05DTU–01

MECHANICAL SYSTEM TESTS

1. PERFORM MECHANICAL SYSTEM TESTS

(a) Measure the stall speed.

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

NOTICE:

- **Do the test at normal operating ATF temperature 50 to 80 ˚C (122 to 176 ˚F).**
- **Do not continuously run this test for longer than 5 seconds.**
- **To ensure safety, do 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.**

(1) Chock the 4 wheels.

(2) Connect an OBD II scan tool or hand–held tester to the DLC3.

(3) Fully apply the parking brake.

(4) Keep your left foot pressed firmly on the brake pedal.

(5) Start the engine.

(6) Shift into the D position. Press all the way down on the accelerator pedal with your right foot.

(7) Quickly read the stall speed at this time.

Stall speed: 2,550 ± 150 rpm

(8) Do the same test in the R position.

Stall speed: 2,550 ± 150 rpm

Evaluation:

Problem	Possible cause
(a) Stall speed low in D and R positions	• Engine output may be insufficient • Stator one–way clutch not operating properly HINT: If the value is less than the specified value by 600 rpm or more, 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 • U/D one–way clutch not operating properly
(c) Stall speed high in R position	• Line pressure too low • Direct clutch slipping • 1st and reverse brake slipping • U/D brake slipping
(d) Stall speed high in D and R positions	• Line pressure too low • Improper fluid level • U/D one–way clutch not operating properly

(b) Measure the time lag.

(1) 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 direct clutch, forward clutch, and 1st and reverse brake.

NOTICE:

- **Do the test at normal operating ATF temperature 50 to 80 ˚C (122 to 176 ˚F).**
- **Be sure to allow 1 minute interval between tests.**
- **Take 3 measurements and take the average value.**

(2) Connect an OBD II scan tool or hand–held tester to the DLC3.

(3) Fully apply the parking brake.

(4) Start the engine and check idle speed.

Idle speed: 650 ± 50 rpm (In N position and A/C OFF)

(5) Shift the shift lever from the N to D position. Using a stop watch, measure the time from when the lever is shifted until the shock is felt.

(6) Measure the time lag of N → R in the same way.

Time lag:

N → D Less than 1.2 seconds

N → R Less than 1.5 seconds

Evaluation (If N → D time or N → R time lag is longer than specified):

Problem	Possible cause
N → D time lag is longer	• Line pressure too low • Forward clutch worn • U/D one–way clutch not operating properly
N → R time lag is longer	• Line pressure too low • Direct clutch worn • 1st and reverse brake worn • U/D one–way clutch not operating properly