Multiport Spill Containment

Installation Guide Overview

<table>
<thead>
<tr>
<th>Manual #</th>
<th>Revision</th>
<th>Date</th>
<th>Changes from Previous Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>602019029</td>
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<td>Removed reference to snow plow ring, added fiberglass instructions, added parts list and included non-FFS sump instructions.</td>
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Inspection of Materials
Visually inspect all components for defects or damage prior to installation. If any defect or damage is found, do not use the product and contact Franklin Fueling Systems for further assistance.

Warranty Information
Please refer to the FFS Fuel Management Systems & Product Warranty Policy for all warranty information.

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Introduction
This guide is meant as an installation overview for multiport spill container manways, single wall underground fiberglass sumps and water-tight sump shields. This should be used in conjunction with the appropriate part-specific installation instructions. To ensure your system integrity and safety, it is essential that you follow all applicable installation instructions and the federal, state, and local codes that supersede them.

Multiport Safety
To ensure your safety, take these precautions when installing multiport spill containment devices:

- Wear steel-toed boots
- Wear work gloves
- Wear eye protection

Tools Required for Installation
- Silicone spray
- ¾” and ½” sockets
- T-7043 Spill container and swivel adapter installation toolkit
- Tape measure
- Pipe sealant approved for gasoline
- Torque Wrench, 0 to 200 Ft. Lbs with 1/2” drive

Guidelines for a Successful Installation
- Do not alter the installation in any way.
- Do not install any material between the multiport containment skirt and concrete.
- Do not get debris in the D-Ring gasket channel. Failure to maintain this surface may cause improper seating of the steel diamond-plate cover.
- Do not Compromise the integrity of anchor points on the Skirt Ring Assembly.
- Do not place fingers or toes under multiport cover while installing.
- Do make sure the multiport fill and vapor risers are 16” center-to-center. The M-1600 riser support is used to hold the risers at the proper distance.
- Do tighten the cover cam-locks in a star pattern.
- Do allow concrete to encircle the multiport skirt.

Fiberglass Safety
To ensure your safety, take these precautions when working with fiberglass sumps:

- Wear protective goggles
- Wear a protective mask (painter’s mask)
- Wear hearing protection
- Protect and avoid skin contact (wear latex gloves, boots and cover all exposed skin)
- Check with local regulations concerning confined space entry

Warning
Catalyst can combust under certain circumstances. To help prevent combustion:

- Ventilate working area
- Do not use near flammable materials
- Keep out of direct sunlight
- Do not use more catalyst than required
- Do not store rags, used mats, or material that has been used to apply catalyst.

Warning
Acetone is flammable; refer to the manufacturer’s instructions for complete safety information.

Fiberglass Tools Required for Installation
- Mat, resin, putty and catalyst
- FG-SEAMKIT (one per seam recommended) - see our product catalog for ordering information
- Protective gear: safety glasses, painter’s mask, latex gloves and painter’s suit
- Mixing stick and mixing containers for mats, resin and putty
- Grooved roller (check that it rolls freely)
- 4” to 6” disposable paintbrush
- (2) Bondo knives – one 4” and one 6” (can be purchased locally at automotive stores)
- 4” putty knife
- Acetone
- DA (Dual Action) sander (coarse, green core 40 grit sandpaper) or hand grinder
Multiport Parts - Reference Drawings

MSC-4842-4-1

MSC-XS36 Series

MSC-4236 Series

MF-4x4 Riser Adapter
Spill Containment Riser Installation

Run vent piping to sump

Install vent piping after the base is installed (Figure 2).

Install Risers

The risers are cut so the top of each one is 18¼" below the finished grade line (Figure 1).

Install Support Bracket

Install the riser support bracket (P/N M-1600) (Figure 4). This inures the proper 16" spacing between the riser pipes. This device is designed to provide no more than one inch adjustment of riser pipes.

Confirm the 16" spacing before proceeding.

Install the MF4x4 onto the fill and vapor tank risers. Refer to the table below for torque values.

<table>
<thead>
<tr>
<th>Location</th>
<th>Torque (ft-lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swivel Adapter to Spill Bucket</td>
<td>50-70</td>
</tr>
<tr>
<td>Spill Bucket to MF4x4 Adapter</td>
<td>75-100</td>
</tr>
<tr>
<td>MF4x4 Adapter to Riser</td>
<td>175-200</td>
</tr>
</tbody>
</table>
FFS Fiberglass Multiport Containment Sumps and Water Tight Sump Shield Installation

Cutting Sump to Length
1. Measure from the top of the octagonal base to finish grade to determine the correct height for the riser. To do so, measure “A” - 14” = “B”. “B” is the overall height of the riser.

Dry Fit
FFS Fiberglass Multiport Containment Sump

Figure 7: Dry-Fit FFS Sump riser

2. Cut the riser where it was marked in Step 1 with a diamond blade to ensure a straight and accurate cut.
3. Dry fit all of the components together so that the correct height is achieved.

If using a Non-FFS sump, follow manufacturer’s instructions. Dry-Fit the M/F 4x4 and buckets to check proper grade level distance. (Figure 1).

Make sure that the top of the riser is between 14” and 16” below grade level.

FFS Water Tight Sump Shield Installed on Non-FFS Fiberglass Sump

Overall height from the tank collar to grade level (14-16”) equals total multiport sump installed height. Cut away excess material from riser section of multiport containment sump.

See page 2 for MSC-XS36, -42 & 48 dimensions.
Fiberglass Application

FFS Multiport Containment Sump

Surface Preparation

1. Abrade, **down to the glass fibers**, four inch tall segments on the two components being fiberglassed together.

2. The fiberglass sump should be sanded using a power sander with coarse, green core 40 grit sandpaper (Dual Action Sander works best). If you’re going to be sanding by hand, use an abrasive medium to make a rough surface for the fiberglass to bond to.

3. Use a tack rag to remove dust.

4. Wipe abraded areas with acetone to help the mat adhere to the abraded areas.

5. Install sump riser on the sump base.

Applying Putty to Sump Joints

1. Clear the inside and outside of the joint of debris so that the area is completely dry and clean.

2. Mixing putty and catalyst:
   a. The putty and catalyst mixing ratio is 20 mL of catalyst per one quart of fiberglass putty. Use a measuring beaker or cup to measure out the 20 mL of catalyst.
   b. For best results, ambient temperature should be above 70° F when fiberglassing. If the ambient temperature is below 70° F, cure times will be longer and the catalyst ratio must be adjusted when mixing putty with resin.
   c. When mixing putty and catalyst, always mix from the bottom up.
   d. Mix the catalyst and putty together until the catalyzed putty is thoroughly, uniformly mixed with no color streaks.

3. Smoothly apply the catalyzed putty with a 4" putty knife to the outside joint of the sump, pushing some down into the joints. Fill in any open areas of the joint with catalyzed putty.

4. Create a smooth surface for the mat to bond to by using a Bondo knife to smooth the catalyzed putty around the joint. Make sure that there are no cracks or holes in the putty because this layer is what creates the watertight bond to the sump.

5. Allow the puttied sump to sit for at least one hour in an above 70° F environment so that the putty can harden. **Do not disturb the sump during this time, or it could become misaligned.** Lower temperatures will require longer cure times.

6. Inspect the outside joint for gaps that could cause a problem for the mat when adhering it to the abraded area of the sump. Visually inspect the inside joint to verify that there are no problem areas, cracks or holes.

7. After the joint has fully cured, lightly sand all previously abraded areas, dust them off, and wipe down the area with an acetone-soaked rag.
Mixtures and Cure Times for Resin and Catalyst

Important Things to Know

• Resin hardens quickly, so have all setup items prepared ahead of time. Spending extra time on setup items prior to mixing the resin will help ensure that you have enough time later to work with the resin before it hardens. Before mixing resin, check that your roller works properly.

• For best results, ambient temperature should be above 70°F. If the ambient temperature is below 70°F, curing time will be extended (refer to the time chart for approximate cure times).

Resin/Catalyst Mixtures

<table>
<thead>
<tr>
<th>Resin</th>
<th>Catalyst in cool or overcast conditions: 2% per weight</th>
<th>Catalyst in standard conditions: 1.5% per weight</th>
<th>Catalyst in hot or sunny conditions: 1% per weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 fl. oz. (1 pt.)</td>
<td>9 mL</td>
<td>7 mL</td>
<td>5 mL</td>
</tr>
<tr>
<td>32 fl. oz. (1 qt.)</td>
<td>19 mL</td>
<td>14 mL</td>
<td>9 mL</td>
</tr>
</tbody>
</table>

Cure Times

Cure times given are for reference purposes only, exact times may vary.

<table>
<thead>
<tr>
<th>Ambient Temperature</th>
<th>Minimum Set-up Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>35 F</td>
<td>20 Hours</td>
</tr>
<tr>
<td>40 F</td>
<td>14 Hours</td>
</tr>
<tr>
<td>50 F</td>
<td>8 Hours</td>
</tr>
<tr>
<td>60 F</td>
<td>5 Hours</td>
</tr>
<tr>
<td>70 F</td>
<td>3 Hours</td>
</tr>
<tr>
<td>80 F</td>
<td>2 Hours</td>
</tr>
<tr>
<td>90 F</td>
<td>1 Hour</td>
</tr>
<tr>
<td>100 F</td>
<td>½ Hour</td>
</tr>
</tbody>
</table>

1. Cut several dozen pieces of fiberglass mats to lengths of 24". These mats will be used in the next section, but it’s important to do this before mixing the resin to give yourself more time to work with the resin before it hardens.

2. Mix one pint of catalyzed resin at a time, starting with a small amount so that the mixture does not cure before applying it to the sump. As you become more familiar with the fiberglass application, you may increase the amount to one quart.

Note: Do not use less than 1% per weight of catalyst per mixture, or the resin will not fully bond to the surface of the sump and mat.

Applying Resin and Mat to Sumps

When applying mats to a sump, use three layers of fiberglass mat strips (the ones you cut in Step 1 in the Mixtures and Cure Times for Resin and Catalyst section) for each joint of the sumps being fiberglassed. Apply one layer of mat at a time, centering and overlapping the mats on the joint being fiberglassed.

Note: Do not store mats in humid or wet environments. If a mat comes in contact with liquids or humidity, it will begin to release the chemicals that allow it to adhere to the fiberglass sump. A wet or damp mat will not adhere to a sump and should be disposed of immediately.

1. Apply catalyzed resin generously to the puttied sump joint using a disposable paintbrush that is 4" or 6" wide. Wet out (apply a large amount of catalyzed resin to) the area on the components being fiberglassed more than large enough for the 24" piece of mat to lay on (Figure 13).

2. Apply a fiberglass mat to the area wetted out in Step 1 and saturate this layer of mat with catalyzed resin.

3. Using a 4-6" grooved roller, roll over the layer of fiberglass mat and remove any air bubbles. Make sure that air bubbles are not present in this layer because this layer is the foundation for the next layer. White areas in a mat indicate the presence of air pockets.

4. Roll over the mat horizontally and vertically with the roller as many times as needed to eliminate air bubbles (Figure 14).
5. Repeat Steps 1 through 4 all of the way around the sump, overlapping each mat with the one previously applied. Three layers of mat need to be applied to each sump joint.

Note: Resin will soak through the first layer: don’t apply as much resin to the second and third layers as on the first.

Note: Clean the roller with acetone periodically so that it keeps rolling freely.

6. Finalize the mat install by spreading some extra resin across the mat. Again, remove any air pockets that may be caught in the resin.

7. Refer to the Cure Times chart for approximate cure times.

Note: The Water-Tight Sump Shield must be fiberglassed to the sump riser on both the inside and outside seams.

Fiberglassing Watertight Sump Shield

Gel Coat Application

Tools
- NIOSH approved respirator
- Disposable paint brush or roller
- Disposable bucket for mixing
- Mixing sticks
- Catalyst
- Tacky rags
- Acetone to clean and prepare surface

Safety Considerations
- The white gel coat contain styrene monomer, which is a flammable liquid. Keep away from sparks, heat and open flame.
- Styrene vapors are heavier than air. Use adequate ventilation or suction fans to remove vapors.
- Both the polyester gel coat and the catalyst may cause burns to eyes and skin. Do not get in the eyes!
- Avoid breathing vapors! Gel coat applicators should wear a NIOSH approved respirator effective for vapors, spray mist and dust. In case of accidental contact, remove the contaminated clothing and wash affected skin areas with soap and copious quantities of water. Contact a physician if persistent skin irritation occurs. For eyes, immediately flush with plenty of water for at least 15 minutes; call a physician immediately. Wash contaminated clothing before reusing.

Note: Do not mix material continuously or its thixotropic properties may be lost (Certain gels become more fluid when over-stirred). If the gel coat is inadvertently over-mixed, hold material for four hours without agitation before application.

Mixing
- It is suggested that the catalyst concentration used in the application of the “LHM” series NPG-ISO White Gel Coats not exceed 3.0% or fall below 1.5% to retain maximum properties.
- The recommended range for the catalyst concentration within the applied film is 1.8 to 2.2% at 77° F.
- Recommended catalysts are NORAC MEKP-9, Superox 46-702 and Cadox L-50a. Call HK’s Lab for other recommendations.

Application
1. Use sandpaper to rough up the surface and remove the shiny surface of the existing gel coat layer.
2. Use a tacky rag to remove dust on the surface to be gel coated.
3. Clean area with acetone and let dry.
4. After mixing resin and catalyst, apply it using a disposable brush or roller. Coat the area thoroughly and allow the gel coat to set. The time required for the gel coat to set is dependent upon the temperature and the percent of catalyst mixed into resin.
5. Inspect the area for full coverage. Paint on additional coats to ensure full coverage.
Finishing
1. After the fiberglass has cured, lightly sand the area (preferably by hand using coarse, green core 40 – 60 grit sandpaper) to remove all excess fiberglass material.
2. Dust the sump clean.

Clean-Up
Bondo knives, putty knifes, grooved rollers

Warning ⚠️ Take care when disposing of these clean-up items because they are highly flammable

Storage Limitations of Catalyst, Resin and Mat
- Do not store mat in a humid or wet environment. If mat comes in contact with humidity or liquid it will begin to release the chemicals that allow it to adhere to the fiberglass sump. A wet or damp mat will not adhere to a sump and should be disposed immediately.
- Three months after manufacture at 73°F or below in a factory-sealed container.
- Keep out of direct sunlight.

Warning ⚠️ Catalyst can combust under certain circumstances. To help prevent combustion: do not store rags, used mats, or material that has been used to apply catalyst; adequately ventilate areas when working with materials; do not use near flammable materials; keep out of direct sunlight and do not use more catalyst than required when mixing with resin.

Completing Installation
Backfill around containment sump until approximately 18” from grade level. Remove diamond plate cover from skirt and place skirt around watertight sump shield.

Figure 17: Sump backfilled
Reinstall diamond plate cover over spill containers and tighten cam locks.

Figure 18: Installing Diamond Plate Cover
Install the cover, making sure to center in on the manway and spill containers. Engage the cam locks in an alternating manner (See next section).

Finish backfilling and concrete.

Figure 19: Concrete Slope from Cover
**Cover Gasket and Cam Locks**

Follow these guidelines for installing and fastening the multiport cover.

**Figure 20: D-Ring Gasket Cross Section**

The D-Ring gasket surface must be free of dirt and debris before installing the cover.

**Figure 21: D-Ring Gasket Installed**

Make sure the gasket is fully seated in the channel and rounded edge is facing up before installing the multiport cover.

**Figure 22: Cam Lock Open**

Before installing or removing the multiport cover, make sure the cam locks are fully open with the long edge against the stop (Figure 22).

**Figure 23: Cam Lock Closed and Engaged**

After the cover is in place, use a star or crossing pattern to tighten the cam locks. Figure 23 shows the can lock engaged (View from underneath).
Figure 24: Final Installation Overview