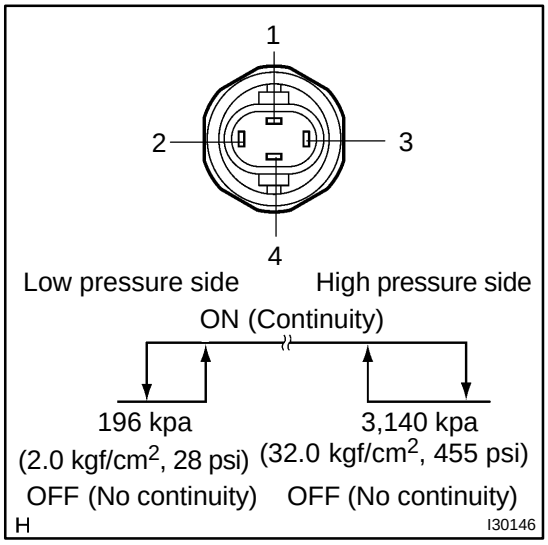
551IK−01

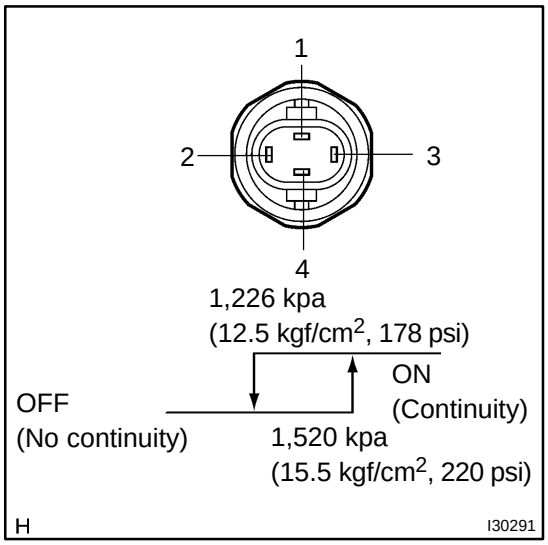
ON−VEHICLE INSPECTION



1. INSPECT PRESSURE SWITCH NO.1

(a) Magnetic clutch control:
Inspect pressure switch operation.
(1) Set on the manifold gauge set.
(2) Connect the positive (+) lead from the ohmmeter to terminal 4 and the negative (−) lead to terminal 1.
(3) Check continuity between terminals when refrigerant pressure is changed, as shown in the illustration.

If operation is not as specified, replace the pressure switch.



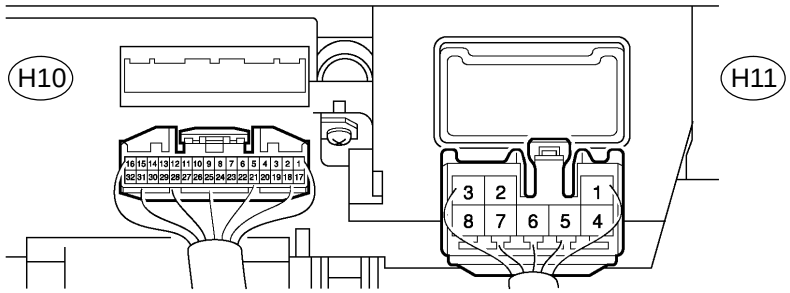
(b) Cooling fan control:
Inspect pressure switch operation.
(1) Connect the positive (+) lead from the ohmmeter to terminal 2 and the negative (−) lead to terminal 3.
(2) Check continuity between terminals when refrigerant pressure is changed, as shown in the illustration.

If operation is not as specified, replace the pressure switch.

2. INSPECT AIR CONDITIONING CONTROL PANEL SUB−ASSY

(a) Disconnect the connector from controller and inspect the connector on wire harness side, as shown in the chart below.

Wire Harness Side:



C

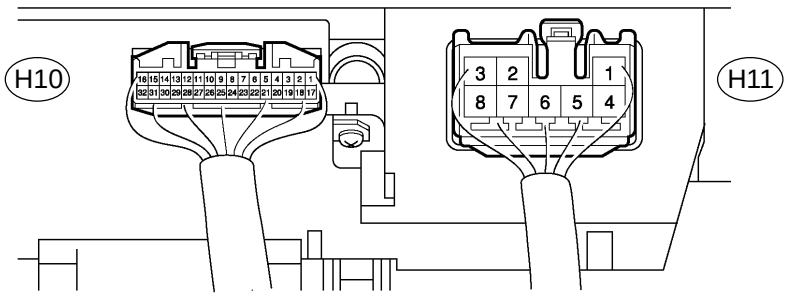
I36548

Terminals No. (Symbols)	Wiring Color	Tester Description	Condition	Specification
+B (H10−1) − Body ground	W−R − Body ground	Power supply for air conditioning panel sub−assy (Back−up)	Always	10 to 14 V
IG+ (H10−2) − Body ground	L−B − Body ground	Power supply for air conditioning panel sub−assy (IG)	Ignition switch OFF → ON	Below 1.0 V → 10 to 14 V
GND (H10−32) − Body ground	W−B − Body ground	Ground for air conditioning panel sub−assy	Always	Below 1 Ω
E (H11−1) − Body ground	W−B − Body ground	Ground for air conditioning panel sub−assy	Always	Below 1 Ω

If the circuit is not as specified, inspect the circuits connected to other parts.

(b) Connect the connector to heater controller and inspect wire harness side from the back side, as shown in the chart below.

From Back Side:



C

I36549

Symbols (Terminals No.)	Wiring Color	Tester Description	Condition	Specification
+B (H10−1) − GND (H10−32)	W−R − W−B	Power supply for air conditioning panel sub−assy (Back−up)	Always	10 to 14 V
IG+ (H10−2) − GND (H10−32)	L−B − W−B	Power supply for air conditioning panel sub−assy (IG)	Ignition switch OFF → ON	Below 1.0 V → 10 to 14 V
A/CB (H10−4) − GND (H10−32)	L−B − W−B	Heater relay signal	Ignition switch: ON Blower switch: OFF → ON (LO, M1, M2, HI)	Below 1.0 V → 10 to 14 V

Terminals No. (Symbols)	Wiring Color	Tester Description	Condition	Specification
1 (H10−6) − GND (H10−32)	LG−B − W−B	Hazard warning switch signal	Hazard warning switch: OFF → ON	10 to 14 V → Below 1.0 V
TCOL (H10−7) − GND (H10−32)	P−L − W−B	Air mix servomotor control signal	Ignition switch: ON Air mix control dial: Max.hot → Max.cool	Below 1.0 V → 10 to 14 V
THOT (H10−8) − GND (H10−32)	P − W−B	Air mix servomotor control signal	Ignition switch: ON Air mix control dial: Max.cool → Max.hot	Below 1.0 V → 10 to 14 V
REC (H10−10) − GND (H10−32)	L − W−B	Air inlet servomotor control signal	Ignition switch: ON Air inlet control switch: FRESH → RICIRCULATION	10 to 14 V → Below 1.0 V
FRS (H10−11) − GND (H10−32)	R−L − W−B	Air inlet servomotor control signal	Ignition switch: ON Air inlet control switch: RECIRCULATION → FRESH	10 to 14 V → Below 1.0 V
A/C (H10−12) − GND (H10−32)	W − W−B	A/C switch operation signal	Ignition switch: ON Blower switch: OFF → ON (LO, M1, M2, HI) A/C switch: OFF → ON	Below 1.0 V → 10 to 14 V
ACID (H10−13) − GND (H10−32)	Y−B − W−B	A/C indicator light up signal	Ignition switch: ON Blower switch: OFF → ON (LO, M1, M2, HI) A/C switch: OFF → ON	Below 1.0 V → 10 to 14 V
DEF (H10−17) − GND (H10−32)	B−W − W−B	Air outlet servomotor operation voltage	Ignition switch: ON Mode dial: Except DEF → DEF	10 to 14 V → Below 1.0 V
F/D (H10−18) − GND (H10−32)	LG−R − W−B	Air outlet servomotor operation voltage	Ignition switch: ON Mode dial: Except FOOT/DEF → FOOT/DEF	10 to 14 V → Below 1.0 V
FOOT (H10−19) − GND (H10−32)	L−R − W−B	Air outlet servomotor operation voltage	Ignition switch: ON Mode dial: Except FOOT → FOOT	10 to 14 V → Below 1.0 V
B/L (H10−20) − GND (H10−32)	BR−W − W−B	Air outlet servomotor operation voltage	Ignition switch: ON Mode dial: Except BI−LEVEL → BI−LEVEL	10 to 14 V → Below 1.0 V
FACE (H10−21) − GND (H10−32)	GR − W−B	Air outlet servomotor operation voltage	Ignition switch: ON Mode dial: Except FACE → FACE	10 to 14 V → Below 1.0 V
S5 (H10−25) − SG (H10−30)	V − B−W	Power supply for air mix damper position sensor	Ignition switch: ON	4.5 to 5.5 V
TSET (H10−27) − SG (H10−30)	L − B−W	Air mix damper position sensor signal	Ignition switch: ON Temperature dial: Max. COOL → Max. HOT	4.0 V → 1.0 V
SG (H10−30) − GND (H10−32)	B−W − W−B	Ground for air mix damper position sensor	Always	Below 1.0 Ω
GND (H10−32) − Body ground	W−B − Body ground	Ground for main power supply	Always	Below 1.0 Ω
E (H11−1) − Body ground	W−B − Body ground	Ground for blower control switch	Always	Below 1.0 Ω
LO (H11−3) − E (H11−1)	L−W − W−B	Blower switch signal	Ignition switch: ON Blower switch: OFF → LO	10 to 14 V → Below 1.0 V
M1 (H11−5) − E (H11−1)	L−O − W−B	Blower switch signal	Ignition switch: ON Blower switch: LO → M1	10 to 14 V → Below 1.0 V

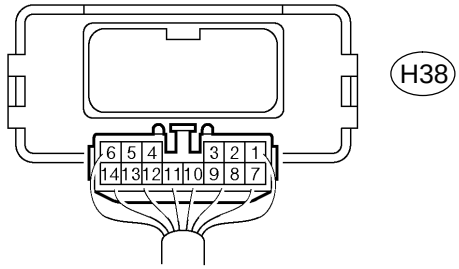
Terminals No. (Symbols)	Wiring Color	Tester Description	Condition	Specification
M2 (H11−6) − E (H11−1)	L−B − W−B	Blower switch signal	Ignition switch: ON Blower switch: M1 → M2	10 to 14 V → Below 1.0 V
HI (H11−7) − E (H11−1)	L − W−B	Blower switch signal	Ignition switch: ON Blower switch: M2 → HI	10 to 14 V → Below 1.0 V

If circuit is as specified, replace the controller with a new one. If the circuit is not as specified, inspect the circuits connected to other parts.

3. INSPECT AIR CONDITIONING AMPLIFIER (2AZ−FE)

(a) Disconnect the connector from controller and inspect the connector on wire harness side, as shown in the chart below.

Wire Harness Side:



C

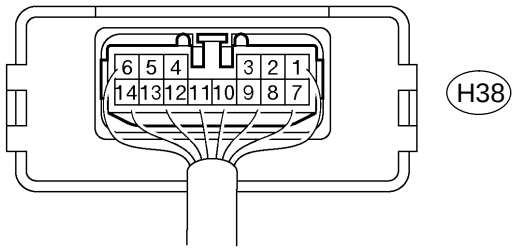
I36566

Terminals No. (Symbols)	Wiring Color	Tester Description	Condition	Specification
GND (H38−5) − Body ground	W−B − Body ground	Ground for air conditioning amplifier	Always	Below 1.0 Ω

If the circuit is not as specified, inspect the circuits connected to other parts.

(b) Connect the connector to air conditioning amplifier and inspect wire harness side from the back side, as shown in the chart below.

From Back Side:



C

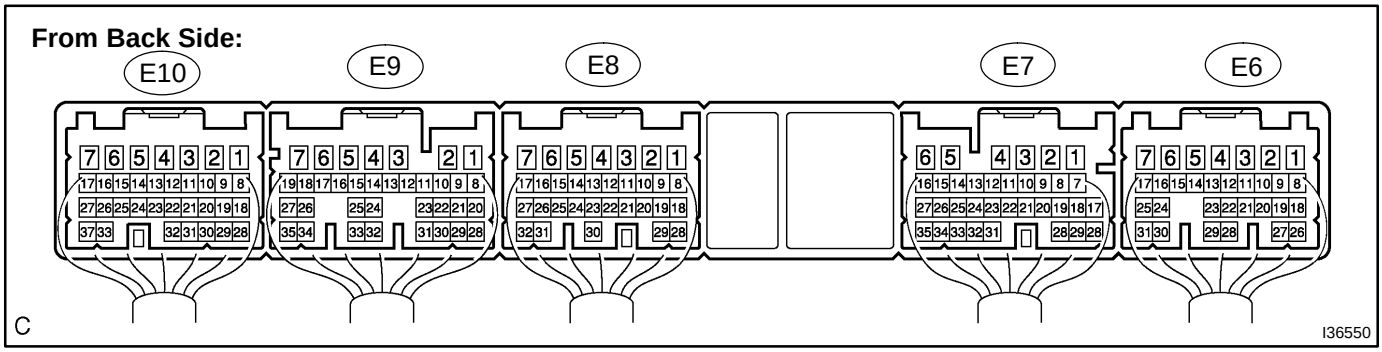
I36565

Symbols (Terminals No.)	Wiring Color	Tester Description	Condition	Specification
AC1 (A38−1) − GND (A38−5)	Y−B − W−B	Engine idle−up demand signal	Ignition switch: ON Blower switch: OFF → ON (LO, M1, M2, HI) A/C switch: OFF → ON	10 to 14 V → Below 1.0 V

Symbols (Terminals No.)	Wiring Color	Tester Description	Condition	Specification
PRS (A38−2) − GND (A38−5)	L−W − W−B	Pressure switch signal	Ignition switch: START Refrigerant pressure: Normally → Less than 196 kpa (2.0 kgf/cm^2, 28 psi) or more than 3,140 kpa (32.0 kgf/cm^2, 455 psi)	10 to 14 V → Below 1.0 V
IGN (A38−4) − GND (A38−5)	B−O − W−B	Engine revolution signal	Engine is running	Pulse generation (see waveform 1)
GND (A38−5) − Body ground	W−B − Body ground	Ground for air conditioning amplifier	Always	Below 1.0 Ω
ACT (A38−7) − GND (A38−5)	R − W−B	Magnet clutch ON permission signal	Ignition switch: ON Magnet clutch: OFF → ON	Below 1.0 V → 10 to 14 V
A/C (A38−8) − GND (A38−5)	W − W−B	A/C switch signal	Ignition switch: ON Blower switch: OFF → ON (LO, M1, M2, HI) A/C switch: OFF → ON	Below 1.0 V → 10 to 14 V
TE (A38−9) − GND (A38−5)	W−L − W−B (*1) L−W − W−B (*2)	A/C evaporator temperature sensor signal	Ignition switch: OFF → ON	see page 55−11
LED (A38−10) − GND (A38−5)	Y−B − W−B	A/C indicator signal	Ignition switch: ON Blower switch: OFF → ON (LO, M1, M2, HI) A/C switch: OFF → ON	Below 1.0 V → Below 10 to 14 V
MGC (A38−12) − GND (A38−5)	B − W−B	Magnet clutch relay signal	Ignition switch: ON Blower switch: OFF → ON (LO, M1, M2, HI) A/C switch: OFF → ON	10 to 14 V → Below 1.0 V
SG (A38−13) − GND (A38−5)	Y−G − W−B	Ground for A/C evaporator temperature sensor signal	Always	Below 1.0 Ω
LOCK (A38−14) − GND (A38−5)	W−L − W−B	Compressor revolution signal	Ignition switch: ON A/C switch: ON	Pulse generation (see waveform 2)

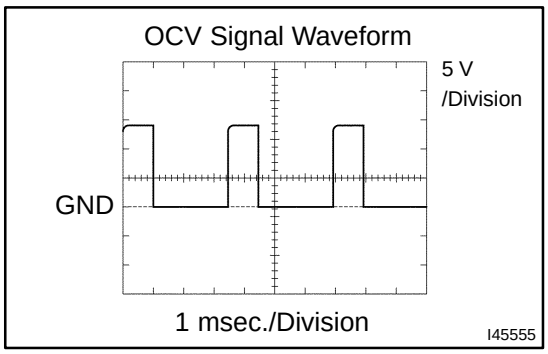
If circuit is as specified, replace the controller with a new one. If the circuit is not as specified, inspect the circuits connected to other parts.

4. INSPECT ECM (1MZ−FE, 3MZ−FE)



Symbols (Terminal No.)	Wiring Color	Tester Description	Condition	Specification
HP (E7−1) − E2 (E10−28)	L−B − BR	Pressure switch signal	Ignition switch: START Refrigerant pressure: Normally → Less than 196 kpa (2.0 kgf/cm^2, 28 psi) or more than 3,140 kpa 32.0 kgf/cm^2, 455 psi)	10 to 14 V → Below 1.0 V
LCKI (E8−23) − E2 (E10−28)	W−L − BR	Compressor revolution signal	Ignition switch: ON A/C switch: ON	Pulse generation (see waveform 3)
E2 (E10−28) − Body ground	BR − Body ground	Ground for ECM	Always	Below 1.0 V
THE (E8−32) − E2 (E10−28)	L−W − BR	A/C evaporator temperature sensor signal	Ignition switch: OFF → ON	see page 55−11
ACLD (E7−33) − E2 (E10−28)	B − BR	Engine idle−up demand signal	Ignition switch: ON A/C switch: OFF → ON	Below 1.0 V → 10 to 14 V
A/CS (E7−31) − E2 (E10−28)	P−L − BR	A/C switch signal	Ignition switch: ON A/C switch: OFF → ON	Below 1.0 V → 10 to 14 V

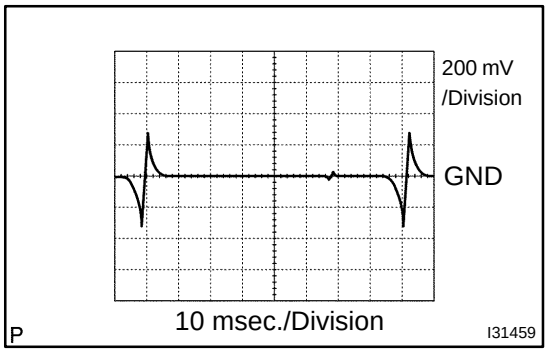
If circuit is as specified, replace the controller with a new one. If the circuit is not as specified, inspect the circuits connected to other parts.



waveform 1:
Measure the waveform between terminal IGN of the A/C amplifier assy connector and body ground.

OK:

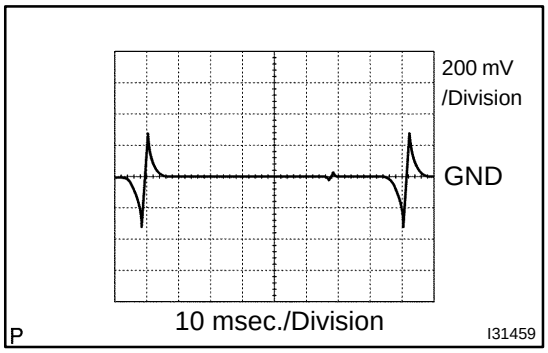
A waveform should be output as shown in the illustration.



waveform 2:
Measure the waveform between terminal LOCK of the A/C amplifier assy connector and body ground.

OK:

A waveform should be output as shown in the illustration.



waveform 3:
Measure the waveform between terminal LCKI of the ECM connector and body ground.

OK:

A waveform should be output as shown in the illustration.