.25	2.48	2.45	0.59	F07	3.54	F07	F05	2.76	0.55	0.43	0.71	12	
3	1.85	5.04	5.51	2.76	4.96	3.07	3.07	0.87	F10	4.92	F10	F07	4.02	0.71	0.55	0.91	19	
4	2.09	5.91	6.18	2.76	6.02	3.74	3.66	0.98	F10	4.92	F10	F07	4.02	0.71	0.55	0.91	31	
5	2.24	6.42	6.89	2.76	7.24	4.85	4.72	1.42	F10	4.92	F10	F07	4.02	0.87	0.67	0.91	40	
6	2.20	6.93	7.28	2.76	8.35	5.63	5.87	1.97	F10	4.92	F10	F07	4.02	0.87	0.67	0.91	43	
8	2.44	8.11	8.66	3.15	10.55	7.39	7.72	2.76	F12	5.91	F12	F10	4.90	0.98	0.75	1.10	68	
10	2.68	9.37	10.24	3.15	12.83	9.27	9.57	3.54	F12	5.91	F12	F10	4.92	1.10	0.87	1.10	104	
12	3.07	10.59	11.42	3.94	14.76	11.10	11.38	4.17	F14	6.89	F14	F12	6.30	1.38	1.06	1.46	148	
14	3.07/3.62	12.05	12.83	3.94	16.38	12.68	12.95	4.92	F14	6.89	F14	F12	6.30	1.42	1.06	1.46	178	
16	4.02	13.46	14.57	4.72	18.74	14.61	14.84	5.51	F16	8.27	F16	F14	7.68	1.89	1.42	1.85	315	
18	4.49	14.57	15.55	4.72	21.02	16.46	16.65	6.18	F16	8.27	F16	F14	7.68	1.89	1.42	1.85	359	
20	5.00	15.71	16.93	4.72	23.15	18.35	18.54	6.97	F16	8.27	F16	F14	7.68	2.36	1.81	2.20	507	
24	6.06	17.91	19.29	5.91	27.24	22.44	22.52	8.27	F25	11.81	F25	F16	11.81	2.36	1.81	2.20	830	

Pipe limit size > C



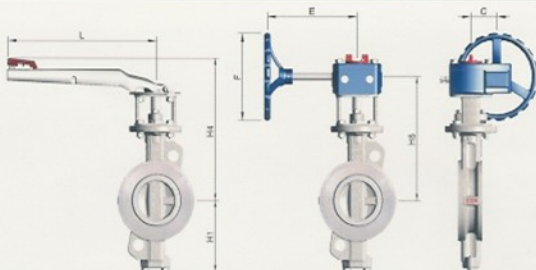
Unit:mm

Size	Face to Face	Dimensions								Mounting flange (ISO 5211)				Shaft end				Suitable pipe flange ★	Weight kg
		L	H1	H2	H3	φD	φD1	C	C1	Type	φM	Type	M1	φB	□B	B1			
mm	L	H1	H2	H3	φD	φD1	C	C1	Type	φM	Type	M1	φB	□B	B1				
65	46	110	125	60	108	63	62.3	15	F07	90	F07	F05	70	14	11	18	ABCD EFG HKMNP	5.5	
80	47	128	140	70	126	78	78	22	F10	125	F10	F07	102	18	14	23	ABCD EFGH KMNP	8.5	
100	53	150	157	70	153	95	93	25	F10	125	F10	F07	102	18	14	23	ABCD EFGH KMNP	14	
125	57	163	170	70	184	118	120	36	F10	125	F10	F07	102	22	17	23	ABCD EFGH KMNP	18	
150	56	176	185	70	212	143	149	50	F10	125	F10	F07	102	22	17	23	ACD EFG KMNP	19.5	
200	62	206	220	80	268	188	196	70	F12	150	F12	F10	125	25	19	26	ACD EFG KMNP	31	
250	68	238	260	80	326	236	243	90	F12	150	F12	F10	125	28	22	28	ACD EFG KMNP	47	
300	78	269	290	100	375	282	289	106	F14	175	F14	F12	160	35	27	37	ACD EFG KMNP	67	
350	78/92	306	326	100	416	322	329	125	F14	175	F14	F12	160	36	27	37	ACD EFG KMNP	81	
400	102	342	370	120	476	371	377	140	F16	210	F16	F14	195	48	36	47	ACD EFG KMNP	143	
450	114	370	395	120	534	418	423	157	F16	210	F16	F14	195	48	36	47	ACD EFG KMNP	163	
500	127	399	430	120	588	466	471	177	F16	210	F16	F14	195	60	46	56	ACD EFG KMNP	230	
600	154	455	490	150	692	570	572	210	F25	300	F25	F16	300	60	46	56	ACD EFG KMNP	377	

A: 150LB B: 300LB C: PN10 D: PN16 E: PN20 F: PN25 G: PN40 H: PN50 K: 10K

*M: 16K N: B.S. 10 TABLE E P: 20K

Pipe limit size > C



Size mm inch	Operator Series no.	Lever operator				Gear operator						Weight (Kg)	
		Dimensions H4 L	Weight (Kg) Wafer Lug	H5	Dimensions C E	F	Weight (Kg) Wafer Lug						
65 2.5	L 7A	257 200	5.2 6.2	-	-	-	-	-	-	-	-	-	-
	C 07	-	-	222	41 155	150	7.8 8.8	-	-	-	-	-	-
80 3	L 7B	282 250	7.8 9.3	-	-	-	-	-	-	-	-	-	-
	C 07	-	-	247	41 155	150	10.3 11.8	-	-	-	-	-	-
100 4	L 7B	299 250	9.8 14.8	-	-	-	-	-	-	-	-	-	-
	C 10	-	-	296.5	63 195	200	16.5 21.5	-	-	-	-	-	-
125 5	L 10	318 355	13.6 19.6	-	-	-	-	-	-	-	-	-	-
	C 10	-	-	281.5	63 195	200	19.5 25.5	-	-	-	-	-	-
150 6	L 10	333 355	15.1 21.1	-	-	-	-	-	-	-	-	-	-
	C 10	-	-	296.5	63 195	200	21 27	-	-	-	-	-	-
200 8	L 10	378 335	23.6 32.6	-	-	-	-	-	-	-	-	-	-
	C 12	-	-	341	61 232	310	31 40	-	-	-	-	-	-
250 10	C 12	-	-	381	61 232	310	41 56	-	-	-	-	-	-
300 12	C 14	-	-	443	81 280	400	70 89	-	-	-	-	-	-
350 14	C 14	-	-	479	81 280	400	88 103	-	-	-	-	-	-
400 16	A2	-	-	546	123 307	400	142 178	-	-	-	-	-	-
450 18	A2	-	-	571	123 307	400	165 198	-	-	-	-	-	-
500 20	A2	-	-	606	123 307	400	198 265	-	-	-	-	-	-
600 24	A3+S3	-	-	785	160 370	400	387 486	-	-	-	-	-	-

Unit: inch

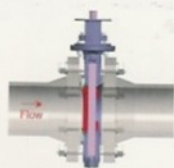
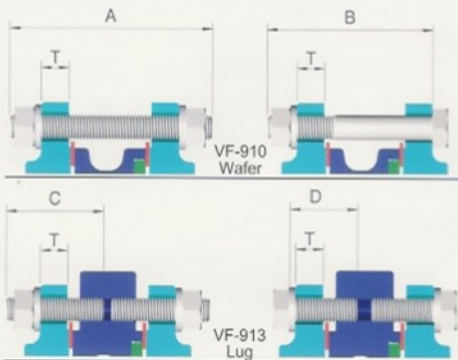
Size mm inch	Operator Series no.	Lever operator				Gear operator				Handwheel turns ON/OFF N	Mounting flange (ISO 5211) Type PCD		
		Dimensions H4 L	Weight (lb) Wafer Lug	H5	Dimensions C E	F	Weight (lb) Wafer Lug	Handwheel turns ON/OFF N	Mounting flange (ISO 5211) Type PCD				
65 2.5	L 7A	10.19 7.87	11 14	-	-	-	-	-	F07	70	2.75	-	-
	C 07	-	-	8.74	1.61 6.10	5.91	17 19	10	F07	70	2.75	-	-
80 3	L 7B	11.10 9.84	17 20	-	-	-	-	-	F10	102	4.02	-	-
	C 07	-	-	9.72	1.61 6.10	5.91	23 26	10	F10	102	4.02	-	-
100 4	L 7B	11.77 9.84	22 33	-	-	-	-	-	F10	102	4.02	-	-
	C 10	-	-	11.67	2.48 7.68	7.87	36 47	9	F10	102	4.02	-	-
125 5	L 10	12.52 13.98	30 43	-	-	-	-	-	F10	102	4.02	-	-
	C 10	-	-	11.08	2.48 7.68	7.87	43 56	9	F10	102	4.02	-	-
150 6	L 10	13.11 13.98	33 46	-	-	-	-	-	F10	102	4.02	-	-
	C 10	-	-	11.67	2.48 7.68	7.87	46 59	9	F10	102	4.02	-	-
200 8	L 10	14.88 13.98	52.03 71.87	-	-	-	-	-	F12	125	4.92	-	-
	C 12	-	-	13.43	2.40 9.13	12.20	68 88	9.5	F12	125	4.92	-	-
250 10	C 12	-	-	15.00	2.40 9.13	12.20	90 123	9.5	F12	125	4.92	-	-
300 12	C 14	-	-	17.44	3.19 11.02	15.75	154 196	12	F14	140	5.51	-	-
350 14	C 14	-	-	18.86	3.19 11.02	15.75	194 227	12	F14	140	5.51	-	-
400 16	A2	-	-	21.50	4.84 12.09	15.75	302 381	17.5	F16	165	6.50	-	-
450 18	A2	-	-	22.48	4.84 12.09	15.75	352 425	17.5	F16	165	6.50	-	-
500 20	A2	-	-	23.86	4.84 12.09	15.75	425 573	17.5	F16	165	6.50	-	-
600 24	A3+S3	-	-	30.91	6.30 14.57	15.75	760 978	52.5	F25	254	10.00	-	-



VF-9 MATERIAL CHART

ANSI CLASS 150LB
PN 10 / 16 / 25
JIS 10K / 16K / 20K

VF-91	0	E	080	13	14	34	TL	A	G
TYPE	END	OPTION	SIZE	BODY	DISC	SHAFT	SEAT	FLANGE	ACTUATOR
TYPE			CODE		DISK MATERIAL			CODE	
High Performance Butterfly valve (Teflon Seat)			VF-91		A351 CF8			13	
					A351 CF8M			14	
					A351 CF3M			16	
High Performance Butterfly valve (Teflon + SS316 Seat Fire Safe)			VF-92		SHAFT MATERIAL			CODE	
					A182 F6a			10	
High Performance Butterfly valve (Metal Seat)			VF-93		A182 F304			34	
					A182 F316			36	
					A182 F316L			6L	
END CONNECTION			CODE		A564 630			63	
WAFER			0		XM-19			XM	
LUG			3						
FLANGE (Short Body)			6						
FLANGE (Long Body)			7						
OPTION			CODE		SEAT MATERIAL			CODE	
None					PTFE (VF-91_ONLY)			TL	
Emission Test			E		PTFE + 15%GRAPHITE (VF-91_ONLY)			TG	
Internal Polished			P		PTFE + 15%GLASS FIBER (VF-91_ONLY)			TF	
WORK TEMP. -100°C~50°C (VF-930)			L		PTFE + A240 316 (VF-92_ONLY)			T6	
WORK TEMP. 210°C~350°C (VF-930)			M		PTFE + 15%GRAPHITE + A240 316 (VF-92_ONLY)			G6	
WORK TEMP. 350°C~500°C (VF-930)			H		PTFE + 15%FIBER + A240 316 (VF-92_ONLY)			F6	
SIZE			CODE		A240 316 (VF-93_ONLY)			36	
DN 65 / 2-1/2"			006		INCONEL 718 (VF-93_ONLY)			IC	
DN 80 / 3"			008		FLANGE DRILLING			CODE	
DN 100 / 4"			010		ASME B16.5 150LB			A	
DN 125 / 5"			012		ASME B16.5 300LB			B	
DN 150 / 6"			015		ISO 7005-1 PN10			C	
DN 200 / 8"			020		ISO 7005-1 PN16			D	
DN 250 / 10"			025		ISO 7005-1 PN20			E	
DN 300 / 12"			030		ISO 7005-1 PN25			F	
DN 350 / 14"			035		ISO 7005-1 PN40			G	
DN 400 / 16"			040		ISO 7005-1 PN50			H	
DN 450 / 18"			045		JIS 10K			K	
DN 500 / 20"			050		JIS 16K			M	
DN 600 / 24"			060		JIS 20K			P	
BODY MATERIAL			CODE		B.S. 10 Table E			N	
A216 WCB			WB		ACTAUATOR			CODE	
A351 CF8			13		No actuator			N	
A351 CF8M			14		Gear actuator			G	
A351 CF3M			16		Pneumatic actuator			M	
					Electric actuator			E	
					Hydraulic actuator			H	
					Lever actuator			L	



The Series 91 features bi-directional shutoff, however by installing the valve in the "preferred" direction, as indicated by the arrow, the following benefits can be realized:

- Minimal start-up torque.
- Reduced seat wear.
- No direct contact between the fluid and the seat.

Size mm inch	PN10						PN16						PN20						PN25					
	Bolt Size	A	B	C	D	T	Bolt Size	A	B	C	D	T	Bolt Size	A	B	C	D	T	Bolt Size	A	B	C	D	T
65 2.5	M16	130	120	65	45	20	M16	130	120	65	45	20	M16	135	125	70	50	23	M16	135	125	70	50	22
80 3	M16	135	120	65	45	20	M16	135	120	65	45	20	M16	140	130	70	50	24	M16	140	130	70	50	24
100 4	M16	145	130	70	50	22	M16	145	130	70	50	22	M16	145	135	75	55	24	M20	155	140	80	55	24
125 5	M16	145	135	75	50	22	M16	145	135	75	50	22	M20	155	140	75	55	24	M24	175	155	85	60	26
150 6	M20	160	140	80	55	24	M20	160	140	80	55	24	M20	160	145	80	55	26	M24	175	155	90	60	28
200 8	M20	160	145	80	55	24	M20	160	145	80	55	24	M20	170	155	85	60	29	M24	185	165	90	65	30
250 10	M20	175	160	85	60	26	M24	185	165	85	60	26	M24	195	175	95	70	31	M27	200	180	100	70	32
300 12	M20	185	170	90	65	26	M24	200	180	90	70	28	M24	205	185	105	70	32	M27	215	195	110	75	34
350 14	M20	185	170	90	65	26	M24	200	185	90	70	30	M27	220	195	105	75	35	M30	230	205	115	80	36
400 16	M24	220	200	110	70	26	M27	235	215	110	80	32	M27	245	225	125	85	37	M33	265	240	130	95	40
450 18	M24	235	215	115	75	28	M27	265	240	115	90	40	M30	270	240	130	95	40	M33	290	265	145	105	48
500 20	M24	245	230	125	75	28	M30	295	270	125	100	44	M30	290	265	140	95	43	M33	305	280	155	105	48
600 24	M27	290	270	145	85	34	M33	345	320	145	110	54	M33	335	310	165	105	48	M36	360	330	180	120	58

Size mm inch	ANSI B16.5 150LB						JIS10K						JIS 16K & 20K						B.S. 10 TABLE E					
	Bolt Size	A	B	C	D	T	Bolt Size	A	B	C	D	T	Bolt Size	A	B	C	D	T	Bolt Size	A	B	C	D	T
65 2.5	5/8	135	125	70	50	22	M16	130	115	65	45	18	M16	130	115	65	45	18	5/8	120	110	60	40	14
80 3	5/8	140	130	70	50	24	M16	130	115	65	45	18	M20	140	125	70	50	20	5/8	120	110	60	40	14
100 4	5/8	145	135	75	55	24	M16	135	120	70	50	18	M20	150	135	75	55	22	5/8	135	120	65	45	17
125 5	3/4	160	145	80	55	24	M20	150	135	75	55	20	M22	160	140	80	55	22	5/8	140	125	70	50	17
150 6	3/4	160	145	80	55	25	M20	155	140	80	55	22	M22	160	145	80	55	24	3/4	145	130	70	50	17
200 8	3/4	170	155	85	60	28	M20	160	140	80	55	22	M22	170	150	85	60	26	3/4	152	135	75	50	19
250 10	7/8	185	170	95	65	30	M22	175	155	85	60	24	M24	190	170	95	65	28	3/4	165	150	85	55	22
300 12	7/8	200	180	100	70	32	M22	185	165	90	60	24	M24	200	185	100	70	30	7/8	185	170	95	65	25
350 14	1	215	195	105	75	35	M22	190	170	95	65	26	M30	220	200	110	80	34	7/8	195	175	95	70	29
400 16	1	240	220	120	80	37	M24	220	205	110	70	28	M30	255	230	130	85	38	7/8	225	205	110	75	32
450 18	1 1/8	265	240	130	90	40	M24	240	220	120	75	30	M30	270	245	135	90	40	7/8	240	225	120	80	35
500 20	1 1/8	285	260	140	90	43	M24	250	230	125	75	30	M30	290	265	145	95	42	7/8	260	245	130	80	38
600 24	1 1/4	330	305	165	100	48	M30	295	270	145	85	32	M36	335	310	170	105	46	1 1/8	325	300	165	100	48



TÜV Rheinland Group

CERTIFICATE

Quality-Assurance System
acc. to European Directive 90/269/EEC
Certificate No.: 01 262 RDCG-08-01 30

Holder and addressee of
manufacturing

Value Valves Co., Ltd.
No. 9, Chung-Shan Rd., Ta-Chung Industrial District,
Taichung Hsien 236
Taiwan, R.O.C.

We hereby certify, for the manufacturer has introduced and implemented a Quality Assurance System according to the European Directive 90/269/EEC. The manufacturer has the permission to affix the following CE marking to products manufactured described and manufactured in accordance to the scope covered by this Quality Assurance System.

CE 0035

Approved and signed by
TUV CERT

CE Marking (Module 1)
The CE Marking is subject to CE 0035 and CE 0036/0037

Product Report No.

01 262 RDCG-08-01 30

Scope

Design and Manufacturing of Industrial Valves,
see annex

Plant

Value Valves Co., Ltd.
No. 9, Chung-Shan Rd., Ta-Chung Industrial District,
Taichung Hsien 236, Taiwan, R.O.C.

The Certificate is valid until

August 31, 2009

Since: August 18, 2006



TUV CERT Certification Body
for European Directives

James H. Hsu
TUV CERT
Taichung, Taiwan, R.O.C.

For Marking:
Marking on the product
and on the certificate
and on the certificate
and on the certificate

For Marking:
Marking on the product
and on the certificate
and on the certificate
and on the certificate

Marking on the product
and on the certificate
and on the certificate
and on the certificate



CERTIFICATE

The TUV CERT Certification Body
of TÜV Rheinland Industrie Service GmbH

certifies in accordance with
TUV CERT procedures that

Value Valves Co., Ltd.

No. 9 Chung-Shan Rd., Ta-Chung Industrial District,
Taichung Hsien 236, Taiwan

has introduced and applied a quality management system for

Design, Manufacturing and Sales of Industrial Valves

for which the product report No. 01 262 RDCG-08-01 30

Product has been examined and the implementation is according to

EN ISO 9001:2000

and follows

The certificate is valid until 2009-08-31

Certificate Registration No.: 01 262 RDCG-08-01 30



TÜV Rheinland Group

James H. Hsu
TUV CERT
Taichung, Taiwan, R.O.C.



VALUE
VALVE USA
Value in Valving

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