

Check Propane System for Leaks

Once the TES Trailer Propane System is installed and the hoses are connected, the system must be checked for leaks. The propane tanks must be filled with propane. With the tank valves closed, connect the tank adapters to the tanks before proceeding.

Perform the leak testing outdoors with the trailer doors and vents open, away from sources of ignition.

We will use three ways to check for leaks:

- Sound & Smell
- Manometer Leak Test or Pressure Testing
- Leak Testing Solution



Low Pressure Manometer



Use Inches of Water Column Scale

Pressure gauges with PSI scales cannot be used on the outlet side of the propane regulator. (The low pressure side is from the 2nd stage of the regulator to the TES burner.)

Low Pressure Manometer scales go to 35 inches of water column, 8.6 Kilopascals or 20 ounces per square inch. The maximum pressure the low pressure manometer can display is approximately 1.25 psi. The readings taken on a properly adjusted propane system will be less than 0.50 psi.

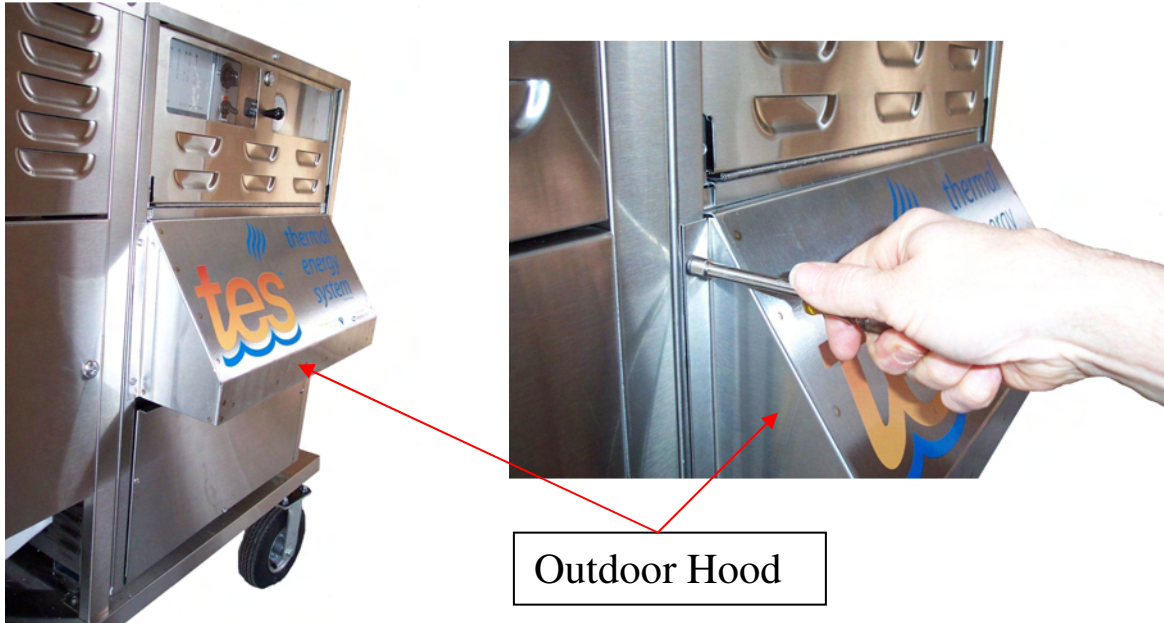
The low pressure manometer cannot be used on the high pressure inlet side of the propane regulator where pressures may exceed 100psi.

(The high pressure side is from the propane tanks to the 2nd stage of the regulator.)

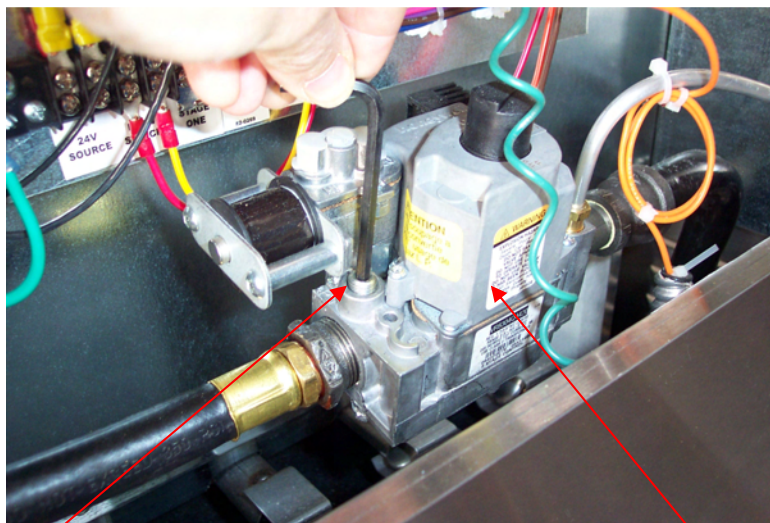
Pressure gauges with PSI scales can be used on the high pressure inlet side of the propane regulator.

PRESSURE TEST

- 1) The main gas valve is located under the Outdoor Hood on the front of the TES unit. Remove the four screws and remove the hood.



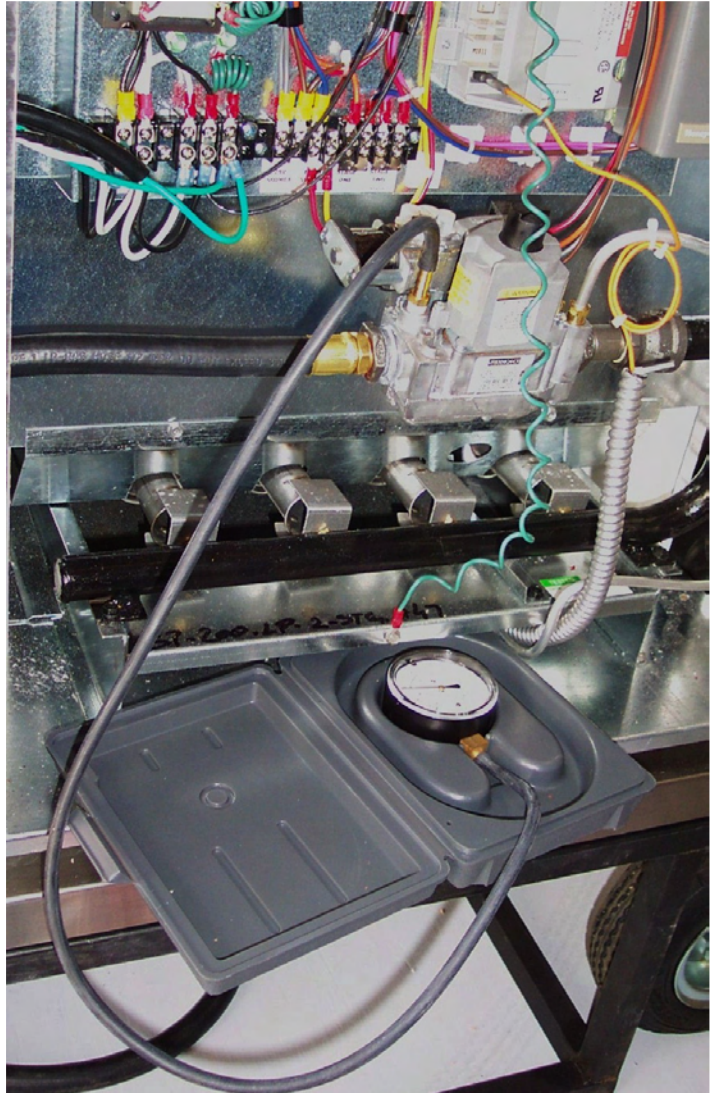
- 2) Remove the plug from the inlet pressure tap on the main gas valve. Thread a 5/16" barb into the inlet pressure tap (1/8" npt).



Inlet Pressure Tap

Main Gas Valve

3) Connect the manometer to the barb. Open the propane tank valves and the gas shutoff valve to pressurize the lines. With the tank valves open listen closely for the sound of escaping gas. If you hear gas escaping or smell propane close the tank valves and check your fittings and hoses for signs of leaking. You may have to re-open the tank valves to locate the source of the leak. Repair any of these larger leaks before proceeding with the pressure testing. With the lines pressurized, the manometer should now read approximately 12” of water column.



Manometer connected to inlet pressure tap

4) Close the propane tank valves. Then release a small amount of gas from the lines to drop the pressure 1” – 2” of water column. This can be done by slightly moving the connection between the manometer and the barb for a short time and quickly reconnecting the manometer. The manometer should now read approximately 10” of water column. Note the reading of the manometer and see if the reading changes as you wait.



Regulated Propane inlet pressure should be: 12” of water column



With tank valves closed, propane inlet line pressure must be reduced to 10” of water column for leak testing

- If the pressure remains unchanged for at least 10 minutes the lines are leak free. Remove the manometer and re-install the plug into the inlet pressure tap on the main gas valve. (Use thread sealant on the plug.)

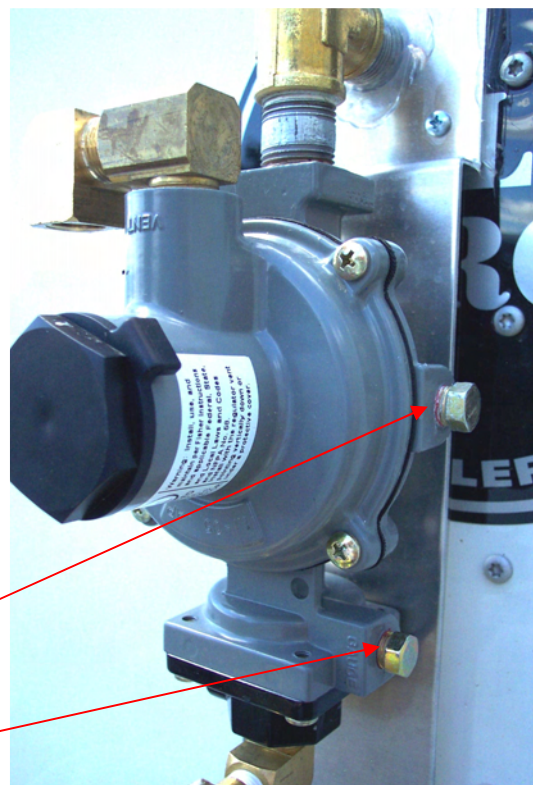
Re-install the Outdoor Hood and proceed with the TES operation testing.

- If the pressure reading increases, the tank valves are not closed tightly. Valves should only be tightened by hand. Do not use pliers or a wrench to close the valves. Again release some pressure so the manometer reads about 10” of water column. If the valve continues to leak and the pressure increases, take the tank to your propane dealer for replacement of the valve.

(The regulator if working properly it will not allow the pressure to go above 12” of water column, so the gas pressure must be reduced to properly test the valves.)

- If a pressure drop occurs, there is a leak somewhere in the system. Open the propane tank valves to pressurize the lines. Close the gas shutoff valve and then close the tank valves. Again release some pressure to set the gauge at approximately 10” of water column. If the pressure remains unchanged for at least 10 minutes the leak is between the tanks and the shutoff valve. If a pressure drop occurs the leak is between the shutoff valve and the main gas valve.

- There still could be a leak between the tanks and the regulator. There are two pressure taps on the propane regulator to test the regulator pressure on the high pressure side between the tanks and the regulator and the 2nd stage or low pressure tap to check the pressure between the regulator and the shutoff valve. With the tank valves closed, remove the plug from the 2nd stage tap and install the barb and monometer. With the shutoff valve closed, open the tank valves to pressurize the lines the close the tank valves and check the pressure to see if there is a leak.



2nd Stage – Low Pressure Tap

1st Stage – High Pressure Tap

Possible pressures above 100psi. Do not use Manometer on 1st Stage – High Pressure Tap

LOCATING LEAKS

- 1) Disconnect the manometer and remove the barb from the inlet pressure tap. Re-install the plug into the pressure tap. (Use thread sealant on the plug.)
- 2) Open the propane tank valves and the gas shutoff valve to pressurize the lines. Listen for the sound of escaping gas and sniff around the fittings checking for the smell of propane.
- 3) Liberally swab all fittings in the area where you have determined the leak to be located from the propane tanks to the main gas valve. This includes the pressure tap plugs you removed and replaced during the pressure tests.
- 4) If bubbles form you have located the leak. Replace hoses and fittings or repair the leaks as needed and repeat the pressure test and the leak testing until no leaking is indicated on all tests. Then proceed to the TES operation testing.

