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Coding Information

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Title: Exhaust Gas Recirculation Valve (EGRV) Harness Kit

Applies To: MaxxForce® 11 and 13 Diesel Engines, EPA 10

CHANGE LOG

Dealers: Please refer to the change log text box below for recent changes to this article:

10/9/2017 - Added clarification as to which kit part numbers are related to this article
 9/8/2015 - Edited article coding.
 7/27/2015 - Fixed some article formatting.
 1/5/2015 - Temporarily republishing article - this harness part number has been superceded but there is still stock remaining in the PDC.
 9/12/2014 - Author updated for feedback purposes

DESCRIPTION

Replace EGRV and Engine Coolant Temperature 1 (ECT1) sensor connectors without replacing entire engine harness.

Note:

This article only applies to kit 3017846C91, which has been superceded. This article does not apply to the replacement kit 2513174C91.

PARTS INFORMATION

| (3017846C91) Kit Contents | Quantity |
|---------------------------------|----------|
| EGRV and ECT1 harness | 1 |
| Reference sheet | 1 |
| C clip retainer | 2 |
| Butt Splice (31818) | 6 |
| Heat shrink tubing (35 mm long) | 6 |
| Twist tube wrap (200 mm long) | 1 |

| | |
|--|-----------------|
| | WARNING: |
| To prevent personal injury or death, shift transmission to park or neutral, set parking brake, and block wheels before doing diagnostic or service procedures. | |

| | |
|--|-----------------|
| | WARNING: |
| | |

To prevent personal injury or death, remove ground cable from negative terminal of main battery before disconnecting or connecting electrical components. Always connect ground cable last.

NOTE:

Read all safety instructions in the 'Safety Information' section of the appropriate Engine Service or Diagnostic Manual. Follow all warnings, cautions, and notes.

REPAIR PROCEDURE

1. Disconnect vehicle battery ground cable(s).



Figure 1: Engine Harness Rear View

1. EGR Coolant Manifold
2. Fir Tree Fastener
3. EGR Valve Connector
4. ECT1 Sensor Connector
5. ECT1 Sensor

2. Press release tab to disconnect wiring harness lead from EGR valve connector (*Figure 1, Item 3*) and remove fir tree fastener from EGR coolant manifold (*Figure 1, Item 1*).

NOTE:

To remove a fir tree fastener, the wire tie can be cut and fir tree fastener can be rotated out if in a threaded hole.

3. Turn ECT1 sensor connector (*Figure 1, Item 4*) locking ring counterclockwise and disconnect from ECT1 sensor (*Figure 1, Item 5*).

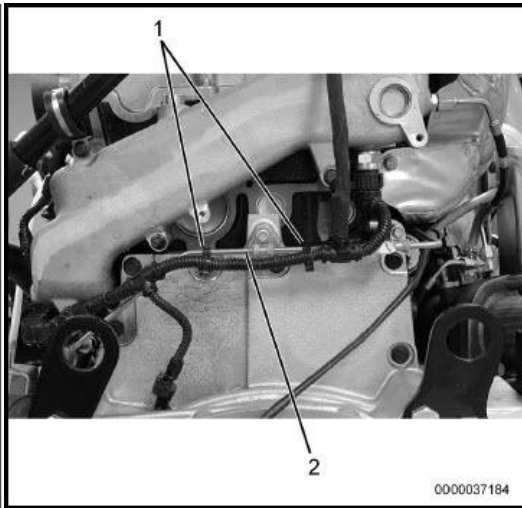


Figure 2: C Clip Retainer locations on AFI Hard Line.

- 1. C Clip Retainers
- 2. AFI Hard Line

4. Cut and remove two C clip retainers (*Figure 2, Item 1*) securing engine harness to After-treatment Fuel Injector (AFI) hard line (*Figure 2, Item 2*).

Table 1: Engine Harness Wires

| Wire ID | Wire Color (Reference) | Wire Size |
|---------|------------------------|---------------------|
| 314 | Blue | 1 mm ² |
| 368 | Brown | 1 mm ² |
| 377 | Gray w/ Black Stripe | 1 mm ² |
| 114 | Magenta | 1 mm ² |
| 104 | Blue | 1.5 mm ² |
| 102 | Red | 1.5 mm ² |

5. Peel off conduit from engine wiring harness to expose the six harness wires.

NOTE:

Refer to Table 1 for proper wire identification before cutting damaged portion of engine wiring harness.

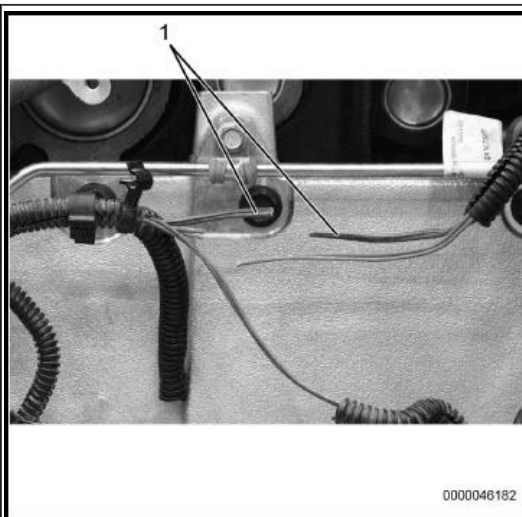


Figure 3: Damaged Engine Harness Wiring.

- 1. The cut damaged portion of engine harness wiring.

6. Cut and remove damaged portion of engine wiring harness (*Figure 3, Item 1*).

7. Position EGRV kit harness wires to overlay existing engine wiring harness.

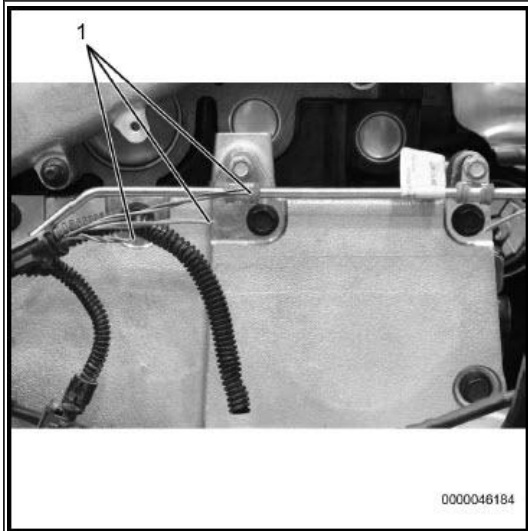


Figure 4: Measurement of Splice Locations.

1. Splice location measured and cut (3).

8. Measure 1.6 in (40 mm) from edge of T fitting and mark splice locations on each of the two engine harness wires with a permanent marker.

9. Measure 0.8 in (20 mm) from previous splice location and mark splice location on each of the two engine harness wires. Repeat for remaining two engine harness wires.

10. Align corresponding EGRV harness kit wires and mark splice locations on harness kit wires with a permanent marker.

11. Cut harness kit wires and engine harness wires at splice locations (*Figure 4, Item 1*).

12. Strip off 1/4 in (6 mm) of insulation from end of one engine harness wire and one EGRV harness kit wire.

13. Install heat shrink tube over engine harness wire side.

14. Install a butt splice onto end of engine harness wire and crimp, using a ratchet crimp tool.

15. Install corresponding EGRV harness kit wire into butt splice and crimp, using a ratchet crimp tool.

16. Heat butt splice with a soldering gun and apply resin core solder until solder flows into both ends of butt splice and into wire conductors.

17. Center heat shrink tubing over butt splice.

18. Use a heat gun to shrink and seal heat shrink tubing until sealer begins coming out of tube ends (*Figure 5*).



Figure 5: Completed Splices.

19. Repeat Steps 12 through 18 for remaining 5 engine harness wires.

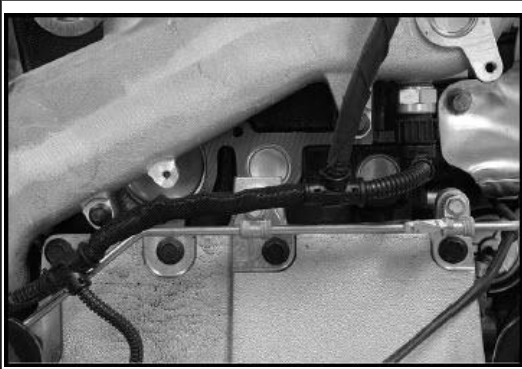


Figure 6: Splices Wrapped With Twist Tube

20. Install twist tube wrap over completed splices (*Figure 6*).

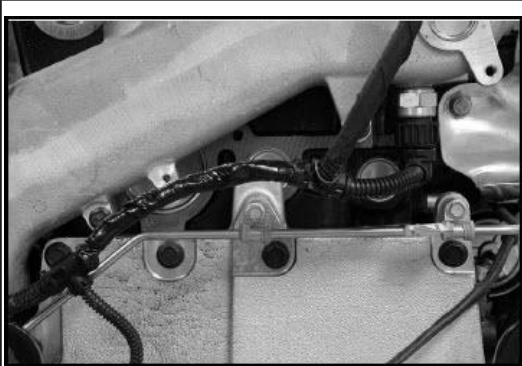


Figure 7: Twist Tube Wrapped with Electrical Tape.

21. Wrap and seal twist tube with electrical tape (*Figure 7*).

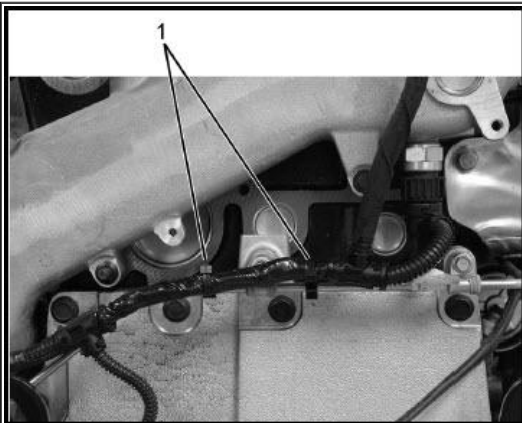


Figure 8: Engine Harness Attached to AFI Hardline
1. C clip retainer (2)

22. Attach C clip retainers to engine wiring harness (*Figure 8, Item 1*).

23. Install new fir tree fastener from new EGR harness to EGR coolant manifold (*Figure 1, Items 1 and 2*).

24. Connect new EGRV harness connector to EGR valve connector (*Figure 1, Item 3*) and push RED Connector Position Assurance (CPA) tab towards EGR valve connector. Pull gently to verify connector is securely latched.

CAUTION:

Ensure connector is fully seated before CPA is engaged. Do not force engage/disengage EGRV harness connector.

NOTE:

EGRV harness connector will make an audible click when engaged.

25. Connect new ECT1 harness connector to ECT1 sensor (Figure 1, Item 5) and turn locking ring clockwise till fully seated.

26. Attach harness C clip retainers to AFI hard line, and trim wire ties.

NOTE:

C Clips may be rotated to allow opening to face downward.

27. Verify engine wiring harness follows previous routing.

28. Connect battery ground cable(s).

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