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**MVC VALVES.**  
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# MTM SERIES CRYOGENIC TRIPLE ECCENTRIC METAL SEATED VALVES

## MVC Industrial Valves

In order to efficiently serve our customers, we have opened MVC in USA. All this infrastructure enables us to serve the market of North America, Central America, South America, Europe and Africa

It is fully committed to promoting technological development in the fields of low temperature, high temperature, high pressure air sealing, low torque and minimal leakage.

In 2012, we established factory in China. With extensive application experience and comprehensive capabilities, we provide tailor-made solutions for your valve automation needs.



## Quality System

MVC's management team adheres to strict policies ensuring that no defects occur in the valves used for industrial services. To maintain this discipline, we enforce internal regulations and a robust working process system. Third parties and customers are regularly invited to audit and approve our system.

MVC holds ISO9001, API6D, CE, TS, and other key certifications. All raw materials undergo re-testing for properties and mechanical performance upon arrival at our factory to ensure they meet machining standards. Non-destructive testing (NDE), including UT, MT, PT, and RT, is conducted by our quality control department during or before machining.

Every valve undergoes shell and sealing hydraulic tests, as well as air sealing tests. For valves used in special applications, additional tests such as fugitive emission, high/low temperature cycling, life, fire safety, cryogenic, and cleanliness tests after degreasing are available upon client request.



# Engineering GREAT Solutions

## MTM Series Cryogenic

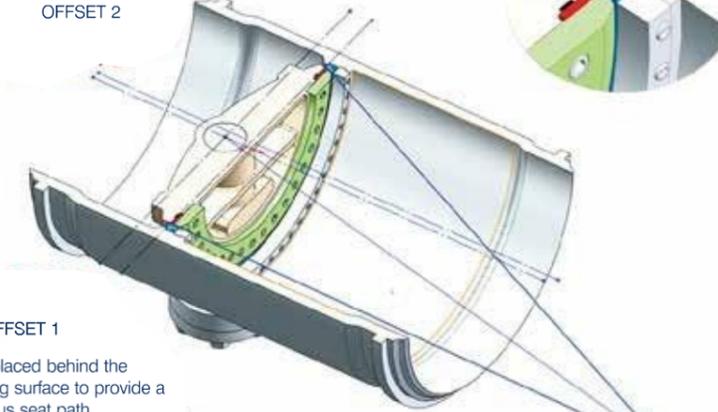
### Triple Eccentric Metal Seated Valves

MVC MTM Series valves are specified worldwide for their unique combination of control, reliability and compactness. They are used for critical high pressure, tight shut-off, high temperature or cryogenic, throttling and isolation duties in critical high pressure tight shut-off, high temperature or cryogenic, throttling and isolation duties.



The shaft is placed to one side of the pipe/valve centerline to allow the displacement of the seal from the seat during the 90° opening

OFFSET 2



OFFSET 1

The shaft is placed behind the plane of the sealing surface path to provide a continuous seat path.

OFFSET 3

The seat and seal cone centerlines are inclined in respect to the pipe/valve centerline. This third offset completely eliminates rubbing

### Key features

- Triple eccentric design
- Resilient metal-to-metal sealing
- Quarter turn friction-free operation
- Fire-safe and fire tested
- Torque seated
- External anti-blowout device
- Bi-directional tight shut-off
- Wide range of materials and sizes

### Benefits

The unique K&W triple eccentric design eliminates friction between the disc seal ring and the seat in the body, thereby preventing wear and any consequent leakage. The result is a valve with a longer service life, in which all sealing elements (seal ring on the disc, seat ring on the body) are fully replaceable with the valve in-line.

- > **Easy in-line maintenance**
  - Inspection door allows quick access for inspection and maintenance
  - No need to remove actuator, bonnet or packaging
  - No special tools or big cranes required
- > **Unique triple eccentric metal seat design**
  - Prevents wear
  - Eliminates leakage
  - Longer service life
  - Allows for lower operating torques
  - Tight seal from bi-directional pressure
  - Conical and inclined
  - Corrosion and erosion resistant
- > **Shaft and disc arrangement**
  - Minimal hysteresis
  - Improves flow capability
  - Reduces pressure drop

### Typical applications

- > LNG liquefaction plants
- > Cargo systems of LNG tankers
- > LNG receiving regasification terminals
- > Aerospace ground support facilities

### Product specification and dimensions

#### Materials

As suitable list or for all applications

#### Production range

3" – 120" ANSI Cl.150

3" – 80" ANSI Cl.300

6" – 60" ANSI Cl.600

8" – 48" ANSI Cl.900

ANSI Cl.1500 and ANSI Cl.2500 on special request

#### Temperature limits

From -196°C (-320°F) up to +80°C (+176°F)

#### Pressure limits

Up to +150 bar of shut off differential pressure

#### Applicable standards

Design: ASME B16.34 / ASME B16.10 /

ASME VIII / API 609 / BS 6755 – API 607 (fire-safe)

Flange Connection: B16.5 or B16.34 GOST 33259-2015

Butt Weld Connection: B16.25 GOST 16037

Fire test: BS 6755-API607-ISO FDIS 10497

Testing: API 598 GOST 9544-2015 GOST 34294-2017

### Rating

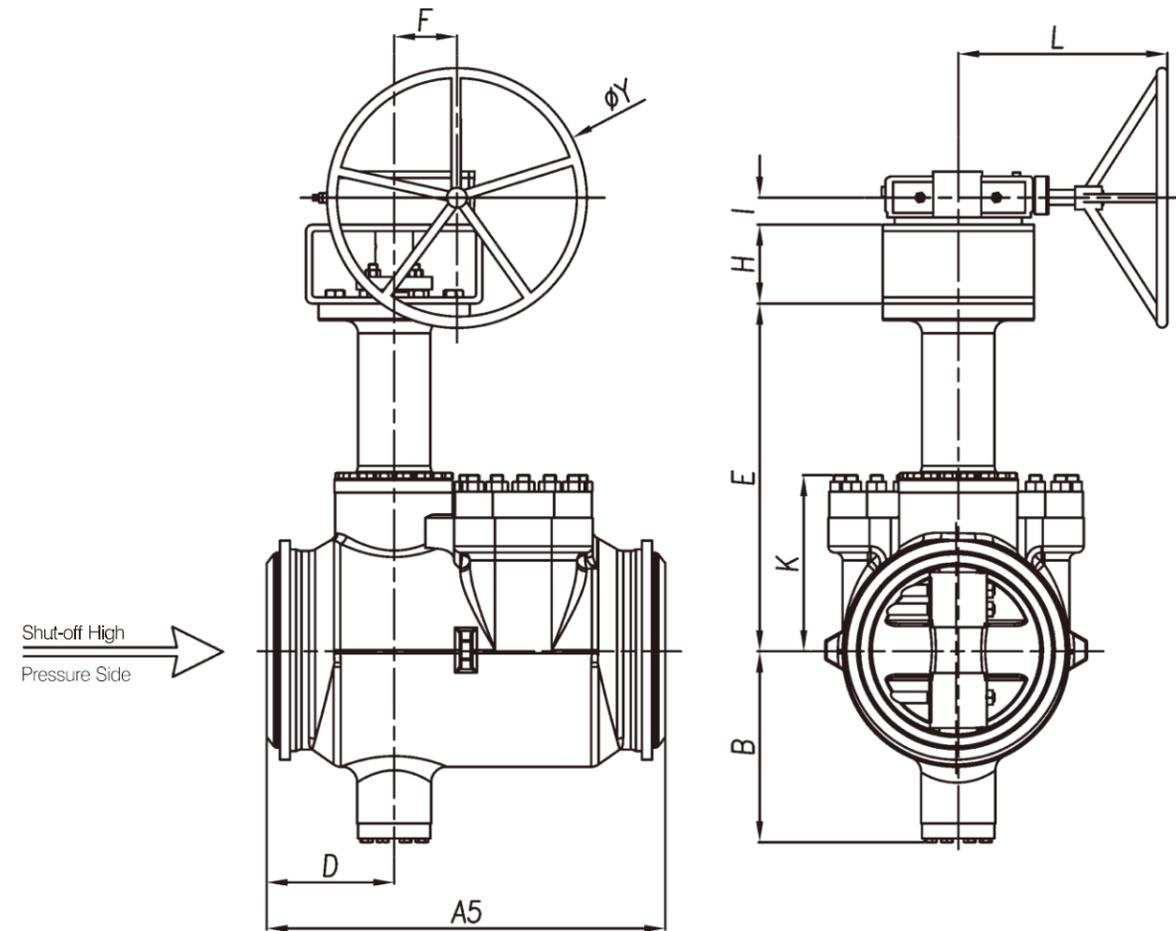
ANSI Cl.150 – 300 – 600 and 900



## Metal sealed triple eccentric butterfly valve

Specifications and dimensions

MV-BWT type: butt welded connection top mounted type



### NOTICE:

1. In terms of orientation, it is recommended to place the valve shaft in a vertical position or maintain the maximum tilt angle at 45° from the vertical direction.
2. The valve body should be thermally insulated to limit the temperature difference between the valve body and the valve core to within 100 °C (212 °F)
3. It is best to position the "closed high-pressure side" on one side of the valve shaft for long-term sealing.
4. If you need to inquire about valve products of other specifications, grades, and end connection methods, please contact K&W company.

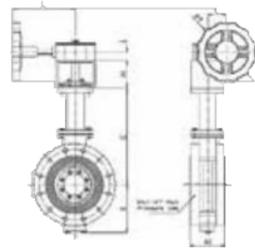
## Metal sealed triple eccentric butterfly valve

Specification dimensions in millimeters

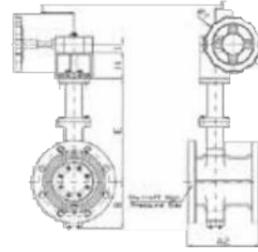
ND (inches)	ND (mm)	A5	D	K	B	E	H	L	I	ØY	F	WEIGHT (Kg)
<b>Class 150#</b>												
6"	150	535	150	183	175	427	100	247	29	250	52	124
8"	200	654	207	225	215	522	100	297	41	400	71	184
10"	250	700	223	250	247	560	120	305	42	500	86	244
12"	300	700	215	270	280	645	120	346	48	600	104.5	282
14"	350	744	240	295	315	672	140	346	48	600	104.5	352
16"	400	801	264	335	360	733	140	387	55	600	130	502
18"	450	808	261	365	395	813	140	447	55	700	211	615
20"	500	877	291	382	436	853	140	500	59	500	263	840
22"	550	883	290	410	490	950	140	500	59	700	263	900
24"	600	921	289	435	505	963	150	500	59	700	263	1030
26"	650	950	295	460	530	986	150	510	65	600	159	1091
28"	700	965	299	505	570	1032	200	658	74	700	169	1340
30"	750	1036	310	510	630	1162	200	658	74	700	169	1590
32"	800	1060	321	545	658	1191	200	673	100	700	293	1828
34"	850	1118	350	595	665	1195	200	673	100	700	293	1978
36"	900	1170	385	605	741	1261	200	696	115	700	285	2410
38"	950	1150	385	645	745	1264	200	696	115	700	285	2660
40"	1000	1150	410	690	795	1314	200	673	99	700	245	2833
42"	1050	1145	345	745	825	1293	200	673	99	700	245	3083
44"	1100	1180	358	785	873	1413	250	673	99	700	245	3283
46"	1150	1200	363	805	900	1463	250	696	100	700	245	3633
48"	1200	1220	372	816	940	1460	250	912	130	700	355	4250
<b>Class 300#</b>												
6"	150	589	175	207	190	497	100	243	45	300	97	204
8"	200	652	205	250	223	535	120	243	45	300	97	262
10"	250	715	228	253	260	620	140	387	55	600	130	292
12"	300	753	239	295	300	656	140	447	55	700	211	395
14"	350	848	280	340	335	759	150	500	59	700	263	633
16"	400	866	288	340	360	790	150	500	59	700	263	650
18"	450	921	305	413	410	823	150	586	59	500	357	890
20"	500	936	315	410	455	910	150	658	74	700	169	920
22"	550	1025	350	460	480	940	150	658	74	700	169	1312
24"	600	1062	370	487	522	980	200	696	115	700	285	1594
26"	650	1095	390	515	522	980	200	696	115	700	285	1729
28"	700	1126	400	552	650	1172	200	673	99	700	245	1889
30"	750	1216	440	570	680	1202	200	673	99	700	245	2131
32"	800	1240	455	602	725	1245	250	796	115	700	288	2443
34"	850	1306	490	642	725	1245	250	796	115	700	288	2739
36"	900	1369	520	663	775	1303	250	950	130	700	517	3407
38"	950	1470	570	680	775	1303	250	950	130	700	517	3660
40"	1000	1488	580	688	795	1350	300	950	130	700	517	3925
42"	1050	1506	590	723	795	1370	300	950	130	700	517	4281
44"	1100	1600	640	726	875	1412	300	990	150	800	444	5780
46"	1150	1624	655	759	900	1437	300	990	150	800	444	6480
48"	1200	1650	675	802	970	1440	300	1102	175	1000	552	8000
<b>Class 600#</b>												
6"	150	660	210	230	235	585	140	243	45	300	97	257
8"	200	750	253	275	270	580	140	387	55	600	130	255
10"	250	895	289	320	300	700	150	447	55	700	211	565
12"	300	940	294	352	340	787	150	500	59	700	263	730
14"	350	995	312	395	380	809	150	500	59	700	263	850
16"	400	1050	330	430	420	838	150	544	74	600	217	1102
18"	450	1130	361	460	474	885	200	658	83	700	169	1558
20"	500	1185	370	475	525	1000	200	673	99	700	293	1828
22"	550	1220	382	510	570	1000	200	673	99	700	293	2228
24"	600	1264	395	539	610	1100	250	673	99	700	245	2583
26"	650	1314	410	569	615	1100	250	673	99	700	245	2933
28"	700	1364	425	599	705	1184	250	950	130	700	517	3850
30"	750	1414	437	629	705	1254	250	950	130	700	517	4230
32"	800	1464	452	659	770	1246	300	950	130	700	517	4687
34"	850	1514	475	689	775	1246	300	950	130	700	517	5100
36"	900	1590	492	720	855	1330	300	990	150	800	444	6480
<b>Class 900#</b>												
6"	150	810	230	249	255	592	140	243	45	300	97	372
8"	200	900	280	320	300	685	150	447	55	700	211	530
10"	250	1020	314	375	365	773	150	500	59	700	263	830
12"	300	1090	352	382	397	806	150	586	59	500	357	1130
14"	350	1170	380	420	420	897	150	544	74	600	217	1442
16"	400	1250	400	455	455	985	250	673	99	700	293	1778
18"	450	1310	430	505	530	1036	250	673	99	700	245	2313
20"	500	1380	450	545	580	1075	250	673	99	700	245	2633
22"	550	1430	450	575	580	1075	250	673	99	700	245	3133
24"	600	1460	456	625	675	1190	300	912	130	700	355	4400
26"	650	1540	496	625	675	1190	300	912	130	700	355	4530
28"	700	1570	500	672	738	1230	300	950	130	700	517	5565
30"	750	1590	510	693	805	1272	300	950	130	700	517	6550
32"	800	1615	510	693	805	1272	300	990	150	800	444	8115
34"	850	1640	530	757	920	1352	300	990	150	800	444	9060
36"	900	1756	525	815	945	1350	300	990	150	800	444	9110

# Metal sealed triple eccentric butterfly valve

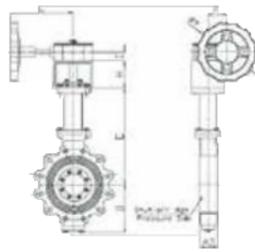
MTM-DFS/DFG/LUG/BWE specifications and dimensions



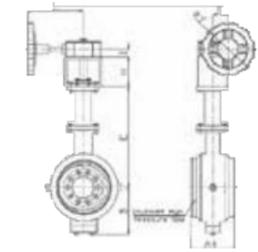
MTM-DFS: Double Flange Short Valve Body Series  
API609 Table 2 (C) (ISO 5752)



MTM-DFG: Double flange long valve body series  
API 609 Table 2 (B) (ASME B16.10)



MTM-LUG Ear Support Type API 609 Table 2 (A)



MTM-BWE: Welding Connection Type

## NOTICE:

- In terms of orientation, it is recommended to place the valve shaft in a vertical position or maintain the maximum tilt angle at 45° from the vertical direction
- The valve body should be thermally insulated to limit the temperature difference between the valve body and the valve core to within 100°C (212°F).
- It is best to position the "closed high-pressure side" on one side of the valve shaft for long-term sealing.
- The end-to-end specifications and dimensions must strictly comply with the latest version of relevant standards.
- Flanges/end connections must strictly comply with the provisions of ASME B16.5 or ASME B16.47 standards
- If you need to consult other specifications, grades, and end connection methods of valve products, please contact K&W company

DN	End to end dimensions				Specification dimensions in millimeters							WEIGHT				
	MTMDFS	MTMDFG	MTMLUG	MTMBWE	B	E	H	L	I	ØY	F	MTMDFS	MTMDFG	MTMLUG	MTMBWE	
	Double Flanged	ASME B16.10	Lug	Butt-Weld								Double Flanged	ASME B16.10	Lug	Butt-Weld	
A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>	A <sub>4</sub>													
<b>Class 150</b>																
2"	108	178	43	150	100	390	100	158	26	200	43	24	34	30	29	
2 1/2"	112	190	46	170	130	380	100	158	26	200	43	32	34	30	31	
3"	114	203	48	180	130	390	100	158	26	200	43	33	36	30	33	
4"	127	229	54	190	135	405	100	158	26	200	43	37	40	32	38	
5"	140	254	57	200	165	415	100	217	29	200	52	46	50	34	42	
6"	140	267	57	210	190	430	100	247	29	250	52	55	57	50	46	
8"	152	292	64	230	215	522	100	305	42	500	86	88	100	69	80	
10"	165	330	71	250	250	580	120	305	42	500	86	120	127	94	102	
12"	178	356	81	270	285	645	120	346	48	600	105	155	171	120	120	
14"	190	381	92	290	315	672	140	346	48	600	105	230	210	184	192	
16"	216	406	102	310	360	733	140	387	55	600	130	256	294	202	215	
18"	222	432	114	330	395	814	140	447	55	700	211	330	359	280	274	
20"	229	457	127	350	438	852	140	500	59	500	263	400	461	360	354	
22"	229	508	127	390	465	877	150	500	59	700	263	488	553	499	470	
24"	267	508	154	390	505	963	150	500	59	700	263	620	652	556	513	
26"	267	559	154	390	530	986	150	586	59	500	357	685	762	720	610	
28"	292	610	229	430	575	1032	200	658	74	700	169	905	941	915	742	
30"	318	610	241	470	630	1162	200	658	74	700	169	920	1061	1120	860	
32"	318	660	241	470	630	1162	200	673	100	700	293	990	1207	1268	950	
34"	318	711	241	510	665	1195	200	673	100	700	293	1040	1417	1550	1195	
36"	330	711	241	510	745	1264	200	696	115	700	285	1430	1631	1776	1340	
38"	330	762	300	530	745	1264	200	696	115	700	285	1530	1863	1943	1548	
40"	410	762	300	550	760	1314	200	673	100	700	245	1869	2046	2295	1666	
42"	410	813	300	550	790	1339	200	673	100	700	245	2260	2559	2756	2104	
44"	470	832	300	575	875	1463	250	673	100	700	245	2550	3263	3220	2350	
46"	470	851	350	575	875	1463	250	796	115	700	288	2750	3861	3790	2570	
48"	470	864	350	630	945	1512	250	912	130	700	355	3150	4026	4239	2744	
50"	470	890	365	653	880	1510	250	912	130	700	355	3550	4370	4550	3075	
52"	530	903	365	682	1015	1544	300	950	130	700	517	3880	4746	4800	3260	
54"	530	918	380	700	1025	1590	300	950	130	700	517	4500	5060	5025	3400	
56"	530	933	390	710	1070	1685	300	950	130	700	517	5200	5600	5214	3700	
58"	530	948	390	726	1105	1714	300	950	130	700	517	5730	6130	5630	4026	
60"	600	963	390	742	1145	1778	300	950	130	700	517	6950	7500	5940	4400	

# Metal sealed triple eccentric butterfly valve

DN	End to end dimensions				Specification dimensions in millimeters							WEIGHT				
	MTMDFS	MTMDFG	MTMLUG	MTMBWE	B	E	H	L	I	ØY	F	MTMDFS	MTMDFG	MTMLUG	MTMBWE	
	Double Flanged	ASME B16.10	Lug	Butt-Weld								Double Flanged	ASME B16.10	Lug	Butt-Weld	
A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>	A <sub>4</sub>													
<b>Class 300</b>																
2"	108	216	48	150	100	390	100	158	26	200	43	37	38	34	33	
2 1/2"	112	241	46	170	130	380	100	158	26	200	43	37	38	36	37	
3"	114	283	48	180	130	391	100	217	29	200	52	42	47	37	43	
4"	127	305	54	190	160	404	100	217	29	200	52	47	53	35	51	
5"	140	381	59	200	190	455	100	305	42	500	86	55	75	48	60	
6"	140	403	61	210	187	497	100	305	42	500	86	77	96	53	84	
8"	152	419	73	230	225	535	120	346	48	600	105	113	136	83	115	
10"	165	455	86	250	260	621	140	387	55	600	130	180	207	143	165	
12"	178	502	92	270	300	657	140	447	55	700	211	238	328	190	223	
14"	190	762	117	290	336	759	150	500	59	700	263	350	460	320	310	
16"	216	838	133	310	370	790	150	500	59	700	263	462	670	411	400	
18"	222	914	149	330	410	823	150	586	59	500	357	555	880	536	450	
20"	229	991	159	350	455	910	150	658	74	700	169	675	1130	649	503	
22"	229	1092	181	350	470	910	150	658	74	700	169	765	1325	859	548	
24"	267	1143	183	390	525	980	200	696	115	700	285	1057	1670	1040	890	
26"	267	1245	210	390	560	980	200	696	115	700	285	1246	1718	1196	1100	
28"	292	1346	228	430	650	1172	200	673	100	700	245	1380	1925	1438	1190	
30"	318	1397	241	470	680	1202	200	673	100	700	245	1765	2150	1779	1580	
32"	330	1524	300	470	725	1245	250	796	115	700	288	2005	2325	1900	1890	
34"	330	1626	300	510	725	1245	250	796	115	700	288	2300	2556	2243	2050	
36"	330	1727	300	510	775	1303	250	950	130	700	517	2530	2860	2630	2355	
38"	330	1824	350	550	790	1335	250	950	130	700	517	2946	3166	3025	2765	
40"	410	1921	350	550	800	1350	300	950	130	700	517	3650	3964	3300	3334	
42"	410	2018	384	580	800	1350	300	950	130	700	517	3770	4125	3760	3678	
44"	440	2115	418	580	866	1415	300	950	150	800	444	4315	4750	3995	4080	
46"	440	2212	452	610	923	1475	300	990	150	800	444	5026	5360	4368	4625	
48"	470	2309	452	610	965	1507	300	1102	175	1000	552	5670	5982	4990	4976	
50"	500	2406	486	630	1026	1560	300	1102	175	1000	552	6027	6400	5360	5500	
52"	530	2503	520	630	1090	1683	300	1102	175	1000	552	6700	7136	5750	6037	
54"	550	2600	554	655	1100	1720	300	1102	175	1000	552	7124	7550	6230	6580	
56"	575	2697	588	655	1136	1762	300	1102	175	1000	552	7600	8026	6770	7037	
58"	600	2794	622	680	1175	1802	300	1102	175	1000	552	8030	8325	7248	7750	
60"	600	2891	656	705	1185	1832	300	1242	190	1000	604	8530	9000	7700	8135	
<b>Class 600</b>																
3"	180	356	54	180	135	441	100	247	29	250	52	40	47	28	30	
4"	190	432	66	190	190	520	120	305	42	500	86	70	71	47	46	
5"	200	508	70	200	205	560	120	305	42	500	86	100	117	77	71	
6"	210	559	78	210	235	585	140	346	48							