

# Assembly and Installation Instructions for OPW 61-SOR Remote Overfill Prevention Valve

## GENERAL INSTRUCTIONS

The OPW 61-SOR Remote Overfill Prevention Valve is designed to be installed in the 4" riser pipe of service station underground storage tanks with remote or offset fill ports. It is designed to close when the liquid level is within 8" of tank capacity to help prevent accidental or intentional overfilling.

A small bypass valve will allow draining of the delivery hose at approximately 3-5 gallons per minute, until the liquid level is within 3" of tank capacity. Above this level the bypass valve closes.

## IMPORTANT

Read these assembly and installation instructions completely and carefully prior to starting. Check to make sure all parts have been provided. Use only the parts supplied, substitution of parts may cause product failure.

Failure to follow instructions may cause improper product operation or premature failure which may permit storage tank overfill. An overfilled storage tank may create hazardous conditions and/or environmental contamination.

## CAUTION

Do not remove elastic band from around float until instructed to do so, as damage to valve may result.

## WARNING

Failure to properly connect delivery hose and elbow or disconnecting a liquid filled delivery hose or elbow will result in an extremely hazardous spill, which may result in personal injury, property damage, fire, explosion, and water and soil pollution.

Make sure all connections, hose and elbow, between storage tank and transport are securely coupled.

Make sure the "measuring stick port" of the fillpipe system is securely capped with the provided OPW 634TT adaptor cap. Failure to cap this port could result in a hazardous spill when the 61-SOR valve closes.

Make sure the lip seal and/or all gaskets in the delivery elbow are properly in place to prevent an overfilled tank.

Do not operate with damaged or missing parts which prevent tight connections.

Normal operation: Hose "Kick" and reduced flow signals tank is full.

Close transport delivery valve and drain hose into tank before disconnecting any hose fitting.

Overfilled Tank: Failure of the hose to drain signals an overfilled tank. Do Not Disconnect any delivery hose fitting or remove the 634TT cap from the "measuring stick port" adaptor until the liquid level in the tank has been lowered to allow the hose to drain into the tank. Attention: In the event you are splashed, remove all wetted clothing immediately. Do not go into an enclosed area and stay away from ignition sources.

## IMPORTANT

This remote fill valve is designed to be installed in a piping system with schedule 40 pipe (4" diameter pipe) installed between the tank and the tee connections.

Determine if the underground storage tank is equipped with a ball float vent-valve, similar to the OPW 53VM, as illustrated in Figure 11A. To permit proper operation of the OPW 61-SO, the ball float vent valve nipple **MUST NOT EXTEND** more than 6" into the tank. If it does, either remove the ball float vent valve or adjust the installation of the 61-SO by adding the difference between 6" and the actual installed length of the ball float vent-valve nipple to STEP 2.

## WARNING

OPW products should be used in compliance with applicable federal, state and local laws and regulations. Product selection should be based on physical specifications and limitations and compatibility with the environment and material to be handled. OPW MAKES NO WARRANTY OF FITNESS FOR A PARTICULAR USE.

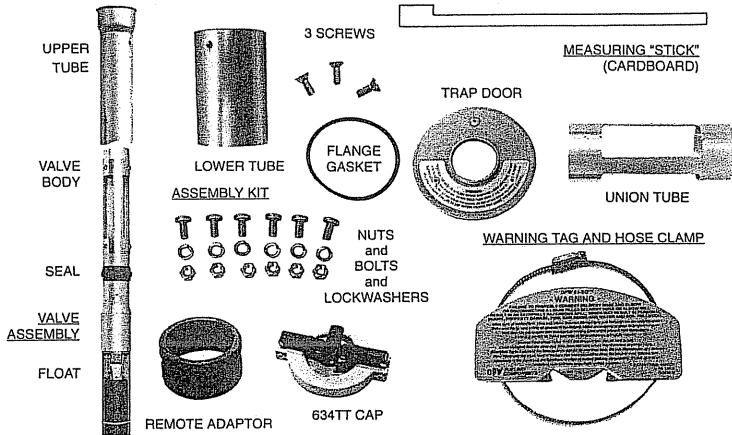
## TOOLS NEEDED FOR INSTALLATION AND ASSEMBLY

1. Drill
2. A new or sharp 21/64" drill bit
3. Tape measure
4. Hacksaw or cut-off saw, fine tooth; 24 teeth/inch
5. Fine half round file
6. Common bearing grease
7. Screwdriver – flat blade
8. One 1/2" wrench
9. Razor knife or scissors

## WARNING

Using electrically operated equipment near gasoline or gasoline vapors may result in fire or explosion, causing personal injury and property damage. Check to assure the working area is free from such hazards, and use proper precautions.

## PACKING LIST



## ASSEMBLY INSTRUCTIONS

**IMPORTANT:** Each of the numbered steps in the installation instructions are designed to be your CHECKLIST for proper installation and troublefree operation of the OPW 61-SOR Remote Overfill Prevention Valve.

Read and follow these steps carefully, checking them off as you proceed.

Figure numbers correspond to step numbers for easy reference.

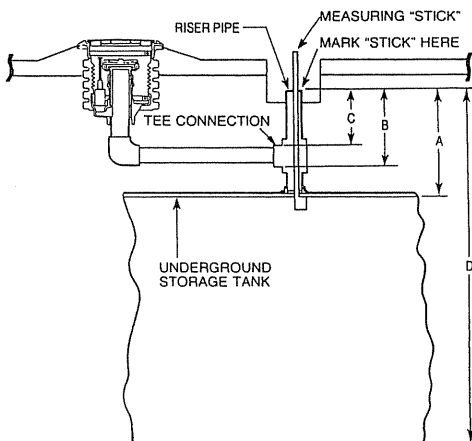


FIGURE 1

## PRODUCT WARRANTY

All OPW parts and products are thoroughly inspected and tested from the time raw material is received at our plant until the product is completed. We guarantee that all products are free from defects in materials and workmanship for a period of one year from the date of shipment. Any products that may prove defective within said one year period will, at OPW's option, be promptly repaired or replaced or credit given for future orders. This warranty shall not apply to any product which has been altered in any way, which has been repaired by any party other than an authorized OPW service representative or when such failure is due to misuse or conditions of use. OPW shall have no liability for special or consequential damages to any party, and shall have no liability for labor costs, freight costs or any other cost or charges in excess of the amount of the invoice for the products.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND SPECIFICALLY THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF.

OPW reserves the right to change specifications at any time without incurring obligations.

## Step 1 □ MEASURE

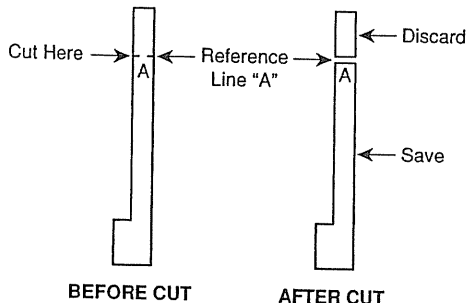
To complete this installation you'll need three (3) measurements of the tank's riser pipe and one measurement of the tank and riser combined (see A, B, C and D in Figure 1).

The below system of measurement is setup for a conventional remote layout using a 4" x 4" x 4" threaded tee as shown in Figure 1. For riser pipe and tank configurations other than that shown, consult installation drawings or use other necessary means to measure and layout dimensions "A", "B", "C" and "D".

NOTE: The overflow valve MUST BE installed a minimum of 6-1/2" into the tank for proper operation.

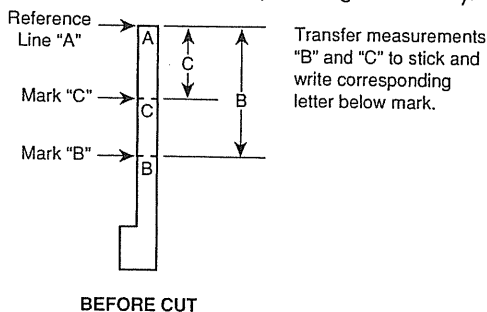
Remove the riser pipe cap and the existing drop tube if present from the tank riser pipe. Measure the distance from the top of the riser pipe to the inside of the tank (Dim. "A") using the measuring stick supplied. For new construction, make the measurement of dimension "A" after the manhole or spill container and pipe nipple have been installed.

Insert the measuring "stick" through the riser pipe and hook it under the inside of the tank in the lengthwise direction. Make a mark on the "stick" at the top of the riser pipe. Remove the "stick" from the riser pipe and write an "A" below the mark you made on the "stick." With scizzors or razor knife cut the "stick" in two at the mark you made on the "stick" (see diagram below).

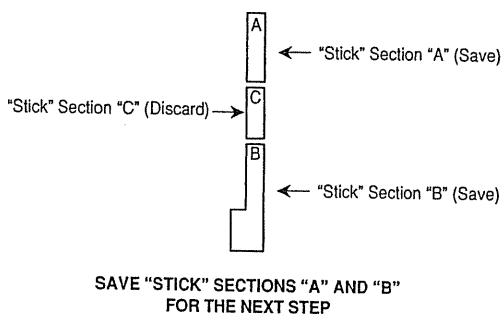


With a tape measure, obtain measurements "B" and "C" (see Figure 1). Measurement "B" is the distance from the top of the tank riser to the bottom of the remote tee horizontal opening. Measurement "C" is the distance from the top of the tank riser to the top of the remote tee horizontal opening.

With measurement "B" and "C" completed, transfer the measurement to the measuring "stick." Using reference line "A" as the starting point (see diagram below).



Again, cut the "stick" along the two (2) marks you made on the "stick" (see below).



Complete STEP 1 by measuring the distance from the top of the riser to the bottom of the tank (dim. "D").

## Step 2 □ Mark the Tube

Using measuring "stick" Section "B", align the end of the measuring "stick" with the seam where the upper tube and valve body meet as shown in Figure 2A. Mark the tube at the other end of "stick" Section "B".

**IMPORTANT NOTE:** Section "B" must be 13" or longer to install the 61-SOR properly. If section "B" is not at least 13", the seal on the upper tube will be located in the tank and not the riser pipe. Product flow will bypass the valve, preventing shutoff!

Using measuring "stick" Section "A" align the end of the section with the flanged portion of the upper tube assembly as shown in Figure 2B. Mark the tube at the other end of "stick" Section "A".

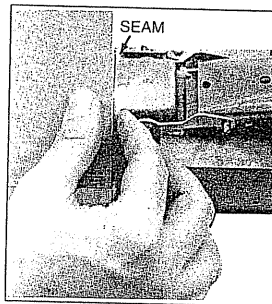


FIGURE 2A

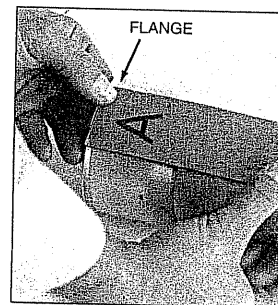


FIGURE 2B

## Step 3 □ Cut the Drop Tube

Slide the hose clamp over the upper drop tube so that it aligns with one of the two measurement marks made in Step 2. Tighten the clamp securely.

Using the hose clamp as a guide, carefully saw through the tube at "marked" location. Use a hacksaw with a new fine tooth blade. Rotating the tube as the sawing progresses will minimize runout (See Figure 3A).

After the first cut is made, remove the hose clamp and slide it onto the upper tube section that has the remaining "marked location." Again align the hose clamp with the mark. Tighten securely and repeat the above sawing procedure (See Figure 3B).

The upper tube is now cut into three (3) pieces. Retain the sections with the flanged end and also the section with the valve attached. Discard the third middle section.



FIGURE 3A

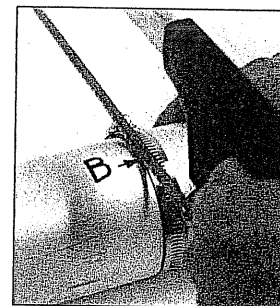


FIGURE 3B

## Step 4 □ File the Drop Tube Sections

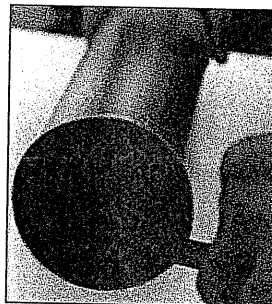


FIGURE 4

With a file, remove the burrs caused by sawing operations from both inside and outside of the tubes.

## Step 5 □ Install the Union Tube

Taking the upper tube section with the valve attached, slide the union tube over the upper tube section until the union tube seats against the top of the upper tube section. (End of tube should align with window opening on Union Tube (see Figure 5B).

With the union tube in place, carefully drill (3) 21/64" diameter holes at the predrilled locations on the union tube (Note: drill through both the union tube and upper tube.)

Install three (3) of the 5/16" screws, lockwashers and nuts provided with the lockwashers and nut to the inside of the tube. Tighten securely. Use only the stainless steel hardware that are supplied with the kit.

Having completed the lower joint of the union tube, now proceed with the upper joint installation.

Locate the flanged portion of the upper tube. Slide it into the upper part of the union tube until it seats (see Figure 5B). Again, carefully drill the remaining (3) 21/64" diameter holes at the predrilled locations. Install the three (3) remaining 5/16" screws, lockwashers and nuts using the same procedure as above. Tighten securely.



FIGURE 5A

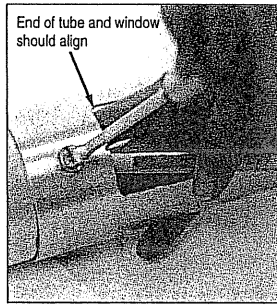


FIGURE 5B

## Step 6 □ Install Lower Tube

Slide the drilled and dimpled end of the lower tube onto the bottom of the valve body, aligning the (3) dimpled holes with the tapped holes in the body. Install the (3) flathead screws into the dimpled holes and tighten securely. Use only the stainless steel locking screws supplied with the kit. The screw heads must be flush with or below the outside surface of the lower drop tube.



FIGURE 6A

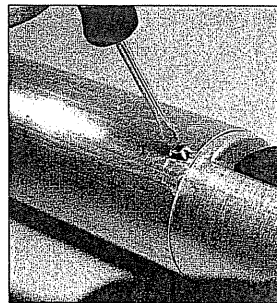


FIGURE 6B

## Step 7 □ Cut Drop Tube at 45° Angle

Measuring from the flange, mark the overall length of the drop tube a minimum distance of "D" minus 6" or as per local codes or requirements. Determine dimension D from the measurements taken in Step 1, Figure 1. Saw off the excess material at an angle of 45 degrees and remove sharp burrs.

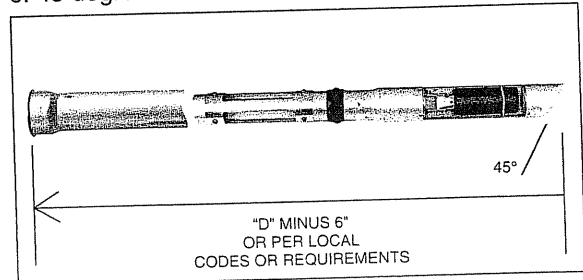


FIGURE 7

## Step 8 □ Inspect Riser Pipe

**IMPORTANT:** Inspect the tank riser pipe for any foreign material. Overspray from tank relining or any internal burrs inside of pipe must be removed prior to installation. Failure to have an unobstructed riser pipe may prevent proper installation or operation of the valve.

## Step 9 □ Remove Elastic Band

**IMPORTANT:** Generously apply any common grease to the "Drop Tube Seal." Remove the elastic band securing the float to the valve body. The float will move into an outward position.

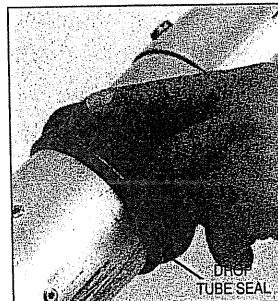


FIGURE 9

## Step 10 □ Insert Drop Tube

Hold the float down into the valve body and insert the drop tube overfill valve into the tank riser pipe. Some resistance from the drop tube seal will be noticed. Use care during insertion so the drop tube seal is not damaged. Do not force valve into riser if foreign matter from tank relining, or any obstruction, creates an interference. The riser will have to be cleaned before insertion of the valve.

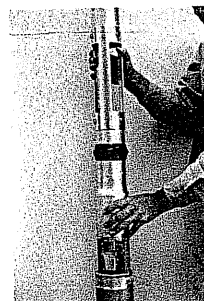


FIGURE 10

## WARNING

Failure to follow the assembly and installation instructions or use of excessive force to install the OPW 61-SOR will VOID THE WARRANTY!

Difficulty in removing the existing fill tube (if there is one) means there may be an obstruction in the riser pipe. Look for burrs, deformations, excess tank lining material or other projections that may interfere with easy insertion of the OPW 61-SOR. If welded, seamed pipe has been used for the riser, the internal weld bead may interfere with the OPW 61-SOR and prevent installation. If the OPW 61-SOR won't slip in easily, DON'T FORCE IT! Damage to the valve may result if excess force is used. Examine the riser pipe carefully, determine the nature of the obstruction and take appropriate steps to remove it.

### Step 11 □ Check Installation

Insert the drop tube all the way into the tank until the flange and gasket of the upper tube seat onto the riser pipe. Some resistance may be felt due to friction of the drop tube seal. The float will swing out into the operating position as it passes into the tank. Make sure that the float is aligned with the length of the tank. The length of the tank can easily be determined by locating other manholes or pump boxes that are installed around other fittings, etc. that are attached to the top of the underground tank. Look into the drop tube and align the deflector with the length of the tank. **CAUTION:** No obstruction can be within 13" from the center of the riser pipe or the valve will not operate properly.

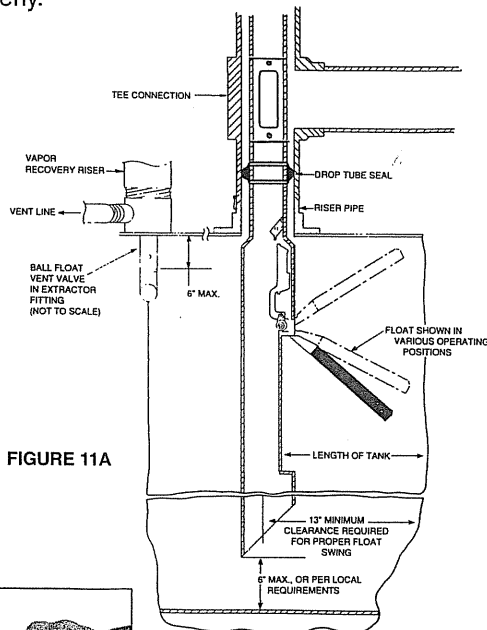


FIGURE 11A

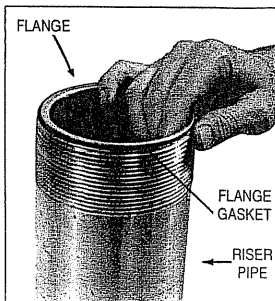


FIGURE 11B

### Step 12 □ Install Trap Door

Install trap door assembly onto the top of the inlet tube flange.



FIGURE 12

### Step 13 □ Align Valve

Install the provided tight fill adaptor and tighten (50 ft. lbs. recommended). Make sure that the valve does not rotate while tightening the adaptor by observing the position of the deflector. The valve must remain aligned with the length of the tank as in Step 11. Repeat this step as necessary to assure proper alignment of the valve. Install the tight fill cap provided.

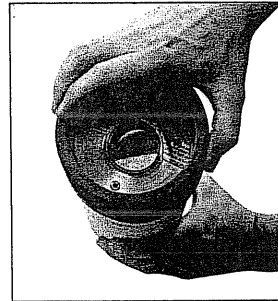


FIGURE 13

### Step 14 □ Install Warning Plate

The warning plate supplied must be installed at the remote or offset fill point only. Position warning plate against product delivery riser pipe approximately 1" below the existing adaptor. Place clamp over warning plate ears so they are located between clamp and riser pipe. Tighten clamp securely. The valve is now fully installed and in operating position.

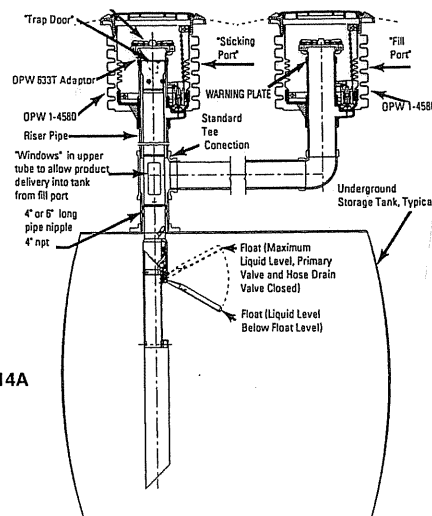


FIGURE 14A

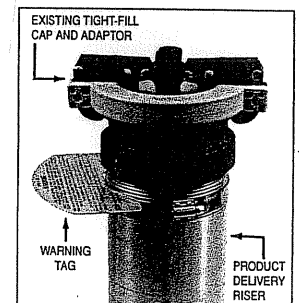


FIGURE 14B

## Step 15 □ Valve Removal

The valve can be removed for tank leak testing, inspection, etc., like any ordinary drop tube. Reinstall per the above instructions. Make sure all gaskets and seals are in place and in good working condition.

### **PREVENTIVE MAINTENANCE**

No maintenance is required for the valve for normal operating conditions. It is advisable, though, to periodically inspect the valve for damage and freedom of movement of the float. It is also advisable to check the inlet tube flange on the upper drop tube for weakening due to wear or corrosion. Please leave these instructions and maintenance procedures with the owner/operator of the station.

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