Mack Trucks, Inc.
Allentown, PA USA

Service Bulletin Trucks

(Not applicable to Mack Trucks Australia)

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Aftertreatment Fuel Injector (AFI) Air Purge System and Air Flow Test Tool

MP7, MP8, MP10

SB234029, Aftertreatment Fuel Injector (AFI) Air Purge System and Air Flow Test Tool

(March 2009)

Certain MACK vehicles equipped with an MP7, MP8 and MP10 engines utilize a continuous air purge system to remove any residual fuel in the AFI after regeneration. When the engine is operating, there is a constant flow of air through the AFI. The air is supplied by the vehicle secondary air system, and is shut off when the engine is not operating. The main components of this system are:

- AFI-mounted two-way check valve assembly
- Air and fuel supply tubes and hoses
- Chassis-mounted pressure regulator with inlet filter
- Oil coalescing desiccant cartridge for the air dryer

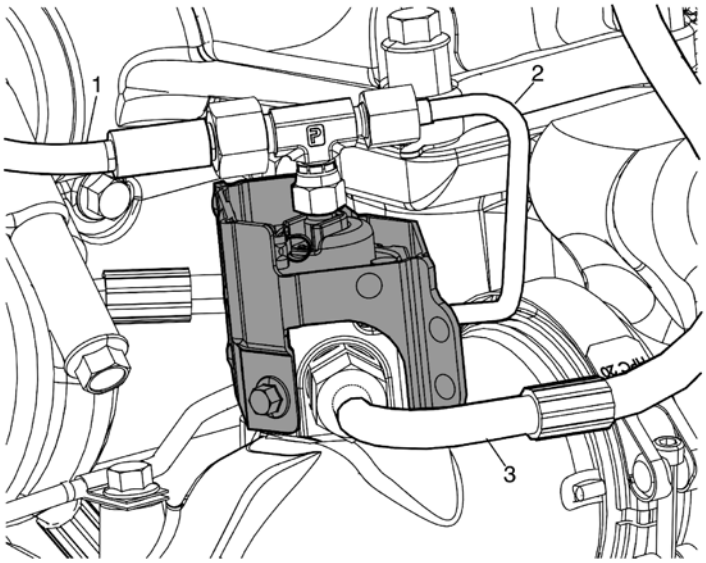

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Figure 1 — AFI Air Purge System

1. Air Line 2. Fuel Line	3. Coolant Line

Air flows from the chassis secondary air system to the pressure regulator. An in-line filter is installed in the inlet port of the regulator to remove any particulate matter from the air. The pressure regulator reduces chassis air system pressure (which is between 90 and 120 psi) to approximately 32 psi. Air then flows from the pressure regulator to the two-way check valve assembly on the AFI. Air entering the two-way check valve unseats the valve poppet and allows air flow through the AFI nozzle and into the engine exhaust stream. The air line between the pressure regulator and the two-way check valve includes a one-way check valve/filter screen assembly to prevent fuel from entering the air system should a failure of the two-way check valve occur.

Fuel is routed from the fuel shut-off valve (SOV) to the two-way check valve on the AFI. When commanded by the engine management system (EMS) to begin an active regeneration, the fuel SOV opens and allows fuel flow to the two-way check valve. Fuel entering the two-way check valve unseats the valve poppet and allows fuel flow through the AFI nozzle and into the exhaust stream. The higher fuel pressure in the two-way check valve seats the valve poppet on the opposite side of the valve to block the flow of air into the AFI.

When the active regeneration is complete, the EMS commands the fuel SOV to close. With fuel flow to the AFI blocked, the flow of air through the AFI continues.

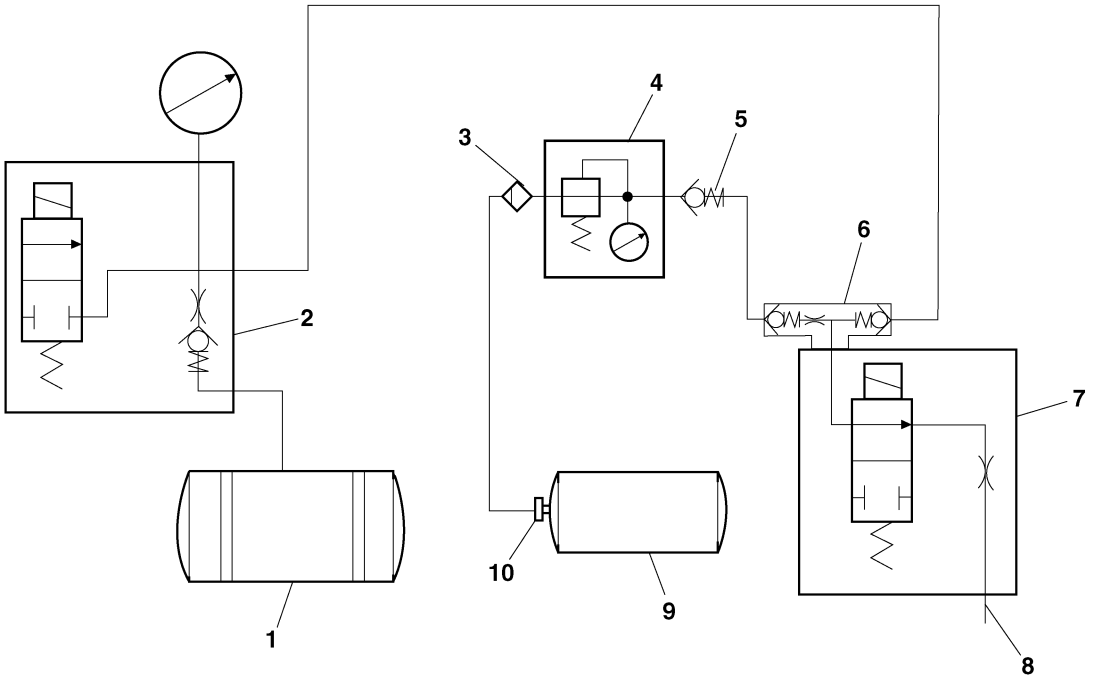

Figure 2 — AFI Continuous Air Purge Schematic Diagram

1. Fuel Tank	6. Two-Way Check Valve
2. Fuel Shut-Off Valve (SOV)	7. AFI (Aftertreatment Fuel Injector)
3. In-Line Air Filter	8. AFI Nozzle Tip
4. Air Pressure Regulator	9. Secondary Reservoir
5. One-Way Check Valve	10. Pressure Protection Valve

An air flow tester (special tool No. 88890112) is available to troubleshoot the air purge system and check for proper operation. The Guided Diagnostics function of Tech Tool contains the procedures for using the tool. Access this information in Guided Diagnostics as follows:

1. In **Guided Diagnostics**, go to the *Symptoms* tab and select “Exhaust Aftertreatment/Service regeneration failure.”
2. Under the *Fault Code and Symptom Analysis* tab, select “Exhaust Aftertreatment, Symptom diagnostics.”
3. Under the *Diagnostic Analysis* tab, select “Service regeneration failure.”
4. Under the *Diagnostic* tab, select “Aftertreatment fuel system check.”
5. Select “Aftertreatment Fuel Injector check.”
6. Select “Aftertreatment Fuel Injector Flow check.”