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	Replace Macro Tech LNG Fill Receptacle			

**Purpose**

The purpose of this document is to outline the necessary procedures for replacing an LNG vehicle tank fill receptacle on Chart LNG vehicle tanks.

**Overview**

The LNG fill receptacle is used to connect the vehicle fuel tank to the fill station when filling the tank. A fuel nozzle and hose is connected to the fueling station and attached to the fill receptacle for filling the tank. Occasionally a fill receptacle may exhibit signs of leaks around the receptacle seal. If the receptacle seal is leaking a determination must be made as to whether to replace the receptacle as an assembly, or replace the seal. This service bulletin covers replacement of the fill receptacle as an assembly. Fill receptacle seal replacement requires a special tool kit to be used, and is covered in a separate document.

**Safety**

Any technician who inspects or services LNG vehicle fuel systems must wear appropriate personal protective equipment (PPE) while performing such tasks.

To replace the fill receptacle, precautions must be taken to ensure the receptacle and fill tubing are at ambient temperatures. Do not attempt to replace a fill receptacle immediately after filling, or while frost is still apparent on the receptacle, fill check valve or fill tubing. If frost is apparent the components can be defrosted using a low volume water stream such as a garden hose. Then all components must be blown completely dry with shop air. This will ensure no moisture will enter the fill piping circuit when components are disassembled. The replacement must take place in a covered and well lit environment.

**Receptacle Replacement Steps**

If the receptacle needs to be replaced follow the steps below.

1. Use a 13 mm wrench or socket to loosen the 4 bolts that secure the grill cover on the plumbing end of the tank on which the receptacle is to be replaced. Completely remove the bolts positioned at 3, 6 and 9 O clock. Wear protective gloves to handle the cover and remove the final bolt (12 O clock).

**Caution: The grill cover may have sharp edges that could cut your skin when handling.**

**This procedure is intended for use by trained technicians with experience on systems using LNG. Review all applicable safety documents before beginning this procedure.**



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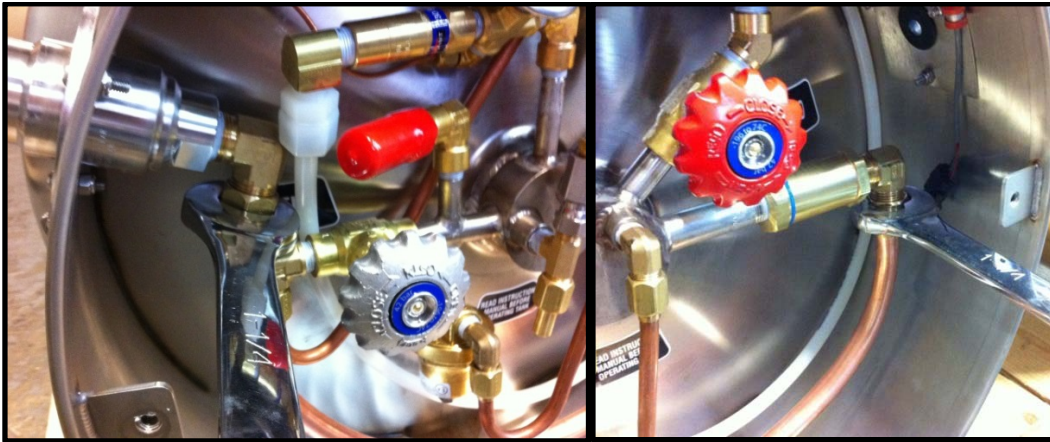
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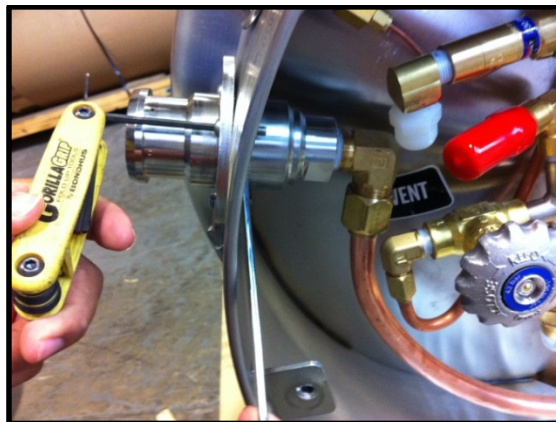
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- Use a 1 ¼" wrench and loosen both flare nuts on the fill tube ½ turn each (shown below). Wiggle the fill tube by hand to loosen it from the flare. You should hear pressure escaping from the tubing. The pressure should bleed down to 0 psi within about a minute or less.  
Note: It may be necessary to remove the nylon vent tube to gain easier wrench access to the fill tube retainer nut.

**Caution: If pressure does not bleed to 0 psi and continues to escape, the fill check valve may also need to be replaced. If the fill check valve needs to be replaced the tank will need to be completely de-fueled and vented to 0 psi prior to removing the fill check valve.**



- Use a 5/64" Allen socket and 7/16" box end wrench, loosen and remove the fill receptacle mounting bolts. Retain the mounting bolts and fill receptacle protective cap for re-use.



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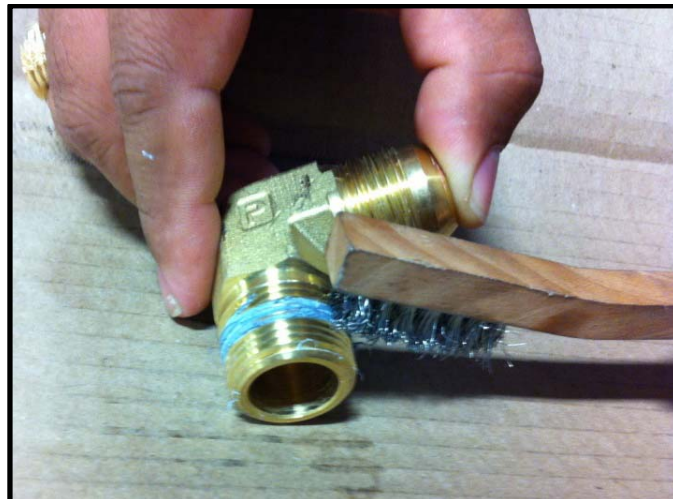
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4. Completely loosen both ends of the fill tube retaining nuts and remove the fill tube.
5. Remove the receptacle from the tank shroud.
6. Clamp the fill receptacle into a vise using the flats on the fill receptacle (shown in the photo below). Use a 1 1/16" wrench to loosen and remove the elbow. Remove the receptacle from the vise and tag if necessary.



7. Clean the thread sealant tape from the elbow threads using a hand wire brush as shown below.



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8. Install three wraps of thread sealant tape on the elbow threads (Refer to service bulletin VT-0030 for proper thread tape procedures if necessary).



9. Mount the new receptacle in a vise and install the elbows male pipe threads into the receptacle threads. Tighten using a 1 1/16" wrench. The final stopping point should have the elbow flared outlet facing directly toward one of the receptacle mounting bolt holes (shown in the photo below).



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10. Replace Flaretite seal onto the Elbows flared end (see photo below).



11. Take the new receptacle back to the tank and install it into the mounting port with the elbow pointing in the downward position (see photo below).
12. Replace Flaretite seal on the elbow at the fill check valve and thread the fill tube nut onto the fill check valve elbow hand tight.
13. Thread the other end of the fill tube nut onto the receptacle elbow hand tight. Ensure the tube flare lines up to the elbow flare properly (as shown below). Then go back and snug up both ends of the fill tube flare nuts using a 1 ¼" wrench.



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14. Install the (3) fill receptacle mounting bolts and nuts. Tighten all 3 alternately until tight. Do not forget to install the fill cap lanyard retainer clip to the bottom bolt.
15. Go back and perform a final tightening sequence to both ends of the copper fill tube. Use a 1 ¼” wrench.
16. If the nylon vent tube was previously removed for easier access, replace it and hand tighten (hand tight only) the nut onto the elbow.
17. Install the protective cap onto the new receptacle.
18. Reinstall the grill cover using the 4 bolts and tighten using a 13 mm wrench or socket.

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