05HRL–01

ON–VEHICLE INSPECTION

1. INSPECT SPEEDOMETER

(a) Check the operation.

(1) Using a speedometer tester, inspect the speedometer for acceptable indication error and check the operation of the odometer.

Reference: km/h

Standard indication	Acceptable range (*1)	Acceptable range (*2)
20 km/h	17.5 to 21.5 km/h	21.0 to 25.0 km/h
40 km/h	38.0 to 42.0 km/h	41.5 to 46.0 km/h
60 km/h	58.0 to 63.0 km/h	62.5 to 67.0 km/h
80 km/h	78.0 to 84.0 km/h	83.0 to 88.0 km/h
100 km/h	99.0 to 104.5 km/h	104.0 to 109.0 km/h
120 km/h	119.5 to 125.5 km/h	125.0 to 130.5 km/h
140 km/h	139.5 to 146.5 km/h	145.5 to 151.5 km/h
160 km/h	159.5 to 167.5 km/h	166.0 to 173.0 km/h
180 km/h	179.5 to 188.5 km/h	186.5 to 194.5 km/h
200 km/h	199.5 to 209.5 km/h	207.0 to 216.0 km/h

*1: General countries, Australia

*2: Midle East, Europe (LHD), South Africa

Reference: mph

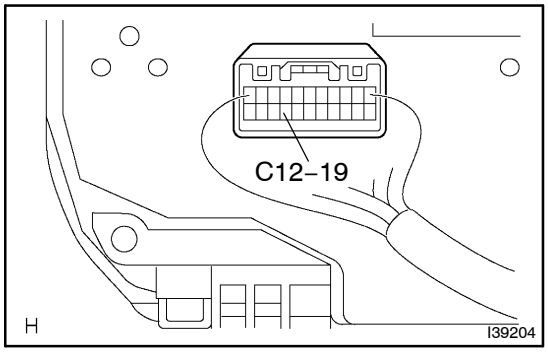
Standard indication	Acceptable range
20 mph	21.0 to 23.5 mph
40 mph	41.5 to 44.0 mph
60 mph	62.5 to 66.0 mph
80 mph	83.0 to 87.0 mph
100 mph	104.0 to 108.5 mph
120 mph	125.0 to 130.0 mph

NOTICE:

Tire wear and over or under tire pressure will affect indication error.

(1) Check the deflection width of the speedmeter indicator.

Reference: Below 0.5 km/h (0.3 mph)



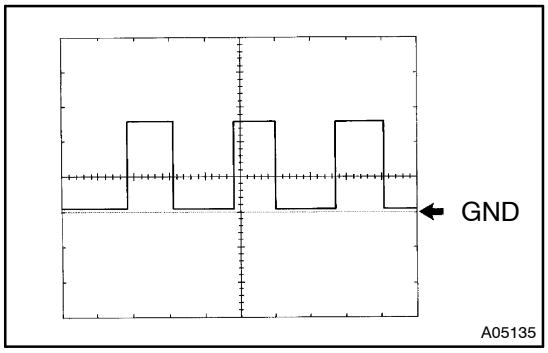
2. INSPECT OUTPUT OF VEHICLE SPEED

(a) Check the output signal waveform.

(1) Remove the combination meter assy.

(2) Connect the oscilloscope to terminal C12–19 and body ground.

(3) Start the engine.



(4) Check the signal waveform according to the condition(s) in the table below.

Item	Condition
Tool setting	5 V/DIV, 20 ms/DIV
Vehicle condition	Driving at approx. 20 Km/h (12 mph)

OK:

As shown in the illustration

HINT:

As the vehicle speed increases, the cycle of the signal waveform narrows.

3. INSPECT TACHOMETER

(a) Check operation

(1) Connect the tune–up test tachometer and start the engine.

NOTICE:

- **Reversing the connection of the tachometer will damage the transistors and the insides of the diodes.**
- **When removing or installing the tachometer, be careful not to drop or subject it to heavy shocks.**

(2) Compare the result of the test with the standard indication.

DC 13.5 V, 25°C (77°F)

Standard indication (r/min)	Acceptable range (r/min) Data in ( ) are for reference
700	630 to 770
1,000	(925 to 1125)
2,000	(1900 to 2200)
3,000	2845 to 3305
4,000	(3870 to 4330)
5,000	4925 to 5325
6,000	(6000 to 6300)
7,000	6875 to 7475

Fuel Sender Gauge Connector
Front View:

Ie–5–1–A I30899

4. INSPECT FUEL RECEIVER GAUGE

(a) Disconnect the connector from the sender gauge.
(b) Connect terminals 1 and 2 on the wire harness side connector of the fuel sender gauge.
(c) Turn the ignition switch to the ON position, then check the position of the receiver gauge needle.
OK:
Needle position is on (EMPTY).
(d) Connect terminals 2 and 3 on the wire harness side connector of the fuel sender gauge.
(e) Turn the ignition switch to the ON position, then check the position of the receiver gauge needle.
OK:
Needle position is on (FULL).

5. INSPECT FUEL LEVEL WARNING

(a) Disconnect the connector from the sender gauge.
(b) Turn the ignition switch to the ON position, then check that the fuel level needle indicates EMPTY and the fuel level warning light comes on.
OK:
Fuel level warning light comes on.

6. INSPECT LOW OIL PRESSURE WARNING LIGHT

(a) Disconnect the connector from the low oil pressure switch.
(b) Turn the ignition switch to the ON position.
(c) Ground the terminal of the wire harness side connector, then check the low oil pressure warning light.
OK:
Low oil pressure warning light comes on.

7. INSPECT BRAKE WARNING LIGHT

(a) Inspect the parking brake warning light.
(1) Disconnect the connector from the parking brake switch.
(2) Turn the ignition switch to the ON position.
(3) Ground the terminal of the wire harness side connector, then check the parking brake warning light.
OK:
Brake warning light comes on.
(b) Inspect the brake fluid level warning light.
(1) Disconnect the connector from the brake fluid level warning switch.
(2) Turn the ignition switch to the ON position.
(3) Connect a terminal to the other terminal of the wire harness side connector, then check the brake fluid level warning switch.
OK:
Brake warning light comes on.

8. INSPECT BRAKE FLUID LEVEL WARNING SWITCH

(a) Remove the reservoir tank cap and strainer.
(b) Disconnect the connector.
(c) Measure the resistance between the terminals.
Standard:
Float up (switch off): 10 kΩ or higher
(d) Use a syphon, etc. to take fluid out of the reservoir tank.
(e) Measure the resistance between the terminals.
Standard:
Float down (switch on): Below 1 Ω
(f) Pour the fluid back in the reservoir tank.

9. INSPECT WASHER LEVEL WARNING SWITCH

(a) Disconnect the connector from the washer level warning switch.
(b) Turn the ignition switch to the ON position.
(c) Ground the terminal of the wire harness side connector, then check the washer level warning light.
OK:
Washer level warning light comes on.