

ROAD TEST

1. PROBLEM SYMPTOM CONFIRMATION

- (a) Based on the result of the customer problem analysis, try to reproduce the symptoms. If the problem is that the transaxle does not shift up, shift down, or the shift point is too high or too low, conduct the following road test referring to the automatic shift schedule and simulate the problem symptoms.

2. ROAD TEST

NOTICE:

Perform the test at the normal operating ATF temperature of 50 to 80°C (122 to 176°F).

- (a) D position test:

Move the shift lever to D and fully depress the accelerator pedal. Check the following:

- (1) Check up-shift operation.

Check that the 1 → 2, 2 → 3, 3 → 4 and 4 → 5th up-shifts take place at the shift point shown in the automatic shift schedule (see page [SS-43](#)).

HINT:

5th Gear Up-shift Prohibition Control

- Engine coolant temperature is 55°C (131°F) or less and vehicle speed is at 80 km/h (50 mph) or less.
- ATF temperature is -2°C (28°F) or less.

4th Gear Up-shift Prohibition Control

- Engine coolant temperature is 47°C (117°F) or less and vehicle speed is at 55 km/h (34 mph) or less.

5th and 4th Gear Lock-up Prohibition Control

- Brake pedal is depressed.
- Accelerator pedal is released.
- Engine coolant temperature is 60°C (140°F) or less.

- (2) Check for shift shock and slip.

Check for shock and slip at the 1 → 2, 2 → 3, 3 → 4 and 4 → 5th up-shifts.

- (3) Check for abnormal noise and vibration.

Check for abnormal noise and vibration when up-shifting from 1 → 2, 2 → 3, 3 → 4 and 4 → 5th while driving with the shift lever on D, and check while driving in the lock-up condition.

HINT:

The check for the cause of abnormal noise and vibration must be done thoroughly as it could also be due to loss of balance in the differential, torque converter clutch, etc.

- (4) Check kick-down operation.
While driving the vehicle in the 2nd, 3rd, 4th and 5th gears with the shift lever on D, check that the possible kick-down vehicle speed limits for 2 → 1, 3 → 2, 4 → 3 and 5 → 4 kick-downs conform to those indicated in the automatic shift schedule (see page [SS-43](#)).
 - (5) Check for abnormal shock and slip at kick-down.
 - (6) Check the lock-up mechanism.
 - Drive the vehicle in the 5th gear with the shift lever on D. Maintain a steady speed (lock-up ON).
 - Lightly depress the accelerator pedal and check that the engine speed does not change abruptly.

HINT:

 - There is no lock-up in the 1st, 2nd and 3rd gear.
 - 4th lock-up operates while uphill-downhill control is active with the shift lever on D.
 - If there is a sudden increase in engine speed, there is no lock-up.
- (b) 4 (O/D OFF) position test:
Move the shift lever to 4 and fully depress the accelerator pedal. Check the following:
- (1) Check up-shift operation.
Check that the 1 → 2, 2 → 3 and 3 → 4 up-shifts take place and that the shifts point conforms to the automatic shift schedule (see page [SS-43](#)).
- HINT:
There is no 5th up-shift in the 4 position.
- (2) Check engine braking.
While driving the vehicle in the 4th gear with the shift lever on 4, release the accelerator pedal and check the engine braking effect.
 - (3) Check for abnormal noise during acceleration and deceleration, and for shock at up-shift and down-shift.
- (c) 3 position test:
Move the shift lever to 3 and fully depress the accelerator pedal. Check the following:
- (1) Check up-shift operation.
Check that the 1 → 2 and 2 → 3 up-shifts take place and that the shifts point conforms to the automatic shift schedule (see page [SS-43](#)).
- HINT:
There is no 3rd up-shift and lock-up in the 3 position.
- (2) Check engine braking.
While driving the vehicle in the 3rd gear with the shift lever on 3, release the accelerator pedal and check the engine braking effect.

- (3) Check for abnormal noise during acceleration and deceleration, and for shock at up-shift and down-shift.
- (d) 2 position test:
 - Move the shift lever to 2 and fully depress the accelerator pedal. Check the following:
 - (1) Check up-shift operation.
 - Check that the 1 →2 up-shifts take place and that the shift point conforms to the automatic shift schedule (see page [SS-43](#)).
 - HINT:
 - There is no 3rd up-shift and lock-up when the shift lever is on 2.
 - (2) Check engine braking.
 - While driving the vehicle in the 2nd gear with the shift lever on 2, release the accelerator pedal and check the engine braking effect.
 - (3) Check for abnormal noise during acceleration and deceleration, and for shock at up-shift and down-shift.
- (e) L position test:
 - Move the shift lever to L and fully depress the accelerator pedal. Check the following:
 - (1) Check no up-shift.
 - While driving the vehicle with the shift lever on L, check that there is no up-shift to 2nd gear.
 - HINT:
 - There is no lock-up in L.
 - (2) Check engine braking.
 - While driving the vehicle with the shift lever on L, release the accelerator pedal and check the engine braking effect.
 - (3) Check for abnormal noises during acceleration and deceleration.
- (f) R position test:
 - Move the shift lever to R and lightly depress the accelerator pedal. Check that the vehicle moves backward without any abnormal noise or vibration.
 - CAUTION:**
Before conducting this test, ensure that no people or obstacles are in the test area.
- (g) P position test:
 - Stop the vehicle on an incline (more than 5°). Then move the shift lever to P and release the parking brake. Check that the parking lock pawl holds the vehicle in place.
- (h) Uphill/downhill control function test:
 - (1) Check that the gear does not up-shift to the 4th or 5th gear while the vehicle is driving uphill.
 - (2) Check that the gear automatically down-shifts from 5 → 4 or from 4 → 3 when the brake is applied while the vehicle is driving downhill.