

# Stall Test

CONTINUOUSLY VARIABLE TRANSMISSION

## 6. Stall Test

### A: INSPECTION

#### CAUTION:

**Make sure no other person is around the vehicle during stall test measurement.**

#### NOTE:

Stall test is extremely important in diagnosing the condition of CVT and engine. The test is necessary to measure the engine stall speeds in “R” and “D” range.

Purposes of the stall test:

- Operational check of forward clutch, reverse brake and output clutch
- Operational check of the torque converter assembly
- Engine performance check

1) Place wheel chocks at the front and rear of all wheels and engage the parking brake.

2) Turn the A/C OFF.

3) Using the Subaru Select Monitor, check if the throttle valve operates when you depress the accelerator pedal. <Ref. to EN(H4DO HEV)(diag)-36, OPERATION, Subaru Select Monitor.>

4) Check the engine oil level. <Ref. to LU(H4DO(w/o HEV))-12, Engine Oil.>

5) Check the coolant level. <Ref. to CO(H4DO(w/o HEV))-16, Engine Coolant.>

6) Adjust the CVTF level. <Ref. to CVT(TH58A)-41, ADJUSTMENT, CVTF.>

7) Increase the CVTF temperature to 60 — 80°C (140 — 176°F) with the engine running and the select lever shifted to “N” or “P” range.

8) Shift the select lever to “D” range.

9) Depress the accelerator pedal to the full while fully depressing the foot brake pedal with your left foot.

10) When the engine speed stabilizes, quickly record the engine speed and release accelerator pedal. Shift the select lever to “N” range. Let the engine idle for one minute or more to cool it down.

11) Shift to “R” range and perform the same stall test.

#### NOTE:

- Do not perform a stall test for over 5 seconds at a time. (From closed throttle, fully open throttle to stall speed reading.) Failure to follow this instruction will cause the engine oil and CVTF to deteriorate and the clutch and brake to be adversely affected.
- Be sure to cool down the engine for at least one minute after each stall test with the select lever set in the “P” or “N” range and with the idle speed of 1,200 r/min or less.
- If the stall speed is higher than the specified range, attempt to finish the stall test in as short a time as possible, in order to prevent the CVT from sustaining damage.

#### **Stall speed standard:**

**D range: 2,000 — 2,750 r/min**

**R range: 1,800 — 2,500 r/min**

#### **Stall test judgment**

Stall speed (at sea level)	Range	Probable cause
Lower than standard value	D, R	<ul style="list-style-type: none"><li>• Insufficient engine output</li><li>• Torque converter malfunction</li></ul>
Higher than standard value	D	<ul style="list-style-type: none"><li>• Forward clutch slippage</li><li>• Secondary pressure (line pressure) is low.</li><li>• Variator chain malfunction</li><li>• Output clutch pressure is low.</li><li>• Output clutch slippage</li></ul>
	R	<ul style="list-style-type: none"><li>• Reverse brake slippage</li><li>• Secondary pressure (line pressure) is low.</li><li>• Variator chain malfunction</li><li>• Output clutch pressure is low.</li><li>• Output clutch slippage</li></ul>
	D, R	<ul style="list-style-type: none"><li>• Torque converter malfunction</li><li>• Control valve body malfunction</li><li>• TCM malfunction</li><li>• Damaged harness and harness connector</li></ul>