C-4081-M
March, 1995

OPW INSTRUCTIONS

ASSEMBLY AND INSTALLATION INSTRUCTIONS FOR OPW 61SO-1000 & 61SO-100C OVERFILL PREVENTION VALVES.

IMPORTANT:
Please read these assembly and installation instructions completely and carefully before starting.

GENERAL INSTRUCTIONS

The OPW 61-SO Overfill Prevention Valve is designed to be installed in the 4″ fill riser pipe of service station underground storage tanks. It is designed to close when 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 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 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 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 clothing immediately. Do not go into an enclosed area and stay away from ignition sources.

IMPORTANT

Determine if the underground storage tank is equipped with a ball float vent-valve, similar to the OPW 53VM, as illustrated in *Figure 16, page 11*. 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, page 5.

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 compatability with the environment and material to be handled. **OPW MAKES NO WARRANTY OF FITNESS FOR A PARTICULAR USE.**

NOTE: The 61-SO is not intended for use in tanks filled by pump pressure, such as an aboveground storage tank (AST).

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.

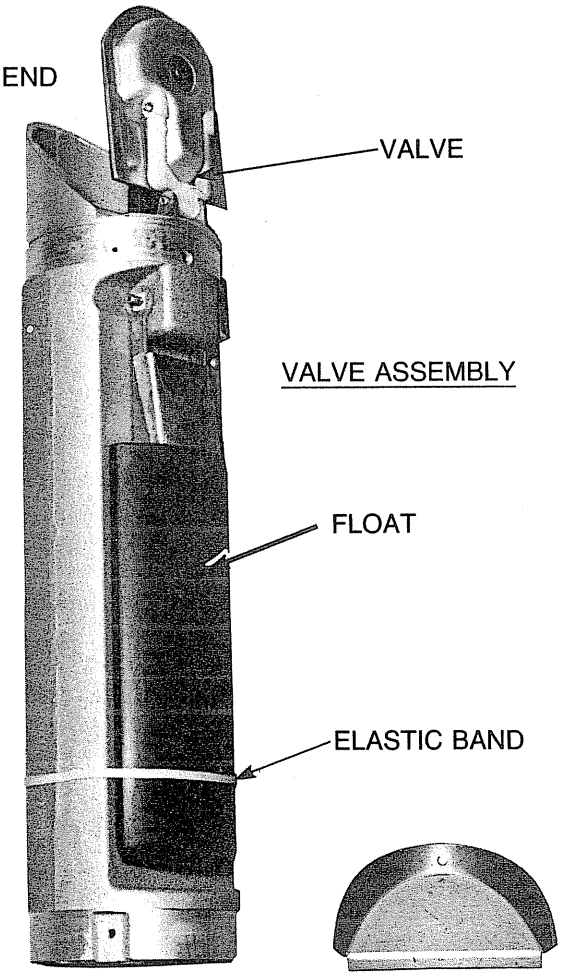
TOOLS NEEDED FOR INSTALLATION AND ASSEMBLY

1. A new or sharp 11/64″ drill bit
2. Drill
3. A new or sharp 1/16″ pilot drill bit
4. Tape measure
5. Hammer
6. Hacksaw or cut-off saw, fine tooth; 24 teeth/inch
7. Fine half round file
8. Pop rivet tool (heavy duty)
9. Screwdriver - flat blade

WARNING

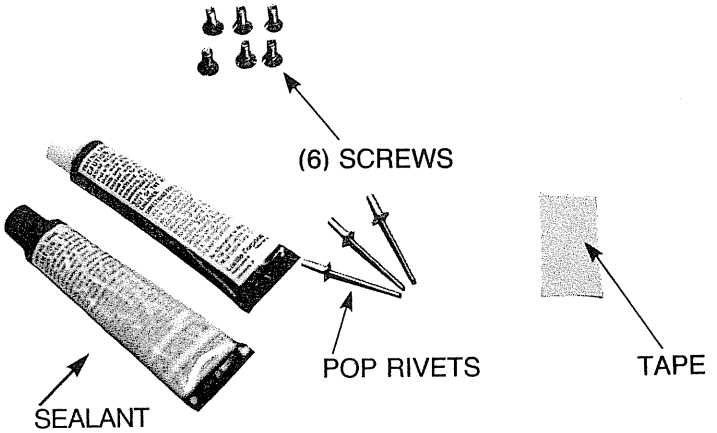
Using electrically operated equipment near gasoline or gasoline vapors may result in fire or explosion, causing personal injury and property damage. Check to assure the working area is free from such hazards, and use proper precautions.

PACKING LIST

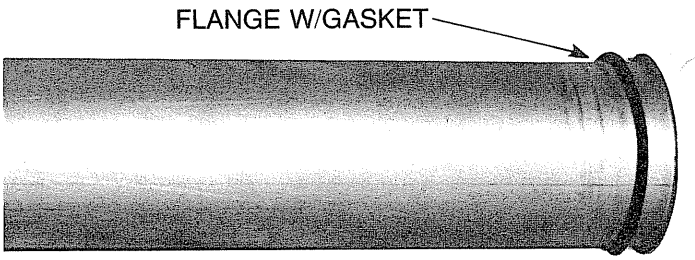


DEFLECTOR

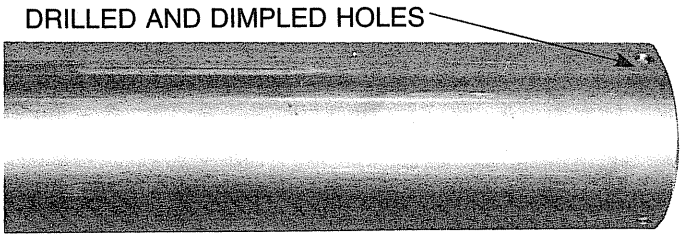
ASSEMBLY KIT



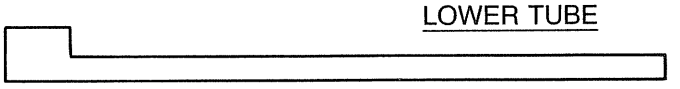
Before beginning assembly - check the contents of the carton to make sure all parts have been supplied.



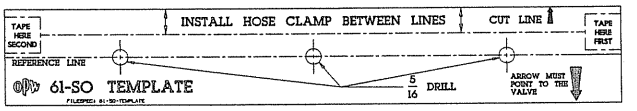
UPPER TUBE



LOWER TUBE

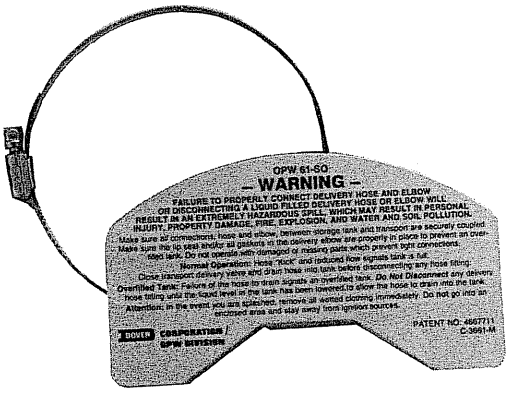


MEASURING "STICK"
(CARDBOARD)



DRILLING TEMPLATE (PAPER)

DIMPLING TOOL



WARNING TAG & HOSE CLAMP

ASSEMBLY INSTRUCTIONS

IMPORTANT: Each of the numbered steps in the installation instructions are designed to be your CHECKLIST for proper installation and trouble free operation of the OPW 61-SO Overfill Prevention Valve.
Read and follow these steps carefully, checking them off as you proceed.

Figure numbers correspond to step numbers for easy reference.

STEP 1 ☐ MEASURE

Remove the tight fill cap and adaptor and the existing drop tube 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 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. Measure the distance from the top of the riser to the bottom of the tank (Dim. "B"). For riser pipe configurations other than that shown, consult installation drawings or use other necessary means to measure dimension "A".

IMPORTANT: Inspect the 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.

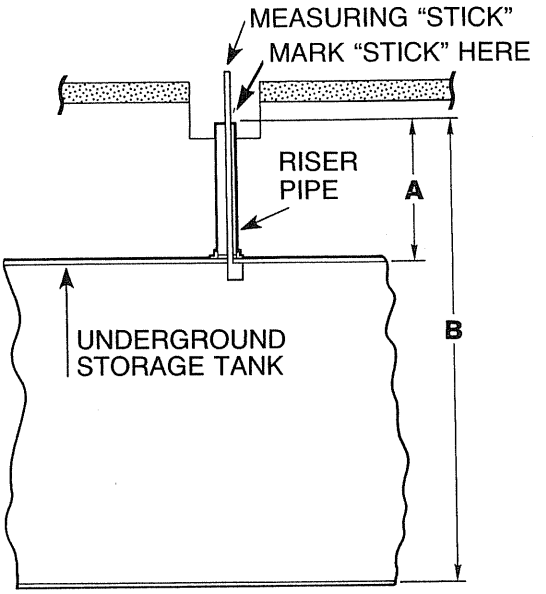


FIGURE 1A

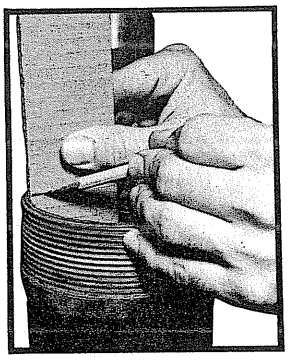


FIGURE 1B

STEP 2 ☐ MARK THE TUBE

Place the measuring "stick" on the bottom side of the upper drop tube flange as shown in Figure 2. Mark the tube at the mark on the measuring "stick" made in Step 1.

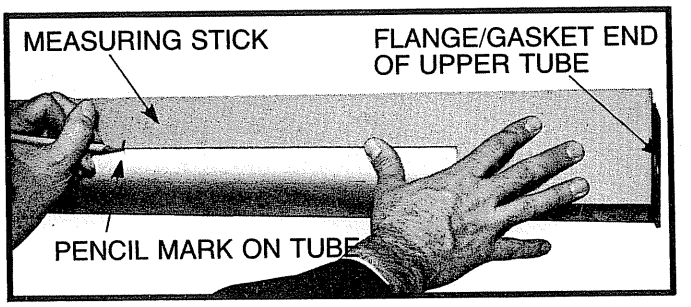


FIGURE 2

STEP 3 ☐ SECURE THE TEMPLATE

Wrap the drilling template TIGHTLY around the drop tube so that the side marked "cut end" is on the mark made in Step 2 and the two reference lines of the template are lined up where they overlap to assure a square cut-off. The "arrow" on the drilling template must point towards the upper drop tube flange. The two 11/64" dia. holes at "F" must center with the "grooves" on diameter of tube "F" as shown in Figure 3C. Tape the overlaps together with the tape supplied. Use the other tape to secure the template to the drop tube.

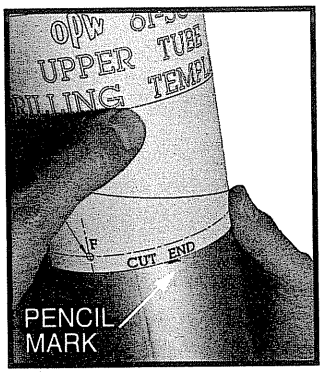


FIGURE 3A

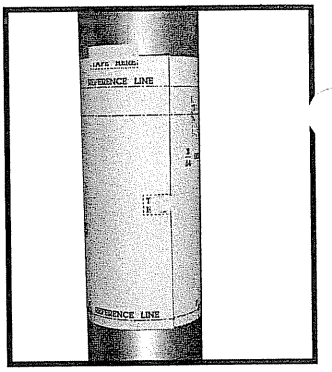


FIGURE 3B

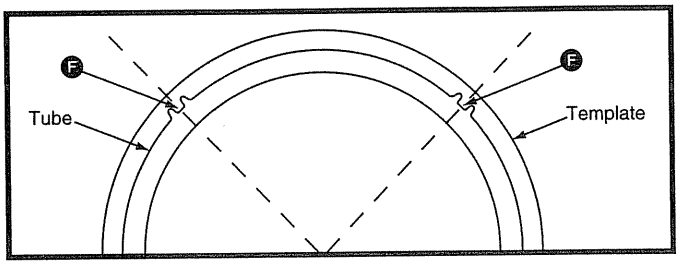


FIGURE 3C

STEP 4 ☐ DRILL HOLES

Carefully drill (5) 1/16 dia. pilot holes through the drop tube at the positions marked D and F on the drilling template. Carefully drill (5) 11/64" dia. holes at location D and F.

CAUTION - DO NOT use pipe or tubing cutter to cut the upper drop tube. This may damage the tube, causing it to be out of round thereby prohibiting assembly of the unit.

CAUTION - DO NOT use the hose clamp supplied if a power cutoff saw is used - use the "cut end" of the drilling template to reference the location of the cut.

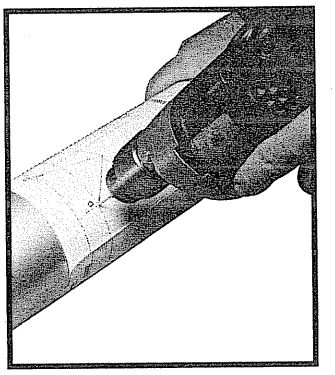


FIGURE 4A

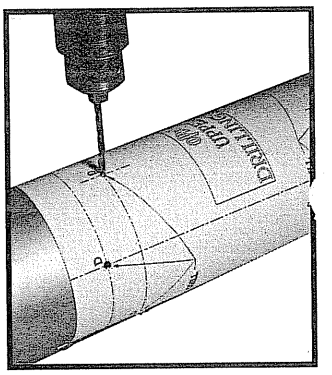


FIGURE 4B

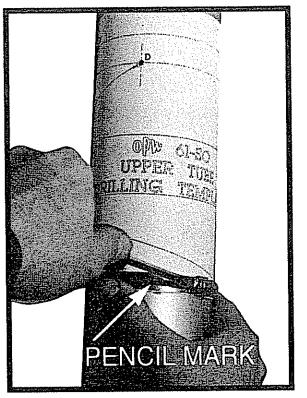


FIGURE 5A

FIGURE 5C

STEP 5 ☐ CUT THE DROP TUBE

Slide the 4″ hose clamp over the upper drop tube and over the drilling template so that its outside edge lines up with the "cut end" of the drilling template and tighten securely. Using the edge of the hose clamp as a guide, carefully saw through the drop tube at the "cut end". Use a hacksaw with a new fine tooth blade. Rotating the upper tube as the sawing progresses will minimize runout. If necessary, file the upper tube flush with the hose clamp to remove rough edges.

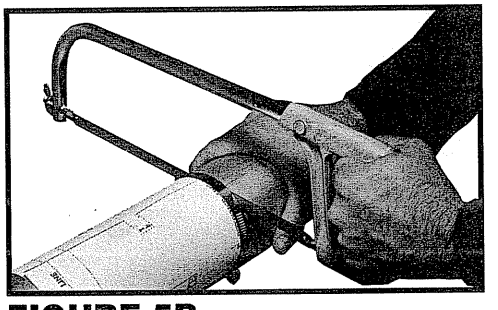


FIGURE 5B

STEP 6A ☐ FILE THE DROP TUBE

Remove the hose clamp and drilling template from the upper tube. Remove the burrs from the drilling and sawing operations from the inside of the drop tube with a fine half round file or other appropriate deburring tool. Make sure the cut end of the tube is flat and square.

STEP 6B ☐ DRILL HOLES

Measure 5/16″ up from cut edge and drill a 1/16″ pilot hole between lines in groove. Re-drill with a 11/64″ drill as shown in Figure 6B.

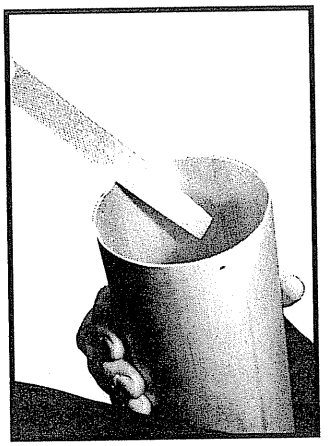


FIGURE 6A

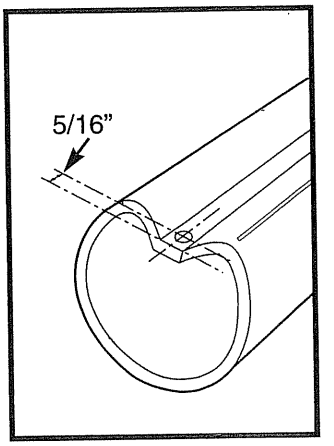


FIGURE 6B

STEP 7 ☐ INSTALL DEFLECTOR

The pop rivets that secure the deflector to the drop tube must be sealed on the vapor tight model 61SO-100C. Mix a small amount of sealant and apply it beneath the head of the pop rivets and around the holes drilled in Step 4. Orient the deflector inside the drop tube as shown in Figure 7A and locate its three mounting holes with the three holes drilled in Step 4. Fasten with the 5/32" blind pop rivets supplied.

NOTE: Improper application of sealant on rivets may result in a failure of a pressure decay leak test.

WARNING:

Substitution of pop rivets provided with this product will void manufacturer warranty.

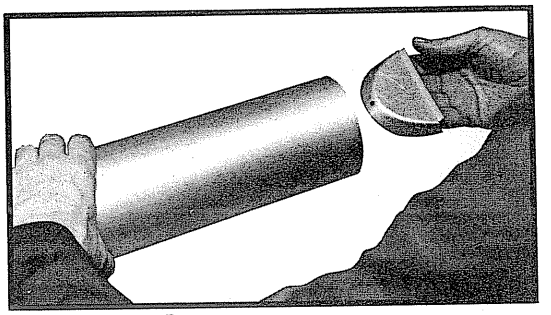


FIGURE 7A

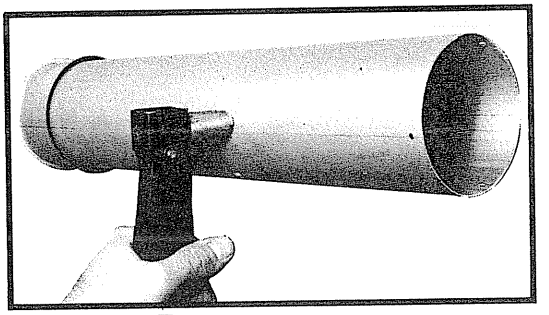


FIGURE 7B

STEP 8 ☐ APPLY SEALANT AND INSTALL UPPER TUBE

Remove the yellow warning tag attached to the valve. Prepare sealant by mixing 1/3 of each tube together until color is uniform. Generously apply sealant to the outside diameter of the valve. Make sure coverage is completely around the tube as shown in Figure 8A. Locate the upper drop tube onto the valve body and push the tube past the sealant until it seats on the machined shoulder. Make sure all (3) holes are in perfect alignment with the countersunk holes on the valve body.

NOTE: Improper application of sealant may result in a failure of a pressure decay leak test.

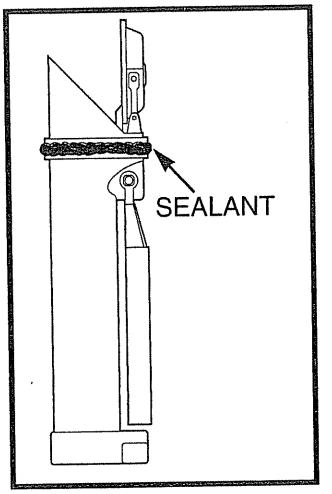


FIGURE 8A

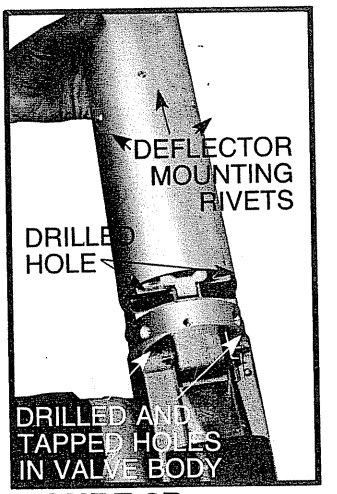


FIGURE 8B

STEP 9 ☐ DIMPLE MOUNTING HOLES
Push the valve body firmly into the upper drop tube, and with the tool supplied, carefully "dimple" the (3) mounting holes into the countersunk holes in the valve body.

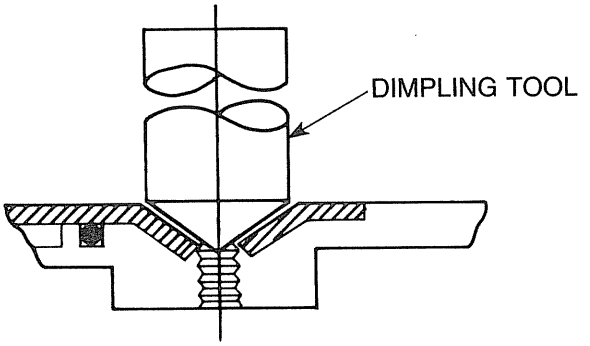


FIGURE 9D

AFTER DIMPLING

STEP 10 ☐ INSTALL SCREWS
Mix small amount of sealant for screw holes.

Fill countersinks with sealant. Assemble screw and tighten. Repeat on two remaining screws. Wipe off excess sealant.

NOTE: Sealant must cure 15 minutes before installing into tank.

NOTE: Improper application of sealant may result in a failure of a pressure decay leak test.

Use only the stainless steel screws supplied with the kit. The screw heads must be flush with or below the outside surface of the upper drop tube.

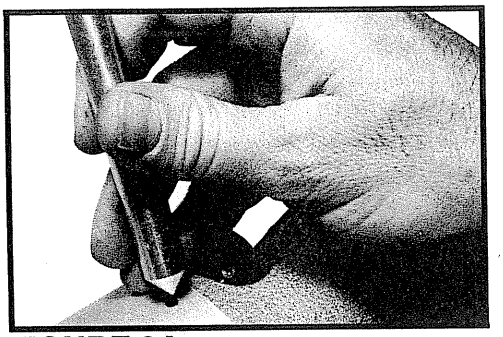


FIGURE 9A

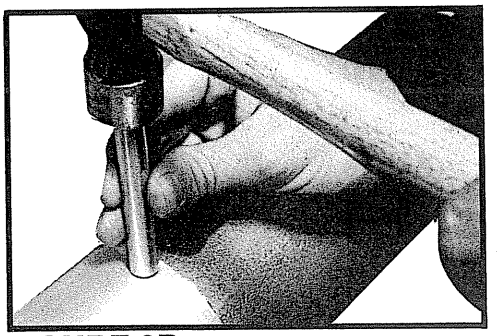


FIGURE 9B

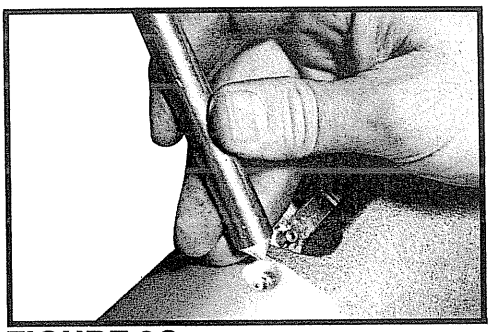


FIGURE 9C

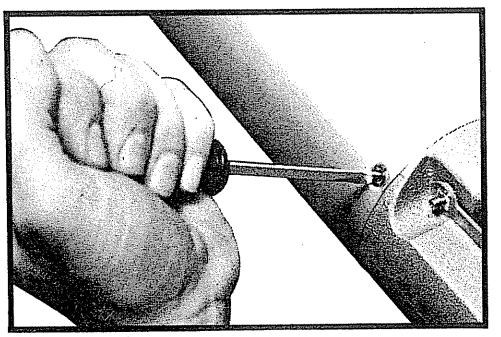


FIGURE 10

STEP 11 ☐ INSTALL LOWER TUBE

The lower tube must be sealed to the valve body on vapor tight models (61SO-100C). Prepare sealant by mixing 1/3 of each tube together until color is uniform. Generously apply sealant to the outside diameter of the valve. Make sure coverage is completely around the tube. Slide the drilled and dimpled end of the lower drop tube onto the bottom of the valve body, aligning the (3) dimpled holes with the tapped holes in the body. Fill countersinks with sealant. Assemble (3) screws and tighten. Wipe off excess sealant.

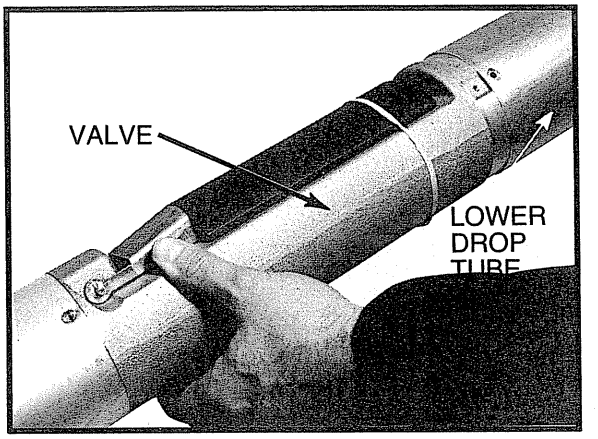


FIGURE 11

NOTE: Sealant must cure 15 minutes before installing tank.

NOTE: Improper application of sealant may result in a failure of a pressure decay leak test.

STEP 12 ☐ CUT DROP TUBE AT 45° ANGLE

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

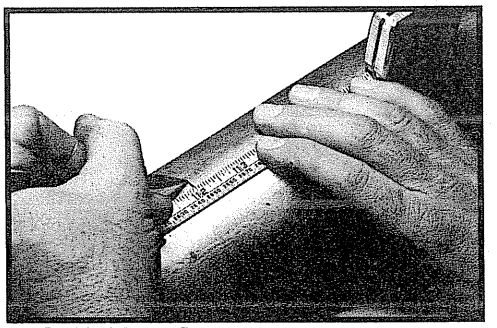


FIGURE 12A

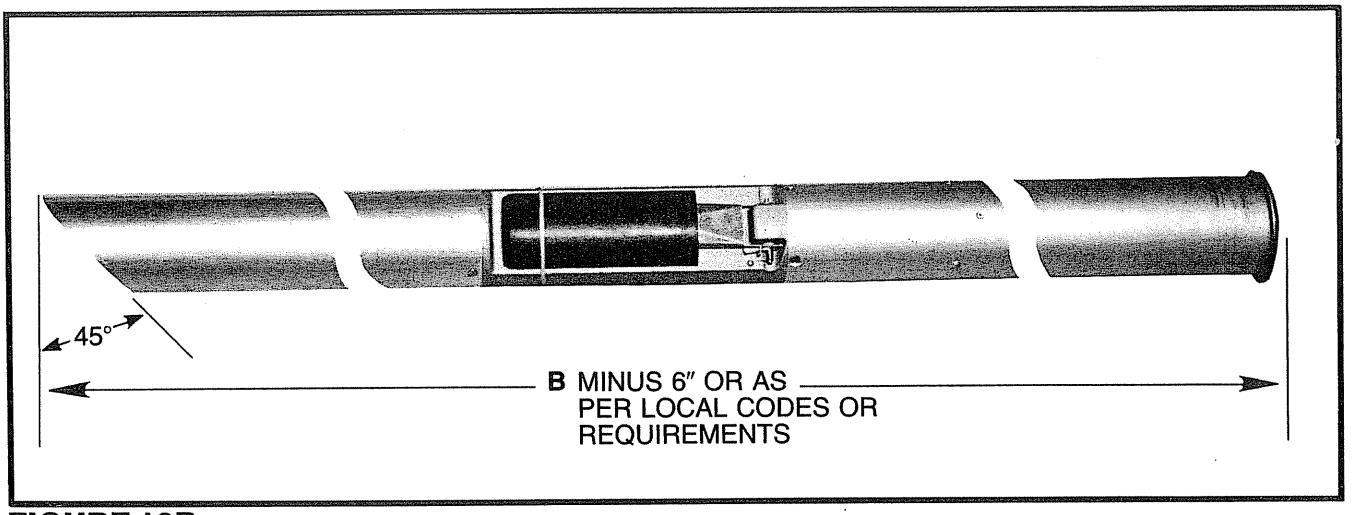


FIGURE 12B

INSTALLATION INSTRUCTIONS

STEP 13 ☐ REMOVE FILL ADAPTOR AND EXISTING DROP TUBE

Remove the tight fill adaptor and existing drop tube from the tank riser pipe.

IMPORTANT: Inspect the riser pipe for any foreign material. Overspray from tank relining or any 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 14 ☐ REMOVE ELASTIC BAND

Make sure the gasket is under the flange of the upper drop tube.

IMPORTANT: Remove the elastic band securing the float to the valve body. **The float will move into an outward position.**

STEP 15 ☐ INSERT THE DROP TUBE

Hold the float down into the valve body and insert the drop tube overfill valve into the riser pipe. **Do not force valve into riser if foreign matter from tank relining or any other obstruction creates an interference.** The riser will have to be cleaned before insertion of the valve.

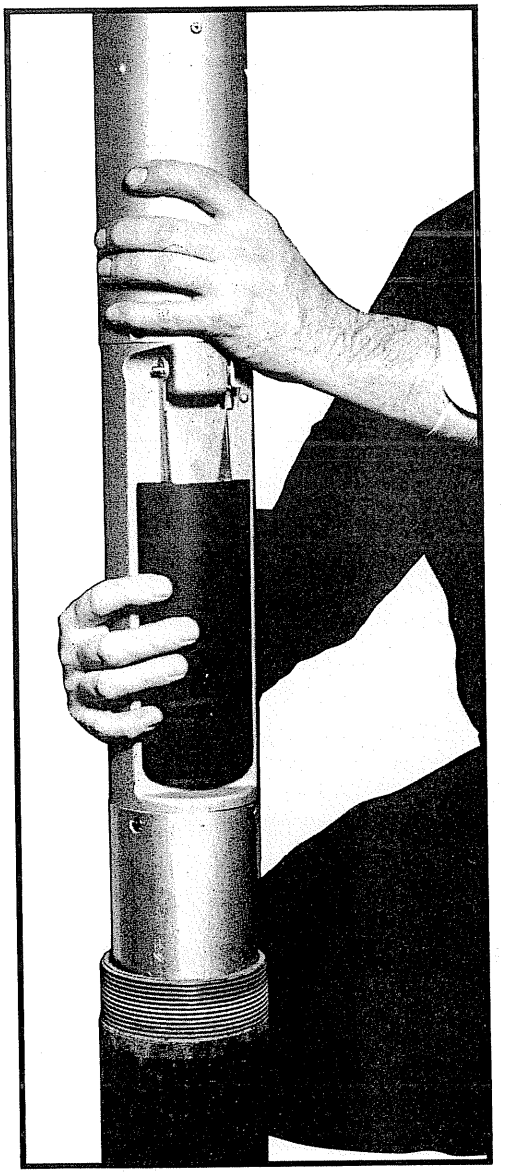


FIGURE 15

;TEP 16 ☐ CHECK INSTALLATION

nsert the drop tube all the way into the tank until he flange and gasket seat onto the riser pipe. The loat will swing out into the operating position as t passes into the tank. Make sure the overfill)revention equipment does not interfere with other ank components. Float must not be obstructed rom fully extending.

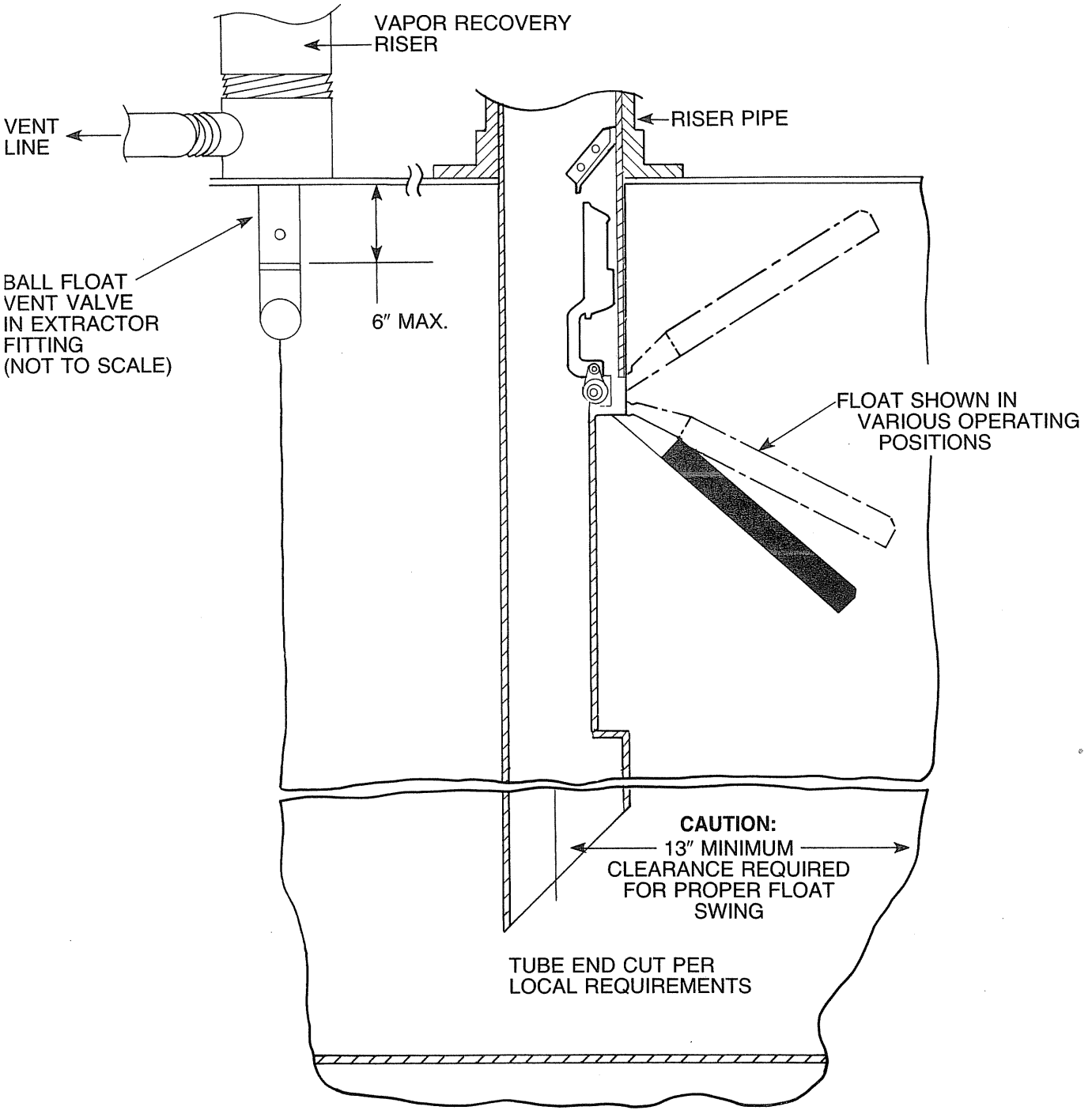


FIGURE 16

STEP 17 ☐ HOSE CLAMP
Slide hose clamp used in Step 5 over riser pipe. Clamp should be loose and move freely.

STEP 18 ☐ ALIGN VALVE
Reinstall the tight fill adaptor and gasket and tighten. 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 16.** Repeat this step as necessary to assure proper alignment of the valve. Install appropriate cap.

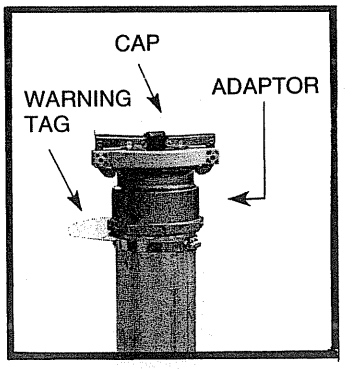


FIGURE 19A

STEP 19 ☐ INSTALL WARNING PLATE
Position warning plate against riser pipe approximately 1" below the adaptor. Slide 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.

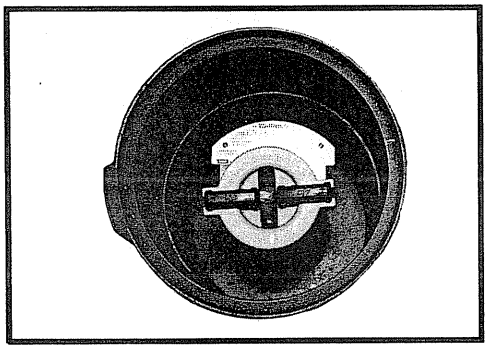


FIGURE 19B

STEP 20 ☐ VALVE REMOVAL
The valve can be removed for tank leak testing, inspection, etc. like any ordinary drop tube. Reinstall per the above instructions.

PREVENTIVE MAINTENANCE

No maintenance is required for the valve under 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 flange mount of 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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FUELING COMPONENTS
A DOVER RESOURCES COMPANY
P.O. Box 405003 ◆ Cincinnati, Ohio 45240-5003
(513)870-3219 ◆ (800)422-2525 (Orders Only)
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