MILLIKEN®

a MUELLER brand

MILLCENTRIC®

Full / 100% Port Eccentric Plug Valve

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SUGGESTED SPECIFICATIONS

The Milliken® criteria of quality, reliability, safety and value are embodied in the Millcentric® Eccentric valve, setting higher standards for dependable performance with excellent features achieved by the utilization of the very latest design and manufacturing techniques.

- Computer Aided Design
- High Integrity Casting
- CNC manufacturing delivers consistent sizes on all components

All complemented by a rigorous Quality Control System

BODY

Conforming to AWWA C504 wall thickness, the Millcentric valve body casting is in ASTM A126 CL B cast iron using high pressure molding techniques. Flanged or mechanical joint ends are available. Other materials are available upon request.

Flange diameter, thickness and drilling conform to ANSI B16.1 Class 125. Mechanical joints conform to AWWA C111 (ANSI A21.11).

SEAT

The Millcentric valve incorporates as standard, on 3" and larger, a 1/8" thick welded 99% nickel seat for corrosion and erosion resistance specifically profiled for low torque and extended seat life.

STEM SEAL

High integrity sealing by combining the advantages of a resilient and abrasion resistant U-Cup seal. From vacuum to high pressure, the self-adjusting sealing system (per AWWA C504) gives positive, trouble-free service and is retained independently of the plug stem or external torque device, thereby eliminating periodic maintenance.

BEARINGS

The plug rotates in permanently lubricated stainless steel bearings, located in the body and bonnet, along with upper and lower PTFE thrust washers, which ensure consistently low operating torque.

PLUG

Supported on integral trunnions, the plug is totally encapsulated with an elastomer that is molded to the casting providing tight shut off even under vacuum conditions. High integrity corrosion-free sealing is achieved by a variety of abrasion resistant elastomers which protect the plug right up to the trunnions. When assembled, the light compression of the elastomers onto PTFE thrust washers, prevents entry of abrasive materials into the bearings.

BONNET SEAL

Superior "O" ring sealing with metal/metal contact means lower bolting stresses compared with compression gaskets.

FLOW

The full port design (round on 2.5" – 12" and rectangular on 14" and larger) with streamlined internal contours gives the highest industry capacity straight through flow in the full open position, reducing turbulence and pressure drop and the effect of erosive media. Handling of sludges and slurries is therefore enhanced.

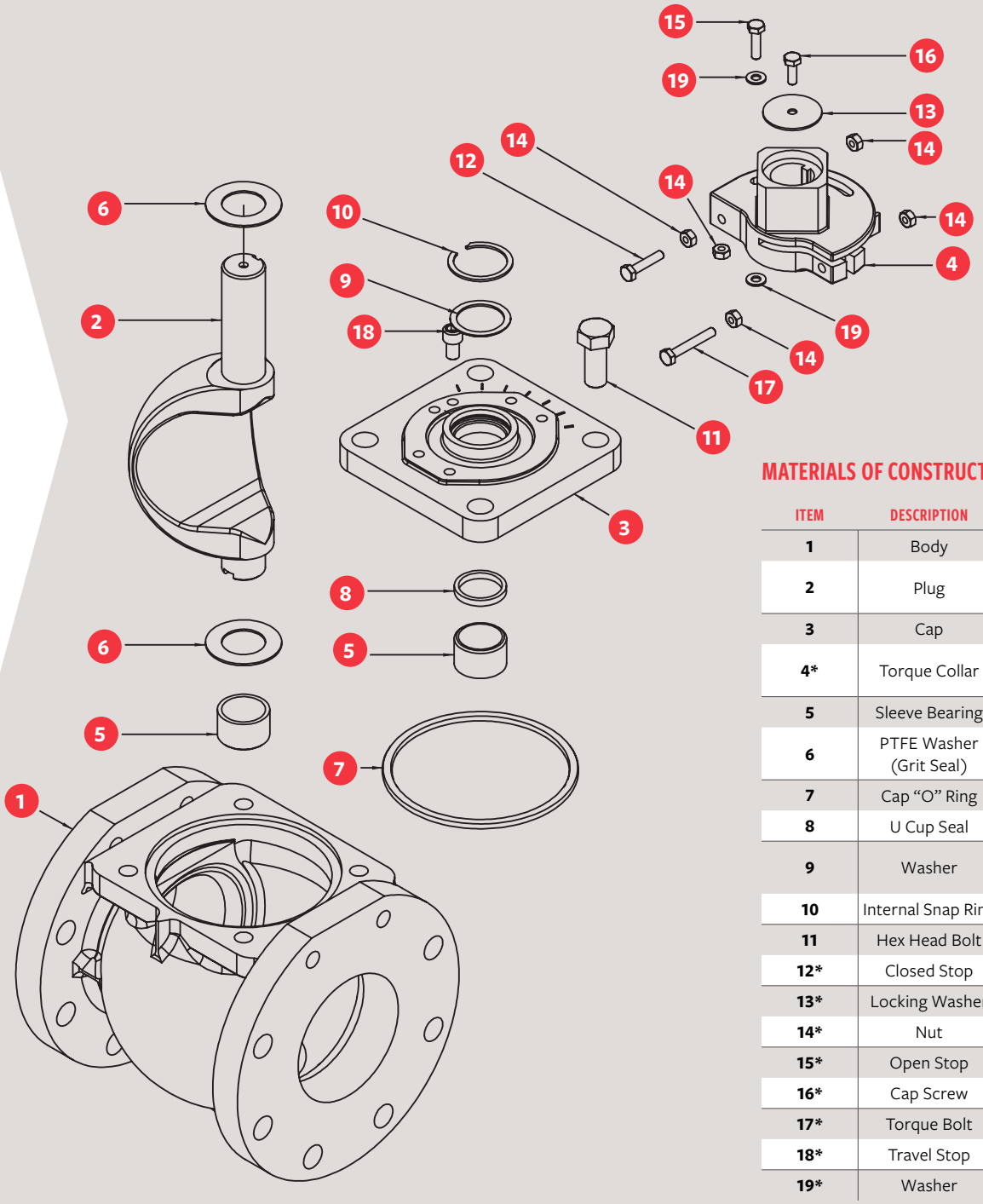
INTERCHANGEABLE

Because of the common face to face dimension with wedge gate valves (3" – 12"), fitting the tight shut-off rotary Millcentric valve into existing systems is accomplished without pipeline modifications.

TRAVEL STOPS

Adjustable open and closed travel stops are fitted as standard on both wrench and gear operated Millcentric valves.

STANDARD MATERIALS OF CONSTRUCTION 12" & SMALLER



MATERIALS OF CONSTRUCTION

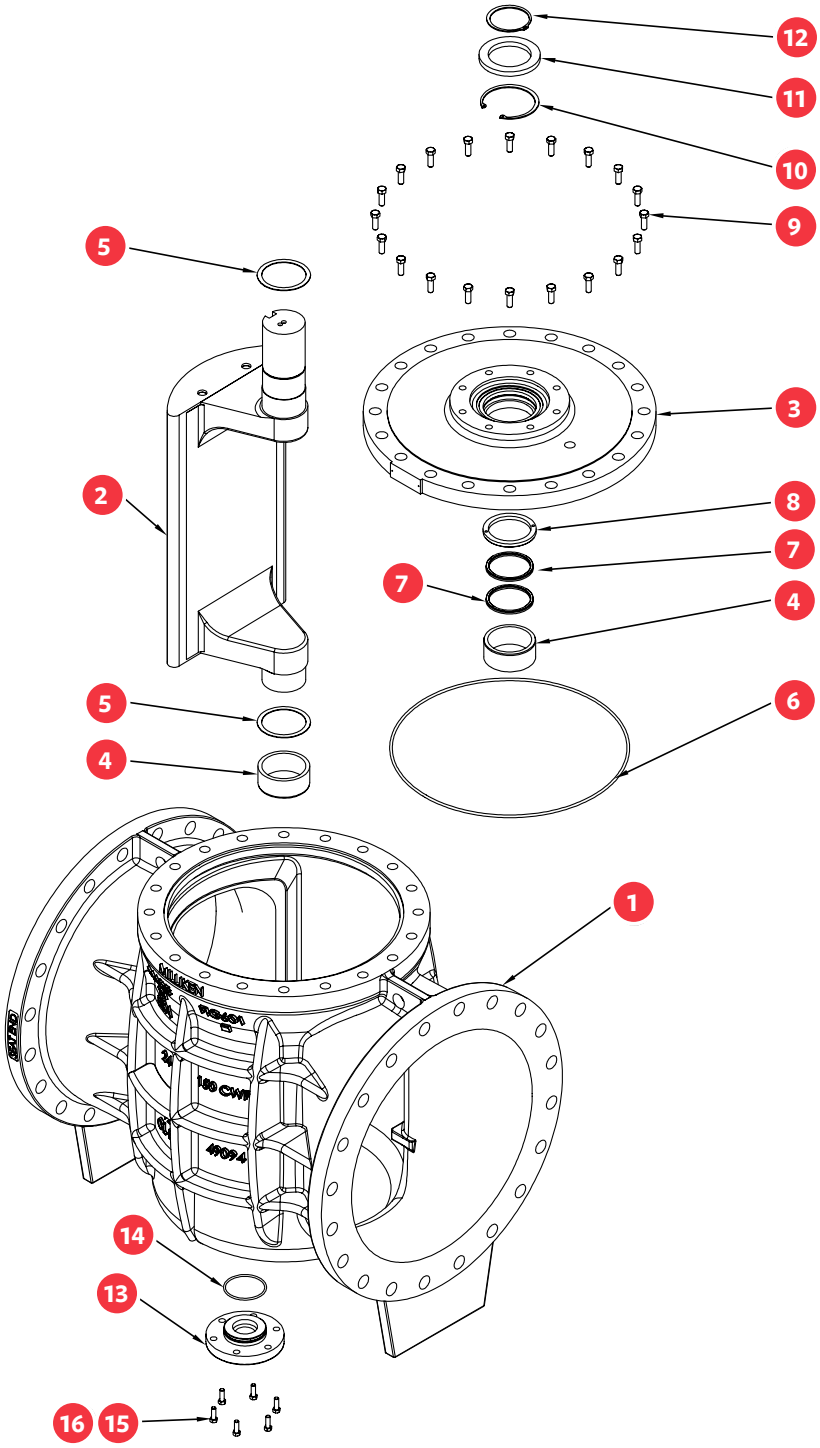
ITEM	DESCRIPTION	MATERIAL
1	Body	Cast Iron A126 Class B
2	Plug	Rubber Coated Ductile Iron ASTM A536
3	Cap	Cast Iron A126 Class B
4*	Torque Collar	Ductile Iron ASTM A536
5	Sleeve Bearing	Stainless Steel
6	PTFE Washer (Grit Seal)	PTFE
7	Cap "O" Ring	Elas. as Spec.
8	U Cup Seal	Elas. as Spec.
9	Washer	Brass — ASTM B-138-675
10	Internal Snap Ring	Spring Steel
11	Hex Head Bolt	Steel (Zinc Plated)
12*	Closed Stop	Steel (Zinc Plated)
13*	Locking Washer	Steel
14*	Nut	Steel (Zinc Plated)
15*	Open Stop	Steel (Zinc Plated)
16*	Cap Screw	Steel (Zinc Plated)
17*	Torque Bolt	Steel (Zinc Plated)
18*	Travel Stop	Steel
19*	Washer	Steel

*Torque collar assembly on 8" and smaller

MILLCENTRIC®

Full / 100% Port Eccentric Plug Valve

STANDARD MATERIALS OF CONSTRUCTION 14" & LARGER



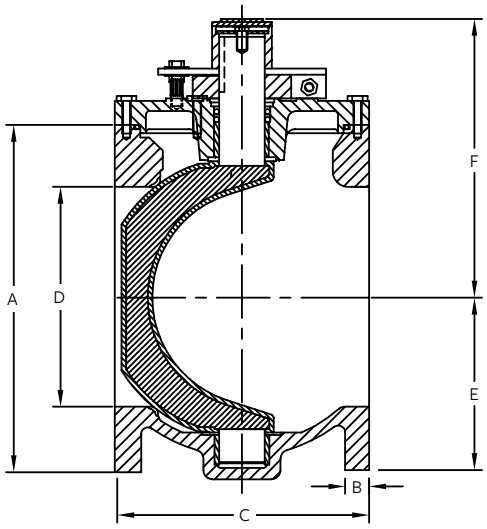
MATERIALS OF CONSTRUCTION

ITEM	DESCRIPTION	MATERIAL
1	Body	Cast Iron A126 Class B
2*	Plug	Rubber Coated Ductile Iron ASTM A-536.
3	Cap	Cast Iron A126 Class B
4	Sleeve Bearing	Stainless Steel
5	PTFE Washer (Grit Seal)	PTFE
6	Cap "O" Ring	Elas. as Spec.
7	U Cup Seal	Elas. as Spec.
8*	Seal Retaining Ring	(See Note)
9	Hex Head Bolt	Steel (Zinc Plated)
10	Internal Snap Ring	Spring Steel
11	Support Collar	Steel
12	External Snap Ring	Spring Steel
13	Bottom Cover	Cast Iron A126 Class B
14	Bottom Cover "O" Ring	Elas as Spec.
15	Lock Washer	Spring Steel
16	Hex Head Bolt	Steel (Zinc Plated)

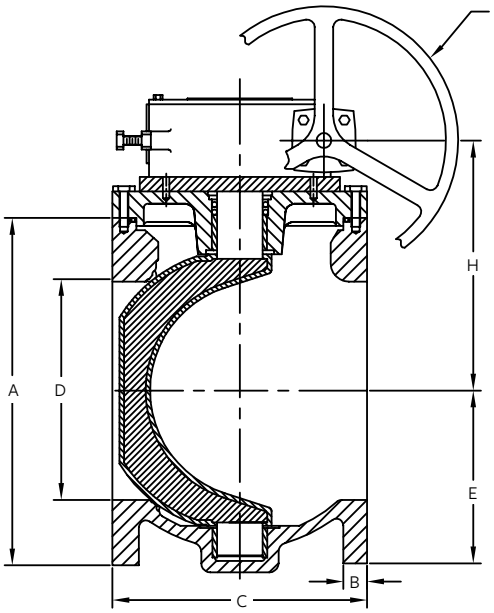
Note: Seal Retaining Ring: Brass-ASTM B-138-675 on 14" - 20" Steel on 24" and larger

DIMENSION DRAWING 2.5" – 12"

FLANGED END FIG. 601 - 175 PSI



2-1/2" - 8" VALVES ONLY



2-1/2" - 12" VALVES

FLANGED END – ANSI 125

SIZE	2.50	3	4	5	6	8	10*	12*
A	7	7.50	9	10	11	13.50	16	19
B	0.69	0.75	0.94	0.94	1	1.13	1.19	1.25
C	7.50	8	9	10	10.50	11.50	13	14
D	2.50	3	4	5	6	8	10	12
E	3.50	3.75	4.50	5.75	5.75	7.63	8.88	10
F	6.19	6.19	7.25	8.38	8.38	10.69	-	-
G	6	6	6	6	6	12	12	12
H	5.16	5.16	6.31	7.56	7.56	9.63	11.13	12.81
Weight (approx.)	30	40	70	105	115	190	** 345	** 440

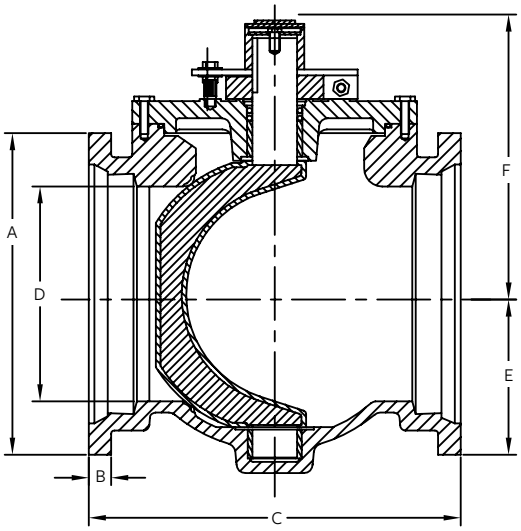
*10" & above have gear operators as standard

**Weight includes gear operator

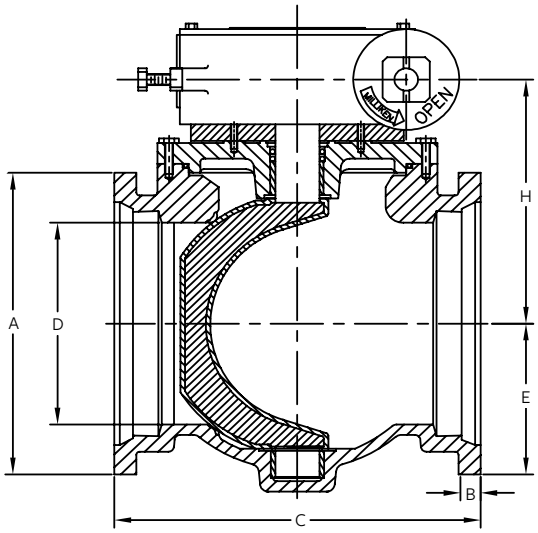
Note: Drawings are for information purposes only; please request certified drawings before preparing piping diagrams.

DIMENSION DRAWING 2.5" – 12"

MECHANICAL JOINT END FIG. 600 - 175 PSI



3" - 8" VALVES ONLY



3" - 12" VALVES

MECHANICAL JOINT END

SIZE	3	4	6	8	10*	12*
A	7.69	9	11.13	13.38	15.63	17.94
B	0.94	1	1.06	1.13	1.19	1.25
C	11.50	14.25	15.75	17.38	19.38	20.75
D	3	4	6	8	10	12
E	3.84	4.50	5.69	7.63	8.88	10
F	6.19	7.25	8.38	10.69	-	-
H	5.16	6.31	7.56	9.63	11.13	12.81
Weight (approx.)	50	80	125	200	** 360	** 480

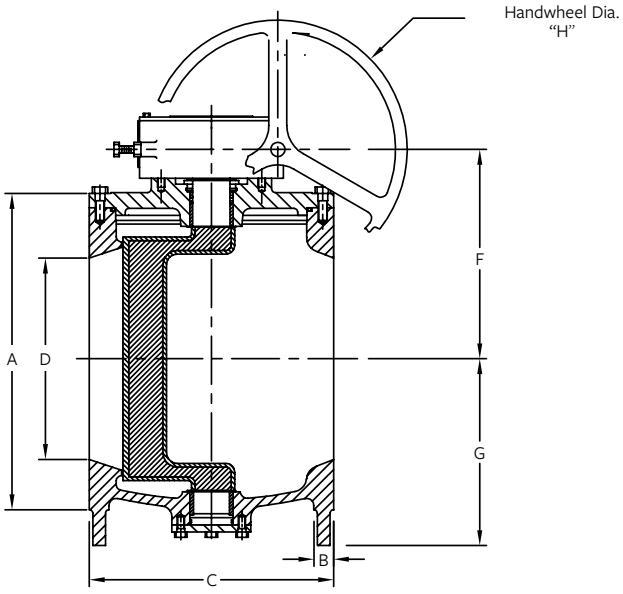
*10" & above have gear operators as standard

**Weight includes gear operator

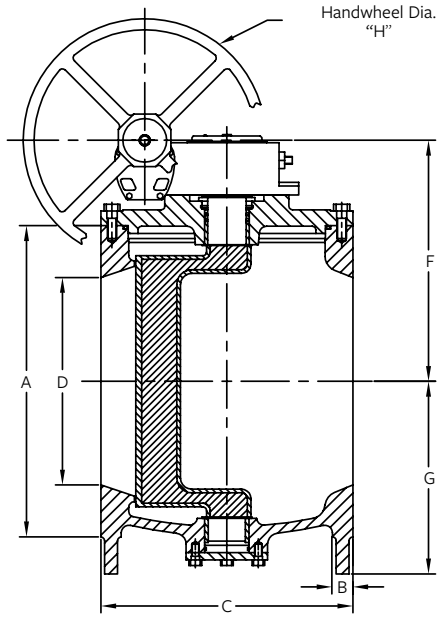
Note: Drawings are for information purposes only; please request certified drawings before preparing piping diagrams.

DIMENSION DRAWING 14" – 48"

FLANGED END FIG. 601F - 150 PSI



14" TO 20" VALVES



24" VALVES AND LARGER

FLANGED END – ANSI 125

SIZE	14	16	18	20	24	30	36	42	48
A	21	23.50	25	27.50	32	38.75	46	53	59.50
B	1.38	1.44	1.56	1.69	1.88	2.13	2.38	2.63	3
C	17	17.75	21.50	23.50	42	51	60	72	84
D	14	16	18	20	24	30	36	42	48
F	16.81	17.48	18.63	21.75	30.25	33.88	38.38	38.91	46.41
G	15	16.13	17.64	20.70	24.75	29	33.38	36	42.50
H	18	18	18	18	24	24	24	32	32
Weight (approx.)	905	1080	1480	1800	4090	7125	8800	11842	14146

Flanged valves meet ANSI B16.1

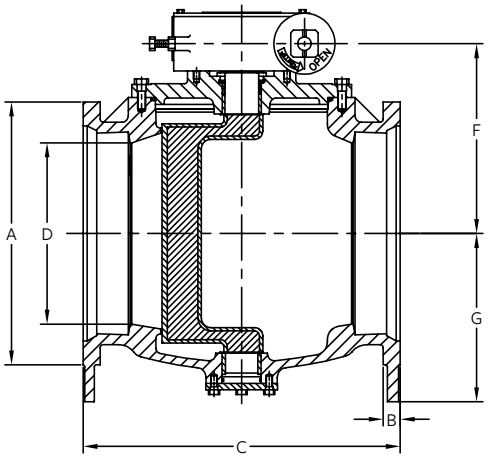
Weight includes gear operator

Notes:

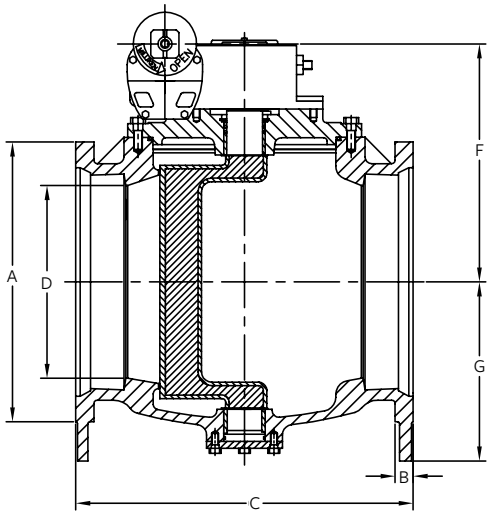
1. Drawings are for information purposes only; please request certified drawings before preparing piping diagrams
2. Dimensions on 54" and larger available upon request
3. 100% Rectangular Port Valves

DIMENSION DRAWING 14" – 48"

MECHANICAL JOINT END FIG. 600F - 150 PSI



14" TO 20" VALVES



24" VALVES AND LARGER

MECHANICAL JOINT END

SIZE	14	16	18	20	24	30	36	42	48
A	20.31	22.50	24.84	27.06	31.50	39.13	46	53	60
B	1.31	1.38	1.44	1.50	1.62	1.81	2	2	2
C	24.50	27.25	31	37.50	51	51	60	72	84
D	14	16	18	20	24	30	36	42	48
F	16.81	17.48	18.63	21.75	30.25	33.88	38.38	38.91	46.41
G	15	16.13	17.57	20	24.75	29	33.38	36	42.50
Weight (approx.)	1065	1353	1675	1800	4090	7125	8775	11842	13767

Mechanical joint valves meet ANSI 21.11 & AWWA C-111

Weight includes gear operator

Notes:

1. Drawings are for information purposes only; please request certified drawings before preparing piping diagrams
2. Dimensions on 54" and larger available upon request
3. 100% Rectangular Port Valves

TECHNICAL SPECIFICATIONS

AWWA C517-09 Standards

FULL / 100% PORT ECCENTRIC PLUG VALVES 2-1/2" - 48"

Valves shall be of the non-lubricated eccentric type with an elastomer covering all seating surfaces. The elastomer shall be suitable for the service intended. Flanged valves shall be manufactured in accordance with **ANSI B16.1 Class 125** including facing, drilling and flange thickness. Mechanical joint ends shall be in compliance with **AWWA / ANSI C-111-92**. Ports shall be round on sizes 2-1/2" - 12" and rectangular port design on valves 14" and larger. All valves shall be capable of being "pigged" with a soft pig when required.

Valve bodies shall be of **ASTM A-126 Class B** cast iron in accordance with **AWWA C-517-09 Section 4.3.3.1**. Valves 3" and larger shall be furnished with a welded-in overlay seat of 1/8" thick of not less than 99% nickel in accordance with **AWWA C-517-09 Section 4.3.3.4**. Sprayed, plated or screwed-in seats are not acceptable.

Plugs shall be of **ASTM A-536-Grade 65-45-12** for all sizes in compliance with **AWWA C-517 Section 4.3.3.2**. The plugs shall be of one piece solid construction with PTFE thrust bearings on the upper and lower bearing journals to reduce torque and prevent dirt and grit from entering the bearing and seal area.

Valves shall be furnished with replaceable sleeve type bearings conforming to **AWWA C-517-09 Section 4.3.3.6**. Bearings shall be of sintered, oil impregnated stainless steel.

Valve shaft seals shall be of the "U" cup type in accordance with **AWWA C-517-09 Section 4.4.7**. Seals shall be self adjusting and repackable without removing the bonnet from the valve.

Wrench operated valves 2-1/2" - 8" shall be capable of being converted to worm gear or automated operation without removing the bonnet or plug from the valve. All wrench operated valves shall be equipped with a 2" square nut for use with removeable levers or extended "T" handles.

Worm gear operators, where required, shall be of the heavy duty construction with the ductile iron quadrant supported on the top and bottom by oil impregnated bronze bearings. The worm gear and shaft shall be manufactured of hardened steel and run on high efficiency roller bearings. All worm gear operators shall be sized for bi-directional shutoff at the valves design pressure rating.

Valves shall be designed and manufactured to shut off bubble tight at 175 psi for valves 2-1/2" - 12" and 150 psi for valves 14" and larger. Each valve shall be given a hydrostatic and seat test with the test results being certified when required by the customer. Certified copies of Proof-of-Design test reports shall be furnished as outlined in **AWWA C-517-09 Section 5.2.2** when requested.

Plug valves shall be Milliken® Millcentric® **Series 601F / 600F**.

NOTES

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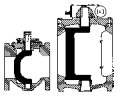
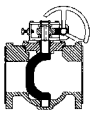
Product Guide



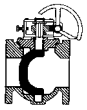
SERIES 600/601
Eccentric Plug Valve
Flanged and MJ

- Welded Nickel Seat
- Stainless Steel Bearings
- ANSI-B16.1 Flanges
- Solid Ductile Iron Plug
- Low Pressure Drop
- Flanged & MJ Ends
- Sizes 2″- 72″ FL
- Sizes 3″- 48″ MJ



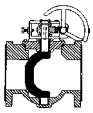
SERIES 601SS
Eccentric Plug Valve

- Integral Stainless Seat
- Stainless Bearings
- Stainless Steel Body
- ANSI B16.5 Class 150 Flanges
- Solid Stainless Steel Plug
- Low Pressure Drop
- Size: 1/2″- 24″



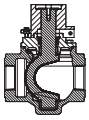
SERIES 601RL
Eccentric Plug Valve
Rubber Lined

- Soft or Hard Rubber Lining
- Stainless Steel Bearings
- ANSI B16.1 Flanges
- Solid Ductile Iron Plug
- Low Pressure Drop
- Sizes 3″- 54″
- Metal Plugs Available – *Consult Factory*



SERIES 602
Eccentric Plug Valve
High Pressure

- Ductile Iron Body
- ANSI B16.1 Flanges
- MJ AWWA C111
- Welded Nickel Seat
- Solid Ductile Iron Plug
- Low Pressure Drop
- Sizes 2″- 72″ FL
- Sizes 3″- 48″ MJ

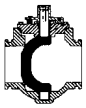


SERIES 613A
Eccentric Plug Valve
Threaded End

- Ductile Iron Construction
- Round Port
- Stainless Steel Bearings
- Low Pressure Drop
- Memory Stop
- NPT End Connections
- Sizes 1/2″ - 2″

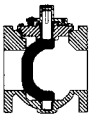
SERIES 604E
Eccentric Plug Valve
Three Way Valve

- Epoxy Seat
- Solid Ductile Iron Plug
- Stainless Steel Bearings
- Low Pressure Drop
- Lift & Turn NOT Required
- High Solids & Flow Capacity
- Sizes 3″ - 16″



SERIES 606
Eccentric Plug Valve
Grooved End

- Welded Nickel Seat
- Stainless Steel Bearings
- AWWA C-606 Grooved
- Solid Ductile Iron Plug
- Low Pressure Drop
- Ductile or Steel Pipe
- Sizes 3″ - 24″

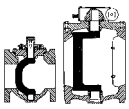


SERIES 611/610
Eccentric Plug Valve
Flanged and MJ

- Ductile Iron Body
- ANSI B16.1 Flanges
- MJ AWWA C111
- Welded Nickel Seat
- Solid Ductile Iron Plug
- Low Pressure Drop
- Sizes 2″ - 72″ FL
- Sizes 3″ - 48″ MJ

MODEL 625
Eccentric Plug Valve

- Available in Threaded and Flanged Ends
- Rated for 175 psi
- Sizes 1/2″ - 4″
- UL / CGA Listed



SERIES 600FP/601FP
Eccentric Plug Valve

- Full / 100% PORT
- Welded Nickel Seat
- Stainless Steel Bearings
- ANSI-B16.1 Flanges
- Solid Ductile Iron Plug
- Low Pressure Drop
- Flanged & MJ Ends
- Sizes 2″ - 48″ FL
- Sizes 3″ - 48″ MJ

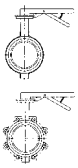


FIGURE 396/397
General Service Butterfly Valve

- Meets MSS SP 67
- Ductile Iron Body
- DI-NP Disc
- Other Materials Upon Request
- Wrench or Gear Operated Available
- 2″ - 48″ Size Range

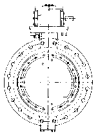


FIGURE 510A/511A
AWWA Butterfly Valve

- Complies with AWWA C-504
- Class 150B Flanged or MJ
- Cast Iron Body and Disc
- Seat in Body
- Flow Through Disc on 24″ and Larger
- Epoxy Paint on All Sizes Standard
- 3″ - 72″

SERIES 8500
AWWA Swing Check

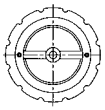
- Full Waterway
- Ductile Iron Construction
- Weight or Spring
- Air Cushion
- SS Body Seat Ring
- Buna Disc Insert
- Sizes 3″ - 24″

SERIES 8000
AWWA Swing Check

- Full Waterway
- Weight or Spring
- Bronze / SS Body Seat Ring
- Bronze / Buna / EPDM Disc Insert
- Sizes 2″ - 36″

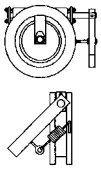
SERIES 9000
AWWA Swing Check

- Clear Waterway
- Weight or Spring
- Air or Oil Cushion
- Bronze / SS Body Seat Ring
- Bronze / Buna / EPDM Disc Insert
- Sizes 3″ - 72″



SERIES 720A
Wafer Check Valve

- Center Guided
- Check Valve
- Rated for 250 psi
- SS Disc / EPDM Seat
- Sizes 2″ - 12″



SERIES 700
Wafer Check Valve

- ANSI Class 125 / 150
- High Flow Capacity
- Narrow Face-to-Face
- Sizes 3″ - 12″
- 316 SS Internals
- Disc Position Indicator

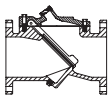


FIGURE 851
Flex Check

- Million Cycle Certification
- Complete Ductile Iron Construction
- 250 psi Pressure Rating
- Fully Epoxy Lined Interior
- No Internal Shafts, Bearings or Bushings
- No External Levers, Weights or Springs
- Mechanical Indicator (3″ - 16″)
- 2″ - 24″ Size Range
- Backflush Devices
- Proximity Switches

FIGURE 740A
Double Disc Check Valve

- Wafer Pattern Check Valve Rated for 250 psi
- Available in Sizes 2″ - 36″ With a SS Disc / EPDM Seat

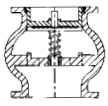


FIGURE 821A
Global Style Check Valve

- Center Guided Check Valve
- SS Disc / EPDM Seat and is Available in Sizes 2″ - 24″

For more information about Milliken or to view our full line of water products, please visit www.millikenvalve.com or call Milliken customer service at 1.800.423.1323.

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