

TRUMBULL

TRUMBULL INDUSTRIES, INC.

Phone: 330.799.3333

1040 N. Meridian Rd.

Toll Free: 800.677.1799

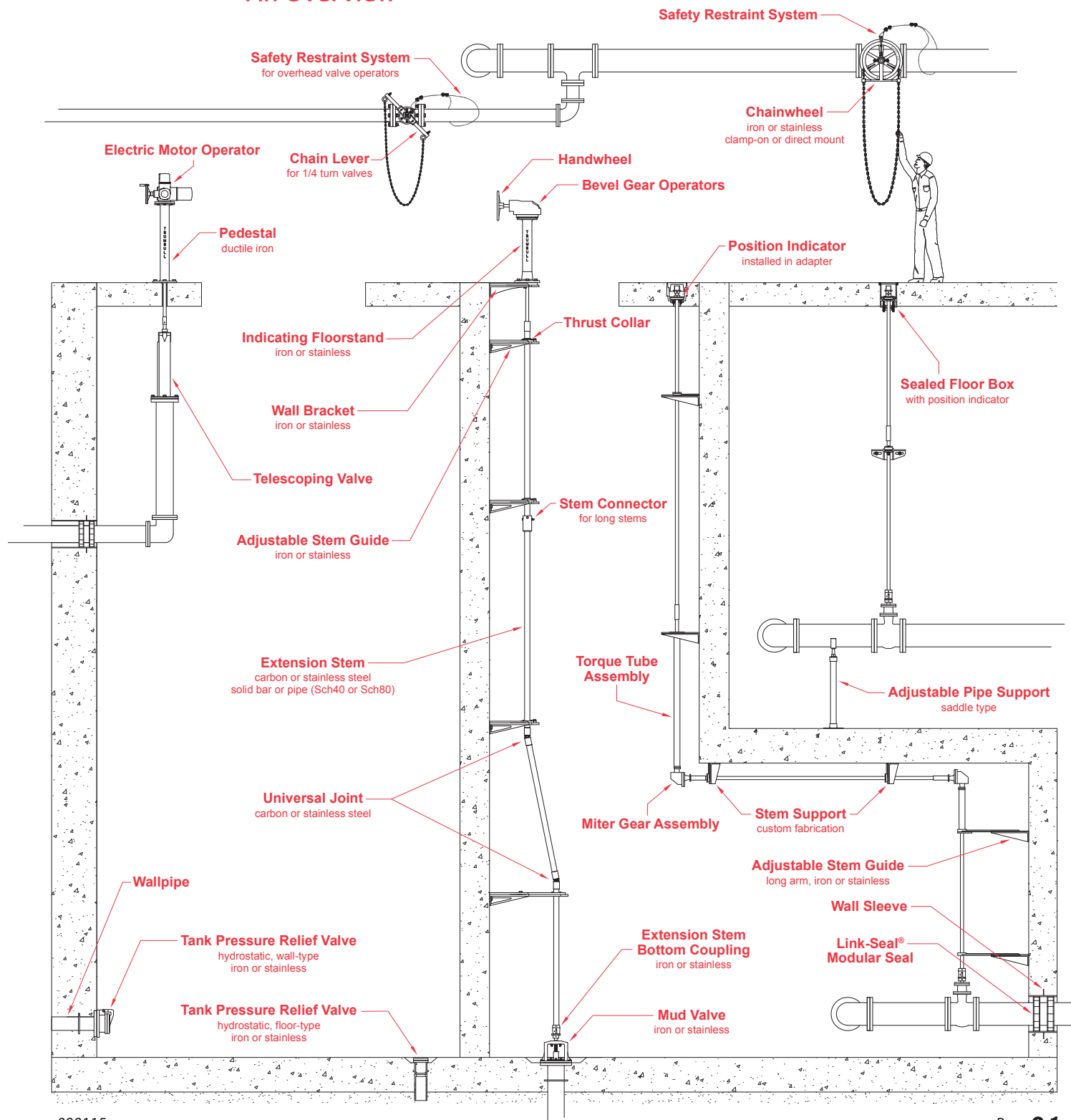
P.O. Box 1556

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Youngstown, Ohio 44501

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Trumbull Treatment Plant Products An Overview



090115

Page **G-1**

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Valve Extension Stems (Round)

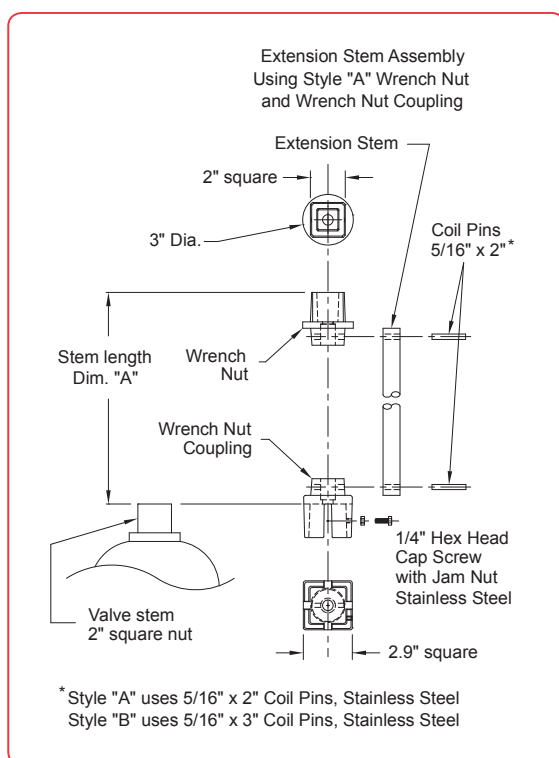
Solid Bar or Pipe – Carbon or Stainless Steel

TRUMBULL ROUND VALVE EXTENSION STEMS are used to raise the elevation of both buried and “in-plant” valves having a 2” square operating nut. We can also adapt to valves without 2” nut.

The extension stem is made up of an extension rod (or pipe), a 2” square top wrench nut (or handwheel), and a bottom wrench nut coupling. The wrench nut coupling fits over the 2” square nut of the valve stem being extended and is held to the nut by two cap screws with jam nuts threaded in the bottom coupling.

The top nut (or handwheel) and bottom coupling are pinned to the extension rod (or pipe) which is drilled to receive stainless steel coil pins. The top nuts and bottom couplings are available in either ductile iron, grade 65-45-12, or stainless steel, Type 316. The pinned connections permit the removal of the castings so the rod can slide through Trumbull Floor Boxes and Stem Guides. Extensions can easily be shortened by cutting the stem & re-drilling for the pin.

Extension Stems are normally furnished complete with top nut (or handwheel), rod, bottom coupling, two cap screws with jam nuts and pins. Top nuts and bottom couplings are also available for separate sale (see page G-4). Universal joints, thrust collars & miter gears are also available. See page G-6 for illustration of custom installations.



See separate literature on Trumbull Floorstands, Floor Boxes, Stem Guides, Mud Valves and Valve Position Indicators.

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Valve Extension Stems (Square)

Telescopic & Non-Telescopic Types

Traditionally, extension stems have been made from round stock, either pipe or solid round bar. Now, Trumbull's Square Extension Stems can simplify the installation when installers cut extension stems in the field for buried service!

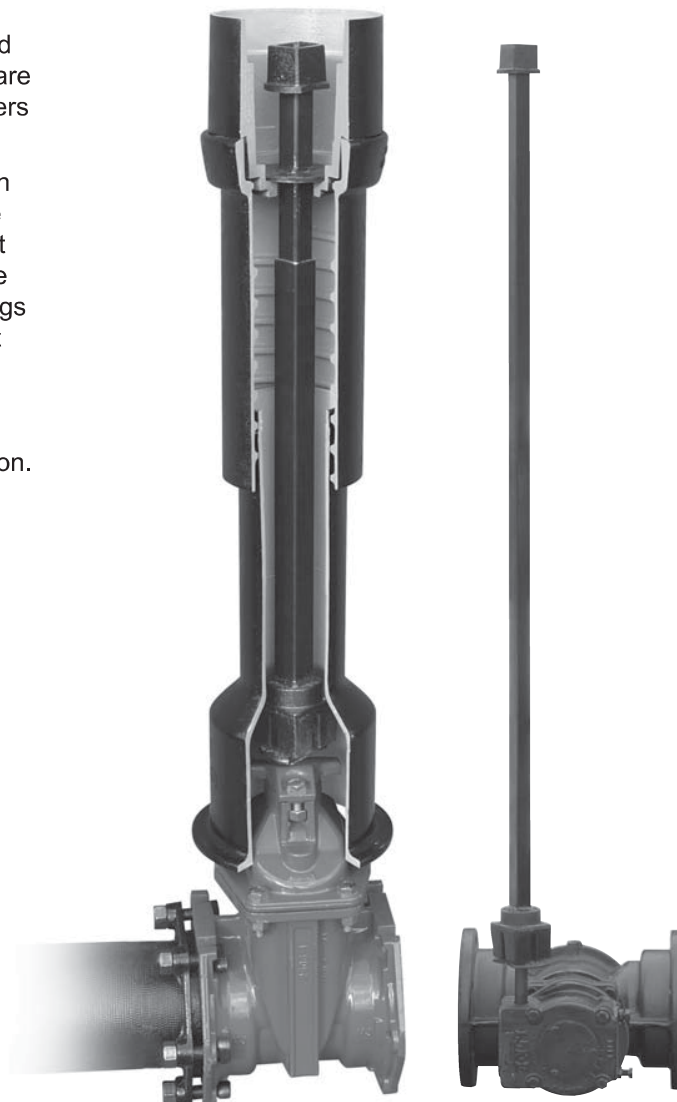
The top and bottom couplings used with Square Extension Stems have an internal square cavity for placement of the square stems. The flat sides inside the cavity bear against the flat sides of the stem, reducing the dependence on the drive pin used to connect both the top and bottom couplings of round extension stems. This enables the installer to cut Square Extension Stems in the field and attach the top coupling with two cap screws, as opposed to drilling for a drive pin. Because of its location, the bottom coupling should be welded or pinned, to provide a secure connection.

When using Trumbull's Valve Position Indicator for buried service, Square Extension Stems are recommended. They eliminate the need to drill holes and pin the stem to attach the Position Indicator and the 2" nut in the field (see pages F-1 and F-2).

Telescopic Extension Stems can also be furnished with Position Indicators for buried service (Patent Pending), as illustrated on pages F-3 and F-4. The Telescopic Extension Stems use a 1-1/4" square tubular upper section which slides inside a 1-1/2" square tubular bottom section. This style has an adjustment range, which saves the installer from field cutting the stem to the exact length required. The adjustment range also provides for ground movement caused by freezing or thawing. The non-telescopic version uses 1-1/4" square stock, either solid or tubular, (as shown on page F-1).

Trumbull can provide Square Extension Stems complete with the required length of square stock, top nut with set screw and welded bottom coupling with two stainless cap screws and jam nuts. Or, the components can be purchased separately for non-telescopic stems (page G-4).

The top nuts and bottom couplings are ductile iron, grade 65-45-12, or Type 316 stainless steel. Telescopic Extension Stems are furnished only as complete units.



**TELESCOPIC
EXTENSION STEM**
*with gate valve for buried service
(cut-away view shown)*

*See page F-3 for ordering information
and page F-4 for adjustment ranges*

**SQUARE
EXTENSION STEM**
*with top nut
and bottom coupling*

See separate literature on Trumbull Floorstands,
Floor Boxes, Stem Guides, Mud Valves and Valve Position Indicators.

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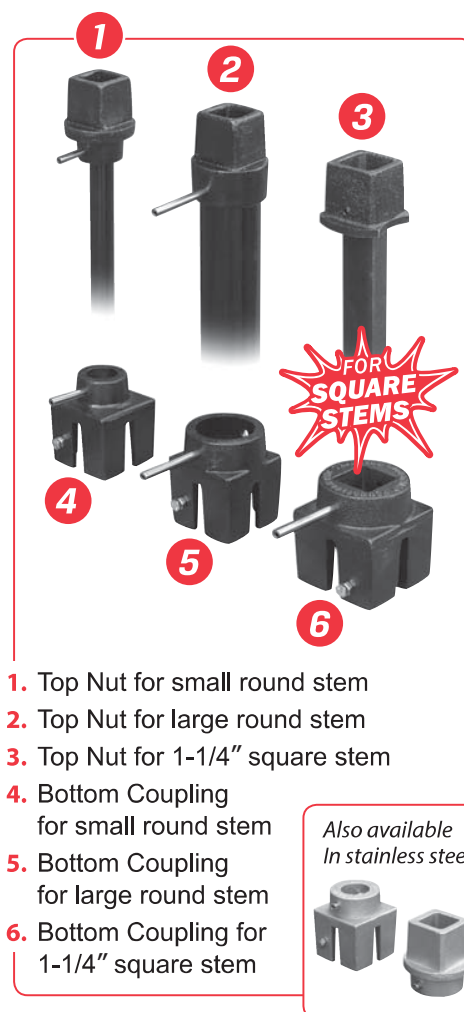
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Top Nuts & Bottom Couplings

For Round & Non-Telescopic Square Stems – Ductile & Stainless

	Solid Rod	Max Torq* in ft-lb	Steel Pipe	Max Torq* in ft-lb	Bore Diameter	Top Nut	Bottom Coupling
						Trumbull Item No.	Trumbull Item No.
Ductile Iron	7/8"	340	1/2"	325	0.905"	367-4953	367-4963
	1"	390	3/4"	410	1.155"	367-4954	367-4964
	1-1/4"	480	---	---	1.265"	367-4905	367-4915
	---	---	1"	510	1.330"	367-4901	367-4910
	1-3/8"	530	---	---	1.390"	367-4955	367-4965
	1-1/2"	580	1-1/4"	640	1.675"	367-4956	367-4966
	1-3/4"	680	1-1/2"	740	1.929"	367-4957	367-4967
	2"	775	---	---	2.047"	367-4958	367-4968
Stainless	---	---	2"	920	**	367-4959	367-4969
	1-1/4" square stems		---	---	---	367-4930	367-4938
	1-1/4"	480	---	---	1.265"	367-4935	367-4945
	---	---	1"	510	1.330"	367-4933	367-4943
	1-1/2"	580	1-1/4"	640	1.675"	367-4934	367-4944
	---	---	2"	920	**	367-4936	367-4947
	1-1/4" square stems		---	---	---	367-4929	367-4937



1. Top Nut for small round stem
2. Top Nut for large round stem
3. Top Nut for 1-1/4" square stem
4. Bottom Coupling for small round stem
5. Bottom Coupling for large round stem
6. Bottom Coupling for 1-1/4" square stem

Also available
in stainless steel



* Maximum torque is based on the minimum load for 5/16" coil pin. For higher torque capacity or for square stems, consult Trumbull.

** Nuts and Couplings have 2.030" hub diameter; fit inside 2" pipe.

*** Max torque is 250 ft-lb for 1-1/4" square tubing; and 460 ft-lb for solid bar.



Cast Handwheels

Handwheels

Trumbull Item No.	Material	O.D.	Description	Weight
367-4961	Cast Iron	14"	Bored to fit 1.188" rod or larger	11.60 lbs.
367-4962	Cast Iron	14"	Socket to fit 2" square AWWA nut	15.15 lbs.
367-2043	316 SS	14"	1" Rod made of cast 316 SS	11.20 lbs.
367-2044	316 SS	14"	1" Pipe made of cast 316 SS	11.20 lbs.
367-2046	316 SS	14"	1-1/4" Rod made of cast 316 SS	11.20 lbs.
367-2047	316 SS	14"	1-1/4" Pipe made of cast 316 SS	11.20 lbs.

Tubular Handwheels

Trumbull Item No.	Material	Dia.	Bore	Weight
367-2055	CS	8"	15/16"	3.40 lbs.
367-2054	CS	12"	15/16"	4.35 lbs.
367-2056	CS	18"	15/16"	5.45 lbs.
367-2057	CS	24"	15/16"	5.70 lbs.
367-2058	CS	30"	15/16"	10.30 lbs.

Other sizes and materials of handwheels are available. Contact Trumbull for more information.

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Ordering Information for Trumbull Valve Extension Stems

Round

Complete Extension Stems

1. Quantity
2. Overall length — See “A” dimension of drawing on page G-2.
3. Order using the following chart:

Material	Pipe or Solid Bar	Type	Operator	Coating
Carbon Steel	Pipe	Sch. 40	2" DI Square Nut, or 14" CI Handwheel*	Black Enamel**
		Sch. 80		
	Solid Bar	Hot Rolled		
		Cold Rolled		
Stainless Steel	Pipe (Sch. 40)	304	2" SS Square Nut, or 14" Handwheel, CI or SS	n/a
		316		
	Solid Bar	304		
		316		

4. Any special requirements, such as Handwheels, Valve Box Centering Rings, Universal Joints, Valve Position Indicators or Miter Gears.

* Other handwheel diameters available (see page G-4).

** Primer coatings also available. Tnemec 37H-77 & N140-1211 normally stocked.
Galvanizing & additional coatings available.

Square

Complete Extension Stems

1. Quantity required
2. Overall length
3. Material type - carbon or stainless steel, solid bar or tubing

1-1/4"
SQUARE
ONLY

Extension Stem Components Only

1. Specify quantity of top nuts, bottom couplings, handwheels and stem couplings. Top nut and handwheel furnished with stainless coil pin. Bottom coupling furnished with stainless coil pin and cap screw with jam nut.
2. For ductile iron top nut and bottom coupling select from chart on page G-4, based on type and diameter of extension being used. Stainless steel top nut and bottom coupling are normally furnished to fit 1-1/4" solid rod or 1" Sch 40 pipe. Specify if larger bore sizes are required, up to a maximum of 2".

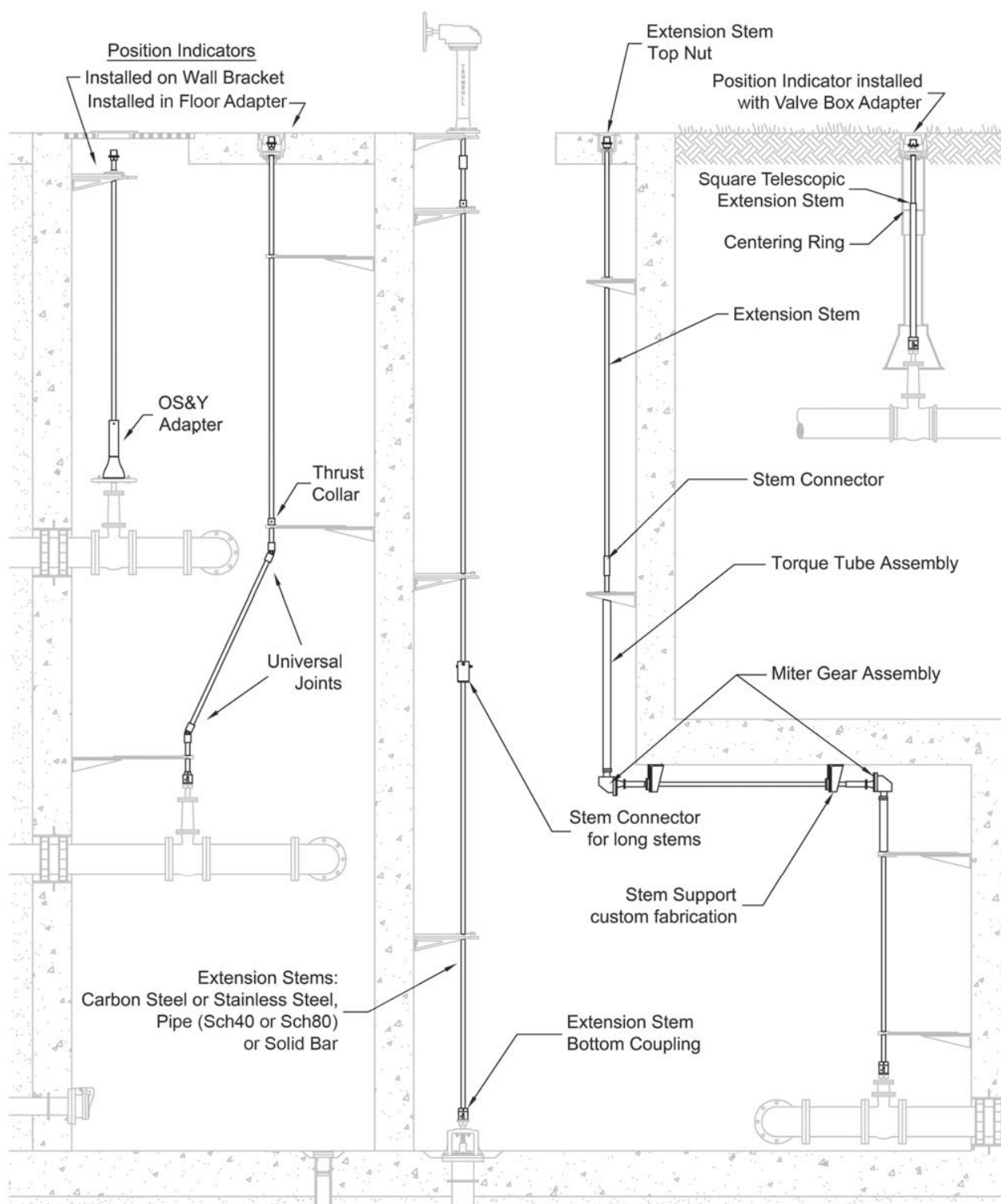
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Custom Extension Stem Applications



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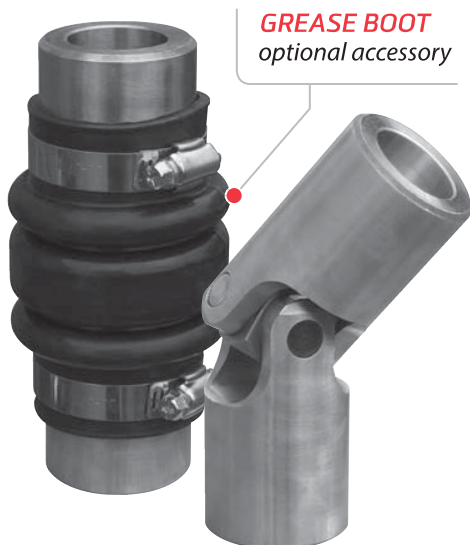
Universal Joints

For Alignment of Valve Extension Stems

TRUMBULL HEAVY-DUTY UNIVERSAL JOINTS are the answer to many common misalignment problems often encountered in valve applications.

Access to valves in treatment plants is often blocked by piping, equipment, or structural obstructions, requiring operation from a location that is not in line with the valve stem. The use of Universal Joints can help solve this situation, as shown by the typical application figure at right.

An optional resilient boot is recommended to seal and protect the Universal Joint, while still permitting full motion. The boot is packed with water-resistant grease on-site, keeping out contaminants and maximizing service life. The boot is furnished with stainless steel retainer clamps. Grease is supplied by customer.



Universal Joints*

Material	Trumbull Item No.	Weight
Carbon Steel	367-8352**	3.65 lbs.
T304 SS	367-8355**	3.70 lbs.

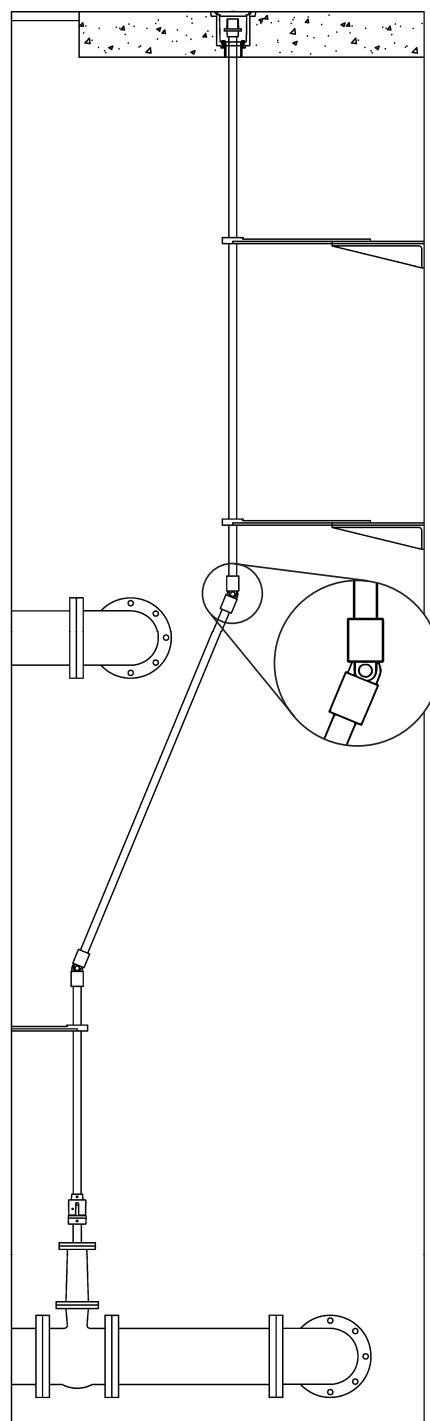
Boot Assembly

Includes two clamps

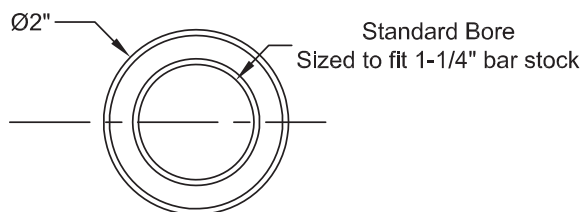
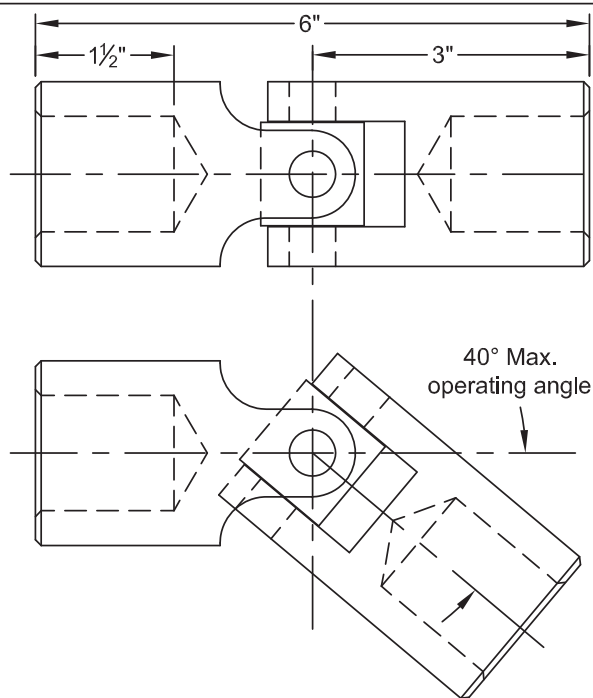
Trumbull Item No.	Weight
367-8360	0.20 lbs.

* Recommended maximum torque is 300 ft-lb. For applications with higher torque requirements, consult Trumbull. Maximum operating angle is 40°.

** Item numbers shown are bored to accept 1-1/4" rod. Other bore sizes are available upon request.



Typical installation



Notes:

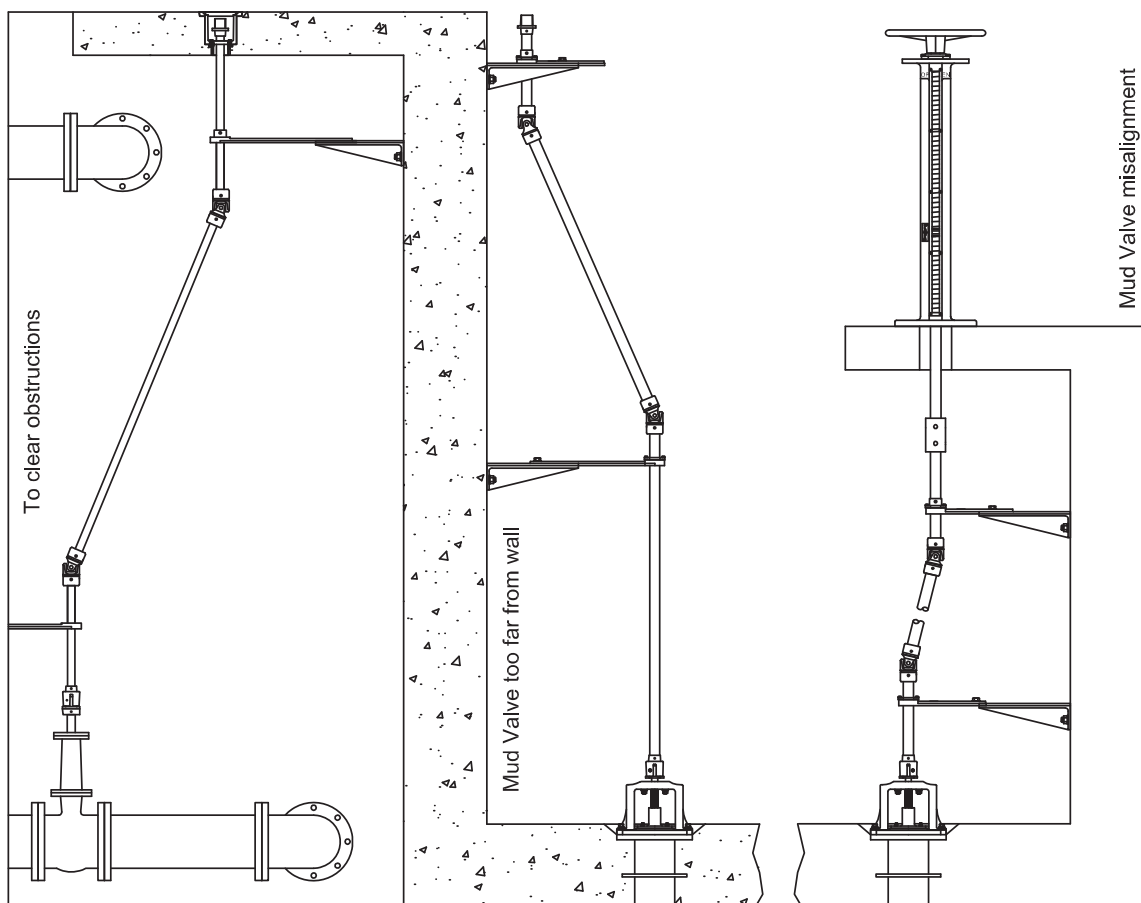
- 1.) Standard U-joint bore is sized to fit 1-1/4" bar stock.
- 2.) A resilient Boot is recommended to protect the working Knuckle of the joint, and can be packed with a water-proof lubricating grease for prolonged operating life. Grease by customer. The optional Boot includes a pair of stainless steel hose-type band clamps.
- 3.) The U-Joint is intended for manual operation. Contact Trumbull for use with electric actuators.

Material:

Carbon Steel, C1045 (Item #: 367-8352)
Stainless Steel, 304 (Item #: 367-8355)

Load rating:

U-Joint is capable of withstanding torsional loads up to 300 ft-lb. Consult engineering if a greater torsional load is required.



Drawn by: BJE	Drawing revision:	
Date	Rev.	Date
5/21/14	---	---

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Universal Joints
Carbon Steel & Stainless Steel

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Miter Gears

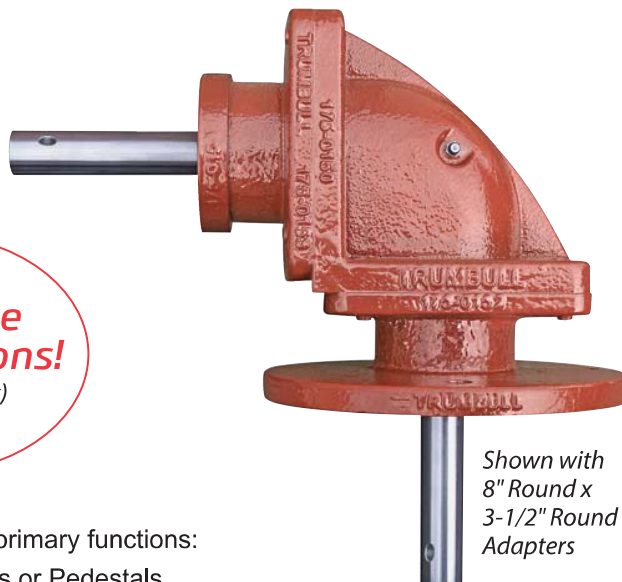
Heavy-Duty, Enclosed Gear Assemblies

3 Standard End Adapters

- 8" Round End Adapter
- 4-1/4" Square End Adapter
- 3-1/2" Round End Adapter

6 Possible Combinations!

(Shown below)



Shown with
8" Round x
3-1/2" Round
Adapters

TRUMBULL MITER GEARS are designed to fulfill the following primary functions:

- To be used as an add-on component to Trumbull Floorstands or Pedestals.
- To be mounted directly to valves where a 90° change in the input shaft direction is required.
- For use as a stand-alone component in a valve operating assembly with rotating elements, such as extension stems, where the installed conditions require one or more 90° changes of direction.

Housings are cast ductile iron 65-45-12 with a Tnemec N140-1211 two-part epoxy, NSF-61 certified exterior coating. The gears are case hardened steel; the gear shafts and fasteners are 316 stainless steel.

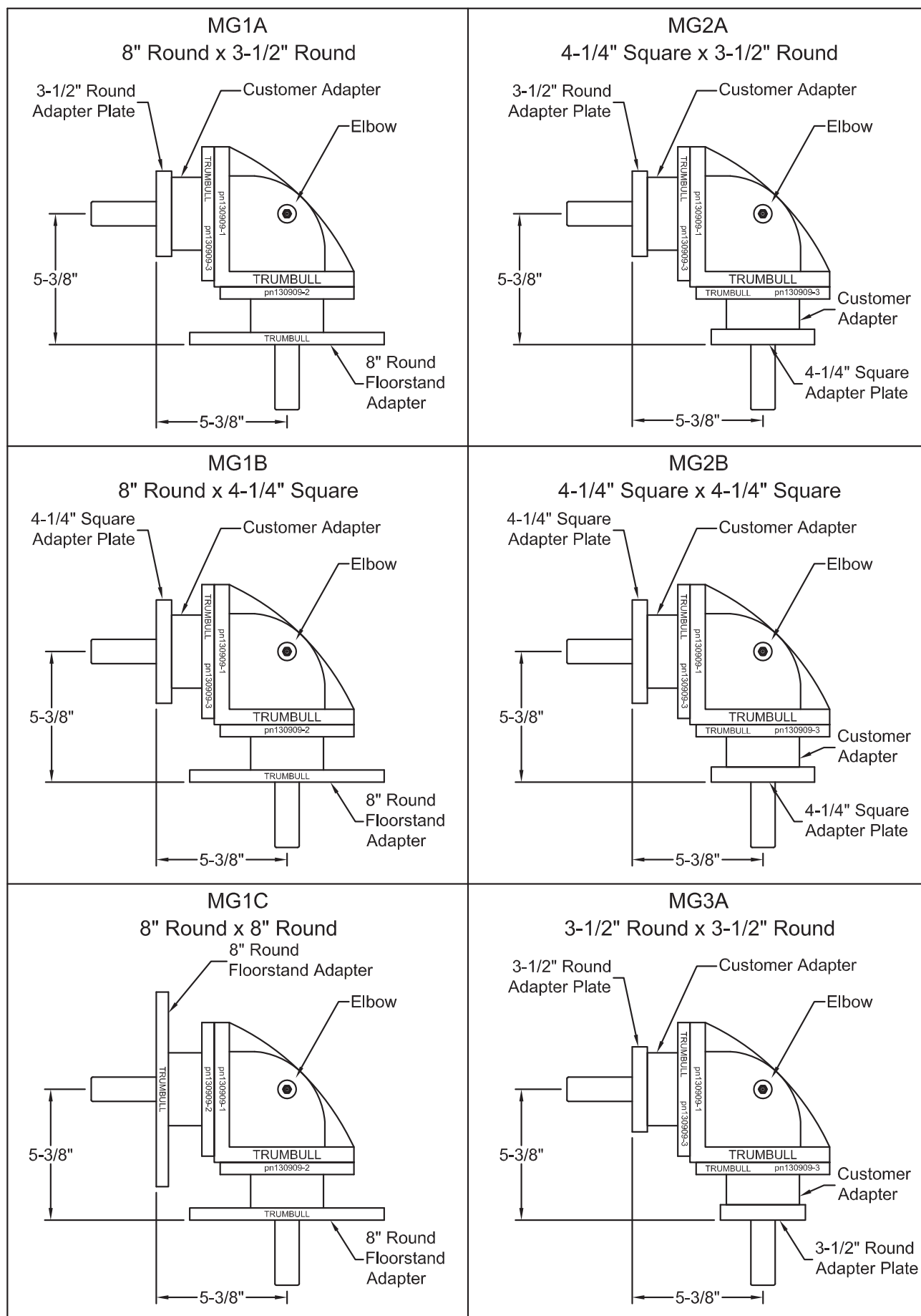
Trumbull Miter Gear Assemblies are provided standard with a recessed grease fitting for easy maintenance and Buna-N O-ring seals on each end adapter.

Trumbull Miter Gears have a recommended maximum torque of 300 ft-lb (406 N-m). For applications with higher torque requirements, please consult Trumbull.

Gear Ratio = 1:1, Input/Output Shaft Diameter = 0.984".

See reverse side for drawings of model end options.

End Configurations	Model#	Weight	Typical Usage for Each End Adapter
8" Round x 3-1/2" Round	MG1A	39.00 lbs.	8" Round - mates to our Floorstands 3-1/2" Round - for use with handwheel or nut operators
8" Round x 4-1/4" Square	MG1B	42.00 lbs.	8" Round - mates to our Floorstands 4-1/4" Square - adapts for guide, bracket & motor mountings
8" Round x 8" Round	MG1C	46.00 lbs.	Both 8" Round ends mate to our Floorstands & other fabrications such as torque tubes
4-1/4" Square x 3-1/2" Round	MG2A	37.00 lbs.	4-1/4" Square - adapts for guide, bracket & motor mountings 3-1/2" Round - for use with handwheel or nut operators
4-1/4" Square x 4-1/4" Square	MG2B	35.00 lbs.	Both 4-1/4" Square ends easily adapt for guide, bracket & motor mountings
3-1/2" Round x 3-1/2" Round	MG3A	32.00 lbs.	Both 3-1/2" Round ends for use with either extension stem assemblies, handwheel, or nut operators



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Cast Iron Floor Box

TRUMBULL FLOOR BOXES are designed for installation in concrete floors or slabs to provide support for extension stems for non-rising type valves, and to provide a cover over the operating nut on the extension stem.

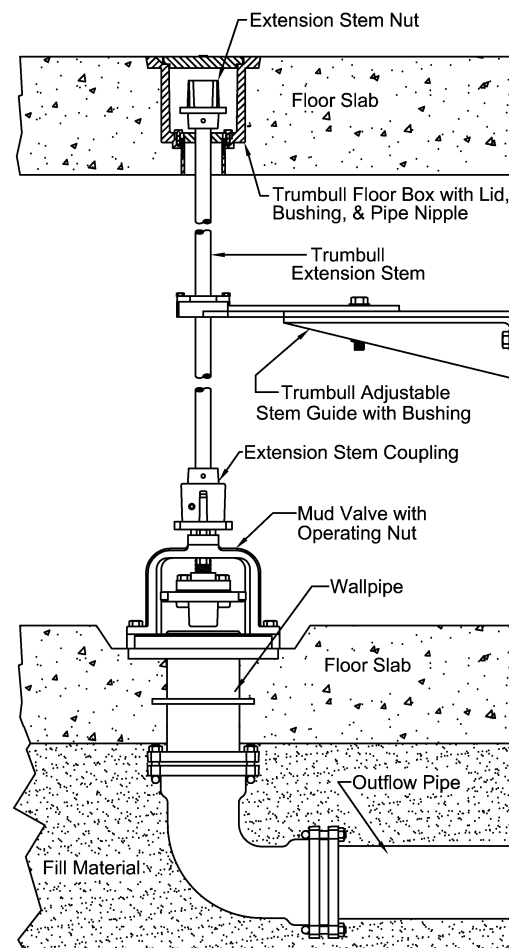
Trumbull cast iron Floor Boxes are designed for varying slab thicknesses. Overall length is 6", but the underside is tapped to accept 2-1/2" NPT steel pipe nipples for floors thicker than 6". When it's necessary to convert a Floor Box to thicker floors, use a 2-1/2" pipe nipple, 1/2" longer than the increase required, as the threads on the underside of the Floor Box are 1/2" deep. For example, for an 8" floor thickness use a 2-1/2" x 2-1/2" nipple. For a 10" floor, use a 2-1/2" x 4-1/2" nipple.

When a stem is required that is larger than the 2-1/2" pipe I.D., a 3" pipe nipple will be welded to the bottom of the Floor Box.

All Trumbull Floor Boxes should be ordered with a removable brass bushing for which the maximum drilling is normally 2-3/8" diameter. For larger diameters, please contact Trumbull. However, when used with floors thicker than 6", clear opening is limited to the I.D. of the pipe nipple. See reverse side for drawing.



Trumbull Item No.	Weight
367-4620	25.65 lbs.



Typical Floor Box installation

Bushings are also available in:

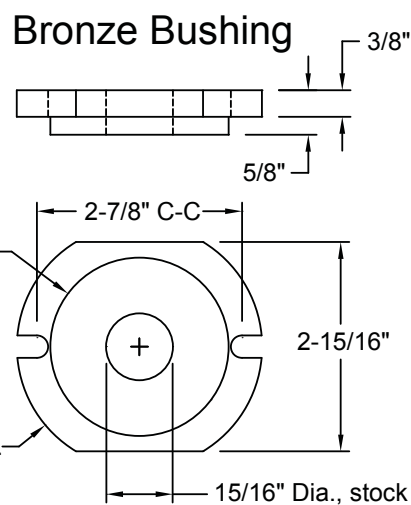
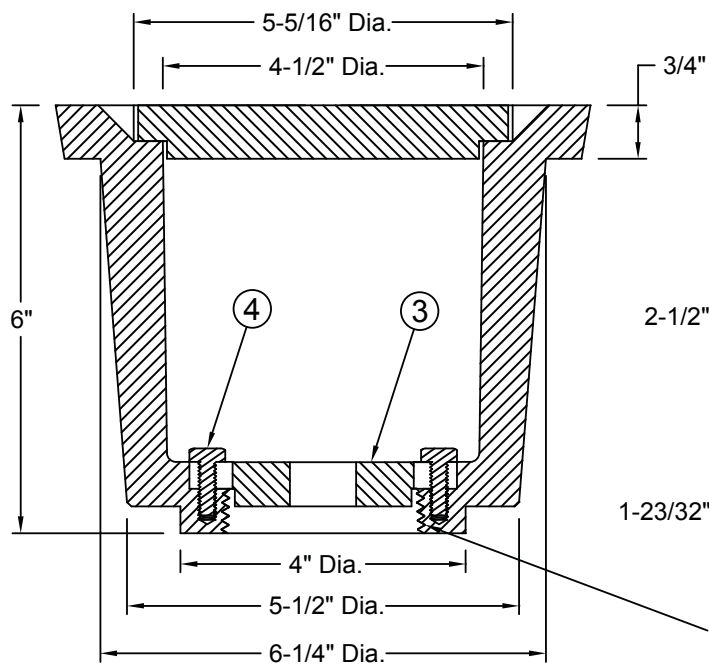
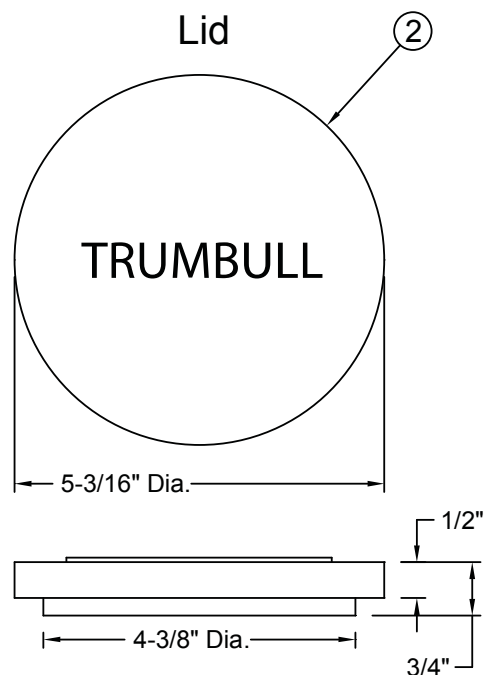
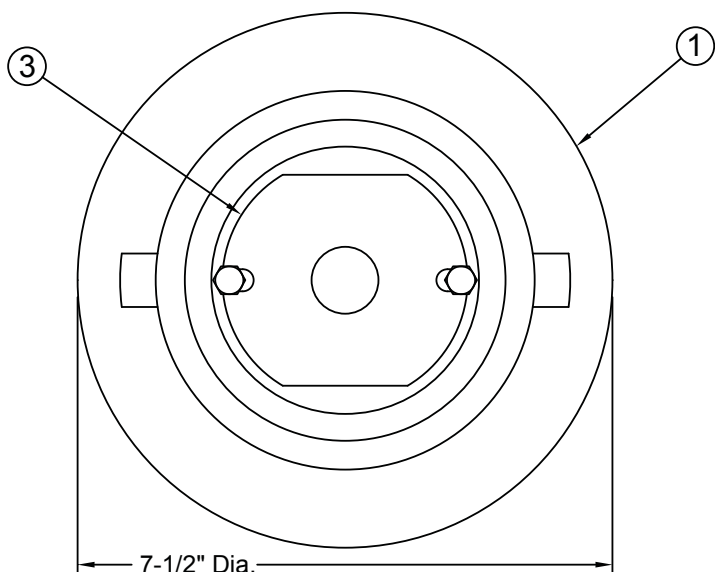
- No-lead brass, per C89833
- Ultra High Molecular Weight Polyethylene (UHMWPE)
- NSF 61 approved polymer (Ryton® R-4)

Ordering Instructions

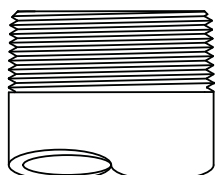
1. Quantity required
2. Thickness of floor slab, or length of pipe nipple required
3. O.D. of stem being used, or desired bushing material & hole size
4. Custom options available such as stainless steel construction, O-Ring lids, water-tight seals, tamper-resistant lids & anchoring collar

When a Valve Position Indicator is installed in a floor, use the cast iron **HOUSING ADAPTER** illustrated on pages F-1 to F-8, or the **SEALED FLOOR BOX** shown on pages G-13 and G-14.

Item	Component	Material
1	Body	Cast Iron, A126(B)
2	Lid	Cast Iron, A126(B)
3	Bushing	Bronze, B584
4	Screw, Hex Head	Stainless Steel, Type 316



The bottom of the Floor Box casting is tapped with a 2-1/2" N.P.T. thread.



Use a pipe nipple 1/2" longer than the increase in floor slab thickness required, as the tapped thread is 1/2" deep.

Coated with black enamel rust preventative.

Drawn:		Drawing Revision:		TRUMBULL INDUSTRIES		Drawn to Scale	
Date	Rev.	Date		P.O. Box 1556		CAST IRON FLOOR BOX	
4/4/94	J	04/07/2015		1040 N. Meridian Rd.			
				Youngstown, Ohio 44501			

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Sealed Floor Boxes

Available in Cast Stainless Steel & Carbon Steel

TRUMBULL SEALED FLOOR BOXES are ideal to prevent fluids from penetrating the floor slab from either direction. Top side is sealed by an o-ring, and bottom side can be sealed by use of optional packing gland. Overall length is 11-1/8", but the underside is tapped to accept 2-1/2" NPT steel pipe nipples for floors thicker than 11". When it's necessary to convert a Floor Box to thicker floors, use a 2-1/2" pipe nipple, 1/2" longer than the increase required, as the threads on the underside of the Floor Box are 1/2" deep.

Floor Boxes

Material	Trumbull Item No.	Weight
Cast Carbon Steel*	367-4622	31.05 lbs.
Cast 316 Stainless Steel	367-4621	33.45 lbs.

* Carbon steel models are EDP coated.

Optional Accessories

Description	Trumbull Item No.	Weight
SS Packing Gland	spec/ord	2.10 lbs.
Brass Bushing	spec/ord	1.75 lbs.

See Pages F-7 and F-8 for Trumbull Valve Position Indicator installation in floors.

SOCKET HEAD CAP SCREWS

furnished standard (tamper-resistant fasteners and installation tools also available)

O-RING

Seals Floor Box at top of floor (furnished as standard)

OVERALL HEIGHT

11-1/8" with lid

Other Optional Accessories

PACKING GLAND

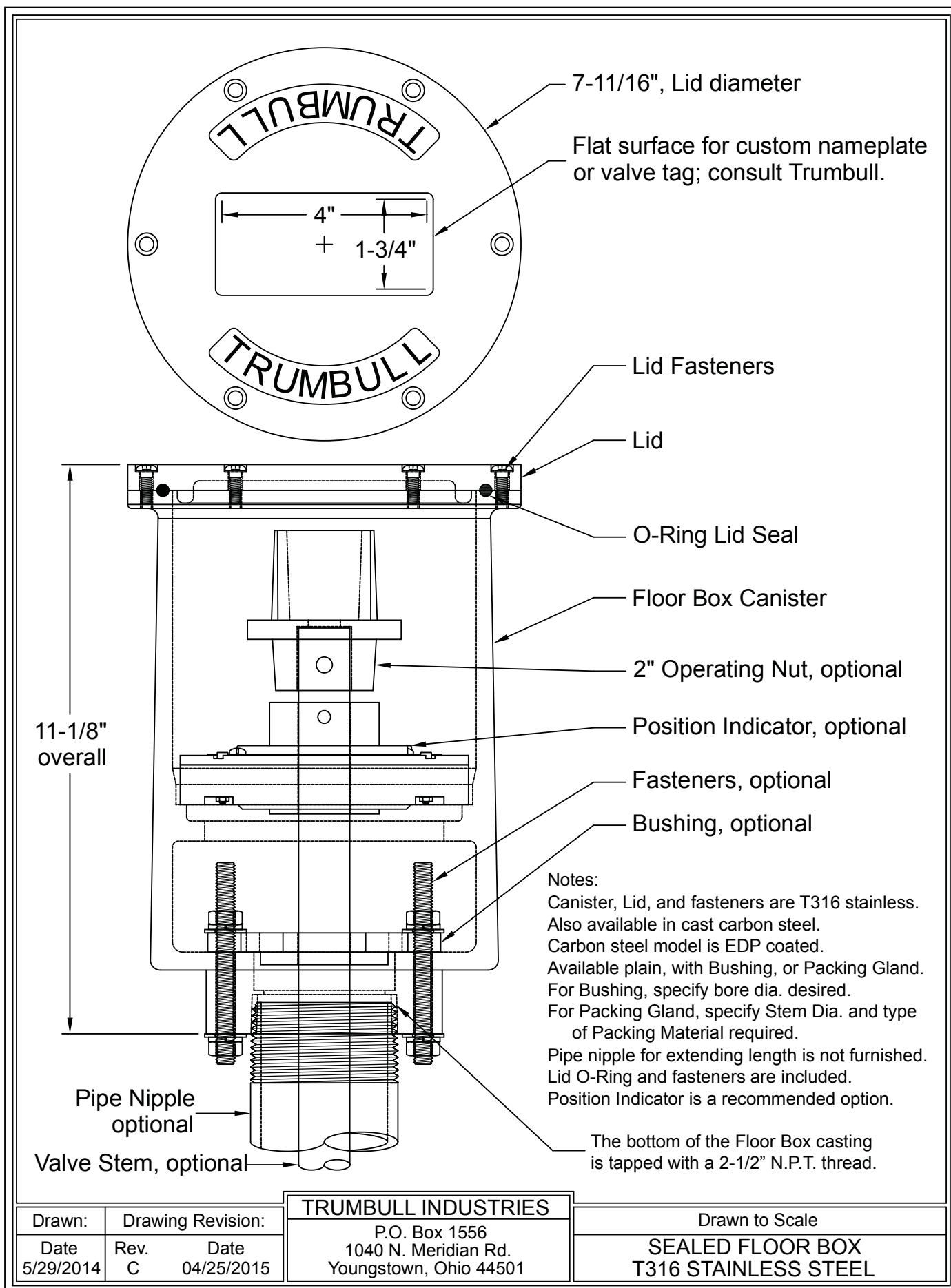
with stainless steel follower seals bottom of Floor Box

BRASS BUSHING

aligns extension stem when bottom seal is not utilized

POSITION INDICATOR

can be used with either brass bushing or packing gland



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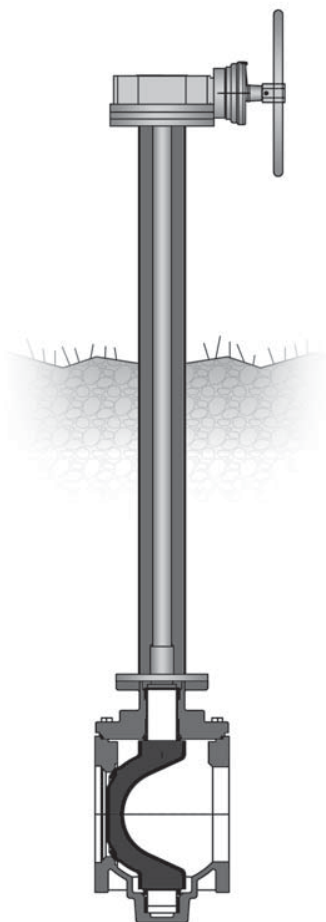
Extended Bonnets

Extended Bonnets are typically provided on valves when there is a need to move the valve operator a set distance away from the valve body. Buried and submerged service installations are the most common Municipal applications.

An Extended Bonnet consists of an outer flanged pipe which connects the valve body to the valve operator housing, and an inner stem extension that connects the valve stem and operator drive.

Buried Service

Extended Bonnets ideal for applications where the valve is located below ground with the operator above ground.



Submerged Service

Extended Bonnets are for applications where the valve is installed submerged in a tank & operated from above the water level.

