

2004 EDITION

3"-16"

METROSEAL[®] 250

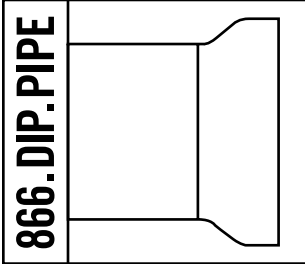
RESILIENT SEATED GATE VALVE



FOR FIRE PROTECTION, WATER & WASTEWATER

**MORE
THAN
JUST
PIPE.**





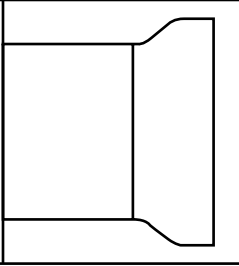
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Typical Applications For METROSEAL Valves

METROSEAL 250 Resilient-Seated Gate Valves are designed for use in virtually any type of buried or above-ground service for water transmission or distribution lines, sewer force mains and certain types of industrial service within the operating pressure range of the valve. The greatest use is in buried service where low cost, positive and reliable shutoff and minimum maintenance are important requirements. Resilient Seated Gate Valves generally operate fully opened/fully closed, although METROSEAL 250 Valves may be operated in the throttling mode when required.

Buried Service

METROSEAL 250 Valves are designed for buried service. It is not necessary to install them in a vault or manhole as is appropriate for other types of valves where maintenance is required and frequent repairs may be necessary. Years of experience have demonstrated that resilient-seated gate valves rarely require maintenance and are typically buried underground without the need for access. Buried valves are normally installed in the vertical position and actuated through a standard valve box by a T-Handle operating wrench (or power operator) which engages the 2" square operating nut. For shallow depths of cover, 16" valves may be installed in the horizontal position and actuated through a bevel gear unit mounted on the valve. For buried service specify mechanical joint or TYTON® Valves when used with pipe having Ductile Iron pipe outside diameters are used.

Interior or Above Ground Service

METROSEAL 250 Valves with flanged joints are used for this type of service, particularly in water and sewage treatment plants, industrial use, pump stations, meter pits, etc. Flanged valves are furnished with ANSI/AWWA C115/A21.15 standard flange drilling, which will also connect to ANSI/AWWA C207 Class D steel flanges and ASME B16.1, Class 125 flanges. Flanged gaskets 1/8" thick should be used. U.S. Pipe's FLANGE-TYTE® Gasket is recommended.

The METROSEAL 250 Valve is suitable for any position of installation:

vertical, horizontal, flat or angled. If sediments are present, care should be taken that the bonnet is not in a position to collect sediments which could interfere with operation of the valve. Gear operators can be rotated as required.

Valve Gearing

METROSEAL 250 Valves operate with considerably less torque than double disc metal-seated gate valves and may be operated without gearing at normal operating pressures. It is recommended you consult with your U.S. Pipe Sales Representative.

When specified, valves can be supplied with bevel gearing. Gear operators are the totally enclosed type, oil filled and designed for buried and submerged service. Gear housings are Ductile Iron. Gears are steel and pinion shafts are stainless steel. Shaft bearings are Teflon with "O" Ring seals.

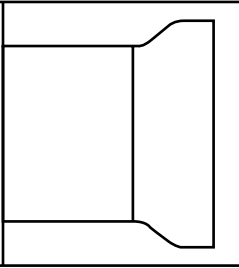
ANSI/AWWA Standards

ANSI/AWWA C509 Resilient-Seated Gate Valves For Water Supply Service and ANSI/AWWA C550 Protective Interior Coatings For Valves And Hydrants.

The 3"-16" METROSEAL 250 Valves featured in this publication are rated at 250 psi. They conform fully to ANSI/AWWA C509 and ANSI/AWWA C550.

NOTE: The body, bonnet and gate are Ductile Iron, instead of gray iron (3" gates are bronze).

FLANGE-TYTE® is a registered trademarks of U.S. Pipe and Foundry Company.



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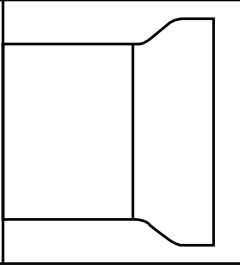


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Dimensional Charts

NO.	DIMENSION DESCRIPTION	NOMINAL VALVE SIZE Inches						
		3	4	6	8	10	12	16
A	Bonnet Flange Length	8-3/8	9-13/16	13	15-5/8	19-7/16	21-1/8	25-5/8
B	Handwheel Diameter	10	10	12	14	23	23	31-1/2
C	Waterway Diameter	3-1/32	4-1/32	6-1/8	8-1/16	10-1/8	12-1/8	16-1/8
D1	Mechanical Joint Bolt Circle	6-13/64	7-1/2	9-1/2	11-3/4	14	16-1/4	21
D2	Flanged Bolt Circle	6	7-1/2	9-1/2	11-3/4	14-1/4	17	21-1/4
E	Bonnet Flange Width	4-1/8	7-1/4	8-3/8	9-5/8	10-15/16	11-1/16	13-5/8
F	Face-to-Face (End to End) Mechanical Joint	8-1/2	9-1/4	10-1/2	11-1/2	14-1/2	15	22
F	Flanged, Face-to-Face	8	9	10-1/2	11-1/2	13	14	16
F	Mechanical Joint x Flanged & Mechanical Joint x Flanged Tapping	8-1/2	9-3/32	10-3/4	12-1/2	13-3/4	14-1/2	19-1/2
F	TYTON® Valve	N/A	11	12-3/8	14	14-3/8	14-7/8	23
F	TYTON® x Flanged Valve & TYTON® x Flanged Tapping Valve	N/A	10-5/16	11-7/16	13-1/16	14	14-3/4	N/A
G	Flange Diameter	7-1/2	9	11	13-1/2	16	19	23-1/2
H	Tapping Flange Lip Diameter	3-63/64	4-63/64	6-63/64	8-63/64	10-63/64	12-63/64	16-15/16
J	Tapping Flange Lip Height	3/16	3/16	1/4	1/4	1/4	1/4	1/4
K	Body-Bonnet Flange to Centerline of Waterway	5-27/32	6-5/16	8-19/32	11-1/4	13-1/4	15-11/16	19-11/16
L	Top of NRS Nut or Handwheel to Center of Waterway	10-1/2	12-13/16	16-1/4	19-3/16	24-1/2	27-5/16	34-3/8
M	Top of OS&Y Stem to Centerline of Waterway Valve Closed	N/A	18-13/16	25-5/16	30-1/8	38-3/4	41-5/8	55-1/8
M	Valve Open	N/A	23-3/8	32-1/16	38-3/4	49-1/2	53-7/8	71-3/8
N	Number of Turns to Open (NRS & OS&Y)	13-1/4	13	19	25	32	37	50
P	Maximum Tap Size (Optional)	1/2	1/2	3/4	3/4	1	1	1
S	Mechanical Joint Socket Depth	2-1/2	2-1/2	2-1/2	2-1/2	2-1/2	2-1/2	3-5/8
S	TYTON® Valve Socket Depth	N/A	3-1/4	3-1/2	3-3/4	3-7/8	3-7/8	5



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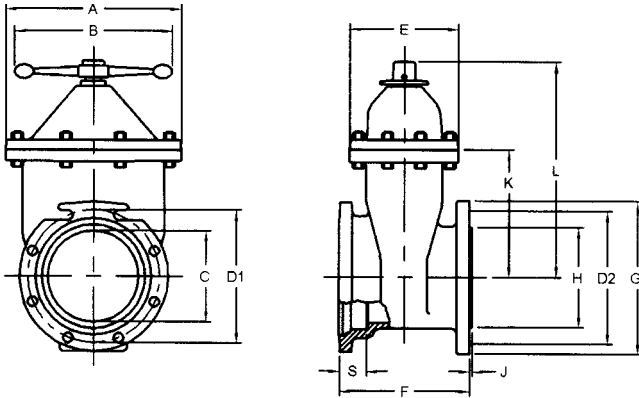


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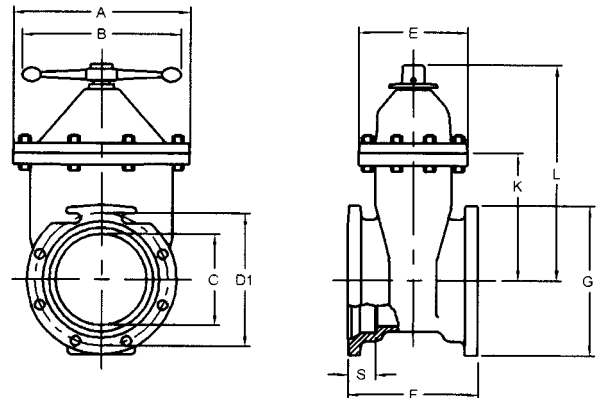
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Dimensional Drawings

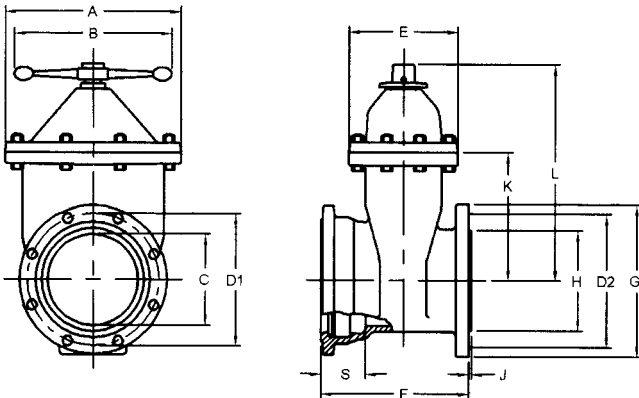
#5860 Mechanical Joint x Flange Tapping Valve



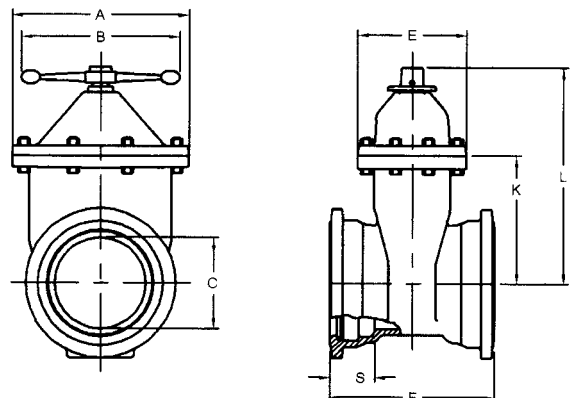
#5460 Mechanical Joint x Mechanical Joint Valve



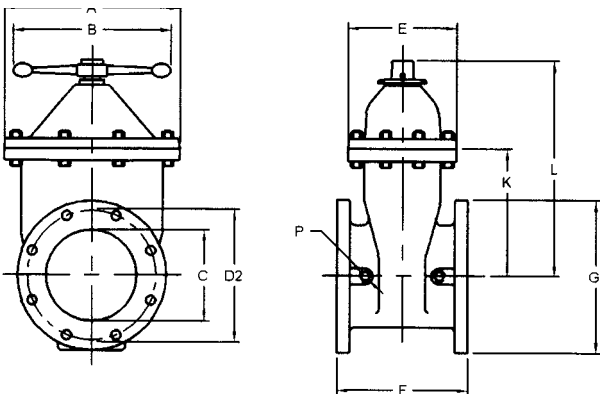
#5490 TYTON® x Flange Tapping Valve



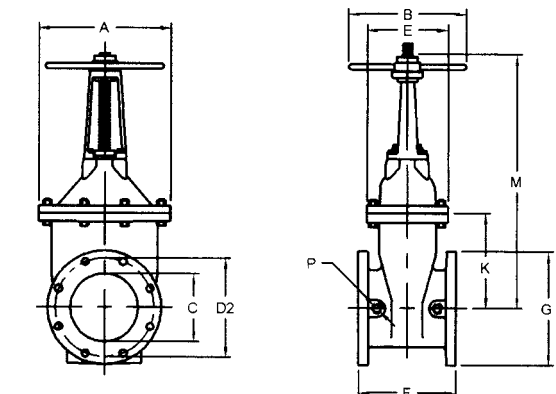
#5080 TYTON® x TYTON® Valve



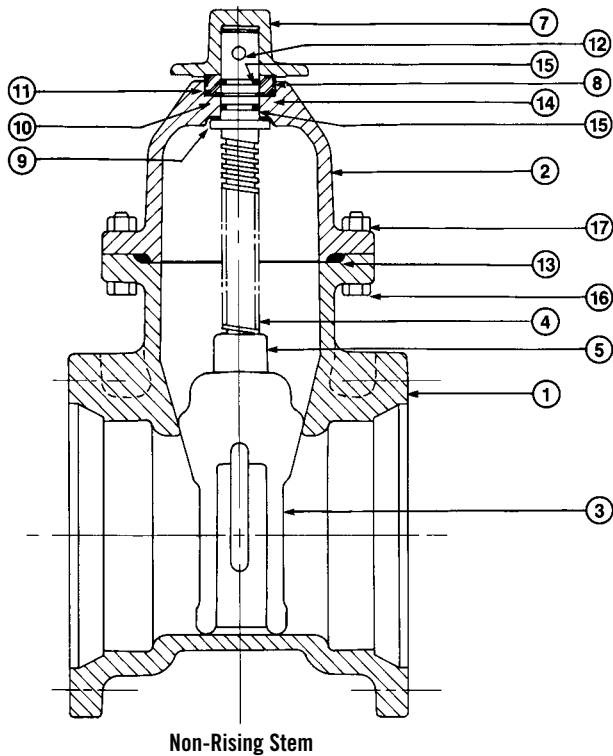
#5150 Flange x Flange Valve



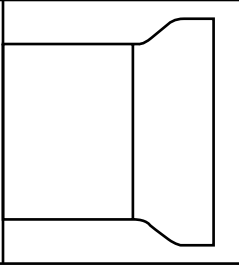
#5120 Flange x OS&Y Valve (Other ends available on OS&Y)



Valve Components Parts List



NO.	PART NAME	QTY REQ'D	MATERIAL
1	Body	1	Ductile Iron
2	Bonnet	1	Ductile Iron
3	Gate, Rubber Covered	1	Ductile Iron
4	Stem	1	Bronze
5	Stem Nut	1	Bronze
7	Operating Nut	1	Gray Iron
8	Cartridge	1	Thermoplastic
9	Bonnet Thrust Washer	1	Thermoplastic
10	Retainer Ring	1	Thermoplastic
11	Dirt Seal	1	Rubber
12	Pin, Operating Nut	1	Steel
13	Seal Ring	1	Rubber
14	"O" Ring (Cartridge)	1	Rubber
15	"O" Ring (Stem)	2	Rubber
16	Bolt, Hex Head		Stainless Steel
17	Nut, Hex		Stainless Steel



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Directions For Ordering

1. The quantity required

2. The size or outlet diameter

3. The body configuration:

FIG. #	BODY CONFIGURATION	FIG. #	BODY CONFIGURATION
5460	Mechanical Joint Valve	5160	TR FLEX® (16" Only) Valve
5150	Flanged Valve	5220	TYTON x Flanged Valve
5860	MJ x Flanged Tapping Valve	5940	TYTON x Flanged Tapping Valve
5260	MJ x Flanged (Non-Tapping)	5120	Flanged OS&Y Valve
5080	TYTON® Valve		

4. Stem material

Standard stems are manganese bronze. Low zinc bronze stems are available on special orders where water may cause dezincification.

5. Direction to open

Valves are furnished open left and the operating nut is painted black — open right valves have operating nuts which are painted red.

6. Operators

Type of gearing if operating nut or handwheel required: Spur or Bevel

7. Accessories

Mechanical Joint Valve Ends

Mechanical joint ends of METROSEAL 250 Valves are furnished with glands, SBR rubber gaskets, tee-head bolts, and nuts unless otherwise specified.

Flanged Valves

Flanged valves are furnished with FLANGE-TYTE® Gaskets when requested. Flanged connections require the use of a 1/8-inch thick rubber gasket.

Tapping Valve Flanged End

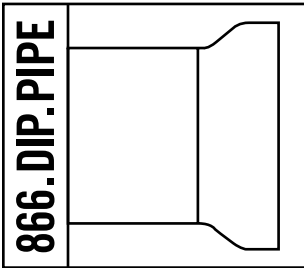
The tapping flange of a METROSEAL 250 Valve is furnished with bolts, nuts and a special gasket.

TYTON Valves

TYTON Valves are furnished with TYTON® Gaskets or FIELD LOK 350® Gaskets can be specified where joint restraint is required.

8. Bolting

METROSEAL 250 Valves are furnished with stainless steel bolts and nuts.



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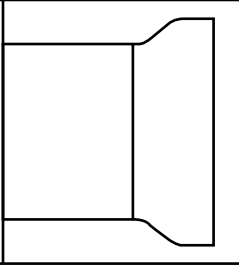
Directions For Ordering (cont.)

Reference Drawings

Detail drawings suitable for submittal purposes may be obtained from your local U.S. Pipe sales office or the Valve and Hydrant products sales office in Chattanooga, Tennessee, Telephone 423-752-3700, Fax 423-752-3710.

CAUTION: Neither push-on products assembled with TYTON® Gaskets nor mechanical joint products assembled with standard accessories as detailed in ANSI/AWWA C111/A21.11 provide any degree of restraint against joint separation. While the configuration in which such products are assembled may in and of itself offer some degree of restraint, our push-on joints with TYTON Gaskets or mechanical joints with standard accessories provide **ABSOLUTELY NO RESISTANCE TO JOINT SEPARATION**. The user must either ensure that restraint is not needed when using our push-on or standard mechanical joint products, or, if there is any question, he must consult a qualified engineer.

If the application to which a push-on joint product is being placed requires restraint, U.S. Pipe recommends the use of FIELD LOK 350® Gaskets or TR FLEX® Pipe, Fittings or Valves — consult with your local U.S. Pipe representative. For mechanical joint connections, various restraint devices are available and the user should consult their manufacturer.



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Products for Water, Wastewater and Fire Protection

Ductile Iron Pipe	SIZE RANGE
TYTON JOINT® Pipe	4"-64" Ductile Iron
Mechanical Joint Pipe	4"-12" Ductile Iron
TR FLEX® Pipe	4"-64" Ductile Iron
Flanged Pipe	3"-64" Ductile Iron
USIFLEX® Boltless Flexible Joint Pipe -- for Subaqueous Installations	4"-48" Ductile Iron
Restrained Joints	
TR FLEX® Pipe	4"-64" Ductile Iron
FIELD LOK 350® Gaskets	4"-24"
FIELD LOK® Gasket	30", 36"
TR FLEX GRIPPER® Rings	4"-36" Ductile Iron
TR TELE FLEX® Assemblies	4"-24" Ductile Iron
FIELD-FLANGE 350® Fittings	4"-24" Ductile Iron
Ductile Iron Fittings	
TYTON® Fittings	14"-64" Ductile Iron
TRIM TYTON® Fittings	4"-12" Ductile Iron
TR FLEX® Fittings and TR FLEX® Telescoping Sleeves	4"-64" Ductile Iron
Mechanical Joint Fittings	3"-48" Ductile Iron
TRIM TYTE® MJ Fittings	3"-48" Ductile Iron
Flanged Fittings	3"-64" Ductile Iron
XTRA FLEX® Couplings	4"-24" Ductile Iron
M-Series Hydrants	
AWWA Dry Barrel hydrants - METROPOLITAN®/M-94 METROFLOW™/M-03	4-1/2" or 5-1/4" Valve Opening
Valves	
AWWA Resilient Seated Gate Valves - METROSEAL® R/S Gate Valves	3"-36"
Double Disc Gate Valves	16"-60", AWWA C500
Miscellaneous Products	
PROTECTO 401™ Lined Ductile Iron Pipe for Domestic Sewage and Industrial Wastes	4"-64" Ductile Iron
FLANGE-TYTE® Gaskets	4"-64"
Saddle Outlets	Various Ductile Iron
Welded Outlets	Various Ductile Iron
Polyethylene Encasement	4"-64"
Tapping Sleeves and Valves	All sizes
Tapping Machines	3"-16"

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