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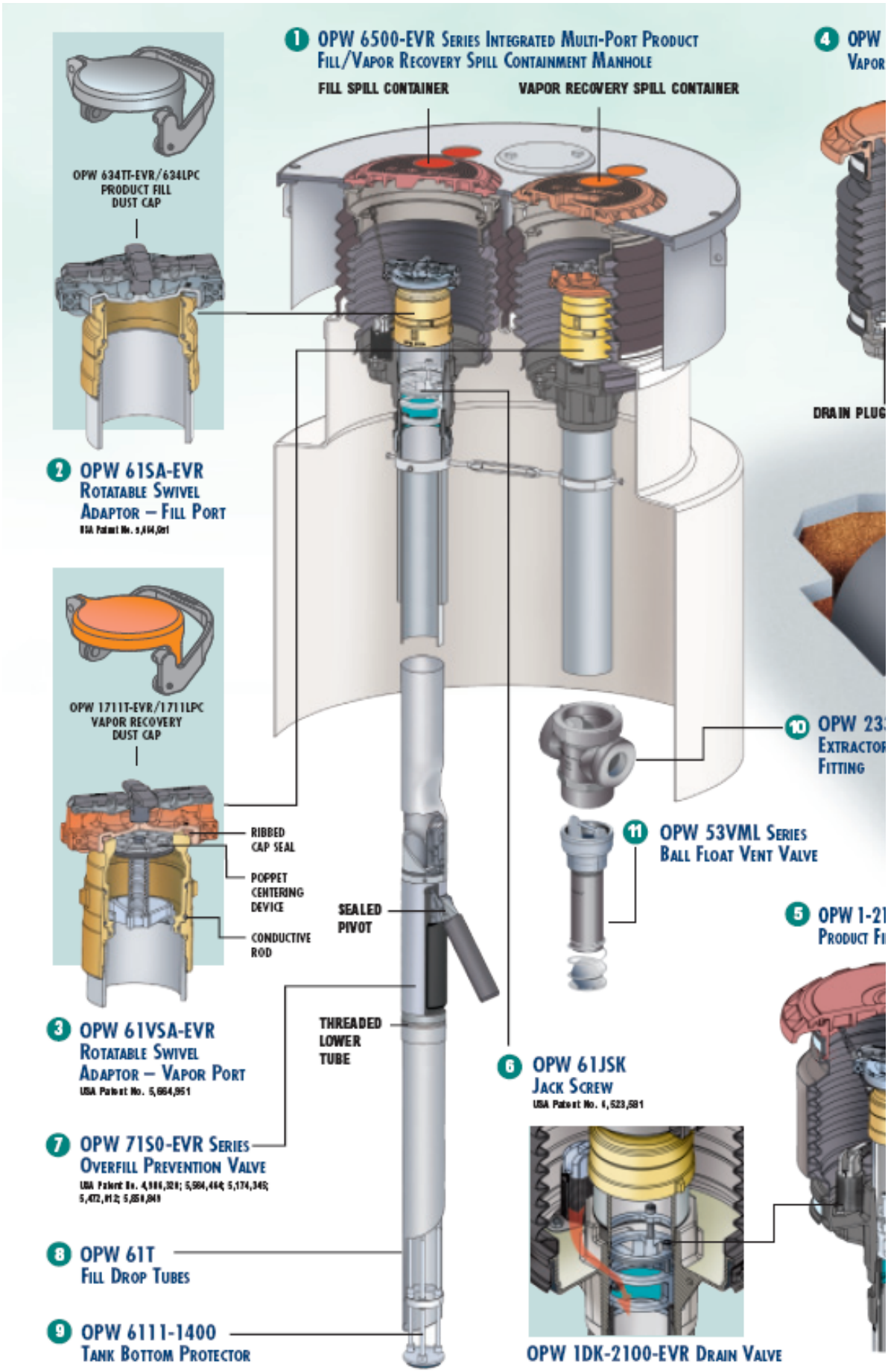
OPW®

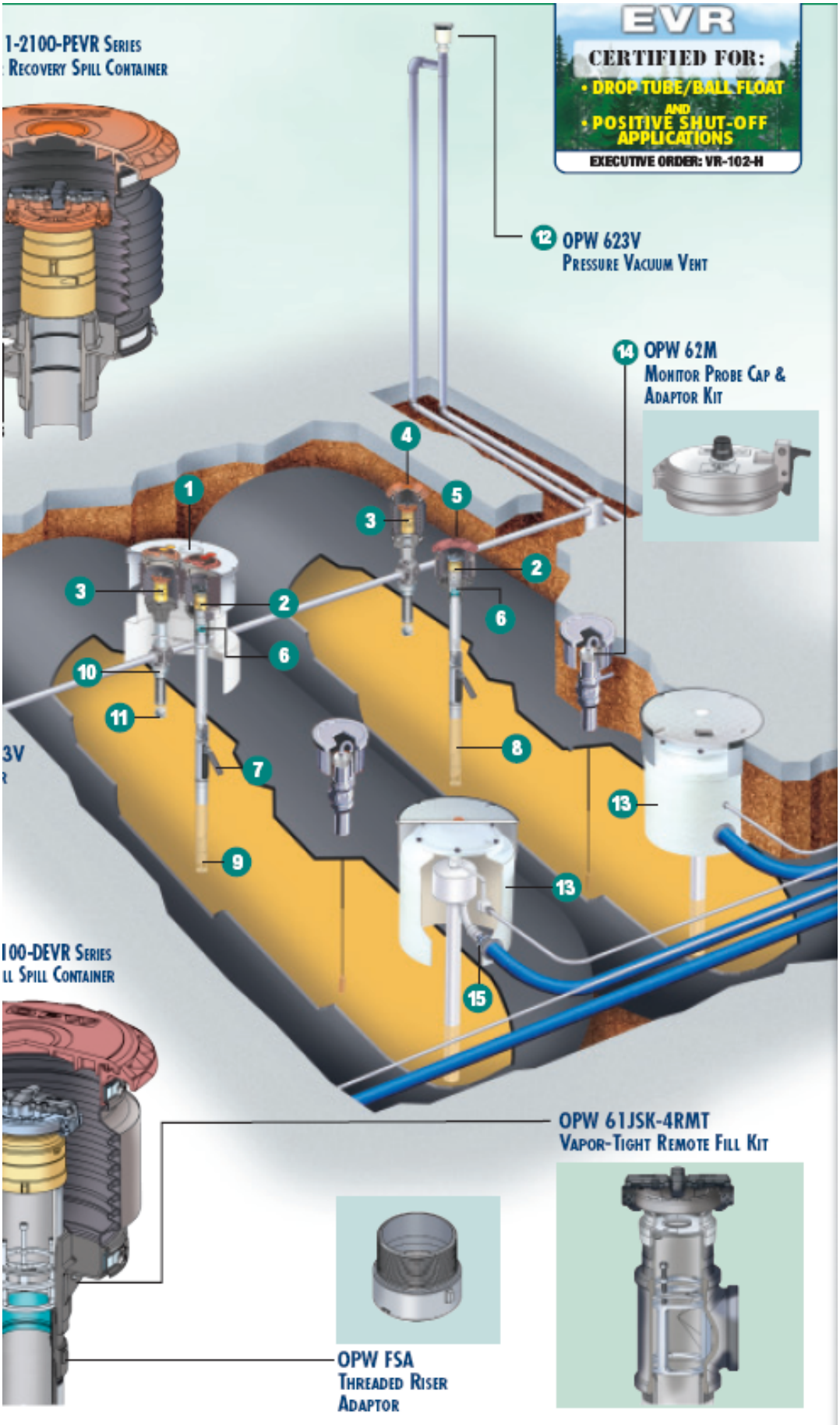
A DOVER COMPANY

PHASE I ENHANCED VAPOR RECOVERY SYSTEM

INSTALLATION AND MAINTENANCE MANUAL

November 14, 2007


1 OPW 6500-EVR Series Integrated Multi-Port Product Fill/Vapor Recovery Spill Containment Manhole
FILL SPILL CONTAINER
VAPOR RECOVERY SPILL CONTAINER
OPW 634TT-EVR/634LPC PRODUCT FILL DUST CAP
2 OPW 61SA-EVR Rotatable Swivel Adaptor – Fill Port
OPW 1711T-EVR/1711LPC VAPOR RECOVERY DUST CAP
RIBBED CAP SEAL
POPPET CENTERING DEVICE
CONDUCTIVE ROD
3 OPW 61VSA-EVR Rotatable Swivel Adaptor – Vapor Port
SEALED PIVOT
THREADED LOWER TUBE
7 OPW 71S0-EVR Series Overfill Prevention Valve
8 OPW 61T Fill Drop Tubes
9 OPW 6111-1400 Tank Bottom Protector
6 OPW 61JSK Jack Screw
10 OPW 23
Extractor Fitting
11 OPW 53VML Series Ball Float Vent Valve
4 OPW
Vapor
DRAIN PLUG
5 OPW 1-21
Product Fi
OPW 1DK-2100-EVR Drain Valve


EVR
CERTIFIED FOR:
• DROP TUBE/BALL FLOAT
AND
• POSITIVE SHUT-OFF APPLICATIONS
EXECUTIVE ORDER: VR-102-H
1-2100-PEVR SERIES
RECOVERY SPILL CONTAINER
12 OPW 623V
PRESSURE VACUUM VENT
14 OPW 62M
MONITOR PROBE CAP & ADAPTOR KIT
100-DEVR SERIES
LL SPILL CONTAINER
OPW 61JSK-4RMT
VAPOR-TIGHT REMOTE FILL KIT
OPW FSA
THREADED RISER ADAPTOR

OPW Fueling Components

Installation and Maintenance Manual

Phase 1 Enhanced Vapor Recovery Systems

For Executive Order VR102

Table of Contents

Section 1

OPW 1-2100 Series Thread-On Grade Level Spill Containers

OPW Installation and Maintenance Instructions

OPW 1-2100 Series Thread-On Grade Level Spill Containers

IMPORTANT: Please read these warnings and use the assembly instructions completely and carefully before starting. Failure to do so may cause product failure, or result in environmental contamination due to liquid leakage into the soil, creating hazardous spill conditions.

IMPORTANT: The OPW 1-2100 Spill Container is pre-assembled for your convenience and ease of installation. Check to make sure the unit is intact and undamaged and all parts have been supplied. Never substitute parts for those supplied. Doing so may cause product failure.

WARNING-DANGER: Using electrically operated equipment near gasoline or gasoline vapors may result in a fire or explosion, causing personal injury and property damage. Be sure that the working area is free from such hazards, and always use proper precautions.
NOTE: At all times when product is in the storage tank keep the riser pipe capped, so the vapors cannot escape into the environment.

Notice: OPW products must 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. All illustrations and specifications in this literature are based on the latest production information available at the time of publication. Prices, materials, and specification are subject to change at any time, and models may be discontinued at any time, in either case, without notice or obligation.

Standard Product Warranty

OPW warrants that products sold by it are free from defects in materials and workmanship for a period of one year from the date of manufacture by OPW (ECO products two years from date of manufacture.) Proof of purchase may be required. As the exclusive remedy under this limited warranty, OPW, will at its sole discretion, repair, replace, or issue credit for future orders for any product that may prove defective within the one year date of manufacture period (repairs, replacements, or credits may be subject to prorated warranty for remainder of the original warranty period, complete proper warranty claim documentation required.) This warranty shall not apply to any product that has been altered in any way, which has been repaired by any party other than a service representative authorized by OPW, or when failure is due to misuse, or improper installation or maintenance. OPW shall have no liability whatsoever for special, incidental or consequential damages to any party, and shall have no liability for the cost of labor, freight, excavation, clean up, downtime, removal, reinstallation, loss of profit, or any other cost or charges.

For any product certified to California 2001 standards, OPW warrants that product sold by it are free from defects in material and workmanship for a period of one year from date of manufacture or one year from date of registration of installation not to exceed 15 months from date of manufacture by OPW.

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.

In California it is prohibit to use spill container drain valves on spill containers that are exclusively used for vapor return risers. Install only 1-2100 Series Thread-On spill containers models equipped with a drain plug.

1-2100 Series Performance Specifications:

This Spill Container drain valve has been manufactured and tested to the following California specifications: Leak Rate to be less than or equal to 0.17 CFH @ 2.0 " W.C.

Torques Specification:

Spill Container 4" NPT, 125 ft-lbs minimum to 250 ft-lbs maximum.

4" Nipple, 4" NPT, 125 ft-lbs minimum to 250 ft-lbs maximum.

Drain Valve clamps, 5/16-18 UN thread, 11.5 ft-lbs minimum to 13.5 ft-lbs maximum.

OPW NO. 1-2100 SERIES GRADE LEVEL SPILL CONTAINER INSTALLATION INSTRUCTIONS:

Step1.
Per California SB-989, all metal must be protected from direct contact with the elements. Coat stainless steel band clamps with the following approved coatings. OPW SL-1100, 3M Underseal 08883 or Polyguard Mastic CA-9. Only the threaded hardware needs to be coated in the field.

Step 2: (See Figure 1 & 2)
Set riser pipe. "L" is the distance between the top of the riser pipe and finish grade.
Note: The "L" dimensions below factors in a 1" slope to grade.

Model Series	"L" Dimension
1-2100, 5 Gal. (Comp. Base)	L=15 5/8" (40cm)
1-2100E, 7.5 Gal.(Comp. Base)	L=19 5/8" (50cm)
1-2115, 15 Gal. (Comp. Base)	L=19 5/8" (50cm)
1-2100C, 5 Gal.(Cast Iron Base)	L=14 1/2" (37cm)
1-2100EC, 7.5 Gal.(Cast Iron Base)	L=18 1/2" (47cm)
1-2115C, 15 Gal. (Cast Iron Base)	L=18 1/2" (47cm)

Note:
If using OPW FSA-400, add 3-1/4" to Dimension "L".
If using OPW FSA-400-S, add 1-3/4 to Dimension "L".
NOTE: FSA-400-S will only work with Cast Iron Base.

Step 3:
Deburr and thoroughly clean riser pipe. Apply pipe dope to riser threads. Pipe dope to be a non-hardening, gasoline resistant pipe thread seal compound.

Step 4:
Install OPW FSA-400 Face Seal Adapter onto riser using the OPW 61SA-TOOL. Torque to 125 ft-lbs min. to 250 ft-lbs max.(4" NPT). Apply pipe dope to FSA-400. Pipe dope to be a non-hardening, gasoline resistant pipe thread seal compound.

Step 5:
Install spill container by rotating the mounting ring until hand tight.
NOTE: Do not attempt to completely tighten the container by using the mounting ring

Step 6:
Finish tightening the spill container with the OPW 61SA-TOOL. Torque to 125 ft-lbs min. to 250 ft. Lbs. max. (4" NPT)

Step 7: (See Figure 2)
Apply pipe dope to nipple and install. Pipe dope to be a non-hardening, gasoline resistant pipe thread seal compound. Use only factory made nipples. Nipples must be cut square and deburred. Torque to 125 ft-lbs min. to 250 ft-lbs max. (4" NPT). Torque value is based on rotation at the center of pipe. For standard cover models install adaptor and dust cap. For sealable cover (1SC) models, install a standard 4" pipe cap to support adjustment system. (Adaptor and dust cap must be installed in sealable cover (SC) models after concrete has dried.
Note: Nipple length is determined by measuring from the bottom of the threaded portion of the base to the bottom of the cover. Then subtract 2" for clearance, height of adaptor and height of cap. Range of nipple lengths that can be used in all of the OPW spill containers: 4" minimum to 14" maximum.

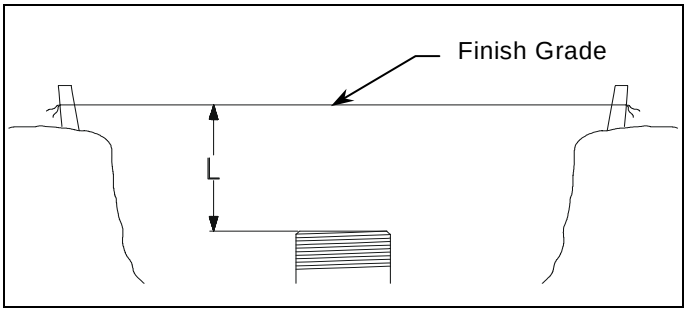


Figure1

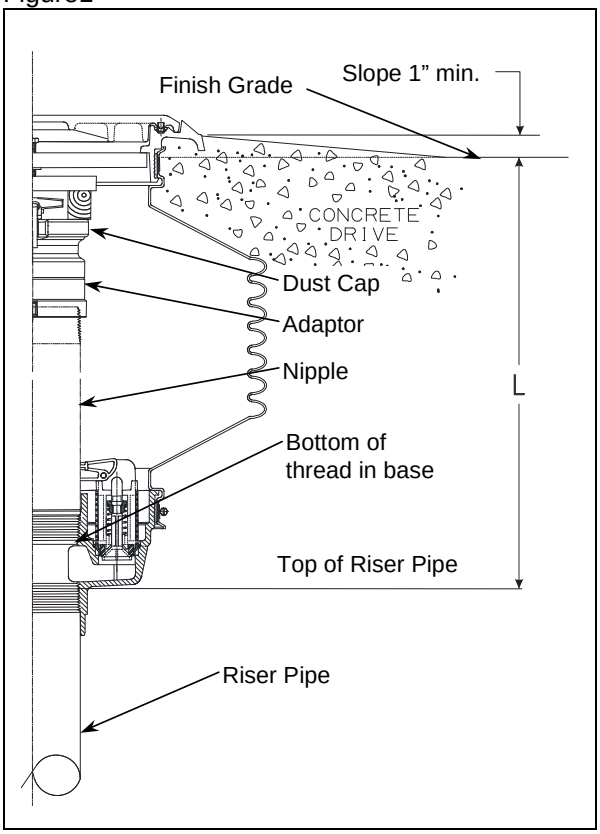


Figure 2

Step 8: (See Figure 3 & 4)
Install adjusting system beneath tabs on mounting ring. See Figure 3 for standard cover models. See Figure 4 for sealable cover models. Add shims as needed and adjust with screw. (Shims must be cut to size for sealable cover models.) The height can be increased up to 1" (2.5cm).
Note: The adjustment should not be more than 1" from the initial length of the unit.

Step 9:
Upon preliminary installation perform the California Test Procedures TP-201.1C or equivalent. Their Test Procedures will check the seals between the drain valve, nipple and rotatable adapter. To test the spill containers base and bellows fill the container with water. A drop in the water level of 1/16" or greater after one hour means that a leak exists. To determine where the leak is, look for a steady stream of bubbles coming from one of the joints or water leaking on the outside of the bucket.
NOTE: Do not drain the water into the UST after the test is complete. Water must be disposed of per local requirements for hazardous waste. If the leak cannot be corrected the spill container should be replaced with another.

Step 10: (See Figure 2)
Before pouring concrete, place plastic over the cover and mounting ring protecting them from concrete splash. Double check that the unit is level and at proper grade height. Pour concrete per figure 2. Ramp or dome the concrete away from the mounting ring. There should be a minimum of 1" slope to finish grade. The concrete surface should start at the bottom edge of the watershed slots and tapered down to grade level.
NOTE: Do not stand on spill container before concrete sets up.
Remove plastic from cover after concrete has dried. Remove adjustment system. Adaptor and tight fill cap can now be installed in sealable cover models. Re-test the spill containers for leaks as described in step 9, after the concrete has set up.

Operation and Maintenance:

Annually: Inspect and clean the interior of the spill container and drain valve screen. Remove accumulated dirt and grit. Test the drain valve using CARB procedure TP-201.1C or TP-201.1D. If the drain valve passes testing no further maintenances required. If the drain valve fails testing, remove the valve, soak in water and use high-pressure air, if needed, to clean. Reinstall the drain valve to its proper position and test the valve with CARB procedure TP-201.1C or TP-201.1D. If problems persist, replace the drain valve with P/N 1DK-2100-EVR (specified torque 11.5 ft-lbs min to 13.5 ft-lbs max, 5/16-18 UN thread). The sealable cover (1SC) adjustment nut is set at the factory, but due to environmental conditions it may be necessary to adjust it to either improve sealing or ease cover removal.

Important: Leave these instructions with Station Operator.

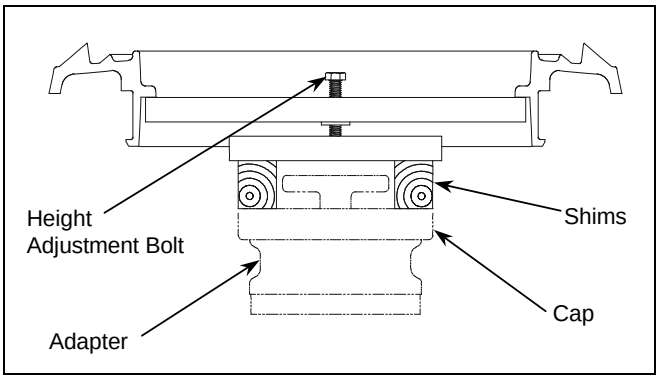


Figure 3 – Standard Cover Model Height Adjustment

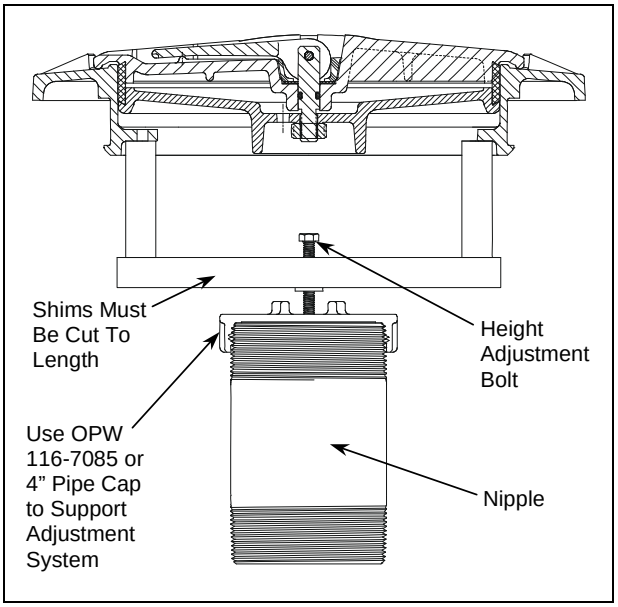
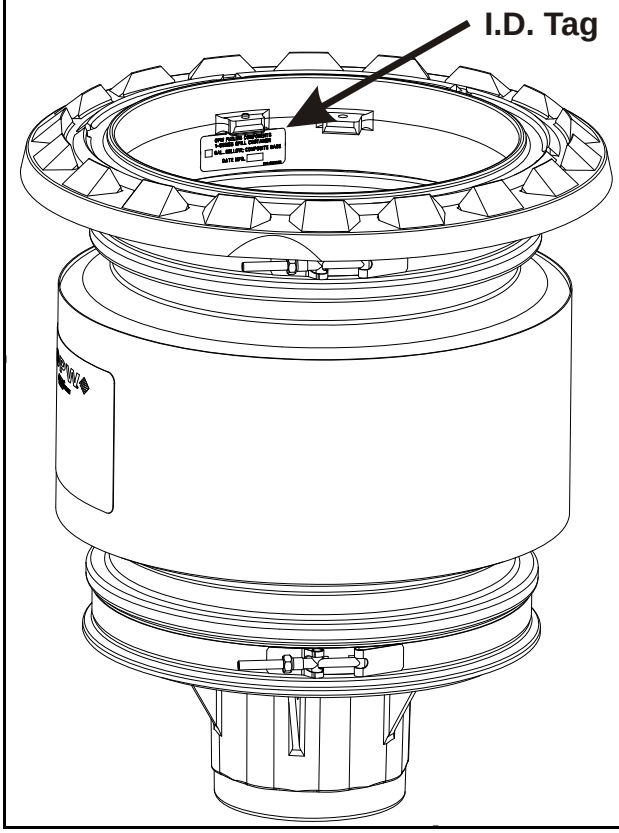
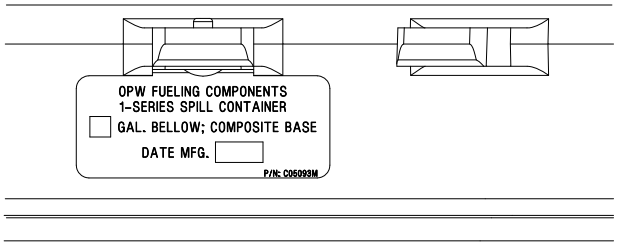


Figure 4 – Sealable Cover Model height adjustment





Manufacture: OPW
Model: 1-Series Spill Container
Size: 5, 7.5 or 15 Gal
Composite or Cast Iron Base
Date Manufactured: MM YY
MM = Month, YY = Year

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Printed in U.S.A. p/n H12295PA – 5/07

Section 2

700L Series Secondary Contained Spill Bucket

Installation and Maintenance Instructions
Direct 700L Series Secondary Contained Spill Bucket

IMPORTANT: Please read these warnings and use the assembly instructions completely and carefully before starting. Failure to do so may cause product failure, or result in environmental contamination due to liquid leakage into the soil, creating hazardous spill conditions.

IMPORTANT: This Spill Container is pre-assembled for your convenience and ease of installation. Check to make sure the unit is intact and undamaged and all parts have been supplied. Never substitute parts for those supplied. Doing so may cause product failure.

WARNING-DANGER: Using electrically operated equipment near gasoline or gasoline vapors may result in a fire or explosion, causing personal injury and property damage. Be sure that the working area is free from such hazards, and always use proper precautions.
NOTE: At all times when product is in the storage tank keep the riser pipe capped, so the vapors cannot escape into the environment.

NOTICE: OPW products must 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. All illustrations and specifications in this literature are based on the latest production information available at the time of publication. Prices, materials, and specification are subject to change at any time, and models may be discontinued at any time, in either case, without notice or obligation.

Standard Product Warranty

OPW warrants that products sold by it are free from defects in materials and workmanship for a period of one year from the date of manufacture by OPW (ECO products two years from date of manufacture.) Proof of purchase may be required. As the exclusive remedy under this limited warranty, OPW, will at its sole discretion, repair, replace, or issue credit for future orders for any product that may prove defective within the one year date of manufacture period (repairs, replacements, or credits may be subject to prorated warranty for remainder of the original warranty period, complete proper warranty claim documentation required.) This warranty shall not apply to any product that has been altered in any way, which has been repaired by any party other than a service representative authorized by OPW, or when failure is due to misuse, or improper installation or maintenance. OPW shall have no liability whatsoever for special, incidental or consequential damages to any party, and shall have no liability for the cost of labor, freight, excavation, clean up, downtime, removal, reinstallation, loss of profit, or any other cost or charges.

For any product certified to California 2001 standards, OPW warrants that product sold by it are free from defects in material and workmanship for a period of one year from date of manufacture or one year from date of registration of installation not to exceed 15 months from date of manufacture by OPW.

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.

NOTE: *In California it is prohibited to use spill container drain valves on spill containers that are exclusively used for vapor return risers.*

NOTE: *The sealable cover (SC) adjustment nut is set at the factory, but due to environmental conditions it may be necessary to adjust it to either improve sealing or ease cover removal.*

WARNING: **The primary containment bucket consists of three components cast iron ring, bellows, and bucket bottom. These parts are held together with stainless steel retaining bands. DO NOT adjust the stainless steel retaining bands securing the bellows to the containment bucket top ring or the containment bucket bottom. Adjusting the retaining bands voids any and all warranties on this product.**

WARNING: **If the cover is removed, for any reason, follow the Operation and Maintenance instruction as noted. Always inspect and replace damaged o-rings and seals and install new ones. Never reuse damaged o-rings or seals as it may result in an improper seal. Only qualified, competent, well-trained technicians should perform maintenance. Common sense and good judgment should always be exercised. The contractor's understanding of all related site conditions prior to starting the project is essential. If the contractor does not have a clear understanding of the required work and site conditions, the contractor is advised to seek clarification prior to starting any portion of the project.**

NOTICE TO DELIVERY DRIVER: All delivery drivers MUST inspect the inside of the container for water or contaminants other then fuel prior to delivery. If water or contaminates are present, then they MUST be removed by the use of absorbent towels before proceeding. Dispose of towels and debris safely and per all applicable local, state, and federal codes. After delivery is complete, the driver MUST drain any excess fuel that may have spilled into the container from their delivery hose by pulling on the drain valve until the fluid is completely gone.

Performance Specifications: This Spill Container drain valve has been manufactured and tested to the following

California specifications: Leak Rate at 0.17 CFH @ 2.0 " W.C.

Tools Required:
61SA-TOOL – Torque Tool
TC-400 – Torque Cap
CHS-550 or CHS-450 – Hole Saw for 4" or 3" Entry Fitting
BFT-300 – Template for Bolted Fitting
Torque Specifications:
Spill Container 4" NPT, 125 ft-lbs minimum to 250 ft-lbs maximum.

4" Nipple, 4" NPT, 125 ft-lbs minimum to 250 ft-lbs maximum.

Drain Valve clamps, 5/16-18 UN thread, 11.5 ft-lbs minimum to 13.5 ft-lbs maximum.

Mounting Ring Stud, 5/16-18 UN thread, 15 ft-lbs minimum to 20 ft-lbs maximum.

Manhole bolts, 5/16-18 UN thread, 15 ft-lbs minimum to 20 ft-lbs maximum.

Secondary Contained Spill Bucket Manhole Installation Instructions

Mark off finish grade. (See Figure 1.)

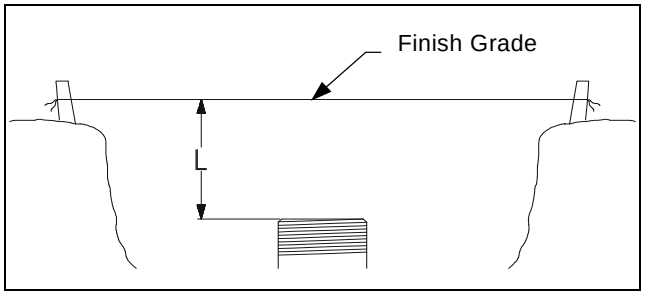

Figure 4

Cut the riser(s) from the underground tank so that both the fill and vapor risers are set below the final grade. Use the dimensions below:

Spill Container

	Inches below grade (L)
5 Gal. Cast Iron Base	**18½"**
5 Gal. Composite Base	**19 5/8"**

Note: Add an extra 3-1/4" when using an OPW FSA-400 Face Seal Adaptor, recommended for Composite Base. Add an extra 1 ¾" when using the FSA-400-S Face Seal Adaptor, recommended for Cast Iron Base. (See Figure 1.)

3. **Remove Spill Container Cover, Spill Container Mounting Ring, and Manhole Cover.**

4. **Slide the Fiberglass basin over the riser pipe, make sure the band clamps on the entry fitting are loose to allow for adjusting the basin over the riser. (See Figure 2.)**

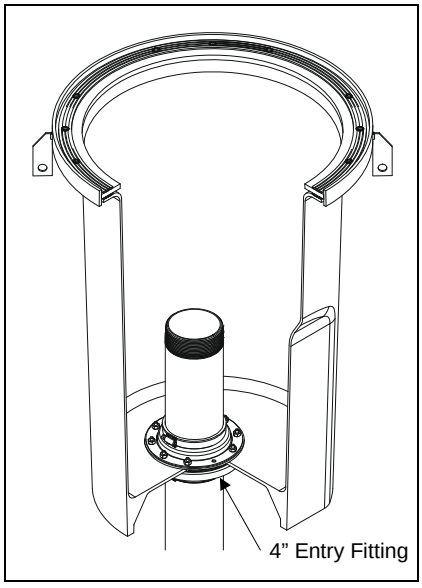

Figure 5

5. **Elevate the Fiberglass Basin and steel ring to grade.**

6. **Secure the fiberglass basin to the riser by tightening the entry fitting band clamps.**

Deburr and thoroughly clean riser pipe(s).

Apply pipe dope to riser(s). The pipe dope is to be a non-hardening, gasoline resistant, pipe thread seal compound.

Install OPW FSA-400 (Composite Base) or FSA-400S (Cast Iron Base) Face Seal Adapter onto riser. (Recommend Torque, 4" NPT, 125 ft-lbs min. to 250 ft-lbs max.). Apply pipe dope to FSA. The pipe dope is to be a non-hardening, gasoline resistant, pipe thread seal compound. This is optional for spill containers that are on the vapor lines. (See Figure 3.)

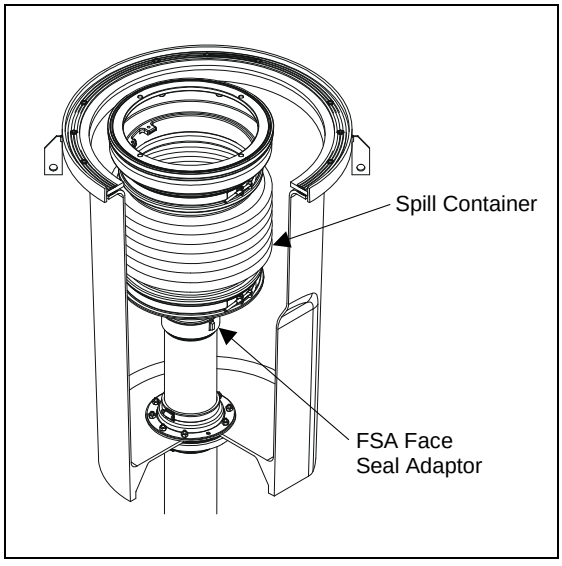

Figure 6

Thread on spill container. (See Figure 3.)

<u>Grounding Wire Specifications:</u>

Use a #10 coated wire TFFN or THHN from grounding.
5/16-18 threaded bolts SST (Stainless)
5/16-18 SST nuts
5/16 SST lock-washer

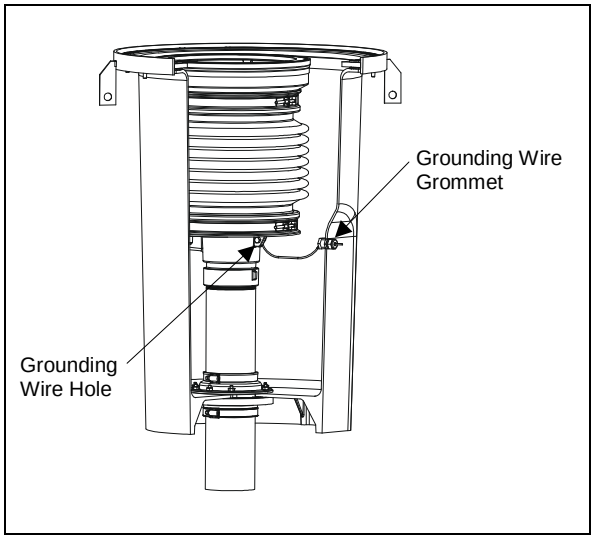

Figure 7

11a.) Measure the distance for the required wire from the grounding wire hole in the primary bucket base to secondary bucket grounding lug.
11b.) Attach one bolt, nut, and lock-washer with the grounding wire to the grounding wire hole in the primary base.
11c.) Attach one nut and lock-washer with the grounding wire to the grounding lug located on the inside of the secondary bucket.
11d.) Attach one nut and lock-washer with the grounding wire and grounding lug located on the outside of the secondary bucket.
11e.) Loop grounding wire to the next bucket. Repeat steps 2-4.
11f.) Attach the last grounding wire in the series of buckets to a grounding rod.

Using the 61SA-TOOL, tighten the spill container onto the nipple with a minimum torque of 125 ft.-lbs. and a maximum torque of 250 ft.-lbs.

WARNING: Do NOT tighten the containment bucket by using the mounting ring at the top of the bucket. Tightening the bucket using the mounting ring may lead to failure of the unit.

Assure both upper and lower entry fitting band clamps are tightly secured to the riser.

Install the steel cover, centering the riser as close as possible in the containment openings. Be very careful not to move or damage the O-Rings.

Inspect the containment bucket O-Rings and Mounting Ring O-Rings for damage. Replace the o-ring gasket(s) if they are damaged.

Place the mounting ring over the containment buckets and rotate the mounting ring until the studs are aligned with the bucket ring holes. (See Figure 5)

Thread nut and lock washer onto studded mounting ring. Tighten the mounting ring retaining bolts until the containment bucket o-rings make contact with the multi-port cover.

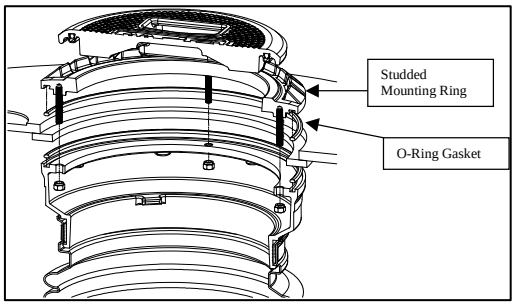

Figure 5

In a crossing pattern, torque the bolts down between 15 to 20 ft.-lbs. 6 Point Ratcheting box wrench is recommended. (See Figure 6.)

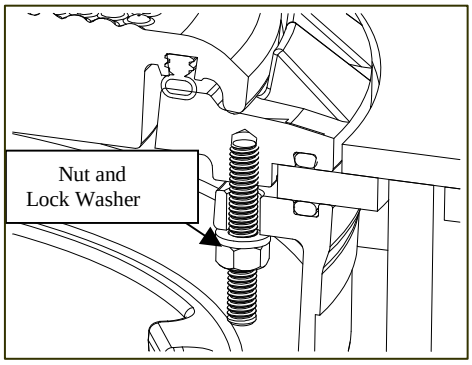

Figure 6

Install the spill bucket covers.

(Optional): Install the product identification disc on the spill bucket cover and multi-port cover in the I.D. disc recess.

Cover the multi-port perimeter ring and cover with plastic to prevent concrete from settling in the drainage areas.

It is required that the perimeter ring and skirt assembly and the multi-port cover be set as an assembled unit, with the bolts engaged. Failure to engage the bolts may result in the distortion of the ring and improper fit of the ring to cover after the concrete is poured.

When pouring the concrete, hand shovel or trowel the concrete around the multi-port assembly to prevent the unit from moving or shifting, which can

cause alignment problems and future maintenance problems.

Note: Do not stand on the multi-port before the concrete has set up.

It is recommended that the paved contours around POMECO covers be adequately sloped to direct water flow away from the cover and direct water runoff from adjacent areas away from POMECO covers. 1" minimum slope is recommended. (See Figure 7.)

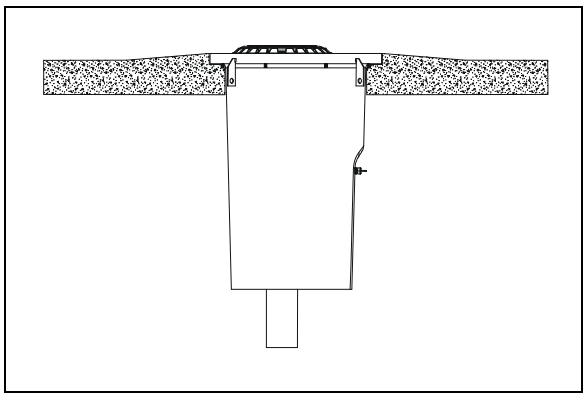

Figure 7

Remove the plastic after the concrete has set up.

After installation is complete, water test the multi-port fixture. The recommended water test procedures include:

a) **Spraying water on cover(s) for 5 to 10 minutes, using a commonly available watering device such as a lawn sprinkler.**
b) **Standing water test, not to exceed ½" in water depth for a period of 5 to 10 minutes.**

Operation and Maintenance:

Weekly: Inspect the interior of both the primary and secondary container for water or other contaminants. If water or contaminates are present, then they MUST be removed by the use of absorbent towels. Dispose of towels and debris safely and per all applicable local, state, and federal codes. Check that the cover is in good condition and properly identified. Replace the cover as necessary. Inspect the bucket walls for cracks, bulges, or holes. If any exist, have that spill container barricaded and contact maintenance personnel immediately for repairs.

Semiannually: Follow all state and local required hydrostatic or vacuum testing on the primary bucket and secondary basin. Inspect and clean the drain valve screen. Remove accumulated dirt and grit. If the drain valve screen becomes clogged, remove the valve, soak in water and use high-pressure air to clean. Reinstall the drain valve to its proper position and test the valve per California ARB TP201-1C Test Procedure. If problems persist, replace the drain valve with P/N 1DK-2100-EVR (specified torque 11.5 ft-lbs min to 13.5 ft-lbs max, 5/16-18 UN thread).

Testing Spill Containers
Use California ARB TP201-1C or TP201-1D Test Procedures: These Test Procedures will check the seals between the drain valve, nipple and rotatable adapter. To test the spill containers base and bellows fill the container with water. A drop in the water level of 1/16" or greater after one hour means that a leak exists. To determine where the leak is, look for a steady stream of bubbles coming from one of the joints or water leaking on the outside of the bucket. **NOTE:** Do not drain the water into the UST after the test is complete. Water must be disposed of per local requirements for hazardous waste. If the leak cannot be corrected the spill container should be replaced with another.

Important: Leave these instructions with Station Operator as per CARB Requirements

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Printed in U.S.A. p/n 200219 – 111407

Installation and Maintenance Instructions
Remote 700L Series Secondary Contained Spill Bucket

IMPORTANT: Please read these warnings and use the assembly instructions completely and carefully before starting. Failure to do so may cause product failure, or result in environmental contamination due to liquid leakage into the soil, creating hazardous spill conditions.

IMPORTANT: This Spill Container is pre-assembled for your convenience and ease of installation. Check to make sure the unit is intact and undamaged and all parts have been supplied. Never substitute parts for those supplied. Doing so may cause product failure.

WARNING-DANGER: Using electrically operated equipment near gasoline or gasoline vapors may result in a fire or explosion, causing personal injury and property damage. Be sure that the working area is free from such hazards, and always use proper precautions.
NOTE: At all times when product is in the storage tank keep the riser pipe capped, so the vapors cannot escape into the environment.

NOTICE: OPW products must 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. All illustrations and specifications in this literature are based on the latest production information available at the time of publication. Prices, materials, and specification are subject to change at any time, and models may be discontinued at any time, in either case, without notice or obligation.

Standard Product Warranty

OPW warrants that products sold by it are free from defects in materials and workmanship for a period of one year from the date of manufacture by OPW (ECO products two years from date of manufacture.) Proof of purchase may be required. As the exclusive remedy under this limited warranty, OPW, will at its sole discretion, repair, replace, or issue credit for future orders for any product that may prove defective within the one year date of manufacture period (repairs, replacements, or credits may be subject to prorated warranty for remainder of the original warranty period, complete proper warranty claim documentation required.) This warranty shall not apply to any product that has been altered in any way, which has been repaired by any party other than a service representative authorized by OPW, or when failure is due to misuse, or improper installation or maintenance. OPW shall have no liability whatsoever for special, incidental or consequential damages to any party, and shall have no liability for the cost of labor, freight, excavation, clean up, downtime, removal, reinstallation, loss of profit, or any other cost or charges.

For any product certified to California 2001 standards, OPW warrants that product sold by it are free from defects in material and workmanship for a period of one year from date of manufacture or one year from date of registration of installation not to exceed 15 months from date of manufacture by OPW.

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.

NOTE: *In California it is prohibited to use spill container drain valves on spill containers that are exclusively used for vapor return risers.*

NOTE: *The sealable cover (SC) adjustment nut is set at the factory, but due to environmental conditions it may be necessary to adjust it to either improve sealing or ease cover removal.*

WARNING: **The primary containment bucket consists of three components cast iron ring, bellows, and bucket bottom. These parts are held together with stainless steel retaining bands. DO NOT adjust the stainless steel retaining bands securing the bellows to the containment bucket top ring or the containment bucket bottom. Adjusting the retaining bands voids any and all warranties on this product.**

WARNING: **If the cover is removed, for any reason, follow the Operation and Maintenance instruction as noted. Always inspect and replace damaged o-rings and seals and install new ones. Never reuse damaged o-rings or seals as it may result in an improper seal. Only qualified, competent, well-trained technicians should perform maintenance. Common sense and good judgment should always be exercised. The contractor's understanding of all related site conditions prior to starting the project is essential. If the contractor does not have a clear understanding of the required work and site conditions, the contractor is advised to seek clarification prior to starting any portion of the project.**

NOTICE TO DELIVERY DRIVER: All delivery drivers MUST inspect the inside of the container for water or contaminants other then fuel prior to delivery. If water or contaminates are present, then they MUST be removed by the use of absorbent towels before proceeding. Dispose of towels and debris safely and per all applicable local, state, and federal codes. After delivery is complete, the driver MUST drain any excess fuel that may have spilled into the container from their delivery hose by pulling on the drain valve until the fluid is completely gone.

Performance Specifications: This Spill Container drain valve has been manufactured and tested to the following

California specifications: Leak Rate at 0.17 CFH @ 2.0 " W.C.

Tools Required:
61SA-TOOL – Torque Tool
TC-400 – Torque Cap
CHS-550 or CHS-450 – Hole Saw for 4" or 3" Entry Fitting
BFT-300 – Template for Bolted Fitting
Torque Specifications:
Spill Container 4" NPT, 125 ft-lbs minimum to 250 ft-lbs maximum.

4" Nipple, 4" NPT, 125 ft-lbs minimum to 250 ft-lbs maximum.

Drain Valve clamps, 5/16-18 UN thread, 11.5 ft-lbs minimum to 13.5 ft-lbs maximum.

Mounting Ring Stud, 5/16-18 UN thread, 15 ft-lbs minimum to 20 ft-lbs maximum.

Manhole bolts, 5/16-18 UN thread, 15 ft-lbs minimum to 20 ft-lbs maximum.

Secondary Contained Spill Bucket Manhole Installation Instructions

Mark off finish grade. (See Figure 1.)

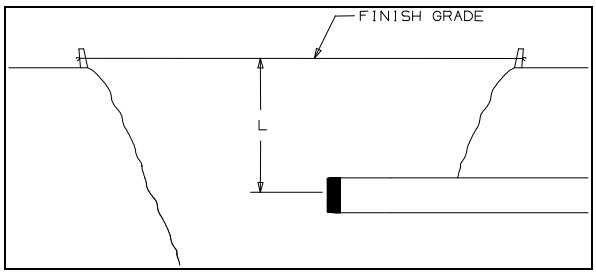

Figure 8

Remove the four (4) bolts that secure the manhole cover to the ring, and remove the manhole cover.

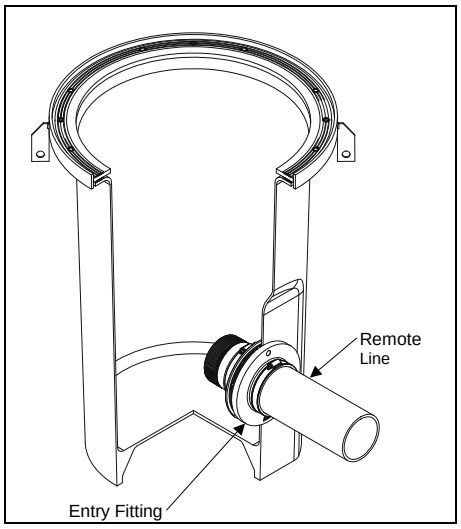

Figure 9

Measure length, L, and mark the distance from the center of the remote line to grade on the outside diameter of the fiberglass bucket, measuring from the top of metal ring. Follow instructions for the bolted flange. The Maximum Length is 26 5/16" and Minimum Length is 21 1/2".

Deburr and thoroughly clean remote line.

Slide the Fiberglass basin over the remote line; make sure the band clamps on the entry fitting are loose to allow for adjusting the basin over the remote line. (See Figure 2).

Apply pipe dope to remote line. The pipe dope is to be a non-hardening, gasoline resistant, pipe thread seal compound.

Install elbow to remote line. Then calculate the nipple length with the equation below. (See Figure 3.)

Spill Container	**Inches below grade**
5 Gal. Cast Iron Base	**18 1/8"**
5 Gal. Composite Base	**19 1/2"**

Elbow	**Height**
Standard	**3 13/16"**
Low Profile	**1/2"**

Nipple Length
L – Spill Container – Elbow = Nipple Length
(Round length to closest standard length)

Deburr and thoroughly clean nipple.

Apply pipe dope to nipple. The pipe dope is to be a non-hardening, gasoline resistant, pipe thread seal compound. Thread 4" pipe 125 to 250 ft. lbs.

Align the elbow at the proper position for installation. Secure the band clamps on the entry fitting to the required torque suggested in the installation instructions. (See Figure 3.)

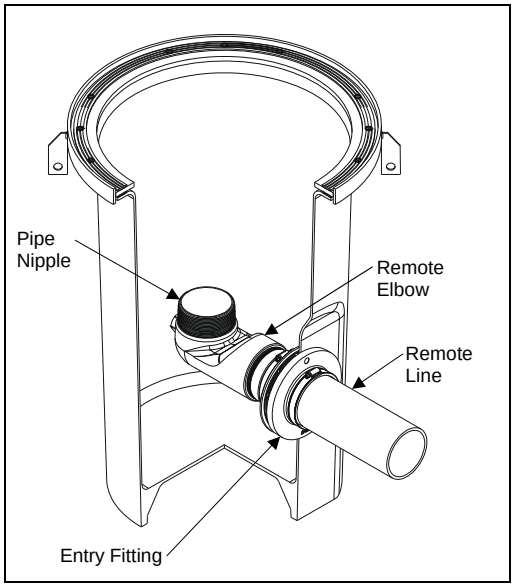

Figure 10

Thread on spill container. (See Figure 4.)

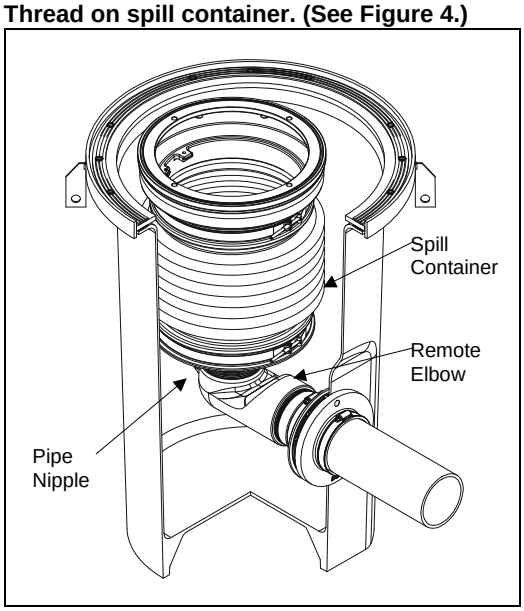

Figure 11

<u>Grounding Wire Specifications:</u>

Use a #10 coated wire TFFN or THHN from grounding.
5/16-18 threaded bolts SST (Stainless)
5/16-18 SST nuts
5/16 SST lock-washer

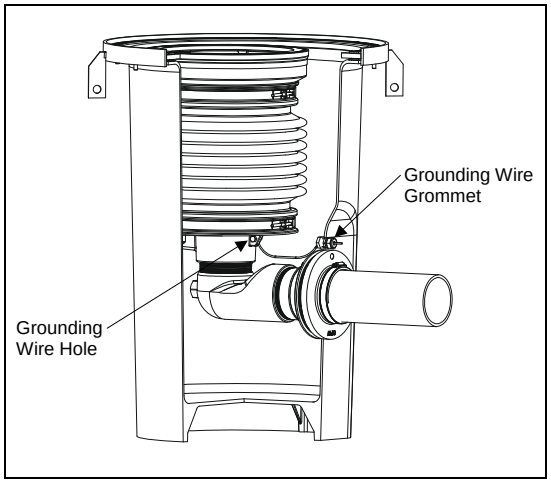

Figure 12

12a.) Measure the distance for the required wire from the grounding wire hole in the primary bucket base to secondary bucket grounding lug.
12b.) Attach one bolt, nut, and lock-washer with the grounding wire to the grounding wire hole in the primary base.
12c.) Attach one nut and lock-washer with the grounding wire to the grounding lug located on the inside of the secondary bucket.
12d.) Attach one nut and lock-washer with the grounding wire and grounding lug located on the outside of the secondary bucket.
12e.) Loop grounding wire to the next bucket. Repeat steps 2-4.
12f.) Attach the last grounding wire in the series of buckets to a grounding rod.

Using the 61SA-TOOL, tighten the spill container onto the nipple with a minimum torque of 125 ft.-lbs. and a maximum torque of 250 ft.-lbs.

WARNING: Do NOT tighten the containment bucket by using the mounting ring at the top of the bucket. Tightening the bucket using the mounting ring may lead to failure of the unit.

Install the steel cover, centering the riser as close as possible in the containment openings. Be very careful not to move or damage the o-rings.

Inspect the containment bucket o-rings and mounting ring o-Rings for damage. Replace the o-ring gasket(s) if they are damaged.

Place the rain tight or sealable cover mounting ring over the containment buckets and rotate the mounting ring until the studs are aligned with the bucket ring holes. (See Figure 6.)

Thread nut and lock washer onto studded mounting ring. Tighten the mounting ring retaining bolts until the containment bucket o-rings make contact with the multi-port cover.

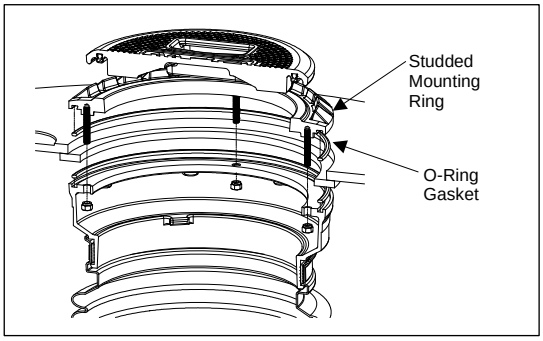

Figure 6

In a crossing pattern, torque the bolts down between 15 to 20 ft.-lbs. A 6 Point Ratcheting box wrench is recommended. (See Figure 7.)

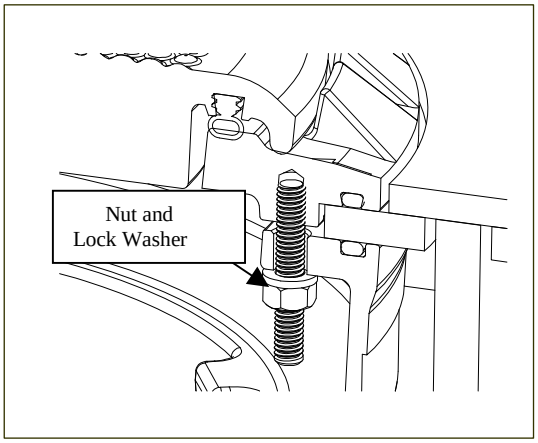

Figure 7

Install the spill bucket covers.

(Optional): Install the product identification disc on the spill bucket cover and multi-port cover in the I.D. disc recess.

Cover the multi-port perimeter ring and cover with plastic to prevent concrete from settling in the drainage areas.

It is required that the perimeter ring and skirt assembly, and the multi-port cover be set as an assembled unit, with the bolts engaged. Failure to engage the bolts may result in the distortion of the ring and improper fit of the ring to cover after the concrete is poured.

When pouring the concrete, hand shovel or trowel the concrete around the multi-port assembly to prevent the unit from moving or shifting, which can cause alignment problems and future maintenance problems.

WARNING: Do not stand on the unit before the concrete has set up. Standing on the unit may result in a cracked unit, line, or tank fitting.

It is recommended that the paved contours around POMECO covers be adequately sloped to direct water flow away from the cover and direct water runoff from adjacent areas away from POMECO covers. 1" minimum slope is recommended. (See Figure 8.)

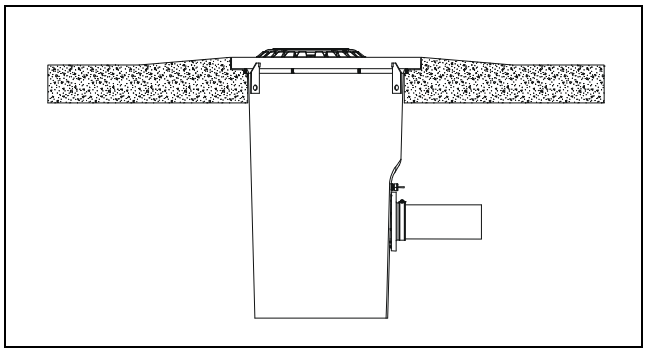

Figure 8

Remove the plastic after the concrete has set up.

After installation is complete, water test the multi-port fixture. The recommended water test procedures include:

c) Spraying water on cover(s) for 5 to 10 minutes, using a commonly available watering device such as a lawn sprinkler.

d) Standing water test, not to exceed ½" in water depth for a period of 5 to 10 minutes.

Any water in the unit is considered a failure. Replace the o-rings in accordance with these installation instructions and repeat test.

<u>Operation and Maintenance:</u>

Weekly: Inspect the interior of both the primary and secondary container for water or other contaminants. If water or contaminates are present, then they MUST be removed by the use of absorbent towels. Dispose of towels and debris safely and per all applicable local, state, and federal codes. Check that the cover is in good condition and properly identified. Replace the cover as necessary. Inspect the bucket walls for cracks, bulges, or holes. If any exist, have that spill container barricaded and contact maintenance personnel immediately for repairs.

Semiannually: Follow all state and local required hydrostatic or vacuum testing on the primary bucket and secondary basin. Inspect and clean the drain valve screen. Remove accumulated dirt and grit. If the drain valve screen becomes clogged, remove the valve, soak in water and use high-pressure air to clean. Reinstall the drain valve to its proper position and test the valve per California ARB TP201-1C Test Procedure. If problems persist, replace the drain valve with P/N 1DK-2100-EVR (specified torque 11.5 ft-lbs min to 13.5 ft-lbs max, 5/16-18 UN thread).

Testing Spill Containers
Use California ARB TP201-1C or TP201-1D Test Procedures: These Test Procedures will check the seals between the drain valve, nipple and rotatable adapter. To test the spill containers base and bellows fill the container with water. A drop in the water level of 1/16" or greater after one hour means that a leak exists. To determine

where the leak is, look for a steady stream of bubbles coming from one of the joints or water leaking on the outside of the bucket. **NOTE:** Do not drain the water into the UST after the test is complete. Water must be disposed of per local requirements for hazardous waste. If the leak cannot be corrected the spill container should be replaced with another.

Important: Leave these instructions with Station Operator as per CARB Requirements

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Section 3

6511-RB16 Riser Spacer

500 Series POMECO Multi-Port

Below Grade Multi-Port with Platform

POMECO Installation & Maintenance Instructions
6511-RB16 Riser Spacer

IMPORTANT: Please read these warnings and use the assembly instructions completely and carefully before starting. Failure to do so may cause product failure, or result in environmental contamination due to liquid leakage into the soil, creating hazardous spill conditions.

IMPORTANT: The POMECO Spill Container is pre-assembled for your convenience and ease of installation. Check to make sure the unit is intact and undamaged and all parts have been supplied. Never substitute parts for those supplied. Doing so may cause product failure.

WARNING-DANGER: Using electrically operated equipment near gasoline or gasoline vapors may result in a fire or explosion, causing personal injury and property damage. Be sure that the working area is free from such hazards, and always use proper precautions.
NOTE: At all times when product is in the storage tank keep the riser pipe capped, so the vapors cannot escape into the environment.

Notice: OPW products must 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. All illustrations and specifications in this literature are based on the latest production information available at the time of publication. Prices, materials, and specification are subject to change at any time, and models may be discontinued at any time, in either case, without notice or obligation.

Standard Product Warranty

OPW warrants that products sold by it are free from defects in materials and workmanship for a period of one year from the date of manufacture by OPW (ECO products two years from date of manufacture.) Proof of purchase may be required. As the exclusive remedy under this limited warranty, OPW, will at its sole discretion, repair, replace, or issue credit for future orders for any product that may prove defective within the one year date of manufacture period (repairs, replacements, or credits may be subject to prorated warranty for remainder of the original warranty period, complete proper warranty claim documentation required.)

This warranty shall not apply to any product that has been altered in any way, which has been repaired by any party other than a service representative authorized by OPW, or when failure is due to misuse, or improper installation or maintenance. OPW shall
have no liability whatsoever for special, incidental or consequential damages to any party, and shall have no liability for the cost of labor, freight, excavation, clean up, downtime, removal, reinstallation, loss of profit, or any other cost or charges.

For any product certified to California 2001 standards, OPW warrants that product sold by it are free from defects in material and workmanship for a period of one year from date of manufacture or one year from date of registration of installation not to exceed 15 months from date of manufacture by OPW.
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.

6511-RB16 Riser Spacer Performance Specifications:

The 6511-RB16 Riser Spacer is designed to assist in the alignment of Tank risers. The 6511-RB16 bolts to Fill and Vapor risers, and a thread turnbuckle allows for adjustment.

6511-RB16 Riser Spacer
Installation Instructions

1. **See POMECO Multi-Port Spill Container Manhole instruction sheet MPIS-903.**

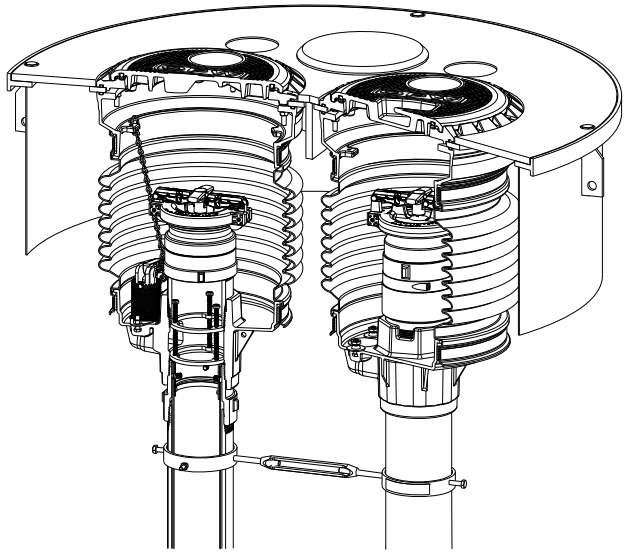
2. **Before completing Step 5 in the Multi-Port Instructions, slide POMECO 6511-RB16 Riser Spacer over Fill and Vapor risers. The Ring with two bolts should mate to the Fill Riser, the second bolt is for grounding wire.**

3. **Thread the hex bolts into the riser until the 6511-RB16 Riser Spacer is firmly attached to the risers.**

4. **Adjust turnbuckle until Spill Containers are aligned to the Multi-Port Cover.**

Consult tank manufactures recommendations before repositioning risers.

WARNING
DO NOT OVERTIGHTEN RISER SPACER.
POTENTIAL RISER



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POMECO Installation and Maintenance Instructions Multi-Port Spill Containment Manholes

IMPORTANT: Please read these warnings and use the assembly instructions completely and carefully before starting. Failure to do so may cause product failure, or result in environmental contamination due to liquid leakage into the soil, creating hazardous spill conditions.

IMPORTANT: The POMECO Spill Container is pre-assembled for your convenience and ease of installation. Check to make sure the unit is intact and undamaged and all parts have been supplied. Never substitute parts for those supplied. Doing so may cause product failure.

WARNING-DANGER: Using electrically operated equipment near gasoline or gasoline vapors may result in a fire or explosion, causing personal injury and property damage. Be sure that the working area is free from such hazards, and always use proper precautions.
NOTE: At all times when product is in the storage tank keep the riser pipe capped, so the vapors cannot escape into the environment.

Notice: OPW products must 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. All illustrations and specifications in this literature are based on the latest production information available at the time of publication. Prices, materials, and specification are subject to change at any time, and models may be discontinued at any time, in either case, without notice or obligation.

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For any product certified to California 2001 standards, OPW warrants that product sold by it are free from defects in material and workmanship for a period of one year from date of manufacture or one year from date of registration of installation not to exceed 15 months from date of manufacture by OPW.
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.

In California it is prohibit to use spill container drain valves on spill containers that are exclusively used for vapor return risers. Install only 1-2100 Series Thread-On spill containers models equipped with drain plug P/N 1DP-2100.

Multi-Port Performance Specifications:

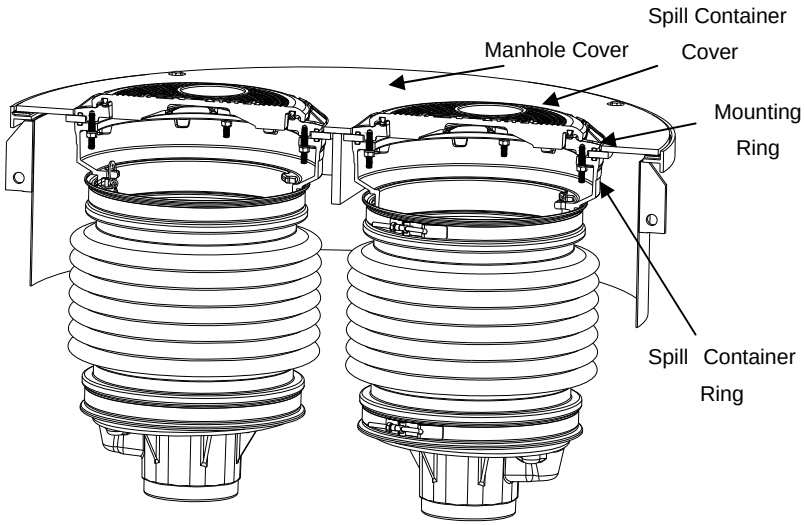
This Spill Container drain valve has been manufactured and tested to the following California specifications: Leak Rate at 0.17 CFH @ 2.0 " W.C.

Torques Specification:
Spill Container 4" NPT, 125 ft-lbs minimum to 250 ft-lbs maximum.

4" Nipple, 4" NPT, 125 ft-lbs minimum to 250 ft-lbs maximum.

Drain Valve clamps, 5/16-18 UN thread, 11.5 ft-lbs minimum to 13.5 ft-lbs maximum.

Mounting Ring Stud, 5/16-18 UN thread, 15 ft-lbs minimum to 20 ft-lbs maximum.



POMECO Multi-Port Spill Container Manhole Installation Instructions

1. Mark off finish grade. (See Figure 1.)

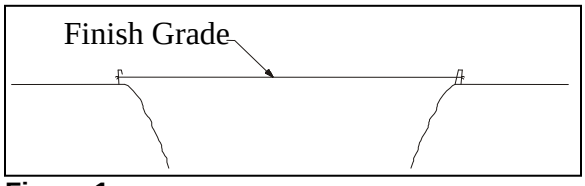


Figure 1

2. Set multi-port manhole assembly (skirt, ring, and cover) to the final grade position. (See Figure 2.)

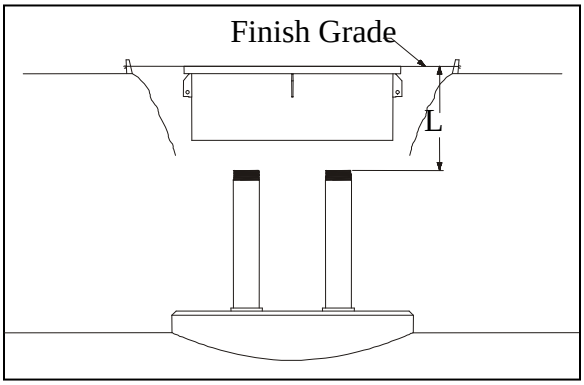


Figure 2

Note: It is strongly recommended that POMECO covers be installed with the following minimum clearances. Sheet metal skirts should have adequate clearance between the tank sump riser sidewall and or the sump top hat. A minimum of one and a half inches clearance on all sides is recommended between the POMECO skirt and the tank sump wall or the sump top hat wall. A minimum of two inches clearance is recommended between the bottom of the POMECO skirt and the horizontal surface of the tank sump or sump top hat. These clearances are recommended to allow adequate water migration away from the sumps. Great care should be used to maintain the recommended clearances when setting the rings and pouring the concrete. (See Figure 3.)

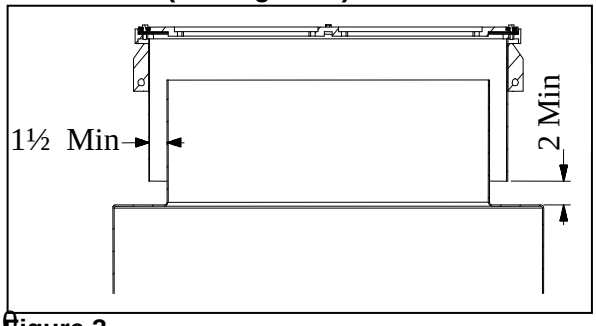


Figure 3

3. Remove the cover and measure the distance from the top of the tanks to the final grade.

4. Cut the riser(s) from the underground tank so that both the fill and vapor risers are set below the final grade. Use the dimensions below:

Spill Container	Inches below grade (L)
5 Gal. Cast Iron Base	18½"
5 Gal. Composite Base	19 5/8"
7.5 Gal. Cast Iron Base	22 ½"
7.5 Gal. Composite Base	23 5/8"

Note: Add an extra 3-1/4" when using an OPW FSA-400 & add an extra 1 ¾" when using the FSA-400S Face Seal Adaptor. (See Figure 2.)
(Offset add extra 6")

5. Deburr and thoroughly clean riser pipe(s).
6. Apply pipe dope to riser(s). The pipe dope is to be a non-hardening, gasoline resistant, pipe thread seal compound.
7. Install OPW FSA-400 Face Seal Adapter onto riser. (Recommend Torque, 4" NPT, 125 ft-lbs min. to 250 ft-lbs max.). Apply pipe dope to FSA-400. The pipe dope is to be a non-hardening, gasoline resistant, pipe thread seal compound. This is optional for spill containers that are on the vapor lines.
8. Thread on spill containers
9. Using the 61SA-TOOL, tighten the spill container(s) onto the riser(s) with a minimum torque of 125 ft.-lbs. and a maximum torque of 250 ft.-lbs.

Note: Do NOT attempt to completely tighten the containment bucket by using the containment bucket mounting ring at the top of the bucket.

10. Inspect the containment bucket O-Rings and Mounting Ring O-Rings for damage. Replace the gasket(s) if they are damaged.
11. Install Optional Multi-Port Water Shroud (MPWS). See separate instructions.
12. Remove Spill Container Cover and Spill Container Mounting ring from Manhole Cover.
13. Replace the multi-port cover, centering the riser(s) as close as possible in the containment openings. Be very careful not to move or damage the O-Rings.
14. Remove lock washers and nuts from the studded mounting ring.

15. Place the mounting ring over the containment buckets and rotate the mounting ring until the studs are aligned with the bucket ring holes.
(See Figure 4.)

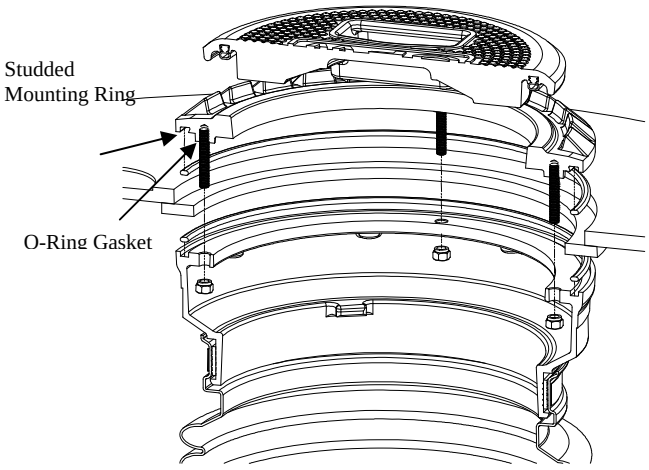


Figure 4

16. Thread nut and lock washer onto studded mounting ring. Tighten the mounting ring retaining bolts until the containment bucket o-rings makes contact with the multi-port cover. Then, in a crossing pattern, torque the bolts down between 15 to 20 ft.-lbs. 6 Point Ratcheting box wrench is recommended (See Figure 5.)

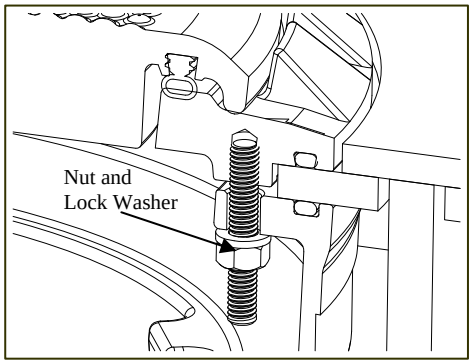


Figure 5

17. Install the spill bucket covers.

18. (Optional): Install the product identification disc on the spill bucket cover and multi-port cover in the I.D. disc recess.
19. Cover the multi-port perimeter ring and cover with plastic to prevent concrete from settling in the drainage areas.
20. It is required that the perimeter ring and skirt assembly, and the multi-port cover be set as an assembled unit, with the bolts engaged. Failure to engage the bolts may result in the distortion of the ring and improper fit of the ring to cover after the concrete is poured.
21. When pouring the concrete, hand shovel or trowel the concrete around the multi-port assembly to prevent the unit from moving or shifting, which can cause alignment problems and future maintenance problems.

Note: Do not stand on the multi-port before the concrete has set up.

22. It is recommended that the paved contours around POMECO covers be adequately sloped to direct water flow away from the cover, and directing water runoff from adjacent areas away from POMECO covers. (See Figure 7.)

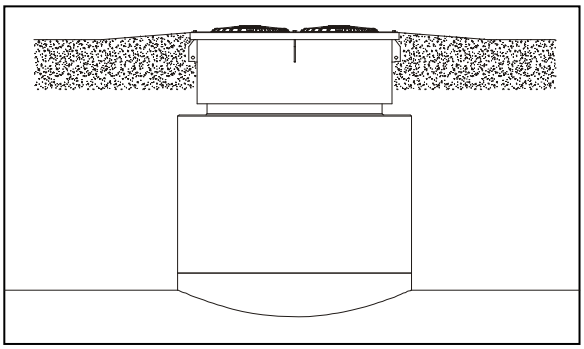


Figure 7

23. Remove the plastic after the concrete has set up.

24. After installation is complete, water test the multi-port fixture. The recommended water test procedures include:
    e) Spraying water on cover(s) for 5 to 10 minutes, using a commonly available watering device such as a lawn sprinkler.
    f) Standing water test, not to exceed ½" in water depth for a period of 5 to 10 minutes.

Note: The containment bucket consists of three components cast iron ring, bellows, and bucket bottom. These parts are held together with stainless steel retaining bands.
DO NOT loosen the stainless steel retaining bands securing the bellows to the containment bucket top ring or the containment bucket bottom. Loosening the retaining bands voids any and all warranties on this product.

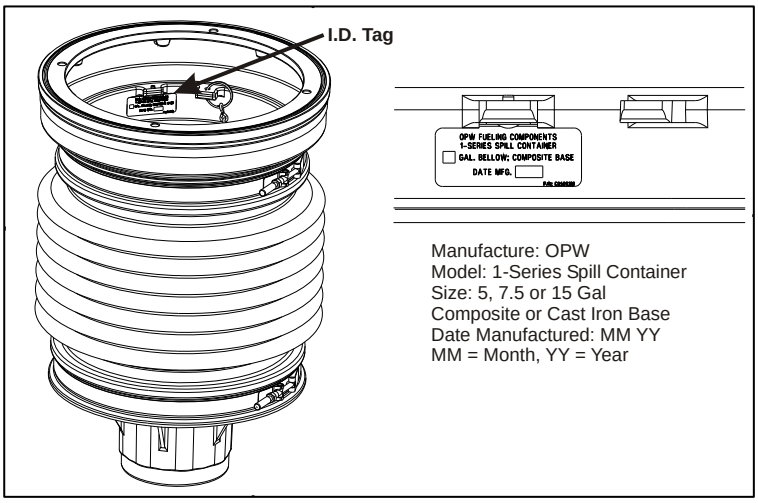
Warning:
If the cover is removed, for any reason, follow the Service and Maintenance instruction as noted. Always inspect and replace damaged o-rings and install new o-rings . Never reuse damaged o-rings as it may result in an improper seal.

Operation and Maintenance:
Annually: Inspect and clean the interior of the spill container and drain valve screen. Remove accumulated dirt and grit. If the drain valve screen becomes clogged, remove the valve, soak in water and use high-pressure air to clean. Reinstall the drain valve to its proper position and test the valve per the appropriate TP201-1C Test Procedure. If problems persist, replace the drain valve with P/N 1DK-2100-EVR (specified torque 11.5 ft-lbs min to 13.5 ft-lbs max, 5/16-18 UN thread). The sealable cover (1SC) adjustment nut is set at the factory, but due to environmental conditions it may be necessary to adjust it to either improve sealing or ease cover removal.

Testing Spill Containers
Use TP201-1C or TP201-1D Test Procedures. Their Test Procedures will check the seals between the drain valve, nipple and rotatable adapter. To test the spill containers base and bellows fill the container with water. A drop in the water level of 1/16" or greater after one hour means that a leak exists. To determine where the leak is, look for a steady stream of bubbles coming from one of the joints or water leaking on the outside of the bucket.
NOTE: Do not drain the water into the UST after the test is complete. Water must be disposed of per local requirements for hazardous waste. If the leak cannot be corrected the spill container should be replaced with another.

POMECO recommends periodic inspection of covers and seals as a part of the regularly scheduled maintenance program. If any of the seals are damage they should be replace. Only qualified, competent, well-trained technicians should perform maintenance.
Note: Common sense and good judgment should always be exercised. The contractor's understanding of all related site conditions prior to starting the project is essential. If the contractor does not have a clear understanding of the required work and site conditions, the contractor is advised to seek clarification prior to starting any portion of the project.

Important: Leave these instructions with Station Operator as per CARB Requirements

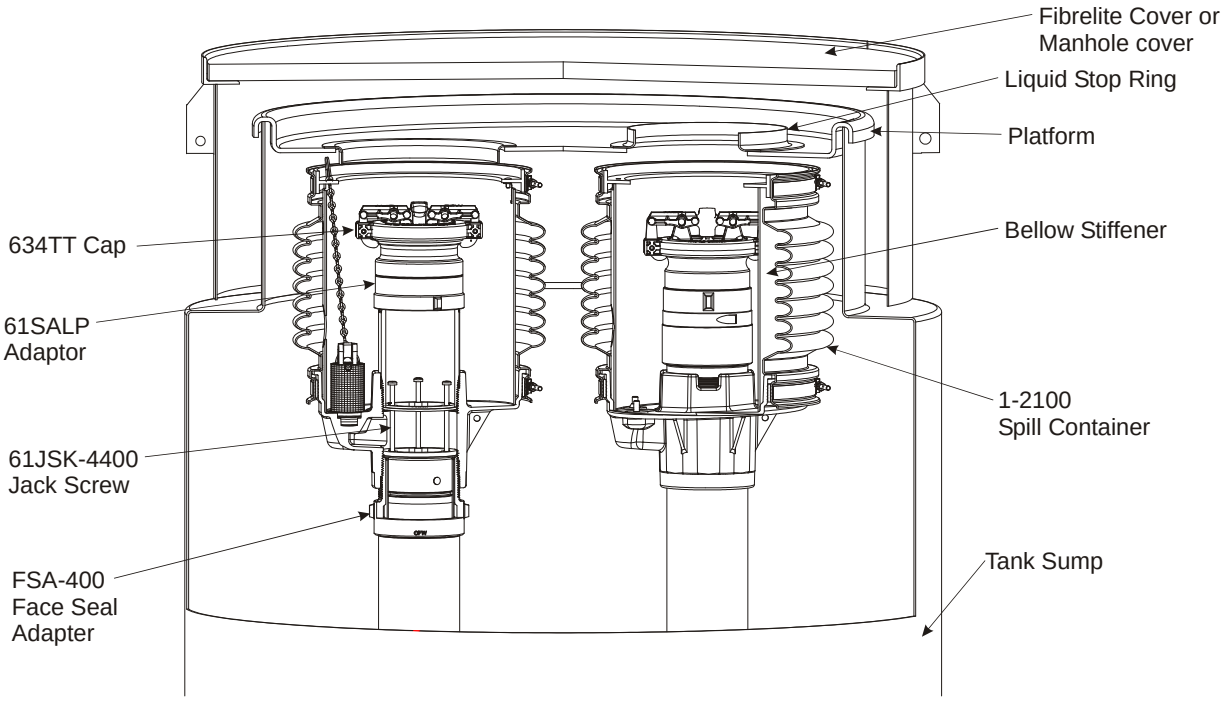


Manufacture: OPW
Model: 1-Series Spill Container
Size: 5, 7.5 or 15 Gal
Composite or Cast Iron Base
Date Manufactured: MM YY
MM = Month, YY = Year

OPW
A DOVER COMPANY

P.O. Box 405003 * Cincinnati, Ohio 45240-5003
1-800-422-2525 Domestically
513-870-3315 Internationally

Supplemental Instructions

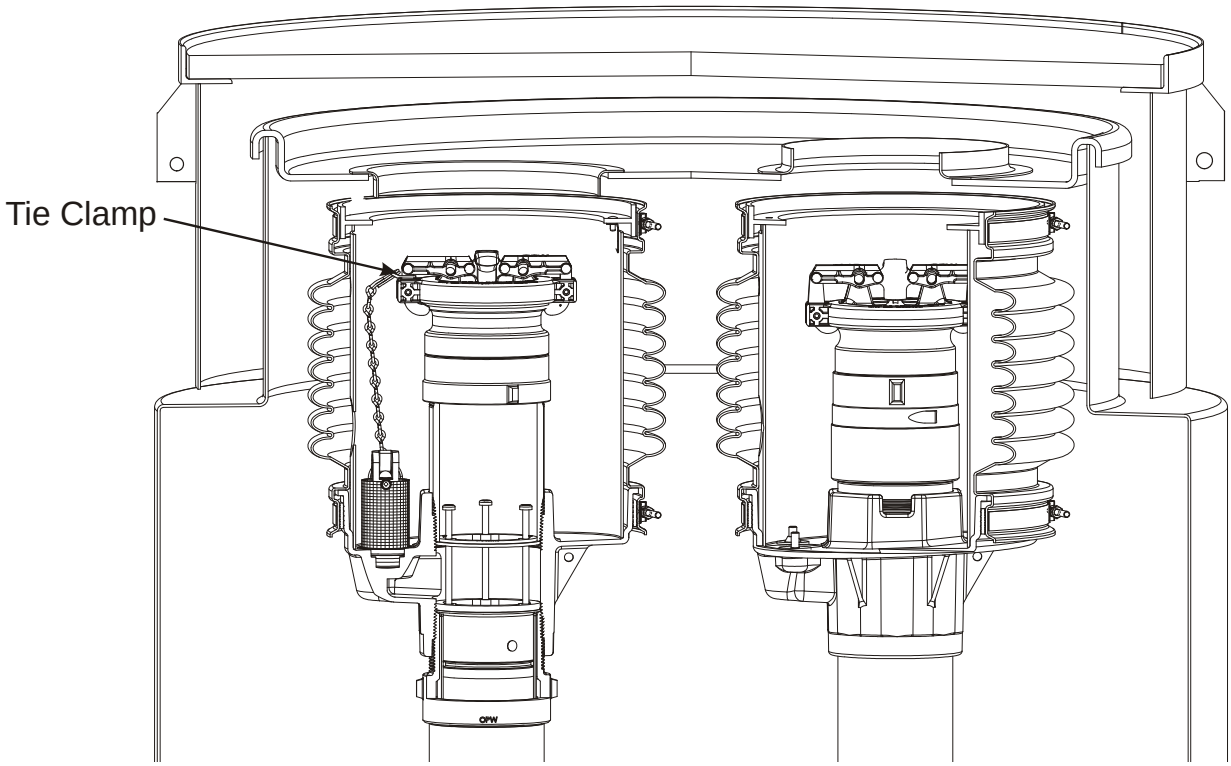


To Calculate Fill and Vapor Risers
Use Fibrelite Measurement Forms

Measurements For Fibrelite

FL36 Cover Normal Remote Burial
FL36 Cover Normal Direct Burial
FL90 Cover Normal Remote Burial
FL90 Cover Normal Direct Burial

Drain Valve / Fill Cap Assembly



After completing the installation of the Spill Container and Fibrelite Sump attach drain valve to 634TT Fill Cap.

Step1. Remove Black Nylon Tie Clamp from instruction bag.
Step 2. Remove the Drain Valve ring from the spill container.
Step 3. Place the Black Tie Clamp through the Ring on the end of the Drain Valve chain.
Attach Tie Clamp and chain to the 634TT Fill Cap between the black link arms and the gray cap.
Step 4. Cut excess Tie Clamp from the Cap / Drain Valve assembly.

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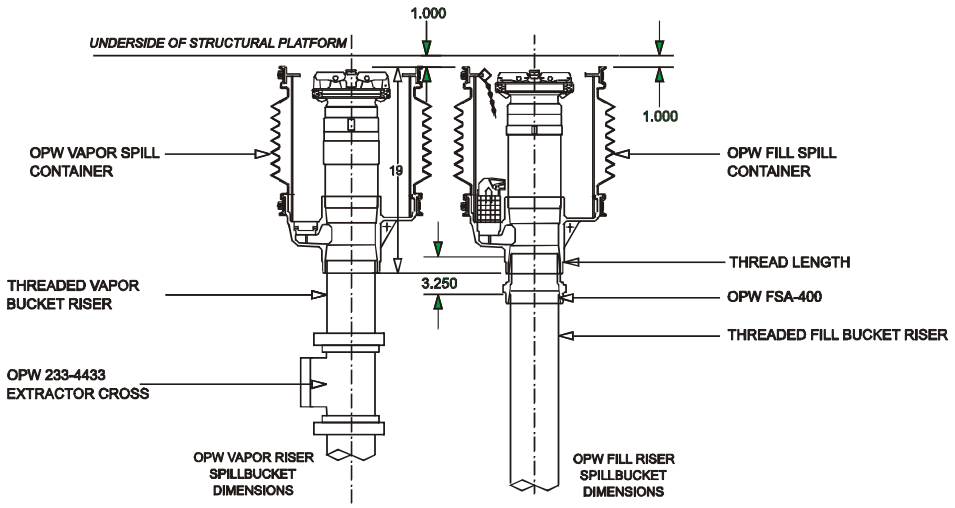


FILL RISER CALCULATION

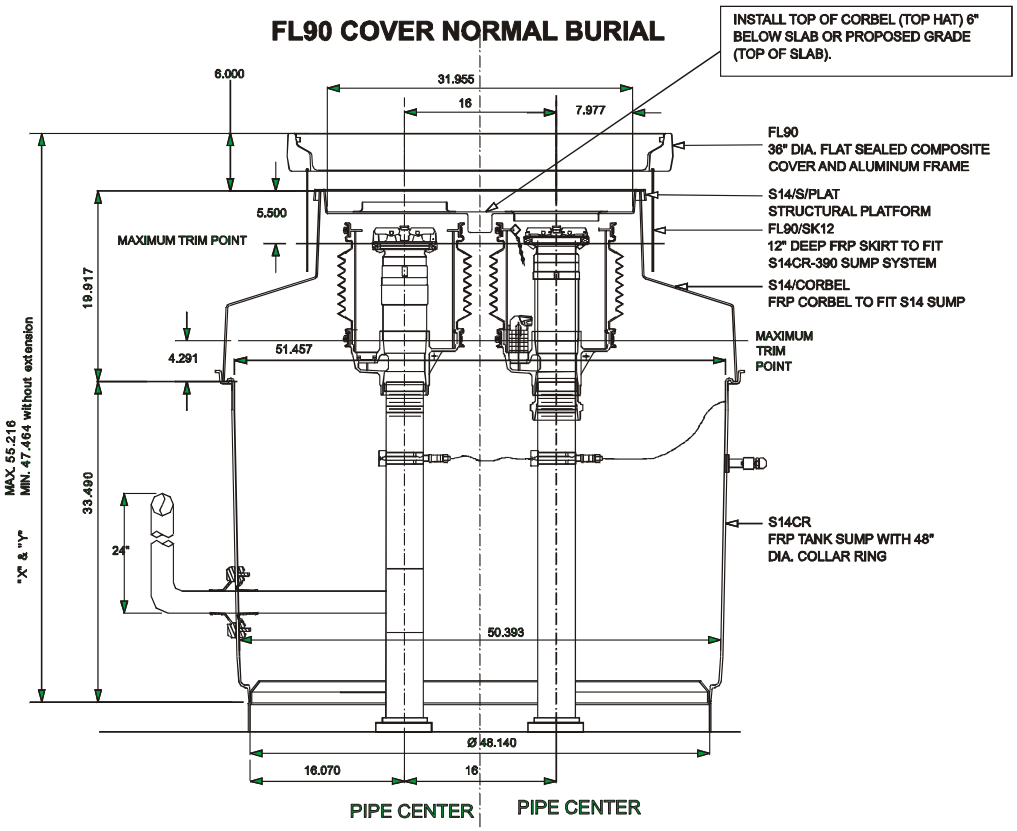
"X" Distance From String Line To Tank	−	6" String Line To Top of Tank	−	1" Clearance For Spill Container	−	19" Length of OPW Spill Container	−	3.25" Length of OPW FSA-400	+	1.75" Thread Allowance	=	Length of Threaded Riser for Fill Bucket

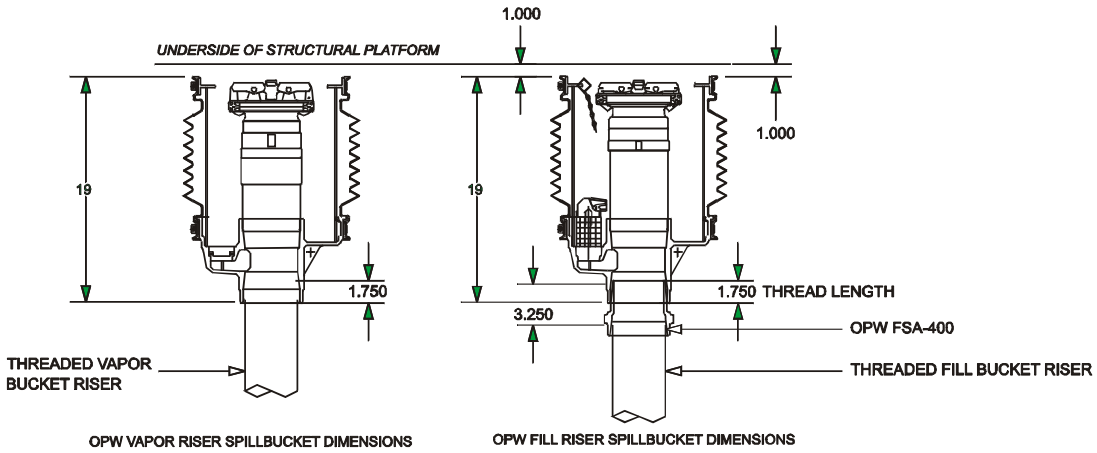
"X" - 27.5"= Length of Threaded Riser for Fill Bucket

VAPOR RISER CALCULATION

"Y" Distance From String Line To Tank	−	6" String Line To Top of Tank	−	1" Clearance For Spill Container	−	19" Length of OPW Spill Container	−	6.75" Length of OPW 233 Extractor Cross	+	1.75" Thread Allowance	=	Length of Threaded Riser for Vapor Bucket

"Y" - 31"= Length of Threaded Riser for Vapor Bucket





FILL RISER CALCULATION

"X" Distance From String Line To Tank	−	6" String Line To Top of Tank	−	1" Clearance For Spill Container	−	19" Length of OPW Spill Container	−	3.25" Length of OPW FSA-400	+	1.75" Thread Allowance	=	Length of Threaded Riser for Fill Bucket

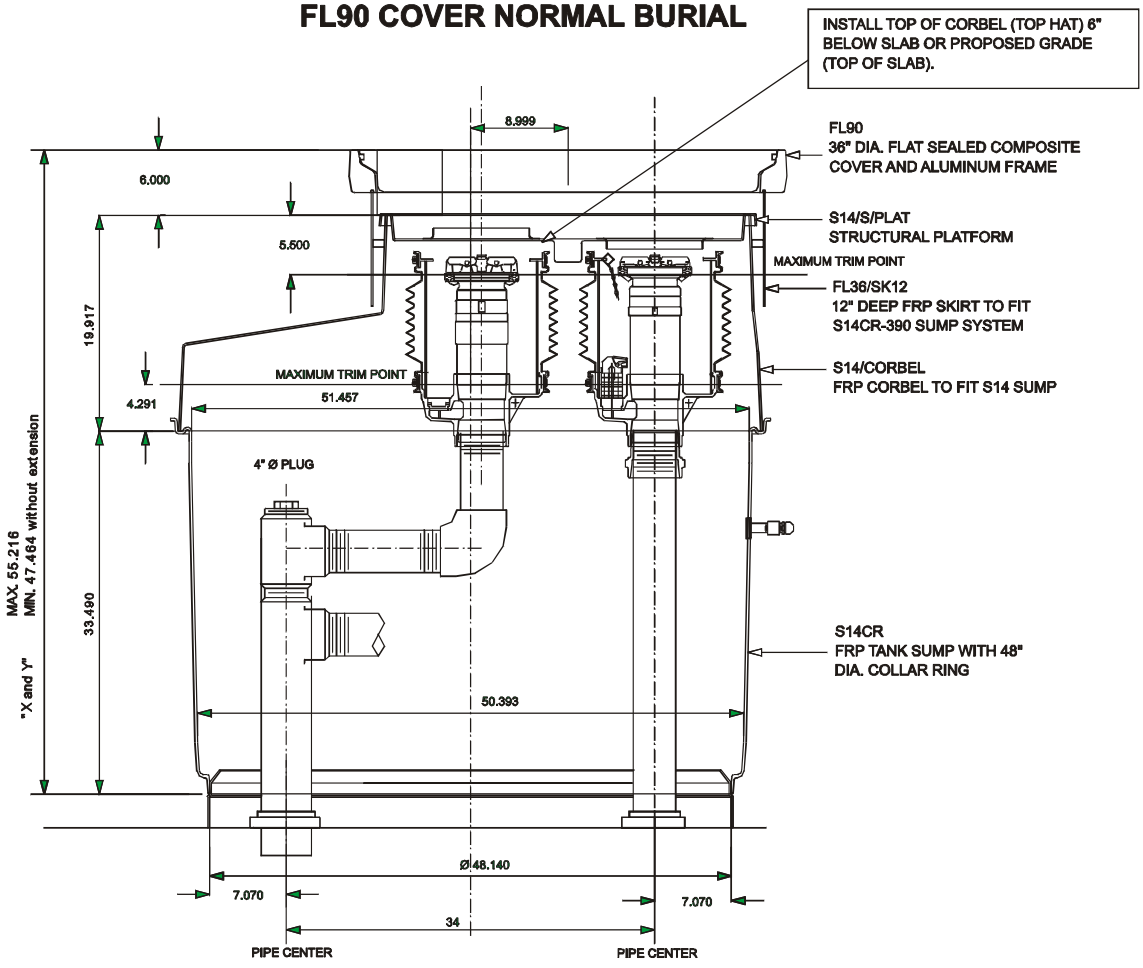
"X" - 27.5"= Length of Threaded Riser for Fill Bucket

VAPOR RISER CALCULATION

"Y" Distance From String Line To Tank	−	6" String Line To Top of Tank	−	1" Clearance For Spill Container	−	19" Length of OPW Spill Container	−	6.75" Length of OPW 233 Extractor Cross	+	1.75" Thread Allowance	=	Length of Threaded Riser for Vapor Bucket

"Y" - 31"= Length of Threaded Riser for Vapor Bucket

FL90 COVER NORMAL BURIAL



Section 4

Retrofit & Upgrades
6521XAR Adaptor Ring

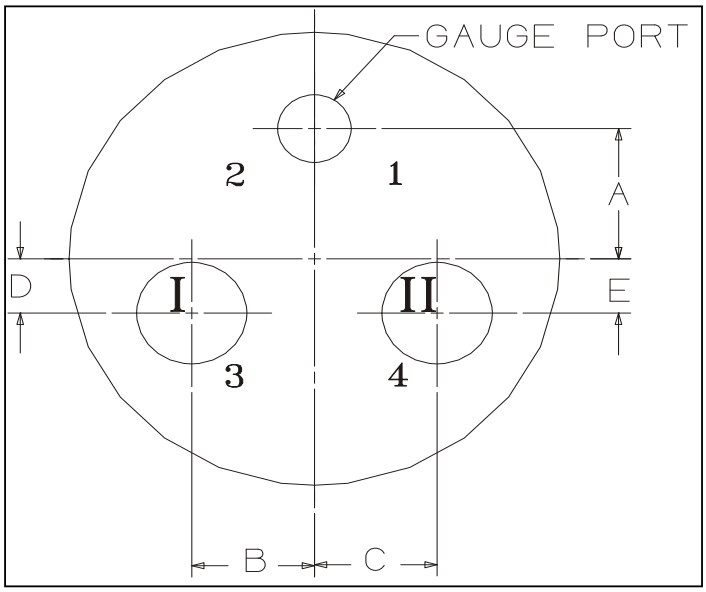
ONE COMPANY. ONE WORLD. ONE SOURCE.™

REPLACEMENT MULTI-PORT COVER FIELD SURVEY FORM (E-STYLE)

Step 1: Site Information

Company:		***P.O. #:***	
Station Address Line 1:		***Distributor:***	
Station Address Line 2:		***Distributor Location:***	
Station #:		***Distributor Nubmer:***	
Survey Date:		***Prepared By:***	
		Date:	10/19/2007

Step 2: Dimensional Information



Is this a Fill or Vapor Bucket?
(Enter: F for Fill / V for Vapor)

I

Is this a Fill or Vapor Bucket?
(Enter: F for Fill / V for Vapor)

II

Note:
Fill buckets come w/ drain valves
Vapor buckets come w/ drain plugs
Use Y for Waste Oil Applications

If "B" + "C" is less then 16, then old style buckets are required. "B" + "C" cannot be less then 14.

A	B	C	D	E	Cover Diameter

All dimensions should be in inches.

Dimension "A" is Required only if a gauge port is selected (Standard is 10.5").
This form assumes that the spill containers are in quadrants 3 & 4 respectively.
If the spill containers are in quadrants 1 or 2 then make the dimensions negative.

******FOR OPW USE ONLY******

Sales Order Number - Line Item:

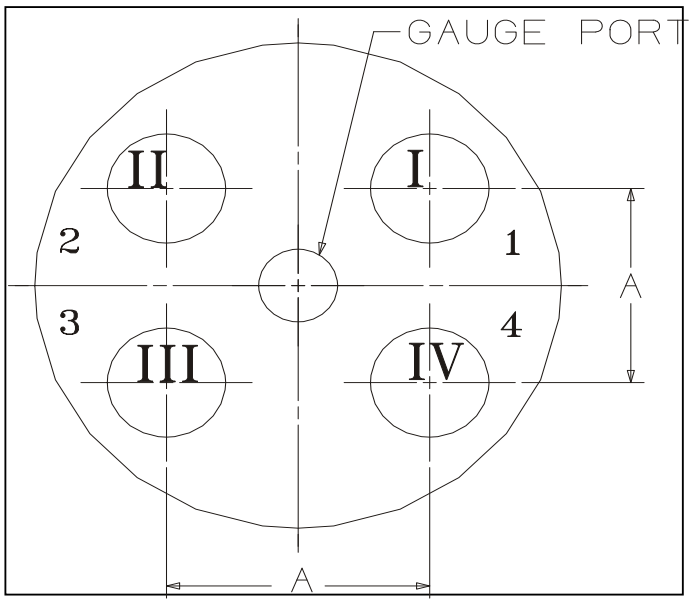
ONE COMPANY. ONE WORLD. ONE SOURCE.™

REPLACEMENT MULTI-PORT COVER
FIELD SURVEY FORM
(G-STYLE)

Step 1: General Information

Company:		*P.O. #:*	
Station Address Line 1:		*Distributor:*	
Station Address Line 2:		*Distributor Location:*	
Station #:		*Distributor Nubmer:*	
Survey Date:		*Prepared By:*	
		Date:	10/19/2007

Step 2: Dimensional Information



Is this a Fill or Vapor Bucket? (Enter: F for Fill / V for Vapor)

I

Is this a Fill or Vapor Bucket? (Enter: F for Fill / V for Vapor)

II

Is this a Fill or Vapor Bucket? (Enter: F for Fill / V for Vapor)

III

Is this a Fill or Vapor Bucket? (Enter: F for Fill / V for Vapor)

IV

Note:

Fill buckets come w/ drain valves

Vapor buckets come w/ drain plugs

Use Y for Waste Oil Applications

A

If "A" is less then 16, then old style buckets are required. "A" cannot be less then 14.

Cover Diameter

All dimensions should be in inches.

This form assumes that if a gauge port is selected then it is concentric with the main cover.
This form assumes that all spill containers are equidistant ("A") from each other.

****FOR OPW USE ONLY****	
Sales Order Number - Line Item:	
Multi-Port Number:	

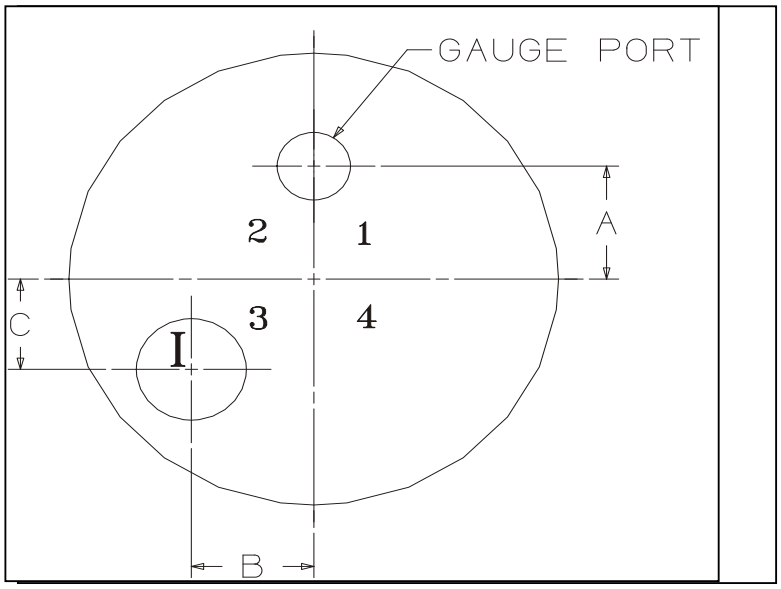
ONE COMPANY. ONE WORLD. ONE SOURCE.™

REPLACEMENT MULTI-PORT COVER FIELD SURVEY FORM (L-STYLE)

Step 1: Site Information

Company:		*P.O. #:*	
Station Address Line 1:		*Distributor:*	
Station Address Line 2:		*Distributor Location:*	
Station #:		*Distributor Nubmer:*	
Survey Date:		*Prepared By:*	
		Date:	10/19/2007

Step 2: Dimensional Information



A	B	C

Cover Diameter

Is this a Fill or Vapor Bucket?
(Enter: F for Fill / V for Vapor)

I

Note:

Fill buckets come w/ drain valves

Vapor buckets come w/ drain plugs

Use Y for Waste Oil Applications

All dimensions should be in inches.

Dimension "A" is Required only if a gauge port is selected (Standard is 10.5").
This form assumes that the spill container is in quadrant 3.
If the spill container is not in quadrant 3 then make the dimensions negative accordingly.

****FOR OPW USE ONLY****	
Sales Order Number - Line Item:	

Pomeco 521 RP Retrofit Series Fill End Manhole Cover Installation Guide

- Align bolt holes in bucket top ring with holes in port ring.
- Install new 5/16” Thread Seal beveled flat washer on hex bolt with beveled side away from bolt head. **Note:** Apply grease to both sides of Thread Seal washer prior to installation on bolt.
- Install 5/16” Thread Seal Series 75 Washers between washer and containment port ring.
- Apply SL-1100 to each 5/16” bolt prior to installation in containment ring.
- Tighten containment bucket ring retaining bolts in a crossing pattern, until gasket makes contact. Then torque bolts evenly in a crossing pattern to 15 to 20 ft. lbs.
- Apply an even bead of SL-1100 sealant around 5/16” bolts after final tightening.
- Loosen Roto Lock bolts to backing jamb nut, allowing Roto Lock arm to extend below bottom lip of existing outer perimeter ring or casting.
- Initially tighten each perimeter Roto Lock until snug, alternating sides in a crossing pattern, then tighten all until firm. (Recommended Maximum Torque – 40 ft-lbs. to 50 ft-lbs.). Do not over tighten.
- **Note: Check to make sure all Roto Locks engaged below outer ring or casting. Note: If cover edges appear to be elevated from the seat and movement downward was not detected as Roto Locks are tightened, Roto Locks may not have engaged the perimeter ring. It may be necessary to attempt to re-engage the Roto Lock with the perimeter ring.**
- Install correct height pipe nipple or close nipple in containment bucket, using non-hardening pipe thread sealant.
- Measure the overfill for correct length. Refer to local regulations for proper length.
- Reinstall overfill valve or drop tube following manufacturer’s recommendations.
- Inspect and reinstall OPW fill and vapor caps.
- Caulk joint around perimeter of cover and perimeter ring and Roto Lock bolts with SL-1100 sealant.

Pomeco 521 RP Retrofit Series
Product Installation Guide
(10/15/04)

Servicing Existing Pomeco 521/541 Series Fill End Manhole Covers

Removal of Existing Manhole Covers

- Block off and protect work area from traffic.
- Remove any accumulation of liquid from existing containment buckets and sumps.

Note: Follow customer's prescribed hazardous waste disposal procedures.

- Remove all bolts holding existing buckets to manhole cover.
- Loosen Roto Locks, Cam Locks or remove perimeter manhole cover bolts.
- Remove existing manhole cover.
- Thoroughly clean cover seating area on existing perimeter ring, removing old gasket, dirt and all foreign materials.
- Remove existing fill and vapor adaptors.
- Remove overfill valves or drop tubes.
- Remove existing fill and vapor containment buckets from riser pipe.
- Inspect riser pipe for signs of damage or other irregularities.
- Check distance from top of riser to top of manhole cover. This dimension should be approcimately 17 ½".

Note: Riser length may need to be adjusted to ensure proper clearance. It is recommended that this dimension is verified prior to installation and correct length risers be available if needed.

- Apply a non-hardening pipe dope to riser threads.
- Install new Pomeco 511 containment bucket onto riser by rotating until hand tight. **DO NOT attempt to completely tighten the containment bucket by using the mounting ring at the top of the bucket.**
- Tighten containment bucket to riser with a pipe wrench on lower octagon shaped area of containment bucket bottom.

Note: Maximum torque applied to the containment bucket bottom at the riser and nipple should NOT exceed 250 ft-lbs.

Note: Drain valves need not be on the same side with all buckets, however, bolt holes in the top ring of the containment bucket must be parallel.

- Clean perimeter ring gasket seating surface with 50% water – 50% bleach mix.
- Apply a bead of SL-1100 sealant to underside and topside of perimeter "T" ring at seam, before installing gasket.
- Evenly apply bead of SL-1100 sealant to gasket seating surface of outer ring.
- Install gasket in bead of caulk on seat area of steel ring. **Note:** Butt gasket ends closely together. Adhesive may be applied to gasket ends to ensure seal.
- Place new Pomeco Retrofit manhole cover into position, aligning ports over containment buckets. Be **VERY CAREFUL** not to move or damage gasket.

POMECO Installation Instructions
Roto Lock 6521XAR Adaptor Ring

Notice: OPW/PISCES™ by OPW, Inc. products must be used in compliance with applicable federal, state, provincial, 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/PISCES™ by OPW, Inc. makes no warranty of fitness for a particular use. All illustrations and specifications in this literature are based on the latest production information available at the time of publication. Prices, materials, and specifications are subject to change at any time and models may be discontinued at any time, in either case without notice or obligation. For complete OPW warranty information, visit our website at www.opw-fc.com.

OPW STANDARD PRODUCT WARRANTY OPW/PISCES™ by OPW, Inc. warrants that products sold by it are free from defects in materials and workmanship for a period of one year from the date of manufacture by OPW/PISCES™ by OPW, Inc. (ECO Systems two years from date of manufacture. ECO replacement parts one year from the date of manufacture.) Proof of purchase may be required. For any product certified to California 2001 standards*, OPW/PISCES™ by OPW, Inc. warrants that products sold by it are free from defects in material and workmanship for a period of one year from date of manufacture or one year from date of registration of installation, not to exceed 15 months from date of manufacture by OPW/PISCES™ by OPW, Inc. As the exclusive remedy under this limited warranty, OPW/PISCES™ by OPW, Inc. will at its sole discretion, repair, replace or issue credit for future orders for any product that may prove defective within the one year date of manufacture period (repairs, replacements, or credits may be subject to prorated warranty for remainder of the original warranty period; complete proper warranty claim documentation required).

OPW/PISCES™ by OPW, Inc. further guarantees that all PISCES™ primary pipe is free from defects in materials and workmanship for a period of ten (10) years from the date of manufacture. Any PISCES™ primary pipe proven to be defective in materials or workmanship within said 10-year period will, at PISCES™ option, be repaired or replaced or credit will be given for future orders. PISCES™ will bear the reasonable labor costs associated with the repair or replacement of non-conforming PISCES™ primary pipe when such pipe has been used exclusively in a complete PISCES™ Retractable System. Any defect will be corrected promptly upon written notification to PISCES™ by OPW, Inc. at P.O. Box 405003 Cincinnati, Ohio, 45240, attention Rick Jones.

This warranty shall not apply to any product that has been altered in any way, which has been repaired by any other than service representative authorized by OPW/PISCES™ by OPW, Inc. or when failure is due to misuse, improper installation or maintenance. OPW/PISCES™ by OPW, Inc. shall have no liability whatsoever for special, incidental or consequential damages to any party, and shall have no liability for the cost of labor, freight, excavation, clean-up, downtime, removal, installation, loss of profit, or any other cost or charges. *Products certivied to the California 2001 standards will have an OPW registration card enclosed/attached to the

product. **THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, AND SPECIFICALLY THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THERE ARE NO WARRANTIES WHICH EXTEND.**

Installation Instructions
Roto Lock 6521XAR Adaptor Ring

The 6521XAR adaptor ring is designed to replace an existing bolt down manhole with a POMECO Roto Lock hold down style manhole cover. The manhole cover perimeter ring and skirt must have a minimum of ¼" horizontal lip, or flange around the inner perimeter of the mahole perimeter ring and skirt. When the needed lip is not available, it is necessary to install a POMECO adaptor ring to the inner surface of the skirt. See following instructions.

Note:
Recommended all sites conditions pertaining to the tank sump be carefully reviewed prior to commencing work. Best safety practices should always be followed.

Use correct adaptor ring for application:

Part Number	**Description**
6521-XAR	36" or 37" manhole adaptor ring
6521-XAR39	39" manhole adaptor ring
6521-XAR42	42" manhole adaptor ring
6521-XAR48	48" manhole adaptor ring

Step 1: Remove existing manhole cover.
Step 2: Verify the sheet metal inner skirt is flush with inner edge of the perimeter ring.
Step 3: Clean inner surface of excessive foreign material as dirt and scale.
Step 4: Align the top oedge of the 6521-XAR ring with the perimeter ring-seating surface.
Step 5: Expand or compress the adaptor ring until sealed against the skirt.
Make sure the edge of the adaptor ring is flush with the perimeter ring sealing surface.
Make sure adaptor ring is secured in place with anchor bolts through each ring tab.
Anchor bolts are NOT included. The size may vary based on application.
Step 6: Make and drill holes for anchor bolts. When drilling and installing bolts, it is recommended to start at one end of the ring and progressively work around the ring.
Keep adaptor ring snug against the surface.
Step 7: Clean perimeter ring seating surface
Step 8: Replace manhole cover perimeter gasket with new POMECO serrated gasket.
Apply an even bead of PISCES SL-1100 Sealant to perimeter ring seating surface between gasket and ring seat.
Step 9: Install new POMECO manhole cover.
Step 10: Engage Roto Locks under the adaptor ring.

Note: Roto Lock arm must engage under the perimeter ring. If the bolt head is not parallel with the manhole cover, the Roto Lock is not properly engaged. Loosen the Roto Lock bolts until it will not turn. Then, retighten the Roto Lock bolts. See technical bulletin for details.

Technical Bulletin

POMECO Rotolock Bolt Issues

1.) To determine if the rotolock bolt is sufficiently long to pull the cover tight start by turning all rotolock bolts counterclockwise until they stop. The locknut will bottom out at this point. See Figure 1.

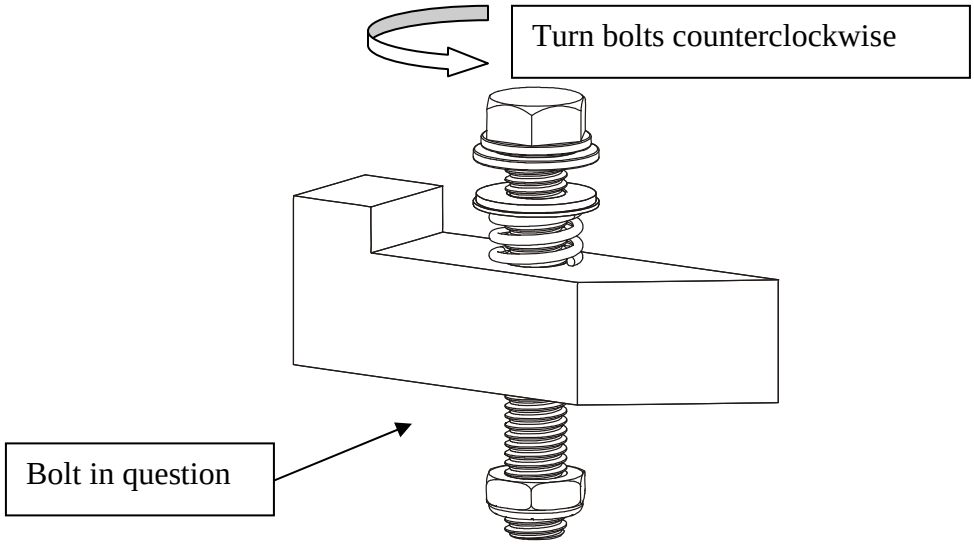


Figure 1

2.) Turn the bolt clockwise until either the cover pulls tight or the bolt will no longer turn.

3.) If the cover pulls tight the bolt is good and the rest of the rotolocks can be tightened. If the cover moves when pried with a screwdriver or other means the rotolock bolt will need to be replaced.

4.) Contact POMECO for replacement rotolock bolts.

5.) When new bolts are received remove the cover and take the locknut off of the bolt.

6.) Remove the old bolt and install the new bolt with all items oriented properly. See Figure 2 for assembly procedure.

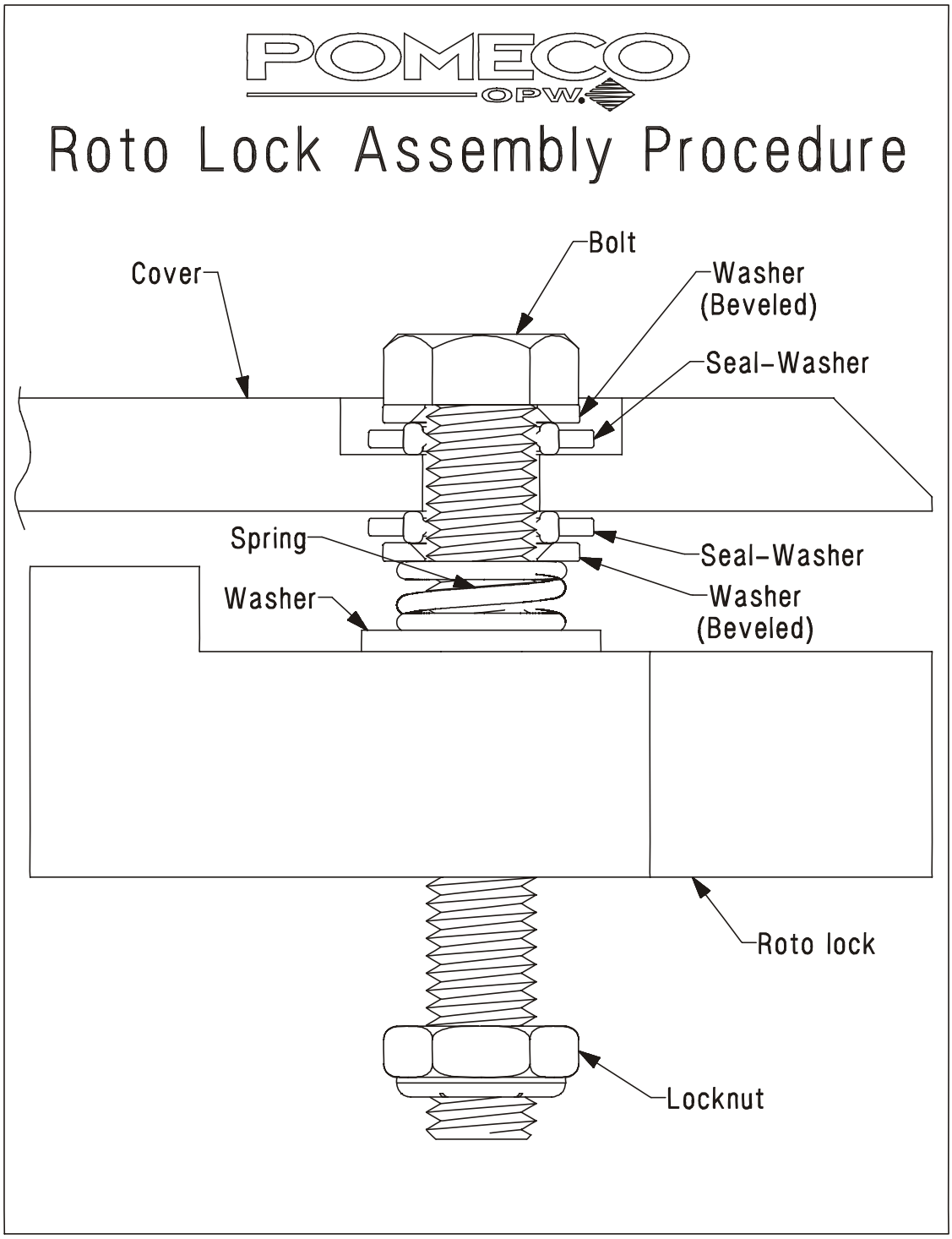

POMECO
OPW
Roto Lock Assembly Procedure
Bolt
Cover
Washer
(Beveled)
Seal–Washer
Spring
Seal–Washer
Washer
Washer
(Beveled)
Roto lock
Locknut

Figure 2

Section 5

Multi-Port Water Shroud

Testable Multi-Port Water Shroud

POMECO Installation and Maintenance Instructions Multi-Port Water Shroud (MPWS)

IMPORTANT: **Please read these warnings and use the assembly instructions completely and carefully before starting. Failure to do so may cause product failure, or result in environmental contamination due to liquid leakage into the soil, creating hazardous spill conditions.**

IMPORTANT: The POMECO Spill Container is pre-assembled for your convenience and ease of installation. Check to make sure the unit is intact and undamaged and all parts have been supplied. Never substitute parts for those supplied. Doing so may cause product failure.

WARNING-DANGER: Using electrically operated equipment near gasoline or gasoline vapors may result in a fire or explosion, causing personal injury and property damage. Be sure that the working area is free from such hazards, and always use proper precautions.
NOTE: At all times when product is in the storage tank keep the riser pipe capped, so the vapors cannot escape into the environment.

Notice: OPW products must 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. All illustrations and specifications in this literature are based on the latest production information available at the time of publication. Prices, materials, and specification are subject to change at any time, and models may be discontinued at any time, in either case, without notice or obligation.

Standard Product Warranty

OPW warrants that products sold by it are free from defects in materials and workmanship for a period of one year from the date of manufacture by OPW (ECO products two years from date of manufacture.) Proof of purchase may be required. As the exclusive remedy under this limited warranty, OPW, will at its sole discretion, repair, replace, or issue credit for future orders for any product that may prove defective within the one year date of manufacture period (repairs, replacements, or credits may be subject to prorated warranty for remainder of the original warranty period, complete proper warranty claim documentation required.) This warranty shall not apply to any product that has been altered in any way, which has been repaired by any party other than a service representative authorized by OPW, or when failure is due to misuse, or improper installation or maintenance. OPW shall have no liability whatsoever for special, incidental or consequential damages to any party, and shall have no liability for the cost of labor, freight, excavation, clean up, downtime, removal, reinstallation, loss of profit, or any other cost or charges.

For any product certified to California 2001 standards, OPW warrants that product sold by it are free from defects in material and workmanship for a period of one year from date of manufacture or one year from date of registration of installation not to exceed 15 months from date of manufacture by OPW.
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.

Multi-Port Water Shroud Performance Specifications:

The Multi-Port Water shroud (MPWS) is optional cover designed to mate with the OPW/POMECO Multi-Port. The MPWS isolates surface water and condensation from Tank Sumps. The Fiberglass Shroud Cover mates to a standard tank sump top hat reducer Not included. Shroud boots isolate the spill container buckets using stainless steel band clamps, providing a tight seal between the water shroud top hat and the underside of the spill container-mounting ring.
Available in 33” or 36” Covers.

MPWS-33/36 consist of:
(1) 33” or 36” fiberglass cover with Sight Glass
(2) D02575M Boots
(2) Stainless Steel Upper Clamps

(2) Stainless Steel Lower Clamps

Multi-Port Water Shroud Installation Instructions

5. See POMECO Multi-Port Spill Container Manhole instruction sheet MPIS-903. After completing Step 10.

Optional Steps 2-4 SLPK Sealant Kit Sealant

6. Apply a bead of urethane sealant (SL-1100) into the SLPK gasket.
7. Install the gasket onto the rim of the tank sump top hat.
8. Apply a bead of urethane sealant (SL-1100) on top of the SLPK gasket.
9. Place Fiberglass cover over the buckets and onto the top hat ring. Make sure the cover is seated against the gasket
10. Band Clamp the two Shroud Boots to the fiberglass Cover. Larger diameter end of the Shroud boot and larger clamp are used to clamp to the FRP Cover (See Figure 1)

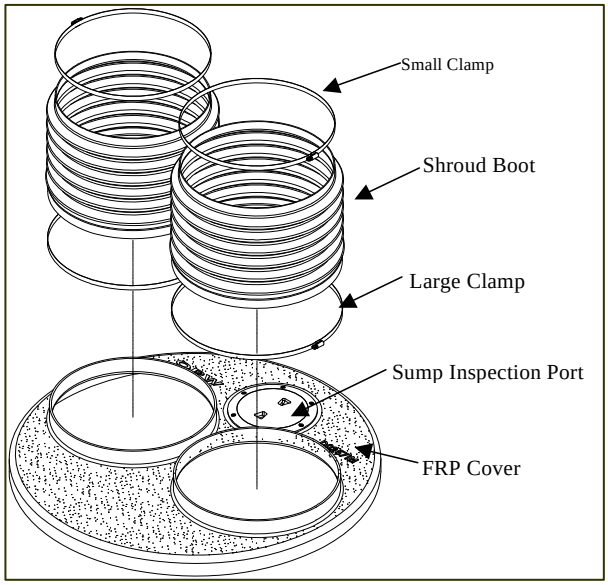


Figure 1

11. Align inspection port over gauge port and slip the Fiberglass cover and Shroud Boots over the Multi-Port Spill containers until the Fiberglass cover is resting on the Top Hat Tank Sump (See Figure 2)
12. Band Clamp top of the Shroud Boot to the Spill Container bucket Ring on the machined surface (See Figure 2).
13. Inspect Shroud boots for damage.
14. Complete step 12 in the Multi-Port instruction Sheet (H15225PA).

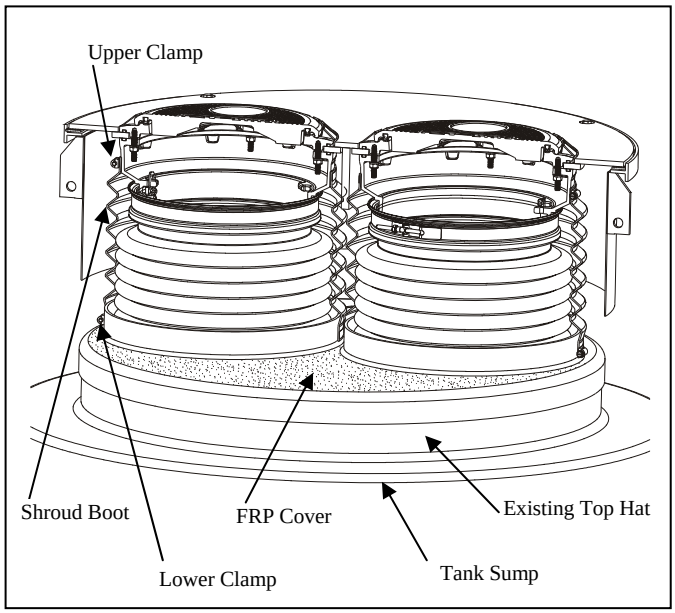


Figure 2

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POMECO Installation and Maintenance Instructions
Testable Multi-Port Water Shroud (MPWS-TS)

IMPORTANT: Please read these warnings and use the assembly instructions completely and carefully before starting. Failure to do so may cause product failure, or result in environmental contamination due to liquid leakage into the soil, creating hazardous spill conditions.

IMPORTANT: The POMECO Spill Container is pre-assembled for your convenience and ease of installation. Check to make sure the unit is intact and undamaged and all parts have been supplied. Never substitute parts for those supplied. Doing so may cause product failure.

WARNING-DANGER: Using electrically operated equipment near gasoline or gasoline vapors may result in a fire or explosion, causing personal injury and property damage. Be sure that the working area is free from such hazards, and always use proper precautions.
NOTE: At all times when product is in the storage tank keep the riser pipe capped, so the vapors cannot escape into the environment.

Notice: OPW products must 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. All illustrations and specifications in this literature are based on the latest production information available at the time of publication. Prices, materials, and specification are subject to change at any time, and models may be discontinued at any time, in either case, without notice or obligation.

Standard Product Warranty

OPW warrants that products sold by it are free from defects in materials and workmanship for a period of one year from the date of manufacture by OPW (ECO products two years from date of manufacture.) Proof of purchase may be required. As the exclusive remedy under this limited warranty, OPW, will at its sole discretion, repair, replace, or issue credit for future orders for any product that may prove defective within the one year date of manufacture period (repairs, replacements, or credits may be subject to prorated warranty for remainder of the original warranty period, complete proper warranty claim documentation required.) This warranty shall not apply to any product that has been altered in any way, which has been repaired by any party other than a service representative authorized by OPW, or when failure is due to misuse, or improper installation or maintenance. OPW shall
have no liability whatsoever for special, incidental or consequential damages to any party, and shall have no liability for the cost of labor, freight, excavation, clean up, downtime, removal, reinstallation, loss of profit, or any other cost or charges.

For any product certified to California 2001 standards, OPW warrants that product sold by it are free from defects in material and workmanship for a period of one year from date of manufacture or one year from date of registration of installation not to exceed 15 months from date of manufacture by OPW.
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.

Testable Multi-Port Water Shroud Performance Specifications:

The Testable Multi-Port Water shroud (MPWS-TS) is designed to mate with the OPW/POMECO Multi-Port. The MPWS-TS isolates surface water and condensation from Tank Sumps. The Fiberglass Shroud Cover mates to a 33” Max O.D. by 31-1/2” Min I.D. tank sump top hat reducer. Not included. Shroud boots isolate the spill container buckets using stainless steel band clamps, providing a tight seal between the water shroud top hat and the underside of the spill container-mounting ring. A test port on the monitoring cap allows for intermittent vapor testing of the internal space of the tank sump. Available in 33” Dia Cover.

<u>MPWS-33TS consists of:</u>
(1) 33” Diameter Fiberglass Cover with Entry Fitting
(2) D02868M Boot
(2) Stainless Steel Upper Clamp
(2) Stainless Steel Lower Clamp
(1) C05411M Seal
(1) 4” PVC Pipe
(1) Monitoring Cap with Test Port
(1) SL-1100 Sealant

Testable Multi-Port Water Shroud Installation Instructions

1. **See POMECO Multi-Port Spill Container Manhole instruction sheet H15225PA. After completing Step 10.**

2. **Insert the PVC pipe and cap into the entry fitting installed into the cover to the desired height. Note: Ensure that there will be adequate clearance between the multiport cover and monitoring cap. Tighten the inside and outside entry fitting band clamps to 60 in-lbs. See Figure 1.**

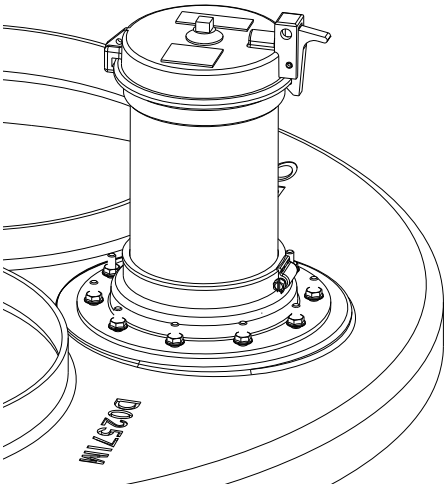

Figure 13

3. **Apply approximately a ¼" bead of the supplied SL-1100 Sealant into the groove on the bottom of the C05411M seal. See Figure 2.**

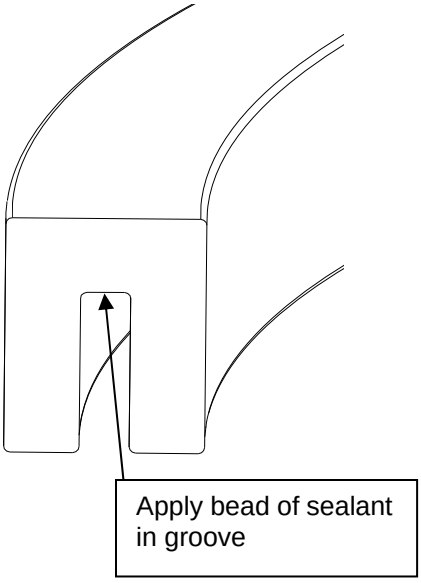

Figure 14

4. **Install the seal onto the top hat. See Figure 3.**

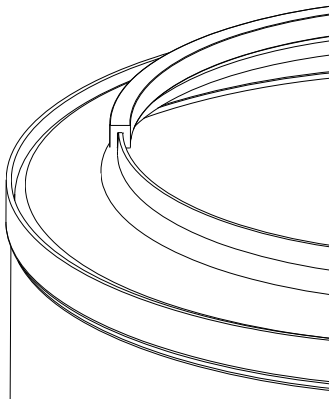

Figure 15

5. **Connect the bottom of the shroud boots to the fiberglass cover using the large band clamps. Tighten the clamps to 60 in-lbs. See Figure 4.**

6. **Apply approximately a ¼" bead of the supplied SL-1100 sealant to the top of the C05411M Seal and lower the shroud cover assembly onto the seal and top hat. Make sure the monitoring cap location will line up with the multi-port cover gage port location. See Figure 4.**

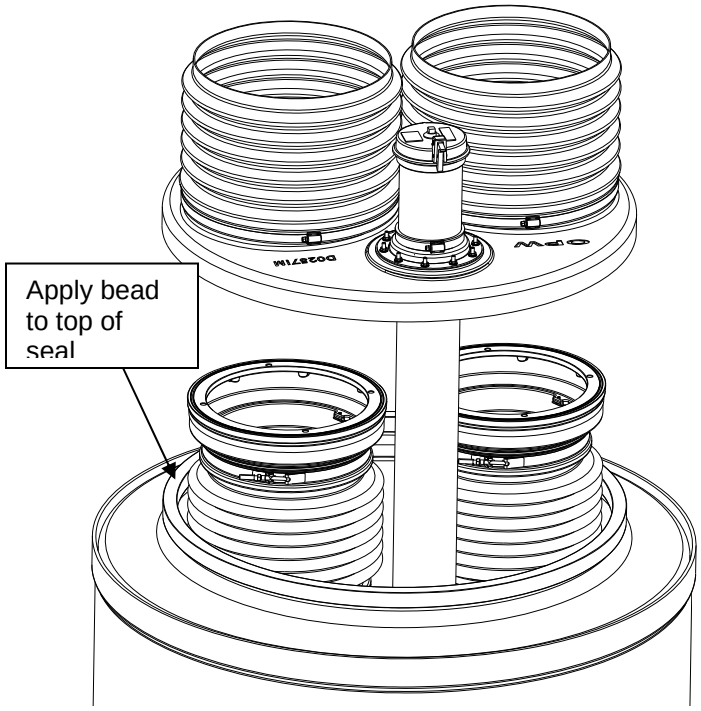

Figure 16

7. **Use the small band clamps to connect the top of the shroud boots to the machined diameter on the outside of the bucket ring. Tighten the band clamps to 60 in-lbs. See Figure 5.**

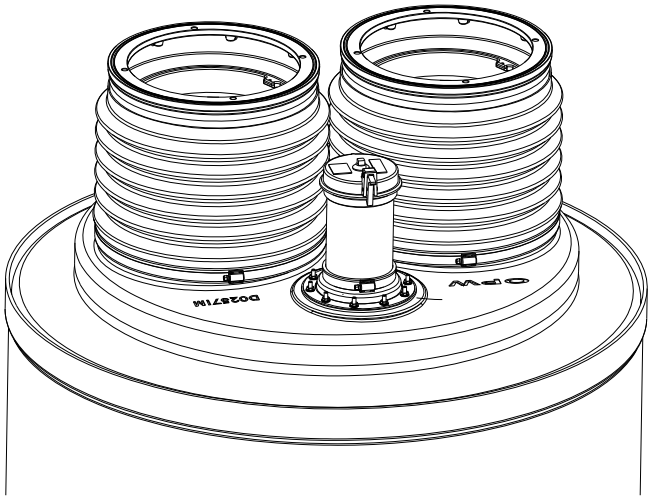

Figure 17

8. **Allow sealant to cure for several hours before vacuum testing.**

9. **Connect test equipment to the monitoring cap ¼" NPT test port. The VTA-200 and VG-2000 or equivalent can be used for this testing.**

10. **Pull a vacuum of approximately 15" H_2O on the sump and allow to stabilize.**

11. **Remove flow from sump and allow it to sit for 15 minutes. At this time record the initial vacuum level. Note: This reading should be at least 10" H_2O.**

12. **Allow the sump to sit for an additional 30 minutes and record the final vacuum level.**

13. **Sump passes if the final vacuum reading does not drop more than 5" H_2O below the initial vacuum level.**

14. **If sump is not tight after testing look for and repair any leaks then repeat steps 9 thru 13.**

15. **Complete step 12 in the Multi-Port instruction Sheet (H15225PA). See Figure 6 for final assembly.**

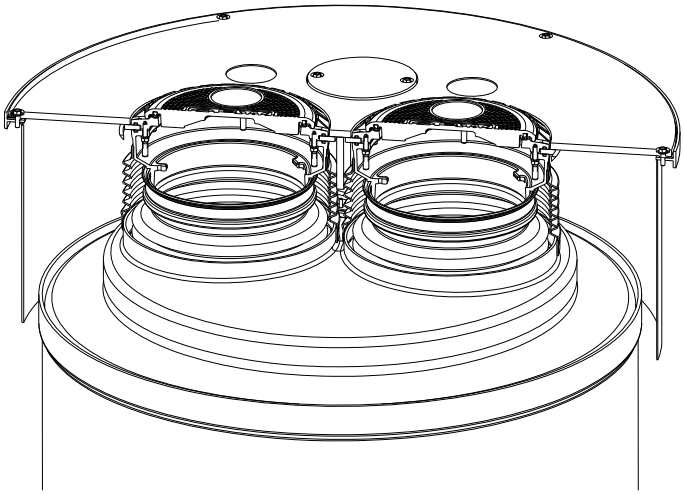

Figure 18

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Section 6

POMECO Multi-Port Maintenance

Pomeco 500 Series
Product Service & Maintenance Guide

(Revised 11/08/04)

Servicing Existing Pomeco 500 Series Fill End Manhole Covers

Removal of Existing Manhole Covers

- Block off and protect work area from traffic.
- Remove any accumulation of liquid from existing containment buckets.

Note: Follow customer's prescribed hazardous waste disposal procedures

- Remove all bolts holding existing buckets to manhole cover.
- Loosen Roto Locks. Rotate hex head bolts counter clockwise until Roto Lock moves freely or until hex bolt rotation is stopped by jamb nut.
- Remove Pomeco cover from sump.
- Remove Roto Locks from cover, by first removing the jamb nuts.
- Inspect Roto Locks for wear or damage. Replace any parts that may show wear or material fatigue.
- Thoroughly clean cover seating area on perimeter ring and underside of cover, removing old gasket, dirt, and all foreign material.
- Remove ALL inspection port rings and containment bucket port rings.
- Thoroughly clean containment bucket seating area on underside of cover, removing old gasket, dirt and all foreign material.
- Clean and lubricate Roto Lock Bolts.
- Install new ½" Thread Seal beveled flat washer on Roto Lock hex bolt with beveled side away from bolt head.
- Install ½" Thread Seal Series 75 washers (by Parker) between washer and cover. **Note:** Apply marine grade grease to both sides of Thread Seal washer prior to installation on bolt.
- Insert Roto Lock bolt in Roto Lock bolt hole and install new bonded neoprene washer on underside of cover, between underside of cover and tension spring.
- Install Roto Lock on Roto Lock Bolt.
- Install Roto Lock stop nuts. Carefully measure and install stop nut at a height to allow Roto Lock clearance to be rotated away from underside of seat ring lip and not so far that Roto Locks will rotate past stop bar on underside of cover.
- Clean perimeter ring area with 90% water, 10% bleach solution.
- Apply a bead of SL1100 sealant to underside and topside of perimeter "T" ring at seam, before installing gasket.
- Evenly apply SL1100 sealant to the full width of outer ring seat surface.
- Install gasket onto seat area of steel ring. **Note:** Butt gasket ends closely together. (Note: When cutting gasket, allow enough for gasket ends to overlap ¼", then move excess

gasket around ring to allow the gasket ends to butt together. Use caution to avoid a gap between gasket ends.) Adhesive may be applied to gasket ends to insure seal.

- Install new 5/16" Thread Seal beveled flat washer on hex bolt with beveled side away from bolt head.
- Install 5/16" Thread Seal Series 75 washers (by Parker) between washer and containment port ring. **Note:** Apply grease to both side of Thread Seal washer prior to installation on bolt. Reinstall Roto Locks.
- Apply an even bead of SL1100 sealant around 5/16" bolts after final tightening.
- An even bead of SL1100 sealant may be applied to the topside of the gasket prior to reinstalling the cover on the steel ring seat.
- Replace manhole cover into position, aligning ports over containment buckets. **Note: Use caution to avoid moving or damaging new seal.**
- Align bolt holes in bucket top ring with holes in the iron port ring and start bolts.
- Apply SL1100 to each 5/16" bolt prior to installation in containment ring.
- Apply anti-seize to bolt threads before installation.
- Apply liberal bead of PISCES SL1100 sealant to ring seat area.
- Reinstall ring on seat.
- Tighten containment bucket ring retaining bolts in a crossing pattern, until gasket makes contact. Then torque bolts evenly in a crossing pattern to 15 to 20 ft. lbs.
- Loosen Roto Lock bolts to backing jamb nut, allowing Roto Lock arm to extend below bottom lip of existing outer perimeter ring or casting.
- Initially tighten each perimeter Roto Lock until snug, alternating sides in a crossing pattern, then tighten all until firm. (Recommended maximum torque- 40 ft. lbs. To 50 ft. lbs.). Do not over tighten.
- **NOTE: <u>Check to make sure all Roto Locks are engaged below outer ring or casting.</u> Note: If cover edges appear to be elevated from the seat and movement downward was not detected as Roto Locks are tightened, Roto Locks may not have engaged the perimeter ring. It may be necessary to attempt to reengage the Roto Lock with the perimeter ring.**
- Inspect OPW 61SA swivel adapter and OPW 61VSA swivel vapor adaptor.
- Inspect OPW fill and vapor caps.
- Caulk joint around perimeter of cover and perimeter ring and Roto Lock bolts with SL1100 sealant.
- Water test cover after assembly is complete. Recommended water test procedures include: 1) Spraying water on cover or covers for 5 to 10 minutes, using a commonly available watering device such as a lawn sprinkler. 2) Standing water test, not to exceed ½" in water depth for a period of 5 to 10 minutes.
- Touch up paint damaged in cleaning process.

<u>Warning:</u>
<u>When cover is removed for any reason, follow cleaning and installation instructions as noted above. Always remove existing gasket and install new gasket.</u>

OPW does recommend periodic inspection of covers and seals as a part of the regularly scheduled maintenance program. Inspection should be performed whenever prudent periodic

inspection of other components in the fill and vapor recovery sumps is conducted.

Regularly scheduled inspection and maintenance programs should be a part of any service station or fueling facility operation. Only qualified, competent, well-trained technicians should perform maintenance.

Note: Common sense and good judgment should always be exercised. The contractor's understanding of all related site conditions prior to starting the project is essential. If the contractor does not have a clear understanding of the required work and site conditions, the contractor is advised to seek clarification prior to starting any portion of the project.

Section 7

1DK-2100 Drain Valve Replacement

OPW Installation and Maintenance

IMPORTANT: Please read these warnings and use the assembly instructions completely and carefully before starting. Failure to do so may cause product failure, or result in environmental contamination due to liquid leakage into the soil, creating hazardous spill conditions.

IMPORTANT: Check to make sure the unit is intact and undamaged and all parts have been supplied. Never substitute parts for those supplied. Doing so may cause product failure and void warranty.

WARNING-DANGER: Using electrically operated equipment near gasoline or gasoline vapors may result in a fire or explosion, causing personal injury and property damage. Be sure that the working area is free from such hazards, and always use proper precautions.
NOTE: At all times when product is in the storage tank keep the riser pipe capped, so the vapors cannot escape into the environment.

The OPW 1DK is an optional drain valve replacement kit for the OPW 1 Spill containers series. It is designed to return incidental spillage of liquid back to the underground storage tank.

HOW TO INSTALL

1. Remove and discard existing drain valve and O-ring.
2. Clean any dirt or debris from the sealing surface where the new drain valve will be installed.
3. Apply any common grease or light oil to the new supplied O-ring. Assemble the O-ring into the spill container base.
4. Insert the 1DK into the spill container O-ring. Be sure that the drain valve seats flush with the floor of the spill container base.
5. The pull lever of the 1DK MUST be positioned halfway between the riser pipe nipple and the spill container bellows. Rotate the drain valve until that position is attained.
6. Secure the 1DK by installing the provided retaining clips and nuts. Tighten the nuts to a torque of 11.5 ft-lbs min. to 13.5 ft-lbs max.
7. The drain valve is now installed and ready for testing.

Instructions

OPW 1DK-2100 EVR Replacement Drain Valve

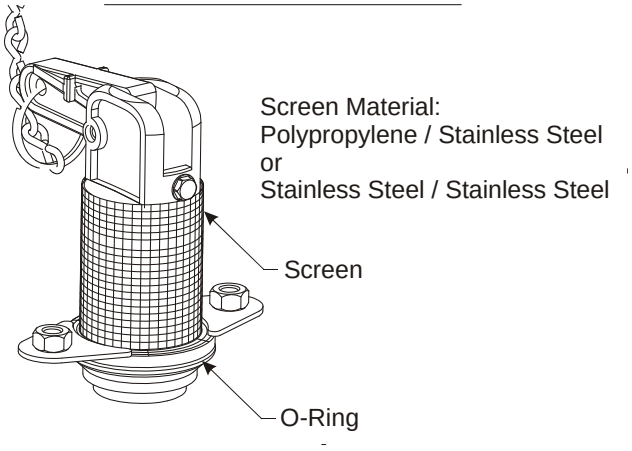
HOW TO TEST

Upon preliminary installation perform the California Test Procedures TP-201.1C or equivalent. Their Test Procedures will check the seals between the drain valve, nipple and rotatable adapter. To test the spill containers base and bellows fill the container with water. A drop in the water level of 1/16" or more after one hour means that a leak exists. To determine where the leak is, look for a steady stream of bubbles coming from one of the joints. **NOTE:** Do not drain the water into the UST after the test is complete. Water must be disposed of per local requirements for hazardous waste.

If a leak is observed in the Test Procedure, check to see that the drain valve poppet is sealing properly. To do this, lift up the drain valve pull chain several times to actuate the poppet. This will ensure that the drain valve poppet is seating properly. If this doesn't correct the leak remove the 1DK valve and inspect the O-ring for nicks or tears, replace if needed, also clean the sealing surfaces of the spill container base that the 1DK valve and O-ring are installed into. Reinstall 1DK valve and repeat test.

If spill container passes the Test Procedure but does not hold water then there is a leak in the bucket and will need to be replaced.

Alternative Construction



1DK-2100 EVR Replacement Drain Valve Performance Specifications:

This Spill Container drain valve has been manufactured and tested to the following California specifications: Leak Rate to be less than or equal to 0.17 CFH @ 2.0 " W.C.

Operation and Maintenance:

To open, pull drain valve chain up and hold open until liquid is drained. To close, release chain.

Annually: Inspect and clean the interior of the spill container and drain valve screen. Remove accumulated dirt and grit. Test the drain valve using CARB procedure TP-201.1C or TP-201.1D. If the drain valve passes testing no further maintenances required. If the drain valve fail testing, remove the valve, soak in water and use high-pressure air, if needed, to clean. Reinstall the drain valve to its proper position and test the valve with CARB procedure TP-201.1C or TP-201.1D.

Important: Leave these instructions with Station Operator.

Notice: OPW products must 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. All illustrations and specifications in this literature are based on the latest production information available at the time of publication. Prices, materials, and specification are subject to change at any time, and models may be discontinued at any time, in either case, without notice or obligation.

Standard Product Warranty

OPW warrants that products sold by it are free from defects in materials and workmanship for a period of one year from the date of manufacture by OPW (ECO products two years from date of manufacture.) Proof of purchase may be required. As the exclusive remedy under this limited warranty, OPW, will at its sole discretion, repair, replace, or issue credit for future orders for any product that may prove defective within the one year date of manufacture period (repairs, replacements, or credits may be subject to prorated warranty for remainder of the original warranty period, complete proper warranty claim documentation required.) This warranty shall not apply to any product that has been altered in any way, which has been repaired by any party other than a service representative authorized by OPW, or when failure is due to misuse, or improper installation or maintenance. OPW shall have no liability whatsoever for special, incidental or consequential damages to any party, and shall have no liability for the cost of labor, freight, excavation, clean up, downtime, removal, reinstallation, loss of profit, or any other cost or charges.

For any product certified to California 2001 standards, OPW warrants that product sold by it are free from defects in material and workmanship for a period of one year from date of manufacture or one year from date of registration of installation not to exceed 15 months from date of manufacture by OPW.

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.

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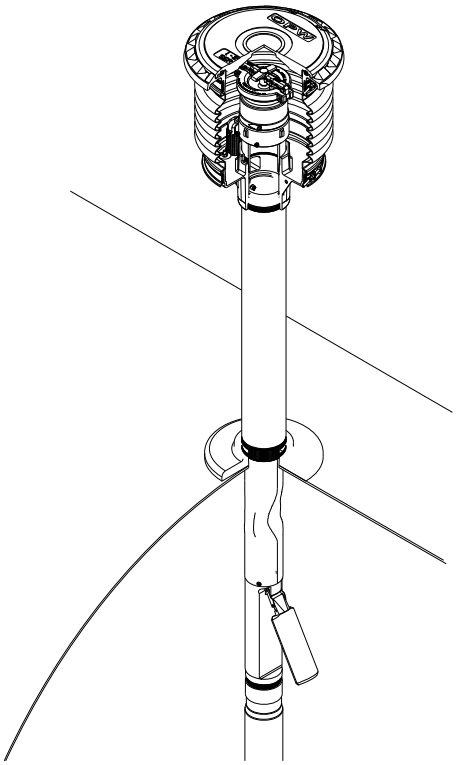
Section 8

61SO-EVR Overfill Protection Valve

H14790PA
May 2007

OPW Installation & Maintenance Instructions

ASSEMBLY, INSTALLATION, and MAINTENANCE INSTRUCTIONS FOR OPW 61SO VAPOR TIGHT, OVERFILL PREVENTION VALVES.



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

Vapor Tight Overfill Prevention Valves

GENERAL INSTRUCTIONS

The OPW 61SO Overfill Prevention Valve is designed for tight fill, gravity drop applications to help prevent accidental or intentional overfilling of underground storage tanks. It is installed in the UST drop tube in place of a standard drop tube.
The main 61SO valve closes when liquid level is at 95% of the top of the tank. A small bypass valve remains open to allow the delivery hose to drain at 3-5 gallons per minute. If the delivery truck valve is not closed after initial shut-off, the bypass valve will close and will restrict all fuel delivery.

The 61SO EVR approved models of the 61SO are designed to be installed with the following OPW products: Face Seal Adapter, Spill Container or Multi-port, Jack Screw Kit, Rotatable Product Adaptor, and Product Cap.

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, and/or disconnecting a liquid filled delivery hose or elbow will result in a hazardous spill, which may result in personal injury, property damage, fire, explosion, and water and soil pollution.

* Make sure all connections, including the hose and elbow connections, 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 spills.
* Do not operate with damaged or missing parts, which prevent tight connections.

Normal Operation: A Hose "Kick" and reduced flow signal that the 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 after closing the delivery valve 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 wetted 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, as illustrated in Figure 16. In all systems, the shut-off point of the 61SO must be reached before the ball float reduces flow to ensure proper overfill valve operation.

TOOLS NEEDED FOR INSTALLATION AND ASSEMBLY:

1. Drill
2. A sharp 1/8" pilot drill bit
3. A sharp 5/16" drill bit
4. Tape measure
5. Hacksaw or cut-off saw, fine tooth; 24 teeth/inch
6. Fine half round file
7. Screwdriver - Phillips blade
8. ½" Wrench or socket
9. Two-part sealant (Supplied)
10. Torque Wrench

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 always use proper precautions.

IMPORTANT: The figures in this installation and maintenance instruction may contain vapor recovery equipment (including model numbers) that is not certified by the California Air Resources Board (CARB) for a specific Phase I Vapor Recovery System. Please refer to Exhibit 1 of the appropriate CARB Phase I Executive Order for a list of certified Phase I Vapor Recovery System Equipment.

HOW TO LOCATE THE POSITION OF THE 61SO AT 95% TANK CAPACITY

The length of the upper tube and the placement of the 61SO valve body determine the shut-off point. Following the standard instructions for the OPW 61SO will provide for initial shutoff at 95%. In all cases, the upper tube length must be a minimum of 6-1/2" plus the length of the riser pipe. All length measurements are in inches.

INSTRUCTIONS

1.) Find tank capacity (in gallons) from tank calibration chart provided by tank manufacturer.

2.) Calculate 95% of capacity.

3.) Locate the 95% volume number on the tank calibration chart.

4.) Find the dipstick number (X) which corresponds to the 95% tank volume. And, find the dipstick number (Y) which corresponds to the 100%volume.

5.) Subtract the dipstick number (X) from the tank diameter (Y) to find the upper tube reference number (Z).

(Y) - (X) = (Z)

6.) Subtract 2" from (Z) to find the upper tube depth (C).

(Z) - 2" = C

7.) Is C less than 6-1/2"?

NO Upper tube length is C plus the distance from the top of the FSA-400 Face Seal Adaptor installed on the riser pipe to the inside, top lip of the storage (A).

Upper Tube Length = C + (A)

YES Upper tube length is 6-1/2" plus the riser pipe measurement (A).

Upper Tube Length = 6-1/2" + (A)

NOTE: You must find the actual tank capacity number that correlates to the 6-1/2" + (A) depth for the station records. This number may also be used for the purposes of calibrating an electronic tank level system.

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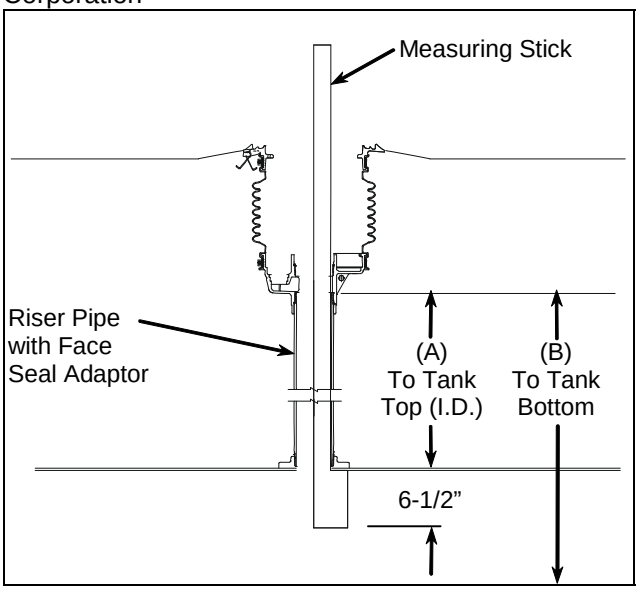


EXAMPLE

1.) For an Owens-Corning Model G-3 Fiberglass® Tank Calibration Chart:
Tank Capacity - 10,000 gal., nominal 9,403 gal.
NOTE: Use actual capacity only

2.) 95% of actual tank capacity = 0.95 x 9403 gal. = 8933 gal.

3.) The closest number which is less than 8933 gal. Is 8910 gal. Choosing the closest number less than 95% of actual capacity ensures that the initial shutoff will occur when the tank is no more than 95% full.

4.) The calibration chart reading of 8910 gal. corresponds to a dipstick measurement of 82".

5.) Dipstick number (X) = 82"
Tank diameter (Y) = 92"
(Y) - (X) = (Z) (92 "- 82" = 10")
(Z) = 10"

6.) (Z) - 2" = C (10" - 2" = 8")
C = 8"

7.) Is 8" less than 6-1/2"?

NO Measure the distance from the top of the Face Seal Adaptor installed on the riser pipe to the inside, top lip of the storage tank and obtain measurement (A).

Upper tube length = C + (A)

ASSEMBLY INSTRUCTIONS

IMPORTANT: Each of the numbered steps in the installation instructions are designed as a CHECK LIST to insure proper installation and trouble free operation of the OPW 61SO 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
Install the OPW Face Seal Adaptor and the Thread-on Spill Container on the Fill Riser (Refer to the Installation Instructions Supplied with the Spill Container). Insert the 61SO measuring stick through the riser pipe and hook it under the inside of the tank in the lengthwise direction. Mark the measuring stick at the top of the Face Seal Adaptor threads inside the base of the spill container bucket just below the drain valve outlet window (See Figure 1 &1A). The top flange on the 61SO will rest on the Face Seal Adaptor just below the drain valve outlet, and be locked in place between the Face Seal Adaptor and the 4" nipple that is installed in the spill container with the Jack Screw Kit (See Figure 1A). (For riser pipe configurations other than that shown, consult installation drawings or use other necessary means to measure Dimension “A”).

Using a tape measure, measure the distance from the top of the Face Seal Adaptor in the spill container to the bottom of the tank (Dim. “B”).

IMPORTANT: Inspect the riser pipe for any foreign material. Over spray 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 and operation of the valve. The 61SO is designed to be installed into schedule 40 riser pipes. The 61SO cannot be installed into schedule 80 riser pipes.

STEP 2: MARK THE TUBE
Use the result from STEP 1 and HOW TO LOCATE THE POSITION OF THE 61SO AT 95% TANK CAPACITY to mark the upper tube. Measure the distance from the point where the upper tube and valve body meets. For “C” measurements lass than or equal to 6-1/2” see Figure 2. For “C” measurements greater than 6-1/2” use tape measure to mark the calculated upper tube length onto the upper tube.

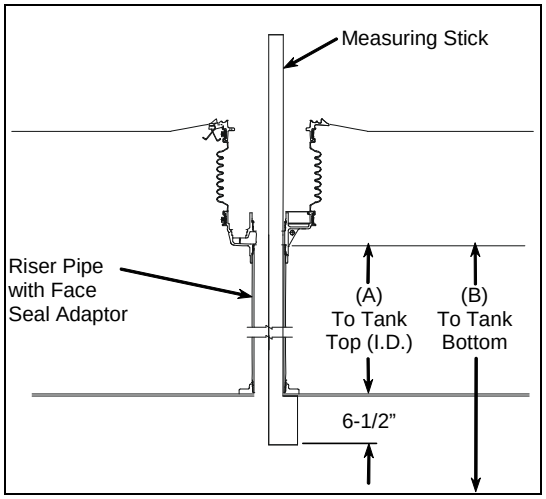


Figure 1

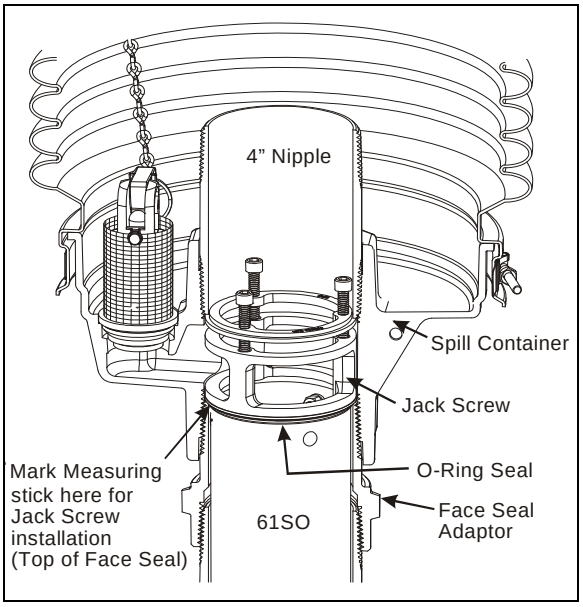


Figure 1A

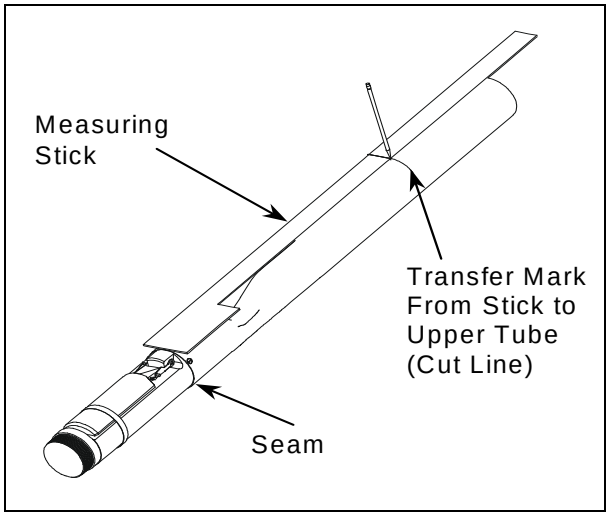


Figure 2 (For “C” less than or equal to 6-1/2 “ only)

STEP 3: CUT THE UPPER DROP TUBE
Carefully saw through the tube squarely, at the mark made in Step 2. Use a hacksaw with a new fine-tooth blade. Rotating the upper tube as the sawing progresses will minimize run out and ensure a square 90-degree cut. A piece of paper, taped square with the tube or a hose clamp can be used as guides for making a square cut.
CAUTION -DO NOT use a 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.

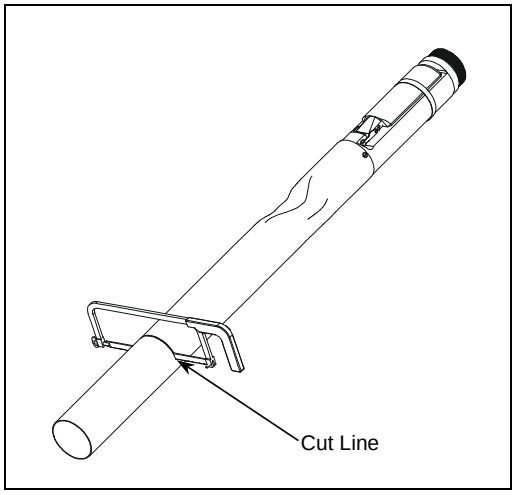


Figure 3

STEP 4: FILE THE DROP TUBE
File the upper tube square and remove any burrs or rough edges. Make sure the cut is flat and square.

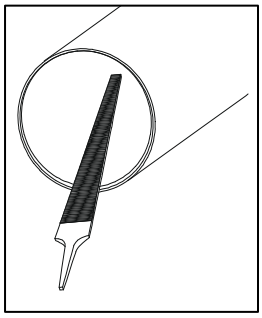


Figure 4

IMPORTANT: Carefully file a **good chamfer** on the inside of the drop tube to provide a lead-in for the o-ring and inlet tube to be installed in step 6.
Caution: Failure to properly apply and cure sealant may result in a failure of a pressure decay leak test.

STEP 5: APPLY SEALANT
Prepare sealant by thoroughly mixing 1/3 of each packet together until color is uniform.
Generously apply sealant to the inside diameter of the upper drop tube. Make sure coverage is completely around the tube as shown in Fig. 5.

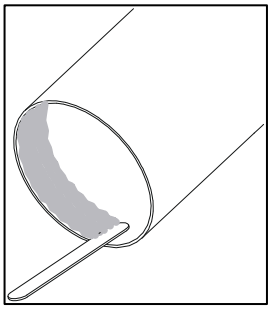


Figure 5

STEP 6: INSTALL INLET TUBE
Install o-ring in the o-ring groove of inlet tube (DO NOT USE GREASE). Insert the inlet tube into the upper tube until it seats against the flange on the upper inlet tube.

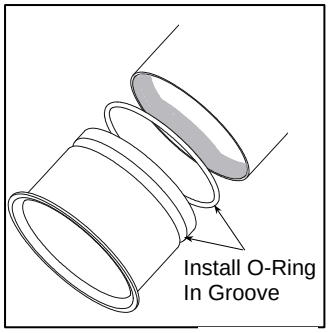


Figure 6

STEP 7: DRILL HOLES
With the inlet tube in place, carefully drill (3) 1/8" diameter pilot holes through the drop tube and inlet tube at three locations at 120 degree intervals around the tube, 1 inch below the flange. Using the pilot holes, drill (3) 5/16" dia. holes through the tubes. Remove the burrs from the drilling operation from the inside of the drop tube assembly with a fine half round file.
IMPORTANT: A 5/16" drill bit must be used. Do not substitute any other size drill bit.

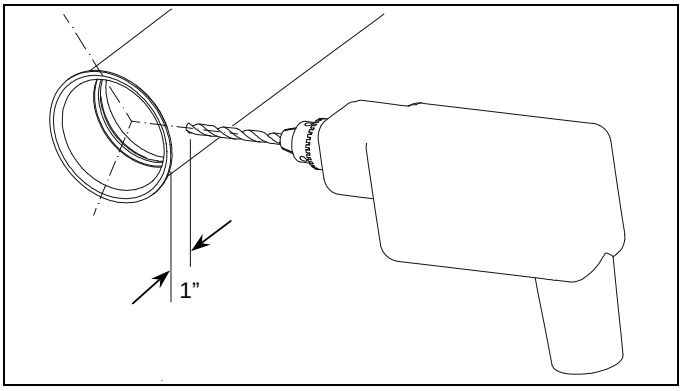


Figure 7

STEP 8: ASSEMBLE AND SEAL CLINCH STUDS
Loosely assemble the three (3) clinch studs, lock washers, and nuts in holes. Do not tighten at this time. Mix up a small amount of sealant. Generously apply sealant underneath each clinch stud head, each nut, and on the outside of the tube around the holes.

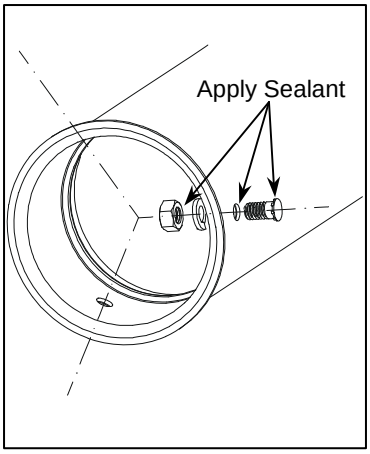


Figure 8

STEP 9: TIGHTEN SELF-CLINCHING STUDS
Tighten clinch studs securely with a ½" wrench. Use only the self-clinching studs that are supplied with the unit. Seating torque is 11.5 ft-lbs min. to 13.5 ft-lbs max. Do not over tighten.
Note: **Failure to properly apply and cure the sealant may result in a failure of a pressure decay leak test.**

STEP 10: LOWER TUBE ASSEMBLY
If a vise is used, clamp on the valve body casting only to avoid damage to the float. Mix the remaining sealant until the color is uniform. Using the mixing stick, **generously apply sealant to the first 6 male threads on the valve body** as shown in figure 10. Make sure coverage is completely around the threads, and work the sealant down into the thread profile. Quickly thread the lower tube onto the valve body. Tighten the tube securely by hand or with a strap wrench. Remove excess sealant and smooth sealant bead with water moistened mixing stick.

Important: Allow sealant (epoxy) to cure for 24 hours before installing into tank.

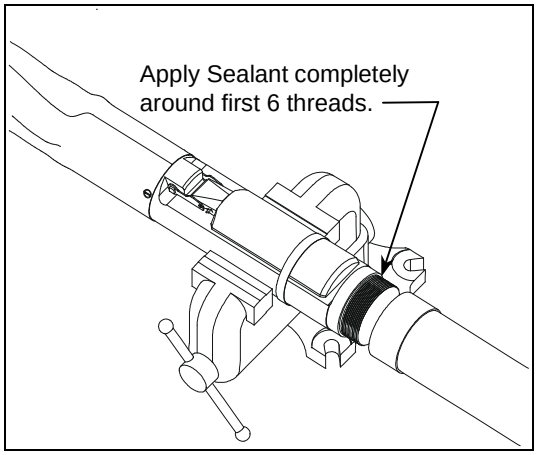


Figure 10

Note: Before installing the valve in the tank, a pressure test can be performed on the valve to check for vapor tightness. Seal off both ends of the tube with inflatable plumber's plugs. Apply a maximum 10" W.C. (1/3 PSI) air pressure. If pressure does not hold and a leak can be located with soap solution, do not install the valve. Send the valve back to OPW for warranty evaluation.
Caution: Do not over-pressure. Excess pressure can damage the valve

STEP 11: CUT LOWER TUBE AT 45° ANGLE
Measuring from the underside of the inlet tube flange, mark the overall length of the drop tube a distance of (B) minus 6" or as per local codes or requirements. Determine dimension (B) from the measurements taken in Step 1, Figure 1 (Top of the Face Seal Adaptor below the drain valve outlet in the spill container to the bottom of the tank). Saw off the excess tube at a 45-degree angle and file off any sharp burrs (Refer to Figure 16). Optional: Install the OPW Tank Bottom Protector on the lower tube (Refer to Installation instructions supplied with the Tank Bottom Protector).

STEP 12: PREPARE FILL RISER FOR VALVE INSERTION

IMPORTANT: Inspect the riser pipe for any foreign material. Over spray 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. Thoroughly clean top of riser pipe.

Important: Before installing the valve, allow sealant to cure for 24 hours.

STEP 13: REMOVE ELASTIC BAND
Remove the elastic band securing the float to the valve body. The float will move into an outward position.

STEP 14: INSERT DROP TUBE
Make sure the O-Ring gasket is under the flange of the inlet tube. Hold the float down against the valve body and slowly insert the drop tube overfill valve into the riser pipe. Do not force valve into the riser pipe. If any obstruction or foreign matter interferes with smooth insertion of the valve, the riser pipe must be cleared.

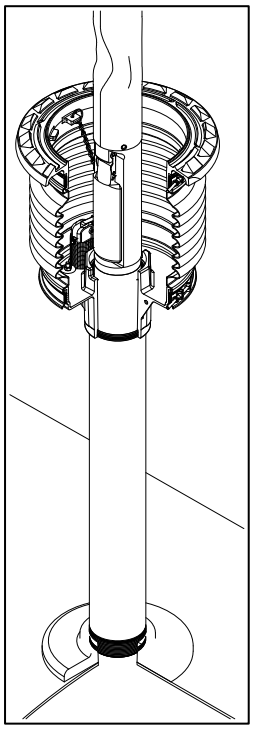


Figure 14

WARNING
Failure to follow the assembly and installation instructions or use of excessive force to insert the OPW 61SO 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 61SO. The 61SO is designed for insertion into schedule 40 pipe. If schedule 80 pipe has been

used for the riser, the 61SO can not be installed. If seamed pipe has been used, the internal weld bead may interfere with the OPW 61SO and prevent installation. If the OPW 61SO 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; take appropriate steps to remove it.

STEP 15: CHECK INSTALLATION

Insert the drop tube all the way into the tank until the flange and gasket seat onto the top of the Face Seal Adaptor. The float will swing out into the operating position as it passes into the tank. Make sure that the float is aligned along 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 tank fittings. Look into the drop tube and align the deflector with the length of the tank. **CAUTION:** No obstruction in the tank can be within 13" from the center of the riser pipe or the valve may not operate properly.

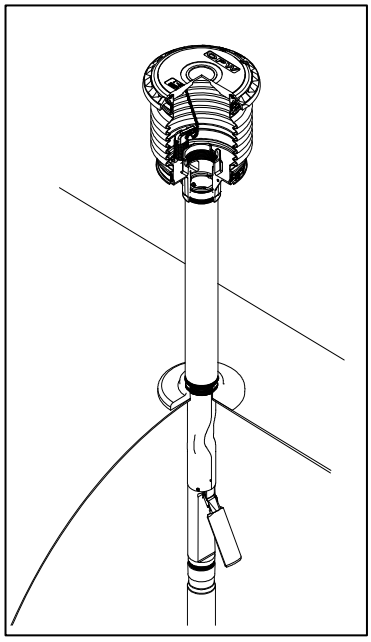


Figure 15

STEP 16: ALIGN VALVE

Install the OPW Jack Screw Kit and a 4" nipple to lock the valve in place. Refer to the Installation Instructions supplied with the Jack Screw Kit. Install the Rotatable Product Adaptor (Refer to Installation Instructions supplied with the Rotatable Product Adaptor.) Make sure that the valve does not rotate while tightening the adaptor by observing the position of the deflector. **The valve must remain aligned along the length of the tank as in Step 15**. Repeat this step as necessary to assure proper valve alignment.

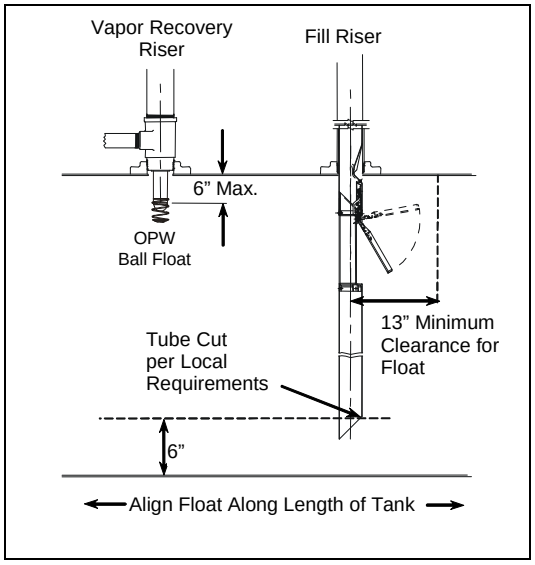


Figure 16

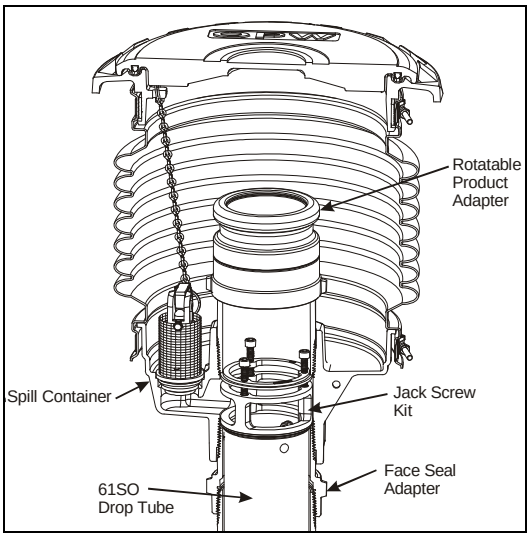


Figure 16A

STEP 17: INSTALL WARNING PLATE

Slide the tie wrap over the warning plate ears and position warning plate against riser pipe approximately 1" below the adaptor. Tighten the tie wrap securely. The valve is now fully installed and in operating position.

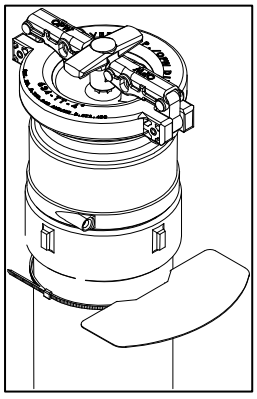


Figure 17

STEP 18: VALVE REMOVAL

The valve can be removed for tank leak testing, inspection, etc., by removing the Rotatable Product Adaptor, the 4" nipple, and the Jack Screw Kit. Reinstall per the above instructions.

STEP 19: ELECTRONIC LIQUID LEVEL MONITORING

If an electronic level monitor is installed, it must be calibrated to match the top of the 61SO valve body, which must correlate with 95% of the actual tank capacity.

PREVENTATIVE MAINTENANCE

Annually, inspect the flapper in the 61SO to see that it is open by looking down the drop tube opening. Test the 61SO drop tube seals with CARB procedure TP-201.1D. If the drop tube seal passes testing, no further maintenance is required. If the drop tube fails testing, replace the drop tube seal with OPW P/N: H11931M for 4" Tubes. Re-test the 61SO drop tube with CARB procedure TP-201.1D. If this does not correct the leak the 61SO needs to be replaced.

CAUTION: Do not insert any foreign object into drop tube if flapper is in the closed position. For example a tank level measuring stick. This will damage the valve and void the Warranty. ALWAYS check flapper location before "sticking" the tank. If flapper is in the closed position the tank is either over filled and you need to wait until the liquid level goes down or the 61SO is damaged and needs to be replaced.

61SO Performance Specifications:

This Overfill Prevention Valve has been manufactured and tested to, and met, the following California specifications. Performance Requirement: Leak rate to be less than or equal to 0.17 CFH @ 2.0" W.C.

Torque Specification:

Self-Clinching Studs, 5/16-8 UN thread, 11.5 ft-lbs minimum to 13.5 ft-lbs maximum.

Important: Leave these installation instructions and maintenance procedures with the station operator.

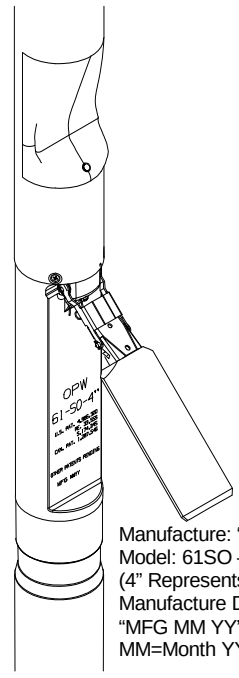
Notice: OPW products must be used in compliance with applicable federal, state, and local laws and regulations. Product selection should be based on physical specifications and limitations and compatibility with the environment and material to be handled. All illustrations and specifications in this literature are based on the latest production information available at the time of publication. Prices, materials, and specification are subject to change at any time, and models may be discontinued at any time, in either case, without notice or obligation.

Standard Product Warranty

OPW warrants that products sold by it are free from defects in materials and workmanship for a period of one year from the date of manufacture by OPW (ECO products two years from date of manufacture.) Proof of purchase may be required. As the exclusive remedy under this limited warranty, OPW, will at its sole discretion, repair, replace, or issue credit for future orders for any product that may prove defective within the one year date of manufacture period (repairs, replacements, or credits may be subject to prorated warranty for remainder of the original warranty period, complete proper warranty claim documentation required.) This warranty shall not apply to any product that has been altered in any way, which has been repaired by any party other than a service representative authorized by OPW, or when failure is due to misuse, or improper installation or maintenance. OPW shall have no liability whatsoever for special, incidental or consequential damages to any party, and shall have no liability for the cost of labor, freight, excavation, clean up, downtime, removal, reinstallation, loss of profit, or any other cost or charges.

For any product certified to California 2001 standards, OPW warrants that product sold by it are free from defects in material and workmanship for a period of one year from date of manufacture or one year from date of registration of installation not to exceed 15 months from date of manufacture by OPW.

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.



Manufacture: "OPW"
Model: 61SO – 4"
(4" Represents Size)
Manufacture Date:
"MFG MM YY"
MM=Month YY=Year

Product Identification

OPW
A DOVER COMPANY

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1-800-422-2525 Domestically, 513-870-3315 Internationally
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Printed in U.S.A. p/n H14790PA Rev. B- 5/07

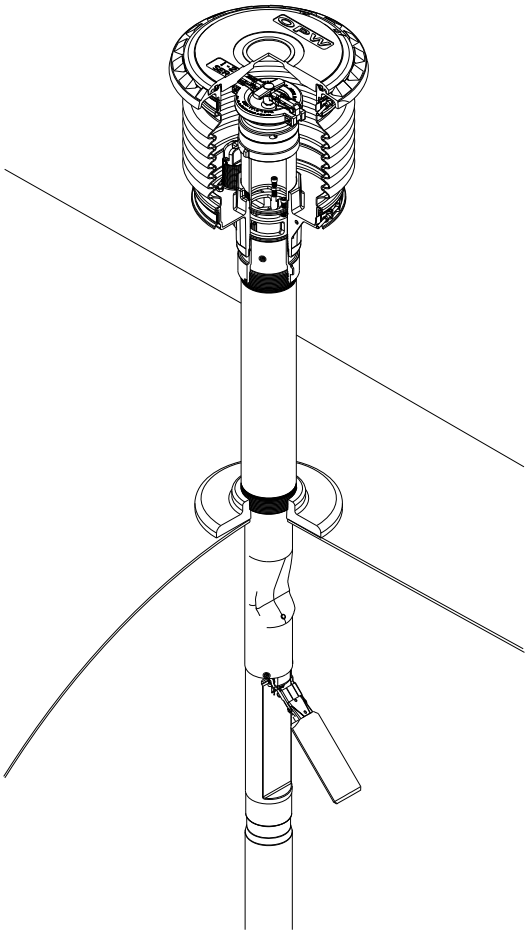
Section 9

71SO-EVR Overfill Protection Valve

H15524PA
September 2007

OPW Installation & Maintenance Instructions

ASSEMBLY, INSTALLATION, and MAINTENANCE INSTRUCTIONS FOR OPW 71SO VAPOR TIGHT, OVERFILL PREVENTION VALVES.



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

Vapor Tight Overfill Prevention Valves

GENERAL INSTRUCTIONS

The OPW 71SO Overfill Prevention Valve is designed for tight fill, gravity drop applications to help prevent accidental or intentional overfilling of underground storage tanks. It is installed in the UST drop tube in place of a standard drop tube.
The main 71SO valve closes when liquid level is at 95% of the top of the tank. A small bypass valve remains open to allow the delivery hose to drain at 3-5 gallons per minute. If the delivery truck valve is not closed after initial shut-off, the bypass valve will close and will restrict all fuel delivery.

The 71SO models of the 71SO are designed to be installed with the following OPW products: Face Seal Adaptor, OPW Spill Container or Multi-port, Jack Screw Kit, Rotatable Product Adaptor, and Product Cap.

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, and/or disconnecting a liquid filled delivery hose or elbow will result in a hazardous spill, which may result in personal injury, property damage, fire, explosion, and water and soil pollution.

* Make sure all connections, including the hose and elbow connections, 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 spills.
* Do not operate with damaged or missing parts, which prevent tight connections.

Normal Operation: A Hose ”Kick” and reduced flow signal that the 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 after closing the delivery valve 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.

WARNING
In the event you are splashed with fuel remove wet clothing immediately. Skin contact with gasoline can cause chemical burns and may result in inhalation of vapors that may be fatal. Never go inside confined areas after being splashed and never go near ignition sources.

IMPORTANT
Determine if the underground storage tank is equipped with a ball float vent valve, as illustrated in Figure 24. In all systems, the shut-off point of the 71SO must be reached before the ball float reduces flow to ensure proper overfill valve operation.

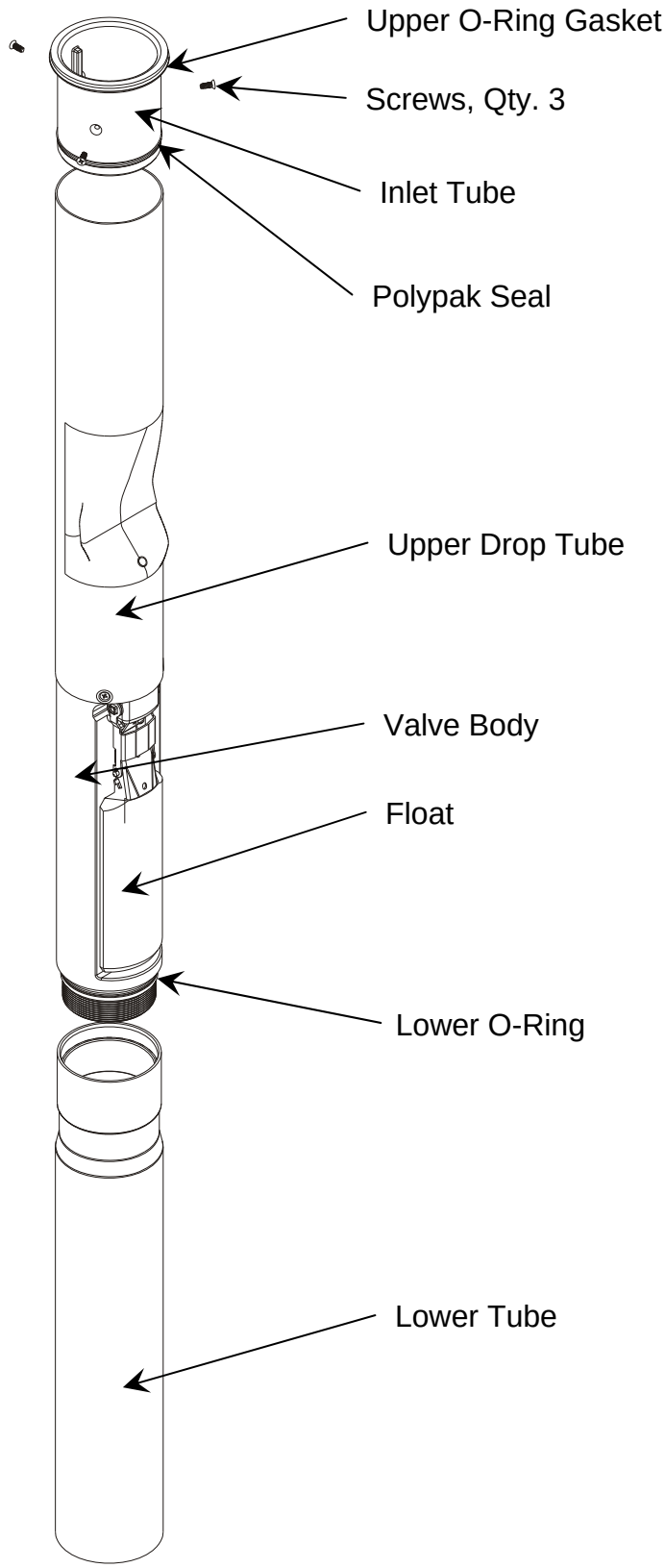
TOOLS NEEDED FOR INSTALLATION AND ASSEMBLY:

1. 71SO-TOOL or 71SO-TOOLC (includes the following)
    a. Sharp 3/16” drill bit with stop
    b. Punch
2. Drill
3. Hammer
4. Tape measure
5. Hacksaw or cut-off saw, fine tooth; 24 teeth/inch
6. Fine half round file
7. Screwdriver - Phillips blade
8. Fine grit sandpaper / steel wool
9. Grease, black moly
10. Torque Wrench
11. Band clamp (3-3/4” diameter minimum)

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 always use proper precautions.

IMPORTANT: The figures in this installation and maintenance instruction may contain vapor recovery equipment (including model numbers) that is not certified by the California Air Resources Board (CARB) for a specific Phase I Vapor Recovery System. Please refer to Exhibit 1 of the appropriate CARB Phase I Executive Order for a list of certified Phase I Vapor Recovery System Equipment.

71SO Parts Diagram



HOW TO LOCATE THE POSITION OF THE 71SO AT 95% TANK CAPACITY

The length of the upper tube and the placement of the 71SO valve body determine the shut-off point. Following the standard instructions for the OPW 71SO will provide for initial shutoff at 95%. In all cases, the upper tube length must be a minimum of 6-1/2" plus the length of the riser pipe. All length measurements are in inches.

INSTRUCTIONS

1.) Find tank capacity (in gallons) from tank calibration chart provided by tank manufacturer.

2.) Calculate 95% of capacity.

3.) Locate the 95% volume number on the tank calibration chart.

4.) Find the dipstick number (X) which corresponds to the 95% tank volume. And, find the dipstick number (Y) which corresponds to the 100%volume.

5.) Subtract the dipstick number (X) from the tank diameter (Y) to find the upper tube reference number (Z).

(Y) - (X) = (Z)

6.) Subtract 2" from (Z) to find the upper tube depth (C).

(Z) - 2" = C

7.) Is C less than 6-1/2"?

NO Upper tube length is C plus the distance from the top of the Face Seal Adaptor installed on the riser pipe to the inside, top lip of the storage (A).

Upper Tube Length = C + (A)

YES Upper tube length is 6-1/2" plus the riser pipe measurement (A).

Upper Tube Length = 6-1/2" + (A)

NOTE: You must find the actual tank capacity number that correlates to the 6-1/2" + (A) depth for the station records. This number may also be used for the purposes of calibrating an electronic tank level system.

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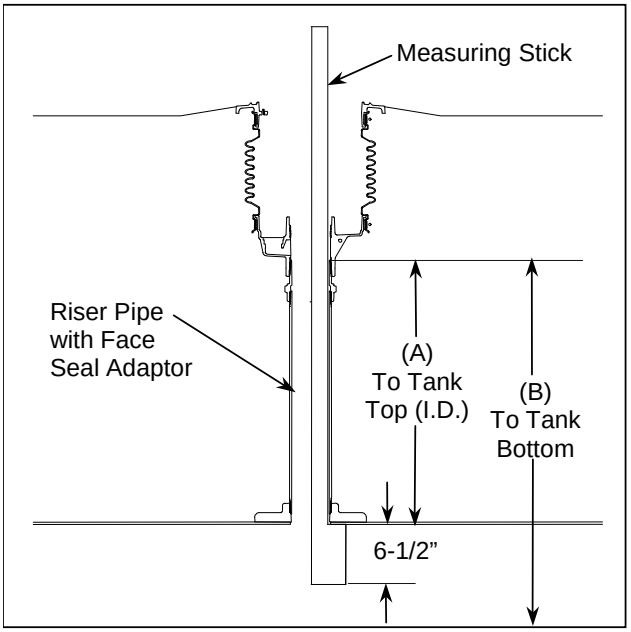

Figure 1

EXAMPLE

1.) For an Owens-Corning Model G-3 Fiberglass® Tank Calibration Chart:
Tank Capacity - 10,000 gal., nominal 9,403 gal.
NOTE: Use actual capacity only

2.) 95% of actual tank capacity = 0.95 x 9403 gal. = 8933 gal.

3.) The closest number which is less than 8933 gal. Is 8910 gal. Choosing the closest number less than 95% of actual capacity ensures that the initial shutoff will occur when the tank is no more than 95% full.

4.) The calibration chart reading of 8910 gal. corresponds to a dipstick measurement of 82".

5.) Dipstick number (X) = 82"
Tank diameter (Y) = 92"
(Y) - (X) = (Z) (92 "- 82" = 10")
(Z) = 10"

7.) (Z) - 2" = C (10" - 2" = 8")
C = 8"

7.) Is 8" less than 6-1/2"?

NO Measure the distance from the top of the FSA-400 Face Seal Adaptor installed on the riser pipe to the inside, top lip of the storage tank and obtain measurement (A).

Upper tube length = C + (A)

ASSEMBLY INSTRUCTIONS

IMPORTANT: Each of the numbered steps in the installation instructions are designed as a CHECK LIST to ensure proper installation and trouble free operation of the OPW 71SO 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
Install the OPW Face Seal Adaptor and the OPW Thread-on Spill Container on the Fill Riser (Refer to the Installation Instructions Supplied with the Spill Container). Insert the 71SO measuring stick through the riser pipe and hook it under the inside of the tank in the lengthwise direction. Mark the measuring stick at the top of the Face Seal Adaptor threads inside the base of the spill container bucket just below the drain valve outlet window (See Figure 1 &1A). The top flange on the 71SO will rest on the Face Seal Adaptor just below the drain valve outlet, and be locked in place between the Face Seal Adaptor and the 4" nipple that is installed in the spill container with the Jack Screw Kit (See Figure 1A). (For riser pipe configurations other than that shown, consult installation drawings or use other necessary means to measure Dimension “A”).

Using a tape measure, measure the distance from the top of the Face Seal Adaptor in the spill container to the bottom of the tank (Dim. “B”).

IMPORTANT: Inspect the riser pipe for any foreign material. Over spray 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 and operation of the valve. The 71SO is designed for installation into schedule 40 riser pipes. The 71SO cannot be installed into schedule 80 riser pipes.

STEP 2: MARK THE TUBE
Use the result from STEP 1 and HOW TO LOCATE THE POSITION OF THE 71SO AT 95% TANK CAPACITY to mark the upper tube. Measure the distance from the seam where the upper tube and valve body meet. For “C” measurements less than or equal to 6-1/2” see Figure 2. For “C” measurements greater than 6-1/2” use a tape measure to mark the calculated upper tube length onto the upper tube.

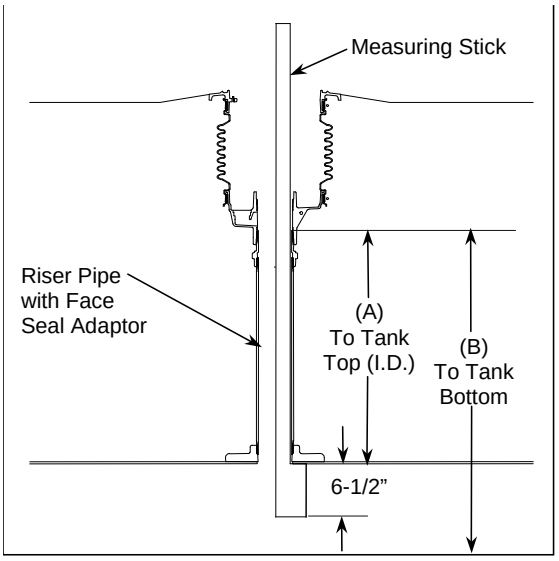

Figure 1

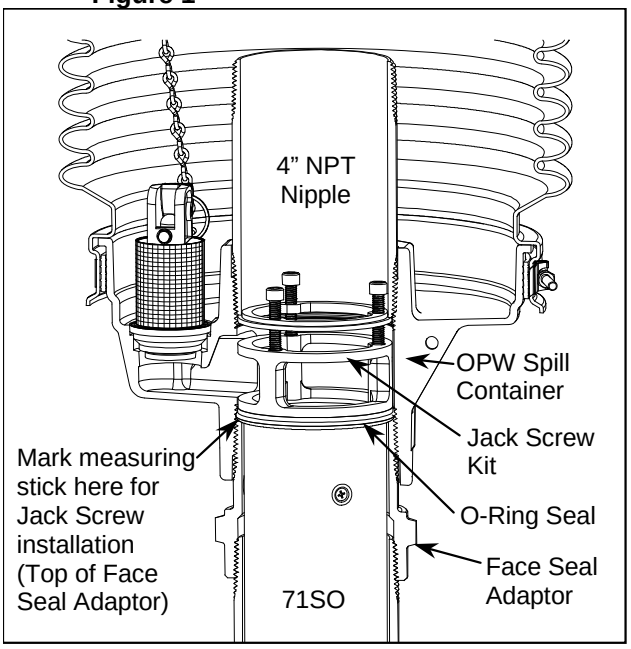

Figure 1A

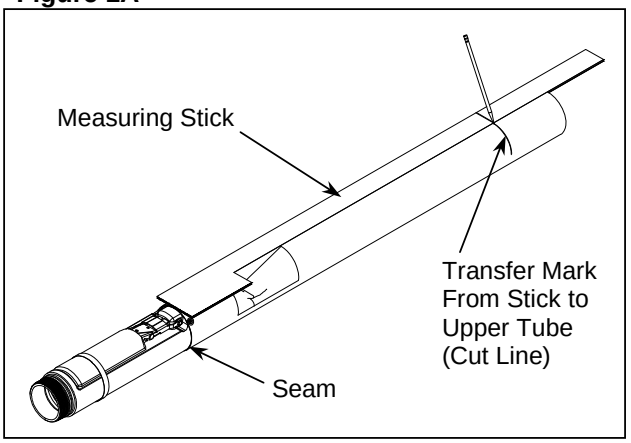

Figure 2 (For “C” less than or equal to 6-1/2” only)

STEP 3: CUT THE UPPER DROP TUBE
Attach the supplied band clamp to the upper tube just below the mark and ensure that it is assembled square to the tube. The clamp can be used as a guide for making a square cut. If a vise is used, clamp on the valve body casting only to avoid damage to the float and tubes (See Figure 3A). Carefully saw through the tube squarely, at the mark made in Step 2. Use a hacksaw with a new fine-tooth blade. Rotating the upper tube as the sawing progresses will minimize run out and ensure a square 90-degree cut. Remove the band clamp after tube is cut.

CAUTION -DO NOT use a 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.

IMPORTANT: Remove all chips and shavings generated in steps 3 thru 5 out of the cut end of the tube. DO NOT remove chips and shavings by dumping thru valve body.

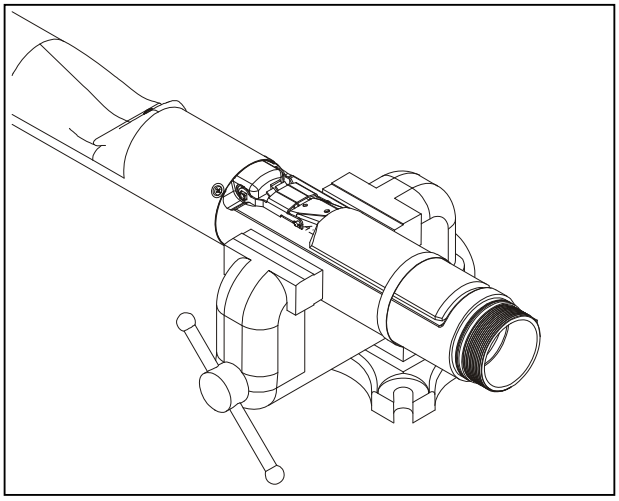

Figure 3A

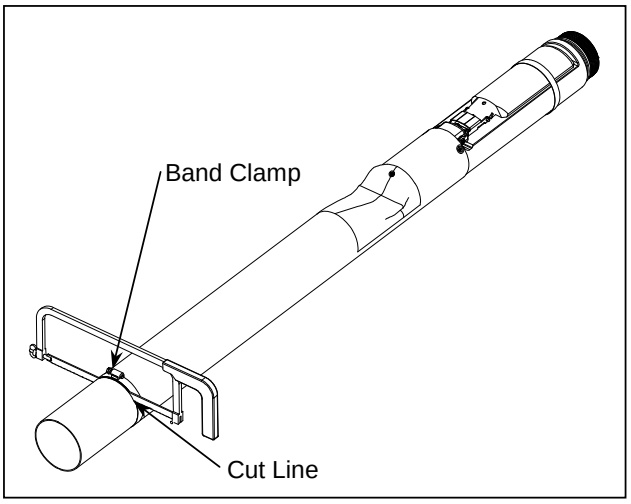

Figure 3B

STEP 4: FILE THE UPPER DROP TUBE
File the upper tube square, and remove any burrs or rough edges. Make sure the cut is flat and square.

IMPORTANT: Carefully file a **good chamfer** on the inside edge of the drop tube to provide a lead-in for the polypak seal and inlet tube installed in step 8.

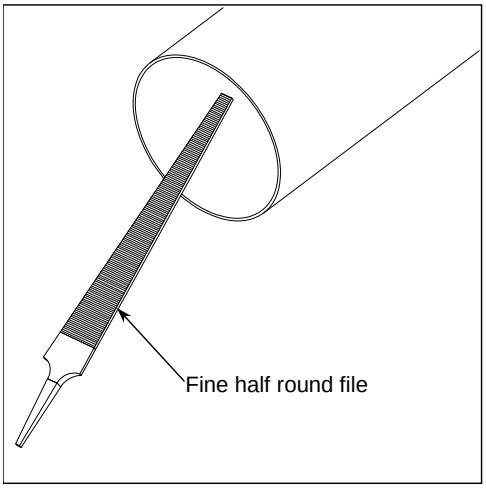

Figure 4

STEP 5: SAND THE UPPER DROP TUBE
Sand the inside of the drop tube with sandpaper and/or steel wool to remove all burrs and sharp edges. After sanding wipe down the inside of the tube with a clean rag from the top to approximately 4 inches down to remove any debris.

<u>Caution:</u> Failure to properly chamfer, sand, and clean the drop tube may cut the seal and result in a failure of a pressure decay leak test.

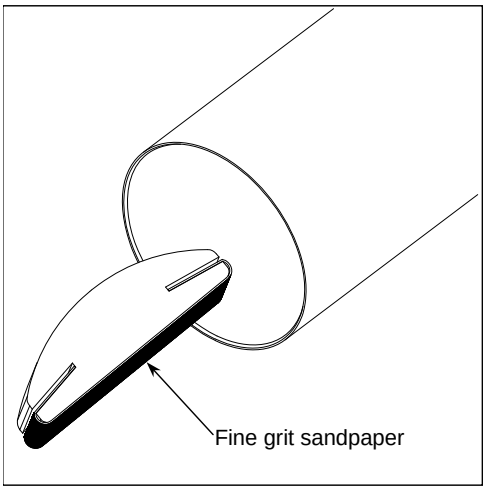

Figure 5

STEP 6: APPLY GREASE TO DROP TUBE
Apply black moly grease to the inside diameter of the upper drop tube. Make sure coverage is completely around the tube as shown in Figure 6.

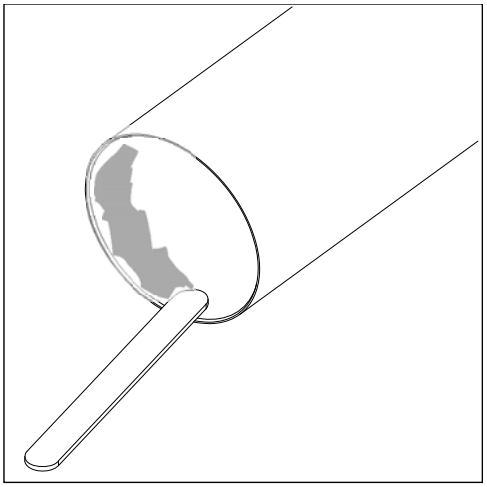

Figure 6

STEP 7: APPLY GREASE TO POLYPAK SEAL
Ensure that the polypak seal is installed on the inlet tube with the lip up as shown in Figure 7. Apply black moly grease to the polypak as shown. Make sure coverage is completely around the polypak seal.

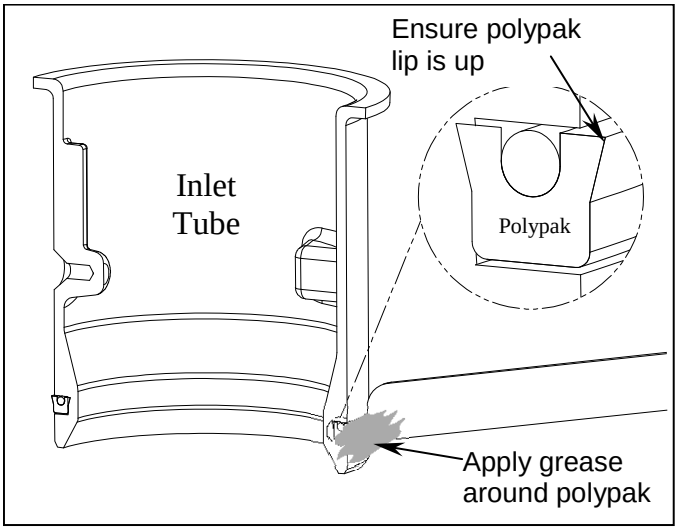

Figure 7

STEP 8: INSTALL INLET TUBE
Insert the inlet tube into the upper tube until the upper tube seats against the flange on the inlet tube. Ensure polypak is inserted evenly and stays in inlet tube groove.

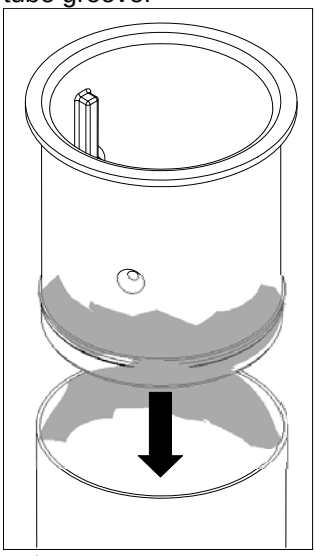

Figure 8

SEE PAGE 8 FOR INSTRUCTIONS USING THE <u>71SO-TOOL</u>.

SEE PAGE 9 FOR INSTRUCTIONS USING THE <u>71SO-TOOLC</u>.

71SO-TOOL PROCEDURE BELOW,
FOR 71SO-TOOLC, SEE PAGE 9

STEP 9A: INSERT 71SO-TOOL OVER INLET TUBE
To install the 71SO-TOOL (sold separately) over the inlet tube, first loosen all three knobs, so the tool can pass freely over the inlet tube flange. Align the slot on the tool with the key on the inlet tube and insert the tool down. See Figure 9A.

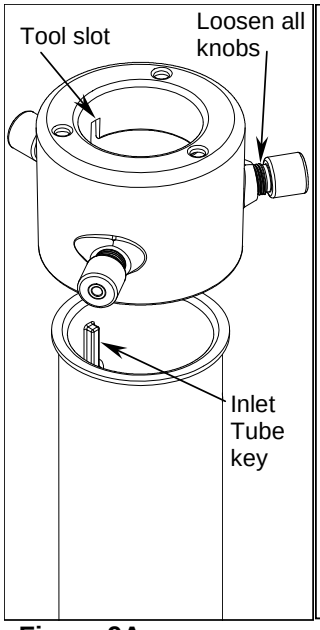

Figure 9A

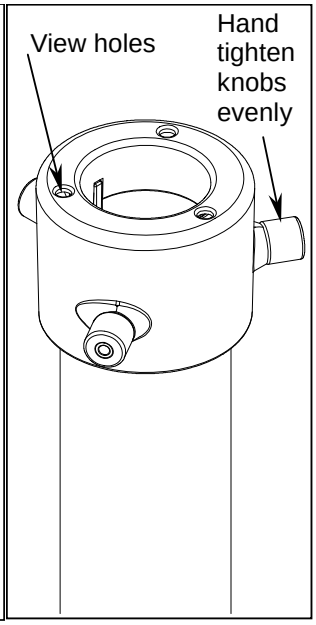

Figure 10A

STEP 10A: TIGHTEN THE 71SO-TOOL
Use the three view holes to ensure that the tool seats out flat against the top of the inlet tube. To prevent vertical movement of the tool during drilling hand tighten all three knobs evenly the upper drop tube. See Figure 10A.

STEP 11A: PREPARE DRILL AND BIT
Confirm that the stop on the 3/16" drill bit supplied with the 71SO-TOOL is in the correct position before drilling. The stop is factory installed at a distance between 2" to 2-1/16" from the tip with the 71SO-TOOL. If the stop is not at the correct position it must be fixed before drilling.

<u>Caution:</u> If the drill stop is not in the proper location failure of a pressure decay leak test may result.

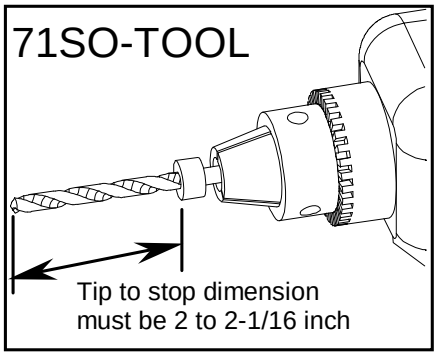

Figure 11A

STEP 12A: DRILL HOLES
With the inlet tube and 71SO-TOOL in place, carefully drill a 3/16" diameter hole in the upper tube using the drill bushing in the knob as a guide. The drill stop is positioned so it will bottom out against the knob after the bit has drilled through the upper drop tube. If the stop is positioned wrong either no hole will be drilled, or a through hole could potentially be drilled through the inlet tube. If no hole is drilled return to step 11 and check the stop dimension. If a hole is drilled through the inlet tube or into the screw hole the assembly is not salvageable. Drill (2) more holes in the two remaining knobs.

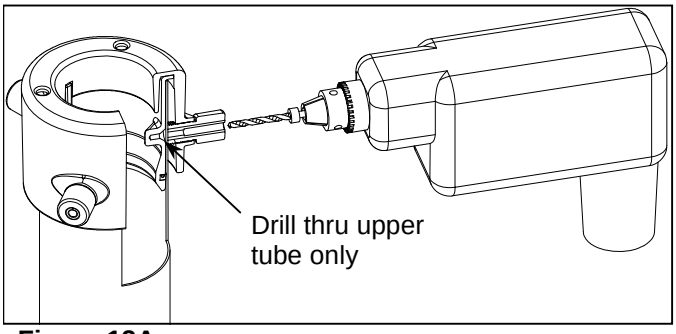

Figure 12A

71SO-TOOLC PROCEDURE BELOW,
FOR 71SO-TOOL, SEE PAGE 8

STEP 9B: INSERT 71SO-TOOLC OVER INLET TUBE
To install the 71SO-TOOLC (sold separately) over the inlet tube, first loosen the thumb screw, so the tool can pass freely over the inlet tube flange. Align the slot on the tool with the key on the inlet tube and insert the tool down. See Figure 9B.

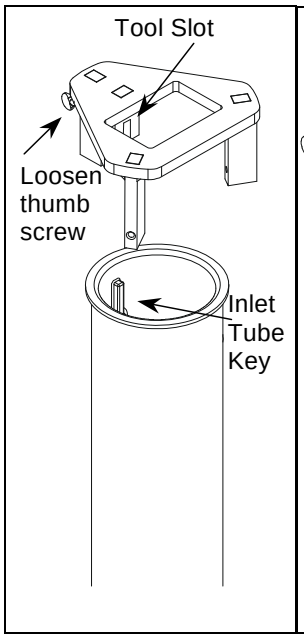

Figure 9

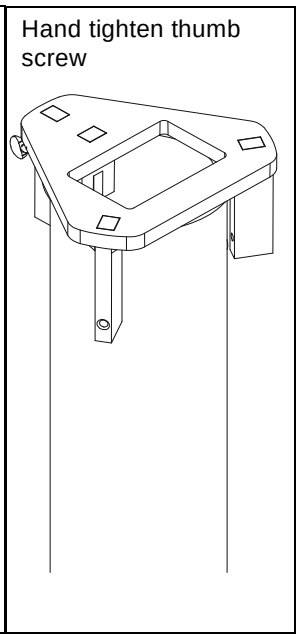

Figure 10

STEP 10B: TIGHTEN THE 71SO-TOOLC
Ensure that the tool seats flat against the top of the inlet tube. To prevent vertical movement of the tool during drilling, hand tighten the thumb screw against the upper drop tube. See Figure 10B.

STEP 11B: PREPARE DRILL AND BIT
Confirm that the stop on the 3/16" drill bit supplied with the 71SO-TOOLC is in the correct position before drilling. The stop is factory installed at a distance between 1-3/16" to 1-1/4" from the tip with the 71SO-TOOLC. If the stop is not at the correct position it must be fixed before drilling.

<u>Caution:</u> If the drill stop is not in the proper location failure of a pressure decay leak test may result.

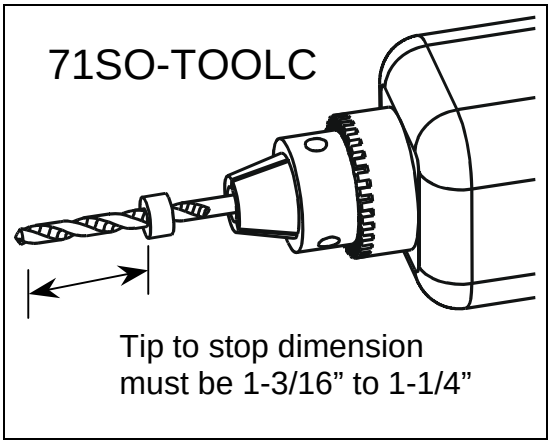

Figure 11B

STEP 12B: DRILL HOLES
With the inlet tube and 71SO-TOOLC in place, carefully drill a 3/16" diameter hole in the upper tube using the hole in the 71SO-TOOLC as a guide. The drill stop is positioned so it will bottom out against the tool after the bit has drilled through the upper drop tube. If the stop is positioned wrong either no hole will be drilled, or a through hole could potentially be drilled through the inlet tube. If no hole is drilled return to step 11 and check the stop dimension. If a hole is drilled through the inlet tube or into the screw hole the assembly is not salvageable. Drill (2) more holes in the two remaining guide holes.

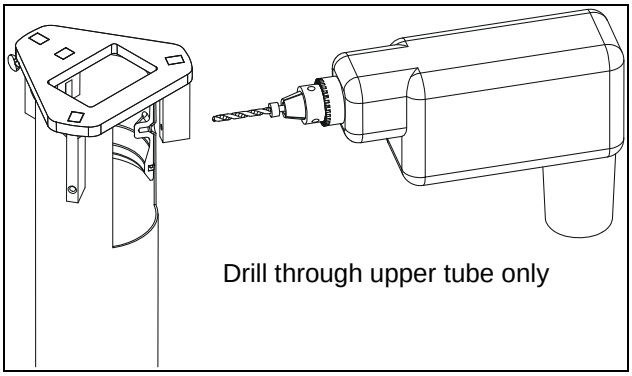

Figure 12B

STEP 13: DIMPLE FIRST HOLE
Remove tool. Remove any chips or burrs from the drilling operation. Place the assembly on a solid surface. Using the punch supplied with the 71SO-TOOL and 71SO-TOOLC, align the tip of the punch with the drilled hole and dimple the upper drop tube by striking the punch with a hammer until the drop tube is formed into countersunk hole in the inlet tube. After punching, remove any chips that may have fallen into the inlet tube screw hole.

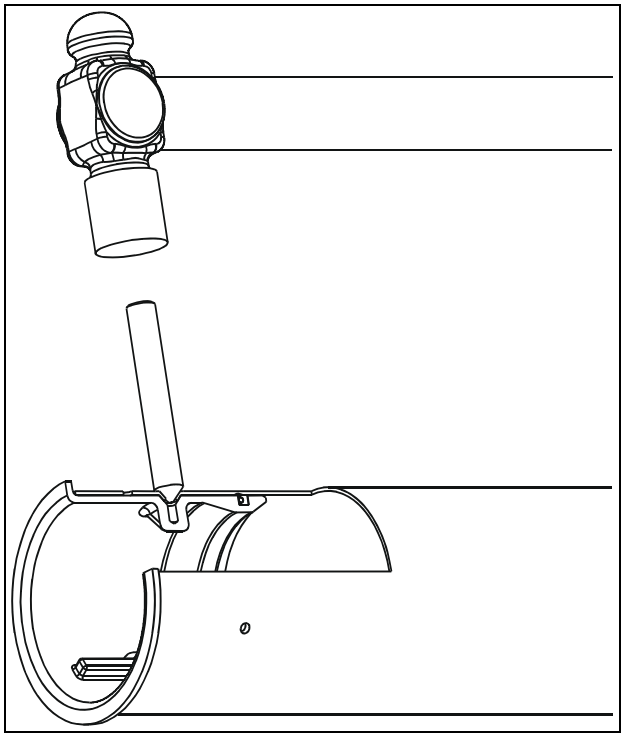

Figure 13

STEP 14: ASSEMBLE FIRST SCREW
Ensure that the drop tube was formed into the countersunk screw hole as shown in Figure 14 if not return to step 13. Apply black moly grease to screw and tighten first screw into inlet tube with a screwdriver. Use only the taptite screws that are supplied with the unit. Seating torque is 20 in-lbs min. to 35 in-lbs max. Screw head should be flush with the drop tube. Do not over tighten.

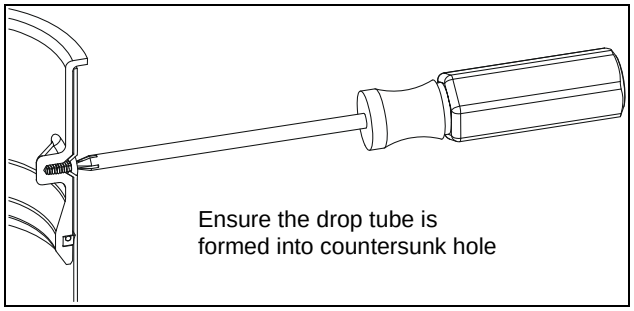

Figure 14

STEP 15: DIMPLE REMAINING HOLES
Remove any chips or burrs from the drilling operation. Dimple the next (2) holes as done in Step 13. Make sure the assembly is on a solid surface when punching. After punching, remove any chips that may have fallen into the inlet tube screw hole.

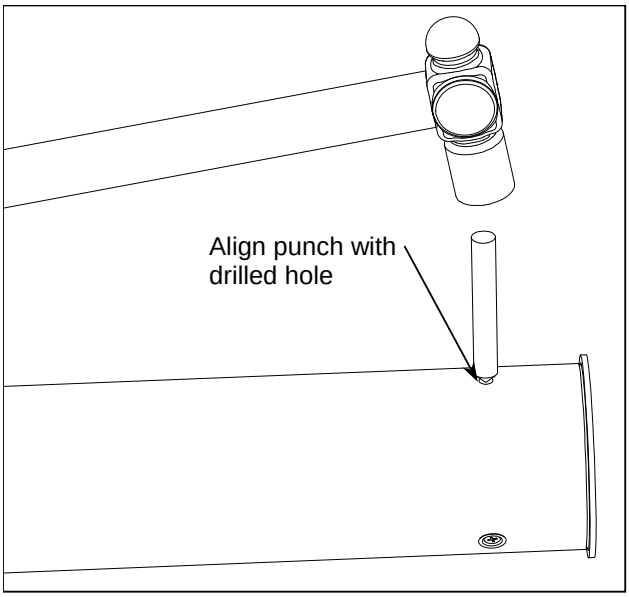

Figure 15

STEP 16: ASSEMBLE OTHER SCREWS
Apply black moly grease to screws and tighten the other (2) screws into inlet tube with a screwdriver as done in Step 14. Use only the taptite screws that are supplied with the unit. Seating torque is 20 in-lbs min. to 35 in-lbs max. Do not over tighten.

STEP 17: APPLY GREASE TO LOWER O-RING AND BODY THREADS
Apply black moly grease to the lower tube o-ring and body threads as shown. Make sure coverage is completely around the o-ring. Install o-ring in groove just above threads.

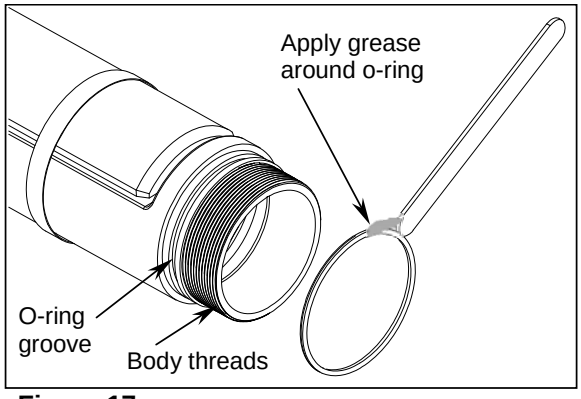

Figure 17

STEP 18: LOWER TUBE ASSEMBLY

If a vise is used, clamp on the valve body casting only to avoid damage to the float and tubes. Thread the lower tube onto the valve body until the lower tube bottoms out on valve body. Tube can be tightened by hand or with a strap wrench. If a strap wrench is used try to position it on the threaded insert portion of the lower tube to prevent damaging the tube.

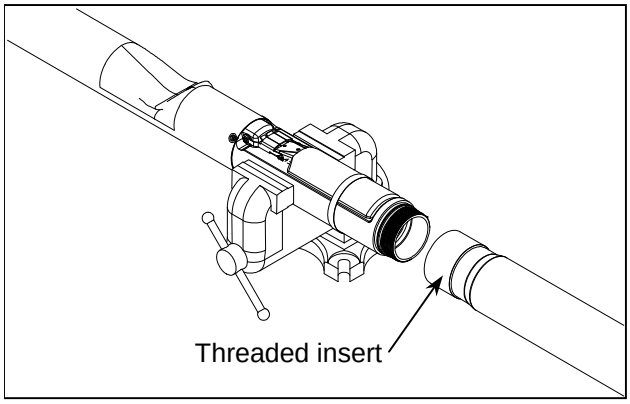

Figure 18

Note: Before installing the valve in the tank, a pressure test can be performed on the valve to check for vapor tightness. Seal off both ends of the tube with inflatable plumber's plugs. Apply a maximum 10" W.C. (1/3 PSI) air pressure. If pressure does not hold and a leak can be located with soap solution, do not install the valve. Send the valve back to OPW for warranty evaluation.
Caution: Do not over-pressurize. Excess pressure can damage the valve.

STEP 19: CUT LOWER TUBE

Measuring from the underside of the inlet tube flange, mark the overall length of the drop tube a distance of (B) minus 6". Determine dimension (B) from the measurements taken in Step 1, Figure 1 (Top of the Face Seal Adapter below the drain valve outlet in the spill container to the bottom of the tank). Saw off the excess tube at a 45-degree angle or per local codes or requirements and file off any sharp burrs (Refer to Figure 24). Optional: Install the OPW Tank Bottom Protector on the lower tube (Refer to Installation instructions supplied with the Tank Bottom Protector).

IMPORTANT: Remove all chips and shavings out of the cut end of the tube. DO NOT remove chips and shavings by dumping thru valve body.

STEP 20: PREPARE FILL RISER FOR VALVE INSERTION

IMPORTANT: Inspect the riser pipe for any foreign material. Over spray 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. Thoroughly clean top of riser pipe.

STEP 21: REMOVE ELASTIC BAND

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

STEP 22: INSERT DROP TUBE

Make sure the upper O-Ring gasket is under the flange of the inlet tube. Hold the float down against the valve body and slowly insert the drop tube overfill valve into the riser pipe. Do not force valve into the riser pipe. If any obstruction or foreign matter interferes with smooth insertion of the valve, the riser pipe must be cleared.

WARNING

Failure to follow the assembly and installation instructions or use of excessive force to insert the OPW 71SO will VOID THE WARRANTY!

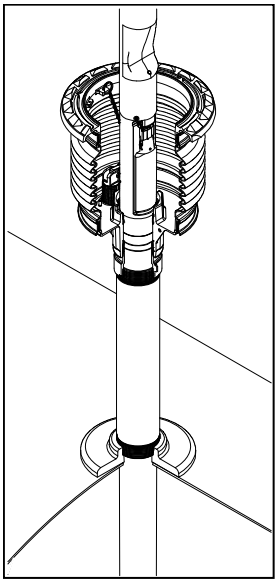

Figure 22

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 71SO. The 71SO is designed for insertion into schedule 40 pipe. If schedule 80 pipe has been used for the riser, the 71SO cannot be installed. If seamed pipe has been used, the internal weld bead may interfere with the OPW 71SO and prevent installation. If the OPW 71SO 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; take appropriate steps to remove it.

STEP 23: CHECK INSTALLATION
Insert the drop tube all the way into the tank until the flange and gasket seat onto the top of the Face Seal Adaptor. The float will swing out into the operating position as it passes into the tank.

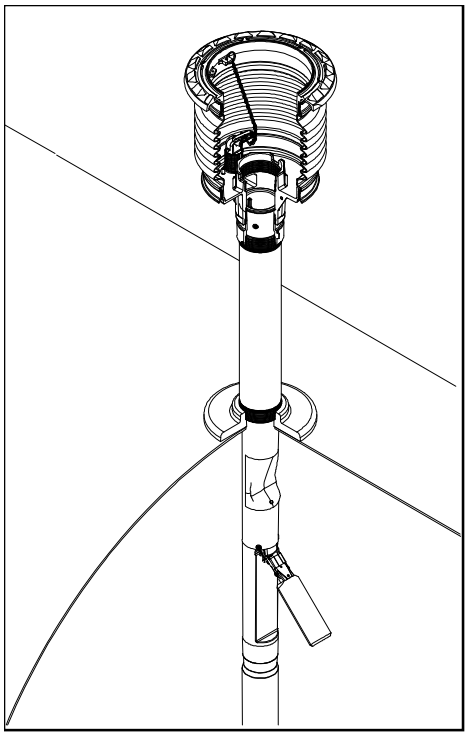

Figure 23

Make sure that the float is aligned along 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 tank fittings. Look into the drop tube and align the deflector with the length of the tank.

CAUTION: No obstruction in the tank can be within 14" from the center of the riser pipe or the valve may not operate properly (See Figure 24).

STEP 24: ALIGN VALVE
Install the OPW Jack Screw Kit and a 4" NPT nipple to lock the valve in place. Refer to the Installation Instructions supplied with the Jack Screw Kit. Install the Rotatable Product Adaptor (Refer to Installation Instructions supplied with the Product Adaptor.) Make sure that the valve does not rotate while tightening the adaptor by observing the position of the deflector. **The valve must remain aligned along the length of the tank as in Step 23**. Repeat this step as necessary to assure proper valve alignment.

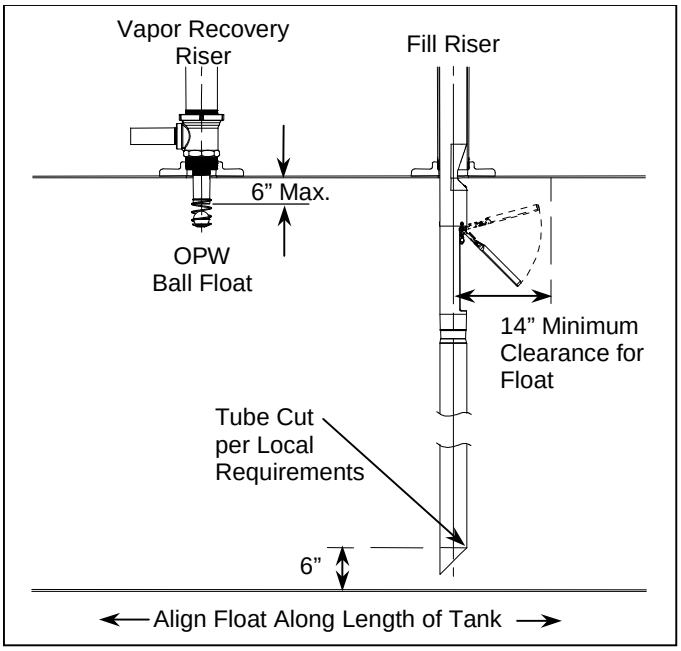

Figure 24

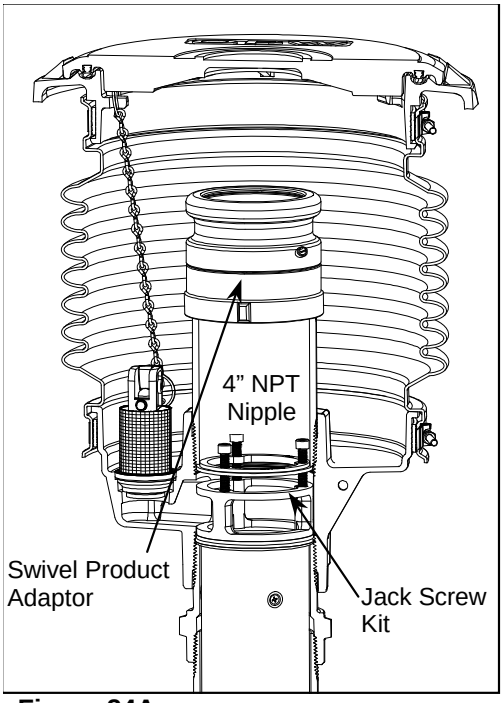

Figure 24A

STEP 25: INSTALL WARNING PLATE
Bend the three warning plate ears down then slide the tie wrap over the warning plate ears and position warning plate against riser pipe approximately 1" below the adaptor. Tighten the tie wrap securely. The valve is now fully installed and in operating position.

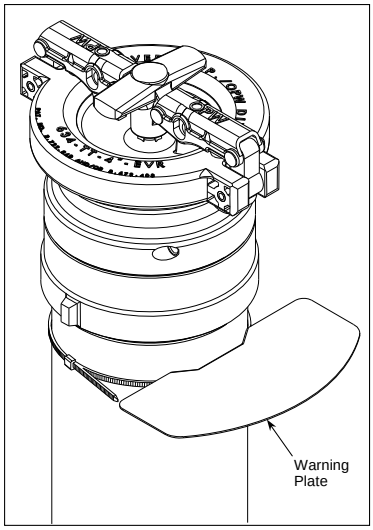

Figure 25

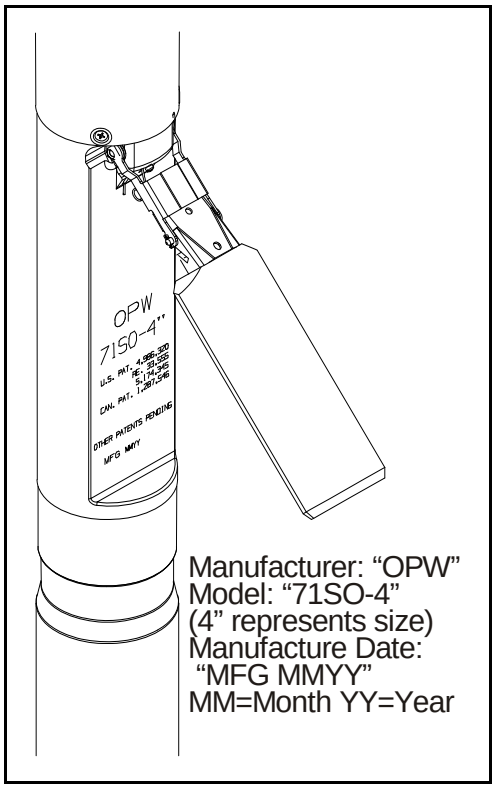

Figure 26 – Product Identification

STEP 26: VALVE REMOVAL
The valve can be removed for tank leak testing, inspection, etc., by removing the Rotatable Product Adaptor, the 4" nipple, and the Jack Screw Kit. Reinstall per the above instructions.

STEP 27: ELECTRONIC LIQUID LEVEL MONITORING
If an electronic level monitor is installed, it must be calibrated to match the top of the 71SO valve body, which must correlate with 95% of the actual tank capacity.

PREVENTATIVE MAINTENANCE
Annually, inspect the flapper in the 71SO to see that it is open by looking down the drop tube opening. Test the 71SO drop tube seals with CARB procedure TP-201.1D. If the drop tube seal passes testing, no further maintenance is required. If the drop tube fails testing, replace the drop tube seal with OPW P/N: H11931M for 4" Tubes. Re-test the 71SO drop tube with CARB procedure TP-201.1D. The lower tube o-ring seal OPW P/N: H14840M can also be replaced. If this does not correct the leak the 71SO needs to be replaced.

CAUTION: Do not insert any foreign object into drop tube if flapper is in the closed position. For example a tank level measuring stick. This will damage the valve and void the Warranty. ALWAYS check flapper location before "sticking" the tank. If flapper is in the closed position the tank is either over filled and you need to wait until the liquid level goes down or the 71SO is damaged and needs to be replaced.

71SO Performance Specifications:
This Overfill Prevention Valve has been manufactured and tested to, and met, the following California specifications. Performance Requirement: Leak rate to be less than or equal to 0.17 CFH @ 2.0" W.C.

Torque Specification:
Taptite Screws, #10-24 thread cutting, 20 in-lbs minimum to 35 in-lbs maximum.

Important: Leave these installation instructions and maintenance procedures with the station operator.

Notice: OPW products must 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. All illustrations and specifications in this literature are based on the latest production information available at the time of publication. Prices, materials, and specification are subject to change at any time, and models may be discontinued at any time, in either case, without notice or obligation.

Standard Product Warranty

OPW warrants that products sold by it are free from defects in materials and workmanship for a period of one year from the date of manufacture by OPW (ECO products two years from date of manufacture.) Proof of purchase may be required. As the exclusive remedy under this limited warranty, OPW, will at its sole discretion, repair, replace, or issue credit for future orders for any product that may prove defective within the one year date of manufacture period (repairs, replacements, or credits may be subject to prorated warranty for remainder of the original warranty period, complete proper warranty claim documentation required.) This warranty shall not apply to any product that has been altered in any way, which has been repaired by any party other than a service representative authorized by OPW, or when failure is due to misuse, or improper installation or maintenance. OPW shall have no liability whatsoever for special, incidental or consequential damages to any party, and shall have no liability for the cost of labor, freight, excavation, clean up, downtime, removal, reinstallation, loss of profit, or any other cost or charges.

For any product certified to California 2001 standards, OPW warrants that product sold by it are free from defects in material and workmanship for a period of one year from date of manufacture or one year from date of registration of installation not to exceed 15 months from date of manufacture by OPW.

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.

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Printed in U.S.A. p/n H15524PA – Rev. F 9/07

Section 10

6111-1400 Tank Bottom Protector

POMECO Installation and Maintenance Instructions 6111-1400 Tank Bottom Protector

IMPORTANT: Please read these warnings and use the assembly instructions completely and carefully before starting. Failure to do so may cause product failure, or result in environmental contamination due to liquid leakage into the soil, creating hazardous spill conditions.

IMPORTANT: The POMECO Tank Bottom Protector is pre-assembled for your convenience and ease of installation. Check to make sure the unit is intact and undamaged and all parts have been supplied. Never substitute parts for those supplied. Doing so may cause product failure.

WARNING-DANGER: Using electrically operated equipment near gasoline or gasoline vapors may result in a fire or explosion, causing personal injury and property damage. Be sure that the working area is free from such hazards, and always use proper precautions.
NOTE: At all times when product is in the storage tank keep the riser pipe capped, so the vapors cannot escape into the environment.

Notice: OPW products must 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. All illustrations and specifications in this literature are based on the latest production information available at the time of publication. Prices, materials, and specification are subject to change at any time, and models may be discontinued at any time, in either case, without notice or obligation.

Standard Product Warranty

OPW warrants that products sold by it are free from defects in materials and workmanship for a period of one year from the date of manufacture by OPW (ECO products two years from date of manufacture.) Proof of purchase may be required. As the exclusive remedy under this limited warranty, OPW, will at its sole discretion, repair, replace, or issue credit for future orders for any product that may prove defective within the one year date of manufacture period (repairs, replacements, or credits may be subject to prorated warranty for remainder of the original warranty period, complete proper warranty claim documentation required.) This warranty shall not apply to any product that has been altered in any way, which has been repaired by any party other than a service representative authorized by OPW, or when failure is due to misuse, or improper installation or maintenance. OPW shall have no liability whatsoever for special, incidental or consequential damages to any party, and shall have no liability for the cost of labor, freight, excavation, clean up, downtime, removal, reinstallation, loss of profit, or any other cost or charges.
For any product certified to California 2001 standards, OPW warrants that product sold by it are free from defects in material and workmanship for a period of one year from date of manufacture or one year from date of registration of installation not to exceed 15 months from date of manufacture by OPW.

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.

Tank Bottom Protector:

The POMECO Tank Bottom Protector is designed to protect the Underground Storage Tank from damage due to the tank measuring stick being dropped into the tank to measure the fluid level.

POMECO Tank Bottom Installation Instruction

1. Check the distance from the bottom of the fill tube to the bottom of the tank. Verify that this distance is in conformance with manufacturer's recommendations and Local Codes. Remove the drop tube from the tank.

2. Using a # 11 Drill (0.191") - Drill a hole into the fill tube about 1/2" above and 1" to 1 1/16 over from point "A" (see figures 1 and 2). Keep in mind that the **POMECO Tank Bottom Protector** must rest on the bottom of the tank.

3. Insert the **POMECO Tank Bottom Protector** and line up the # 11 hole in the sliding rod guide with the corresponding hole just drilled in the drop tube. Make sure that point "A" is clear for future measurements of the drop tube's length. (See figure 2)

4. Attach the **POMECO Tank Bottom Protector** with the pop rivet supplied. Drill two more # 11 holes into the drop tube and sliding rod guide at the same time. Install supplied pop rivets into new holes.

5. Check to ensure that the **POMECO Tank Bottom Protector** slides up and down without binding.

6. Reinstall fill tube into the tank.

*Check local codes and regulation for proper dimension

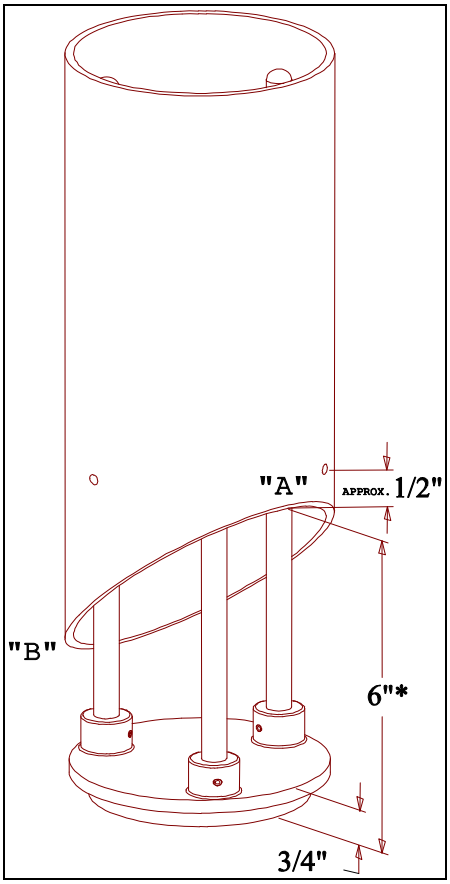

Figure 19

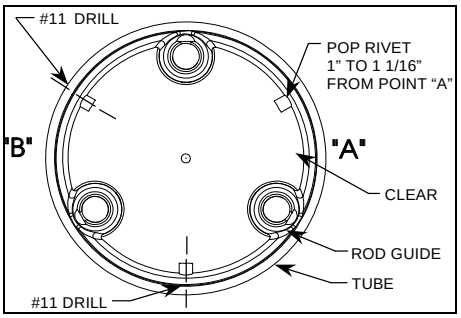

Figure 20

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Section 11

61JSK Jack Screw
And
FSA-400 Face Seal Adaptor

OPW Installation and Maintenance Instructions

OPW 61JSK-4410 and 61JSK-44CB Jack Screw Kit

IMPORTANT: Please read these warnings and assembly instructions completely and carefully before starting. Failure to do so may cause product failure, or result in environmental contamination due to liquid leakage into the soil, creating hazardous spill conditions.

IMPORTANT: Check to make sure the product is intact and undamaged and all parts have been supplied. Never substitute parts for those supplied. Doing so may cause product failure.

WARNING-DANGER: Using electrically operated equipment near gasoline or gasoline vapors may result in a fire or explosion, causing personal injury and property damage. Be sure that the working area is free from such hazards, and always use proper precautions.
NOTE: At all times when product is in the storage tank keep the riser pipe capped, so the vapors cannot escape into the environment.

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For any product certified to California 2001 standards, OPW warrants that product sold by it are free from defects in material and workmanship for a period of one year from date of manufacture or one year from date of registration of installation not to exceed 15 months from date of manufacture by OPW.

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61JSK Performance Specifications:

This OPW Jack Screw Kit is designed to lock an OPW 61SO Series Overfill Valve or 61T Drop Tube into an OPW 1-2100 (or Multi-Port 500) Series Spill Container Base below the outlet of the drain valve.

Torque Specification:
5/16-18 Screw, 3.5 ft-lbs (42 in-lbs) minimum to 5.0 ft-lbs (60 in-lbs) maximum.

4" Nipple, 125 ft-lbs minimum to 250 ft-lbs maximum.

4” NPT Thread, 125 ft-lbs minimum to 250 ft-lbs maximum.

IMPORTANT: The figures in this installation and maintenance instruction may contain vapor recovery equipment (including model numbers) that is not certified by the California Air Resources Board (CARB) for a specific Phase I Vapor Recovery System. Please refer to Exhibit 1 of the appropriate CARB Phase I Executive Order for a list of certified Phase I Vapor Recovery System Equipment.

OPW 61JSK-4410 JACK SCREW KIT FOR COMPOSITE BASE SPILL CONTAINERS INSTALLATION INSTRUCTIONS:

Figure numbers correspond to step numbers for easy reference.

Step 1

Remove any old or dried pipe dope and metal burrs from top of riser pipe. Apply a gasoline resistant pipe dope on the threads of an OPW FSA-400 Face Seal Adapter and install onto the riser pipe. Torque to 125 ft-lbs min. to 250 ft-lbs max using the OPW 61SA-TOOL.

Step 2:

Install the OPW 1-2100 or POMECO 500 Series Spill Container in accordance with the OPW Installation Instructions supplied with the product.

Step 3: (See Figure 3 & 3A)

Assemble and Install the OPW Drop Tube in accordance with the OPW Installation Instructions supplied with the product.

Step 4: (See Figure 4)

Insert the Jack Screw Lower Cage completely into the spill container base on top of the drop tube flange with the screw pockets facing up.

Step 5: (See Figure 5)

Assemble screws into upper plate with the step facing up. Adjust the screws so that the top plate will be located just below the bottom of the threads in the spill container base when the assembly is inserted into the spill container.

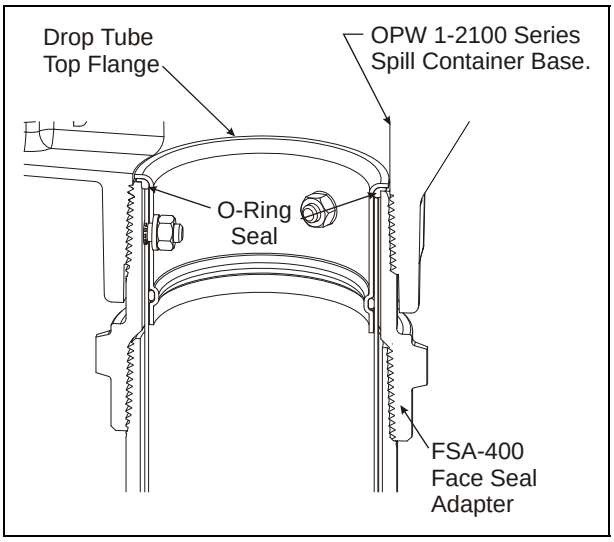


Figure 3

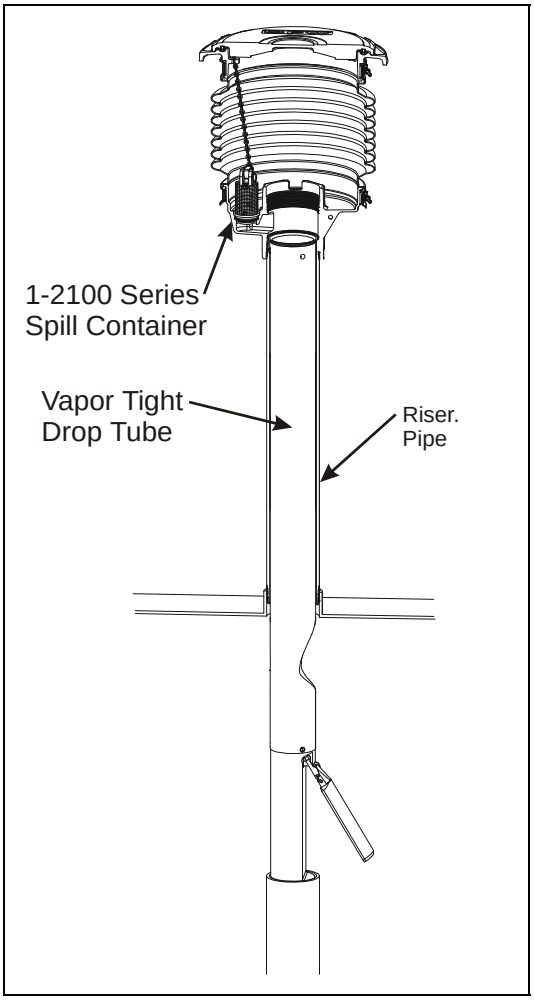


Figure 3a

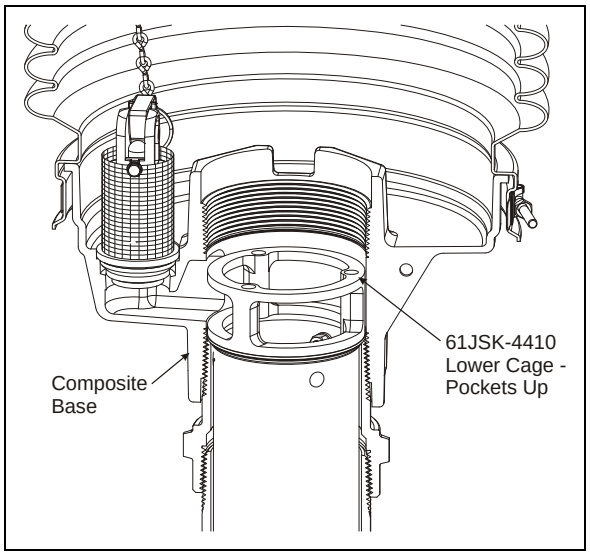


Figure 4

Step 6: (See Figure 5)
Install the Jack Screw Assembly into the spill container base. Make sure the bottoms of the three screws are seated in the pockets on the Jack Screw Lower Cage. Apply the supplied thread locker to the threads above the top plate on all three screws on the Jack Screw Top Assembly.

Step 7:
Apply a gasoline resistant pipe dope on the threads of a 4" nipple. Install the 4" nipple into the spill container and tighten securely. (Recommended torque, 4"NPT, 125 ft-lbs min. to 250 ft-lbs max.)
Note: The top plate should not be in contact with the nipple at this point. If the nipple hits the top plate while being tightened lower the top plate on the Jack Screw below the threads on the spill container.

Step 8: (See Figure 8)
Using a ¼ inch Allen socket, alternately and evenly tighten the three (3) screws on the Jack Screw Assembly until the top plate contacts the bottom of the 4" nipple. Check to make sure the step in the top plate is centered in the nipple. Tighten the three (3) screws evenly and securely with a torque of 3.5 ft-lbs min. to 5.0 ft-lbs max to ensure that the drop tube flange is sealed securely to the Face Seal Adapter.

Step 9: (See figure 9)
Assembly of the Jack Screw Kit is now complete. Proceed to installation of the OPW 61SALP-EVR Rotatable Product Adaptor and OPW 634TT Cap in accordance with the OPW Installation Instructions supplied with the product.

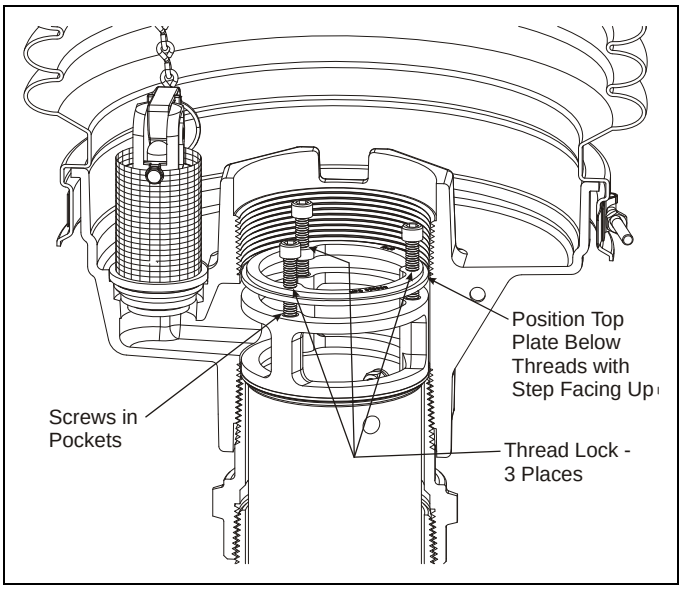


Figure 5

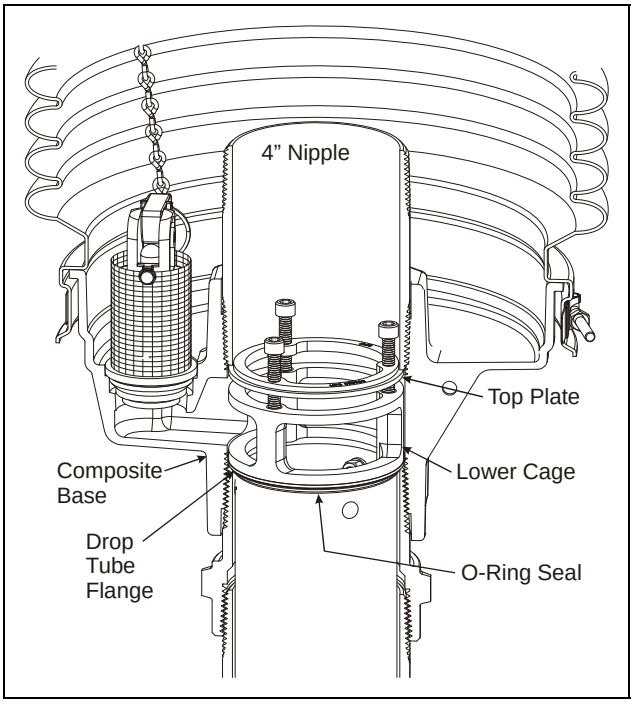


Figure 8

OPW 61JSK-44CB JACK SCREW KIT FOR CAST IRON BASE SPILL CONTAINERS
INSTALLATION INSTRUCTIONS:
Figure numbers correspond to step numbers for easy reference.

Step 1
Remove any old or dried pipe dope and metal burrs from top of riser pipe. Apply a gasoline resistant pipe dope on the threads of an OPW FSA-400 or FSA-400-S Face Seal Adapter and install onto the riser pipe. Torque to 125 ft-lbs min. to 250 ft-lbs max using the OPW 61SA-TOOL.
Note: Only the cast iron base will work with the FSA-400-S (Short Face Seal Adapter).

Step 2:
Install the OPW 1-2100 or POMECO 500 Series Spill Container in accordance with the OPW Installation Instructions supplied with the product.

Step 3: (See Figure 3 & 3A)
Assemble and Install the OPW Drop Tube in accordance with the OPW Installation Instructions supplied with the product.

Step 4: (See Figure 4)
Insert the Jack Screw Lower Plate (plate without threads) completely into the spill container base on top of the drop tube flange with the screw pockets facing up.

Step 5: (See Figure 5)
Assemble screws into upper plate with the step facing up. Adjust the screws so that the top plate will be located just below the bottom of the threads in the spill container base when the assembly is inserted into the spill container.

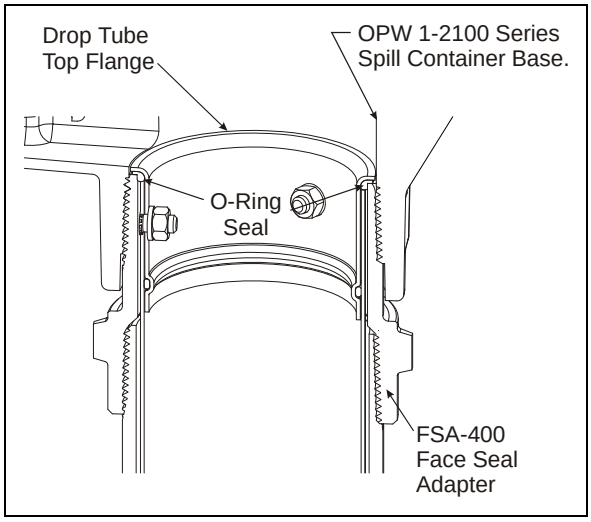


Figure 3

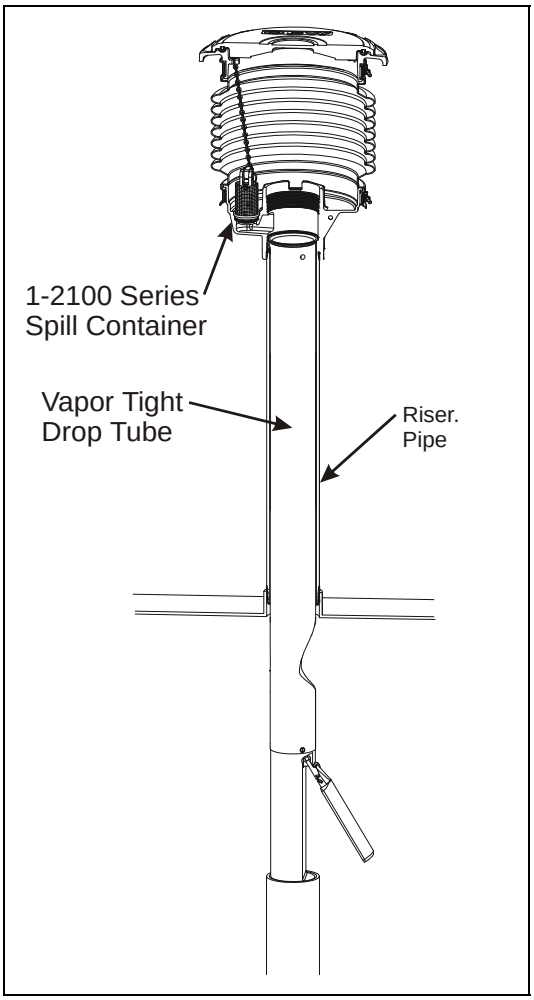


Figure 3a

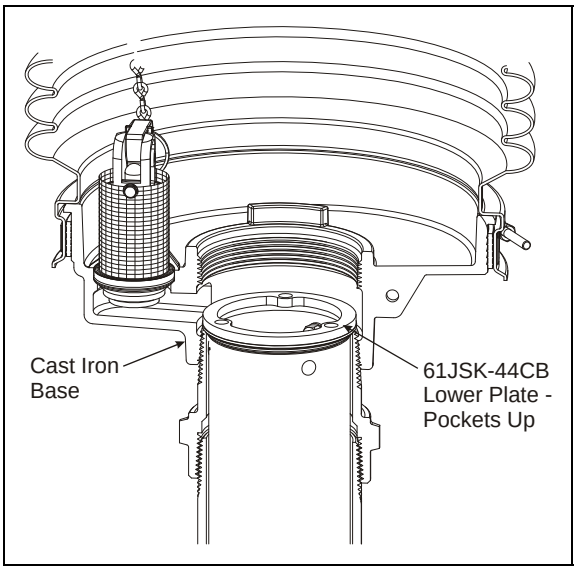


Figure 4

Step 6: (See Figure 5)
Install the Jack Screw Assembly into the spill container base. Make sure the bottoms of the three screws are seated in the pockets on the Jack Screw Lower Plate. Apply the supplied thread locker to the threads above the top plate on all three screws on the Jack Screw Top Assembly.

Step 7:
Apply a gasoline resistant pipe dope on the threads of a 4" nipple. Install the 4" nipple into the spill container and tighten securely. (Recommended torque, 4"NPT, 125 ft-lbs min. to 250 ft-lbs max.)
Note: The top plate should not be in contact with the nipple at this point. If the nipple hits the top plate while being tightened lower the top plate on the Jack Screw below the threads on the spill container.

Step 8: (See Figure 8)
Using a ¼ inch Allen socket, alternately and evenly tighten the three (3) screws on the Jack Screw Assembly until the top plate contacts the bottom of the 4" nipple. Check to make sure the step in the top plate is centered in the nipple. Tighten the three (3) screws evenly and securely with a torque of 3.5 ft-lbs min. to 5.0 ft-lbs max to ensure that the drop tube flange is sealed securely to the Face Seal Adapter.

Step 9: (See figure 9)
Assembly of the Jack Screw Kit is now complete. Proceed to installation of the OPW 61SALP-EVR Rotatable Product Adaptor and OPW 634TT Cap in accordance with the OPW Installation Instructions supplied with the product.

Operation and Maintenance:

If a leak develops at the drop tube, re-torque the (3) screws on the Jack Screw. (Torque value: 3.5 ft-lbs min. to 5.0 ft-lbs max.) If this does not correct the leak, check for burrs, clean the sealing surface on the FSA-400 and replace the o-ring on the drop tube.
NOTE: Loctite 242, thread locker, must be reapplied each time the screws are adjusted.

Important: Leave these instructions with Station Operator.

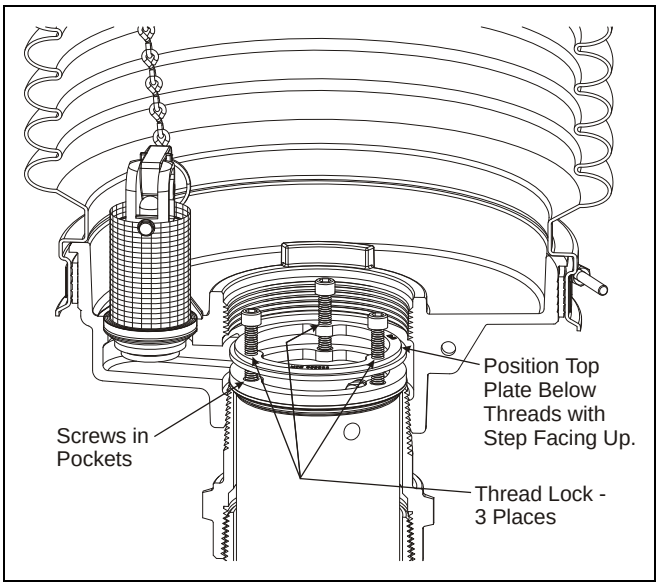


Figure 5

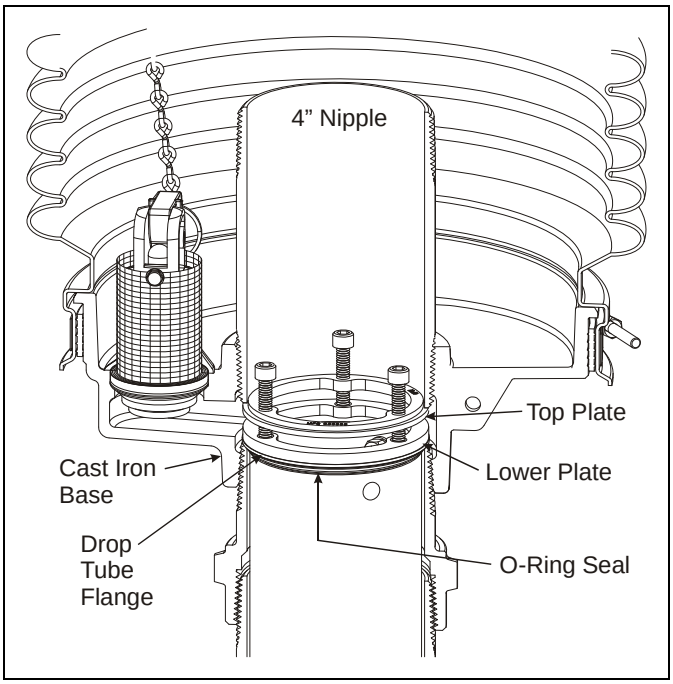


Figure 8

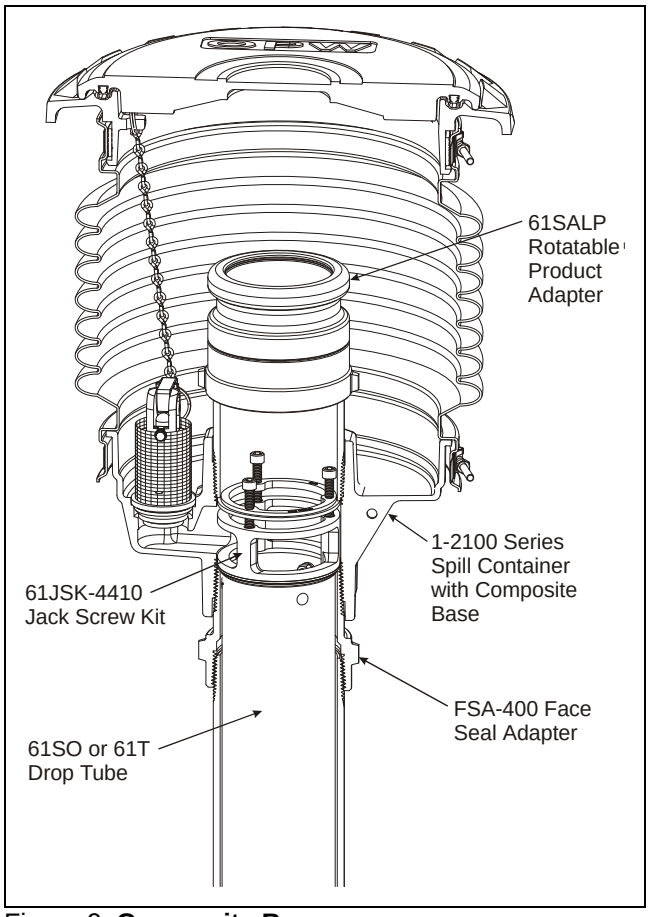


Figure 9 **Composite Base**

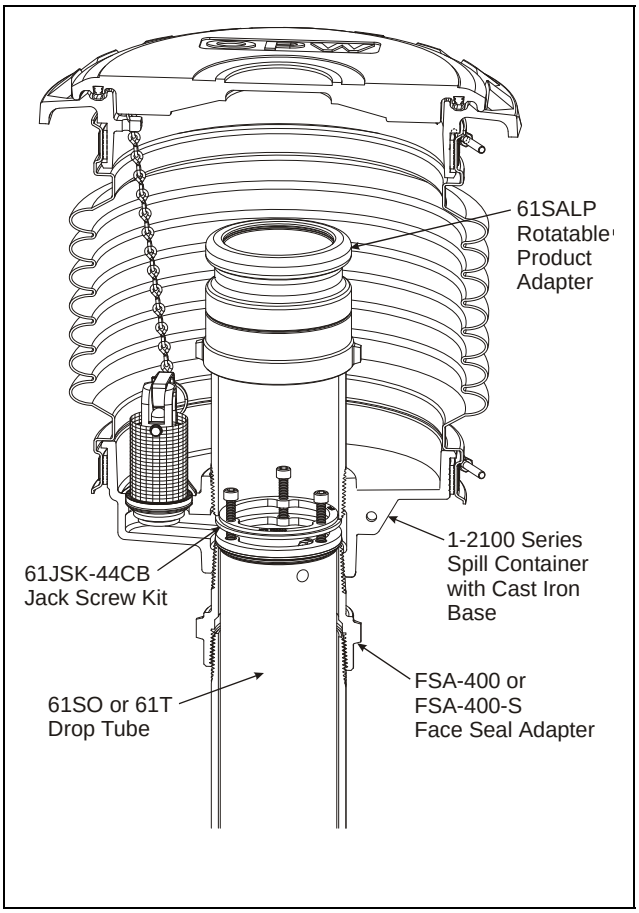
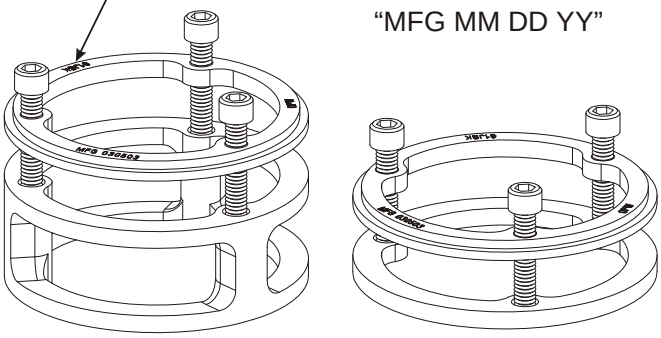


Figure 9 **Cast Iron Base**

Alternative Construction

Identification
This Surface

Manufacture: “OPW”
Model: “61JSK”
Manufactured Date:
“MFG MM DD YY”



61JSK-4410
Composite Base

61JSK-44CB
Cast Iron Base

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Section 12

61SALP Fill Swivel Adaptor
and
61VSA Vapor Swivel Adaptor

OPW Installation and Maintenance Instructions

OPW 61SALP EVR (Low Profile) Rotatable Product Adaptors

IMPORTANT: Please read these warnings and use the assembly instructions completely and carefully before starting. Failure to do so may cause product failure, or result in environmental contamination due to liquid leakage into the soil, creating hazardous spill conditions.

IMPORTANT: Check to make sure the unit is intact and undamaged and all parts have been supplied. Never substitute parts for those supplied. Doing so may cause product failure.

WARNING-DANGER: Using electrically operated equipment near gasoline or gasoline vapors may result in a fire or explosion, causing personal injury and property damage. Be sure that the working area is free from such hazards, and always use proper precautions.
NOTE: At all times when product is in the storage tank keep the riser pipe capped, so the vapors cannot escape into the environment.

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61SALP Performance Specifications:
This Rotatable Adaptor has been manufactured and tested to the following California Specifications: Rotatable 360°, Static Torque maximum 108 inch-lbs.

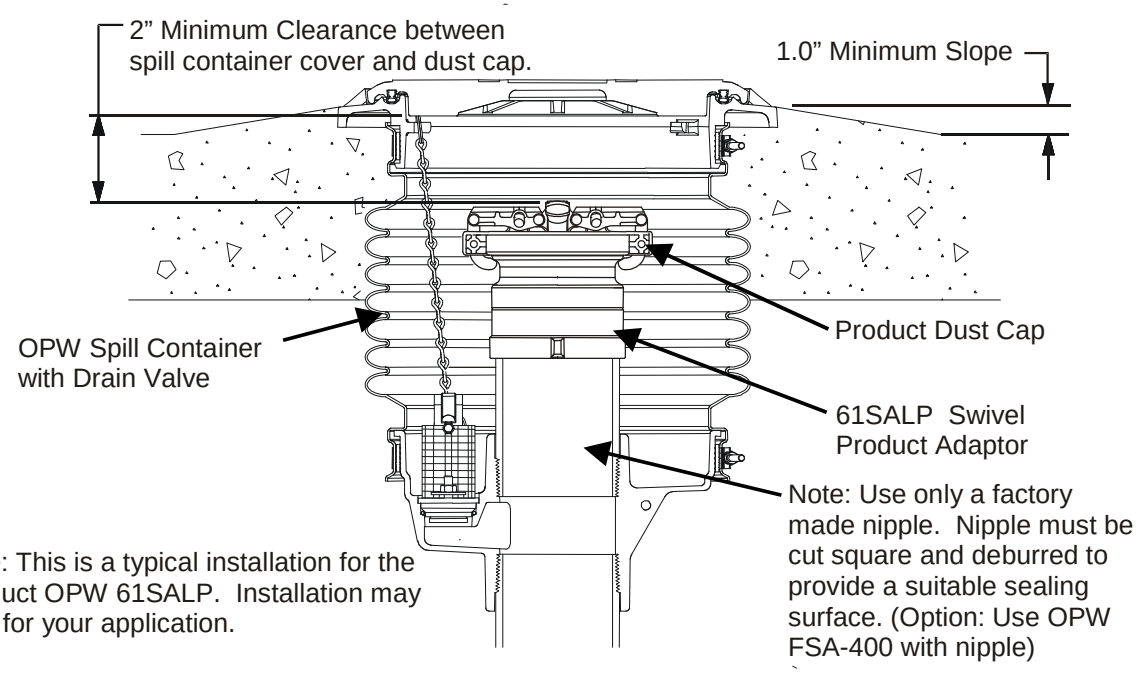
Preventative Maintenance:
Annually, inspect the adaptor for large dents, cracks or deformation. Replace if necessary. The rotation mechanism is not field serviceable.

Replacement Parts:
Nipple sealing gasket OPW P/N: H09039M.

Torque Specification:
Adapter, 4" NPSM, 90 ft-lbs minimum to 110 ft-lbs maximum.

Important: Leave these Installation Instructions with the Station Operator.

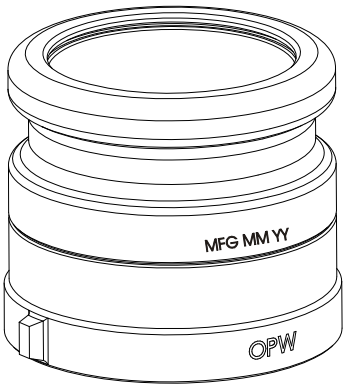
61SALP EVR Rotatable Product Adaptor
INSTALLATION INSTRUCTIONS



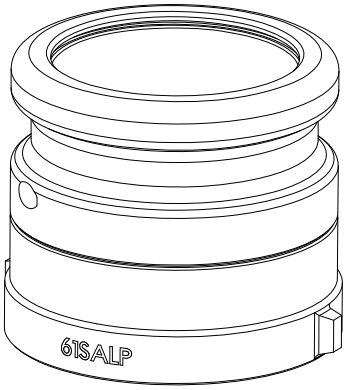
Step 1
The riser nipple in the spill container must be cut square and deburred. See drawing note for the correct distance between the top of the nipple and finished grade. (Optional: Use a OPW FSA-400 Face Seal Adapter with nipple. Add 3-1/4” to distance from top of nipple to finish grade).

Step 2 (Optional)
Apply pipe dope to the nipple. Pipe dope to be non-hardening, gasoline resistant pipe thread seal compound.

Step 3
Tighten the Rotatable Adaptor onto the nipple with a torque of 90 ft-lbs min. to 110 ft-lbs max this will be enough torque to seat and seal the gasket. Use an OPW 61SA-TOOL to install rotatable adaptor.



Manufacture “OPW”
Date Manufactured: “MFG MMYY”
MM= Month, YY=Year



Product ID: “61SALP”

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OPW Installation and Maintenance Instructions

OPW 61VSA EVR Poppetted Rotatable Vapor Recovery Adaptor

IMPORTANT: Please read these warnings and use the assembly instructions completely and carefully before starting. Failure to do so may cause product failure, or result in environmental contamination due to liquid leakage into the soil, creating hazardous spill conditions.

IMPORTANT: Check to make sure the unit is intact and undamaged and all parts have been supplied. Never substitute parts for those supplied. Doing so may cause product failure.

WARNING-DANGER: Using electrically operated equipment near gasoline or gasoline vapors may result in a fire or explosion, causing personal injury and property damage. Be sure that the working area is free from such hazards, and always use proper precautions.
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61VSA Performance Specifications:
This Rotatable Adaptor has been manufactured and tested to the following California specifications: Rotatable 360°, Static torque of 108 inch-lbs.

Preventative Maintenance:
Annually, inspect the adaptor for large dents, cracks or deformation. Replace if necessary. The rotation mechanism is not field serviceable.

Check the vapor poppet for damage and ensure that the poppet seats evenly with the adaptor. Clean out any foreign objects from the vapor poppet's seal and seal surface if necessary. Test the poppet seal by applying a soap solution to the poppet while the underground storage tank is under a positive gauge pressure of at least 2.00 inches W.C and inspect for the presence of bubbles. If the facility continuously operates under vacuum, a bag test may be used by sealing a clear plastic bag to the adaptor's sides. If no bubbles appear at the poppet under positive pressure or the bag test shows no signs of the bag collapsing, no further maintenance is required. If bubbles appeared around the poppet seal or the bag collapsed, replace the poppet components and re-test

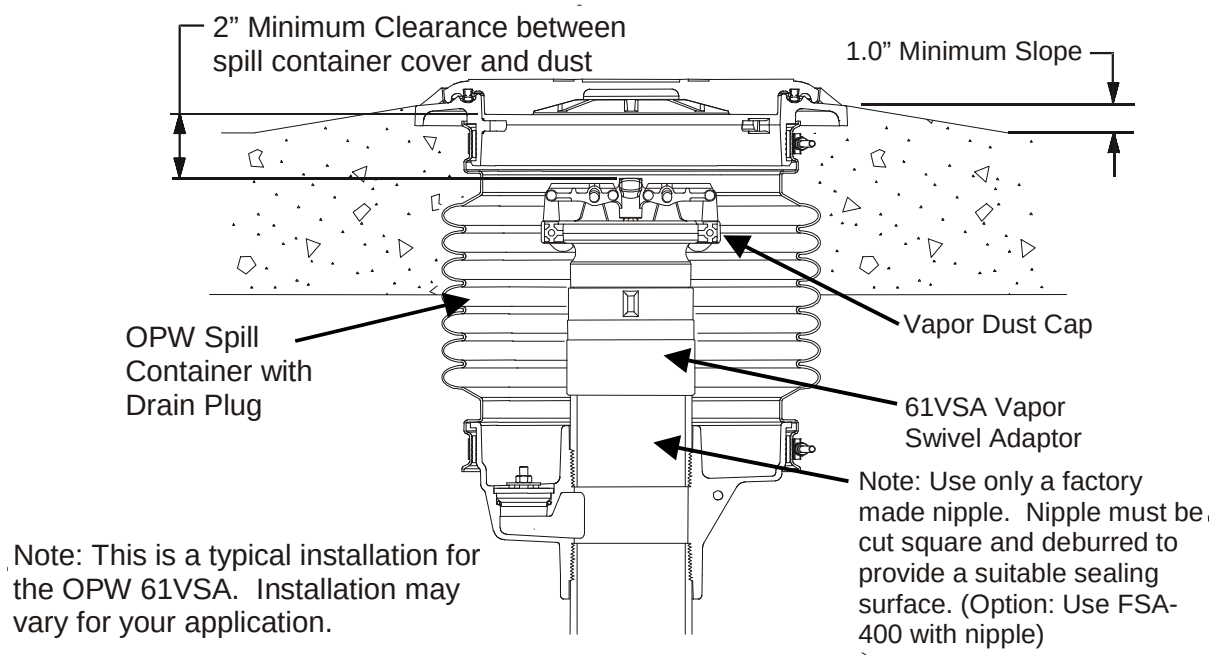
Replacement Parts:
Nipple sealing gasket OPW P/N: H09039M.
Vapor Poppet Kit OPW P/N: 61VSA-Kit

Torque Specification:
Adaptor, 4" NPSM, 90 ft-lbs minimum to 110 ft-lbs maximum.

Patent # 5,664,951

Important: Leave these Installation Instructions with the Station Operator.

OPW 61VSA EVR Series Poppetted Rotatable Vapor Adaptor
INSTALLATION INSTRUCTIONS

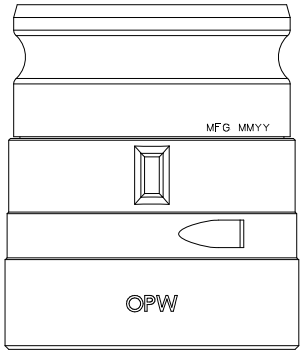


Step 1

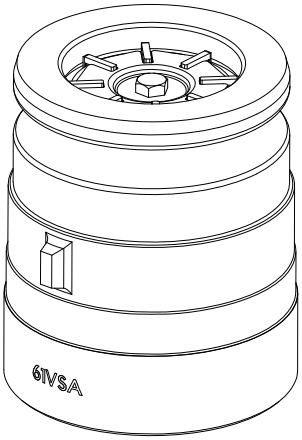
The riser nipple in the spill container must be cut square and deburred. See drawing note for the correct distance between the top of the nipple and finished grade. (Optional: Use an OPW FSA-400 Face Seal Adaptor with nipple. Add 3-1/4” to distance from top of nipple to finish grade).

Step 2 (Optional)
Apply pipe dope to the nipple. Pipe dope to be non-hardening, gasoline resistant pipe thread seal compound.

Step 3
Tighten the Rotatable Adaptor onto the nipple with a torque of 90 ft-lbs min. to 110 ft-lbs max, this will be enough torque to seat and seal the gasket. Use a 61SA-TOOL to install rotatable adaptor.



Manufacture: “OPW”
Date Manufactured: “MFG MMYY”
MM= Month, YY=Year



Product ID: “61VSA”

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Section 13

623V Pressure Vacuum Vent

OPW Installation and Maintenance Instructions
OPW 623V Pressure / Vacuum Vent Valve

IMPORTANT: Please read these warnings and use the assembly instructions completely and carefully before starting. Failure to do so may cause product failure, or result in environmental contamination due to liquid leakage into the soil, creating hazardous spill conditions.

IMPORTANT: The OPW 623V Pressure / Vacuum vent is pre-assembled for your convenience and ease of installation. Check to make sure the unit is intact and undamaged and all parts have been supplied. Never substitute parts for those supplied. Doing so may cause product failure.

WARNING-DANGER: Using electrically operated equipment near gasoline or gasoline vapors may result in a fire or explosion, causing personal injury and property damage. Be sure that the working area is free from such hazards, and always use proper precautions.
NOTE: At all times when product is in the storage tank keep the vent pipe capped, so the vapors cannot escape into the environment.

Notice: OPW products must 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. All illustrations and specifications in this literature are based on the latest production information available at the time of publication. Prices, materials, and specification are subject to change at any time, and models may be discontinued at any time, in either case, without notice or obligation.

Standard Product Warranty

OPW warrants that products sold by it are free from defects in materials and workmanship for a period of one year from the date of manufacture by OPW (ECO products two years from date of manufacture.) Proof of purchase may be required. As the exclusive remedy under this limited warranty, OPW, will at its sole discretion, repair, replace, or issue credit for future orders for any product that may prove defective within the one year date of manufacture period (repairs, replacements, or credits may be subject to prorated warranty for remainder of the original warranty period, complete proper warranty claim documentation required.) This warranty shall not apply to any product that has been altered in any way, which has been repaired by any party other than a service representative authorized by OPW, or when failure is due to misuse, or improper installation or maintenance. OPW shall have no liability whatsoever for special, incidental or consequential damages to any party, and shall have no liability for the cost of labor, freight, excavation, clean up, downtime, removal, reinstallation, loss of profit, or any other cost or charges.

For any product certified to California 2001 standards, OPW warrants that product sold by it are free from defects in material and workmanship for a period of one year from date of manufacture or one year from date of registration of installation not to exceed 15 months from date of manufacture by OPW.

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.

623V Series Performance Specifications:

This Pressure / Vacuum vent has been manufactured and tested to the following specifications: Pressure leak rate not to exceed 0.05 CFH at 2” W.C. Vacuum leak rate not to exceed 0.21 CFH at -4” W.C. The cracking pressure to be 3” W.C. +/- 0.5 and cracking vacuum to be -8” W.C. +/- 2.0. Tested using CARB Test Procedure TP-201.1E or applicable Phase I Executive Order.

Torque Specification:
Vent Assembly 2” NPT, 35 ft-lbs minimum to 55 ft-lbs maximum.

OPW 623V Pressure / Vacuum Vent Valve INSTALLATION INSTRUCTIONS:

Step 1:
Deburr and thoroughly clean vent pipe. Apply pipe dope to vent pipe threads. Pipe dope to be a non-hardening, gasoline resistant pipe thread seal compound.

Step 2: (See Figure 1)
Screw the vent assembly onto the vent pipe and torque to 35 ft.-lbs minimum to 55 ft-lbs maximum. Use the flats on the pipe adaptor only, **Do not wrench on the composite valve assembly.**

NOTE: NEVER PAINT OR COVER THE VENT

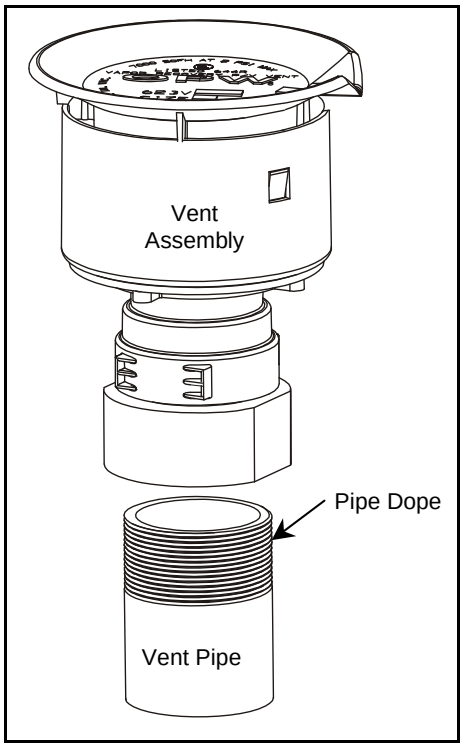


Figure 1

Operation and Maintenance:

Annual maintenance is required to keep the vent operating satisfactorily. Remove and inspect filter screens – clean or replace as necessary.

Upper Screen Maintenance

1. Remove vent top by depressing tabs as indicated in Fig. 2, and lift top upward. Screen will slip up and out of valve.
2. Clean or replace filter screen (P/N H14895M) as necessary and reinstall Fig. 3.
3. Reinstall vent top by reinserting into the body. Be sure the tabs are inside the valve body, and then rotate top until the tabs snap into place

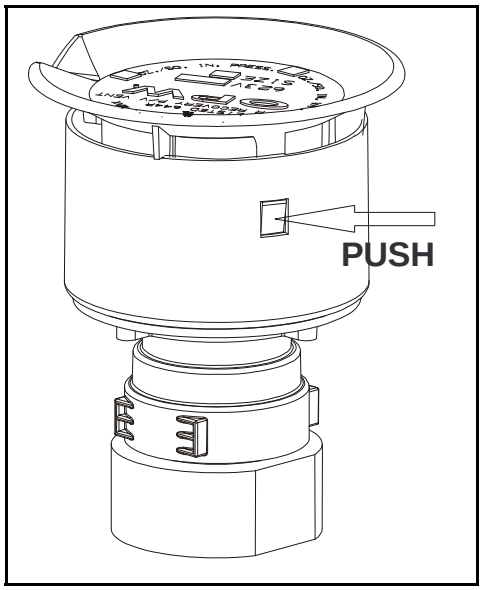


Figure 2

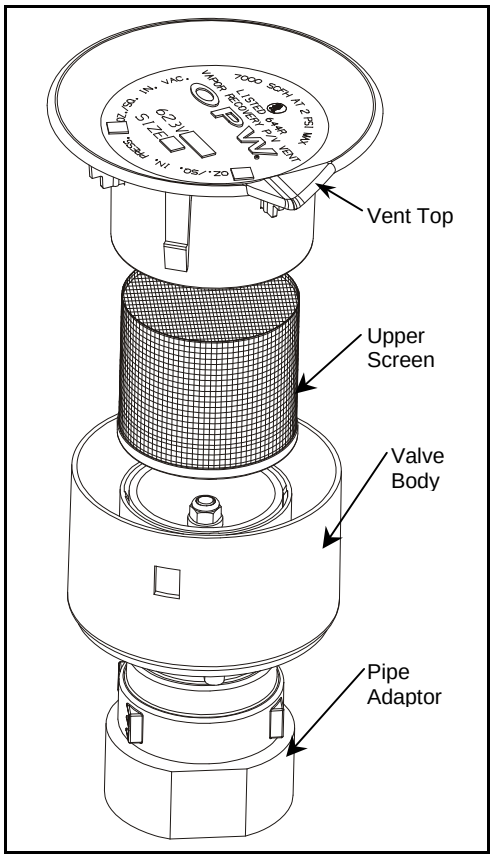


Figure 3

Lower Screen Maintenance

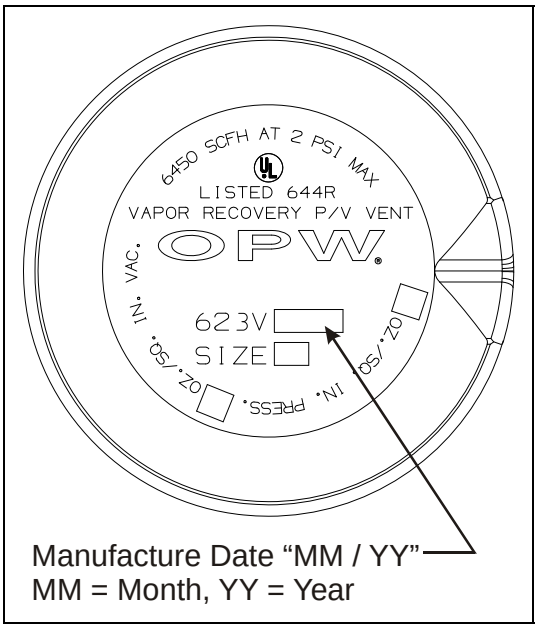
Note: Do not remove the pipe adaptor from the vent pipe to service the lower filter screen.

1. Remove valve assembly from the pipe adaptor. Grip assembly at the flats just

above the pipe adaptor and unscrew. (Fig. 4) Wrench C05102M can be used for this purpose.

2. Lift the filter screen out and clean or replace (P/N C05086M) as necessary.
3. Reinstall filter screen in the pipe adaptor (see Fig. 4 for orientation).
4. Reinstall valve assembly on pipe adaptor and tighten until it stops. Do not wrench valve assembly except with P/N C05102M

Important: Leave these instructions with Station Operator.



Product Identification

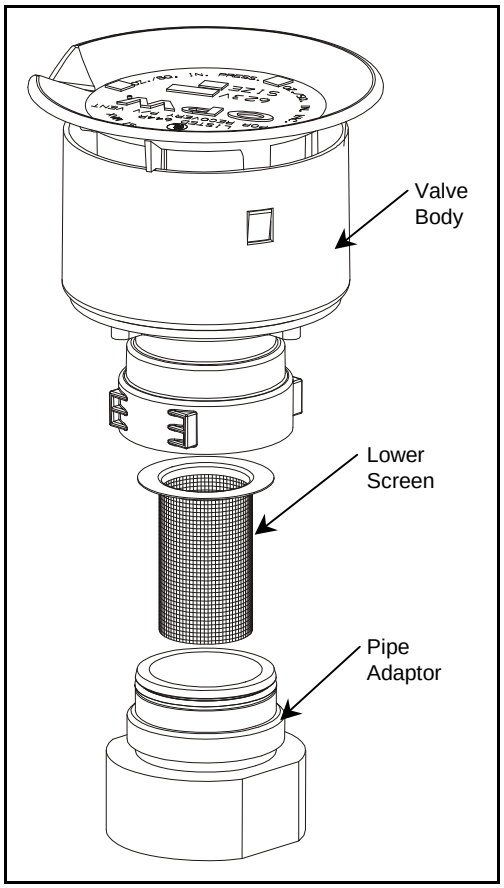


Figure 4

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Section 14

Installation Tools

OPW Installation Instructions
61SA-TOOL Multipurpose Installation Tool

IMPORTANT: Please read all warnings and follow the installation instructions completely and carefully. Failure to do so will void all warranties and may cause product failure, or result in environmental contamination due to liquid leakage into the soil, creating hazardous spill conditions.

WARNING - DANGER: Using electrically- operated equipment near gasoline or gasoline vapors may result in fire or explosion, causing personal injury and property damage. Be sure that the working area is free from such hazards, and always use proper precautions.

WARNING: Proper operation is dependent on proper installation and regular maintenance. The following instructions are provided to assist you in properly installing rotating product adaptors and spill container. Failure to follow these instructions may cause failure to the system, resulting in a hazardous condition.

HOW TO USE 61SA-TOOL TO INSTALL A 61SA, 61VSA, 61SALP, AND FSA-400

1.) Slide the rotatable adaptor socket of the assembled tool onto the appropriate lugs of the necessary product. See Figure 1.

2.) Rotate the tool clockwise to tighten the product to the riser pipe.

3.) Remove handle by removing screw “A” and use the 7/8” hex to attach torque wrench and tighten to specified torque per each products instruction sheet.

CAUTION: DO NOT over torque product. Doing so may cause failure to the system resulting in a hazardous condition.

HOW TO USE 61SA-TOOL TO INSTALL a #1 SERIES SPILL CONTAINER BASE

1.) Remove the rotatable adaptor socket from the base bar by taking out screw “B”. The finished assembly should be as seen in Figure 2.

2.) Slide the 61SA-TOOL onto the spill container base inside the appropriate slots.

3.) Rotate the tool clockwise to tighten the product to the riser pipe at the given torque values per the products instruction sheet.

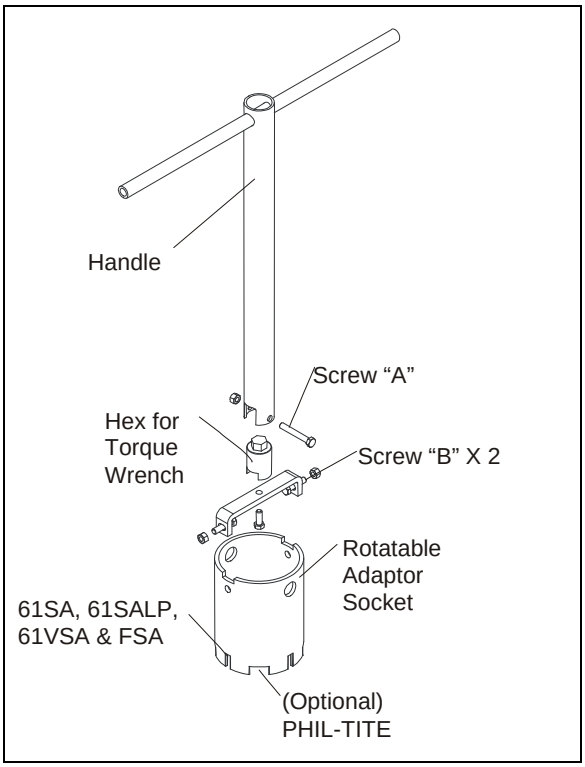

Figure 21

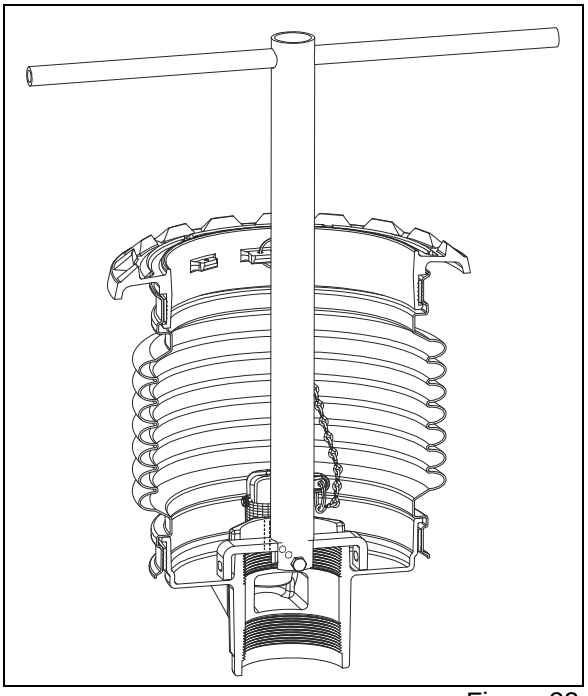

Figure 22

4.) Use the TC-400 torque cap and 61SA-TOOL for installing 4" nipples and risers (See figure 3).

5.) Use lubricate (molly grease) on the threads of the TC-400.

6.) Thread TC-400 onto the 4" Riser or Nipple.

7.) Slide the 61SA-TOOL, using the appropriate slots onto the TC-400.

8.) Rotate the tool clockwise to tighten the product to the riser pipe. Make sure recommended torque values are applied (See installation instruction).

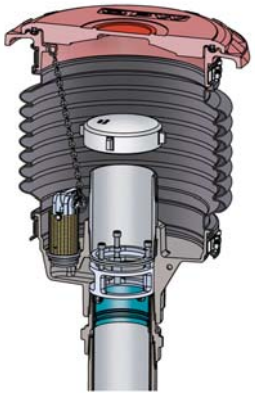

Figure 3

Notice: OPW products must 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. All illustrations and specifications in this literature are based on the latest production information available at the time of publication. Prices, materials, and specification are subject to change at any time, and models may be discontinued at any time, in either case, without notice or obligation.

Standard Product Warranty

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For any product certified to California 2001 standards, OPW warrants that product sold by it are free from defects in material and workmanship for a period of one year from date of manufacture or one year from date of registration of installation not to exceed 15 months from date of manufacture by OPW.

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 OF THE FACE HEREOF.

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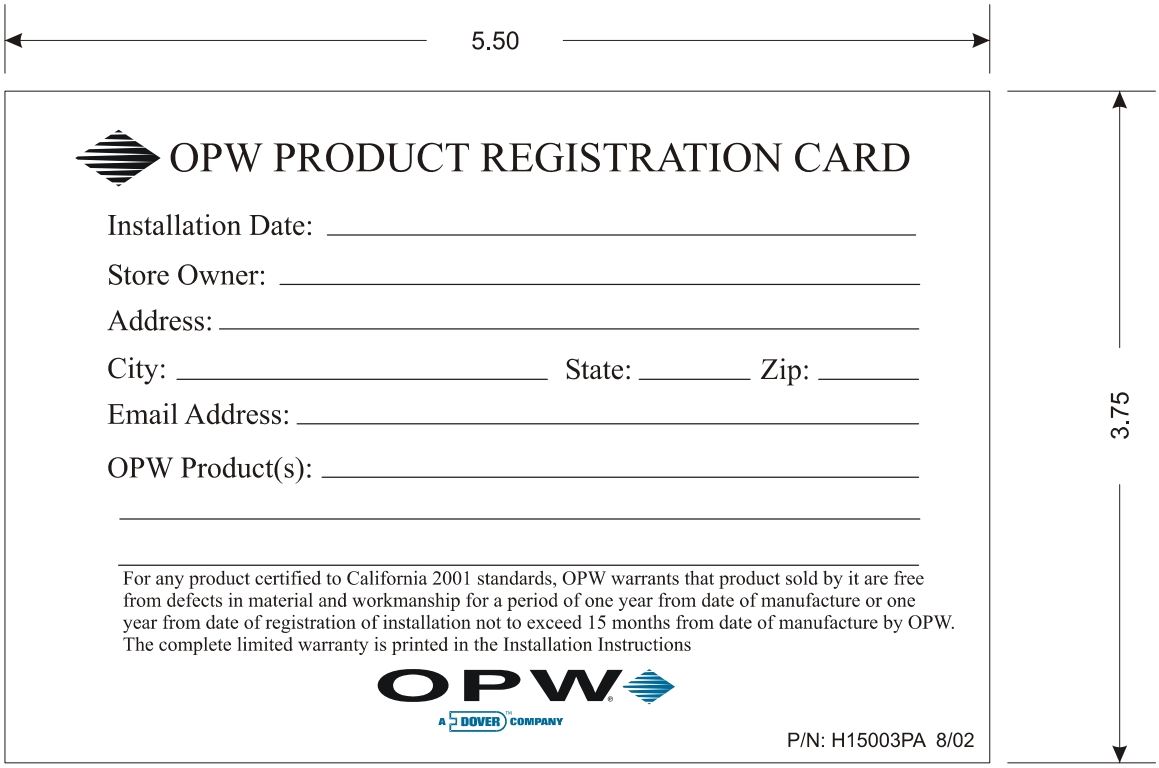
Appendix

EVR Product Registration Card
OPW Standard Product Warranty
Reference Tables
EVR Installation Check List
CARB Test Protocol and Field Inspection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OPW PRODUCT REGISTRATION CARD
Installation Date:
Store Owner:
Address:
City:
State:
Zip:
Email Address:
OPW Product(s):
For any product certified to California 2001 standards, OPW warrants that product sold by it are free from defects in material and workmanship for a period of one year from date of manufacture or one year from date of registration of installation not to exceed 15 months from date of manufacture by OPW. The complete limited warranty is printed in the Installation Instructions
OPW
A DOVER COMPANY
P/N: H15003PA 8/02
3.75

(Front)


Stamp Here
OPW Fueling Components
P.O. Box 405003
Cincinnati, OH 45240-5003
Attention: Warranty Administrator

(Back)

OPW-FC STANDARD PRODUCT WARRANTIES

NOTICE: FlexWorks by OPW, Inc., VAPORSAVER™ and all other OPW products must be used in compliance with all applicable federal, state, provincial and local laws, rules and regulations. Product selection must be based on physical specifications and limitations, compatibility with the environment and material to be handled. All illustrations and specifications in this literature are based on the latest production information available at the time of publication. Prices, materials and specifications are subject to change at any time, and models may be discontinued at any time, in either case, without notice or obligation.

OPW warrants solely to its customer that the following products sold by OPW will be free from defects in materials and workmanship under normal use and conditions for
the periods indicated:

Product	
FlexWorks Primary Pipe	10 years from date of manufacture
All Products Certified to California 2001 Standards*	1 year from date of manufacture or from date of installation registration (not to exceed 15 months from date of manufacture)
All other Products	1 year from date of manufacture
* Products certified to California 2001 Standards will have an OPW registration card enclosed/attached to the product.	

OPW's exclusive obligation under this limited warranty is, at its option, to repair, replace or issue credit (in an amount not to exceed the list price for any defective product) for future orders for any product that may prove defective within the applicable warranty period (repairs or replacements are subject to prorated warranty coverage for remainder of the original warranty period). Complete and proper warranty claim documentation and proof of purchase required. All warranty claims must be made in writing and delivered during the applicable warranty period to OPW at P.O. Box 405003, Cincinnati, Ohio 45240, Attention: Richard P. Jones. No products may be returned to OPW without its prior written authority.
This limited warranty shall not apply to any FlexWorks or VAPORSAVER™ product unless it is installed by an OPW attested installer. This limited warranty also shall not apply to any FlexWorks, VAPORSAVER™ or other OPW product: unless all required site and warranty registration forms are completed and received by OPW within 60 days of installation; unless all piping connections are installed with a nationally-recognized or state-approved leak detection device in each tank and dispenser sump (which are not for storage and from which all discharge hydrocarbons must be removed, and the systems completely cleaned, within 24 hours); unless testable sumps utilize FlexWorks pipe and access fittings; unless a sump inspection log or an EPA recommended/required checklist is maintained and the results are furnished to OPW upon request; and unless OPW is notified within 24 hours of any known or suspected product failure and is provided with unrestricted access to the product and the site. This limited warranty also shall not apply to any product which has been altered in any way, which has been repaired by anyone other than a service representative authorized by OPW, or when failure or defect is due to: improper installation or maintenance (including, without limitation, failure to follow FlexWorks Quick Reference Manual Installation Guide and all product warning labels); abuse or misuse; violation of health or safety requirements; use of another manufacturer's, or otherwise unauthorized, substances or components; soil or other surface or subsurface conditions; or fire, flood, storm, lightning, earthquake, accident or any other conditions, events or circumstances beyond OPW's control.
THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND ALL OTHER WARRANTIES INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY EXCLUDED. OPW shall have no other liability whatsoever, whether based on breach of contract, negligence, gross negligence, strict liability or any other claim, including, without limitation, for special, incidental, consequential or exemplary damages or for the cost of labor, freight, excavation, clean-up, downtime, removal, reinstallation, loss of profit, or any other cost or charges. No person or entity is authorized to assume on behalf of OPW any liability beyond this limited warranty. This limited warranty is not assignable.

CUSTOMER SERVICE DEPARTMENT
North America Toll Free - TELEPHONE: (800) 422-2525 or FAX (800) 421-3297
E-mail: domesticsales@opw-fc.com
www.opw-fc.com

EVR Phase I Components
Installation Torque Specifications
(Oct. 19, 2007)

Component	Torque Specification
	Foot Pounds (Inch Pounds)
All 4" NPT pipe. See note 1.	125 to 250 ft-lb
FSA-400, FSA-400-S. See note 1.	125 to 250 ft-lb
Spill containment bucket. See note 1.	125 to 250 ft-lb
Spill bucket cover perimeter bolts/nuts.	15 to 20 ft-lb
Drain valve retaining bolts/nuts.	11-1/2 to 13-1/2 ft-lb
61SO Inlet Adaptor	11-1/2 to 13-1/2 ft-lb
71SO Inlet Adaptor	(20 to 35 in-lb)
Jack Screw Assembly	
61JSK-4400 (Old Style)	3 to 4-1/2 ft-lb (36 to 56 in-lb)
61JSK-4410	3-1/2 to 5 ft-lb (42 to 60 in-lb)
61JSK-44CB	3-1/2 to 5 ft-lb (42 to 60 in-lb)
61VSA Swivel Adaptor	90 to 110 ft-lb
61SALP Low Profile Swivel Fill Adaptor	90 to 110 ft-lb
623V Pressure Vacuum Vent base	35 to 55 ft-lb
3" NPT	125 to 200 ft-lb
2" NPT	100 to 150 ft-lb

Notes: 1. All 4" NPT thread are to be torqued progressively lower from the tank up.

OPW EVR Phase I
Spill Bucket Installation "L" Dimension
Reference Chart
(October 22, 2007)

The following are "L" dimensions for riser installation heights referenced in OPW's 2100 Series Installation Instructions and POMECO's 500 Series Multi-Port Installation Instructions.

Note: If using OPW FSA-400, add 3-1/4" to Dimension "L." If using OPW FSA-400-S, add 1-3/4" to Dimension "L." NOTE: FSA-400-S will only work with Cast Iron Base.

NOTE: FSA-400 is required on fill risers and tank probe risers in areas governed by ARB Phase I Enhanced Vapor Recovery regulations.

The height of all Spill Containers, except Below Grade Applications, can be adjusted ±1 inch. Below Grade Applications can only be adjusted ±1/2 inch.

	"L" Dimension		
Bucket Style	**5 Gallon**	**7.5 Gallon**	**15 Gallon**
POMECO 700 Series Cast Iron Bottom	**18-1/2"**	**22-1/2"**	**22-1/2"**
POMECO 700 Series Composite Bottom	**19-5/8"**	**23-5/8"**	**23-5/8"**
POMECO 500 Series Cast Iron Bottom	**18-1/2"**	**22-1/2"**	**22-1/2"**
POMECO 500 Series Composite Bottom	**17-1/8"**	**21-1/8"**	**N/A**
OPW 2100C Series Cast Iron Bottom	**14-1/2"**	**18-1/2"**	**18-1/2"**
OPW 2100 Series Composite Bottom	**15-5/8"**	**19-5/8"**	**19-5/8"**
Below Grade Application Composite Bottom	**21-1/2" ***	**N/A**	**N/A**

* "L" Dimension is from underside of structural platform to top of fill riser.

Summary of Guidelines for Maintenance Activities Required of the OPW Phase I Vapor Recovery System[1]

Component	Interval	Maintenance To Be Performed
Pressure/Vacuum Vent Valve OPW 623V	Annual	Upper Screen 1. Remove vent top by depressing tabs on side of valve. Screen will slip up and out of valve. 2. Clean or replace filter screen as necessary and reinstall. 3. Reinstall vent top by reinserting into the body. Be sure the tabs are inside the valve body and then rotate top until the tabs snap into place. Lower Screen 1. Remove valve assembly from pipe adaptor 2. Lift the filter screen out and clean or replace as necessary. 3. Reinstall filter screen in the pipe adaptor. 4. Reinstall valve assembly on pipe adaptor and tighten until it stops.
Husky 4885	Annual	1. Remove screws that hold top cover on. 2. Remove any debris that might be sitting inside the lower cover. 3. Check the drain holes in the lower cover for blockage. 4. Do not remove the two (2) screens. 5. Reinstall the top cover and retaining screws. 6. Tighten the screws firmly.
Spill Containers and Drain Valves OPW/POMECO "All Models"	Annual and after each delivery	After each delivery, the operator must remove any standing fuel from the container. Annually, clean the interior of the container and drain valve. Annually, remove accumulated dirt and grit. If the drain valve becomes clogged, remove the valve, soak in water, and use high-pressure air to clean. If valve is removed, reinstall to its proper position and perform CARB TP-201.1C or TP-201.1D
Dust Caps OPW "All Models"	Annual	Visually inspect the seal in cap and replace if damaged or missing.
Product Adaptor OPW 61SALP	Annual	Visually inspect the adaptor for large dents, cracks, or deformations.

[1] These maintenance requirements shall not circumvent use of the manufacturer's installation and maintenance instructions. Maintenance contractors or owner/operators shall refer to the manufacturers complete installation and maintenance instructions found herein for the OPW Phase I System to ensure that all maintenance and torque requirements are met.

Summary of Guidelines for Maintenance Activities Required of the OPW Phase I Vapor Recovery System[1]

Component	Interval	Maintenance To Be Performed
Vapor Adaptor OPW 61VSA	Annual	Visually inspect the adaptor for large dents, cracks, or deformations. Check the vapor poppet for damage and ensure that the poppet seats evenly with the adaptor. Clean out any foreign objects from the vapor poppet's seal and seal surface if necessary. Test the poppet seal by applying a soap solution to the poppet while the underground storage tank is under a positive gauge pressure of at least 2.00 inches W.C and inspect for the presence of bubbles. If the facility continuously operates under vacuum, a bag test may be used by sealing a clear plastic bag to the adaptor's sides. If no bubbles appear at the poppet under positive pressure or the bag test shows no signs of the bag collapsing, no further maintenance is required. If bubbles appeared around the poppet seal or the bag collapsed, replace the poppet components and re-test.
Jack Screw Kit OPW 61JSK-4410 OPW 61JSK-44CB OPW 61JSK-4400-EVR	Annual	Visually inspect the Jack Screw for proper alignment and installation.
Face Seal Adaptor OPW FSA-400 OPW FSA-400-S	None	No maintenance is required for this product.
Drop Tubes OPW 61T	Annual	Visually inspect Drop Tube to see if it is installed and ensure that the bottom of tube is within 6 inches of the bottom of tank. Test the drop tube seal with ARB procedure TP-201.1C or TP-201.1D as applicable. If the drop tube seal passes testing, no further maintenance is required. If the drop tube seal fails testing, replace the drop tube seal with OPW P/N: H11931M for 4" Tubes. Re-test the drop tube seal with ARB procedure TP-201.1C or TP-201.1D as applicable.

[1] These maintenance requirements shall not circumvent use of the manufacturer's installation and maintenance instructions. Maintenance contractors or owner/operators shall refer to the manufacturers complete installation and maintenance instructions found herein for the OPW Phase I System to ensure that all maintenance and torque requirements are met.

Summary of Guidelines for Maintenance Activities Required of the OPW Phase I Vapor Recovery System[1]

Component	Interval	Maintenance To Be Performed
Drop Tube Overfill Prevention OPW 61SO	Annual	Inspect the flapper in the 61SO to see that it is open by looking down the drop tube opening. Test the 61SO drop tube seals with ARB procedure TP-201.1D. If the drop tube passes testing, no further maintenance is required. If the drop tube fails testing, replace the drop tube seal with OPW P/N: H11931M for 4" Tubes. Re-test the 61SO drop tube with ARB procedure TP-201.1D. If this does not correct the leak, the 61SO needs to be replaced.
OPW 71SO	Annual	Inspect the flapper in the 71SO to see that it is open by looking down the drop tube opening. Test the 71SO drop tube seals with ARB procedure TP-201.1D. If the drop tube passes testing, no further maintenance is required. If the drop tube fails testing, replace the drop tube seal with OPW P/N: H11931M for 4" Tubes. Re-test the 71SO drop tube with ARB procedure TP-201.1D. If this does not correct the leak, the 71SO needs to be replaced.
Tank Bottom Protector OPW/POMECO 6111-1400	None	No maintenance is required for this product.
Tank Gauge Port Components OPW 62M Morrison Brothers 305 Ever-Tite 4097 Veeder-Root 312020-952	Annual	Visually inspect cap to see that it is not missing any seals and is installed properly.

[1] These maintenance requirements shall not circumvent use of the manufacturer's installation and maintenance instructions. Maintenance contractors or owner/operators shall refer to the manufacturers complete installation and maintenance instructions found herein for the OPW Phase I System to ensure that all maintenance and torque requirements are met.

OPW
EVR Phase I Equipment
Installation Check List

(Revised 08/25/04)

Site Identification Information

Site Address:

_____

_____

_____

Installing Company:

_____

Technician's Name (Print Clearly)**:**

_____

Technician's Signature:

_____

Date of installation: _____

OPW
EVR Phase I Equipment
Installation Check List

(Revised 08/25/04)

Components Installed

OPW 500 Series EVR Fill Spill Containment Bucket	Yes __	No__
OPW 500 Series EVR Vapor Spill Containment Bucket	Yes __	No__
OPW 2100 Series EVR Fill Spill Containment Bucket	Yes __	No__
OPW 2100 Series EVR Vapor Spill Containment Bucket	Yes __	No__
OPW FSA-400, or FSA-400-S Threaded Riser Adaptor (Face Seal Adaptor)		
On Fill Riser (Required)	Yes ___	No ___
On Tank Probe Riser (Required)	Yes ___	No ___
On Vapor Riser (Optional)	Yes ___	No ___
OPW 61SO 400 EVR Series Overfill Prevention Valve	Yes ___	No ___
OPW 71SO 400 EVR Series Overfill Prevention Valve	Yes ___	No ___
OPW 61T Series Straight Drop Tube	Yes ___	No ___
OPW 61JSK Jack Screw Assembly		
61JSK-4410 (Use with composite base spill bucket)	Yes ___	No ___
61JSK-44CB (Use with cast iron base spill bucket)	Yes ___	No ___
61JSK-4RMT	Yes ___	No ___
OPW 61VSA Vapor Swivel Adaptor	Yes ___	No ___
OPW 61SALP Fill Swivel Adaptor	Yes ___	No ___
OPW 634TT Top Seal EVR Fill Cap	Yes ___	No ___
OPW 1711T Top Seal EVR Vapor Cap	Yes ___	No ___
OPW 634LPC Low Profile Top Seal EVR Fill Cap	Yes ___	No ___
OPW 1711LPC Low Profile Top Seal EVR Vapor Cap	Yes ___	No ___
OPW 623 Pressure Vacuum Vent	Yes ___	No ___
OPW 233 Extractor	Yes ___	No ___
OPW 53VML Ball Float Vent Valve	Yes ___	No ___
OPW 30MV Ball Float Vent Valve	Yes ___	No ___

Installation acknowledgment

Installed OPW FSA-400 (-S) Threaded Riser Adaptor (Face Seal Adaptor) on fill riser and tightened to _____ ft. lb.

Thread sealant compound used_____

Installed OPW FSA-400 (-S) Threaded Riser Adaptor (Face Seal Adaptor) on tank probe riser and tightened to _____ ft. lb.

Thread sealant compound used_____

Optional:

Installed OPW FSA-400 (-S) Threaded Riser Adaptor (Face Seal Adaptor) on vapor riser and tightened to _____ ft. lb.

Thread sealant compound used_____

Installed OPW 2100 Series ____ or 500 Series ___ Fill spill containment bucket onto FSA-400 attached to fill riser and tightened to _____ ft. lb.

Thread sealant compound used_____

Installed OPW 2100 Series ____ or 500 Series ____ vapor spill containment bucket onto vapor riser and tightened to _____ ft. lb.

Thread sealant compound used_____

Assembled 61SO-400C-EVR Series overfill prevention valve

Used OPW supplied epoxy Yes ___ No ___

Applied epoxy: To upper 1" inside of top tube; under cinch head bolts and lock washers; on threads of valve body at lower tube connection.

Yes ___ No ___

Allowed epoxy to cure for 24 hours before exposure to fuel or vapor

Yes ___ No ___

Installed OPW 61SO 400C-EVR Series overfill prevention valve into fill spill containment bucket. Yes ___ No ___

Assembled 71SO-400C-EVR Series overfill prevention valve

Used OPW 71SO-TOOLC Yes ___ No ___

Installed 71SO-400C-EVR Series overfill prevention valve into fill spill containment bucket.

Yes ___ No ___

Alternative to 61SO:

Installed OPW 61T Straight Drop Tube into fill spill containment bucket.

Yes ___ No ___

Installed OPW 61JSK Jack Screw assembly on top of 61SO 400C-EVR Series overfill prevention valve or on top of 61T Series Straight Drop Tube.

Yes ___ No ___

Lock-Tite applied to screws Yes ___ No ___

Screws tightened to _____ ft. lb.

Installed faced off 4" NPT pipe nipple in fill spill containment bucket and tightened nipple to _____ ft. lb.

Thread sealant compound used _____

Tool used to install nipple _____

Installed faced off 4" NPT pipe nipple in vapor spill containment bucket and tightened nipple to _____ ft. lb.

Thread sealant compound used _____

Tool used to install nipple _____

Installed OPW 61 SALP Fill Swivel Adaptor onto faced off 4" NPT pipe nipple in fill spill containment bucket and tightened fill adaptor to _____ ft. lb.

Thread sealant compound used _____

Tool used to install nipple _____

Installed OPW 61 VSA Vapor Swivel Adaptor onto faced off 4” NPT pipe nipple in vapor spill containment bucket and tightened vapor adaptor to _____ ft. lb.

Thread sealant compound used _____

Tool used to install nipple _____

OPW 61 SA-Tool used to install OPW components Yes ___ No ___

California Environmental Protection Agency

Air Resources Board

Vapor Recovery Test Procedure

TP-201.1B

Static Torque of Rotatable Phase I Adaptors

Adopted: July 3, 2002
Amended: October 8, 2003

California Environmental Protection Agency
Air Resources Board

Vapor Recovery Test Procedure

TP-201.1B

Static Torque of Rotatable Phase I Adaptors

Definitions common to all certification and test procedures are in:

D-200 Definitions for Vapor Recovery Procedures

For the purpose of this procedure, the term "CARB" refers to the California Air Resources Board, and the term "Executive Officer" refers to the CARB Executive Officer, or his or her authorized representative or designate.

1. PURPOSE AND APPLICABILITY

The purpose of this procedure is to quantify the amount of static torque required to start the movement of a rotatable Phase I adaptor and to ensure 360-degree rotation. This procedure determines compliance with the performance specifications set forth in Section 3 of CP-201 Vapor Recovery Certification Procedure.

2. PRINCIPLE AND SUMMARY OF TEST PROCEDURE

A compatible dust cap is installed on a rotatable Phase I adaptor. A Torque Test Tool is installed on the dust cap. A socket wrench is installed on the Torque Test Tool and 360-degree rotation is verified. Following the rotation test, a torque wrench is installed on the Torque Test Tool and three static torque measurements are taken. If the resulting, average static torque is less than, or equal to, the maximum allowable value specified in Certification Procedure 201 (CP-201), the adaptor is verified to be in compliance.

3. BIASES AND INTERFERENCES

3.1 Missing or defective gaskets in the dust cap may bias the results towards compliance as a dust cap may slip on the rotatable adaptor prior to the adaptor rotating. This bias is eliminated by ensuring that the dust cap seal is securely in place and does not show signs of excessive wear or damage.

3.2 Gasoline or other lubricants on the sealing surface of the rotatable adaptor or the dust cap seal can cause the dust cap to slip and may bias the results towards compliance. This bias is eliminated by ensuring that the sealing surface of the rotatable adaptor and dust cap is clean, dry and free of lubricants.

4. SENSITIVITY, RANGE, AND PRECISION

4.1 Torque Wrench. The maximum full-scale range shall be 250 pound-inches with minimum accuracy of 3.0 percent full-scale and minimum readability of 5 pound-inch increments. The torque wrench shall incorporate a mechanism, such as a tell-tale needle that identifies the maximum applied torque during each measurement.

5. EQUIPMENT

5.1 Torque Wrench. Use a Snap-On® Model TER12FUA Torque Wrench, or equivalent, to measure the static torque of the rotatable adaptor.

5.2 Static Torque Test Assembly. Use a compatible dust cap and rotatable adaptor Torque Test Tool, Phil-Tite® Part Number 6004, or equivalent. A depiction of a Torque Test Tool is shown in Figure 1. An example of a Static Torque Test Assembly is shown in Figure 2.

5.3 Socket wrench and socket extension. Use a $^{3}/_{8}$ inch or ½ inch socket wrench, adaptors and socket extension (if needed) to verify 360-degree rotation or to conduct static torque testing. The socket extension shall not exceed 12 inches in length.

Figure 1
Phil-Tite® Torque Test Tool

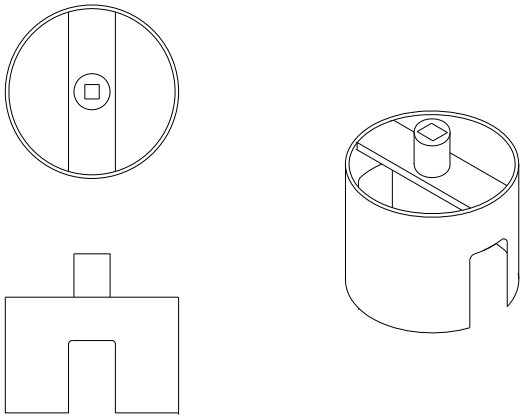
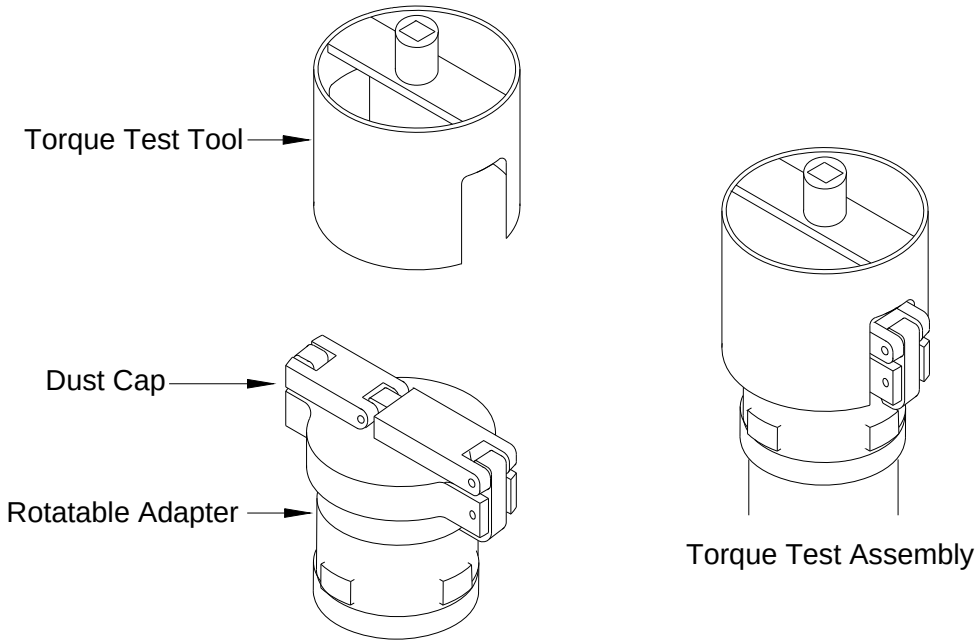


Figure 2
Static Torque Test Assembly



6. PRE-TEST PROCEDURES

6.1 Remove the lids of the Phase I spill containers. Visually determine that the adaptors are of the rotatable design.

6.2 Inspect the dust caps to ensure that the caps and that the gaskets are intact and do not show signs of excessive wear or damage.

6.3 Inspect the rotatable adaptors. If the adaptors are wet or covered with a lubricant, wipe the adaptors clean to ensure maximum friction between the dust cap and the adaptor seal surface.

7. TEST PROCEDURE

7.1 Install the dust cap on the Phase I rotatable adaptor.

7.2 Install the Torque Test Tool on the dust cap as shown in Figure 2.

7.3 Verification of rotation, conducted prior to the Static Torque Test. Place a socket wrench with socket extension (if required) into the Torque Test Tool, or equivalent. Rotate the

adaptor a minimum of 360 degrees. Do not continue with static torque measurements if the adaptor does not rotate 360 degrees. Record the result on the data sheet where provided.

7.4 Install the Torque Wrench into the Torque Test Tool. If the spill container is too deep to allow connection of the Torque Wrench, use a compatible socket extension to reach into the bucket to the Torque Test Tool. The socket extension shall not exceed 12 inches in length.

7.5 Place one hand on top of the Torque Wrench, directly above the center of the Torque Test Tool to keep the wrench level while applying pressure. Gently apply an even, steady pressure just until the adaptor begins to rotate. Record the maximum applied static torque value shown on the torque wrench and proceed to 7.6.

7.6 After the first measurement, slowly rotate the adaptor one third of full rotation (120 degrees) from the point that the first measurement was taken. Using the same technique described in 7.5, measure and record the second torque measurement.

7.7 Following the first two measurements, slowly rotate the adaptor another, one third of full rotation (120 degrees) from the second measurement location. Using the same technique as described in 7.5, measure and record the third torque measurement. Rotating the adaptor in one-third increments ensures that the average static torque is representative of the entire adaptor rotation.

8. POST-TEST PROCEDURES

8.1 Remove the Torque Test Assembly and replace the appropriate lids on each of the spill containers. Store all test equipment in a protected location to prevent damage to the equipment.

9. CALCULATING RESULTS

9.1 Calculate the arithmetic average of the three tests for each adaptor tested and record the value on the data sheet where provided.

10. REPORTING RESULTS

10.1 Report the results of the static torque measurements on the data sheet where provided. Alternate data sheets may be used provided they include the same parameters identified on Form 1.

11. ALTERNATE PROCEDURES

11.1 This procedure shall be conducted as specified. Modifications to this test procedure shall not be used to determine compliance unless prior written approval has been obtained from the Executive Officer, pursuant to Section 14 of Certification Procedure CP-201.

Form 1
Static Torque of Rotatable Phase I Adaptors

Test Company:	**Conducted By**:
Test Date:	**Facility Name:**
Facility Address:	**City:**

Measurement Units: (circle one): pound-inches pound-feet

Vapor Adaptor 1	Vapor Adaptor 2	Vapor Adaptor 3	Vapor Adaptor 4
Brand:	**Brand:**	**Brand:**	**Brand:**
Model:	**Model:**	**Model:**	**Model:**
Grade:	**Grade:**	**Grade:**	**Grade:**
Torque 1:	Torque 1:	Torque 1:	Torque 1:
Torque 2:	Torque 2:	Torque 2:	Torque 2:
Torque 3:	Torque 3:	Torque 3:	Torque 3:
Average:	**Average:**	**Average:**	**Average:**
360 Rotation: Yes / No	**360 Rotation: Yes / No**	**360 Rotation: Yes / No**	**360 Rotation: Yes / No**

Product Adaptor 1	Product Adaptor 2	Product Adaptor 3	Product Adaptor 4
Brand:	**Brand:**	**Brand:**	**Brand:**
Model:	**Model:**	**Model:**	**Model:**
Grade:	**Grade:**	**Grade:**	**Grade:**
Torque 1:	Torque 1:	Torque 1:	Torque 1:
Torque 2:	Torque 2:	Torque 2:	Torque 2:
Torque 3:	Torque 3:	Torque 3:	Torque 3:
Average:	**Average:**	**Average:**	**Average:**
360 Rotation: Yes / No	**360 Rotation: Yes / No**	**360 Rotation: Yes / No**	**360 Rotation: Yes / No**

Comments:

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 EVRTM-11/07