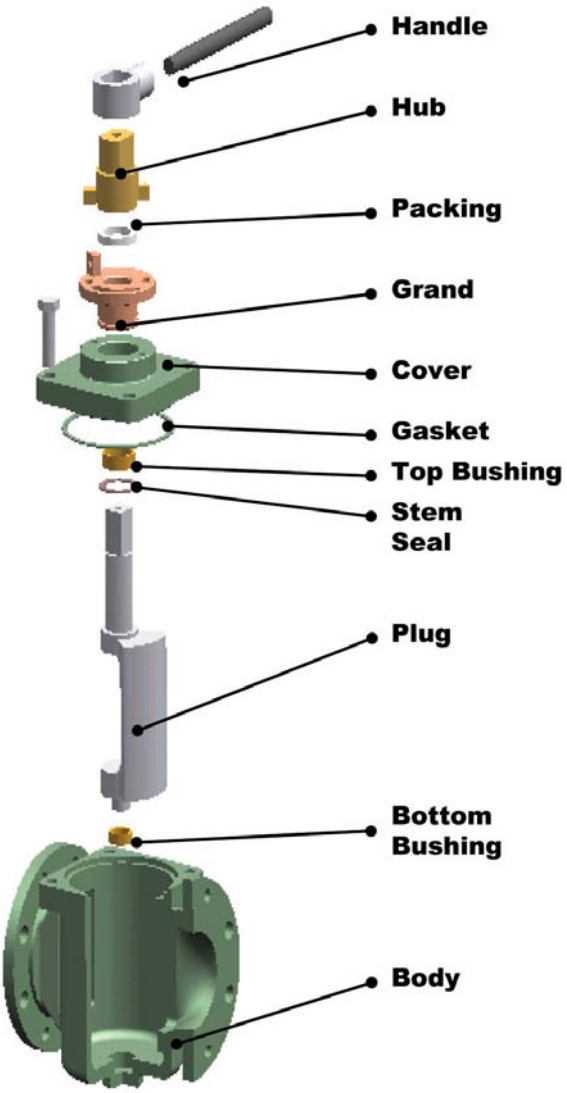
Eccentric Plug Valves are designed to handle a wide variety of liquids, gasses and solids, including water, air, petroleum, paint and non-corrosive chemicals. Eccentric plug valves are used in power and chemical plants, paper mills, water and waste water treatment plants, HVAC applications as well as hot process applications, and mining operations.

Basic structure is consists of plug, cover, body, position indicators, stem seal and bearing. Single piece plug/stem is designed for a quick lift camming motion to provide both low torque and reduced wear of the plug face elastomer.

The elastomer extends along the stem in both directions to protect the integral tunnions and form the bearing interference. A wide range of plug elastomers are available to assure complete fluid compatibility.

Body casting is in ASTM A126 Class B cast iron and conforms to the leading standard for wall thickness. Flange thickness, diameter and drilling fully conform to ANSI B16.1 Class 150. Alternative flanged, screwed or mechanical joint ends are available. A high quality two-part epoxy coating can be applied externally and internally to protect the casting integrity and assure long, trouble-free performance.

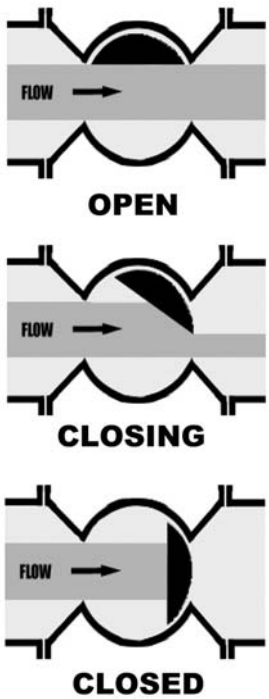


3Z eccentric plug valves provide Safety, Reliability, and Economy in plant operation, owing to its super longevity.
Merits in construction make it possible.

3Z Eccentric Plug Valve

Designed to meet higher CV requirements and excessive sludge handling in such as sewage treatment plant or waste water treatment plant. Line seal is achieved by an eccentric plug and metal body. The plug is designed in half shape of concentric plug, and centered eccentrically to seat smoothly on the seat sealing surface in pressing motion.

The plugs can be supplied with or without elastomer coated.



Eccentric Action

Eccentric action and resilient plug facings assure lasting dead-tight shutoff. As the eccentric plug rotates 90° from open to closed, it moves into a raised eccentric seat.
In the open position, the segmented plug is out of the flow path. Flow is straight through, flow capacity is high.
As the plug closes, it moves toward the seat without scraping the seat or body walls so there is no plug binding or wear.
Flow is still straight through making the throttling characteristic of this valve ideal for gases, liquids and slurries.
In the closed position, the plug makes contact with the seat. When furnished with resilient facing, the plug is pressed firmly into the seat for dead-tight shutoff. Eccentric plug and seat design assures lasting shutoff because the plug continues to be pressed against the seat until firm contact is made.

Plug Options Available

Plug for Metal Seated Type

Plug for Rubber Coated Type

● High Flow Capacity Feature

Clean interior design and straight through flow allow high maximum capacity with minimum pressure drop.

Plug for Metal Seated Type

Plug for Rubber Coated Type

● Resilient Plug Facings for Dead-Tight Shutoff Feature

3Z valves are available with a variety of resilient plug facings suitable for temperatures up to 450 F (232 C). Resilient-faced plugs provide dead-tight shutoff without the use of sealing lubricants. Even if small solids are trapped between the plug and seat, the resilient facing provides tight shutoff and prevents seat damage. The resilient plug design provides drip-tight shutoff on wet service applications up to the full pressure rating of the valve with pressure in either direction. Materials available include chloroprene, acrulonitrile-butadiene, hard natural rubber, chloro-isobutene isoprene, hard rubber with fluoro rebber. All-metal plugs are also available for high-temperature or throttling applications where dead tight shutoff is not required.

● One-Piece Cast Plug Feature

3Z Eccentric Plug valves feature a plug with upper and lower shaft in a one-piece casting. The straight plug face allows for inherent linear flow characteristic. The plug rotates completely out of flow, allowing high, straight-through flow capacity. Because the plug is out of flow path, it provides increased plug life in abrasive application.

● Control Valve Availability Features

3Z mounting kits for eccentric plug valves are available for most popular actuators which customer requests. And a full line o of accessories designed to match 3Z control systems is also available, like positioners, solenoids, switches, speed controls, extensions and floorstands.

● Wide Choice of Body Materials Feature

3Z offers the most compete line of eccentric body materials to meet the requirements of a broad range of applications such as Cast Iron, Bronze, Nickel, Carbon Steel, Stain Less Steel, Alloy 20, CD4M, Monel and Hastelloy C, from our own foundry.

● Bolted Cover Feature

3Z valves have a rugged, one piece bolted cover for maximum strength. It houses upper bearing and shaft seals to increase cycle life. If maintenance is ever required, ease of disassembly allows accessibility to internal components.

● **Long-Life Stem Seals Feature**

A Variety of stem seal materials provides Zero-Maintenance sealing that matches valve performance and assures long life and reliability.

● **Corrosion-Resistant Bearing Feature**

Heavy-duty bearings resist corrosion to prevent binding and assure lasting easy valve operation without lubrication. These rugged stainless steel bearings are furnished in the cover and body of all 3Z valves.

● **Choice of Patterns & End Styles Feature**

A Complete choice of patterns and end styles includes ANSI, DIN, BS, or JIS standards.

● **Eccentric Action**

Eccentric action and resilient plug facings assure lasting dead-tight shutoff. As the eccentric plug rotates 90o from open to closed, it moves into a raised eccentric seat.

In the open position, the segmented plug is out of the flow path. Flow is straight through, flow capacity is high.

As the plug closes, it moves toward the seat without scraping the seat or body walls so there is no plug binding or wear.

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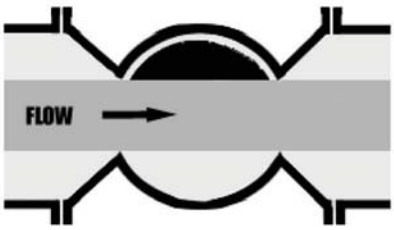
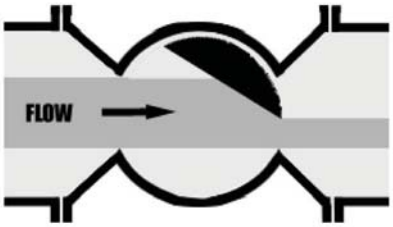
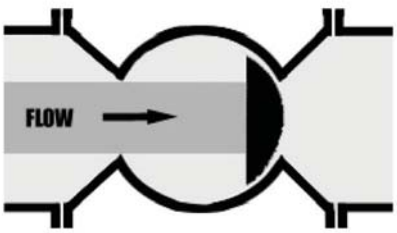


OPEN



CLOSING



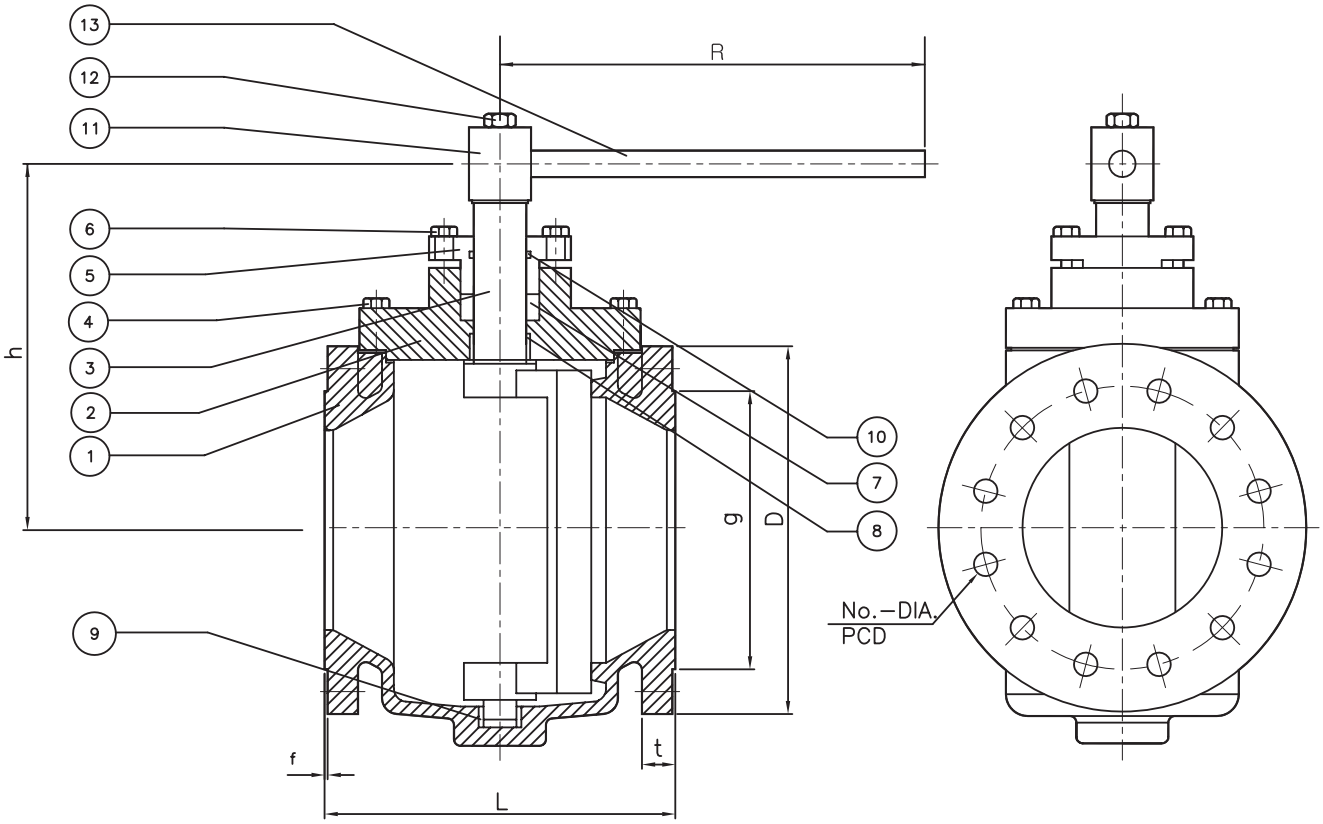
CLOSED

- 3Z Eccentric Plug Valves shall be Zero leakage at the rated pressure.
- 3Z Eccentric Plug Valve shall be satisfactory for applications involving throttling service as well as on-off service
- The valve closing member should rotate approxima tely 90 degrees from the full-open to full-close position and vice versa.
- Body ends shall be: 1) Flanged in full conformance with ANSI, DIN, JIS, and Class 150, 300. 2) Mechanical Joint to meet the requirements of AWWA C111/ANSI A21.11. 3) Grooved ends to meet the requirements of AWWA C606.
- The plug shaft shall be integral. The 3Z rubber coated plug valves shall have 100% encapsulated plug with NBR, EPDM, VITON, etc. The rubber to metal bond must withstand 75 lbs, under test procedure ASTM D-429-73 Method B.
- Shaft bearings, upper and lower, shall be sleeve type metal bearings, sintered, oil impregnated and permanently lubricated Type 316 stainless steel.
- All packing shall be replaceable without removing the valve from the line while the valve is in service.
- Manual valves shall have lever or worm gear type actuators with hand wheels. Worm gear type actuators shall be furnished on all 4" or larger valves where the max. unseating pressure is 25 psig or more.
- Eccentric plug valves have no void spaces to entrap solids or other debris and interfere with tight shutoff.

Materials of Construction

Description	Material
Body	Cast Iron, ASTM A126 Class B
	Carbon Steel, ASTM A216, Grade WCB
	316 Stainless Steel, ASETM a743, Grade CF8M
	Alloy 20
	Hastelloy C
	Acid Resistant Bronze, ASTM B427 Alloy C90800
	Ni-Restist, ASTM A436 Type 2
	Monel
Top, Botton Bushing	Brass + Graphite
Plug	Metal
	NBR Acrylonitrile-Butadiene
	NRH Hard Natural Rubber
	CR Cholroprene
Gasket	PTFE
Cover	Same material as body
Stem Seal	PTFE
Packing	Graphite
Gland	Same material as body
Hub	Carbon Steel, ASTM A216, Grade WCB
Handle	Carbon Steel, ASTM A216, Grade WCB

NO.	PART NAME	Q'TY	MATERIALS
1	BODY	1	DUCTILE IRON
2	COVER	1	DUCTILE IRON
3	PLUG	1	DUCTILE IRON
4	COVER BOLT	1S	STAINLESS STEEL
5	GALND	1	STAINLESS STEEL
6	GALND BOLT	1S	STAINLESS STEEL
7	GALND RACKING	1S	GRAPHITE
8	TOP BEARING	1	STAINLESS STEEL
9	BOTTOM BEARING	1	STAINLESS STEEL
10	O-RING	1	VITON
11	HUB	1	STAINLESS STEEL
12	HUB BOLT	1S	STAINLESS STEEL
13	WRENCH	1	CARBON STEEL

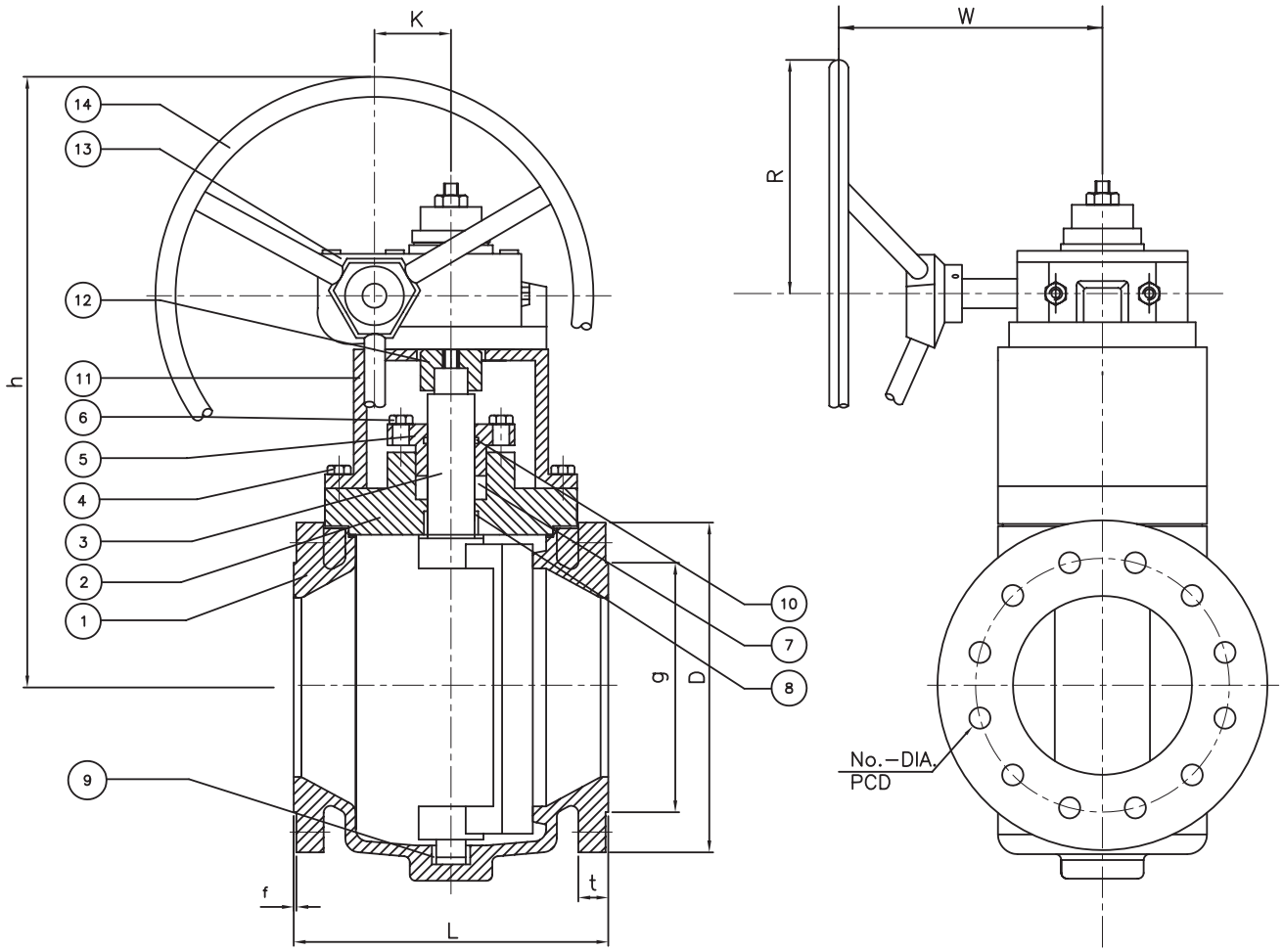


DIMENSIONS(mm)

NOMINAL SIZE				END FLANGES							
					BOLT HOLE						
IN	MM	L	h	D	PCD	NO	DIA	g	t	f	R
2	50	178	237	150	120.7	4	19	92	16.3	2	457
3	80	203	270	190	152.4	4	19	127	19.5	2	597
4	100	229	320	230	190.5	8	19	157	24.3	2	746

NOTE.			
1. NON-LUBRICATED VALVE	END CONNECTION : RF		
	STD	TEST	ANSI B 16.34
		FACE TO FACE or END TO END	ANSI B 16.10 CLASS 150
		DIMENSIONS OF FLANGE	ANSI B 16.5 CLASS 150
		WALL THICKNESS	ANSI B 16.34 CLASS 150
3Z ECCENTRIC PLUG VALVES		PRODUCTION NO.	
		126.1-DI.DI	

NO.	PART NAME	Q'TY	MATERIALS
1	BODY	1	DUCTILE IRON
2	COVER	1	DUCTILE IRON
3	PLUG	1	DUCTILE IRON
4	COVER BOLT	1S	STAINLESS STEEL
5	GALND	1	STAINLESS STEEL
6	GALND BOLT	1S	STAINLESS STEEL
7	GALND PACKING	1S	GRAPHITE
8	TOP BEARING	1	STAINLESS STEEL
9	BOTTOM BEARING	1	STAINLESS STEEL
10	O-RING	1	VITON
11	BRACKET	1	CARBON STEEL
12	COMPENSATOR	1	CARBON STEEL
13	GEAR OPERATOR	1S	STEEL
14	HANDWHEEL	1	STEEL



DIMENSIONS(mm)

NOMINAL SIZE				END FLANGES									
					BOLT HOLE								
IN	MM	L	h	D	PCD	NO	DIA	g	t	f	R	K	W
6	150	267	314.5	280	241.3	8	22	216	25.9	2	190	73	300
8	200	292	362	345	298.5	8	22	270	29	2	225	108	350
10	250	330	420.6	405	362	12	25	324	30.6	2	270	166	450

NOTE.			
1. NON-LUBRICATED VALVE		END CONNECTION : RF	
	STD	TEST	ANSI B 16.34
		FACE TO FACE or END TO END	ANSI B 16.10 CLASS 150
		DIMENSIONS OF FLANGE	ANSI B 16.5 CLASS 150
		WALL THICKNESS	ANSI B 16.34 CLASS 150
3Z ECCENTRIC PLUG VALVES		PRODUCTION NO.	
		126.2-DI.DI	