

Authorized Field Change



AFC 13918

Date: December 2013

Subject File: Engine

Subject: MaxxForce® 13 Electronic Control Module (ECM) and Aftertreatment Control Module (ACM) Recalibration and Aftertreatment Fuel Line 1 Replacement for Certain Vehicles Marked in Service PortalSM with AFC 13918 to Provide Protection Against Damage to Fuel Shut-Off Valve (FSOV) Pressure Sensor.

Model: PayStar®, ProStar®, TranStar®, and WorkStar®
Start Date: 04 March 2013 End Date: 07 August 2013

Engine Family: N13 (EPA 10) with SCR

DESCRIPTION

Certain MaxxForce® 13 engines may experience damage to Fuel Shut-Off Valve (FSOV) pressure sensor if the aftertreatment fuel line is not replaced prior to reprogramming the ECM and ACM. To prevent damage to FSOV pressure sensor, this procedure will require replacement of the solid aftertreatment fuel line 1 to a new aftertreatment fuel line 1 with a flexible section and recalibration of both the engine Electronic Control Module (ECM) and Aftertreatment Control Module (ACM). This procedure is applicable only to certain vehicles marked in Service PortalSM with AFC 13918.

PARTS INFORMATION


Table 1. [Tool Information](#)


Part Number	Description	Quantity
ZTSE4891	Air and Fuel Cap and Plug Kit	1


Table 2. [Parts Information](#)


Part Number	Description	Quantity
3018496C1	HCI Fuel Supply Tube Assembly	1


SERVICE PROCEDURE

 **WARNING:** Park vehicle on hard flat surface, turn engine off, set parking brake, and install wheel chocks to prevent vehicle from moving in both directions. Failure to do so may result in property damage, personal injury, and / or death.

 **WARNING:** If vehicle must be raised, do not work under vehicle supported only by jacks. Jacks can slip or fall over, potentially resulting in property damage, personal injury, and / or death.

 **WARNING:** Always wear safe eye protection when performing vehicle maintenance. Failure to do so may result in personal injury and / or death.

 **WARNING:** Keep flames or sparks away from vehicle and do not smoke while servicing the vehicle's batteries. Batteries expel explosive gases. Failure to do so may result in property damage, personal injury, and / or death.

 **WARNING:** Remove ground cable from negative terminal of battery box before disconnecting any electrical components. Always connect ground cable last. Failure to do so may result in property damage, personal injury, and / or death.

NOTE: Perform replacement of Hydrocarbon Injection (HCI) fuel line 1 before performing ECM Recalibration.

1. Bring vehicle into shop and park on flat surface.
2. Turn wheels to right.
3. Shift transmission to Park or Neutral, set parking brake, and install wheel chocks.
4. Open battery box cover and disconnect negative battery cable from batteries.
5. Unlatch and open hood.
6. Unlatch and flip front bumper down, if equipped.
7. Remove seven bolts, washers, and left-front fender assembly from vehicle.

SERVICE PROCEDURE (CONT.)

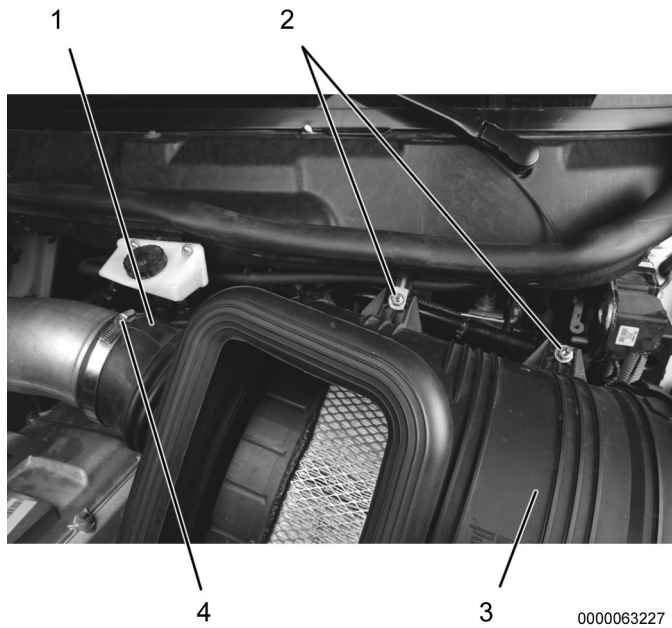


Figure 1. Air Filter Housing.

1. Air filter housing tube
2. Nut (2)
3. Air filter housing
4. Clamp

NOTE: Perform Steps 8 and 9 only on WorkStar®, TranStar®, and ProStar® vehicles.

8. Remove clamp (Figure 1, Item 4) from air filter housing tube (Figure 1, Item 1).
9. Remove two nuts (Figure 1, Item 2) and air filter housing (Figure 1, Item 3) from vehicle and install cap ZTSE4891 on tube.

SERVICE PROCEDURE (CONT.)

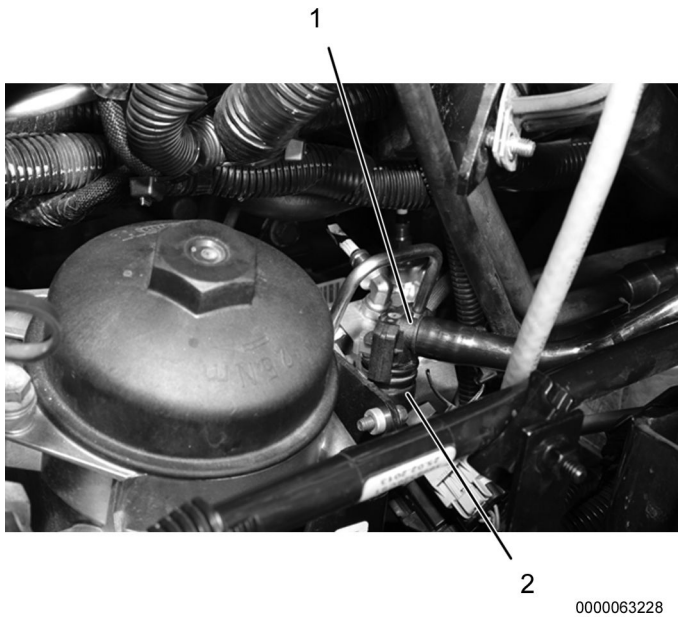


Figure 2. Fuel Return Tube.

1. Fuel return tube
2. Aftertreatment fuel doser module

10. Disconnect fuel return tube (Figure 2, Item 1) from aftertreatment fuel doser module (Figure 2, Item 2) and install cap ZTSE4891.

SERVICE PROCEDURE (CONT.)

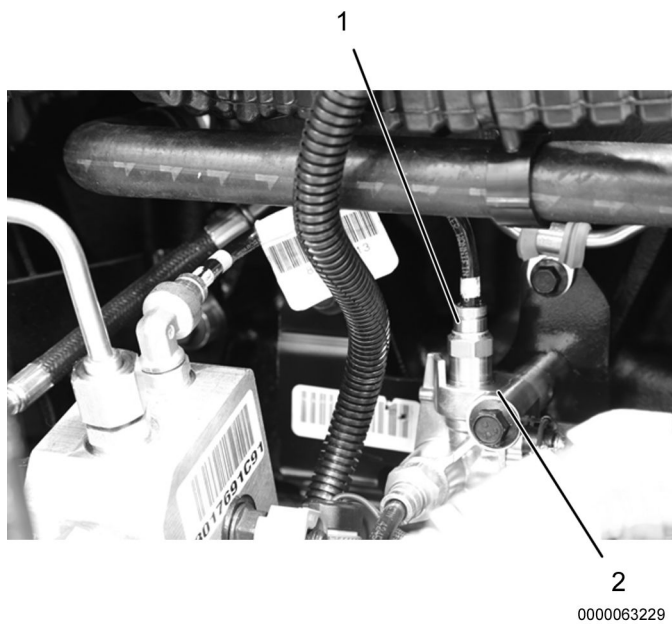


Figure 3. Aftertreatment Purge Air Valve Air Line.

1. Air line
2. Aftertreatment purge air valve

11. Disconnect air line (Figure 3, Item 1) from aftertreatment purge air valve (Figure 3, Item 2) and install cap ZTSE4891.

SERVICE PROCEDURE (CONT.)

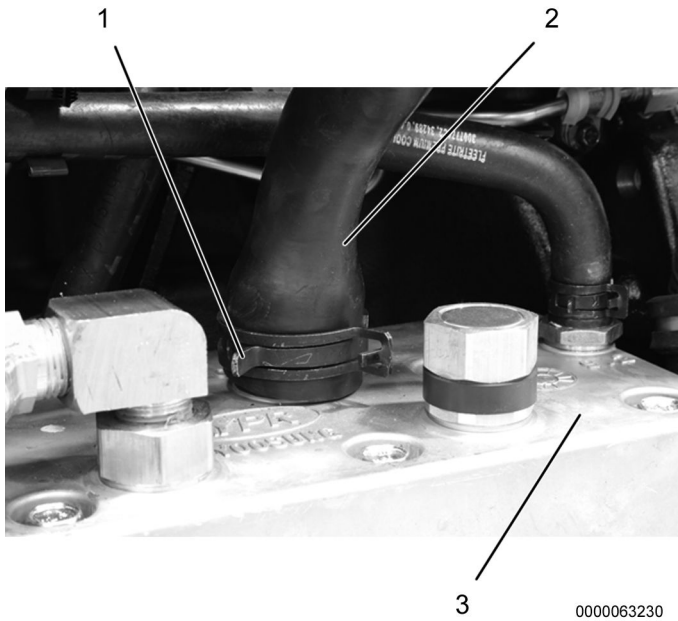


Figure 4. Air Compressor Inlet Hose.

1. Hose clamp
2. Air compressor inlet hose
3. Air compressor

12. Loosen hose clamp (Figure 4, Item 1) and disconnect air compressor inlet hose (Figure 4, Item 2) from air compressor (Figure 4, Item 3) and install cap ZTSE4891.

SERVICE PROCEDURE (CONT.)

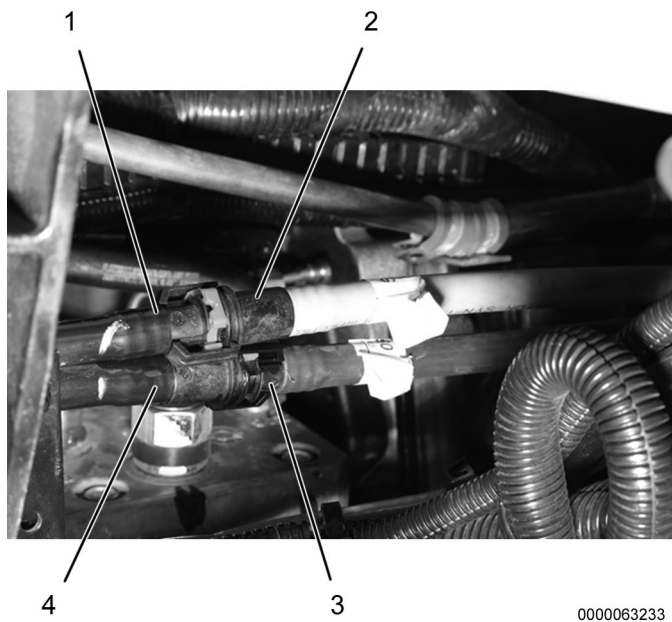
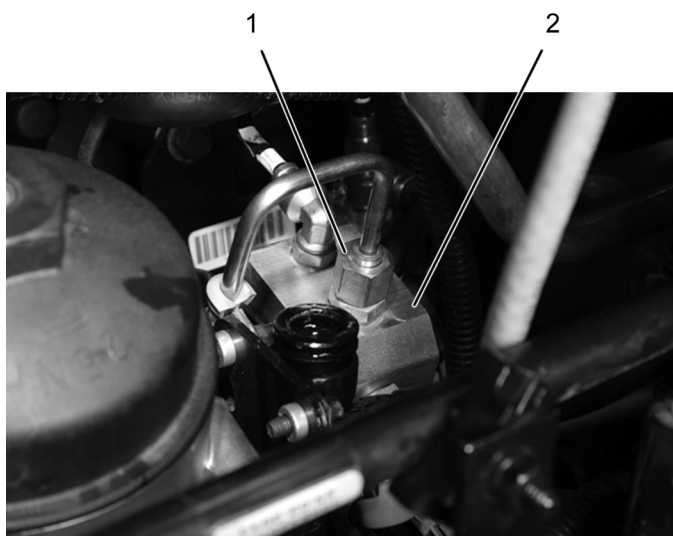


Figure 5. Fuel Return and Supply Lines.

1. Aftertreatment fuel supply line
 2. Fuel tank fuel supply line
 3. Fuel tank fuel return line
 4. Engine fuel return line
13. Disconnect fuel tank fuel supply line (Figure 5, Item 2) from aftertreatment fuel supply line (Figure 5, Item 1) and install cap ZTSE4891.
 14. Disconnect fuel tank fuel return line (Figure 5, Item 3) from engine fuel return line (Figure 5, Item 4) and install cap ZTSE4891.

SERVICE PROCEDURE (CONT.)



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Figure 6. Hydrocarbon Injection (HCI) Fuel Tube 1 at Aftertreatment Fuel Doser Module.

1. HCI fuel tube 1
2. Aftertreatment fuel doser module

15. Disconnect Hydrocarbon Injection (HCI) fuel tube 1 (Figure 6, Item 1) from aftertreatment fuel doser module (Figure 6, Item 2) and install cap ZTSE4891.

SERVICE PROCEDURE (CONT.)

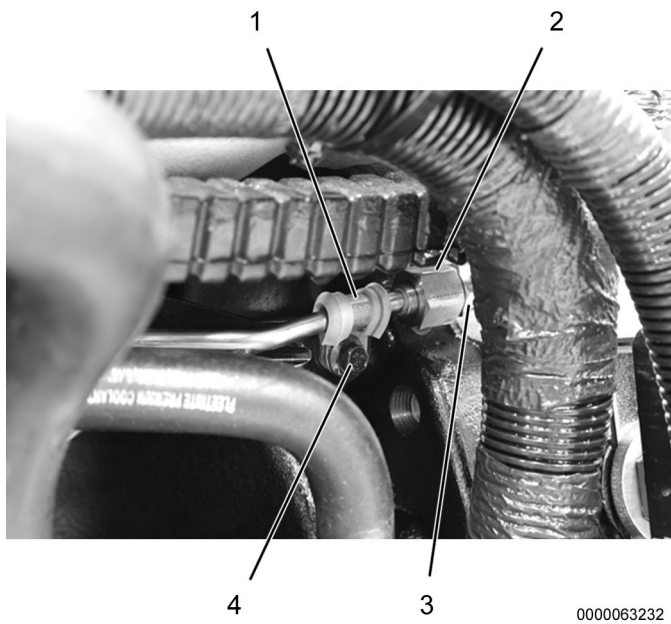


Figure 7. HCl Fuel Tube 1.

1. P-clamp
2. HCl fuel tube 1
3. HCl fuel tube 2
4. Bolt

16. Disconnect HCl fuel tube 1 (Figure 7, Item 2) from HCl fuel tube 2 (Figure 7, Item 3) and install cap ZTSE4891.

SERVICE PROCEDURE (CONT.)



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Figure 8. HCl Fuel Tube 1 P-Clamps.

1. P-clamp (2)
2. Bolt (2)

NOTE: It may be necessary to cut HCl fuel tube 1 to remove from vehicle.

NOTE: Pay particular attention to routing of HCl fuel tube 1 during removal to aid in installation.

17. Remove three bolts (Figure 7, Item 4 and Figure 8, Item 2), P-clamps (Figure 7, Item 1 and Figure 8, Item 1), and HCl fuel tube 1 (Figure 7, Item 2) from vehicle.
18. Install new HCl fuel tube 1 (Figure 7, Item 2) on vehicle with three P-clamps (Figure 7, Item 1 and Figure 8, Item 1) and bolts (Figure 7, Item 4 and Figure 8, Item 2).
19. Using torque wrench, torque three bolts (Figure 7, Item 4 and Figure 8, Item 2) to 115 lb-in (13 N·m).

SERVICE PROCEDURE (CONT.)

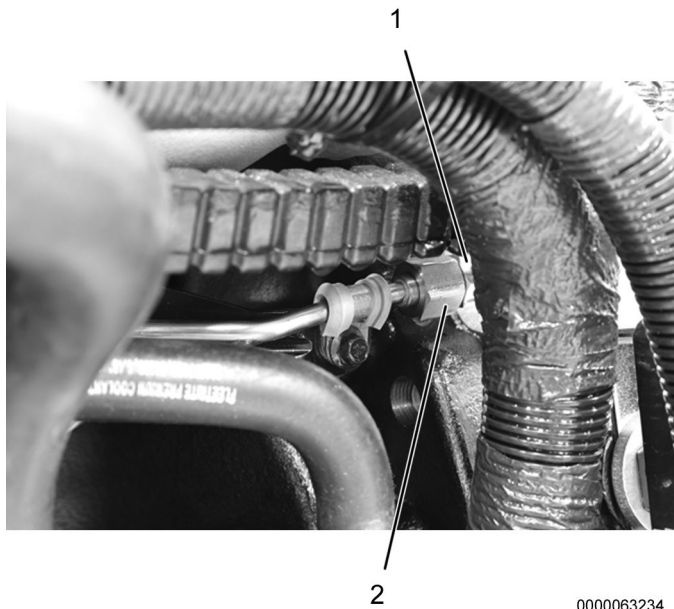
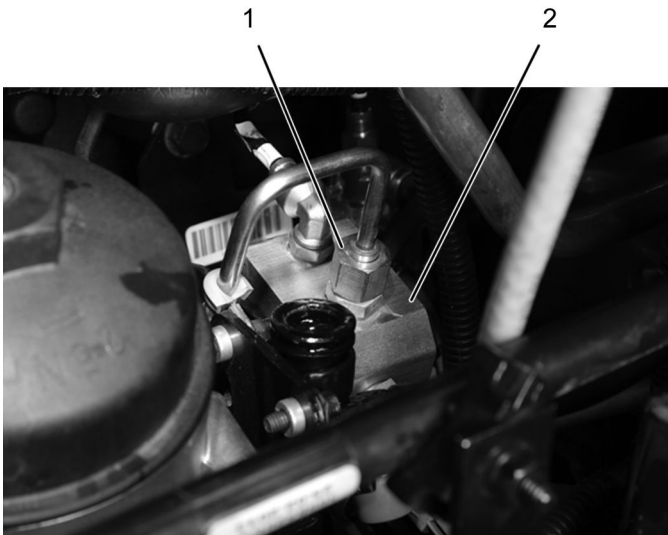


Figure 9. HCl Fuel Tube 1.

1. HCl fuel tube 1
2. HCl fuel tube 2

20. Remove cap ZTSE4891 from HCl fuel tube 2 (Figure 9, Item 2) and connect HCl fuel tube 1 (Figure 9, Item 1) to HCl fuel tube 2.
21. Using torque wrench, torque HCl fuel tube 1 (Figure 9, Item 1) fitting to 18.4 lb-ft (25 N·m).

SERVICE PROCEDURE (CONT.)



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Figure 10. Hydrocarbon Injection (HCI) Fuel Tube 1 at Aftertreatment Fuel Doser Module.

1. HCI fuel tube 1
2. Aftertreatment fuel doser module

22. Remove cap ZTSE4891 from aftertreatment fuel doser module (Figure 10, Item 2) and connect HCI fuel tube 1 (Figure 10, Item 1) to aftertreatment fuel doser module.
23. Using torque wrench, torque HCI fuel tube 1 (Figure 10, Item 1) fitting nut to 18.4 lb-ft (25 N·m).

SERVICE PROCEDURE (CONT.)

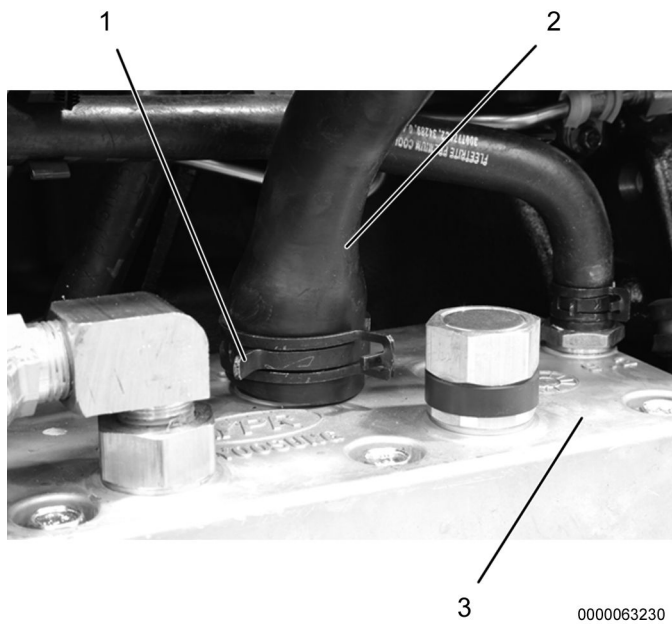


Figure 11. Air Compressor Inlet Hose.

1. Hose clamp
2. Air compressor inlet hose
3. Air compressor

24. Remove cap ZTSE4891 from air compressor (Figure 11, Item 3) and connect air compressor inlet hose (Figure 11, Item 2) onto air compressor with hose clamp (Figure 11, Item 1).

SERVICE PROCEDURE (CONT.)

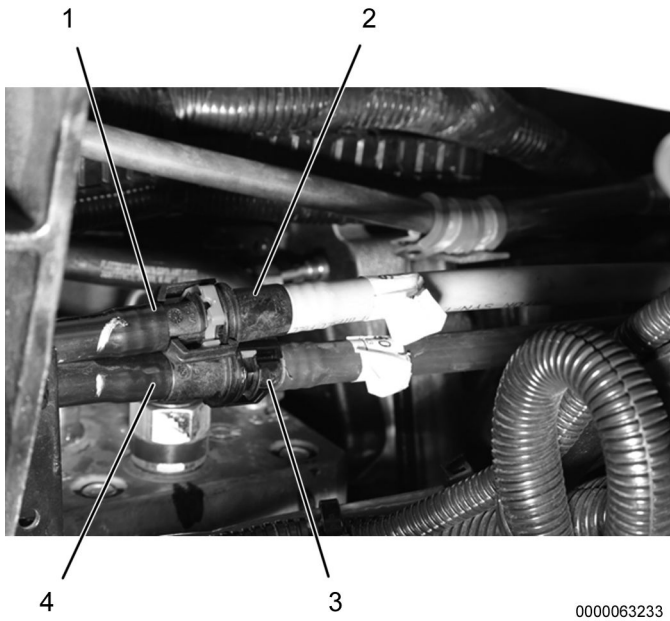


Figure 12. Fuel Return and Supply Lines.

1. Aftertreatment fuel supply line
 2. Fuel tank fuel supply line
 3. Fuel tank fuel return line
 4. Engine fuel return line
25. Remove cap ZTSE4891 from fuel tank fuel return line (Figure 12, Item 3) and connect fuel tank fuel return line to engine fuel return line (Figure 12, Item 4).
26. Remove cap ZTSE4891 from fuel tank fuel supply line (Figure 12, Item 2) and connect fuel tank fuel supply line to aftertreatment fuel supply line (Figure 12, Item 1).

SERVICE PROCEDURE (CONT.)

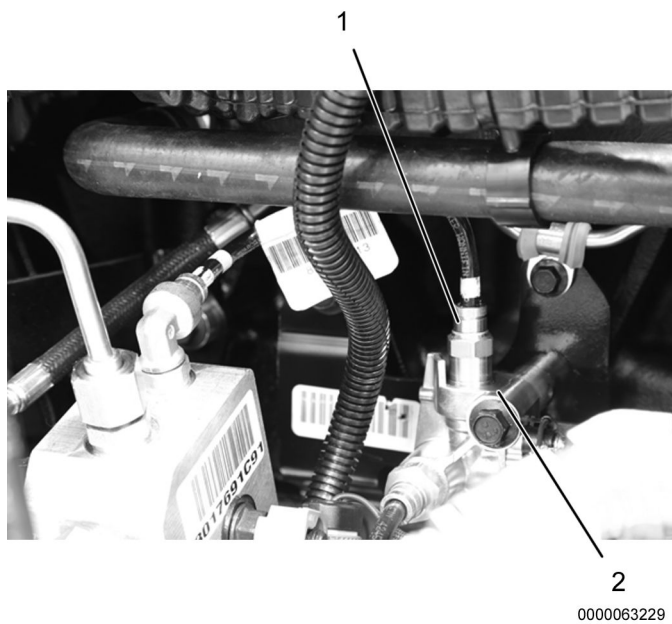


Figure 13. Aftertreatment Purge Air Valve Air Line.

1. Air line
2. Aftertreatment purge air valve

27. Remove cap ZTSE4891 from aftertreatment purge air valve (Figure 13, Item 2) and connect air line (Figure 13, Item 1) onto aftertreatment purge air valve.

SERVICE PROCEDURE (CONT.)

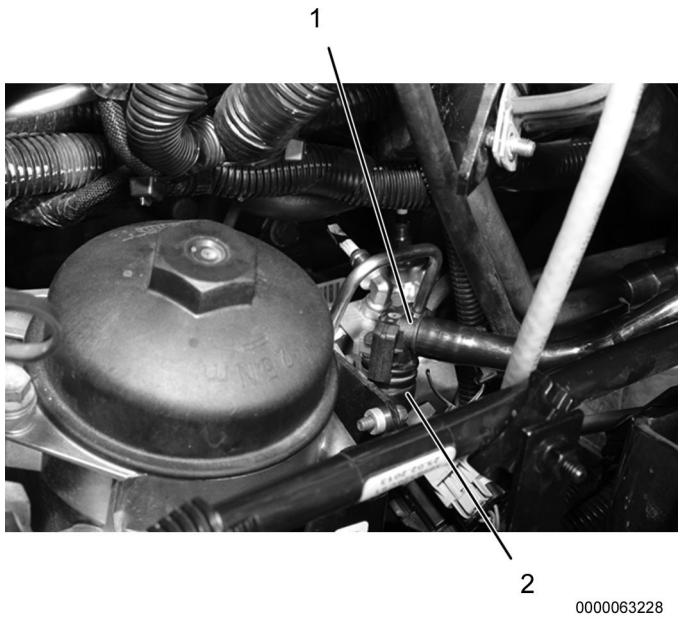


Figure 14. Fuel Return Tube.

1. Fuel return tube
2. Aftertreatment fuel doser module

28. Remove cap ZTSE4891 from aftertreatment fuel doser module (Figure 14, Item 2) and connect fuel return tube (Figure 14, Item 1) onto aftertreatment fuel doser module.

SERVICE PROCEDURE (CONT.)

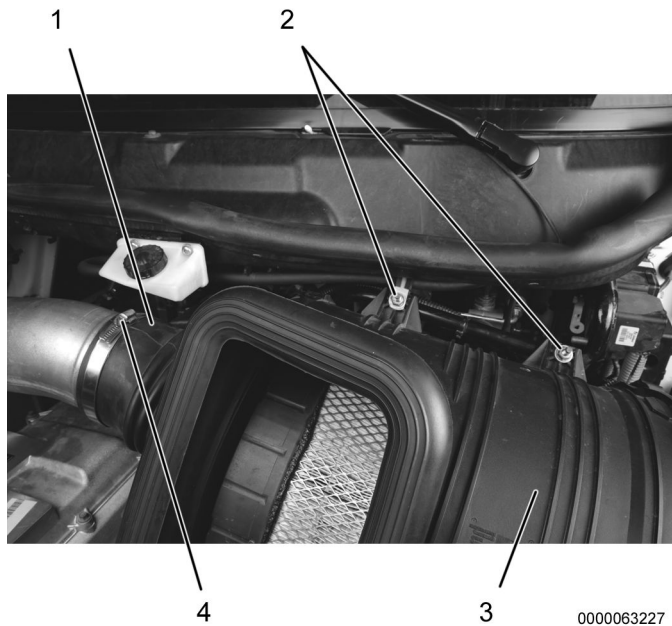


Figure 15. Air Filter Housing.

1. Air filter housing tube
2. Nut (2)
3. Air filter housing
4. Clamp

NOTE: Perform Steps 28 through 31 only on WorkStar®, TranStar®, and ProStar® vehicles.

29. Remove cap ZTSE4891 from tube and install air filter housing (Figure 15, Item 3) onto vehicle with two nuts (Figure 15, Item 2).
30. Install air filter housing tube (Figure 15, Item 1) onto tube with clamp (Figure 15, Item 4).
31. Using torque wrench, tighten clamp (Figure 15, Item 4) to 66 - 75 lb-in (7.5 - 8.5 N·m).
32. Install left-front fender assembly on vehicle with seven washers and bolts.
33. Raise and latch front bumper, if equipped.
34. Close and latch hood.
35. Connect negative battery cable and close battery box cover.

ECM / ACM RECALIBRATION

NOTE: Perform replacement of Hydrocarbon Injection (HCI) fuel line 1 before performing ECM Recalibration.

1. Check to see if ECM has latest software by referring to vehicle calibration scorecard in Service PortalSM system. If calibration scorecard indicates that calibration is not current, engine must be reprogrammed to raise calibration to latest level.

NOTE: The below articles contain general information about each reprogramming method and software, with links to specific instructions for each.

NOTE: If AutoUpgrade functionality is not available, use NETS.

2. Program ECM using NETS or AutoUpgrade. For instructions, see [IK2600010 - NETS Programming and Troubleshooting Guide](#). Use most current Update to Latest Calibration programming option or follow [IK2600082 – Auto Upgrade Programming Instructions](#).
3. If assistance is needed, contact Vehicle Programming by creating an iKNOW case file or calling 1-800-336-4500, options, 3, 1, 1.
4. Run diagnostic check. If no fault codes or leaks are present, procedure has been completed.
5. Remove wheel chocks.

LABOR INFORMATION

Operation number must appear on all claims.

Table 3. Labor Information

Operation No.	Description	Time
A40-13918-1	Replace Aftertreatment Fuel Supply Line, Re-Flash ECM and ACM	2.4 hrs

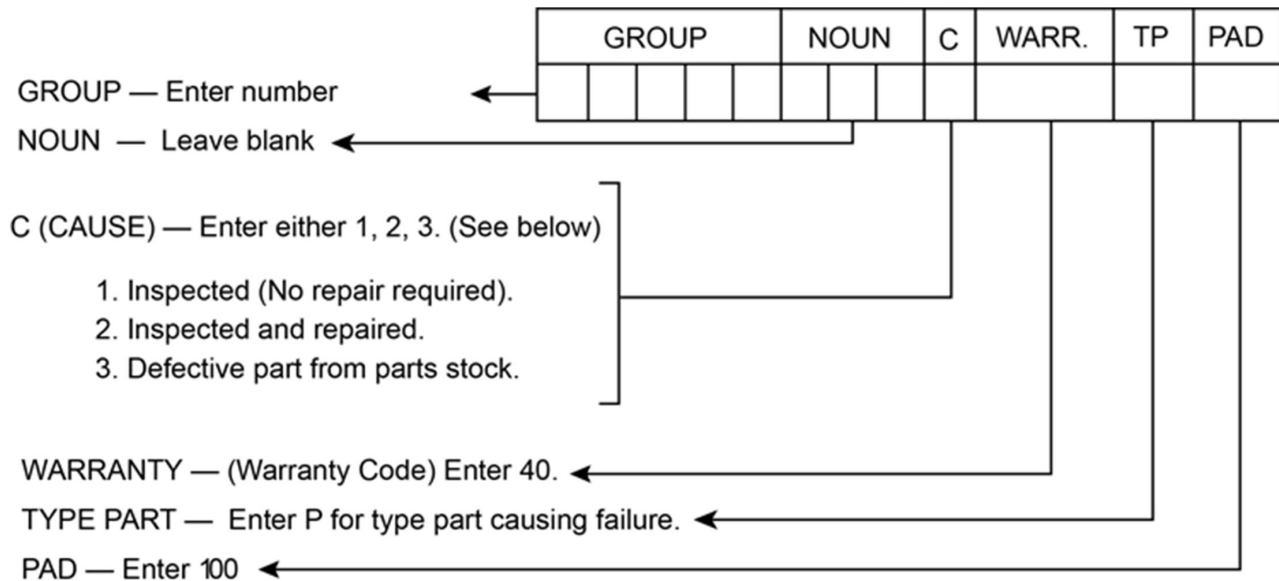
ADMINISTRATIVE PROCEDURE

Expense is to be charged to Warranty. Claims are to be submitted in the normal manner, making reference to Authorized Field Change Number 13918.

It is important that the coding be completed properly to assist in processing the warranty claim. Complete instructions will be found in the Warranty Policy Manual, Section 7.1.8.

As with all claim submissions, items acquired locally must be submitted in the "Other Charges" tab. The cost of any bulk items (such as a bag of cable tie straps, roll of wire, barrel of oil, or tube of silicone) should be prorated for the cost of the individual pieces / amount used during each repair.

To ensure this important improvement is made in a timely manner, all claims for 13918 activity must be submitted by 31 December 2014 or within the normal warranty period for the vehicle, if after 31 December 2014.



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