ISO 9001 CERTIFIED

MILLIKEN
VALVE COMPANY

MILLCENTRIC®
FULL/100% PORT
ECCENTRIC PLUG VALVE

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 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.

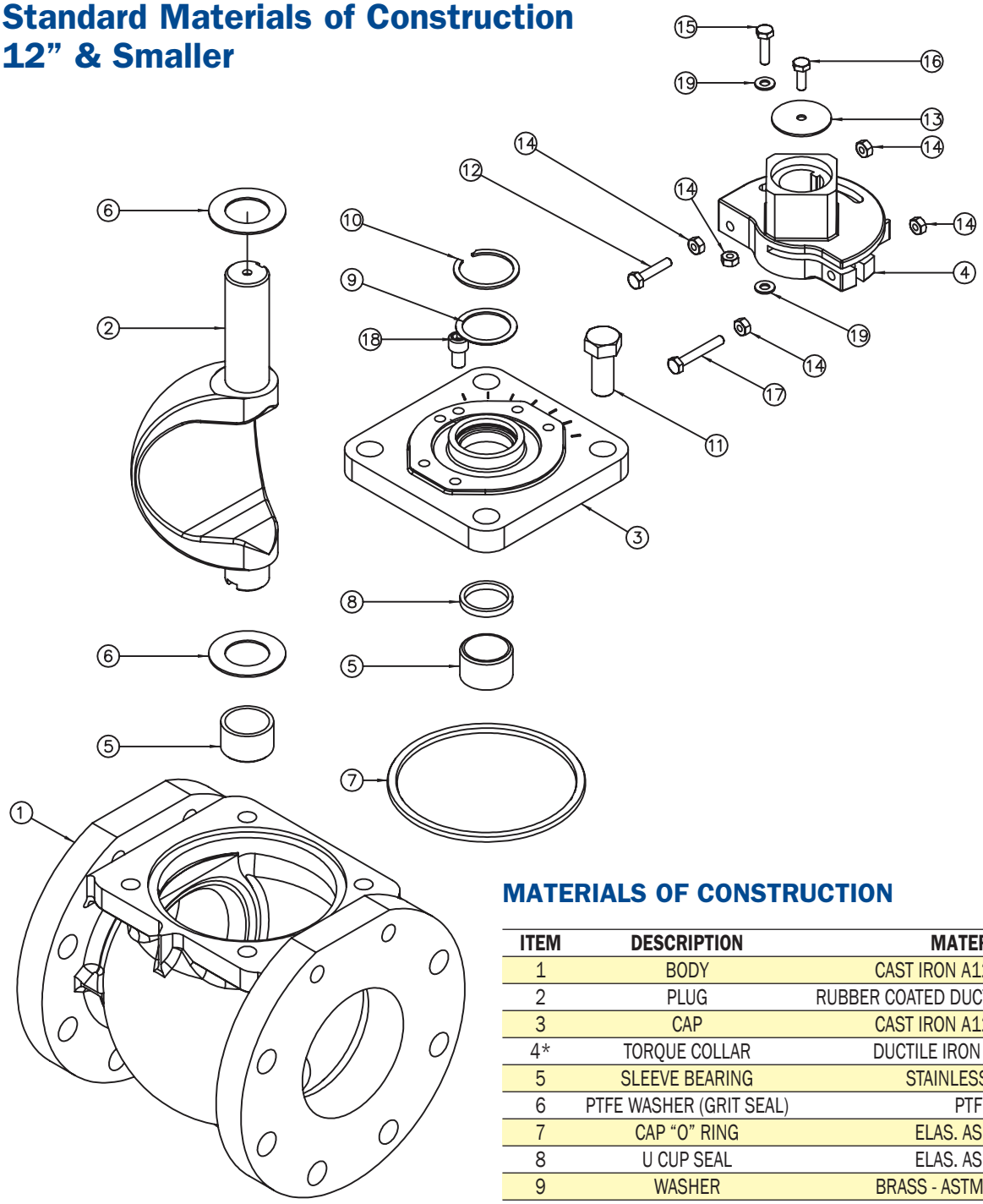
Interchangeable

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

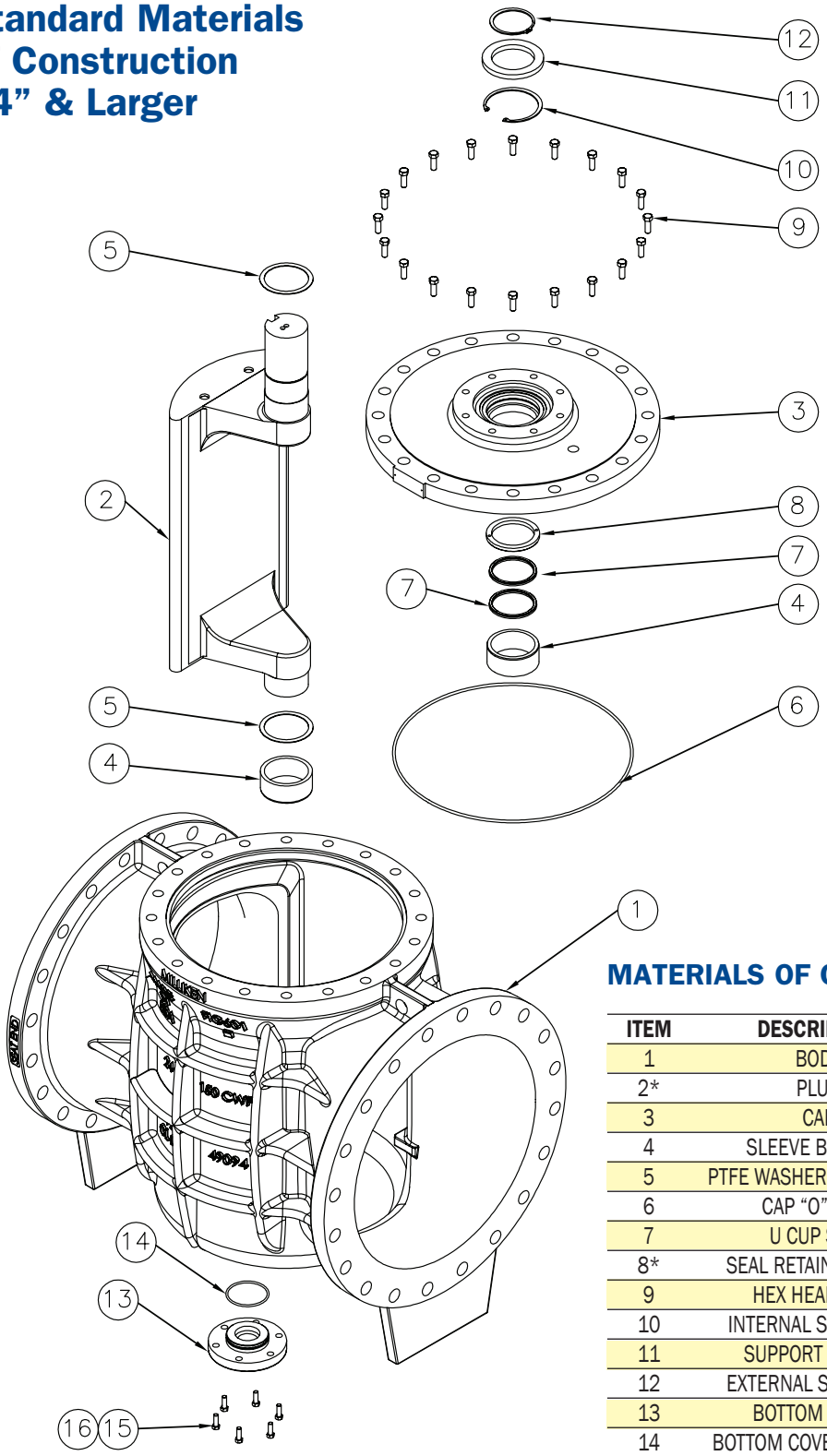


MATERIALS OF CONSTRUCTION

ITEM	DESCRIPTION	MATERIAL
1	BODY	CAST IRON A126 CLASS B
2	PLUG	RUBBER COATED DUCT. 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

*NOTE: TORQUE COLLAR ASSEMBLY ON 8” AND SMALLER

Standard Materials of Construction 14” & Larger



MATERIALS OF CONSTRUCTION

ITEM	DESCRIPTION	MATERIAL
1	BODY	CAST IRON A126 CLASS B
2*	PLUG	RUBBER COATED SEE NOTE 1
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 2
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)

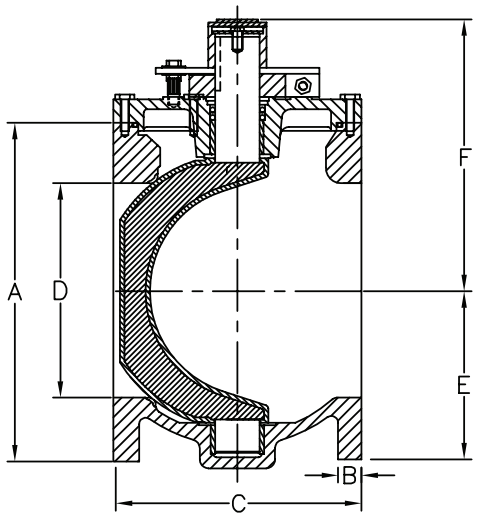
*NOTE 1: PLUGS DUCTILE IRON-ASTM A536 ON 14” - 20”
CAST IRON-A126 CLASS B ON 24” AND LARGER

NOTE 2: SEAL RETAINING RING: BRASS-ASTM B-138-675 ON 14”-20”
STEEL ON 24” AND LARGER

Dimension Drawing 2.5” - 12”

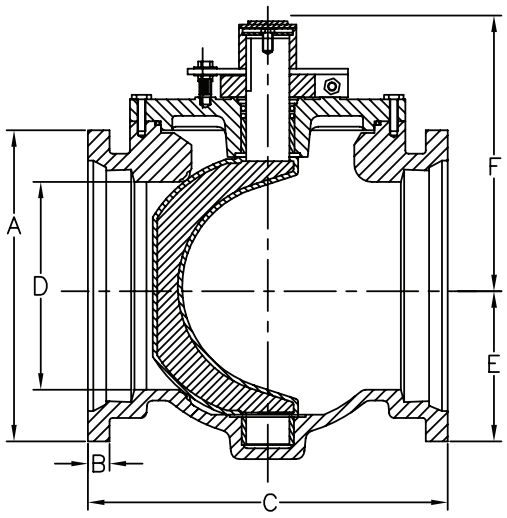
FLANGED END FIG. 601FP
175 PSI

2-1/2" - 8" VALVES ONLY

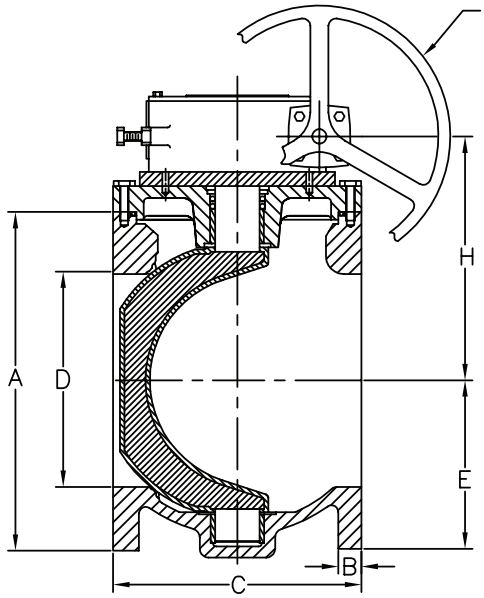


MECHANICAL JOINT END FIG. 600FP
175 PSI

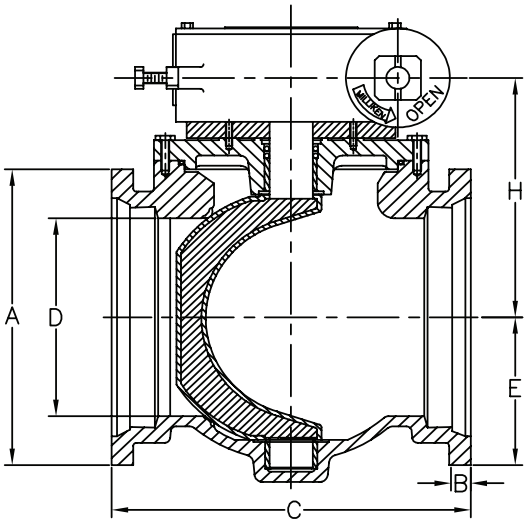
3" - 8"VALVES ONLY



2-1/2" - 12" VALVES



3" - 12" VALVES



FLANGED END - ANSI 125								
SIZE	2.50	3	4	5	6	8	10*	12*
A	7	7.5	9	10	11	13.5	16	19
B	.69	.75	.94	.94	1	1.13	1.19	1.25
C	7.5	8	9	10	10.5	11.5	13	14
D	2.5	3	4	5	6	8	10	12
E	3.5	3.75	4.5	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 (APROX.)	30	40	70	105	115	190	** 345	** 440

MECHANICAL JOINT END						
SIZE	3	4	6	8	10*	12*
A	7.69	9.00	11.13	13.38	15.63	17.94
B	.94	1	1.06	1.13	1.19	1.25
C	11.5	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 (APROX)	50	80	125	200	** 360	** 480

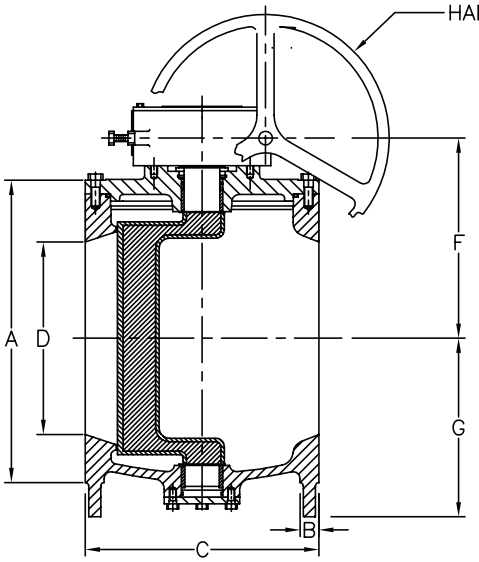
*10” & above have gear operators as standard
**Weight includes gear operator

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

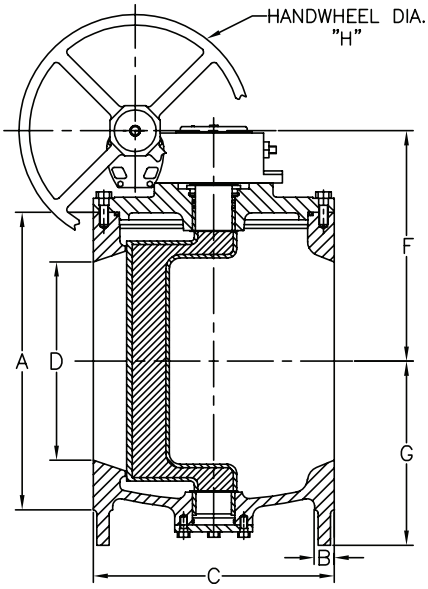
Dimension Drawing 14” - 48”

FLANGED END FIG. 601FP
150 PSI

14" TO 20" VALVES

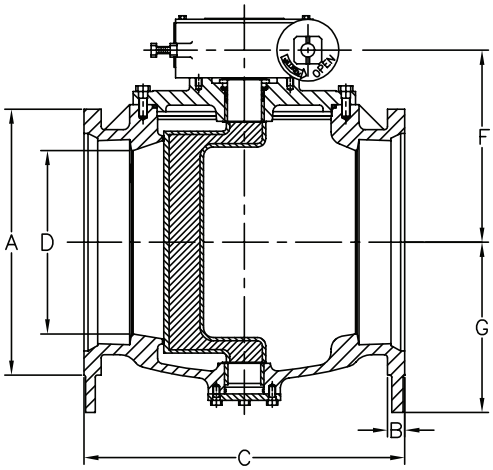


24" VALVES AND LARGER

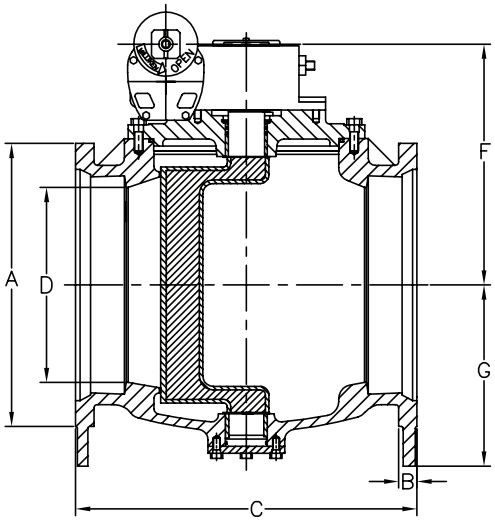


MECHANICAL JOINT END FIG. 600FP
150 PSI

14" TO 20" VALVES



24" VALVES AND LARGER



FLANGED END - ANSI 125									
SIZE	14	16	18	20	24	30	36	42	48
A	21	23.5	25	27.5	32	38.75	46	53	59.5
B	1.38	1.44	1.56	1.69	1.88	2.13	2.38	2.63	3
C	17	17.75	21.5	23.5	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	20.7	24.75	29	33.38	36	42.5
H	18	18	18	18	24	24	24	32	32
WEIGHT (APROX)	905	1080	1480	1800	4090	7125	8800	11842	14146

FLANGED VALVES MEET ANSI B16.1

MECHANICAL JOINT END									
SIZE	14	16	18	20	24	30	36	42	48
A	20.31	22.5	24.84	27.06	31.5	39.13	46	53	60
B	1.31	1.38	1.44	1.5	1.62	1.81	2	2	2
C	24.5	27.25	31	37.5	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	42.5
WEIGHT (APROX)	1065	1353	1675	1800	4090	7125	8775	11842	13767

MECHANICAL JOINT VALVES MEET ANSI 21.11 & AWWA C-111

Weight includes gear operator
NOTE: Drawings are for information purposes only; please request certified drawings before preparing piping diagrams
NOTE: Dimensions on 54” and larger available upon request
NOTE: 100% Rectangular Port Valves

Technical Specifications
Full/100% Port Eccentric Plug Valves 2 ½”- 48”
AWWA C517-09 Standards

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 ½”-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** ductile iron for sizes 20” and smaller, and **ASTM A126 Class B** cast Iron for sizes 24” and larger in compliance with **AWWA C-517-09 Sections 4.3.3.1 and 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 2½”-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.

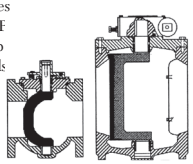
Valves shall be designed and manufactured to shut off bubble tight at 175 psi for valves 2½”-12” and 150 psi for valves 14” and larger. Each valve shall be given a hydrostatic and seat test with the test results being certified when required by the customer. Certified copies of Proof-of-Design test reports shall be furnished as outlined in **AWWA C-517-09 Section 5.2.2** when requested.

Plug valves shall be Millcentric **Series 601FP/600FP** as manufactured by **Milliken Valve Company of Bethlehem, Pennsylvania.**

Series 600/601
Eccentric Plug Valve

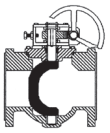
Flanged and MJ

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



Series 601SS
Eccentric Plug Valve

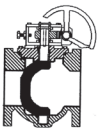
Integral Stainless Seat
Stainless Bearings
Stainless Steel Body
ANSI B16.5 Class 150 Flanges
Solid Stainless Steel Plug
Low Pressure Drop
Size: 1/2"-24"



Series 601RL
Eccentric Plug Valve

Rubber Lined

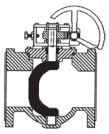
Soft or Hard Rubber Lining
Stainless Steel Bearings
ANSI B16.1 Flanges
Solid Ductile Iron Plug
Low Pressure Drop
Sizes 3"-54"
Metal Plugs Available
– Consult Factory



Series 602
Eccentric Plug Valve

High Pressure

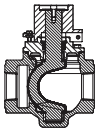
Welded Nickel Seat
Stainless Steel Bearings
ANSI B16.1 Class 250 Flanges
Solid Ductile Iron Plug
Low Pressure Drop
Sizes 2-1/2"-54"



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

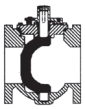
Grooved End

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

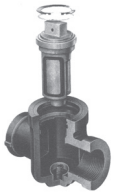
Flanged and MJ

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

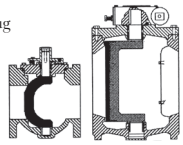


Figure 396/397
General Service
Butterfly Valve

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

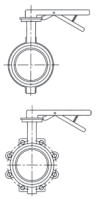
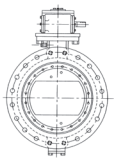


Figure 510A/511A
AWWA Butterfly Valve

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"

Model 720A
Wafer Check Valve

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

Series 700
Wafer Check Valve

Wafer Check Valve

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

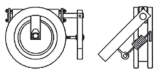


Figure 851
Flex Check

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

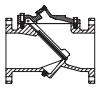


Figure 740A
Double Disc Check Valve

Wafer pattern
check valve
rated for 250 psi.
Available in sizes
2"-36" with a
SS Disc/EPDM Seat

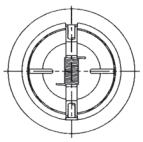
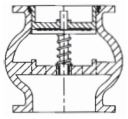


Figure 821A
Globe Style Check Valve

Center guided
check valve.
SS Disc/EPDM Seat
and is available
in sizes 2"-24".



MILLIKEN
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