

Authorized Field Change



AFC 12930

Date: December 2012

Subject File: ENGINE

Subject: Air Control Valve (ACV) Connector with Plugs Installed Backwards in Empty Connector Cavities

Model: LoneStar®, PayStar®, WorkStar®, TranStar®, and ProStar®; Continental FD Mixer built 24 September 2012

Start Date: 28 March 2012 End Date: 02 October 2012

Engine Family: MaxxForce® 11 and 13

DESCRIPTION

This AFC applies to vehicles with Air Control Valve (ACV) 3015646C91. Some ACV connectors were produced with plugs installed backwards in empty connector cavities. This could permit water intrusion, which could short the terminals. This may lead to ACV failure or EGR cooler plugging. This repair will involve reinstalling the plugs in the correct orientation to ensure the connector is tightly sealed.

CAUTION: This repair must be performed before any other service activity that may expose the connector to coolant, water, or other fluid.

PARTS INFORMATION

Table 1. **Parts Information**

Part Number	Description	Quantity
291207C1	Tie Strap, 10 pack	1
1831730C1	Dielectric Grease, ¼ oz tube	1

Table 2. **Tools Required**

Description	Tool Number / Type
Terminal Release Tool	TX126870202 (49304)
Small Flathead Screwdriver	—
Complex Pick Tool	—
Yellow Paint Marker	—

SERVICE PROCEDURE



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



WARNING: If the vehicle must be raised, do not work under the 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 serious eye injury.



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

1. Bring truck into shop and park on flat surface.
2. Shift transmission to park or neutral, set parking brake, and block wheels.
3. Unlatch and open hood.

SERVICE PROCEDURE (CONT.)

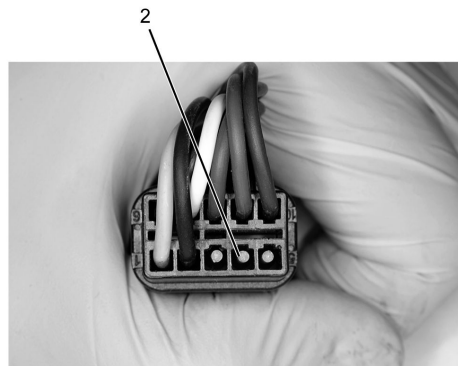
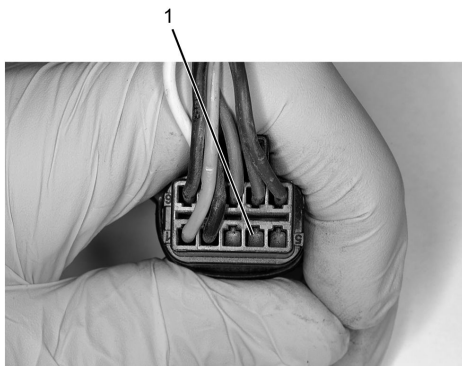
4. Locate updated ACV connector (Figure 1, Item 1) secured to Coolant Control Valve (CCV) near front on passenger side of engine.



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Figure 1. Updated ACV Connector.

1. ACV connector
5. Unlatch red lock button and disconnect ACV connector.
6. Inspect plugs in ACV connector to determine if they have been inserted backwards (Figure 2, Item 1). If installed incorrectly, plugs must be reinstalled to proper orientation (Figure 2, Item 2) following this procedure.



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Figure 2. ACV Connector Plugs.

1. Incorrectly installed plugs
2. Correctly installed plugs

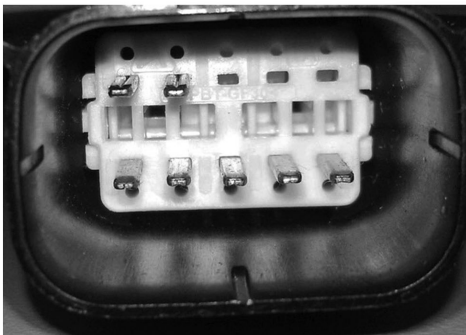
SERVICE PROCEDURE (CONT.)

NOTE: Incorrectly installed plugs may cause corrosion due to moisture intrusion (Figures 3 and 4). If ACV connector is corroded or damaged, do not attempt repair. Create Technical Parts Case which references AFC 12930, including part description and quantity needed.



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Figure 3. Engine Harness Side.



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Figure 4. ACV Harness Side.

SERVICE PROCEDURE (CONT.)

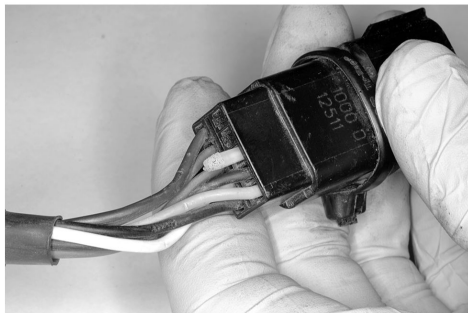
7. Locate one of the small rectangular holes inside ACV connector that corresponds to one of the incorrectly installed plugs (Figure 5). Using terminal release tool, gently push plastic plug out of the end of connector (Figure 6). Repeat for remaining two plugs.

NOTE: If replacement plug is needed, create Technical Parts Case which references AFC 12930, including part description and quantity needed.



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Figure 5. Terminal Release Tool.



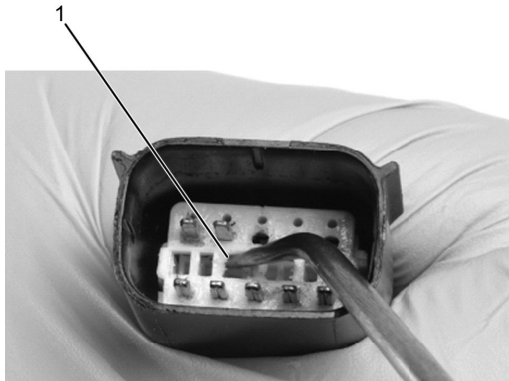
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Figure 6. Plug Removal.

SERVICE PROCEDURE (CONT.)

8. Using complex pick tool, gently pull Terminal Position Assurance (TPA) lock upward into pre-locked position (Figure 7, Item 1). TPA lock will move approximately 0.1 in (2.5 mm). TPA lock should click once and remain in connector housing.

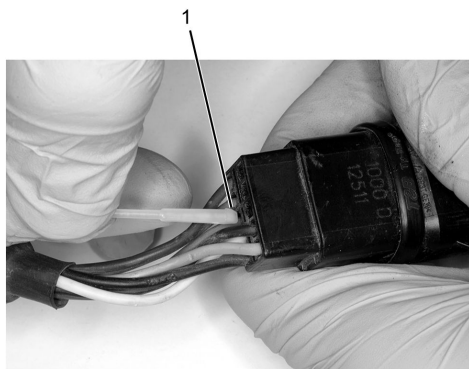
NOTE: TPA lock should not be removed from connector. If TPA lock is completely removed, place lock back into connector in its pre-locked position.



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Figure 7. Setting TPA Lock to Pre-Locked Position.

9. Reinsert plugs with square end first and barbed tooth facing outward (Figure 8, Item 1). Gently push plugs into connector, leaving approximately $\frac{1}{8}$ in (3.175 mm) protruding.



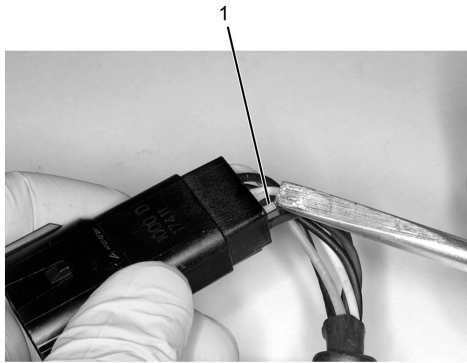
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Figure 8. Plug Reinsertion.

1. Barbed tooth pointing outward

SERVICE PROCEDURE (CONT.)

10. Using a small flathead screwdriver, gently push each plug into locked position (Figure 9, Item 1). Plugs will click when fully inserted.



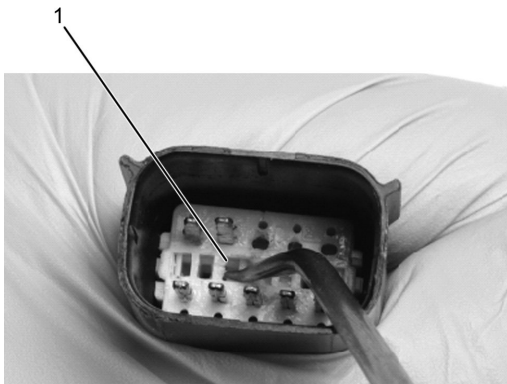
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Figure 9. Plug Seating.

1. Plug seating

NOTE: If excessive force is needed to insert plug, make sure it is correctly aligned to connector block before proceeding.

11. Using complex pick tool, gently press against TPA surface to snap back into locked position (Figure 10, Item 1).



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Figure 10. Setting TPA Lock to Locked Position.

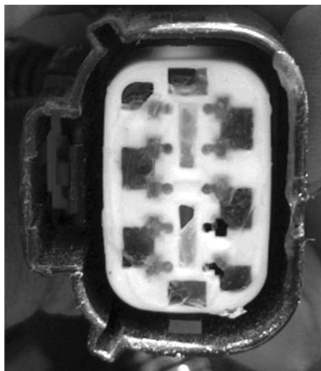
SERVICE PROCEDURE (CONT.)

12. Verify that no plugs were pressed back out of connector during rework.
13. Apply a small amount of dielectric grease to engine harness side of ACV connector. Use enough to cover surface area of terminals (Figures 11 and 12).



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Figure 11. Dielectric Grease.

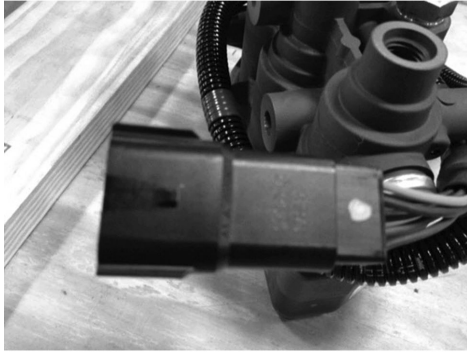


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Figure 12. Terminal Surface Area.

SERVICE PROCEDURE (CONT.)

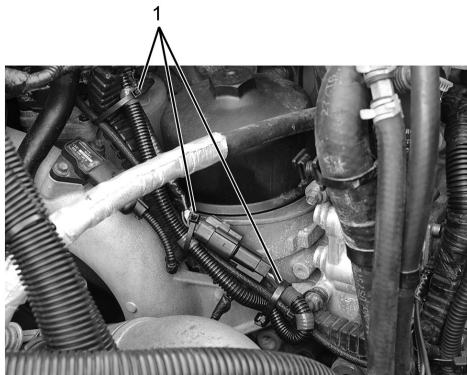
14. Plug both mating ends of connector back together and re-latch red lock button. Using a paint marker, place a yellow paint dot on base of connector to indicate connector has been reworked (Figure 13).



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Figure 13. Marked ACV Connector.

15. Using three tie straps, secure ACV harness and air line to Coolant Control Valve (CCV) (Figure 14). Trim excess length from ends of tie straps.



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Figure 14. ACV Harness Installation.

16. Verify proper operation of engine and no DTCs present.
17. Close and secure hood.
18. Remove wheel chocks.

LABOR INFORMATION

Operation number must appear on all claims.

Table 3. Labor Information

Operation No.	Description	Time
A40-12930-1	Inspect plug orientation in ACV connector (no rework)	0.2 hr
A40-12930-2	Reverse plugs in empty connector cavities in ACV connector	0.3 hr

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 G-12930.

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 assure this important improvement is made in a timely manner, all claims for G-12930 activity must be submitted by 31 December 2013 or within the normal warranty period for the vehicle, if after 31 December 2013.

	GROUP	NOUN	C	WARR.	TP	PAD
GROUP — Enter number G —						
NOUN — Leave blank						
C (CAUSE) — Enter either 1, 2, 3. (See below)						
1. Inspected (No repair required).						
2. Inspected and repaired.						
3. Defective part from parts stock.						
WARRANTY — (Warranty Code) Enter 40.						
TYPE PART — Enter P for type part causing failure.						
PAD — Enter 100						