

## ON-VEHICLE INSPECTION

### 1. INSPECT SPEEDOMETER

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

#### USA (mph):

Standard indication	Allowable range
20 mph	20 to 23.0 mph
40 mph	40 to 43.5 mph
60 mph	60 to 64.0 mph
80 mph	80 to 84.5 mph
100 mph	100 to 105.0 mph
120 mph	120 to 125.5 mph

#### CANADA (km/h):

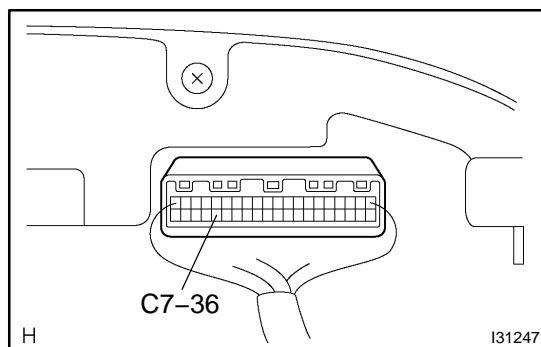
Standard indication	Allowable range
20 km/h	17.5 to 21.5 km/h
40 km/h	38.0 to 42.0 km/h
60 km/h	58.0 to 63.0 km/h
80 km/h	78.0 to 84.0 km/h
100 km/h	98.5 to 104.5 km/h
120 km/h	119.0 to 125.0 km/h
140 km/h	139.0 to 146.0 km/h
160 km/h	159.0 to 167.0 km/h
180 km/h	179.0 to 188.0 km/h
200 km/h	199.0 to 209.0 km/h

#### NOTICE:

**Tire wear and tire over or under inflation will cause the indication error.**

- (2) Check the deflection range of the speedometer indicator.

**Reference: Below 0.5 km/h (0.3 mph)**



### 2. INSPECT OUTPUT SIGNAL OF VEHICLE SPEED

- (a) Check the input signal wave form.
- (1) Remove the combination meter with connectors still connected.
- (2) Connect the oscilloscope to terminal C7-36 and body ground.
- (3) Start the engine.
- (4) Check the signal wave form.

#### OK:

**Signal wave form generates.**

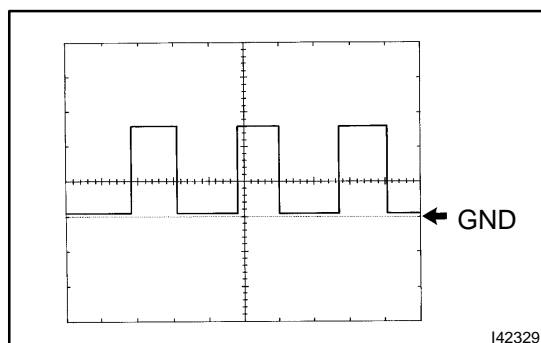
#### HINT:

A wave form as shown on the left appears if the voltage is 12 V under the following conditions:

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

#### HINT:

As vehicle speed increases, the cycle of the signal wave form narrows.



### 3. INSPECT TACHOMETER

(a) Check the operation

(1) Connect a tune-up test tachometer, and start the engine.

**NOTICE:**

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

(2) Compare the result of the test and tachometer indications.

**DC 13.5 V, 25°C at (77°F)**

**2AZ-FE:**

Standard indication (r/min)	Allowable range (r/min) Data in ( ) are for reference
700	630 to 770
1,000	(900 to 1,100)
2,000	(1,850 to 2,150)
3,000	2,800 to 3,200
4,000	(3,800 to 4,200)
5,000	4,800 to 5,200
6,000	(6,750 to 6,250)
7,000	(6,700 to 7,000)

**1MZ-FE, 3MZ-FE:**

Standard indication (r/min)	Allowable range (r/min) Data in ( ) are for reference
700	618 to 758
1,000	(883 to 1,083)
2,000	(1,817 to 2,117)
3,000	2,750 to 3,150
4,000	(3,733 to 4,133)
5,000	4,717 to 5,117
6,000	(5,650 to 6,150)
7,000	(6,583 to 7,000)

Fuel Sender Gauge:



le-5-1-A

I30899

### 4. INSPECT FUEL RECEIVER GAUGE

(a) Inspect the circuit.

- (1) Disconnect the connector from the sender gauge.
- (2) Turn the ignition switch ON, then check the position of the receiver gauge needle.

**Standard:**

**Needle position is EMPTY and FUEL warning light comes on.**

### 5. INSPECT FUEL LEVEL WARNING

(a) Inspect the circuit.

- (1) Disconnect the connector from the sender gauge.
- (2) Turn the ignition switch to ON, and check the position of the fuel level needle and the FUEL level warning light.

**Standard:**

**Needle position is EMPTY and FUEL warning light comes on.**

**6. INSPECT ENGINE COOLANT TEMPERATURE RECEIVER GAUGE WARNING LIGHT**

- (a) Inspect the circuit.
- (1) Disconnect the connector from the sender gauge.
  - (2) Turn the ignition switch to ON, and check the position of the water temperature receiver gauge needle.

**OK:**

**Needle position: COOL**

- (3) Ground terminal 2 on the wire harness side, then check the position of the water temperature receiver gauge needle.

**OK:**

**Needle position: HOT**

**7. INSPECT SEAT BELT WARNING LIGHT (Driver Side)**

- (a) Check the operation.
- (1) Turn the ignition switch to ON and check that the warning light lights up.
  - (2) Fasten the outer belt to the inner belt and check that the warning light goes off.
  - (3) Disconnect the connector from the buckle switch and ground terminal on the wire harness side connector.
  - (4) Turn the ignition switch to ON and check the warning light.

**OK:**

**Seat belt warning light: Come on**

**8. INSPECT LOW OIL PRESSURE WARNING LIGHT**

- (a) Inspect the circuit.
- (1) Disconnect the connector from the low oil pressure switch.
  - (2) Turn the ignition switch to ON.
  - (3) Connect the terminal of wire harness side connector to ground, then check the warning low oil pressure warning light.

**OK:**

**Low oil pressure warning light: Come on**

**9. INSPECT BRAKE WARNING LIGHT**

- (a) Inspect the parking brake warning light.
- (1) Disconnect the connector from the parking brake switch and ground terminal on the wire harness side connector.
  - (2) Turn the ignition switch to ON and check the warning light.

**OK:**

**Brake warning light: Come on**

- (b) Inspect the brake fluid level warning light.
- (1) Disconnect the connector from the brake fluid level warning switch and connect terminals on the wire harness side connector.
  - (2) Turn the ignition switch to ON and check the warning light.

**OK :**

**Brake fluid level warning light: Come on**

**10. INSPECT BRAKE FLUID LEVEL WARNING SWITCH**

- (a) Inspect the continuity.
  - (1) Remove the reservoir tank cap and strainer.
  - (2) Disconnect the connector.
  - (3) Check that the continuity exists between the terminals.

**OK:**

**Float up (switch off): No continuity**

- (4) Use a syphon, etc., to take fluid out of the reservoir tank.
- (5) Check that the continuity exists between the terminals.

**OK:**

**Float down (switch on): Continuity**

- (6) Pour the fluid back in the reservoir tank.

**11. INSPECT SEAT BELT WARNING BUZZER**

- (a) When only driver's seat is occupied.
  - (1) Turn the ignition switch to ON and check that the driver's seat belt warning sounds if the driver's seat belt is not fastened about 1.8 seconds after the ignition switch is turned to ON.
  - (2) Check that the buzzer stops after about 6 seconds.
- (b) When both driver's seat and passenger's seat are occupied
  - (1) When either of the seat belts for the driver seat and front passenger seat is not fastened within 13.8 seconds after the ignition switch is turned to ON, the buzzer sounds for 9.6 seconds.
  - (2) When the seat belt is still not fastened after that, the buzzer is switched to level 2 and sounds for 20 seconds.

**12. INSPECT KEY REMINDER WARNING BUZZER**

- (a) Check warning buzzer function.
  - (1) Turn the ignition switch off and check that the key reminder warning sounds if the ignition key is inserted into the key cylinder and the front driver side door is opened.

**OK :**

**Warning buzzer sounds**

**13. INSPECT WASHER LEVEL WARNING SWITCH**

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

**OK:**

**Washer level warning light comes on.**

**14. MAINTENANCE LIQUID RESETTING PROCEDURE****Indicator Condition:**

State	Condition	Specified state
Blinking	The vehicle runs 4,500 $\pm$ 100 miles after the previous setting	The indicator blinks for 15 seconds after the ignition switch is turned on (including 3 seconds for a valve check).
Continuously Illuminated	The vehicle runs 5,000 $\pm$ 100 miles after the previous setting	The indicator is continuously illuminated after the ignition switch is turned on.

- (a) Set the display window to ODO.
- (b) Turn the ignition switch off.
- (c) While pressing the reset switch, turn the ignition switch to the ON position (keep pressing for at least 5 seconds).
- (d) Reset procedure is completed.

**HINT:**

- If the ignition switch is turned off during the reset procedure, reset mode is canceled.
- If the reset switch is turned off during the reset procedure, reset mode is canceled and the display shows the condition prior to the reset procedure.