



Department of Environmental Protection

2600 Blair Stone Road • Tallahassee, Florida 32399-2400

DEP Form: 62-761.900(9)

Form Title: Storage Tank Equipment

Registration Form

Effective Date: July 2019

Incorporated in Rule 62-761.850, F.A.C.

Storage Tank System Equipment Registration Form

Fill out completely

General Information

Company Name: OPW Retail Fueling, Inc

Company Address: 3250 US Highway 70 Business West

E-mail: gpope@popeasc.com

Contact Name: Gene Pope

City, State: Smithfield, North Carolina Zip: 27577-6954

Contact Number: 813-431-2009

Product Name: OPW FibreTite Fiberglass Tank Sumps

Model Number(s): FTSM & FTSD Series-See Attached Product Sheet

Product Type: Piping Sumps-Fiberglass Tank Sumps

Rule(s) citation that registration is being requested within Chapter 62-761 (UST), and/or 62-762 (AST), 62-761.500

(6) Piping sumps; (a) Piping sumps shall meet the performance requirements of paragraph 62-761.500(1)(b), F.A.C., and be registered

F.A.C.: Write a brief description of equipment registration request including product limitations:

This is a renewal request for EQ#912 which covers the OPW Fibretite fiberglass tank sumps(piping sumps). The latest product information and installation instructions are being submitted with this request.

Information Checklist (Choose Yes, No, or N/A - Not Applicable):

1. Third-party Certification by a Nationally Recognized Testing Laboratory? (Required) ☒ Yes ☐ No ☐ N/A
2. Documentation of third-party evaluation that the equipment meets DEP Rules? ☒ Yes ☐ No ☐ N/A
3. Documents included about the qualifications of the Nationally Recognized Testing Laboratory? ☒ Yes ☐ No ☐ N/A
4. Technical information and drawings included? ☒ Yes ☐ No ☐ N/A
5. Installation instructions included? ☒ Yes ☐ No ☐ N/A
6. Annual Operability Testing Requirements (Rules 62-761.500, 62-762.501, & 62-762.502 F.A.C.)? ☒ Yes ☐ No ☐ N/A
7. Integrity Testing Requirements (Rules 62-761.700, 62-762.701, & 62-762.702, F.A.C.)? ☒ Yes ☐ No ☐ N/A
8. Compatible with fuel blends containing >10% ethanol or >20% biodiesel? ☒ Yes ☐ No ☐ N/A
9. Has the product been approved or registered in other countries or states? (If so provide list) ☐ Yes ☒ No ☐ N/A
10. Any requirements for company-certified installers or trainers? ☒ Yes ☐ No ☐ N/A
11. Was this product(s) previously approved or registered by the Department? If yes, EQ- 912 ☒ Yes ☐ No ☐ N/A
12. Any changes or modifications to the equipment since the last submittal to DEP? ☐ Yes ☒ No ☐ N/A

Document Information: Provide supporting documents indicated as "Yes" above including this form via email to Tanknotify@floridadep.gov, or documents can be sent to FDEP, Division of Waste Management, 2600 Blair Stone Road, MS 4560, Tallahassee, FL 32399.

Write a brief description of equipment installation and performance in the U.S.:

The OPW Fibretite series fiberglass tank sumps are installed on new or existing tanks in field through either a collar mount or tank mounting adapter method. The sumps are provided in two parts for ease of installation and the parts are joined in the field through the use of OPW RK-5000 Fiberglass Resin Kits. The sumps will accept entry fittings from OPW, as well as other manufacturers. The "RTM" (resin transfer mold) manufacturing process provides a smooth sealing surface for the entry fittings

Equipment Registration Certification:

To the best of my knowledge and belief, all information submitted on this form is true, accurate and complete.

Gene Pope - Manufacturer's Representative

Printed Name and Title

Gene Pope

Signature (right click to sign)

Digitally signed by Gene Pope
Date: 2026.02.17 13:13:15 -05'00'

02/17/2026

Date

For Department Use Only:

Date Application Received: 02/17/2026

Application complete:

Yes: ☒ No: ☐

EQ- 912

Date of complete or incomplete letter sent: 02/17/2026

Date Equipment Requires Renewal: 02/17/2031

Storage tank system equipment requires renewal every 5 years in accordance with subsection 62-761.850(2), F.A.C.

FibreTite Tank Sump

From the engineering labs of Flexworks and Fibrelite, OPW has made the best even better. Meet the newest member of the FibreTite Family of sumps, the most watertight sumps on the market today. Designed to meet all the new 2018 EPA UST regulations.

Materials:

Sump: Resin Transfer Molding (RTM) technology



FibreTITE
TANK SUMP

Features & Benefits:

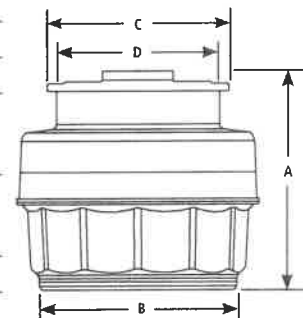
- ◆ The only sump manufactured using superior Resin Transfer Molding (RTM) technology. The RTM process utilizes a two-sided mold to ensure consistent wall thickness and exceptionally smooth wall surfaces inside and out for an ultra-tight entry fitting sealing surface
- ◆ Two-piece top-hat design allows for tailored height adjustments
- ◆ Inverted U-Channel allows for equal resin distribution, creating a superior bond between the base and the top hat to eliminate water intrusion
- ◆ Stainless-steel ring and watertight sealing gasket provide the proven seal-ability of our world-renowned Fibrelite sumps
- ◆ Available with and without bottom for collar or flange mounting
- ◆ Ergonomic "L-Handle" provides ease of use and a visual indicator that the handle is in the locked position and the watertight lid is secure

Ordering Specifications - Tank Sump Systems

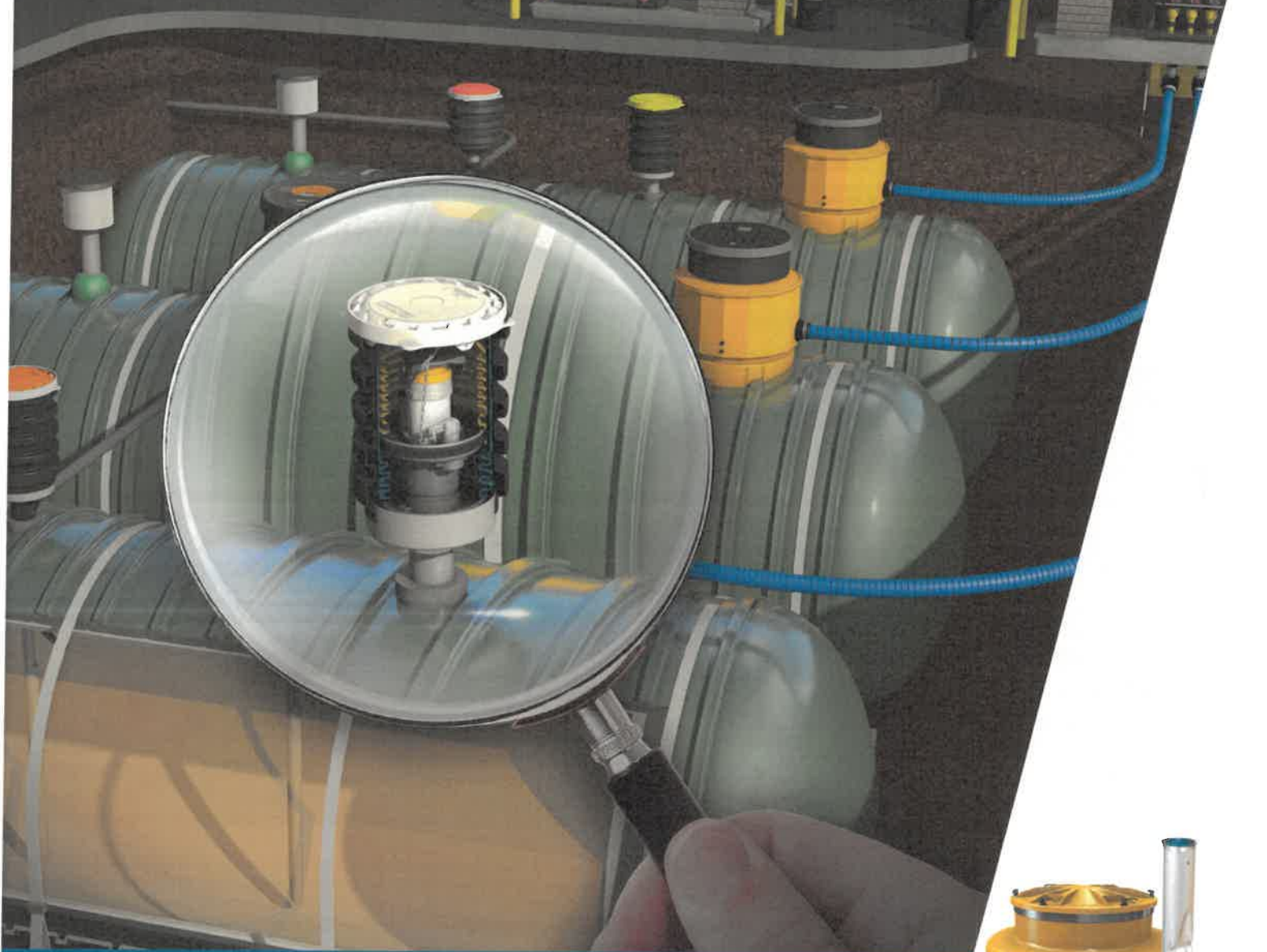
	New Name	Max Sump Height (A)	Min Sump Height (A)	Sump Base Diameter (B)	Sump Mount Design	Sump Lid Diameter (C)	Minimum Diameter Opening (D)	Additional RK-5000 Resin Kits Needed for Top Hat Attachment (Sold Separately)	Additional RK-5000 Resin Kits Needed for Collar Ring Attachment (Sold Separately)
42"	FTSM-4233CR	46"	33.5"	42"	Collar Ring Mount	34.8"	29"	1	1
	FTSM-4233SB	46"	33.5"	42"	Solid Bottom	34.8"	29"	1	-
	FTSD-4233CR	53"	40.5"	42"	Collar Ring Mount	34.8"	29"	1	1
	FTSD-4233SB	53"	40.5"	42"	Solid Bottom	34.8"	29"	1	-
	FTSM-4237CR	46"	33.5"	42"	Collar Ring Mount	39.5"	34.6"	1	1
	FTSM-4237SB	46"	33.5"	42"	Solid Bottom	39.5"	34.6"	1	-
	FTSD-4237CR	53"	40.5"	42"	Collar Ring Mount	39.5"	34.6"	1	1
	FTSD-4237SB	53"	40.5"	42"	Solid Bottom	39.5"	34.6"	1	-
48"	FTSM-4837CR	46"	33.5"	48"	Collar Ring Mount	39.5"	34.6"	1.5	1
	FTSD-4837CR	53"	40.5"	48"	Collar Ring Mount	39.5"	34.6"	1.5	1
	FTSM-4837SB	46"	33.5"	48"	Solid Bottom	39.5"	34.6"	1.5	-
	FTSD-4837SB	53"	40.5"	48"	Solid Bottom	39.5"	34.6"	1.5	-

Replacement Parts/Accessories

Part #	Description	Part #	Description
FTSMBASE-42CR	42" Medium Bury Collar Mount	WT-33SL	33" Fibretite Sump Lid
FTSMBASE-42SB	42" Medium Bury Solid Bottom	WT-37SL	37" Fibretite Sump Lid
FTSMBASE-48SB	48" Medium Bury Solid Bottom	FCS42-EX12	42" Diameter Sump 12" Extension (1 RK-5000 kit needed for attachment sold separately)
FTSMBASE-48CR	48" Medium Bury Collar Mount	FCS48-EX12	48" Diameter Sump 12" Extension (1.5 RK-5000 kit needed for attachment sold separately)
FTSDBASE-42CR	42" Deep Bury Medium Bury Collar	RK-5000	1 Quart Epoxy Resin Kit
FTSDBASE-42SB	42" Deep Bury Solid Bottom	S-CR-FGK	Optional Glassing Kit for Collar Ring Attachment
FTSDBASE-42SB	48" Medium Bury Solid Bottom	WT-LID-GASKET	Gasket Seal and Epoxy for WT, WSP, WTS Lids
FTSDBASE-48CR	48" Deep Bury Collar Mount	WT-LID-GASKET-TOOL	Installation tool for WT-LID-GASKET
FTS-4233TH	Top Hat for 42" Base Sump (33" opening)		
FTS-4237TH	Top Hat for 42" Base Sump (37" opening)		
FTS-4837TH	Top Hat for 48" Base Sump (37" opening)		



BUILT FOR THE TEST



The EPA-Compliance Deadline is October 13, 2018

The standard for EPA-compliant UST products

OPW 
RETAIL FUELING
a **DOVER** company

opwglobal.com

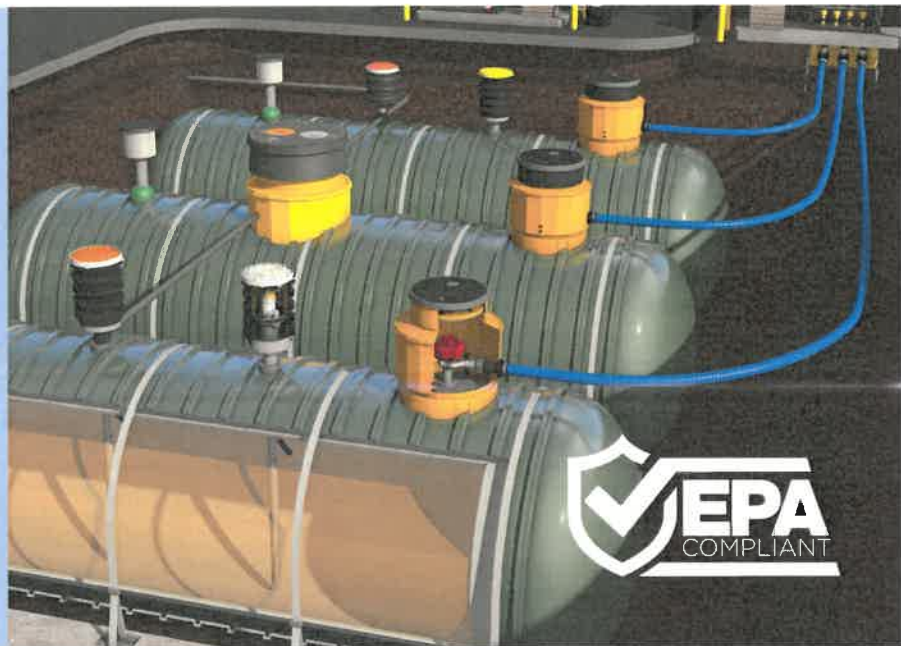


DEFINING | WHAT'S NEXT

PRODUCTS ENGINEERED FOR EASIER INSTALLATION AND EASIER ACCESSIBILITY FOR TESTING

**The Environmental Protection Agency's (EPA)
new UST regulations go into full effect on October 13, 2018:**

Revising Underground
Storage Tank Regulations
– Revisions to Existing
Requirements and
New Requirements for
Secondary Containment
and Operator Training;
Final Rule (40 CFR Parts
280 and 281)



These regulations create new standards and strengthen existing ones regarding the testing and maintenance of new or existing underground storage tank (UST) systems and their components in four specific areas:

- **Sump and under-dispenser containment system testing**
- **Spill-bucket testing**
- **Compliance testing of repaired components**
- **Overfill-prevention equipment inspection**

These new and upgraded testing and inspection requirements are designed to guarantee that one major goal is achieved: ensure that all retail UST systems in the United States are regularly and reliably tested, which

will help eliminate the risk of harmful product leaks while increasing safety for consumers, site personnel and the environment.

OPW stands ready to assist retailers by offering the highest quality, most reliable UST-system leak-prevention components.

Utilizing any or all of these OPW components can help ease or eliminate the strain on fuel retailers who must meet and comply with the new EPA regulations, keeping in mind that those who are found to be non-compliant may be subject to debilitating fines from the EPA.



FIBRETITE TANK SUMP

Unique smooth wall surface inside and out ensures seal integrity for future entry fitting testing. Provides a clean and dry environment for future maintenance and inspection.



FIBRETITE MULTIPORTS

Multiports provide access to containment of the riser connection to the tank. Featuring a watertight sump inspection port and easy access to 71SO-T Overfill Prevention Valve. Lightweight composite cover allows for easy and safe removal for inspection. All composite construction ensure no corrosion to facilitate long-term serviceability.



71SO-T TESTABLE OVERFILL PREVENTION VALVES

The first UST Overfill Prevention Valve that is testable without removal from the tank which allows testing to be completed in 60 seconds vs. 60 minutes. The testable feature can be raised and lowered, allowing the user to inspect the valve operation from the inside of the tube.



EDGE DOUBLE-WALL SPILL CONTAINER

Allows for quick and easy vacuum testing. Eliminates expensive hydrostatic testing. Optional electronic sensor for continuous monitoring of interstitial space eliminates the need to test.



FLEXWORKS LOOP SYSTEM™ LOW-PROFILE SUMP

Shallow design allows for quick and easy testing.

OPW'S EPA Compliance Checklist

	OPW Solutions	Features	Benefits
☐ Testing of Sumps and Under-Dispenser Containment Systems Must be performed every three (3) years if the system uses piping in the interstitial monitoring as its primary form of leak deterrence	FibreTite Tank Sumps	- Smooth wall surface inside and out ensures seal integrity for future entry fitting testing - Inverted U-Channel eliminates water intrusion - Stainless-steel ring and watertight sealing gasket	FibreTite provides surface access to the tank itself, as well as a clean and dry environment for future service and maintenance. The height-adjustable top-hat accommodates different tank buri depths
	FlexWorks Loop System	- Shallow-bury design reduces potential problems caused by ground water forces that can affect deep-bury sumps in high water table areas - The system design preserves total underground access to all piping connections, piping runs and sump for hassle-free inspection	Shallow-bury design allows for quick and easy testing
☐ Spill-Bucket Testing Required every three (3) years, unless the UST system is outfitted with double-wall spill buckets where the interstitial space is regularly tested. Note: Some states already require spill-bucket testing every year	EDGE Double-Wall Spill Container	- Visual gauge provides quick and easy inspection of double wall interstitial space - Integrated test port allows for quick and easy vacuum testing - Optional electronic sensor allows for continuous monitoring of interstitial space to eliminate the need for testing	Delivers best-in-class features that significantly improve reliability, installation, testing and serviceability. The EDGE™ exceeds the performance levels of all other double-wall spill containers.
☐ Compliance Testing of Repaired Components Whenever any components in the spill-protection, overfill-containment and secondary-containment areas of the UST system need to be repaired, compliance testing of the repaired system must be completed within 30 days, regardless of whether or not an actual product release has occurred	EDGE Double-Wall Spill Container	- Visual gauge provides quick and easy inspection of double wall interstitial space - Integrated test port allows for quick and easy vacuum testing - Optional electronic sensor allows for continuous monitoring of interstitial space to eliminate the need for testing	Delivers best-in-class features that significantly improve reliability, installation, testing and serviceability. The EDGE™ exceeds the performance levels of all other double-wall spill containers.
	FibreTite Tank Sumps	- Smooth wall surface inside and out ensures seal integrity for future entry fitting testing - Inverted U-Channel eliminates water intrusion - Stainless-steel ring and watertight sealing gasket	FibreTite provides surface access to the tank itself, as well as a clean and dry environment for future service and maintenance. The height-adjustable top-hat accommodates different tank buri depths
	71SO-T testable overfill prevention valve	- Testable feature allows the user to inspect the valve operation from inside the tube - Ensures overfill valves are operating properly without having to remove the valve from the tank	- Designed to prevent the overfill of underground storage tanks by providing a positive shutoff of product delivery - Testable without removal from the tank which allows testing to be completed in 60 seconds rather than in 60 minutes
	FlexWorks Loop System	- Shallow-bury design reduces potential problems caused by ground water forces that can affect deep-bury sumps in high water table areas - The system design preserves total underground access to all piping connections, piping runs and sump for hassle-free inspection	Shallow-bury design allows for quick and easy testing
	71SO-T testable overfill prevention valve	- Testable feature allows the user to inspect the valve operation from inside the tube - Ensures overfill valves are operating properly without having to remove the valve from the tank	- Designed to prevent the overfill of underground storage tanks by providing a positive shutoff of product delivery - Testable without removal from the tank which allows testing to be completed in 60 seconds rather than in 60 minutes
☐ Overfill-Prevention Equipment Inspection Required every three (3) years, except in states where these inspections are already required annually	71SO-T testable overfill prevention valve	- Testable feature allows the user to inspect the valve operation from inside the tube - Ensures overfill valves are operating properly without having to remove the valve from the tank	- Designed to prevent the overfill of underground storage tanks by providing a positive shutoff of product delivery - Testable without removal from the tank which allows testing to be completed in 60 seconds rather than in 60 minutes



Installation Instructions Fiberglass Tank Sumps FTS / FCS Series

IMPORTANT INFORMATION – FOLLOW ALL 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: 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 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 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 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, 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.

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.

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.

Tank Sumps

OPW Fibrelite FlexWorks FibreTite / ElectroTite Primary Tank Sumps for automotive fuels are installed below grade on top of UST's to provide secondary containment of and access to underground equipment such as submersible pumps, tank bung fittings, and various piping connections. Tank Sumps extend from the top of the tank to just below a manhole cover at grade level. The sump cover must be located within the grade level manhole skirt just under the manhole cover. If the tank is too deep to allow for this, a deeper sump must be used. FTS / FCS series fiberglass tank sumps are available with three different base options (collar ring, solid bottom, and reverse flange) in both 42" and 48" diameters.

Maximum Sump Burial Depth w/extensions: 84" (7 ft)
FCSM / FTSM Max 56" (4.7 ft) without extensions
FCSD / FTSD Max 64" (5.3 ft) without extensions

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.

IMPORTANT:

For best results, Flexworks / 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).

NOTE: Sump must be assembled and installed by a qualified person. The use of non-qualified personnel or any deviations from these recommended procedures could result in damage or leakage.

NOTE:

Sumps have been evaluated per UL for use with REF, SMF, TFA, TMA, and AXP series of products. Failure to use recommended combinations of sump products in a completed assembly may cause damage or leakage.

Sumps have also been evaluated per ULC for use with REF, CEJ, DEB, and EBF series of products.

NOTE:

Sump products are not intended for storage in excessive temperatures or direct sunlight. Rough handling may cause damage and leaking in use. Visually inspect sump prior to installation to ensure no damage. Damaged sumps shall not be used.

TOOLS NEEDED FOR INSTALLATION AND ASSEMBLY:

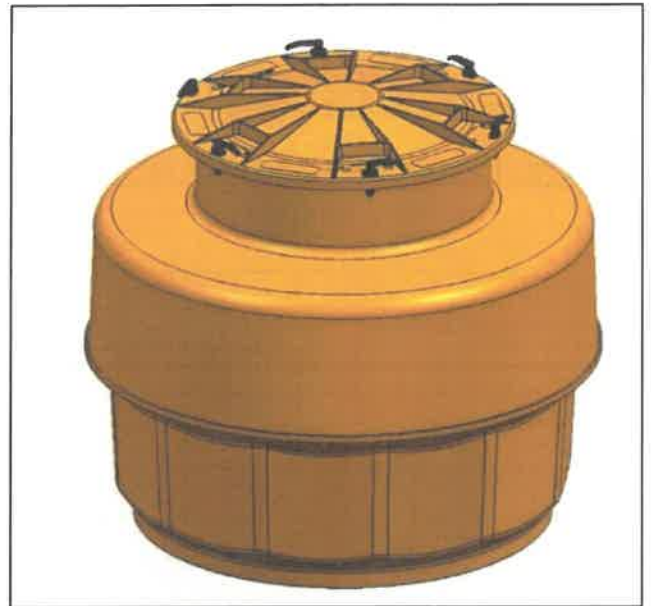
1. String line
2. Tape measure
3. Level
4. Permanent marker
5. Cutting tool (saber saw, circular saw, jigsaw, or angle grinder with a diamond grit blade)
6. Heavy grit sandpaper
7. Acetone

Items needed for FCS series only:

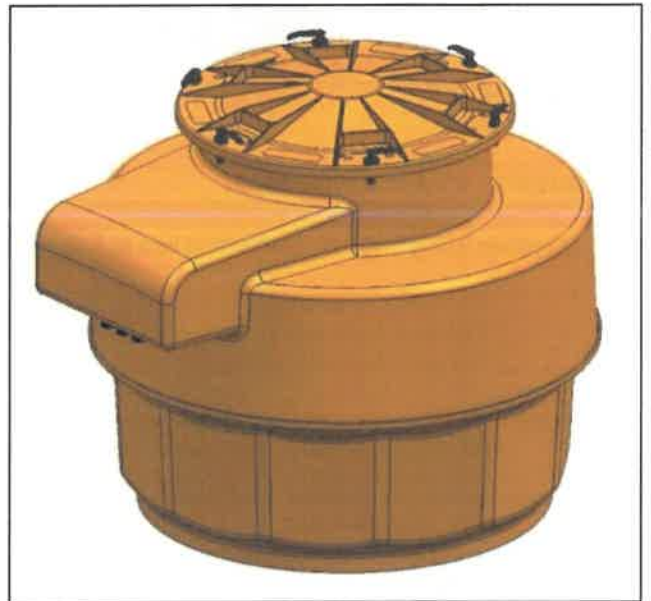
8. Torque wrench (in-lb)
9. Ratchet and sockets including: 7/16" socket and 1/2" socket
10. Pipe wrench

Items needed for L-handle adjustment:

11. 17 mm combination wrench
12. Ratchet / torque wrench with 17 mm socket



FTSX-4X3X Series



FCSX-X-4X3X Series

STEP 1: INSTALL STRING LINE

Install string lines at finished grade level (manhole grade level) as shown in Figure 1 in order to accurately measure the distance from grade level to the tank.

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

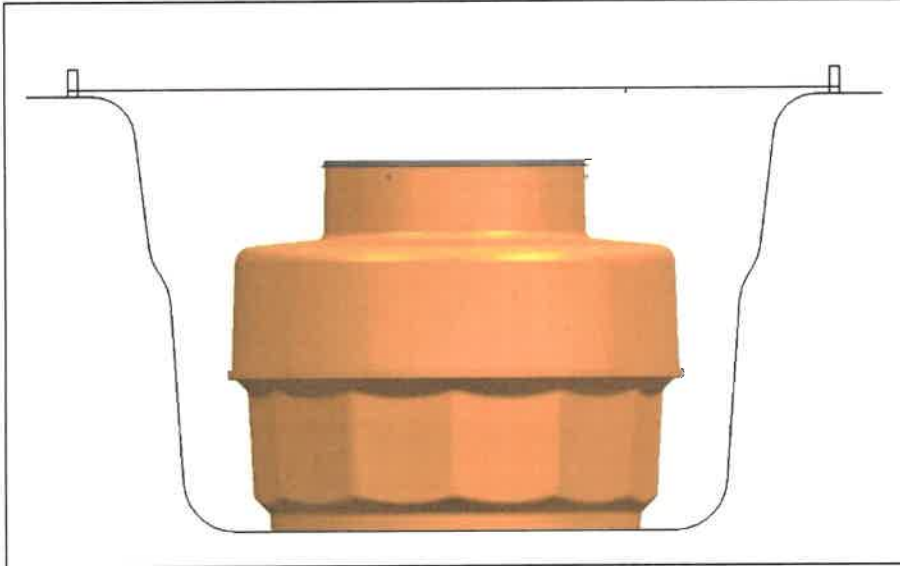


Figure 1

STEP 2: MEASURE TO TANK

Measure "Dimension A" from string line at finished grade level to tank. **Dimension A** = _____ inch

For collar ring models measure to stop on collar as shown in Figure 2 below.

For reverse flange models measure to tank flange.

For solid bottom models measure to top of bung as shown in Figure 2 below.

Note: For a sample calculation see Appendix A.

"Dimension A" cannot exceed maximum burial depth for sump of 84" (7 ft).

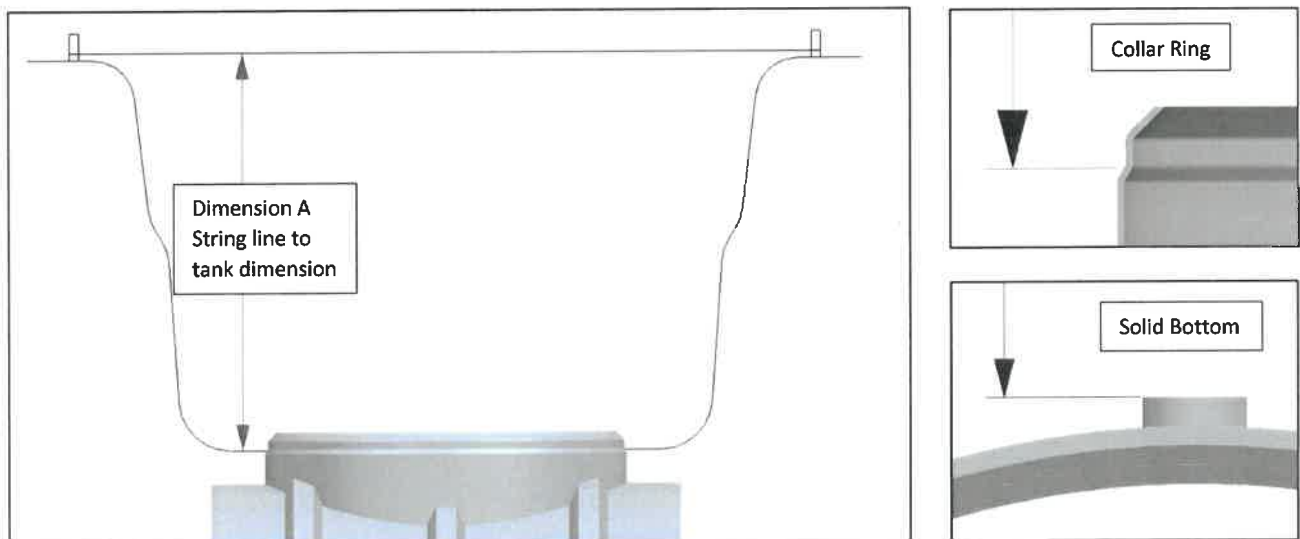


Figure 2

STEP 3: DETERMINE STRING LINE TO TOP HAT DIMENSION

A minimum 3 inch clearance is required between any load-bearing item and the tank sump. Determine "Dimension B" from finish grade string line to top hat. See Figure 3. This is the minimum distance necessary to ensure 3" minimum clearance between underside of manhole cover / tank sump cover and bottom of skirt / top hat. Common "Dimension B" distances for OPW manholes can be found in the table below as illustrated in Appendices B and C. Table assumes the manhole ring is set 1" above string line for slope. If slope will exceed 1", calculation can be adjusted accordingly.

In general "Dimension B" can be calculated by measuring the manhole thickness (**including ribs on underside**), subtracting 1" for slope from grade, adding 2.5" for tank sump cover height, and adding 3" for clearance between underside of manhole cover / tank sump cover. Skirt clearance can affect this dimension and also needs to be taken into account to ensure adequate clearance.

OPW Manhole Style	Tank Sump Style	Dimension B (inch)	Notes
39CD / 44CD -XX10	FTSM / FTSD	5.3	
37MAT / 42MAT	FTSM / FTSD	5.8	
FL90 / FL100 -BSK12	FTSM / FTSD	8.2	
39CD / 44CD -XX10	FCSM / FCSD	5.5	Requires notch in manhole skirt, see Step 16.
39CD / 44CD -XX10	FCSM / FCSD	8.0	No notch in manhole skirt
37MAT / 42MAT	FCSM / FCSD	5.5	Requires notch in manhole skirt, see Step 16.
37MAT / 42MAT	FCSM / FCSD	10.0	No notch in manhole skirt
FL90 / FL100 -BSK12	FCSM / FCSD	8.2	Requires notch in manhole skirt, see Step 16.
FL90 / FL100 -BSK12	FCSM / FCSD	12.4	No notch in manhole skirt

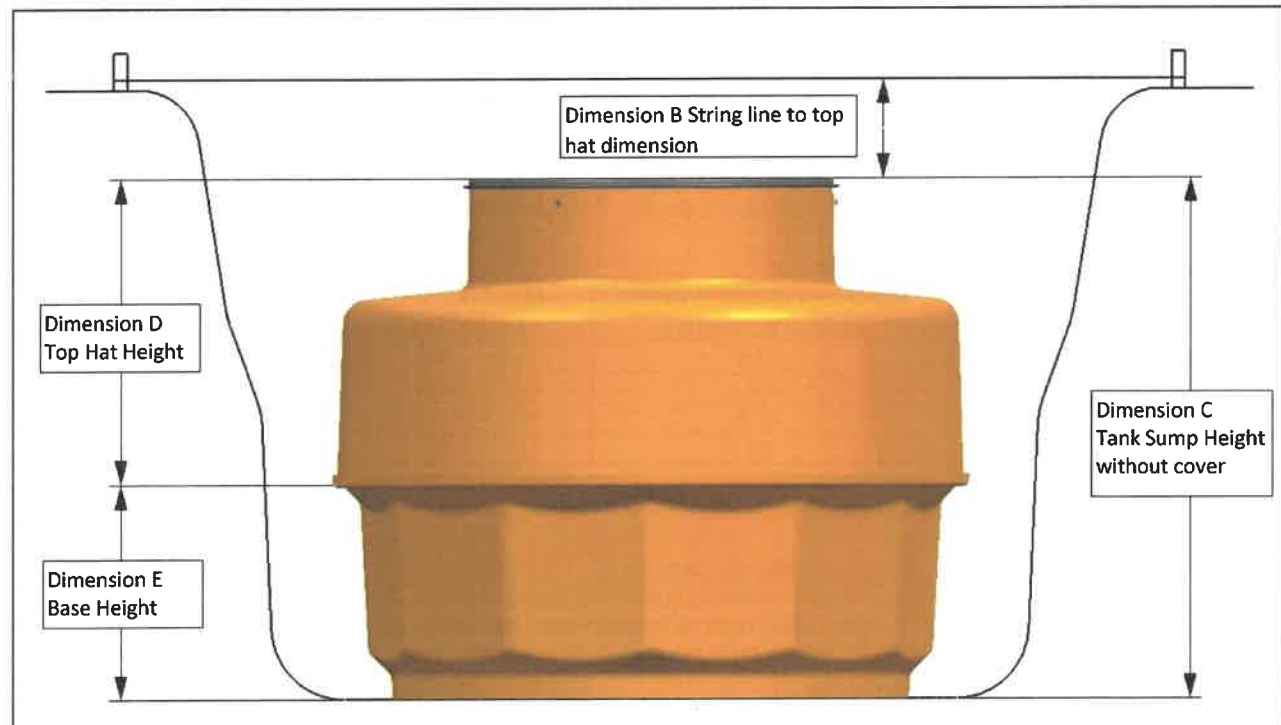


Figure 3

STEP 4: CALCULATE TANK SUMP HEIGHT WITHOUT COVER

Calculate "Dimension C", required tank sump height (without tank sump cover) by subtracting "Dimension B" from "Dimension A". See Figure 3. The height calculation for solid bottom models needs to account for the height of the sump mounting flange. Use appropriate calculation below to determine tank sump height without cover.

Calculation for Collar Ring and Reverse Flange Models

$$\text{Dimension C, Tank Sump Height without cover} = \frac{\text{Dimension A} - \text{Dimension B}}{\text{Dimension C}} = \text{inch}$$

Calculation for Solid Bottom Models Only

Note: For solid bottom models the installed height of different mounting flange models can be found in the table below.

Mounting Flange	Installed Height (inches)
TFA-4090	2.0
SMF-4E Series	4.0
SMF-6	3.0

$$\text{Dimension C, Tank Sump Height without cover} = \frac{\text{Dimension A} - \text{Dimension B} - \text{Mounting Flange}}{\text{Dimension C}} = \text{inch}$$

STEP 5: CHECK TANK SUMP HEIGHT WITHOUT COVER

Confirm calculated "Dimension C", tank sump height (without cover), matches height range in table below for sump series and does not exceed maximum burial depth. If height does not match a different sump may be required.

Tank Sump Model	Maximum Height (inches), without extensions	Minimum Trimmed Height (inches)
FTSM Series	43.5	30
FTSD Series	51	37.5
FCSM Series	43.5	35.5
FCSD Series	51	43

Note: Minimum height for solid bottom models is 1" taller than listed in the table.

Note: FCS4X-EX12 can be used to increase height. See Appendix D for sample calculation with extensions along with calculation adjustments needed when using extensions. Extension is available in 12" height. Maximum of 3 extensions per sump can be used up to a maximum burial depth of 84". See Step 9 Method 2 for extension attachment.

STEP 6: CALCULATE TANK SUMP TOP HAT HEIGHT

Calculate "Dimension E" tank sump top hat height by subtracting "Dimension D" base height from "Dimension C" tank sump height (without cover). See Figure 3. "Dimension D" base heights can be found in the table below. As received top hats are 25 inch height.

FTSM / FTSD series top hats can be trimmed a maximum of 12.5" to an overall height of 12.5". See Figure 4.
FCSM / FCSD series top hats can be trimmed a maximum of 7" to an overall height of 18". See Figure 5.

Tank Sump Model	Dimension D Base Height (inches)
FXSM, Medium, Collar Ring	17.5
FXSM, Medium, Reverse Flange & Solid Bottom	18.5
FXSD, Deep, Collar Ring	25
FXSD, Deep, Reverse Flange & Solid Bottom	26

$$\text{Dimension E, Top Hat Height} = \frac{\text{Dimension C}}{\text{Tank Sump Height}} - \frac{\text{Dimension D}}{\text{Base Height}} = \text{_____ inch}$$

Calculate "Dimension F" top hat trim distance for use in Step 9 by subtracting "Dimension E" from 25 inch.

$$\text{Dimension F, Top Hat Trim Distance} = 25 \text{ inch} - \text{Dimension E, Top Hat Height} = \text{_____ inch}$$

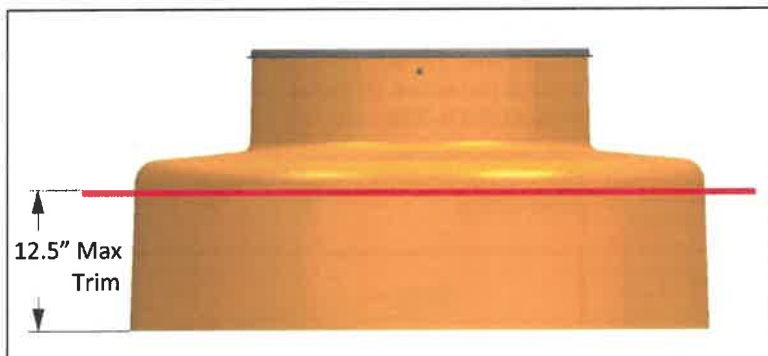


Figure 4

Note: See Appendix D for calculation adjustments needed when using extensions.

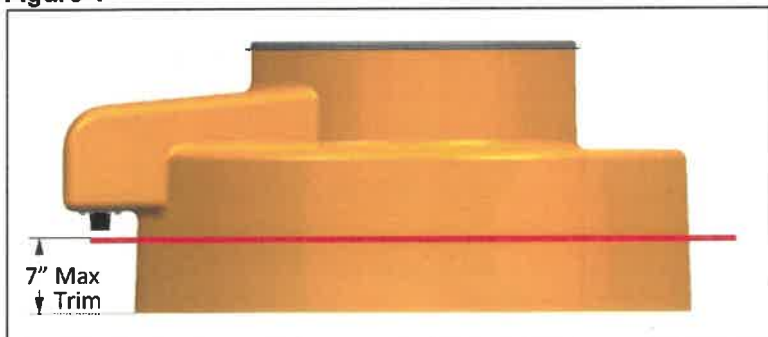


Figure 5

STEP 7: MOUNT BASE

Mount the tank sump base to the UST. Flexworks FTS / FCS series fiberglass tank sumps are available with three different base options (collar ring, solid bottom, and reverse flange). Use the appropriate method to mount the tank sump base.

Method 1: Solid Bottom, Mounting Flanges (not shown)

Attach the base of the sump to the tank bung fittings using Flexworks Sump Mounting Flanges – Flexworks product numbers:

SMF-4E	4" NPT Mounting Flange
SMF-4EFT	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 sump is level as described in Method 3c and Figure 7.

Note: As mentioned in mounting flange instructions ensure proper backfill with no voids under tank sump bottom.

Method 2: Reverse Flange (not shown)

Attach the base of the sump to the tank flange per tank manufacturers instructions. Reverse flange sumps have 24 bolt holes on a 32" bolt circle with a 29.25" ID. Ensure sump is level as described in Method 3c and Figure 7.

Method 3: Collar Ring

Measure across the tank collar to confirm if it is 42" or 48" and confirm tank sump matches. Attach sump base to collar using a FlexWorks Resin Adhesive Kit (product number RK-5000, sold separately). One RK-5000 kit will be needed for collar attachment (42" or 48" diameter). Tank sumps evaluated per UL / ULC as a complete assembly using 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.

a) Using heavy grit sandpaper, completely roughen the surface of both the sump collar and the sump base where they will be joined with the resin adhesive kit. All sanded surfaces must be wiped clean with acetone and a clean cloth immediately prior to bonding to ensure that no dust, dirt, grease, or oil are present on the surfaces. The surfaces must be free from moisture and other contaminants.

b) Immediately after cleaning install the tank sump onto the tank collar. Prior to attaching the sump to the collar, dry fit it onto the collar and position so that the sump facets align perpendicular with the pipework exit / entry points. See Figure 6.

For FCS series ensure that pipe entry points will not interfere with desired Kwik Wire junction box location.

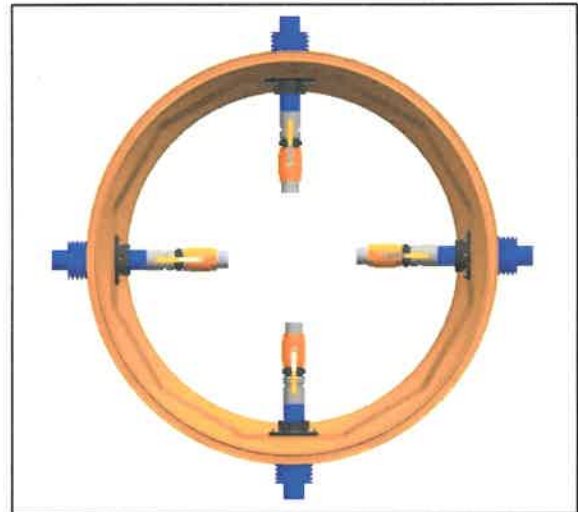


Figure 6

c) Use a level to set the sump base on the collar as shown in Figure 7.

CAUTION: The sump base must be set level to ensure that the adhesive will fill the trough evenly around the entire diameter of the middle joint to be assembled in Step 10.

Double check sump height calculations before proceeding.

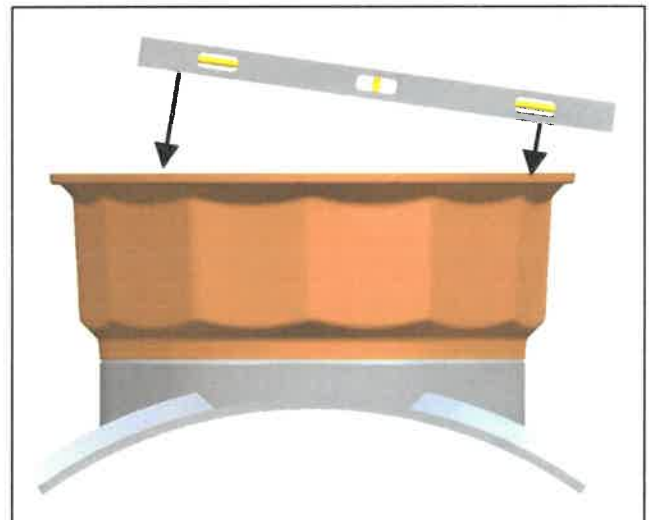


Figure 7

d) After leveling the sump base, apply duct tape around the outside of the joint between the sump base and the collar to prevent the adhesive from running out of the joint before it hardens. See Figure 8.

Note: Instead of duct tape the outside of the collar can be glassed on using the S-CR-FGK kit. Detailed tank collar fiberglass instructions are packed in the S-CR-FGK kit. Even when outside of collar is glassed on RK-5000 must be used on inner collar joint.

e) Mix RK-5000 resin adhesive kit following the detailed instructions (p/n ERAI-0001) packed with kit

For best results, the adhesive resin kit 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.

Pour the entire mixture into the joint between the tank collar and the tank sump. See Figure 8. 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 resin adhesive to harden before proceeding. Carefully follow the instructions supplied with the RK-5000 resin adhesive kit and observe minimum set-up times before proceeding.

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

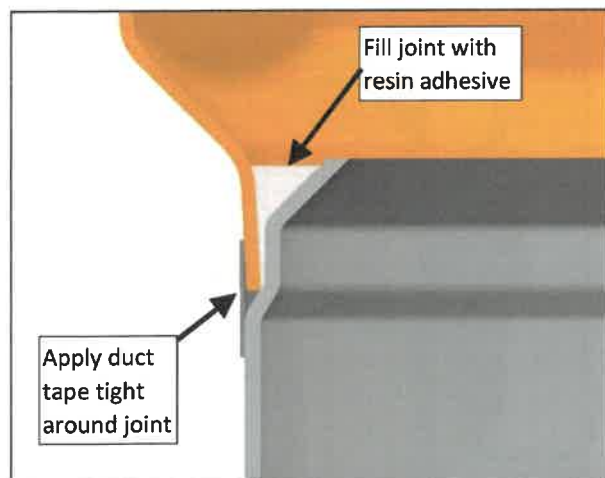


Figure 8

STEP 8: INSTALL ENTRY FITTINGS

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).

Note: Conduit entry fittings should not be needed with FCS series sumps with Kwik Wire junction box. Ensure that pipe entry points will not interfere with desired Kwik Wire junction box location.

To ease installation, it is recommended to install motor and piping prior to setting the top hat.

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.

STEP 9: HEIGHT ADJUSTMENT

If necessary, the height of FlexWorks tank sumps can be adjusted in the field. A portion of the sump top hat can be cut off to shorten the sump height or FCS4X-EX12 extensions can be used to increase the height of the tank sump. To shorten the tank sump use Method 1 below. To extend the tank sump use Method 2 below. If "Dimension F" calculated in Step 6 is zero proceed to Step 10.

Method 1: Shorten Tank Sump Top Hat

Using "Dimension F" calculated in Step 6 mark the top hat trim distance on the top hat. Do not exceed maximum trim distances as shown in Figures 4 & 5. Double check sump height calculations before cutting top hat. Using a saber saw, circular saw, jigsaw, or angle grinder with a diamond grit blade cutoff the necessary portion of the top section **making sure the cut is square**. Before proceeding, test fit the top hat by placing it in the trough on the sump base. Verify that the correct sump height, "Dimension C", has been attained and the cut has been made square. See Figures 9 & 10.

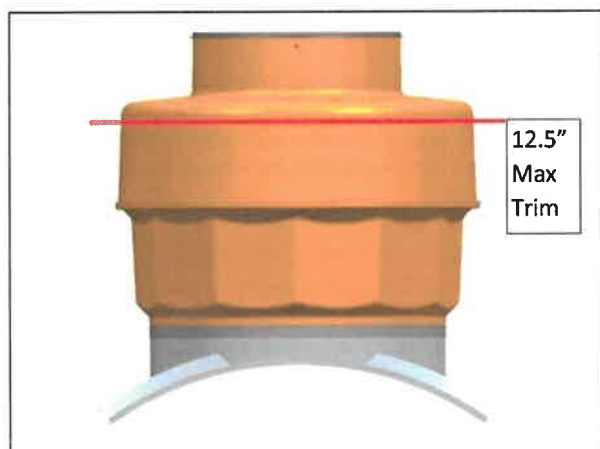


Figure 9

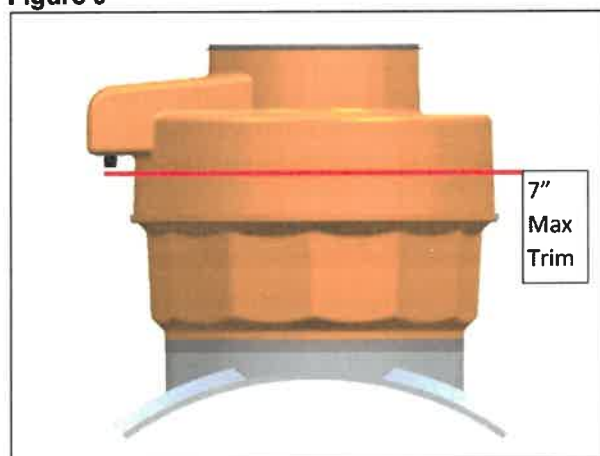


Figure 10

Method 2: Extend Tank Sump Top Hat

Using the FCS4X-EX12 extension can extend the top hat in 12" increments. Maximum of 3 extensions per sump can be used up to a maximum burial depth of 84". Using "Dimension E" and "Dimension F" calculated in Appendix D for extensions mark the top hat trim distance on the top hat. Do not exceed maximum trim distances as shown in Figures 4 & 5. Double check sump height calculations before cutting top hat. Using a saber saw, circular saw, jigsaw, or angle grinder with a diamond grit blade cutoff the necessary portion of the top section **making sure the cut is square**. Before proceeding, test fit the extension(s) and top hat by placing it in the trough on the sump base. Extension(s) is placed between sump base and top hat. Verify that the correct sump height, "Dimension C", has been attained and the cut has been made square. See Figure 11.

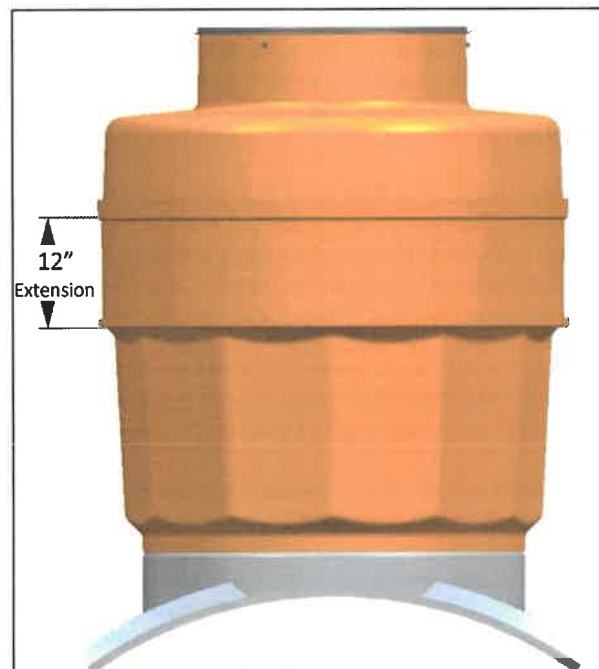


Figure 11

STEP 10: MIDDLE JOINT

After test fitting the top hat remove it from the sump.

For FCS series sumps with Kwik Wire junction box from this point forward it is imperative that the electrical contractor be present or consulted to ensure conduit placement is coordinated. The Kwik Wire junction box receives all conduit for each tank sump in a single location, located in the top hat. It is of the utmost importance that prior to installing the top hat the Kwik Wire junction box be positioned in a location where all conduit has been / will be laid. It is recommended to dry fit the top hat and ensure conduit can reach its intended location prior to pouring resin. See Figure 12.

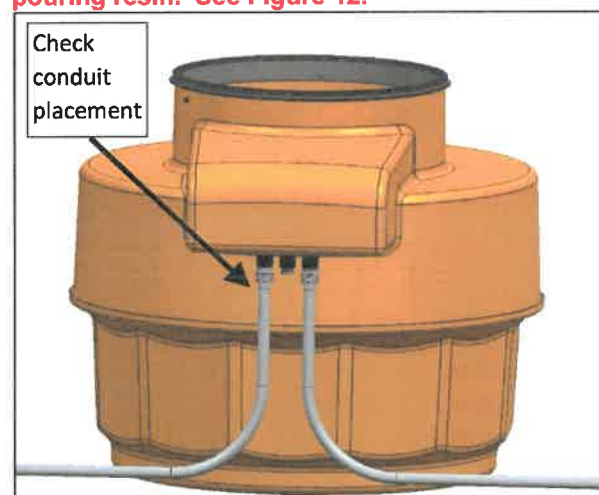


Figure 12 – FCS Series Only

Prepare top hat (or extension) for attachment to sump base.

Note: When using an FCS4X-EX12 extension the extension will be attached to the sump base.

Using heavy grit sandpaper, completely roughen the surface of both the sump base and top hat (or extension) where they will be joined with the resin adhesive kit. All sanded surfaces must be wiped clean with acetone and a clean cloth immediately prior to bonding to ensure that no dust, dirt, grease, or oil are present on the surfaces. The surfaces must be free from moisture and other contaminants.

Immediately after cleaning install the top hat (or extension) onto the tank sump base.

As previously mentioned, for FCS series ensure that final Kwik Wire junction box location aligns with conduit location.

RK-5000 resin adhesive kit (sold separately) required for this joint. For 42" diameter models one RK-5000 kit needed for this joint. For 48" diameter models 1.5 RK-5000 kits needed for this joint.

Mix RK-5000 resin adhesive kit following the detailed instructions (p/n ERAI-0001) packed with kit

For best results, the adhesive resin kit 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.

Pour the entire mixture into the trough on the sump base. See Figure 13. Allow adhesive to set up undisturbed until it is hard.

Important: Resin Set-up Times

After joining the top hat (or extension) to the sump base allow the resin adhesive to harden before proceeding. Carefully follow the instructions supplied with the RK-5000 resin adhesive kit and observe minimum set-up times before proceeding.

Note: For added protection, a bead of FlexWorks SL-1100 can be applied to joint after epoxy cures.

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

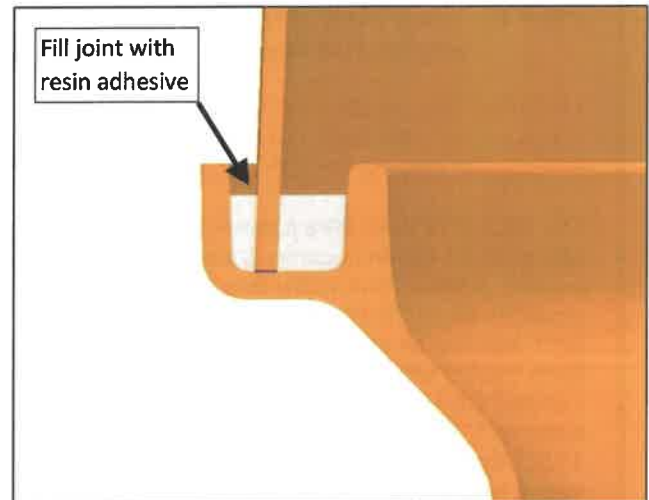


Figure 13

STEP 11: EXTENSION ATTACHMENT – optional

This Step only applies to installations requiring an extension. Proceed to Step 12 if extension is not needed.

Sand and clean top hat and extension as done previously in Steps 7 & 10. The bell end of each extension **must** be joined with both an RK-5000 resin adhesive kit and fiberglass. Each extension joint (both 42" and 48" diameter) requires one RK-5000 resin adhesive kit per joint (sold separately). Mix and pour as done previously in Steps 7 & 10. The S-TH-FGK or S-CR-FGK kit (sold separately) can be used to glass the joint. Detailed fiberglass instructions are packed in 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 14. Repeat steps for additional extensions. 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 sump.

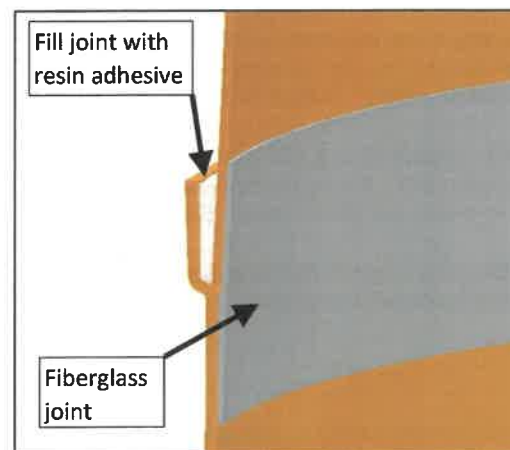


Figure 14

STEP 12: KWIK WIRE JUNCTION BOX – only for FCS Series sumps

This Step only applies to FCS series sump installations with Kwik Wire Junction Box. Proceed to Step 13 for FTS series sumps.

The CEJ-3210 Kwik Wire junction box is c UL us approved for use in hazardous locations as a conduit, junction, pull, outlet box for Class 1 Group D locations as defined by the National Electric Code. Each box has an internal volume of 42 cubic inches. Each top hat will have a maximum of two factory installed CEJ boxes. Each CEJ box has three external 1" NPT thread connections and two internal 1"NPT thread connections. The segmented design allows both high voltage and low voltage to share the same junction box. The CEJ box must be installed per the National Electric Code (NEC) and any Authority Having Jurisdiction (AHJ) requirements.

WARNING – Disconnect equipment from supply circuit before and during installation.

a) Verify torque on external mounting bolts (7/16" socket). Torque to be 60 in-lbs. See Figure 15.

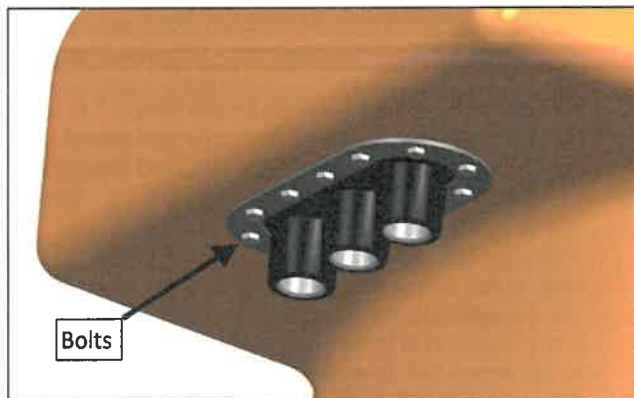


Figure 15

b) Plug any external threads that will not be used. Use non-hardening, gasoline resistant pipe thread compound on plugs. Torque to 100 ft-lbs.

c) Attach conduit to external threads on CEJ Kwik Wire junction box. It may be necessary to use unions to make this attachment. See Figure 16.

Note: Be careful not to damage sump during installation of conduit or plugs.

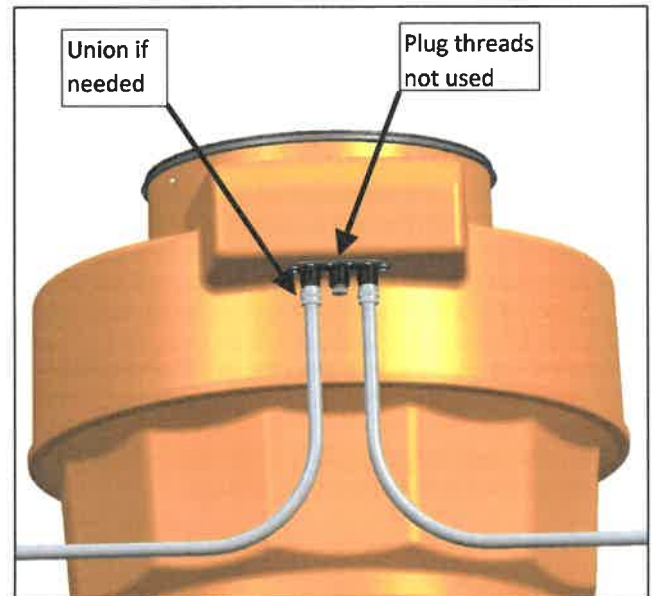


Figure 16

d) Remove cover bolts (1/2" socket) and cover from CEJ box. See Figure 17.

Note: Do not pry off cover. Be careful not to damage cover or box surface during removal. Do not handle cover roughly. Set cover aside being careful not to damage or scratch flat ground joint.

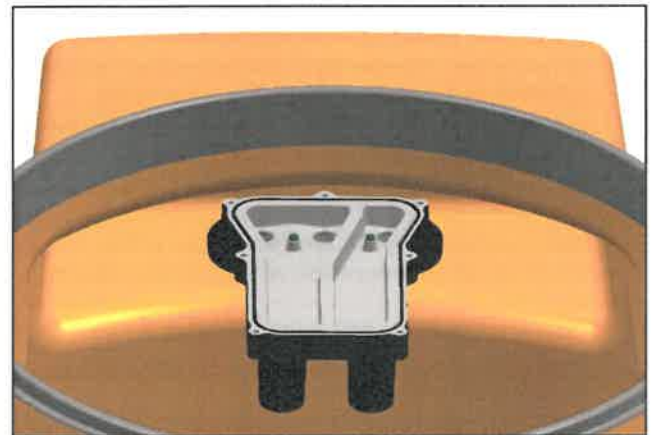


Figure 17

e) Pull wires into Kwik Wire Junction box. Ensure enough length is available to make all connections.

f) Attach conduit and grommets as required to internal threads on Kwik Wire junction box. Example shown in Figure 18 includes conduit for submersible turbine pump and grommet for sump sensor.

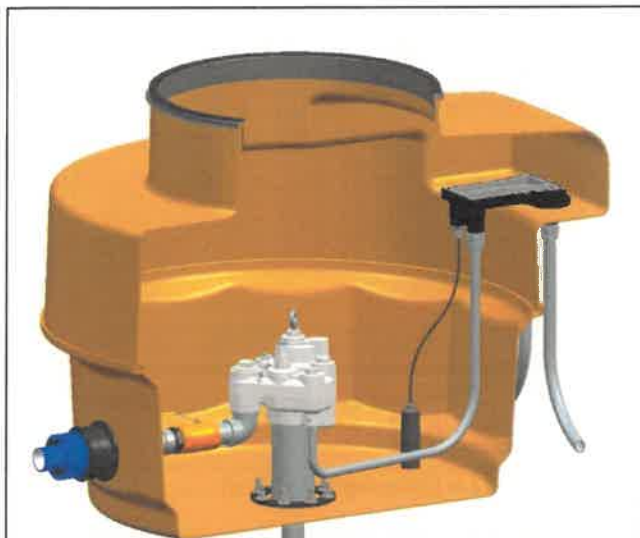


Figure 18

g) Make and test all electrical connections. Two grounding lugs are available in each box. See Figure 19.

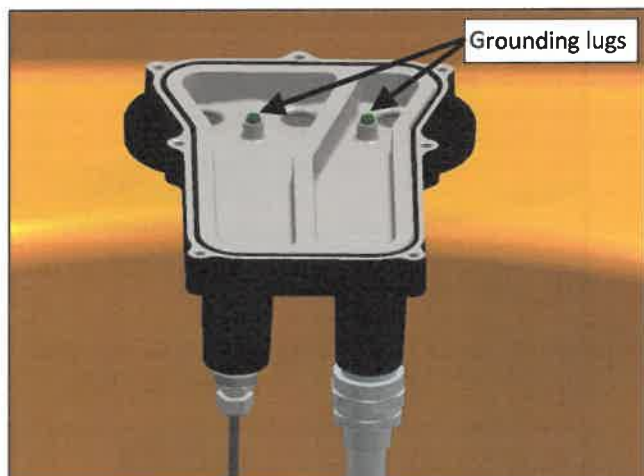


Figure 19

h) Integral sealing fittings are available at all five threaded entry points into the Kwik Wire junction box. As required by NEC and AHJ use UL approved fiber and UL approved sealing compound and pour into necessary sealing fittings. Follow instructions supplied with sealing compound. Allow compound to harden before proceeding. See Figure 20.

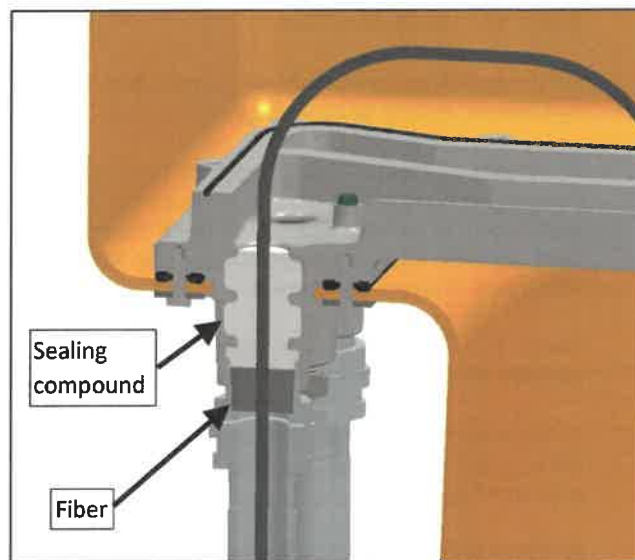


Figure 20

i) Ensure seal is in body groove and clean. Put cover back on box using all seven supplied bolts. Torque bolts to 12 to 20 ft-lbs. Be careful not to damage cover or box joint surface during installation. See Figure 21.

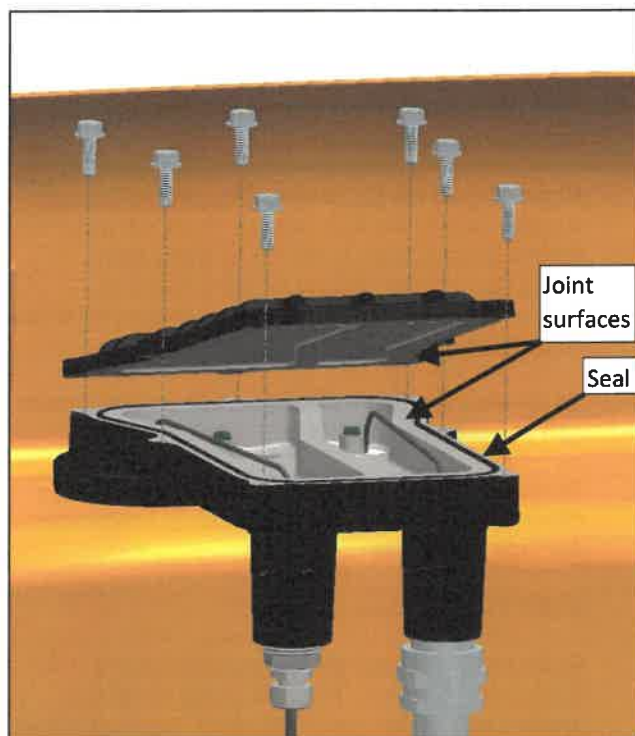


Figure 21

STEP 13: 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. Ensure all band clamps are tight. Ensure REF grommet is flush with end of entry fitting nut. Correct as needed.

Note: For FCS series verify torque on Kwik Wire junction box external bolts as described in Step 12a.

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.

Note: For FCS series, the Kwik Wire junction box is factory installed and testing may not be required above the box. Local requirements are determined by the AHJ.

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 maximum of 30" inch water column or irreparable damage may occur.

STEP 16: INSTALL COVER

Ensure all L-handles on the cover are in the "Unlocked" position. The tank sump cover has molded in "Locked" and "Unlocked" logos as shown in Figures 22 and 23. Seat the cover on the stainless steel ring on the top hat. Press down on the cover. Turn the L-handles 180 degrees to the "Locked" position to lock the latch beneath the stainless steel ring on the top hat.

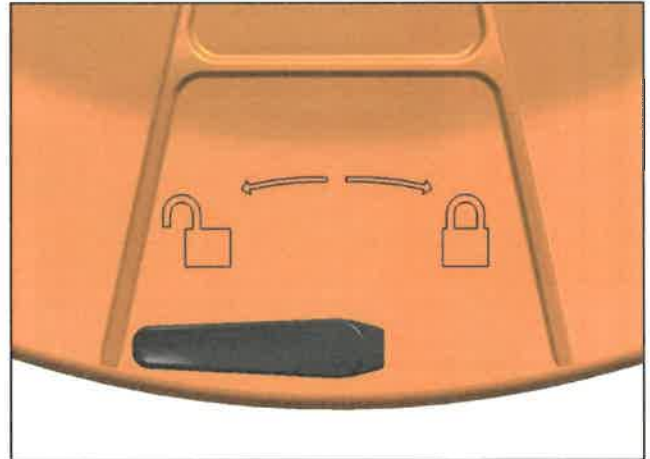


Figure 22 – Unlocked Position



Figure 23 – Locked Position

If the L-handle fails to engage it may be necessary to adjust the 'cam-lock' height. See Figure 24.

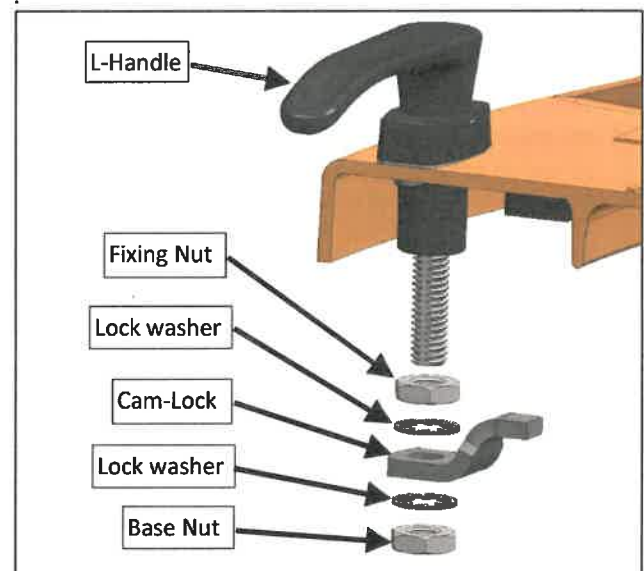


Figure 24

If the L-handle is not fully engaging it means the cam-lock needs to be lowered. Loosen the base nut to a lower position. Pull the cam-lock down to rest onto the base nut. Lower and tighten the fixing nut to 177 in-lbs max to secure the cam-lock. See Figure 25.

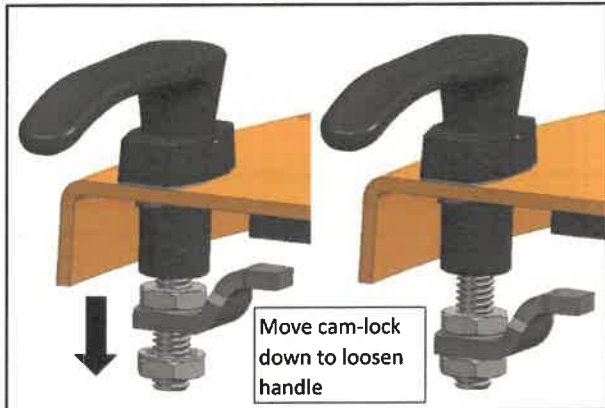


Figure 25

If the cover is not compressing the gasket tightly against the stainless steel ring it means the cam-lock needs to be raised. Loosen the base nut and pull the cam-lock down to rest onto the base nut and raise the fixing nut. Push the cam-lock up to the fixing nut and tighten the base nut to 177 in-lbs max to secure the cam-lock. See Figure 26.

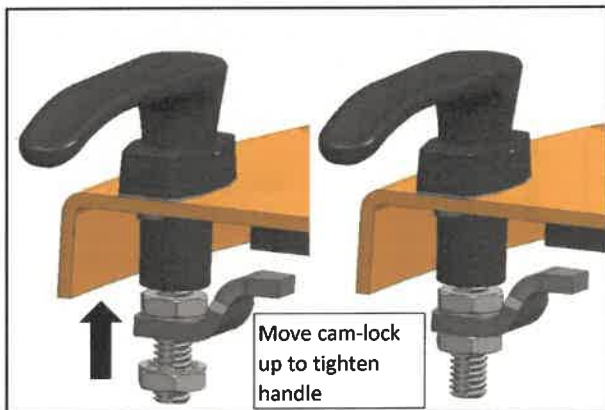


Figure 26

Once the cam-lock is secure refit the cover. See Figure 27.

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

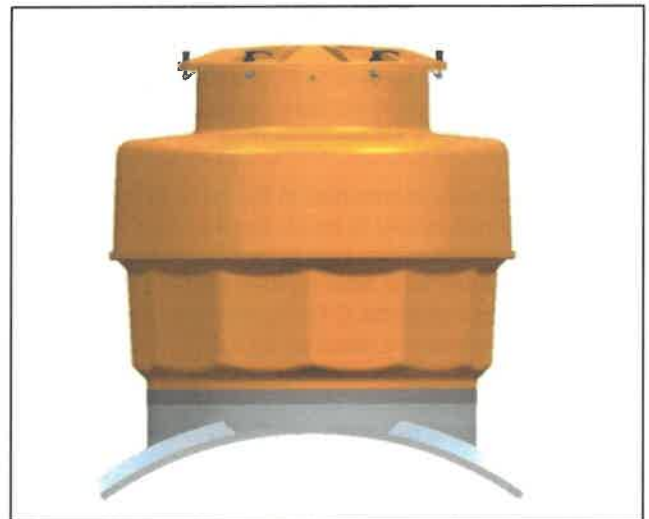


Figure 27

STEP 15: BACKFILL

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 / FibreTite / ElectroTite 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. Ensure proper backfill with no voids under tank sump bottom, middle joint, and Kwik Wire junction box area if present.

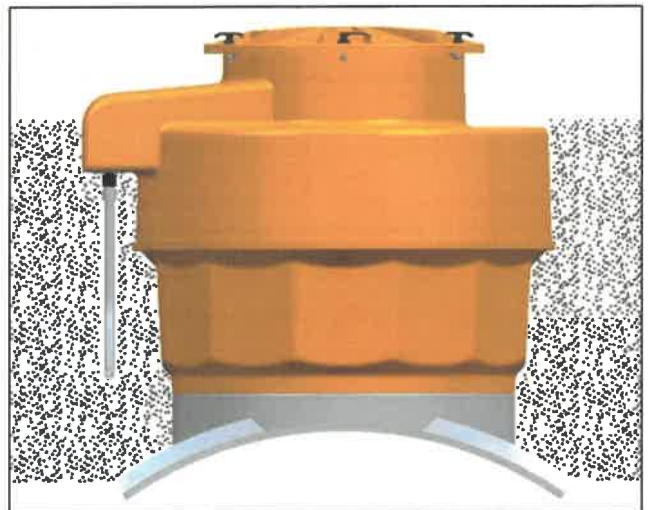


Figure 28

STEP 16: NOTCH MANHOLE SKIRT – optional

This Step only applies to FCS series sump installations with Kwik Wire Junction Box. Proceed to Step 17 for FTS series sumps.

As previously mentioned in the table in Step 3, it may be necessary to notch the manhole skirt to ensure the required minimum 3 inch clearance between any load-bearing item and the tank sump is met. See Appendix C for figures with the exact notch dimensions required for OPW / Fibrelite manholes. Notch manhole accordingly to ensure adequate clearance. See table below for summary of notch sizes required with OPW manholes.

OPW / Fibrelite Manhole Style	Dimension B (inch)	Notch Size
39CD / 44CD –XX10	5.5 to 8	26" wide x 2.5"
37MAT / 42MAT	5.5 to 10	26.3" wide x 4.6"
FL90 / FL100 –BSK12	8.2 to 12.4	26.3" wide x 4.2"

STEP 17: SET MANHOLE SKIRT

Set manhole skirt and ensure adequate clearance. A minimum 3 inch vertical clearance is required between any load-bearing item and the tank sump. A minimum of 1.5 inches clearance between top hat and skirt is highly recommended on all sides to allow adequate water migration away from sumps. See Figures 29 & 30.

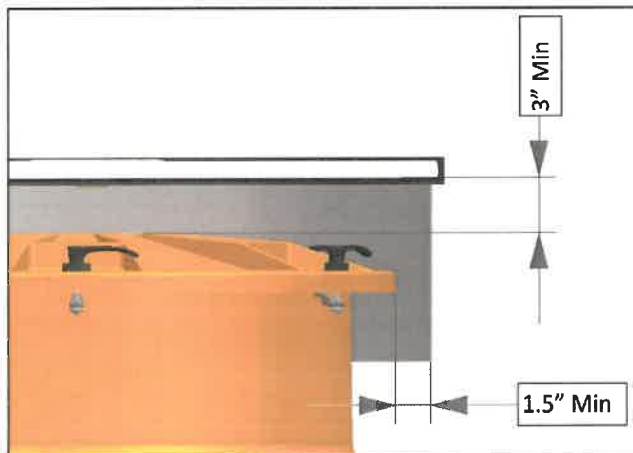


Figure 29

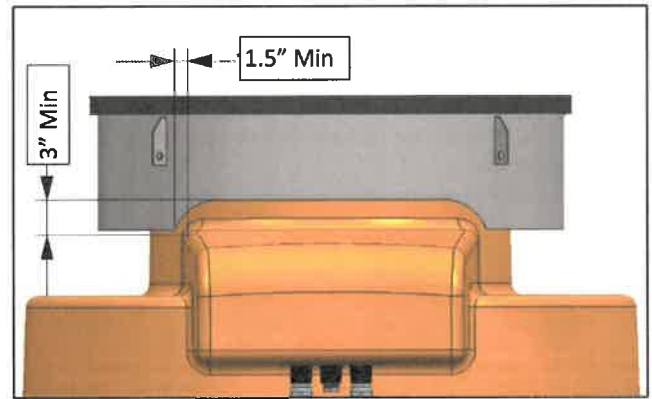


Figure 30

STEP 18: INSTALL MANHOLE

Install manhole per installation instructions. See Figure 31.

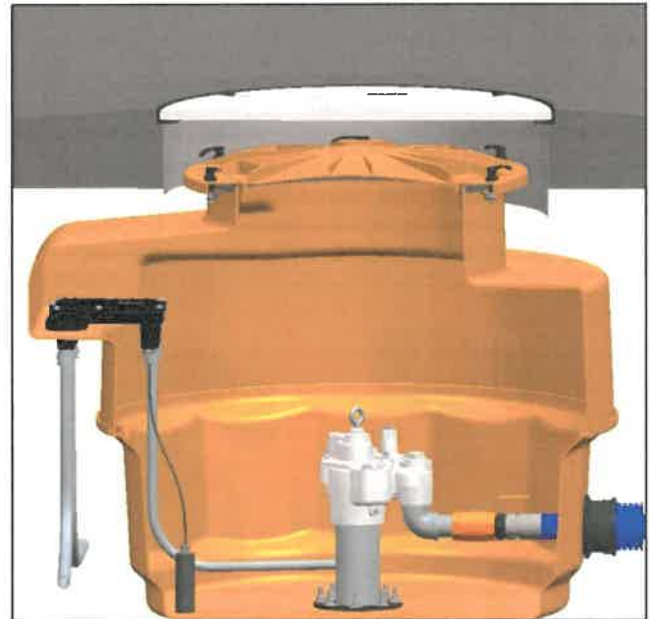


Figure 31

Operation and Maintenance:

The FlexWorks System is designed to provide reliable underground fuel transfer and short-term secondary containment of leaked petroleum product. FlexWorks sumps and secondary containment pipes are not intended for long term storage of petroleum products. Liquid that accumulates in the secondary containment system must be promptly removed and properly disposed of. Operational third party approved liquid sensors should be installed and maintained in each sump to reliably indicate to the operator that liquid is present in the secondary containment system. Once a leak is detected, the system must be shut down immediately and the source of the leak must be repaired. All liquid must be thoroughly flushed and cleaned out of the secondary containment system at once. Inspect all system components at least monthly for leaks or damage, and repair or replace any suspect component as necessary.

Visual inspections of all containment sumps and components should be made on a routine basis to check for damage, water infiltration or for any signs of leaking product. An electronic or mechanical shut-off leak detection system is recommended for

all containment sumps. Sumps are to be kept free of debris and spilled fuel.

NOTE:

Failure to remove fuel and liquids from containment sumps may compromise the performance and integrity of the sump and its associated fittings and seals over prolonged periods of time.

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
--

Appendix A

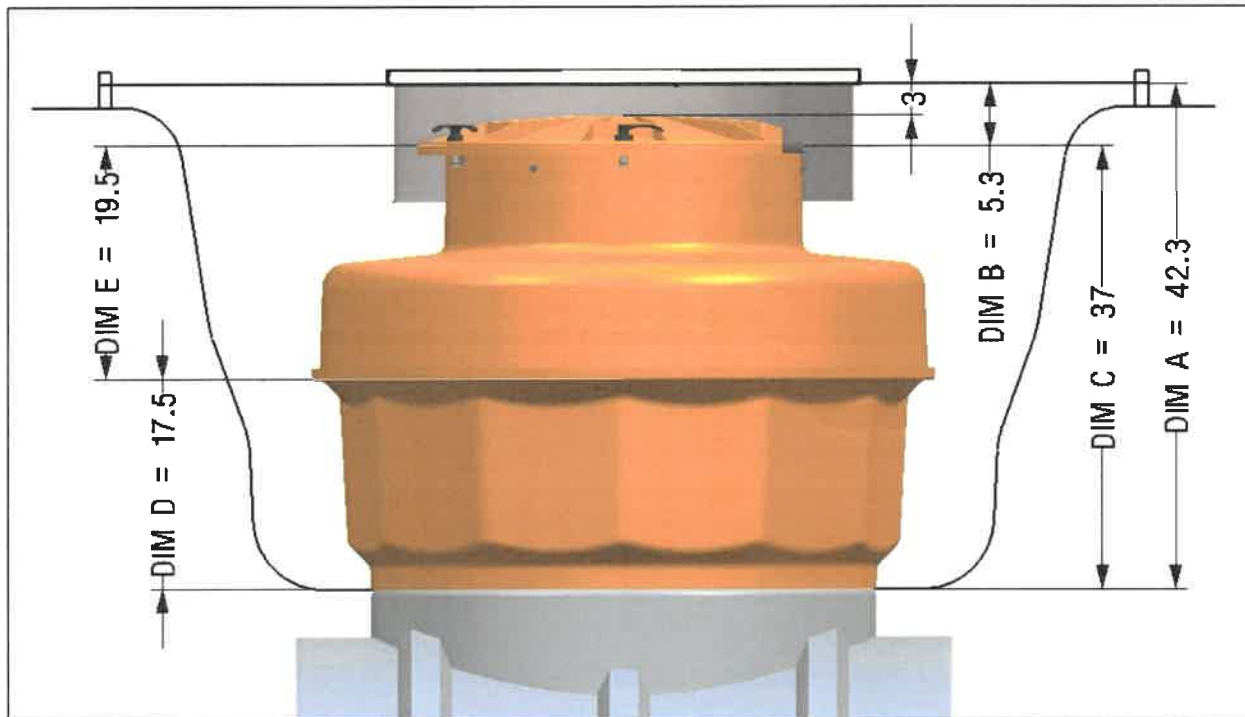
Sample Height Calculations (no extensions)

Sample Calculation #1

Sump Model = FTSM-4233CR

Manhole Model = 39CD-PL10

Dimension A, string line to tank	=	42.3 inch
Dimension B, string line to top hat dimension from table	=	5.3 inch
Dimension C, tank sump height without cover, A-B, 42.3-5.3	=	37 inch
Check dimension C, 37 inch is in range of 30 inch to 43.5 inch	=	CHECK
Dimension D, base height from table	=	17.5 inch
Dimension E, tank sump top hat height, C-D, 37-17.5	=	19.5 inch
Dimension F, trim distance, 25-E, 25-19.5	=	5.5 inch



FTSM-4233CR with 39CD-PL10

Sample Calculation #2

Sump Model = FCSD-1-4233SB

Manhole Model = FL90-BSK12

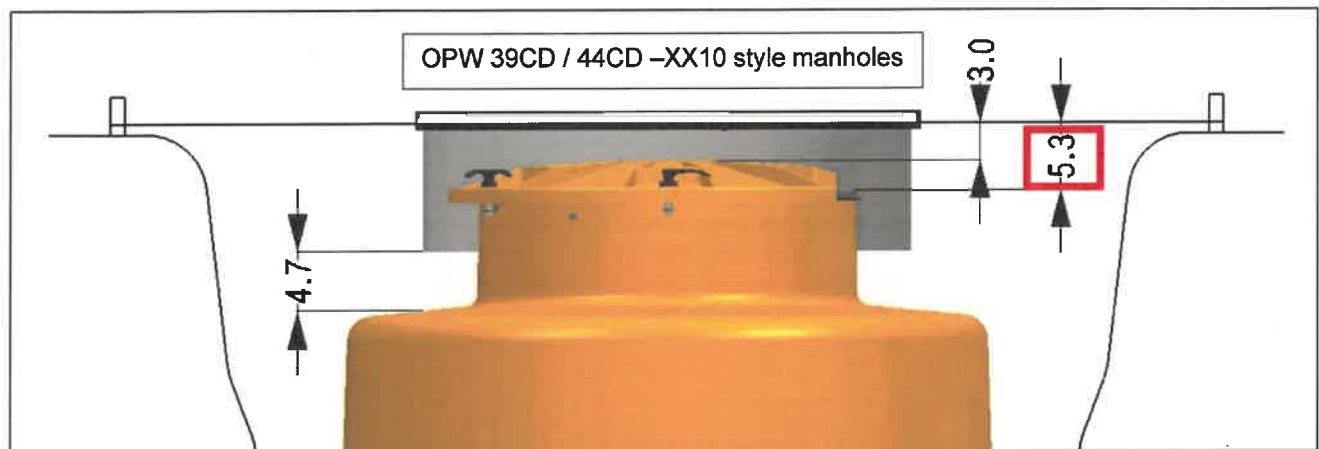
Mounting Flange = TFA-4090

Dimension A, string line to tank	=	61.2 inch
Dimension B, string line to top hat dimension from table	=	8.2 inch
Dimension C, tank sump height without cover, A-B-2, 61.2-8.2-2	=	51 inch
Check dimension C, 51 inch is in range of 42 inch to 51 inch	=	CHECK
Dimension D, base height from table	=	26 inch
Dimension E, tank sump top hat height, C-D, 51-26	=	25 inch
Dimension F, trim distance, 25-E, 25-25	=	0 inch (no trim needed)

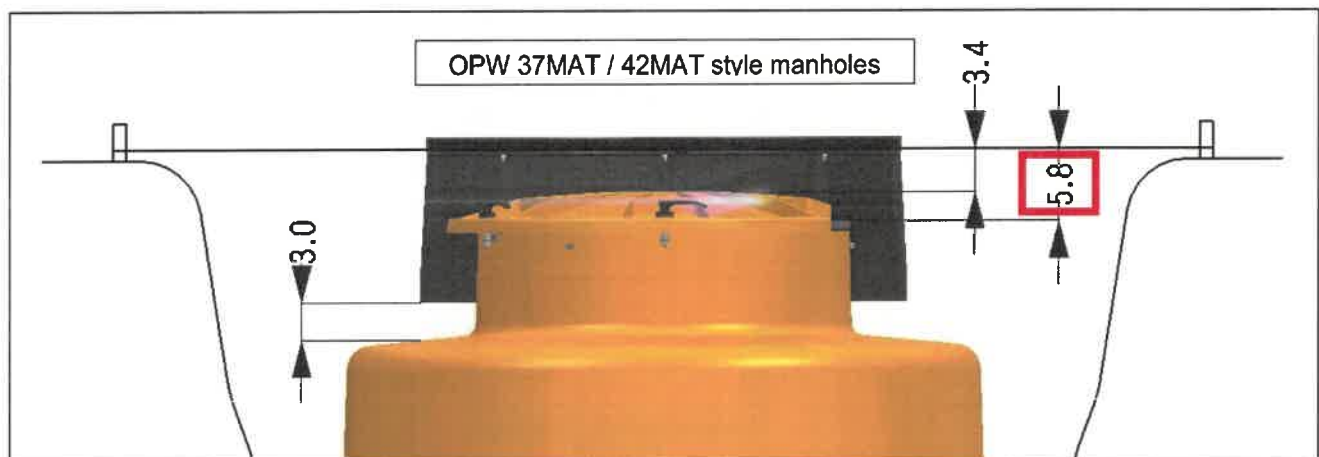
Appendix B

Required Minimum Clearances for FTSM and FTSD series.

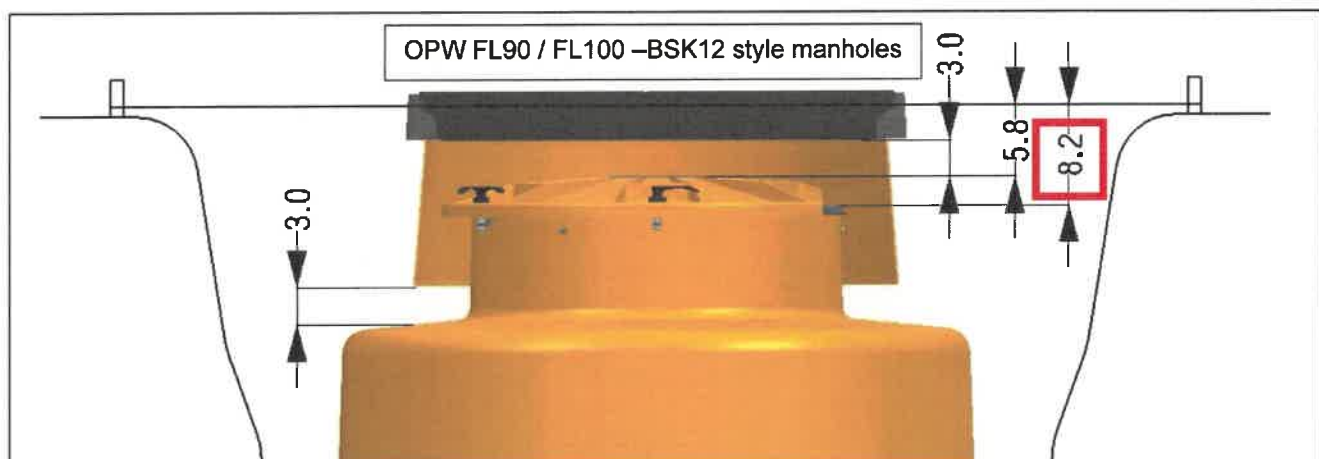
For all scenarios shown below the manhole ring is set 1" above string line for slope.



To ensure 3" minimum clearance between bottom of manhole cover and tank sump cover requires **5.3" minimum** from string line to top hat.



To ensure 3" minimum clearance between bottom of skirt and top hat requires **5.8" minimum** from string line to top hat.

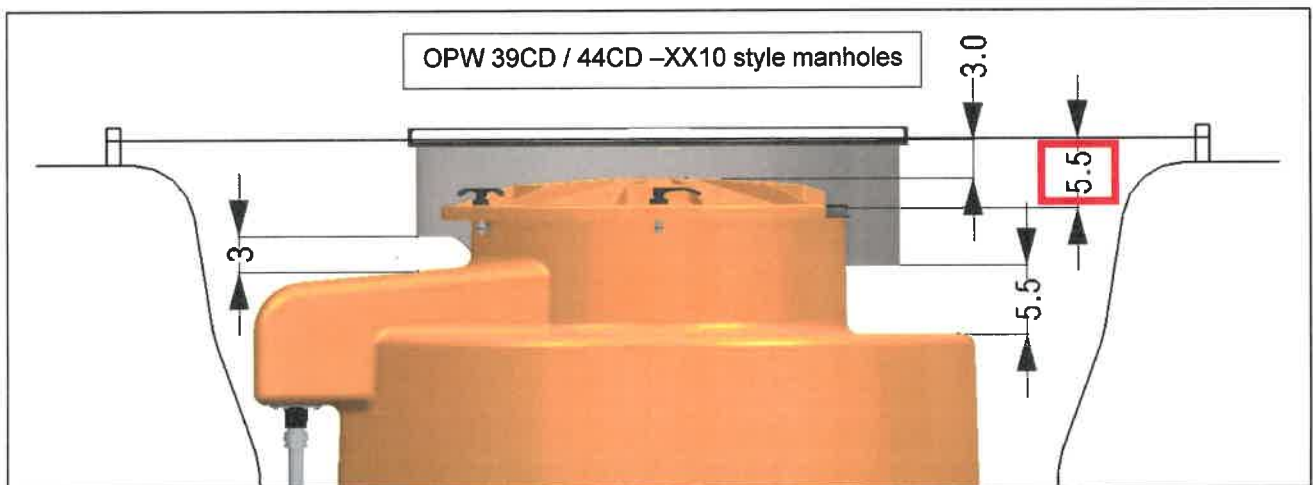


To ensure 3" minimum clearance requires **8.2" minimum** from string line to top hat.

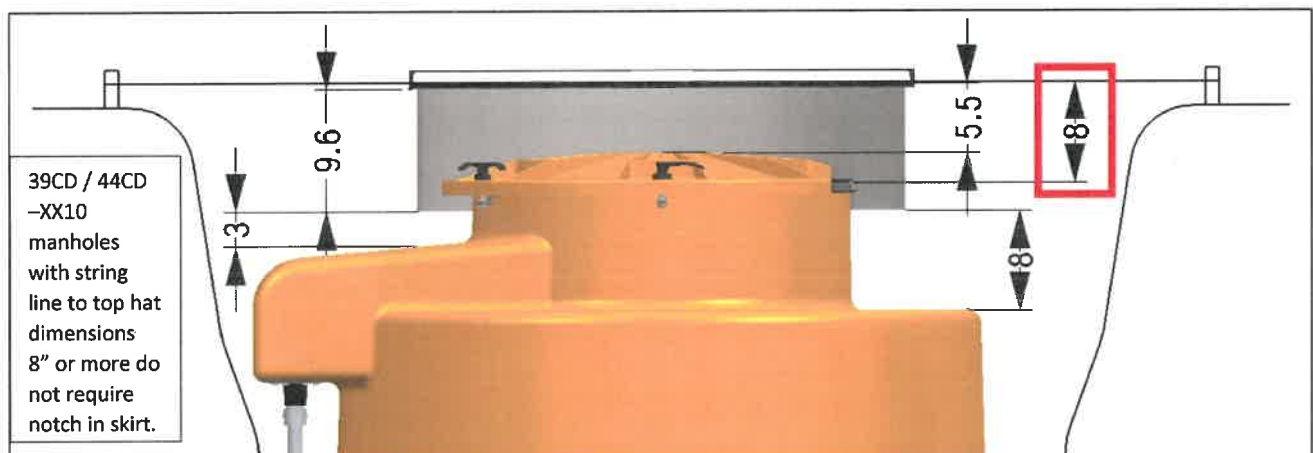
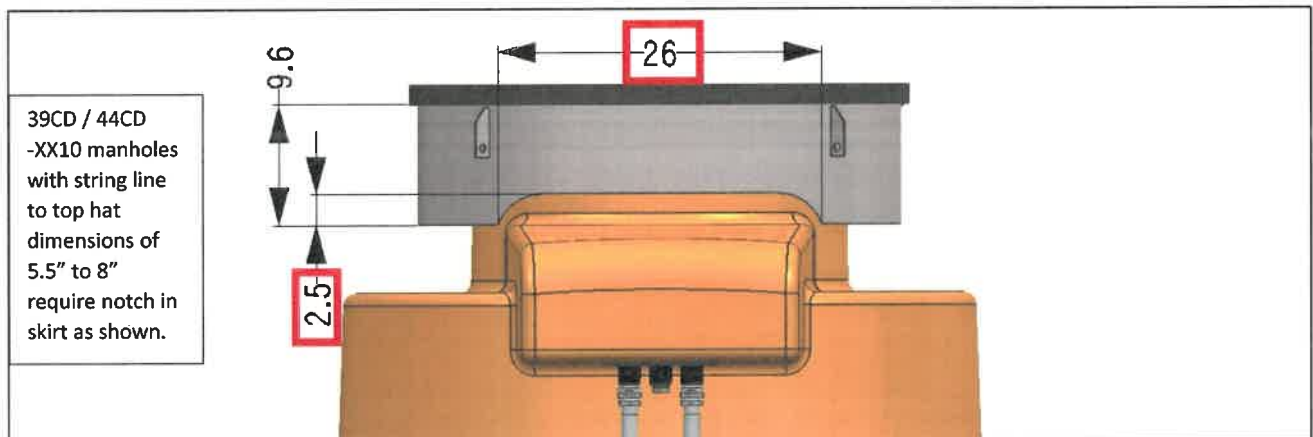
Appendix C

Required Minimum Clearances for FCSM and FCSD series.

For all scenarios shown the manhole ring is set 1" above string line for slope.



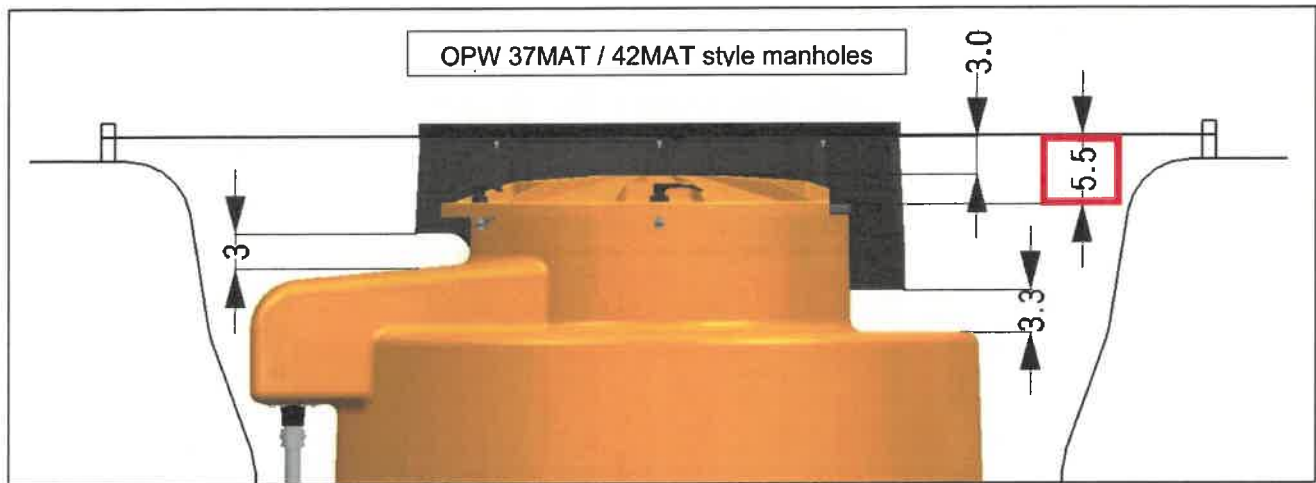
To ensure 3" minimum clearance between bottom of manhole cover / tank sump cover and bottom of skirt / top hat requires **5.5" minimum** from string line to top hat. This configuration also requires a 26" wide x 2.5" notch be cut in the skirt as shown below.



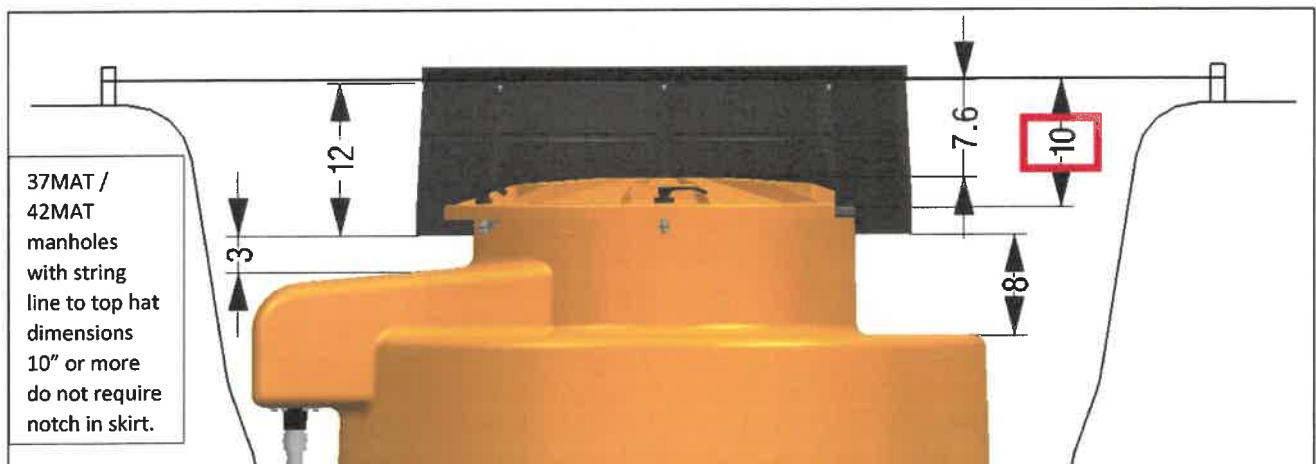
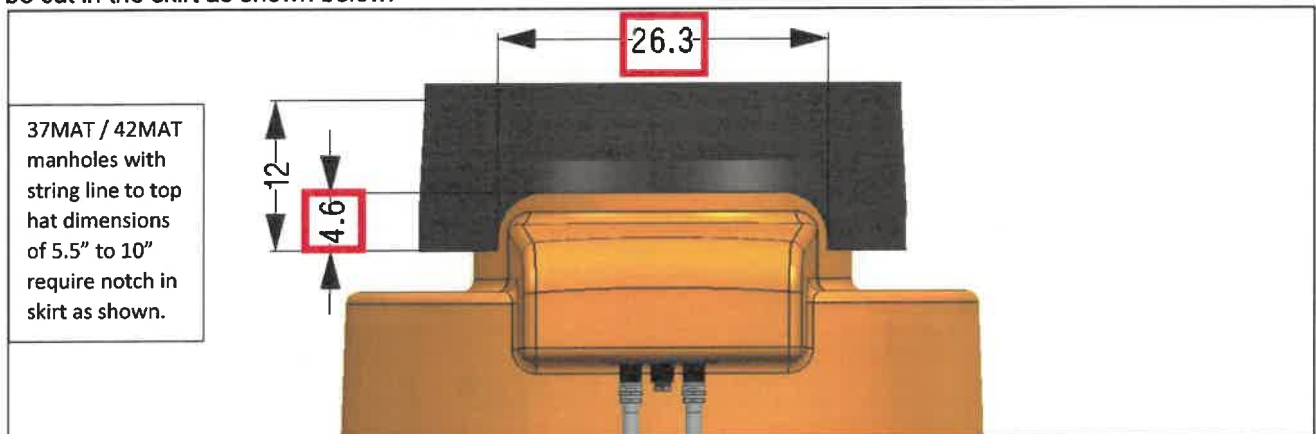
To ensure 3" minimum clearance between bottom of skirt / top hat requires **8" minimum** from string line to top hat for an untrimmed skirt with no notch.

Appendix C (continued)

For all scenarios shown the manhole ring is set 1" above string line for slope.



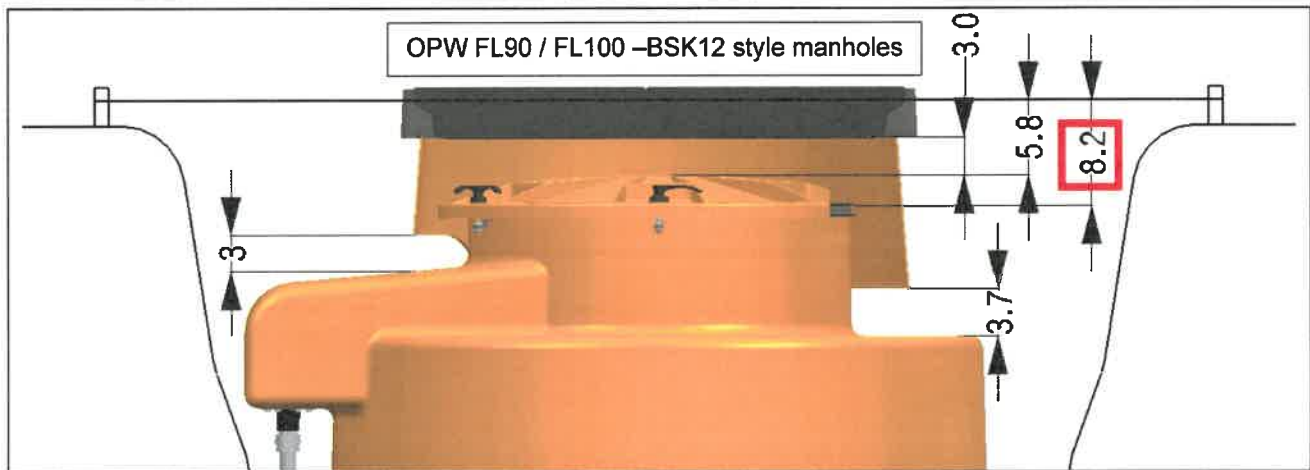
To ensure 3" minimum clearance between bottom of manhole cover / tank sump cover and bottom of skirt / top hat requires **5.5" minimum** from string line to top hat. This configuration also requires a 26.3" wide x 4.6" notch in the skirt as shown below.



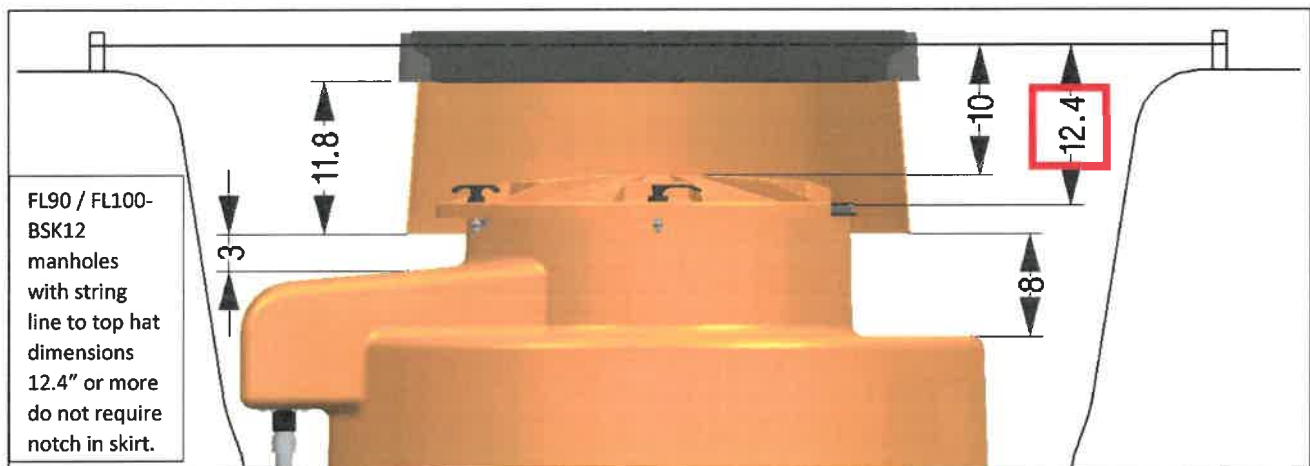
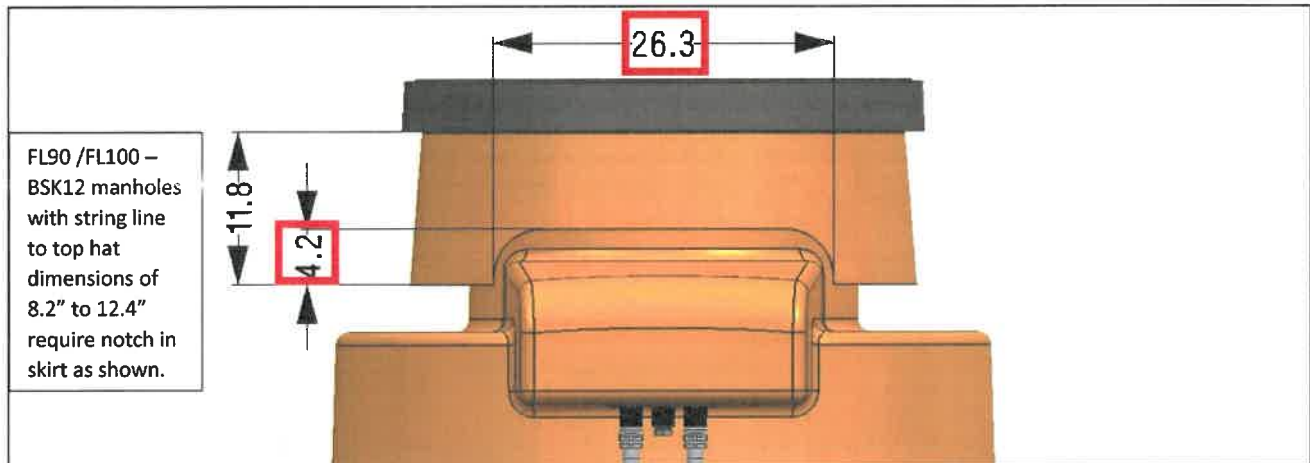
To ensure 3" minimum clearance between bottom of skirt / top hat requires **10" minimum** from string line to top hat for an untrimmed skirt with no notch.

Appendix C (continued)

For all scenarios shown the manhole ring is set 1" above string line for slope.



To ensure 3" minimum clearance between bottom of manhole cover / tank sump cover and bottom of skirt / top hat requires **8.2" minimum** from string line to top hat. This configuration also requires a 26.3" wide x 4.2" notch be cut in the skirt as shown below.



To ensure 3" minimum clearance between bottom of skirt / top hat requires **12.4" minimum** from string line to top hat for an untrimmed skirt with no notch.

Appendix D

Sample Height Calculation with Extensions.

Sample Calculation

Sump Model = FTSD-4233CR

Manhole Model = 37MAT-PL12

Dimension A, string line to tank

= 76 inch

Dimension B, string line to top hat dimension from table

= 5.8 inch

Dimension C, tank sump height without cover, A-B, 76-5.8

= 70.2 inch

Check dimension C, 70.2 inch is out of range of 30 to 43.5 inch

= EXCEEDS, extension needed

FCS42-EX12 extension will be needed.

Dimension D, base height from table

= 25 inch

Dimension E, tank sump top hat height, C-D, 70.2-25

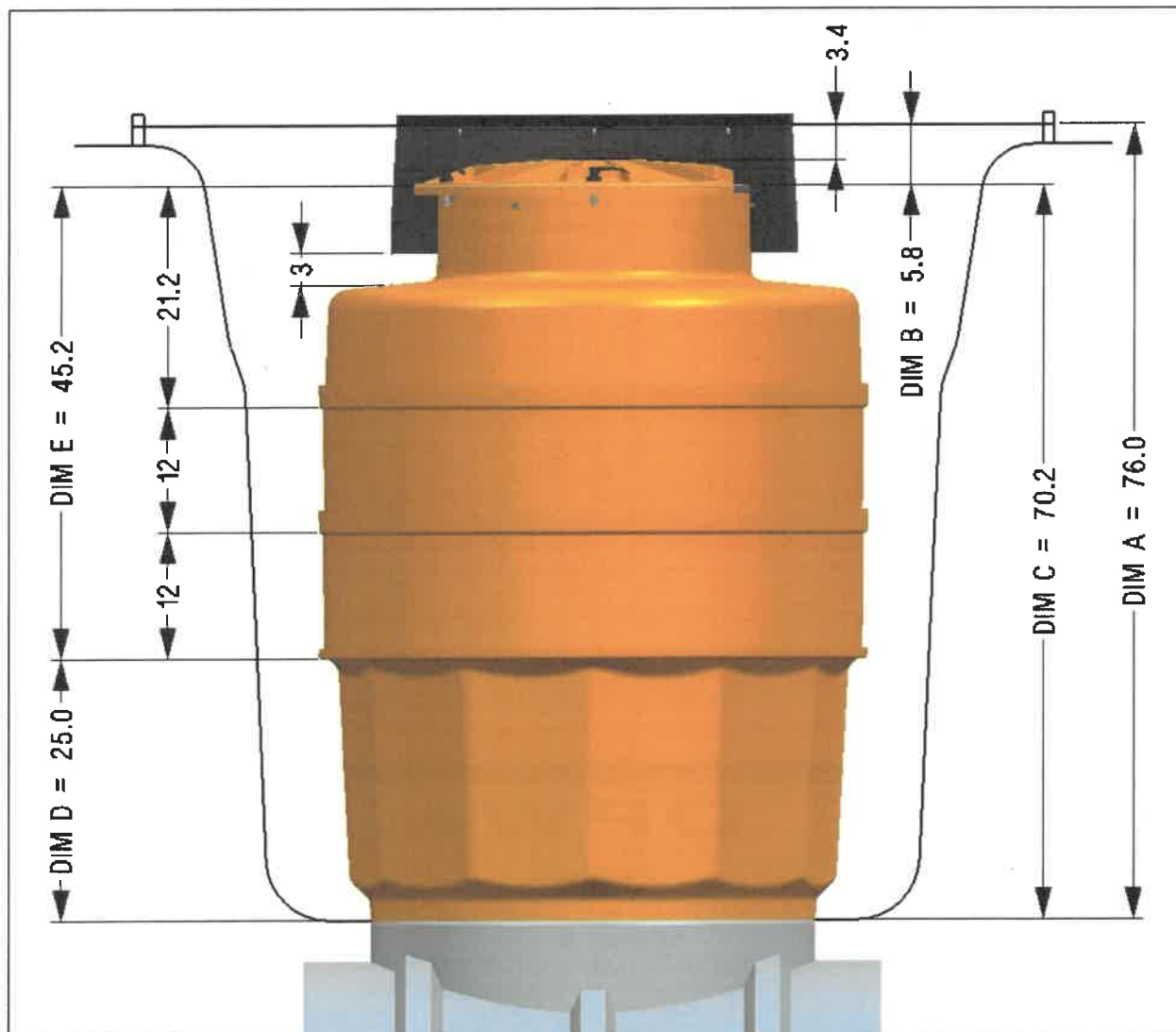
= 45.2 inch

Determine number of extensions needed to extend standard 25" top hat to meet Dimension E.

Extensions are available in 12 inch increments.

For this configuration 45.2 inch – 24 inch (2 extensions) = 21.2 inch top hat height. Trim top hat to match.

Dimension F, trim distance, 25-E, 25-21.2 = 3.8 inch



FTSD-4233CR with 37MAT-PL12



3250 US 70 Business West
Smithfield, NC 27577
Customer Service: 1-(800) 422-2525
Technical Service and Questions:
1-(877) OPW-TECH
www.opwglobal.com

Part Number:	212496
Issue Date:	5/17/2019 Rev B



Department of Environmental Protection

2600 Blair Stone Road ♦ Tallahassee, Florida 32399-2400

DEP Form: 62-761.900(9)

Form Title: Storage Tank Equipment

Registration Form

Effective Date: January 2017

Incorporated in Rule 62-761.850, F.A.C.

Storage Tank Equipment Registration Form

Fill out completely

General Information

Company Name: OPW Retail Fueling, Inc Contact Name: Gene Pope
Company Address: 3250 US Highway 70 Business West City: Smithfield Zip: 27577-6954
E-mail: gpope@popeasc.com Contact Number: 813-969-1900
Product Name: OPW FibreTite Fiberglass Tank Sumps
Model Number(s): FTSM & FTSD Series-See Attached Product Sheet Product Type: Piping Sumps-Fiberglass Tank Sumps
Rule(s) citation within Chapter 62-761, or 62-762, F.A.C. that registration is being requested: 62-761.500

(6) Piping sumps; (a) Piping sumps shall meet the performance requirements of paragraph 62-761.500(1)(b), F.A.C., and be registered

Write a brief description of equipment registration request including product limitations:

The OPW Fibretite fiberglass tank sumps(piping sumps) provide a non-corrosive solution for piping sump applications. The Resin Transfer Mold(RTM) manufacturing process provides consistent wall thickness and durability to the tank sump. The sumps are height adjustable in the field to meet various tank burial depths, can be mounted via a collar mount or tank mounting adapter, provide a stainless steel sealing surface, and watertight easy access cover with locking tabs for proper closure

Information Checklist

	Yes	No	N/A
1. Third-party Certification by a Nationally Recognized Testing Laboratory?	☒	☐	☐
2. Documentation of third-party evaluation that the equipment meets DEP Rules?	☒	☐	☐
3. Documents included about the qualifications of the Nationally Recognized Testing Laboratory?	☒	☐	☐
4. Installation instructions included?	☒	☐	☐
5. Technical information and drawings included?	☒	☐	☐
6. Annual Operability Testing Requirements (Rules 62-761.700, 62-762.701, & 62-762.702 F.A.C.)?	☒	☐	☐
7. Compatible with fuel blends containing >10% ethanol or >20% biodiesel?	☒	☐	☐
8. Has the product been approved or registered in other countries or states? (If so provide list)	☐	☒	☐
9. Any requirements for company-certified installers or trainers?	☐	☒	☐
10. Was this product(s) previously approved or registered by the Department?	☐	☒	☐
If yes, please specify the Equipment Number: <u>EQ-_____</u>	☐	☐	☒
11. Any changes or modifications to the equipment since the last submittal to DEP?	☐	☐	☒

Document Information: Provide supporting documents indicated as "Yes" above including this form via email to Tanknotify@dep.state.fl.us, or documents can be sent to FDEP, Division of Waste Management, 2600 Blair Stone Road, MS 4560, Tallahassee, FL 32399.

Write a brief description of equipment installation and performance in the U.S.:

The OPW Fibretite series fiberglass tank sumps are installed on new or existing tanks in field through either a collar mount or tank mounting adapter method. The sumps are provided in two parts for ease of installation and the parts are joined in the field through the use of OPW RK-5000 Fiberglass Resin Kits. The sumps will accept entry fittings from OPW, as well as other manufacturers. The "RTM"(resin transfer mold) manufacturing process provides a smooth sealing surface for the entry fittings

Equipment Registration Certification:

To the best of my knowledge and belief, all information submitted on this form is true, accurate and complete.

Gene Pope - Manufacturer's Representative-OPW Retail Fueling
Printed Name and Title

Eugene Pope
Signature

Digitally signed by Eugene Pope
DN: cn=Eugene Pope, o=Pope & Associates, ou,
email=gpope@popeasc.com, c=US
Date: 2019.01.14 15:36:39 -05'00'

1/11/19
Date

For Department Use Only:

Date Application Received: 1/15/2019 renew by 1/15/2024

Application complete:

Yes: ☒ No: ☐

EQ- **912**

Date of complete or incomplete letter sent: 1/15/2019

Date of entry to the DEP Equipment Registration List: 1/15/2019

Watertight Wonder.

NEW

FibreTITE TANK
SUMP

Redesigned inverted U-Channel in base to hold resin for Top Hat (Bonds with RK-5000 Resin Kit)

Ergonomic "L-Handle" Provides Ease of Use and a visual indicator that the handle is in the locked position and the watertight lid is secure.

Industry's most consistent wall thickness and only sump with smooth sealing surfaces inside and out for optimum entry fitting watertight integrity.

From the engineering labs of FLEXWORKS and FIBRELITE, OPW has made the best even better. Meet the newest member of the FibreTite Family of sumps, the most watertight sumps on the market today. The new **FibreTite Tank Sump**:

- The only sump manufactured using superior Resin Transfer Molding (RTM) technology. The RTM process utilizes a 2-sided mold to ensure consistent wall thickness and exceptionally smooth wall surfaces inside and out for an ultra-tight entry fitting sealing surface.
- Inverted U-Channel allows for equal resin distribution, creating a superior bond between the base and the top hat to eliminate water intrusion.
- Trimmable top hat design allows for tailored height adjustments
- Stainless steel ring and watertight sealing gasket provide the proven seal-ability of our world renowned Fibrelite sumps
- Available with and without bottom for collar or flange mounting

This is just another example of how OPW is leading the way in containment solutions, and **Defining What's Next.**

To request more information, please contact your OPW District Manager, call OPW Customer Service at 800-422-2525 or visit us at www.opwglobal.com.

OPW 
RETAIL FUELING
a **DOVER** company

DEFINING | WHAT'S NEXT

FibreTite Tank Sump

From the engineering labs of FLEXWORKS and FIBRELITE, OPW has made the best even better. Meet the newest member of the FibreTite Family of sumps, the most watertight sumps on the market today. Designed to meet all the new 2018 EPA UST regulations.

Materials:

Sump: Resin Transfer Molding (RTM) technology



FibreTITE
TANK SUMP

Features & Benefits:

- ◆ The only sump manufactured using superior Resin Transfer Molding (RTM) technology. The RTM process utilizes a 2-sided mold to ensure consistent wall thickness and exceptionally smooth wall surfaces inside and out for an ultra-tight entry fitting sealing surface.
- ◆ 2-piece top hat design allows for tailored height adjustments
- ◆ Inverted U-Channel allows for equal resin distribution, creating a superior bond between the base and the top hat to eliminate water intrusion.
- ◆ Stainless steel ring and watertight sealing gasket provide the proven seal-ability of our world renowned Fibrelite sumps
- ◆ Available with and without bottom for collar or flange mounting
- ◆ Ergonomic "L-Handle" Provides Ease of Use and a visual indicator that the handle is in the locked position and the watertight lid is secure.

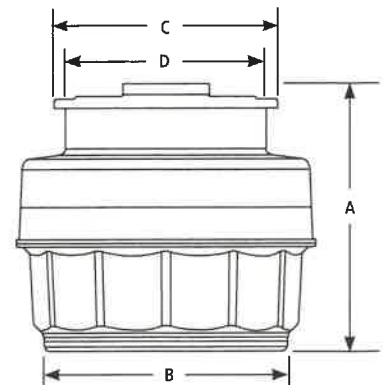
Ordering Specifications - Tank Sump Systems

	New Name	Sump Base Diameter	Max Sump Height (A)	Min Sump Height (B)	Sump Mount Design	Sump Lid Diameter (C)	Minimum Diameter Opening (D)	Additional RK-5000 Resin Kits Needed for Top Hat Attachment (Sold Separately)	Additional RK-5000 Resin Kits Needed for Collar Ring Attachment (Sold Separately)
42"	FTSM-4233CR	42"	46"	33.5"	Collar Ring Mount	33"	29"	1	1
	FTSM-4233SB	42"	46"	33.5"	Solid Bottom	33"	29"	1	-
	FTSD-4233CR	42"	53"	40.5"	Collar Ring Mount	33"	29"	1	1
	FTSD-4233SB	42"	53"	40.5"	Solid Bottom	33"	29"	1	-
	FTSM-4237CR	42"	46"	33.5"	Collar Ring Mount	37"	34.6"	1	1
	FTSM-4237SB	42"	46"	33.5"	Solid Bottom	37"	34.6"	1	-
	FTSD-4237CR	42"	53"	40.5"	Collar Ring Mount	37"	34.6"	1	1
	FTSD-4237SB	42"	53"	40.5"	Solid Bottom	37"	34.6"	1	-
48"	FTSM-4837CR	48"	46"	33.5"	Collar Ring Mount	37"	34.6"	1.5	1
	FTSD-4837CR	48"	53"	40.5"	Collar Ring Mount	37"	34.6"	1.5	1

Replacement Parts/Accessories

Part #	Description
FTSMBASE-42CR	42" Medium Bury Collar Mount
FTSMBASE-42SB	42" Medium Bury Solid Bottom
FTSDBASE-42CR	42" Deep Bury Solid Bottom
FTSDBASE-42SB	42" Deep Bury Solid Bottom
FTSDBASE-42SB	48" Medium Bury Collar Mount
FTSDBASE-48CR	48" Deep Bury Collar Mount
FTS-4233TH	Top Hat for 42" Base Sump and 33" Lid
FTS-4237TH	Top Hat for 42" Base Sump and 37" Lid
FTS-4837TH	Top Hat for 48" Base Sump and 37" Lid

Part #	Description
WT-33SL	33" Fibretite Sump Lid
WT-37SL	37" Fibretite Sump Lid
FCS42-EX12	42" Diameter Sump 12" Extension (1 RK-5000 kit needed for attachment sold separately)
FCS48-EX12	48" Diameter Sump 12" Extension (1.5 RK-5000 kit needed for attachment sold separately)
RK-5000	1 Quart Epoxy Resin Kit
S-CR-FGK	Optional Glassing Kit for Collar Ring Attachment





October 18, 2018

Mr. Kris Kane
OPW Fueling Containment Systems Inc.
3250 US RTE 70 BUSINESS W
SMITHFIELD, NC 27577

Reference: File MH60659 Project 4788690981 Volume: 1
Subject: MH60659 – Dispenser, Transition, Tank and Spill Containment Sumps

Dear Mr. Kane:

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

This confirms that the following products were evaluated by UL and, pending final review, the results of the evaluation were found to comply with the applicable requirements of UL2447, Outline of Investigation for Containment Sumps, Fittings and Accessories for Fuels, Issue No. 1 dated March 30, 2012.

Dispenser Sumps

Models DS1630B, DS-1741, DS-1836, DSF Series, EL-G Series, EL-W Series, DSLF series, FDS-4021 and FDS-4319

Transition Sumps

PST Series

Tank Sumps

S8 Series, S12 Series, S14 Series, S15 Series, TSMF Series, FCSM Series, FTSM Series and TSDF Series

Spill Containment Sumps

1-2100 Series, 1-2200 Series, 1-3100 Series, 1-3122 Series, 1-3132 Series and 1-3700 Series

Records covering the above products are currently being prepared and will be covered in the UL Follow-Up Service Inspection Procedure, MH60659, Volume 1 and UL Listing Report dated February 26, 2018.

If you have any questions, please contact me

Sincerely,

Tim Crews
Staff Engineer
Department: 3014CNBK
Tel: 847-664-2516
Fax: 847-313-2516
E-mail: timothy.a.crews@ul.com

CERTIFICATE OF COMPLIANCE

Certificate Number 20180601-MH27190

Report Reference MH27190 -20000811

Issue Date 2018-JUNE-01

Issued to: OPW FUELING CONTAINMENT SYSTEMS INC
3250 U S RTE 70 BUSINESS W
SMITHFIELD NC 27577

This is to certify that
representative samples of

UNDER-DISPENSER SUMPS AND UNDERGROUND
TANK RISERS

Non metallic Under Dispenser Sumps, Tank Sumps,
Extensions and Transition Sumps, for Flammable and
Combustible Liquids, single walled Model Series DSF,
DSFE, TSF, PSTF, PST, PTS, TRSF, FDS, FTS, and FCS.
Non-metallic double walled sumps Model DST-1242, DST-
1543, DST-1642, DST-1836, DST-1840, and tank risers
Model -4248, and -4848.

Have been investigated by UL in accordance with the
Standard(s) indicated on this Certificate.

Standard(s) for Safety: Under Dispenser Sumps, ULC/ORD-C107.21-1992, First
Edition,

Additional Information: See the UL Online Certifications Directory at
www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's
Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.



Bruce Mahrenholz, Director North American Certification Program

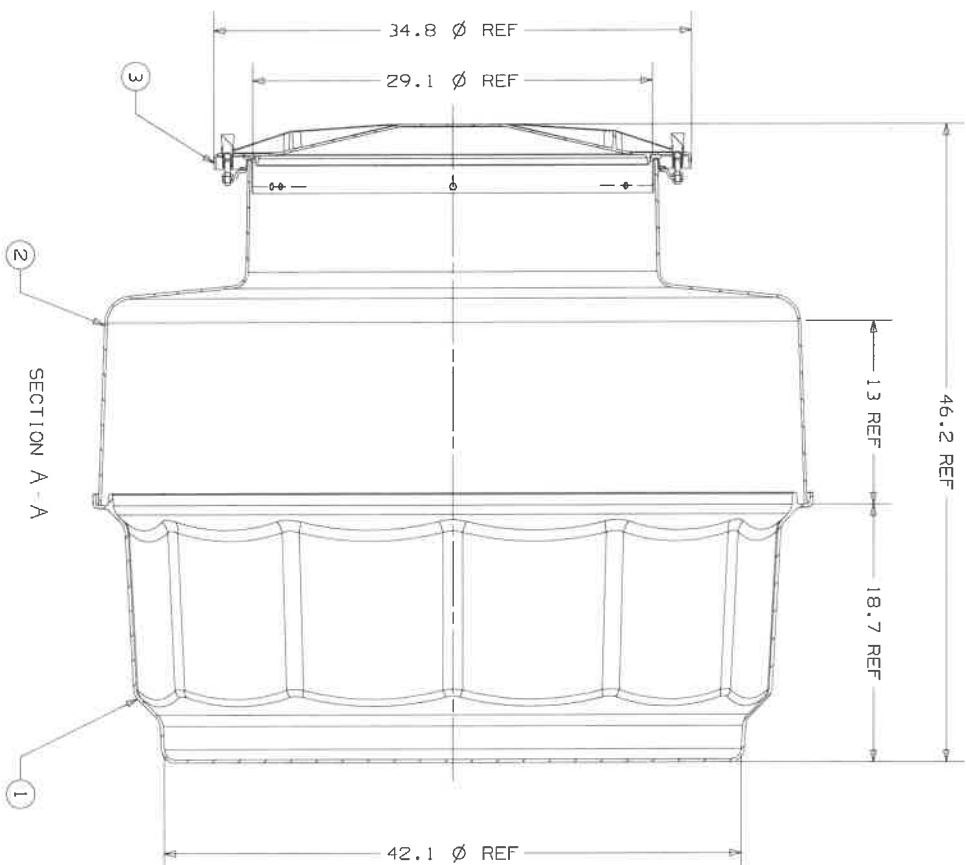
UL LLC

Any Information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please
contact a local UL Customer Service Representative at <http://ul.com/aboutul/locations/>



NO.	PART NO.	DESCRIPTION	QTY.
1	212705	TANK SUMP BOTTOM	1
2	F75-4233TH	TOP HAT S/A	1
3	WT-33SL	COVER	1
4	212496	INSTALLATION INSTRUCTIONS	1

Technical drawing of a circular mechanical component, likely a wheel or a disc, showing a cross-section. The drawing includes a central hub, a series of radial spokes, and an outer rim. The rim is divided into segments, some of which are labeled 'OPW'. The drawing is oriented with a vertical centerline and a horizontal centerline, both marked with arrows and the letter 'A'.



A	
ALL DIMENSIONS IN INCHES OR [mm]	
TOLERANCES (unless otherwise specified)	
X.XXX = $\pm .005$ [X.XX = $\pm .13$ mm]	
X.XX = $\pm .01$ [X.X = $\pm .25$ mm]	
X.X = $\pm .03$ [X = $\pm .8$ mm]	
SAND CAST FRACTIONAL = $\pm 1/32$	
ALL OTHER FRACTIONAL = $\pm 1/64$	
FINISH = 125 RMS [3.2 μ m]	
ANGLE = $\pm 1/2^\circ$	

[illegible]

Installation Instructions Fiberglass Tank Sumps FTS

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.

Tank Sumps

FlexWorks Tank Sumps are installed below grade on top of UST's to provide secondary containment of and access to underground equipment such as submersible pumps, tank bung fittings, and various piping connections. Tank Sumps extend from the top of the tank to just below a manhole cover at grade level. The sump cover must be located within the grade level manhole skirt just under the manhole cover. If the tank is too deep to allow for this, a deeper sump must be used. Do not exceed Maximum Sump Burial Dept: FTS 84".

IMPORTANT: For best results, FlexWorks 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).

Step #1

Mount the Tank Sump Base to the UST. Flexworks Fiberglass Tank Sumps can be mounted to the top of UST's 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.

Method 2: Collar Mount - The sump is attached to the 42" diameter containment collar on an FRP tank by cutting out the bottom of the tank sump base and 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.

42" FRP Collar Mount Installation Procedure

a) Measure across the tank collar to confirm that it is 42". Saw off the very bottom of the sump base to fit the tank collar as shown in **Figure (A)** below. Be sure to leave a minimum of 1" of side wall on the round bottom section.

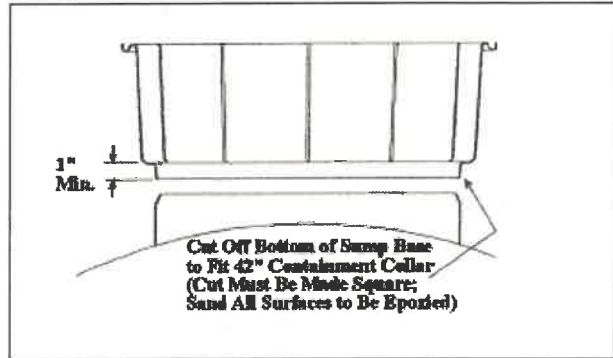


Figure (A)

b) Using sandpaper, completely roughen the surface of both the sump collar and the sump base where they will be joined with the resin adhesive kit (see resin contact area in **Figure (A)** above). Use a level to set the sump base on collar as shown in **Figure (B)** below.

CAUTION: The sump base must be set level to insure that the adhesive will fill the trough evenly around the entire diameter of the middle joint to be assembled in **Step #4**.

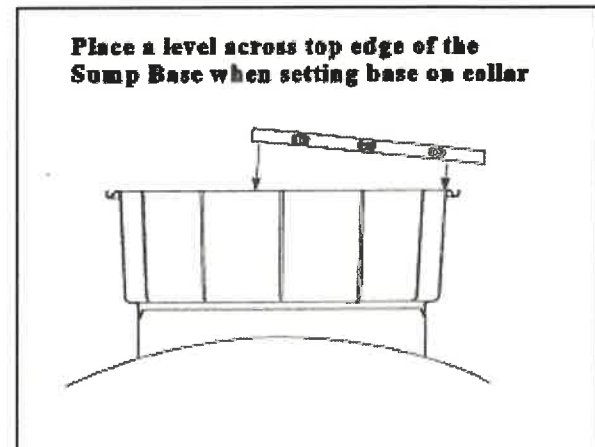


Figure (B)

c) After leveling sump base, apply duct tape around the outside of the joint between the sump base and collar to prevent the adhesive from running out of the joint before it hardens. Mix epoxy resin adhesive as shown in **Figure (C)** below.

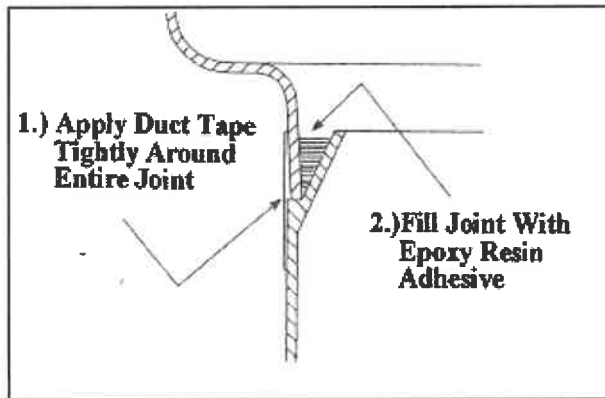


Figure (C)

Important: Resin Set-up Times

After joining the sump base to the collar or to the sump top, allow the epoxy resin adhesive to harden before proceeding. Carefully follow the instructions supplied with the Epoxy Resin Kit (RK-5000), 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.**

Step #2

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). Complete all piping connections as shown on the following pages.

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.

Step #3 - Height Adjustment (See Figure 3)

If necessary, the height of FlexWorks tank sumps can be adjusted in the field by cutting off a portion of the sump top piece. Determine the location to cut to allow the sump to extend so that the sump cover is just below the grade level access manhole cover. Using a saber or circular saw, cut off the necessary portion of the top section **making sure the cut is square.** Before proceeding, test fit the top piece by placing it in the trough on the sump base. Verify that the correct sump height has been attained and the cut has been made square.

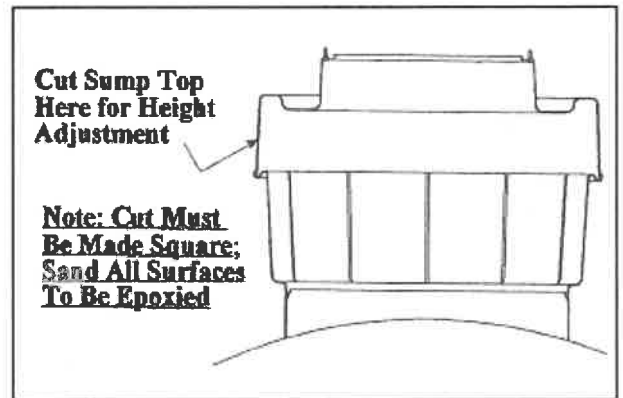


Figure 3

Step #4 - Middle Joint (See Figure 4)

After test fitting the top piece, remove it from the sump base. Using sandpaper, completely roughen the middle joint area on both the sump base and sump top. Wipe the joint area clean. Fill the trough with a full portion of epoxy resin adhesive (supplied in Kit RK-5000). Set the sump top on sump base as shown in Figure 4 below. Allow resin to cure undisturbed as per Epoxy Resin Kit Instructions. For added protection, a bead of FlexWorks SL-1100 sealant can be used to fill in the joint after the epoxy resin adhesive is fully cured.

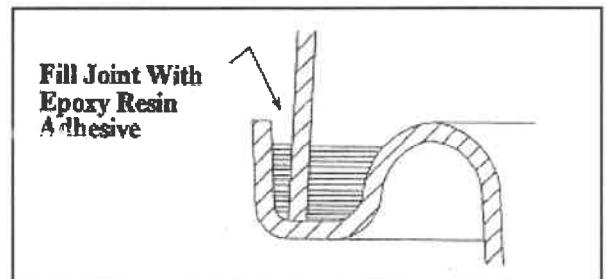


Figure 4

NOTE: For added protection, a bead of FlexWorks SL-1100 can be applied to joint after epoxy cures.

Important: Resin Set-up Times

After joining the sump base to the collar or to the sump top, allow the epoxy resin adhesive to harden before proceeding. Carefully follow the instructions supplied with the Epoxy Resin Kit (RK-5000), 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.**

Step #5 - (See Figure 5)

Replace cover on sump top.

Leak Testing

OPW Fueling Containment Systems recommends the following procedure for hydrostatic testing of dispenser sumps, tank sumps and specialty application sumps.

- 1) Visually inspect all entry boots for band clamps, compression rings and donuts for possible leak points prior to connecting. 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 60in/lbs. Repeat testing procedure.

Backfilling

Rounded pea gravel with a minimum diameter of 1/8" and a maximum diameter of 3/4" must be used for backfill around FlexWorks Tank Sumps. To prevent sump damage, avoid dumping pea gravel directly onto the Tank Sumps when backfilling.

Maintenance

FlexWorks sumps are designed to provide secondary containment of tank equipment and piping connections. All sumps should be regularly checked for the presence of petroleum products. Third party approved leak sensors should be installed in every sump. Any liquid present in the sump should be promptly removed and disposed of properly. The drainage area between the sump and manhole skirt must be kept clear of silt and debris to allow surface water to drain away.

Flexworks tank sumps must be used and tested in compliance with applicable federal, state, and local laws and regulations.

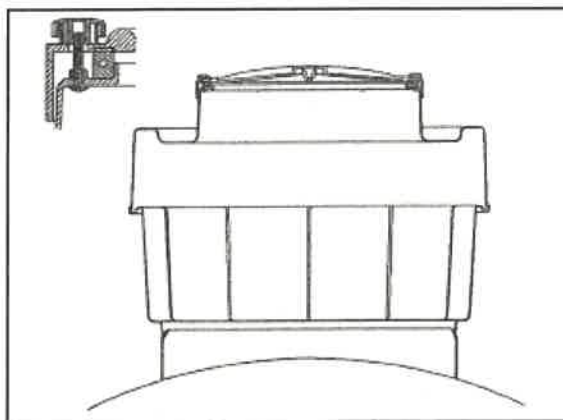
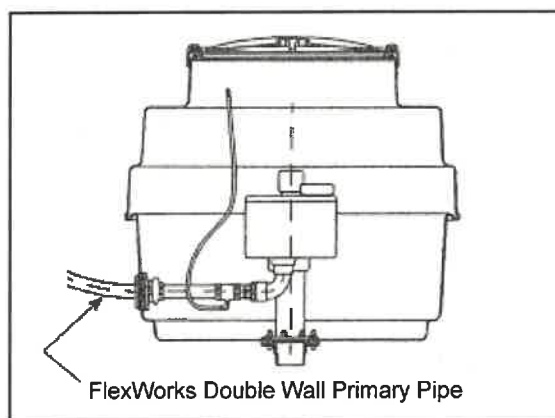
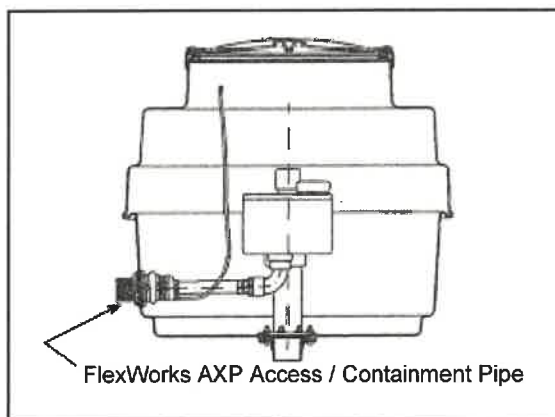


Figure 5

FlexWorks Tank Sump Piping Connections



Direct Burial System



Retractable System

Seat the cover on the stainless steel ring. Press down on the cover. Turn the L-handles 90 degrees to lock the latch beneath the stainless steel ring.

If the L-handle (See Figure 41) fails to engage it may be necessary to adjust the 'cam-lock' height.

If the L-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 cover 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 cover.

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

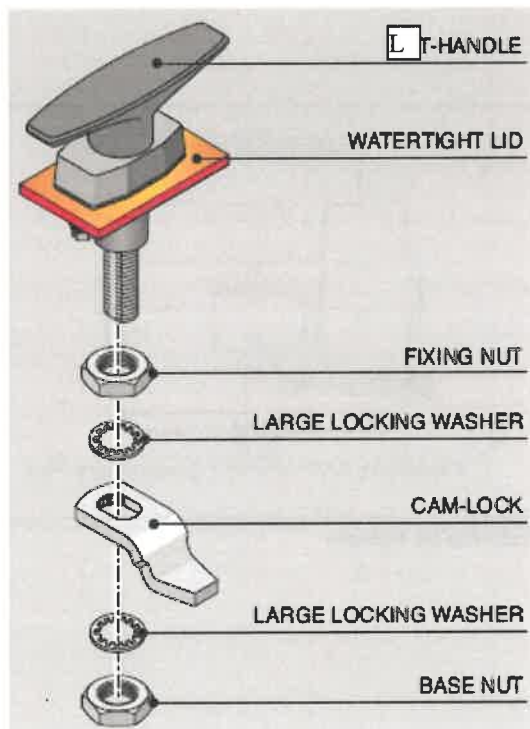


Figure 38

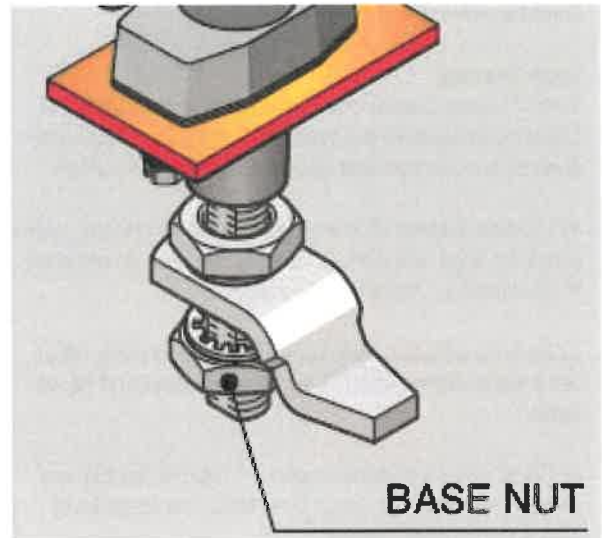


Figure 39

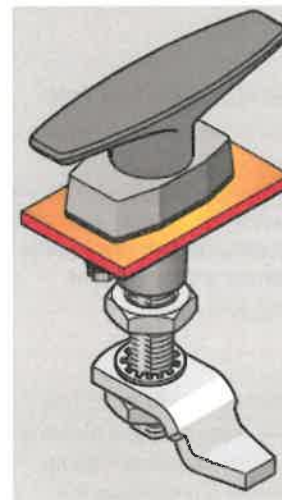


Figure 40

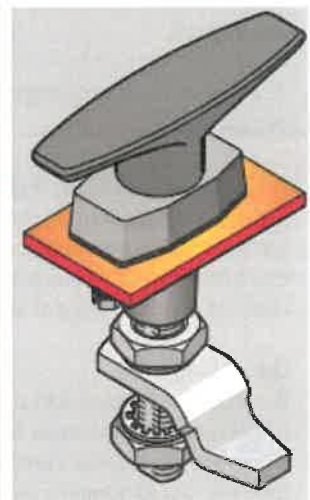


Figure 41

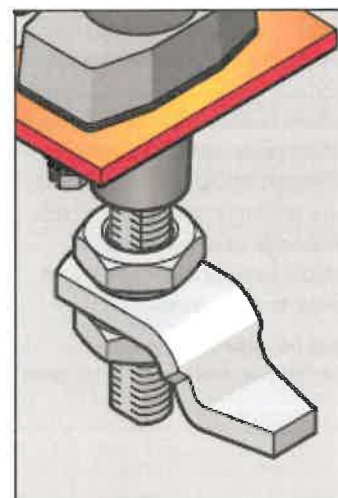


Figure 42

Notice: FlexWorks 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 specifications are subject to change at any time, and models may be discontinued at any time, in either case, without notice or obligation.

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 shipment by OPW. As the exclusive remedy under this limited warranty, FlexWorks 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 period. 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, conditions of use, or improper installation or maintenance. Neither OPW Fueling Containment Systems nor OPW shall in any instance have any 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 in excess of the amount of the original invoice for the products.

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



IMPORTANT INFORMATION - FOLLOW ALL INSTRUCTIONS

Please contact your OPW-FCS sales representative or OPW-FCS customer service representative at 1-800-422-2525 for OPW-FCS products installation procedures. All OPW-FCS literature including installation instruction sheets and manuals can be accessed from the OPW-FCS website at: www.opwfcs.com.



OPW Fueling Containment Systems
3250 US 70 Business West
Smithfield, NC 27577
Customer Service: (800)-422-2525
Customer Service Fax: (800)-421-3297
Technical Questions: (919)-934-2786
Literature Requests: (919) 934-2786
www.opwfcs.com





Below Ground Products Fuel Compatibility Matrix

Updated 8/2018

OPW Product Number	Description	Standard Fuels: ≤15% Ethanol Gasoline ≤5% Bio-Diesel*	High Ethanol Content Gasoline: 15-100% Ethanol	High Biodiesel Content 5-20% Biodiesel*	High Biodiesel Content 5-100% Biodiesel*	Av-Gas/ Jet Fuel	Kerosene/ Fuel Oil	DEF (Diesel Exhaust Fluid)
CXXA Double Wall Piping	Double Wall Primary Piping	X	X	X	X	X	X	X
DPC Series	Double Wall Pipe Couplings	X	X	X	X	X	X	
SPC Series	Single Wall Pipe Coupling	X	X	X	X	X	X	
SBC Series	Stainless Steel Swivel Bolt On Coupling	X	X	X	X	X	X	X
SMA-1515, SMA-1520, SMA-2020, SMA-3030	E-Coated Male Adaptors	X	X	X	X	X	X	
SMA-7575, SMA-1010	Swivel Male Adaptor (Brass or Zinc Plated)	X					X	
STF-1515, STF-2020, STF-2215, STF-2020	E-Coated Swivel Tees	X	X	X	X	X	X	
SFA-7575, SFA-1010	Swivel Female Adaptor (Brass or Zinc Plated)	X					X	
SEF-1515, SRE-2015, SEF-2020, SEF-3030	E-Coated Swivel Elbows	X	X	X	X	X	X	
Polyethylene and Fiberglass Sumps	Dispenser, Tank, Loop, and Transition Sumps	X	X	X	X	X	X	X
REF Series Entry Fittings	Entry Fittings	X	X	X	X	X	X	X
DEB and EBF Series	Entry Boots	X	X	X		X	X	X
1-2100 Series / Multiports / 1-2200 Series	Spill Containers	X	X	X	X	X	X	***
FibreTite Multiports	Spill Containers	X	X	X	X	X	X	***
101BG-Series	Spill Containers	X	X	X	X	X	X	***
1-3100 Series (Edge)	Double Wall & Single Wall Spill Container Series	X	X	X	X	X	X	***
60V Series	Vapor Line Shear Valve	X	X	X	X	X	X	
10 Series	Emergency Shut Off Valve	X	X	X	X	X	X	
10 Plus Series	Emergency Shut Off Valve	X	X	X	X	X	X	
60V-DEF	DEF Series Shear Valve							X
61SALP Series	Fill Swivel Adaptor	X	X	X	X	X	X	
633T-8076	Fill Adaptor	X	X	X	X	X	X	
61VSA Series	Vapor Swivel Adaptor	X	X	X	X	X	X	
1611AVB-1625	Vapor Adaptor	X	X	X	X	X	X	
634TT-7085-EVR	Fill Cap	X	X	X	X	X	X	
1711T-7085-EVR	Vapor Cap	X	X	X	X	X	X	
634LPC-040	Low Profile Fill Cap	X	X	X	X	X	X	
1711LPC-0300	Low Profile Vapor Cap	X	X	X	X	X	X	
62M Series	Monitoring Probe Cap	X	X	X	X	X	X	X
6150 & 7150 Series	Overfill Valve	X				X	X	
6150M & 7150M Series	Overfill Valve Anodized	X	X			X	X	
7150-B Series	High BioDiesel Overfill Valve	X	X	X	X	X	X	
6111 & 61TP Series	Tank Bottom Protectors	X				X	X	
61T Series	Drop Tubes	X				X	X	
61T-SS Series	Stainless Steel Drop Tube	X	X	X	X	X	X	
61T-DEF Series	Stainless Steel DEF Drop Tube							X
233 Series	Extractor Valve	X	X	X	X	X	X	X
FCXX Series	Stainless Flex Connectors	X	X	X	X	X	X	X
53VML/30MV Series	Ball Floats	X	X	X	X	X	X	
523V Series	Pressure Vacuum Vent	X	X	X	X	X	X	X
623V Series	Pressure Vacuum Vent	X	X	X	X	X	X	X
723V Series	EVR Pressure Vacuum Vent	X	X	X	X	X	X	X

* Bio-Diesel must meet ASTM Standard for fuel quality to maintain compatibility with products above

*** Drain plug versions compatible with DEF if installed with Stainless Steel Drop Tube between Nipple and Fill Adapter

≤ Refers to less than or equal to the fuel standard rating for percentage of content