

5. Stall Test

A: INSPECTION

1. GENERAL DESCRIPTION

The stall test is extremely important for diagnosing the condition of the automatic transmission and the engine. It should be conducted to measure the engine stall speeds in "R" and "2" ranges.

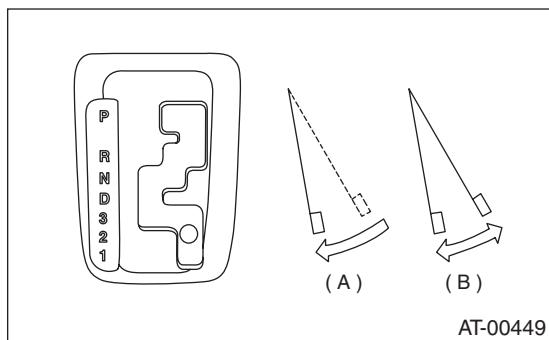
Purposes of the stall test:

- 1) To check the operation of the automatic transmission clutch.
- 2) To check the operation of the torque converter clutch.
- 3) To check engine performance.

2. TEST METHODS

1) Preparations before test:

- (1) Check that throttle valve is wide open.
- (2) Check that engine oil level is correct.
- (3) Check that coolant level is correct.
- (4) Check that ATF level is correct.
- (5) Check that differential gear oil level is correct.
- (6) Increase ATF temperature to 70 to 80°C (158 to 176°F) by idling the engine for approx. 30 minutes (with select lever set to "N" or "P").
- 2) Place the wheel chocks at the front and rear of all wheels and engage the parking brake.
- 3) Move the manual linkage to ensure it operates properly, and shift the select lever to the "2" range.
- 4) While forcibly depressing the foot brake pedal, gradually depress the accelerator pedal until the engine operates at full throttle.



(A) Brake pedal
(B) Accelerator pedal

- 5) As soon as the engine speed stabilizes, record the speed and release the accelerator pedal.
- 6) Shift the select lever to "N" range, and cool down the engine by idling it for more than one minute.
- 7) If the stall speed in 2 range is higher than specified, low clutch slipping and 2-4 brake slipping may occur. To identify this, conduct the same test as above in "R" range.

- 8) Perform the stall tests with the select lever in "D" range.

NOTE:

- Do not continue the stall test for MORE THAN 5 SECONDS at a time (from closed throttle, wide open throttle to stall speed reading). Failure to follow this instruction causes the engine oil and ATF to deteriorate and the clutch and brake to be adversely affected.

Be sure to cool down the engine for at least 1 minute after each stall test with the select lever set in the "P" or "N" range and with the idle speed lower than 1,200 rpm.

- If the stall speed is higher than the specified range, attempt to finish the stall test in as a short time as possible, in order to prevent the automatic transmission from sustaining damage.

Stall speed (at sea level):

Non-turbo model: 2,100 — 2,600 rpm

Turbo model: 2,600 — 3,400 rpm

STALL TEST

AUTOMATIC TRANSMISSION

3. EVALUATION

Stall speed (at sea level)	Location	Cause
Less than standard value	2, R	<ul style="list-style-type: none">• Throttle valve not wide open• Erroneous engine operation• Torque converter clutch's one-way clutch slipping
Greater than standard value	D	<ul style="list-style-type: none">• Line pressure too low• Low clutch slipping• One-way clutch malfunctioning
	R	<ul style="list-style-type: none">• Line pressure too low• Reverse clutch slipping• Low & reverse brake slipping
	2	<ul style="list-style-type: none">• Line pressure too low• Low clutch slipping• 2-4 brake slipping