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Special Instruction
Turbo Oil Supply Retrofit for the CT660 with CT11/13 Engines{7000}
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Turbo Oil Supply Retrofit for the CT660 with CT11/13 Engines {7000}

SMCS - 7000

On Highway Truck:

CT660 (S/N: TGA1-UP; TGD1-UP; TJD1-UP; TEJ1-UP; TRK1-UP; TKL1-UP; TEM1-UP; TEP1-UP; TGR1-UP; TGS1-UP; TJS1-UP; TGW1-UP; TSW1-UP; TEY1-UP; TSY1-UP; TEZ1-UP; TGZ1-UP)

Introduction

This procedure provides instructions on how to install the updated turbocharger oil supply tube and T-fitting. It also provides instructions on how to reroute certain coolant hoses that may interfere with the routing of the new turbocharger oil supply tube. There are outlined instructions for each different vehicle model and configuration. Select the appropriate routing and clipping section for the vehicle being repaired.

Parts Information

Table 1

Part Number	Description	Quantity
460-7270	Tube, Assy Turbo Oil Supply	1
460-7271	Fitting, Oil Tube	1
376-2947	Spacer (If Required)	1
397-0900	Stud Bolt (If Required)	1
360-1072	Swivel Saddle	1
Obtain Locally	Tie Straps	2

Service Procedure

WARNING

Before service work is begun, park the machine on a hard level surface. Block the wheels of the machine so unexpected movement will not

occur. Unexpected movement of the machine can cause personal injury or death.

WARNING

To prevent injury or death, never work under a machine while a test is being performed.

WARNING

Prevent sparks near the batteries. Sparks could cause vapors to explode. Do not allow jumper cable ends to contact each other or the engine.

WARNING

To avoid personal injury from electrical shock, ensure that the negative battery cable is disconnected first.

Note: It is recommended the technician read these instructions thoroughly prior to performing this procedure.

Note: The oil supply tube is a ONE TIME USE ONLY item and must be replaced if damaged or removed. The T-fitting and adapter fitting are reusable and to be installed per these instructions the first time.

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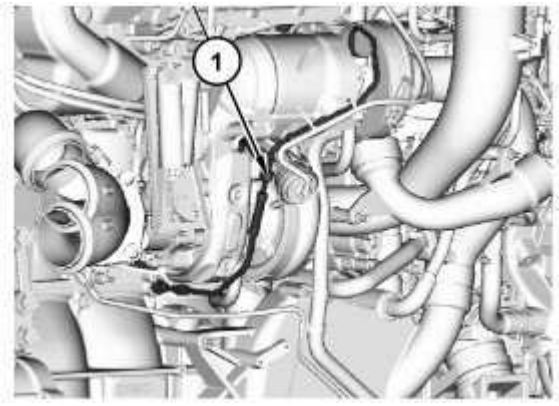

Illustration 1 g03698377

Old Style Turbocharger Oil Supply Tube

(1) Turbocharger oil supply tube

1. Bring vehicle into shop and park on flat surface.
2. Shift transmission to Park or Neutral, set parking brake, and install wheel chocks.
3. Unlatch and open hood.
4. Remove right side inner fender.
5. Remove air intake and pipe.
6. Remove CAC pipe from high-pressure charge air cooler and high-pressure turbo outlet elbow.
7. Remove high-pressure turbo outlet elbow from high-pressure turbocharger.
8. Remove air inlet duct from low-pressure turbocharger.
9. Remove and discard turbocharger oil supply tube.

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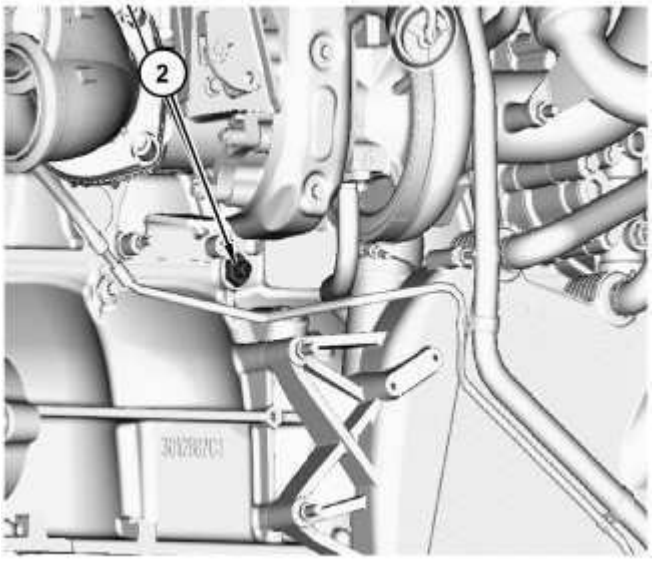

Illustration 2 g03698404
Turbocharger Oil Supply Line Male Stud Fitting.

(2) Turbocharger oil supply tube male stud fitting

10. Remove and discard turbocharger oil supply tube male stud fitting.

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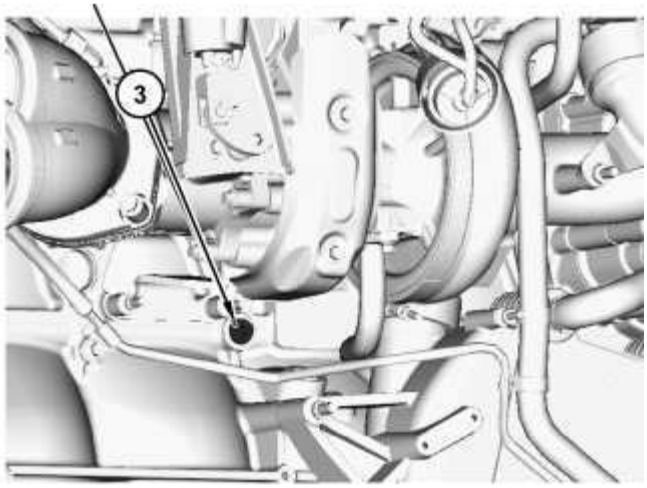

Illustration 3 g03698440
Oil Supply Tube Hex Socket Plug.

(3) Oil supply tube hex socket plug.

11. Install oil supply tube hex socket plug into oil supply inlet port in block. Using torque wrench, tighten socket plug to 70 N·m (52 lb ft).

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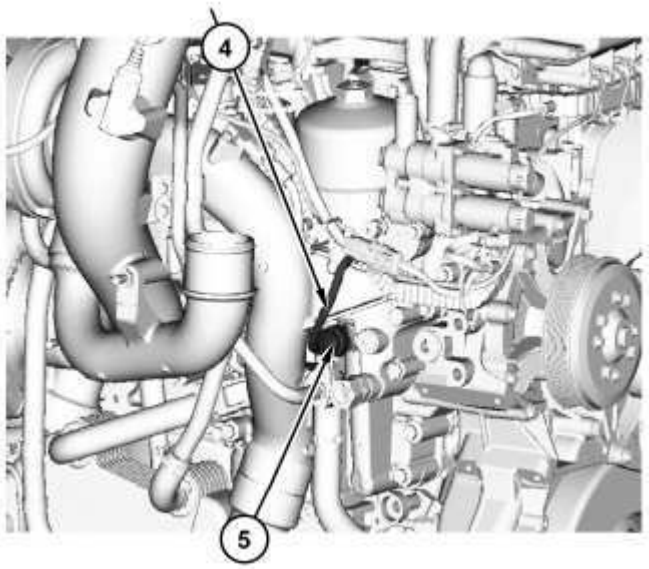

Illustration 4 g03698455
Engine Oil Pressure (EOP) Sensor.

(4) EOP sensor connector

(5) EOP sensor

12. Disconnect connector from EOP sensor.
13. Remove EOP sensor and gasket, and save for reuse.

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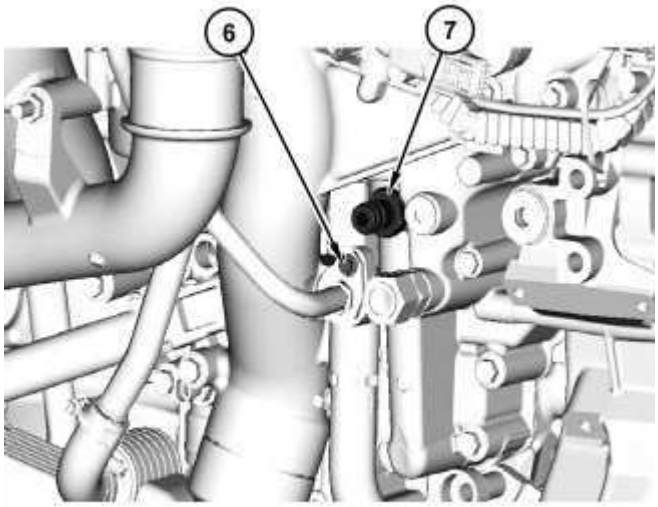

Illustration 5 g03698512
Adapter Assembly Fitting.

(6) M6 bolt

(7) Adapter assembly fitting

14. Remove M6 bolt from heater return tube and discard.

Note: Install adapter fitting with the two O-rings facing out towards the operator.

15. Install adapter assembly fitting. Using torque wrench, tighten fitting to 70 N·m (52 lb ft)

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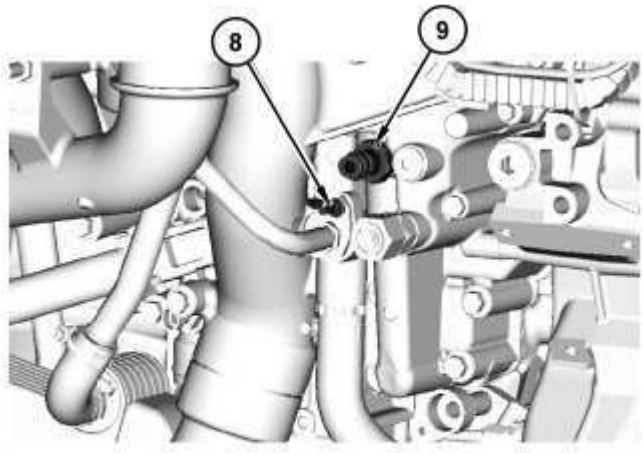

Illustration 6 g03698538
Oil Supply T-fitting.

(8) Oil supply T-fitting

(9) M6 stud bolt

16. Install M6 stud bolt Using torque wrench, tighten stud bolt to 13 N·m (10 lb ft).

17. Lubricate adapter fitting.

18. Slide oil supply T-fitting over adapter assembly fitting and M6 stud bolt.

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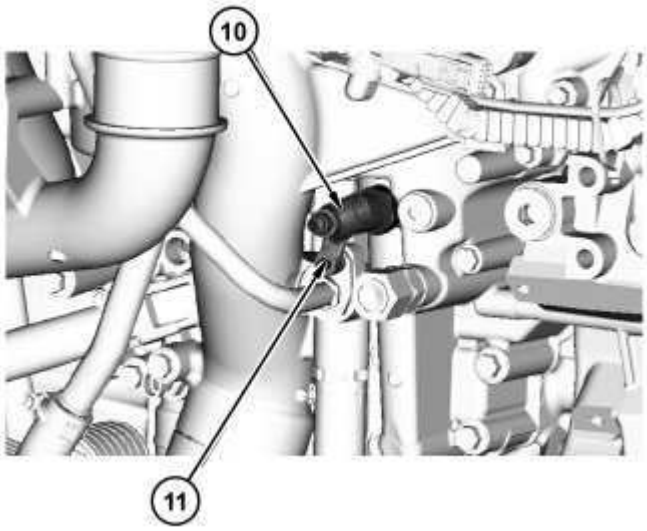

Illustration 7 g03698591
Oil Supply T-fitting.

(10) Oil supply T-fitting

(11) M6 stud bolt

19. Install M6 nut to oil supply T-fitting. Using torque wrench, tighten nut to 13 N·m (10 lb ft).

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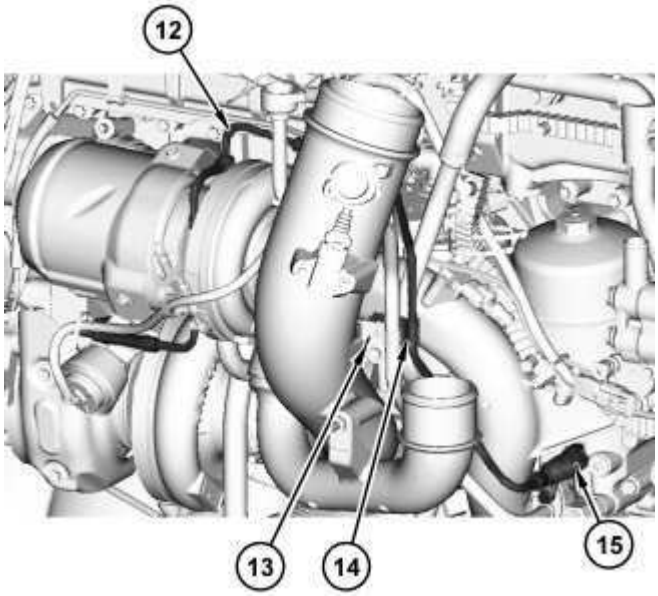

Illustration 8 g03698593
Turbo Oil Supply Tube Position.

(12) Turbo oil supply tube

(13) Oil supply T-fitting

(14) Turbo oil supply tube bracket

(15) Heater and cooler line bracket (2)

20. Remove M8 bolt from heater and cooler line brackets and discard.

    Note: Do not tighten any bolts or flare nuts at this time.

21. Align turbo oil supply tube with oil supply T-fitting and turbocharger oil supply openings.

22. Loosely install turbo oil supply tube flare nut end onto oil supply T-fitting.

23. Position turbo oil supply tube bracket BETWEEN heater and cooler line brackets.

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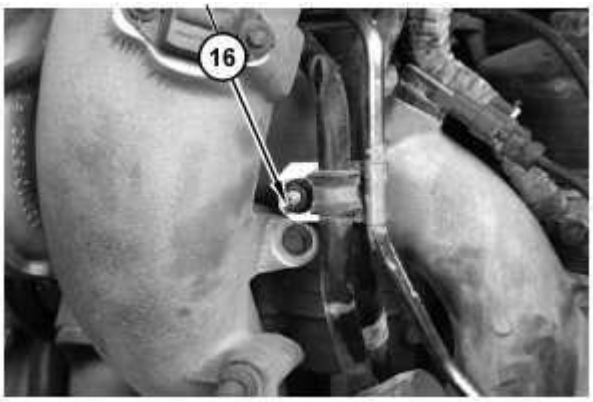

Illustration 9 g03698599
Heater and Cooler Line Bracket Stud Bolt.

(16) M8 stud bolt

Note: Do not exceed torque.

24. Install M8 stud bolt through turbo supply line bracket, heater and cooler line brackets, and into high-pressure turbocharger air inlet duct. Using torque wrench, tighten stud bolt to 31 N·m (23 lb-ft).

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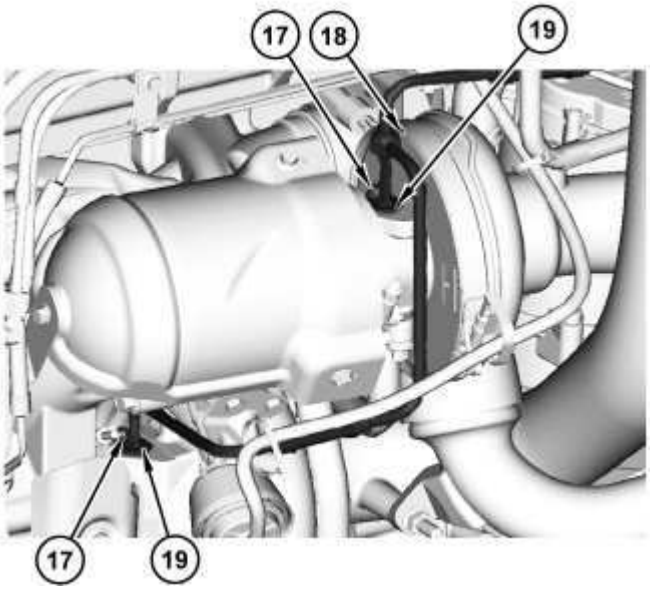

Illustration 10 g03698675

Turbocharger Oil Supply Openings.

(17) M6 x16 bolt (2)

(18) Turbocharger

(19) Turbo oil supply tube flange (2)

25. Lubricate turbocharger oil supply tube O-rings.

26. Press turbo oil supply tube fittings into openings on turbocharger

27. Align turbo oil supply tube flanges and loosely install the two previously removed M6 X 16 bolts. Using torque wrench, tighten bolts to 13 N·m (10 lb ft).

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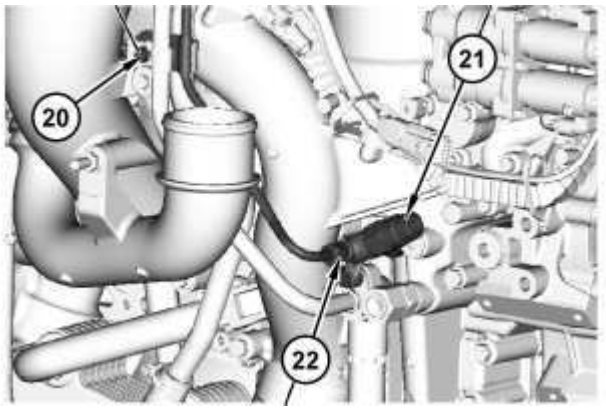

Illustration 11 g03698683

28. Install M8 nut over turbo supply line bracket, heater, and cooler line brackets and stud bolt in high-pressure turbocharger air inlet duct. Using torque wrench, tighten nut to 31 N·m (23 lb-ft).

29. Install turbo oil supply tube flare nut to T-fitting. Using torque wrench, tighten nut to 26 N·m (19 lb-ft).

30. Install EOP sensor to T-fitting. Using torque wrench, tighten sensor to 45 N·m (33 lb-ft).

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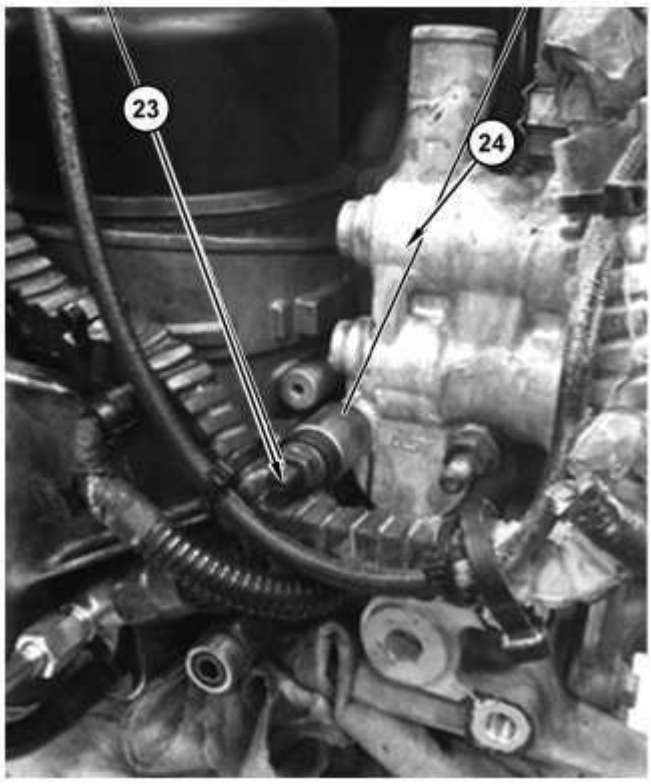

Illustration 12 g03698694

31. If EOP sensor connector contacts engine harness:
    - Remove rear coolant control valve (CCV) stud bolt, and install spacer with longer stud bolt
    - Install EOP sensor connector
    - Secure engine harness to longer stud with original nut. Install low-pressure air inlet duct to low-pressure turbocharger
32. Install low-pressure air inlet duct to low-pressure turbocharger.
33. Install high-pressure turbo outlet elbow to high-pressure turbocharger.
34. Install CAC pipe.
35. Install air intake and pipe.
36. Install inner fender.
37. Verify routing and clipping for various coolant hoses has been performed before repairs are complete.

CAT® Models – Deaeration Tank Hose Routing

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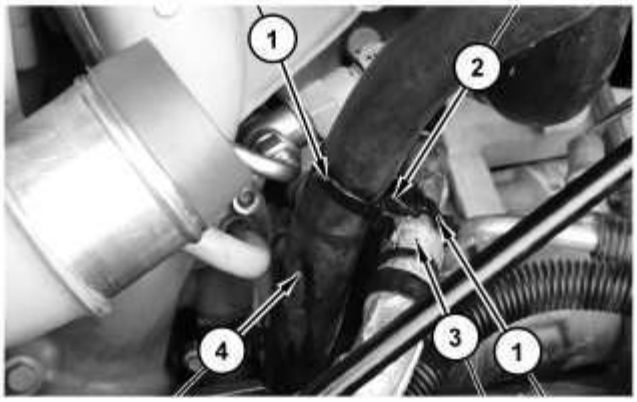

Illustration 13 g03698713
Surge Tank Hose.

(1) Tie strap (2)

(2) Swivel saddle

(3) A/C suction line

(4) Deaeration tank hose

Note: This routing procedure does not require draining cooling system.

Note: CAC pipe removed from graphic for clarity.

1. Pull deaeration tank hose back to its original location towards deaeration tank until it clears turbocharger oil supply tube.
2. Using two tie straps, and a swivel saddle secure deaeration tank hose to A/C suction line.
3. Verify that deaeration tank hose is not rubbing on turbocharger oil supply line or CAC pipe.
4. Close hood.
5. Remove wheel chocks.