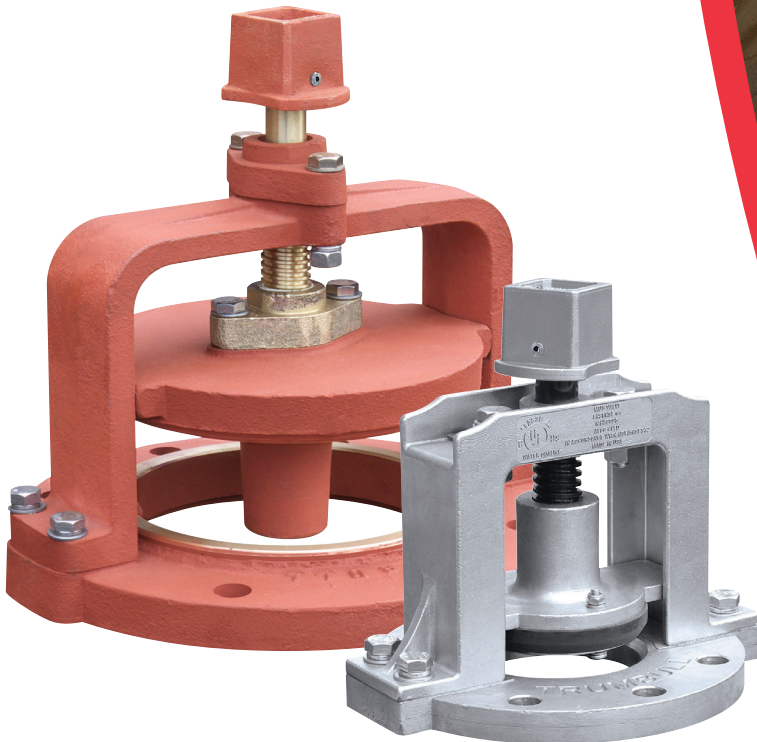


Trumbull Manufacturing

RISING STEM AND NON-RISING STEM TYPE
IRON & STAINLESS MUD VALVES

FOR WATER AND WASTEWATER TREATMENT PLANTS





Trumbull Manufacturing

3850 Hendricks Road, Youngstown, Ohio 44515

Phone:
330.270.7888

Toll Free:
877.504.1507

Fax:
330.392.0756

www.trumbull-mfg.com

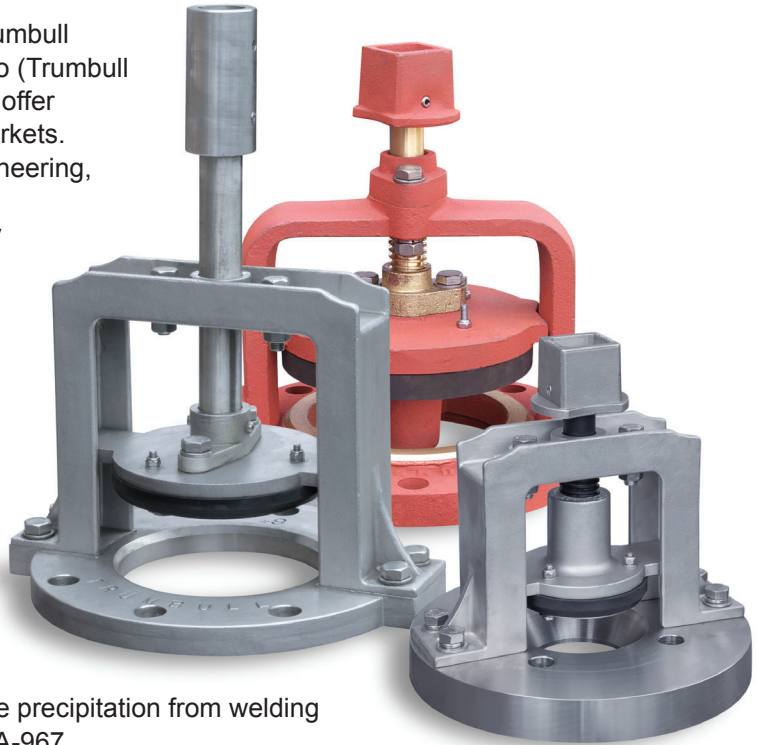
Trumbull Manufacturing began as an outgrowth of Trumbull Industries which was founded in 1922 in Warren, Ohio (Trumbull County). Manufacturing operations started in 1981 to offer specialty products for the Municipal and Industrial markets. We stand behind our products with experienced Engineering, Quality Control and Field Service personnel. Our products are designed for long life, and are rigorously tested in-house and at independent labs.

Trumbull Mud Valves are manufactured in cast iron and cast stainless steel. Stem designs include Non-Rising Stem (NRS), Rising Stem (RS), as well as sliding stem. A full line of accessories are offered to operate our Mud Valves, including Valve Position Indicators, Extension Stems, Stem Guides, Floorstands and Floor Boxes.

Premium Stainless Mud Valves use only cast stainless components & have additional advantages:

- Heavy-duty CAST stainless steel, Type 316
 1. No welded components
 2. Cast design eliminates problem of carbide precipitation from welding
 3. Stainless castings passivated per ASTM A-967
- Resilient seats are field-replaceable and mechanically retained; available in a variety of elastomers
- One-piece heavy-duty stem, 3rd party torque tested to over 500 ft-lb
- Permanently bonded coating on stainless stem prevents galling, 3rd party tested to over 15,000 cycles
- Rising stem, non-rising stem and sliding stem styles
- "All stainless" installation available with stainless Extension Stem, Stem Guide and Floorstand

**Extend useful life of critical valves and components
for an affordable premium!**



Trumbull Mud Valves have been thoughtfully designed to meet the highest expectations of Engineers and Operators.



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.

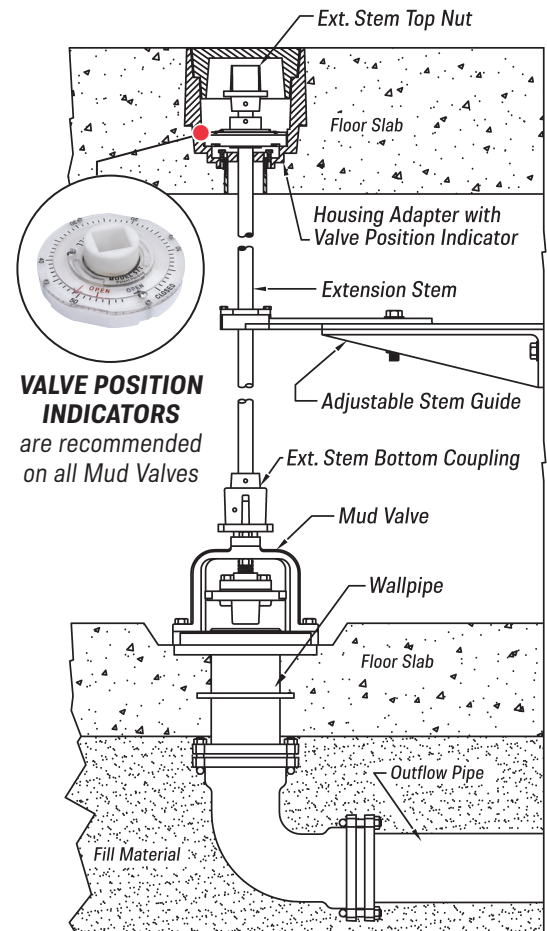
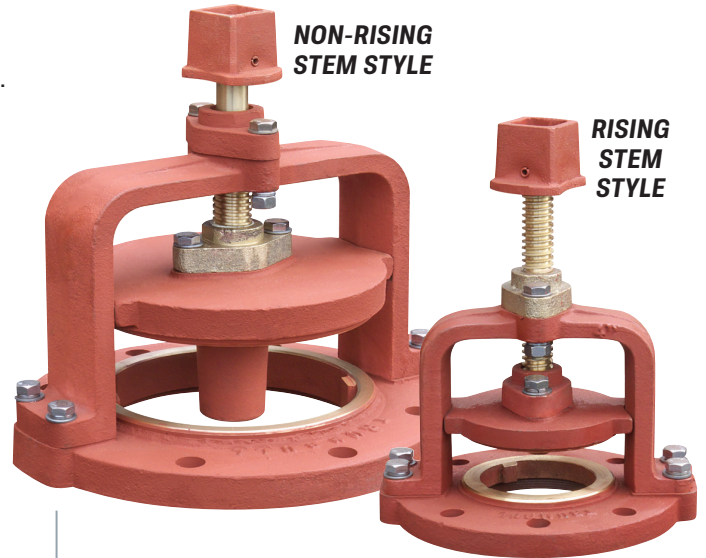
Nuts, bolts and gaskets for mounting to floor pipe are NOT furnished but can be ordered separately. Ductile iron components are coated with Tnemec N140-1211 epoxy, per NSF 61.

See pages 4 and 5 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.

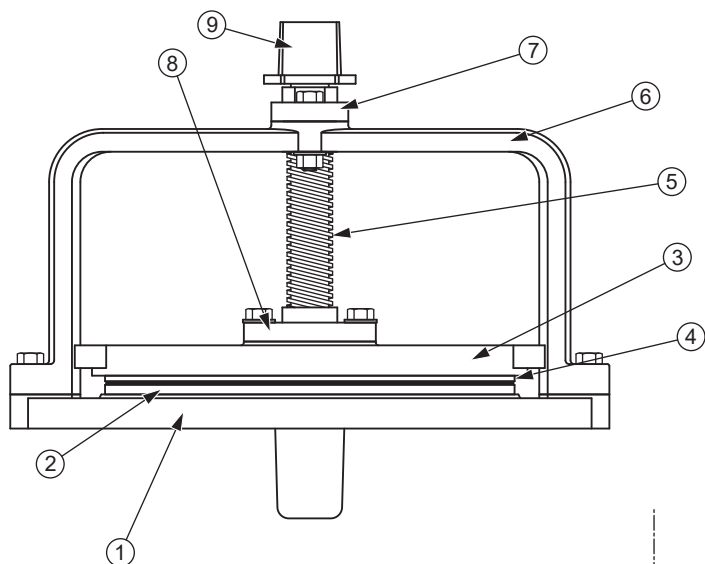
| Size | Non-Rising Stem | | Rising Stem | |
|------|-----------------|-------------|---------------------------------------|-------------|
| | Item No | Weight | Item No | Weight |
| 3" | 367-1414 | 26.00 lbs. | 367-1421 | 25.00 lbs. |
| 4" | 367-1415 | 31.00 lbs. | 367-1420 | 30.00 lbs. |
| 6" | 367-1416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

See page 10 for installation options.



Typical Mud Valve Installation

| 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 | | |

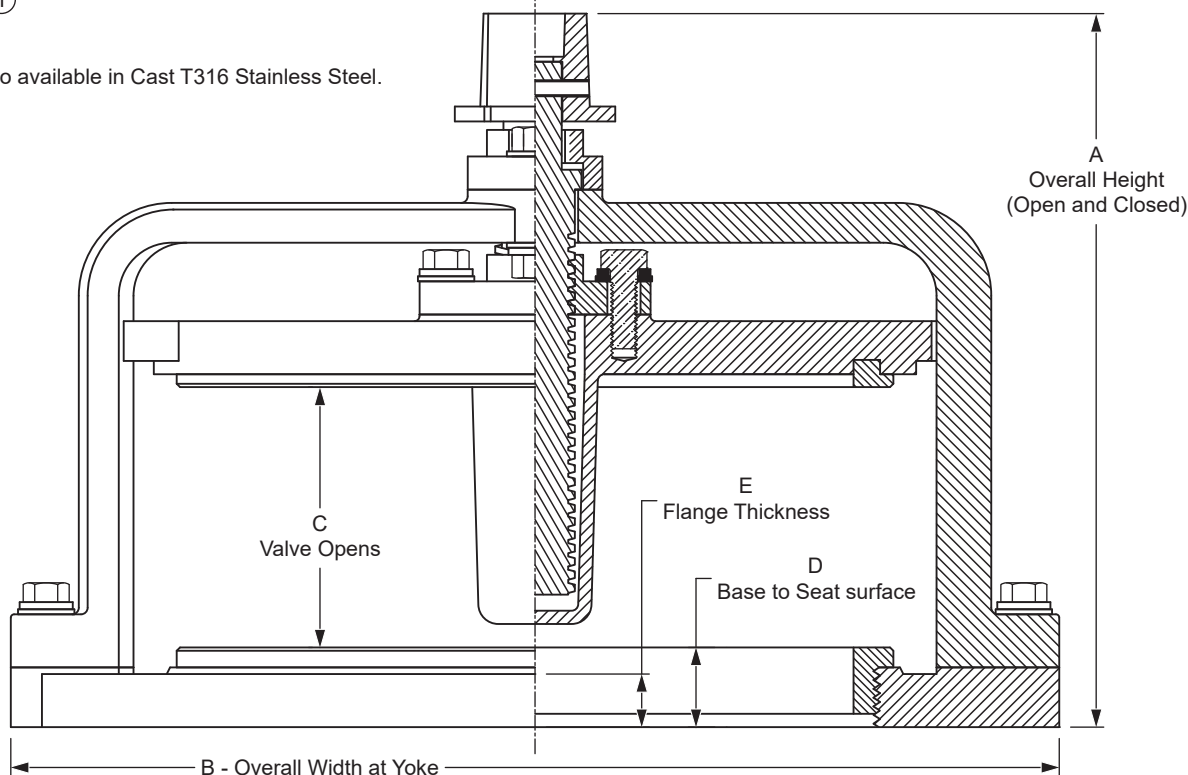
Standard 125 pound drilling template.

* 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.

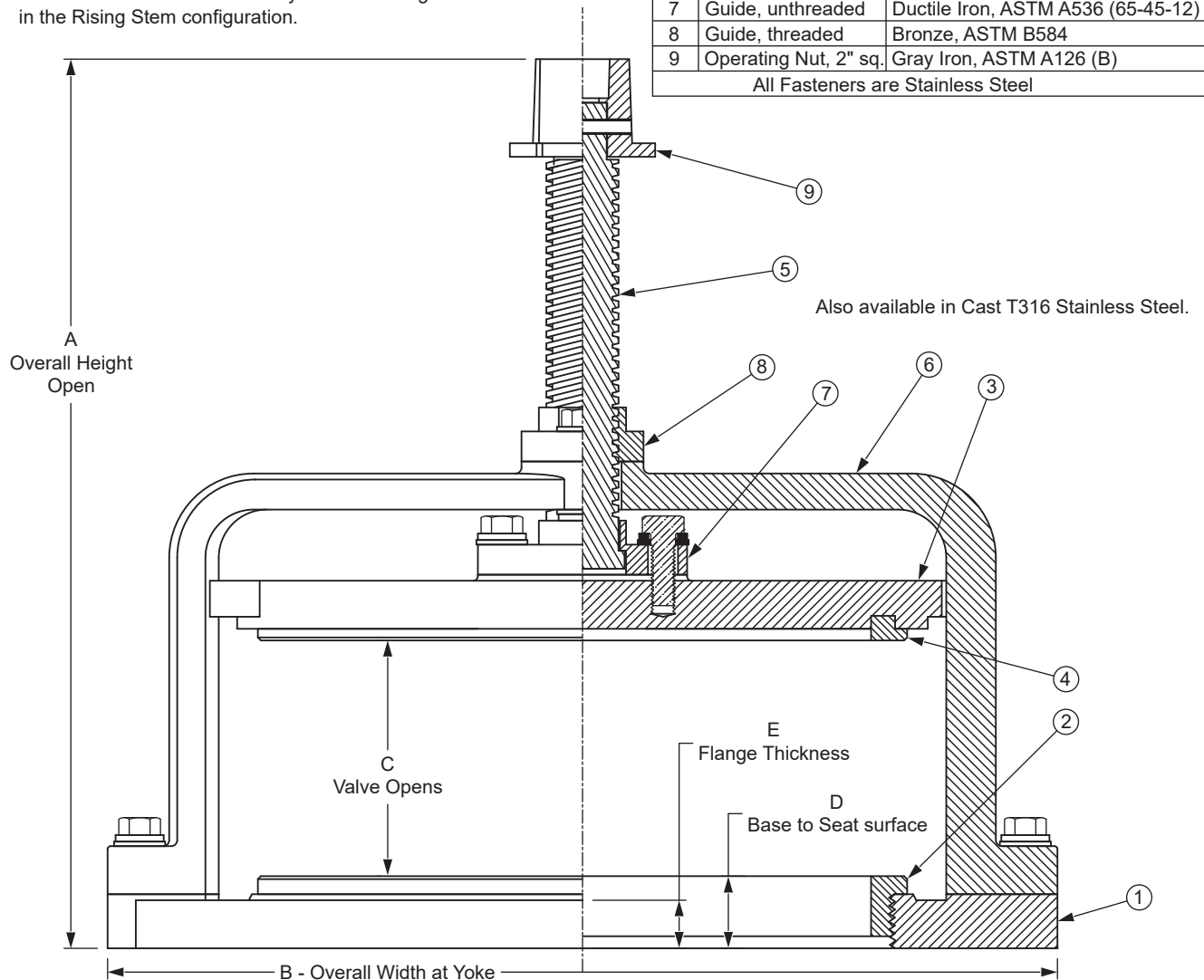
All cast iron surfaces, except machined surfaces, to be finished with NSF61 (TNEMEC 140-1211) coating.

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

OTHER ADAPTATIONS

For Trumbull Mud Valves



SLIDING STEM MUD VALVE

*Available when desirable
to keep operating threads
out of the water.*



STAINLESS STEEL MUD VALVE EXTENDED BONNET WITH PNEUMATIC CYLINDER

For remote operation.



FLOORSTAND WITH LIMIT SWITCHES

*For remote indication
of valve position.*

Cast 316 Stainless Steel Mud Valves

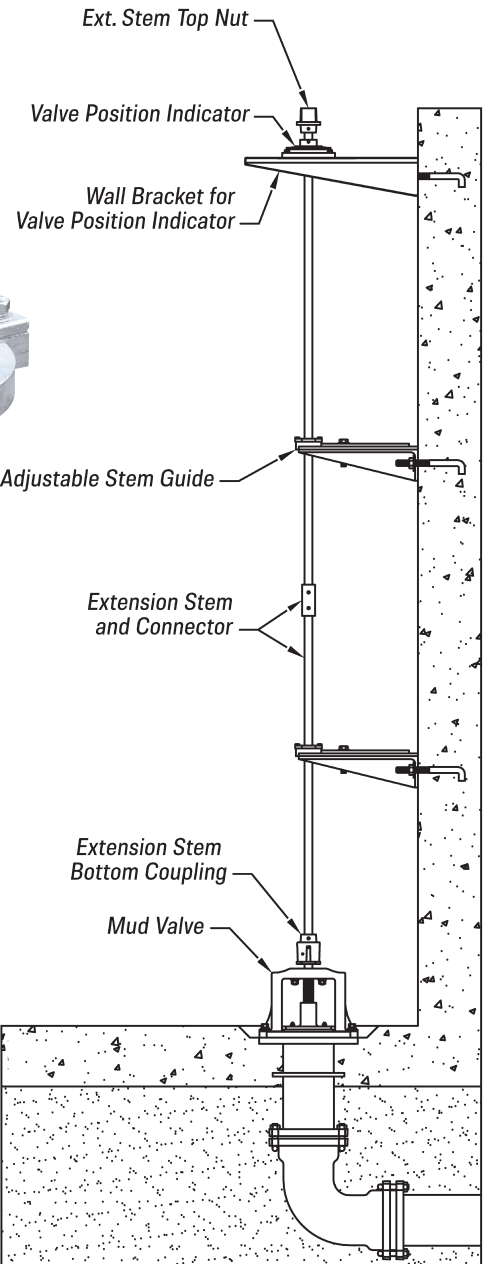
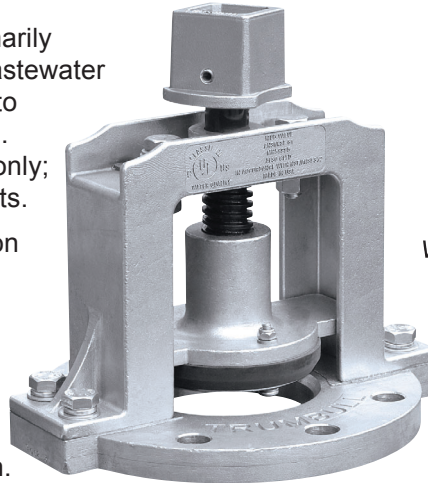
Heavy-Duty Design – Certified to NSF-61 and NSF-372 in USA and Canada

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 8 and 9 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 8 & 9.

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 | 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.

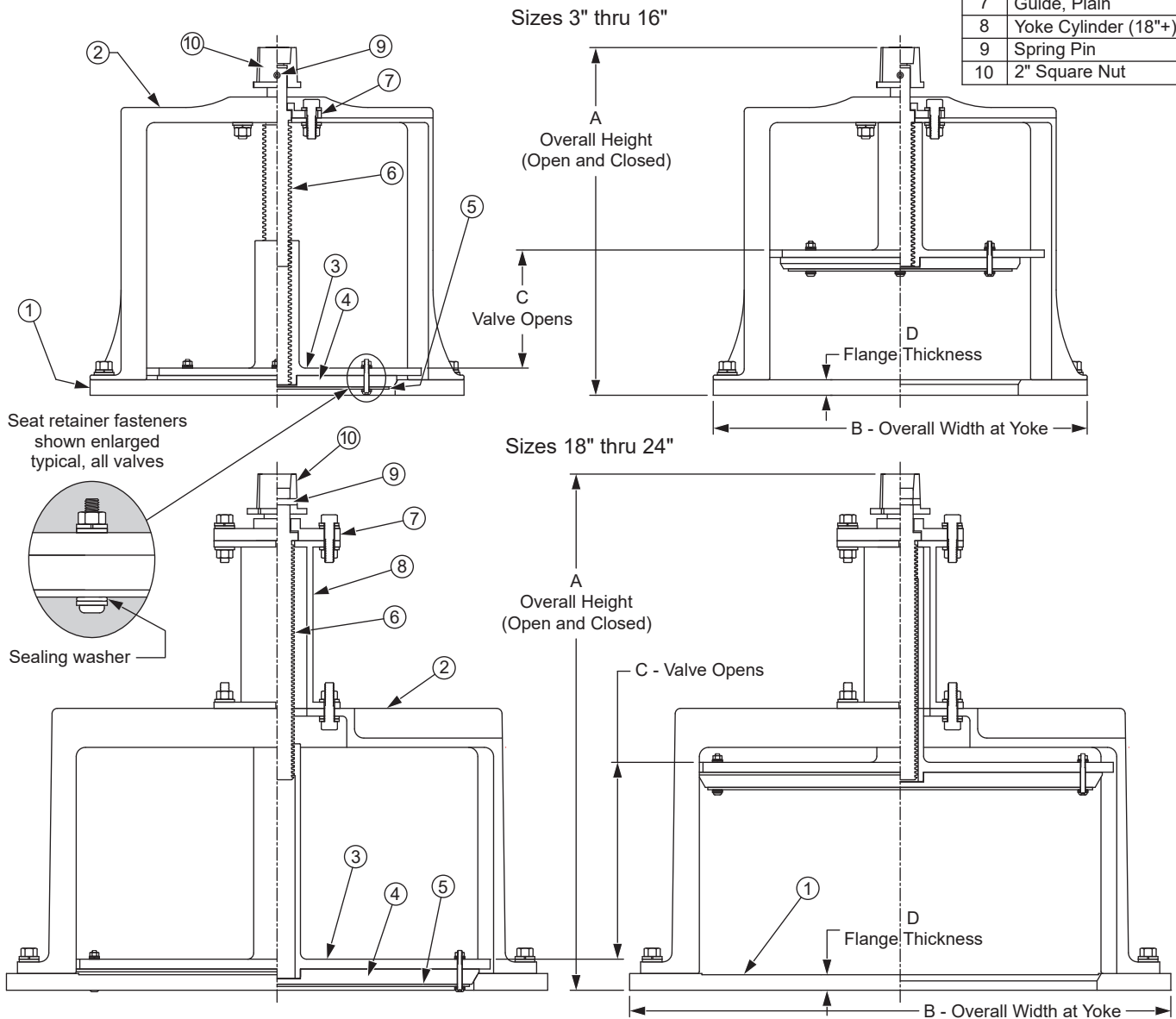
Seal and sealing washers are SBR.

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
F 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.

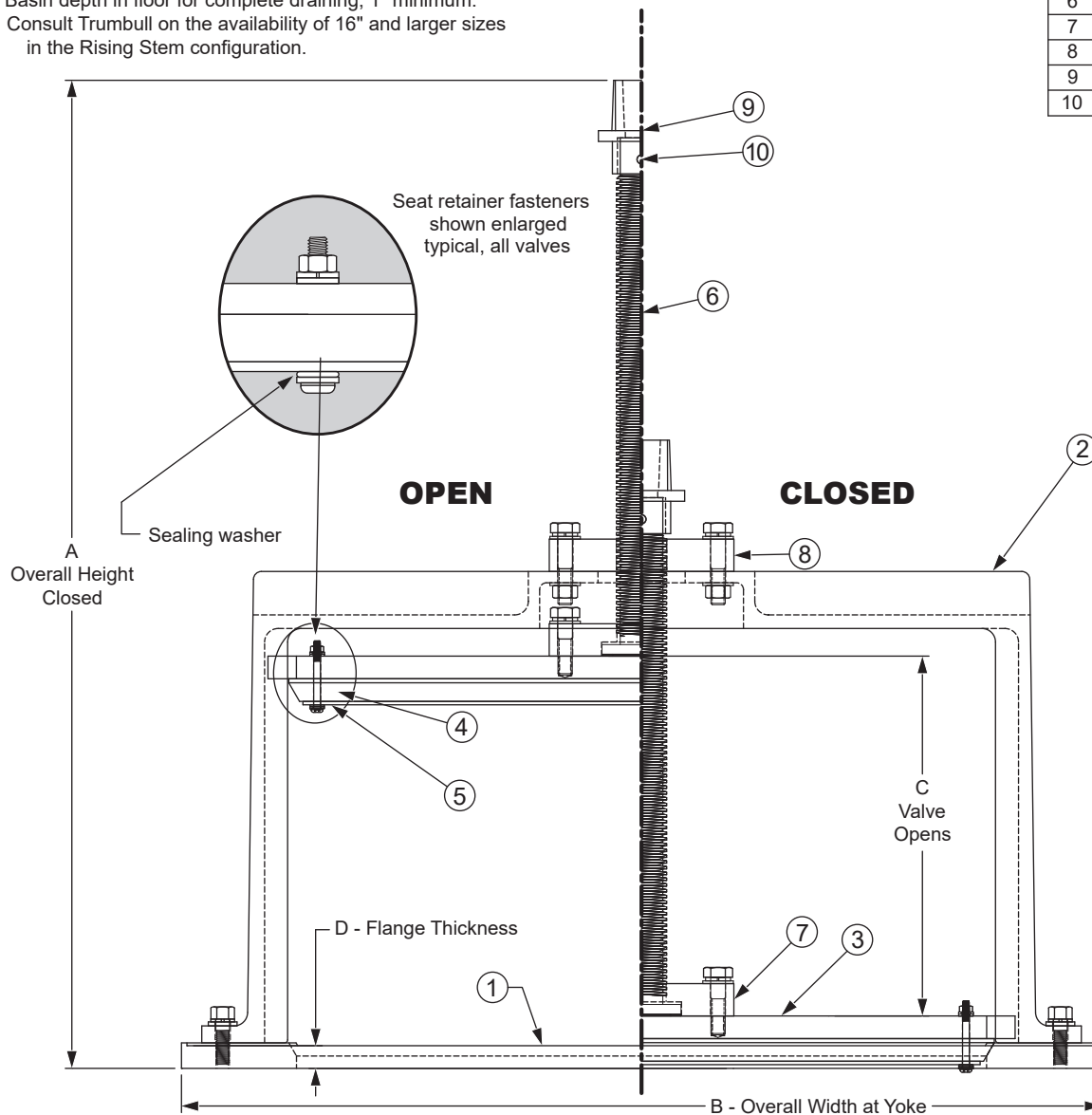
All Fasteners are Stainless Steel, Type 316, ASTM A193, Grade B

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

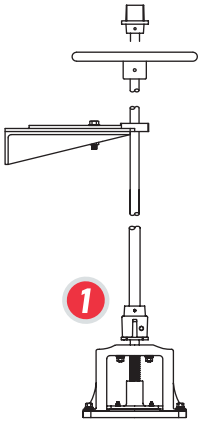
Revision:
NJC
03/19/20

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

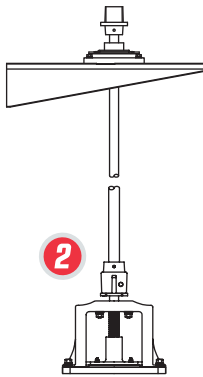
Optional Mud Valve Installations

Standard options shown on right

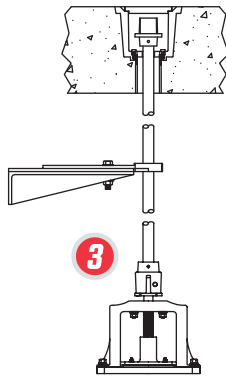
Mud Valve: Cast iron or cast 316 stainless steel
Stem Guide: Ductile iron or cast 316 stainless steel
Floorstand: Ductile iron (30" or 36") or cast 316 SS (36")
Pedestal: Ductile iron or cast 316 SS
Extension Stem: Carbon steel or stainless steel
Wall Bracket: Ductile iron or cast 316 stainless steel
Floor Box: Sealed or unsealed, cast iron or cast SS



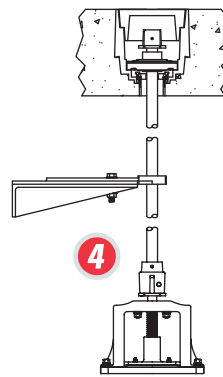
1
Stem Guide
with Handwheel or
2" square nut



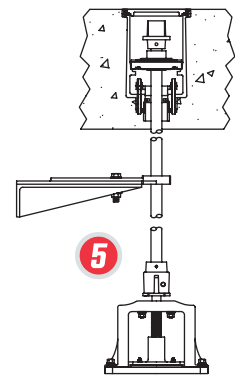
2
Wall Bracket with
Position Indicator



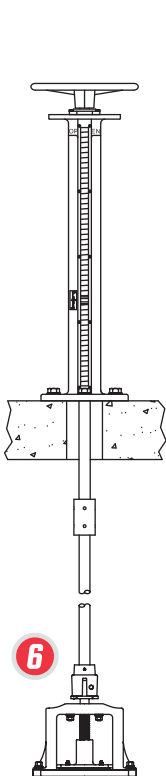
3
Floor Box w/out
Position Indicator



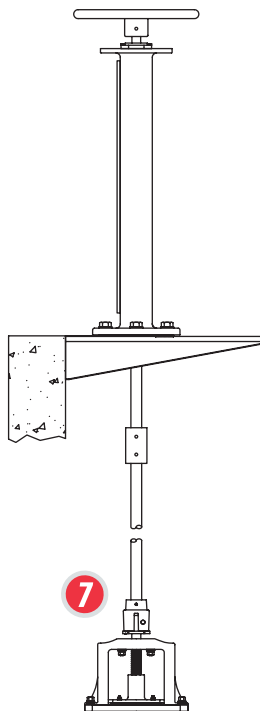
4
Floor Box with
Position Indicator



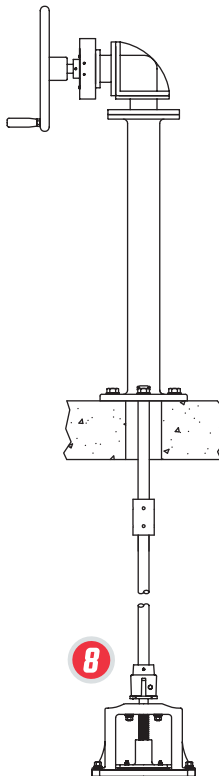
5
Cast Sealed
Floor Box with
Position Indicator



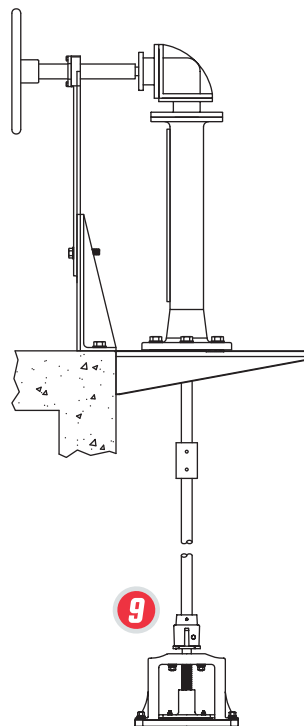
6
Indicating
Floorstand



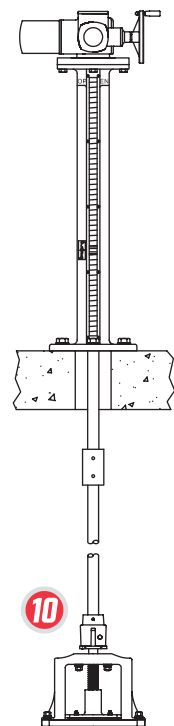
7
Indicating Floorstand
with Wall Bracket*



8
Pedestal with Miter Gear,
Crank Handwheel &
Position Indicator
(57T or 275T only)



9
Indicating Floorstand with
Wall Bracket, Miter Gear &
Horizontal Extension Stem*



10
Indicating Floorstand
with Actuator

* Indicating slot faces operator and is not visible in installations 7 and 9.

Stainless Mud Valve Design & Test Results

Independent Testing of Stainless Mud Valves

STORK®
Materials Technology

Stork Herron Testing Laboratories

8/13/2008

F Craig Newmeyer
Trumbull Industries
1040 N Meridian Rd
PO Box 1556
Youngstown, OH 44501-1556

Date Received: 1/30/2008

Test Report No.: TRU040-08-01-53169-1

P.O. No.: EXPIRED

Material Testing and Non-Destructive Testing

5405 E. Schaaf Road
Cleveland, OH 44131
USA

Telephone : (216) 524-1450
Fax : (216) 524-1459
Website : www.storkherron.com

TEST REPORT

SET-UP

Three (3) T316 Stainless Steel 6" Mud Valves were assembled and tested as shown in Figure 1.

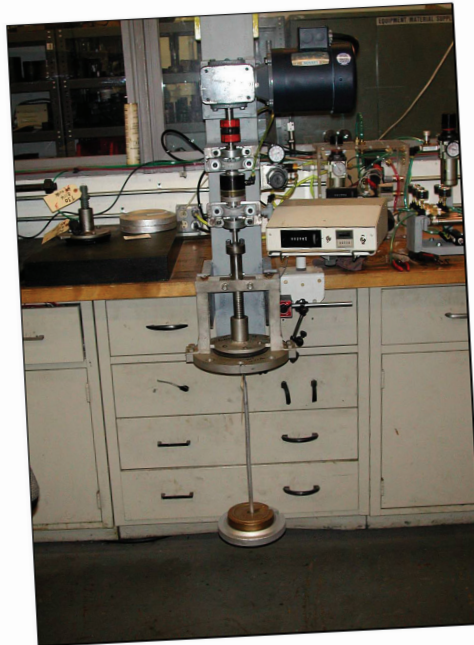


FIGURE 1

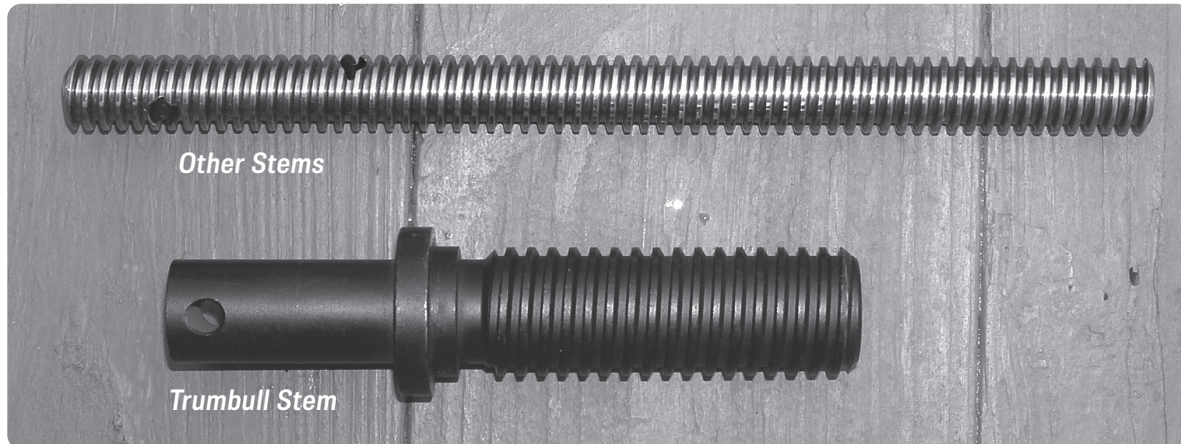
The above services were performed in accordance with Herron Testing Laboratories' Quality Assurance Program Edition 1, Revision 2 dated 1/30/07. Information and statements in this report are derived from material, information and/or specifications furnished by the client and exclude any expressed or implied warranties as to the fitness of the material tested or analyzed for any particular purpose or use. This report is the confidential property of our client and may not be used for advertising purposes. This report shall not be reproduced except in full, without written approval of this laboratory. The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under Federal Statutes. Sample remnants are held for a minimum of 30 days following issuance of test results, at which point they will be discarded unless notified in writing by the client. This material was not contaminated by mercury or chlorinated solvents during the handling and processing at Stork-Herron Testing Laboratories facilities.

Michael R. Gaydos

Michael R. Gaydos
General Manager, COO

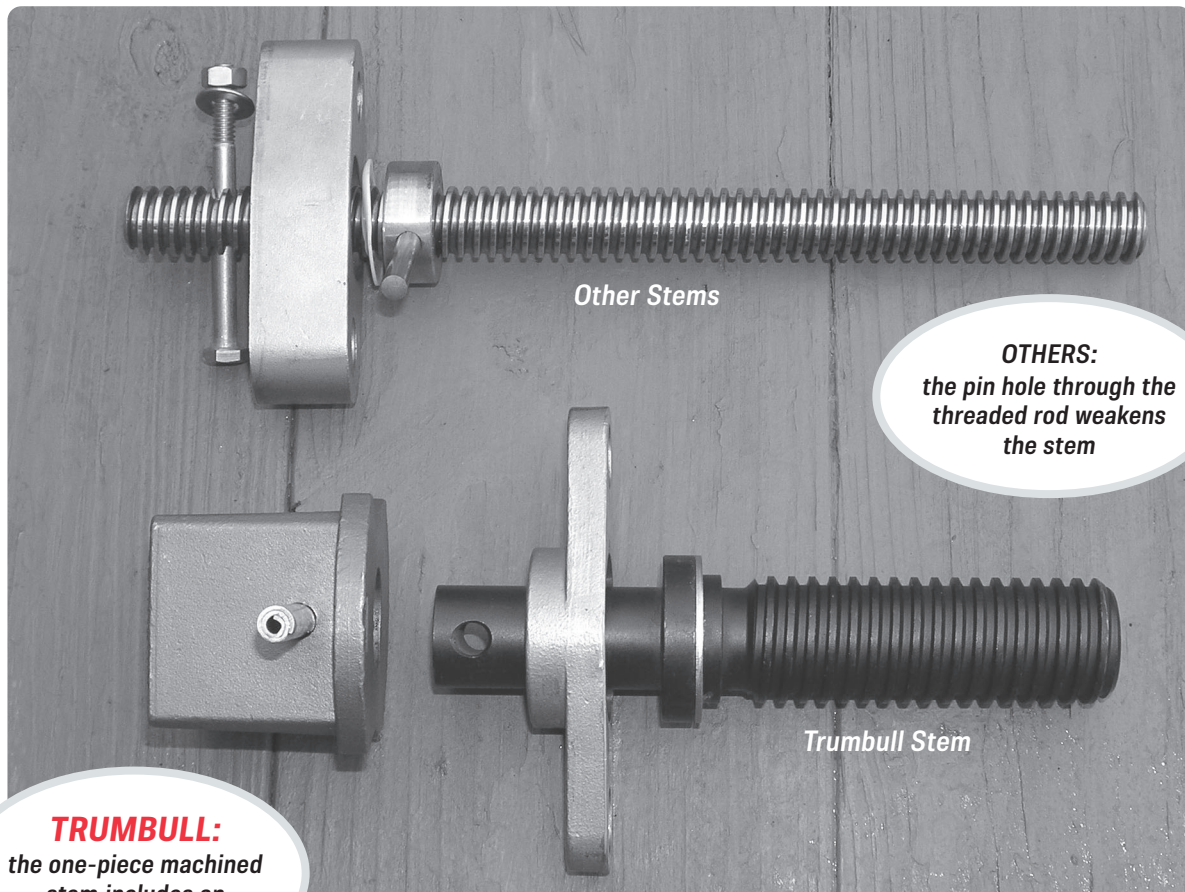
TEST REPORT
& VIDEO OF
INDEPENDENT TESTING
AVAILABLE UPON
REQUEST

Stem Diameters



Stem Designs

Trumbull Stem is Machined One-Piece, vs. All-Thread Rod with a Pinned Collar



RESULTS OF TORQUE TESTING BY INDEPENDENT TEST LAB:

Stem with drilled holes = **165 ft-lb** (fastener and stem failed)

Trumbull one-piece stem = **625 ft-lb** (connecting pin sheared, stem intact)

TRUMBULL

Trumbull Manufacturing

3850 Hendricks Road, Youngstown, Ohio 44515

Phone: 330.270.7888 | Toll Free: 877.504.1507 | Fax: 330.392.0756

www.trumbull-mfg.com

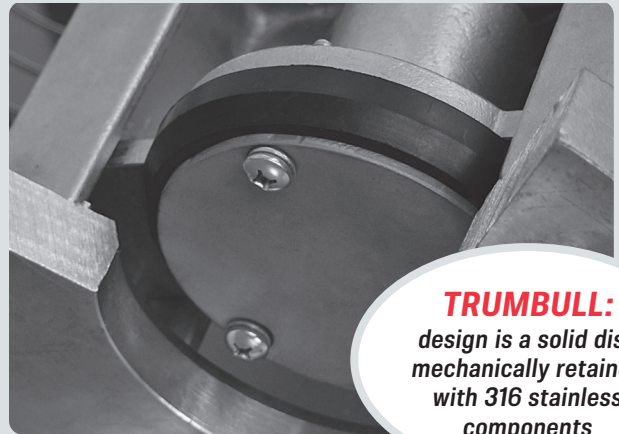
Seat Design

Stainless Mud Valves

OTHERS:
May split, separate
from gate, or stick to
base flange



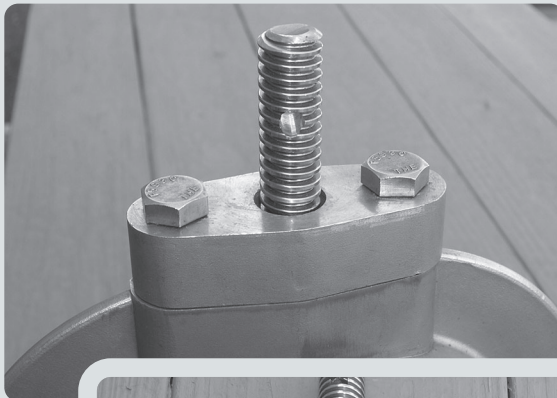
TRUMBULL:
design is a solid disk
mechanically retained
with 316 stainless
components



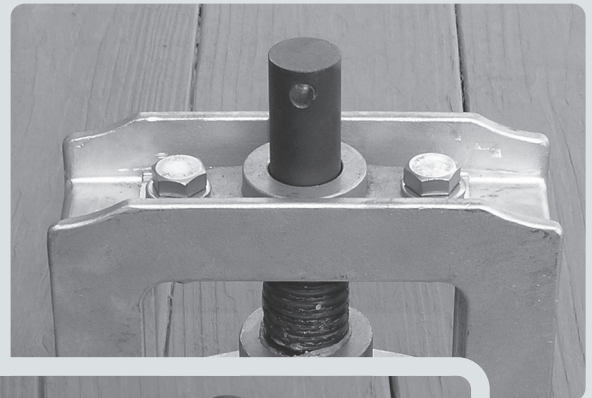
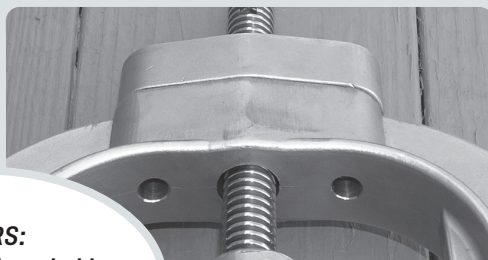
Trumbull's standard seating material is SBR rubber;
optional seat materials available, including BUNA, EPDM & Viton.

Yoke Bolt Design

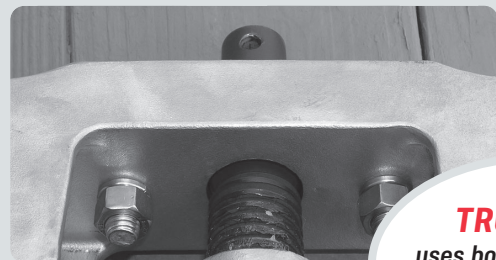
Stainless Mud Valves



OTHERS:
stainless bolts threaded into
tapped holes may gall and
require a bolt extractor



TRUMBULL:
uses bolted attachment
for easy removal,
if necessary





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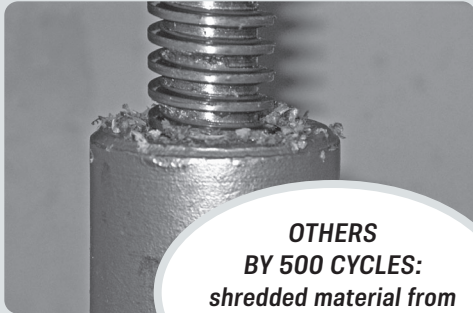
Toll Free:
877.504.1507

Fax:
330.392.0756

www.trumbull-mfg.com

Cycle Tests

Independent Testing of Stainless Mud Valves



OTHERS
BY 500 CYCLES:
shredded material from
the internal sleeve
was ejected

of Cycles Results of Other Models

| | |
|-------|--|
| 500 | Nylon sleeve damage |
| 700 | Nylon sleeve completely shredded |
| 1,000 | Build-up of fine metal shavings |
| 1,308 | Required increased torque to continue rotation |
| 5,000 | Deformation of threads |

OTHERS
BY 7,500 CYCLES:
stem threads that engaged the
internal threads during cycling showed
deformation when compared to
non-engaged threads



Non-Engaged



Engaged

**TESTING OF
TRUMBULL'S MUD VALVE:**
Stem has anti-galling coating
with anti-seize lubricant

AFTER 7,500 CYCLES:

- no damage
- slight wear

AFTER 15,000 CYCLES:

- no damage
- slight wear



TRUMBULL:
BY 500 CYCLES:
little wear and no damage to
stem or internal thread



TRUMBULL:
BY 7,500 CYCLES:
stem threads that engaged
the internal threads during cycling
showed some wear and no
damage when compared to
non-engaged threads

TRUMBULL

Trumbull Manufacturing

3850 Hendricks Road, Youngstown, Ohio 44515

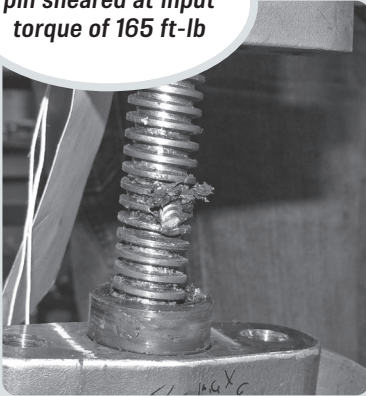
Phone: 330.270.7888 | Toll Free: 877.504.1507 | Fax: 330.392.0756

www.trumbull-mfg.com

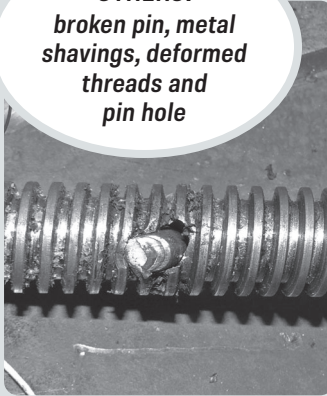
Torque Tests

Independent Testing of Stainless Mud Valves

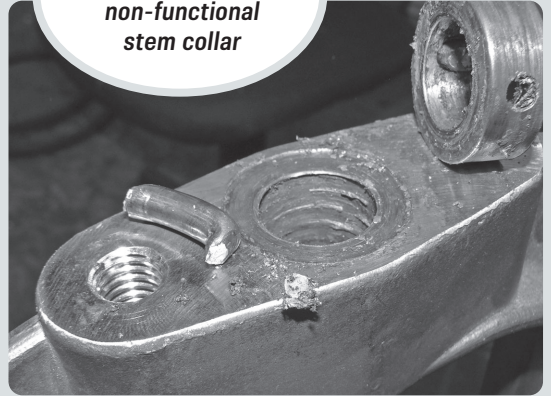
OTHERS:
pin sheared at input
torque of 165 ft-lb



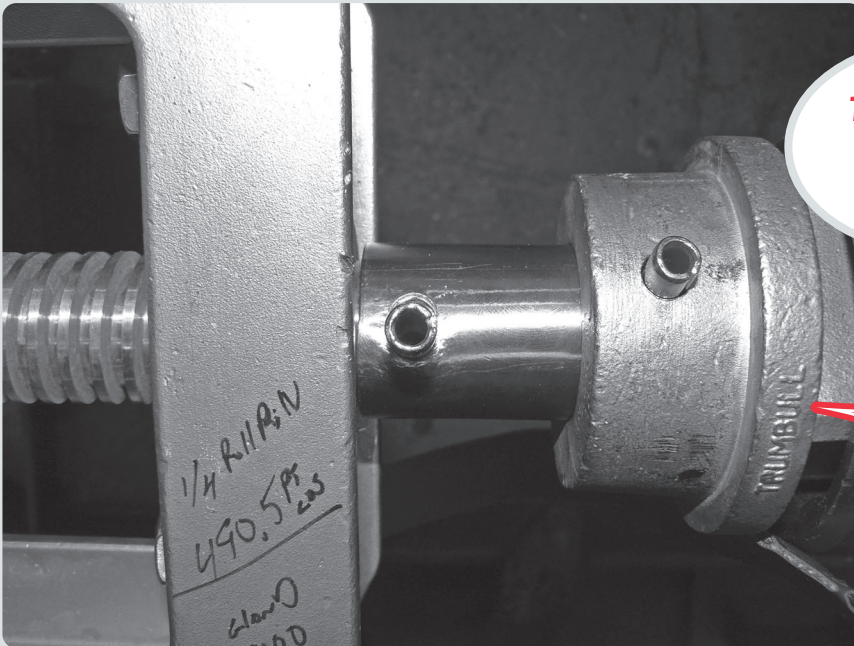
OTHERS:
broken pin, metal
shavings, deformed
threads and
pin hole



OTHERS:
broken pin,
non-functional
stem collar



TRUMBULL:
pin sheared at
input torque of
625 ft-lb



**TEST REPORT
& VIDEO OF
INDEPENDENT TESTING
AVAILABLE UPON
REQUEST**

Thank you for your interest in
Trumbull Manufacturing Mud Valves!

Specialty Products for the Waterworks and Valve Industries

Our product categories include waterworks tools, valve position indicators, polywrap, joint restraints products, meter pit lids and couplings, valve and curb box accessories, as well as valves and accessories for water/wastewater treatment plants.

We specialize in unique and customized accessories for the valve market. We have pioneered cast stainless valve accessories such as stainless chainwheels, floorstands, wall brackets and stem guides. Other innovations include our valve position indicators and cast stainless mud valves that have been thoughtfully designed to meet the highest expectations of Engineers and Operators. Trumbull Manufacturing is a leader in providing thermoplastic and composite lids for water meter changeout programs, as well as composite manhole frames and covers.

We stand behind our product with experienced Engineering, Quality Control and Field Service personnel. Our products are designed for long life, and are rigorously tested, in-house and at independent labs. Our inside Sales staff is passionate about customer satisfaction, contact them today.



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