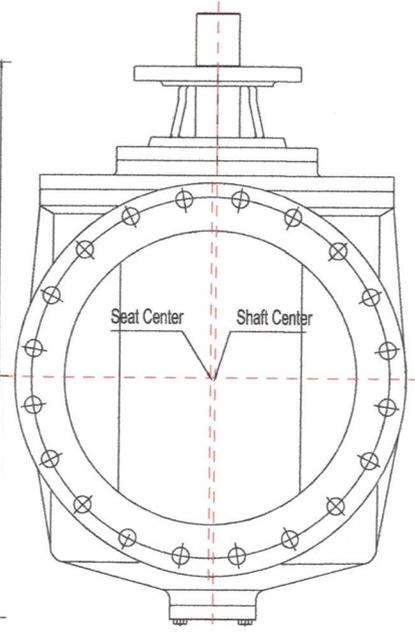
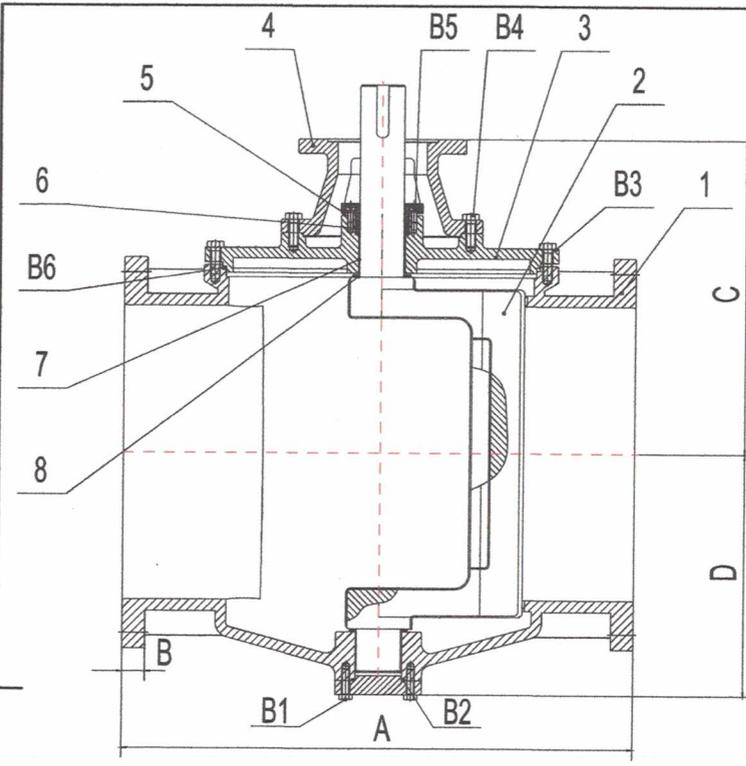
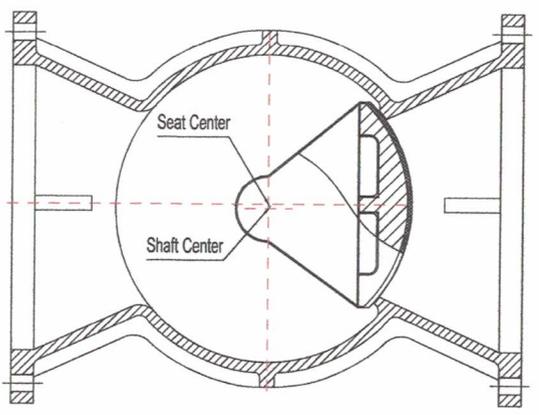


PRICING INCLUDES GEAR WITH INDICATOR, HANDWHEEL AND OPERATING NUT



Valve Sizes	Main Dimensions (mm)					
	A		B		C	D
	Flange	MJ	Flange	MJ		
4"	228	362	17	63	220	113
6"	266	400	19	63	270	165
8"	292	441	20	63	312	209
10"	330	492	22	63	354	261
12"	355	527	23	63	386	296
14"	431	622	25	89	426	329
16"	450	692	27	89	454	363
18"	546	743	28	89	486	399
20"	596	787	30	89	537	437
24"	1067	1067	47	89	562	465
30"	1295	1524	54	101	646	556
36"	1524	1524	60	101	715	630
42"	1829	1879	67	101	890	794
48"	2134	2134	71	101	1151	1016
54"	2438	-	78	-	1151	1016
66"	2921	-	87	-	1371	1257
72"	3175	-	90	-	1360	1257

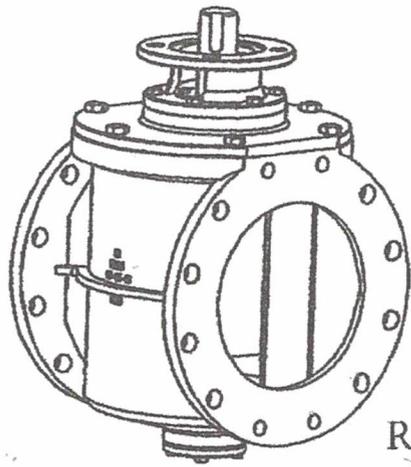
For individual drawings for each size, please contact us.



Bill of Material		
Item	Description	Material
1	Body	Ductile Iron ASTM A536 Grade 65-45-12
2	Plug	Ductile Iron ASTM A536 Grade 65-45-12 + Buna-N
3	Cover	Ductile Iron ASTM A536 Grade 65-45-12
4	Yoke	Ductile Iron ASTM A536 Grade 65-45-12
5	Packing Gland	Ductile Iron ASTM A536 Grade 65-45-12
6	Packing	EPDM
7	Bushing	Nylon + PTFE
8	Gasket	PTFE
B1	Hex Bolt	Stainless Steel Type 304
B2	O ring	EPDM
B3	Hex Bolt	Stainless Steel Type 304
B4	Hex Bolt	Stainless Steel Type 304
B5	Inner Hex Bolt	Stainless Steel Type 304
B6	O ring	EPDM

Note: Other materials are available upon request.

AWWA C517 Full Port Eccentric Plug Valves



Flange to ANSI B16.1 Class 250
MJ to ANSI/AWWA C111/A21.11
Plug fully encapsulated with EPDM/NBR
Full Port Flow Area
Design Conform to AWWA C517
Coating conform to AWWA C550
Seat test up to 400psi zero leakage.

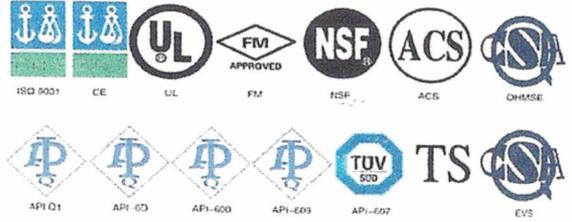
Rectangular Port Available up to 72"

AWWA C517 Full Port Eccentric Plug Valve

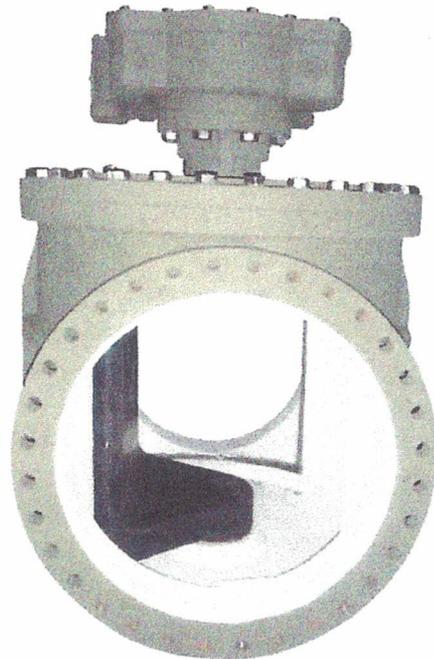




COMPANY CERTIFICATE



AWWA C517 ECCENTRIC PLUG VALVE



WATER TECHNOLOGY RESOURCES

Jefferson Parish, LA
Bid No. 50-00123457
(1) 16" x 17.75"
(1) 24" x 42" Plug Valves

Specification Checklist

Plug Valves – WTR –PVF16F and 24F.

Valves to be provided with above ground gear operator, with Indicator, Operating nut, and Handwheel.

Non-Lubricated Eccentric Type with Buna Nitrile Elastomer covering on all seating surfaces.

Flanged x Flanged End Connections ANSI B16.1 Class 125/150.

Rectangular 100% Port Design – Capable of “Pigging” Operation.

Valve Body – ASTM A536 Grade 65-45-12 – Ductile Iron.

Valve Design and Construction per AWWA C517-09 Standards.

Seat – Welded – In Overlay – 1/8" Thickness – 99% Nickel.

Plug Construction – ASTM A536 Grade 65-45-12 Ductile Iron.

Plug – One Piece Design – Solid construction provided with PTFE Thrust Bearings on the upper and lower bearing journals designed to reduce torque and to prevent dirt and grit from entering the bearing and seal area.

Bearings – Sintered, Oil Impregnated, Type 316 Stainless Steel – ASTM A743 Grade CF-8M.

Valve Shaft Seals – “U” WP design in accordance with AWWA C517-09 Standards. Self adjusting and replaceable without removing the bonnet from the valve.

Worm Gear Operator – Includes Heavy Duty construction with ductile iron quadrant supported on top and bottom by oil impregnated bronze bearings. The Worm Gear and Shaft shall be manufactured of hardened steel and include high efficiency Roller Bearings.

Valve Design – Shall provide Bubble tight shutoff at 150 psi operating pressure.

June 20, 2018

Valves shall be factory tested to include hydrostatic and seat tests – and include certified copies of test results.

Proof of Design test reports to be provided when specified per AWWA C517.

Valves are as manufactured by WTR Plug Valve Partnership.

Water Technology Resources (WTR Valves) – A Woman Owned Business Enterprise (WBE) is located in Bloomington, Mpls, Minnesota.

WATER TECHNOLOGY RESOURCES - WTR VALVES

9201 E. Bloomington Fwy Suite Z
Bloomington, MN 55420
Phone: 952-641-9004 Fax: 952-885-9173
Toll Free: 888-620-9007
Email: contact@wtrvalves.com



Notations

A) We prefer Ductile Iron in lieu of Cast Iron for the valve body.

Cast Iron Specification ASTM A126 Class B

- Physical Properties
 - Minimum tensile strength 31,000 psi
 - Minimum traverse strength 3,300 lbs
 - Minimum deflection (12" Centers) .12 in
- Chemical Analysis (percent)
 - Phosphorus (maximum) .75
 - Sulfur (maximum) .15

Ductile Iron ASTM A536

- Minimum tensile strength 65,000 psi
- Minimum yield strength 45,000 psi
- Elongation 10-12%

1. Ductile Iron (DI) is a stronger material and its strength is rated at approximately double the strength of Cast Iron.
2. DI is a more flexible material, less brittle, and less subject to cracking.
3. DI is also easier to machine and is more corrosion resistant.

Difference Between Ductile Iron and Cast Iron

Posted on March 5, 2011 by Clarisse



Ductile Iron vs Cast Iron

Ductile iron and cast iron are used in the metal industry on an everyday basis. However, the two alloys have different characteristics which results in them being used for various purposes.

Ductile Iron

Ductile iron was firstly created during the mid 1940's by Keith Millis through incorporating the ferrous alloy with magnesium treatment. This shows the structural alteration of graphite, since in the development of this material, the graphite creates spherical nodules which restricts the development of fissures thereby resulting in increased malleability. It is usually utilized as a water main pipe due to its durability and resistance to corrosion.

Cast Iron

Cast iron has a vast range of properties that are being cast into shape as opposed to being formed. Its production consists of re-melting pig iron and steel scrap and adding different alloys in it during the procedure. Some of those that are added are carbon and silicon. It usually contains high amount of silicon in addition to the already high carbon content. Sulfur and manganese are also added to provide strength and solidity to the metal.

Difference between Ductile Iron and Cast Iron

Cast iron is usually used for engineering and construction structures because of its stability, while ductile iron is utilized for water pipes due to its durability. Ductile iron is a newer material which is more favored, not just in terms for a water pipe fixture but also for engine parts such as crankshafts and connecting rods, plus various brakes and steering components due to its strength, reliability and flexibility. Their main difference lies in the presence of graphite, since it causes cracks, which softens the alloy, it is an important component for ductile iron but in the case of cast iron, it is eliminated.

We see these materials each day, though a regular person might not know the difference. The important thing is that they are made for a purpose and that they provide the needed support that they are developed for in the first place.

In brief:

- Cast iron is usually used for engineering and construction structures because of its stability, while ductile iron is utilized for water pipes due to its durability.
- Ductile iron is a newer material which is more favored, not just in terms for a water pipe fixture but also for engine parts such as crankshafts and connecting rods, plus various brakes and steering components due to its strength, reliability and flexibility.

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ductile iron vs cast iron

Ductile iron can be bent without breaking, whereas cast iron is brittle and breaks when bent.

As ductile iron can be bent, it can be made into different shapes and forms. But one cannot make out different shapes and forms using cast iron. While ductile iron is flexible, cast iron is not.

When comparing the two, cast iron corrodes more quickly than ductile iron.

Ductile iron consists of iron, carbon, silicon, manganese, magnesium, phosphorous and sulphur. Tin and copper are also sometimes found.

Ductile iron also consists of nodular graphite, which gives it flexibility.

Cast iron mainly consists of carbon and silicon.

With regard to practical uses, ductile iron pipes are used in sewer and water lines. This is because they are much stronger than cast iron.

Moreover, ductile iron is better than cast iron in difficult terrains.

Ductile iron is mainly used in the automobile industry such as trucks, tractors and oil pumps. Cast iron is mainly seen in the construction industry.

It was Keith Millis who discovered ductile iron in 1943. Cast iron has been in use for many centuries. China is credited with the invention of cast iron in the 4th century BC. It was used first for making weapons, pots, ploughshares and pagodas. The western people knew cast iron only in the late 14th century.

Summary

Central Certification CERT Program

CERT Number 2016-20101266

This is to confirm that

Water Technology Resource, Inc.

is recertified as Small and Woman Business Enterprise (S/WBE)
Your certification with the CERT Program is valid for three years. Your company's certification expiration date is
May 9, 2019

Signed: 
Certification Specialist

Date: *May 9, 2016*



WTR Valves

Eccentric Plug Valve

AWWA C-517

Design Features

- ◆ 2" Thru 72" size
- ◆ Ductile Iron Body, Bonnet, Plug and Collar
- ◆ 100% Full Port Opening - Circular 2" - 14" size
- ◆ Rectangular Port Design 16" and Larger Sizes
- ◆ Nickel welded (91%) Valve Seats (99% pure Nickel)
- ◆ Low profile seat design ensures extended seat life and results in reduced operating torques
- ◆ Self adjusting Stem Seals

WTR Valves

Eccentric Plug Valve

AWWA C-517

Design Features

- ◆ Radial and Thrust Bearings are manufactured from high grade sintered, oil impregnated, 316 stainless steel for extended service under demanding conditions. Bronze Shaft Bearing
- ◆ Reduced Torque by the use of upper and lower PTFE thrust washers
- ◆ Bonnet Seal is manufactured from high grade elastomers including EPDM, Nitrile, Neoprene and Viton
- ◆ Shaft seals of the “U” cup design, externally adjustable and replaceable without removal of the valve bonnet.
- ◆ Flanges conform ANSI B. 16.1 125/250

WTR Valves

Eccentric Plug Valve

AWWA C-517

Design Features

- ◆ Ductile Iron Body, Bonnet, Plug and Collar
- ◆ 100% Full Port Opening - Circular
- ◆ Nickel welded (91%) Valve Seats (Nickel pure 99% content)
- ◆ Low profile seat design ensures extended seat life and results in reduced operating torques
- ◆ Self adjusting Stem Seals
- ◆ Bearings are manufactured from high grade sintered, oil impregnated, 316 stainless steel for extended service under demanding conditions.
- ◆ Reduced Torque by the use of upper and lower PTFE thrust washers
- ◆ Round Port Design for Full Flow when fully open, with minimal turbulence
- ◆ Bonnet Seal is manufactured from high grade elastomers including EPDM, Nitrile, Neoprene and Viton
- ◆ Shaft seals of the "U" cup design, externally replaceable without removal of the valve bonnet.
- ◆ Flanges conform ANSI B. 16.1 125/250

WTR Valves

Plug Valve Options

- ◆ Materials of Construction
 - Bronze
 - Stainless Steel Alloys
 - Carbon Steel
 - Aluminum
 - Alloy 20
 - Hastelloy C
 - Monel
- ◆ Gear Operators
- ◆ Fully Lined Valves Variety of Elastomer Compound Materials
- ◆ Non Lubricated
- ◆ Mechanical Joint x Mechanical Joint
- ◆ Grooved Joint End Connections
- ◆ Actuators - Manual, Lever, Hand Wheel, Worm Gear, Electric, Pneumatic
- ◆ 3 Way and 4 Way Diverter Valves
- ◆ Accessories
 - Extension Stem
 - Extension Bonnet
 - Valve Box
 - Chain Wheel
 - Floor Stand