	VT-0048R110	000	03/16	CWH
	Filling a Chart LNG Tank			

OVERVIEW

The Chart LNG fuel tank is designed to be filled from any saturated LNG fuel source. Fuel must be delivered from the bulk tank in a saturated condition at a minimum pressure of 7 bar and a temperature of -130°C or higher for proper system performance.




SAFETY

It is recommended to perform fueling of tanks in a well ventilated area so as to avoid gas from concentrating in an area. When air to fuel mixture is correct, concentrated gases become flammable. Insure truck’s parking brake is applied, tank is grounded, and ignition switch is in the “off” position. Check for leaks and repair as needed. Wear proper PPE as needed for fueling LNG tanks.



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

	VT-0048R110	000	03/16	CWH
	Filling a Chart LNG Tank			

Normal Filling

The Chart LNG fuel tank is designed to be top filled via a single hose connection. A return (vent) hose is not needed to achieve a 100% fill. A ullage tank inside the main tank prevents overfilling.



Step 1: Ensure all safety policies and procedures are followed at all times.

Step 2: Ensure proper personal protective equipment is worn.

Step 3: Connect the station ground clamp to tank.

Step 4: Check the tank pressure gauges on both tanks; they will normally be at or below 10 bar. If either tank pressure gauge reads above 10 bar follow the “Venting a Tank” procedure below (Step 14 - 28). If tank pressure is at or below 10 bar continue with Step 5 below.



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



VT-0048R110

000

03/16

CWH

Filling a Chart LNG Tank

Step 5: Remove the fill receptacle dust cap.



Step 6: Use the station air hose to blow off any moisture or dirt from the tank fill receptacle and station fill nozzle.

Step 7: Install the station fill nozzle onto the tank fill receptacle. For Kodiak style nozzles, ensure the locking tabs are fully engaged into the locked position. For JC Carter and MacroTech style nozzles, ensure the locking arms are fully forward and engaged.



Kodiak



MacroTech



JC Carter

Step 8: Push the start button on the dispenser.

Step 9: The LNG tank pressure will initially spike upward and should then maintain at a fairly stable pressure throughout the tank fill.

Step 10: Once the tanks become full, the LNG tank pressure will rise higher and the station will automatically terminate the fill sequence, indicating the tanks are full.


NOTE:

Once the fill sequence has terminated do not press the fill station start button again.

Doing so can cause the tank to become overfilled.

Step 11: (Kodiak) Slowly rotate the nozzle to release pressure, and then remove the nozzle from the fill receptacle
(JC Carter/MacroTech) Slowly pull back the fill nozzle locking arms to the released position. Release the nozzle by pressing the locking tab (if equipped), and remove the nozzle from the fill receptacle.

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

	VT-0048R110	000	03/16	CWH
	Filling a Chart LNG Tank			

Step 12: Remove the ground clamp.

Step 13: Reinstall the fill receptacle dust cap.

Venting a Tank

The tank will very rarely need to be vented in order to fill it. If the truck has been out of service for several days and filling is necessary before going on the road, vent filling may be necessary if tank pressures are higher than 10 bar.



NOTE:

Vent filling should NOT be performed as a standard procedure, or on a regular basis.

The vent hose and filling hose should never be connected to the tank at the same time. Always vent (only when needed), then fill as separate procedures.

Step 14: Ensure all safety policies and procedures are followed at all times.

Step 15: Ensure proper personal protective equipment is worn.

Step 16: Check the tank pressure gauge(s). If either of the gauges read higher than 10 bar the tank(s) will need to be vented before they can be filled.

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



VT-0048R110

000

03/16

CWH

Filling a Chart LNG Tank

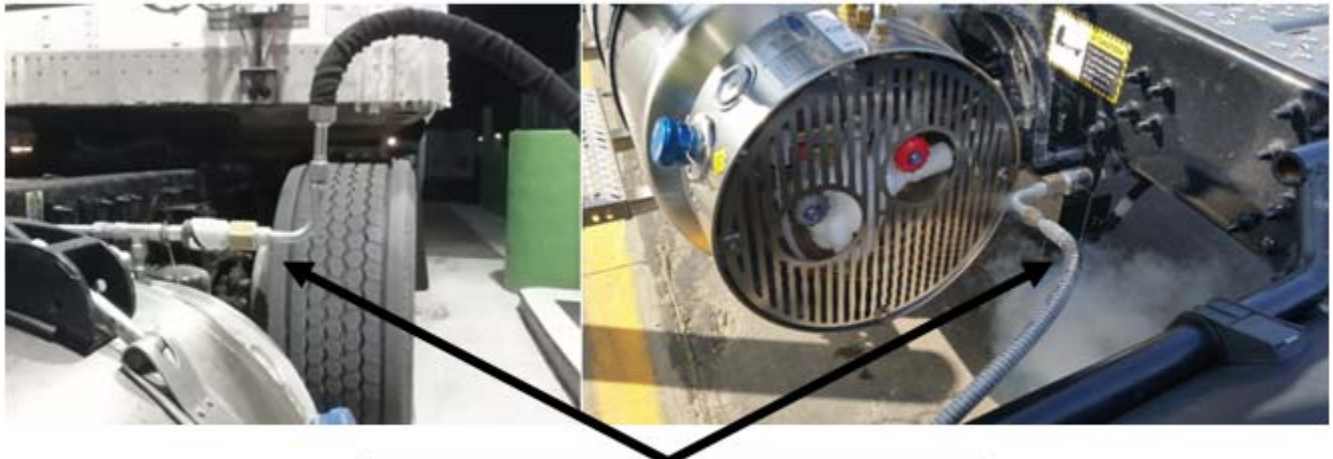
Step 17: Connect the station ground clamp to tank.

Step 18: Remove the vent receptacle dust cap.



Step 19: Use the station air hose to blow off any moisture or dirt from the tank vent receptacle and station vent connector.

Step 20: Connect the station vent hose to the tank vent receptacle.




Vent hose from fuel station

Step 21: If the truck has dual tanks open the secondary tank (the one without the fill receptacle) vent valve (gray hand wheel).

Step 22: Vent the tank down to just below 10 bar while observing the tank pressure gauges.

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

	VT-0048R110	000	03/16	CWH
	Filling a Chart LNG Tank			

NOTE:

The tanks should never be vented below 9 bar.

Step 23: Close the secondary tank vent valve.

Step 24: Open the primary tank (the one with the fill receptacle) vent valve (gray hand wheel).

Step 25: Vent the primary tank down to just below 10 bar.

NOTE

The tanks should never be vented below 9 bar.



Step 26: Close the primary tank vent valve (gray hand wheel).

Step 27: Remove the vent hose.

Step 28: The tank should now fill completely using the single hose method. Go to Step 1 above (Normal Filling) and follow Steps 1 through 13 to fill the tanks.

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