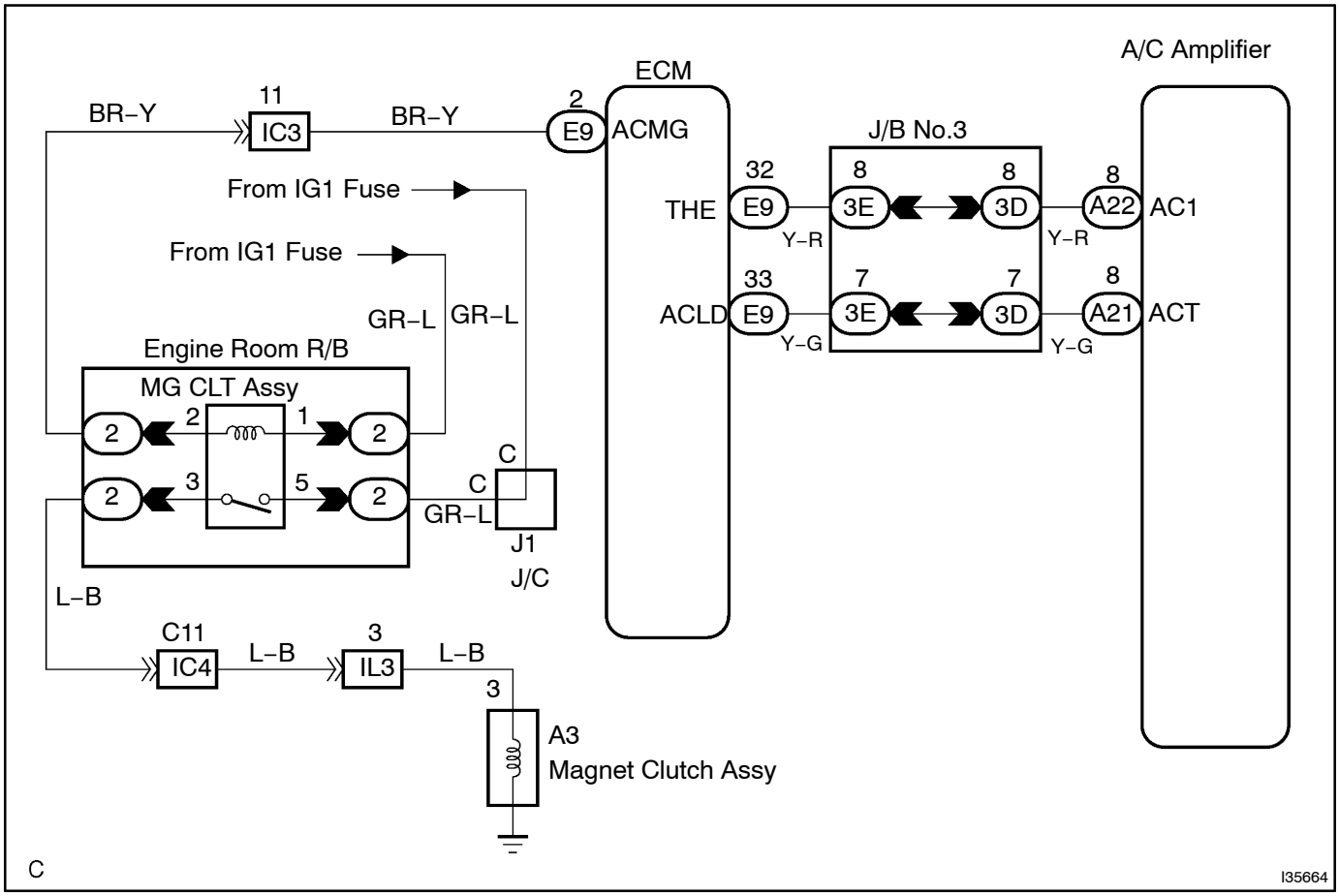
# COMPRESSOR CIRCUIT

## CIRCUIT DESCRIPTION

This is a driving circuit of the A/C magnetic clutch and controlled by the ECU terminal as shown below.

- AC1 of the A/C amplifier outputs the A/C switch condition ”ON” or ”OFF”.
- ACT of the A/C amplifier outputs the request signal to drive the magnetic clutch and send it to ECM.
- ACMG of ECM operates the cooler relay assy and drive the magnetic clutch.

## WIRING DIAGRAM



# INSPECTION PROCEDURE

## 1 READ VALUE OF HAND–HELD TESTER

(a) Connect the hand–held tester to DLC3.
(b) Turn the ignition switch to ON and push the hand–held tester main SW ON.
(c) Check the A/C magnet clutch input signal using DATA LIST.

**ECM:**

| Description | Tester display | Check condition |
|---|---|---|
| Magnet clutch input signal | A/C SIG | ON – OFF |

**NG** → **Go to step 7**

**OK**

## 2 READ VALUE OF HAND–HELD TESTER

(a) Connect the hand–held tester to DLC3.
(b) Turn the ignition switch to ON and push the hand–held tester main SW ON.
(c) Check the A/C magnet clutch using DATA LIST.

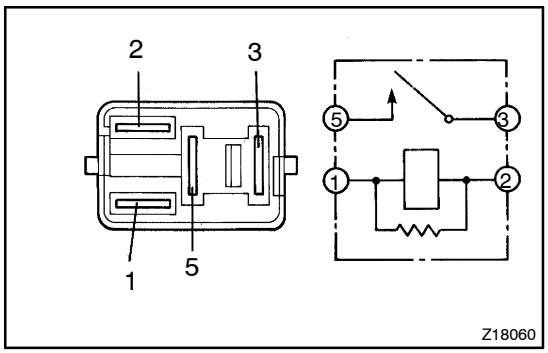
**ECM:**

| Description | Tester display | Check condition |
|---|---|---|
| Magnet clutch output signal | A/C MAG CLUTCH | ON – OFF |

**NG** → **Go to step 9**

**OK**

## 3 INSPECT COOLER RELAY ASSY




(a) Remove the cooler relay assy from the engine room R/B.
(b) Check continuity between each pair of the terminals as shown in the chart.

**Standard:**

| Tester connection | Specified condition |
|---|---|
| 1 – 2 | Continuity |
| 3 – 5 | No continuity |

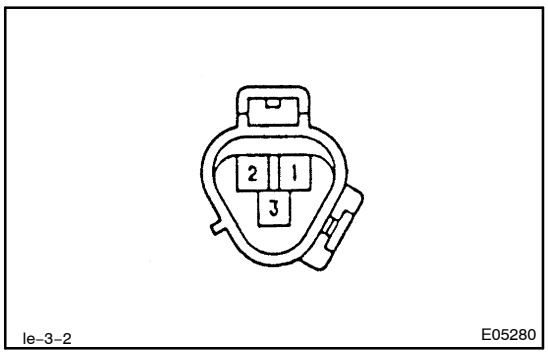
(c) Apply battery voltage between the terminal 1 and terminal 2.
(d) Check that continuity exists between the terminal 3 and terminal 5.

**Standard: Continuity exists.**

**NG** → **REPLACE COOLER RELAY ASSY**

**OK**

| 4 | INSPECT MAGNET CLUTCH ASSY |
|---|---|

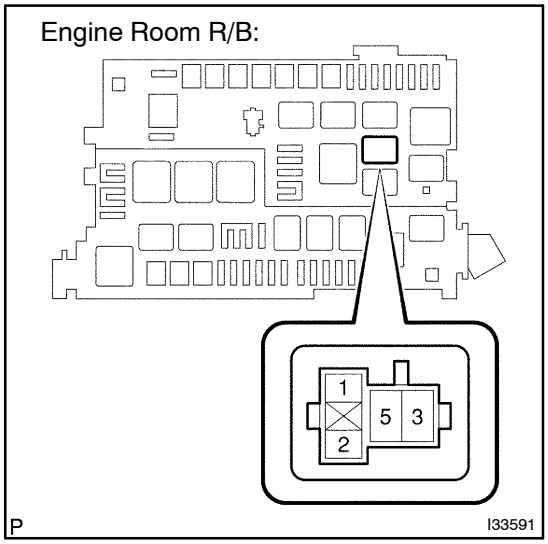



(a) Disconnect the connector from the compressor.
(b) Connect the battery positive (+) lead to the terminal 3 and the battery negative (–) lead to the body ground, then check that the magnetic clutch is engaged.
**Standard: Magnetic clutch is engaged.**

| NG | REPLACE MAGNET CLUTCH ASSY |
|---|---|

**OK**

| 5 | CHECK HARNESS AND CONNECTOR(BATTERY – COOLER RELAY ASSY) |
|---|---|

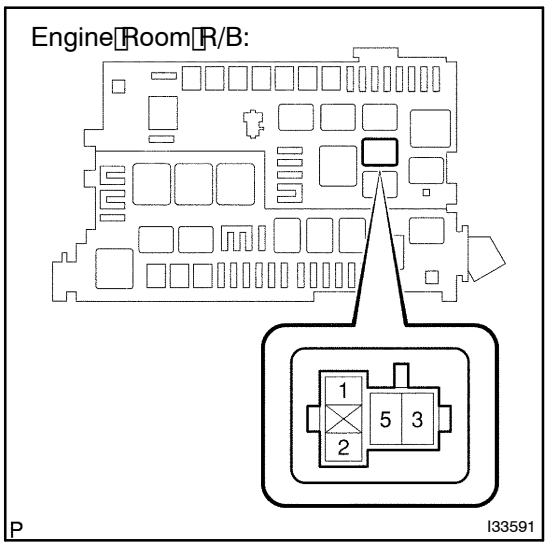



(a) Remove the cooler relay assy from the engine room R/B.
(b) Turn the ignition switch to ON.
(c) Measure the voltage between the terminal 1 and terminal 5 of the engine room R/B and body ground.
**Standard: 10 to 14 V**

| NG | REPAIR OR REPLACE HARNESS OR CONNECTOR |
|---|---|

**OK**

| 6 | CHECK HARNESS AND CONNECTOR (COOLER RELAY ASSY – BODY GROUND) |
|---|---|



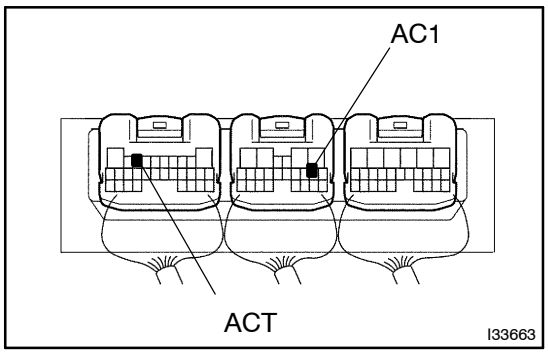

(a) Remove the cooler relay assy from the engine room R/B.
(b) Measure resistance between the terminal 3 of the engine room R/B and body ground.
**Standard: Below 1.0 Ω (Continuity)**

| NG | REPAIR OR REPLACE HARNESS OR CONNECTOR |
|---|---|

**OK**

**PROCEED TO NEXT CIRCUIT INSPECTION SHOWN ON PROBLEM SYMPTOMS TABLE (See page 05–349)**

| 7 | INSPECT AIR CONDITIONING AMPLIFIER (ACT, AC1) |
|---|---|




(a) Remove the A/C amplifier with the connectors being connected.
(b) Start the engine and push the AUTO switch.
(c) Measure the voltage between the terminal AC1 and terminal ACT of the A/C amplifier and body ground when the magnetic clutch is ON and OFF by operating the A/C switch.
**Standard:**

| Switch operation | Tester connection | Specified condition |
|---|---|---|
| ON | AC1 – Body ground | 1.3 to 2.6 V |
| OFF | AC1 – Body ground | 3.7 to 4.5 V |
| ON | ACT – Body ground | 10 to 14 V |
| OFF | ACT – Body ground | Below 1 V |

| NG | REPLACE AIR CONDITIONING AMPLIFIER |
|---|---|

**OK**

| 8 | CHECK HARNESS AND CONNECTOR(ECM – A/C AMPLIFIER) |
|---|---|

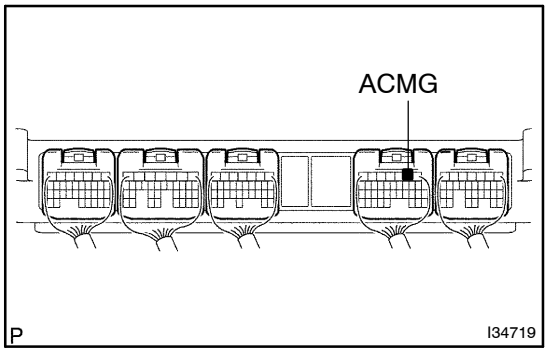
(a) Check for open or short in the harness and the connector between the ECM and the A/C amplifier. (See page 01–35).

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE ECM

| 9 | CHECK HARNESS AND CONNECTOR(ECM – BODY GROUND) |
|---|---|




(a) Remove the ECM.
(b) Turn the ignition switch to ON.
(c) Measure the voltage between the terminal ACMG of ECM and body ground.
**Standard: 10 to 14 V**

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE ECM