



**Edmund**  
VALVE COMPANY (1965) LTD

ECCENTRIC PLUG VALVE



## Soft seal eccentric plug valve

### Features

- The valve is designed according to AWWA C517.
- Ductile or cast iron available as per request.
- NBR or EPDM coated plug.
- Welded nickel seat (Min. 95% nickel alloy).
- Abrasion resistant permanently lubricating 316SS stem bearings.
- External and internal epoxy coating.
- Bi-directional shutoff.
- Repair online. (The stem sealing can be replaced by pulling out the plug from the body, without removing the valve from the pipeline.)

### General Applications

- Systems of water
- Raw sewage, slurries, sludge age and sewage



## Soft seal eccentric plug valve

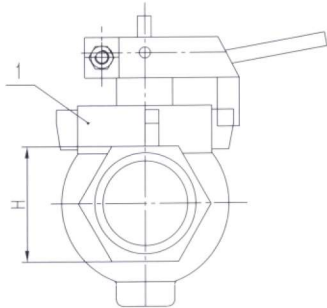
### Technical data

- Size: 1/2" – 96".
- Temperature: 212F.
- Designed Pressure Rating: 175psi(1/2"-12")、 150psi(14"-96")(Higher pressure available upon request.)
- Testing standard: AWWA C517.
- Flange drilling according to: ANSI B16.1 Other available on request.
- Actuator: Worm gear manual actuator, electrical, pneumatic and hydraulic driven actuators.

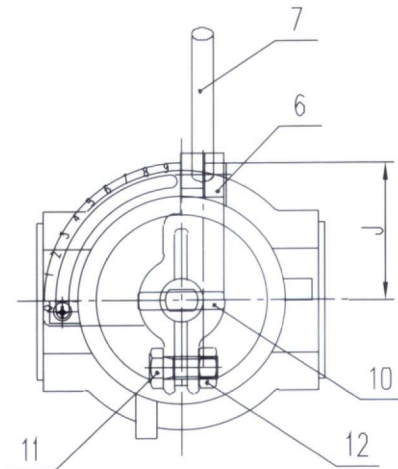
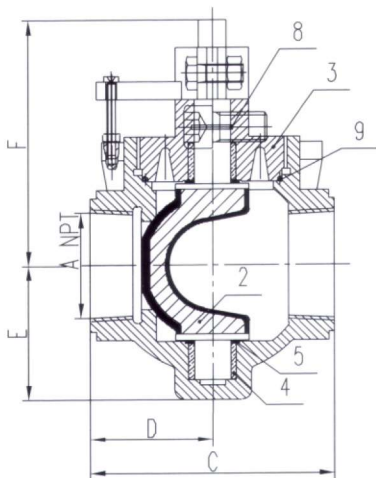


## Soft seal eccentric plug valve

### Threaded end valve dimension(inches)



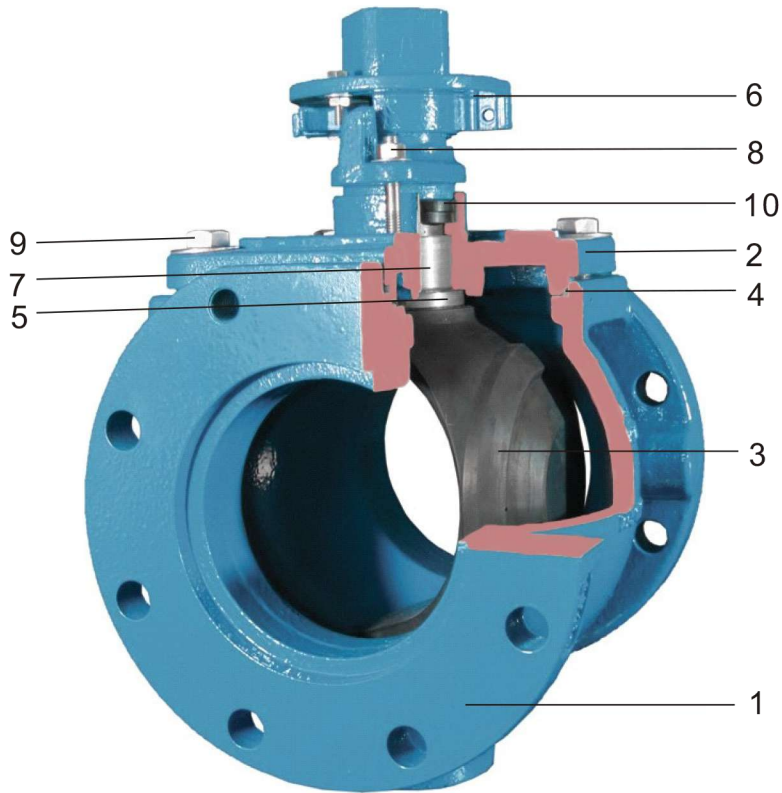
Size	A (NPT)	C	D	E	F	H	J
1/2	1/2	3-3/4	2-1/8	2	3-3/4	1-7/8	2
1	1	3-3/4	2-3/16	2	3-7/8	1-7/8	2
1-1/2	1-1/2	4-7/8	2-5/8	2-3/8	4-3/8	2-3/4	2-3/8
2	2	5-1/2	2-7/8	3	5-3/8	3-1/4	2-1/2
2-1/2	2-1/2	6-1/4	3-3/8	3-1/2	5-3/4	4	3



### Threaded end valve parts and materials

No.	Description	Material	Specification
1	Body	Ductile iron	ASTMA536 65-45-12
2	Plug	Ductile iron/Synthetic rubber coated	ASTMA536 65-45-12/Buna-N coated
3	Cover	Ductile iron	ASTMA536 65-45-12
4	Bearing	Stainless steel	Permanently lubricated 316 SS
5	O-ring seal	Synthetic rubber	Buna-N
6	Torque collar	Aluminum	
7	Handle	Steel	Carbon steel
8	O-ring	Synthetic rubber	Buna-N
9	O-ring	Synthetic rubber	Buna-N
10	Spring pin	Steel	Carbon steel
11	Hex bolt	Steel	Zinc plated
12	Hex bolt	Steel	Zinc plated

## Soft seal eccentric plug valve

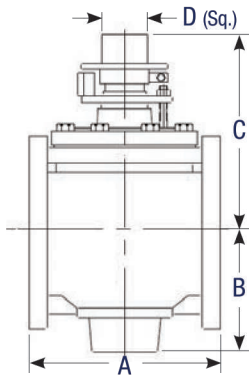


### Material specification&parts list

No.	Description	Standard Material	Specification
1	Body	Ductile iron (Welded nickel seat)	ASTMA536 65 -45 -12
2	Cover	Ductile iron	ASTMA536 65 -45 -12
3	Plug	Ductile iron (NBR coated)	ASTMA536 65 -45 -12
4	Cover O-ring	Rubber	NBR
5	Grit excluder	Rubber	NBR
6	Valve positioner	ASTMA536 65 -45 -12	ASTMA536 65 -45 -12
7	Upper bearing	Stainless steel	Permanently lubricated 316 SS
8	adjust shaft	Stainless steel	Stainless steel
9	Cover bolt	Steel	Cad plated
10	cup Seal	Rubber	NBR

## Soft seal eccentric plug valve

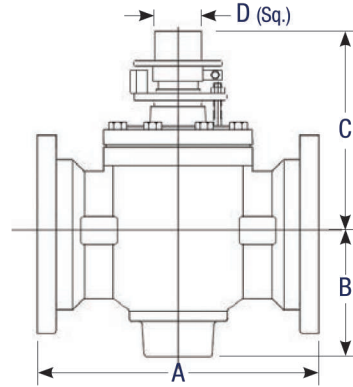
### 3"-8" Wrench operated



Flanged dimensions

Size	A	B	C	D	Weight
3	8	4½	8⅞	2	46
4	9	6	10	2	83
6	10½	6¾	10¾	2	125
8	11½	9⅞	14	2	229

Flanges per ANSI B16.1 Class 125, dimensions in inches, weight in pounds

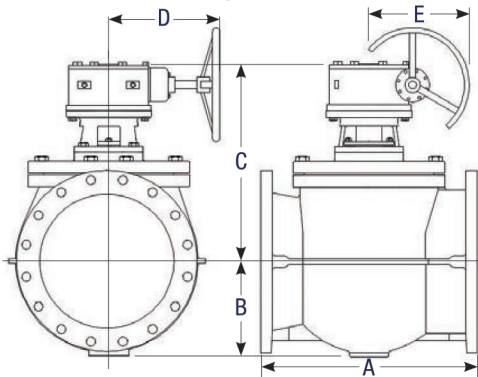


Mechanical joint dimensions

Size	A	B	C	D	Weight
3	11½	4½	8⅞	2	56
4	14¼	6	10	2	90
6	15¾	6¾	10¾	2	136
8	17⅞	9⅞	14	2	247

Mechanical joint ends per ANSI B21.11/AWWA C111, dimensions in inches, weight in pounds.

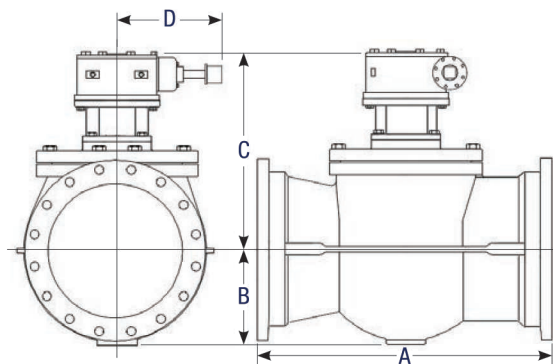
### 3"-24" worm gear operated



Flanged dimensions

Size	A	B	C	D	E	Weight
3	8	4½	10¼	9¼	9	73
4	9	6	11¾	9¼	12	115
6	10½	6¾	12½	9¼	12	155
8	11½	9⅞	16½	10½	12	304
10	13	10½	18½	10½	12	394
12	14	11	19¾	10½	12	487
14	17	11	22¼	19¾	20	757
16	17¾	13	24	19¾	20	952
18	30	13¼	24	19¾	20	1,254
20	36	15¾	26	19¾	20	2,004
24	42	15¾	26	19¾	20	2,202

Flanges per ANSI B16.1 Class 125, dimensions in inches, weight in pounds



Mechanical joint dimensions

Size	A	B	C	D	Weight
3	11½	4½	10¼	8¾	83
4	14¼	6	11¾	8¾	122
6	15¾	6¾	12½	8¾	166
8	17⅞	9⅞	16½	9⅞	322
10	19⅞	10½	18½	9⅞	451
12	20¾	11	19¾	9⅞	524
14	25	11	22¼	16⅞	827
16	29	13	24	16⅞	1,106
18	38	13¼	24	16⅞	1,417
20	44	15¾	26	16⅞	2,095
24	48	15¾	26	16⅞	2,220

Mechanical joint ends per ANSI B21.11/AWWA C111, dimensions in inches, weight in pounds.

## Soft seal eccentric plug valve

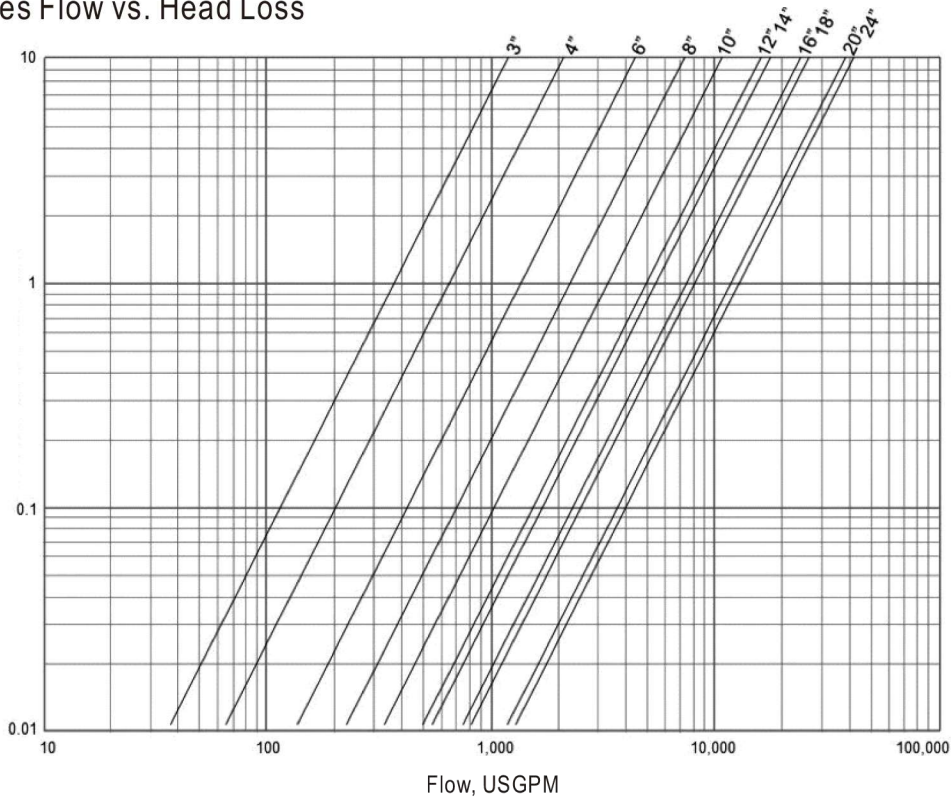
### Bare shaft Torque(N.M)

Size	PN 6	PN 10	PN 16
3"	81	95	142
4"	163	197	287
6"	325	420	556
8"	678	909	1202
10"	974	1275	1794
12"	1288	1819	2512
14"	2441	2712	3588
16"	2570	3523	3947
18"	3159	3797	5023
20"	3797	4339	5561
24"	3973	4746	6279

### Full open flow coefficients (Cv)

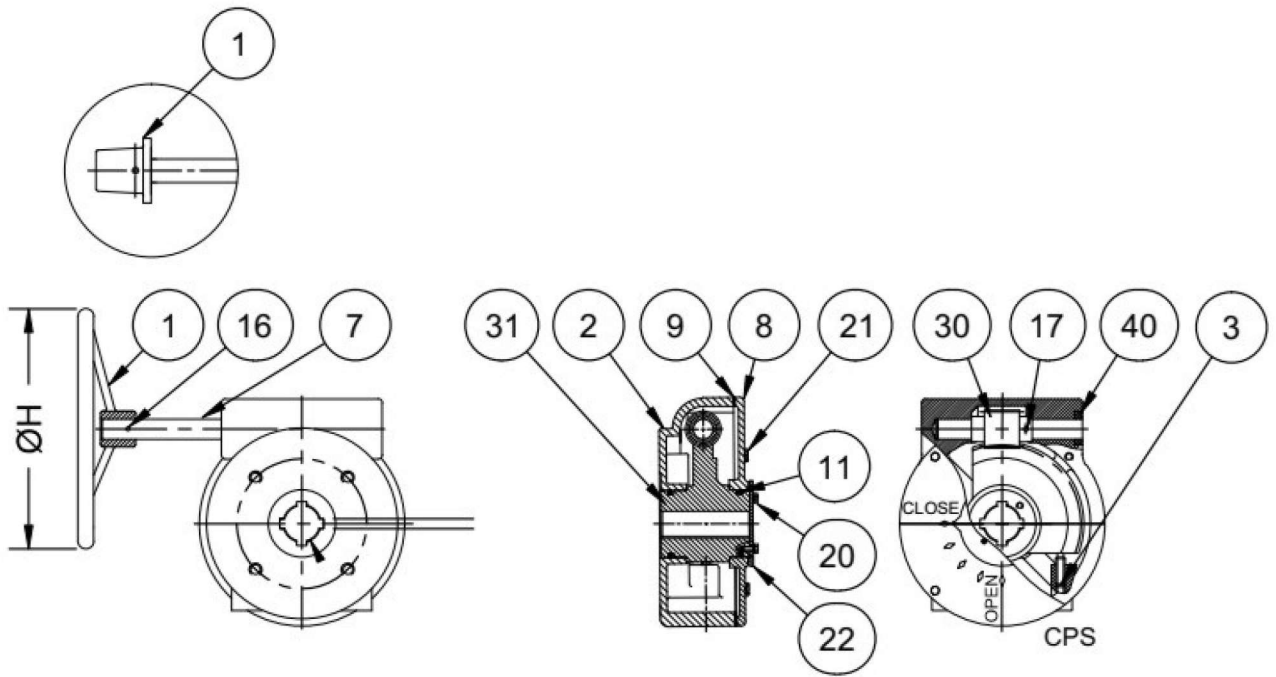
Size	Cv	Size	Cv	Size	Cv	Size	Cv
3"	569	8"	3371	14"	8220	20"	17500
4"	982	10"	4870	16"	11300	24"	19500
6"	1997	12"	7643	18"	12400		

### Plug Valves Flow vs. Head Loss



# Soft seal eccentric plug valve

## 3"-12" Parts lists-worm gear actuator



NO.	Part	NO.	Part
1	Handwheel or nut	17	Worm pin
2	Housing	20	Indicator bolt
3	Stop screw	21	Cover bolt
7	Shaft	22	Indicating disc
8	Cover	30	Threaded worm
9	Gasket	31	Worm gear
11	O-ring	40	Shaft seal ring
16	Handwheel pin		

**NOTES**

CPS-Close Position Stop.

Conforms to AWWA C504 (Can Withstand 300 ft.-lbs.(407Nm) input torque against stops).

Sealed and 90% grease packed.

Optional square nut for buried service.

Size	Rate input torque(ft.-lbs)	Rate output torque(ft.-lbs)	Handwheel diameter( $\Phi$ H)
3"	89	517	12"
4"	89	886	12"
6"	89	886	12"
8"	111	1476	12"
10"	111	1476	12"
12"	111	1476	12"

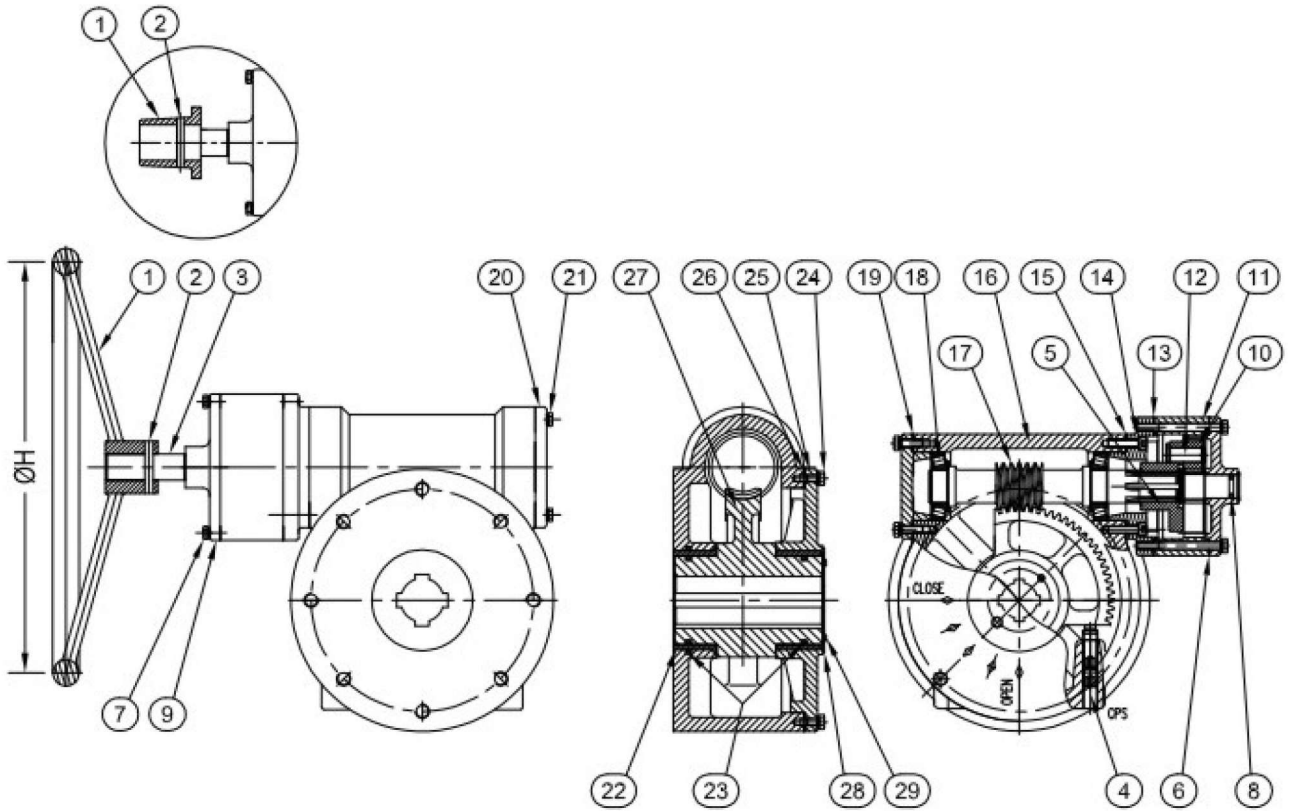
Part numbers 20 and 22 are not provided with buried service actuators.

Chain wheel per customer request



# Soft seal eccentric plug valve

## Parts lists-worm gear actuator, 14"-24"



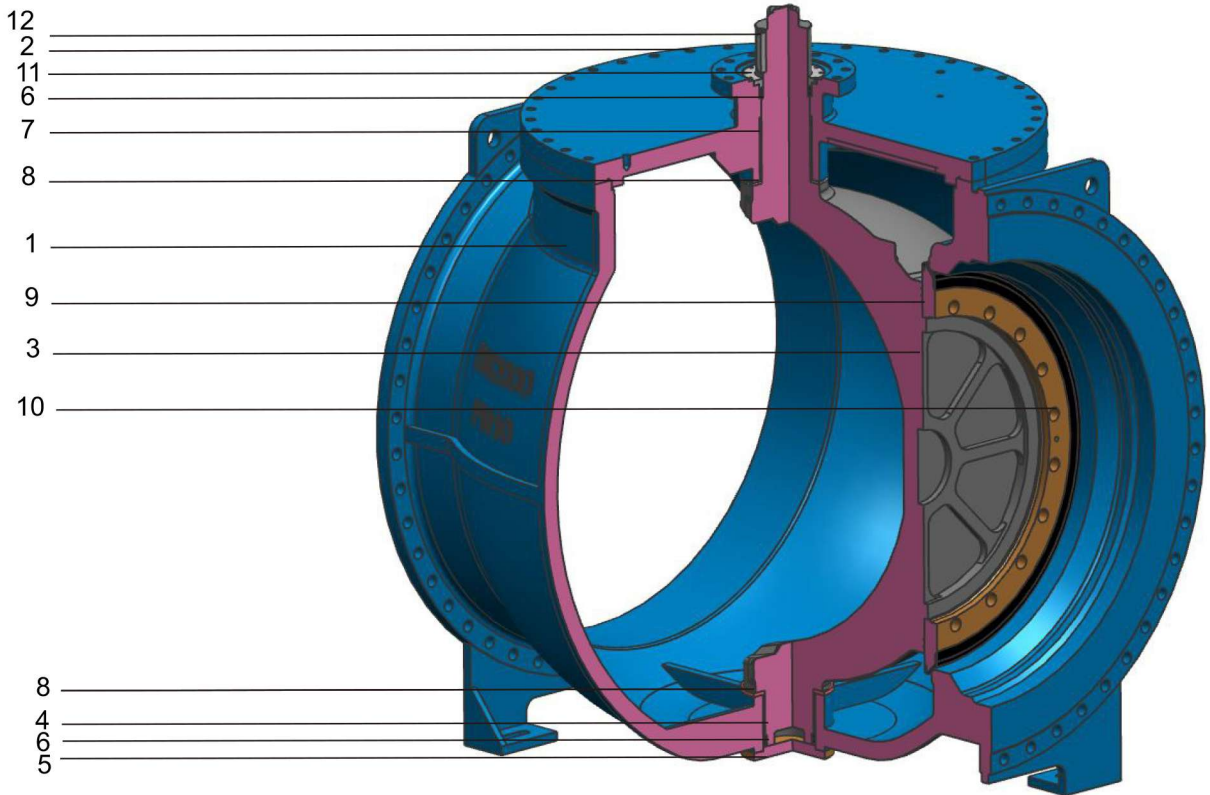
NO.	Part	NO.	Part	NO.	Part
1	Handwheel or nut	11	Pinion housing	21	Housing cover gasket
2	Handwheel or nut pin	12	Inner gear ring	22	Bearing
3	Shaft	13	Connecting cover gasket	23	O-ring
4	Stop screw	14	Connecting cover	24	End cover bolt
5	Pinion cage	15	Housing gasket	25	End cover
6	Stem cover gasket	16	Housing	26	End cover gasket
7	Stem cover bolt	17	Threaded worm	27	Worm gear
8	Stem o-ring	18	Thrust bearing	28	Indicating disc
9	Stem cover	19	Housing cover gasket	29	Indicator bolt
10	Pinion gear	20	Housing cover		

Size	Rate input torque(ft-lbs)	Rate output torque(ft-lbs)	Handwheel diameter(ΦH)	NOTES
14"	111	5167	15.75"	CPS-Close Position Stop.
16"	111	5167	15.75"	
18"	111	5167	15.75"	
20"	111	5167	19.69"	Conforms to AWWA C504(Can Withstand 300 ft-lbs.(407Nm) input torque against stops).
24"	111	5167	19.69"	Sealed and 90% grease packed.

Optional square nut for buried service.

Part numbers 28 and 29 are not provided with buried service actuators.

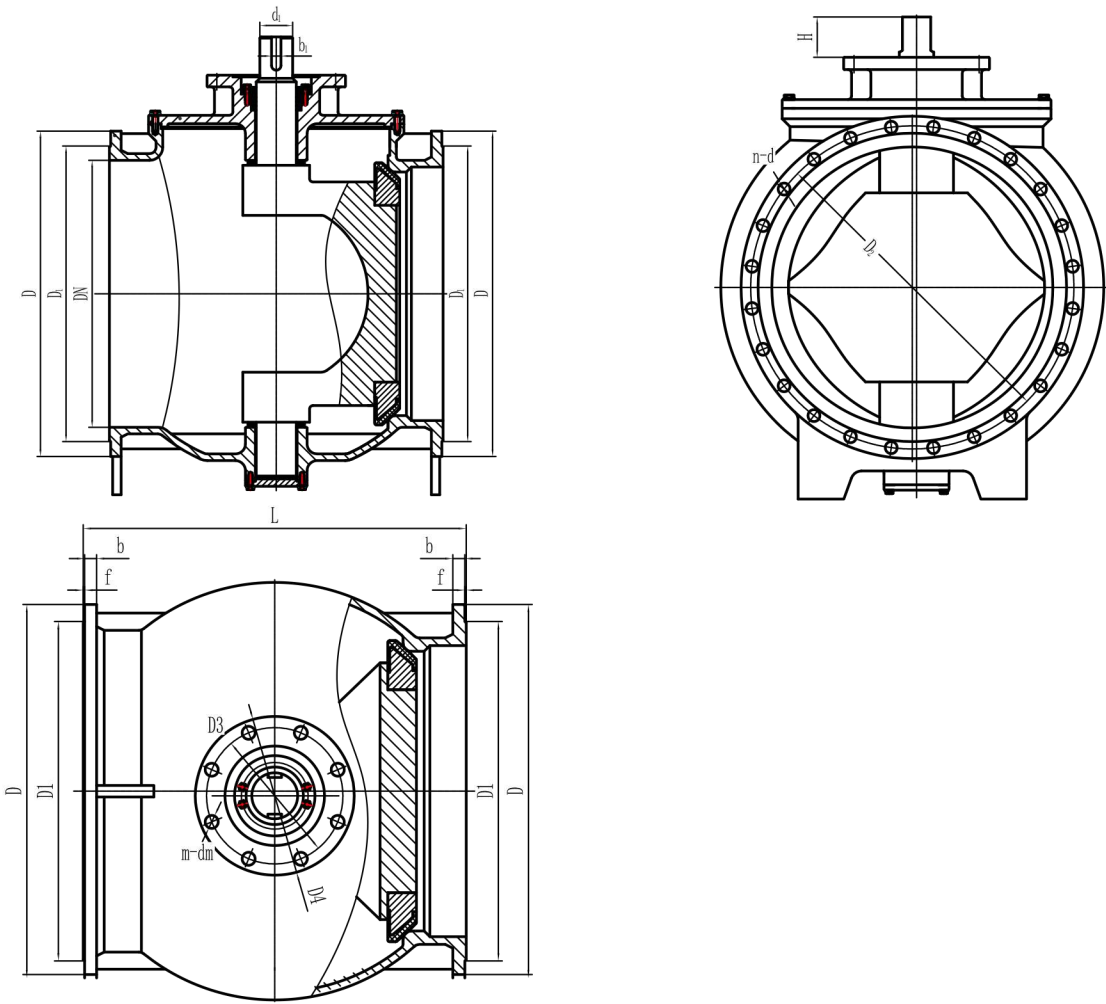
## Soft seal eccentric plug valve



### 28"-96" Materials specifications

No.	Description	Material	Specification
1	Body	Ductile iron	ASTMA536 65 -45 -12
2	Bonnet	Ductile iron	ASTMA536 65 -45 -12
3	Plug	Ductile iron	ASTMA536 65 -45 -12
4	lower earring	Copper	Brass
5	Bottom Bonnet	Ductile iron	ASTMA536 65 -45 -12
6	Packing	Rubber	NBR
7	Upper bearing	Copper	Brass
8	Adjust Spacer	Stainless steel	SS 304
9	O-ring	Rubber	NBR
10	Plug Disc	Ductile iron+Rubber	ASTMA536 65 -45 -12+NBR
11	Gland	Stainless steel	SS 304
12	Key	Steel	Steel

# Soft seal eccentric plug valve



DN	L	d1	b1	H	b	f	PN10			PN16			Top flange	ØD3	ØD4	m-Ødm		
							ØD	ØD1	ØD2	n-Ød	ØD	ØD1					ØD2	n-Ød
DN700	800	110	32	125	40	5	910	800	840	24-30	910	795	840	24-36	F35	415	356	8-33
DN800	1000	110	36	125	43	5	1015	905	950	24-33	1025	900	950	24-39	F35	415	356	8-33
DN900	1080	130	40	135	47	5	1115	1005	1050	28-33	1125	1000	1050	28-39	F40	475	406	8-39
DN1000	1100	130	40	135	50	5	1230	1110	1160	28-36	1255	1115	1170	28-42	F40	475	406	8-39
DN1200	1230	140	40	140	54	5	1455	1330	1380	32-39	1485	1330	1390	32-48	F40	475	406	8-39
DN1400	1460	140	40	160	57	5	1675	1535	1590	36-42	1685	1530	1590	36-48	F40	475	406	8-39
DN1600	1650	200	50	180	58	5	1915	1760	1820	40-48	1930	1750	1820	40-56	F48	560	483	12-39
DN1800	1800	200	50	180	60	5	2115	1960	2020	44-48	2130	1950	2020	44-56	F48	560	483	12-39
DN2000	2200	220	50	180	65	5	2325	2170	2230	48-48	2345	2150	2230	48-62	F48	560	483	12-39
DN2200	2400	230	50	200	85	5	2550	2370	2440	52-56	2550	2370	2440	52-62	F60	686	603	20-39
DN2400	2600	240	56	240	100	6	2760	2570	2650	56-56	2765	2570	2650	56-62	F60	686	603	20-39

## Soft seal eccentric plug valve

### Elastomers available for eccentric plug valve

Natural rubber is also available.

#### Nitrile

A general purpose material sometimes referred to as BUNA-N or HYCAR with a  $-20^{\circ}\text{F}$  to  $212^{\circ}\text{F}$  temperature range. Used on sewage, water, hydrocarbon and mineral oils.

#### EPDM

An excellent polymer for use on chilled water through to LP steam applications having a temperature range of  $-35^{\circ}\text{F}$  to  $250^{\circ}\text{F}$ . Resistance to many acids, alkalies, detergents, phosphate esters, alcohols and glycols is an added benefit.

#### Neoprene

This versatile material shows outstanding resistance to abrasion and ozone. Chemical resistance to a wide range of petroleum base products and dilute acids and alkalies. Temperature range  $-20^{\circ}\text{F}$  to  $225^{\circ}\text{F}$ .

#### Viton

Retention of mechanical properties at high temperature is an important feature of this elastomer: temperature range is  $-10^{\circ}\text{F}$  to  $300^{\circ}\text{F}$ . It also has excellent resistance to oils, fuels, lubricants and most mineral acids and aromatic hydrocarbons.



## Soft seal eccentric plug valve

Valve body and cover shall be ASTM A536 Grade 65-45-12 ductile iron, or 304,316,etc.



Valve body and cover shall be lined with NBR,EPDM rubber for corrosive medium.



## Soft seal eccentric plug valve

Eccentric plug valves shall be installed in the flow direction. Downstream of the seat end is the preferred direction, and any return requirements should be stated at the time of ordering.

**Online maintenance** In the event of a stem leak, the stem seal can be easily replaced without removing the bonnet. Access to the valve body for cleaning or inspection does not require removal from the line. The design of the block-type construction bonnet and stem allows for the installation of a gear operating mechanism, power actuator, or extension to the standard valve. The switch can be made easily without removing the valve cap, thus minimizing downtime.

Power operation is available for pneumatic, electric or hydraulic operation and comes with accessories such as limit switches, solenoid valves and positioners when required.



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