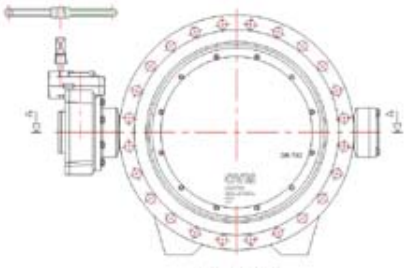
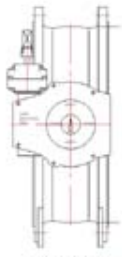
CVM

Model 3
BUTTERFLY VALVES
Double Flange

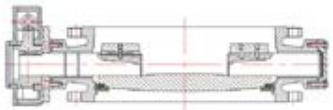


Front View



Side View

Top View



Section A-A

- Double flange
- Complying with BSEN 593
- Stainless steel seated
- Off-centered disc
- Tight shut-off valve
- Great durability
- Compact and efficient
- Easy operation
- Standard ISO mounting flange

CVM®

Butterfly Valves

Model 3

Chuah Valves Manufacturing
Quality and Reliability Solutions

CVM Butterfly Valve Model 3 is a valve for use in various water works - dams, water treatment, sewage treatment and water pipelines.

Features

• Fully comply with BS EN 593:2004 with double flange short (Basic Series 13) and eccentric disc (disc lined). Other basic series are also available upon request.
• Tight Shut Off (TSO type). It comes with stainless steel body seat and EPDM resilient seat that provide water tightness and long life service.
• The valve is bi-directional.
• The flange is comply with BS EN 1092-2: 1997. The flange is cast integral with body.
• All the shaft and disc connection is via key and keyway.
• Easy replaceable of resilient seat and retaining ring without removing valve from the pipeline.
• There is no disc pin passing through the disc.
• Integrally cast adjustable travel stop provide for both fully open and close position of the gearbox. The adjustment of the close and open position is available at site.
• Mounting flange is fully complied with ISO5211.
• Self lubricating with PTFE Bush
• With lifting lug & supporting feet for stability.
• Easy installation as it is compact, refine and light).
• Embossed body markings (DN, PN, Open-Shut position).
• User-friendly, low operating torque that only require one man operation. It is because the seating design has minimum rubber protruded out from disc.
• Non-toxic food grade epoxy coating.
• Service fluid are fresh water, treated water, sea water and other corrosive fluids.
• No water contamination - greaseless, no graphite, no lubricating animal oil and no asbestos usage.
• The disc design provide low head loss
• Build in thrust bearing at bottom of shaft that allow the valve to be installed vertically.
• Gear box has been sealed to provide water tight against ingress of ground water to a head of 4.5meter of water column.

• No threaded bolt hole on the flange.
• Gear box was designed to incorporate a safety pin to snap and give way when excessive torque is applied before the gears are damaged.
• Position indicator and opening direction indicator are provided to indicate the valve position.
• Closing direction can be interchangeable for clockwise and anti-clockwise.

Technical Data

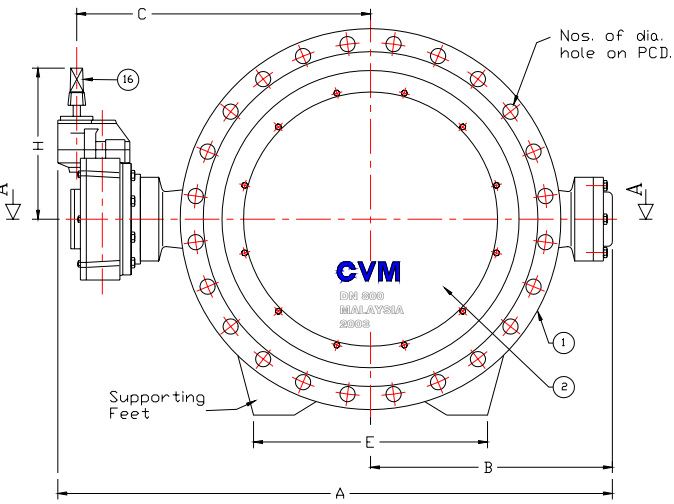
Pressure (bar)	: 10 / 16
Temperature (^{o}C)	: 0 to 65
Sizes (mm)	: 200 to 2000
Flange	: PN10/ PN16

* Other flange drilling are available upon request.

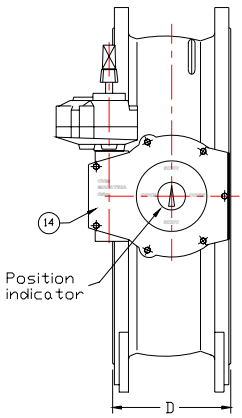
CVM®

Butterfly Valves

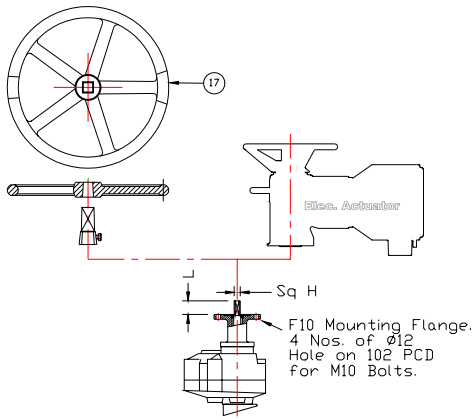
Model 3 - Dimension and Part Name



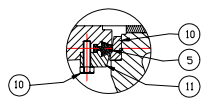
Side View



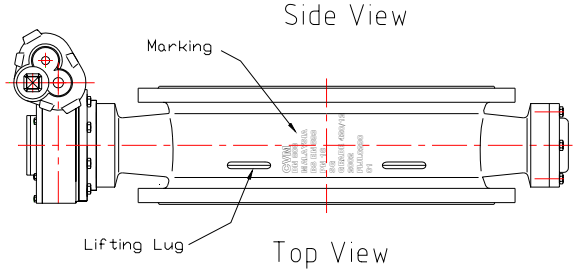
Front View



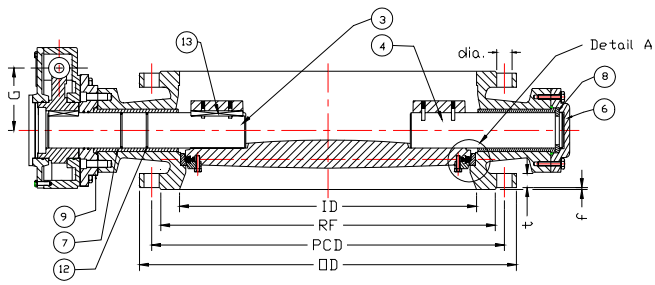
Provision for Actuator.



Detail A



Top View



Section A-A

Valve Dimension in mm

Nominal Diameter		A	B	C	D	E	G	H	ID	t		f	OD		RF	HOLES			PCD	
																No.	dia.			
(mm)	(in)									PN10	PN16		PN10	PN16			PN10	PN16	PN10	PI
300	12	655	295	315	178	-	49	270	300	24.5	24.5	4	455	455	370	12	22	28	400	4
350	14	740	330	361	190	-	90	270	350	24.5	26.5	4	505	520	429	16	22	28	460	4
400	16	760	340	371	216	350	90	345	400	24.5	28	4	565	580	480	16	26	31	515	5
450	18	965	410	505	222	400	150	430	450	25.5	30	4	615	640	530	20	26	31	565	5
500	20	975	415	510	229	415	150	430	500	26.5	31.5	4	670	715	582	20	26	34	620	6
600	24	1085	490	530	267	485	165	515	600	30	36	5	780	840	682	20	30	38	725	7
700	28	1265	585	690	292	550	165	520	700	32.5	39.5	5	895	910	794	24	30	38	840	8
800	32	1460	650	760	318	640	165	535	800	35	43	5	1015	1025	901	24	33	41	950	9
900	36	1600	730	830	330	700	165	535	900	37.5	46.5	5	1115	1125	1001	28	33	41	1050	1(
1000	40	1700	780	880	410	770	165	535	1000	40	50	5	1230	1255	1112	28	36	44	1160	1
1200	48	2100	970	980	470	800	215	600	1200	45	57	5	1455	1485	1328	32	39	50	1380	1
1400	56	2450	1100	1300	530	1050	215	600	1400	46	60	5	1675	1685	1530	36	44	50	1590	1
1500	60	2650	1225	1400	530	1110	215	600	1500	47.5	62.5	5	1785	1820	1640	36	44	57	1700	1
1600	64	2750	1280	1450	600	1180	215	600	1600	49	65	5	1925	1930	1750	40	50	57	1820	1
1800	72	3200	1480	1680	670	1400	215	600	1800	52	70	5	2115	2130	1950	44	50	57	2020	2(
2000	80	3500	1650	1800	760	1600	215	600	2000	55	75	5	2325	2345	2150	48	50	62	2230	2

Part Name

1	Body
2	Disc
3	Upper Shaft
4	Lower Shaft
5	Rubber seat
6	Bottom cover
7	Bush
8	LS Thrust Bearing
9	Mounting Flange
10	Body seat
11	Retaining plate
12	Shaft O-ring
13	Disc key
14	Gear box
15	Retaining plate bolt
16	Cap
17	Handwheel

i. Standard flange drilling is BS EN 1092-2:1997, Table 8 (PN10), Table 9 (PN16). Other flange drilling dimensions are available upon request.
ii. BS EN 558-1:1995 Basic series 13. Other basic series are available upon request.

Kv values

DN	Disc opening angle								
	10°	20°	30°	40°	50°	60°	70°	80°	90°
200	62	144	267	411	658	967	1296	1646	2057
250	106	248	461	709	1134	1665	2232	2834	3543
300	153	358	664	1022	1635	2401	3218	4086	5108
350	209	487	905	1392	2227	3271	4384	5567	6959
400	279	650	1208	1858	2973	4367	5854	7434	9292
450	353	823	1529	2352	3764	5528	7410	9410	11762
500	457	1065	1978	3043	4869	7152	9587	12174	15217
600	683	1593	2958	4551	7282	10696	14337	18206	22757
700	911	2126	3949	6075	9720	14276	19136	24300	30375
800	1222	2851	5295	8146	13034	19143	25660	32584	40730
900	1612	3762	6987	10749	17198	25259	33858	42994	53743
1000	2042	4765	8849	13614	21783	31994	42885	54458	68072
1200	3074	7173	13321	20493	32789	48159	64554	81973	102466
1400	4509	10521	19539	30060	48096	70641	94689	120240	150300
1600	6958	16234	30149	46384	74214	109001	146108	185534	231918

Kv is the flow coefficient which shows the rate of flow in m^3/h of water that will generate a pressure drop of 1 bar across the valve at 20°C.

Material Selection and Specification

Part Name	Material	Material Standard
Body	Ductile Iron	BS 2789 Grade 420/12
	Ductile Iron	BS EN 1563 Grade 400/15
	Ductile Iron	BS EN 1563 Grade 450/10
	Ductile Iron	BS EN 1563 Grade 500/7
Disc	Ductile Iron	BS 2789 Grade 420/12
	Ductile Iron	BS EN 1563 Grade 400/15
	Ductile Iron	BS EN 1563 Grade 450/10
	Ductile Iron	BS EN 1563 Grade 500/7
Retaining Plate	Ductile Iron	BS 2789 Grade 420/12
	Ductile Iron	BS EN 1563 Grade 400/15
	Ductile Iron	BS EN 1563 Grade 450/10
	Ductile Iron	BS EN 1563 Grade 500/7
	Stainless Steel	AISI 304
	Stainless Steel	AISI 316
Resilient Seat	EPDM	
Body Seat	Stainless Steel	AISI 304
	Stainless Steel	AISI 316
Shaft	Stainless Steel	AISI 304
	Stainless Steel	AISI 316
Shaft bushes	Metallic base PTFE Self Lubricating Bearing	
Shaft seal (O-ring)	NBR	
Coating	Food grade quality epoxy coated with the thickness of 250micron internally and externally	

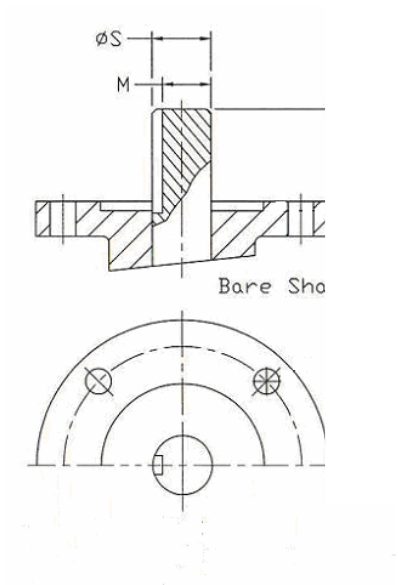
Note: Contact factory if different material standard is required.

Model 3 - Actuator Selection

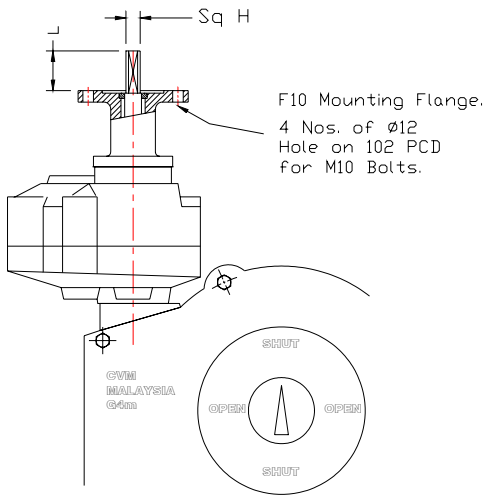
Actuator Selection

Valve Size (mm)	Part-turn					Multi-turn			
	Mounting Flange	S_{h9}	M	Keysize	L_1	Worm Gear Box Model	Mounting Flange	Sq H	L_2
200	F10	25.4	20.8	8 x 7	40	G1s/G1	F10	16	40
250	F10	28.6	24.0	8 x 7	40	G1	F10	16	40
300	F12	34.9	30.5	10 x 8	50	G1	F10	16	40
350	F12	34.9	30.5	10 x 8	50	G1/G2	F10	16	40
400	F14	44.5	39.2	14 x 9	60	G2	F10	16	40
450	-	-	-	-	-	G2/G3	F10	22	40
500	-	-	-	-	-	G2/G3	F10	22	40
600	-	-	-	-	-	G3/G4	F10	22	40
700	-	-	-	-	-	G4/G4m-a2	F10	22/16	40
800	-	-	-	-	-	G4m-a2/G4m-b8	F10	16	40
900	-	-	-	-	-	G4m-a2/G4m-b8	F10	16	40
1000	-	-	-	-	-	G4m-a2/G4m-b8	F10	16	40
1200	-	-	-	-	-	G5/G5-a3	F10	22	40
1400	-	-	-	-	-	G5-a3/G5-a4s	F10	22	40
1600	-	-	-	-	-	G5-a3/G5-a4s	F10	22	40
1800	-	-	-	-	-	G5-a4s/G5-b8	F10	22/16	40
2000	-	-	-	-	-	G5-a4s/G5-b8	F10	22/16	40

Note: Contact factory if different mounting flange is required.



For DN200 to DN400 bare shaft. (Part-turn)



For DN300 and above with gear box (Multi-turn)