CVT VALVE BODY
INSTALLATION
PRECAUTIONS

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Disclaimer:
Please consult with a qualified auto technician before attempting to perform any diagnosis, repairs, or modifications based on this guide. Before attempting to perform any work in this guide read the manufacturer’s repair manual for your transmission. Take all necessary safety precautions as performing work on automobiles may be hazardous. Berkeley Standard is not responsible for any property damage or personal injury resulting from repairs performed. Please consult the vehicle owner’s manual, NHSTA, US Federal Motor Vehicle Safety Standards, or other government standards to ensure the vehicle all safety parameters and no safety features are disabled during the course of diagnosis, repair, or other work.
Be careful when installing the internal harness to prevent case connector pin damage

Inspect and replace the valve body to case seal
CVT VB INSTALLATION PRECAUTIONS

Control arm *below* the shaft

Control arm *above* the shaft

Pictures from ATRA webinar RE0F10A/B (CVT) Internal

Make sure the control arm is facing the correct way as shown on the left picture

For ease of installation: Use a thin punch to lock the primary pulley adjustment valve in place

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### CVT VB INSTALLATION PRECAUTIONS

**PIVOT PIN**

![Image of PIVOT PIN and CONTROL ARM](Picture from ATRA webinar RE0F10A/B (CVT) Internal)

1. Make sure the control arm aligns onto the pivot pin on the pulley guide located in the case.

2. Make sure sealing rings on the transmission are properly installed and are not damaged.

3. Tighten the valve body positioning screws in the order shown (torque spec 10 Nm).
DO NOT misplace the sleeve when installing the shift lever; the shifter shaft will be loose without the sleeve.

Check the orientation when installing the shift lever.
Inspection before installation:

- Prior to installing the valve body, check to make sure all pressure sensors and solenoid connectors are properly connected with no loose connections or connector damage.
- Check to make sure the case connector is properly working without any loose connections, bent or broken pins, or other connector damage.
- Check the quality of the CVT transmission fluid and for metal shavings or debris.
- The required CVT transmission fluid for all CVT-equipped Nissan vehicle models is NS-3 (HXLVT4000) or NS-2V (HXLVT40001).
- Caution: Do not use non-OEM CVT transmission fluid, automatic transmission fluid (ATF), manual transmission fluid, or mix the proper Nissan CVT fluid with other fluids, as it may damage the transmission and will void the warranty coverage. For CVT-equipped Nissan vehicles, replace the fluid every 100,000 km or request the technician to inspect the fluid.

Notes on alternative self-learning procedure:

- The Nissan manual requires the technician to perform an official Nissan self-learning/initialization commonly known as B-mode after replacing a valve body.
- In practice, manual B-mode initialization is not always required or accessible, especially in markets where aftermarket dealer support is limited. In most valve body replacements, a road test (5 iterations of 0-80 km/h cycle is recommended) will suffice for the vehicle TCM and ROM to self-calibrate.
- In rare cases, where road test is not enough to complete the self learn calibration process or if DTC and other vehicle issues arise during or after road test, B-mode initialization is required.

B-mode initialization procedure:

1. Use CONSULT-II or similar scanner to scan and clear all DTC.
2. Start the engine, let the engine run until transmission fluid temperature exceeds 20°C, then turn off engine. Do not drive the vehicle during this process.
3. Turn on vehicle but do not start engine.
4. Use CONSULT-II or similar scanner; enter “clear self-learning data” function.
5. Shift to “R” gear, while keeping the brake depressed, slightly depress the accelerator pedal (approx. ¼ way). Then clear self-learning data using scanner.
6. Turn off vehicle; wait for at least 30 seconds; shift gear to “P” position.
7. Turn on vehicle, check for “P” position indicator light and see if it turns on after a 2 second delay. If indicator light turns on after delay then B-mode learning is successful.
8. Test drive for approximately 10 km under normal driving conditions.
9. Note: for certain Rogue and X-trail models there may be a roaring noise from the rotation of gears at 40-80 km/h; this noise is intrinsic to the design and can only be reduced, not eliminated. For certain Teana 2.0L model there may be slight jolt when shifting between “D” and “R” gear.
### CVT3/RE0F09A/JF010E VB INSTALLATION PRECAUTIONS

| Make sure sealing rings on the transmission are properly installed with no damage. |
| Ensure the primary pulley adjustment valve lever is connected to both the stepper motor and the positioning fork on the transmission. |

1. Tighten the valve body positioning screws according to the order shown (torque spec 10 N*M)  
2. Check the orientation of the positioning arm when installing the shift plate
CVT VB INSTALLATION PRECAUTIONS

CVT3/RE0F09A/JF010E VB INSTALLATION PRECAUTIONS

Inspection before installation:
- Prior to installing the valve body, check to make sure all pressure sensors and solenoid connectors are properly connected with no loose connections or connector damage.
- Check to make sure the case connector is properly working without any loose connections, bent or broken pins, or other connector damage.
- Check the quality of the CVT transmission fluid and check for metal shavings or debris in the fluid.
- The required CVT transmission fluid for all CVT-equipped Nissan vehicle models is NS-3 (HXLVT4000) or NS-2V (HXLVT40001).
- Caution: Do not use non-OEM CVT transmission fluid, automatic transmission fluid (ATF), manual transmission fluid, or mix the proper Nissan CVT fluid with other fluids, as it may damage the CVT transmission and will void the warranty coverage. For CVT-equipped Nissan vehicles, replace the fluid every 100,000 km or request the technician to inspect the fluid.
<table>
<thead>
<tr>
<th>CVT VB INSTALLATION PRECAUTIONS</th>
<th>CVT7/RE0F11A/JF015E VB INSTALLATION PRECAUTIONS</th>
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<tr>
<td>Tighten the valve body positioning screws according to the order shown (torque spec 10N*M)</td>
<td>Connect the manual valve lever as shown; ensure the lever is slotted into the manual valve</td>
</tr>
</tbody>
</table>

Ensure O-rings are properly installed on the filter head prior to installing the valve body filter; tighten the bolts on the filter in the order shown.
CVT VB INSTALLATION PRECAUTIONS

CVT7/RE0F11A/JF015E VB INSTALLATION PRECAUTIONS

Inspection before installation:
- Prior to installing the valve body, check to make sure all pressure sensors and solenoid connectors are properly connected with no loose connections or connector damage.
- Check to make sure the case connector is properly working without any loose connections, bent or broken pins, or other connector damage.
- Check the quality of the CVT transmission fluid and check for metal shavings or debris in the fluid.
- The required CVT transmission fluid for all CVT-equipped Nissan vehicle models is NS-3 (HXLVT4000) or NS-2V (HXLVT40001).
- Caution: Do not use non-OEM CVT transmission fluid, automatic transmission fluid (ATF), manual transmission fluid, or mix the proper Nissan CVT fluid with other fluids, as it may damage the CVT transmission and will void the warranty coverage. For CVT-equipped Nissan vehicles, replace the fluid every 100,000 km or request the technician to inspect the fluid.

Self-learning procedure:
- The Nissan manual requires the technician to perform an official Nissan self-learning/initialization of TCM after replacing a valve body.
- In practice, manual TCM initialization is not always required or accessible, especially in markets where aftermarket dealer support is limited. In most valve body replacements a road test (5 iterations of 0-80 km/h cycle is recommended) will suffice for the vehicle TCM and ROM to self-calibrate.
- In rare cases, where road test is not enough to complete the self learn calibration process or if DTC and other vehicle issues arise during or after road test, manual TCM initialization is required.
- If TCM initialization is needed, use the CONSULT-II or similar scanner and follow the on-screen instruction.
  - CAUTION: Do not perform any other function besides clearing the TCM's self-learning data. Failure to follow instruction may lead to loss of TCM data, inaccurate or non-functional gear indicator light display, or vehicle non-responsiveness after gear change.
- Suggested road test distance is 10km under normal driving condition.
- This transmission has an interchange point between two forward drives. It is normal for slight engine tachometer fluctuation or gearshift sensation at 40km/h (~300RPM). If the tachometer fluctuation is significant then a longer road test distance is recommended to complete the self-learning process.
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CVT VB INSTALLATION PRECAUTIONS

CVT8/RE0F10D/JF017E VB INSTALLATION PRECAUTIONS

Inspection before installation:
- Prior to installing the valve body, check to make sure all pressure sensors and solenoid connectors are properly connected with no loose connections or connector damage.
- Check to make sure the case connector is properly working without any loose connections, bent or broken pins, or other connector damage.
- Check the quality of the CVT transmission fluid and check for metal shavings or debris in the fluid.
- The required CVT transmission fluid for all CVT-equipped Nissan vehicle models is NS-3 (HXLVT4000) or NS-2V (HXLVT40001).
- Caution: Do not use non-OEM CVT transmission fluid, automatic transmission fluid (ATF), manual transmission fluid, or mix the proper Nissan CVT fluid with other fluids, as it may damage the CVT transmission and will void the warranty coverage. For CVT-equipped Nissan vehicles, replace the fluid every 100,000 km or request the technician to inspect the fluid.

Self-learning procedure:
- The Nissan manual requires technicians to perform an official solenoid IP characteristics calibration after a valve body replacement using an official calibration CD.
- In practice, IP characteristic calibration is not always required or accessible, especially in markets where aftermarket dealer support is limited. In most valve body replacements, a road test (5 iterations of 0-80 km/h cycle is recommended) will suffice for the vehicle TCM and ROM to self-calibrate.
- In cases where DTC or vehicle issues are still present after road test, a IP Characteristics calibration is required.

Updating TCM and IP characteristics procedure:
1. If the TCM have not been updated with the latest calibration, update the TCM to the latest version after installing the transmission to the vehicle (Some DTC can be resolved by updating the TCM before repairing or replacing the transmission).
2. If the TCM is already updated to the latest calibration and if the transmission or valve body is replaced, IP characteristic calibration is recommended (specific calibration file is needed depending on if it is a valve body or whole transmission replacement). Some DTC cannot be cleared unless IP characteristics are calibrated (P17F1).
3. Additional manual self-learning process may be necessary if vehicle issues arise or persist after TCM update and IP characteristic calibration.
OTHER INSTALLATION PRECAUTIONS

Engine Air Filter

Before transmission replacement, please confirm the vehicle only uses genuine Nissan engine air filters and there is no blockage or damage to the filters. Non-OEM air filters may cause deviation in engine air flow quality, which in turn affects air flow sensor voltage output and directly affects engine performance. Improper engine and transmission coupling is a common cause of damage to CVT pulley and chains.

Transmission Fluid

The required CVT transmission fluid for all CVT-equipped Nissan vehicle models is NS-3 (HXLVT4000) or NS-2V (HXLVT40001).

Transmission fluid should be translucent as pictured on the left sample in the picture. The center sample is old transmission fluid. The right sample shows burned transmission fluid. Burned transmission fluid is a symptom of serious problems and the transmission should be further investigated to prevent damage to the transmission.
Instructions on checking CVT2/RE0F10A/JF011E fluid level

CVT2/RE0F10A/JF011E transmission has a drain plug on the oil pan. There is no overfill tube, it uses a dipstick (CVT fluid level gauge) and tube to fill and check the fluid level.

CHECKING THE FLUID LEVEL

1. Refill the transmission fluid using the fluid charge pipe (filler tube) to the proper level specified in the corresponding factory manual.
2. Start the engine and change gears one position at a time and return to P gear. Check the transmission fluid level when the fluid temperature is at 50 – 80°C.
3. Use the dipstick (CVT fluid level gauge) to check the transmission fluid level while the engine is idling.
4. Make sure the transmission fluid level is between the low and high values indicated on the dipstick.
Instructions on checking CVT7/RE0F11A/JF015E fluid level

CVT7/RE0F11A/JF015E transmission has a drain plug on the oil pan for draining fluid and for checking the fluid level. There is a overfill tube, but there is NO dipstick (CVT fluid level gauge).
Instructions on checking CVT7/RE0F11A/JF015E fluid level (cont’d)

CHECKING THE FLUID LEVEL

1. Refill the transmission fluid using filler tube to the proper level specified in the corresponding factory manual.
2. Start the engine and change gears one position at a time and return to P gear. Check the transmission fluid level when the fluid temperature is at 35 – 45°C.
3. Check the transmission fluid level while the engine is idling through looking into the hole behind the drain plug with caution.
4. While the vehicle is idling, remove the drain plug and confirm that the CVT fluid is drained from the overflow tube.
5. If the CVT fluid is not drained, refill with the CVT fluid until there is fluid dripping from the overflow tube.
6. When the flow of CVT fluid slows to a drip, tighten the drain plug to the specified torque spec.
7. **Always replace a drain plug gasket with new ones.**
8. **After replacement, always perform CVT fluid leakage check.**
Instructions on checking CVT8/RE0F10D/JF017E fluid level

CVT8/RE0F10D/JF017E transmission has a drain plug on the oil pan. It uses the same type of filler tube as the CVT2/RE0F10A/JF011E and the CVT7/RE0F11A/JF015E (shown in page 15), but there is NO dipstick (CVT fluid level gauge).

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Instructions on checking CVT8/RE0F10D/JF017E fluid level (cont’d)

CHECKING THE FLUID LEVEL

1. Always verify the fluid capacity at the correct temperature setting with the factory information for the vehicle you’re working on.
2. Confirm the transmission fluid temperature is at 40°C or less.
3. Make sure the selector lever is in P gear, completely engage the parking brake, then lift up the vehicle.
4. Remove the drain plug and drain the CVT fluid from the oil pan, then reinstall the drain plug.
5. Remove the overflow plug.
6. Using the charge pipe set (KV311039S0) to fill and check fluid level at the overflow plug located on the lower front case (bellhousing) near the pan rail.
7. Start the engine and change gears one position at a time and return to P gear. Check the transmission fluid level when the fluid temperature is at 35 – 45°C
8. While the engine is idling, remove the overflow plug and confirm that the CVT fluid is drained from the overflow plug hole.
9. If the CVT fluid is not drained, refill with the CVT fluid with the charging pipe set until there is fluid drains out from the charging pipe.
10. When the flow of CVT fluid slows to a drip, tighten the drain plug to the specified torque spec.
11. Always replace a drain plug gasket and O-ring with new ones.
12. After replacement, always perform CVT fluid leakage check.