



## LPM12- Side Mounted Eccentric Rotating Half Ball Valve



### Overview

The hemisphere of double-eccentricity half-ball valve adopt double eccentric design, it has reliable sealing, instantaneous release, small torque, long service life, it can be used in the harsh working condition of transporting granule medium. The structure principle is that hemisphere center line has setover size with stem center line and the seat center line. When fully open, the sphere and the valve seat separated completely, and there is certain space. Radius of gyration is divided into long radius and short radius. There will be a  $\theta$  angle between the tangent line on the long radius turn trajectory and the seat sealing surface. When the valve opens and closes, relative seat surface of the hemisphere will have a coming out separation and a coming in extrusion, thus to reduce the mechanical wear and abrasion between the seat and the hemisphere during operation, improving the service life.

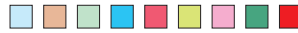
Double-eccentricity half-ball valve is suitable for all kinds of general industry, medium such as water, sewage, waste water, steam and gas etc. If the sealing pair uses Cr-Mn-Si cemented carbide, and has the function of fireproof and explosion protection and anti-static, then it applies to the requirements of high temperature medium such as gas, coke oven gas, water gas and natural gas. If the sealing pair (hemisphere, the valve seat) and the flow channel of valve body are through tungsten carbide special craft processing, it will have advantages like high efficiency and energy saving, good abrasion resistance, reliable sealing performance, convenient operation, fast opening and closing, long service life etc, which is an ideal choice for the valve in the pipeline in the field of industrial silicon. Due to the property of instant detachment of hemisphere and the seat and instant compaction, it applies to harsh working condition of medium containing particles, it can be widely used for various pipeline control in pulverized coal, the coal pulverizing system and dust collection system in metallurgy, mineral processing and power manufacturing technique. In the process of instant detachment and instant compaction, the hemisphere and the seat squeeze and cut each other, which can remove the scaling and adhesion on the sealing surface, to ensure a reliable sealing. It is an ideal choice for valves for two phase mixed fluid medium in the technological process of transporting easy-to-precipitate scaling, crystallizing the precipitation of solution pulp and slurry ash.

### Design Standard

1. Design and Manufacture: API608, GB/T12237.2005
2. Inspection and Test: API608, GB/T12237.2005
3. End Connection: ASME/ANSI B16.5, JB/T79.1-42000
4. Face to Face length: ASME/ANSI B16.5, GB/T12221.2005



# LPM12- Side Mounted Eccentric Rotating Half Ball Valve



Code	Actuator	Action	Air Fail Position	Control	Structure	Body	Sealing	Ball	Connection DN	PN
LPM12-	1 Pneumatic	D Double-acting	1 Normally Open	A On-off	5 One-piece	A 316L	P PTFE	A 316L	1 Flange	
	2 Pneumatic & Handwheel	S Single-acting	2 Normally Closed	B Control	6 Two Pieces	B 316	Q TFM1600	B 316		
	3 Electric DC24V	0 Others	3 Flexible	C Intelligent	0 Others	C 304	T EK	C 304		
	4 Electric AC220V		4 Held	0 Others		I 304L	R BODY	I 304L		
	5 Electric AC380V		0 Others			D WCB	S STL	L CE3MN		
	7 Handle					L CE3MN	0 Others	0 Others		
	8 Turbine					0 Others				
	0 Others									

## Performance Specifications

PN	1.6	2.5	4.0	6.4	Class150	Class300	Class600
Maximum pressure at constant temperature ( MPa )	1.6	2.5	4.0	6.4	2.0	5.0	10.0
The shell pressure testing(MPa)	2.4	3.8	6.0	9.6	3.0	7.5	15.0
Air tightness test pressure(MPa)	0.6	0.6	0.6	0.6	0.6	0.6	0.6
High-pressure seal testing ( MPa )	1.76	2.75	4.4	7.1	2.2	5.5	11.0
Applicable temperature(°C)	< 0.1XDNmm <sup>3</sup> /s						
Leakage	Soft seal: -40°C~350°C; Hard seal: -50°C~600°C						
Suitable medium	Gas,steam,oil,acid alkali,gas ash,residue,slurre constant and partides medium etc.						
Actuator	Wormgear electric actuator pneumatic actuator hydraulic actuator						

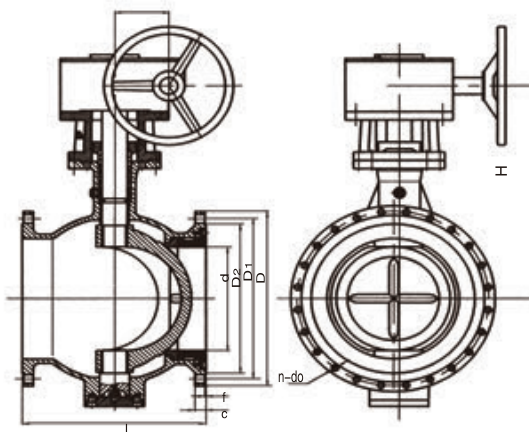
## Parts material

Body gland	GB	WCB	ZG1Cr18Ni9Ti	ZG0Cr18Ni12Mo2Ti	ZG15Cr1Mo1V
	ASTM	A216 WCB	CF8	CF8M	WC9
Ball	GB	WCB+HF	1Cr18Ni9Ti	0Cr18Ni12Mo2Ti	25Cr2Mo1V
	ASTM	A216 WCB+HF	304+HF	316+HF	F22a+HF
Stem	GB	2Cr13	1Cr18Ni9Ti	0Cr18Ni12Mo2Ti	25Cr2Mo1V
	ASTM	420	304	316	F22a
Seat	GB	q235a+ptfe	1Cr18Ni9Ti/PTFE	0Cr18Ni12Mo2Ti/PTFE	25Cr2Mo1V/PTFE
	ASTM	420/PTFE	304/PTFE	316/PTFE	F22A/PTFE
Packing	GB	Graphite	Graphite	Graphite	Graphite
	ASTM	Graphite	Graphite	Graphite	Graphite
Bolt	GB	35	0Cr18Ni9	0Cr18Ni9	15Cr1Mo1V
	ASTM	A193B7	A320-B8	A320-B8	A193B16
Nut	GB	45	0Cr18Ni9	0Cr18Ni9	20CrMo
	ASTM	A193B7	194-8	194-8	A194-8





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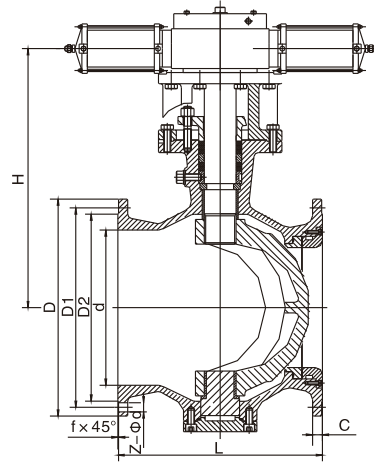
## Dimensions

PN: 0.6mPa

DN		Dimensions (mm)							
mm	in	L	D 1/2	D <sub>1</sub>	D <sub>2</sub>	H	b	f	Z-Φd
40	-	125	130	100	80	254	16	3	4-14
50	-	178	140	110	90	254	16	3	4-14
65	-	190	160	130	110	265	16	3	4-14
80	-	203	190/185	150	125	313	18	3	4-18
100	-	229	210/205	170	145	333	18	3	4-18
125	-	254	240/235	200	172	380	20	3	8-18
150	-	267	265/260	225	200	435	20	3	8-18
200	-	292	320/315	280	255	480	22	3	8-18
250	-	330	375/370	335	310	525	24	3	12-18
300	-	390	440/435	395	362	596	24	4	12-23
350	-	430	490/485	445	412	655	26	4	12-23
400	-	530	540/535	495	462	705	28	4	16-23
450	-	580	595/590	550	518	730	28	4	16-23
500	-	660	645/640	600	568	868	30	4	16-23
600	-	800	755	705	670	1040	30	5	20-26/25
700	-	900	860	810	775	-	32	5	24-26/25
800	-	1000	975	920	880	-	32	5	24-30
900	-	1100	1075	1020	980	-	34	5	24-30



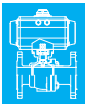
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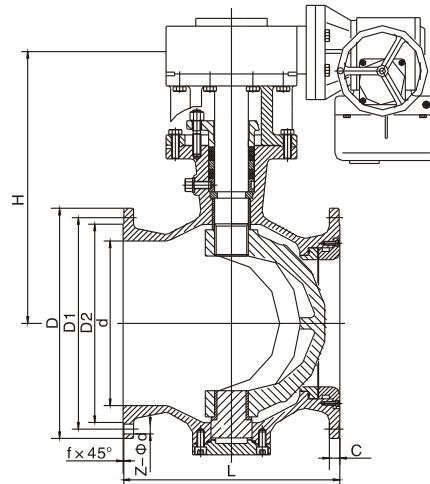
Dimensions

PN: 1.0mPa

DN		Dimensions (mm)							
		L	D 1/2	D <sub>1</sub>	D <sub>2</sub>	H	b	f	Z-Φd
mm	in								
40	-	125	145	110	85	254	16	3	4-18
50	-	178	160	125	100	254	16	3	4-18
65	-	190	180	145	120	265	18	3	4-18
80	-	203	195	160	135	313	20	3	4-18
100	-	229	215	180	155	333	20	3	8-18
125	-	254	245	210	185	380	22	3	8-18
150	-	267	280	240	210	435	24	3	8-23
200	-	292	335	295	265	480	24	3	8-23
250	-	330	390	350	320	525	26	3	12-23
300	-	390	440	400	368	596	26	4	12-23
350	-	430	500	460	428	655	28	4	16-23
400	-	530	565	515	482	705	28	4	16-25
450	-	580	615	565	532	730	30	4	20-25
500	-	660	670	620	585	868	30	4	20-25
600	-	800	780	725	685	1040	34	5	20-30
700	-	900	895	840	800	1095	38	5	24-30
800	-	1000	1010	950	905	1153	42	5	24-34
900	-	1100	1150	1050	1001	-	54	5	28-33



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## Dimensions

PN: 1.6mPa

DN		Dimensions (mm)							
		L	D 1/2	D <sub>1</sub>	D <sub>2</sub>	H	b	f	Z-Φd
mm	in								
40	–	125	145	110	85	254	16	3	4-18
50	–	178	160	125	100	254	16	3	4-18
65	–	190	180	145	120	265	18	3	4-18
80	–	203	195	160	135	313	20	3	8-18
100	–	229	215	180	155	333	20	3	8-18
125	–	254	245	210	185	380	22	3	8-18
150	–	267	280	240	210	435	24	3	8-23
200	–	292	335	295	265	480	26	3	12-23
250	–	330	405	355	320	525	30	3	12-25
300	–	390	460	410	375	596	30	4	12-25
350	–	430	520	470	435	655	34	4	16-25
400	–	530	580	525	485	705	36	4	16-30
450	–	580	640	585	545	730	40	4	20-30
500	–	660	705	650	608	868	44	4	20-34
600	–	800	840	770	718	1040	48	5	20-41
700	–	900	910	840	788	1095	50	5	24-41
800	–	1000	1020	950	898	1153	52	5	24-41
900	–	1100	1120	1050	998	–	54	5	28-41



# LPM12- Side Mounted Eccentric Rotating Half Ball Valve



PN: 2.5mPa

DN		Dimensions (mm)							
		L	D 1/2	D <sub>1</sub>	D <sub>2</sub>	H	b	f	Z-Φd
mm	in								
40	-	125	145	110	85	254	18	3	4-18
50	-	178	160	125	100	254	20	3	4-18
65	-	190	180	145	120	265	22	3	8-18
80	-	203	195	160	135	313	22	3	8-18
100	-	229	230	190	160	333	24	3	8-23
125	-	254	270	220	188	380	28	3	8-25
150	-	267	300	250	218	435	30	3	8-25
200	-	292	360	310	278	480	34	3	12-25
250	-	330	425	370	332	525	36	3	12-30
300	-	390	485	430	390	596	40	4	16-30
350	-	430	550	490	448	655	44	4	16-34
400	-	530	610	550	505	705	48	4	16-34
450	-	580	660	600	555	730	50	4	20-34
500	-	660	730	660	610	868	52	4	20-41
600	-	800	840	770	718	1040	56	5	20-41
700	-	900	955	875	815	1095	60	5	24-48
800	-	1000	1070	990	930	1153	64	5	24-48

PN: 4.0mPa

DN		Dimensions (mm)							
		L	D 1/2	D <sub>1</sub>	D <sub>2</sub>	H	b	f	Z-Φd
mm	in								
40	-	125	145	110	85	254	18	3	4-18
50	-	178	160	125	100	254	20	3	4-18
65	-	190	180	145	120	265	22	3	8-18
80	-	203	195	160	135	313	22	3	8-18
100	-	229	230	190	160	333	24	3	8-23
125	-	254	270	220	188	380	28	3	8-25
150	-	267	300	250	218	435	30	3	8-25
200	-	292	375	320	282	480	38	3	12-30
250	-	330	445	385	345	525	42	3	12-34
300	-	390	510	450	408	596	46	4	16-34
350	-	430	570	510	465	655	52	4	16-34
400	-	530	655	585	535	705	58	4	16-41
450	-	580	680	610	560	730	60	4	20-41
500	-	660	755	670	612	868	62	4	20-48
600	-	800	890	495	730	1040	62	5	20-54
700	-	900	995	900	835	1095	68	5	24-54
800	-	1000	1135	1030	960	1153	76	5	24-58