The Milliken Valve Company designs, develops, manufactures and markets plug, butterfly, and check valves and their respective controls and actuators. These valves are used primarily in the water, wastewater, and industrial markets.

Milliken Valve was started over two decades ago manufacturing the eccentric plug valve for the waste water and HVAC marketplace. Growth has been constant with the addition of a AWWA butterfly valve, general service butterfly valve, swing check valve, rubber flapper check valve, double disc check valve, wafer (outside spring) check valve, globe style check valve and compact wafer check valve.

Milliken believes that in order to satisfy customers, our products need to be considered the best design and the highest quality within the industry. All of our valves have had extensive testing before they are marketed or sold. Milliken’s quality standards are a step above the industry norm, and Milliken is committed to standing behind its products in the field. All valves are tested in complete conformance to applicable standards before shipment. In addition, valve designs are routinely sent to independent testing facilities to ensure they meet or exceed expectations.
## Millcentric Eccentric Plug Valve

<table>
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<th>Section</th>
<th>Page</th>
</tr>
</thead>
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<td>Technical Specification Series 602 Class 250 Valves</td>
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<td>Technical Specification Series 601RL Rubberlined Valves</td>
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<td>Technical Specification Series 611/610 Ductile Iron Valves</td>
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<td>Technical Specification Series 601GL Glass Lined Valves</td>
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</table>
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. Alternative flanged, grooved or mechanical joint ends are available.

Flange diameter, thickness and drilling conform to ANSI B16.1 Class 125 or 250.

Grooved ends meet AWWA C-606 for ductile or steel pipe. Mechanical joints 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 316 grade 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 on 2½" – 48" and vulcanized on 54" and larger 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 port design (round on 2½" – 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.
Suggested Specifications

- Valve in closed position for bubble tight shut-off
- Normal flow direction gives pressure assisted sealing
- Torques are low even in reverse flow

- Plug rotates away from the seat for instant opening
- Seat wear and operating torque reduced
- No further seat contact until valve is closed again

- Design of Millcentric plug valve allows modulating control over the full 90° travel
- Ideally suited for balancing service
- Standard rotary valve provides control and tight shut off in one valve

- Plug is out of flow path when fully open
- Straight through, uninterrupted smooth flow
- Round port reduces turbulence and erosion, lowers pumping costs and can be “pigged” to clean the pipeline

Installation
The Millcentric® plug valve is suitable for flow and shut-off in either direction. Seat end downstream is the preferred orientation and any reverse flow requirement should be stated at the time of order. For use on fluids with suspended solids, installation with the seat upstream and the valve stem horizontal is recommended with, plug rotation to the top of the valve will ensure smooth operation.

In-Line Maintenance
In the unlikely event of stem leakage, the stem seals can be easily replaced without removing the bonnet. Access to the body for cleaning or inspection does not require removal from the line.

Modular Construction
Design of the bonnet and stem allows for on-site adaption of gear operators, power actuators, or extension devices onto standard valves. Conversion can be easily undertaken without removing the valve bonnet, thereby minimizing downtime.

Power Operation
Pneumatic, electric or hydraulic operation is available, complete with accessories such as limit switches, solenoid valves and positioners when required.
### Elastomer Selection Chart

<table>
<thead>
<tr>
<th>Service</th>
<th>Elastomer</th>
<th>Average Useful Temp. Range</th>
<th>Service</th>
<th>Elastomer</th>
<th>Average Useful Temp. Range</th>
<th>Service</th>
<th>Elastomer</th>
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<td>Air</td>
<td>Nitrile</td>
<td>0°F to 212°F</td>
<td>Alcohol AMYL</td>
<td>EPDM</td>
<td>0°F to 212°F</td>
</tr>
<tr>
<td>Air w/Oil</td>
<td>Nitrile</td>
<td>0°F to 212°F</td>
<td>Alcohol Aromatic</td>
<td>Nitrile</td>
<td>-20°F to 212°F</td>
<td>Alcohol Butyl</td>
<td>Neoprene</td>
<td>-20°F to 225°F</td>
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<tr>
<td>Alcohol Denatured</td>
<td>Nitrile</td>
<td>-20°F to 212°F</td>
<td>Alcohol Ethyl</td>
<td>EPDM</td>
<td>-20°F to 250°F</td>
<td>Alcohol Grain</td>
<td>Nitrile</td>
<td>-20°F to 212°F</td>
</tr>
<tr>
<td>Alcohol Isopropyl</td>
<td>Neoprene</td>
<td>-20°F to 225°F</td>
<td>Alcohol Methyl</td>
<td>EPDM</td>
<td>-20°F to 250°F</td>
<td>Ammonia Anhydrous</td>
<td>Neoprene</td>
<td>-20°F to 225°F</td>
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<tr>
<td>Ammonium Nitrate</td>
<td>EPDM</td>
<td>-20°F to 250°F</td>
<td>Ammonium, water</td>
<td>EPDM</td>
<td>-20°F to 250°F</td>
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<td>-20°F to 212°F</td>
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<td>EPDM</td>
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<td>Blast Furnace</td>
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<td>“C”</td>
<td>Nitrile</td>
<td>Calcium Chloride</td>
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<tr>
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<td>-20°F to 150°F</td>
<td>Carbon Monoxide (Hot)</td>
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**NOTE:** Above elastomer/temperature chart are guidelines only. See Milliken Compatibility Chart for specific applications.
# Standard Materials of Construction, Fig. 601/600, 12" & Smaller

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<tr>
<th>Item No.</th>
<th>Component</th>
<th>Material</th>
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<td>1</td>
<td>Body</td>
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<tr>
<td>2</td>
<td>Plug</td>
<td>Rubber Coated Ductile Iron ASTM A536</td>
</tr>
<tr>
<td>3</td>
<td>Cap</td>
<td>Cast Iron A126 Class B</td>
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<tr>
<td>4</td>
<td>Torque Collar</td>
<td>Ductile Iron ASTM A536</td>
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<tr>
<td>5</td>
<td>Journal Bearing</td>
<td>St.Steel — ANSI 316</td>
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<tr>
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<td>O Ring</td>
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</tr>
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<td>U Cup Seal</td>
<td>Elas. as Spec.</td>
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<td>9</td>
<td>Washer</td>
<td>Brass — ASTM B-138-675</td>
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<td>10</td>
<td>Internal Snap Ring</td>
<td>Spring Steel</td>
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<tr>
<td>11</td>
<td>Setscrew</td>
<td>Steel (Zinc Plated)</td>
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<tr>
<td>12*</td>
<td>Closed Stop</td>
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<tr>
<td>13*</td>
<td>Locking Washer</td>
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<td>19*</td>
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*NOTE: Torque Collar Assembly on 8" and Smaller
Standard Materials of Construction, Fig. 601/600, 14" & Larger

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<th>Item No.</th>
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<td>Cap</td>
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<td>Cap “O” Ring</td>
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<td>12</td>
<td>External Snap Ring</td>
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</tbody>
</table>

*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
Fig. 601 Cast Iron / 611 Ductile Iron – Flanged End
2½" – 12", 175 PSI

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*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.
Fig. 600 Cast Iron / 610 Ductile Iron – Mechanical Joint
3" – 12", 175 PSI

3” – 8” VALVES ONLY

3” – 12” VALVES

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<tr>
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*10" & above have gear operators as standard
**Weight includes gear operator

We recommend gears on all Mechanical Joint Valves

NOTE: Drawings are for information purposes only; please request certified drawings before preparing piping diagrams
Fig. 601 Cast Iron / 611 Ductile Iron Flanged End
Fig. 600/610 Ductile Iron Mechanical Joint End
14" & Larger, 150 PSI

**FLANGED END — ANSI 125**

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Weight includes gear operator

**MECHANICAL JOINT END**

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Mechanical Joint Valves Meet ANSI 21.11 & AWWA C-111

Flanged Valves Meet ANSI B16.1

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

NOTE: Dimensions on 60" and larger available upon request.
Fig. 602 Class 250 Flanged End
2\(\frac{1}{2}\)" – 12", 400 PSI, 14" – 36", 300 PSI

2\(\frac{1}{2}\)" – 12" VALVES

14" – 20" VALVES

24" AND LARGER VALVES

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WEIGHT (approx.) 70 80 120 162 170 275 398 590 980 1125 1830 2060 4160 5700 7670

All 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
NOTE: Dimensions on 42" and larger available upon request
Fig. 601RL Rubberlined – Flanged End
3" – 12", 175 PSI, 14" & Larger, 150 PSI

3" – 12" VALVES

14" – 20" VALVES

24" AND LARGER VALVES

FLANGED END — ANSI 125 RUBBER LINED

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All 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
NOTE: Dimensions on 48" and larger available upon request
Fig. 606 Grooved End
2\(\frac{1}{2}\)" – 12", 175 PSI, 14" – 20", 150 PSI

2\(\frac{1}{2}\)" – 8" VALVES

2\(\frac{1}{2}\)" – 12" VALVES

14" – 20" VALVES

GROOVED END — AWWA 606

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*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

NOTE: Larger sizes are available. Contact Milliken Valve for data.
Adaption

A range of extended stems & floor mounted stands for remote operation, particularly in buried service, are available.
Chainwheels & locking devices are readily incorporated onto the Millcentric Valve.
**Technical Specification Series 601/600 Valves**

**TECHNICAL SPECIFICATION**

**ECCENTRIC PLUG VALVES**

**AWWA C517-09 Standards**

**Series 601/600 Valves**

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 125/150 including facing, drilling and flange thickness. Mechanical joint ends shall be in compliance with AWWA/ANSI C-111-92. Grooved ends shall be manufactured to the dimensions of ANSI/AWWA C606 for ductile or steel pipe as required. Ports shall be round on sizes 2½"-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 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 type 316 stainless steel ASTM A-743 Grade CF-8M. 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.

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 601/600 as manufactured by Milliken Valve Company of Bethlehem, Pennsylvania.
Technical Specification Series 602 Class 250 Valves

TECHNICAL SPECIFICATION
ANSI CLASS 250 ECCENTRIC PLUG VALVES
AWWA C517-09 Standards
Series 602 Valves

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 250 including facing, drilling and flange thickness. Ports shall be round on sizes 2½" through 12" to facilitate “pigging” when required. Valves 14" and larger shall be of a rectangular port design.

Valve bodies shall be of ASTM A-536 Grade 65-45-12 ductile iron in accordance with AWWA C-517-09 Section 4.3.3.2. 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 in compliance with AWWA C-517-09 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 form 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 type 316 stainless steel ASTM A-743 Grade CF-8M. 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.

Worm gear operators 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 400 psi for valves 2½"-12" and 300 psi for valves 14"-48" with pressure behind the plug.

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 Series 602 as manufactured by Milliken Valve Company of Bethlehem, Pennsylvania.
Technical Specification Series 601RL Rubberlined Valves

TECHNICAL SPECIFICATION
RUBBERLINED ECCENTRIC PLUG VALVES
AWWA C517-09 Standards
Series 601RL Valves

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 125/150 including facing, drilling and flange thickness. Mechanical joint ends shall be in compliance with AWWA/ANSI C-111-92. Grooved ends shall be manufactured to the dimensions of ANSI/AWWA C606 for ductile or steel pipe as required. Ports shall be round on sizes 2½”-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. The interior of the valve bodies shall be covered with a suitable elastomer with a minimum thickness of 1⁄8”.

Plugs shall be of ASTM A-536-Grade 65-45-12 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 type 316 stainless steel ASTM A-743 Grade CF-8M. 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.

Worm gear operators 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 601RL as manufactured by Milliken Valve Company of Bethlehem, Pennsylvania.
Technical Specification Series 601S – Stainless Steel Valves

TECHNICAL SPECIFICATION
STAINLESS STEEL ECCENTRIC PLUG VALVES
AWWA C517-09 Standards
Series 601S Valves

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. Ports shall be round on sizes 2½”-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 CF8M (316 stainless steel). Valves shall be furnished with 316 stainless steel seat in accordance with AWWA C-517-09 Section 4.3.3.4.

Plugs shall be of CF8M (316 stainless steel). 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 type 316 stainless steel ASTM A-743 Grade CF-8M. 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 removable 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 601S as manufactured by Milliken Valve Company of Bethlehem, Pennsylvania.
Technical Specification Series 611/610 Ductile Iron Valves

TECHNICAL SPECIFICATION
DUCTILE IRON ECCENTRIC PLUG VALVES
AWWA C517-09 Standards
Series 611/610 Valves

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 125/150 including facing, drilling and flange thickness. Mechanical joint ends shall be in compliance with AWWA/ANSI C-111-92. Grooved ends shall be manufactured to the dimensions of ANSI/AWWA C606 for ductile or steel pipe as required. Ports shall be round on sizes 2½"-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-536 Grade 65-45-12 in accordance with AWWA C-517-09 Section 4.3.3.2. Valves 3" and larger shall be furnished with a welded-in overlay seat of ½" 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 accordance with AWWA C-517-09 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 type 316 stainless steel ASTM A-743 Grade CF-8M. 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 removable 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 611/610 as manufactured by Milliken Valve Company of Bethlehem, Pennsylvania.
Technical Specification Series 601GL Glass Lined Valves

TECHNICAL SPECIFICATION
GLASS LINED ECCENTRIC PLUG VALVES 3"-30"
AWWA C517-09 Standards
Series 601GL/600GL Valves

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 125/150 including facing, drilling and flange thickness. Mechanical joint ends shall be in compliance with AWWA/ANSI C-111-92. Grooved ends shall be manufactured to the dimensions of ANSI/ AWWA C606 for ductile or steel pipe as required. Ports shall be round on sizes 3"-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. Interior of valves shall be glass lined at .008-.012 mils thickness, covering the entire interior of valve bodies and stopping at the flange faces.

Plugs shall be of ASTM A-536-Grade 65-45-12 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 type 316 stainless steel ASTM A-743 Grade CF-8M. 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 601GL/600GL as manufactured by Milliken Valve Company of Bethlehem, Pennsylvania.
Series 600/601
Eccentric Plug Valve
- Welded Nickel Seat
- Stainless Steel Bearings
- ANSI B16.1 Flanges
- Solid Ductile Iron Plug
- Low Pressure Drop
- Sizes: 2”-72” FL
- Sizes: 3”-48” MJ

Series 600/601SS
Eccentric Plug Valve
- Integral Stainless Seat
- Stainless Steel Bearings
- ANSI B16.5 Class 150 Flanges
- Solid Stainless Steel Plug
- Low Pressure Drop
- Sizes: 3”-34”
- Metals Plug Available – Consult Factory

Series 606
Eccentric Plug Valve
- Welded Nickel Seat
- Stainless Steel Bearings
- ANSI B16.1 Flanges
- Solid Ductile Iron Plug
- Low Pressure Drop
- Sizes: 2”-34”
- Metal Plug Available – Consult Factory

Series 602
Eccentric Plug Valve
- 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 603
Eccentric Plug Valve
- Solid Ductile Iron Plug
- Round Port
- Low Pressure Drop
- Memory Stop
- NPT End Connections
- Sizes: 1/2”-2”

Series 604E
Eccentric Plug 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 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 604
Eccentric Plug 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 602
Eccentric Plug Valve
- Welded Nickel Seat
- Stainless Steel Bearings
- ANSI B16.1 Flanges
- Solid Ductile Iron Plug
- Low Pressure Drop
- Sizes: 2-1/2”-54”

Series 603
Eccentric Plug Valve
- Solid Ductile Iron Plug
- Round Port
- Low Pressure Drop
- Memory Stop
- NPT End Connections
- Sizes: 1/2”-2”

Model 625
Eccentric Plug Valve
- Available in Threaded and Flanged Ends
- Rated for 175 psi
- Sizes: 1/2”-4”
- UL/CGA Listed

Series 8000
AWWA Swing Check
- Full waterway
- Weight or Spring
- Bronze/SS Body Seat Ring
- Sizes: 2”-36”

Series 8500
AWWA Swing Check
- Full waterway
- Ductile Iron Construction
- Weight or Spring
- Buna disc insert
- Sizes: 2”-36”

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

Model 821A
Globe Style Check Valve
- Center guided check valve
- SS Disc/EPDM Seat
- Available in sizes 2”-24”

Model 625
Eccentric Plug Valve
- Available in Threaded and Flanged Ends
- Rated for 175 psi
- Sizes: 1/2”-4”
- UL/CGA Listed

ISO 9001:2000 Certified
Field Services Available
Engineering Services