

## **ECO-Centric<sup>®</sup> Plug Valve**

The Eco-friendly Eccentric Plug Valve





## **A Century of Experience**

GA Industries valves are known for long term reliability in the most demanding water and wastewater applications. Whether a simple check valve or a complex automatic control valve, each GA Industries valve is built on over 100 years of design, manufacturing and application experience to ensure its dependability and superior performance.

## **Outstanding Technical Support**

From the factory to the field, every GA Industries valve comes with responsive and knowledgeable technical assistance and support. Factory application engineers and our team of trained and experienced sales representatives work closely with designers to select the right valve from our broad product range to ensure the valve meets the system requirements. We are committed to serving our customers in all phases of the project.

## **Superior Quality**

GA Industries valves are produced under a certified ISO-9001 quality system. They are designed in accordance with AWWA and other applicable industry standards and precision manufactured from the highest grade materials. Every valve is tested to ensure it meets our high standards and the latest industry requirements so you can be sure it will operate as expected from the minute it is put in service.

## **Comprehensive Product Range**

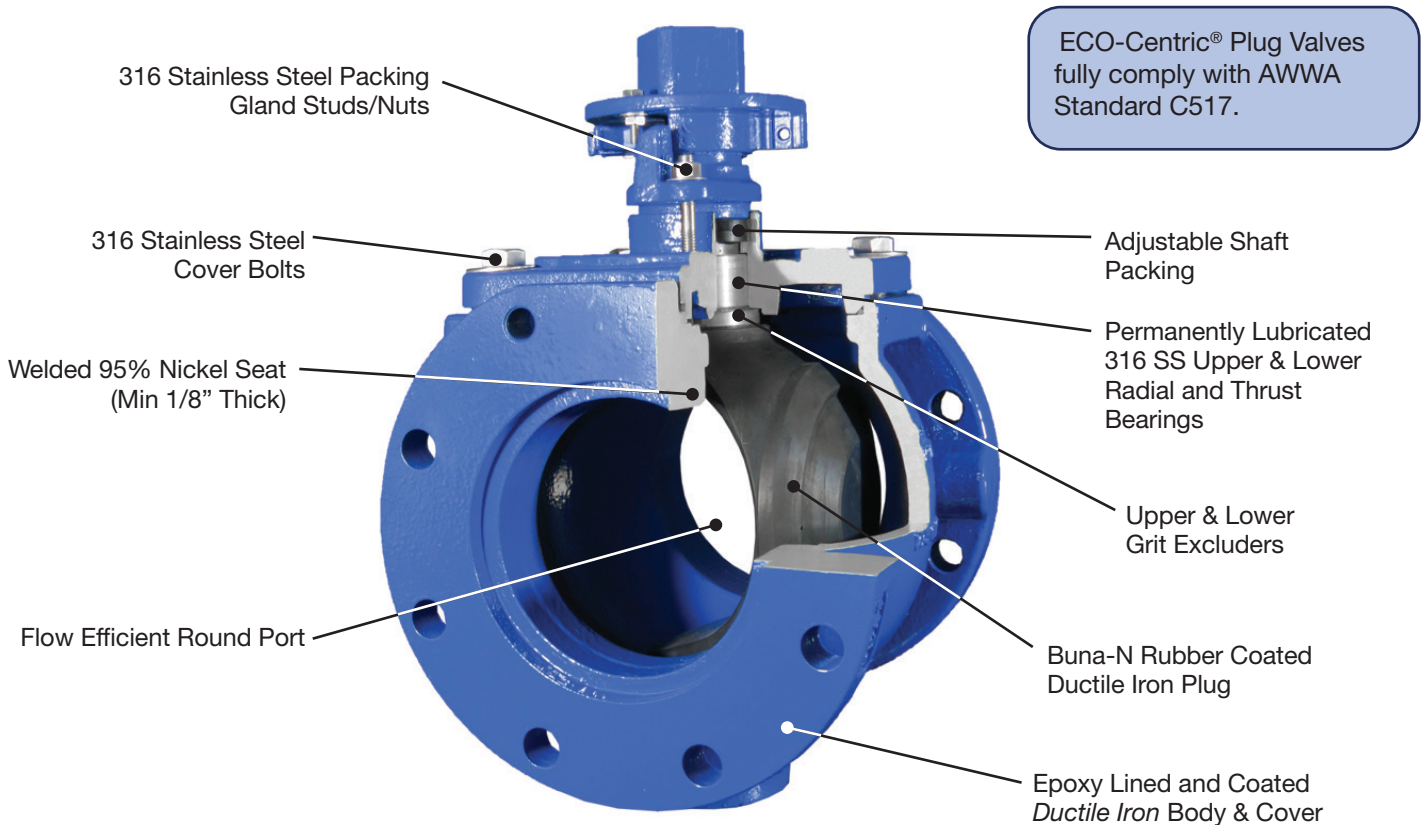
We are continuously expanding and improving our product line to meet the ever-changing needs of the waterworks industry. From off-the-shelf standard butterfly and plug valves to sophisticated, highly engineered pump control, check and surge control valves, we offer one of the broadest ranges of valves in the industry. Please see the back cover for a complete listing of our product offering.



## 3" – 24" ECO-Centric® Plug Valve

### The Eco-friendly Eccentric Plug Valve

Representing the highest design, materials, and manufacturing standards, the ECO-Centric® Plug Valve meets the most demanding service requirements while affording lower headloss and greater solids handling ability than traditional plug valves.



### Body Styles and Rating

3" to 12" Class 125 flanged or MJ, 175 PSI Rated  
14" to 24" Class 125 flanged or MJ, 150 PSI Rated

### Flow Efficient Round Port Design

Round port provides superior capacity, reduced headloss, greater solids handling, and lower energy cost

### Rugged and Durable Materials

Standard epoxy coated heavy duty ductile iron body, welded nickel body seat, upper and lower grit excluders, and stainless steel external fasteners provide long term dependable service in harsh operating conditions.

### Adjustable Shaft Packing

Multiple Buna-N rings – adjustable and replaceable without removing the actuator – with standard stainless steel packing gland studs and nuts.

### Bi-Directional Shutoff

Drip tight shut off in both directions up to full rated pressure allows installation versatility.

### True Eccentric Action

Molded and vulcanized rubber coated ductile iron plug and state of the art CNC machining process ensures accurate plug-to-seat alignment for true eccentric action, reduced wear, and long term tight shutoff.

### Tested and Certified

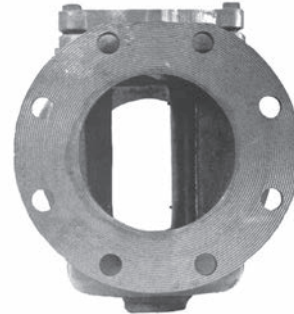
ECO-Centric® Plug Valves have not only undergone proof of design testing but also every valve is rigorously tested in accordance with AWWA Standard C517 before it leaves the factory.

## Why Round Port?

Traditional eccentric plug valves have a rectangular “port” that is narrower than it is tall. Since the entrance and exit of the plug valve is round (same as the pipe to which it is connected), the change of shape coupled with a reduction in flow area through the narrow rectangular “port” produces head loss. The GA Industries ECO-Centric® Plug Valve’s modern round port design neither changes the shape of the flow nor “squeezes” it through a narrow opening. Compared to traditional eccentric plug valves, the ECO-Centric® Plug Valve’s flow efficient design produces lower head loss and its circular port can pass larger solids to minimize clogging and more easily accommodate pigging equipment.



Round Port, ECO-Centric® Plug Valve



Rectangular Port Plug Valve

## Compare and Decide

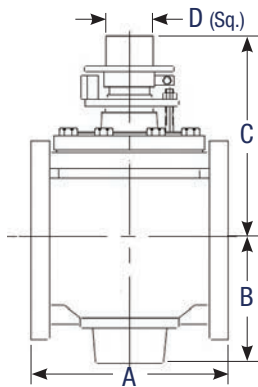
Valve Size	Cv (GPM necessary to cause one psi pressure drop)		Maximum Object Passage Size	
	GA Round Port Plug Valve	Typical Rectangular Port Plug Valve	GA Round Port Plug Valve	Typical Rectangular Port Plug Valve
3"	569	330	2-27/32"	–
4"	982	560	3-5/8"	2"
6"	1997	1180	5-11/16"	3-3/8"
8"	3371	2030	7-5/16"	4-1/4"
10"	4870	3130	9-3/8"	5-1/8"
12"	7643	4140	10-5/8"	6-1/4"
14"	8220	5500	11-5/8"	7-1/4"
16"	11300	7300	14-1/2"	8-1/4"
18"	12400	9600	15-7/16"	9-1/2"
20"	17500	13000	17-1/16"	11-7/8"
24"	19500	17500	18-5/8"	14-3/16"

\*Cv = number of USGPM that can pass through the valve at a 1 PSI pressure drop. For pressure drop in PSI at other flows use the formula  $(Q/C_v)^2 = \Delta P$ . For head loss in feet of water see chart on page 6.

## Standard Materials

Part	Material
Body	Ductile Iron, ASTM A536 Grade 65-45-12, Internal and External Epoxy Coated
Cover (Bonnet)	Ductile Iron, ASTM A536 Grade 65-45-12, Internal and External Epoxy Coated
Plug/Shaft	Ductile Iron, ASTM A536 Grade 65-45-12, Buna-N Rubber Coated
Shaft Bearings	Type 316 Stainless Steel, Permanently Lubricated
Grit Excluders	Buna-N Rubber
Thrust Bearing	Type 316 Stainless Steel
Shaft Seal	Buna-N Rubber
Cover Fasteners	Type 316 Stainless Steel
Packing Gland	Ductile Iron, ASTM A536 Grade 65-45-12, Epoxy Coated
Gland Studs/Nuts	Type 316 Stainless Steel

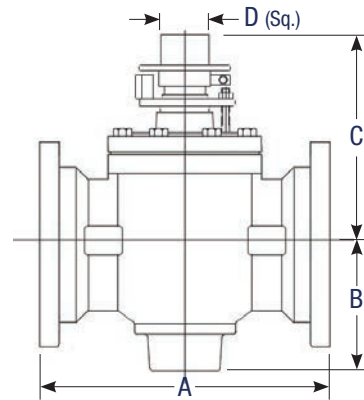
## 3" to 8" Wrench Operated



**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

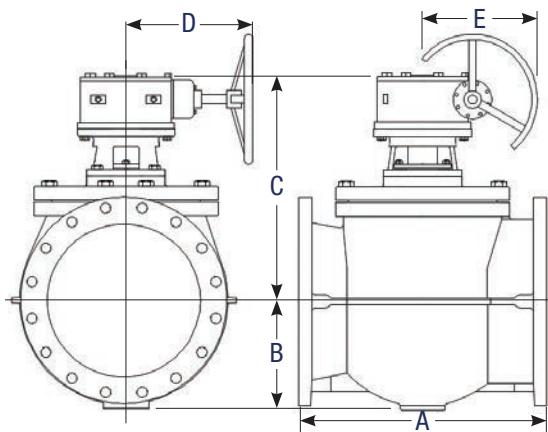


**Mechanical Joint Dimensions**

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"	17¾	9⅞	14	2	247

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

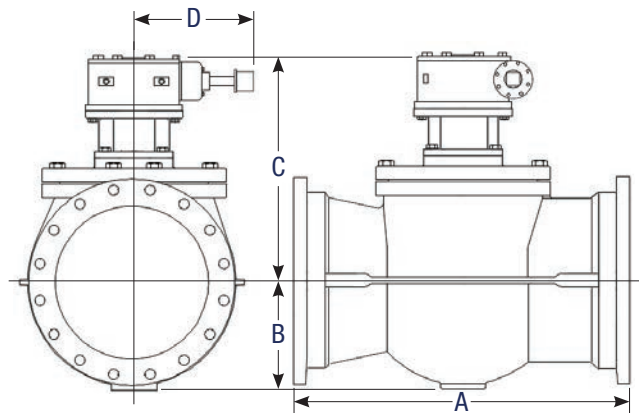
## 3" to 24" Worm Gear Operated



**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  
Can be supplied with 2" nut in lieu of handwheel  
Dimensions in inches, weight in pounds



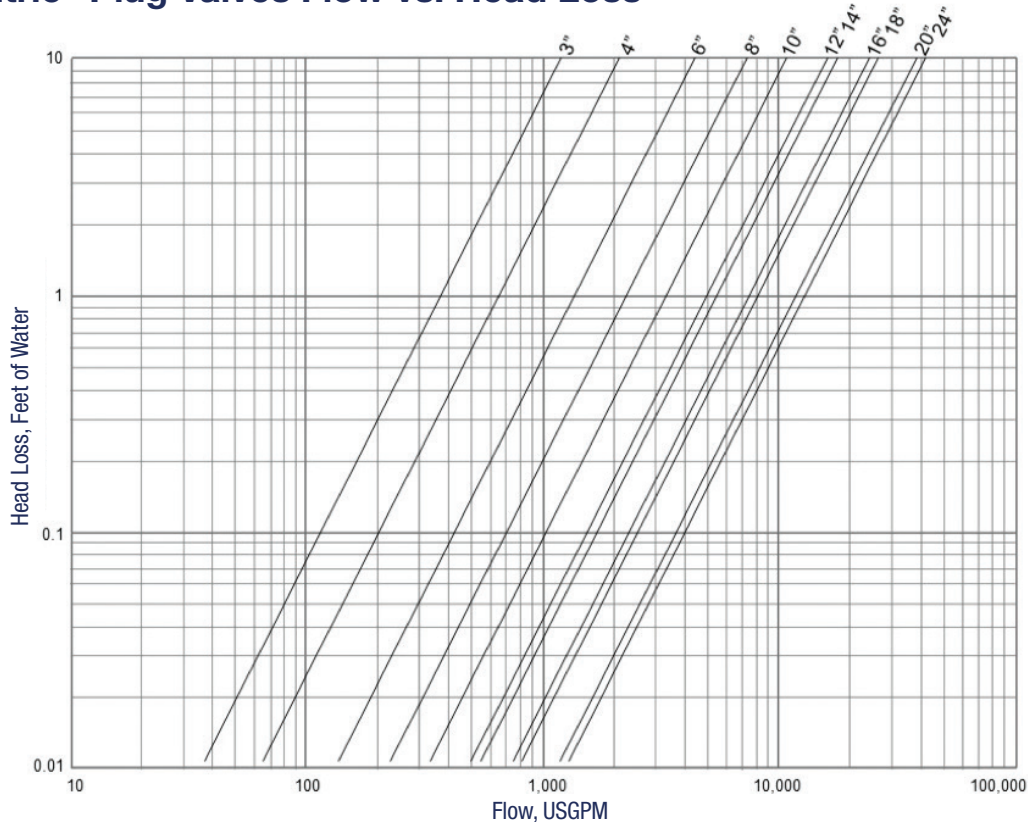
**Mechanical Joint Dimensions**

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"	17¾	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



## ECO-Centric® Plug Valves Flow vs. Head Loss



## Specification

### 3" to 24" Figure 517 ECO-Centric® Plug Valves

#### DESIGN

- Plug valves shall be of the quarter-turn, non-lubricated eccentric type, designed, manufactured and tested in accordance with the latest revision of AWWA C517
- Valves through 12" shall be rated for 175 PSI working pressure and 14" to 24" shall be rated for 150 PSI working pressure. Plug valves shall seal tightly in both directions up to rated pressure and be capable of operation after long periods of inactivity.
- Flanged valves shall meet AWWA C517 laying length with flanges that are faced, drilled and have the minimum thickness required by ANSI/ASME B16.1 Class 125. Mechanical joint end valves shall conform to ANSI/AWWA A21.1/C111.
- The nominal size, pressure rating, year of manufacture and manufacturer's name or mark shall be cast onto the valve body or be on a permanently attached nameplate. The "seat end" shall be clearly identified.

#### CONSTRUCTION

- Valve body and cover (bonnet) shall be ASTM A536 Grade 65-45-12 ductile iron for superior strength with a 95% pure nickel seat weld overlaid onto the body. Sprayed, plated or removable body seats are not acceptable.

- Plug valves through 24" shall have a round port for improved flow characteristics. The minimum Cv shall be as follows: 3" – 569, 4" – 982, 6" – 1,997, 8" – 3,371, 10" – 4,870, 12" – 7643, 14" – 8,220, 16" – 11,300, 18" – 12,200, 20" – 17,500, 24" – 19,500
- The valve shall have a ductile iron plug with a molded and vulcanized Buna-N rubber coating with integral seat per ASTM D429. The plug shaft shall be fitted with permanently lubricated 316 stainless steel upper and lower bearings, upper and lower grit excluders and thrust bearings.
- Valves shall have the shaft sealed with multiple Buna-N rings. Exposed valve shaft seals shall be adjustable and replaceable without valve disassembly or removal of the actuator. Buried service valves shall have the packing protected from foreign matter.
- Valve cover fasteners, packing gland studs and nuts shall be Type 316 stainless steel.
- Valve shall be coated with minimum 6 mil hi-build epoxy on internal and external ferrous surfaces.

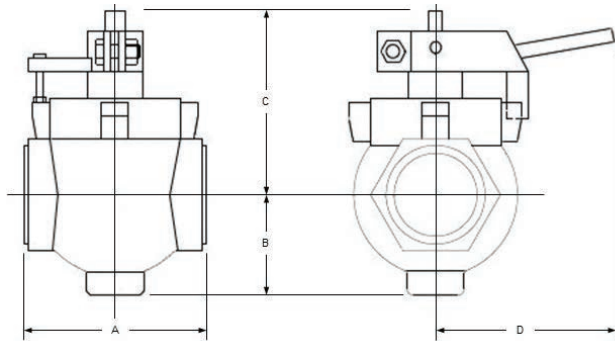
#### MANUFACTURER

- Valves shall be Figure 517 ECO-Centric® Plug Valve as manufactured by VAG USA, LLC, Mars, PA USA.

## 1/2" to 2 1/2" ECO-Centric® Plug Valves Round Port Lever Operated



The ECO-Centric® Plug Valve's round port design is also available in smaller sizes with corresponding improved flow characteristics and significantly less chance of plugging when handling solids bearing fluids. These valves use the same rugged design and materials of construction as the larger sizes to ensure long lasting service. These valves come equipped with NPT female connections and a lever operator, torque collar, and memory stop.



### Dimensions

Size	A	B	C	D	Weight
1/2	3 3/4	2	3 3/4	5 1/8	4
1	3 3/4	2	3 3/4	6	5
1 1/2	4 7/8	2 3/8	4 3/8	6 1/2	9
2	5 1/2	3	5 3/8	7 1/8	13
2 1/2	6 1/4	3	5 1/2	8	20

Dimensions in inches, weight in pounds and are approximate. Consult factory if critical.

### Standard Materials

Part	Material
Body & Cover	Ductile Iron, ASTM A536 Grade 65-45-12, Epoxy Coated
Plug	Ductile Iron, with Molded and Vulcanized Buna-N Rubber Coating
Bearings	Permanently Lubricated Type 316 Stainless Steel
Grit Excluders	Buna-N

## Large Size Plug Valves



Figure 518R8 standard port plug valves are available 24" to 48" with Class 125 flanged or MJ ends



Figure 517RF 100% port plug valves are available 24" to 36" with Class 125 or MJ ends

GA Industries rectangular port plug valves are standard with cast iron body and cover, Buna-N coated ductile iron plug, upper and lower grit excluders, PTFE coated stainless steel bearings and adjustable shaft packing.

Valves can be manually operated by exposed or buried service gear actuators or automatically with electric motor or pneumatic actuators.

## GA Industries Valves for Water and Wastewater



- Butterfly Valves
  - Series 800 AWWA C504 Butterfly Valve
- Eccentric Plug Valves
  - 1/2" to 24" ECO-Centric® Round Port
  - 24" to 48" Rectangular Port
- Engineered Check Valves
  - Cushioned Swing Check
  - Oil Controlled Closing Swing Check
  - Tilting Disc Check
- Check Valves
  - Lever & Weight or Spring Swing Check
  - Heavy-Duty Swing Check
  - Rubber Flapper Check
- Pilot Operated Control Valves
  - Pressure Reducing
  - Pressure Sustaining
  - Emergency Cut-in
  - Altitude
  - Slow-Closing Check
  - Solenoid Control
  - Float
- Pump Control Valves
  - AWWA C507 Ball Valves
  - CHECKtronic® – Motor Actuated
  - Electric Check – Piston Actuated
  - Rotovalve® Cone Valve
- Surge Relief Valves
  - Diaphragm Actuated for Water
  - Differential Piston Actuated for Water
  - Spring Loaded for Wastewater or Sewage
- Air Valves
  - Air Release for Water & Sewage
  - Air and Vacuum for Water & Sewage
  - Combination for Water & Sewage
  - Vacuum Breaking Valves for Water & Sewage
  - Durovent™ All Stainless Steel Air Valves

GA Industries is a brand of the VAG Group, a renowned manufacturer of water control valves with headquarters in Mannheim, Germany, and an international organization of specialists that includes:

- Engineering & technical design
- Production
- Fabrication
- Sales & distribution
- Installation & start-up
- Aftermarket service



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