TS-2
TELESCOPING VALVES

- **Brass, Stainless Steel or PVC Tubes**
- **Screw Type or Rack & Pinion Lifts**

Telescoping valves are designed to control the height of liquid within a pond, reservoir, or other holding chamber. In modern sewage treatment facilities, one specific use is to control the level of effluent in settling basins. Also called Decanting Valves or Sludge Draw-off Valves, the assembly consists of a drain tube which can slip up and down inside a stationary vertical pipe. Through a lifting device, the tube is raised and lowered to maintain the desired level within the chamber.

CONSTRUCTION FEATURES

TUBE:

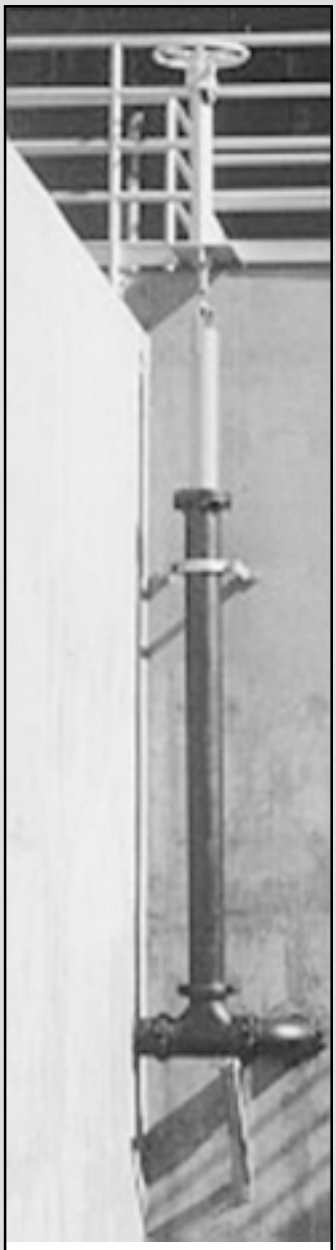
Waterman manufactures telescoping valves in a range of sizes from 4" tube diameter to 36" tube diameter. Valve body material is brass, stainless steel, PVC plastic or fusion epoxy coated mild steel. Lifting straps (bails) for stainless or steel tubes are the same material as tube and rigidly welded to tube. When brass or PVC plastic tube is selected, a stainless steel bail is securely bolted to the tube using stainless steel hardware. V notches or flared tube tops can be provided when requested. Also non-rising stem tube design is available.

SEAL AND FLANGE:

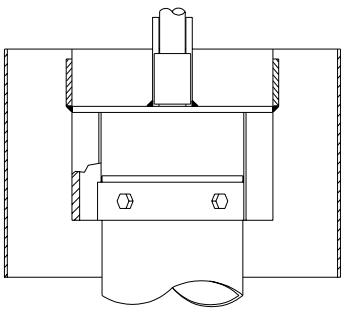
At the point where the sliding tube enters the vertical stationary pipe a seal is effected by means of a wiper gasket retained by a holding flange. This retaining flange may be of cast iron or stainless steel. The wiper gasket is generally of Neoprene and is of such dimension as to provide a friction seal around the sliding tube.

STEM and OPERATOR:

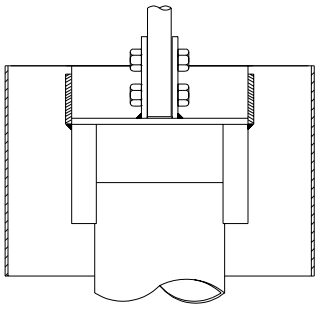
Stems are manufactured from solid type 304 stainless steel rod and are available in rising or non-rising styles. The standard operator is the Waterman Threaded Stem Type Lift mounted on an upright or offset pedestal. Position indicators may be furnished for either model.



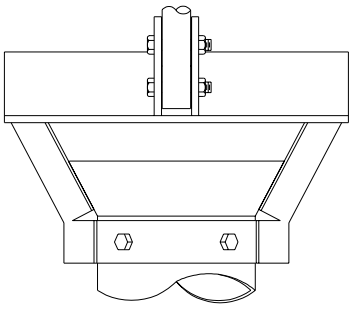
6" TS-2



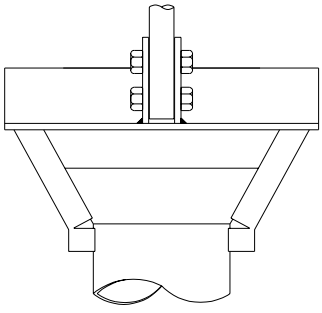
BAFFLE STYLE BRASS/PVC



BAFFLE STYLE STEEL/STAINLESS STEEL



FLARED STYLE BRASS/PVC

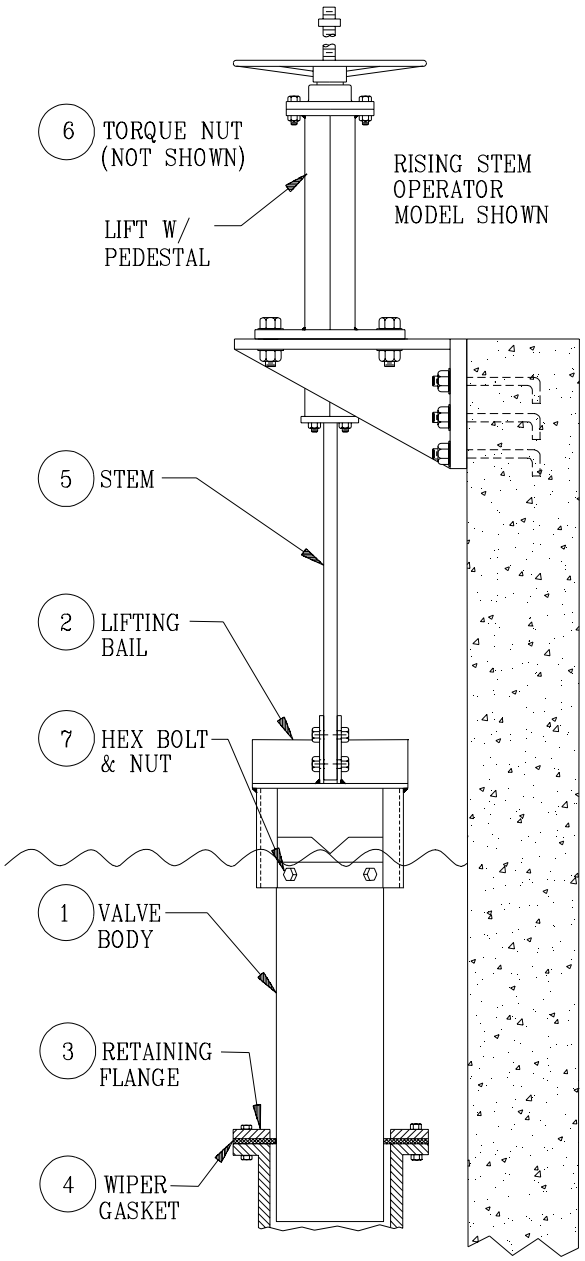


FLARED STYLE STEEL/STAINLESS STEEL

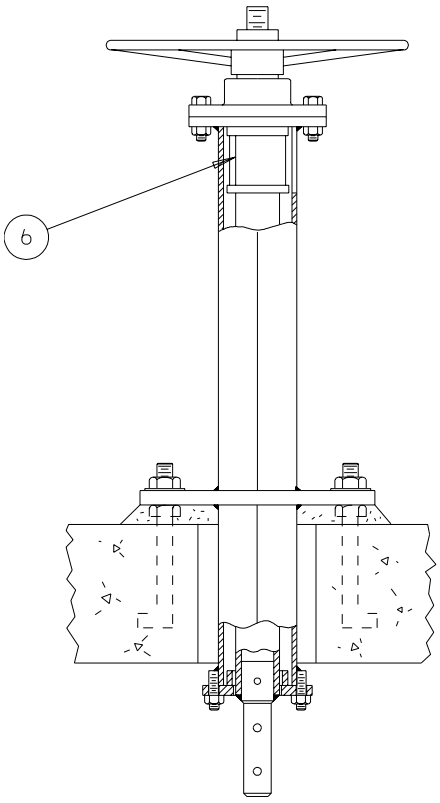
TS-2 TELESCOPING VALVES

PARTS	
No.	**Name**
1	Valve Body - Commercial Brass.*
2	Lifting Strap - Stainless Steel ASTM A-276.
3	Retainer Flange - Cast Iron ASTM A-126 Class B.
4	Wiper Gasket - Neoprene ASTM D-2000.
5	Lifting Stem - Stainless Steel ASTM A-276.
6	Torque Nut -Manganese Bronze ASTM B-584 Al 865
7	Hex Bolt & Nut - Stainless Steel ASTM F-593

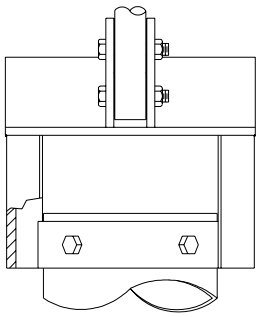
*Or 304 Stainless Steel
*Or 316 Stainless Steel
*Or PVC Pipe



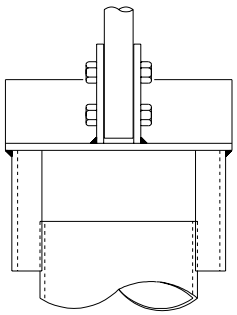
TYPICAL INSTALLATION



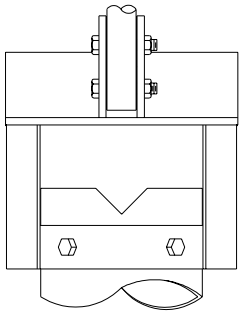
NRS OPERATOR



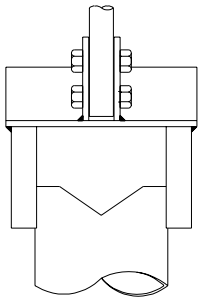
PLAIN STYLE BRASS/PVC



PLAIN STYLE STEEL/STAINLESS STEEL



V NOTCH STYLE BRASS/PVC



V NOTCH STYLE STEEL/STAINLESS STEEL

TYPICAL SPECIFICATIONS
TS-2 TELESCOPING (SLIP-SEAL) VALVES

General
Telescoping valves are used primarily for sludge removal, or liquid level control, and are considered to be fully open when in the lowermost position. The valve tube travels inside a cast iron or ductile iron riser pipe as shown in the plan drawings. The nominal riser pipe diameter determines the valve tube diameter. Vee notch, flared, or baffled tube tops shall be provided when required by the plan drawings.

Tube (metal)
Brass tubes for 10 inch nominal diameter and smaller valves shall be manufactured from seamless tube or pipe. For 12 inch and larger brass valves the tube shall be of rolled plate construction with the weld seam ground smooth. The finish O.D. of the tube is to be ± .04 inches, cylindrical within .100 TIR and have a smooth, 125 micro inch or better surface. Stainless steel or steel tubes up through 24" size shall be manufactured from seamless pipe or tube. Steel tubes are to be fusion epoxy coated. Tube lengths shall be as shown or noted on the drawings and must be of sufficient length to facilitate valve travel and maintain an appropriate insert depth. Valve tubes are to be a minimum 1/8" thick and are attached to connecting stems by use of a lifting bail.

Tube (PVC)
Valve tubes shall be of PVC plastic pipe. Tube lengths shall be as shown or noted on the plan drawings and must be of sufficient length to facilitate valve travel and maintain an appropriate insert depth. Valve tubes are to be attached to connecting stems by use of a lifting bail and must include bushings or an inner reinforcing ring of stainless steel, to prevent bolt hole enlargement on tube.

Seal Flange
A cast iron or stainless steel companion flange and neoprene slip seal gasket shall be provided by the valve manufacturer. The gasket must be a minimum 1/4" thick. The inside diameter of the gasket is to be 1/8" smaller than the outside diameter of the valve tube to provide a friction seal. The gasket is to be sandwiched between the riser pipe flange and the companion flange. The gasket and companion flange shall include a 125# standard drilling pattern to match the riser pipe.

Lifting Bail
On brass and PVC tubes the lifting bail shall be stainless steel construction and be fastened to the valve body with stainless steel attaching bolts. On stainless steel and steel tubes, the bail shall be the same material as the tube and be rigidly welded to the tube.

Lift and Stems (Rising)
Lifts shall be handwheel type, with UHMW polyethylene thrust bearings along with a stub acme threaded type 304 stainless steel stem to provide automatic self-locking, infinite valve positioning. The standard rising stem lift shall use a galvanized steel square tube with torque nut design to prevent telescoping valve tube rotation. Alternately, where conditions require, a vee keyed shaft, with torque plate, shall be used to prevent valve tube rotation. Handwheels shall be a minimum of 12" in diameter and shall include a clear plastic Butyrate stem cover with a mylar strip type position indicator, calibrated in ¼ inch increments to illustrate valve position. The mylar strip, provided by the manufacturer, will be affixed by the contractor after installation to provide a true and accurate indication of the tube elevation by comparing it to the top of the rising stem. Stainless steel anchor bolts shall be provided for all pedestals. Cleaning and shop prime coat of lift housing and handwheel will be (as specified elsewhere in this specification) (manufacturer's standard).

Lift (Non-Rising Stem)
Lifts shall be ball bearing supported handwheel type with dial position indicator, mounted to a fabricated galvanized steel non-rising stem pedestal. The pedestal shall be manufactured with a square, main vertical member and a telescoping type torque tube. The torque tube must incorporate a square thrust pocket at the top to house a square thrust nut, to prevent rotation of the valve tube assembly. The bottom of the torque tube is attached to the lifting bail with bolts & nuts, same as rising stem lift.

Non-Rising Stem
Where mounting conditions do not permit standard rising or non-rising stem lifts, a non-rising stem telescoping valve shall be provided. The valve bail design shall include nut pocket for NRS thrust nut and guides to prevent tube rotation. Stems shall be stub acme threaded type 304 stainless steel non-rising stem, threaded and keyed to either ball bearing supported lift, or floor box type lift. Lift shall have dial position indicator and 2" square nut to be operated by T-handle.

Telescoping valve shall be Model TS-2 as manufactured by Waterman Industries, Inc. or equal.