OVERVIEW OF VALVE DETAILS - 1/2” - 2”

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
The Millcentric® valve body casting is ASTM A536 65-45-12 ductile iron using high pressure molding techniques. Threaded connection available on 1/2” - 2” sizes. Flanged connection available on 2” size.

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

SEAT
The valve seat shall be furnished with an overlay of corrosion and abrasion resistant epoxy.

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 round port design 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.

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

**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 on to 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.
1/2” - 2” MILLCENTRIC®
Eccentric Plug Valve

STANDARD MATERIALS OF CONSTRUCTION, FIG. 613A/611A, 1/2” - 2”

<table>
<thead>
<tr>
<th>ITEM</th>
<th>COMPONENT</th>
<th>MATERIAL</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Ductile Iron ASTM A536</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Plug</td>
<td>Rubber Coated Ductile Iron ASTM A536</td>
<td>1</td>
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<tr>
<td>3</td>
<td>Cap</td>
<td>Ductile Iron ASTM A536</td>
<td>1</td>
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<td>4</td>
<td>Torque Collar Assembly</td>
<td>Ductile Iron ASTM A536</td>
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<tr>
<td>5</td>
<td>Journal Bearing</td>
<td>Stainless Steel</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>PTFE Washer (Grit Seal)</td>
<td>PTFE</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>O Ring</td>
<td>Elas. as Spec.</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>U Cup Seal</td>
<td>Elas. as Spec.</td>
<td>2</td>
</tr>
<tr>
<td>9</td>
<td>Seal Retaining Ring</td>
<td>Brass — ASTM B-138-675</td>
<td>1</td>
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<tr>
<td>10</td>
<td>Internal Snap Ring</td>
<td>Spring Steel</td>
<td>1</td>
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<tr>
<td>11</td>
<td>Cap Bolt</td>
<td>Steel (Zinc Plated)</td>
<td>AR</td>
</tr>
<tr>
<td>12</td>
<td>Close Stop</td>
<td>Steel (Zinc Plated)</td>
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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>
<th>AVERAGE USEFUL TEMP. RANGE</th>
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</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>EPDM</td>
<td>-35°F to 250°F</td>
<td>Caustic Soda</td>
<td>EPDM</td>
<td>-35°F to 250°F</td>
<td>Oil Animal</td>
<td>Nitrile</td>
<td>-20°F to 212°F</td>
</tr>
<tr>
<td>Air</td>
<td>EPDM</td>
<td>-35°F to 250°F</td>
<td>Cement Slurry</td>
<td>EPDM</td>
<td>-35°F to 250°F</td>
<td>Oil Mobil Therm Light</td>
<td>Viton</td>
<td>-10°F to 212°F</td>
</tr>
<tr>
<td>Air w/Oil</td>
<td>Nitrile</td>
<td>0°F to 212°F</td>
<td>Copper Sulphate</td>
<td>EPDM</td>
<td>-35°F to 250°F</td>
<td>Oil Mobil Therm 600</td>
<td>Viton</td>
<td>-10°F to 212°F</td>
</tr>
<tr>
<td>Alcohol, Amyl</td>
<td>EPDM</td>
<td>0°F to 212°F</td>
<td>Creosote (Coal)</td>
<td>Nitrile</td>
<td>-20°F to 212°F</td>
<td>Oil Mobil Therm 600</td>
<td>Viton</td>
<td>-10°F to 212°F</td>
</tr>
<tr>
<td>Alcohol, Butyl</td>
<td>Neoprene</td>
<td>-20°F to 212°F</td>
<td>Diesel Fuel No. 3</td>
<td>Nitrile</td>
<td>-20°F to 212°F</td>
<td>Oil Lubricating</td>
<td>Nitrile</td>
<td>-20°F to 212°F</td>
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<td>Alcoholic, Denatured</td>
<td>Nitrile</td>
<td>-20°F to 212°F</td>
<td>Diethyl Glycol</td>
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<td>-35°F to 250°F</td>
<td>Oil Vegetable</td>
<td>Nitrile</td>
<td>-20°F to 212°F</td>
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<tr>
<td>Alcohol, Ethyl</td>
<td>EPDM</td>
<td>-20°F to 212°F</td>
<td>Ethylene Glycol</td>
<td>EPDM</td>
<td>-35°F to 250°F</td>
<td>Oil Vegetable</td>
<td>Nitrile</td>
<td>-20°F to 212°F</td>
</tr>
<tr>
<td>Alcohol, Gran</td>
<td>Nitrile</td>
<td>-20°F to 212°F</td>
<td>Fatty Acid</td>
<td>Nitrile</td>
<td>-20°F to 212°F</td>
<td>Propane</td>
<td>Nitrile</td>
<td>-20°F to 212°F</td>
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<td>Alcohol, Isoproply</td>
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<td>-20°F to 212°F</td>
<td>Fuel Oil No. 3</td>
<td>Nitrile</td>
<td>-20°F to 212°F</td>
<td>Rape Seed Oil</td>
<td>EPDM</td>
<td>-35°F to 250°F</td>
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<tr>
<td>Alcohol, Methy</td>
<td>EPDM</td>
<td>-20°F to 212°F</td>
<td>Fertilizer Liquid (H₂N₂O₃)</td>
<td>EPDM</td>
<td>-35°F to 250°F</td>
<td>Sewage with Oil</td>
<td>Nitrile</td>
<td>-20°F to 212°F</td>
</tr>
<tr>
<td>Ammonia, Anhydrous</td>
<td>Neoprene</td>
<td>-20°F to 212°F</td>
<td>Gas Natural</td>
<td>Nitrile</td>
<td>-20°F to 212°F</td>
<td>Steam 250°F</td>
<td>EPDM</td>
<td>-35°F to 250°F</td>
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<td>Ammonia, Water</td>
<td>EPDM</td>
<td>-20°F to 212°F</td>
<td>Glue Animal</td>
<td>Nitrile</td>
<td>-20°F to 212°F</td>
<td>Steam 250°F</td>
<td>EPDM</td>
<td>-35°F to 250°F</td>
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<td>Animal Fats</td>
<td>Nitrile</td>
<td>-20°F to 212°F</td>
<td>Green Liquid</td>
<td>EPDM</td>
<td>-20°F to 212°F</td>
<td>Stoffard Solvent</td>
<td>Nitrile</td>
<td>-20°F to 40°F</td>
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<td>Black Liquor</td>
<td>EPDM</td>
<td>-20°F to 212°F</td>
<td>Hydrazine</td>
<td>Nitrile</td>
<td>-20°F to 212°F</td>
<td>Sulphuric Acid 10% 50%</td>
<td>Neoprene</td>
<td>-20°F to 188°F</td>
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<td>Blast Furnace Gas</td>
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<td>-20°F to 212°F</td>
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<td>Nitrile</td>
<td>-20°F to 212°F</td>
<td>Sulphuric Acid 100%</td>
<td>Viton</td>
<td>-10°F to 30°F</td>
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<tr>
<td>Butane</td>
<td>Nitrile</td>
<td>-20°F to 212°F</td>
<td>JPS</td>
<td>JPS</td>
<td>Viton</td>
<td>-20°F to 212°F</td>
<td>Trichloroethylene Dry</td>
<td>Viton</td>
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<td>Butyl Rubber</td>
<td>EPDM</td>
<td>-20°F to 212°F</td>
<td>Kerosene</td>
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<td>-20°F to 212°F</td>
<td>Thiocyanic Amine</td>
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<td>-35°F to 212°F</td>
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<td>Calcium Chloride</td>
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<td>-20°F to 212°F</td>
<td>Ketone</td>
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<td>-35°F to 250°F</td>
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<td>Viton</td>
<td>-10°F to 30°F</td>
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<td>Carbon Dioxide</td>
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<td>-20°F to 212°F</td>
<td>Lime Slurry</td>
<td>EPDM</td>
<td>-35°F to 250°F</td>
<td>Water, Fresh</td>
<td>EPDM</td>
<td>-35°F to 250°F</td>
</tr>
<tr>
<td>Carbon Monoxide (Cold)</td>
<td>Neoprene</td>
<td>-20°F to 212°F</td>
<td>Methane</td>
<td>Nitrile</td>
<td>-20°F to 212°F</td>
<td>Water, Salt</td>
<td>EPDM</td>
<td>-35°F to 250°F</td>
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<tr>
<td>Carbon Monoxide (Hot)</td>
<td>Viton</td>
<td>-10°F to 300°F</td>
<td>Methyl Ethyl Ketone</td>
<td>EPDM</td>
<td>-35°F to 250°F</td>
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<td>Viton</td>
<td>-10°F to 300°F</td>
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<tr>
<td>Carbon Tetrachloride</td>
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<td>Naphtha (Benzin)</td>
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<td>Acetone</td>
<td>EPDM</td>
<td>-35°F to 250°F</td>
</tr>
</tbody>
</table>

Note: Above elastomer / temperature chart are guidelines only.
1/2” - 2” MILLCENTRIC®
Eccentric Plug Valve

THREADED END:
FIG. 613A DUCTILE IRON / 603AS STAINLESS STEEL 1/2” - 2”

FLANGED END:
FIG. 611A DUCTILE IRON / 601S STAINLESS STEEL 2”

THREADED ENDS

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<td>C</td>
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<tr>
<td>D</td>
<td>1/2” NPT</td>
<td>3/4” NPT</td>
<td>1” NPT</td>
<td>1-1/4” NPT</td>
<td>1-1/2” NPT</td>
<td>2” NPT</td>
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Weight (approx.)

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<th>1-1/4</th>
<th>1-1/2</th>
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<tr>
<td>D</td>
<td>1/2” NPT</td>
<td>3/4” NPT</td>
<td>1” NPT</td>
<td>1-1/4” NPT</td>
<td>1-1/2” NPT</td>
<td>2” NPT</td>
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<tr>
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<td>4.38</td>
<td>5.00</td>
<td>5.00</td>
<td>5.00</td>
</tr>
</tbody>
</table>

Weight (approx.)

Note: Raised face is only on the 2” Fig. 601AS Stainless Steel.
# MILLIKEN®

## 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 6015S
**Eccentric Plug Valve**
- rubber lined
- 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**
- High Pressure
- Welded Nickel Seat
- Stainless 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**
- 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 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"

### MODEL 625
**Eccentric Plug Valve**
- Available in Threaded and Grooved Ends
- Rated for 175 psi
- Sizes 2" - 4"
- UL / CGA Listed

### SERIES 600P / 601TP
**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
**Butterfly Valve**
- Wrench or Gear
- Operated Available
- Sizes 3" - 24"

### FIGURE 510A / 511A
**Butterfly Valve**
- Double Disc
- Wafer Pattern Check Valve
- Rated for 250 psi
- Available in Sizes 2" - 36" With a SS Disc / EPDM Seat

### FIGURE 851
**Check Valve**
- Wrench or Gear
- Operated Available
- Upon Request
- 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

### SERIES 8500
**AWWA Swing Check**
- All Sizes Standard
- Available in Sizes 2" - 24"

### SERIES 8000
**AWWA Swing 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
- Backflash Devices
- Proximity Switches

### 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
- 316 SS Internals
- Disc Position Indicator

### FIGURE 851A
**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"

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