

14" - 48" SERIES 2500  
RESILIENT WEDGE GATE VALVE

## CONSTRUCTION

### DUCTILE IRON CONSTRUCTION

greater strength, durability, and lighter weight than gray iron construction. 250 p.s.i.g. rating.

**FUSION-BONDED-EPOXY COATING INSIDE AND OUT**  
ensures maximum corrosion resistance for long service life.

### LIFTING DEVICES 14" - 48"

stuffing box is constructed of high-strength ductile iron with integral lifting lugs. This allows the valve to be handled without having to lift the valve by the operating nut which could cause damage to the valve stem. 30" - 36" have eyebolts for lifting. 42" - 48" valves have integrally cast lifting lugs.

**DUCTILE IRON OPERATING NUT**  
provides strength and durability.

**BEVEL GEAR**

**HIGH-STRENGTH BRONZE STEM AND STEM NUT**  
resists corrosion and abuse.

### INTEGRAL FEET

cast flats on valve ends allow the valve to stand upright during storage or at installation.

### RUBBER-ENCAPSULATED DUCTILE IRON WEDGE DESIGN

ensures drop tight seal every time with low stem torque.

### SMOOTH

### WATERWAY CONSTRUCTION

100% full port diameter waterway. No recesses to trap debris or obstruct flow. Reduces pumping costs.

## FEATURES/BENEFITS/SPECIFICATIONS

### FEATURES

American Flow Control's 14" - 48" Series 2500 Ductile Iron Resilient Wedge Gate Valves are suitable for use in potable water, sewage and fire protection systems. These valves have a rated working pressure of 250 p.s.i.g. The valves seal 100% leak tight. The waterway is clear, unobstructed and free from pockets.

#### ADVANTAGES OVER BUTTERFLY VALVES

- No disc in waterway to restrict flow or to increase pumping costs.

- Allows passage of pigging devices.
- Internal parts can be serviced without cutting valve out of pipeline.
- 250 p.s.i.g. rating provides for future pressure increases over the 150 p.s.i.g. pressure rating found on most butterfly valves.

#### ADVANTAGES OVER DOUBLE DISC GATE VALVES

- 100% bottle-tight seal. No more time-consuming testing to determine allowable

leakage rate.

- No pocket in bottom of valve to collect sediment or trap debris.
- Lower torque requirements to operate valve.
- 250 p.s.i.g. pressure rating compared to the 150 p.s.i.g. rating found on double disc gate valves.
- Epoxy coated inside and out.
- Lighter total valve weight.

#### The 14" - 48" Series 2500 Resilient Wedge Gate Valves have these standard features:

- |                                       |   |  |
|---------------------------------------|---|--|
| • 250 p.s.i.g. rating                 | • Fusion-bonded-epoxy coating                   | • Flats on valve body so valve stands upright for storage or during installation |
| • Ductile iron body, bonnet and wedge | • 100% bottle-tight closure                     | • Low operating torques eliminate need for by-pass valve                         |
| • Triple O-Ring stem seals            | • Optional gearing (Standard on 30" and larger) |  |
| • NSF Approved coating                | • Rubber-encapsulated wedge                     |  |
| • Thrust washers                      |   |  |

### BENEFITS

#### DUCTILE IRON CONSTRUCTION

The ductile iron body and bonnet provide superior strength and allow a pressure rating of 250 p.s.i.g. The strength of ductile iron doubles that provided by gray iron. This added strength and higher pressure rating are provided in a compact, lighter design.

#### TRIPLE O-RING STEM SEALS

This valve features triple O-Ring stem seals. Two O-Rings are located above the thrust collar, and one O-Ring is located below the thrust collar. The O-Rings directly above and below the stem collar provide a permanently sealed lubrication chamber. This feature ensures ease of operation for long periods of time without the need for constant maintenance required by other types of valving. The upper O-Ring acts as a shield by sealing the stem from dirt and grit that might otherwise enter the stuffing box in buried and sewage service applications.

#### FUSION-BONDED-EPOXY COATING

The 14" - 48" Series 2500 valves are epoxy coated both on the interior as well as the exterior of the valve. The fusion-bonded coating is applied after the valve body is shot-blasted clean. The coating is applied to all ferrous surfaces so that even the bolt holes and body-to-bonnet flange surfaces are fully epoxy coated.

#### LIFTING DEVICES 14" - 48"

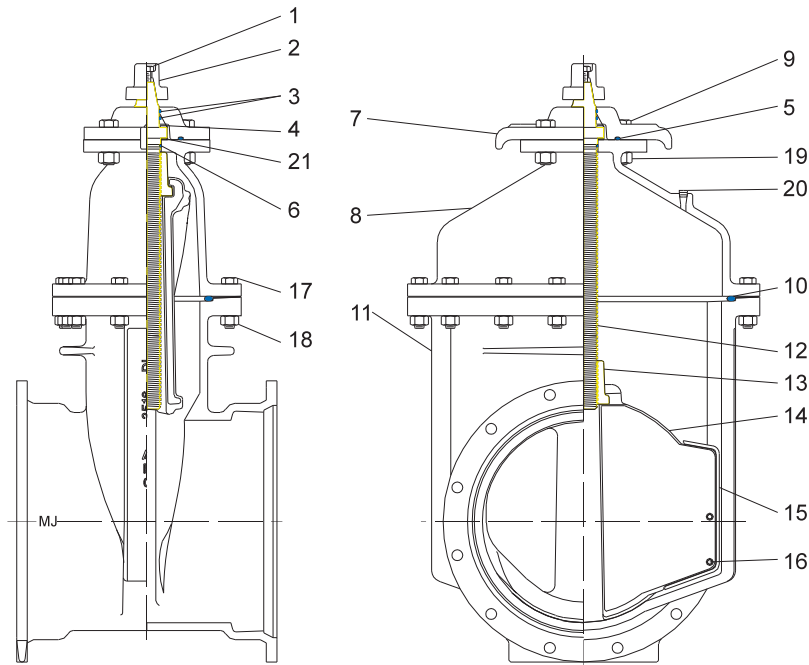
Stuffing box is constructed of high-strength ductile iron with integral lifting lugs. This allows the valve to be handled without having to lift the valve by the operating nut which could cause damage to the valve stem. 30" - 36" have eyebolts for lifting. 42" - 48" valves have integrally cast lifting lugs.

#### THRUST WASHERS

Thrust washers are located above and below the stem collar to reduce operating input torque and ensure trouble-free operation of the valve.

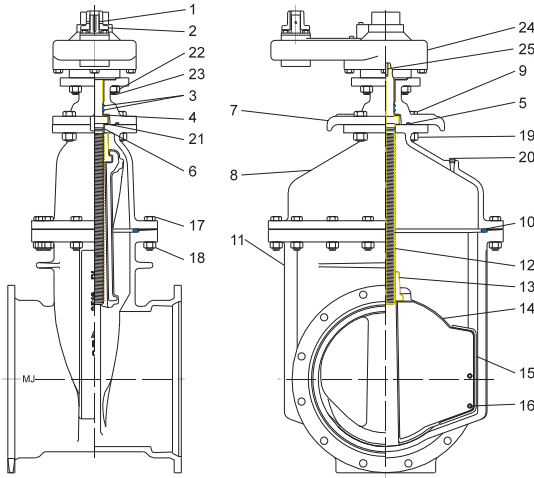
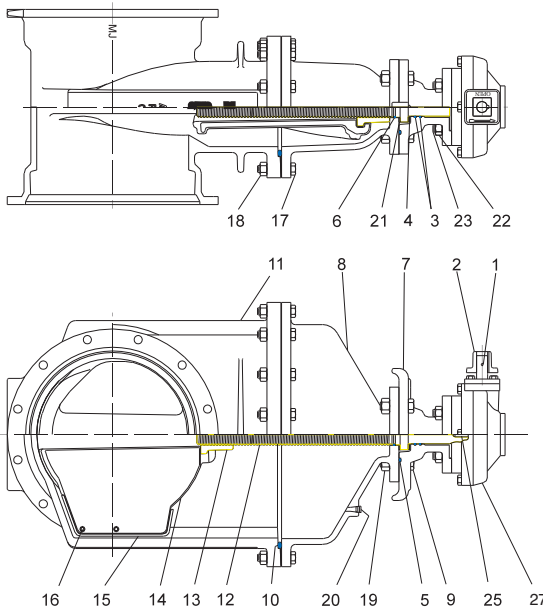
#### NO FLAT GASKETS

The stuffing box gasket and throat flange gasket are pressure energized rubber O-Rings. This ensures bottle-tight seals without the need for excessive bolt loading as is required of flat gaskets. The O-Rings are reusable, which eliminates the need for time-consuming cleaning, scraping, and cutting of new gaskets.

**PARTS LIST****NRS**

| Ref | Description          | Material                |
|-----|----------------------|-------------------------|
| 1   | Hex Hd Bolt          | Steel, zinc plated      |
| 2   | Operating Nut 2" Sq  | Ductile Iron, ASTM A536 |
| 3   | O-Ring               | Rubber                  |
| 4   | Upper Thrust Washer  | Delrin                  |
| 5   | Stuffing Box Gasket  | Rubber O-Ring           |
| 6   | O-Ring               | Rubber                  |
| 7   | Stuffing Box         | Ductile Iron, ASTM A536 |
| 8   | Bonnet               | Ductile Iron, ASTM A536 |
| 9   | Hex Hd Bolt          | Steel, zinc plated      |
| 10  | Throat Flange Gasket | Rubber                  |
| 11  | Valve Body           | Ductile Iron, ASTM A536 |
| 12  | Stem                 | Bronze                  |
| 13  | Wedge Nut            | Bronze                  |
| 14  | Resilient Wedge      | Rubber                  |
| 15  | Wedge Cover          | Acetal Copolymer        |
| 16  | Wedge Cover Pin      | Acetal Copolymer        |
| 17  | Hex Hd Bolt          | Steel, zinc plated      |
| 18  | Hex Nut              | Steel, zinc plated      |
| 19  | Hex Nut              | Steel, zinc plated      |
| 20  | Pipe Plug            | Brass                   |
| 21  | Lower Thrust Washer  | Delrin                  |

Note: Valves rated for 250 p.s.i.g.

**PARTS LIST****NRS  
with Spur Gearing****NRS  
with Bevel Gearing**

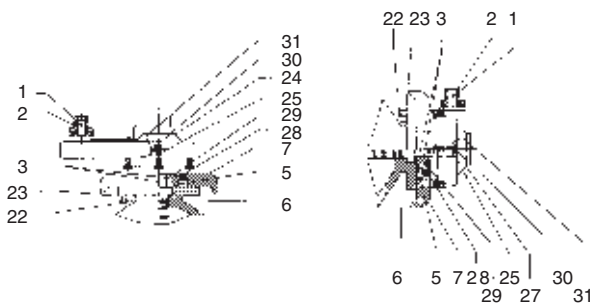
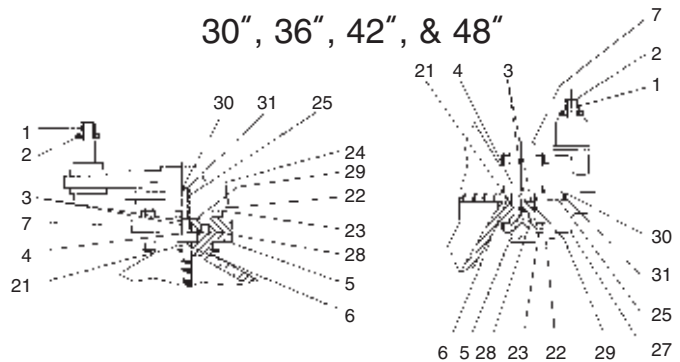
| Ref | Description            | Material  |
|-----|------------------------|---|
| 1   | Driv-Lok pin           | Stainless Steel                                     |
| 2   | Operating Nut 2" Sq    | Gray Iron, ASTM A126 Class B                        |
| 3   | O-O-Ring               | Rubber  |
| 4   | Upper Thrust Washer    | Delrin  |
| 5   | Stuffing Box Gasket    | Rubber O-Ring                                       |
| 6   | O-Ring                 | Rubber  |
| 7   | Stuffing Box           | Ductile Iron, ASTM A536                             |
| 8   | Bonnet                 | Ductile Iron, ASTM A536                             |
| 9   | Hex Hd Bolt            | Steel, zinc plated                                  |
| 10  | Throat Flange Gasket   | Rubber  |
| 11  | Valve Body             | Ductile Iron, ASTM A536                             |
| 12  | Stem                   | Manganese Bronze                                    |
| 13  | Wedge Nut              | Bronze  |
| 14  | Resilient Wedge        | Ductile Iron encapsulated with rubber               |
| 15  | Wedge Cover            | Acetal Copolymer                                    |
| 16  | Wedge Cover Pin        | Acetal Copolymer                                    |
| 17  | Hex Hd Bolt            | Steel, zinc plated                                  |
| 18  | Hex Nut                | Steel, zinc plated                                  |
| 19  | Hex Nut                | Steel, zinc plated                                  |
| 20  | Pipe Plug              | Brass   |
| 21  | Lower Thrust Washer    | Delrin  |
| 22  | Stud                   | Steel, zinc plated                                  |
| 23  | Hex Nut                | Steel, zinc plated                                  |
| 24  | Spur Gear 4:1 Operator | 14", 16" & 18" EXEECO IS-5<br>20" & 24" EXEECO IS-7 |
|     | Spur Gear 6:1 Operator | 30" EXEECO IS-8<br>36" EXEECO IS-10                 |
|     | Spur Gear 8:1 Operator | 48" EXEECO IS-12                                    |
| 25  | Key                    | Stainless Steel                                     |

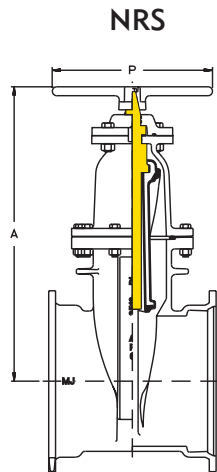
**\*NOTE PART NUMBER CHANGE FOR NRS WITH BEVEL GEARING**

| Ref | Description             | Material  |
|-----|-------------------------|---|
| 27  | Bevel Gear 4:1 Operator | 14", 16" & 18" EXEECO IB-5<br>20" & 24" EXEECO IB-7 |
|     | Bevel Gear 6:1 Operator | 30" EXEECO IB-8<br>36" EXEECO IB-10                 |
|     | Bevel Gear 8:1 Operator | 48" EXEECO IB-12                                    |
| 28  | Socket Head Cap Screw   | Steel, zinc plated                                  |
| 29  | Actuator Gasket         | Rubber O-Ring                                       |
| 30  | Hex Head Bolt           | Steel, zinc plated                                  |
| 31  | Washer                  | Steel   |

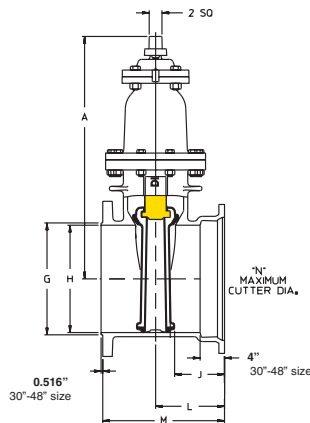
**Note:**

It is recommended that valve stems be installed vertical when used in raw sewage or sludge applications.

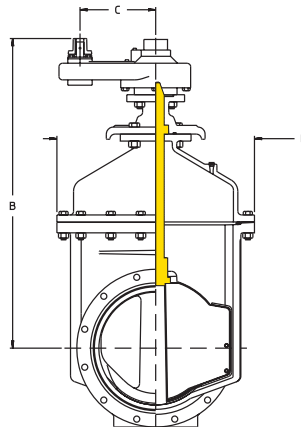
**\*\*SPUR GEAR OR BEVEL GEAR IS AVAILABLE FOR VALVES 14" AND LARGER****20" & 24"****30", 36", 42", & 48"**

**SECTIONAL DRAWINGS/DIMENSIONS**

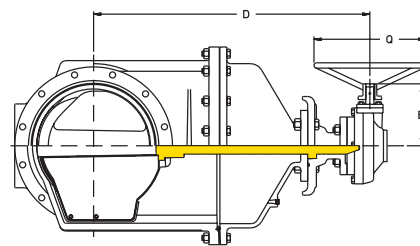
|                              | 14"      | 16"      | 18"      | 20"      | 24"      | 30"      | 36"      | 42"     | 48"     |
|------------------------------|----------|----------|----------|----------|----------|----------|----------|---------|---------|
| A                            | 33-1/4   | 36-3/4   | 39-5/8   | 43-1/4   | 51-1/4   | N/A      | N/A      | N/A     | N/A     |
| B                            | 39-13/16 | 43-3/8   | 47-3/16  | 47-3/4   | 55-7/8   | 71       | 83       | 98-3/4  | 108-1/2 |
| C                            | 8-5/8    | 8-5/8    | 10-13/16 | 10-13/16 | 10-13/16 | 13-1/8   | 14       | 14      | 16      |
| D                            | 35-9/16  | 39-1/8   | 42-3/8   | 43       | 51-1/8   | 62-5/8   | 74-5/16  | 86-5/16 | 96      |
| E                            | 7-5/8    | 7-5/8    | 8-7/8    | 8-7/8    | 8-7/8    | 13-1/16  | 14-7/8   | 14-7/8  | 19-3/16 |
| F                            | 26       | 28-1/4   | 32       | 34-1/2   | 39       | 49       | 58       | 66-3/4  | 75-1/2  |
| G                            | 14-15/16 | 16-15/16 | 18-15/16 | 20-15/16 | 24-15/16 | 30-15/16 | 36-15/16 | 43-7/16 | 49-7/16 |
| H                            | 14-3/16  | 16-3/16  | 18-1/8   | 20-1/8   | 24-1/8   | 30-7/32  | 36-3/16  | 42-3/8  | 48-3/8  |
| J                            | 7-5/8    | 7-9/16   | 8-7/16   | 8-9/16   | 9        | 13-3/8   | 13-15/16 | 15-7/8  | 17-5/8  |
| L                            | 10-1/4   | 10-7/16  | 11-7/16  | 11-11/16 | 12-3/4   | 16-7/8   | 18-3/4   | 21-3/8  | 22-1/2  |
| M                            | 17-3/4   | 18-7/16  | 19-15/16 | 20-11/16 | 22-3/4   | 29-7/8   | 33-3/4   | 40-3/8  | 44      |
| N                            | 14       | 16       | 18       | 20       | 24       | 30       | 36       | 42      | 48      |
| P                            | 20       | 20       | 20       | 28       | 28       | N/A      | N/A      | N/A     | N/A     |
| Q                            | 12       | 12       | 12       | 20       | 20       | 20       | 20       | 36      | 36      |
| WEIGHT (MJxMJ)               | 670#     | 820#     | 1100#    | 1520#    | 2300#    | 4100#    | 7450#    | 11210#  | 15870#  |
| No. Turns to Open (no gears) | 44       | 50       | 56       | 62       | 73       | N/A      | N/A      | N/A     | N/A     |
| No. Turns to Open (gears)    | 176      | 200      | 224      | 248      | 292      | 568      | 672      | 694     | 789     |



**NRS**  
**Tapping Valve**



**NRS**  
**with Spur Gearing**



**NRS**  
**with Bevel Gearing**

**Note:**  
It is recommended that valve stems be installed vertical when used in raw sewage or sludge applications.

**SPECIFICATIONS**

Valves 2" - 48" shall be resilient wedge type rated for 250 p.s.i.g. cold water working pressure. All ferrous components shall be ductile iron, ASTM A536. Valves 3" - 36" shall be in full compliance with AWWA C515. The words "D.I." or "Ductile Iron" shall be cast on the valve. The wedge shall be ductile iron encapsulated with EPDM rubber.

The wedge shall be symmetrical and seal equally well with flow in either direction.

The gate valve stem and wedge nut shall be copper alloy in accordance with Section 4.4.5.1 of the AWWA C515 Standard. Stainless Steel stems are not acceptable. The NRS stem must have an integral thrust collar in accordance with Section 4.4.5.3 of AWWA C515 Standard. Two-piece stem collars are not acceptable. The

wedge nut shall be independent of the wedge and held in place on three sides by the wedge to prevent possible misalignment.

Valves shall be NSF Standard 61 certified.

Bolting materials shall develop the physical strength requirements of ASTM A307 and may have either Regular Square or hexagonal heads with dimensions conforming to ANSI B18.2.1. Metric size socket head cap screws are not allowed.

The operating nut shall be constructed of ductile iron and shall have four flats at the stem connection to assure even input torque to the stem.

All gaskets shall be pressure energized O-Ring type seals.

Stem shall be sealed by three O-Rings. The top two O-Rings shall be replaceable with the valve fully open and while subject to full rated working pressure. O-Rings set in a cartridge shall not be allowed.

The valve shall have thrust washers located with (1) above and (1) below the thrust collar to assure trouble-free operation of the valve.

All internal and external surfaces of the valve body and bonnet shall have a fusion-bonded-epoxy coating, complying with ANSI/AWWA C550, applied electrostatically prior to assembly.

Valves shall be American Flow Control's **Series 2500 Resilient Wedge Gate Valve**.



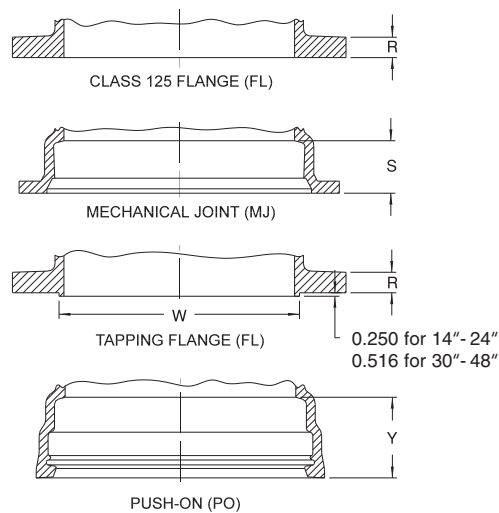
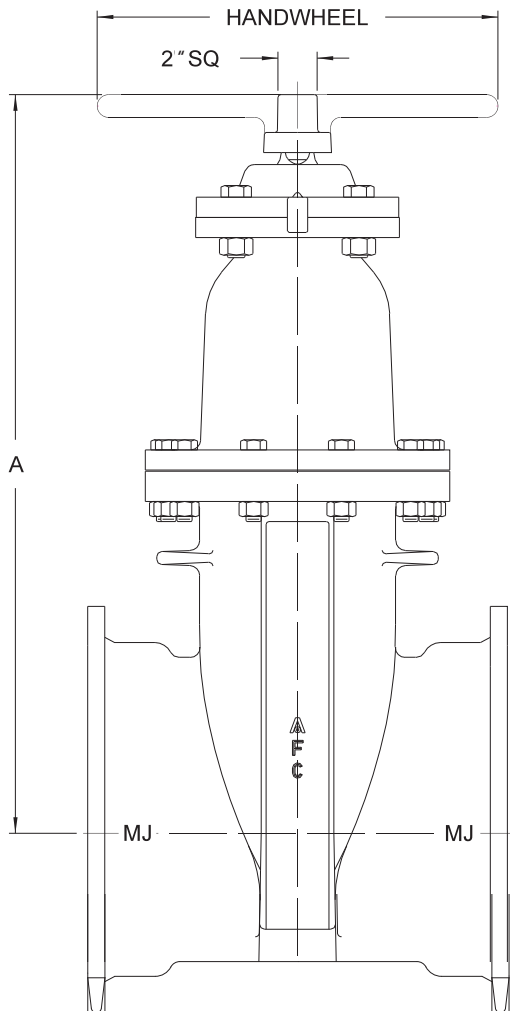
**SECTIONAL DRAWINGS/DIMENSIONS****SUBMITTAL DATA**

| VALVE SIZE                                       | 14" | 16" | 18" | 20" | 24" | 30" | 36" | 42" | 48" |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| QUANTITY   |     |     |     |     |     |     |     |     |     |
| NRS _____ W/SPUR GEARS _____ W/BEVEL GEARS _____ |     |     |     |     |     |     |     |     |     |
| OPERATING NUT _____ HANDWHEEL _____              |     |     |     |     |     |     |     |     |     |
| DIRECTION OF OPENING LEFT _____ RIGHT _____      |     |     |     |     |     |     |     |     |     |
| END CONNECTION _____                             |     |     |     |     |     |     |     |     |     |
| OTHER REQUIREMENTS _____                         |     |     |     |     |     |     |     |     |     |

**NOTES:**

- Valves are available with optional gearing.
- 3" through 36" valves meet or exceed requirements of ANSI/AWWA C515.
- 2-1/2" through 16" valves may be ordered in configurations which are UL Listed and/or FM Approved.
- 2" through 48" valves have 250 p.s.i.g. AWWA rated working pressure.
- 2-1/2" through 8" valves have 250 p.s.i.g. UL and FM rated working pressure.
- 10" through 16" valves - contact factory for UL and FM rated working pressures.
- Fusion-bonded-epoxy coating meets or exceeds requirements of ANSI/AWWA C550.
- Flanged ends are in accordance with ANSI/AWWA C110/A21.10 (ANSI B16.1, Class 125).
- Threaded ends are in accordance with ANSI B16.4, Class 125.
- Mechanical joint ends are in accordance with ANSI/AWWA C111/A21.11.
- Tyton® ends and push-on ends are in accordance with ANSI/AWWA C111/A21.11 for use on cast iron (CI) size ductile iron pipe.
- PVC ends are suitable for use on steel (IPS) sizes of PVC or steel pipe.
- 4" through 36" valves are certified to ANSI/NSF Standard 61.

**It is recommended that stems be vertical in raw sewage applications.**

**OPTIONAL END CONNECTIONS**

| DIMENSION                     | VALVE SIZE |          |          |          |          |          |          |         |         |
|-------------------------------|------------|----------|----------|----------|----------|----------|----------|---------|---------|
|                               | 14"        | 16"      | 18"      | 20"      | 24"      | 30"      | 36"      | 42"     | 48"     |
| END TO END - FL x FL          | 15         | 16       | 17       | 18       | 20       | 26       | 30       | 38      | 43      |
| LAY LENGTH - MJ x MJ          | 13-1/4     | 13-5/8   | 15-3/4   | 16-1/4   | 18-1/4   | 25-3/4   | 29-1/2   | 34-3/4  | 37      |
| LAY LENGTH - PO x PO          | 10-7/8     | 13-3/8   | N/A      | N/A      | N/A      | N/A      | N/A      | N/A     | N/A     |
| LAY LENGTH - FL x MJ          | 14-1/8     | 14-13/16 | 16-3/8   | 17-1/8   | 19-1/8   | 25-3/4   | 29-3/4   | 36-3/8  | 40      |
| LAY LENGTH - FL x MJ Tapping  | 14-1/8     | 14-13/16 | 16-3/8   | 17-1/8   | 19-1/8   | 25-3/4   | 29-3/4   | 36-3/8  | 40      |
| A                             | 33-1/4     | 36-3/4   | 39-5/8   | 43-1/4   | 51-1/4   | N/A      | N/A      | N/A     | N/A     |
| R                             | 1-3/8      | 1-7/16   | 1-9/16   | 1-11/16  | 1-7/8    | 2-1/8    | 2-3/8    | 2-5/8   | 2-3/4   |
| S                             | 3-5/8      | 3-5/8    | 3-5/8    | 3-5/8    | 3-5/8    | 4        | 4        | 4       | 4       |
| Y                             | 5-5/8      | 5-5/8    | N/A      | N/A      | N/A      | N/A      | N/A      | N/A     | N/A     |
| W                             | 14-15/16   | 16-15/16 | 18-15/16 | 20-15/16 | 24-15/16 | 30-15/16 | 36-15/16 | 43-7/16 | 49-7/16 |
| HANDWHEEL DIAMETER (no gears) | 20         | 20       | 20       | 28       | 28       | N/A      | N/A      | N/A     | N/A     |
| HANDWHEEL DIAMETER (gears)    | 12         | 12       | 12       | 20       | 20       | 20       | 20       | 36      | 36      |
| No. Turns to Open (no gears)  | 44         | 50       | 56       | 62       | 73       | N/A      | N/A      | N/A     | N/A     |
| No. Turns to Open (gears)     | 176        | 200      | 224      | 248      | 292      | 568      | 672      | 694     | 789     |
| WEIGHT (MJ x MJ)              | 670#       | 820#     | 1100#    | 1520#    | 2300#    | 4100#    | 7450#    | 11210#  | 15870#  |



## **American Flow Control**

**American-Darling Valve and Waterous**  
A Division of American Cast Iron Pipe Company

<http://www.acipco.com/afc>

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