

Voluntary Recall Campaign

Subject: Inspection and Replacement of Turbocharger - J08E

Date: June 16, 2011

Bulletin: RCB-003-11

Campaign #: D4460

Affected Models: Certain 2008 – 2010 MY ND8J, NE8J, NJ8J, NV8J models equipped with a J08E engine

Important: Verify on the Hino DCS Warranty System that the vehicle still needs to have this work performed.

Description:

This bulletin involves the inspection of the Variable Nozzle Turbine (VNT) turbocharger link rod along with the potential replacement of the VNT turbocharger assembly.

Condition:

The check engine light may become illuminated indicating a VNT turbocharger malfunction. The malfunction is the result of the link rod between the VNT and turbocharger computer sticking due to rust. This malfunction occurs in the following rust belt states: Connecticut, Illinois, Indiana, Iowa, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, North Carolina, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, South Dakota, Vermont, Virginia, West Virginia, and Wisconsin.

Subject Vehicles:

Certain 2008~2010 MY ND8J, NE8J, NJ8J and NV8J model trucks equipped with a J08E Engine.

Before You Begin:

Read and understand all instructions and procedures before you begin. Read and observe all Caution and Warning safety alerts that precede these instructions while following these procedures. The alerts help to avoid damage to components, serious personal injury, or both.

!!! WARNING !!!

Park the vehicle on a flat and level surface.

Apply the parking brake.

Shift transmission to NEUTRAL.

Block the wheels to prevent the vehicle from moving.

Use care when working around surfaces which may be hot.

Wear safety glasses to prevent eye injuries.

Confirm the engine is stopped, the starter switch is in the off (LOCK) position, and the key is removed.

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Once Recall Is Completed

Complete a recall sticker and affix to the left door jam above the V.I.N. decal.



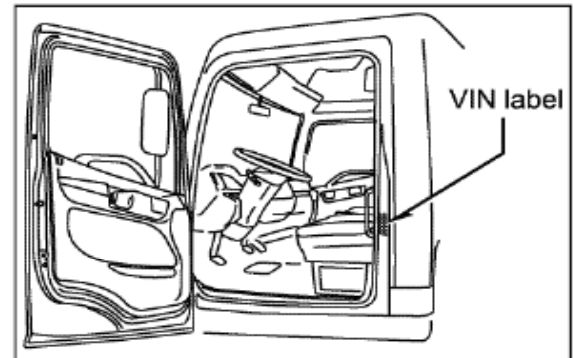
HINO  **TRUCKS**TM
A Toyota Group Company

Campaign No.: _____

Dealer code: _____

Repair date: ____/____/____
(MM / DD / YY)

DO NOT REMOVE



PARTS:

PART NUMBER	DESCRIPTION	QUANTITY
51286	Anti-Seize Nickel Compound 12oz Aerosol Can	1
17201E0353	Variable Nozzle Turbine (VNT) Turbocharger	1
S040010442	Install Gasket Kit Turbo J08E	1

DIAGNOSIS AND INSPECTION:

1. Park the vehicle on level ground.



2. Confirm the engine is stopped, the starter switch is in the off (LOCK) position, and the key is removed.

3. Apply the parking brakes.



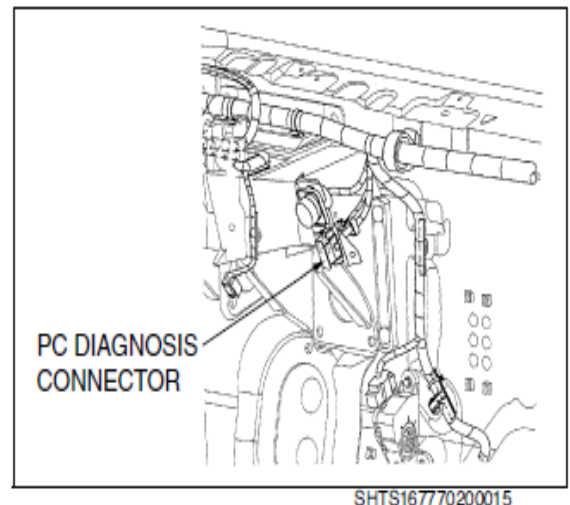
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4. Chock all of the wheels.



5. Connect your PC to the vehicles diagnostic connector using the DX and the related software.

NOTE: The diagnostic connector is located to the right side of the steering column under the dash.

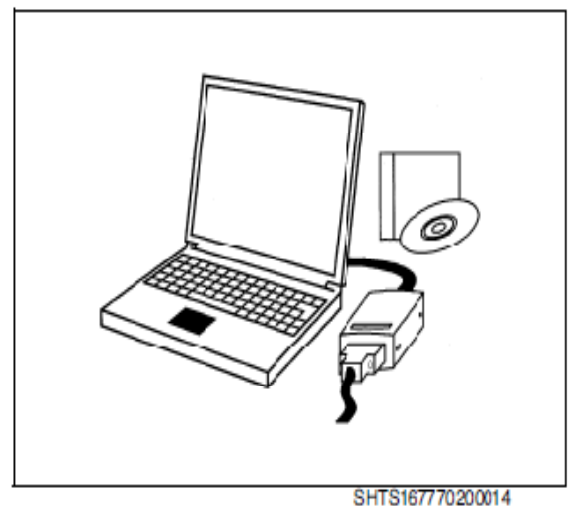


NOTICE: HINO'S DIAGNOSTIC HARWARE AND SOFTWARE

Hino Bowie (09993-E9070)

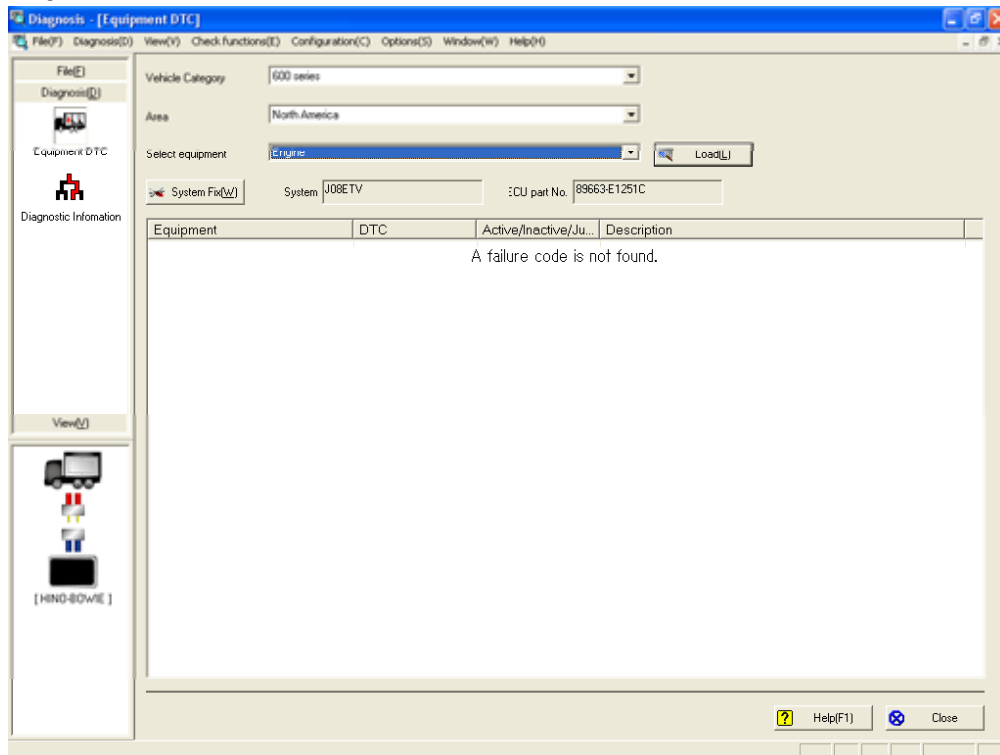
Cable communication (09042-1220)

Diagnosis software: HINO
Diagnostic eXplorer (DX)

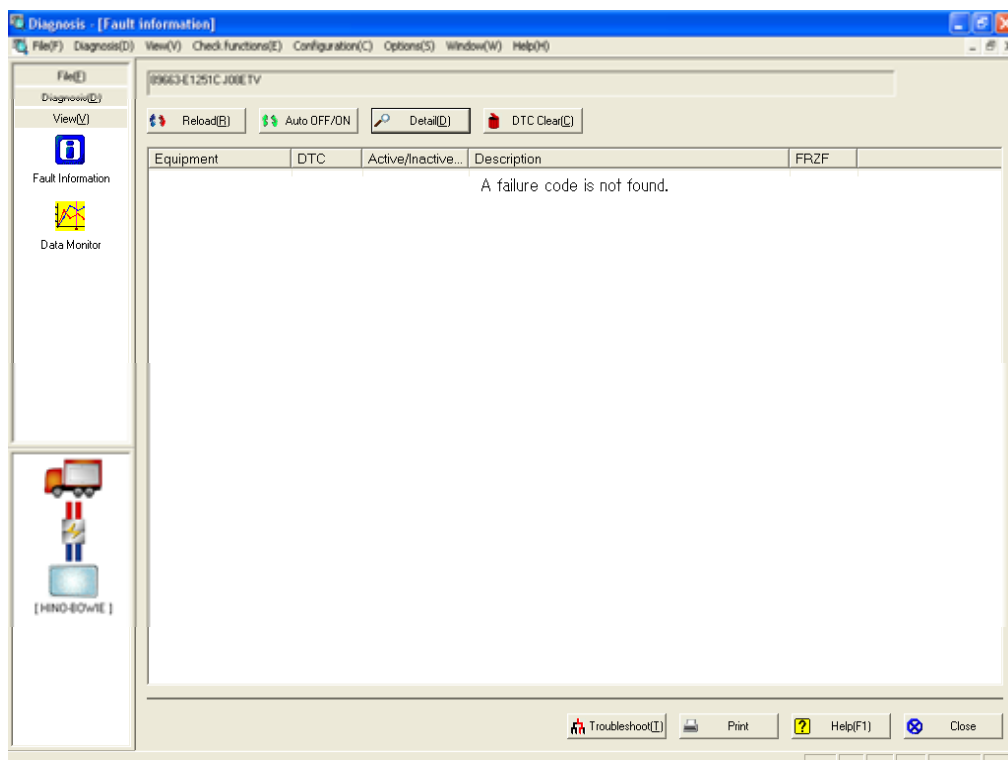


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6. Cycle the ignition key (ON) and then open the “HINO Diagnosis Explorer” application on your PC. Select: - “**Diagnosis**”, “**Equipment DTC**”, “**600 Series**”, “**North America**”, “**Engine**”, “**Load**” then “**System Fix**”



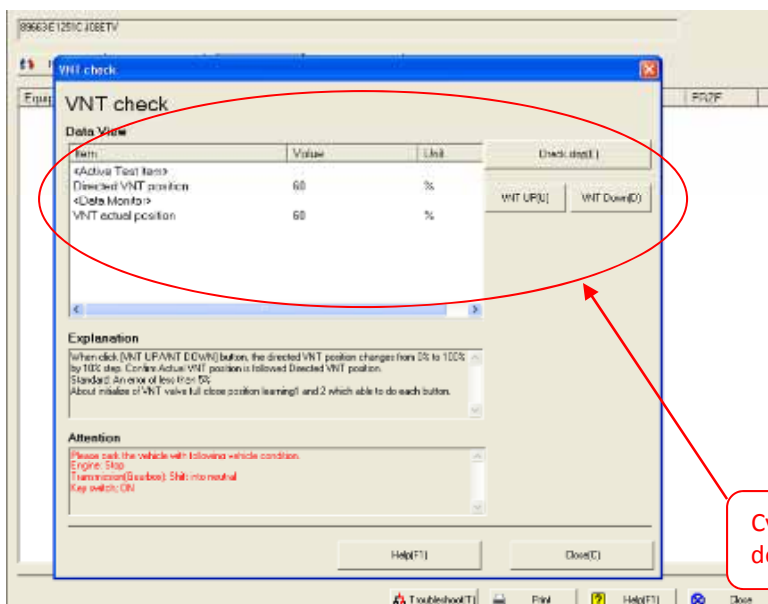
7. Read, record and clear any engine Diagnostic Trouble Codes (DTC)'s.



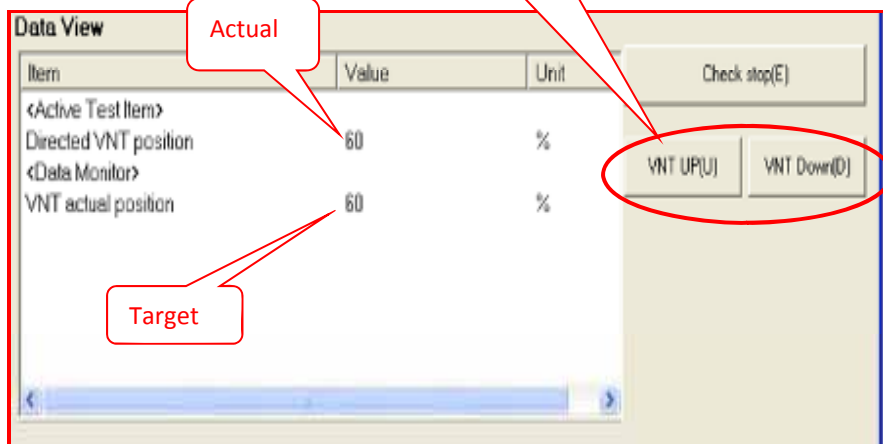
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8. Perform the following "VNT Check".

- (i) Select the "VNT Check" in the "Check Functions" menu using the DX.
- (ii) Select "Check Start(E)" and then toggle the VNT turbocharger up and down from 0 to 100 using the "VNT UP(U)" and "VNT DOWN(D)" buttons on the DX.
- (iii) Confirm the "Directed VNT Position" follows the "VNT Actual Position".



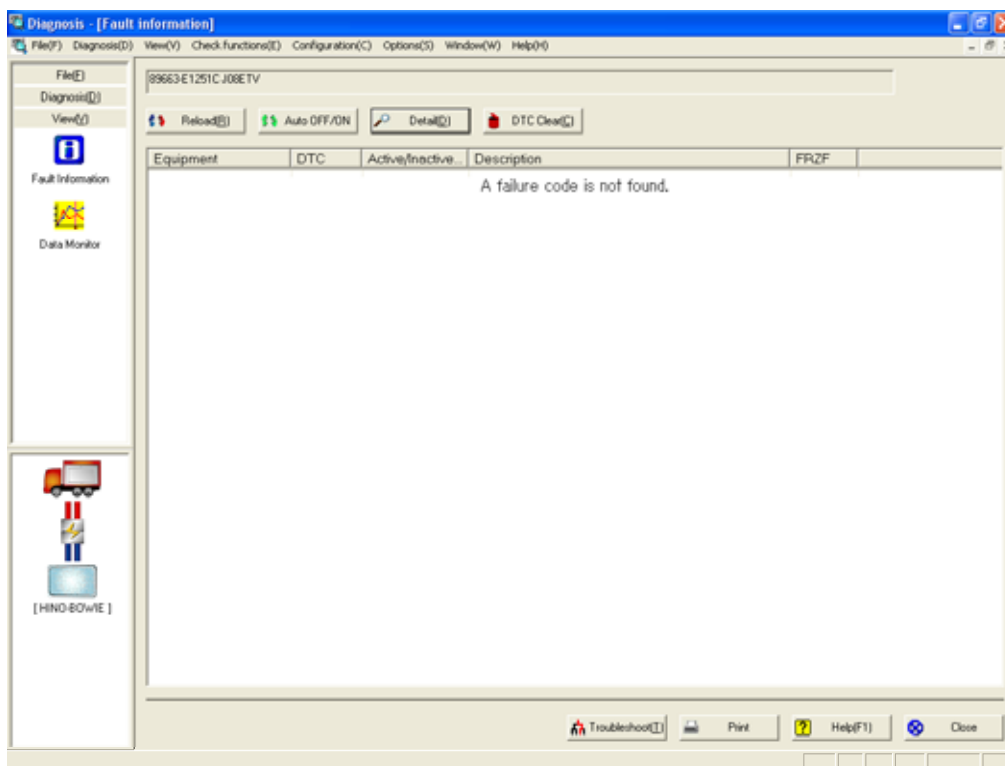
Cycle up to 100 and down to 0 – Ten cycles



- (iv) Once the VNT turbo has been cycled fully open and closed 10 times, select the "Check Stop(E)" button.

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9. Recheck for DTC's by selecting the "Reload(R)" button.



- (9a) If either DTC's P0045 / U1123 were reset from STEP 9 or the "VNT Actual Position" fails to follow the "Directed VNT Position", please continue to **STEP 10**.
- (9b) If no DTC's set were reset in STEP 9 and the "VNT Actual Position" follows the "Directed VNT Position" during the VNT check, please proceed to **STEP 12**.
10. With DTC's P0045 / U1123 set or the "VNT Actual Position" fails to follow the "Directed VNT Position", confirm no related pin, connector or harness concerns are present. Reference the on-line Engine Workshop Manual under "*Fuel Control*" and then "*VNT Turbocharger Controller*" for specific pin and connector locations along with more detailed diagnostic procedures.
- (10a) If currently no concerns are found with the related circuits between the Rotary Electronic Actuator (REA) and Engine Control Unit (ECU), continue to **STEP 11** in efforts to lubricate and free up the VNT turbocharger linkage.
- (10b) If a concern is identified with the related circuits between the REA and ECU, repair the failure using the most current Engine Workshop Manual Procedures, clear the DTC's and go back to **STEP 8** to recheck and determine if the concern has been resolved.

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WARNING: BEFORE BEGINNING THE INSPECTION AND LUBRICATION OF THE VNT TURBOCHARGER LINK ROD, MAKE CERTAIN THAT THE ENGINE AND EXHAUST HAVE COOLED OFF TO REDUCE THE RISK OF BURNS.

11. Lubricate the VNT turbocharger upper (A) and lower (B) link rod pivots with the aerosol “Loctite Nickel Anti-Seize”, part number 51286.

(i) Clear any engine Diagnostic Trouble Codes (DTC)’s.

(ii) Perform the following “VNT Check” again.

- (a) Select the “VNT Check” in the “Check Functions” menu using the DX.
- (b) Select “Check Start(E)” and then toggle the VNT turbocharger up and down from 0 to 100 using the “VNT UP(U)” and VNT DOWN(D) buttons on the DX.
- (c) Confirm that the “Directed VNT Position” follows the “VNT Actual Position”.
- (d) Once the VNT turbo has been cycled fully open and closed 10 times, select the “Check Stop(E)” button.
- (e) Recheck for DTC’s by selecting the “Reload(R)” button.

(iii) If either DTC’s P0045 / U1123 set again or the “VNT Actual Position” fails to follow the “Directed VNT Position”, replacement of the VNT turbocharger assembly will be required. Please continue to the “**Turbo Replacement Procedure**”. If the “VNT Actual Position” now successfully follows the “Directed VNT Position” and the DTC’s P0045 and/or P0045 U1123 do not reset, please continue to **STEP 12**.



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12. Lubricate the VNT turbocharger upper(A) and lower(B) link rod pivots with the aerosol “Loctite Nickel Anti-Seize”, part number 51286 and then cycle the VNT turbocharger 10 times to allow the “Loctite Nickel Anti-Seize” to penetrate and work into the VNT pivot and pivot rod joint. With no current failures found of the VNT turbocharger, VNT turbocharger replacement **WILL NOT** be required at this time. The vehicle can be returned to the customer as no further service will be required.

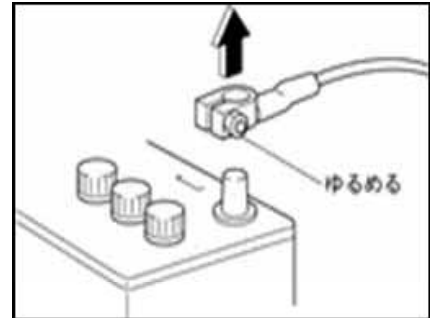


Voluntary Recall Campaign

TURBO REPLACEMENT PROCEDURE (TURBO REMOVAL):

WARNING: BEFORE BEGINNING REPLACEMENT OF THE VNT TURBOCHARGER, MAKE CERTAIN THAT THE ENGINE AND EXHAUST HAVE COOLED OFF TO REDUCE THE RISK OF BURNS.

1. Remove the negative battery cable from the negative posts of the batteries.



2. Release both hood latches.

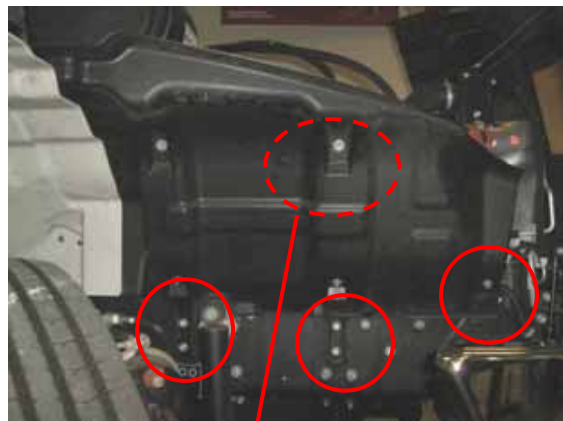


3. Make certain that there is proper clearance around the hood and then raise the hood.



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4. Prior to removal of the well wheel splash shield, remove the single nut securing the air conditioning high pressure line to the splash shield. Removal of the right front inner wheel well splash shield can now proceed by removing the 5 bolts that secure the splash shield to the frame rail.



5. Loosen the VNT turbocharger fresh air inlet hose clamp and remove the fresh air inlet hose off of the VNT turbocharger fresh air inlet tube assembly.



6. Loosen the VNT turbocharger outlet hose clamp and remove the hose from the VNT turbocharger outlet tube.



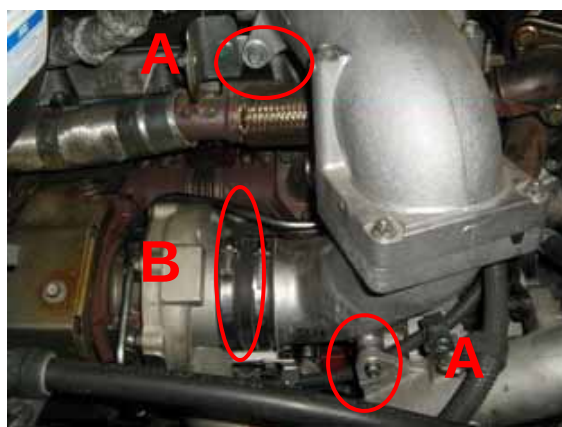
NOTICE: Make certain that no debris enters any of the openings on the filtered side of the air induction system. If the engine is allowed to restart with debris present in the air induction system, engine damage may occur.

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7. Remove both the crankcase and the air compressor breather hose clamps. Disconnect each hose from the VNT turbocharger fresh air inlet air tube.



8. Remove the 2 VNT turbocharger fresh air inlet tube mounting bolts (A) and then loosen the VNT turbocharger fresh air hose clamp (B).



9. Remove the 2 VNT turbocharger fresh air inlet tube mounting bolts.



10. Remove the VNT turbocharger fresh air inlet tube.



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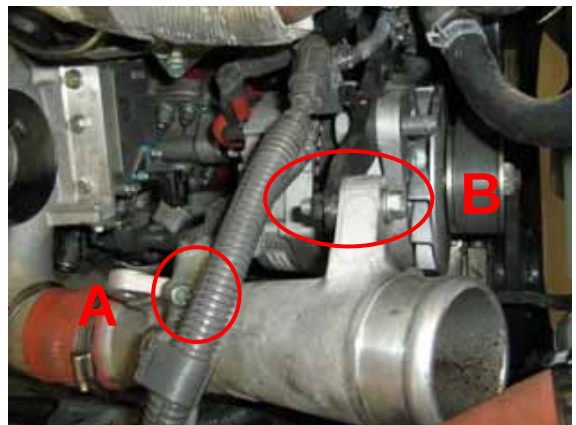
- 11.** Loosen the VNT turbocharger air outlet tube clamp.



- 12.** Remove the engine harness mounting bracket bolt from the VNT turbocharger air outlet tube assembly.



- 13.** Remove the harness mounting bracket bolt (A) and then the VNT turbocharger air outlet mounting bracket bolt (B).



- 14.** Remove the VNT turbocharger air outlet tube assembly.

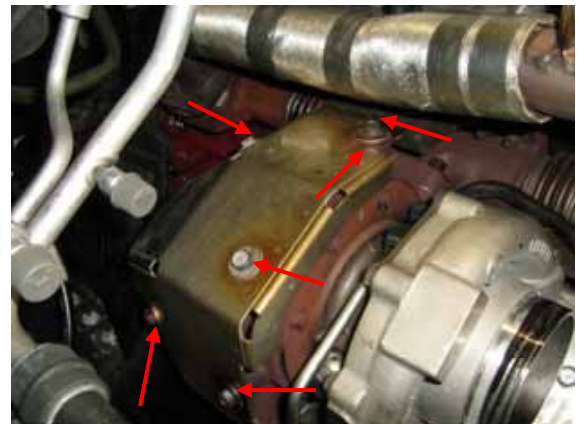


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15. Remove the REA mounting bracket bolt (A) and then disconnect the REA electrical connector (B).



16. Remove the 6 VNT turbocharger upper heat shield bolts and then remove the upper heat shield.



17. Remove the 2 VNT turbocharger lower heat shield bolts for the lower heat shield and then remove the heat shield.



WARNING: Never open the cooling system until enough time has passed to allow the coolant temperatures and coolant pressure to drop to ambient temperature and pressures. Failure to allow the coolant temperature and pressure to decrease may result in personal injury.

18. Drain the engine coolant into an approved container. Once the coolant has been completely drained, torque the drain plug to the specified torque.

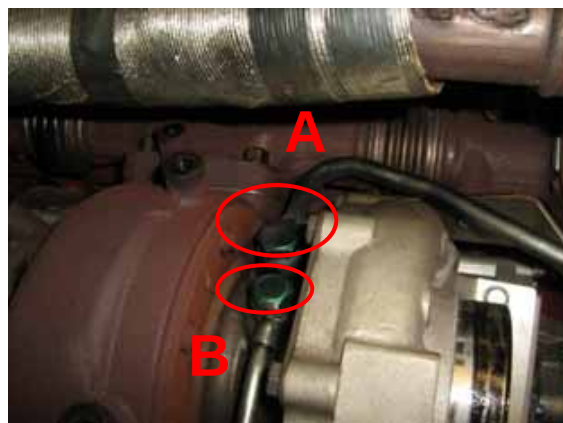
Specified Torque: 32.5 lb. ft. (44 Nm)



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19. Remove the VNT turbocharger coolant supply line banjo bolt (A) and then the VNT turbocharger oil supply line banjo bolt (B).

NOTICE: Discard the old copper and rubber/aluminum sealing washers. Do not reuse the discarded copper and rubber/aluminum sealing washers.

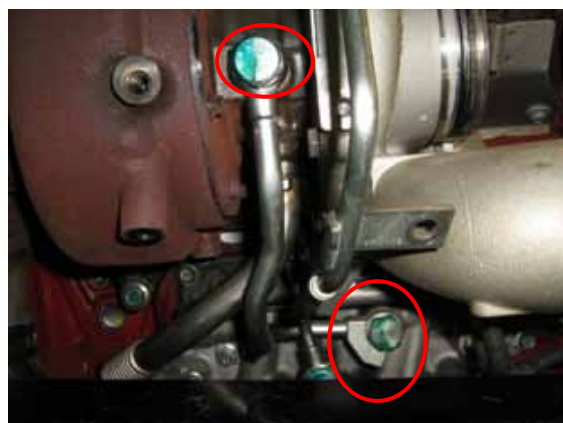


20. Remove the VNT turbocharger oil supply line mounting bracket bolt.



21. Remove the 2 VNT turbocharger coolant return line banjo bolts and then remove the VNT turbocharger coolant return line.

NOTICE: Discard the old rubber/aluminum sealing washers. Do not reuse the discarded rubber/aluminum sealing washers.



22. Remove the 4 VNT turbocharger oil drain tube flange bolts and then remove the VNT turbocharger oil drain tube.

NOTICE: Discard the old gaskets. Do not reuse the discarded gaskets.



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23. Remove the lower VNT turbocharger oil supply banjo bolt and then the VNT turbocharger oil supply line.

NOTICE: Discard the old copper sealing washers. Do not reuse the discarded copper sealing washers.



24. Loosen the 2 exhaust Diesel Particulate Filter (DPF) hanger bracket nuts. This will allow the exhaust to pivot rearward for removal of the forward exhaust pipe.



25. Loosen the rear exhaust hanger clamp to allow the exhaust to pivot rearward for removal of the forward exhaust pipe.



26. Remove the 4 forward exhaust brake flange nuts that secure the forward exhaust pipe.

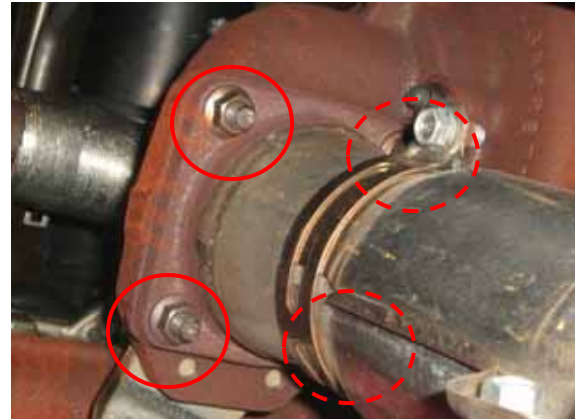
NOTICE: Discard the old steel gasket. Do not reuse the discarded steel gasket.



Voluntary Recall Campaign

27. Remove the 4 VNT turbocharger outlet down pipe exhaust flange nuts.

NOTICE: Discard the old steel gasket. Do not reuse the discarded steel gasket.



28. Loosen the bolt securing the VNT turbocharger mounting bracket to the engine block.



29. Remove the 2 VNT turbocharger outlet elbow mounting bracket bolts.



30. Remove the forward exhaust pipe hanger and then remove the forward exhaust pipe between the exhaust brake and VNT turbocharger outlet.

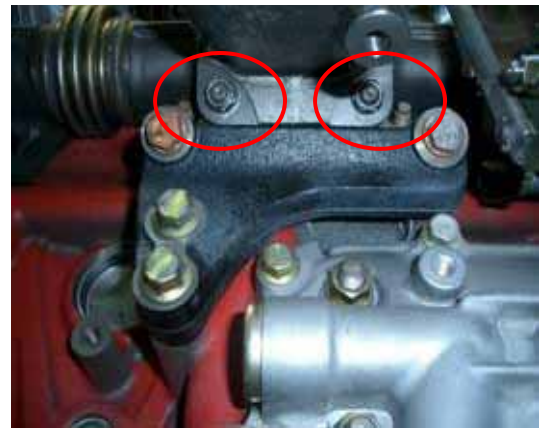
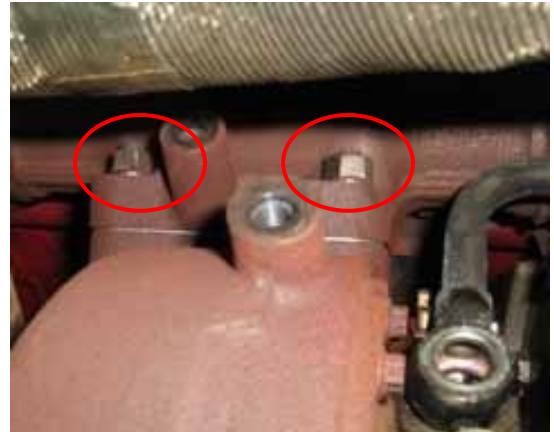
NOTICE: Discard the old steel gasket. Do not reuse the discarded steel gasket.



Voluntary Recall Campaign

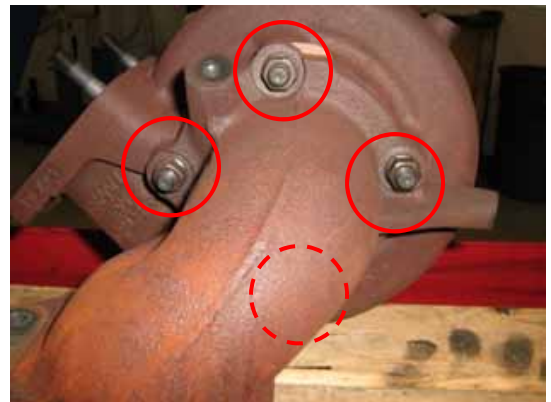
31. Remove the 4 VNT turbocharger flange nuts at the exhaust manifold outlet-to-VNT turbocharger inlet flange and then remove the VNT turbocharger.

NOTICE: Discard the old steel gasket. Do not reuse the discarded steel gasket.



32. With the VNT turbocharger removed from the vehicle, remove the 4 VNT turbocharger flange nuts. Remove the VNT turbocharger elbow off the VNT turbocharger assembly.

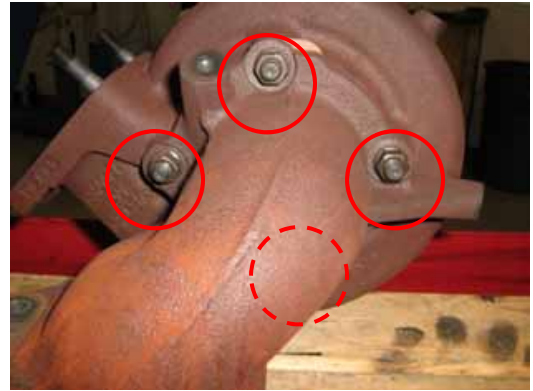
NOTICE: Discard the old steel gasket. Do not reuse the discarded steel gasket.



Voluntary Recall Campaign

TURBO REPLACEMENT PROCEDURE (TURBO INSTALLATION):

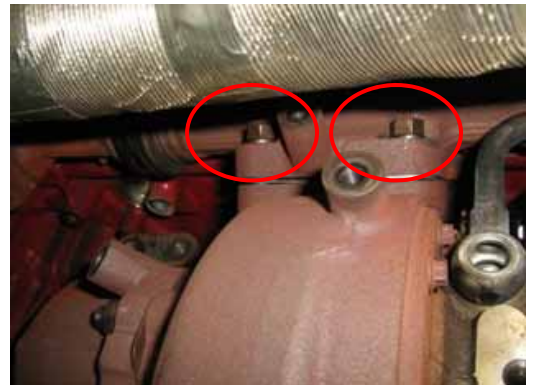
1. Install the VNT turbocharger elbow onto the VNT turbocharger with a new steel flange gasket. Tighten the 4 flange nuts to the specified torque.



Specified Torque: 51 lb. ft. (69 Nm)



2. Install the VNT turbocharger onto the exhaust manifold outlet-to-VNT turbocharger exhaust inlet flange. Make certain that a new steel flange gasket is installed. Tighten the 4 flange nuts to the specified torque.



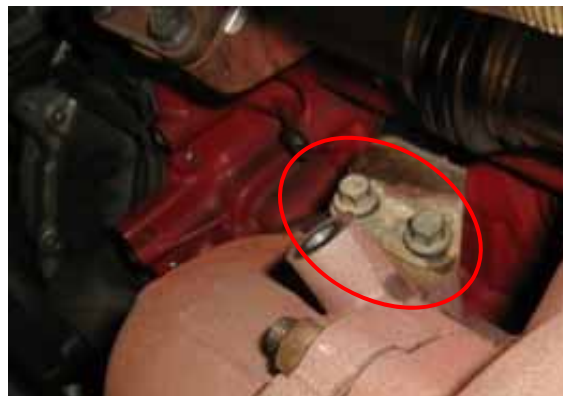
Specified Torque: 41 lb. ft. (56 Nm)



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3. Tighten the 2 VNT turbocharger outlet elbow mounting bracket bolts to the specified torque.

Specified Torque: 51 lb. ft. (69 Nm)



4. Tighten the VNT turbocharger mounting bracket to the specified torque.

Specified Torque: 51 lb. ft. (69 Nm)



5. Install the forward exhaust pipe. Make certain that the flange gaskets between the VNT turbocharger and forward exhaust pipe along with the flange gasket between the forward exhaust pipe and exhaust brake have been replaced.

NOTICE: Make certain that new steel flange gaskets are installed. Do not install the old steel flange gaskets.



6. Install the 4 VNT turbocharger outlet down pipe exhaust flange nuts. Tighten to the specified torque.

Specified Torque: 52 lb. ft. (70Nm)

NOTICE: Make certain that new steel flange gaskets are installed. Do not install the old steel flange gaskets



Voluntary Recall Campaign

7. Install the forward exhaust pipe flange nuts at the exhaust brake forward flange and tighten to the specified torque.

Specified Torque: 41 lb. ft. (56Nm)

NOTICE: Make certain that new steel flange gaskets are installed. Do not install the old steel flange gaskets



8. Center and tighten the forward and rear exhaust pipe hanger clamps to the specified torque. The upper clamp bolt will require tightening first and then the lower hanger clamp bolt last.

Specified Torque: 38 lb. ft. (5 Nm) -Upper-
Specified Torque: 21 lb. ft. (29 Nm) -Lower-



9. Tighten the DPF hanger bracket nuts to the specified torque.

Specified Torque: 44 lb. ft. (60 Nm)



10. Install the VNT turbocharger oil drain tube and then 4 oil drain tube flange bolts. Make certain that new gaskets are used and that all 4 bolts are threaded in by hand. Once all 4 bolts are hand tight, tighten the VNT turbocharger oil drain tube flange bolts to the specified torque.

Specified Torque: 21 lb. ft. (28.5 Nm)

NOTICE: Make certain that new flange gaskets are installed. Do not install the old flange gaskets.



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11. Install VNT turbocharger oil supply line and hand tighten the lower banjo bolt. Make certain that new sealing washers are installed.

NOTICE: Make certain that new copper sealing washers are used in the reassembly. Do not install the old copper sealing washers.

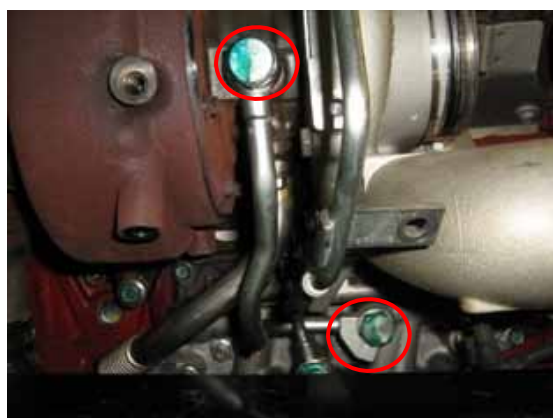
NOTICE: The specified torque for this lower banjo bolt will be set forth in STEP 13, below.



12. Install the VNT turbocharger coolant return line along with the upper and lower banjo bolts. Make certain that new sealing washers are installed and the banjo bolts are tightened to the specified torque.

Specified Torque: 18.5 lb. ft. (25 Nm)

NOTICE: Make certain that new rubber/aluminum sealing washers are used in the reassembly. Do not use the discarded rubber/aluminum sealing washers in the reassembly.



13. Install the VNT turbocharger oil supply line upper banjo bolt and the VNT turbocharger oil supply line mounting bracket bolt. Tighten the VNT turbocharger oil supply line mounting bracket by hand. Make certain that new sealing washers are installed and the upper and lower VNT turbocharger oil supply line banjo bolts are BOTH tightened to the specified torque.

Specified Torque: 18.5 lb. ft. (25 Nm)

NOTICE: Make certain that new copper sealing washers are used in the reassembly. Do not use the discarded copper sealing washers in the reassembly.



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14. Tighten the VNT turbocharger oil supply line mounting bracket bolt to the specified torque.

Specified Torque: 21 lb. ft. (28.5 Nm)



15. Install the VNT turbocharger coolant supply line banjo bolt with new sealing washers and tighten to the specified torque.

Specified Torque: 18.5 lb. ft. (25 Nm)

NOTICE: Make certain that new rubber/aluminum sealing washers are used in the reassembly. Do not use the discarded rubber/aluminum sealing washers in the reassembly.



16. Install the lower and upper VNT turbocharger heat shields and then corresponding bolts. Tighten the bolts to the specified torque.

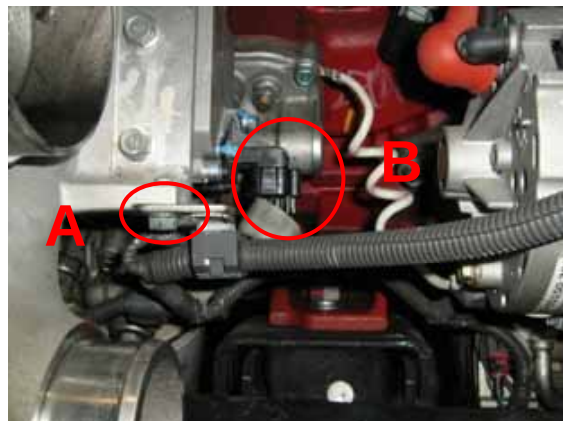
Specified Torque: 21 lb. ft. (28.5 Nm)



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17. Install the REA harness mounting bracket bolt (A) and then reconnect the REA electrical connector (B). Tighten the REA harness mounting bracket bolt to the specified torque.

Specified Torque: 21 lb. ft. (28.5 Nm)



18. Install the VNT turbocharger air outlet tube. Install the harness bracket bolt (A) and tighten to the specific torque. Install and tighten the mounting bracket bolt (B) to the specific torque.

(A) **Specified Torque: 21 lb. ft. 28.5 Nm)**

(B) **Specified Torque: 41 lb. ft. (55 Nm)**

NOTICE: make certain that both mating surfaces of the hose connection are free from grease before reassembly.

19. Install the engine harness bracket bolt onto the VNT turbocharger air outlet tube and tighten to the specified torque.

Specified Torque: 21 lb. ft. (28.5 Nm)



20. Tighten the VNT turbocharger outlet hose clamp to the specific torque.

Specified Torque: 5 lb. ft. (6 Nm)



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21. Reinstall the fresh air inlet tube going to the VNT turbocharger assembly.



22. Install the 2 mounting bolts for the fresh air inlet tube assembly and tighten to the specified torque.

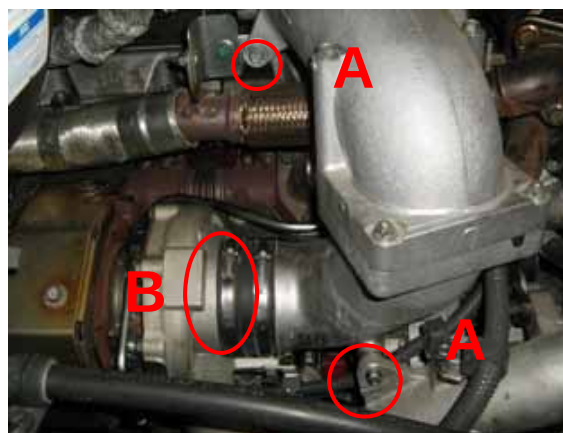
Specified Torque: 21 lb. ft. (28.5 Nm)



23. Install both mounting bolts (A) for the fresh air inlet tube assembly and then tighten to the specified torque. Position the band clamp (B) and tighten to the specified torque.

(A) Specified Torque: 21 lb. ft. (28.5 Nm)

(B) Specified Torque: 5 lb. ft. (6 Nm)



24. Install the VNT turbocharger outlet hose over the VNT turbocharger outlet tube. Position the hose clamp and tighten to the specified torque.

Specified Torque: 5 lb. ft. (6 Nm)

NOTICE: Make certain that both mating surfaces of the hose connection are free from grease before reassembly.

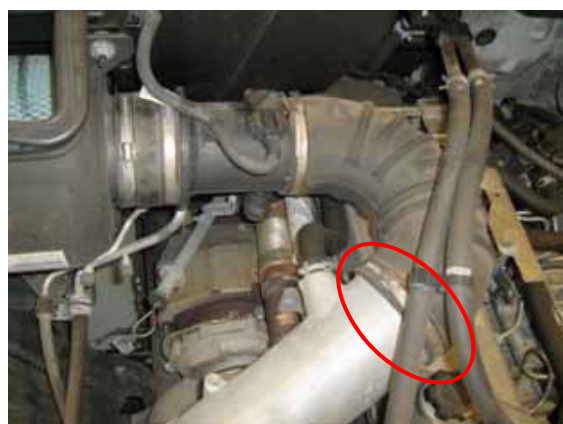


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25. Install both crankcase and air compressor breather hoses onto the VNT turbocharger fresh air inlet air tube. Position and secure the spring clamps.



26. Install the VNT turbocharger fresh air hose over the VNT turbocharger fresh air tube. Position the hose clamp and tighten to the specified torque.



Specified Torque: 5 lb. ft. (6 Nm)

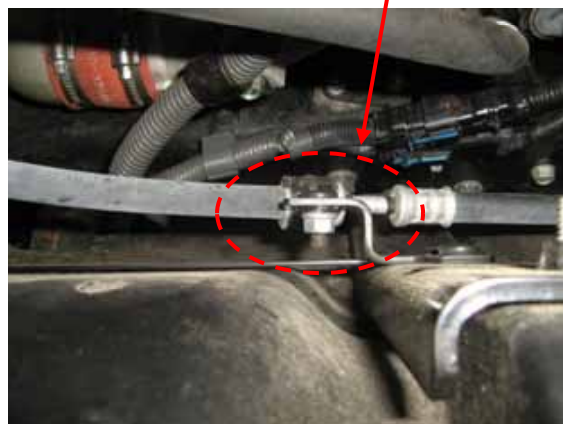
NOTICE: Make certain that both mating surfaces of the hose connection are free from grease before reassembly.

27. Reinstall the right front inner wheel well splash shield. Tighten the bolts to the specified torque. In addition, the nut securing the air conditioning high pressure line to the splash shield must also be reinstalled and tightened to the specified torque



Specified Torque:

10mm x 1.25 : 44 lb. ft. (60 Nm)
8mm x 1.25 : 21 lb. ft. (28.5 Nm)



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28. Fill and bleed the vehicles cooling system with approved Hino Genuine Coolant.
29. Reconnect the vehicle's negative battery terminals.
30. Start the engine and allow it to reach operating temperature.
31. Hook up to the vehicle to the DX and recheck for and DTC's. If any DTC's may have been set during service of the vehicle, these should be cleared prior to releasing the vehicle back to the customer. Run the vehicle through a "VNT CHECK" with the DX and confirm the vehicle has been repaired.
32. Shut the vehicle down and cycle the ignition key to "Lock". Once the vehicle has cooled off, recheck to make certain the coolant level is full and then top off as needed.
33. Perform your final confirmation after the repair and inspect to confirm that there are no oil or coolant leaks present that were induced from this service.

CLAIM APPLICATION

J08E Inspection and Lubrication

- a) Campaign No: D4460
- b) Labor charge: 1.0hr
- c) Warranty code: 0816598
- d) Operation code: 08150AOT
- e) Original part #: 17201E0352

J08E Inspection and Replacement

- a) Campaign No: D4460
- b) Labor charge: 5.0hr
- c) Warranty code: 0816598
- d) Operation code: 08101ARE
- e) Original part #: 17201E0352