

SB-10052496-3716**CATERPILLAR****Service Information System**

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Special Instruction**Air Control Valve (ACV) Connector with Plugs Installed Backwards in Empty Connector Cavities{7000}**

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Air Control Valve (ACV) Connector with Plugs Installed Backwards in Empty Connector Cavities{7000}

SMCS - 7000

On Highway Truck:

CT660 (S/N: TRK1-UP; TKL1-UP; TGT1-UP)

Introduction

This AFC applies to vehicles with Air Control Valve (ACV) **419-0970** Air Control Valve . Some ACV connectors were produced with plugs installed backwards in empty connector cavities. Empty connector cavities 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 that the connector is tightly sealed.

Parts Information

Table 1

Part Number	Description	Quantity
358-0269	Tie Strap	10
Obtain Locally	Dielectric Grease, 1/4 oz tube	1

Tools Required

Table 2

Description	Tool Number / Type
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Terminal Release Tool	372-5274
Small Flathead Screwdriver	
Complex Pick Tool	
Yellow Paint Marker	

Service Procedure

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.

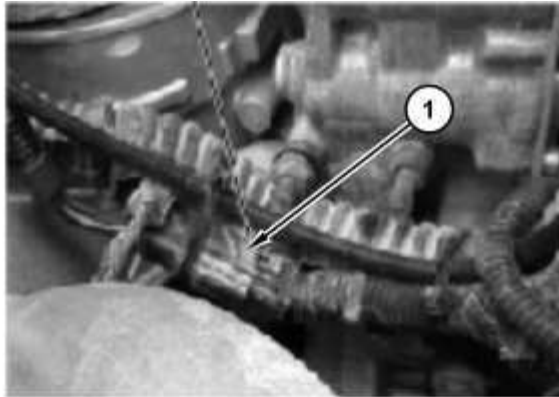


Illustration 1

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(1) ACV connector

4. Locate updated ACV connector (1) secured to Coolant Control Valve (CCV) near front on passenger side of engine.
 5. Unlatch red lock button and disconnect ACV connector.
 6. Locate one of the small rectangular holes inside ACV connector that corresponds to one of the incorrectly installed plugs. Using terminal release tool, gently push plastic plug out of the end of connector. Repeat for remaining two plugs.
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Illustration 2 g03380624

(2) Incorrectly installed plugs



Illustration 3 g03380626

(3) Correctly installed plugs

7. Inspect plugs in ACV connector to determine if the connector has been inserted backwards (2). If installed incorrectly, plugs must be reinstalled to proper orientation (3) following this procedure.

Note: Incorrectly installed plugs may cause corrosion due to moisture intrusion. If ACV connector is corroded or damaged, do not attempt repair.



Illustration 4 g03380628

Engine Harness Side.



Illustration 5 g03380629

ACV Harness Side.

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

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



Illustration 6 g03380631
Terminal Release Tool.



Illustration 7 g03380423
Plug Removal.

9. Reinsert plugs with square end first and barbed tooth facing outward. Gently push plugs into connector, leaving approximately 2.5 mm (0.1 inch) protruding.



Illustration 8 g03380633

Setting TPA Lock to Pre-Locked Position.

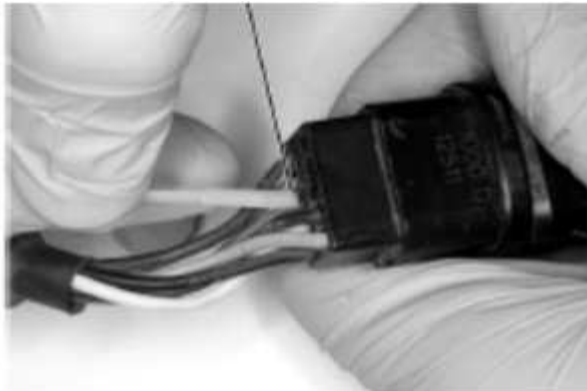


Illustration 9 g03380634

10. Using a small flathead screwdriver, gently push each plug into locked position. Plugs will click when fully inserted.

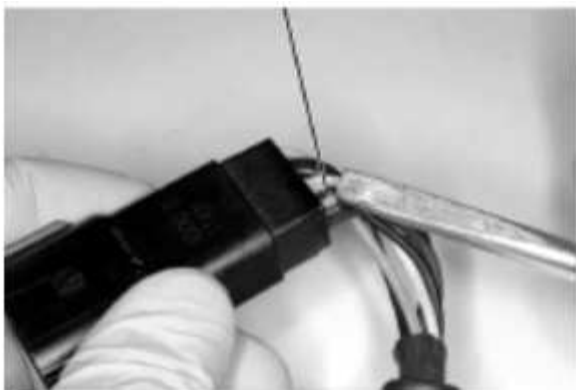


Illustration 10

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Plug Seating

Note: If excessive force is needed to insert plug, make sure that 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.



Illustration 11

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Setting TPA Lock to Locked Position.

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.



Illustration 12

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Dielectric Grease.



Illustration 13

g03380637

Terminal Surface Area

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.



Illustration 14

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Marked ACV Connector

15. Using three tie straps (8), secure ACV harness and air line to Coolant Control Valve (CCV). Trim excess length from ends of tie straps.

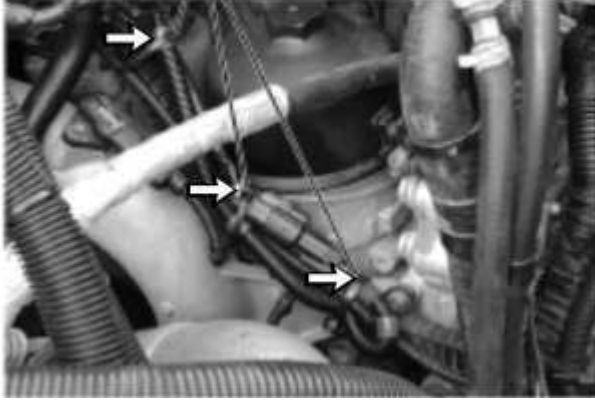


Illustration 15

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ACV Harness Installation.

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