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Author: Greg Scheff

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Coding Information

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Title: S13 Leaks at the Coolant Return Pipe Hose Clamps

Applies To: All S13 Engines

CHANGE LOG

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

10/10/2025 - Added Parts and Service Info for Turbo Downpipe
07/08/2025 - Added special note below parts section
03/10/2025 - Revised parts notes
02/26/2025 - Initial Article Release

DESCRIPTION

This document will guide the user through replacement of the two hose clamps at the right rear coolant distribution housing to the large coolant return tube leading to the thermostat housing (**Figure #1**). The original clamp design may not be adequate to maintain the proper clamping force in the event the rubber hose relaxes. The steps below will outline the installation of a new design constant torque clamp in this location.

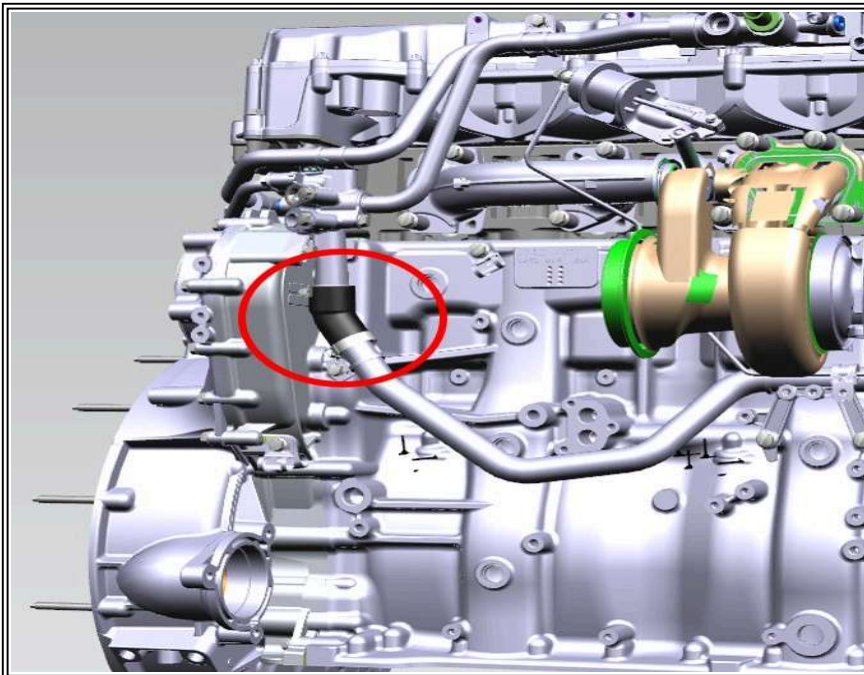


Figure #1: Location of the leak

SYMPTOM(s)

Traces of coolant seen at the right rear of the engine, on or around the starter, or drops of coolant seen on the ground after sitting overnight.

SPECIAL TOOL(s) / SOFTWARE

Tool Description	Tool Number	Comments	Instructions
Coolant Management Tool	KL5007NAV	Used to Drain / Fill Cooling System	Service Manual Link
Pressure Regulator Assy	KL5006NAV		
Cooling Sys Adapter	09-040-03		
Coolant Drain Adapter	09-146-02		

SERVICE PARTS INFORMATION

Description	Part Number	Quantity	Notes
Thermostat Housing Rubber Return Hose	104696N1	1	As Needed
Clamp, Hose, Outlet 1 in. - 1-3/4	3523809C1	2	Constant Torque

Kit, Cooling Return Pipe to Thermostat	2523735C91	1	As Needed See NOTE Below
Exhaust Downpipe V-Band Clamp - Turbo End	3621545C1	1	As Needed
Exhaust Downpipe V-Band Clamp Gasket - Turbo End	3853371C1	1	As Needed
Exhaust Downpipe V-Band Clamp - Aft Inlet End	3848436C1	1	As Needed
Exhaust Downpipe V-Band Clamp Gasket - Aft Inlet End	4275371C2	1	As Needed

NOTE:

If using the 2523735C91 kit, you still need to order two of the 3523809C1 constant torque clamps listed above and discard the clamps that come in the kit. The kit is only needed when replacing the coolant return pipe.

REPAIR STEP(s)

WARNING! To prevent property damage, personal injury, and / or death, park vehicle on a hard, flat surface, turn the engine off, set the parking brake, and install wheel chocks to prevent the vehicle from moving in either direction.

WARNING! To prevent property damage, personal injury, and / or death, if the vehicle must be raised, do not work under the vehicle supported only by jacks. Jacks can slip or fall over.

WARNING! To prevent personal injury and / or death, always wear safe eye protection when performing vehicle maintenance.

WARNING! To prevent property damage, personal injury, and / or death, keep flames or sparks away from vehicle and do not smoke while servicing the vehicle's batteries. Batteries expel explosive gases.

WARNING! To prevent property damage, personal injury, and / or death, remove the ground cable from the negative terminal of the battery box before disconnecting any electrical components. Always connect the ground cable last.

REMOVAL PROCEDURE:

1. If replacing the rubber 104696N1 coolant return hose, drain the cooling system per the service manual linked [HERE](#).
2. It may be necessary in some applications to remove the turbo downpipe to the aftertreatment inlet (**Figure #2**) to gain access to the coolant manifold

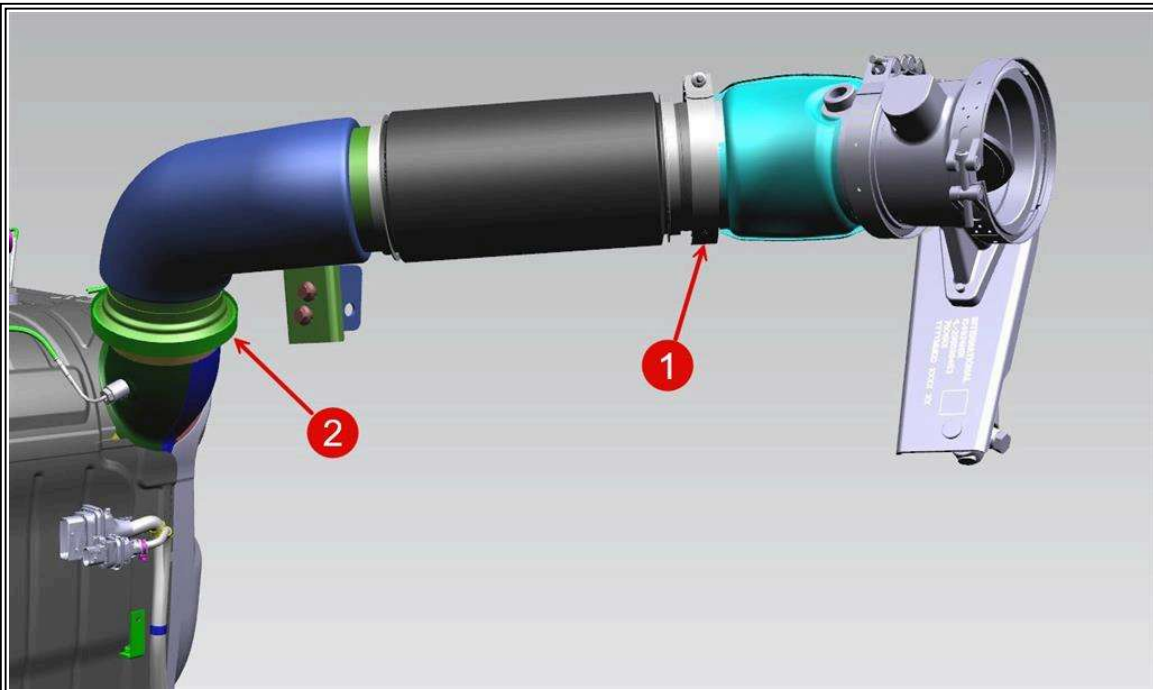


Figure #2: Turbo Downpipe

Item 1: Turbo Out V-Band Clamp 3621545C1 and 3853371C1 Gasket
 Item 2: Aftertreatment In V-Band Clamp 3848436C1 and 4275371C2 Gasket

3. Loosen the clamps securing the steel coolant return pipe to the cylinder block to allow movement of the pipe.
4. Remove and discard both of the former 104700N1 hose clamps.
5. Remove and discard the 104696N1 rubber hose from the return pipe and coolant distribution housing.

INSTALLATION PROCEDURE:

6. Before installing the new hose, position two new 3523809C1 constant torque clamps (**Figure #3 & 4**) over the coolant return pipe with the hex inboard towards the cylinder block and facing forward.



Figure #3: Constant Torque Clamp

Item 1: Clamp positioned inboard facing forward



Figure #4: Constant Torque Clamps

- 7. Install a new 104696N1 rubber hose over the coolant return pipe and coolant distribution housing.
- 8. Position the two clamps over the hose and torque the clamps to 70-80 In. lb. (8.0 to 9.0 Nm)
- 9. Install and tighten the clamps for the steel return pipe to the cylinder block if previously removed.
- 10. If removed in step 2, reinstall the turbo downpipe using new gaskets (**Figure #2 Item 1 and 2**). Tighten clamps to 12 ft-lbs. (15 Nm).
- 11. Fill the cooling system per the service manual instructions linked [HERE](#).

WARRANTY INFORMATION

Warranty Claim Coding:
Refer to the [Warranty Coding Manual](#) for Group and Noun Codes.

Standard Repair Time(s):
Refer to the [SRT Manual](#) for Repair Times

OTHER RESOURCES

[Master Service Information Site](#)

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