MANUAL OVERRIDE VENT TOOL # P1700 SERIES OPERATING PROCEDURE

This procedure should only be used if the solenoid tank valve cannot be operated electrically and the solenoid tank valve must be replaced due to a stuck open, stuck closed or not operating condition. This procedure should also be used when venting a damaged fuel tank with a properly operating solenoid tank valve. This will ensure the fuel tanks are completely vented. **Using the manual override vent tool will damage the solenoid tank valve making the valve inoperative and the valve must not be reused.**

WARNINGS AND PRECAUTIONS

When servicing fuel related components, eliminate all sources of ignition (e.g. torches, heaters, and lighted tobacco). Flammable mixtures may be present and can ignite, resulting in damage and/or injuries.

The fuel system line pressure must be relieved before any component can be removed. The fuel tanks must be vented prior to the solenoid tank valve removal. Removal of components without pressure relief or tank venting can cause an uncontrolled release of natural gas and may result in damage and/or injuries.

The status of each solenoid tank valve (stuck open, operating properly, stuck closed or not operating) must be identified prior to venting the fuel tank(s). Venting the fuel tank(s) without identifying solenoid tank valve status can cause an uncontrolled release of natural gas and may result in damage and/or injuries.

Multiple fuel tank systems must be vented in the following solenoid tank valve status sequence: 1. Stuck open 2. Operating properly 3. Stuck closed or not operating. Venting tanks out of sequence may result in damage and/or injuries.

Ensure that the stem in the override tool is fully retracted prior to the installation of the override tool in the solenoid tank valve (see figure 1). Installation of the override tool in the venting (engaged) position would immediately cause an uncontrolled release of natural gas and may result in damage and/or injuries.

Eye and ear protection must be worn during tank venting, removal and installation of fuel system components.

Do not vent the fuel system into the shop environment.

When venting the natural gas vehicle fuel system, it is required that the vent stack and the tank valve be properly grounded to prevent any static electrical discharge.

When venting fuel, follow local regulations concerning venting natural gas. Consult your local fire and environmental authorities for specific regulations.

All tank valves must be manually locked down during this procedure, with the exception of the tank valve that is being vented or tested as indicated.

These procedures should only be performed by qualified trained personnel.

***GFI* shall not be liable for damages to property or injuries to persons arising out of failure to properly follow these procedures or by performance of such procedures by unqualified personnel.**

MANUAL OVERRIDE VENT TOOL PROCEDURES

1. Before venting the tank(s), run the vehicle until the fuel tank pressure is as low as possible.
2. Determine the status condition and identify the solenoid tank valve(s) that are stuck open, operating normally, stuck closed or not operating.
3. Close all tank valve(s) by turning all manual lock down stem(s) clockwise. Torque the stem to 7-9 Nm (5-7 lb-ft). ***WARNING: Do not over tighten the manual lock down stem. Forcing the stem may cause damage to the manual lock down.***
4. Depressurize the natural gas in the system lines, down stream of the solenoid tank valve(s).
5. Disconnect power to the tank valve(s).

MANUAL OVERRIDE VENT TOOL PROCEDURES (continued)

6. Connect the vent point to the system fuel line, down stream of the solenoid tank valve(s).
   WARNING: Ensure all tank valves are manually locked down and that all system lines down stream of the solenoid tank valve(s) are fully depressurized.
7. To begin venting, follow the correct solenoid tank valve status/sequence venting procedure(s).
   WARNING: Multiple fuel tank systems must be vented in the following solenoid tank valve status sequence: 1. Stuck open 2. Operating properly 3. Stuck closed or not operating.
8. When ready to vent, open the manual lock down (only for the tank that is being vented) by turning the manual lock down stem counter-clockwise.

   NOTE: *For the 1706 Series valve, only open the outlet manual lock down. Leave the inlet lock down closed throughout these procedures.*

   NOTE: *For valves that are stuck open, apply power to the solenoid valve and then open the vent point on the down stream system fuel line. With the valve already in the open position (stuck open or electrically opened), the tank contents will start venting. When the tank is fully vented, disconnect power to the solenoid valve.*
9. ***WARNING: Before removing the manual lock down, ensure that all fuel lines connected to the tank valve have been fully depressurized. Before installing the manual override tool, ensure that the stem on the manual override tool is fully retracted (see figure 1).***
   Remove the manual lock down and immediately insert the override tool. Torque the override tool nut to 38-43 Nm (28-32 lb-ft).
   NOTE: *For the 1706 Series valve, only remove the outlet manual lock down. Leave the inlet lock down installed and closed throughout these procedures.*
10. Slowly turn the stem on the manual override tool clockwise (using a 3/16" Allen wrench) until the stem stops (approximately 1 turn). This will indicate the override tool is fully engaged (see figure 1).
    NOTE: *This will force the valve open, destroying the valve seals and the solenoid tank valve must be replaced.*
    WARNING: Do not over tighten the manual override tool stem. Forcing the stem may cause damage to the override tool.
11. Open vent point on the down stream system fuel line and start venting the tank contents.
12. Continue venting until the tank is fully vented.
13. After the tank is fully vented, turn the stem on the manual override tool counter-clockwise (using a 3/16" Allen wrench) until the tool is fully retracted (see figure 1).

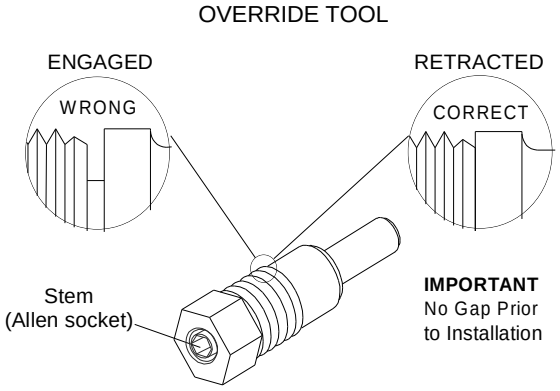

Figure 1

14. Ensure all system fuel lines are depressurized, remove the manual override tool and immediately insert the manual lock down. Torque the manual lock down nut to 38-43 Nm (28-32 lb-ft).
    CAUTION: Before installing the manual lock down, ensure that the stem on the manual lock down is fully retracted.
15. Close the tank valve by turning the manual lock down stem clockwise. Torque the stem to 7-9 Nm (5-7lb-ft).
    WARNING: Do not over tighten the manual lock down stem. Forcing the stem may cause damage to the manual lock down.
16. For multiple tank systems, continue venting the next tank for the solenoid tank valve requiring service (in the correct status/sequence).

    CAUTION: Once all required tanks are vented, ensure all lock down stems are closed and that there is no pressure in the system fuel lines down stream of the solenoid tank valve(s).
17. To replace the solenoid tank valve(s) follow the recommended 'Valve Removal and Installation' procedures.

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