MODENTIC

ISO9001-2008

TS2732095-2015

MODENTIC
CONTROL VALVES

MODENTIC VALVE CORP.(NANJING)

MODENTIC

With a history of new product development and innovation that dates back to the company's inception in 1982, Modentic Group provides the products in a broad range of materials, sizes and pressure classes. Focused on various industrial sectors including Power Generation, Petroleum Refining, Oil & Gas, Food & Pharmacy and Commercial Construction, Modentic's highly engineered product solutions are widely specified and used throughout the world.

Partner with Modentic, you have chosen the reliable company of the valve design and engineering, we guarantee the durability and consistent quality of our products. The manufacturing documentation are always provided very detailed to ensure the traceability and easy maintenance, you never have to worry about the products do not perform as expected. We want you to be a life long partner of our dedicated work team, and we welcome your feedback about our performance all the time, which is an important extra value for our company.

CONTENTS

CERTIFICATE

ISO9001

API6D

API609

TS

Product range

API607 Fire Safe Ball Valves
Metal Seated Ball Valves
High Pressure Forged Ball Valves
API6D Trunnion Mounted Ball Valves
API609 Butterfly Valves
API6D/API600/API603 Gate/Check Valves
Bs1873 Globe Valves
Pneumatic Actuated Valves
Electric Actuated Valves

In-house Quality Assurance on Highest Level

1. PMI
2. Dimension Examination
3. MT
4. Neutral Salt Spray Testing
5. Precision Machining
6. Fire Testing
7. Pressure Testing
8. Laser Marking
9. UT
10. Hardness Testing

Modentic's quality assurance is dedicated to supplying zero defect valves to customers with reliable service life.

Fire safe trunnion mounted ball valve MD-64

(If you need API607 certificate, please contact with us)

Feature of design

Forged steel structure

The valve body and connector of ball valve are made of forged steel while its inner parts are exquisitely selected, so as to ensure the product to operate reliably under various work conditions. The wall thickness of the body and the connection strength of valve bolts are performed as per ASME B16.34, besides the relating pressure class and reliable strength of joint is insured through strict calculation.

Low operating torque

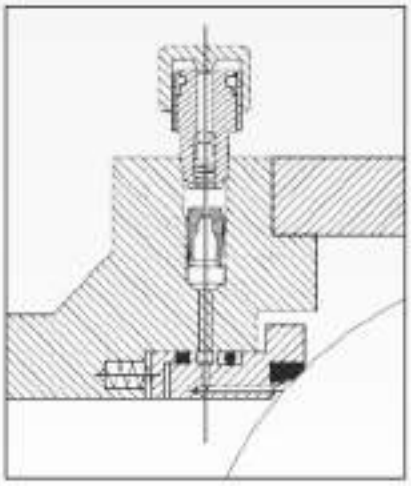
Fixed ball and floating seat are applied in ball valve, by which low torque can be attained under operating pressure. Self-lubricating PTFE metal axle sleeve is used with high-strength and high-polished stem, so as to enable the friction coefficient to a minimum.

Reliable sealing

The polymeric sealing seat suitable for various pressure classes are floating and loaded by spring, keeping close contact with the body at OFF position and then, this reliable sealing is reached. Before delivery, each valve is wholly examined as per API 6D or API 598 and finally issue the test report on the condition that it conforms to the requirement.

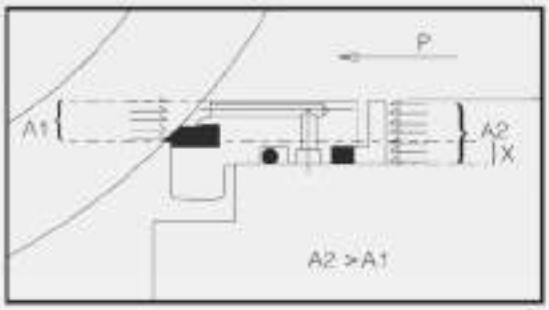
Auxiliary valve seat sealing

As shown in the graph, the design with the diameter equal or above 6" has the auxiliary valve seat sealing system. If a certain degree damage and bits of leakage are occurred in the soft sealing, the auxiliary is obtained by the sealant injected by auxiliary sealing system.The system also can wash and lubricate the seat as necessary in order to retain the cleanness. Note:(As shown in Diagram)A cleaning valve is set at ball valve body while its diameter is less than or equal to 4 inches (DN100). This cleaning valve is available for injecting cleaner and has no auxiliary sealing function.



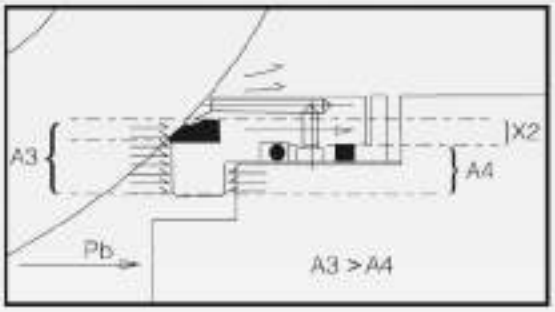
Auto discharge of cavity pressure

The specialized explanation is given for the overstocking of dual-sealing-seat valve cavity in ASME B16.34. Because the separate spring-loaded upper/lower seat ring is applied in ball valve, in this way the cavity can be discharged downwards automatically, so as to avoid the danger arisen from overstocking.(As shown in diagram)



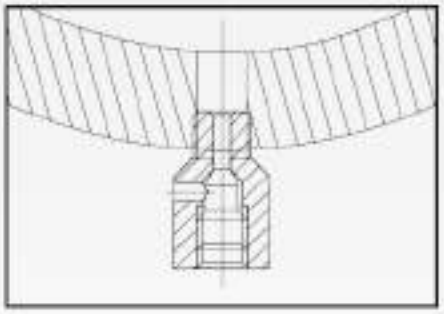
Upper side:the seat is axially moved along the valve. One reverse force is produced at A1 while upper inlet pressure P is exerted on A2. Because A2 is greater than A1, X is equal to the valve of A2 minus A1, and the force on X will pull the seat onto upper close sealing of ball.

Lower side: Once Pb(pressure in cavity) is enhanced, the force exerted on A3 is greater than that on A4. Because X2 is equal to the force of A3 minus A4, the pressure difference of X2 will separate the seat and ball by eliminating spring force, in this way the cavity pressure is discharged downwards. Finally, the contact between the seat and the ball van be conducted under the action of spring.



Body discharge device

The discharge valve is installed at the body of ball valve. When valve is in the OFF status, the fluids coming from both sides of valve can be stopped, therefore, the valve enjoys the functions of stop and discharge(DBB). The other function is to wash and discharge the sediment in the body through the device.(As shown in Diagram)



Reliable sealing to stem and body

The stem and body sealing materials respectively employ fluorubber O-ring and graphite gasket meeting the requirements of international advanvced standards, to ensure reliable sealing under various work conditions. Fluorubber O-ring preventing from pressure reduction explosion can also be applied of stem and body under severe fluctuation. Besides, most of stems are installed with auxiliary sealing device.

Fireproof and staticproof design

Fireproof design is the standard design for pipeline ball valve. The fireproof structure can be tested by burning as per API 607, its performance meets the requirements stipulated in API 607, Besides, staticproof structure is also offered according to the requirements of customers.

Corrosion-proof

Certain corrosion margin is reserved for wall thickness of body. Chemical nickelplating is done on carton steel stem, fixed shaft, ball, seat and base seat as per ASTM B733 and B656. Besides,there are other various anti-corrosion materials for customers.

Resistance to Sulfide stress

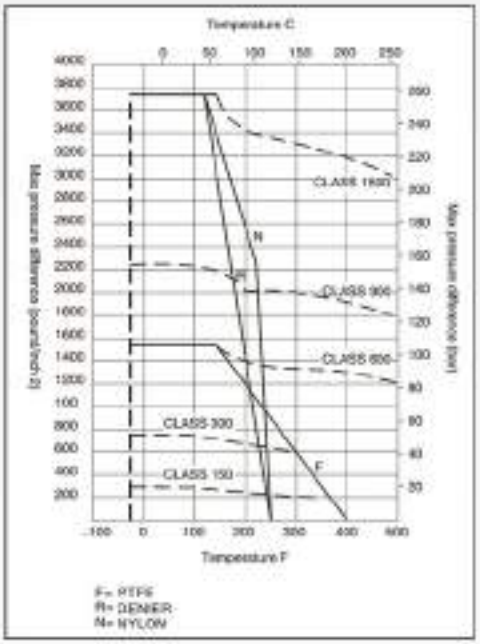
According to the requirements of customers, the materials of valve can be selected as per NACE MR0175 or NACE MR0103. With a view to meeting the requirements of the standard and the work conditions of sulfide, strictly quality control and test will be performed during the production.

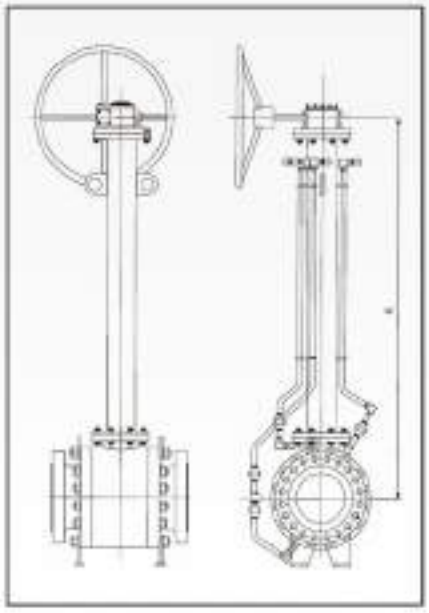
Manual or auto operation

Manual handle operation is suitable for Class150, 300, 400 and 600 of 2–4 inches (DN50–DN100); Class 900 of 2&3 inches (DN50 and DN80); Class 1500 of 2 inches (DN50). Worm operation mode is suitable for larger sizes. Besides, other operation modes involving pneumatic, electric, hydraulic and pneumatic–hydraulic combination are fit for auto control.

Extension device

The extension device is offered to the ball valve mounted and operated on the ground. It contains stem, grease injector, discharge valve and so on. The requirements of length must be illustrated when ordering. The extension length of ball valve driven by worm box is the distance between the center of ball valve pipeline and that of worm box handwheel. The extension of ball valve driven electricaly, pneumatically and pneumatically–hydraulically is the distance between the center of ball valve pipeline and the connection flange surface of extension rod.





Temperature-pressure rated value of valve

The sealing rated value indicated in full line in the following diagram, and only for sealing seat, determined by the pressure difference under full close of valve. The max work pressure of carton steel (A105) body is indicated in dotted line. The intersection point of both lines indicates the max rated value under relative temperature and pressure. Please consult MODENTIC VALVE CORP.(NANJING) for other applications.

Temperature-pressure rated value of body

The rated values of main body materials are listed in the following table as per ASME B16.34, the actual pressure limit as per rated value of sealing seat stated above.

Temp-erature		Pressure Class																							
		Class 150				Class 300				Class 400				Class 600				Class 900				Class 1500			
°C	°F	A105,LF2		ASTM A182 F316		A105,LF2		ASTM A182 F316		A105,LF2		ASTM A182 F316		A105,LF2		ASTM A182 F316		A105,LF2		ASTM A182 F316		A105,LF2		ASTM A182 F316	
Up to	Up to	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi
38	100	19.7	285	19	275	51	740	49.6	720	68.3	990	66.2	960	102	1480	99.3	1440	153.1	2220	148.9	2160	255.5	3705	248.2	3600
93	200	17.9	260	16.5	240	46.5	675	42.7	620	62.1	900	56.9	825	93.1	1350	85.5	1240	139.6	2025	128.2	1860	232.7	3375	213.4	3096
149	300	15.9	230	15.8	215	46.2	665	39.6	568	60.3	875	51.4	745	90.7	1315	77.2	1120	135.9	1970	115.8	1680	226.1	3280	192.7	2796
204	400	13.8	200	13.4	195	43.8	635	35.5	515	58.3	845	47.2	685	87.6	1270	71.0	1030	131	1900	106.2	1540	218.6	3170	177.2	2570
260	500	11.7	170	11.7	170	41.4	600	33.1	480	55.2	800	43.8	635	82.7	1200	65.8	955	123.3	1795	98.9	1435	206.5	2995	164.8	2390

Main parts materials

body	WCB A105	CF8 304	CF3 304L	CF8M 316	CF3M 316L	ZTA2 TA2	Hastelly C
ball	304	304	304L	316	316L	TA2	Hastelly C
seat	304	304	304L	316	316L	TA2	Hastelly C
seat materials	Co-based alloy, Ni-base alloy, Tungsten carbide and Chromium carbide are available to choose under different working conditions.						

Note: According to different working conditions, the valve body and inner parts can be made of other materials like Duplex Stainless Steel, Monel alloy, Hastelloy, Inconel alloy and Titanium alloy and so on, please contact MODENTIC VALVE CORP.(NANJING) Company for more details.

Reference standards and specifications for design

API Q1	Specification for quality programs for the petroleum, Petrochemical and natural gas industry
API 6D	Pipeline valves
API 598	Valve inspection and testing
API 607	Fire test for soft-seated quarter-turn valves
ISO 14313	Petroleum and natural gas industries-Pipeline transportation systems-Pipeline valves
ASME B16.5	Pipe flanges and flanged fittings
ASME B16.10	Face-to-face and end-to-end dimensions of valves
ASME B16.25	Buttwelding ends
ASME B16.34	Valves-Flanged, threaded, and welding end
ASME B16.47	Large diameter steel flanges
MSS SP-44	Steel pipeline flanges
NACE MR0103	Materials resistance to sulfide stress cracking in corrosive petroleum refining Environments
NACE MR0175	Petroleum and natural gas industries-Materials for use in H2S-containing Environments in oil and gas production
GB/T 9113.1	Integral steel pipe flanges with flat face or raised face
GB/T 9113.4	Integral steel pipe flanges with ring-joint face
GB/T 12224	General requirements for industrial steel valves
GB/T 13927	Pressure testing for general purpose valves
GB/T 19672	Specification of pipeline valves
JB/T 6899	Fire test for valves

Operating torque

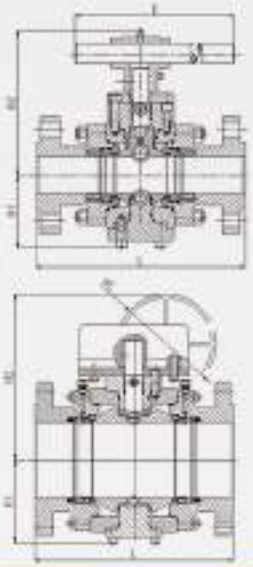
SIZE		Pressure Class				
NPS	DN	Class 150 PN20	Class 300 PN50	Class600 PN100	Class900 PN150	Class1500 PN250
2"	50	57	99	168	228	390
2-1/2"	65	95	170	292	402	687
3"	80	122	212	360	512	813
4"	100	192	335	575	846	1524
6"	150	324	544	912	1784	2934
8"	200	647	995	2177	4116	7215
10"	250	1106	1736	3069	5910	11128
12"	300	1502	2388	4262	10137	16103
14"	350	1946	3224	7458	14141	24518
16"	400	3164	5138	8310	18866	29630
18"	450	3750	6194	11233	22400	-
20"	500	4769	7826	16815	28544	-
22"	550	5896	9454	20333	-	-
24"	600	7529	12958	24554	53163	-
26"	650	8693	14394	32488	-	-
28"	700	9832	15626	37558	-	-
30"	750	11172	18700	44293	-	-
32"	800	12494	21030	49586	-	-

Notes: 1.The torque indicated in the table is starting torque under maximum pressure difference, only for reference as selecting driving device. 2.Please consider the safety coefficient not less than 1.25 times when selecting actuators. 3.The extra requirements on torque may be required because of different nature of mediums, inner parts and start/close speed.

Fire safe trunnion mounted ball valve MD-64(Flange)

Dimension

SIZE		Class 150 SIZE (mm)					
		L		H2		E	
NPS	DN	Flange RF	H1	Handle	Worm Wheel	Handle	Worm Wheel
2"	50	178	185	153	-	680	-
2-1/2"	65	191	182	165	-	680	-
3"	80	203	204	195	-	700	-
4"	100	229	217	213	-	700	-
6"	150	394	185	-	534	-	460
8"	200	457	226	-	575	-	460
10"	250	533	259	-	608	-	460
12"	300	610	311	-	770	-	705
14"	350	686	348	-	808	-	705
16"	400	762	390	-	937	-	800
18"	450	864	540	-	995	-	800
20"	500	914	578	-	1030	-	800
22"	550	991	610	-	1075	-	800
24"	600	1067	660	-	1134	-	800
26"	650	1143	695	-	1353	-	800
28"	700	1245	735	-	1382	-	800
30"	750	1295	775	-	1433	-	800
32"	800	1372	820	-	1471	-	800



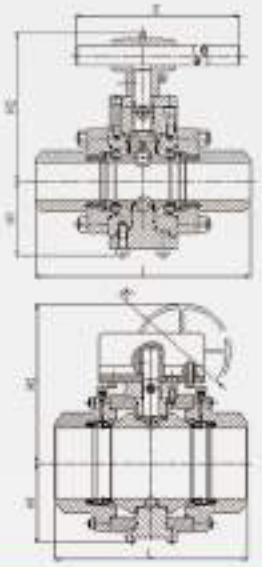
SIZE		Class 300 SIZE (mm)						Class 600 SIZE (mm)					
		L		H2		E		L		H2		E	
NPS	DN	Flange RF	H1	Handle	Worm Wheel	Handle	Worm Wheel	Flange RF	H1	Handle	Worm Wheel	Handle	Worm Wheel
2"	50	216	185	153	-	680	-	292	141	167	-	700	-
2-1/2"	65	241	182	165	-	680	-	330	151	182	-	700	-
3"	80	283	204	195	-	700	-	356	167	208	-	1100	-
4"	100	305	217	213	-	700	-	432	202	244	-	1100	-
6"	150	403	185	-	534	-	460	559	192	-	542	-	460
8"	200	502	226	-	575	-	460	660	260	-	711	-	705
10"	250	568	271	-	732	-	705	787	290	-	762	-	705
12"	300	648	311	-	770	-	705	838	342	-	875	-	800
14"	350	762	348	-	808	-	705	889	378	-	902	-	800
16"	400	838	390	-	937	-	800	991	423	-	972	-	800
18"	450	914	540	-	995	-	800	1092	570	-	1032	-	800
20"	500	991	578	-	1030	-	800	1194	610	-	1086	-	800
22"	550	1092	610	-	1075	-	800	1295	650	-	1306	-	800
24"	600	1143	660	-	1137	-	800	1397	720	-	1373	-	800
26"	650	1245	695	-	1353	-	800	1448	750	-	1420	-	800
28"	700	1346	735	-	1382	-	800	1549	780	-	1471	-	800
30"	750	1397	775	-	1433	-	800	1651	820	-	1516	-	800
32"	800	1524	820	-	1471	-	800	1778	900	-	1580	-	800

SIZE		Class 900 SIZE (mm)						Class 1500 SIZE (mm)					
		L		H2		E		L		H2		E	
NPS	DN	Flange RF	H1	Handle	Worm Wheel	Handle	Worm Wheel	Flange RF	H1	Handle	Worm Wheel	Handle	Worm Wheel
2"	50	368	141	167	-	700	-	368	141	167	-	700	-
2-1/2"	65	419	162	182	-	700	-	419	162	182	-	700	-
3"	80	381	167	208	-	1100	-	470	167	-	492	-	460
4"	100	457	202	-	508	-	460	546	202	-	508	-	460
6"	150	610	200	-	656	-	705	705	200	-	656	-	705
8"	200	737	259	-	792	-	800	832	259	-	792	-	800
10"	250	838	293	-	828	-	800	991	455	-	894	-	800
12"	300	965	359	-	908	-	800	1130	500	-	950	-	800
14"	350	1029	500	-	943	-	800	1257	520	-	1175	-	800
16"	400	1130	550	-	1201	-	800	1384	600	-	1258	-	800
18"	450	1219	590	-	1243	-	800	-	-	-	-	-	-
20"	500	1321	650	-	1329	-	800	-	-	-	-	-	-
22"	550	-	-	-	-	-	-	-	-	-	-	-	-
24"	600	1549	760	-	1443	-	800	-	-	-	-	-	-

Fire safe trunnion mounted ball valve MD–64(Butt Weld)

Dimension

SIZE		Class 150 SIZE (mm)					
		L	H1	H2		E	
NPS	DN	BW		Handle	Worm Wheel	Handle	Worm Wheel
2"	50	216	165	153	–	680	–
2–1/2"	65	241	182	165	–	680	–
3"	80	283	204	186	–	700	–
4"	100	305	217	213	–	700	–
6"	150	457	185	–	534	–	460
8"	200	521	226	–	575	–	460
10"	250	559	259	–	608	–	460
12"	300	636	311	–	770	–	705
14"	350	762	348	–	808	–	705
16"	400	838	390	–	937	–	800
18"	450	914	540	–	995	–	800
20"	500	991	578	–	1030	–	900
22"	550	1092	610	–	1075	–	800
24"	600	1143	660	–	1134	–	800
26"	650	1245	695	–	1353	–	800
28"	700	1346	735	–	1392	–	800
30"	750	1397	775	–	1433	–	800
32"	800	1524	820	–	1471	–	800

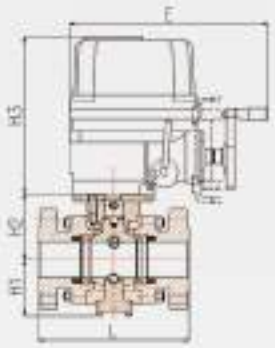


SIZE		Class 300 SIZE (mm)						Class 600 SIZE (mm)					
		L	H1	H2		E		L	H1	H2		E	
NPS	DN	BW		Handle	Worm Wheel	Handle	Worm Wheel	BW		Handle	Worm Wheel	Handle	Worm Wheel
2"	50	216	165	153	–	680	–	292	141	167	–	700	–
2–1/2"	65	241	182	165	–	680	–	330	151	182	–	700	–
3"	80	283	204	186	–	700	–	356	167	208	–	1100	–
4"	100	305	217	213	–	700	–	432	202	244	–	1100	–
6"	150	403	185	–	534	–	460	559	192	–	542	–	460
8"	200	502	226	–	575	–	460	660	250	–	711	–	705
10"	250	568	271	–	732	–	705	787	290	–	762	–	705
12"	300	648	311	–	770	–	705	838	342	–	875	–	800
14"	350	762	349	–	808	–	705	889	378	–	902	–	800
16"	400	838	390	–	937	–	800	991	423	–	972	–	800
18"	450	914	540	–	995	–	800	1092	570	–	1032	–	800
20"	500	991	578	–	1030	–	800	1194	610	–	1086	–	800
22"	550	1092	610	–	1076	–	800	1295	650	–	1308	–	800
24"	600	1143	660	–	1137	–	800	1397	720	–	1373	–	800
26"	650	1245	695	–	1353	–	800	1448	750	–	1420	–	800
28"	700	1346	735	–	1392	–	800	1549	780	–	1471	–	800
30"	750	1397	775	–	1433	–	800	1651	820	–	1516	–	800
32"	800	1524	820	–	1471	–	800	1778	900	–	1580	–	800

SIZE		Class 900 SIZE (mm)						Class 1500 SIZE (mm)					
		L	H1	H2		E		L	H1	H2		E	
NPS	DN	BW		Handle	Worm Wheel	Handle	Worm Wheel	BW		Handle	Worm Wheel	Handle	Worm Wheel
2"	50	368	141	167	–	700	–	368	141	167	–	700	–
2–1/2"	65	419	162	182	–	700	–	419	152	182	–	700	–
3"	80	381	167	208	–	1100	–	470	167	–	492	–	460
4"	100	457	202	–	508	–	460	546	202	–	508	–	460
6"	150	610	200	–	656	–	705	705	200	–	656	–	705
8"	200	737	259	–	792	–	800	832	259	–	792	–	800
10"	250	838	283	–	828	–	800	991	455	–	884	–	800
12"	300	965	359	–	908	–	800	1130	500	–	950	–	800
14"	350	1029	500	–	943	–	800	1257	520	–	1176	–	800
16"	400	1130	550	–	1201	–	800	1384	600	–	1258	–	800
18"	450	1219	580	–	1243	–	800	–	–	–	–	–	–
20"	500	1321	650	–	1329	–	800	–	–	–	–	–	–
22"	550	–	–	–	–	–	–	–	–	–	–	–	–
24"	600	1549	750	–	1443	–	800	–	–	–	–	–	–

Electric Actuated Fire safe trunnion mounted ball valve MD-64 E

SIZE: 2" ~ 32"
END: Flange,Butt weld
PRESSURE: ANSI CLASS150/300/600/900/1500
DESIGN: API 6D
Fire Safe Design: API 607
OPTIONS: Actuator



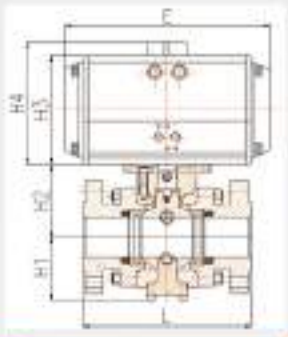
Dimension

SIZE	150LB						300LB					
	L	H1	H2	H3	E	Actuator	L	H1	H2	H3	E	Actuator
2"	178	165	153	238	260	MDEC-008	216	165	153	270	351	MDEC-015
2-1/2"	191	182	165	270	351	MDEC-015	241	182	165	290	367	MDEC-030
3"	203	204	195	270	351	MDEC-020	283	204	195	290	367	MDEC-030
4"	229	217	225	290	367	MDEC-030	305	217	213	290	367	MDEC-050
6"	394	185	278	290	367	MDEC-050	403	185	278	330	410	MDEC-080
8"	457	226	300	330	410	MDEC-120	502	226	300	534	410	MDEC-150
10"	533	259	325	534	410	MDEC-150	568	271	325	534	410	MDEC-300
12"	610	311	365	534	410	MDEC-200	648	311	365	534	410	MDEC-300
14"	686	348	408	534	410	MDEC-300	762	348	408	534	410	MDEC-600
16"	762	390	459	534	410	MDEC-400	838	390	459	-	-	-
18"	864	540	600	534	410	MDEC-500	914	540	600	-	-	-
20"	914	578	680			-	991	578	680	-	-	-
22"	991	610	710			-	1092	610	710	-	-	-
24"	1067	660	750			-	1143	660	750	-	-	-
26"	1143	695	808			-	1245	695	808	-	-	-
28"	1245	795	858			-	1346	795	858	-	-	-
30"	1295	775	905			-	1397	775	905	-	-	-
32"	1372	820	945			-	1524	820	945	-	-	-

SIZE	600LB						900LB						1500LB					
	L	H1	H2	H3	E	Actuator	L	H1	H2	H3	E	Actuator	L	H1	H2	H3	H3	Actuator
2"	292	141	167	290	367	MDEC-050	368	141	167	290	367	MDEC-030	368	141	167	290	367	MDEC-050
2-1/2"	330	151	182	290	367	MDEC-050	419	152	182	290	367	MDEC-060	419	152	182	330	410	MDEC-120
3"	356	167	208	290	367	MDEC-050	381	167	208	330	410	MDEC-080	470	167	208	330	410	MDEC-120
4"	432	202	244	330	410	MDEC-080	457	202	285	330	410	MDEC-120	546	202	306	534	410	MDEC-200
6"	559	192	288	330	410	MDEC-120	610	200	312	534	410	MDEC-300	705	200	356	534	410	MDEC-600
8"	660	250	312	534	410	MDEC-300	737	258	365			-	832	259	389	-		-
10"	787	290	339	534	410	MDEC-400	838	293	408			-	991	455	555	-		-
12"	838	342	375	534	410	MDEC-600	965	359	465			-	1130	500	633	-		-
14"	889	378	428			-	1029	500	612			-	1257	520	668	-		-
16"	991	423	476			-	1130	550	660			-	1384	600	710	-		-
18"	1092	570	625			-	1219	580	710			-	-	-	-	-		-
20"	1194	610	760			-	1321	650	756			-	-	-	-	-		-
22"	1295	650	731			-	1549	750	868			-	-	-	-	-		-
24"	1397	720	777			-	-	-				-	-	-	-	-		-
26"	1448	750	825			-	-	-				-	-	-	-	-		-
28"	1549	780	880			-	-	-				-	-	-	-	-		-
30"	1651	820	926			-	-	-				-	-	-	-	-		-
32"	1778	900	965			-	-	-				-	-	-	-	-		-

Pneumatic Actuated Fire safe trunnion mounted ball valve MD-64 DA/SR

SIZE: 2" - 32"
END: Flange,Butt weld
PRESSURE: ANSI CLASS150/300/600/900/1500
DESIGN: API 6D
Fire Safe Design: API 607
OPTIONS: Actuator, Solenoid, Limit Switch, Positioner, F.R, Gear Box



Dimension

SIZE	150LB							300LB						
	L	H1	H2	H3	H4	E	Actuator	L	H1	H2	H3	H4	E	Actuator
2"	178	165	153	98.5	128.7	204	MDND80	216	165	153	111	136.5	282	MDND92
2-1/2"	191	182	165	111	136.5	282	MDND92	241	182	165	145.5	175	301	MDND125
3"	203	204	196	122.5	153	288	MDND105	283	204	196	145.5	175	301	MDND125
4"	229	217	225	145.5	175	301	MDND125	305	217	213	161	192	390	MDND140
6"	394	185	278	161	192	390	MDND140	403	185	278	184	217	458	MDND160
8"	457	228	300	213	260	525	MDND190	502	228	300	235.5	285	532	MDND210
10"	533	259	325	235.5	285	532	MDND210	568	271	325	299	356	722	MDND270
12"	610	311	365	264.5	319	602	MDND240	648	311	365	299	356	722	MDND270
14"	686	348	408	299	356	722	MDND270	762	348	408	348	378	742	MDND300
16"	762	390	458	348	378	742	MDND300	838	390	459	464	494	924	MDND400
18"	864	540	600	402	432	860	MDND350	914	540	600	464	494	924	MDND400
20"	914	578	680	402	432	860	MDND350	991	578	680	363	-	1360	MODD1028
22"	991	610	710	464	494	924	MDND400	1092	610	710	440	-	1825	MODD1035
24"	1067	666	750	363	-	1360	MODD1028	1143	660	759	440	-	1825	MODD1035
26"	1143	696	808	363	-	1360	MODD1028	1245	696	808	440	-	1825	MODD1035
28"	1245	735	858	440	-	1825	MODD1035	1346	735	858	440	-	1825	MODD1035
30"	1295	775	905	440	-	1825	MODD1035	1397	775	905	440	-	1825	MODD1035
32"	1372	820	945	440	-	1825	MODD1035	1524	820	945	562	-	2130	MODD1049

SIZE	600LB							900LB							1500LB						
	L	H1	H2	H3	H4	E	Actuator	L	H1	H2	H3	H4	E	Actuator	L	H1	H2	H3	H4	E	Actuator
2"	292	141	167	145.5	175	301	MDND125	368	141	167	145.5	175	301	MDND125	368	141	167	213	260	525	MDND190
2-1/2"	330	151	182	161	192	390	MDND140	419	152	182	184	217	458	MDND160	419	152	182	235.5	285	532	MDND210
3"	356	167	208	161	192	390	MDND140	381	167	208	184	217	458	MDND160	470	167	208	235.5	285	532	MDND210
4"	432	202	244	184	217	458	MDND160	457	202	285	213	260	525	MDND190	546	202	308	299	356	722	MDND270
6"	559	192	298	213	260	525	MDND190	610	200	312	299	356	722	MDND270	705	200	366	402	432	860	MDND350
8"	660	250	312	299	356	722	MDND270	737	259	365	402	432	860	MDND350	832	259	389	383	-	1360	MODD1028
10"	787	290	339	348	378	742	MDND300	838	293	408	464	494	924	MDND400	991	455	565	383	-	1360	MODD1035
12"	838	342	375	402	432	860	MDND350	965	359	465	363	-	1360	MODD1035	1130	500	632	383	-	1360	MODD1035
14"	889	378	428	363	-	1360	MODD1028	1029	500	612	383	-	1360	MODD1035	1257	520	666	562	-	2130	MODD1049
16"	991	423	476	363	-	1360	MODD1028	1130	550	660	383	-	1360	MODD1035	1384	600	710	562	-	2130	MODD1049
18"	1092	570	625	363	-	1360	MODD1035	1219	590	710	562	-	2130	MODD1049							
20"	1194	610	700	363	-	1360	MODD1035	1321	650	756	562	-	2130	MODD1049							
22"	1295	650	731	562	-	2130	MODD1049	1549	750	868	700	-	2530	MODD1060							
24"	1397	720	777	562	-	2130	MODD1049	-	-												
26"	1448	750	825	562	-	2130	MODD1049	-	-												
28"	1549	780	880	562	-	2130	MODD1049	-	-												
30"	1651	820	926	700	-	2530	MODD1060	-	-												
32"	1778	900	966	700	-	2530	MODD1060	-	-												

Metal seated trunnion mounted ball valve MD–64Q

◆ The metal seated ball valves are suitable for most severe working conditions as their bodies and seats apply hardening–technology treatments like painting Ni–base alloy, Tungsten carbide and Chromium carbide, which can be offered according to different working conditions of customers' requirement.

◆ To avoid losing flexibility caused by metal expansion under high temperature, the seal structure applies belleville spring–loaded and spring–loaded. Therefore, the heat expansion of the parts can be absorbed, which ensures the ball valve run flexibly under high temperature.

◆ The ball face has high roundness and smoothness due to special grinding process, hereby making it 100% fit close to seal valve seat. So the seal function can be reached or even exceeded current test standards.

◆ Complete fireproof design and construction, intrinsic safety of metal seal.

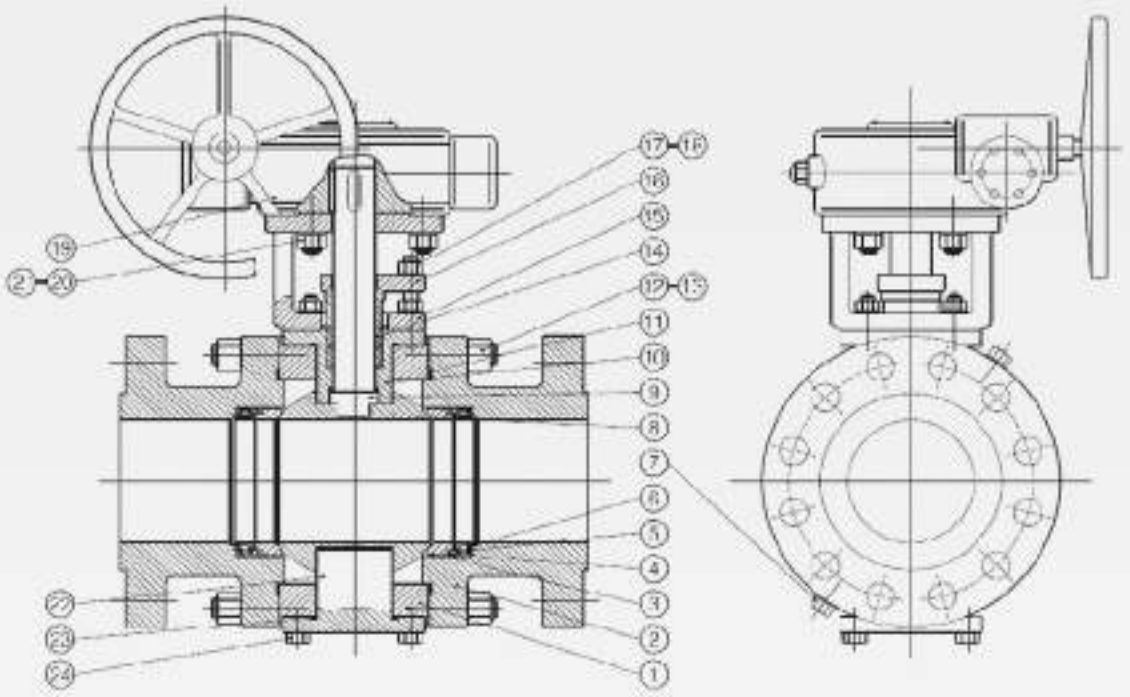
◆ Natural static guide path is formed in metal seal due to anti–static design and construction.

◆ Generally, metal seated trunnion mounted ball valves adopt valve–front seal structure. When the ball valves are close even the two end of inlet and outlet receive pressure at the same time, the lumen and channels of two end can be separated and the rest mediums in lumen can be discharged by release valves.

◆ The valve body can be made of cast steel or forged steel, and the full bore or reduced bore are available to choose.

◆ The connection ends include flange, butt–weld, threaded, socket–weld, and clamp.

Typical structure drawing



Design: API 6D ; Face to face: API 6D; Flanged : ASME B 16.5 ; Test :API 6D

No.	Part	MATERIAL	
1	BODY	A105	F316
2	Cap	A105	F316
3	Seat	F304	F316
4	Seat sealing ring	Graphite	Graphite
5	Clamping ring	F304	F316
6	Spring	Inconel x-750	Inconel x-750
7	Relief valve	Stainless Steel	Stainless Steel
8	ball	F304	F316
9	Stem	F6a	F6a
10	Packing block	A105	F316
11	Gasket	304+Graphite	316+Graphite
12	Bolt	B7M	8M
13	Nut	2HM	B8M
14	Packing block	304+Graphite	316+Graphite
15	Yoke	WCB	CF8M
16	Packing gland	CF8	CF8M
17	Bolt	B7M	8M
18	Nut	2HM	B8M
19	Worm wheel	–	–
20	Bolt	B7M	8M
21	Nut	2HM	B8M
22	Fixed axle	F6a	F6a
23	Sealing gasket	304+Graphite	316+Graphite
24	Screw	B7M	8M

Note: According to different working conditions, the valve body and inner parts can be made of other materials like duplex stainless steel, Monel alloy, Hastelloy, Inconel alloy and Titanium alloy and so on, please contact MODENTIC VALVE CORP.(NANJING) for more details.

Operating torque

Port		Pressure Class					
NPS	DN	Class 150	Class 300	Class 600	Class 900	Class 1500	Class 2500
2"	50	115	180	245	350	915	1490
2-1/2"	65	205	255	420	600	1720	2760
3"	80	295	410	840	1150	2590	4140
4"	100	380	690	1100	1650	5860	9350
6"	150	970	1400	2400	3850	12770	20350
8"	200	1720	2550	6880	8500	21380	34100
10"	250	2860	4850	8400	14220	31400	51050
12"	300	4200	7000	12900	21100	49000	–
14"	350	5600	9300	17400	28200	69000	–
16"	400	8970	14400	22500	39500	–	–
18"	450	11100	18300	33980	56000	–	–
20"	500	14400	22500	50400	71200	–	–
22"	550	17080	28200	60900	–	–	–
24"	600	22580	38850	73900	132800	–	–

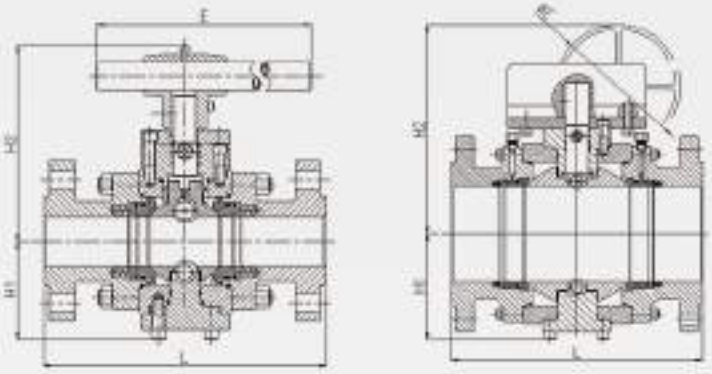
Notes:

1.The torque indicated in the table is starting torque under maximum pressure difference, only for reference as selecting driving device.

2.Please consider the safety coefficient not less than 1.25 times when selecting executing actuators.

3.The extra requirements on torque may be required because of different nature of mediums, inner parts and start/close speed.

Metal seated trunnion mounted ball valve MD-64Q(Flange)



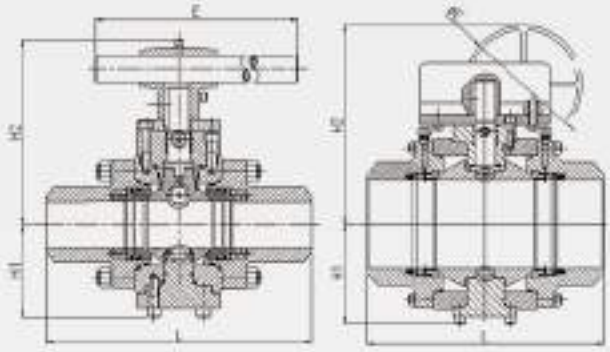
Dimension

SIZE		Class 150 SIZE (mm)						Class 300 SIZE (mm)					
		L	H1	H2		E		L	H1	H2		E	
NPS	DN	Flange RF		Handle	Worm Wheel	Handle	Worm Wheel	Flange RF		Handle	Worm Wheel	Handle	Worm Wheel
2"	50	178	105	145	-	580	-	216	105	145	-	580	-
2-1/2"	65	190	125	165	-	580	-	241	125	165	-	580	-
3"	80	203	139	188	-	700	-	282	139	188	330	700	300
4"	100	229	162	206	380	700	300	305	152	206	380	700	300
6"	150	394	219	280	460	1100	300	403	219	280	460	1100	300
8"	200	457	273	-	550	-	300	502	273	-	560	-	300
10"	250	533	304	-	706	-	300	568	304	-	716	-	400
12"	300	610	395	-	852	-	300	648	395	-	865	-	400
14"	350	686	430	-	895	-	400	762	430	-	900	-	400
16"	400	762	470	-	927	-	400	838	470	-	935	-	600
18"	450	864	550	-	1130	-	500	914	550	-	1140	-	750
20"	500	914	580	-	1450	-	600	991	580	-	1490	-	750
22"	550	991	615	-	1520	-	750	1092	615	-	1550	-	750
24"	600	1067	670	-	1650	-	750	1143	670	-	1690	-	750

SIZE		Class 600 SIZE (mm)						Class 900 SIZE (mm)					
		L	H1	H2		E		L	H1	H2		E	
NPS	DN	Flange RF		Handle	Worm Wheel	Handle	Worm Wheel	Flange RF		Handle	Worm Wheel	Handle	Worm Wheel
2"	50	292	114	165		700		368	122	165		700	
2-1/2"	65	330	124	188	-	700	-	416	134	188	-	700	-
3"	80	356	133	210	330	1100	300	381	144	210	330	1100	300
4"	100	432	169	232	380	1100	300	457	168	232	380	1100	300
6"	150	559	260	-	530	-	400	610	270	-	630	-	400
8"	200	660	284	-	610	-	400	737	317	-	610	-	400
10"	250	787	395	-	716	-	400	838	426	-	716	-	400
12"	300	838	445	-	915	-	500	965	480	-	965	-	500
14"	350	889	500	-	1000	-	600	1029	530	-	1000	-	600
16"	400	991	530	-	1025	-	750	1130	555	-	1025	-	750
18"	450	1092	575	-	1140	-	750	1219	590	-	1140	-	750
20"	500	1194	630	-	1480	-	750	1321	670	-	1490	-	750
22"	550	1295	670	-	1560	-	750	-	-	-	-	-	-
24"	600	1397	720	-	1680	-	750	1549	760	-	1680	-	750

SIZE		Class 1500 SIZE (mm)						Class 2500 SIZE (mm)					
		L	H1	H2		E		L	H1	H2		E	
NPS	DN	Flange RF		Handle	Worm Wheel	Handle	Worm Wheel	Flange RF		Handle	Worm Wheel	Handle	Worm Wheel
2"	50	368	134	165	325	700	300	451	147	178	330	700	300
2-1/2"	65	419	147	195	335	700	300	508	158	210	345	700	300
3"	80	470	157	220	340	1100	300	578	185	235	355	1100	300
4"	100	546	185	-	400	-	300	673	248	-	470	-	400
6"	150	705	257	-	550	-	400	914	348	-	635	-	500
8"	200	832	348	-	650	-	400	1022	458	-	720	-	500
10"	250	991	408	-	805	-	500	1270	528	-	875	-	600
12"	300	1130	528	-	1050	-	600	1422	570	-	1080	-	600
14"	350	1257	570	-	1090	-	600	-	-	-	-	-	-
16"	400	1384	590	-	1130	-	750	-	-	-	-	-	-

Metal seated trunnion mounted ball valve MD-64Q(Butt Weld)



Dimension

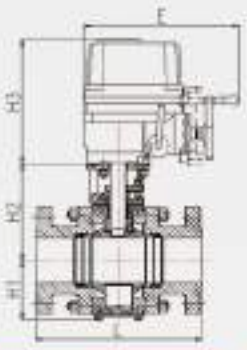
SIZE		Class 150 SIZE (mm)						Class 300 SIZE (mm)					
				H2		E				H2		E	
NPS	DN	BW	H1	Handle	Worm Wheel	Handle	Worm Wheel	BW	H1	Handle	Worm Wheel	Handle	Worm Wheel
2"	50	216	105	146	-	680	-	216	105	146	-	680	-
2-1/2"	65	241	125	166	-	680	-	241	125	166	-	680	-
3"	80	283	139	188	-	700	-	282	139	188	330	700	300
4"	100	305	162	206	380	700	300	305	162	206	380	700	300
6"	150	457	219	280	460	1100	300	403	219	280	480	1100	300
8"	200	521	273	-	550	-	300	502	273	-	560	-	300
10"	250	559	364	-	700	-	300	568	364	-	716	-	400
12"	300	635	395	-	852	-	300	648	395	-	885	-	400
14"	350	762	430	-	886	-	400	762	430	-	900	-	400
16"	400	838	470	-	927	-	400	838	470	-	935	-	600
18"	450	914	550	-	1130	-	600	914	550	-	1140	-	750
20"	500	991	580	-	1450	-	600	991	580	-	1490	-	750
22"	550	1092	615	-	1620	-	750	1092	615	-	1650	-	750
24"	600	1143	670	-	1650	-	750	1143	670	-	1680	-	750

SIZE		Class 600 SIZE (mm)						Class 900 SIZE (mm)					
				H2		E				H2		E	
NPS	DN	BW	H1	Handle	Worm Wheel	Handle	Worm Wheel	BW	H1	Handle	Worm Wheel	Handle	Worm Wheel
2"	50	292	114	166	-	700	-	368	122	166	-	750	-
2-1/2"	65	330	124	188	-	700	-	419	134	188	-	750	-
3"	80	356	133	210	330	1100	300	381	144	210	330	1100	300
4"	100	432	169	232	380	1100	300	457	168	232	380	1100	300
6"	150	559	250	-	530	-	400	610	270	-	530	-	400
8"	200	660	294	-	610	-	400	737	317	-	610	-	400
10"	250	787	395	-	716	-	400	838	426	-	716	-	400
12"	300	838	445	-	915	-	500	965	480	-	965	-	500
14"	350	889	500	-	1000	-	600	1029	530	-	1000	-	600
16"	400	991	530	-	1025	-	750	1130	555	-	1025	-	750
18"	450	1092	575	-	1140	-	750	1218	590	-	1140	-	750
20"	500	1194	600	-	1400	-	750	1321	670	-	1400	-	750
22"	550	1295	670	-	1650	-	750	-	-	-	-	-	-
24"	600	1397	720	-	1680	-	750	1549	760	-	1680	-	750

SIZE		Class 1000 SIZE (mm)						Class 2500 SIZE (mm)					
				H2		E				H2		E	
NPS	DN	BW	H1	Handle	Worm Wheel	Handle	Worm Wheel	BW	H1	Handle	Worm Wheel	Handle	Worm Wheel
2"	50	368	134	166	328	700	300	451	147	178	338	700	300
2-1/2"	65	419	147	196	336	700	300	508	158	210	345	700	300
3"	80	470	157	220	340	1100	300	578	185	235	355	1100	300
4"	100	546	185	-	400	-	300	673	248	-	470	-	400
6"	150	705	297	-	550	-	400	914	348	-	535	-	500
8"	200	832	348	-	650	-	400	1022	468	-	720	-	500
10"	250	991	468	-	805	-	500	1270	528	-	875	-	600
12"	300	1130	528	-	1050	-	600	1422	670	-	1080	-	600
14"	350	1257	570	-	1090	-	600	-	-	-	-	-	-
16"	400	1384	590	-	1130	-	750	-	-	-	-	-	-

Electric Actuated Metal seated trunnion mounted ball valve MD-64Q E

SIZE: 2" – 32"
END: Flange,Butt weld
DESIGN: API 6D
OPTIONS: Actuator
PRESSURE: ANSI CLASS150/300/600/900/1500



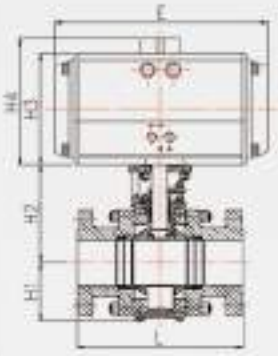
Dimension

SIZE	150LB						300LB						600LB					
	L	H1	H2	H3	E	Actuator	L	H1	H2	H3	E	Actuator	L	H1	H2	H3	E	Actuator
2"	178	105	145	270	351	MDEC-015	216	105	145	290	367	MDEC-030	292	114	165	290	367	MDEC-050
2-1/2"	190	125	165	290	367	MDEC-030	241	125	165	290	367	MDEC-050	330	134	188	290	367	MDEC-060
3"	203	139	188	290	367	MDEC-050	283	139	188	290	367	MDEC-060	356	133	210	330	410	MDEC-120
4"	119	152	206	290	367	MDEC-050	305	152	206	330	410	MDEC-120	432	159	232	534	410	MDEC-150
6"	394	219	280	534	410	MDEC-150	403	219	280	534	410	MDEC-200	559	250	348	534	410	MDEC-300
8"	457	273	330	534	410	MDEC-300	502	273	365	534	410	MDEC-500	660	294	396	-	-	-
10"	533	364	422	534	410	MDEC-500	568	364	435	-	-	-	787	395	486	-	-	-
12"	610	395	486	-	-	-	648	395	490	-	-	-	838	445	550	-	-	-
14"	686	430	512	-	-	-	762	430	515	-	-	-	889	500	616	-	-	-
16"	762	470	538	-	-	-	838	470	588	-	-	-	991	530	675	-	-	-
18"	864	550	621	-	-	-	914	550	648	-	-	-	1092	575	712	-	-	-
20"	914	580	679	-	-	-	991	580	690	-	-	-	1194	630	765	-	-	-
22"	991	615	709	-	-	-	1092	615	715	-	-	-	1295	670	815	-	-	-
24"	1067	670	748	-	-	-	1143	670	777	-	-	-	1397	720	866	-	-	-

SIZE	900LB						1500LB						2500LB					
	L	H1	H2	H3	E	Actuator	L	H1	H2	H3	E	Actuator	L	H1	H2	H3	H3	Actuator
2"	368	122	165	290	367	MDEC-050	368	134	165	290	367	MDEC-080	451	147	178	330	410	MDEC-120
2-1/2"	419	134	188	290	367	MDEC-080	419	147	196	330	410	MDEC-120	508	158	210	534	410	MDEC-300
3"	381	144	210	534	410	MDEC-150	470	158	220	534	410	MDEC-300	578	185	235	534	410	MDEC-600
4"	457	168	232	534	410	MDEC-300	546	185	315	534	410	MDEC-600	673	248	401	-	-	-
6"	610	270	414	534	410	MDEC-500	705	297	396	-	-	-	914	348	525	-	-	-
8"	737	317	466	-	-	-	832	349	494	-	-	-	1022	469	649	-	-	-
10"	838	426	586	-	-	-	991	466	610	-	-	-	1270	528	702	-	-	-
12"	965	490	613	-	-	-	1130	528	668	-	-	-	1422	570	775	-	-	-
14"	1029	530	686	-	-	-	1257	570	712	-	-	-	-	-	-	-	-	-
16"	1130	555	710	-	-	-	1384	590	796	-	-	-	-	-	-	-	-	-
18"	1219	590	765	-	-	-												
20"	1321	670	805	-	-	-												
22"	-	-	-	-	-	-												
24"	-	760	896	-	-	-												

Pneumatic Actuated Metal seated trunnion mounted ball valve MD-64Q DA/SR

SIZE: 2" – 32"
END: Flange,Butt weld
PRESSURE: ANSI CLASS150/300/600/900/1500
DESIGN: API 6D
OPTIONS:Actuator, Solenoid, Limit Switch,
Positioner, F.R, Gear Box



Dimension

SIZE	150LB							300LB							600LB						
	L	H1	H2	H3	H4	E	Actuator	L	H1	H2	H3	H4	E	Actuator	L	H1	H2	H3	H4	E	Actuator
2"	178	105	145	122.5	153	268	MDND105	216	105	145	146.5	175	301	MDND125	292	114	165	181	192	390	MDND140
2-1/2"	190	125	165	145.5	175	301	MDND125	241	125	165	161	192	390	MDND140	330	124	188	184	217	458	MDND160
3"	203	139	186	161	192	390	MDND140	283	139	186	184	217	458	MDND160	356	133	210	213	260	525	MDND190
4"	229	152	206	161	192	390	MDND140	305	152	206	213	260	525	MDND190	432	169	232	235.5	285	532	MDND210
6"	394	218	290	235.5	285	532	MDND210	403	218	290	264.5	319	602	MDND240	559	250	348	299	359	722	MDND270
8"	457	273	330	264.5	319	602	MDND240	502	273	365	299	356	722	MDND270	660	294	395	464	494	924	MDND400
10"	533	364	422	348	378	742	MDND300	568	364	435	402	432	860	MDND350	787	395	486	363	-	1360	MODD1028
12"	610	395	486	402	432	860	MDND350	648	395	490	464	494	924	MDND400	838	445	550	440	-	1825	MODD1035
14"	686	430	512	464	494	924	MDND400	762	430	515	363	-	1360	MODD1028	889	500	616	440	-	1825	MODD1035
16"	762	470	538	363	-	1360	MODD1028	838	470	586	440	-	1825	MODD1035	991	530	675	562	-	2130	MODD1049
18"	864	550	621	440	-	1825	MODD1035	914	550	648	440	-	1825	MODD1035	1092	575	712	562	-	2130	MODD1049
20"	914	580	679	440	-	1825	MODD1035	991	580	680	562	-	2130	MODD1049	1194	630	765	700	-	2530	MODD1060
22"	991	615	700	440	-	1825	MODD1035	1092	615	716	562	-	2130	MODD1049	1295	670	815	700	-	2530	MODD1060
24"	1067	670	745	562	-	2130	MODD1049	1143	670	777	562	-	2130	MODD1049	1397	720	866	800	-	2530	MODD1070

SIZE	600LB							1500LB							2500LB						
	L	H1	H2	H3	H4	E	Actuator	L	H1	H2	H3	H4	E	Actuator	L	H1	H2	H3	H4	E	Actuator
2"	368	122	165	161	192	390	MDND140	368	134	165	184	217	458	MDND160	451	147	179	213	260	525	MDND190
2-1/2"	419	134	188	213	260	525	MDND190	419	147	195	213	260	525	MDND190	508	158	210	264.5	319	602	MDND240
3"	381	144	210	235.5	285	532	MDND210	470	158	220	264.5	319	602	MDND240	578	185	235	348	378	742	MDND300
4"	457	168	232	264.5	319	602	MDND240	546	185	315	298	356	722	MDND270	673	248	401	402	432	860	MDND350
6"	610	270	414	402	432	860	MDND350	705	297	386	464	494	924	MDND400	914	348	525	363	-	1360	MODD1028
8"	737	317	495	363	-	1360	MODD1028	832	348	496	440	-	1825	MODD1035	1022	468	649	440	-	1825	MODD1035
10"	838	426	596	440	-	1825	MODD1035	991	468	610	562	-	2130	MODD1049	1270	528	702	562	-	2130	MODD1049
12"	965	480	613	562	-	2130	MODD1049	1130	528	666	562	-	2130	MODD1049	1422	570	775	700	-	2530	MODD1060
14"	1029	530	695	562	-	2130	MODD1049	1257	670	712	700	-	2530	MODD1060	-	-	-	-	-	-	-
16"	1130	585	710	562	-	2130	MODD1049	1384	690	796	700	-	2530	MODD1060	-	-	-	-	-	-	-
18"	1219	590	765	700	-	2530	MODD1060														
20"	1321	670	805	800	-	2530	MODD1070														
22"	-	-	-	-	-	-	-														
24"	1549	760	895	-	-	-	-														

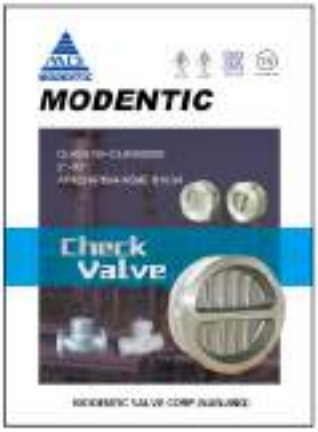
MODENTIC

Pneumatic actuators

Electric actuators

Positioner

Others



MODENTIC

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CAT:MD-2014-01 2000