



Technical Bulletin

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SERVICE BULLETIN

Classification:

AT12-005c

Reference:

NTB12-057c

Date:

September 9, 2016

ALTIMA, SENTRA, AND ROGUE; CVT FAIL-SAFE CONDITION SERVICE INFORMATION

This bulletin has been amended. The APPLIED VEHICLES section has been revised. No other changes have been made. Please discard previous versions of this bulletin.

APPLIED VEHICLES: 2007-2012 Altima (L32)
2008-2012 Altima Coupe (CL32)
2007-2012 Sentra (B16)
2008-2013 Rogue (S35)
2014-2015 Rogue Select (S35)

APPLIED TRANSMISSION: Vehicles equipped with CVT **ONLY**

This bulletin does not apply to Altima Hybrid or Rogue (T32)

SERVICE INFORMATION

A Continuously Variable Transmission (CVT) is designed to go into fluid temperature protection logic mode ("fail-safe mode") if the CVT fluid temperature rises above a certain threshold. If the CVT goes into fail-safe mode, engine performance is reduced. Customers may report this condition as "low power" or "reduced engine performance".

NOTE: For 2007 and 2008 models listed in the Applied Vehicles above, in addition to the information in this bulletin, also refer to NTB09-044.

While the CVT is designed to go into fail-safe mode if the fluid temperature rises above the threshold, the following conditions may cause the CVT to go into fail-safe mode prematurely during normal vehicle operation:

1. Overfilled CVT fluid level.
2. Incorrect type of transmission fluid – **Use Genuine NISSAN CVT Fluid NS-2 or NS-3* (or equivalent).**
3. Incorrect coolant/water mix.

See this bulletin (starting on page 2) for more detail on each of the above conditions.

*Reference the **Maintenance and do-it-yourself** section of the applicable vehicle Owner's Manual to determine whether NS-2 or NS-3 is recommended to be used in the vehicle being worked on.

Nissan Bulletins are intended for use by qualified technicians, not 'do-it-yourselfers'. Qualified technicians are properly trained individuals who have the equipment, tools, safety instruction, and know-how to do a job properly and safely. NOTE: If you believe that a described condition may apply to a particular vehicle, DO NOT assume that it does. See your Nissan dealer to determine if this applies to your vehicle.

1. CVT fluid level check/adjust procedure

- a. Park the vehicle on a level surface.
- b. Apply the parking brake firmly.
- c. Move the A/T shift lever to "P" (Park) position.
- d. With the engine idling, depress brake pedal, move the shift selector throughout the entire shift range, and then back to "P".
- e. Using CONSULT III plus, verify CVT fluid temperature is 70 - 80°C, and CVTF (CVT Fluid) count is 158-161.

NOTE: If CVT fluid temperature is below 70°C, drive the vehicle for 5 - 10 minutes until the required temperature is reached.

IMPORTANT: CVTF count must be 158 to 161.

- f. Adjust the CVT fluid level between the marks shown in Figure 1.

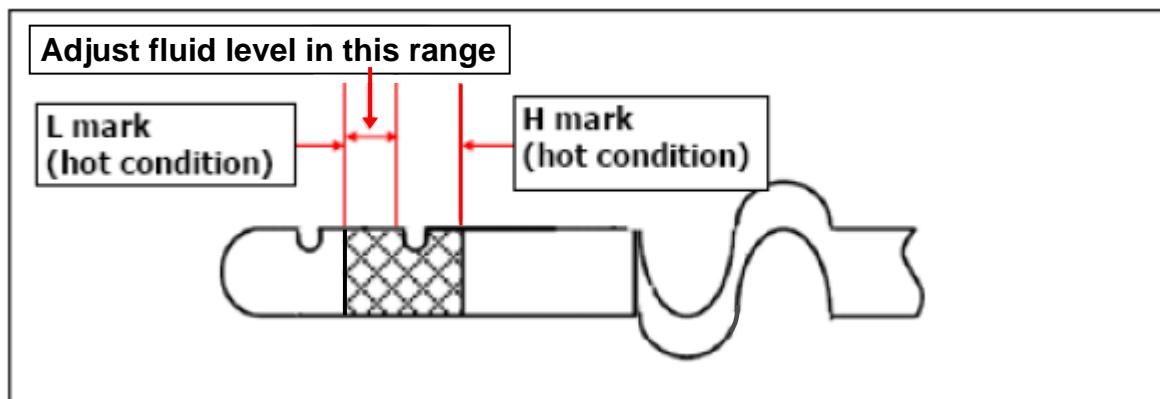


Figure 1

2. Incorrect CVT fluid type

NOTE: Any damage caused by the use of any fluid other than as specified in the vehicle owner's manual is excluded from coverage under the New Vehicle Limited Warranty.

- a. To check fluid type, draw a sample by using a syringe or suitable tool through the oil level gauge charge pipe, or drain from the oil pan (see Figure 2).

OK: The fluid sample is **green** in color. It may have a greenish/brown tint.

NG: The fluid sample is red in color, or any color other than a greenish/brown tint.

- b. If incorrect fluid is found:

- Perform the following two times: Drain, then refill with Genuine NISSAN CVT Fluid NS-2 or NS-3* (or equivalent), and then let the engine idle in Drive (with the vehicle lifted off the ground).

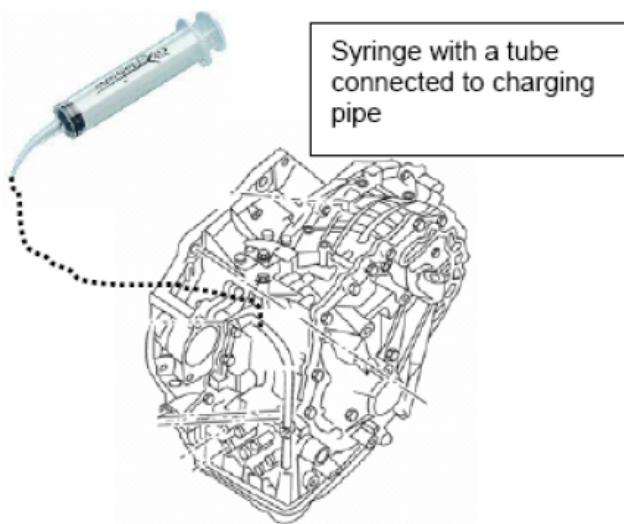


Figure 2

3. Incorrect ethylene glycol-to-water mixture in the engine's cooling system

The capacity of the vehicle's cooling system to cool the engine and transmission is reduced when the concentration (percentage) of ethylene glycol is greater than 60%.

- To check ethylene glycol concentration, use a refractometer.
- For details on coolant mixture inspection and refractometer use, refer to page 4.

Nissan recommends a 50/50 mix of ethylene glycol and water for optimum performance. A percentage greater than 60% ethylene glycol will reduce the capacity of the vehicle's cooling system to cool the CVT fluid.

* Reference the **Maintenance and do-it-yourself** section of the applicable vehicle Owner's Manual to determine whether NS-2 or NS-3 is recommended to be used in the vehicle being worked on.

Coolant Mixture Inspection

1. Take a sample of coolant from the radiator and check the percentage of ethylene glycol.

- Use “Refractometer” (J-23688)—engine coolant and battery tester (see page 5 for tool information).
- The refractometer has the percentage of ethylene glycol written on the scale (see Figure 3).

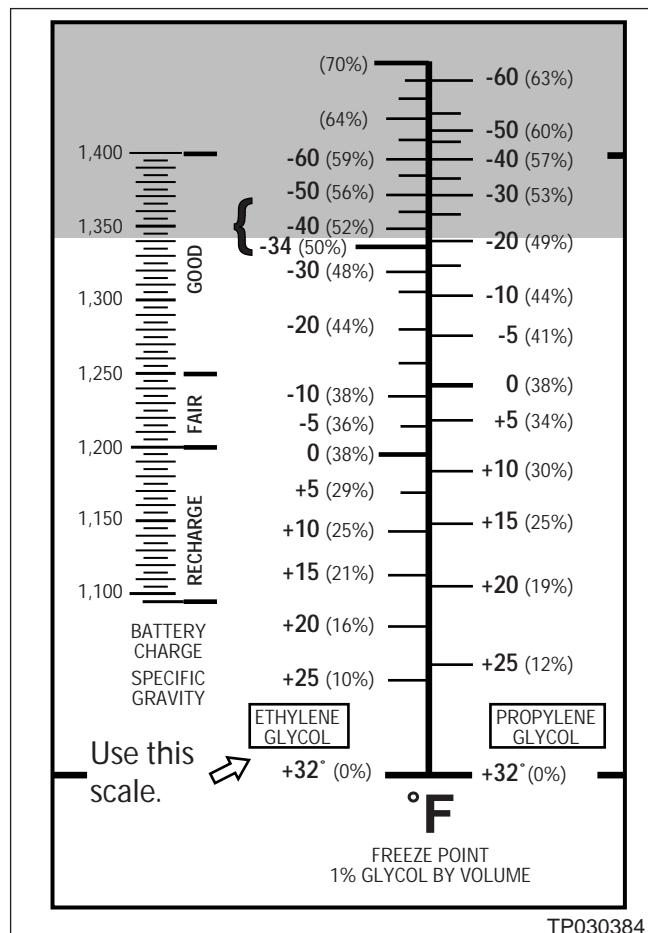


Figure 3

- Do Not use the old style bulb and disc/ball type hydrometers, or pH test strips. These devices are not precise enough to provide the readings required for the critical balance between freeze protection, heater performance, and cooling capacity.
- If the coolant mixture **is not** between 50-55% ethylene glycol, correct the mixture by performing the Coolant Mixture Correction procedure on page 6.
- If engine coolant and battery tester (refractometer) J-23688 is not available, perform the Coolant Mixture Correction procedure on page 6.

Refractometer J-23688 (Engine Coolant and Battery Tester) Tool Information

- Nissan requires coolant and battery tester (refractometer) J-23688 be used for the Coolant Mixture Inspection procedure in this bulletin.
 - Refractometer J-23688 is automatically “temperature compensated”. Other refractometers may not be temperature compensated, and will not be precise enough to provide the readings required for the critical balance between freeze protection and heater performance.

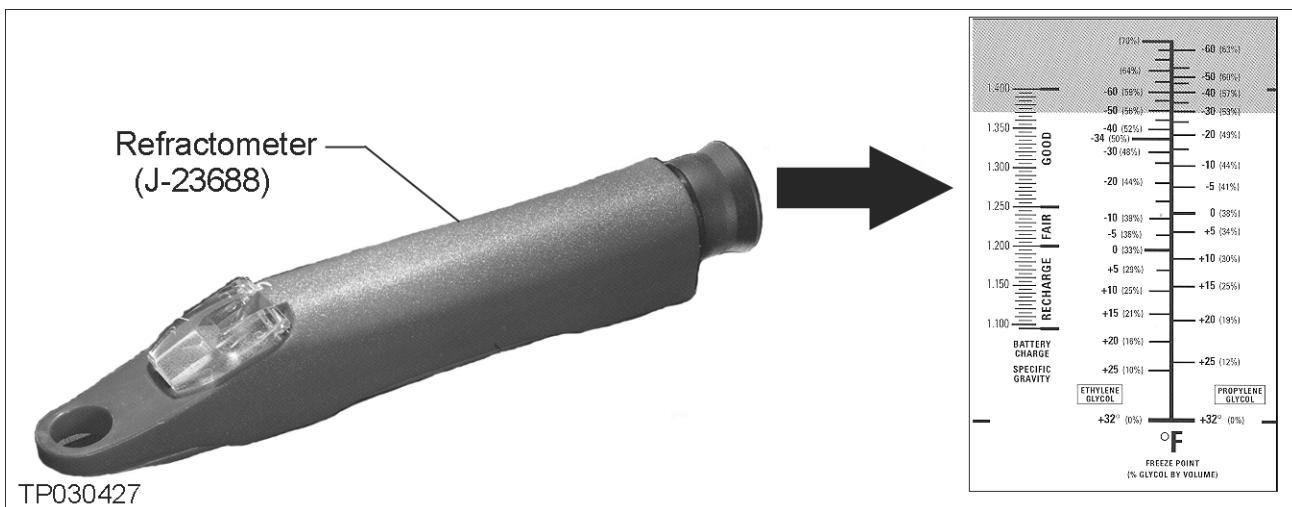


Figure 4

- Refractometer J-23688 is an essential tool that was automatically sent to all Nissan dealers late September 2003.
 - If you cannot find the tool at your dealership, tools can be ordered from Tech-Mate at 1-800-662-2001.

Coolant Mixture Correction

1. Drain the entire cooling system (radiator, coolant reservoir tank, and cylinder block).
 - Refer to the applicable Electronic Service Manual (ESM), section MA, for coolant drain locations.
2. Refill the engine cooling system using Genuine Nissan Anti-freeze Coolant (or equivalent) mixed **50/50** with distilled water or de-mineralized water.
 - Refer to the applicable ESM, section MA, for coolant refill procedures.

IMPORTANT:

- It is very important that the engine cooling system be filled with a mixture that is no more than 55% coolant (ethylene glycol). **Please be “precise” (accurate) when measuring.**
- **In most areas it is best to use a 50% coolant / 50% water mixture.** The freezing point of a 50/50 mixture is –34 degrees F.
- If freeze protection down to –47 degrees F is needed, a 55% coolant / 45% water mixture may be used.
- To account for spillage and refill tool reservoir capacity, we recommend a refill mixture of 12 quarts / 3 gallons.
- The following measurements will give you 12 quarts / 3 gallons of a 55/45 mixture.

Coolant	6 quarts 19 ounces
Water	5 quarts 13 ounces
Total 55/45 mixture	12 quarts or 3 gallons

- If a refractometer is available, it is best to recheck the coolant mixture after mixing to confirm it is within 50 to 55% ethylene glycol.