NAVISTAR®

FIELD SERVICE CAMPAIGN – 16107

23 February 2016

SUBJECT:
Intake Manifold Replacement

MODELS INVOLVED:
KME™ Fire Truck Chassis equipped with MaxxForce® DT, 9 & 10 (EPA 10)

DEFECT DESCRIPTION:
On certain KME™ Fire Truck vehicles it may become necessary to replace intake manifold components. This article contains the procedure and part information needed to complete the installation of gel-coated intake components. All other vehicles built during this period have either been repaired prior to shipment or determined to not require this repair.

TOOLS REQUIRED:

Description	Tool Number
Coolant Management Tool	KL5007NAV

Table 1 Tools Information

PARTS REQUIRED:

Part Number	Description	Quantity
7096633C92	MANIFOLD, ASSY INTAKE	1
1884925C1	GASKET INLET DUCT-INTAKE MANIFOLD	1
1889335C93	KIT EGR CROSSOVER DUCT W/ SEAL	1
3018016C2	GASKET, HC INJECTOR	1
1836005C1	GASKET HIGH PRESSURE PUMP	1
1812559C1	SEAL, OIL DIPSTICK TUBE	1

Table 2 Parts Information

WORK INSTRUCTIONS

GOVERNMENT REGULATION: Engine fluid (oil, fuel, and coolant) may be a hazard to human health and the environment. Handle all fluid and other contaminated materials (such as filters and rags) in accordance with applicable regulations. Recycle or dispose of engine fluids, filters, and other contaminated materials according to applicable regulations.

WARNING! To prevent property damage, personal injury, and / or death, park vehicle on hard flat surface, turn the engine off, set the parking brake, and install wheel chocks to prevent the vehicle from moving in both directions.

WARNING! To prevent personal injury and / or death, always wear safe eye protection when performing vehicle maintenance.

WARNING! To prevent property damage, personal injury, and / or death, keep flames or sparks away from vehicle and do not smoke while servicing the vehicle's batteries. Batteries expel explosive gases.

WARNING! To prevent property damage, personal injury, and / or death, remove the ground cable from the negative terminal of the battery batteries before disconnecting any electrical components. Always connect the ground cable last.

1. Bring vehicle into shop and park on flat surface.
2. Shift transmission to Park or Neutral and set parking brakes.
3. Install wheel chocks.
4. Remove operator-side battery box cover.
5. Disconnect and isolate ground cable from negative battery terminal.
6. Unlatch and open hood.
7. Using KL5007NAV Coolant Management Tool, drain coolant.
8. Remove interior engine cover.
9. Disconnect injector coolant outlet and inlet tubes at intake manifold.
10. Remove Downstream Injection (DSI) assembly. Refer to service manual for detailed instruction.
11. Remove exhaust brake assembly. Refer to service manual for detailed instruction.

NOTE: Only remove crossover tube support at the intake manifold.

12. Remove Exhaust Gas Recirculation (EGR) crossover duct assembly with crossover tube support as an assembly. Refer to service manual for detailed instruction. Discard seal from intake manifold.

NOTE: Do not remove the EGR valve from mixer duct assembly.

13. Remove EGR mixer duct and EGR valve as an assembly.

14. Remove oil filler tube assembly. Refer to service manual for detailed instruction.

15. Remove fuel filter assembly. Refer to service manual for detailed instruction.

16. Remove conduit from high-pressure oil hose assembly.

NOTE: The following step requires the use of a secondary wrench.

17. Using a primary and secondary wrench, loosen jam nuts on 70 and 90 degree adapter elbows.

18. Remove high-pressure oil hose.

19. Remove high-pressure oil pump. Refer to service manual for detailed instruction.

NOTE: Removal of rear engine lifting eye may be required to access rear fuel rail plug with intake manifold on engine.

20. Remove intake manifold. Refer to service manual for detailed instruction. Drain any remaining fuel from intake manifold into an appropriate diesel fuel container. Discard intake manifold gasket.

21. Remove fuel valve assembly from intake manifold. Discard O-ring.

22. Remove M12 plug assemblies from intake manifold. Discard O-rings.

23. Using a suitable non-caustic solvent, clean intake manifold mating surface on cylinder head and dry with filtered compressed air.

24. Install new O-ring onto fuel valve assembly (air bleed and pressure test port).

25. Install new O-rings onto M12 plug assemblies.

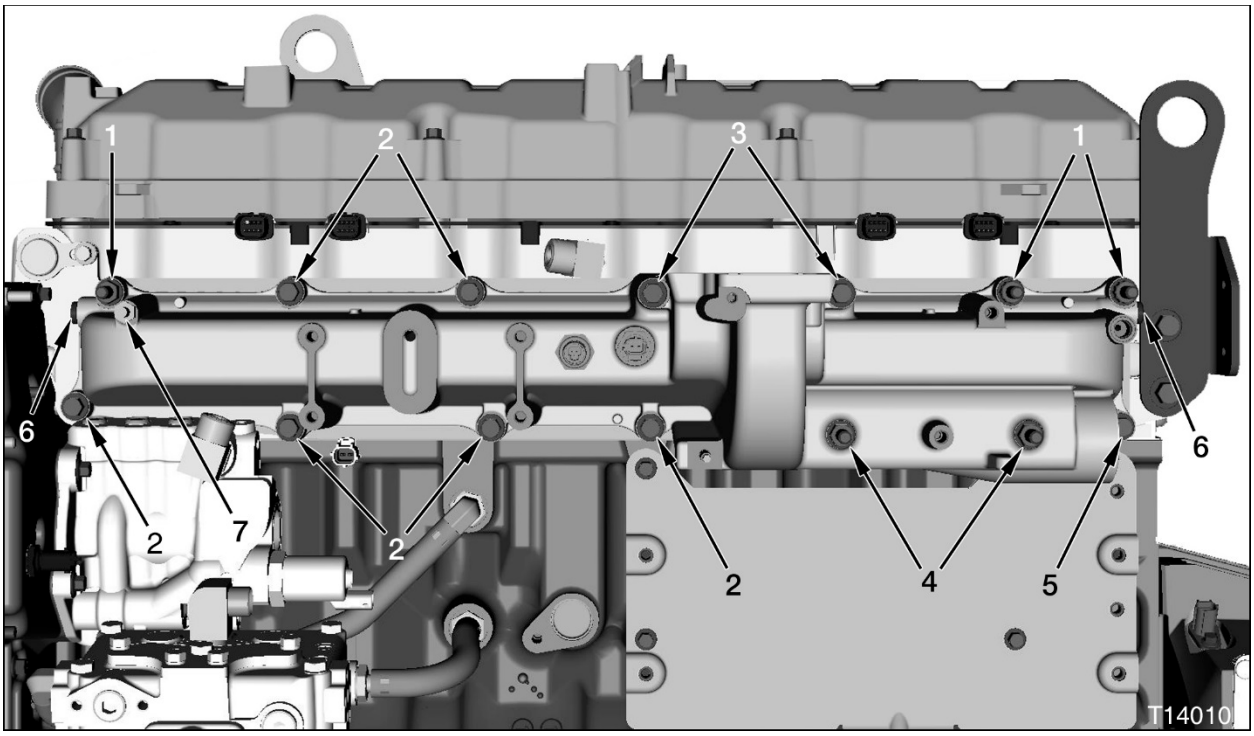


Figure 1. Intake Manifold Bolts

1. M10 x 35 stud bolt (3)
2. M10 x 35 bolt (6)
3. M10 x 110 bolt (2)
4. M10 x 110 stud bolt (2)
5. M10 x 25 bolt
6. M12 plug assembly (2)
7. Fuel valve assembly

26. Install fuel valve assembly (Figure 1, Item 7) into kit-supplied intake manifold. Using torque wrench, tighten fuel valve assembly to 11 lb-ft (15 N·m).

27. Install M12 plug assemblies (Figure 1, Item 6). Using torque wrench, tighten plugs to 25 lb-ft (18 N·m).

28. Install one M10 x 35 manifold stud bolt (Figure 1, Item 1) into each side of intake manifold. Position kit-supplied intake manifold gasket onto manifold.

29. Align and position intake manifold assembly onto cylinder head. Finger tighten two manifold stud bolts.

30. Loosely install twelve remaining manifold fasteners:

    A. Install remaining M10 x 35 stud bolt (Figure 1, Item 1).

    B. Install six M10 x 35 bolts (Figure 1, Item 2).

    C. Install two M10 x 110 bolts (Figure 1, Item 3).

    D. Install two M10 x 110 stud bolts (Figure 1, Item 4).

    E. Install M10 x 25 bolt (Figure 1, Item 5).

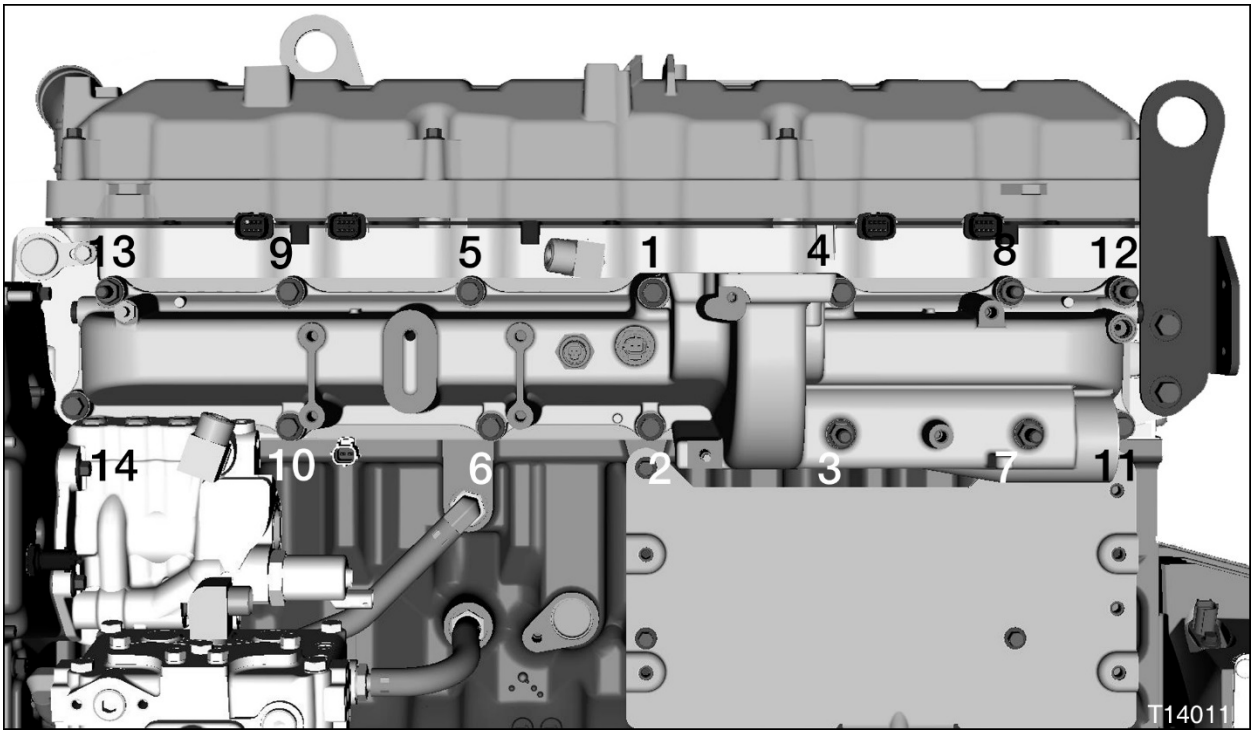


Figure 2. Intake Manifold Torque Sequence

31. Using torque wrench and torque sequence (Figure 2), tighten intake manifold fasteners to 45 lb-ft (61 N·m).

32. Install high-pressure oil pump. Refer to service manual for detailed instruction.

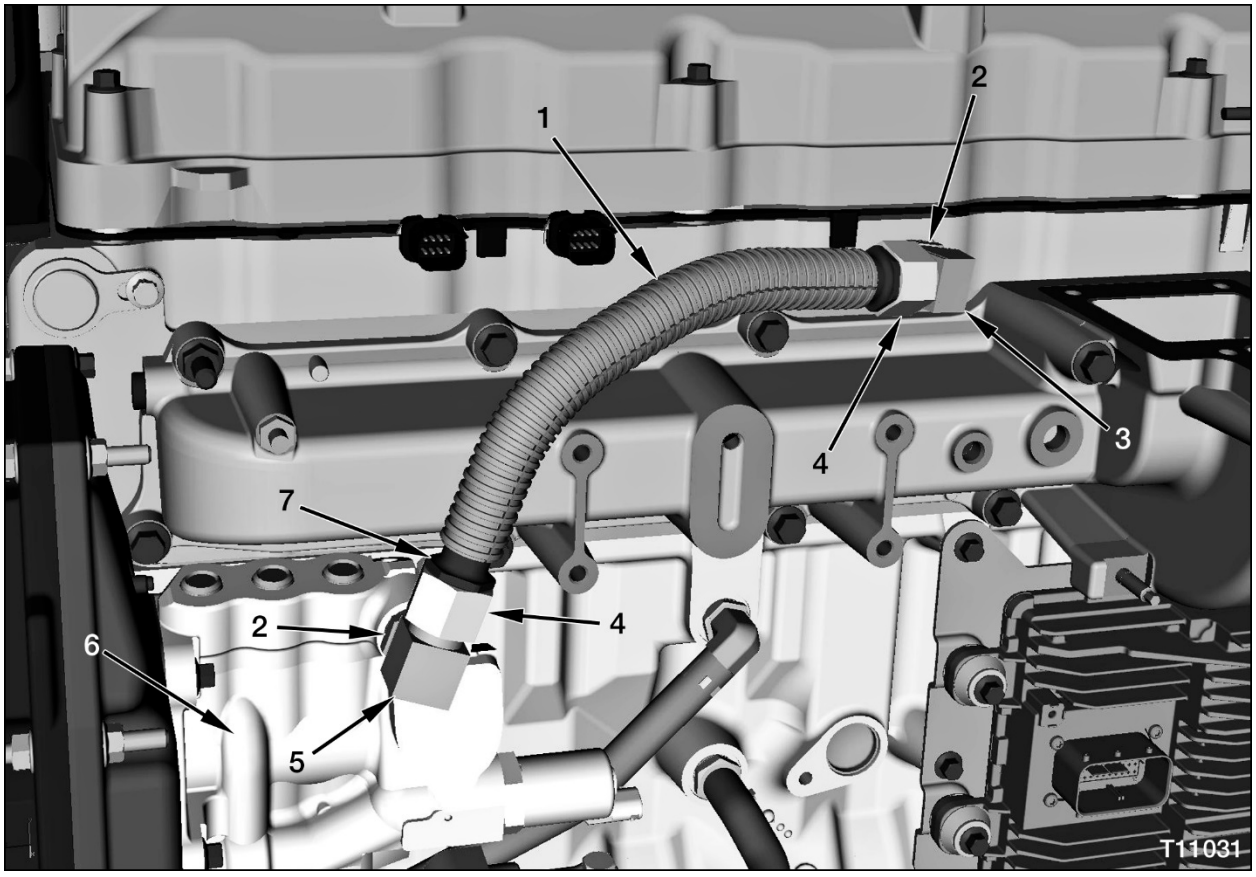


Figure 3. High-Pressure Oil Hose

1. High-pressure oil hose
2. Elbow jam nut (2)
3. 70 degree elbow
4. Swivel nut (2)
5. 90 degree elbow
6. High-pressure pump assembly
7. High-pressure oil hose nut (2) (1 not called out)

33. Connect high-pressure oil hose (Figure 3, Item 1) to 70 and 90 degree elbows (Figure 3, Items 3 and 5) and finger-tighten swivel nuts (Figure 3, Item 4).

CAUTION: To prevent engine damage, high-pressure hose must be positioned and aligned in a smooth arc. The high-pressure hose cannot be twisted, under excess tension, or touching engine components.

34. Ensure high-pressure hose is not under excess tension, twisted, or incorrectly aligned. Leave both sides of hose loose enough to allow for proper alignment.

NOTE: The following step requires the use of a secondary wrench.

35. Tighten elbow jam nuts (Figure 3, Item 2), starting with 90 degree elbow fitting at high pressure oil pump (Figure 3, Item 6), then proceed with tightening 70 degree fitting. Using torque wrench and a secondary wrench, hold elbow in place and tighten jam nut to 75 lb-ft (102 N·m).

36. Ensure high-pressure hose is not under excess tension and is positioned correctly.

NOTE: The following step requires the use of a secondary wrench.

37. Tighten high-pressure oil swivel nuts starting with 90 degree hose end first, then proceed with tightening 70 degree hose end. Use a backing wrench to hold high-pressure oil hose nut (Figure 3, Item 7) while using a torque wrench to tighten swivel nut (Figure 3, Item 4). Tighten swivel nuts to 48 lb-ft (65 N·m).

38. Ensure high-pressure hose is not under excess tension and is positioned in a smooth arc (Figure 3, Item 1).

39. Install conduit onto high-pressure oil hose.

40. Install fuel filter assembly. Refer to service manual for detailed instruction.

41. Install oil filler tube assembly. Refer to service manual for detailed instruction.

42. Install EGR mixer duct and EGR valve as an assembly. Torque mounting bolts to 23 lb-ft (31 N·m).

43. Using kit-supplied seal, install Exhaust Gas Recirculation (EGR) crossover duct assembly with crossover tube support as an assembly. Refer to service manual for detailed instruction.

44. Install exhaust brake assembly. Refer to service manual for detailed instruction.

45. Install Downstream Injection (DSI) assembly and connect injector coolant outlet and inlet tubes at intake manifold. Refer to service manual for detailed instruction and specific torque values.

46. Connect injector coolant outlet and inlet tubes at intake manifold.

47. Using KL5007NAV Coolant, fill vehicle with coolant. Refer to owner’s manual for specific capacity levels.

48. Connect negative cable to battery terminal.

49. Start vehicle, inspect for fuel / coolant leaks. Repair if necessary.

50. Install interior engine cover.

51. Remove wheel chocks.

LABOR INFORMATION

Operation number must appear on all claims.

Table 3 Labor Information

Operation Number	Description	Time
A40-16107-1	Intake Manifold Replacement	5.8 hrs

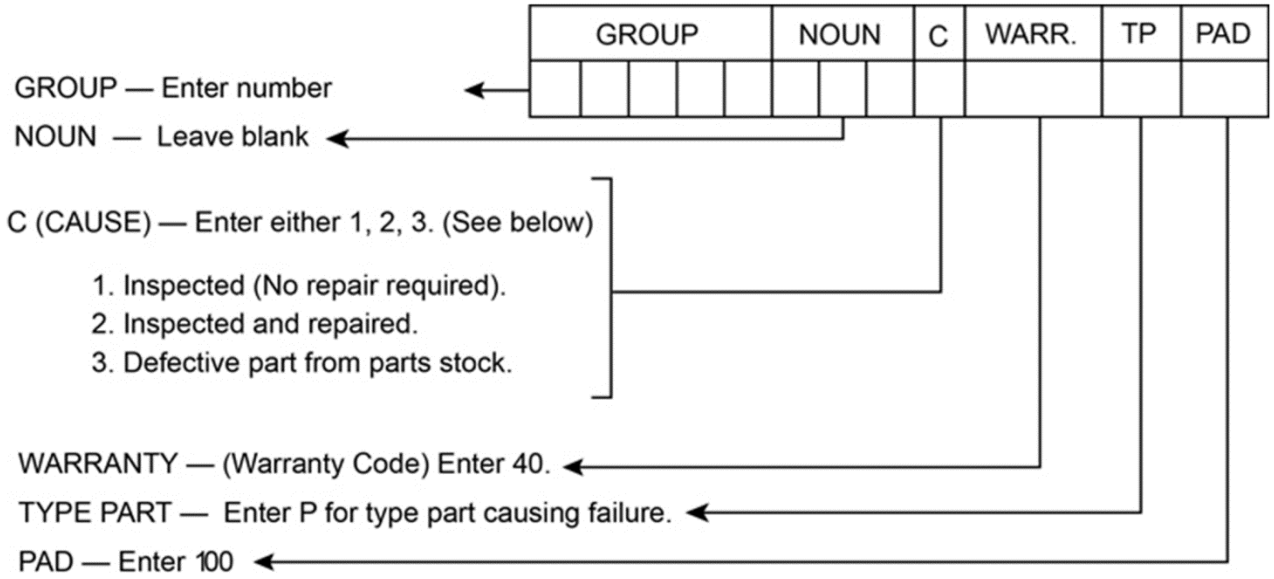
WARRANTY CLAIMS

Warranty claim expense is to be charged to Warranty. Claims are to be submitted in the normal manner, making reference to Field Service Campaign 16107.

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 make sure this important improvement is made in a timely manner, all claims for 16107 activity must be submitted by 23 February 2017 or within the normal warranty period for the component, if after 23 February 2017.



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