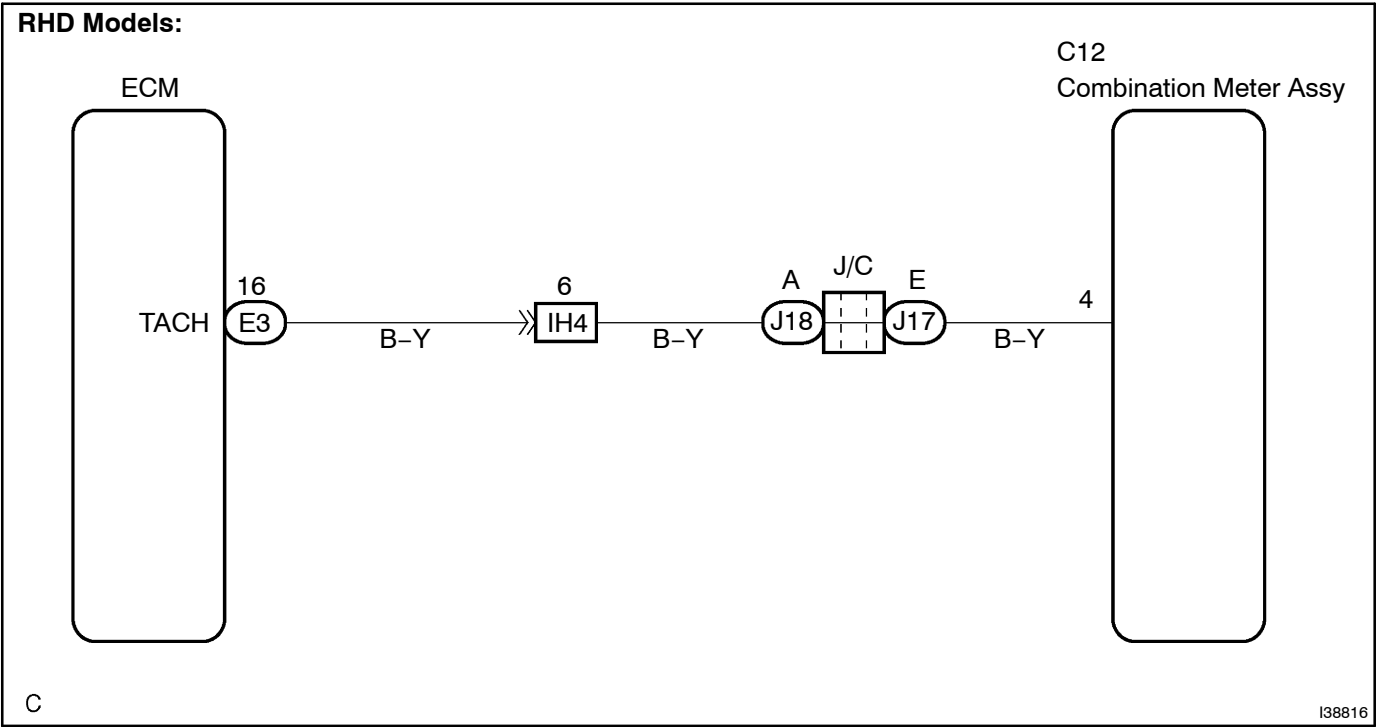
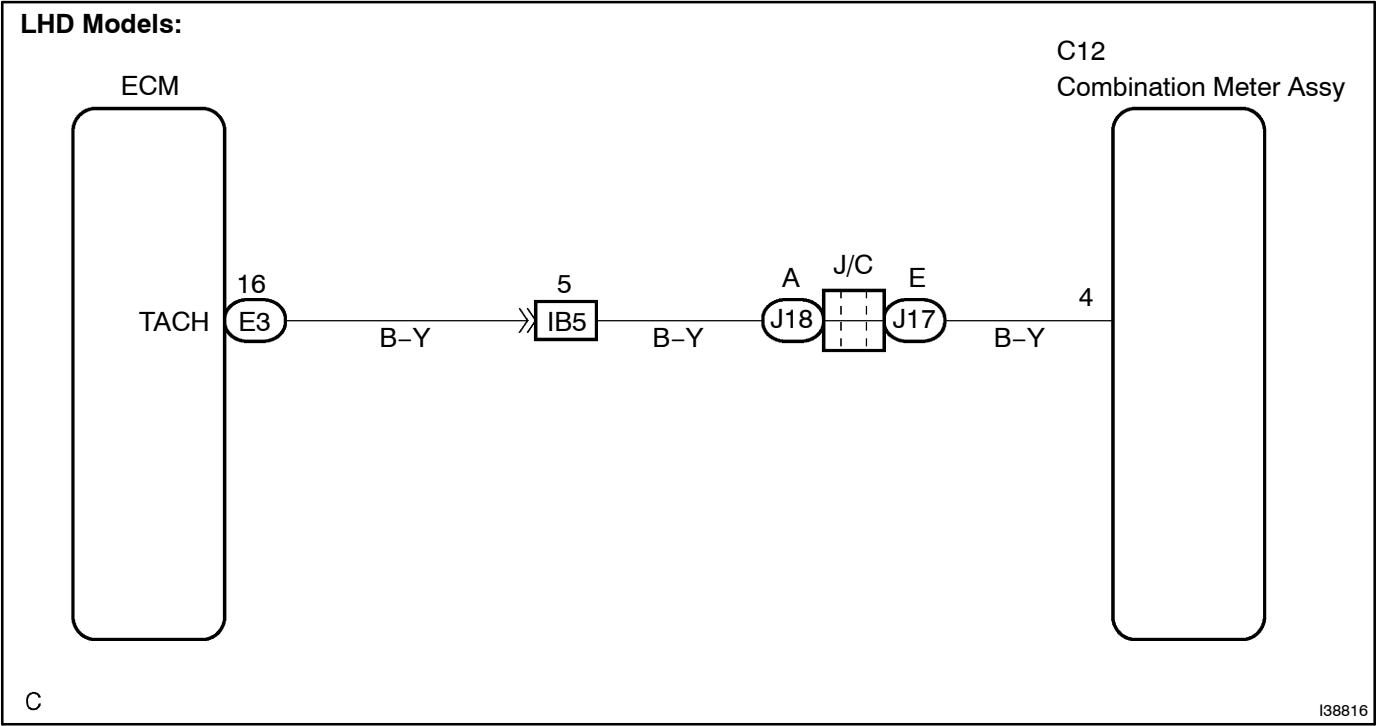


MALFUNCTION IN TACHOMETER

WIRING DIAGRAM



INSPECTION PROCEDURE

1 PERFORM ACTIVE TEST BY INTELLIGENT TESTER

(a) Operate the Intelligent Tester II according to the steps on the display and select the "ACTIVE TEST".
METER:

Item	Test Details	Diagnostic Note
Tachometer	OFF / 0rpm / 1000rpm / 2000rpm / 3000rpm / 4000rpm / 5000rpm / 6000rpm / 7000rpm	-

OK:

Needle indication is normal.

NG

**REPLACE COMBINATION METER ASSY
 (SEE PAGE 71-21)**

OK

2 READ VALUE OF INTELLIGENT TESTER II (ENGINE SPEED SIGNAL)

(a) Operate the Intelligent Tester II according to the steps on the display and select the "DATA LIST".
METER:

Item	Measurement Item/ Range (Display)	Normal Condition	Diagnostic Note
Tacho Meter	Engine speed / Min.: 50rpm, Max.: 12,750rpm	Almost same as actual engine speed (When engine is running)	-

OK:

Engine speed displayed on the tester is almost the same as the actual engine speed.

NG

Go to step 3

OK

REPLACE COMBINATION METER ASSY (SEE PAGE 71-21)

3 READ VALUE OF INTELLIGENT TESTER II (ENGINE SPEED SIGNAL)

(a) Operate the Intelligent Tester II according to the steps on the display and select the "DATA LIST".
ENGINE:

Item	Measurement Item/ Range (Display)	Normal Condition	Diagnostic Note
Engine Spd	Engine speed / Min.: 0rpm, Max.: 16,383rpm	Almost same as actual engine speed (When engine is running)	-

OK:

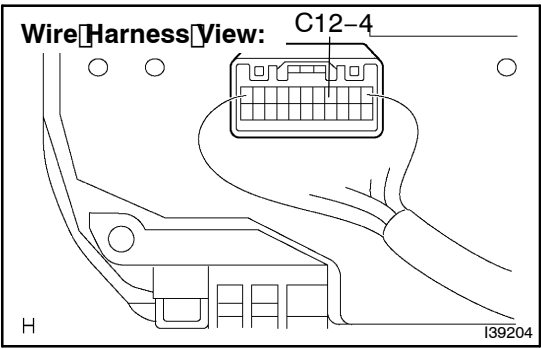
Engine speed displayed on the tester is almost the same as the actual engine speed.

NG

**GO TO ENGINE CONTROL SYSTEM
 (SEE PAGE 05-7)**

OK

4 INSPECT COMBINATION METER ASSY



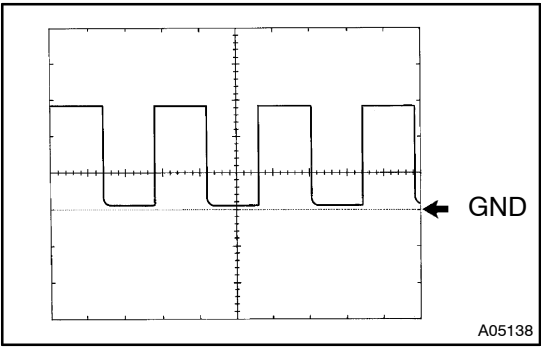
INSPECTION USING OSCILLOSCOPE

- (a) Check the input signal waveform.
- (1) Remove the combination meter assy.
 - (2) Connect the oscilloscope to the terminals C12-4 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	5V/DIV, 0ms/DIV
Vehicle condition	Engine idle speed

OK:
As shown in the illustration



NG

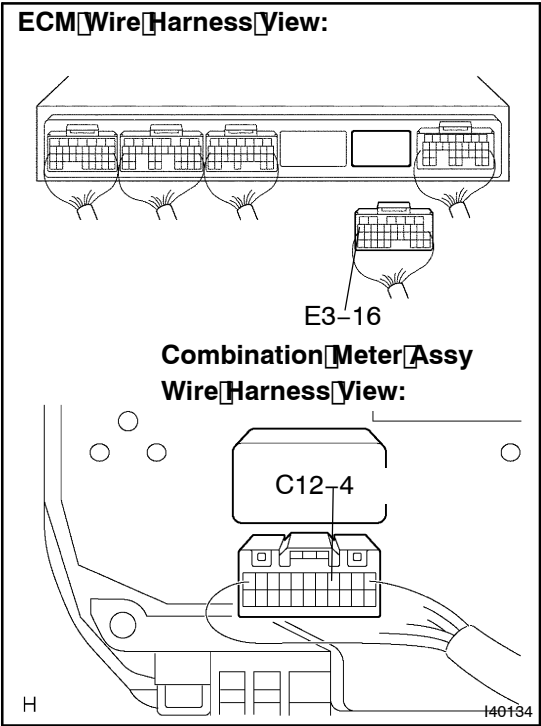
Go to step 5

OK

REPLACE COMBINATION METER ASSY (SEE PAGE 71-21)

5

CHECK HARNESS AND CONNECTOR (ECM – COMBINATION METER ASSY)
(SEE PAGE 01-34)



- (a) Disconnect the C12 and E3 connectors.
- (b) Measure the resistance according to the value(s) in the table below.

Standard:

Tester Connection	Condition	Specified Condition
C12-4 – E3-16	Always	Below 1 Ω
C12-4 – Body ground	Always	10 kΩ or higher

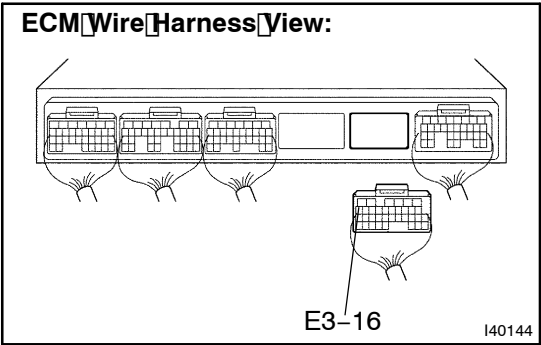
NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

6

INSPECT COMBINATION METER ASSY



- (a) Disconnect the E3 connector.
- (b) Measure the voltage according to the value(s) in the table below.

Standard:

Tester Connection	Condition	Specified Condition
E3-16 – Body ground	Ignition switch ON	10 to 4V

NG

REPLACE COMBINATION METER ASSY
(SEE PAGE 71-21)

OK

GO TO ENGINE CONTROL SYSTEM (SEE PAGE 05-7)