

MECHANICAL SYSTEM TESTS

STALL TEST

The object of this test is to check the overall performance of the transmission and engine by measuring the stall speeds in the D and R positions.

NOTICE:

- Do the test at normal operating fluid temperature 50–80°C (122–176°F).
- Do not continuously run this test longer than 5 seconds.
- To ensure safety, conduct this test in a wide, clear, level area which provides good traction.
- The stall test should always be carried out in pairs. One technician should observe the conditions of wheels or wheel stoppers outside the vehicle while the other is doing the test.

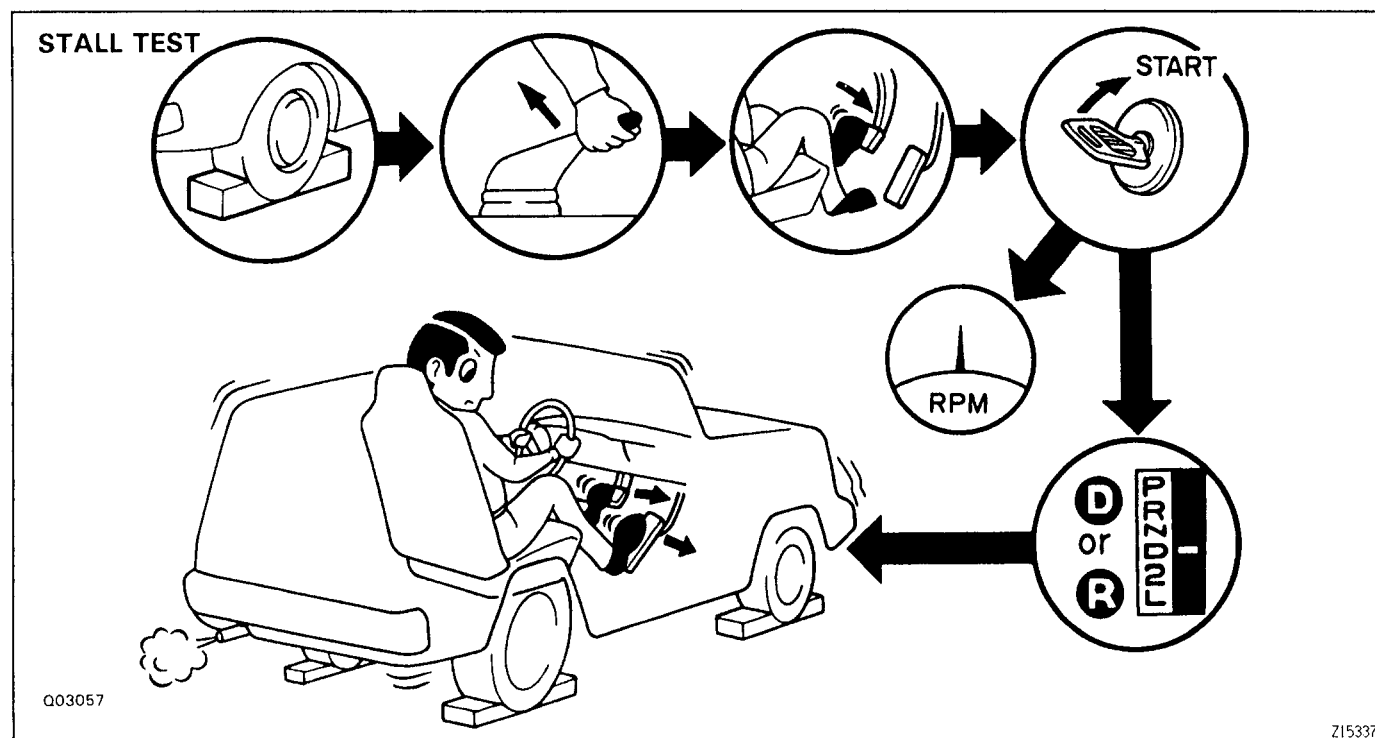
MEASURE STALL SPEED

- Chock the 4 wheels.
- Connect OBD II scan tool or TOYOTA hand-held tester to DLC 3.
- Fully apply the parking brake.
- Keep your left foot pressed firmly on the brake pedal.
- Start the engine.
- Shift into the D position. Press all the way down on the accelerator pedal with your right foot. Quickly read the stall speed at this time.

Stall speed: 1,950 ± 150 rpm

- Do the same test in R position.

Stall speed: 1,950 ± 150 rpm



EVALUATION

Problem	Possible cause
(a) Stall speed low in D and R positions.	• Engine output may be insufficient • Stator one-way clutch is not operating properly HINT: If more than 600 rpm below the specified value, the Torque converter could be faulty.
(b) Stall speed high in D position.	• Line pressure too low • Forward clutch slipping • No.2 one-way clutch not operating properly • O/D one-way clutch not operating properly
(c) Stall speed high in R position.	• Line pressure too low • Direct clutch slipping • First and reverse brake slipping • O/D clutch slipping
(d) Stall speed high in D and R positions.	• Line pressure too low • Improper fluid level • O/D one-way clutch not operating properly

TIME LAG TEST

When the shift lever is shifted while the engine is idling, there will be a certain time lapse or lag before the shock can be felt. This is used for checking the condition of the O/D direct clutch, forward clutch, direct clutch, and first and reverse brake.

NOTICE:

- Do the test at normal operating fluid temperature 50–80°C (122–176°F).
- Be sure to allow one minute interval between tests.
- Take three measurements and take the average value.

MEASURE TIME LAG

- Fully apply the parking brake.
- Start the engine and check idle speed.

Idle speed: 650 ± 50 rpm (In N position and air conditioner OFF)

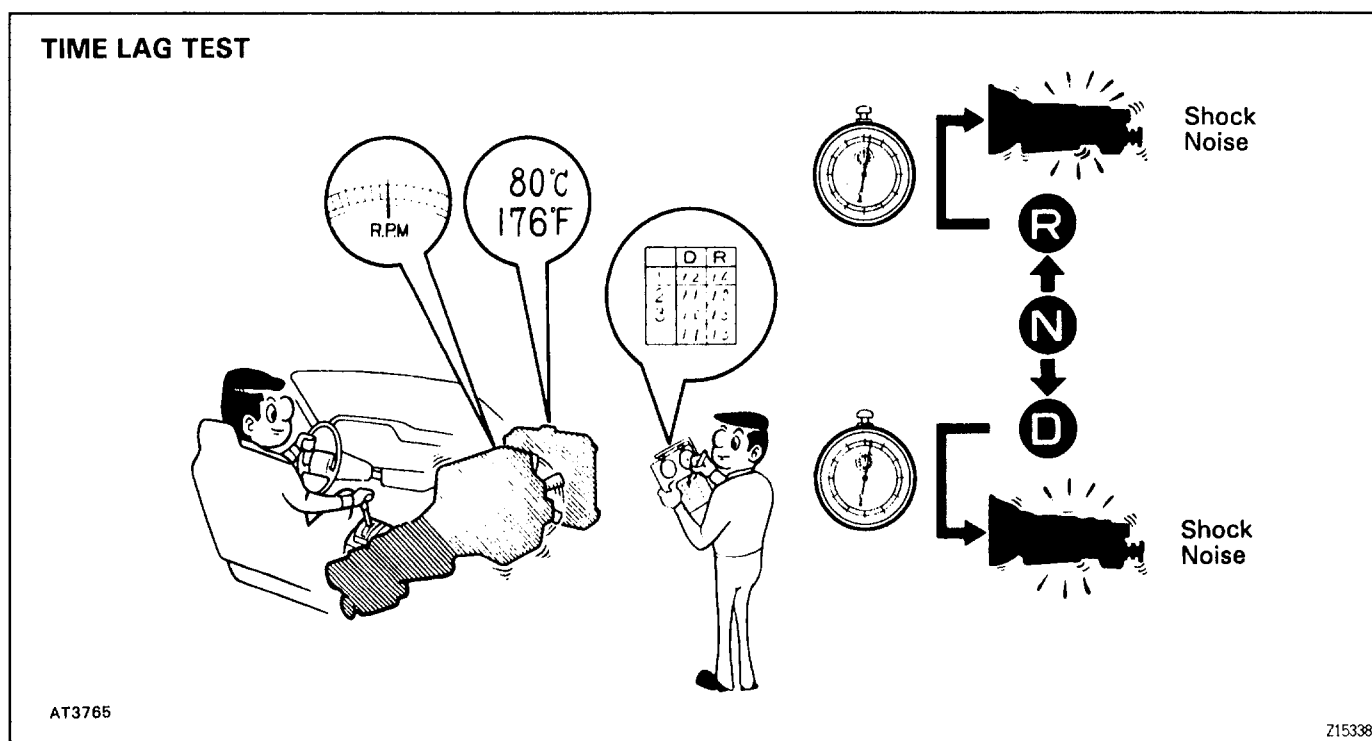
- Shift the shift lever from N to D position. Using a stop watch, measure the time it takes from shifting the lever until the shock is felt.

In same manner, measure the time lag for N ⇒ R.

Time lag:

N⇒D Less than 1.2 seconds

N⇒R Less than 1.5 seconds



EVALUATION

If N→D or N→R time lag are longer than specified:

Problem	Possible cause
N→D time lag is longer	• Line pressure too low • Forward clutch worn • O/D one-way clutch not operating properly
N→R time lag is longer	• Line pressure too low • Direct clutch worn • First and reverse brake worn • O/D one-way clutch not operating properly