



## Fibrelite Multiport Installation and Maintenance Instructions

Please read these warnings and use 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.

**OPW Standard Product Warranty Tag:** Notice: Flex-Works 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 is the sole responsibility of the customer and/or its agents and 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 (the initial purchaser and any subsequent purchasers within the warranty period) 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	WARRANTY PERIOD
FlexWorks Primary Pipe	10 years from date of manufacture
All Products and replacement parts installed in the State of California Certified to California CP-201 and/or CP-206 Standards*	1 year from date of installation (proof of purchase from certified contractors/ technicians required) OPW warrants ongoing compliance with the standards and specifications for the duration of the warranty period required by the State of California; this limited warranty is under the condition the equipment was installed and maintained by trained and certified contractors/ technicians unless noted in Installation Manual.
All other Products and replacement parts	1 year from date of manufacture**
*Products certified to California CP-201 and/or CP-206 Standards have been factory tested and met all applicable performance standards and specifications and 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 the product) for future orders for any product that may prove defective within the applicable warranty period. (Parts repaired or replaced under warranty 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 OPW 9393 Princeton-Glendale Road Hamilton, Ohio, USA 45011, Attention: Customer Service Manager. 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 and all required site and warranty registration forms are completed and received by OPW within 60 days of installation. This limited warranty also shall not apply to any FlexWorks, VAPORSAVER™ or other OPW product: 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 fit-tings; 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 un-authorized, 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, with-out 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.

**\*\* Date of manufacture on this product is located on the spill container.**

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

#### **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.

## **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.

#### **Torque 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.

**Note:** All 4" NPT threads are to be torqued progressively lower from the tank up.

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

Ring Bolts and Nuts, 5/16-18 UN thread, 15 ft-lbs minimum to 20 ft-lbs maximum.

Shroud boot band clamps, 60 in-lbs.

## **TOOLS NEEDED FOR INSTALLATION AND ASSEMBLY:**

1. FL7A Lifting handle
2. Pipe wrench
3. Level
4. Tape measurer
5. Permanent marker
6. Torque wrenches (ft-lb and in-lb)
7. 1/2" combination wrench
8. Ratchet and sockets including: 1/2" socket, 7/16" deep socket, 9/16" socket, 7/8" socket.
9. Socket extensions
10. Caulk gun
11. Pipe dope
12. Silicone lubricant spray
13. Caulk gun
14. 61SA-TOOL (optional)
15. 1-3100-TOOL (optional)
16. TC-400 Torque cap (optional)
17. DW-VAC-TEST Vacuum Test Kit (optional)
18. SC-TEST Test Cover (optional)
19. 3/4" deep socket or wrench (SC port cover)

Items needed for new installs only:

20. String line
21. Jigsaw or angle grinder with diamond blade
22. Heavy grit sandpaper
23. Acetone
24. Tank sump vacuum test equipment (optional)

Items needed for retrofit of steel mutliports only

25. Concrete saw.

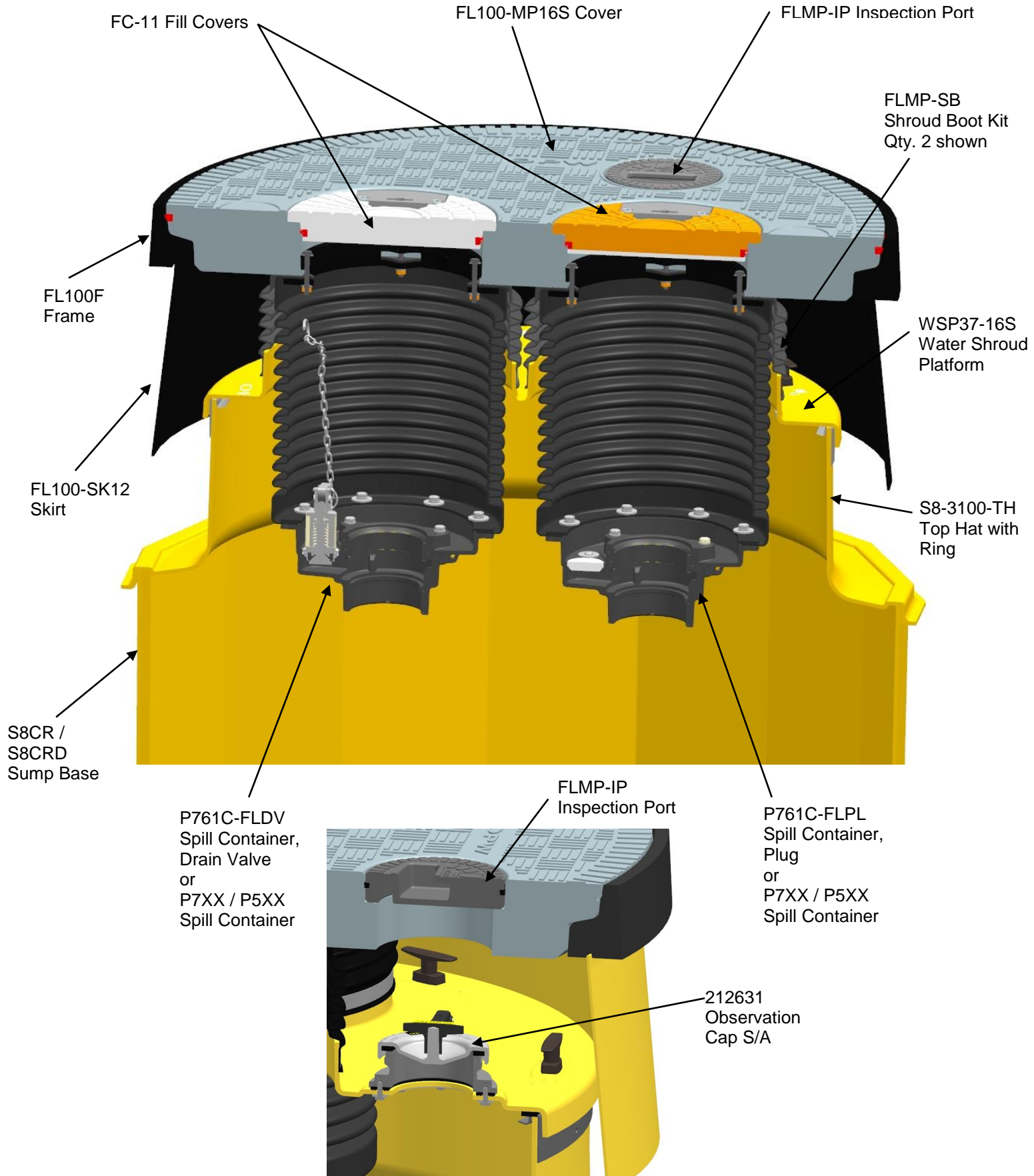
#### **WARNING**

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.

#### **NOTE:**

Do not store sumps on their sides prior to installation. Failure to do so may cause sump to deform preventing installation on the round tank collar.

# Fibrelite Multiport Parts Diagram



- **For new installations with OPW / Fibrelite single wall tanks sumps proceed to step 1 on page 5.**
- **For new installations with double wall tank sumps proceed to step 34 on page 12.**
- **For retrofit installations replacing an existing steel multiport or new installations onto a round single wall sump proceed to step 38 on page 13.**
- **For retrofit installations replacing an existing Fibrelite FL100 cover proceed to step 49 on page 16.**

**Fibrelite Multiport Spill Container  
Installation Instructions for new installation with  
OPW / Fibrelite single wall tank sump.**

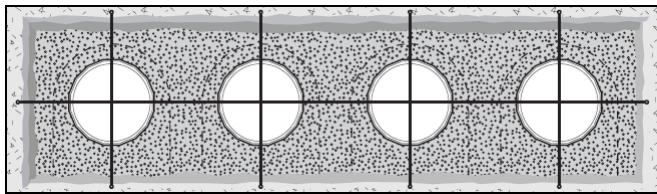
**IMPORTANT:**

For best results, OPW / Fibrelite Fiberglass Tank Sumps should be installed when the ambient temperature is at least 50°F to allow proper curing of the epoxy resin adhesive. (See RK-5000 Resin Kit Instruction Sheet).

Do not exceed Maximum Sump Burial Depth:  
S8, S14, S15 = 94”.

1. Install string lines at finished grade level (manhole grade level) across the length and width of the tank farm (as shown in Figure 1) in order to accurately measure the distance from grade level to the tank top.

Note: The cover frame will be set 1 inch minimum (for slope) above the final grade position.



**Figure 1**

2. Mount the tank sump base to the UST. OPW / Fibrelite tank sumps can be mounted to the top of the UST using one of the following methods:

**Method 1: Mounting Flanges (not shown)**

Attaches the base of the sump to tank bung fittings using Flexworks Sump Mounting Flanges - FlexWorks Product Numbers:

- SMF-4E\* 4” NPT Mounting Flange
- SMF-6\* 6” NPT Mounting Flange
- TFA-4090 4” No Bolt Style

\* See Installation Instructions supplied with FlexWorks Sump Mounting Flanges. Ensure dimensions in steps 4 and 5 are met.

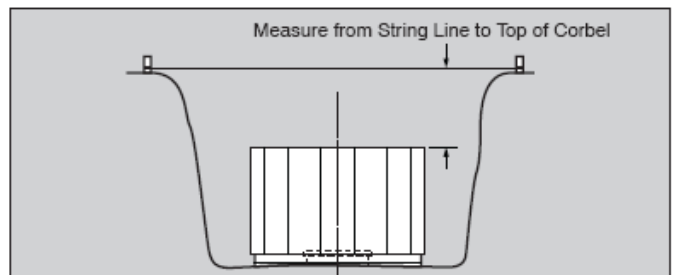
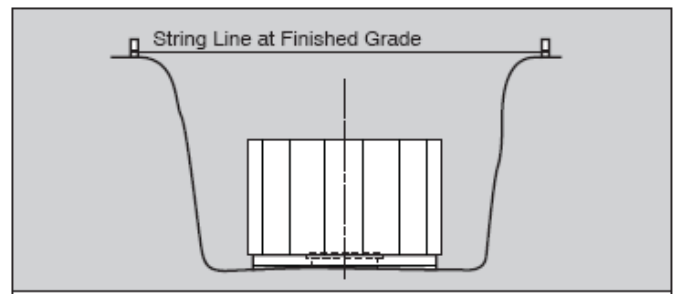
**Method 2: Collar Mount**

The sump is attached to the containment collar on an FRP tank by attaching the sump base to the collar using a FlexWorks Resin Adhesive Kit (Product Number RK-5000).

**NOTICE:** Many mounting kits supplied by other manufacturers are not warranted by OPW. OPW bears no responsibility

whatsoever for the integrity of joints using alternate tank sump mounting systems.

3. **For collar mount installation.** Measure across the tank collar and ensure it is the same size as the tank sump before proceeding. Place the sump bases onto each of the tank collars (“dry fit” the sump base at this stage). Mark the sump to reflect the tank it is installed on. Measure the distance from the string line to the top of the sump and note the measurement in a log or on the side of the sump.



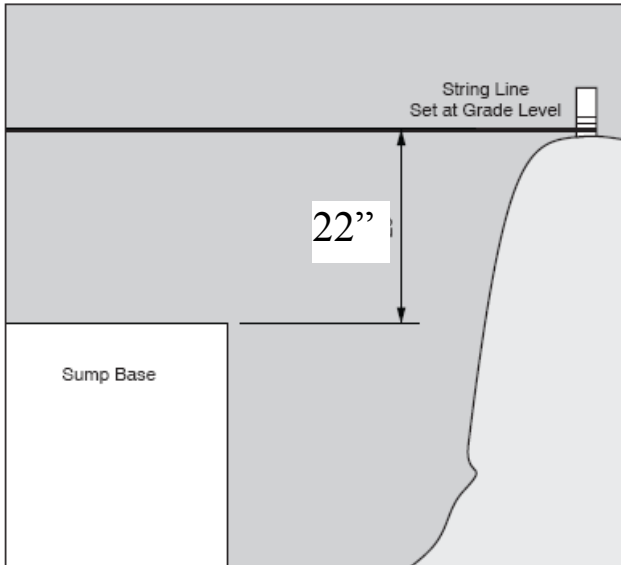
**Figure 2**

4. The top of the sump base must be 22” below the string line set at finished manhole grade level. This will provide sufficient clearance for both the OPW / Fibrelite top hat and the water shroud platform. See Figure 3.

If trimming is required to meet the 22” dimension proceed to step 5. If no trimming is needed proceed to step 6.

If the sump base is more than 22” below the string line, it will be necessary to install an extension and trim it so the combined sump base and extension are 22” below the string line. If the sump base is less than 11” from the string line, it will be necessary to use a shorter sump base. The S8 series sumps have deep and normal sump bases and extensions to handle such issues.

**Note:** For more detail, see figure 52 showing finished fill sump installation with critical dimensions.

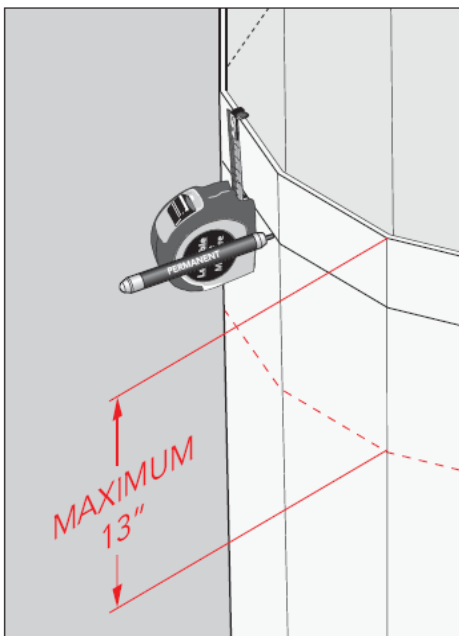


**Figure 3**

5. If the sump base must be trimmed, mark the trim line on the sump base using a permanent marker - make sure to mark a level line on the tank sump for cutting (use a locked tape measure as shown in Figure 4). If the line is not level, re-measure and re-mark until the marked line is correct and level. The sump and top hat will not seal properly if the cut is jagged or uneven.

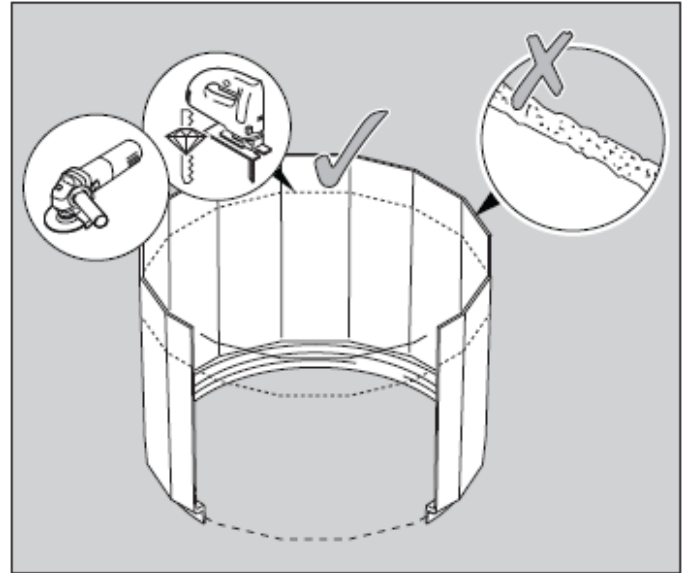
**Note:**

The S8 sump may be trimmed a maximum of 13" from the top. If this is not sufficient, a shorter sump base will be required.



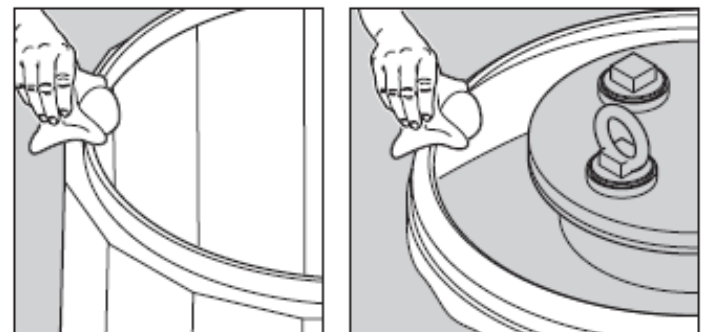
**Figure 4**

6. Use a jigsaw or angle grinder with a diamond grit blade to trim the top of the sump at the marked line from step 5. Ensure that the sump is cut evenly. A jagged or uneven cut must be corrected before proceeding.



**Figure 5**

7. The surface of the tank collar and sump base must be prepared properly prior to fiberglassing. Using heavy grit sandpaper, completely roughen the surface of both the sump collar and the sump base where they will be joined. Sand both the internal and external sides of the collar and sump base.



**Figure 6**

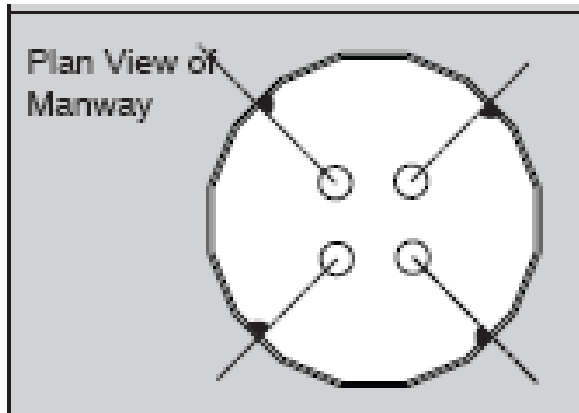
8. All sanded surfaces must be wiped clean with acetone and a clean cloth immediately prior to fiberglassing to ensure that no dust, dirt, grease, or oil are present on the surfaces. The surfaces must be free from moisture and other contaminants.



**Figure 7**

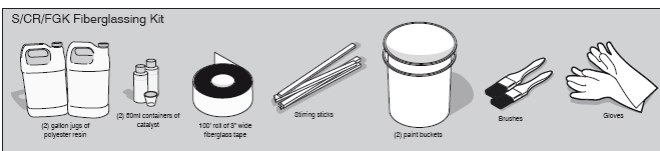
9. Immediately after cleaning, install the tank sump onto the tank collar.

Note: Prior to fiberglassing the sump to the tank collar, dry fit it onto the collar and position so that the sump facets align perpendicular with the pipework exit/entry points (see Figure 8).



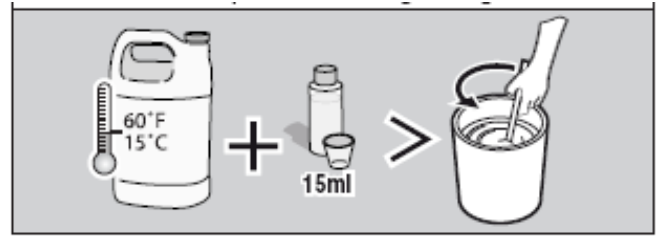
**Figure 8**

10. Use a level to set the sump base on collar. Make sure the sump will be level to finished grade. Ensure the 22" dimension in Figure 3 is correct.
11. Attach the sump base to the tank collar using the S-CR-FGK fiberglassing kit. Detailed tank collar fiberglass instructions are packed in fiberglassing kit.



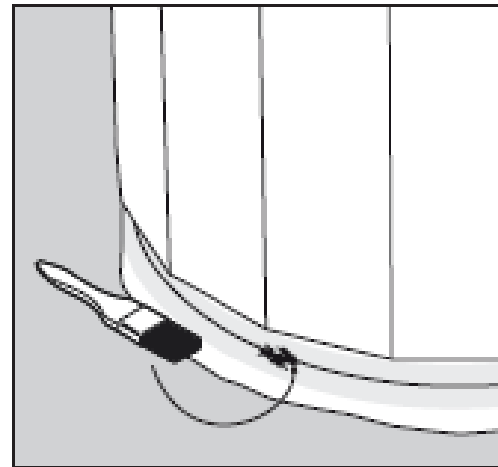
**Figure 9**

12. At 60°F, mix 1 quart resin with 15 ml catalyst and stir well.



**Figure 10**

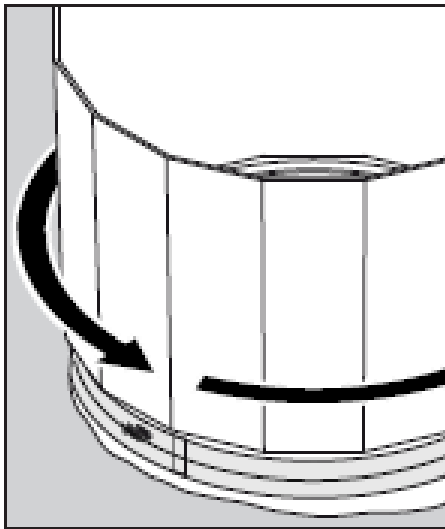
13. Using brush, paint resin onto sanded surfaces at the tank collar joint. Apply resin around circumference of the tank collar.



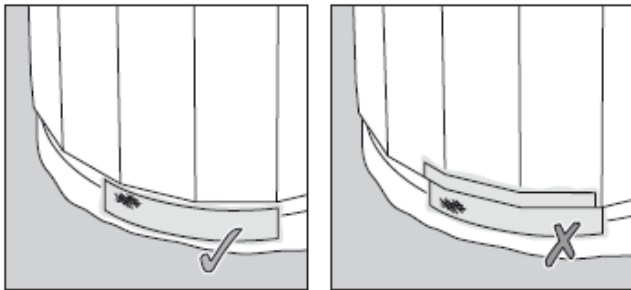
**Figure 11**

14. Apply a layer of fiberglass tape by centering it on the tank collar joint and unrolling it completely around the sump keeping it centered over the joint (this will require 2 people). Cut the tape once the first layer is applied.

Apply fiberglass tape only at the tank collar to tank sump joint. Fiberglassing on the sump body may cause distortion after the resin has dried. See Figure 13.

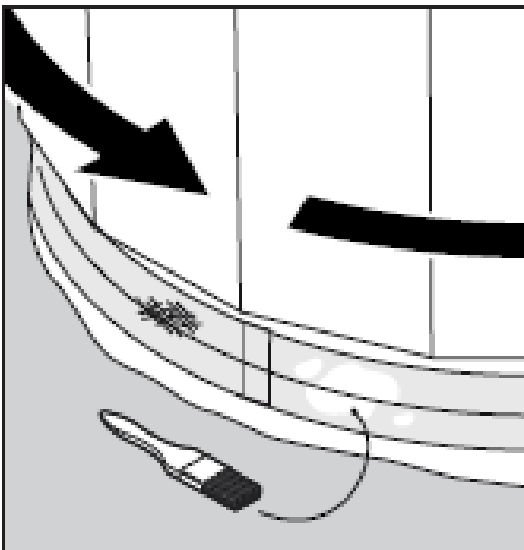


**Figure 12**



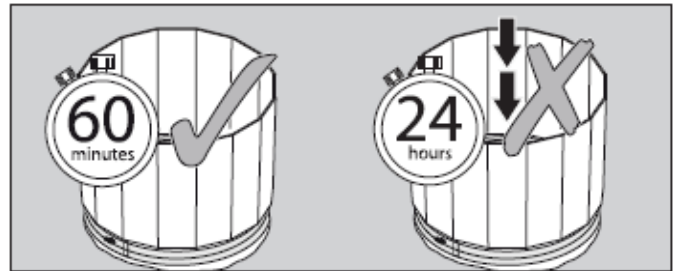
**Figure 13**

15. Apply a second and third layer of fiberglass tape by repeating steps 13 and 14 ensuring that all joints are staggered and overlap by a minimum of 2 inches. Paint a final layer of resin onto the third layer of fiberglass and use the brush to flatten out any bubbles or air pockets.



**Figure 14**

16. Allow a minimum of one hour for the resin to cure before proceeding with any other work on the tank sump. Allow 24 hours before putting any stress on the sump.



**Figure 15**

17. In addition to fiberglassing the outside tank collar joint, the inner tank collar joint should be filled with an epoxy resin to ensure that the joint will be watertight. Use part number RK-5000 Epoxy Resin Kit and follow detailed instructions packed with kit.



**Figure 16**

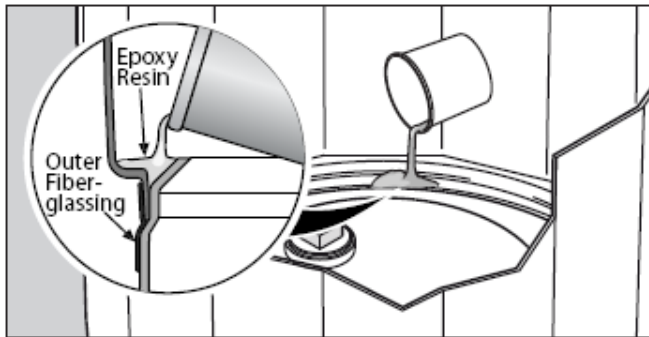
18. Surfaces previously sanded in step 7 should be cleaned again with acetone to remove contaminants.
19. For best results, the epoxy should be stored and mixed at room temperature. If the temperature is below 60°F, the adhesive must be warmed and mixed indoors. Pour the entire contents of Part A and Part B into mixing container. Thoroughly mix the adhesive with the provided mixing stick or with a drill mounted mixing paddle at low speed for a minimum of three (3) minutes. Be sure to scrape the bottoms and sides of the container to ensure proper and complete mixing.
20. Apply epoxy resin by pouring the epoxy into the joint between the tank collar and the tank sump."
21. Pour the entire mixture into the joint as shown in Figure 17. Allow adhesive to set-up undisturbed until it is hard.



Important: Resin Set-up Times

After joining the sump base to the collar allow the epoxy resin adhesive to harden before proceeding. Carefully follow the instructions supplied with the RK-5000 Epoxy Resin Kit and observe minimum set-up times before proceeding.

**DO NOT BACKFILL OR CONTINUE WORK IN OR AROUND THE SUMP UNTIL THE EPOXY IS COMPLETELY CURED.**



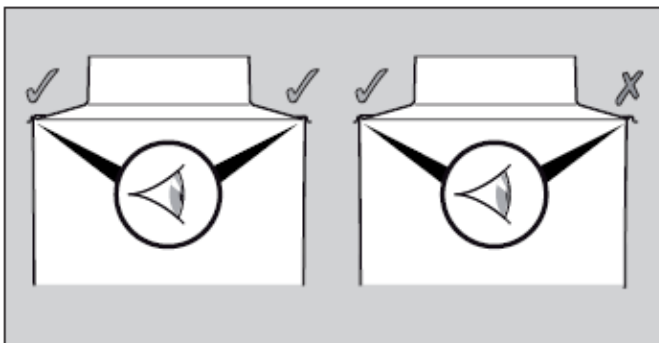
**Figure 17**

22. Install the appropriate FlexWorks pipe and conduit entry fittings into the flats around the tank sump base at the proper locations (Refer to the appropriate FlexWorks Entry Fitting Installation Instructions).

**Determining Pipe Entry Height**

Pipe entries are generally located as close to the bottom of the tank sump as possible. The lower the pipe entry into the tank sump wall, the easier it will be to maintain the proper piping slope back to the UST from the dispensers.

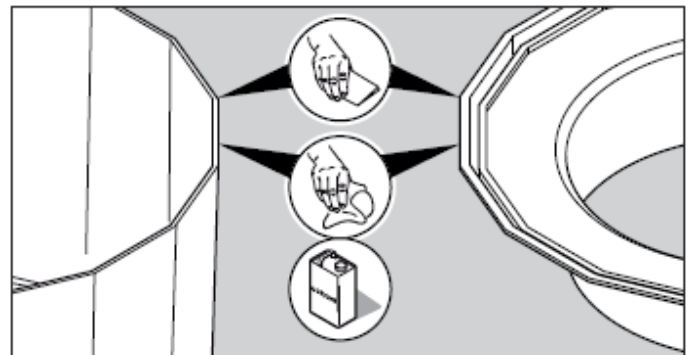
23. Place the sump top hat (S8-3100-TH or similar) onto the tank sump base to ensure it will fit. Push top hat groove onto sump base wall ("dry fit" the sump top hat at this stage). The top hat should sit evenly all the way around. See Figure 18.



**Figure 18**

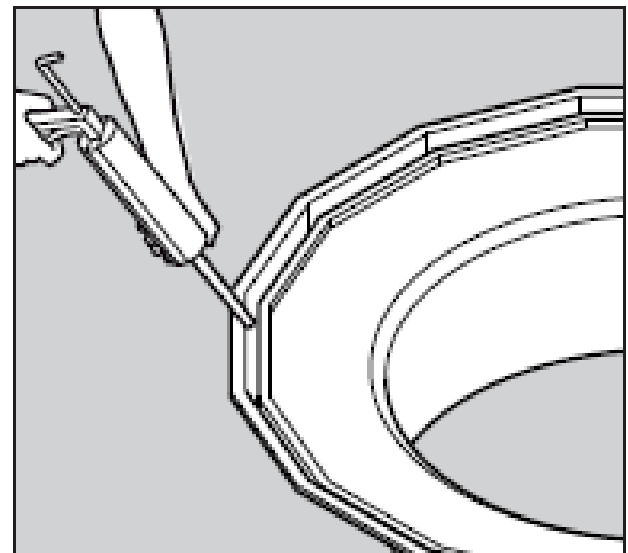
24. Measure the distance from the string line to the top of the top hat. This dimension should measure between 10.5" to 11.5". If this dimension is not met adjustments must be made before proceeding.

25. Remove top hat from sump base. As done in steps 7 thru 9 for the tank sump base using heavy grit sandpaper, completely roughen the surface of both the sump base and the downward facing groove on the top hat where they will be joined. Sand both the internal and external sides of the sump base and top hat. Clean all sanded surfaces with acetone.



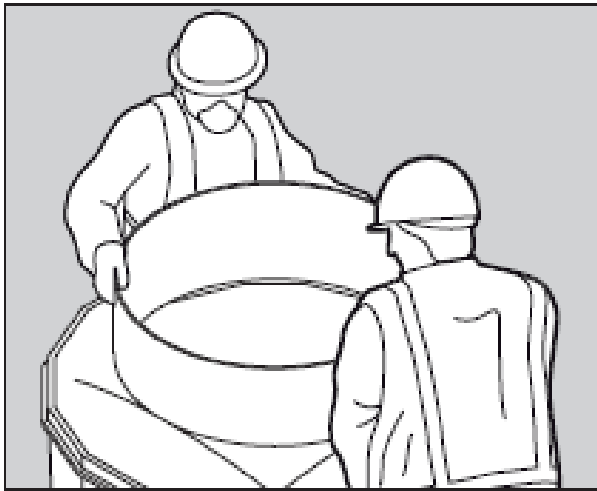
**Figure 19**

26. Apply two to three tubes of RK-6000 Epoxy Resin in the groove of the top hat. Resin should fill at least half of the groove.



**Figure 20**

27. Place the top hat on the sump base using two people and push it into position.



**Figure 21**

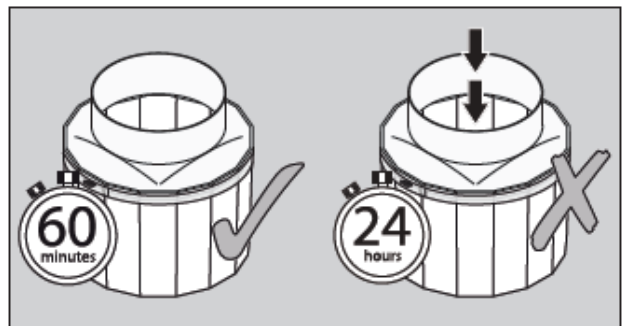
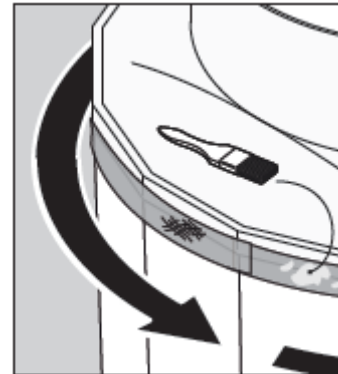
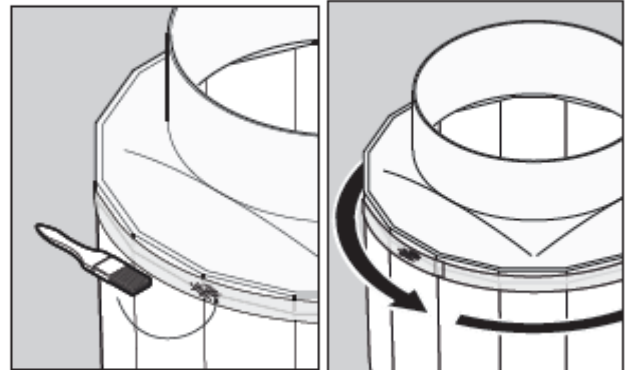
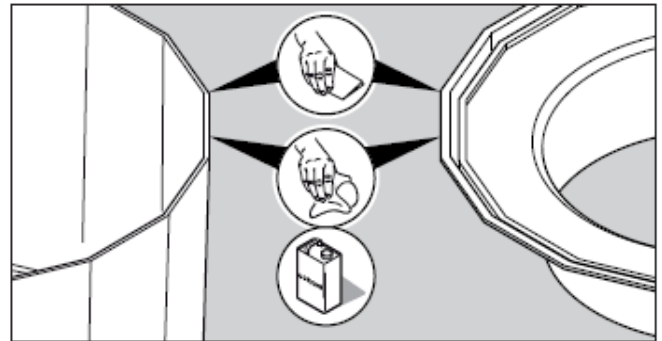
28. Smooth off the epoxy resin inside the joint and around the outside of the joint.
29. Allow adhesive to set-up undisturbed until it is hard.

**Important: Resin Set-up Times**

After joining the sump top hat to the sump base allow the epoxy resin adhesive to harden before proceeding. Carefully follow the instructions supplied with the RK-6000 Epoxy Resin and observe minimum set-up times before proceeding.

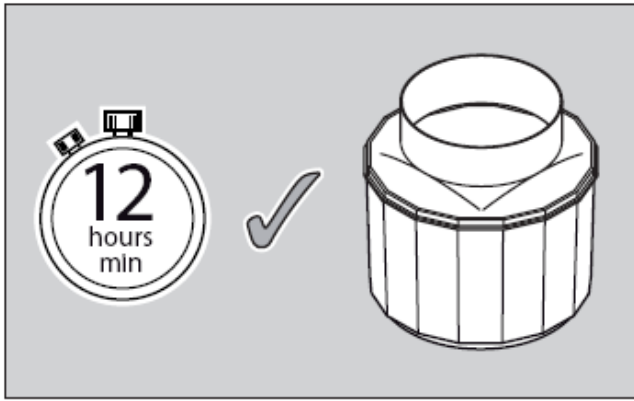
**DO NOT BACKFILL OR CONTINUE WORK IN OR AROUND THE SUMP UNTIL THE EPOXY IS COMPLETELY CURED.**

30. (Optional) If desired the top hat can be fiberglassed to the sump base. Similar to steps 7 thru 16 the top hat can be fiberglassed to the sump base using the S-CR-FGK fiberglassing kit. After sanding and cleaning, mix resin and paint onto sanded surfaces followed by three layers of fiberglass tape and a final coat of resin. See figure 22. Allow a minimum of one hour for the resin to cure before proceeding with any other work on the tank sump. Allow 24 hours before putting any stress on the sump.



**Figure 22**

31. Wait a minimum of 12 hours before vacuum testing sump, preferably overnight to allow epoxy resin to set before vacuum or hydrostatic testing.



**Figure 23**

**32. Leak Testing**

OPW recommends the following procedure for hydrostatic testing of tank sumps

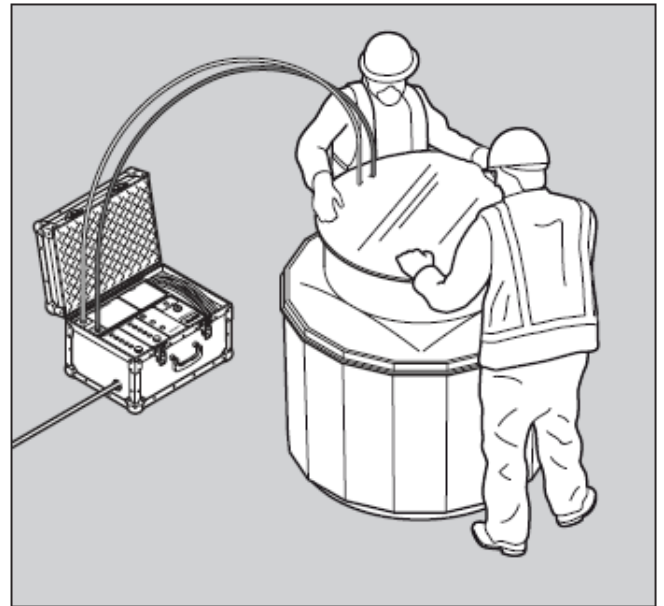
- 1) Visually inspect all entry boots for band clamps, compression rings and donuts for possible leak points prior to testing. Correct as needed.
- 2) Be sure all test tubes, connector tubes or any other open secondaries into the sump are sealed and liquid tight.
- 3) Fill all sumps to a minimum of 1" above the highest penetration fitting or sump joint. Mark the liquid level with a permanent marker.
- 4) Hydrostatic test should be held for 1 hour or per local regulations.
- 5) Be sure all water is disposed of properly after completing the test.

**Note:** Should the liquid level drop during testing, visually identify the leak source. Remove water and tighten band clamps to 30 in/lbs. Entry boot compression rings should be tightened in a clockwise manner until each stud reaches 60 in/lbs. Repeat testing procedure.

As an alternate to a hydrostatic test a vacuum test can be performed on the tank sump.

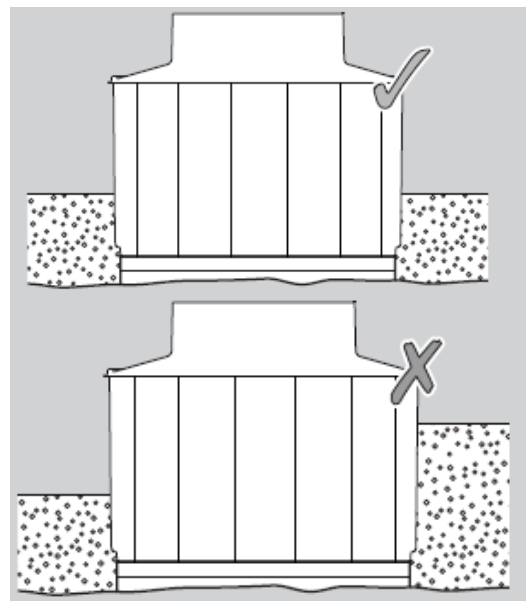
**Warning:** If vacuum testing, test the sump at a 24" depth setting only or irreparable damage may occur.

Refer to vacuum testing instructions for correct method.



**Figure 24**

33. Once the sump and top hat have successfully passed tightness testing, the area around the sump can be carefully backfilled. Rounded pea gravel with a minimum diameter of 1/8" and a maximum diameter of 3/4" must be used for backfill around OPW / Fibrelite Tank Sumps. To prevent sump damage, avoid dumping pea gravel directly onto the Tank Sump when backfilling. Backfill equally around the sump in layers to prevent damage or deformation.



**Figure 25**

**For new installations with OPW / Fibrelite single wall tanks sumps proceed to step 47 on page 15.**

**Fibrelite Multiport Spill Container  
Installation Instructions for new installation with  
double wall tank sump.**

34. Three methods are currently available to adapt the Fibrelite multiport spill container system to double wall tank sumps. These include:
- a. Factory installed WS-RING-37 onto Western Fiberglass, Xerxes, or similar double wall tank sump.
  - b. Double wall tank sump and cover adapted for use with OPW / Fibrelite multiport spill container system. Containment Solutions model DW PTS-FBS (WT34) (FV2/15/16) 42/8 fill / vapor sump or similar.
  - c. Field installed top hat (S42 or S48) or riser attached to top of double wall sump.

**Note:** If installed in California the sump and spill container configuration must meet the requirements of California AB 2481.

35. For all options follow all instructions supplied by tank sump manufacturer. In all cases the 10.5" to 11.5" distance from the string line to the top of the top hat must be maintained.
36. For option C follow instructions supplied with top hat or riser. Steps 23 thru 30 above include instructions for this option.
37. Once the sump and top hat have successfully passed tightness testing per the manufacturers recommendations, the area around the sump can be carefully backfilled. Backfill around the sump per the sump manufacturers recommendations. See step 33 for OPW recommendations.

**For new installations with double wall tanks sumps proceed to step 47 on page 15.**

**Fibrelite Multiport Spill Container  
Installation Instructions for retrofit installations  
replacing an existing steel multiport or new  
installations onto a round single wall sump**

- 38. Ensure existing multiport configuration matches current steel multiport. Examples include 16" spacing dual ports or 8" offset single port. If new Fibrelite multiport does not match the existing configuration do not proceed.
- 39. Ensure existing adapters are on center with existing ports. Adapters should be within approximately 1" radially of port center. If adapters are too far off center a retrofit may not be possible (See Figure 29.)
- 40. Ensure sump / top hat installed under cover is sized properly (or can be adapted) to work with the new multiport system. New multiport requires a WS-RING-37 upper ring be installed for attachment to water shroud platform.
- 41. Ensure sump / top hat installed under cover can be adapted to meet the dimensions shown in Figure 27.
- 42. Ensure riser heights can be adjusted to meet dimensional requirements shown in Figure 27.

**Note:** For use of P7XX or P5XX buckets with adapter ring see Figure 53 in Appendix A on page 26 for riser height dimensions.

**Note:** Ensure electrical connections and other equipment will not interfere with new spill buckets.

- 43. If desired, the existing drop tube / overfill valve can potentially be used with the new installation. Determine mounting location of current drop tube / overfill valve (See Figure 27 for 3 possible options).

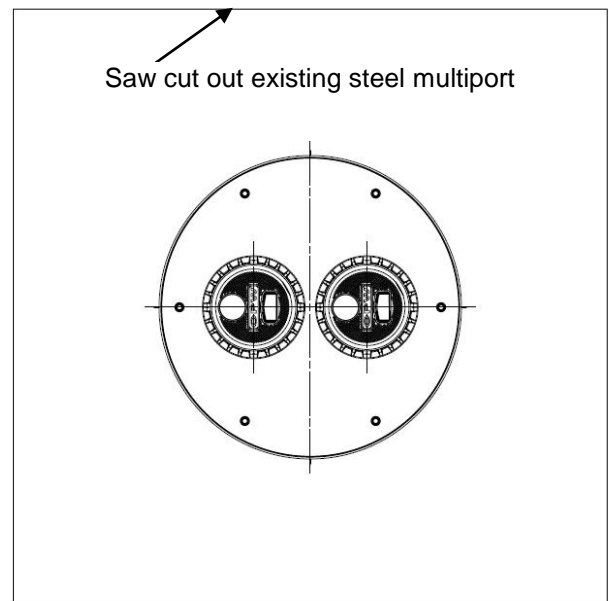
Location "A" - If drop tube / overfill valve is mounted at the adapter (location "A") the drop tube / overfill valve can be used as is if the grade to adapter height is maintained. Measure existing grade to adapter height and maintain with new configuration. Confirm dimensions meet requirements in the drop tube / overfill valve instructions when reinstalling.

Location "B" – If drop tube / overfill valve is

mounted in the bottom of the spill container (on FSA face seal adapter) the valve will need to be adjusted or replaced to meet the dimension in the new configuration. The nominal dimension from grade to sealing face in base of new spill container is 23 inches. Drop tube / overfill valve will need to be adjusted or replaced accordingly. Confirm dimensions meet requirements in the drop tube / overfill valve instructions when reinstalling.

Location "C" – If tee remains in same location the drop tube / overfill valve can be used as is.

- 44. Saw cut out existing steel multiport. Frame on new composite FL100 multiport is approximately 45 inches in diameter. Ensure saw cut is large enough to accommodate new frame (approximately 7 feet square). See Figure 26.



**Figure 26**

- 45. Remove any existing shrouds and buckets.
- 46. Install top hat / riser with WS-RING-37 to meet the 12 inch dimension from grade to top hat shown in Figure 27. Follow instructions supplied with top hat or riser. Steps 23 thru 30 may apply.

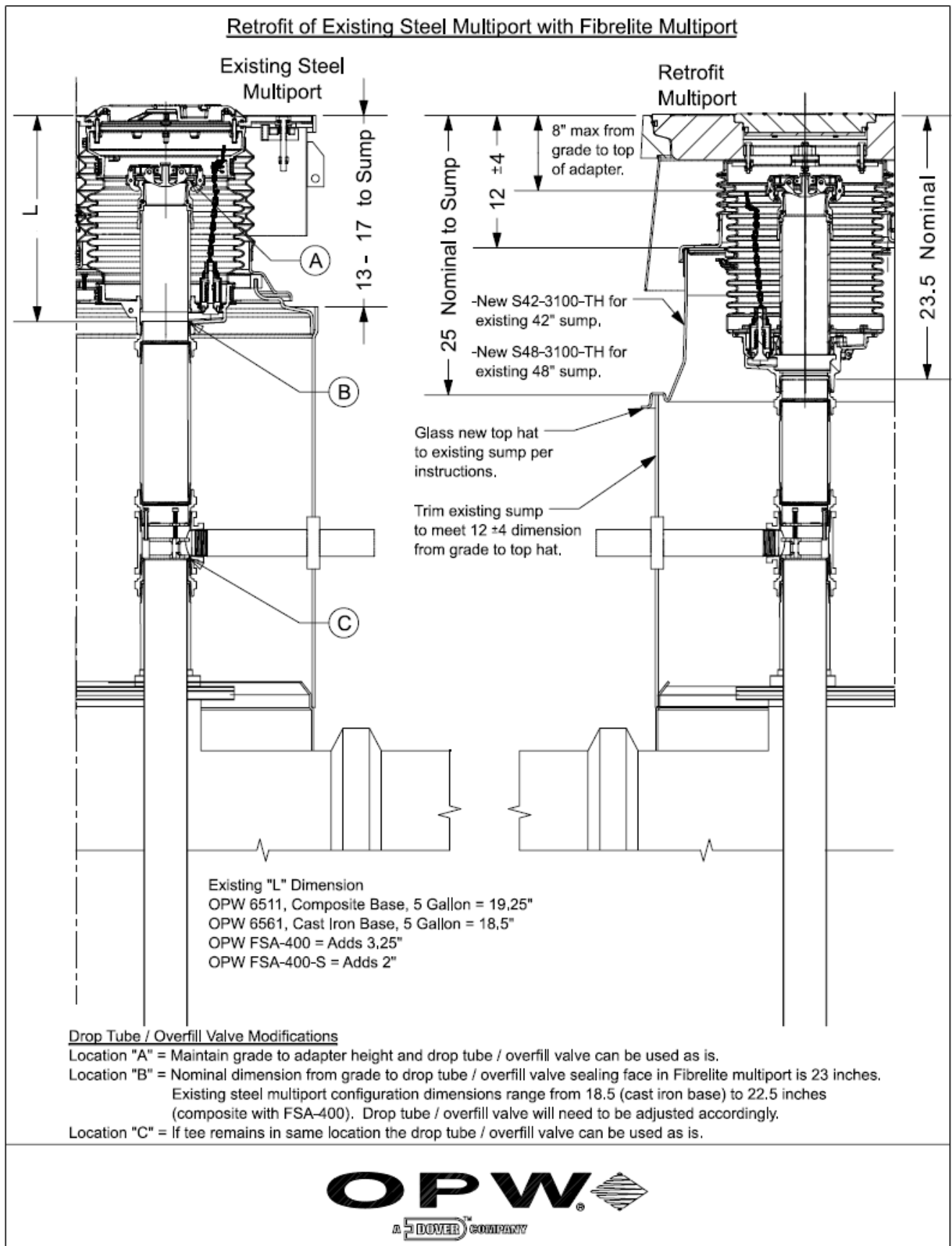


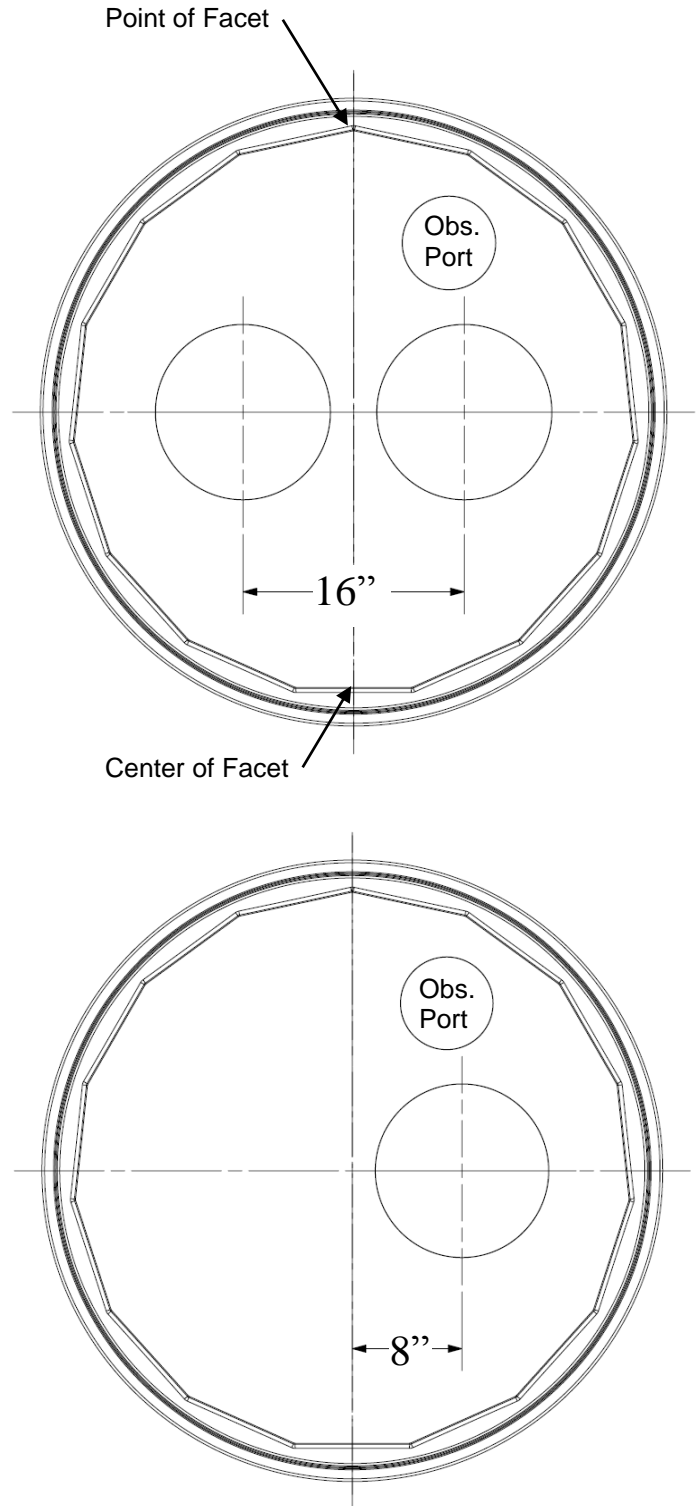
Figure 27

**Fibrelite Multiport Spill Container  
Installation Instructions for aligning / installing  
the skirt and frame**

47. After the sumps have been installed and backfilled, the multiport or offset fill covers can be installed. The FL100F frame must be carefully installed to ensure the fill and vapor port openings will line up properly above the risers. In order to position the frame so that the centerline of the fill and vapor ports are positioned directly over the fill and vapor risers, the FL100F frame must be positioned so that that the centerline of one of the 15 flat facets on the frame is 180 degrees opposed from the point of the opposite facet (as shown in Figure 28). Also, the desired orientation of the observation port must be considered. If a sensor or other accessory in the sump needs to line up with the observation port there are two possible orientations available and the frame must be rotated to match accordingly.

48. After the frame orientation has been selected set the multiport cover, frame, and skirt to 1" minimum (for slope) above the final grade position. The weight of the multiport assembly must be supported when set into place. This may require a partial backfill and support structure. Ensure fill and vapor ports align with risers and observation port is located as desired.

**Note:** It is strongly recommended that covers be installed with the following minimum clearances. 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 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 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.

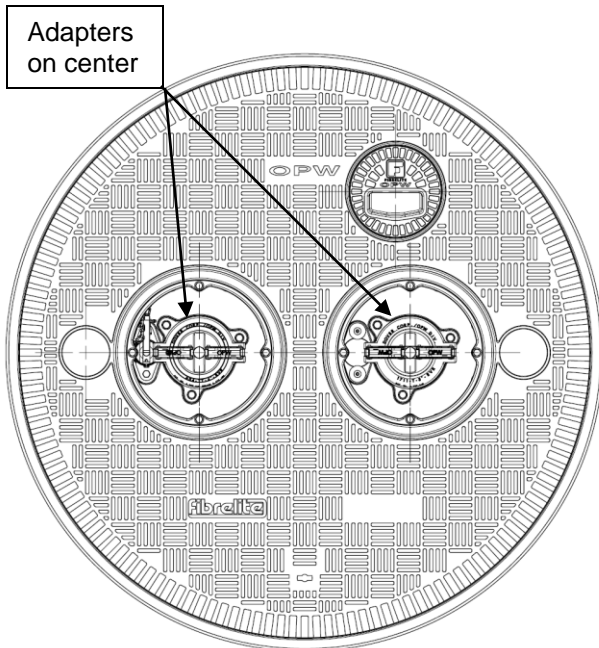


**Figure 28**

**For new and steel retrofit installations  
proceed to step 55 on page 20.**

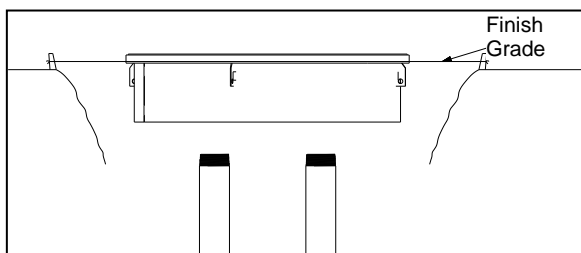
**Fibrelite Multiport Spill Container  
Installation Instructions for retrofit into existing  
composite frame**

- 49. Ensure diameter of existing cover to be retrofit matches new cover before proceeding.
- 50. Ensure existing adapters are on center with existing ports. Adapters should be within approximately 1" radially of port center. If adapters are too far off center a retrofit may not be possible (See Figure 29)



**Figure 29**

- 51. Measure distance from finish grade to the top of the riser pipes (or face seal adapters if present). Distance should be greater than or equal to 22 inches. Nominal distance from finish grade to top of riser for P761C-FLXX buckets is 23.5 inches. If not prepared to adjust riser pipe to necessary height do not continue.

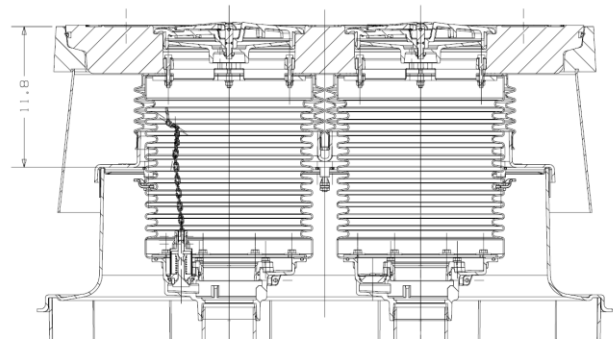


**Figure 30**

**Note:** For use of P7XX or P5XX buckets with adapter ring see Figure 53 in Appendix A on page 26 for riser height dimensions.

- 52. Remove existing FL100 cover and measure the distance from the spill platform to the final grade. Distance should be 12" +/- 4" in order to retrofit. If distance does not meet this range it may not be possible to retrofit without making adjustments. See Figure 31.

**Note:** Ensure electrical connections and other equipment will not interfere with new spill buckets.



**Figure 31**

- 53. If desired, the existing drop tube / overfill valve can potentially be used with the retrofit installation. Determine mounting location of current drop tube / overfill valve (See Figure 32 and 33 for the two most common scenarios).

**Scenario #1 (Figure 32) -** If drop tube / overfill valve is mounted at the adapter (the drop tube / overfill valve can be used as if the grade to adapter height is maintained. Measure existing grade to adapter height and maintain with new configuration. Confirm dimensions meet requirements in the drop tube / overfill valve instructions when reinstalling.

**Scenario #2 (Figure 33) -** If drop tube / overfill valve is mounted in the bottom of the spill container (on FSA face seal adapter) the valve will most likely need to be replaced to meet the dimension in the new configuration. The nominal dimension from grade to sealing face in base of new spill container is 23 inches. Install new drop tube / overfill valve per instructions supplied with drop tube / overfill valve.

**Note:** If drop tube / overfill valve were to be installed in Location C as shown in Figure 27 if the tee remains in same location the drop tube / overfill valve can be used as is.



Scenario #1 - Drop Tube / Overfill Valve Installed at Fill Adapter

- If height from grade to top of adapter is maintained the existing drop tube / overfill valve can be used with retrofit multiport.

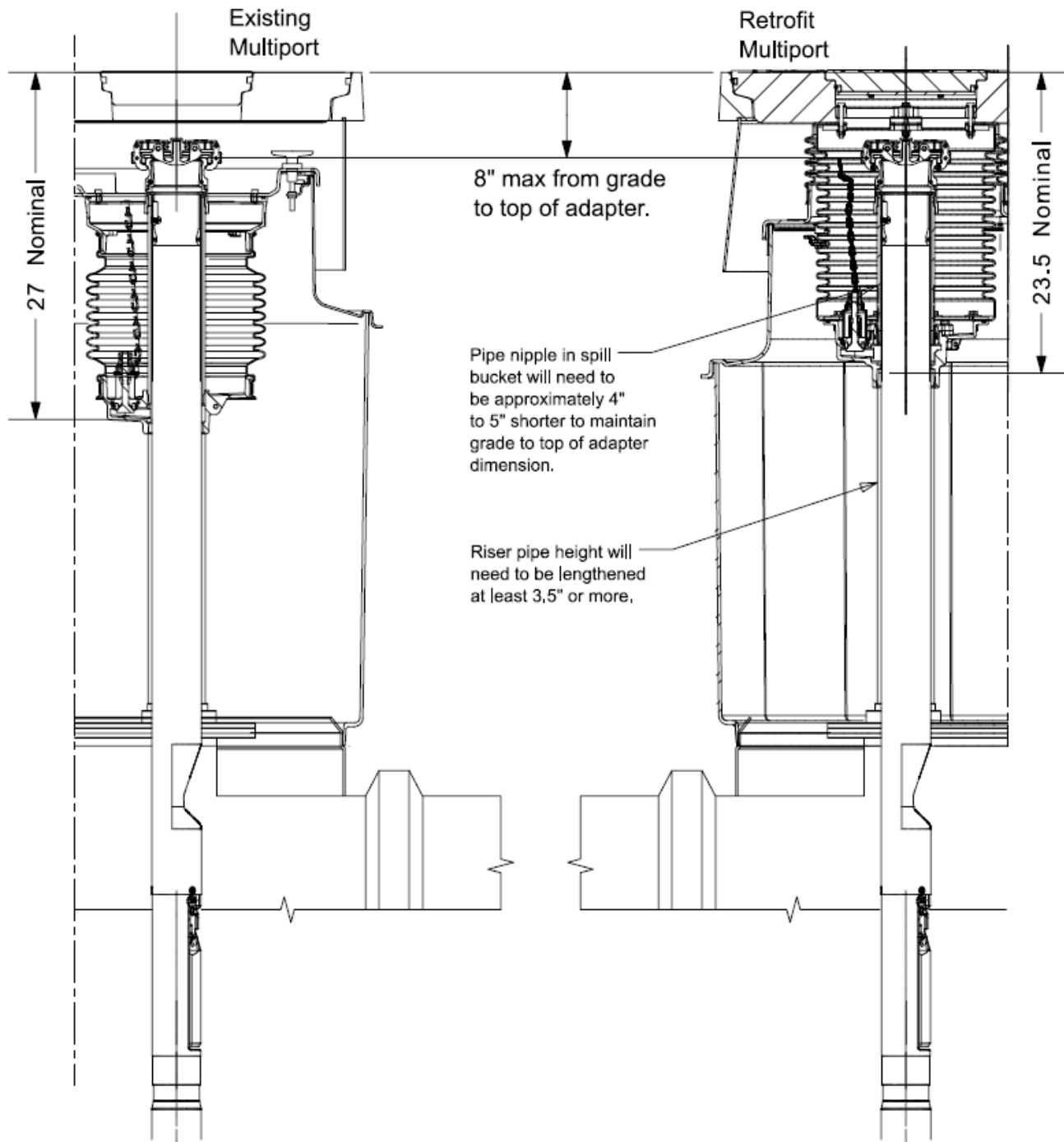


Figure 32

Scenario #2 - Drop Tube / Overfill Valve Installed in Base of Spill Bucket

- New drop tube / overfill valve will most likely be required as the drop tube / overfill valve sealing surface is nominally 4.4 inches higher than existing multiport.

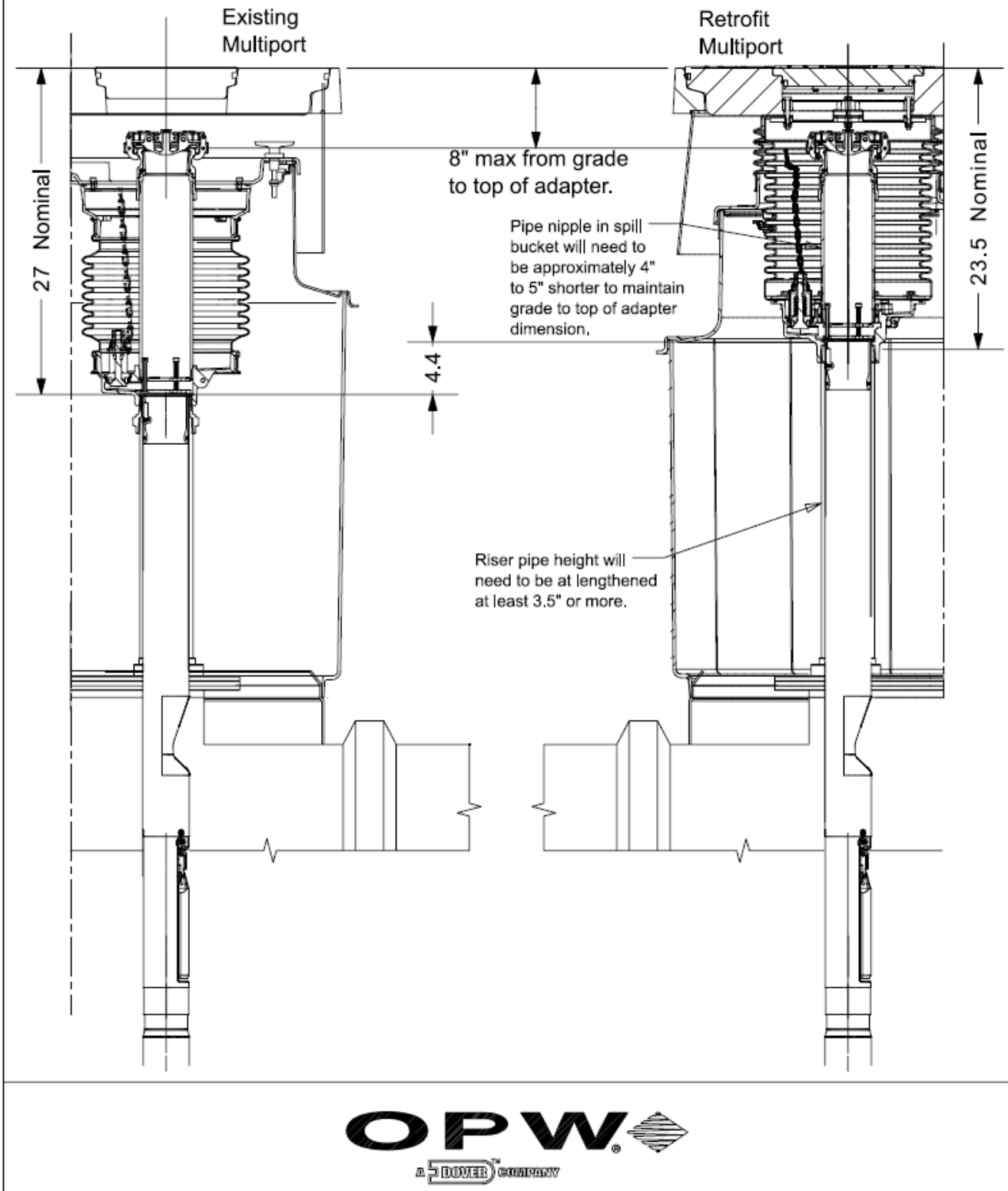
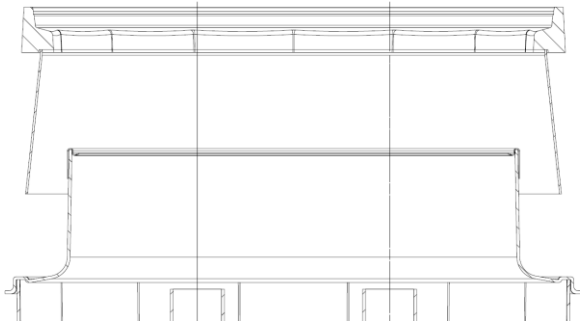


Figure 33

54. Remove spill platform from existing tank sump top hat. If present remove S-CS-SEALANT sealant between skirt and top hat. See Figure 34.



**Figure 34**

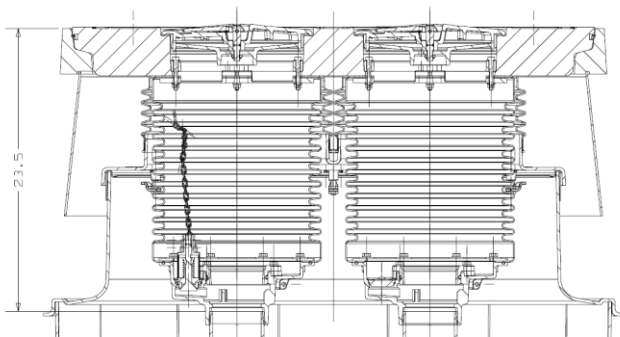
**Fibrelite Multiport Spill Container  
Installation Instructions**

55. Adjust 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 top of multiport (L)
5 Gal. Cast Iron Base	23½"

**Note:** Add an extra 3-1/4" when using an OPW FSA-400 & add an extra 2" when using the FSA-400-S Face Seal Adaptor. (See Figure 35.) (Offset add extra 6")

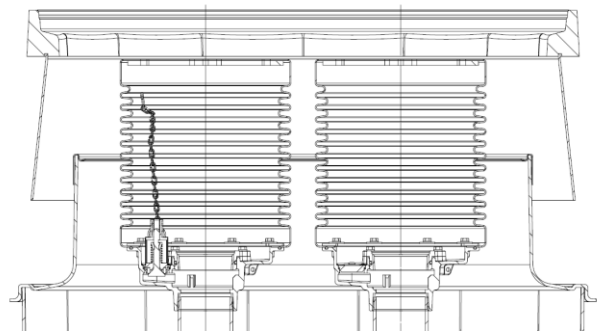
**Note:** For use of P7XX or P5XX buckets with adapter ring see Figure 53 in Appendix A on page 26 for bucket dimensions.



**Figure 35**

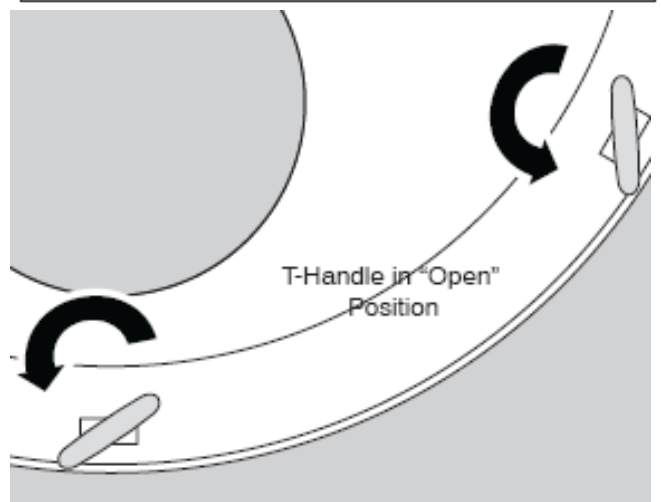
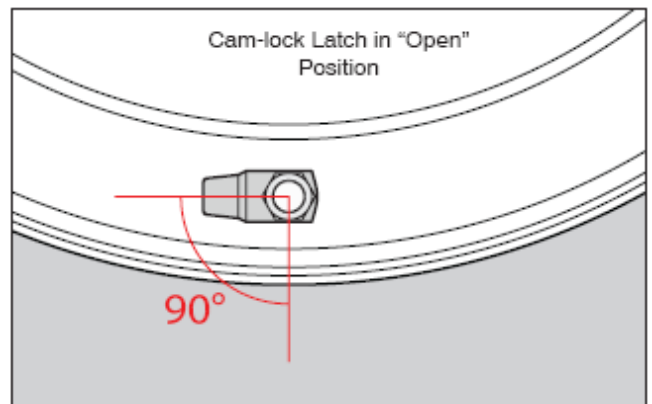
- 56. Deburr and thoroughly clean riser pipe(s).
- 57. Apply pipe dope to riser(s). The pipe dope is to be a non-hardening, gasoline resistant, pipe thread seal compound.
- 58. Thread on new P761C-FLXX spill containers. (P7XX or P5XX spill containers with adapter ring can also be used).
- 59. Using the 1-3100—TOOL (61SA-TOOL for P7XX or P5XX), 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. See Figure 36.

**Note:** Ground riser pipe(s) to nearest grounding rod.

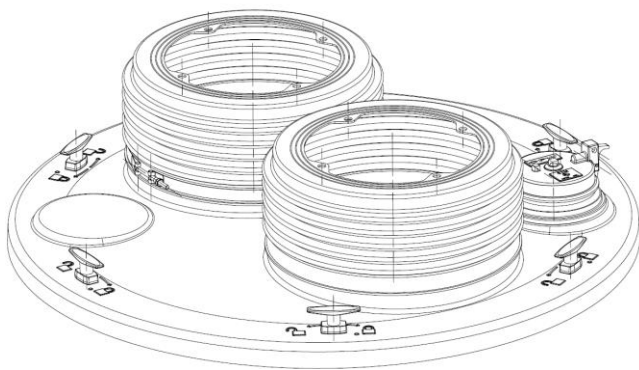


**Figure 36**

60. Ensure shroud cover is ready for installation. Turn all T-handles on the water shroud platform to the open position – the cam-lock latches on the underside should be 90 degrees opposed from the edge of the platform (See Figure 37): Loosely install shroud boots over the shroud cover but do not tighten band clamps. Observation cover should be installed with all threaded openings plugged. See Figure 38.

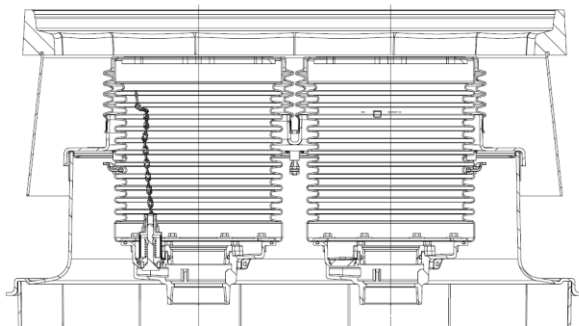


**Figure 37**



**Figure 38**

61. Install water shroud platform and boots over spill containers. See Figure 39.



**Figure 39**

62. Seat the water shroud platform on the stainless steel ring. Press down on the water shroud platform. Turn the T-handles 90 degrees to lock the latch beneath the stainless steel ring. See Figure 40.

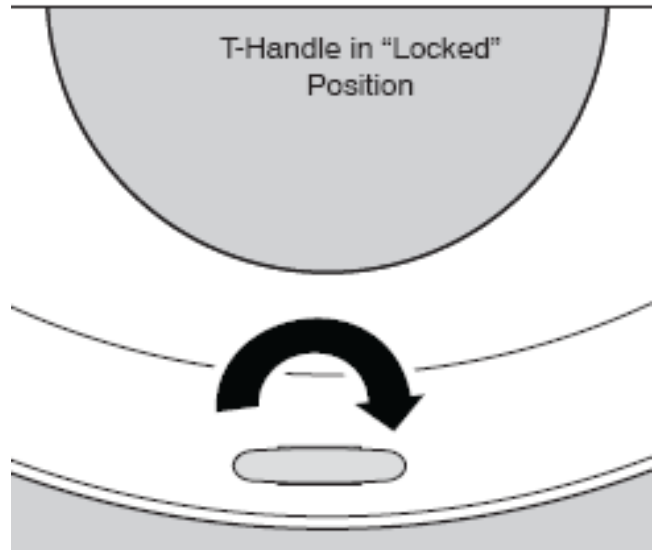
If the T-handle (See Figure 41) fails to engage it may be necessary to adjust the 'cam-lock' height.

If the T-handle is not fully engaging it means the cam-lock needs to be lowered. Loosen the base nut (see Figure 42) to a lower position. Pull the cam-lock down to rest onto the base nut (see Figure 43). Lower and tighten the fixing nut until the cam-lock is secure as shown in figure 45.

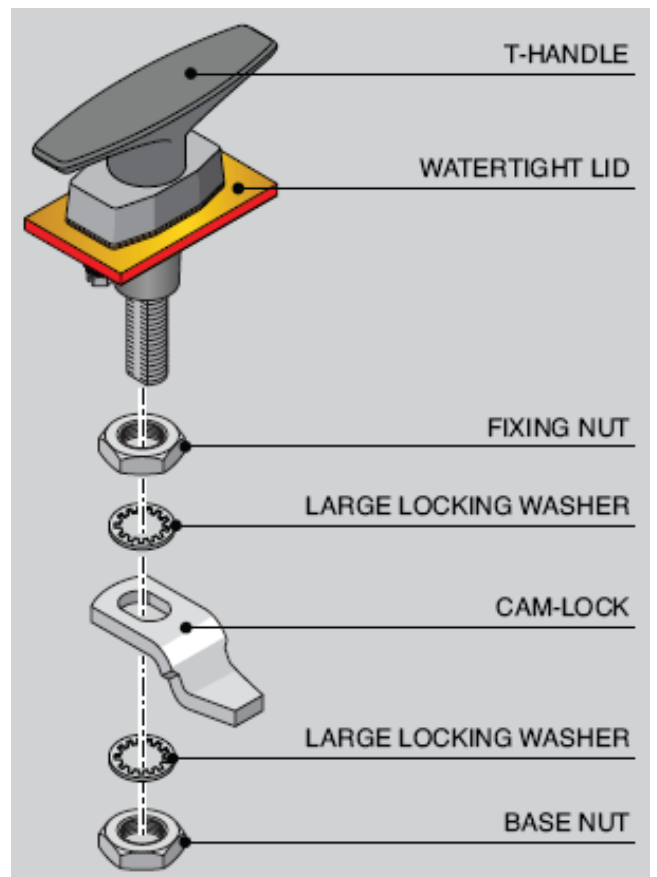
If the lid is not compressing the gasket tightly against the stainless steel ring it means the cam-lock needs to be raised. Loosen the base nut (see Figure 42) and pull the cam-lock down to rest onto the base nut and raise the fixing nut (see Figure 44). Push the cam-lock up to the fixing nut and tighten the base nut until the cam-lock is secure as shown in figure 45.

Once the cam-lock is secure refit the water shroud platform.

**Note:** It may be necessary to further adjust the cam-lock height until the optimal position is located.



**Figure 40**



**Figure 41**

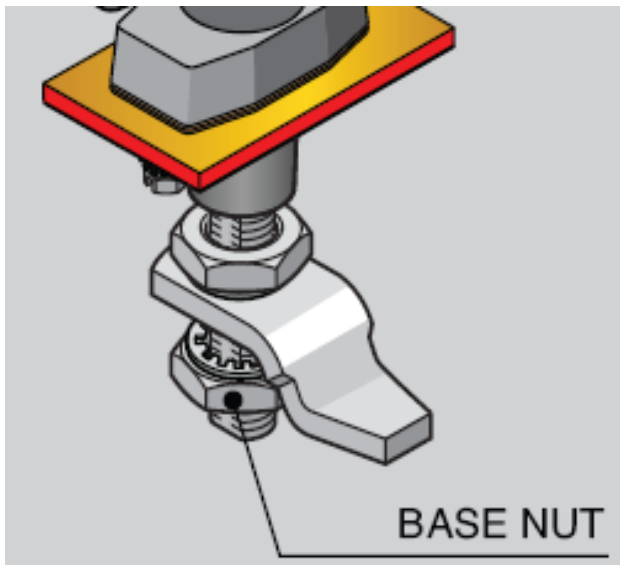


Figure 42

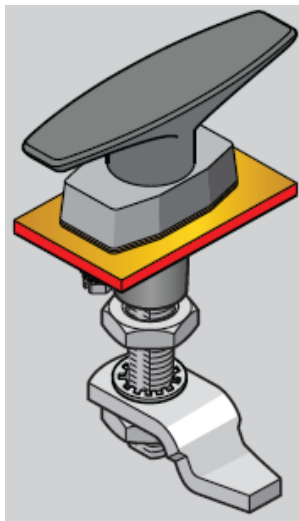


Figure 43

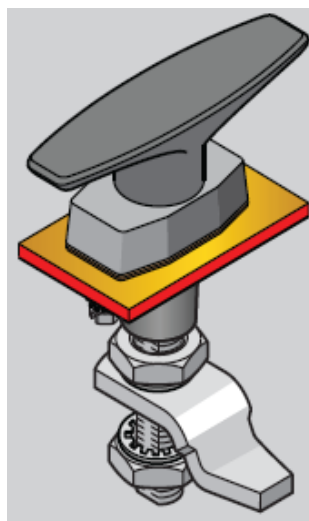


Figure 44

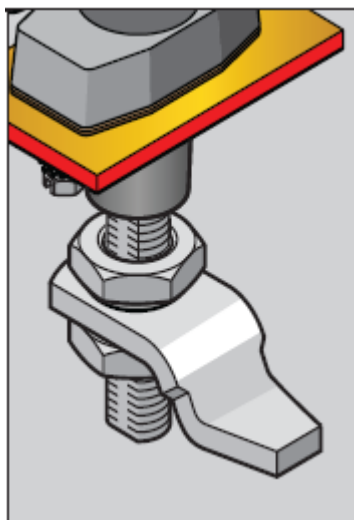


Figure 45

63. Align holes on shroud boots with holes in spill container upper ring and bellows. After aligning holes tighten shroud boot clamps to 60 in-lbs. See Figure 46.

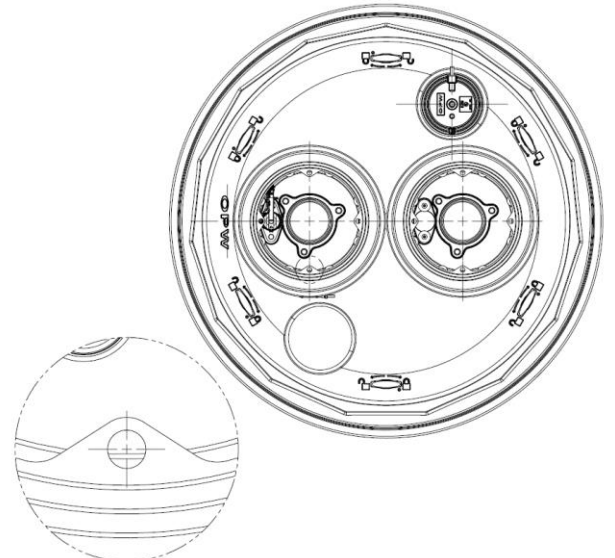


Figure 46

64. Install new FL100-MPS cover into FL100F frame. Ensure observation port in shroud cover and FL100-MPS cover are aligned.

65. Using 209398 rings attach upper ring of spill containers to 209398 rings using 5/16 bolts, washers, lock washers, and nuts. Tighten bolts and nuts to 15-20 in-lbs. See Figures 47 thru 49. **Note:** The containment bucket height can be adjusted by  $\pm 1.5"$ . The adjustment should not be more than 1.5" from the initial length of the unit.

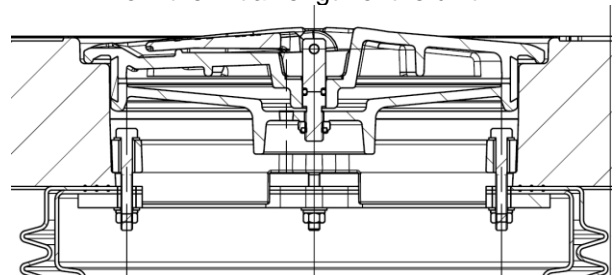


Figure 47

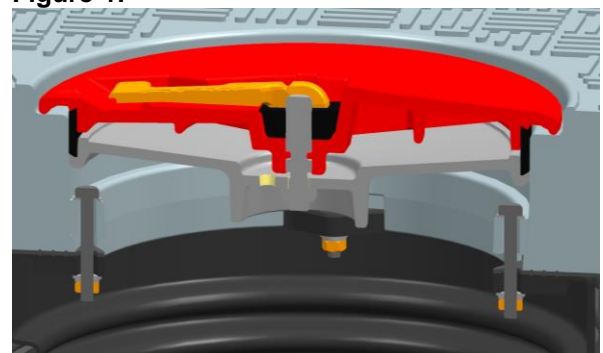
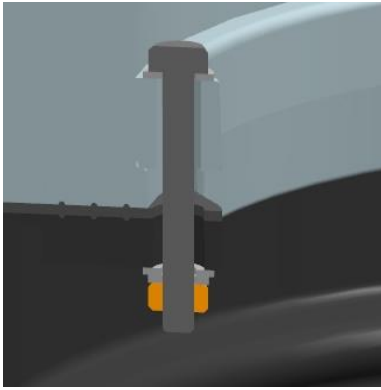


Figure 48



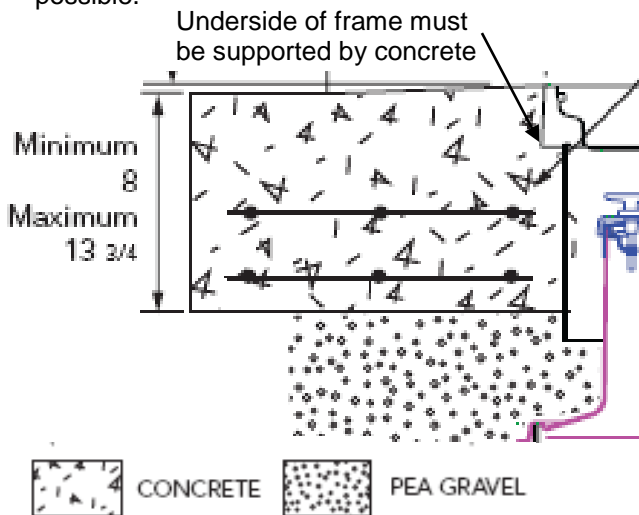
**Figure 49**

66. Install the spill bucket covers.

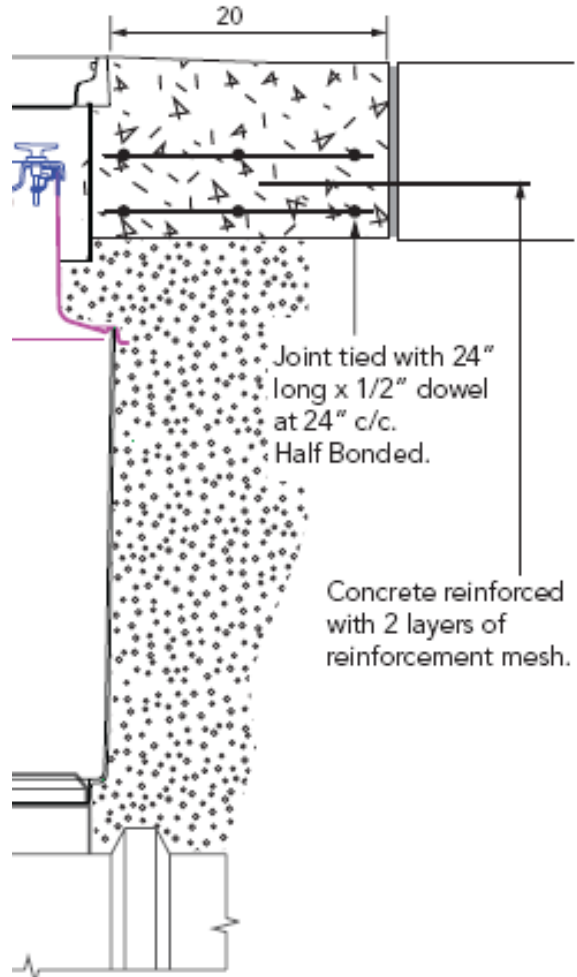
**For retrofit installations into an existing composite frame not requiring concrete proceed to step 71 on page 24.**

67. Confirm frame is still aligned properly as determined in step 47. Complete backfilling to appropriate level. Cover the frame and cover with plastic to prevent concrete from settling in the drainage areas.

68. It is required that the frame and skirt assembly, and the multiport cover be set as an assembled unit, with the bolts on the 209398 rings engaged. Frame must be supported by a minimum depth of 8" of concrete (maximum 13.75" depth, see Figure 50.). Concrete reinforcement must be positioned as close to the frame as possible. Minimum block of 20" square around the frame. Joint must be tied as per Figure 51. Continuous pour preferred if possible.



**Figure 50**



**Figure 51**

69. When pouring the concrete, hand shovel or trowel the concrete around the multiport assembly to prevent the unit from moving or shifting, which can cause alignment and future maintenance problems. Ensure the void between top hat and skirt is kept free from concrete.

**NOTE: Do not stand on the multiport before the concrete has set up.**

70. It is required that the paved contours around the covers be adequately sloped to direct water flow away from the cover, and directing water runoff from adjacent areas away from covers. Minimum slope is 1" from grade to the top of the ring of the manhole. Note that this slope must be taken into consideration when cutting riser lengths in earlier steps.

71. Install overfill valve, jack screw kits, pipe nipples, adapters, and caps into spill containers as specified in their installation instructions. Adapters must be no more than 8" from grade. Clearance between spill container cover and cap must be 1" minimum. Recommended dimensions are shown in Figure 52.

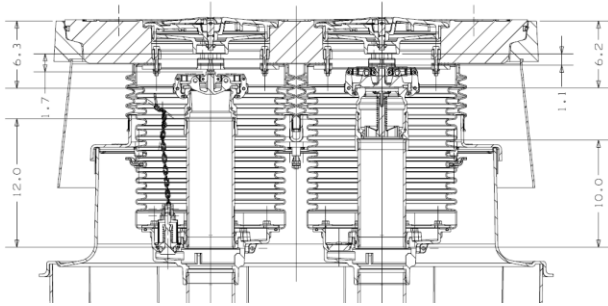


Figure 52

72. (Optional): Install the 1TAG product identification disc on the spill bucket cover and multi-port cover in the I.D. disc recess.
73. After installation is complete, water test the multi-port fixture. The recommended water test procedures include:
- Spraying water on cover(s) for 5 to 10 minutes, using a commonly available watering device such as a lawn sprinkler.
  - Standing water test, not to exceed 1/2" in water depth for a period of 5 to 10 minutes.

If water is found on the interior of the spill container or on the skirt (which can be checked through the observation port) that is not due to condensation; determine the root cause of the leak, repair the seal, and retest the unit.

#### 74. Testing Spill Containers

Use CARB 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 1/8" 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.

As an alternate to a hydrostatic test a vacuum test can be performed on the spill container. Using OPW DW-VAC-TEST and SC-TEST, perform a vacuum test on the spill container. An initial vacuum of 15" of water should be attained and the spill container must retain a vacuum of at least 12" of water after 5 minutes. (See DW-VAC-TEST Instructions.)

#### **Warning:**

**If the cover is removed, for any reason, follow the Service and Maintenance instructions as noted. Always inspect and replace damaged seals and install new seals. Never reuse damaged seals as it may result in an improper seal.**



**Operation and Maintenance:**

After each fuel delivery, the operator must remove any standing fuel from the container. Fuel can be removed by actuating the drain valve or with a gasoline absorbing disposable towel. If access to drop tube or overfill valve is required remove Nipple Adaptor from primary bucket.

**Weekly:** Perform a visual inspection of the interior of the containment bucket for water or other contaminants. If water or other contaminants are found they must be disposed of with disposable towels. Dispose of towels safely and per all applicable local, state and federal codes. Check that cover is in good condition and properly identified. Replace cover and seal 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.

**NOTE: The bellows and base on the spill container can be replaced if damaged.**

**Semiannually:** Follow all state and local required hydrostatic or vacuum testing on the buckets. Inspect and clean the interior of the spill container and drain valve screen. Remove accumulated dirt and grit. Where applicable, test the drain valve using CARB procedure TP-201.1C or TP-201.1D. If the drain valve passes testing no further maintenance is 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 where applicable, 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 (See Appendix B).

OPW recommends periodic inspection of covers and seals as a part of the regularly scheduled maintenance program. If any of the seals are damaged they should be replaced. 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**



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## Appendix A – P7XX or P5XX Bucket with Adapter Ring Installation Only

Riser Height dimensions for use of P7XX or P5XX Buckets with Adapter Ring.

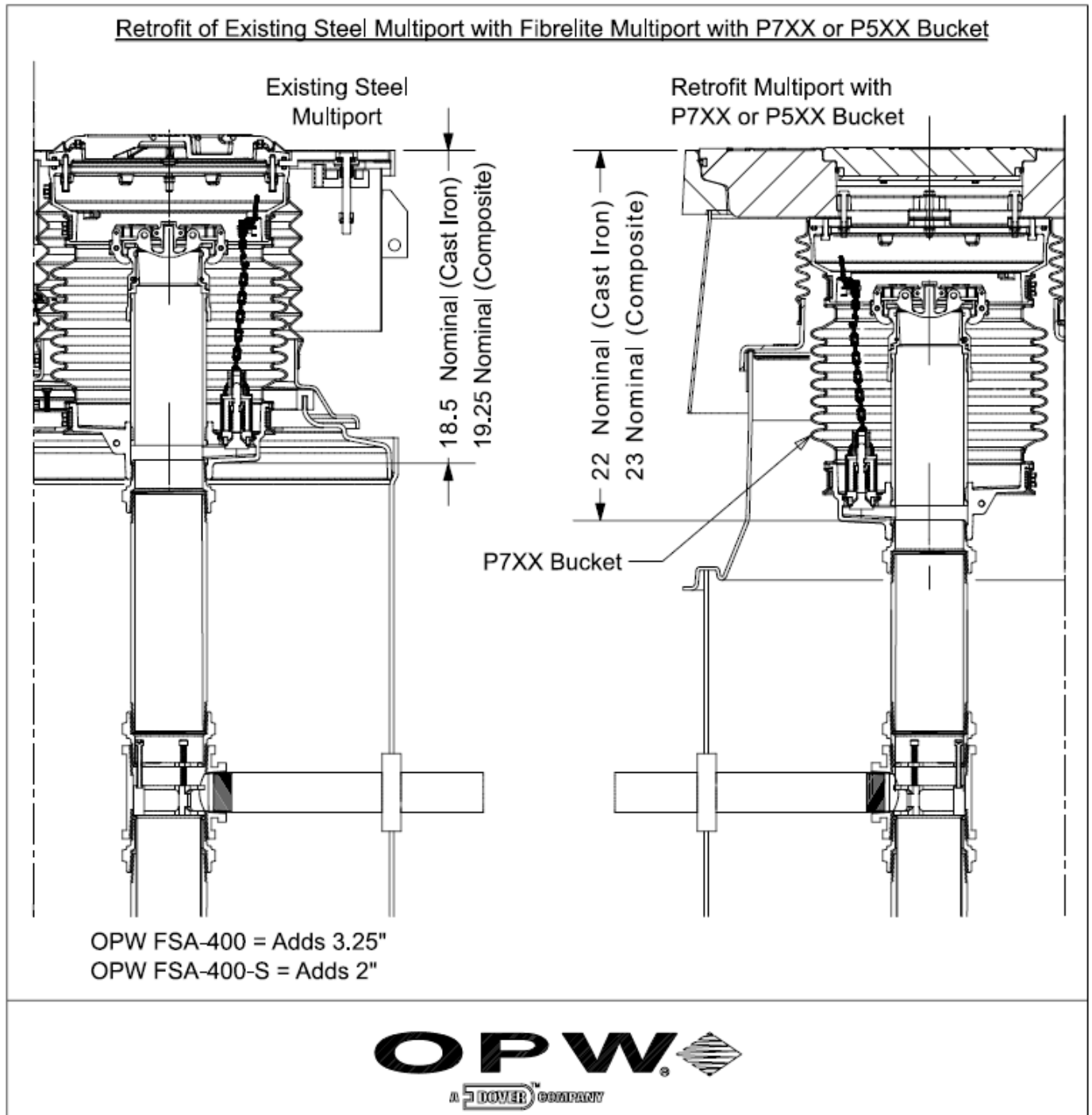


Figure 53

## Appendix A (continued) – P7XX or P5XX Bucket with Adapter Ring Installation Only

Before installing P7XX or P5XX bucket attach adapter ring to bucket. Attach adapter ring 210641-KIT to P7XX or P5XX Buckets as shown in Figure 54. Ensure lockwasher and flat washer are installed on the bolt. Tighten the four supplied 5/16-18 bolts to 15 ft-lbs minimum to 20 ft-lbs maximum.

Note: Bolt must not protrude thru adapter ring.

Note: Top of adapter ring is a sealing surface. Keep surface as clean as possible.

With adapter ring installed the buckets will attach in the same manner as depicted in step 65 with the adapter ring acting as the upper ring of the spill container.

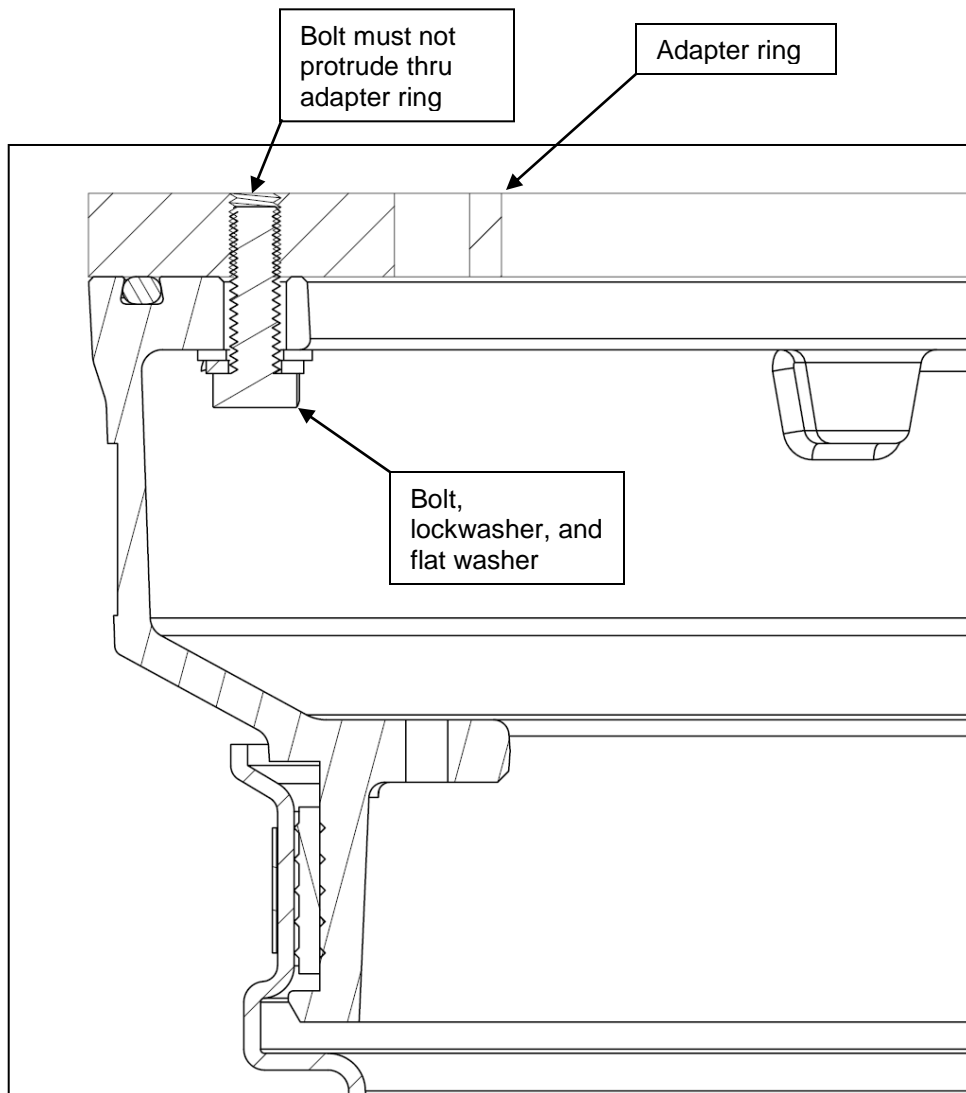


Figure 54

## Appendix B – Adjusting SC-Series Sealable Cover Gasket, SC Port Covers Only

When using an SC-Series sealable cover in an FL100-MP16S multiport or FL100-OF8S single port cover, the gasket must be adjusted prior to installation to ensure a watertight seal. Follow the steps below for proper gasket adjustment:

B1. Locate the lever handle on the SC cover and raise it so that the lever points straight up (See Figure 55). Keep the lever handle in this position until the gasket is fully adjusted.

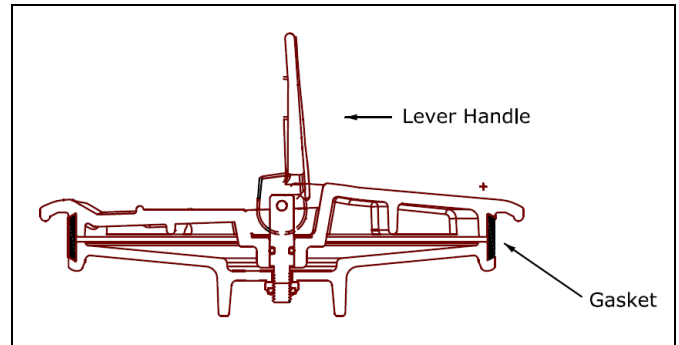


Figure 55

B2. On the underside of the lid locate the 3/4" adjustment nut. Using a 3/4" deep socket or wrench, tighten the adjustment nut until the gasket begins to expand and bulge out slightly (See Figure 56).

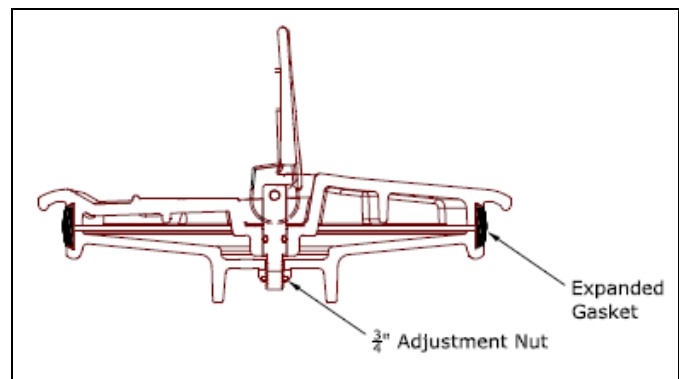


Figure 56

B3. With the lever handle up, place the SC cover into the port opening (See Figure 57). Lower the handle until it is fully seated – this may require additional force after the gasket adjustment. Once the lever handle is seated, the cover should not be able to be lifted out of the port or spun in the port. If the lever handle cannot be fully lowered, back the adjustment nut off slightly.

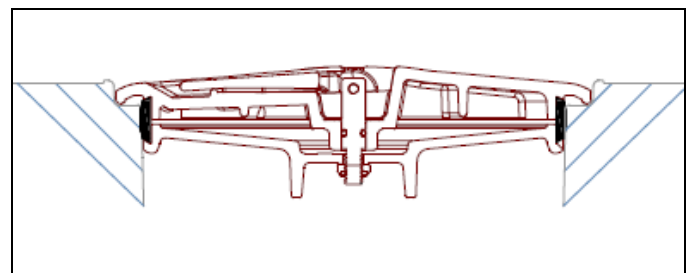


Figure 57

**Note: After adjustment of the gasket, OPW recommends using the 1SC-TOOL for raising the lever handle to prevent damage to the cover or handle. The SC covers can be tested by flooding water over the sealed covers – a properly adjusted SC gasket should not allow water into the spill buckets (except for any water collected above the gasket that may drain in during cover removal).**