



MAINTENANCE Mi11-28
INFORMATION



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| DATE : NOVEMBER 2011 | SECTION: 04 - Exhaust |
| SUBJECT : AFTERTREATMENT FUEL INJECTOR CLEANING | |

DESCRIPTION

Use the following procedure to perform cleaning of the aftertreatment fuel injector as prescribed on the lubrication and servicing schedule of your vehicle's Maintenance Manual

| AFTERTREATMENT FUEL INJECTOR CLEANING | |
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| DESCRIPTION | ODOMETER READING |
| Aftertreatment fuel injector, clean as per mileage | Every 150 000 miles / 240 000 km |

AFTERTREATMENT FUEL INJECTOR CLEANING

Proper functioning of the aftertreatment fuel injector a.k.a. aftertreatment hydrocarbon injector (AHI) is required in order to obtain efficient regeneration process of the DPF. Clogged aftertreatment fuel injector will result in clogged DPF.

In addition to the activation of the CHECK telltale, emission of diagnostic troubleshooting codes (DTC) by the engine ECM (MID128) will indicate malfunction of the aftertreatment system and/or aftertreatment fuel injector. DTC may be accessed through the Driver Information Display. Select DIAGNOSTICS menu then FAULT DIAGNOSTICS and ENGINE ECU submenus.

In the Driver Information Display, you can check the aftertreatment system status. Select AFTERTREATMENT menu then ATS STATUS. Then check the DPF soot level with SOOT LEVEL GAUGE.

Replacement parts as required:

| Part No. | Description | Qty |
|----------|------------------------|-----|
| 21089234 | AHI injector | 1 |
| 85115784 | Kit AHI system | 1 |
| | 20824439 Flange screw | 2 |
| | 20831902 Cable tie | 1 |
| | 20887403 Gasket | 1 |
| | 20824438 Spacer sleeve | 2 |
| | 21142251 Insulator | 1 |

NOTE

Material can be obtained through regular channels.

PROCEDURE



DANGER

Park vehicle safely, apply parking brake, stop engine and set battery master switch(es) to the OFF position prior to working on the vehicle.

Cleaning

This procedure covers cleaning of the aftertreatment fuel injector. Draining of the coolant or removal of the coolant lines to the aftertreatment injector is not required if the following procedure is followed.

NOTE

Replacement of the aftertreatment fuel injector requires draining of the coolant.



WARNING

Turbocharger and exhaust system components can be hot. Contact with hot components can cause severe personal injury. Allow the turbo and exhaust system to cool before working with exhaust system components.

1. Apply parking brake and set the battery master switch to the OFF position.
2. Remove P-clamp bolts securing the aftertreatment fuel injector fuel line, coolant line and air line.



CAUTION

Do not kink the fuel and coolant lines. Kinking the lines may result in leakage.

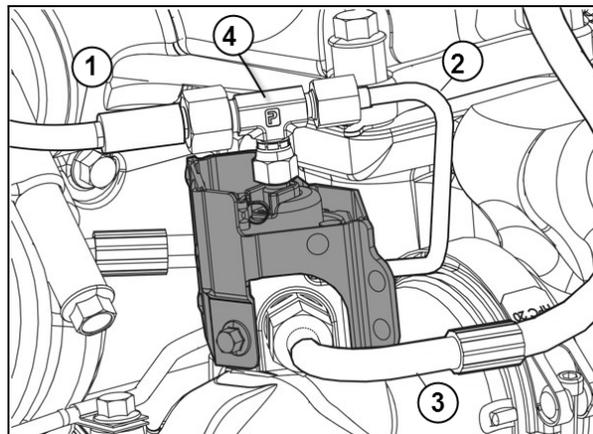
3. Unscrew the two-way check valve from the injector.

NOTE: The coolant line and coolant do not need to be removed for aftertreatment fuel injector cleaning.



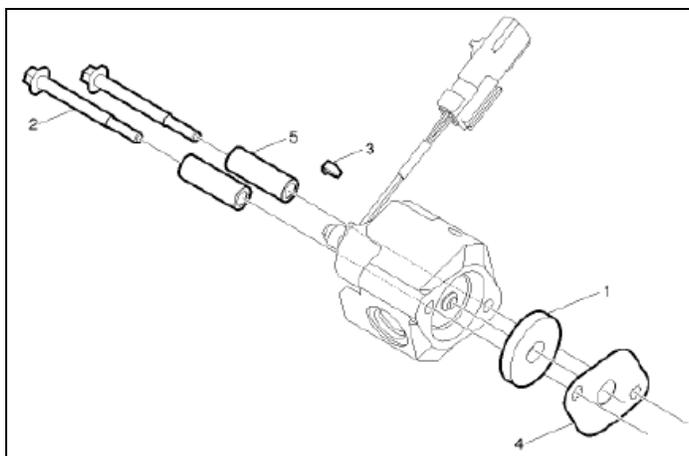
WARNING

Clean up fuel spills immediately. Fuel leaked or spilled onto hot surfaces or electrical components can cause a fire.



- 1- Air line
- 2- Fuel line
- 3- Coolant line
- 4- Two-way check valve

4. Remove and discard the aftertreatment injector mounting flange screws and spacer sleeves. Remove the injector mounting from the diffuser pipe (attached to the turbocharger outlet).
5. Cover the hole in the diffuser pipe to prevent dirt and cleaning solution from entering the exhaust.
6. Remove and discard the high-temperature insulator and steel plate gasket from the bottom of the injector.



- 1- Insulator
- 2- Flange screw, torque: 14Nm (125±4 lb-in)
- 3- Cable tie
- 4- Steel plate gasket
- 5- Spacer sleeve



CAUTION

Always use a fine nylon or brass brush to scrub the aftertreatment injector inlet screen. Do not use a steel bristle brush to clean the injector inlet screen. A steel bristle brush will damage the injector and could lead to leakage.

7. Inspect the inlet screen to the aftertreatment injector. If it is filled with carbon, spray carburetor cleaner on the injector screen and use a fine nylon or brass brush to scrub the screen repeatedly. Repeat as necessary to clean all carbon off of the screen.



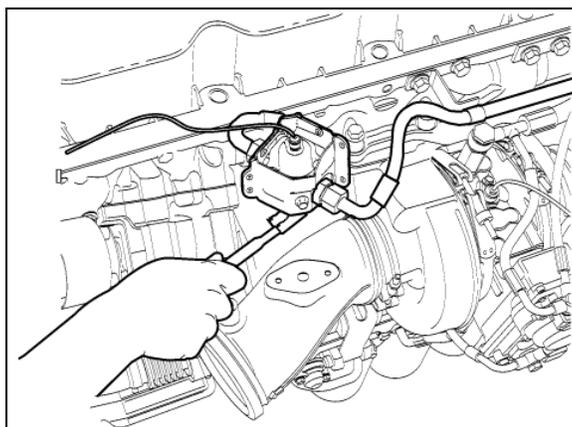
AFTERTREATMENT FUEL INJECTOR INLET SCREEN



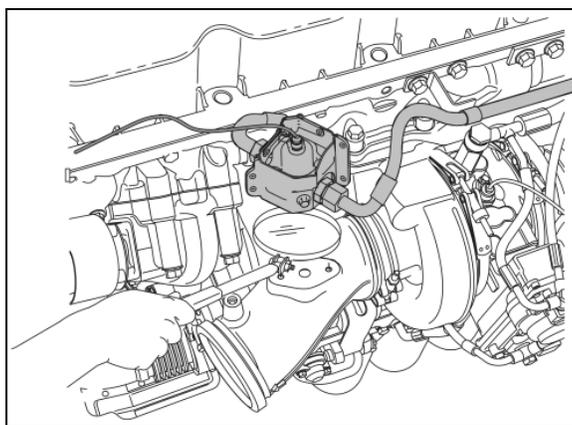
CAUTION

Only high quality carburetor cleaner should be used to clean the injector. Other cleaners, such as brake cleaner products, do not work and may contain chlorine, which could damage the catalyst if they enter the exhaust system.

8. Turn the aftertreatment injector body to allow the injector tip to be sprayed with carburetor cleaning solution. Brush the injector tip with a stiff bristled nylon “tooth” brush. Repeat two or three times.

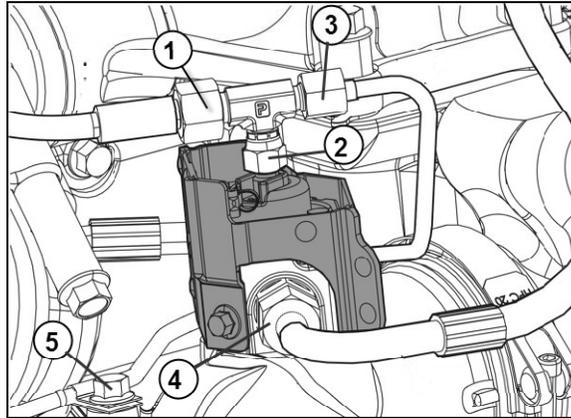


9. Inspect the injector tip. Use a mirror if a clear view of the tip is not possible.



10. Install a new high-temperature insulator and steel plate gasket onto the bottom of the aftertreatment injector (included in kit 85115784).

11. Apply high-temperature nickel-graphite anti-seize compound to the new injector mounting bolt threads and insert the bolts into the new spacers (kit 85115784).
12. Secure the injector mounting bolts. Tighten the bolts to 125 ± 4 lbf-in (14Nm).



- 1- Air line fitting: 27Nm (20 lb-ft)
- 2- Two-way check valve swivel nut: 24Nm (18 lb-ft)
- 3- Fuel line fitting: $15\pm 2\text{Nm}$ (135 ± 5 lb-in)
- 4- Coolant line fitting: $48\pm 5\text{Nm}$ (35 ± 4 lb-ft)
- 5- P-clamp: $28\pm 4\text{Nm}$ (21 ± 3 lb-ft)

13. Use carburetor cleaner and shop air to clean the aftertreatment injector and two-way check valve threads.



CAUTION

Only apply Loctite to the top threads of the aftertreatment injector. Loctite on the flare or injector tip will damage the aftertreatment injector.

14. Apply two drops of Loctite 271, 180° apart on the top threads of the injector. While securing the check valve with a wrench, tighten the two-way check valve swivel nut as specified above.
15. Install P-clamp bolts securing the fuel, air and coolant lines.
16. Set the battery master switch to the ON position.

Testing

1. Connect Premium Tech Tool to the vehicle and perform the aftertreatment diagnostics function test in VCADS (Vehicle Computer-Aided Diagnostic System). Activate the fuel shut-off solenoid and check for leaks.
2. Use the scan tool to reset the aftertreatment injector adaptive factor. Use Guided Diagnostics to read and clear all diagnostic trouble codes (DTCs).
3. Perform a complete parked regeneration. Check for leaks and proper operation during the regeneration.
4. After shutdown, replenish fluids as necessary. Re-check the injector fuel line fitting and make sure it is tightened to specification:

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| <i>NOTE</i> |
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| <i>Cleaning of the aftertreatment fuel injector is part of normal vehicle maintenance. Note that no reimbursement is awarded for carrying out this preventive maintenance.</i> |
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