

## TRUMBULL MUD VALVES

### CAST IRON AND STAINLESS STEEL MODELS RISING STEM AND NON-RISING STEM STYLES

#### Installation, Operation and Maintenance Manual

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## **General information:**

Trumbull Mud Valves are designed for use in draining large volumes of fluids by means of static head pressure. They are particularly useful in reservoirs, and in tanks of water and wastewater treatment plants, for normal operations, and when draining is required for maintenance or cleaning. These valves are generally intended for low pressure applications; however, please consult Trumbull for special requirements, such as high head pressure, or back pressure applications.

There are two different Mud Valve models available: Cast Iron, and Cast Stainless Steel. The standard Cast Iron model uses brass seats in the body and gate; however, resilient seats are also available as an option. The cast iron assembly features bronze stems and bronze threaded guides for use in submerged installations. The fasteners are stainless steel to prevent corrosion during the life of the valve.



**Cast Iron, Non-rising Stem Type Valve**

The Cast Stainless Steel model uses SBR seats in the gate (other seat materials are available), and seals against the stainless steel base flange. All metallic components of the Cast Stainless Steel mud valve are Type 316 stainless steel. The stem has a proprietary coating to eliminate galling and provide decades of service life.



**Cast Stainless Steel, Non-rising Stem Type Valve**

Trumbull mud valves can be furnished with extension stems of carbon or stainless steel. The extension stems can then be operated thru a 2" operating nut in a floorbox (see illustration on page 4), or with an indicating floorstand. Position Indicators are also available for installation in the floor (see page 10), or over an open tank (see page 11.)

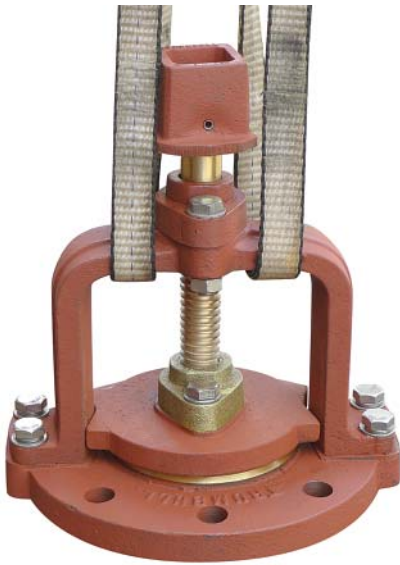
When ordering extension stems, the material type must be specified along with either the overall length required, or the distance from the face of the mud valve flange to the top of the handwheel, the 2" nut, or to the base of the floorstand.

## **Installation:**

**To insure proper operation of the Mud Valve, the following instructions must be followed:**

- 1) The Mud Valve must be mounted to a mating floorpipe having a standard 125# flange. The mounting flange should be recessed below the floor surface; the mud valve base seating surface should be below the floor surface for complete draining of the fluid. The flange must be installed level to provide vertical alignment for an extension stem.  
  
**Note:** The Mud Valve flange is drilled in accordance with the ANSI 125# template on all sizes; however, one hole under each Yoke leg is not available for fastening to the mating flange. Fasteners for mounting are not furnished but can be ordered separately.
- 2) The area surrounding the mounting flange should be clean, and clear of obstructions. Typical installation is shown on the following pages 4 and 5.
- 3) Prior to the installation of the mud valve, check the bottom of the valve flange for any adhering materials, such as wood or packing debris, and for any visible damage.
- 4) Open the valve and clean the seating surfaces.
- 5) Operate the valve before installation to make sure it operates properly and was not damaged during shipment or handling.
- 6) Do not use chains or other lifting devices on the stem or the bronze seats as this could deform the threads, bend the stem, or damage the sealing surfaces.
- 7) For proper lifting, use a nylon strap of sufficient lifting capacity, and lift from under the yoke, as shown in the figures below.

### **Proper lifting of mud valves, using a sling**



**Cast Iron  
Non-rising Stem Type**



**Cast Stainless Steel  
Non-rising Stem Type**

- 8) Install the valve to the mounting flange using a full face, 1/8", rubber flange gasket with the proper sized bolts, or studs and nuts, for this size valve.
- 9) Tighten fasteners using a star tightening pattern. Uneven or over tightening could cause excessive leakage.

**Note:** Mud valves are not designed to be bubble-tight, and are not covered by an AWWA standard. Some leakage may occur.

- 10) Check for obstacles between the gate and the yoke, then cycle the valve fully open and fully closed, to make sure it opens and seals properly.
- 11) Complete the installation of related accessories such as extension stem, stem guides, floorstand or floor box, as specified by the design engineer.

## Cast Iron Mud Valves

Certified to NSF-61 and NSF-372 in USA and Canada

Trumbull Mud Valves are designed primarily for use in settling tanks of water and wastewater treatment plants. Their intended use is to drain tanks for maintenance or cleaning. They are for low pressure applications only; consult Trumbull for special requirements.

Mud Valves are furnished with a 2" square operating nut; however, they can be supplied with optional extension stem or handwheel (see page G-5).

This valve series uses bronze seats in the body and gate (also available with resilient seat). The cast iron body assembly features manganese bronze stems and guides for use in submerged installations. The fasteners are furnished in stainless steel to prevent corrosion from years of submerged service.

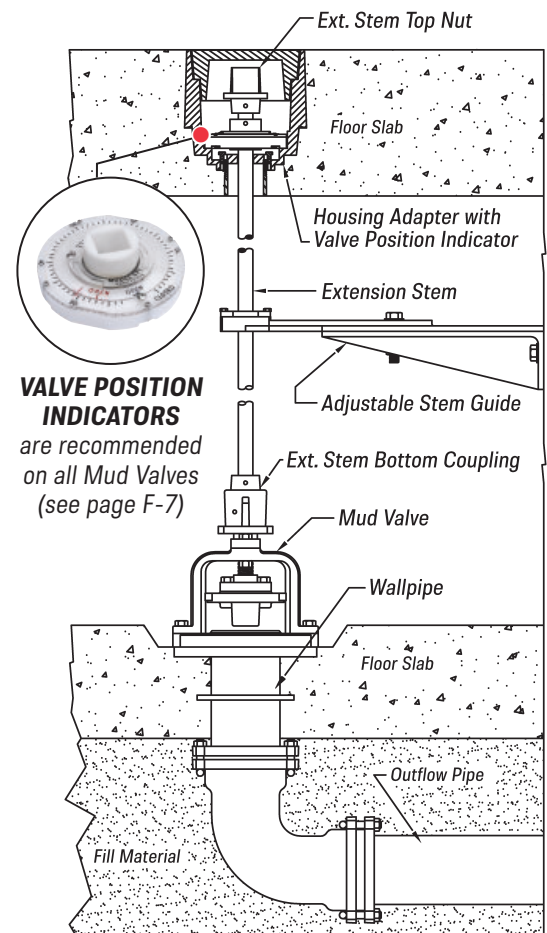
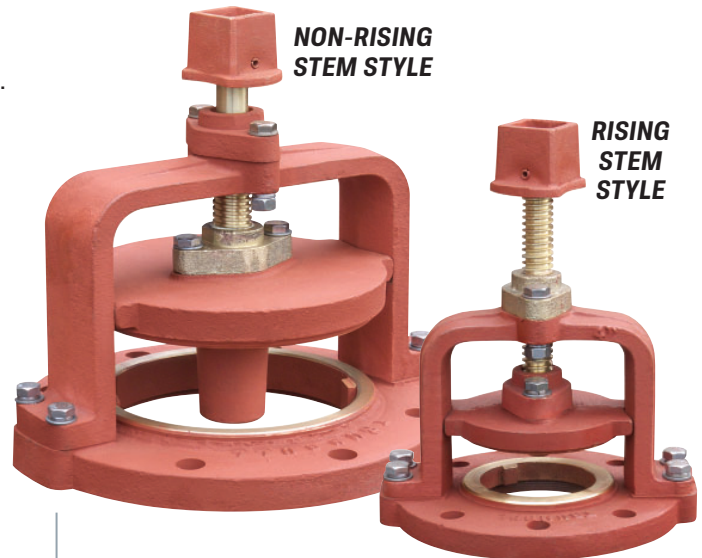
Nuts, bolts and gaskets for mounting to floor pipe are NOT furnished but can be ordered separately. Ductile iron components are coated with Tnemec N140-1211 epoxy, per NSF 61.

See pages G-28 and G-29 for drawings.

*The flange drilling is according to ANSI 125# STD. on all sizes; however, one hole under each leg of the yoke is not available for fastening to the mating flange.*

Size	Non-Rising Stem		Rising Stem	
	Item No	Weight	Item No	Weight
3"	<b>367-1414</b>	26.00 lbs.	<b>367-1421</b>	25.00 lbs.
4"	<b>367-1415</b>	31.00 lbs.	<b>367-1420</b>	30.00 lbs.
6"	<b>367-1416</b>	47.00 lbs.	<b>367-1423</b>	46.00 lbs.
8"	<b>367-1418</b>	76.00 lbs.	<b>367-1425</b>	73.00 lbs.
10"	<b>367-1428</b>	95.00 lbs.	<b>367-1494</b>	90.00 lbs.
12"	<b>367-1430</b>	130.00 lbs.	<b>367-1495</b>	130.00 lbs.
14"	<b>367-1431</b>	142.00 lbs.	Consult Trumbull for availability.	
16"	<b>367-1432</b>	169.00 lbs.		
18"	<b>367-1433</b>	256.00 lbs.		
20"	<b>367-1434</b>	281.00 lbs.		
24"	<b>367-1435</b>	450.00 lbs.		

See page G-34 for installation options.



Typical Mud Valve Installation



## Cast 316 Stainless Steel Mud Valves

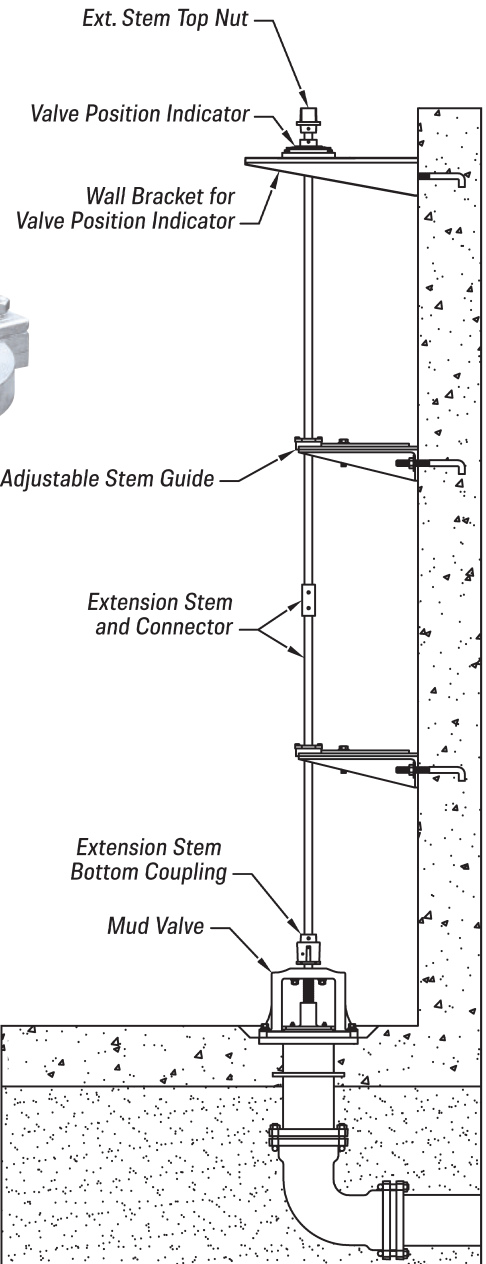
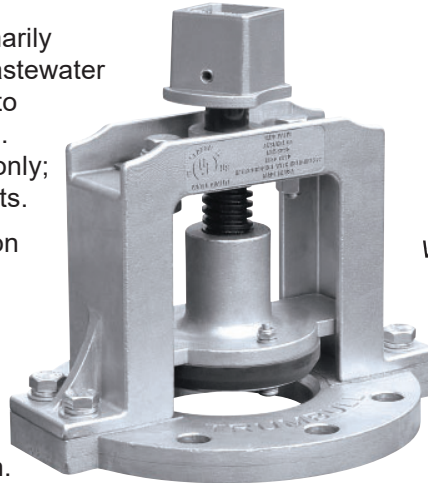
Heavy-Duty Design – Certified to NSF-61 and NSF-372 in USA and Canada

Trumbull Mud Valves are designed primarily for use in settling tanks of water and wastewater treatment plants. Their intended use is to drain tanks for maintenance or cleaning. They are for low pressure applications only; consult Trumbull for special requirements.

For applications requiring more corrosion protection than cast iron, the yoke, flange, guides and gate of these Mud Valves are cast from Type 316 stainless steel. The one-piece, Type 316 stem has a permanently bonded coating to protect against galling for a lifetime of maintenance-free operation.

Cast components eliminate corrosion problems frequently caused when stainless steel is welded. Castings are passivated after machining, per ASTM A-967. Heavy-duty design incorporates generous wall thicknesses and stem diameters for maximum strength and corrosion protection. Seat is SBR rubber for positive shutoff. Mechanically retained seat is field-replaceable. Fasteners are Type 316 stainless. See pages G-32 and G-33 for drawings.

Nuts, bolts and gaskets for mounting to floor pipe are NOT furnished but can be ordered separately.



Typical Mud Valve Installation  
See page G-34 for installation options.

Size	Non-Rising Stem**		Rising Stem**	
	Domestic Item No	Non-Domestic Item No	Domestic Item No	Non-Domestic Item No
3"	1367-1349	367-1453	1367-1369*	367-1469
4"	1367-1350	367-1454	1367-1370*	367-1470
6"	1367-1351	367-1455	1367-1371*	367-1472
8"	1367-1352	367-1456	1367-1372*	367-1474
10"	1367-1353	367-1457	1367-1373*	367-1480
12"	1367-1354	367-1458	1367-1374*	367-1481
14"	1367-1355*	367-1459	*	*
16"	1367-1356*	367-1460		
18"	1367-1357*	367-1461		
20"	1367-1358*	367-1462		
24"	1367-1359*	367-1463		

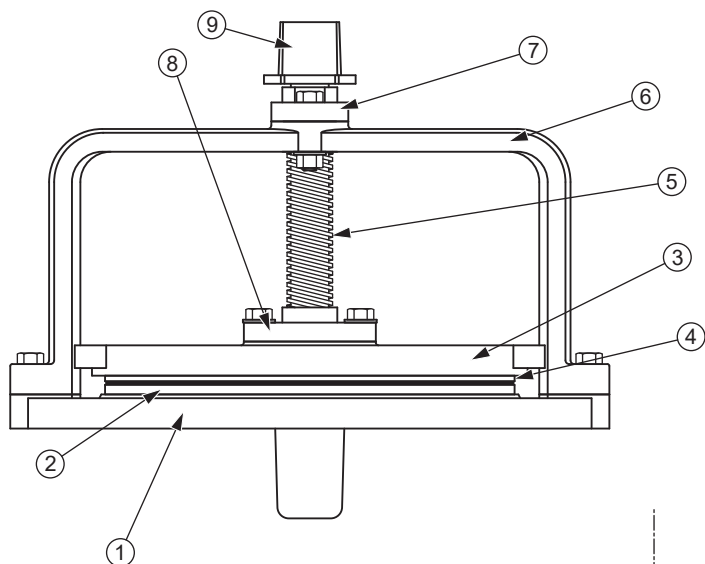
\* Consult Trumbull for availability.

\*\* For product weights, see drawings on Pages G-32 & G-33.

**i** Valve Position Indicators recommended on all Mud Valves (see page F-9).



Valve Size (Bore Dia.)	3	4	6	8	10	12	14	16	18	20	24
A - Overall height	9-7/8	9-1/2	11-1/4	11-3/4	12-13/16	13	15	16-3/4	18-3/4	19-3/4	23-1/2
B - Width at Yoke	10	10	12-3/8	14-1/2	17	19-3/4	22-3/4	24-5/8	28-1/2	30-5/8	37
C - Valve opening	2-1/4	2	3-1/2	4	4-1/16	5	6-3/4	7-3/4	8-1/2	9-3/4	12-1/4
D - Basin depth in floor, min.	1-3/8	1-3/8	1-5/8	1-5/8	1-5/8	1-3/4	1-3/4	1-7/8	2-1/8	2-1/4	2-5/8
E - Flange Thickness	3/4	13/16	1	7/8	7/8	1	1-1/8	1-1/4	1-3/8	1-9/16	1-7/8
Flange O.D.	7-1/2	9	11	13-1/2	16	19	21	23-1/2	25	27-1/2	32
Bolt Circle	6.0	7.5	9.5	11.75	14.25	17.0	18.75	21.25	22.75	25.0	29.5
Bolt Hole Dia.	3/4	3/4	7/8	7/8	1	1	1-1/8	1-1/8	1-1/4	1-1/4	1-3/8
Bolt Dia.	5/8	5/8	3/4	3/4	7/8	7/8	1	1	1-1/8	1-1/8	1-1/4
Bolts in full Pattern* (except 3")	4	8*	8*	8*	12*	12*	12*	16*	16*	20*	20*
Stem Diameter	1	1	1-1/8	1-1/4	1-3/8	1-1/2	1-1/2	1-1/2	1-3/4	1-3/4	1-3/4
Turns to Open	10-1/2	11	17	20	21	25-1/2	34	40	43	49	63
Weight, pounds	26.3	27	47	73	110	130	139	167	243	280	453



Item	Part	Materials
1	Base Flange (Body)	Gray Iron, ASTM A126 (B)
2	Seat, Base Flange	Bronze, ASTM B62; B584
3	Gate	Ductile Iron, ASTM A536 (65-45-12)
4	Seat, Gate	Bronze, ASTM B62; B584
5	Stem	Bronze, ASTM B584
6	Yoke	Ductile Iron, ASTM A536 (65-45-12)
7	Guide, unthreaded	Ductile Iron, ASTM A536 (65-45-12)
8	Guide, threaded	Bronze, ASTM B584
9	Operating Nut, 2" sq.	Gray Iron, ASTM A126 (B)

All Fasteners are Stainless Steel

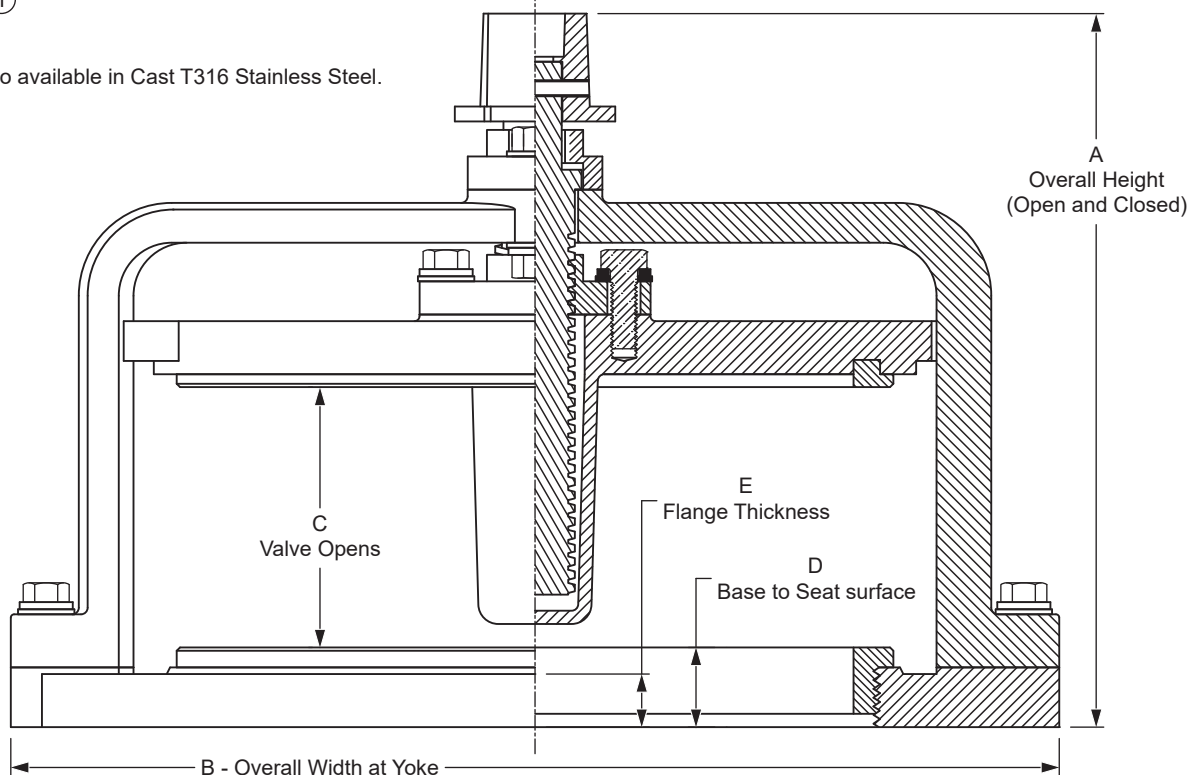
Standard 125 pound drilling template.

\* Two of the bolts in the bolt pattern are under the yoke feet and not used (except for 3").

All cast iron surfaces, except machined surfaces, to be finished with NSF61 (TNEMEC 140-1211) coating.

Flange mounting gasket and fasteners are not included, and must be ordered separately.

Also available in Cast T316 Stainless Steel.



## CAST IRON MUD VALVES NON-RISING STEM TYPE

Drawn to Scale

Drawn:  
FCN  
10/16/17

Revision:  
FCN  
**B** 02/13/20

**Trumbull Manufacturing**  
Youngstown, Ohio  
www.trumbull-mfg.com

Valve Size (Bore Dia.)	3	4	6	8	10	12	14	16**	18**	20**	24**
A - Overall height, closed	9-3/4	9-3/4	11	11-3/4	12-3/4	13	14-1/2	16-3/4	18-3/4	19-3/4	23-1/2
A - Overall height, open	12	11-7/8	14-3/8	15-3/4	16-3/4	18	21-1/2	24-3/4	27-3/4	29-3/4	35-1/2
B - Width at Yoke	10	10	12-3/8	14-1/2	17	19-3/4	22-3/4	24-5/8	28-1/2	30-5/8	37
C - Valve opening	2-1/4	2-1/8	3-3/8	4	4	5	7	8	9	10	12
D - Basin depth in floor, min.	1-3/8	1-3/8	1-5/8	1-5/8	1-5/8	1-3/4	1-3/4	1-7/8	2-1/8	2-1/4	2-5/8
E - Flange Thickness	3/4	13/16	1	7/8	7/8	1	1-1/8	1-1/4	1-3/8	1-9/16	1-7/8
Flange O.D.	7-1/2	9	11	13-1/2	16	19	21	23-1/2	25	27-1/2	32
Bolt Circle	6.0	7.5	9.5	11.75	14.25	17.0	18.75	21.25	22.75	25.0	29.5
Bolt Hole Dia.	3/4	3/4	7/8	7/8	1	1	1-1/8	1-1/8	1-1/4	1-1/4	1-3/8
Bolt Dia.	5/8	5/8	3/4	3/4	7/8	7/8	1	1	1-1/8	1-1/8	1-1/4
Bolts in full Pattern* (except 3")	4	8*	8*	8*	12*	12*	12*	16*	16*	20*	20*
Stem Diameter	1	1	1-1/8	1-1/4	1-3/8	1-1/2	1-1/2	1-1/2	1-3/4	1-3/4	1-3/4
Turns to Open	10-1/2	11	17	20-1/2	20	25	35	40	45	50	60
Weight, pounds	26.3	30	46	73	110	130	140	165	240	280	450

Standard 125 pound drilling template.

\* Two of the bolts in the bolt pattern are under the yoke feet and not used.

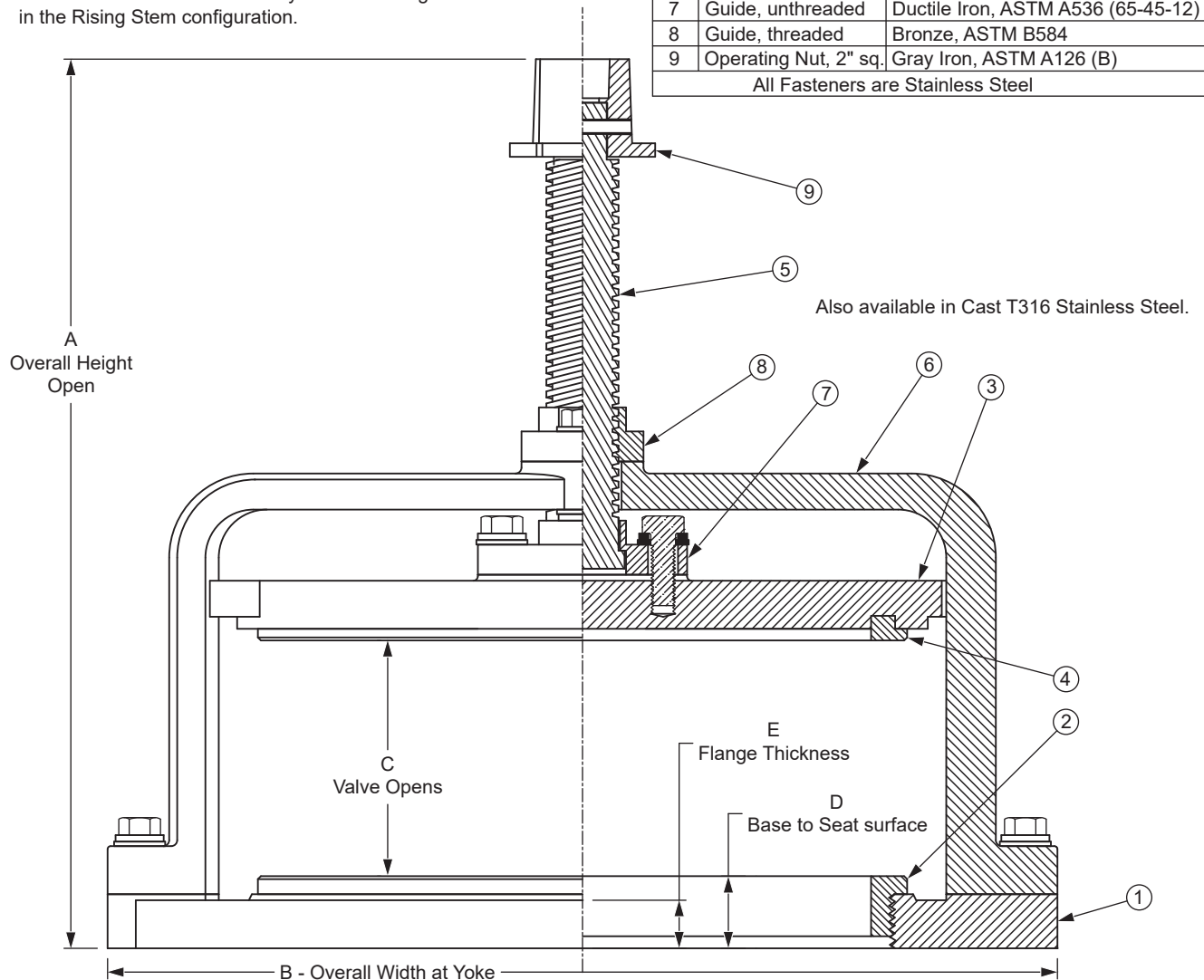
All cast iron surfaces, except machined surfaces, to be finished with NSF61 (TNEMEC 140-1211) coating.

Flange mounting gasket and fasteners are not included, and must be ordered separately.

\*\* Consult Trumbull on the availability of 16" and larger sizes in the Rising Stem configuration.

Item	Part	Materials
1	Base Flange (Body)	Gray Iron, ASTM A126 (B)
2	Seat, Base Flange	Bronze, ASTM B62; B584
3	Gate	Ductile Iron, ASTM A536 (65-45-12)
4	Seat, Gate	Bronze, ASTM B62; B584
5	Stem	Bronze, ASTM B584
6	Yoke	Ductile Iron, ASTM A536 (65-45-12)
7	Guide, unthreaded	Ductile Iron, ASTM A536 (65-45-12)
8	Guide, threaded	Bronze, ASTM B584
9	Operating Nut, 2" sq.	Gray Iron, ASTM A126 (B)

All Fasteners are Stainless Steel



## CAST IRON MUD VALVES RISING STEM TYPE

Drawn to Scale

Drawn:  
FCN  
10/16/17

Revision:  
FCN  
**B** 02/13/20

**Trumbull Manufacturing**  
Youngstown, Ohio  
www.trumbull-mfg.com

Valve Size (Bore Dia.)	3	4	6	8	10	12	14	16	18	20	24
A - Overall height	9	8	10-1/2	12-1/2	14-1/2	17	23	21-1/4	23	25-3/4	34-5/8
B - Width at Yoke	8	10-1/4	12-5/8	15-1/8	17-3/8	19	25-3/4	25-3/4	27-3/4	27-1/2	32
C - Valve opening	1-1/2	1-3/4	2-3/4	3-1/2	4-3/4	6	7-3/8	7-1/2	8-1/4	9-1/4	12
D - Flange thickness	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
Flange O.D.	7-1/2	9	11	13-1/2	16	19	21.0	23-1/2	25	27-1/2	32
Bolt Circle Diameter	6.00	7.50	9.50	11.75	14.25	17.00	18.75	21.25	22.75	25.00	29.5
Bolt Hole Dia.	3/4	3/4	7/8	7/8	1	1	1-1/8	1-1/8	1-1/4	1-1/4	1-3/8
Bolt / Stud Size	5/8	5/8	3/4	3/4	7/8	7/8	1	1	1-1/8	1-1/8	1-1/4
Bolts in full Pattern*	4	8	8	8	12	12	12	16	16	20	20
Stem Diameter	1-1/4	1-1/4	1-1/4	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	1-3/4	1-3/4	1-3/4
Turns to Open	7	9	15-1/2	20	26	30	37	20-1/2	23	48-1/2	60
Weight, pounds	19-1/2	24-1/2	33-1/2	48	65	88	125	142	186	206	230

\* Standard 125 pound drilling template, with two holes covered by the Yoke (except for 3").

Flange mounting gasket and fasteners are not included, and must be ordered separately.

All items, except for the Seal and the sealing washers are Type 316 Stainless Steel.

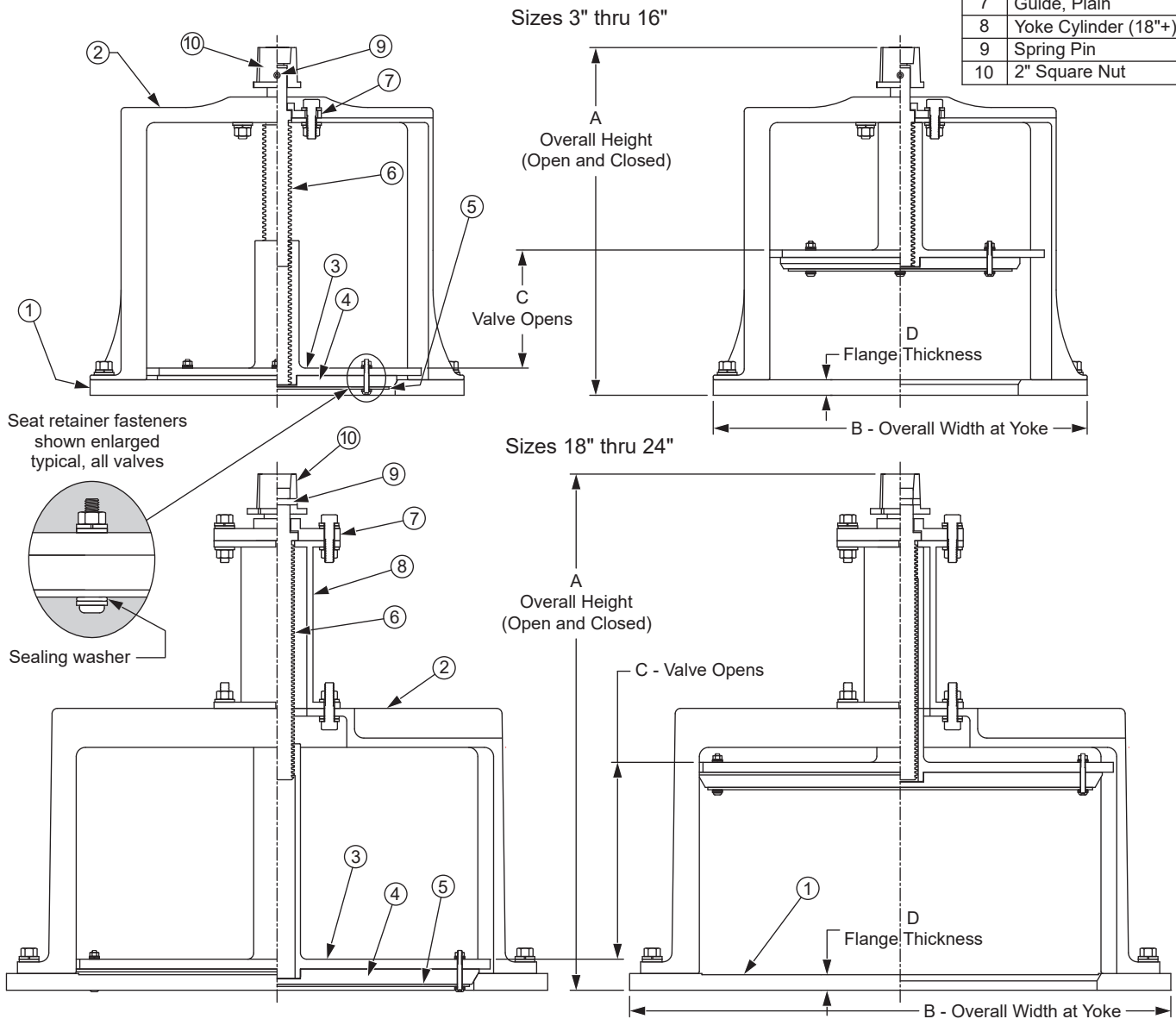
Seal and sealing washers are SBR.

All Fasteners are Stainless Steel, Type 316, ASTM A193, Grade B

Stem is coated and greased to prevent galling.

Basin depth in floor for complete draining, 1" minimum.

Part	Description
1	Base Flange (Body)
2	Yoke
3	Gate
4	Seat
5	Seat Retainer
6	Stem
7	Guide, Plain
8	Yoke Cylinder (18"+)
9	Spring Pin
10	2" Square Nut



## CAST T316 SS MUD VALVES NON-RISING STEM TYPE

Drawn to Scale

Drawn:  
FCN  
07/24/07

Revision:  
FCN  
02/07/20

**Trumbull Manufacturing**  
Youngstown, Ohio  
www.trumbull-mfg.com



Valve Size (Bore Dia.)	3	4	6	8	10	12	14	16	18	20	24
A - Overall height, closed	9	8-3/4	10-1/2	12-1/2	14	17	23	23	18	18	23
A - Overall height, open	10-1/2	11-1/2	16	19-1/4	22-3/4	28-1/2	39	39	27	28	35
B - Width at Yoke	8	10-1/4	12-5/8	15-1/8	17-3/8	19	25-3/4	25-3/4	27-3/4	27-1/2	32
C - Valve opening	1-1/2	2-1/4	5	7	8-1/4	11-1/2	16	16	9	10	12
D - Flange thickness	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4	3/4
Flange O.D.	7-1/2	9	11	13-1/2	16	19	21.0	23-1/2	25	27-1/2	32
Bolt Circle Diameter	6.00	7.50	9.50	11.75	14.25	17.00	18.75	21.25	22.75	25.00	29.5
Bolt Hole Dia.	3/4	3/4	7/8	7/8	1	1	1-1/8	1-1/8	1-1/4	1-1/4	1-3/8
Bolt / Stud Size	5/8	5/8	3/4	3/4	7/8	7/8	1	1	1-1/8	1-1/8	1-1/4
Bolts in full Pattern*	4	8	8	8	12	12	12	16	16	20	20
Stem Diameter	1-1/4	1-1/4	1-1/4	1-1/2	1-1/2	1-1/2	1-1/2	1-1/2	1-3/4	1-3/4	1-3/4
Turns to Open	7	13-1/2	26-1/2	30-1/2	36-1/2	50-1/2	80	80	45	50	60
Weight, pounds	19-1/2	25	34	48	59	78	142	142	155	164	218

Standard 125 pound drilling template, with two holes covered by the Yoke.

Flange mounting gasket and fasteners are not included, and must be ordered separately.

All items, except for the Seal and the sealing washers are Type 316 Stainless Steel.

Seal and sealing washers are SBR.

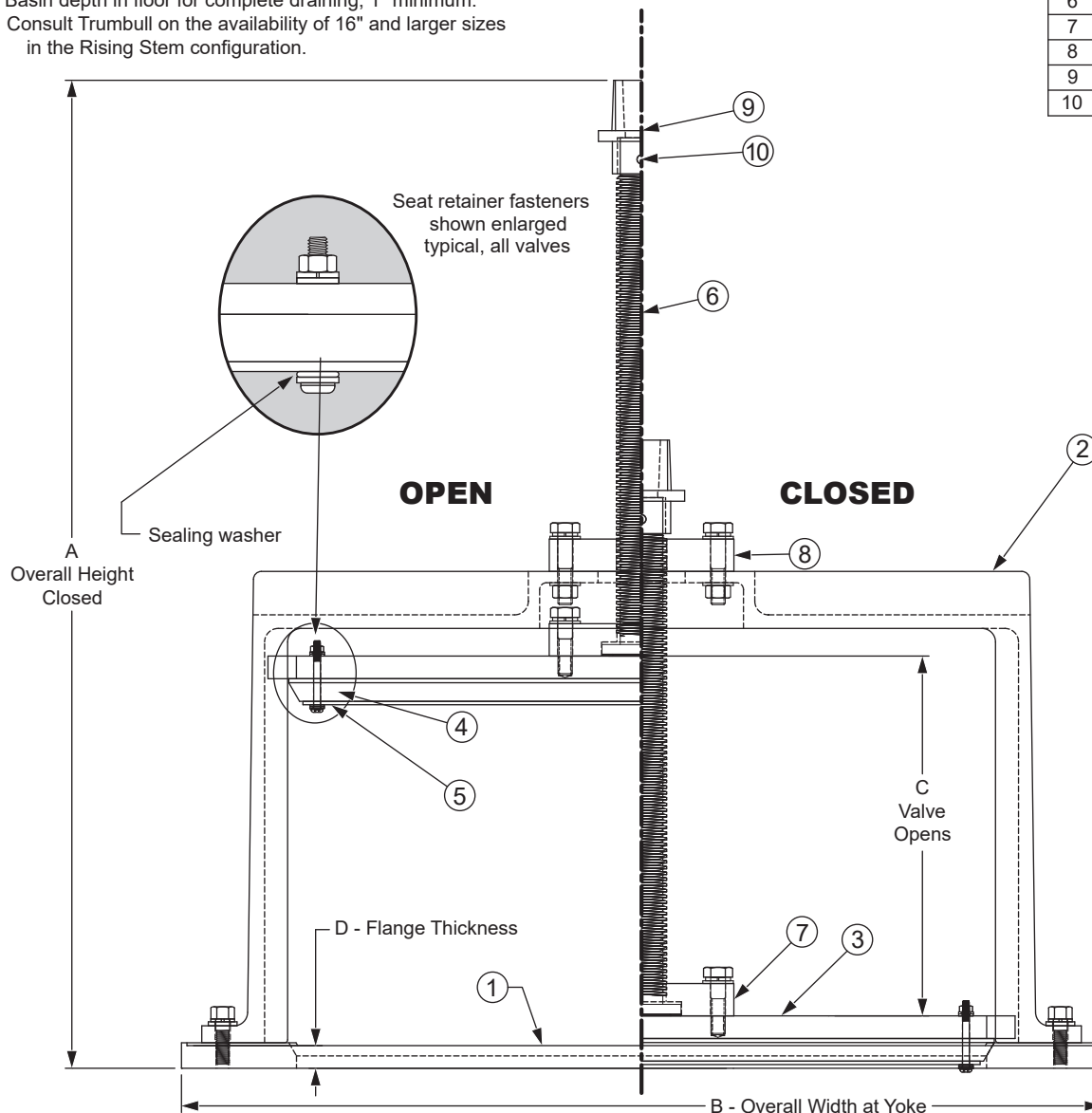
All Fasteners are Stainless Steel, Type 316, ASTM A193, Grade B

Stem is coated and greased to prevent galling.

Basin depth in floor for complete draining, 1" minimum.

Consult Trumbull on the availability of 16" and larger sizes in the Rising Stem configuration.

Part	Description
1	Base Flange (Body)
2	Yoke
3	Gate
4	Seat
5	Seat Retainer
6	Stem
7	Guide, Unthreaded
8	Guide, Threaded
9	2" Square Nut
10	Coil Type Spring Pin



## CAST T316SS MUD VALVES RISING STEM TYPE

Drawn to Scale

Drawn:  
FCN  
10/16/17

Revision:  
NJC  
03/19/20

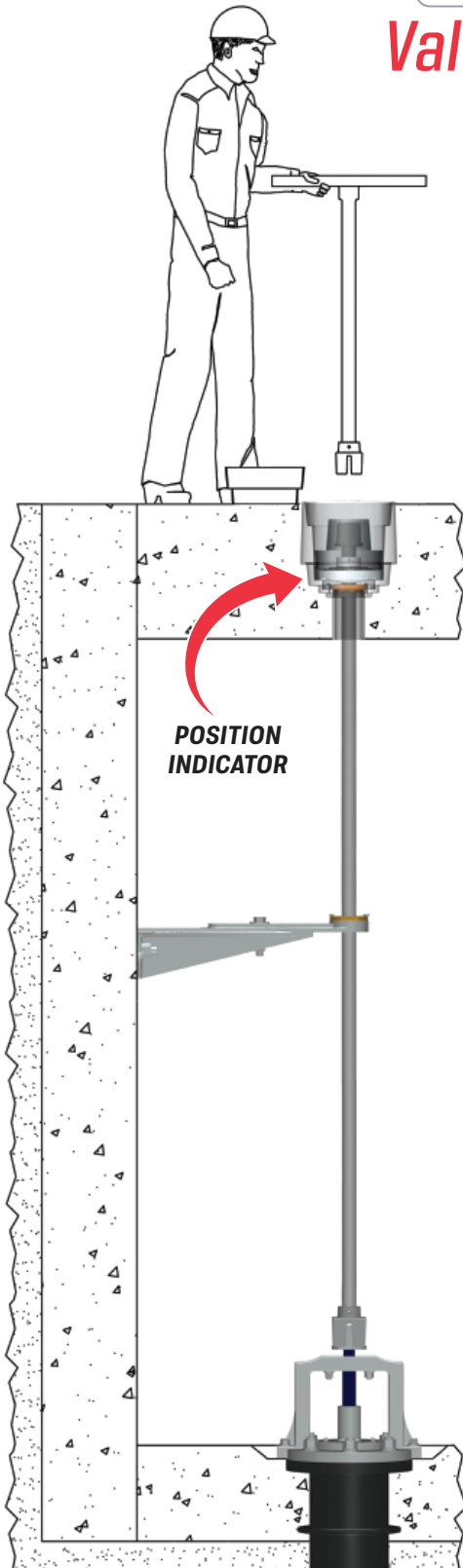
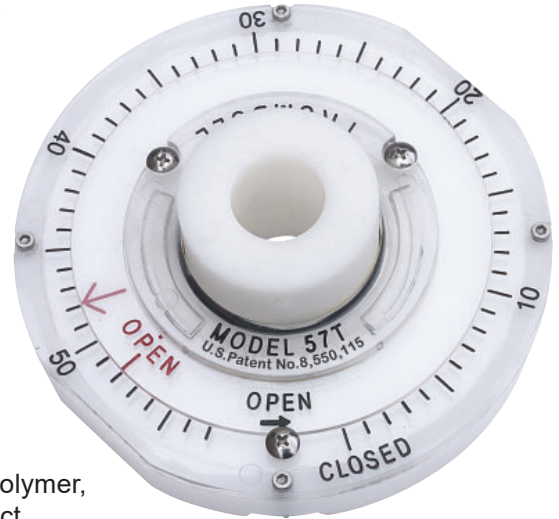
**Trumbull Manufacturing**  
Youngstown, Ohio  
www.trumbull-mfg.com

 US Patent No.'s 8,550,115 / 9,347,583 / 10,066,760

## Valve Position Indicators

### Installation in Floor

- Eliminates broken valve stems caused by over-opening or over-closing
- Field-adjustable for any number of turns within the range of each model
- Constructed of heavy-duty, non-corrosive DuPont™ Delrin® polymer, providing high-impact resistance even in cold climates
- Double O-ring seals keep out water and dirt
- Third-party tested to over 1 million revolutions
- Provided with stainless steel hardware
- Also available w/Wall Bracket for mounting to tank walls (pages F-9 to F-10), and in Valve Boxes for buried service (pages F-1 to F-6)



### Ordering Instructions

1. Specify direction of open (open left or open right)
2. Model required (available in 57, 275 or 870 turns, shown below)
3. Extension Stem required
  - a. Length required
  - b. Round (maximum OD of 1.75"), 1-1/4" square, or round x square stem (see reverse for details)
  - c. Carbon steel or stainless steel
4. Housing Adapter - Floor Box style
  - a. Cast iron housing (unsealed), see page F-11
  - b. Carbon steel or stainless steel (sealed), see page G-13

Model Number	Square Ext. Stem		Round Ext. Stem	
	Open Left Item No	Open Right Item No	Open Left Item No	Open Right Item No
57T	367-9394	367-9393	367-9404	367-9403
275T	367-9396	367-9395	367-9406	367-9405
870T	367-9400	367-9399	367-9410	367-9409



US Patent No.'s 8,550,115 / 9,347,583 / 10,066,760

## Valve Position Indicators

Installation with **Wall Bracket**



### WALL BRACKET

DUCTILE IRON  
Item No. **367-2450**

CAST 316 STAINLESS  
Item No. **367-2460**



- Eliminates broken valve stems caused by over-opening or over-closing
- Field-adjustable for any number of turns within the range of each model
- Constructed of heavy-duty, non-corrosive DuPont™ Delrin® polymer, providing high-impact resistance even in cold climates
- Double O-ring seals keep out water and dirt
- Third-party tested to over 1 million revolutions
- Provided with stainless steel hardware
- Also available for use in the floor (pages F-7 to F-8), and in Valve Boxes for buried service (pages F-1 to F-6)

### Ordering Instructions

1. Specify direction of open (open left or open right)
2. Model required (available in 57, 275 or 870 turns)
3. Extension Stem required
  - a. Length required
  - b. Round (maximum OD of 1.75") see next page for details
  - c. Carbon steel or stainless steel

Model Number	Number of Turns	Open Left Item No.	Open Right Item No.
57T	0 - 57	<b>367-9404</b>	<b>367-9403</b>
275T	0 - 275	<b>367-9406</b>	<b>367-9405</b>
870T	0 - 870	<b>367-9410</b>	<b>367-9409</b>

## **Storage before installation:**

There are no special requirements for storage of these mud valves; their intended use can be more severe than environmental conditions.

However, the valves should be handled with proper care and attention during shipment, handling, and storage to prevent physical damage, especially from contact with material handling equipment.

## **Operation and Maintenance Precautions during freezing weather:**

Although it is unlikely a tank would be drained during freezing conditions, proper precautions must be observed during these operations, as water can be retained in the stem protector cavity of the Gate when the valve is opened after being submerged.

By closing the valve after the tank is drained, air is drawn into the stem protector and forms a cushion. This air cushion prevents freezing damage to the stem protector.

Always close the valve after the tank has been emptied, if the valve will be subjected to freezing temperatures, either during operation, or for maintenance.

## **Operation:**

Trumbull mud valves are designed to open left, by turning the stem counterclockwise; they will seat by rotating the stem in a clockwise rotation.

The mud valve is manufactured to seal with minimum torque.

If the valve does not seal with 35 foot pounds of torque, inspect for obstructions on the seating surfaces.

Using excess closing torque with an obstruction or debris on the seats will not seal the valve; instead it may cause damage to the seating surfaces. Position Indicators are recommended on the mud valves to avoid over-torquing (from opening or closing while the gate is obstructed), causing damage to the seats or stems.

## **Maintenance:**

Trumbull mud valves are designed to require very little maintenance.

When the mud valve is available for servicing, the following measures will help to assure trouble-free performance.

- Clean the valve by pressure washing it to remove any debris.

- Wipe the seating surfaces with a clean rag, and allow the valve to dry, by natural or forced warm air.

- Remove all the debris from the area around the valve.

- Once the valve is dry inspect the seating surfaces for condition and damage.

- Inspect all the fasteners to insure they are tight; retighten if necessary.

- Lubricate the stem (a food grade lubricant may be required by the application.)

  - Loctite 82328 SuperLube is used on all of our stainless steel mud valves.

- Document the service. Include a description of inspection observations, all work that was performed, and recommended follow-up actions.

No spare parts are required for maintenance; replacement parts are available for damaged valves.

## **Trumbull Manufacturing Resources:**

For any questions, comments, or concerns, please contact our people at the following numbers:

Sales and Manufacturing	Scott Greaver	330-393-1291
Quality Assurance	Dwayne Hill	330-392-1353
Engineering	Craig Newmeyer	330-799-3333

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