TECH CALL OF THE MONTH March 2016

NISSAN CVT Transmission Overheating

You may get a Nissan Sentra or other Nissan vehicle into your center with the customer complaint of reduced power or transmission is slipping complaint.

The problem is the transmission is overheating. We see this complaint on Chrysler vehicles as well with the Nissan CVT. Many manufacturers use this form of limp mode by reducing the power of the engine.

The fix is to replace the cooler, remove the bypass valve or in some cases add an additional cooler.

On Chrysler vehicles look for a cooler bypass valve the valve may be stuck partially closed. You can take this valve apart and clean it or in warm climates remove the valve altogether. On Nissan vehicles you may be able to add a factory replacement cooler or simply add an aftermarket cooler.

Please see the Nissan TSB:

AT13-011 - NTB13-095 dated October 25, 2013

Technical Bulletin

SERVICE BULLETIN

Classification:	Reference:	Date:
AT13-011	NTB13-095	October 25, 2013

2007-2012 SENTRA; REDUCED PERFORMANCE DUE TO CVT FLUID TEMPERATURE PROTECTION LOGIC

APPLIED VEHICLE: 2007-2012 Sentra (B16)
APPLIED ENGINE: MR20

IF YOU CONFIRM:

The maximum vehicle speed is, or was, reduced by the CVT fail-safe logic after continuous operation under the following conditions:

- High RPM and/or high speed driving
  (4000 RPM or more, and/or 65 MPH or more for 1.0 – 1.5 hrs or more)
- Driving in ambient temperature of 96 degrees or higher
- Climbing steep or extended hills for 6 miles or more
- Whine or rattle type noise occurring during reduced engine performance (vehicle speed decrease)

NOTE: Before applying this bulletin if the vehicle has any DTCs, they should be checked and repaired first.

ACTION:

Install SERVICE KIT-COOLER ASSY.

IMPORTANT: The purpose of "ACTION" (above) is to give you a quick idea of the work you will be performing. You MUST closely follow the entire Service Procedure as it contains information that is essential to successfully completing the repair.

SERVICE PROCEDURE

1. Place the vehicle on a lift and raise it as needed to perform the following procedure.

2. Install the "COOLER ASSY – AUTO TRANS. OIL" to the pre-existing weld nuts on the front of the radiator support with bolts from kit.
   - Torque bolts to 7N•m (0.71 kg-m, 62 in-lb).

   NOTE: Figure 1 is shown looking from the bottom of the vehicle upward, at the lower front radiator/condenser support.

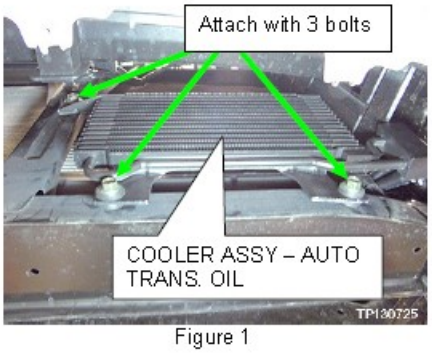

Figure 1

   NOTE: Figure 10 on page 5 shows an overview of the external CVT cooler and hose routing.

3. Route both hoses through the radiator support and into engine comparment.

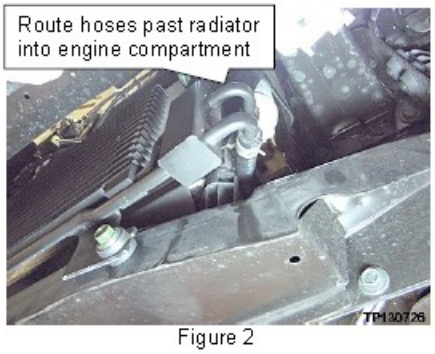

Figure 2

4. Remove the Air Inlet to gain access to the CVT Fluid Cooler.

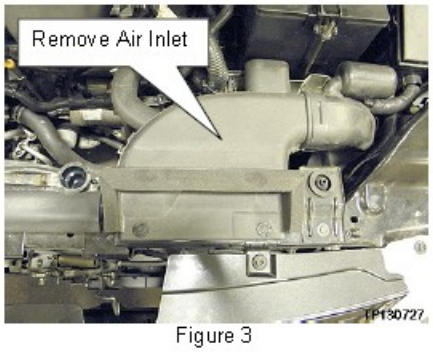

Figure 3

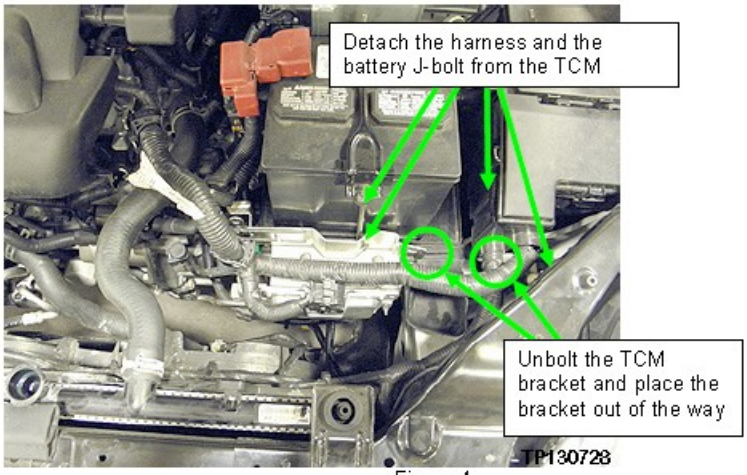

Figure 4

5. Detach the Engine Room harness and the battery J-bolt from the TCM bracket.

6. Unbolt the TCM bracket and place it out of the way.

WARNING:

- Never remove the radiator cap when the engine is hot. Serious burns may occur from high-pressure engine coolant escaping from the radiator.

7. Relieve any residual cooling system pressure.
   a. Wrap a thick cloth around the radiator cap. Slowly turn it a quarter of a turn to release the pressure.
   b. Then turn it all the way.

8. Clamp both of the coolant hoses attached to the CVT Fluid Cooler to prevent coolant loss.

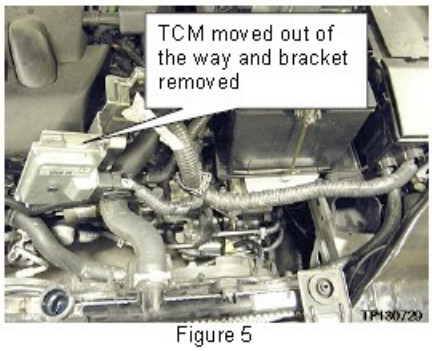

Figure 5

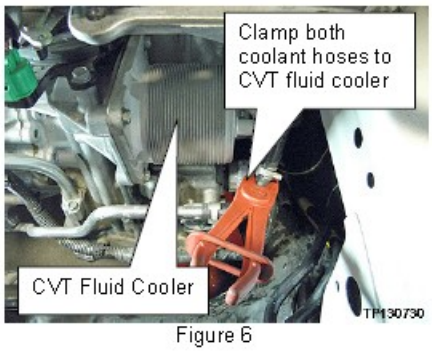

Figure 6

9. Remove both of the CVT Fluid Cooler coolant hose (Water Hose B and Water Hose C) spring clamps and then remove both of the hoses from the CVT Fluid Cooler.

   NOTE: These spring clamps will be saved for reassembly.

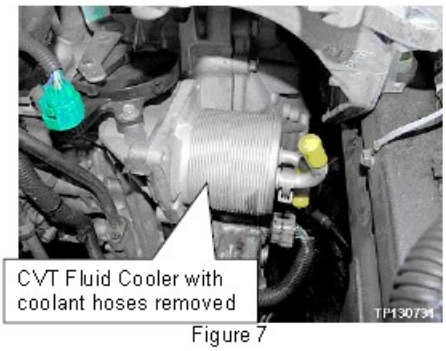

Figure 7

10. Loosen the CVT Fluid Cooler mounting bolts (4 bolts) and remove the CVT Fluid Cooler.

11. Clean any debris from the CVT Fluid Cooler mounting surface with brake cleaner and a lint free cloth.

    NOTE: Use genuine Nissan Brake Cleaner or equivalent.

Figure 8

12. Coat the O-ring on the new CVT Fluid Cooler using NS-2 CVT fluid before installing it onto the CVT Cooler mounting area.

Figure 9

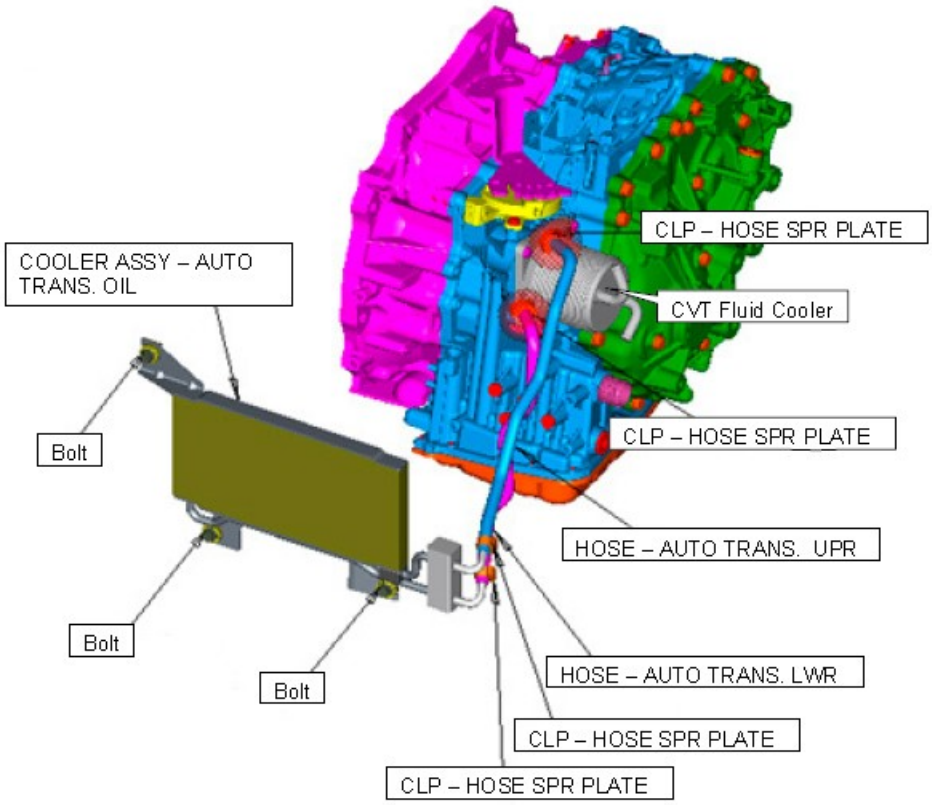

Figure 10

Figure 10 shows overview of external CVT cooler and hose routing.

13. Install the new CVT Fluid Cooler from the kit onto the CVT and tighten the mounting bolts to 3.63 N•m (0.37 kg-m, 32 in-lb).

14. Use a lint-free cloth and genuine Nissan Brake Cleaner or equivalent to remove any residual coolant from the inside of both of the coolant hoses before re-assembly of the hoses to the CVT fluid cooler.

15. Re-install CVT Water Hose B and CVT Water Hose C onto the new CVT Fluid Cooler and reposition spring clamps.

    - Position the spring clamps as close to each fitting bulge as possible and then release them.

    NOTE: Confirm that the clamps are not on top of each fitting bulge or on an angle.

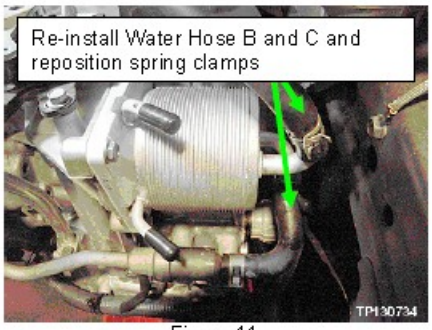

Figure 11

16. Place 2 new "CLP – HOSE SPR PLATE" (spring clamps) onto the COOLER ASSY – AUTO TRANS. OIL hoses and install the cooler hoses on to the CVT Fluid Cooler.

    - See Figure 10 for hose routing.
    - Position the hoses so that they do not come in contact with the radiator support.
    - Position the spring clamps as close to the fitting bulge as possible and then release them.

    NOTE: Confirm that the spring clamps are not on top of the fitting bulge or on an angle.

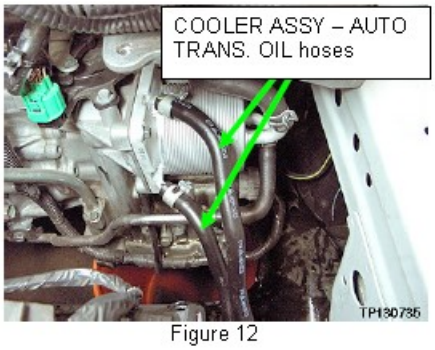

Figure 12

17. Reassemble the components removed in steps 4 – 6 in reverse order.

18. Check the level of the coolant and add as needed.

    - Refer to ESM for correct coolant for the model year vehicle that is being worked on.

19. Check the level of the CVT NS-2 Fluid and add as needed.

    - Refer to ESM for correct method to check fluid level for the model year vehicle that is being worked on.

PARTS INFORMATION

DESCRIPTION	PART #	QUANTITY
SERVICE KIT-COOLER ASSY	21606-ET89B	1
NS-2 CVT Fluid	999MP-NS200P*	As needed

* NS-2 CVT Fluid can be ordered from the Maintenance Advantage website that can be accessed through www.nnanet.com (**NNANET.COM, Parts & Service, Maintenance Advantage-Tire/Wiper/Battery/Chemical**).

Table A – Listing of parts included in the SERVICE KIT-COOLER ASSY

PART NAME	QTY PER KIT
COOLER ASSY-AUTO TRANS OIL (air-to-ATF cooler)	1
HOSE-AUTO TRANS, UPR	1
HOSE-AUTO TRANS, LWR	1
CLP – HOSE SPR PLATE(s)	4
BOLT-HEX	3
BOLT-HEX	4
CVT Fluid Cooler (CVT mounted heat exchanger with 4 ports)	1
OIL COOLER O-Ring	1

CLAIMS INFORMATION

Submit a Primary Part (PFP) type line claim using the following claims coding:

DESCRIPTION	PFP	OP CODE	SYM	DIA	FRT
Oil cooler kit installation	(1)	JX15AA	AE	32	1.0

(1) Refer to the electronic parts catalog (FAST) and use the Oil Cooler assembly part number (21606-*****) as the Primary Part (PFP).