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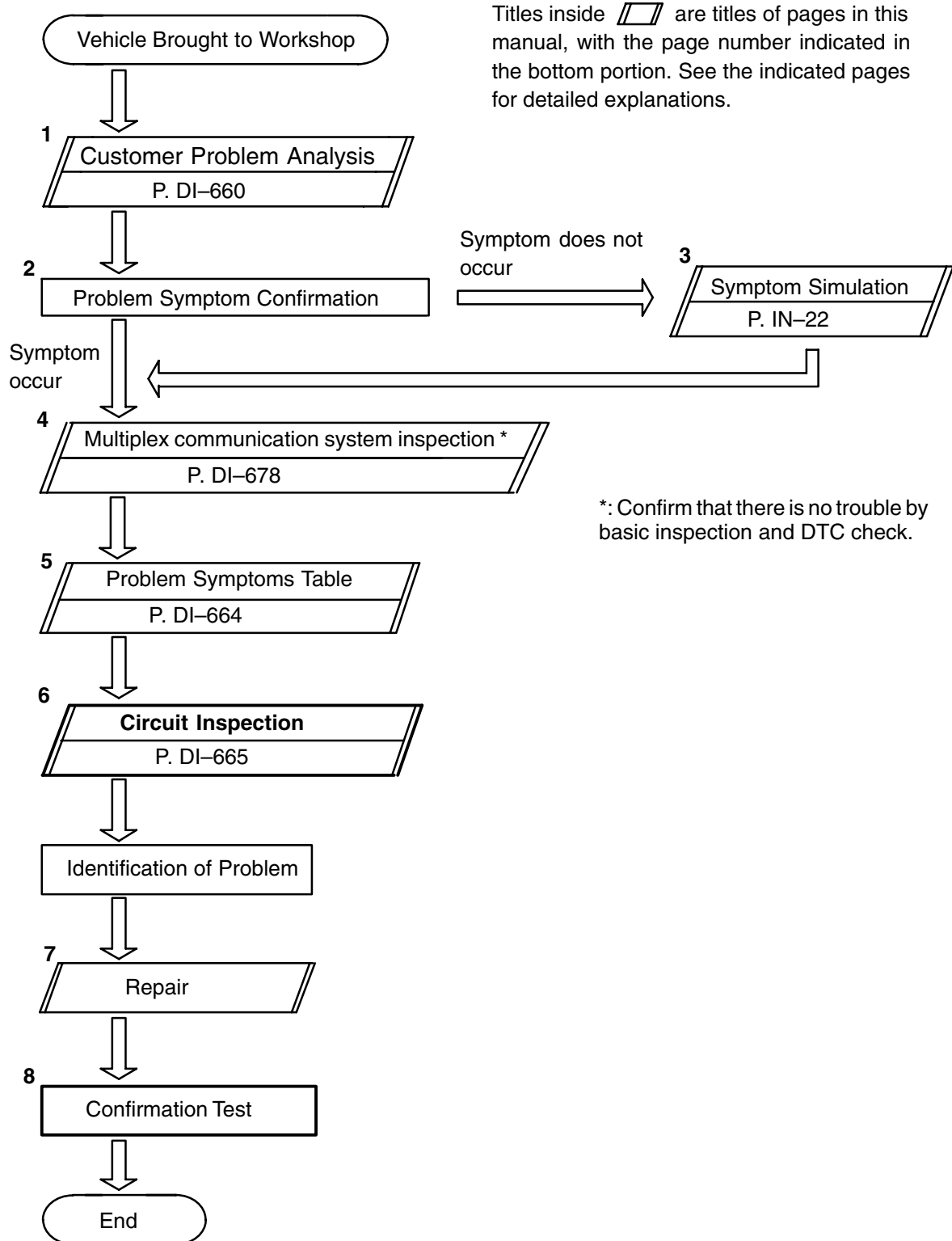
REAR RIGHT DOOR CONTROL SYSTEM

HOW TO PROCEED WITH TROUBLESHOOTING

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HINT:

This ECU is connected to the multiplex communication system. Therefore, be sure to check that there is no troubles in the multiplex communication system before performing the troubleshooting.



Step 6, 8 : Diagnostic steps permitting the use of the hand-held tester.

CUSTOMER PROBLEM ANALYSIS CHECK

REAR RIGHT DOOR CONTROL SYSTEM Check Sheet

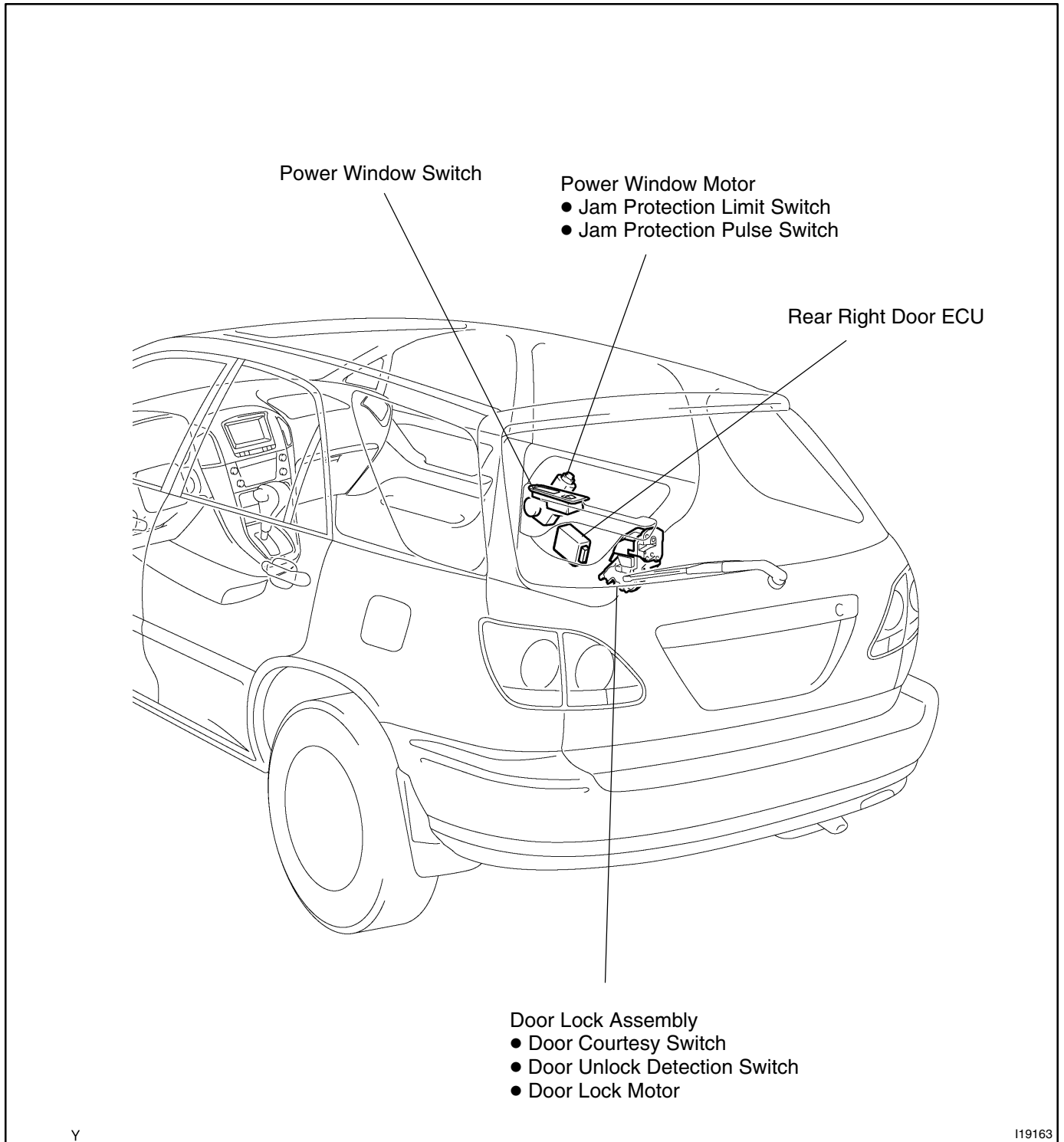
Inspector's name: _____

| | | | |
|-------------------------|-----|-------------------|------------|
| Customer's Name | | Registration No. | |
| | | Registration Year | |
| | | Frame No. | |
| Date Vehicle Brought in | / / | Odometer Reading | km Mile |

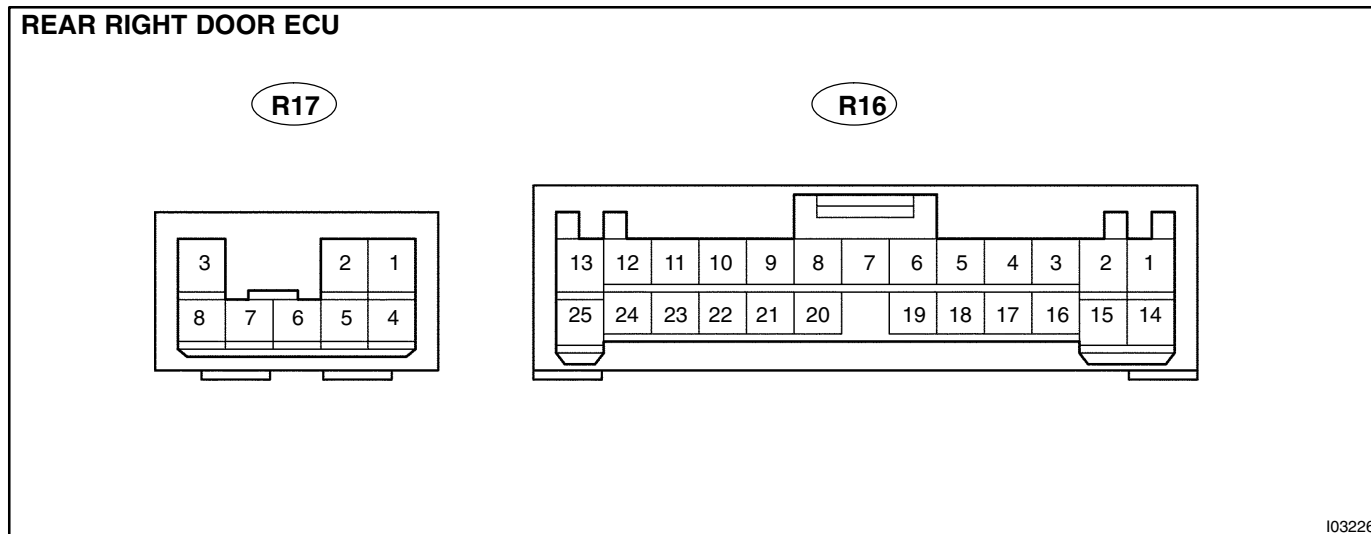
| | |
|--|---|
| Date Problem First Occurred | / / |
| Frequency Problem Occurs | <input type="checkbox"/> Constant <input type="checkbox"/> Sometimes (times per day, month) <input type="checkbox"/> Once only |
| Weather Conditions When Problem Occurred | Weather <input type="checkbox"/> Fine <input type="checkbox"/> Cloudy <input type="checkbox"/> Rainy <input type="checkbox"/> Snowy <input type="checkbox"/> Various/ Others |
| | Outdoor Temperature <input type="checkbox"/> Hot <input type="checkbox"/> Warm <input type="checkbox"/> Cool <input type="checkbox"/> Cold (Approx. °F (°C)) |

| | |
|--------------------|---|
| Malfunction System | <input type="checkbox"/> Power Window Control System |
| | <input type="checkbox"/> Power Door Lock Control System |
| | <input type="checkbox"/> Theft Deterrent System |
| | <input type="checkbox"/> Jam Protection System |
| | <input type="checkbox"/> Others |

PARTS LOCATION



TERMINALS OF ECU



I03226

| Symbols (Terminals No.) | Wiring Color | Condition | STD Voltage (V) |
|---------------------------------|--------------|--|-----------------|
| A- ↔ GND (R16-1 ↔ R16-25) | L-B ↔ W-B | Door lock switch OFF or LOCK | Below 1.0 |
| | | Door lock switch UNLOCK | 10 - 14 |
| CTY ↔ GND (R16-8 ↔ R16-25) | R-Y ↔ W-B | Rear RH door closed | 10 - 14 |
| | | Rear RH door open | Below 1.0 |
| SIG ↔ GND (R16-9 ↔ R16-25) | R-L ↔ W-B | Constant | 10 - 14 |
| PCTO ↔ GND (R16-10 ↔ R16-25) | L-O ↔ W-B | Window lock switch UNLOCK* | 10 - 14 |
| | | Window lock switch LOCK* | Below 1.0 |
| PCTI ↔ GND (R16-11 ↔ R16-25) | L-R ↔ W-B | Window lock switch UNLOCK* | 10 - 14 |
| | | Window lock switch LOCK* | Below 1.0 |
| A+ ↔ GND (R16-13 ↔ R16-25) | L-R ↔ W-B | Door lock switch OFF or UNLOCK | Below 1.0 |
| | | Door lock switch LOCK | 10 - 14 |
| BDR ↔ GND (R16-14 ↔ R16-25) | L-W ↔ W-B | Constant | 10 - 14 |
| CPUB ↔ GND (R16-15 ↔ R16-25) | G-B ↔ W-B | Constant | 10 - 14 |
| LSW ↔ GND (R16-17 ↔ R16-25) | GR ↔ W-B | Rear LH door is locked | 10 - 14 |
| | | Rear LH door is unlocked | Below 1.0 |
| AUTO ↔ GND (R16-22 ↔ R16-25) | Y ↔ W-B | Ignition switch ON and power window switch OFF,UP or DOWN | Below 1.0 |
| | | Ignition switch ON and power window switch AUTO,UP or DOWN | 10 - 14 |
| MDN ↔ GND (R16-23 ↔ R16-25) | R-W ↔ W-B | Ignition switch ON and powr window switch OFF or UP | Below 1.0 |
| | | Ignition switch ON and powr window switch DOWN | 10 - 14 |
| MUP ↔ GND (R16-24 ↔ R16-25) | Y-G ↔ W-B | Ignition switch ON and power window switch OFF or DOWN | Below 1.0 |
| | | Ignition switch ON and power window switch UP | 10 - 14 |
| DN ↔ GND (R17-1 ↔ R16-25) | G ↔ W-B | Ignition switch ON and power window switch OFF or UP | Below 1.0 |
| | | Ignition switch ON and power window switch DOWN | 10 - 14 |
| LMT ↔ GND (R17-2 ↔ R16-25) | Y ↔ W-B | Window fully - close position | 10 - 14 |
| | | Window except fully - close position | Below 1.0 |

DIAGNOSTICS - REAR RIGHT DOOR CONTROL SYSTEM

| | | | |
|-------------------------------|---------|--|-----------------|
| UP ↔ GND (R17-3 ↔ R16-25) | R ↔ W-B | Ignition switch ON and power window switch OFF or DOWN | Below 1.0 |
| | | Ignition switch ON and power window switch UP | 10 - 14 |
| PLS ↔ GND (R17-7 ↔ R16-25) | L ↔ W-B | During power window is operate | Pulsegeneration |
| | | Power window is not operate with switch ON | Below 1.0 |
| | | Power window is not operate with switch OFF | 10 - 14 |

*: Power window master switch

PROBLEM SYMPTOMS TABLE**POWER WINDOW CONTROL SYSTEM:**

| Symptom | Suspect Area | See page |
|--|--|----------------------|
| Power window does not operate. | 3. Power window switch circuit 4. Power window motor circuit 5. Rear right door ECU | DI-674 BE-84 – |
| Auto up (or down) function does not operate. | 1. Power window switch circuit 2. Rear right door ECU | DI-674 – |
| Jam protection function and auto up (or down) function does not operate. | 1. Jam protection limit switch circuit 2. Jam protection pulse switch circuit 3. Rear right door ECU | BE-84 BE-84 – |

OTHERS:

| Symptom | Suspect Area | See page |
|--------------------------------------|---|-------------|
| Parts of the door does not function. | 1. Power source circuit 2. Rear right door ECU | DI-665 – |

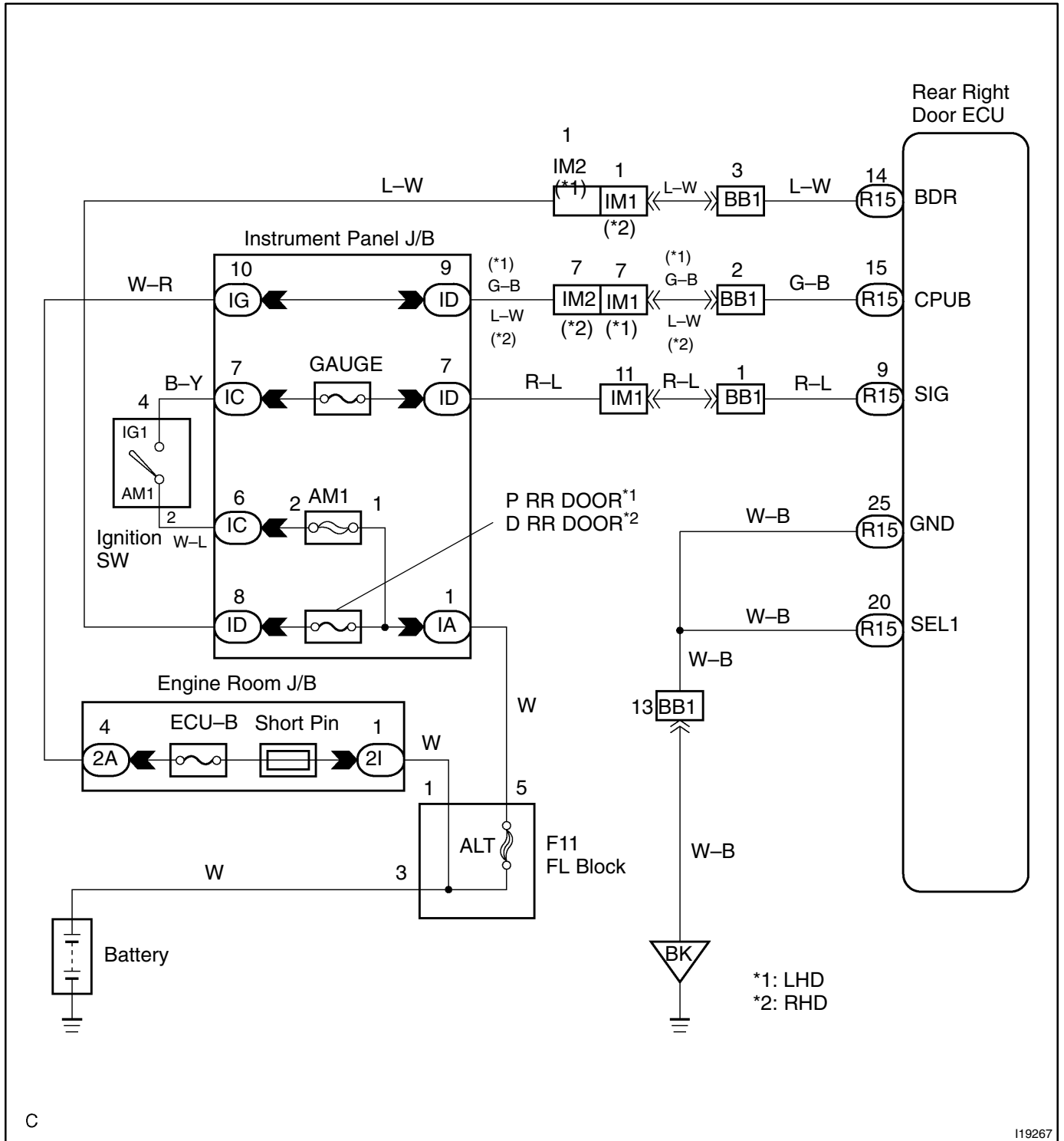
CIRCUIT INSPECTION

Power source circuit

CIRCUIT DESCRIPTION

This circuit provides power to operate the rear right door ECU.

WIRING DIAGRAM



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INSPECTION PROCEDURE

| | |
|----------|---|
| 1 | Check ECU-B, GAUGE and P RR DOOR fuse. |
|----------|---|

CHECK:

Check continuity of ECU-B,GAUGE and P RR DOOR fuse.

OK:

Continuity



| | |
|----------|--|
| 2 | Check voltage between terminals BDR,CPUB, SIG and GND of rear right door ECU connector. |
|----------|--|

PREPARATION:

Turn ignition switch ON.

CHECK:

Measure voltage between terminals SIG, and GND.

OK:

Voltage: 10 – 14V

PREPARATION:

(a) Turn ignition switch OFF.

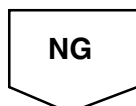
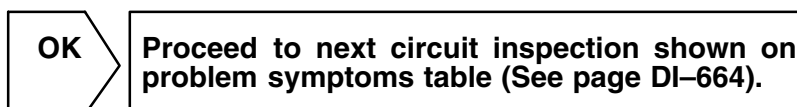
(b) Disconnect the rear right door ECU connector.

CHECK:

Measure voltage between terminals BDR, CPUB and GND.

OK:

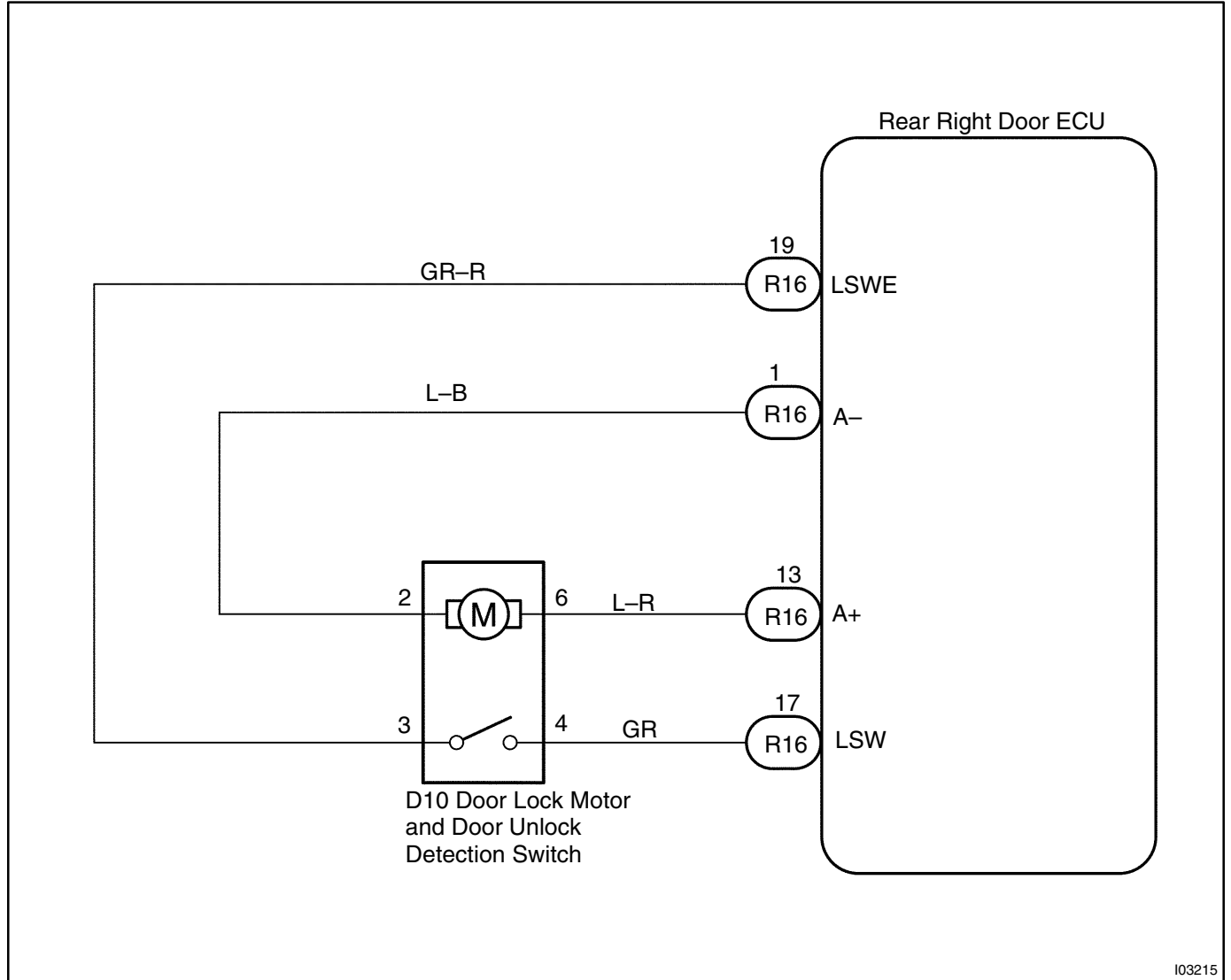
Voltage: 10 – 14V



3**Check wireharness and connector between ECU and body ground.****NG****Repair or replace wireharness or connector.****OK****Check and repair wireharness and connector
between ECU and battery.**

Door lock motor circuit

WIRING DIAGRAM



INSPECTION PROCEDURE

1 Check door lock motor (See page BE-97).

NG

Replace the door lock motor.

OK

2 Check wireharness and connector between door lock motor and rear right door ECU.

NG

Repair or replace wireharness or connector.

OK

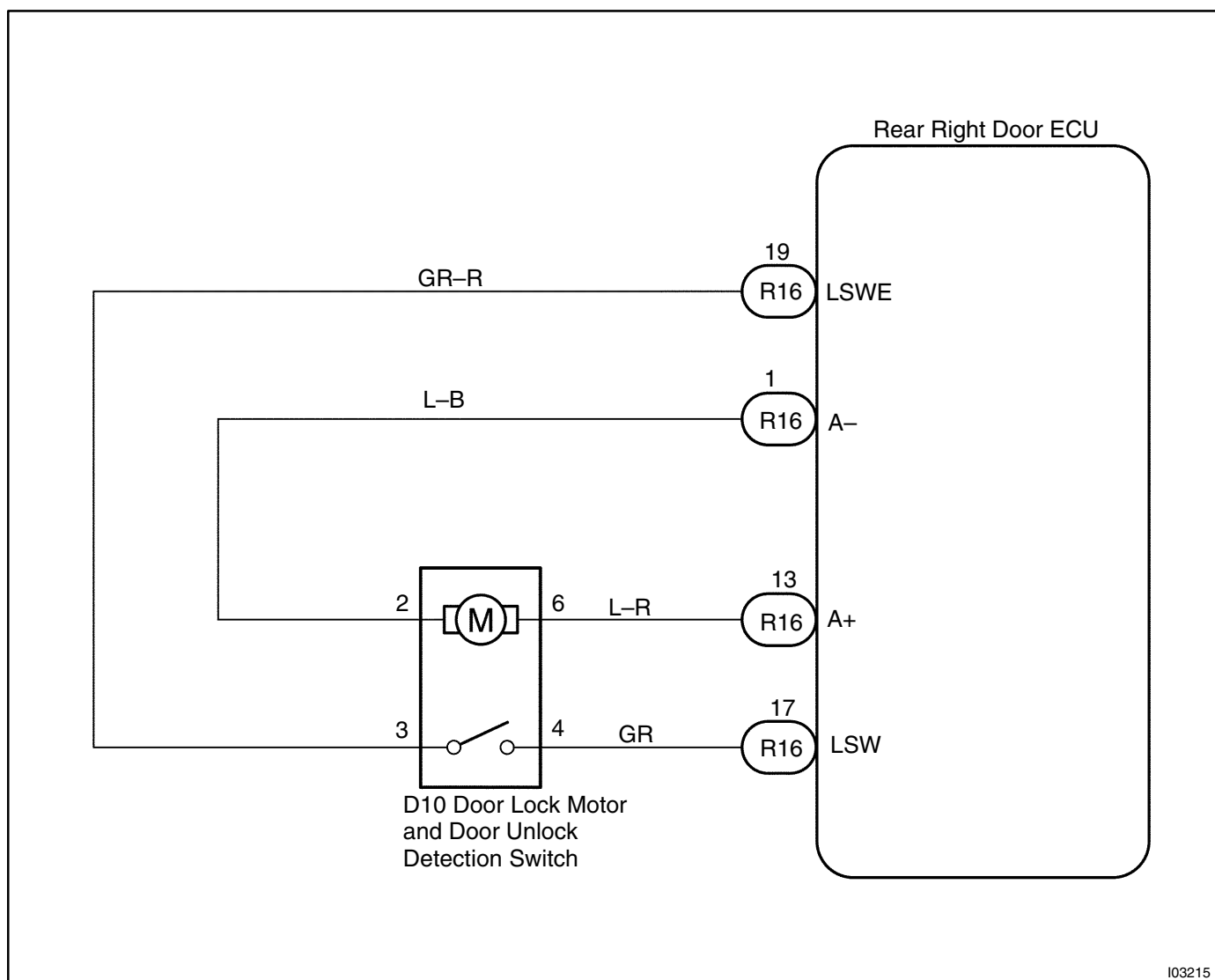
Proceed to next circuit inspection shown on
problem symptoms table
(See page DI-570).

Door unlock detectin switch

CIRCUIT DESCRIPTION

The door unlock detection switch is built in the door lock motor assembly. This switch is ON when the door lock knob is in the unlock position and OFF when the lock knob is in the lock position. The ECU detects the door lock knob conditions is this circuit. It is used as one of the operating conditions for the key confinement prevention function.

WIRING DIAGRAM



INSPECTION PROCEDURE

1 Check door unlock detection switch (See page BE-97).

NG

Replace the door lock motor.

OK

2 Check wireharness and connector between door unlock detection switch and rear right door ECU.

NG

Repair or replace wireharness or connector.

OK

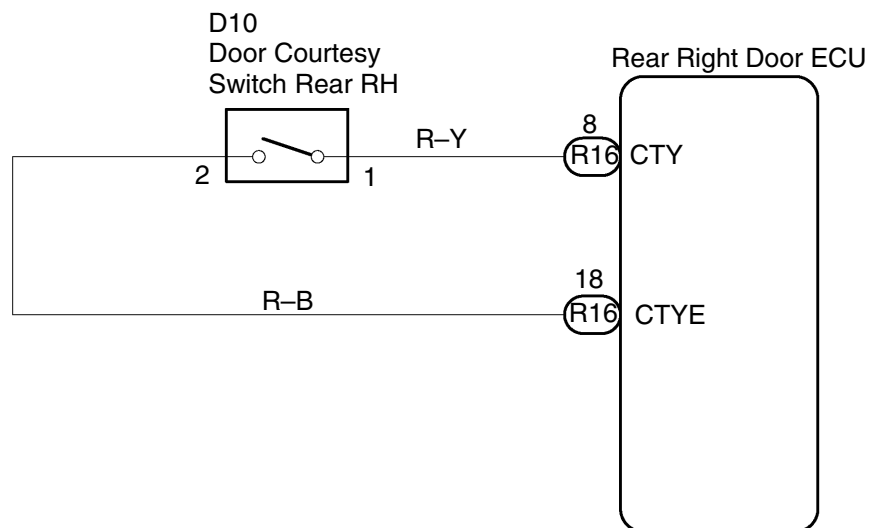
Proceed to next circuit inspection shown on problem symptoms table (See page DI-570).

Door courtesy switch circuit

CIRCUIT DESCRIPTION

The door courtesy switch turns on when the door is opened and turns off when door is closed.

WIRING DIAGRAM

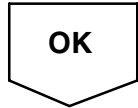


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INSPECTION PROCEDURE

| | |
|----------|---|
| 1 | Check door courtesy switch (See page BE-48). |
|----------|---|

| | |
|-----------|-------------------------------------|
| NG | Replace the courtesy switch. |
|-----------|-------------------------------------|



| | |
|----------|---|
| 2 | Check wireharness and connector between courtesy light and rear right door ECU, courtesy switch and rear right door ECU. |
|----------|---|

| | |
|-----------|--|
| NG | Repair or replace wireharness or connector. |
|-----------|--|



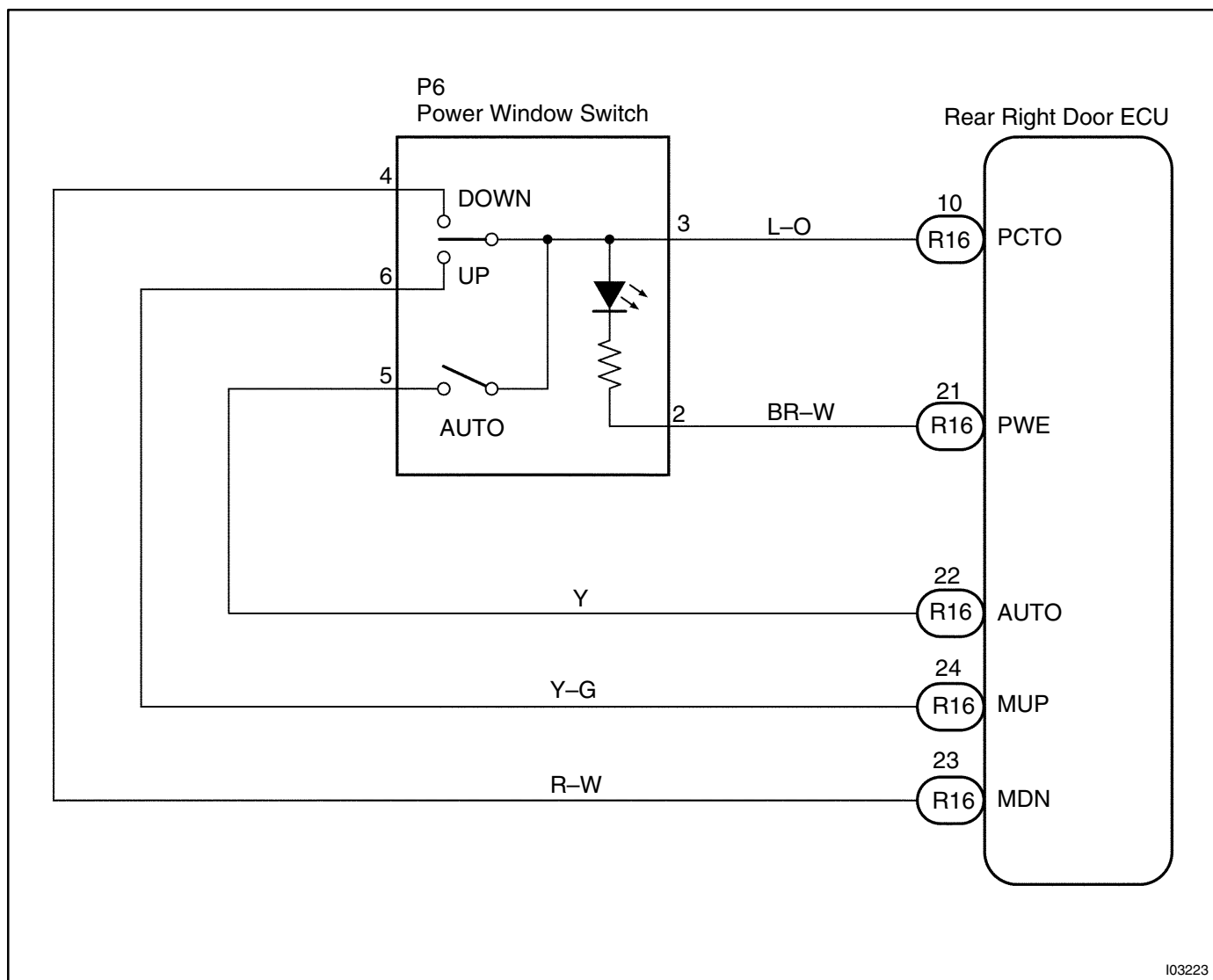
Proceed to next circuit inspection shown on problem symptoms table (See page DI-570).

Power window switch circuit

CIRCUIT DESCRIPTION

Power window switch circuit can be checked using DTC check (Refer to DI-708).

WIRING DIAGRAM



INSPECTION PROCEDURE

| | |
|----------|---|
| 1 | Check the power window switch circuit using DTC check (See page DI-708). |
|----------|---|

| | |
|-----------|--|
| OK | Proceed to next circuit inspection shown on problem symptoms table (See page DI-664). |
|-----------|--|

| |
|-----------|
| OK |
|-----------|

| | |
|----------|--|
| 2 | Check the power window switch (See page BE-84). |
|----------|--|

| | |
|-----------|---|
| NG | Replace the power window switch. |
|-----------|---|

| |
|-----------|
| OK |
|-----------|

| | |
|----------|---|
| 3 | Check wireharness and connector between power window switch and rear right door ECU. |
|----------|---|

| | |
|-----------|--|
| NG | Repair or replace wireharness or connector. |
|-----------|--|

| |
|-----------|
| OK |
|-----------|

| | |
|----------|--|
| 4 | Check wireharness and connector between power window switch and power window master switch. |
|----------|--|

| | |
|-----------|--|
| NG | Repair or replace wireharness or connector. |
|-----------|--|

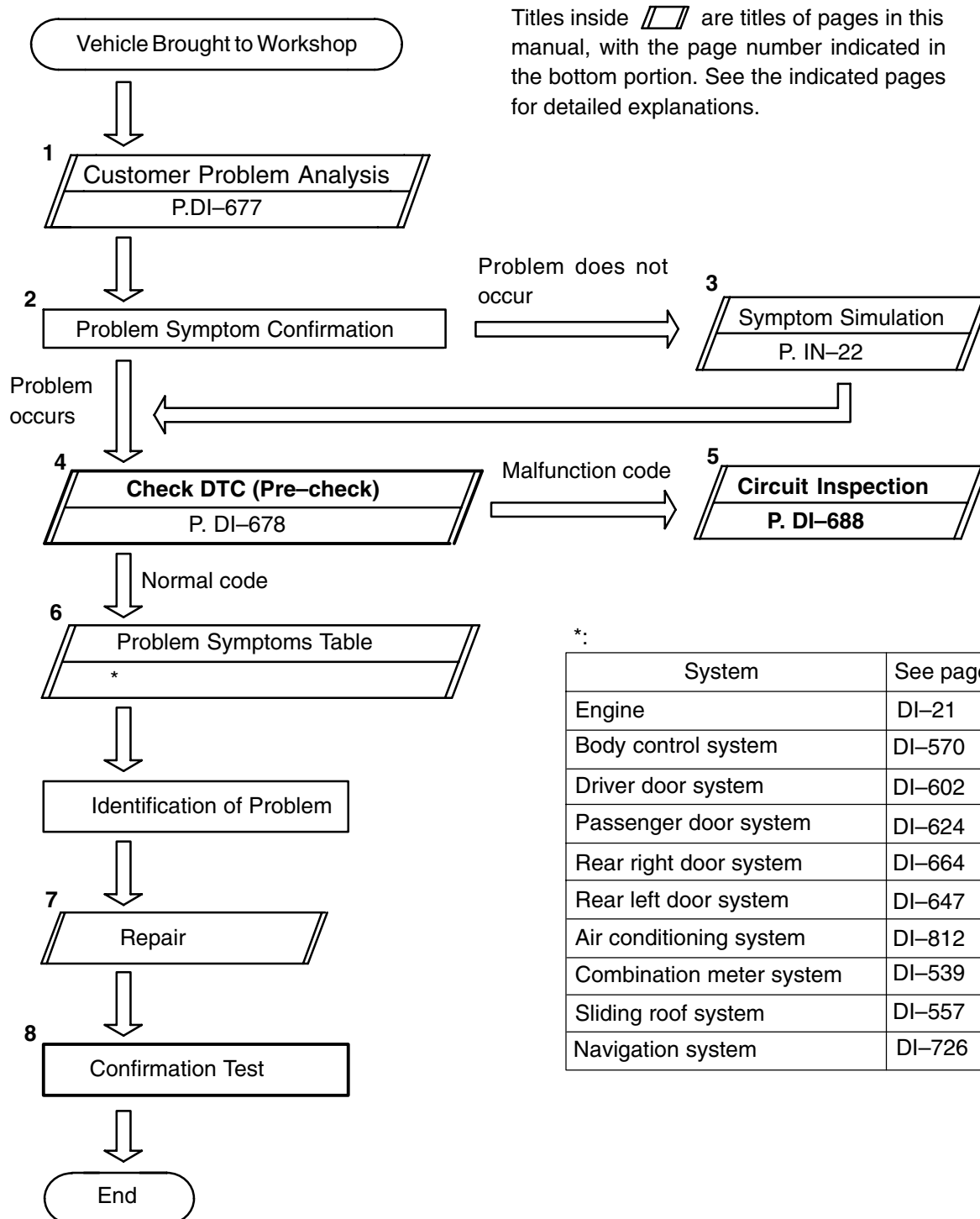
| |
|-----------|
| OK |
|-----------|

| |
|--|
| Proceed to next circuit inspection shown on problem symptoms table (See page DI-664). |
|--|

MULTIPLEX COMMUNICATION SYSTEM

HOW TO PROCEED WITH TROUBLESHOOTING

Perform troubleshooting in accordance with the procedure on the following page.



*,

| System | See page |
|--------------------------|----------|
| Engine | DI-21 |
| Body control system | DI-570 |
| Driver door system | DI-602 |
| Passenger door system | DI-624 |
| Rear right door system | DI-664 |
| Rear left door system | DI-647 |
| Air conditioning system | DI-812 |
| Combination meter system | DI-539 |
| Sliding roof system | DI-557 |
| Navigation system | DI-726 |

Step 4, 8 : Diagnostic steps permitting the use of the hand-held tester.

CUSTOMER PROBLEM ANALYSIS CHECK

MULTIPLEX COMMUNICATION SYSTEM Check Sheet

Inspector's name: _____

| | | | |
|--------------------------------|-----|--------------------------|--------------------|
| Customer's Name | | Registration No. | |
| | | Registration Year | |
| | | Frame No. | |
| Date Vehicle Brought in | / / | Odometer Reading | km Mile |

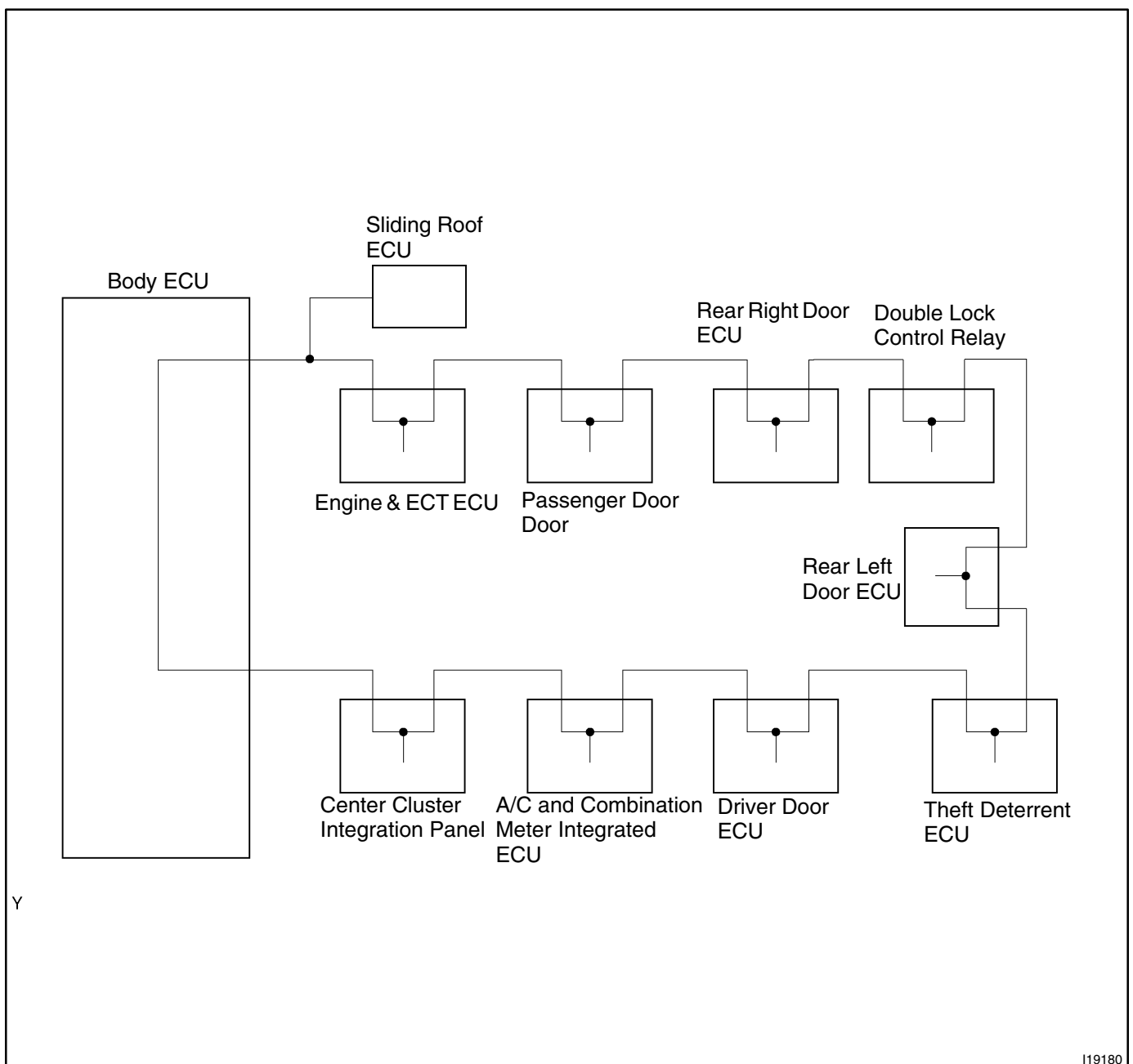
| | | |
|---|--|---|
| Date Problem First Occurred | / / | |
| Frequency Problem Occurs | <input type="checkbox"/> Constant <input type="checkbox"/> Sometimes (times per day, month) <input type="checkbox"/> Once only | |
| Weather Conditions When Problem Occurred | Weather | <input type="checkbox"/> Fine <input type="checkbox"/> Cloudy <input type="checkbox"/> Rainy <input type="checkbox"/> Snowy <input type="checkbox"/> Various/ Others |
| | Outdoor Temperature | <input type="checkbox"/> Hot <input type="checkbox"/> Warm <input type="checkbox"/> Cool <input type="checkbox"/> Cold (Approx. °F (°C)) |

| | |
|---------------------------|---|
| Malfunction System | <input type="checkbox"/> Engine |
| | <input type="checkbox"/> Body Control System |
| | <input type="checkbox"/> Driver Door System |
| | <input type="checkbox"/> Passenger Door System |
| | <input type="checkbox"/> Rear Right Door System |
| | <input type="checkbox"/> Rear Left Door System |
| | <input type="checkbox"/> Air Conditioning System |
| | <input type="checkbox"/> Combination Meter System |
| | <input type="checkbox"/> Sliding Roof System |

PRE-CHECK

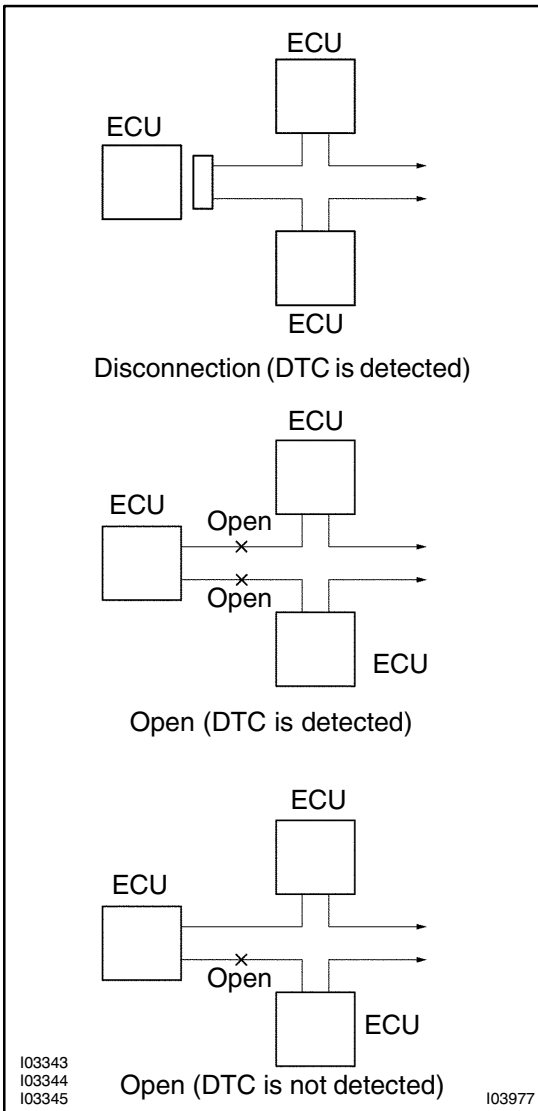
1. DIAGNOSIS SYSTEM

- (a) As shown in the following illustration, each ECU of this vehicle is connected by communication bus and it transmits each signal by communication. This communication bus is self-diagnosed by Body No.1 ECU and it memorizes DTC when it detects communication stop to ECU or communication bus +B short or GND short. There is a possibility that Body No.1 ECU cannot self-diagnose accurately unless it doesn't work normal. So, please note that the troubleshooting of Body Electrical System should be done after confirming if Body No.1 ECU and Open door indicator works normal by 2 "BASIC INSPECTION" described later.

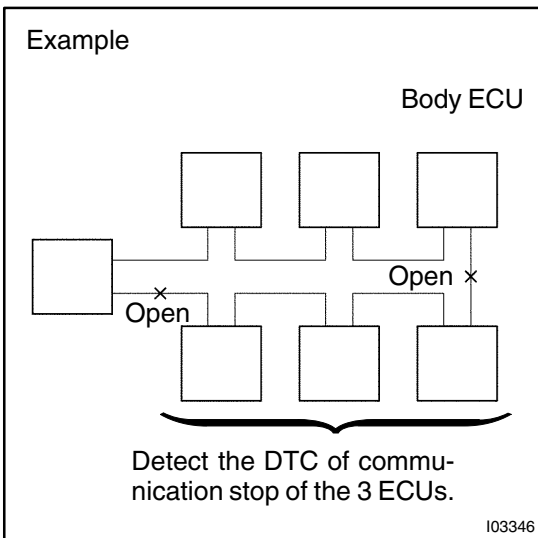


Y

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(b) If DTC of ECU communication stop is output, there is a possibility of connector disconnection or 2 communication buses open. It will not become abnormal with only 1 communication bus open.



(c) If 2 communication buses are open at the position as shown in the illustration, DTC of ECU communication stop between those 2 buses is output.

2. BASIC INSPECTION**INSPECT BODY ECU**

| | |
|----------|----------------------------------|
| 1 | Check Body ECU operation. |
|----------|----------------------------------|

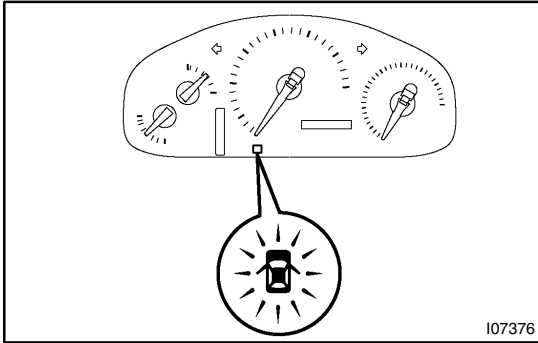
HINT:

With this inspection Body ECU CPU can be diagnosed if it works normal or not.

CHECK:

Check if the luggage compartment door opener works normal.

OK**Go to next step "OPEN DOOR INDICATOR LIGHT INSPECTION".****NG****Repair or replace malfunction part.**

INSPECT OPEN DOOR INDICATOR LIGHT.**1 Check open door indicator light.****CHECK:**

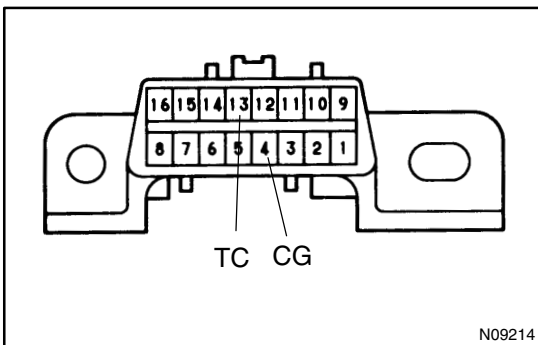
Check if open door Indicator light is turned on when either door open.

HINT:

If open door Indicator light is not turned on, DTC will not be output.

NG

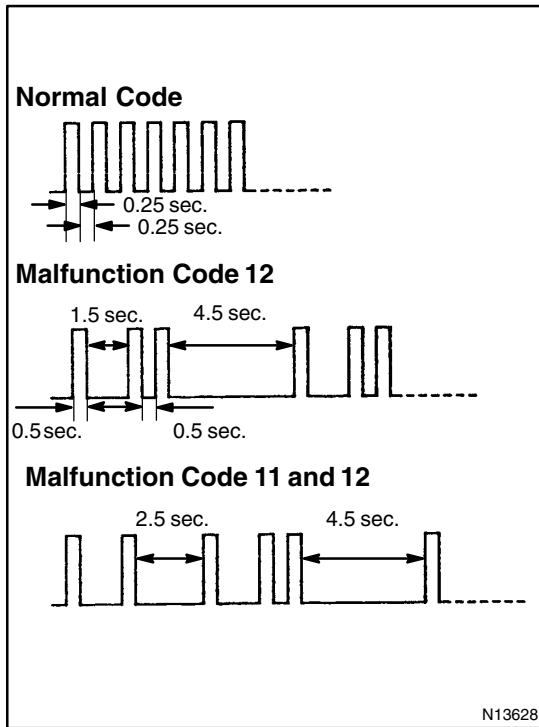
Repair the open door indicator light (See page BE-68).

OK**"Check DTC"****3. DTC CHECK (Using diagnosis check wire)**

- (a) Using SST, connect terminals 13 (TC) and 4 (CG) of DLC3.

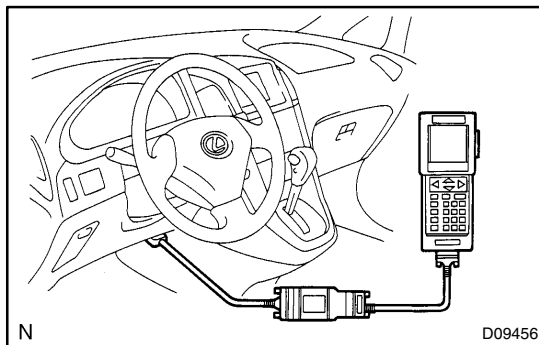
SST 09843-18040

- (b) Turn the ignition switch ON.
 (c) Read the DTC on the open door indicator light.



As an example, the blinking patterns for codes; normal, 12, and 11 and 12 are shown in the illustration.

- (d) Check for the problem using the DTC table on the next page.
- (e) After completing the check, turn the ignition switch off, and disconnect terminals 13 (TC) and 4 (CG).



4. DTC CHECK (Using hand-held tester)

- (a) Prepare the hand-held tester.
- (b) Connect the hand-held tester to DLC3.
- (c) Turn the ignition switch ON and switch the hand-held tester main switch ON.
- (d) Use the hand-held tester to check the DTCs, note them down. (For opening instructions, see the hand-held tester's instruction book.)
- (e) See page DI-683 to confirm the details of the DTCs.

5. DTC CLEARANCE

DTC will be cleared when the trouble output to DTC is recovered normally.

DIAGNOSTIC TROUBLE CODE CHART

If a malfunction code is displayed during the DTC check, check the circuit listed for that code in the table below (Proceed to the page given for that circuit).

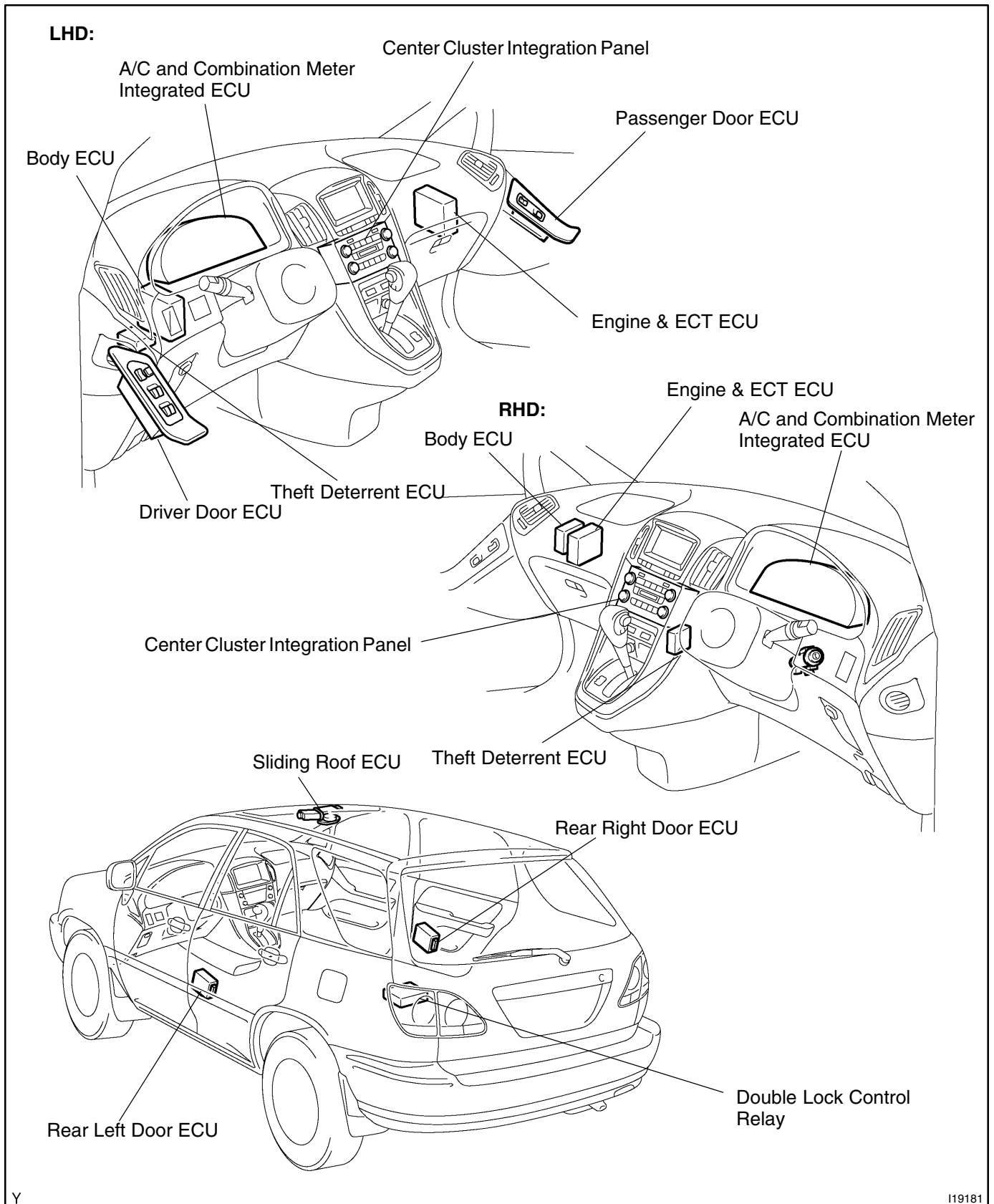
| DTC No. (See Page) | Detection Item | Trouble Area |
|----------------------------------|---|---|
| B1211/11 (DI-688) | Driver door ECU communication stop | <ul style="list-style-type: none"> • Wireharness • Driver door ECU |
| B1212/12 (DI-691) | Front passenger door ECU communication stop | <ul style="list-style-type: none"> • Wireharness • Passenger door ECU |
| B1214/14 B1215/15 (DI-693) | System communication bus malfunction (+B short) System communication bus malfunction (GND short) | <ul style="list-style-type: none"> • Wireharness • ECU (Door system bus) |
| B1216/16 (DI-704) | Rear right door ECU communication stop | <ul style="list-style-type: none"> • Wireharness • Rear right door ECU |
| B1217/17 (DI-706) | Rear left door ECU communication stop | <ul style="list-style-type: none"> • Wireharness • Rear left door ECU |
| B1221/21 (DI-708) | Power window switch circuit on driver door | <ul style="list-style-type: none"> • Power window master switch • Wireharness |
| B1222/22 (DI-708) | Door lock switch circuit on driver door | <ul style="list-style-type: none"> • Door lock control switch • Door key lock and unlock switch • Wireharness |
| B1223/23 (DI-708) | Power window switch circuit on passenger door | <ul style="list-style-type: none"> • Power window switch • Wireharness |
| B1224/24 (DI-708) | Door lock switch circuit on passenger door | <ul style="list-style-type: none"> • Door lock control switch • Door key lock and unlock switch • Wireharness |
| B1225/25 (DI-708) | Power window switch circuit on rear right door | <ul style="list-style-type: none"> • Power window switch • Wireharness |
| B1226/26 (DI-708) | Power window switch circuit on rear left door | <ul style="list-style-type: none"> • Power window switch • Wireharness |
| B1231/31 (DI-710) | Jam protection limit switch circuit on driver door | <ul style="list-style-type: none"> • Power window motor • Wireharness |
| B1232/32 (DI-711) | Jam protection pulse switch circuit on driver door | |
| B1233/33 (DI-710) | Jam protection limit switch circuit on passenger door | <ul style="list-style-type: none"> • Power window motor • Wireharness |
| B1234/34 (DI-711) | Jam protection pulse switch circuit on passenger door | |
| B1235/35 (DI-710) | Jam protection limit switch circuit on rear right door | <ul style="list-style-type: none"> • Power window motor • Wireharness |
| B1236/36 (DI-711) | Jam protection pulse switch circuit on rear right door | |
| B1237/37 (DI-710) | Jam protection limit switch circuit on rear left door | <ul style="list-style-type: none"> • Power window motor • Wireharness |
| B1238/38 (DI-711) | Jam protection pulse switch circuit on rear left door | |
| B1241/41 (DI-708) | Body ECU switch circuit diagnosis | <ul style="list-style-type: none"> • Driver side buckle switch • Stop light switch • Light control switch • Wireharness |

| | | |
|----------------------|---|---|
| B1242/42 (DI-712) | Wireless door lock tuner circuit malfunction | <ul style="list-style-type: none"> • Wireharness • Wireless door lock tuner |
| B1244/44 (DI-714) | Light sensor circuit malfunction | <ul style="list-style-type: none"> • Light sensor • Wireharness |
| B1249/49 (DI-716) | Double lock ECU communication stop | <ul style="list-style-type: none"> • Wireharness • Double lock ECU |
| B1256/56 (DI-708) | Center cluster integration panel switch circuit diagnosis | <ul style="list-style-type: none"> • Wireharness • Center cluster integration panel |
| B1261/61 (DI-718) | ECM communication stop | <ul style="list-style-type: none"> • Wireharness • Engine & ECT ECU |
| B1269/69 (DI-720) | Theft deterrent ECU communication stop | <ul style="list-style-type: none"> • Wireharness • Theft deterrent ECU |
| B1273/73 (DI-722) | Sliding roof ECU communication stop (w/ Sliding roof vehicle only) | <ul style="list-style-type: none"> • Wireharness • Sliding roof ECU |
| B1275/75 | Accessory bus buffer communication stop | <ul style="list-style-type: none"> • Wireharness • Accessory |
| B1276/76 (DI-724) | A/C and combination meter integrated ECU communication stop | <ul style="list-style-type: none"> • Wireharness • A/C and combination meter integrated ECU |
| B1277/77 (DI-725) | Center cluster integration panel communication stop | <ul style="list-style-type: none"> • Wireharness • Center cluster integration panel |

HINT:

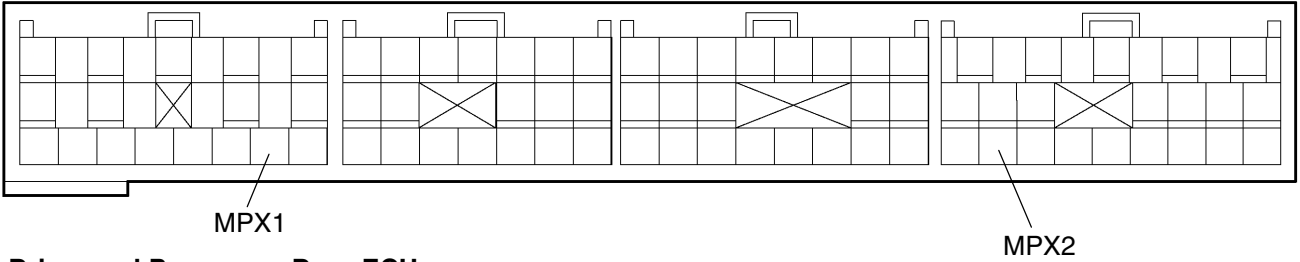
DTC 21~26 and 41 don't mean switch abnormal but notify how switch works.
 If DTC is not output when operating switch, it means failure of switch contact.
 If DTC is output when not opening switch, it means stick of switch.

PARTS LOCATION

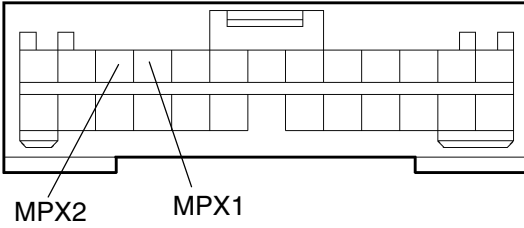


TERMINALS OF ECU

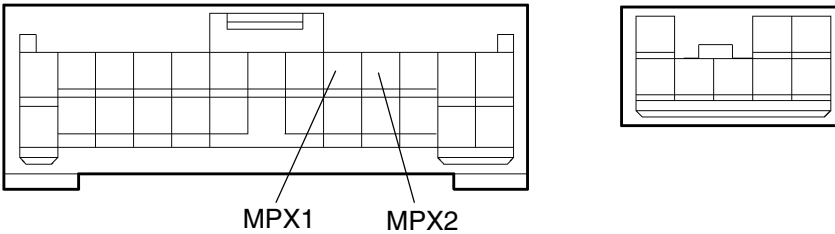
Body ECU



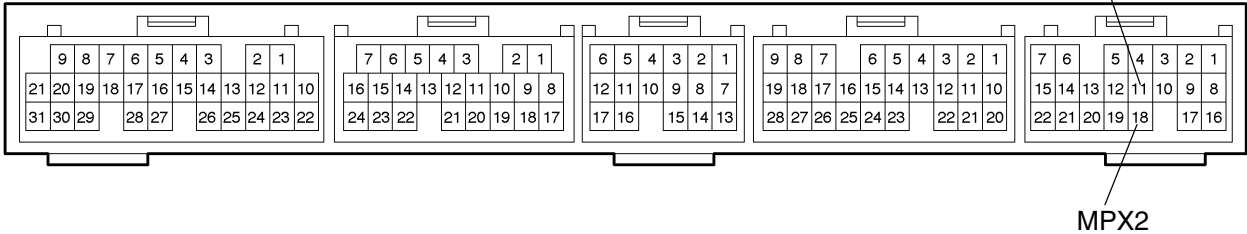
Driver and Passenger Door ECU



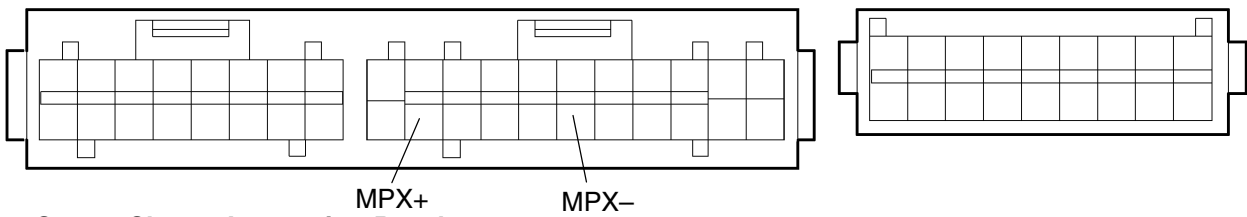
Rear Left and Right Door ECU



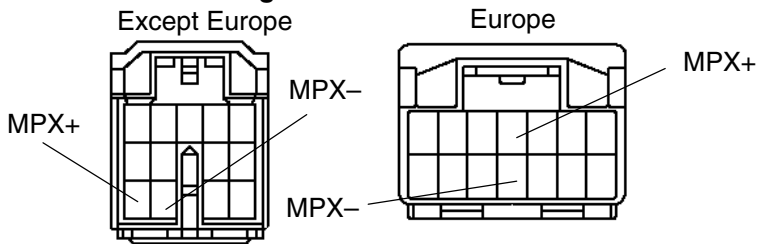
Engine & ECT ECU

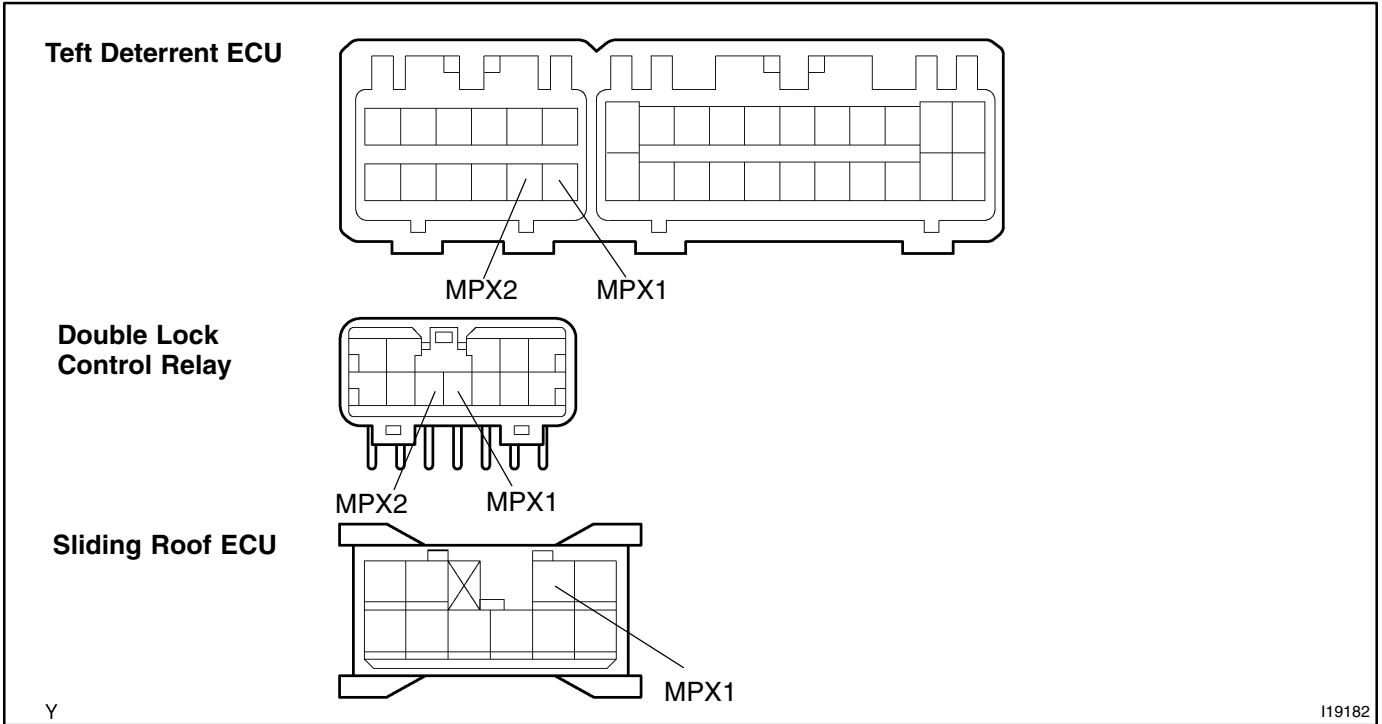


A/C and Combination Meter Integrated ECU



Center Cluster Integration Panel





CIRCUIT INSPECTION

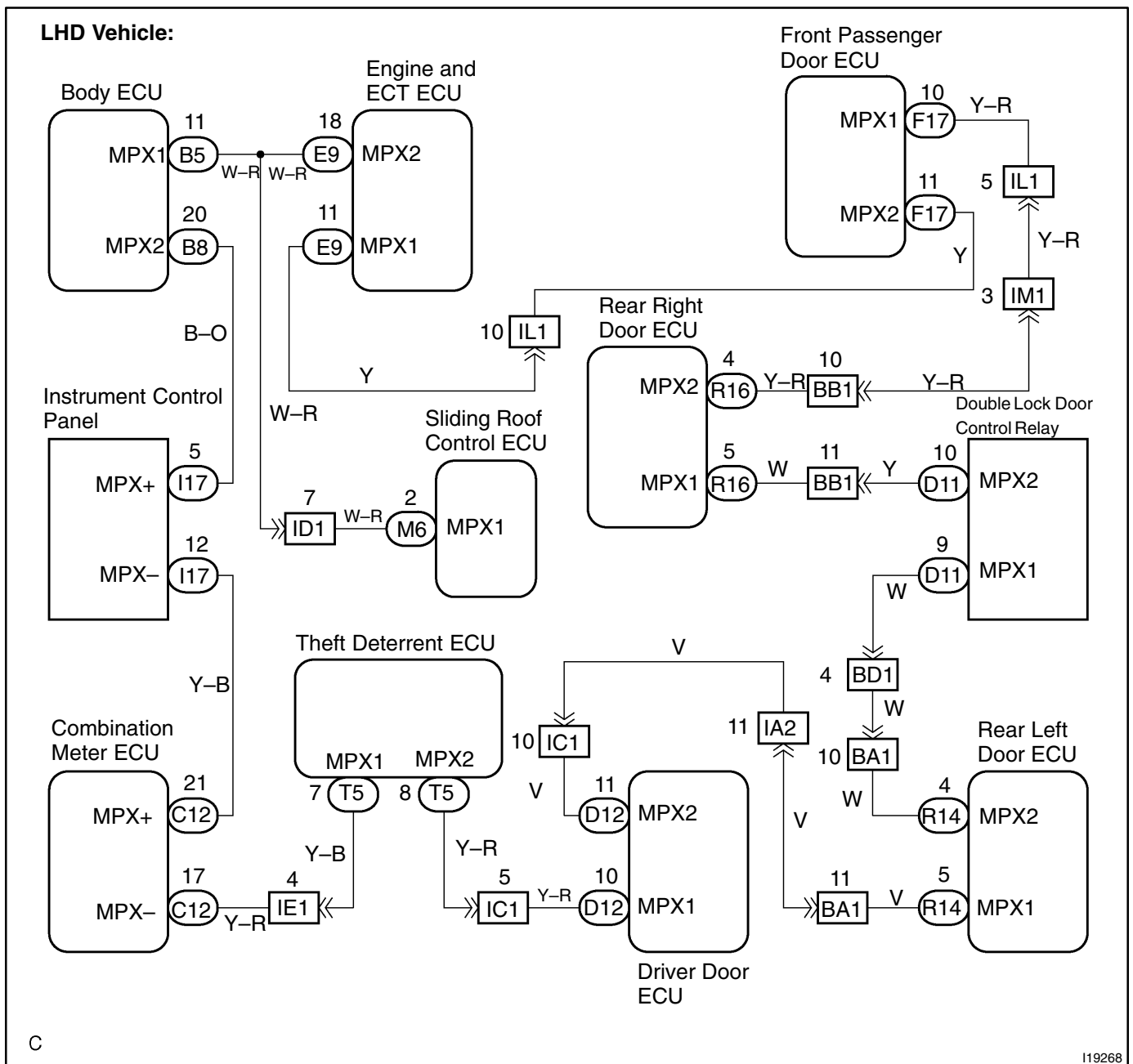
| | | |
|------------|-------------------|---|
| DTC | B1211 / 11 | Driver door ECU communication stop |
|------------|-------------------|---|

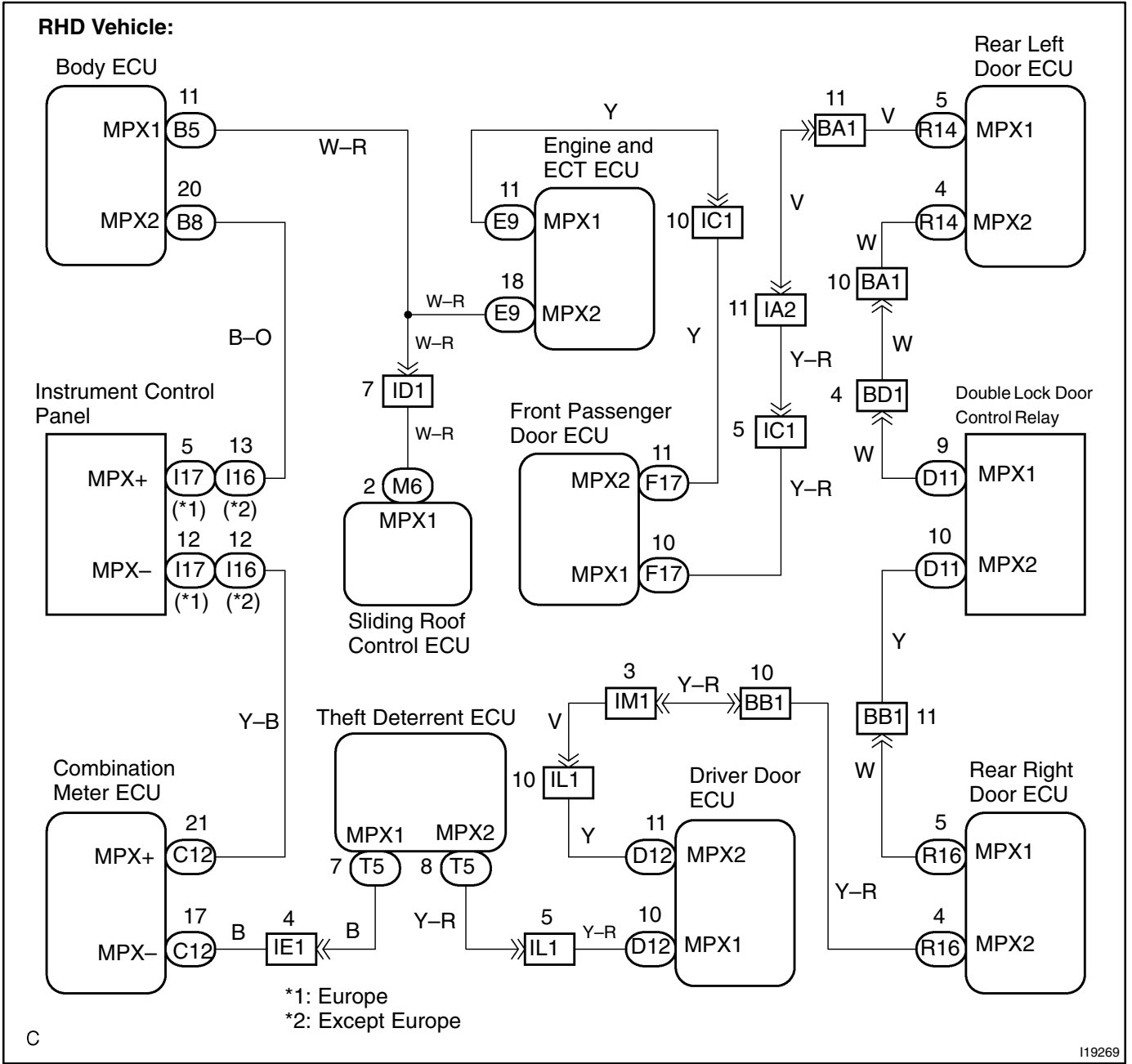
CIRCUIT DESCRIPTION

This DTC is output when communication stops between driver door ECU and body ECU.

| DTC No. | DTC Detecting Condition | Trouble Area |
|----------|---|--|
| B1211/11 | No communication from driver door ECU more than 10 seconds. | <ul style="list-style-type: none"> • Driver door ECU • Wireharness |

WIRING DIAGRAM





INSPECTION PROCEDURE

1 Check driver door ECU.

CHECK:

Check if the driver door window glass auto up.

HINT:

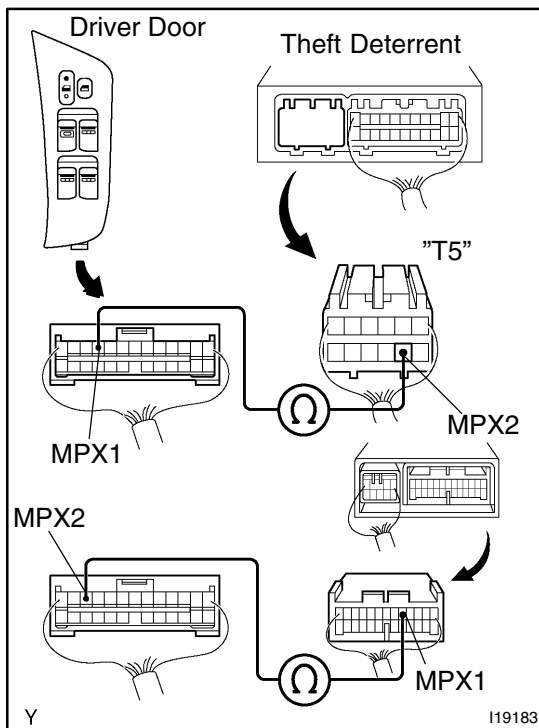
With this inspection, the driver door ECU CPU can be diagnosed if it works normally or not.

NG

Replace the driver ECU.

OK

2 Check wireharness.



PREPARATION:

Disconnect connector of "T5" of theft deterrent ECU and driver door ECU and "R11" of rear left door ECU.

CHECK:

- Check continuity between terminals MPX2 of theft deterrent ECU and MPX1 of driver door ECU.
- Check continuity between terminals MPX2 of driver door ECU and MPX1 of rear left door ECU.

OK:

There is a continuity in wireharness of both (a) and (b). or either (a) or (b).

HINT:

If there is OPEN in wireharness of either (a) or (b), please repair it.

NG

Repair or replace wireharness.

OK

Replace the driver door ECU.

| | | |
|------------|-------------------|--|
| DTC | B1212 / 12 | Front passenger door ECU communication stop |
|------------|-------------------|--|

CIRCUIT DESCRIPTION

This DTC is output when communication stops between front passenger door ECU and body ECU.

| DTC No. | DTC Detecting Condition | Trouble Area |
|----------|--|---|
| B1212/12 | No communication from front passenger door ECU more than 10 seconds. | <ul style="list-style-type: none"> • Front passenger door ECU • Wireharness |

WIRING DIAGRAM

See page DI-688

INSPECTION PROCEDURE

| | |
|----------|--|
| 1 | Check front passenger door ECU. |
|----------|--|

CHECK:

Check if the front passenger door window glass auto up.

HINT:

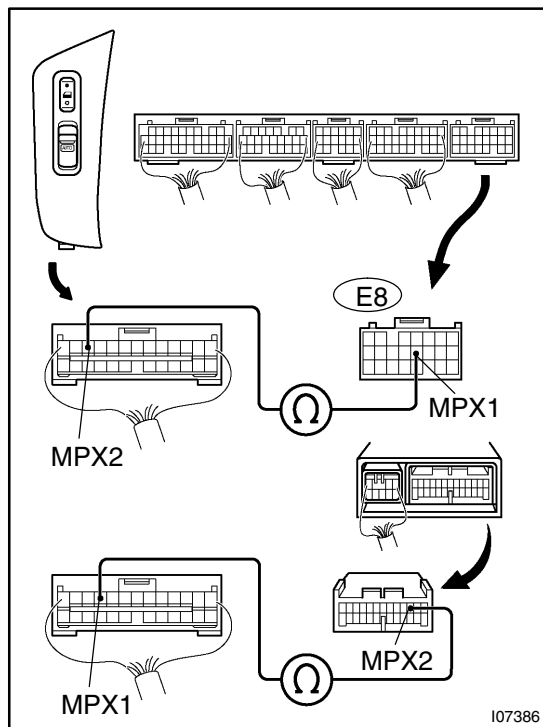
With this inspection, the front passenger door ECU CPU can be diagnosed if it works normally or not.

NG

Replace the front passenger door ECU.

OK

2 Check wireharness



PREPARATION:

Disconnect connector "E8" of engine & ECT ECU and "R13" of rear right door ECU.

CHECK:

- (a) Check continuity between terminals MPX1 of engine & ECT ECU and MPX2 of passenger door ECU.
- (b) Check continuity between terminals MPX1 of passenger door ECU and MPX2 of rear right door ECU.

OK:

There is a continuity in wireharness of both (a) and (b) or (a) or either (a) or (b).

HINT:

If there is OPEN in wireharness of either (a) or (b), please repair it.

NG

Repair or replace wireharness.

OK

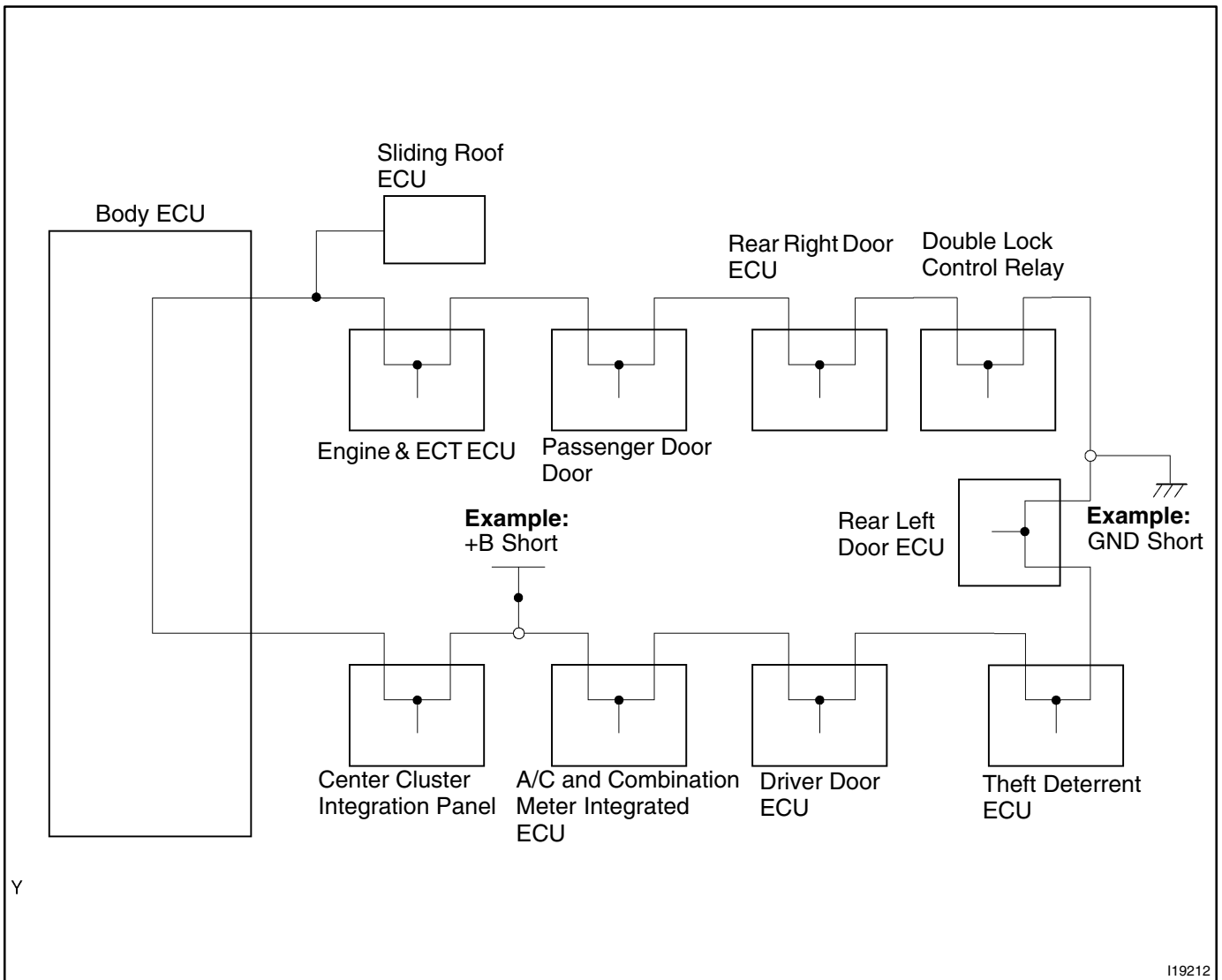
Replace the passenger door ECU.

| | | |
|------------|-------------------|--|
| DTC | B1214 / 14 | System communication bus malfunction (+B short) |
|------------|-------------------|--|

| | | |
|------------|-------------------|---|
| DTC | B1215 / 15 | System communication bus malfunction (GND short) |
|------------|-------------------|---|

CIRCUIT DESCRIPTION

This DTC is output when +B or GND short occurs on door system communication bus. If +B or GND short is detected on door system communication bus, separate it by bus cut relay in body ECU to prevent while communication buses' failure.

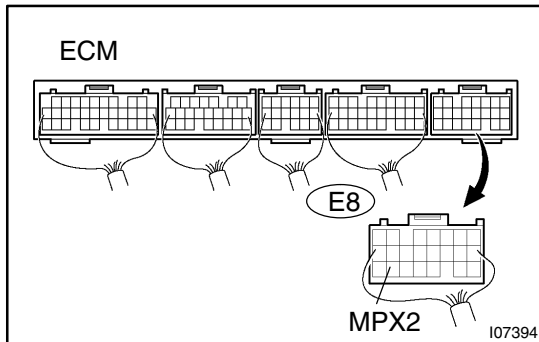


WIRING DIAGRAM

See page DI-688.

INSPECTION PROCEDURE

1 Check the communication circuit inside engine & ECT ECU.

**PREPARATION:**

Disconnect the connector "E8" of engine & ECT ECU.

CHECK:

Check the DTC.

OK:

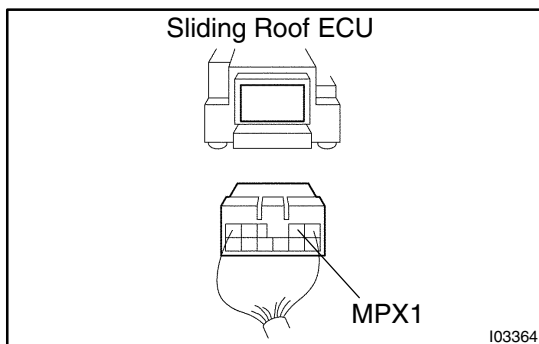
Code B1214/14 or B1215/15 is not output.

OK

Replace the engine & ECT ECU.

NG

2 Check the communication circuit inside sliding roof ECU.

**PREPARATION:**

(a) Connect the connector "E8" of engine & ECT ECU.

(b) Disconnect the connector of sliding roof ECU.

CHECK:

Check the DTC.

OK:

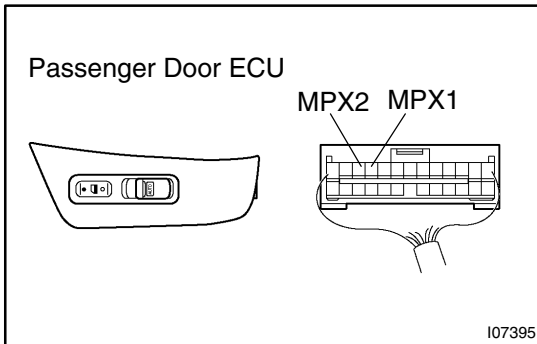
Code B1214/14 or B1215/15 is not output.

OK

Replace the sliding roof ECU

NG

3 Check the communication circuit inside passenger door ECU.



PREPARATION:

- (a) Connect the connector of sliding roof ECU.
- (b) Disconnect the connector of passenger door ECU.

CHECK:

Check the DTC.

OK:

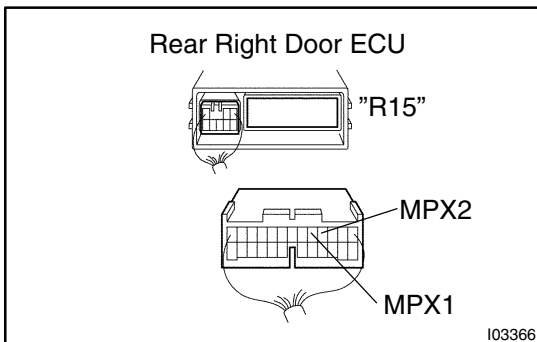
Code B1214/14 or B1215/15 is not output.

OK

Replace the passenger door ECU.

NG

4 Check the communication circuit inside rear right door ECU.



PREPARATION:

- (a) Connect the connector of passenger door ECU.
- (b) Disconnect the connector "R15" of rear right door ECU.

CHECK:

Check the DTC.

OK:

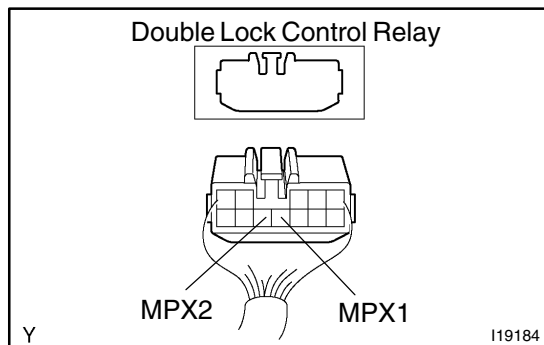
Code B1214/14 or B1215/15 is not output.

OK

Replace the rear right door ECU.

NG

5 Check the communication circuit inside double lock control relay.



PREPARATION:

- (a) Connect the connector "R15" of rear right door ECU.
- (b) Disconnect the connector of double lock control relay.

CHECK:

Check the DTC.

OK:

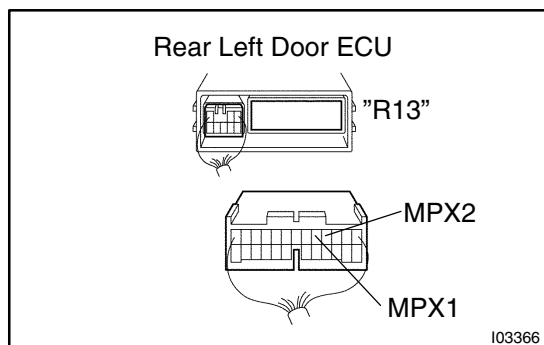
Code B1214/14 or B1215/15 is not output.

OK

Replace the double lock control relay.

NG

6 Check the communication circuit inside rear left door ECU.



PREPARATION:

- (a) Connect the connector of double lock control relay.
- (b) Disconnect the connector "R13" of rear left door ECU.

CHECK:

Check the DTC.

OK:

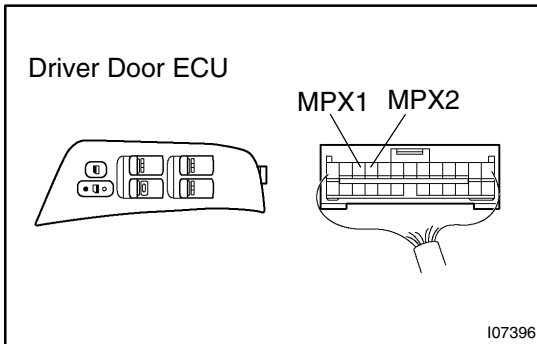
Code B1214/14 or B1215/15 is not output.

OK

Replace the rear left door ECU.

NG

7 Check the communication inside driver door ECU.



PREPARATION:

- (a) Connect the connector "R13" of rear left door ECU.
- (b) Disconnect the connector of driver door ECU.

CHECK:

Check the DTC.

OK:

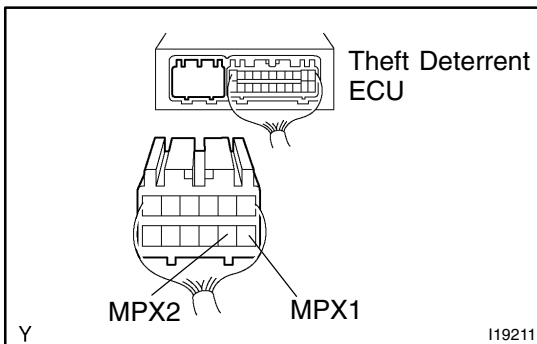
Code B1214/14 or B1215/15 is not output.

OK

Replace the driver door ECU.

NG

8 Check communication inside theft deterrent ECU.



PREPARATION:

- (a) Connect the connector of driver door ECU.
- (b) Disconnect the connector "T5" of theft deterrent ECU.

CHECK:

Check the DTC.

OK:

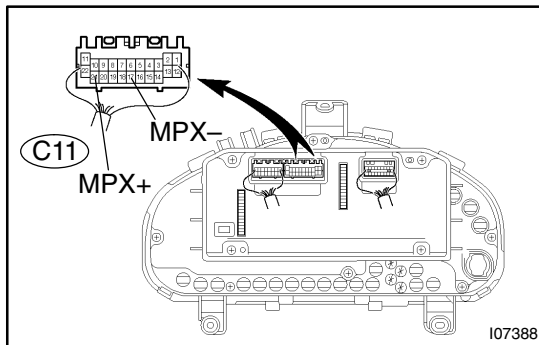
Code B1214/14 or B1215/15 is not output.

OK

Replace the theft deterrent ECU.

NG

9 Check the communication circuit inside A/C and combination meter integrated ECU.



PREPARATION:

- Connect the connector "T5" of theft deterrent ECU.
- Disconnect the connector "C11" of A/C and combination meter integrated ECU.

CHECK:

Check the DTC.

OK:

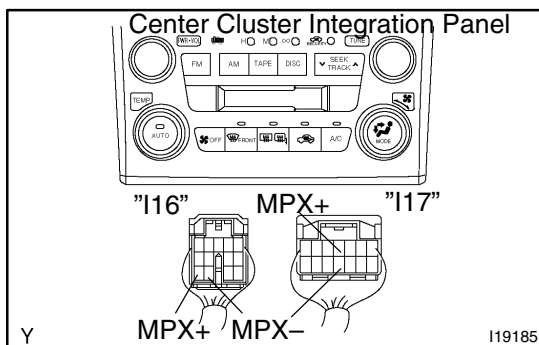
Code B1214/14 or B1215/15 is not output.

OK

Replace the A/C and combination meter integrated ECU.

NG

10 Check the communication circuit inside center cluster integration panel.



PREPARATION:

- Connect the connector "C11" of A/C combination meter integrated ECU.
- Disconnect the connector "116 (Except Europe)" or "117 (Europe)" of center cluster integration panel.

CHECK:

Check the DTC.

OK:

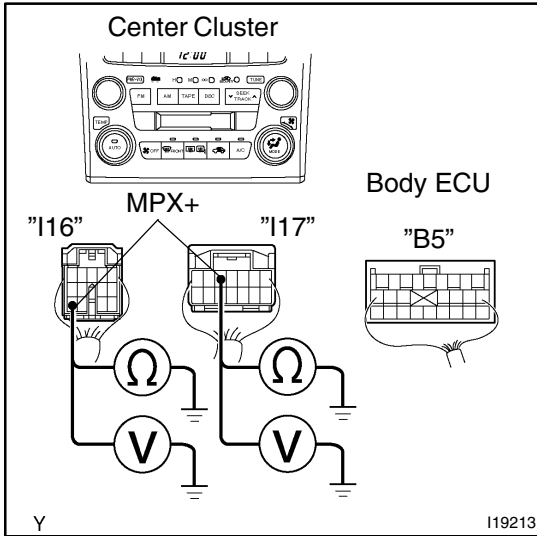
Code B1214/14 or B1215/15 is not output.

OK

Replace the center cluster integration panel.

NG

11 Check for short circuit between center cluster integration panel and body ECU.



PREPARATION:

Disconnect the connector "B5" of body ECU and "116 (Except Europe)" or "117 (Europe)" of center cluster integration panel.

CHECK:

Check continuity between terminal MPX+ of center cluster integration panel and body ground.

OK:

No continuity.

CHECK:

Measure voltage between terminal MPX+ of center cluster integration panel and body ground.

OK:

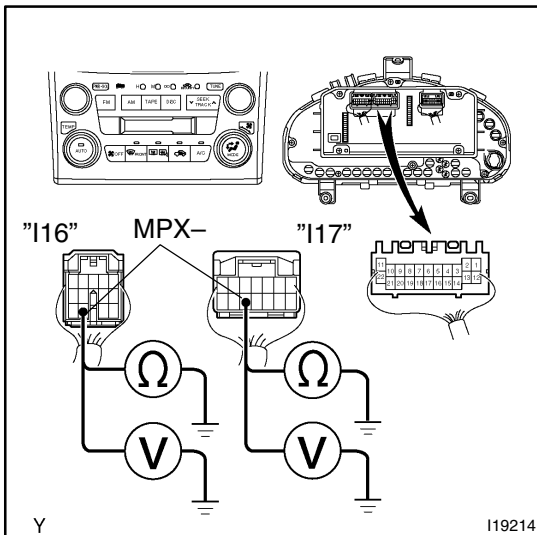
No voltage.

OK

Repair or replace the wireharness between center cluster integration panel and body ECU.

NG

12 Check for short circuit between center cluster integration panel and A/C and combination meter integrated ECU.



PREPARATION:

- Connect the connector "B8" of body ECU.
- Disconnect the connector "C11" of A/C combination meter integrated ECU.

CHECK:

Check continuity between terminal MPX- of center cluster integration panel.

OK:

No continuity.

CHECK:

Measure voltage between terminal MPX- of center cluster integration panel.

OK:

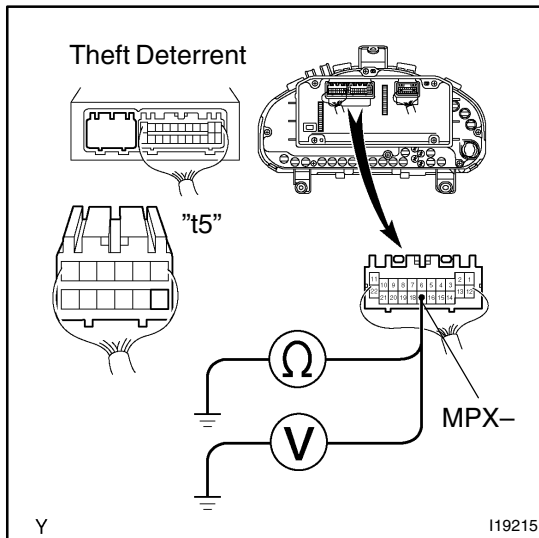
No voltage.

NG

Repair or replace the wireharness between center cluster integration panel and A/C and combination ECU.

OK

13 Check short circuit between A/C and combination meter integrated ECU and theft deterrent ECU.



PREPARATION:

- Connect the connector of center cluster integration panel.
- Disconnect the connector "T5" of theft deterrent ECU.

CHECK:

Check continuity between terminal MPX- of A/C and combination meter integrated ECU and body ground.

OK:

No continuity.

CHECK:

Measure voltage between terminal MPX- of A/C and combination meter integrated ECU and body ground.

OK:

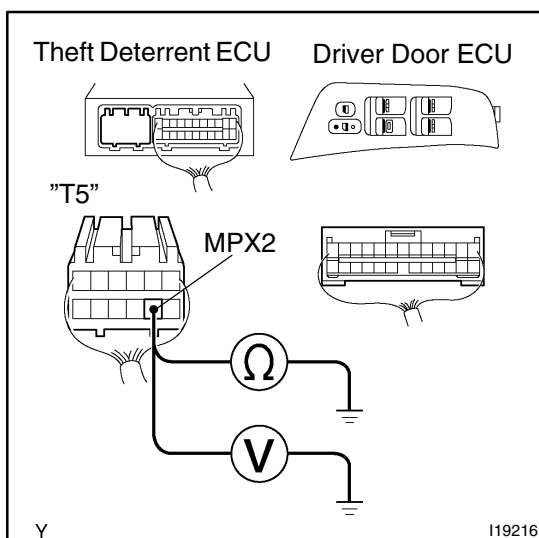
No voltage.

NG

Repair or replace the wireharness between A/C and combination meter integrated ECU and theft deterrent ECU.

OK

14 Check for short circuit between theft deterrent ECU and driver door ECU.



PREPARATION:

- Connect the connector of A/C and combination meter integrated ECU.
- Disconnect the connector of driver door ECU.

CHECK:

Check continuity between terminal MPX2 of theft deterrent ECU and body ground.

OK:

No continuity.

CHECK:

Measure voltage between terminal MPX2 of theft deterrent ECU and body ground.

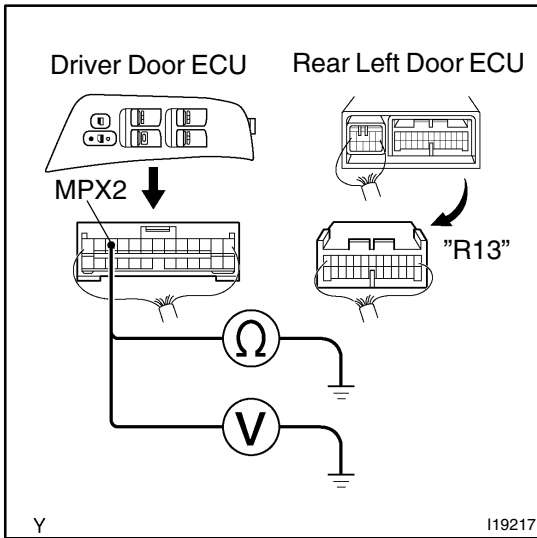
OK:

No voltage.

NG

Repair or replace the wireharness between driver door ECU and theft deterrent ECU.

OK

15 Check for short circuit between driver door ECU and rear left door ECU.
**PREPARATION:**

- (a) Connect the connector of theft deterrent ECU.
 (b) Disconnect the connector "R13" of rear left door ECU.

CHECK:

Check continuity between terminal MPX2 of driver door ECU and body ground.

OK:

No continuity.

CHECK:

Measure voltage between terminal MPX2 of driver door ECU and body ground.

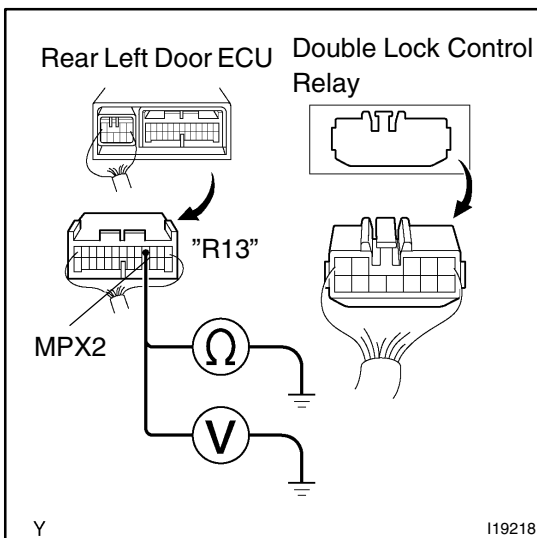
OK:

No voltage.

NG

Repair or replace the wireharness between driver door ECU and rear left ECU.

OK

16 Check for short circuit between rear left door ECU and double lock control relay.
**PREPARATION:**

- (a) Connect the connector of driver door ECU.
 (b) Disconnect the connector of double lock control relay.

CHECK:

Check continuity between terminal MPX2 of rear left door ECU and body ground.

OK:

No continuity.

CHECK:

Measure voltage between terminal MPX2 of rear left door ECU and body ground.

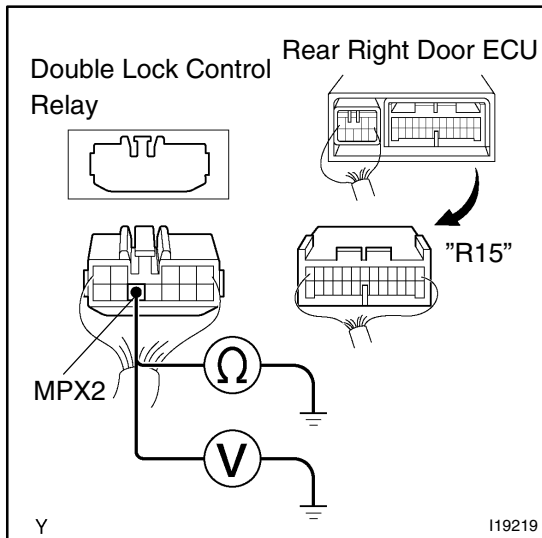
OK:

No voltage.

NG

Repair or replace the wireharness between the rear left door ECU and double lock control relay.

OK

17 Check for short circuit between double lock control relay and rear right door ECU.
**PREPARATION:**

- Connect the connector of rear left door ECU.
- Disconnect the connector "R15" of rear right door ECU.

CHECK:

Check continuity between terminal MPX2 of double lock control relay and body ground.

OK:

No continuity.

CHECK:

Measure voltage between terminal MPX2 of double lock control relay and body ground.

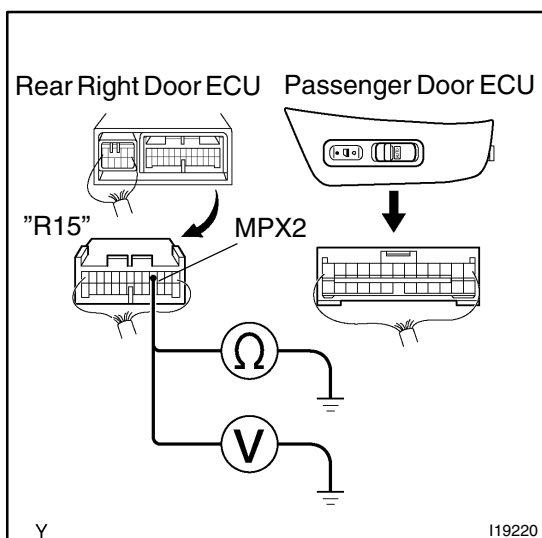
OK:

No voltage.

OK

Repair or replace the wireharness between double lock control relay and rear right door ECU.

NG

18 Check for short circuit between rear right door ECU and passenger door ECU.
**PREPARATION:**

- Connect the connector of double lock control relay.
- Disconnect the connector of passenger door ECU.

CHECK:

Check continuity between terminal MPX2 of rear right door ECU and body ground.

OK:

No continuity.

CHECK:

Measure voltage between terminal MPX2 of rear right door ECU and body ground.

OK:

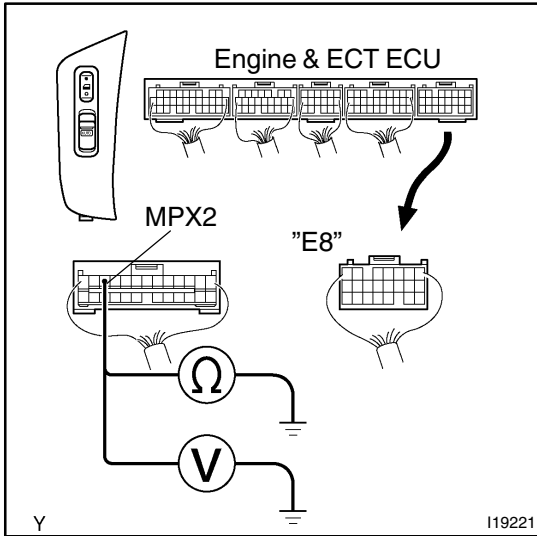
No voltage.

OK

Repair or replace the wireharness between rear right door ECU and passenger door ECU.

NG

19 Check for short circuit between passenger door ECU and engine & ECT ECU.



PREPARATION:

- Connect the connector of rear right door ECU.
- Disconnect the connector "E8" of engine & ECT ECU.

CHECK:

Check continuity between terminal MPX2 of passenger door ECU and body ground.

OK:

No continuity.

CHECK:

Measure voltage between terminal MPX2 of passenger door ECU and body ground.

OK:

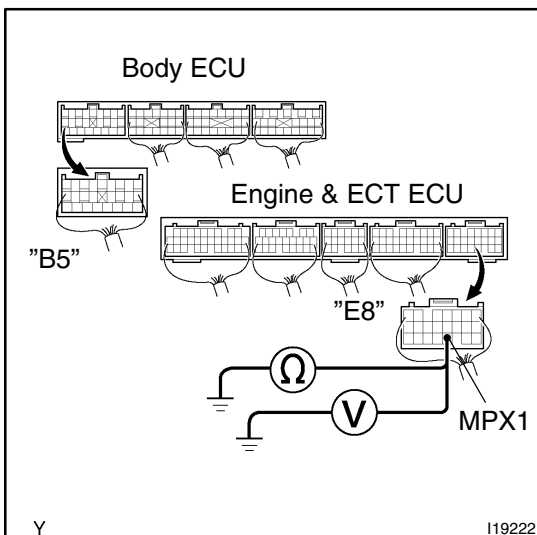
No voltage.

OK

Repair or replace the wireharness between engine & ECT ECU and passenger door ECU.

NG

20 Check for short circuit between engine & ECT ECU and body ECU.



PREPARATION:

- Connect the connector of passenger door ECU.
- Disconnect the connector "B5" of body ECU and sliding roof ECU.

CHECK:

Check continuity between terminal MPX2 of engine & ECT ECU and body ground.

OK:

No continuity.

CHECK:

Measure voltage between terminal MPX2 of engine & ECT ECU and body ground.

OK:

No voltage.

OK

Repair or replace the wireharness between engine & ECT ECU and body ECU.

NG

Replace the body ECU.

| | | |
|------------|-------------------|---|
| DTC | B1216 / 16 | Rear right door ECU communication stop |
|------------|-------------------|---|

CIRCUIT DESCRIPTION

This DTC is output when communication stops between rear right door ECU and body ECU.

| DTC No. | DTC Detecting Condition | Trouble Area |
|----------|---|--|
| B1216/16 | No communication from rear right door ECU more than 10 seconds. | <ul style="list-style-type: none"> • Rear right door ECU • Wireharness |

WIRING DIAGRAM

See page DI-688

INSPECTION PROCEDURE

| | |
|----------|-----------------------------------|
| 1 | Check rear right door ECU. |
|----------|-----------------------------------|

CHECK:

Check if the rear right door window glass auto up.

HINT:

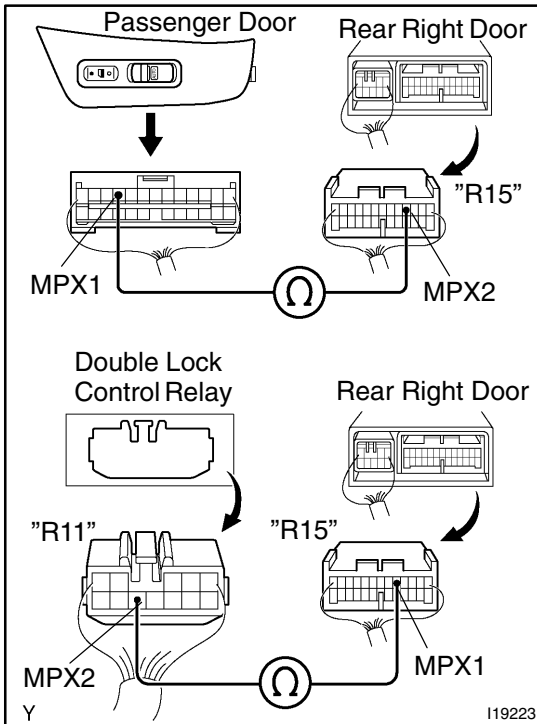
With this inspection rear right door ECU CPU can be diagnosed if it works normal or not.

NG

Replace the rear right door ECU.

OK

2 Check wireharness.



PREPARATION:

Disconnect connector of passenger door ECU, "R15" of rear right door ECU and double lock control relay.

CHECK:

- Check continuity between terminals MPX1 of passenger door ECU and MPX2 of rear right door ECU.
- Check continuity between terminals MPX1 of rear right door ECU and MPX2 of double lock control relay.

OK:

If there is OPEN in wireharness of either (a), (b) or (c), please repair it.

There is a continuity in wireharness of both (a) and (b), or either (a) or (b).

HINT:

If there is OPEN in wireharness of either (a) or (b), please repair it.

NG

Repair or replace wireharness.

OK

Replace the rear right door ECU.

| | | |
|------------|-------------------|--|
| DTC | B1217 / 17 | Rear left door ECU communication stop |
|------------|-------------------|--|

CIRCUIT DESCRIPTION

This DTC is output when communication stops between rear left door ECU and body ECU.

| DTC No. | DTC Detecting Condition | Trouble Area |
|----------|--|---|
| B1217/17 | No communication from rear left door ECU more than 10 seconds. | <ul style="list-style-type: none"> • Rear left door ECU • Wireharness |

WIRING DIAGRAM

See page DI-688

INSPECTION PROCEDURE

| | |
|----------|----------------------------------|
| 1 | Check rear left door ECU. |
|----------|----------------------------------|

CHECK:

Check if the rear left door window glass auto up.

HINT:

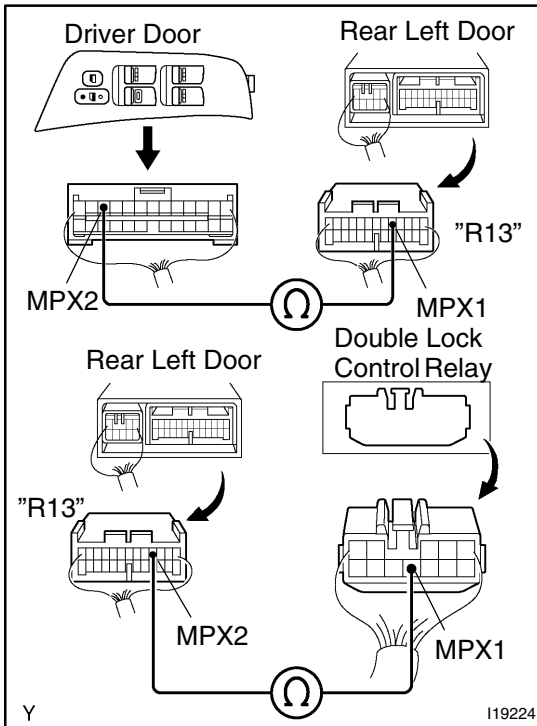
With this inspection rear left door ECU CPU can be diagnosed if it works normal or not.

NG

Replace the rear left door ECU.

OK

2

Check wireharness**PREPARATION:**

Disconnect connector of driver door ECU, "R13" of rear left door ECU and double lock control relay.

CHECK:

- Check continuity between terminals MPX2 of driver door ECU and MPX1 of rear left door ECU.
- Check continuity between terminals MPX2 of rear left door ECU and MPX1 of double lock control relay.

OK:

There is a continuity in wireharness of both (a) and (b) or (a) and (c), (a) or either (b) or (c).

HINT:

If there is OPEN in wireharness of either (a), (b) or (c), please repair it.

NG**Repair or replace wireharness.****OK****Replace the rear left door ECU.**

| | | |
|------------|-------------------|--|
| DTC | B1221 / 21 | Power window switch circuit on driver door |
| DTC | B1222 / 22 | Door lock switch circuit on driver door |
| DTC | B1223 / 23 | Power window switch circuit on passenger door |
| DTC | B1224 / 24 | Door lock switch circuit on passenger door |
| DTC | B1225 / 25 | Power window switch circuit on rear right door |
| DTC | B1226 / 26 | Power window switch circuit on rear left door |
| DTC | B1241 / 41 | Body ECU switch circuit diagnosis |
| DTC | B1256 / 56 | Center cluster integration panel switch circuit diagnosis |

CIRCUIT DESCRIPTION

These DTC notify how switch works as follows:

If DTC is not output when operating switch, it means failure of switch contact. If DTC is output when not operating switch, it means stick of switch. When something wrong is found by this diagnosis, inspect each switch. Then, replace the switch if there is a problem, or check the wireharness if there is no problem.

| DTC No. | DTC Detecting Condition | Trouble Area |
|----------|---|--|
| B1221/21 | Stick of either of the power window master switch (except window lock switch) | <ul style="list-style-type: none"> • Power window master switch • Wireharness |
| B1222/22 | Stick of door key lock and unlock switch | <ul style="list-style-type: none"> • Door lock control switch • Door key lock and unlock switch • Wireharness |

DIAGNOSTICS – MULTIPLEX COMMUNICATION SYSTEM

| | | |
|----------|---|--|
| B1223/23 | Stick of passenger power window switch or door lock control | <ul style="list-style-type: none"> • Power window switch • Door lock control switch • Wireharness |
| B1224/24 | Stick of door key lock and unlock switch | <ul style="list-style-type: none"> • Door lock control switch • Door key lock and unlock switch • Wireharness |
| B1225/25 | Stick of rear right power window switch | <ul style="list-style-type: none"> • Power window switch • Wireharness |
| B1226/26 | Stick of rear left power window switch | <ul style="list-style-type: none"> • Power window switch • Wireharness |
| B1241/41 | Stick of switch | <ul style="list-style-type: none"> • Driver's seat belt buckle switch • Light control switch • Stop light switch • Wireharness |
| B1256/56 | Stick of switch | <ul style="list-style-type: none"> • Multi function switch • Power switch • Sound mode switch • Clock switch • CD switch • TAPE switch • FM1/2 switch • AM switch • INFO switch • BRIGHTNESS switch • TUNE SEEK TRAC switch • Eject switch • MUTE switch • MODE switch • A/C switch • R/F switch • REAR defogger switch • FRONT defroster switch • OFF switch • AUTO switch • Wireharness |

HINT:

Please refer to BE section for switch inspection, and to each door system of DI section for wireharness inspection.

| | | |
|------------|-------------------|---|
| DTC | B1231 / 31 | Jam protection limit switch circuit on driver door |
|------------|-------------------|---|

| | | |
|------------|-------------------|--|
| DTC | B1233 / 33 | Jam protection limit switch circuit on passenger door |
|------------|-------------------|--|

| | | |
|------------|-------------------|---|
| DTC | B1235 / 35 | Jam protection limit switch circuit on rear right door |
|------------|-------------------|---|

| | | |
|------------|-------------------|--|
| DTC | B1237 / 37 | Jam protection limit switch circuit on rear left door |
|------------|-------------------|--|

CIRCUIT DESCRIPTION

These DTCs are output when a malfunction of limit switch within power window motor is detected.

| DTC No. | DTC Detection Condition | Trouble Area |
|----------|--|--|
| B1231/31 | No change in limit switch more than 2.0 seconds even if operating glass down when limit switch is OFF (window glass is fully closed) | <ul style="list-style-type: none"> • Jam protection limit switch • Wireharness |
| B1233/33 | | |
| B1235/35 | | |
| B1237/37 | | |

HINT:

Please refer to power window control system of BE section for switch inspection, and to each door system of DI section for wireharness inspection.

| | | |
|------------|-------------------|---|
| DTC | B1232 / 32 | Jam protection pulse switch circuit on driver door |
|------------|-------------------|---|

| | | |
|------------|-------------------|--|
| DTC | B1234 / 34 | Jam protection pulse switch circuit on passenger door |
|------------|-------------------|--|

| | | |
|------------|-------------------|---|
| DTC | B1236 / 36 | Jam protection pulse switch circuit on rear right door |
|------------|-------------------|---|

| | | |
|------------|-------------------|--|
| DTC | B1238 / 38 | Jam protection pulse switch circuit on rear left door |
|------------|-------------------|--|

CIRCUIT DESCRIPTION

These DTCs are output when a malfunction of pulse switch within power window motor is detected.

| DTC No. | DTC Detecting Condition | Trouble Area |
|----------|---|--|
| B1232/32 | No change in pulse switch more than 2.0 seconds even if opening glass down when limit switch is OFF (window glass is fully closed). | <ul style="list-style-type: none"> • Jam protection pulse switch • Wireharness |
| B1234/34 | | |
| B1236/36 | | |
| B1238/38 | | |

HINT:

Please refer to power window control system of BE section for switch inspection, and to each door system of DI section for wireharness inspection.

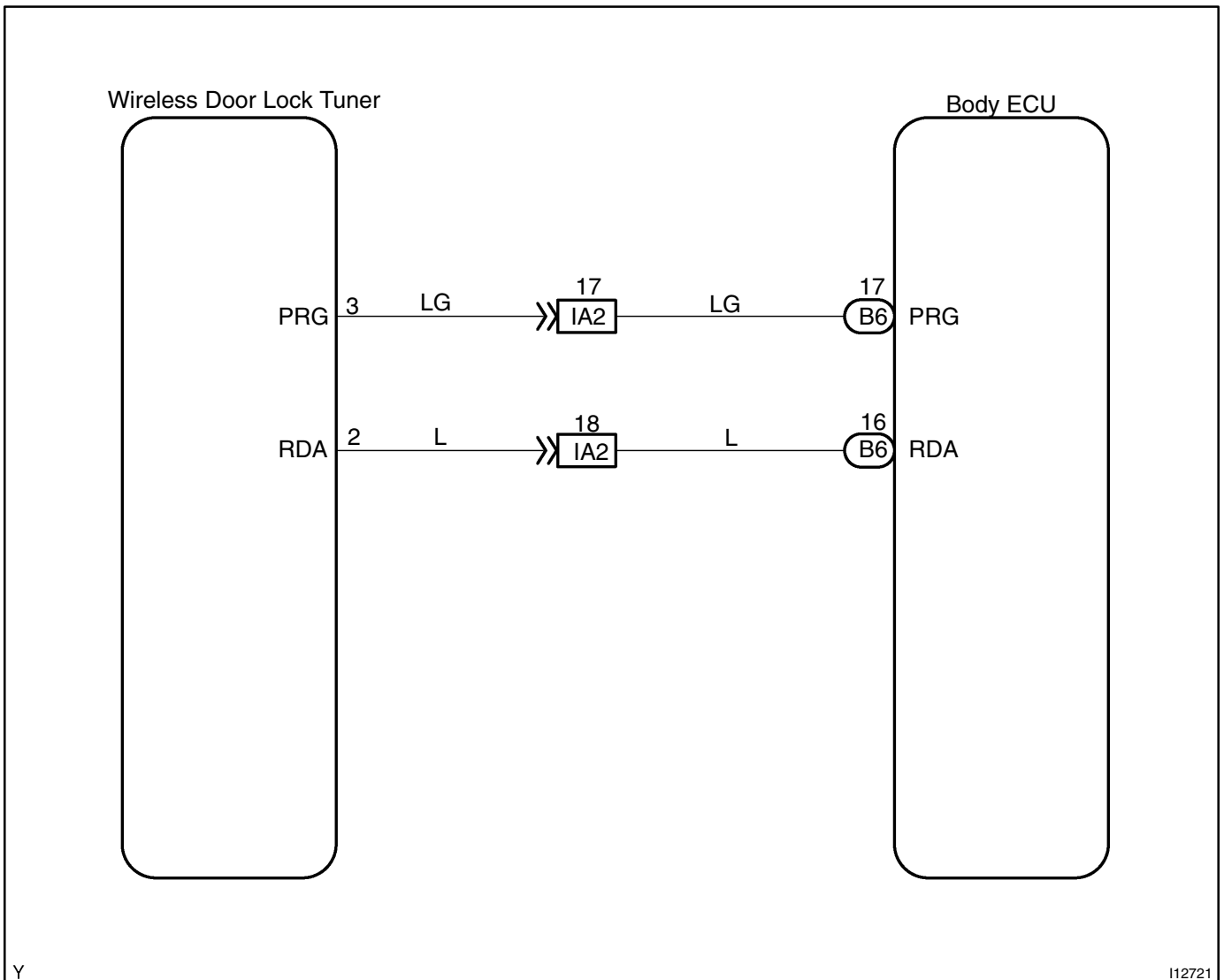
| | | |
|------------|-------------------|---|
| DTC | B1242 / 42 | Wireless door lock tuner circuit malfunction |
|------------|-------------------|---|

CIRCUIT DESCRIPTION

This DTC is output when GND short of RDA terminal is detected.

| DTC No. | DTC Detecting Condition | Trouble Area |
|----------|---------------------------|---|
| B1242/42 | GND short of RDA terminal | <ul style="list-style-type: none"> • Wireharness • Wireless door lock tuner • Body ECU |

WIRING DIAGRAM

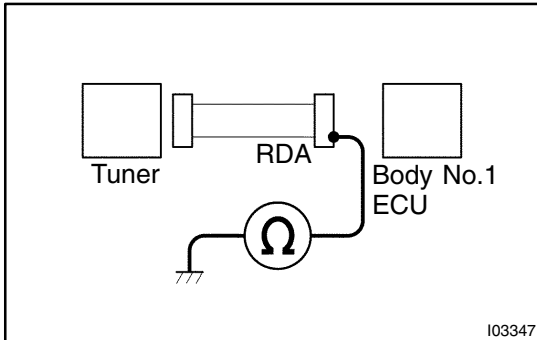


Y

I12721

INSPECTION PROCEDURE

1 Check wireharness.

**PREPARATION:**

Disconnect the connector of tuner and body ECU.

CHECK:

Check the continuity between wireharness and body ground.

OK:

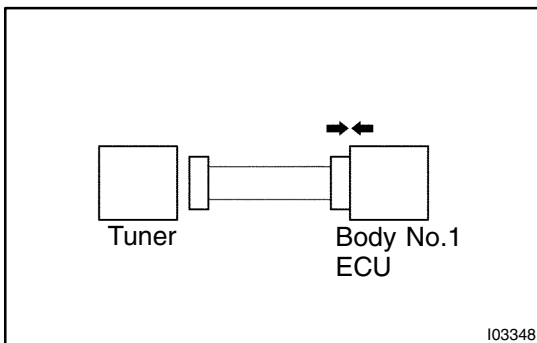
No continuity.

NG

Repair or replace the wireharness.

OK

2 Check body ECU.

**PREPARATION:**

Connect the connector of body ECU.

CHECK:

Check the DTC.

OK:

B1242/42 is not output.

NG

Replace the body ECU.

OK

Replace the tuner.

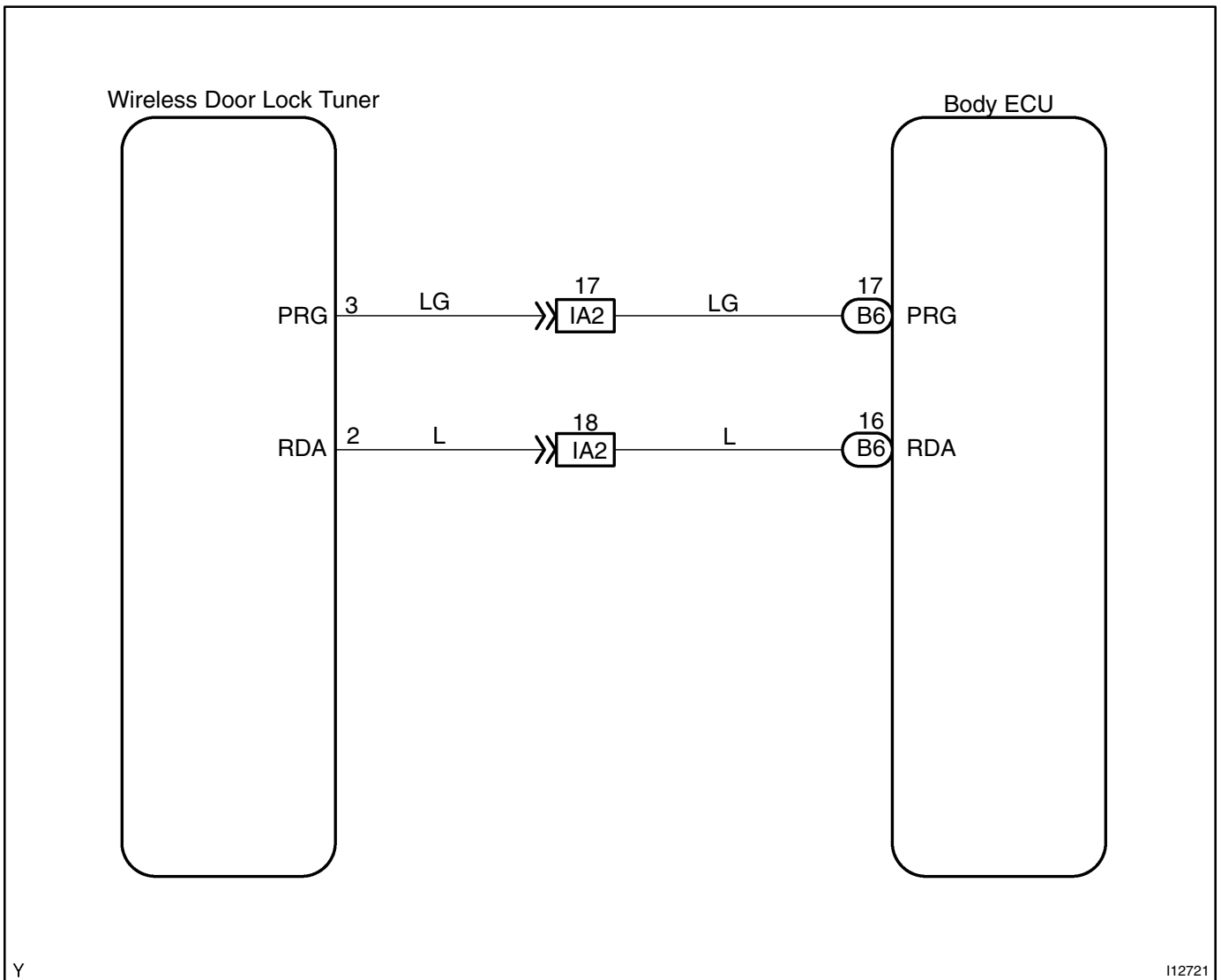
| | | |
|------------|-------------------|---|
| DTC | B1244 / 44 | Light sensor circuit malfunction |
|------------|-------------------|---|

CIRCUIT DESCRIPTION

This DTC is output when failure of light sensor circuit is detected.

| DTC No. | DTC Detecting Condition | Trouble Area |
|----------|--|---|
| B1244/44 | <ul style="list-style-type: none"> • Malfunction of light sensor • Open or short of light sensor circuit | <ul style="list-style-type: none"> • Light sensor • Wireharness • Body ECU |

WIRING DIAGRAM



Y

I12721

INSPECTION PROCEDURE

| | |
|----------|----------------------------|
| 1 | Check light sensor. |
|----------|----------------------------|

Using hand-held tester:

PREPARATION:

- (a) Connect the hand-held tester to the DLC3.
- (b) Turn ignition switch ON and hand-held tester main switch ON.

CHECK:

The value of the illumination rate should change in the following range when the light sensor is put in the light or covered by a hand.

OK:

0.8 ms ~ 22.0 ms

HINT:

- This is the time to be taken for the light sensor to generate one cycle of frequency according to the brightness.
- Check it by putting the light control switch in AUTO position.

When not using hand-held tester. (See page BE-31)

NG → **Replace the light sensor.**

OK

| | |
|----------|---|
| 2 | Check wireharness and connector between light sensor and Body ECU. |
|----------|---|

NG → **Repair or replace wireharness or connector.**

OK

Replace the Body ECU.

| | | |
|------------|-------------------|---|
| DTC | B1249 / 49 | Double lock control relay communication stop |
|------------|-------------------|---|

CIRCUIT DESCRIPTION

This DTC is output when communication stops between double lock control relay and Body ECU.

| DTC No. | DTC Detecting Condition | Trouble Area |
|----------|---|--|
| B1249/49 | No communication from double lock control relay more than 10 seconds. | <ul style="list-style-type: none"> • Double lock control relay • Wireharness |

WIRING DIAGRAM

See page DI-688

INSPECTION PROCEDURE

| | |
|----------|---|
| 1 | Check double lock control relay. |
|----------|---|

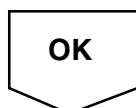
CHECK:

Check that the operation of double lock control relay is normal.

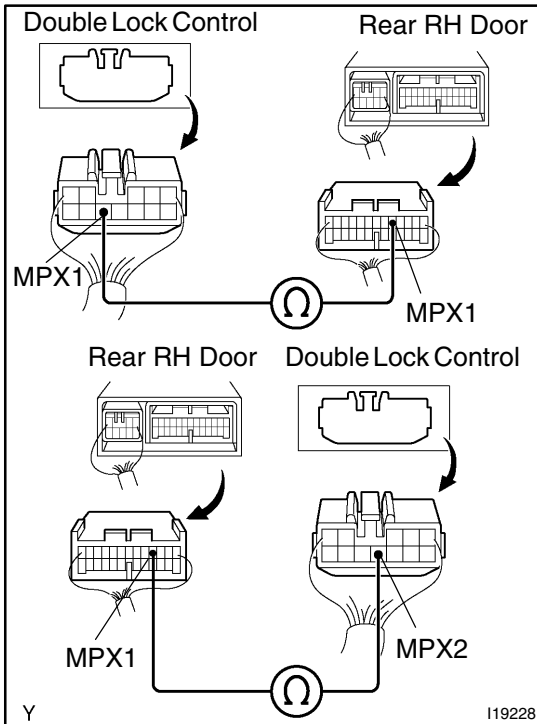
HINT:

With this inspection, the double lock control relay can be diagnosed if it works normally or not.

| | |
|-----------|---|
| NG | Replace the double lock control relay. |
|-----------|---|



2 Check wireharness



PREPARATION:

Disconnect connector "R15" of rear right door ECU, double lock control relay and "R13" of rear left door ECU.

CHECK:

- Check continuity between terminals MPX1 of double lock control relay and MPX2 of rear left door ECU.
- Check continuity between terminals MPX1 of rear right door ECU and MPX2 of double lock control relay.

OK:

There is a continuity in wireharness of both (a) and (b), or either (a) or (b).

HINT:

If there is OPEN in wireharness of either (a) or (b), please repair it.

NG

Repair or replace wireharness.

OK

Replace double lock control relay.

| | | |
|------------|-------------------|--|
| DTC | B1261 / 61 | Engine & ECT ECU communication stop |
|------------|-------------------|--|

CIRCUIT DESCRIPTION

This DTC is output when communication stops between engine & ECT ECU and Body ECU.

| DTC No. | DTC Detecting Condition | Trouble Area |
|----------|--|---|
| B1261/61 | No communication from engine & ECT ECU more than 10 seconds. | <ul style="list-style-type: none"> • Engine & ECT ECU • Wireharness |

WIRING DIAGRAM

See page DI-688

INSPECTION PROCEDURE

| | |
|----------|------------------------------------|
| 1 | Check engine & ECT ECU. |
|----------|------------------------------------|

CHECK:

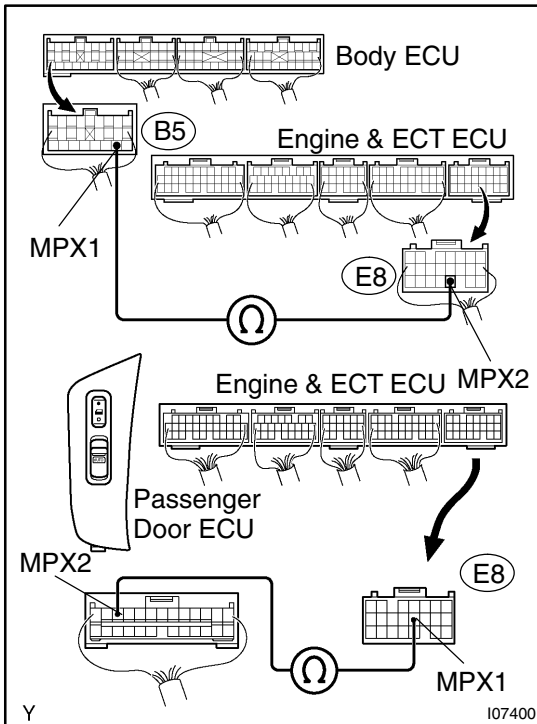
Check that the engine starts normally.

HINT:

With this inspection, engine & ECT ECU CPU can be diagnosed if it works normally or not.



2 Check wireharness



PREPARATION:

Disconnect connector "B5" of body ECU, "E8" of engine & ECT ECU and passenger door ECU.

CHECK:

- Check continuity between terminals MPX1 of body No.1 ECU and MPX2 of engine & ECT ECU.
- Check continuity between terminals MPX2 of engine & ECT ECU and MPX1 of passenger door ECU.

OK:

There is a continuity in wireharness of both (a) and (b), or either (a) or (b).

HINT:

If there is OPEN in wireharness of either (a) or (b), please repair it.

NG

Repair or replace wireharness.

OK

Replace the engine & ECT ECU.

| | | |
|------------|-------------------|---|
| DTC | B1269 / 69 | Theft deterrent ECU communication stop |
|------------|-------------------|---|

CIRCUIT DESCRIPTION

This DTC is output when communication stops between theft deterrent ECU and body ECU.

| DTC No. | DTC Detecting Condition | Trouble Area |
|----------|---|--|
| B1269/69 | No communication from theft deterrent ECU more than 10 seconds. | <ul style="list-style-type: none"> • Theft deterrent ECU • Wireharness |

WIRING DIAGRAM

See page DI-693.

INSPECTION PROCEDURE

| | |
|----------|-----------------------------------|
| 1 | Check theft deterrent ECU. |
|----------|-----------------------------------|

CHECK:

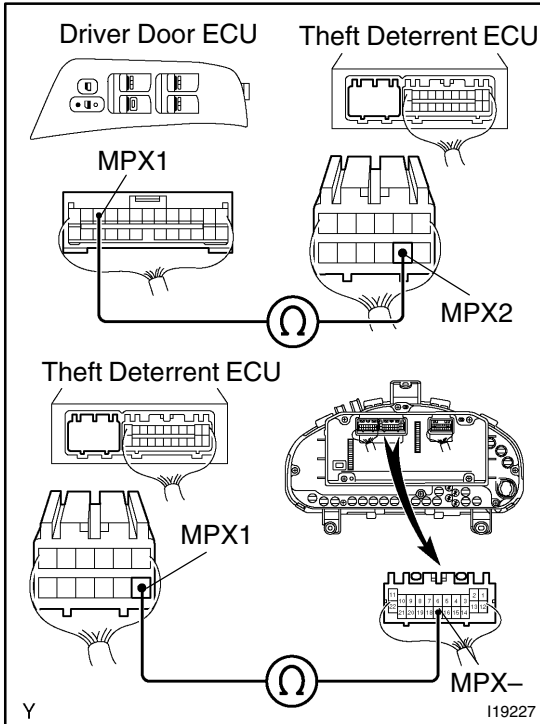
Check that the operation of the theft deterrent function is normal.

HINT:

With this inspection, the theft deterrent ECU CPU can be diagnosed if it works normally or not.



2 Check wireharness



PREPARATION:

Disconnect connector of driver door ECU, "C11" of A/C and combination meter integrated ECU and "T5" of theft deterrent ECU.

CHECK:

- Check continuity between terminals MPX1 of driver door ECU and MPX2 of theft deterrent ECU.
- Check continuity between terminals MPX1 of theft deterrent ECU and MPX- of A/C and combination meter integrated ECU.

OK:

There is a continuity in wireharness of both (a) and (b), or either (a) or (b).

HINT:

If there is OPEN in wireharness of either (a) or (b), please repair it.

NG

Repair or replace wireharness.

OK

Replace the theft deterrent ECU.

| | | |
|------------|-------------------|---|
| DTC | B1273 / 73 | Sliding roof ECU communication stop (w/ Sliding roof vehicle only) |
|------------|-------------------|---|

CIRCUIT DESCRIPTION

This DTC is output when communication stops between sliding roof ECU and body ECU.

| DTC No. | DTC Detecting Condition | Trouble Area |
|----------|--|---|
| B1273/73 | No communication from sliding roof ECU more than 10 seconds. | <ul style="list-style-type: none"> • Sliding roof ECU • Wireharness |

WIRING DIAGRAM

See page DI-688.

INSPECTION PROCEDURE

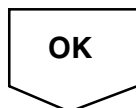
| | |
|----------|--------------------------------|
| 1 | Check sliding roof ECU. |
|----------|--------------------------------|

CHECK:

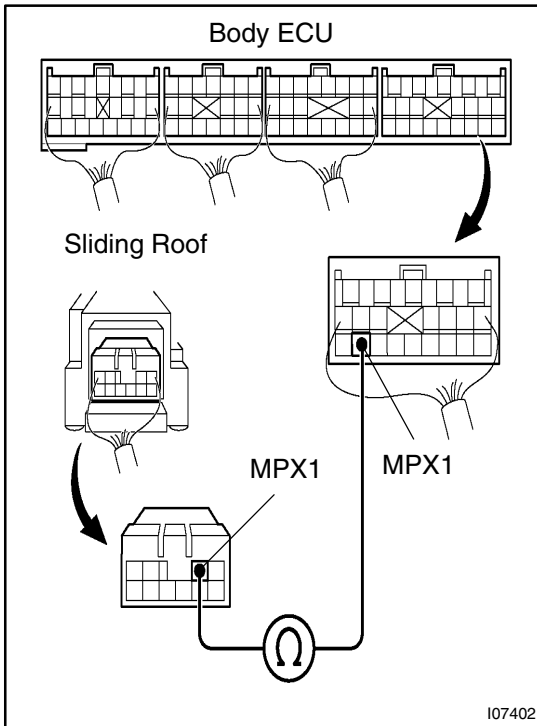
Check that the operation of the sliding roof function is normal.

HINT:

With this inspection, the sliding roof ECU CPU can be diagnosed if it works normally or not.



2 Check wireharness



PREPARATION:

Disconnect connector sliding roof ECU and body ECU.

CHECK:

Check continuity between terminals MPX1 of body ECU and MPX1 of sliding roof ECU.

OK:

There is a continuity in wireharness.

NG

Repair or replace wireharness.

OK

Replace the sliding roof ECU.

| | | |
|------------|-------------------|--|
| DTC | B1276 / 76 | A/C and combination meter integrated ECU communication stop |
|------------|-------------------|--|

CIRCUIT DESCRIPTION

This DTC is output when communication stops between A/C and combination meter integrated ECU and Body ECU.

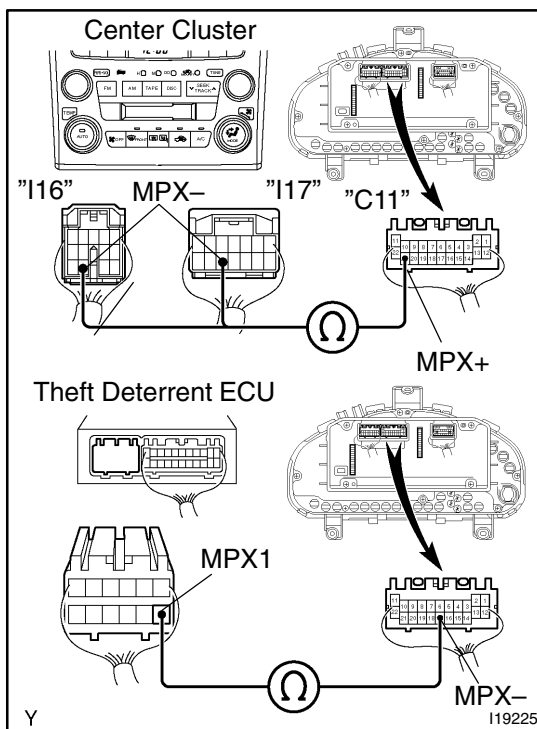
| DTC No. | DTC Detecting Condition | Trouble Area |
|----------|--|---|
| B1276/76 | No communication from A/C and combination meter integrated ECU more than 10 seconds. | <ul style="list-style-type: none"> • A/C and combination meter integrated ECU • Wireharness |

WIRING DIAGRAM

See page DI-688

INSPECTION PROCEDURE

| | |
|----------|--------------------------|
| 1 | Check wireharness |
|----------|--------------------------|



PREPARATION:

Disconnect connector "I16 (Except Europe)" or "I17 (Europe)" of center cluster integration panel "T5" of theft deterrent ECU and "C11" of A/C and combination meter integrated ECU.

CHECK:

- Check continuity between terminals MPX- of center cluster integration panel and MPX+ of A/C and combination meter integrated ECU.
- Check continuity between terminals MPX- of A/C and combination meter integrated ECU and MPX1 of theft deterrent ECU.

OK:

There is a continuity in wireharness of both (a) and (b), either (a) or (b).

HINT:

If there is OPEN in wireharness of either (a) or (b), please repair it.

NG

Repair or replace wireharness.

OK

Replace the A/C and combination meter integrated ECU.

LEXUS RX300 (RM785E)

| | | |
|------------|-------------------|--|
| DTC | B1277 / 77 | Center cluster integration panel communication stop |
|------------|-------------------|--|

CIRCUIT DESCRIPTION

This DTC is output when communication stops between center cluster integration panel and Body ECU.

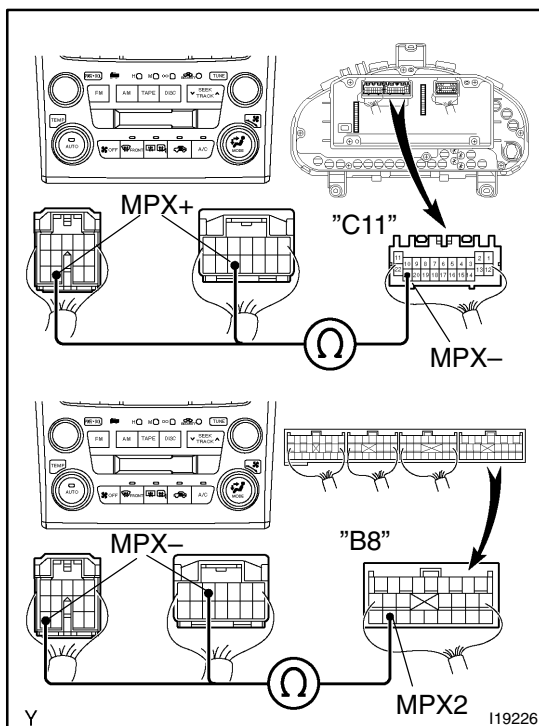
| DTC No. | DTC Detecting Condition | Trouble Area |
|----------|--|---|
| B1277/77 | No communication from center cluster integration panel more than 10 seconds. | <ul style="list-style-type: none"> Center cluster integration panel Wireharness |

WIRING DIAGRAM

See page DI-688

INSPECTION PROCEDURE

| | |
|----------|--------------------------|
| 1 | Check wireharness |
|----------|--------------------------|



PREPARATION:

Disconnect connector "B8" of body ECU "I16" or "I17" of center cluster integration panel and "C11" of A/C and combination meter integrated ECU.

CHECK:

- Check continuity between terminals MPX2 of body ECU and MPX+ of A/C and combination meter integrated ECU.
- Check continuity between terminals MPX2 of body ECU and MPX- of center cluster integration panel.

OK:

There is a continuity in wireharness of both (a) and (b), or either (a) or (b).

HINT:

If there is OPEN in wireharness of either (a) or (b), please repair it.

NG

Repair or replace wireharness.

OK

Replace the A/C ECU.

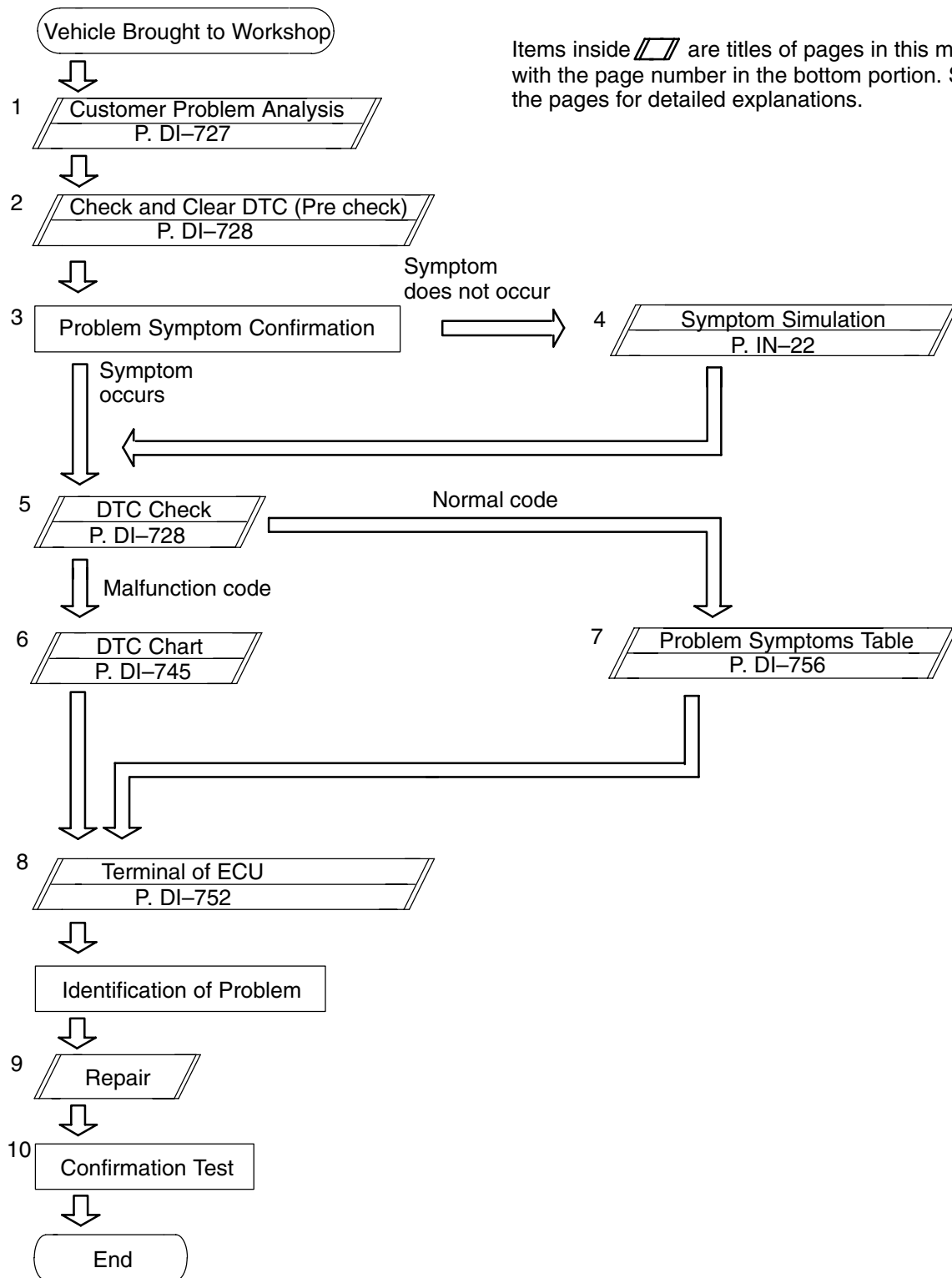
LEXUS NAVIGATION SYSTEM

HOW TO PROCEED WITH TROUBLESHOOTING

DI27W-07

HINT:

The ECU of this system is connected to the multiplex communication system. Therefore, before starting troubleshooting, make sure to check that there is no trouble in the multiplex communication system.



CUSTOMER PROBLEM ANALYSIS CHECK

NAVIGATION SYSTEM Check Sheet

Inspector's name: _____

| | | | |
|----------------------------|-----|-------------------|------------|
| Customer's Name | | Registration No. | |
| | | Registration Year | |
| | | Frame No. | |
| Date of Vehicle Brought in | / / | Odometer Reading | km Mile |

| | |
|-----------------------------|---|
| Date Problem First Occurred | / / |
| Frequency Problem Occurs | <input type="checkbox"/> Constant <input type="checkbox"/> Intermittent (Times a day) |

| | | |
|--|----------------------------|---|
| Problem Symptom | Navigation malfunction | <input type="checkbox"/> Cursor movement is defective. |
| | | <input type="checkbox"/> Cursor does not move. |
| | | <input type="checkbox"/> GPS mark does not appear. |
| | | <input type="checkbox"/> Map is not displayed. |
| | | <input type="checkbox"/> Others () |
| | Display malfunction | <input type="checkbox"/> Screen is dark. |
| | | <input type="checkbox"/> Screen is white. |
| | | <input type="checkbox"/> Color is not uniform. |
| | | <input type="checkbox"/> Screen is in disorder. |
| | | <input type="checkbox"/> Others () |
| | Control Switch malfunction | <input type="checkbox"/> Can not operate with panel switches. |
| | | <input type="checkbox"/> Can not operate with touch switches. |
| <input type="checkbox"/> Others () | | |

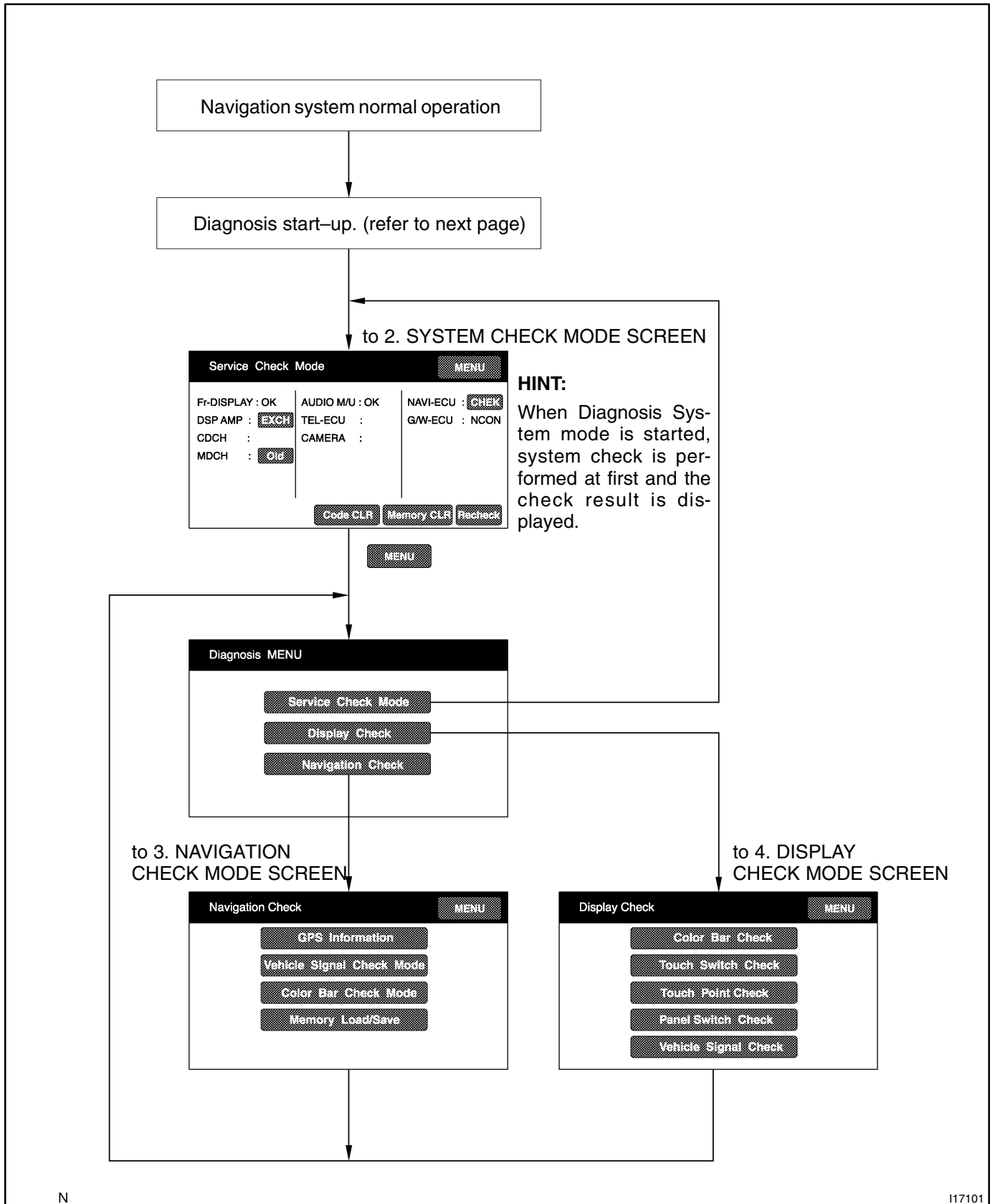
| DTC Check | Parts name | 1st time malfunction code. | 2nd time malfunction code. |
|-----------|-------------------------|----------------------------|----------------------------|
| | Navigation ECU | | |
| | Multi Display | | |
| | Radio receiver assembly | | |

PRE-CHECK

1. DIAGNOSIS SYSTEM MODE

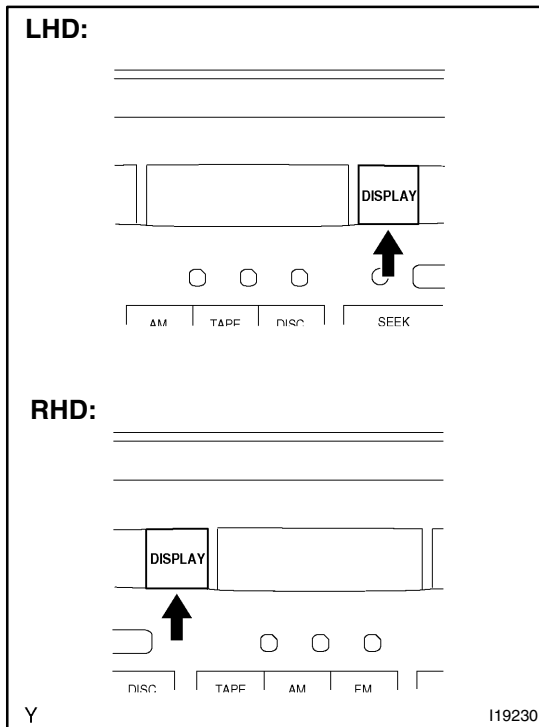
HINT:

Diagnosis System Mode is operated as follows.



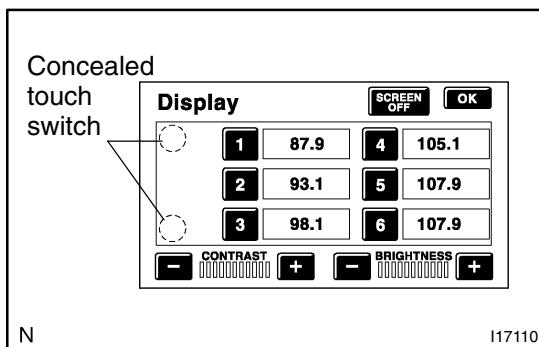
(a) DIAGNOSIS START-UP

To start the diagnosis menu, there are 2 ways: using a diagnosis check wire and using a switch.



(b) START-UP BY SWITCH OPERATION

- (1) Vehicle speed is 0 km/h (0 mph).
- (2) Parking brake switch is pressed.
- (3) Press the Display switch to display the Screen Adjustment screen.



- (4) Repeatedly touch the upper and lower bottom parts of the left end of the screen 3 times.

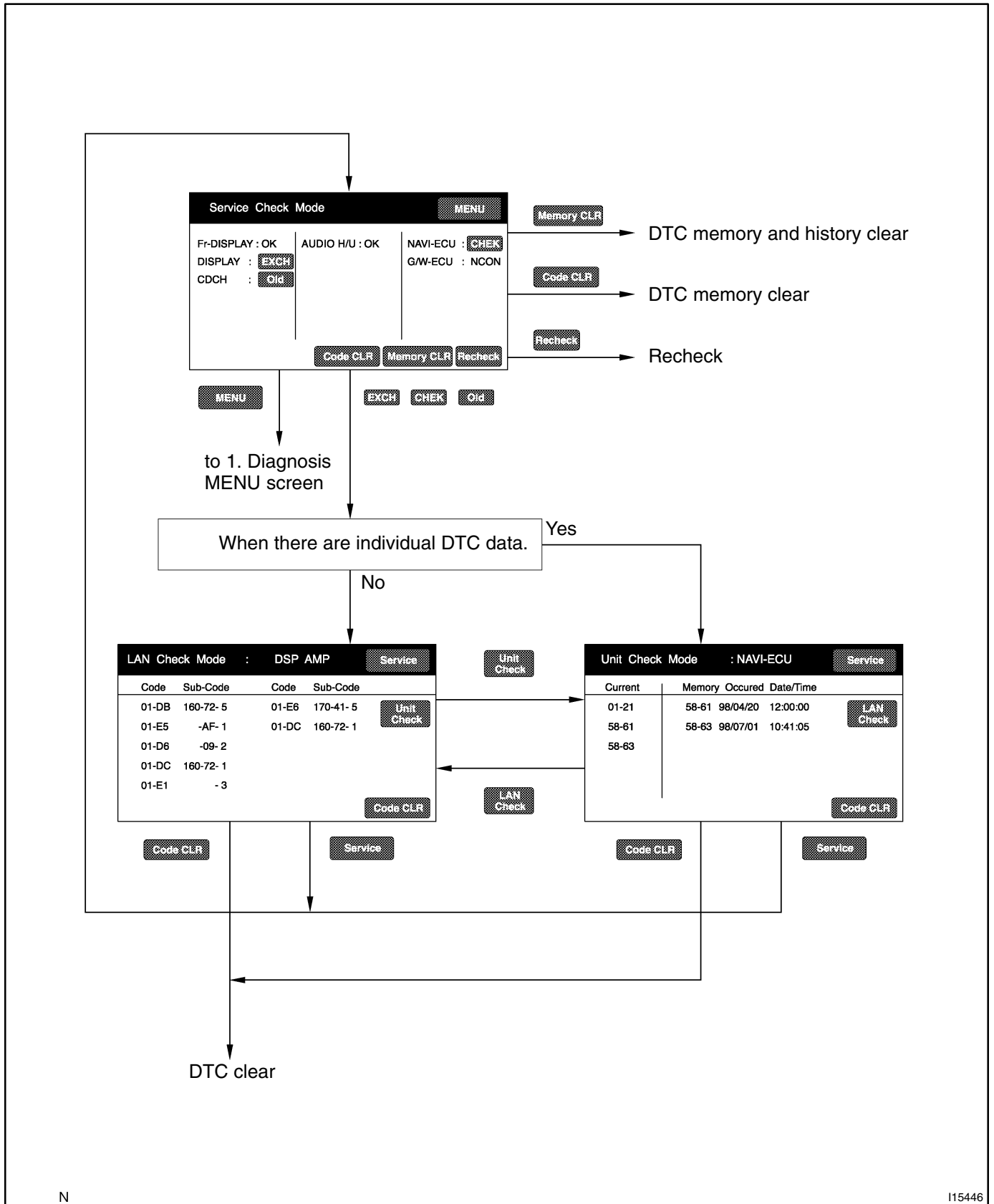
(c) FINISHING DIAGNOSIS SYSTEM MODE

Turn the ignition switch from ACC to OFF to finish the mode. If it is started by switch operation.

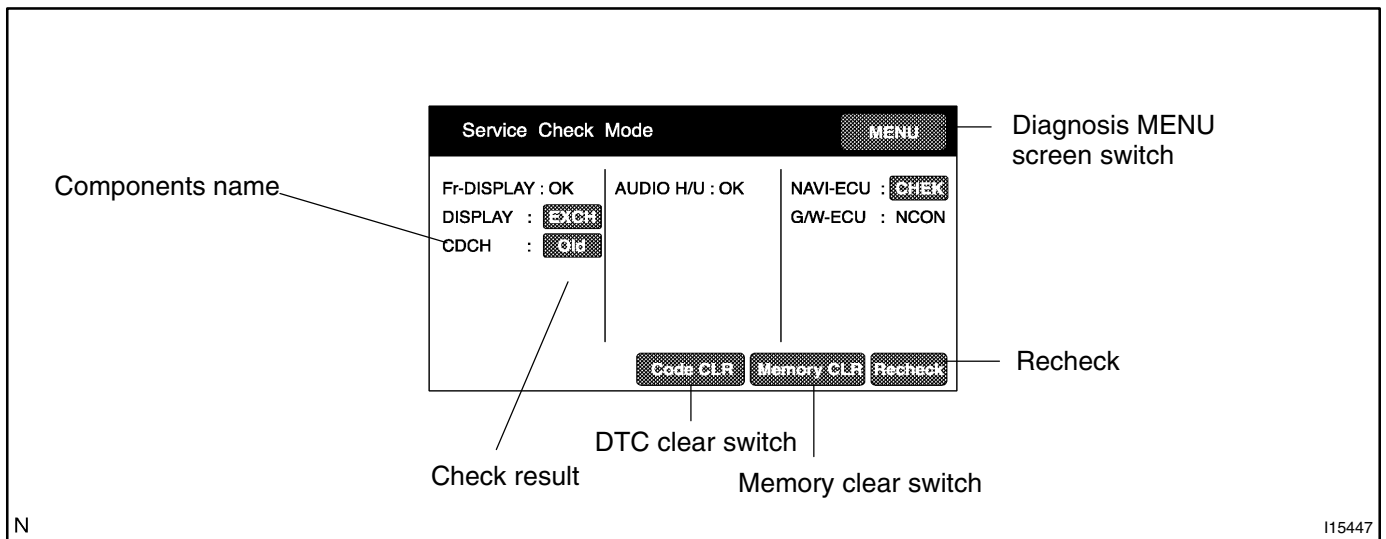
2. SERVICE CHECK MODE

HINT:

Service Check Mode is operated as follows.

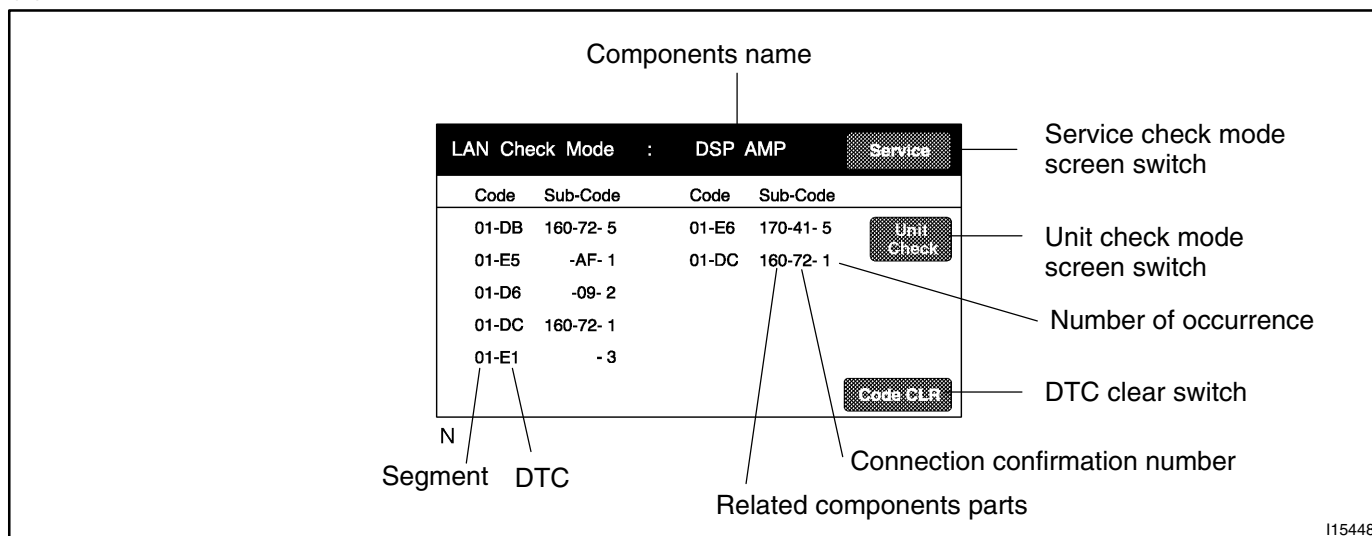


(a) SERVICE CHECK SCREEN



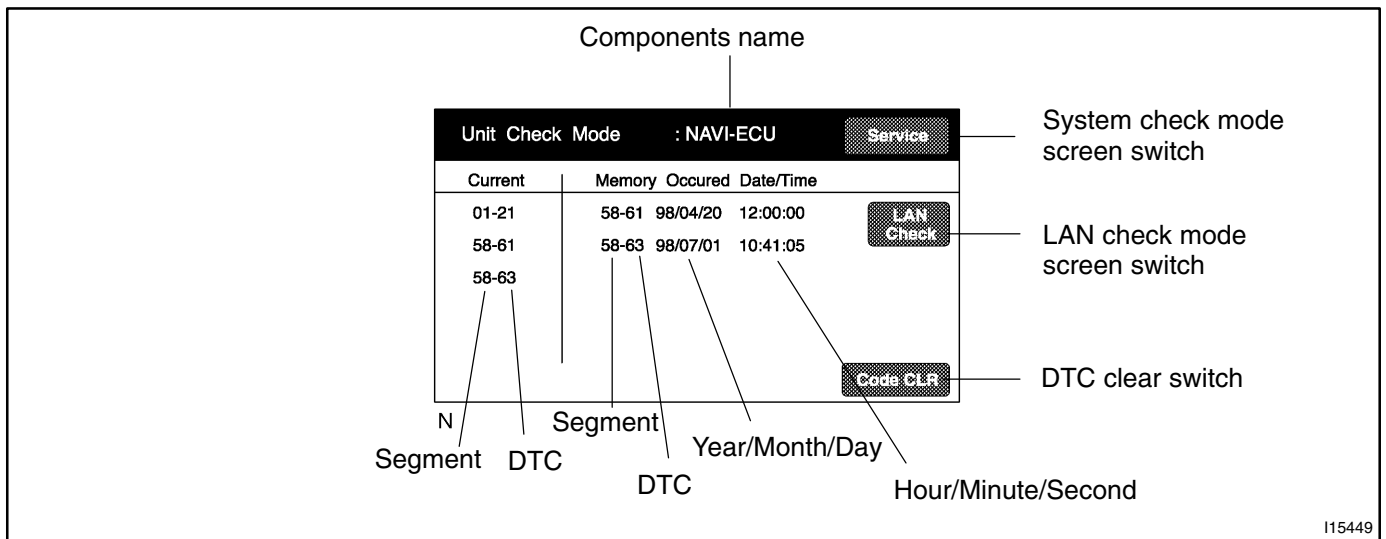
- (1) By performing system check and collecting data of diagnosis memory, this mode checks the current and past condition of the vehicle.
- (2) List of all components name or physical addresses.
It displays only the components that have been connected at least once.
- (3) The check result is displayed for all components.
- (4) The check result is displayed by 6 abbreviations: "OK", "EXCH", "CHEK", "NCON", "NRES" and "Old". ("EXCH", "CHEK" and "Old" have a function as switches.)
- (5) Based on all information obtained from "System Check Request", "Diagnosis Memory Request" and "Current Diagnosis Result" command, the following results are displayed:
OK: No error is identified.
EXCH: One or more error codes requesting for exchange are detected in any check result.
CHEK: Except the conditions for "EXCH", one or more error codes requesting for check are detected in any check result.
- (6) The other check results are as follows:
NCON: No response to "Diagnosis ON Instruction" command and it is not connected when the system is started.
Old: One or more error codes are detected when responding to "Diagnosis ON Instruction" command because of the old version .
NRES: No response to all commands of "System Check Request", "Diagnosis Memory Request" and "Current Diagnosis Result". Or no error is detected by any one of "System Check Request" or "Diagnosis Memory Request" when no response to the other command.
- (7) "EXCH", "CHEK" and "Old" are functioned as switches any by pressing these, LAN Check Mode and Unit Check Mode are activated.
- (8) Memory Clear Switch
Pressing this switch for 3 sec. deletes all information about master component registration and diagnosis memory of all components.
- (9) DTC Clear Switch
Pressing this switch for 3 sec. deletes diagnosis memory of all components.
- (10) Recheck Switch
Pressing this switch rechecks the system.
- (11) Menu Switch
Pressing this switch activated the Diagnosis Menu Screen.

(b) LAN CHECK MODE SCREEN



- (1) As a detailed screen in the System Check Mode, LAN Check Mode is displayed.
- (2) Communication codes (logical address "01") are extracted from the diagnosis data obtained by "Diagnosis Memory Request" and displayed.
- (3) Component Name
Names of the components to be checked are displayed.
- (4) Segment
Logical address codes corresponding to DTC are displayed.
- (5) DTC
DTC displayed.
- (6) Related components address
Physical address codes corresponding to DTC are displayed.
- (7) Connection Confirmation Number
Connection confirmation numbers corresponding to DTC is displayed.
- (8) Number of Occurrence
The number of occurrence of the same DTC is displayed.
- (9) DTC Clear Switch
Pressing this switch for 3 sec. deletes DTC memory of the selected diagnosis component. When returning to the System Check Mode, the check result is shown as a blank.
- (10) Unit Check Mode Screen Switch
Pressing this switch activates the Unit Check Mode screen.
- (11) System Check Mode Screen Switch
Pressing this switch activates the System Check Mode screen.

(c) UNIT CHECK MODE SCREEN



- (1) As a detailed screen in the System Check Mode, the Unit Check Mode is displayed.
- (2) Up to 6 error codes detected by "The DTC obtained during the system check (including when starting the diagnosis mode)" can be displayed as "Current".
- (3) Up to 6 error codes detected by "DTC stored in the past" can be displayed as "Memory".
- (4) Component Name
Names of the components are displayed.
- (5) Segment
Logical address numbers corresponding to DTC are displayed.
- (6) DTC
DTC is displayed.
- (7) Year/Month/Day/Hour/Minute/Second
The date and time stamped at the time of code occurrence is displayed in the order of year–month–day–hour–minute–second. (Year is shown in 2–digit number.) If the date and time data is invalid, it is displayed as a blank.

HINT:

Time data is obtained after turning the ignition from ACC to ON. Until the valid time data is obtained, the data shown in the display shall be considered as invalid.

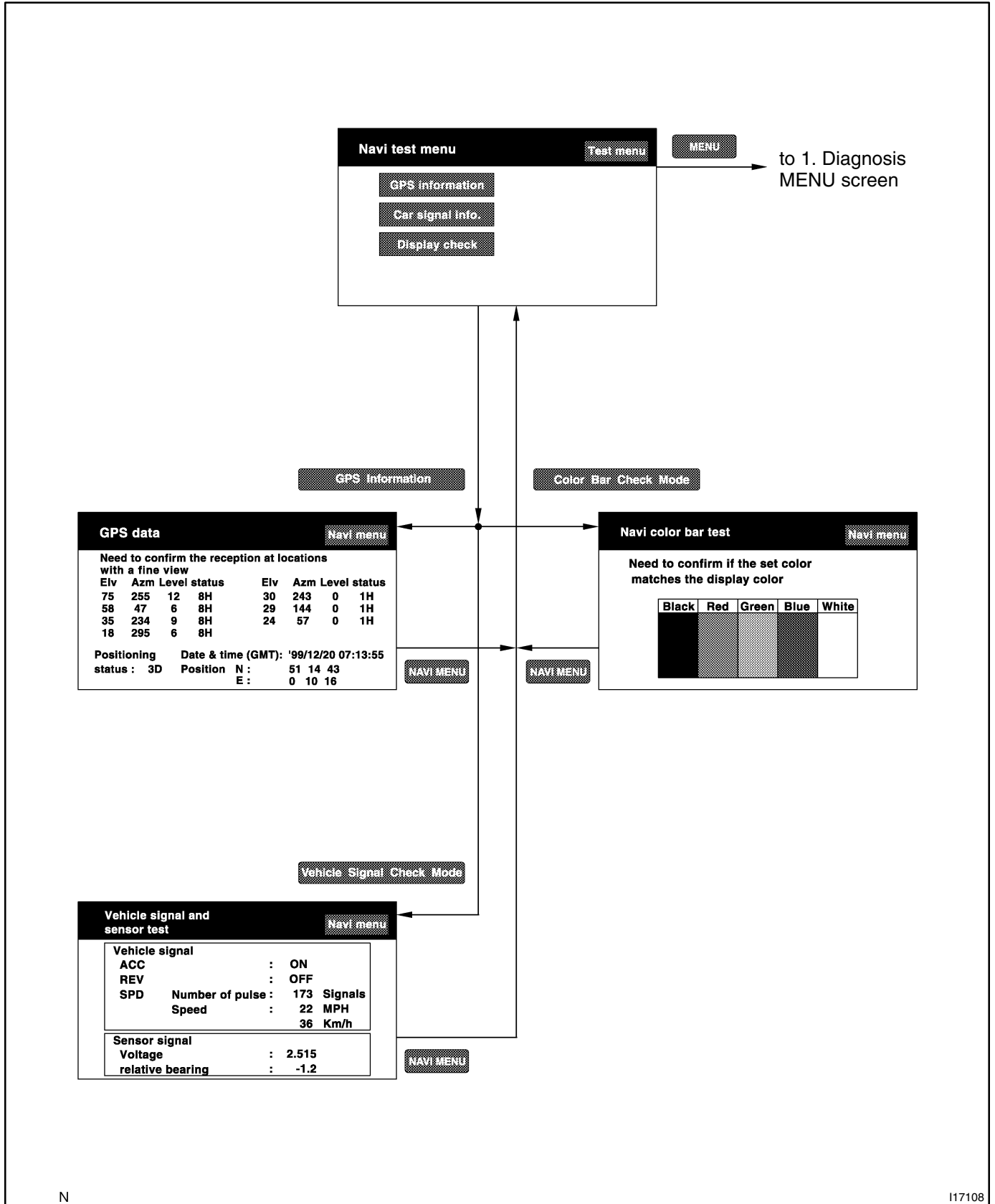
If stored before a valid time data is obtained, the data shall not be displayed.

- (8) DTC Clear Switch
Pressing this switch for 3 sec. deletes all diagnosis memory of the component. When returning to the System Check Mode, the check result is displayed as a blank.
- (9) Lan Check Mode Screen Switch
Pressing this switch activates the LAN Check Mode screen.
- (10) System Check Mode Screen .Switch
Pressing this switch activates the System Check Mode screen.

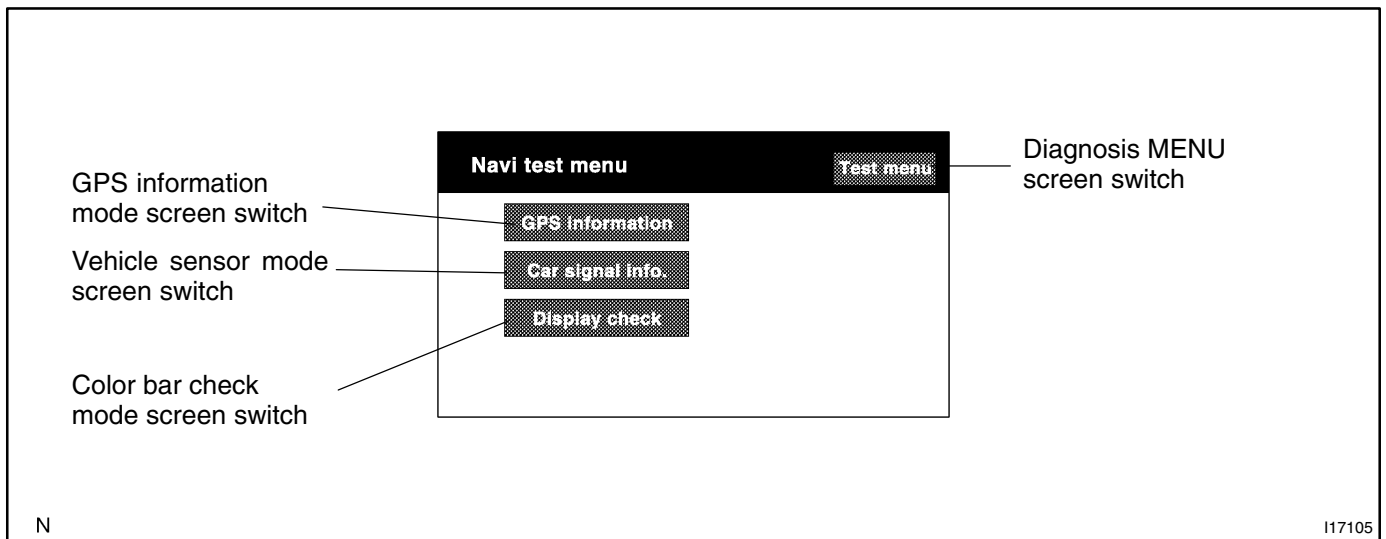
3. NAVIGATION CHECK MODE

HINT:

Navigation Check Mode is operated as follows.

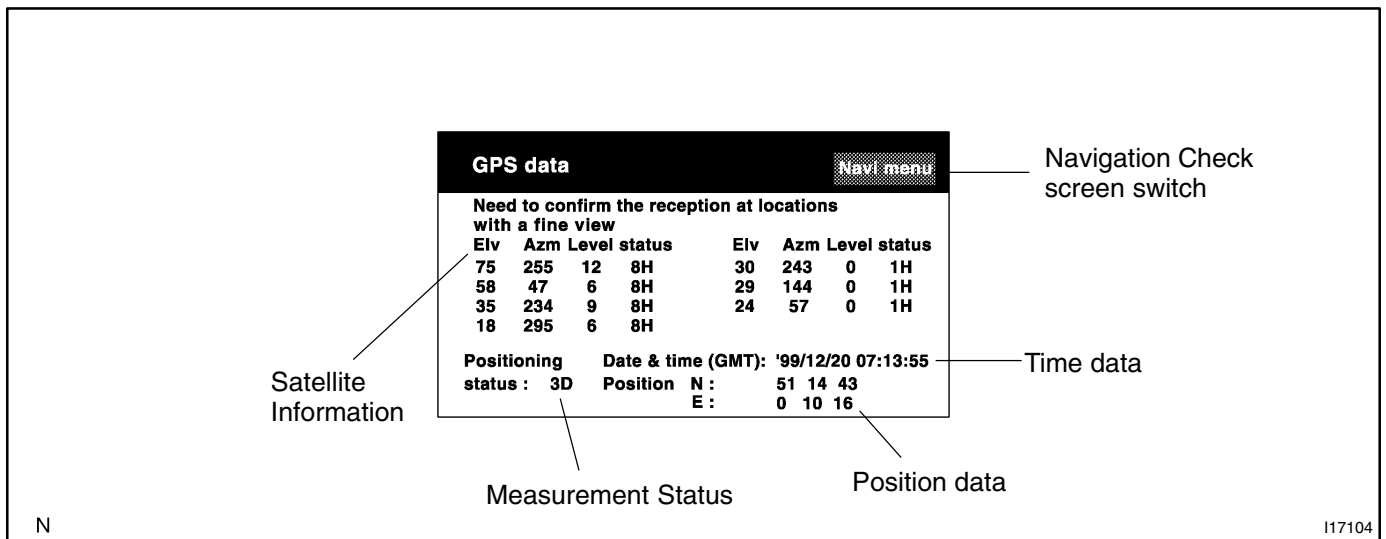


(a) NAVIGATION CHECK MODE SCREEN



- (1) Various check screens for the Navigation ECU can be started from this menu screen.
- (2) GPS Information Mode Screen Switch
Pressing this switch activates GPS Information Mode Screen.
- (3) Vehicle Sensor Mode Screen Switch
Pressing this switch activates the Vehicle Signal Mode screen.
- (4) Color Bar Check Mode Screen Switch
Pressing this switch activates the Color Bar Check Mode screen.
- (5) Diagnosis Menu Screen Switch
Pressing this switch activates the Diagnosis Menu screen.

(b) GPS INFORMATION MODE SCREEN



(1) This screen displays GPS related data.

HINT:

Data are updated every 1 sec.

(2) Satellite Information

The angle of elevation of relevant satellite, azimuth signal level, and receiving condition of signals are displayed.

HINT:

The reception status shows receiving.

"T": means in operation but measurement is not being used for positioning.

"P": means measurement is being used for positioning.

"-": means no data can be received.

Display area for up to 8 satellites is ensured.

Data shall be updated corresponding to change of information.

(3) Time data: The time data obtained from a GPS receiver is displayed in month, day, year, hour and minute.

(4) The displayed time is Greenwich Mean Time.

(5) Position Data: The latitude and longitude of the current location are displayed in degree and minute.

(6) Measurement Status is displayed in the following 5 items.

2D: 2 dimensions.

3D: 3 dimensions.

NG: GPS information cannot be used.

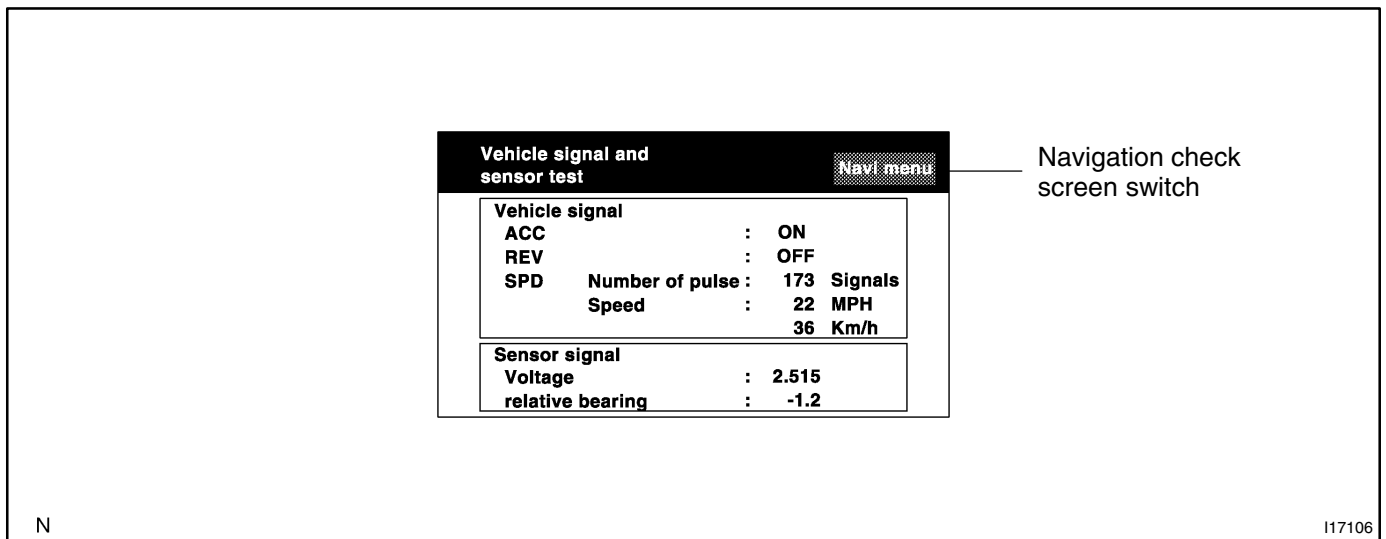
error: Receiving error occurs.

–: Other than the above.

(7) Navigation Check Screen Switch

Pressing this switch activates the Navigation Check screen.

(c) VEHICLE SIGNAL CHECK MODE SCREEN



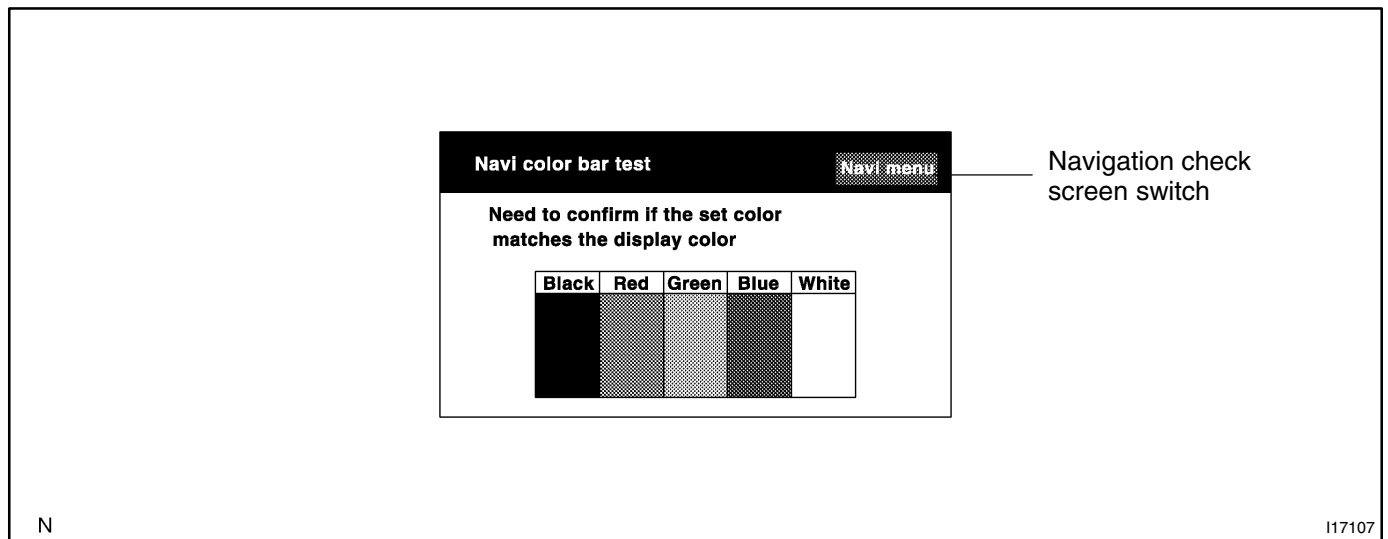
(1) Status of the vehicle sensor which are input to the Navigation ECU is checked in this screen.

HINT:

Data are updated every 1 sec.

- (2) ACC signal status: Displayed as ON/OFF.
- (3) REV signal status: Displayed as ON/OFF.
- (4) SPD signal status: The following is displayed:
 - The cumulative value of the input pulse after displaying this screen. (shown in 5 digits)
 - Vehicle speed (Unit: km/h, mph)
- (5) Output condition of the gyro sensor: The following is displayed:
 - Voltage (Unit: mV, LSB: 1mV)
 - Relative azimuthal angle to the current point (0 degree).
Assuming the angle at a point when this screen is activated as 0 degree.
- (6) Navigation Check Menu Screen Switch
Pressing this switch displays the Navigation Check screen.

(d) COLOR BAR CHECK MODE SCREEN

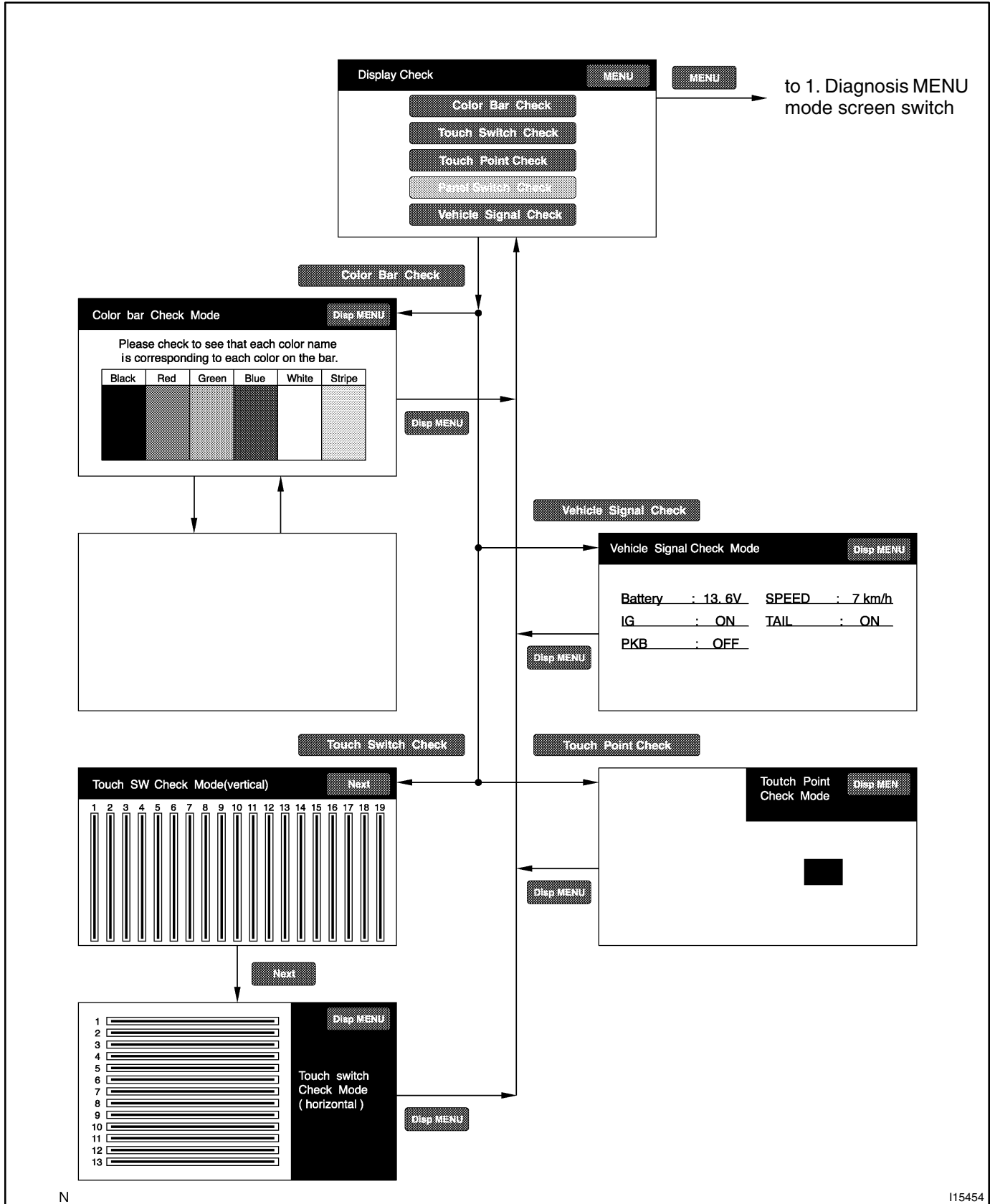


- (1) Color display of the Navigation ECU is checked in this screen.
- (2) Color Bars:
Five colors of "BLACK", "RED", "GREEN", "BLUE" and "WHITE" are displayed as bars.
- (3) Navigation Check Screen Switch
Pressing this switch displays the Navigation Check screen.

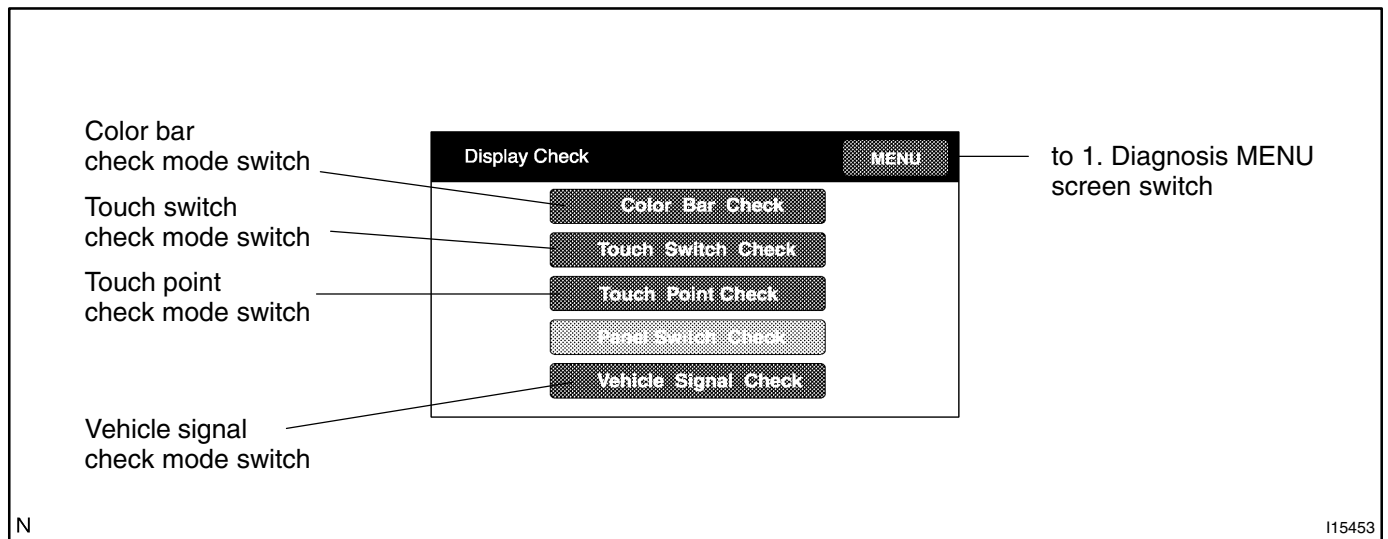
4. DISPLAY CHECK MODE

HINT:

Display Check Mode is operated as follows.

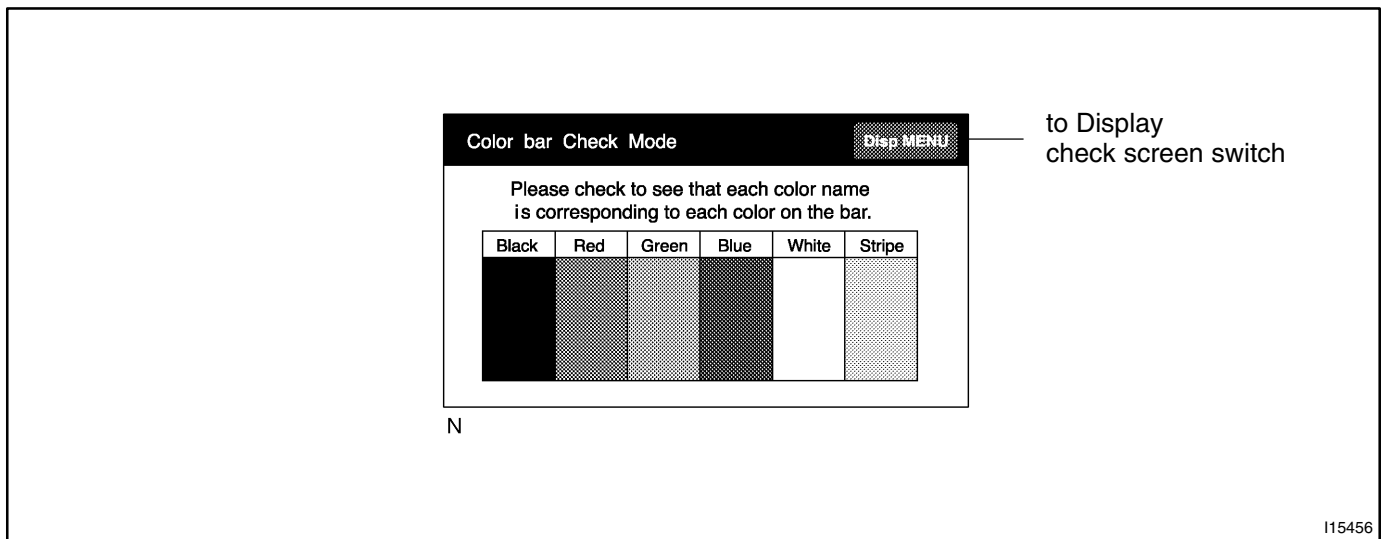


(a) DISPLAY CHECK MENU SCREEN



- (1) Various screens to check the display are started from this screen.
- (2) Color Bar Check Mode Switch
Pressing this switch activates the Color Bar Check Mode screen.
- (3) Touch Switch Check Mode Switch
Pressing this switch activates the Touch Switch Check Mode screen.
- (4) Touch Point Check Mode Switch
Pressing this switch activates the Touch Point Check Mode screen.
- (5) Vehicle Signal Check Mode Switch
Pressing this switch activates the Vehicle Signal Check Mode screen.
- (6) Diagnosis MENU Screen Switch
Pressing this switch activates the Diagnosis MENU screen.

(b) COLOR BAR CHECK MODE SCREEN



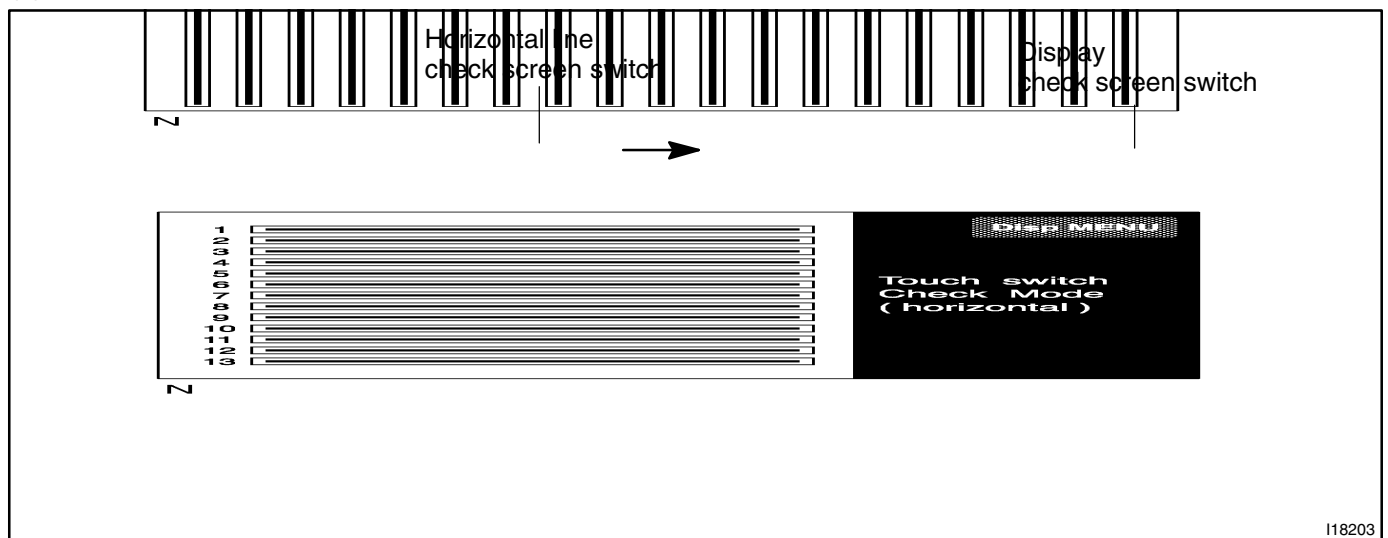
- (1) Color display is checked in this screen.
- (2) Color Bar:

Black, Red, Green, Blue, White and Stripe is displayed in bars.

If a bar is touched, color or stripe of the bar is appeared all over the screen. When touched again, it returns to the previous screen.

- (3) Display Check Screen Switch
Pressing this switch activates the Display Check Mode screen.

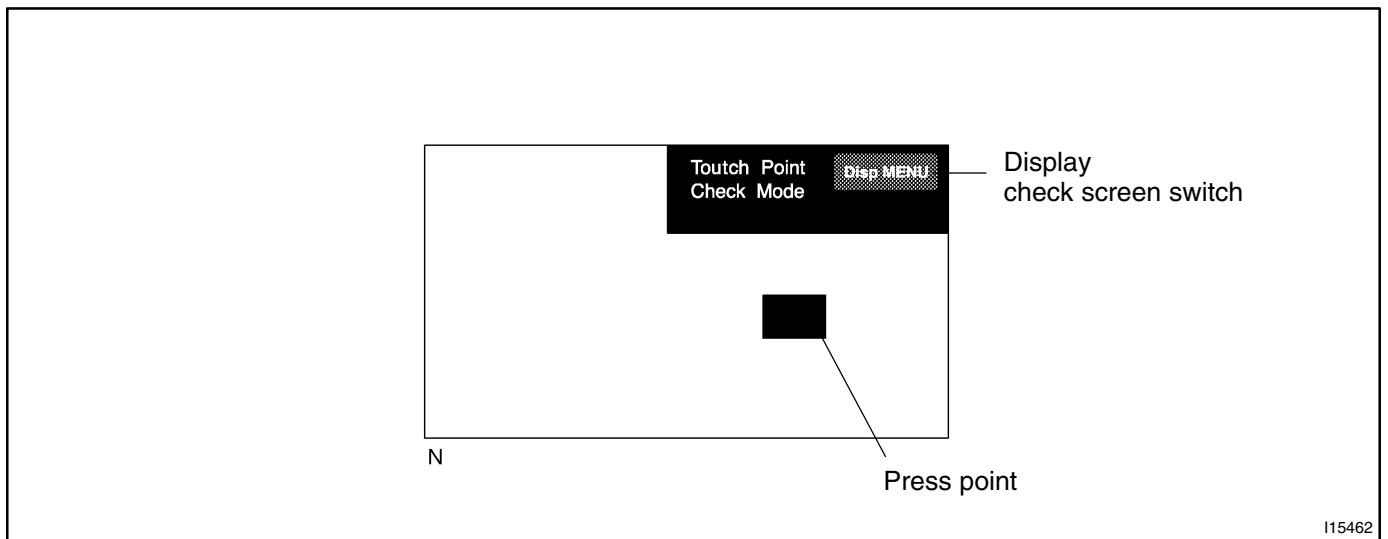
(c) TOUCH SWITCH CHECK MODE SCREEN



I18203

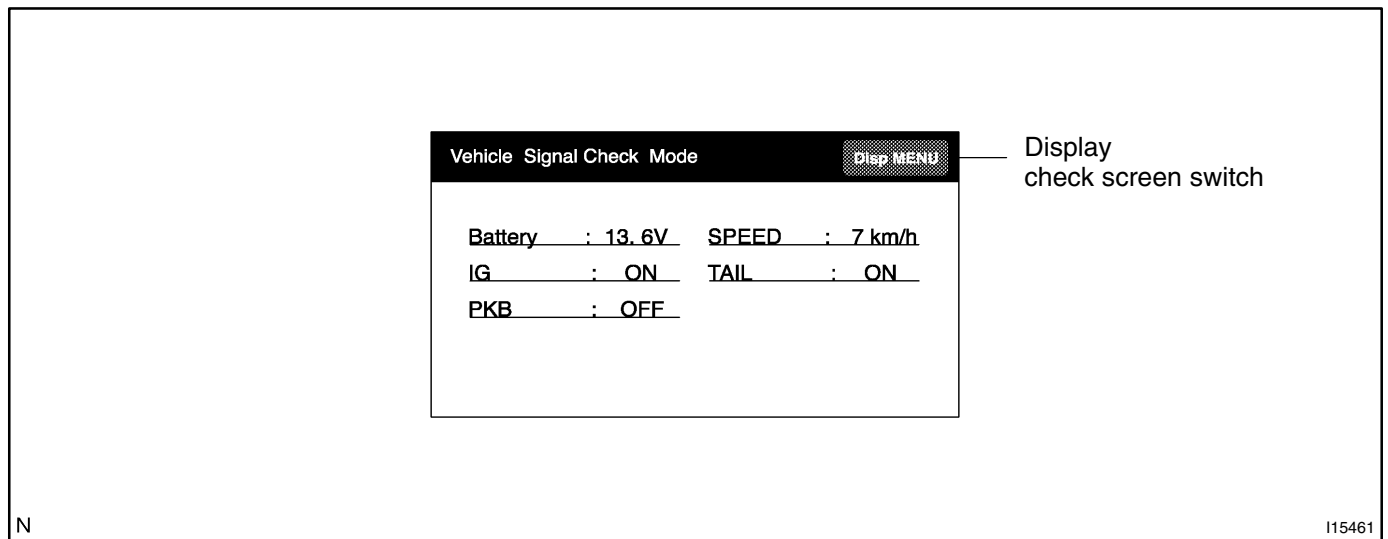
- (1) Operating condition is checked line by line in the Touch Switch Check Mode screen.
- (2) Check Line:
Lines are displayed by using infrared beams in this screen.
Once a beam is blocked off by touching the screen with a fingertip, the blocked part of the line is deleted.
- (3) Horizontal Line Check Screen Switch:
Pressing this switch activates a screen in which beams of horizontal lines are checked.
- (4) Display Check Mode Switch
Pressing this switch activates the Display Check Mode screen.

(d) TOUCH POINT CHECK MODE SCREEN



- (1) In this screen, the position detected by the pressure sensing touch switch is checked.
- (2) Press point:
The detected point is indicated by a cross-hair cursor.
- (3) Display Check Screen Switch
Pressing this switch activates the Display Check Mode screen.

(e) VEHICLE SIGNAL CHECK MODE SCREEN



- (1) Status of the Vehicle Signal which has been loaded into the display is checked in this screen.
- (2) Signal Description
 Battery: Displays battery voltage in V.
 IG: Displays ON or OFF of the ignition switch.
 PKB: Displays ON (applied) or OFF (released) of the parking brake.
 SPEED: Displays the vehicle speed in km/h.
 TAIL: Displays ON or OFF of the tail light switch.
- (3) Display Check Screen Switch
 Pressing this switch activates the Display Check Mode screen.

DIAGNOSTIC TROUBLE CODE CHART

| Terms | Meaning |
|------------------|--|
| Physical address | Three-digit code (shown in hexadecimal) which is given to each component comprising the AVC – LAN Corresponding to the function, individual symbols are specified.. |
| Logical address | Two-digit code (shown in hexadecimal) which is given to each function comprising the inner system of the AVC – LAN. |

Physical address: 110 Multi display

| Logical address | DTC | Diagnosis item | Diagnosis content | Countermeasure and inspected parts |
|---------------------------------|-----|----------------------------------|--|--|
| 21 *1 (Switch) | 10 | Panel Switch Error | Error in panel switch input part is detected. (Error in switch control part, or internal communication error with switch control part is detected.) | <ul style="list-style-type: none"> Inspect all switches on touch switch test screen in display check mode. If any of lines and point does not react, replace multi-display assembly. If all switches function without problem, observe them for a while. |
| 21 (Switch) | 11 | Touch Switch Error | Error in touch switch sensor is detected. | <ul style="list-style-type: none"> Inspect all touch switches on touch switch test screen in display check mode. If any of lines does not react, replace multi-display assembly. If all of vertical and horizontal lines react normally, observe them for a while. |
| 34 (Front passenger monitor) | 10 | Error in Picture Circuit | Error in power supply system for picture circuit (abnormal voltage) is detected. | Replace multi-display assembly. |
| 34 (Front passenger monitor) | 11 | Backlight Error (No current) | Decline in power output from inverter circuit for backlight. | Replace multi-display assembly. |
| 34 (Front passenger monitor) | 12 | Backlight Error (Excess current) | Excess power output from inverter circuit for backlight. | Replace multi-display assembly. |
| 01 (Communication control) | 21 | ROM Error | Abnormal condition of ROM is detected. | Replace multi-display assembly. |
| 01 (Communication control) | 22 | RAM Error | Abnormal condition of RAM is detected. | Replace multi-display assembly. |

*1: Check if the operation in Touch Point Check or Touch Switch Check screen is normal. If it operates without any problem, see how things go for a while.

Although this code is defined as Panel Switch Error, there are touch switches only on the display. If the internal communication is erroneous, however, this code is stored.

| | | | | |
|----------------------------------|----|--------------------------------------|--|---|
| 01 *2 (Communication Control) | D5 | Registered component disconnected | Component shown by auxiliary code is or was disconnected from system with ignition switch in ACC or ON. Communication with component shown by auxiliary code is not established when engine is started. | <ul style="list-style-type: none"> ● Check harness for power supply of component shown by auxiliary code ● Check harness for communication system of component shown by auxiliary code |
| 01 *3 (Communication Control) | D8 | No response to connection check | Component shown by auxiliary code is or was disconnected from system after engine is started. | <ul style="list-style-type: none"> ● Check harness for power supply of component shown by auxiliary code ● Check harness for communication system of component shown by auxiliary code |
| 01 *2 (Communication Control) | D9 | Last Mode Error | Component operated (sound and/or image was provided) before engine stop is or was disconnected with ignition switch in ACC or ON. | <ul style="list-style-type: none"> ● Check harness for power supply of component shown by auxiliary code ● Check harness for communication system of component shown by auxiliary code |
| 01 (Communication Control) | DA | No Response to ON/OFF Instruction | No response is identified when changing mode (audio and visual mode change). Detected when sound and picture does not change by button operation. | <ul style="list-style-type: none"> ● Check harness for power supply of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code. ● If error occurs again, replace component shown by auxiliary code. |
| 01 *2 (Communication Control) | DB | Mode Status Error | Dual sound is detected. | <ul style="list-style-type: none"> ● Check harness for power supply system of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code. |
| 01 *4 (Communication Control) | DC | Transmission Error | Transmission to component shown by auxiliary code has been failed. (This code does not necessarily mean actual failure.) | If same component shown by auxiliary code is recorded in other component(s), check harness for power supply and communication system of components shown sub code. |
| 01 *5 (Communication Control) | DE | Slave Reset (Momentary Interruption) | After engine start, slave component has been disconnected. DB | <ul style="list-style-type: none"> ● Check harness for power supply system of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code. |
| 01 *1 (Communication Control) | E4 | Multiple Frame Abort | Multiple frame transmission is aborted. | Since this DTC is provided for engineering, it may be detected when no actual failure exists. |

*2: Even if no failure is detected, it may be stored depending on the battery condition or voltage for starting an engine.

*3: It is stored when 180 sec. has passed after the power supply connector is pulled out after engine start.

*4: It may be stored when the engine key is turned again 1 min. after engine start.

*5: It may be stored when the engine key is turned again after engine start.

Physical address: 190 Radio receiver assembly

| Logical address | DTC | Diagnosis item | Diagnosis content | Countermeasure and inspected parts |
|----------------------------------|-----|---------------------------------------|--|--|
| 01 (Communication Control) | 21 | ROM Error | Error is detected in internal ROM. | Replace radio receiver assembly. |
| 01 (Communication Control) | 22 | RAM Error | Error is detected in internal RAM. | Replace radio receiver assembly. |
| 01 *2 (Communication Control) | D6 | Absence of Master | Component in which this code is recorded has been disconnected from system with ignition in ACC or ON. Or, when this code was recorded, multi-display assembly was disconnected. | <ul style="list-style-type: none"> ● Check harness for power supply system of multi display. ● Check harness for communication system of multi display. ● Check harness for power supply system of radio receiver assembly. ● Check harness for communication system of radio receiver assembly. |
| 01 *3 (Communication Control) | D8 | No Response to Connection Check | Component shown by auxiliary code is or had been disconnected from system after engine start. D9 | <ul style="list-style-type: none"> ● Check harness for power supply system of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code. |
| 01 *2 (Communication Control) | D9 | Last Mode Error | Component operated (sounds and/or images were provided) before engine stop is or has been disconnected with ignition switch in ACC or ON. | <ul style="list-style-type: none"> ● Check harness for power supply system of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code. |
| 01 (Communication Control) | DA | No Response to ON/OFF Instruction | No response is identified when changing mode (audio and visual mode change). Detected when sound and picture does not change by button operation. | <ul style="list-style-type: none"> ● Check harness for power supply of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code. ● If error occurs again, replace component shown by auxiliary code. |
| 01 *2 (Communication Control) | DB | Mode Status Error | Dual alarm is detected. | <ul style="list-style-type: none"> ● Check harness for power supply of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code. |
| 01 *4 (Communication Control) | DC | Transmission Error | Transmission to component shown by auxiliary code has been failed. (Detecting this DTC does not necessarily mean actual failure.) | <ul style="list-style-type: none"> ● If same auxiliary code is recorded in other component, check harness for power supply and communication system of components shown sub code. |
| 01 *5 (Communication Control) | DD | Master Reset (Momentary Interruption) | After engine is started, multi-display assembly was disconnected from system. | <ul style="list-style-type: none"> ● If this error occurs frequently, replace multi-display assembly. |

| | | | | |
|----------------------------------|----|---|---|---|
| 01 *5 (Communication Control) | DE | Slave Reset (Momentary Interruption) | After engine is started, slave component was disconnected from system. | <ul style="list-style-type: none"> ● Check harness for power supply of component shown by auxiliary code. ● Check harness for communication system of component shown by auxiliary code. |
| 01 *6 (Communication Control) | DF | Master Error | Due to defective condition of multi display, master function is switched to audio equipment. Error occurs in communication between sub-master (audio) and multi display. | <ul style="list-style-type: none"> ● Check harness for power supply of multi-display assembly. ● Check harness for communication system of multi-display assembly. ● Check harness for communication system between multi-display assembly and sub-master component. |
| 01 (Communication Control) | E0 | Registration Completion Instruction Error | "Registration Completion Instruction" command from multi display cannot be received. | <ul style="list-style-type: none"> ● Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists. |
| 01 *2 (Communication Control) | E1 | Audio processor ON error | While source equipment is operating, AMP output is stopped. | <ul style="list-style-type: none"> ● Check harness for power supply of multi-display assembly. ● Check harness for communication system of multi-display assembly. |
| 01 (Communication Control) | E2 | ON/OFF Instruction Parameter Error | Error occurs in ON/OFF controlling command from multi-display assembly. | <ul style="list-style-type: none"> ● Replace multi-display assembly. |
| 01 (Communication Control) | E3 | Registration Request Transmission | Registration Request command is output from slave component. Receiving Connection Check Instruction, Registration Request command is output from sub-master component. | <ul style="list-style-type: none"> ● Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists. |
| 01 (Communication Control) | E4 | Plural Frame Abort | Plural frame transmission is aborted. | <ul style="list-style-type: none"> ● Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists. |
| 60 (Radio receiver assembly) | 43 | AM Tuner Error | Abnormal condition is detected in AM tuner. Inspect radio receiver assembly. | Replace radio receiver assembly. |
| 60 (Radio receiver assembly) | 44 | FM Tuner Error | Abnormal condition is detected in FM tuner. | Replace radio receiver assembly. |
| 61 (Cassette switch) | 40 | Mechanical or Media Error | Malfunction due to mechanical failure is identified. Or, cassette tape is cut or entangled. | Inspect cassette tape. |
| 61 (Cassette switch) | 41 | EJECT Malfunction | Malfunction due to mechanical failure. | Replace radio receiver assembly. |
| 62 (CD player) | 42 | No Disc Readout | Disc cannot be read. | Inspect CD. |
| 62 (CD player) | 44 | CD Error | Error is detected in CD player. | Replace radio receiver assembly. |

| | | | | |
|-------------------|----|-----------------------------|--|----------------------------------|
| 62 (CD player) | 45 | EJECT Error | Magazine cannot be ejected. | Replace radio receiver assembly. |
| 62 (CD player) | 46 | Scratched/ Reversed Disc | Scratches or dirt is found on CD surface or CD is set upside down. | Inspect CD. |

*2: Even if no failure is detected, it may be stored depending on the battery condition or voltage for starting an engine.

*3: It is stored when 180 sec. has passed after the power supply connector is pulled out after engine start.

*4: It may be stored when the engine key is turned again 1 min. after engine start.

*5: It may be stored when the engine key is turned again after engine start.

*6: When 210 sec. has passed after pulling out the power supply connector of the master component with the ignition switch in ACC or ON, this code is stored.

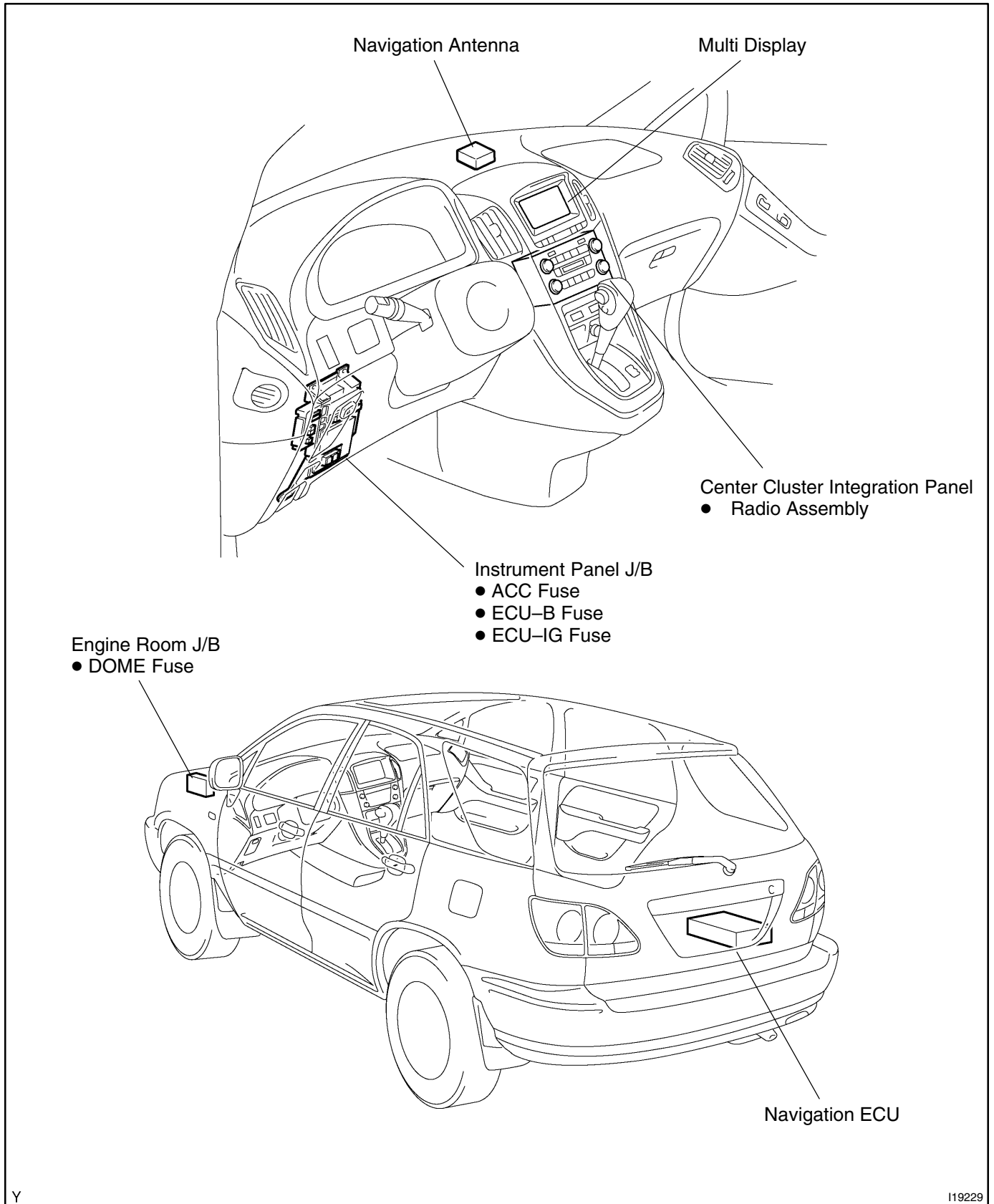
Physical address: 178 Navigation ECU

| | | | | |
|------------------------|----|-----------------------------------|--|--|
| 58 (Navigation ECU) | 10 | Gyro Error | Error in gyro sensor is detected. (Abnormal value in voltage output from sensor is detected for more than specified time.) | <ul style="list-style-type: none"> ● Check the Gyro voltage in the diagnosis system mode. |
| 58 (GPS receiver) | 11 | GPS Receiver Error | Operation error of GPS receiver is detected. | <ul style="list-style-type: none"> ● At an outdoor site with a clear view, operate to display the GPS information screen of the diagnosis system. If GPS time stamp is not properly displayed after 15 min. or more, replace navigation ECU. |
| 58 (GPS receiver) | 40 | GPS Antenna Error | Operation condition of GPS antenna cable is detected. (Open circuit, connection failure of connectors, etc.) | <ul style="list-style-type: none"> ● Check if the GPS antenna is correctly connected or positioned or not. After replacing the antenna, if the error remains, replace the navigation ECU. |
| 58 (GPS receiver) | 41 | Power Supply Error of GPS Antenna | Abnormal voltage of GPS antenna cable or short circuit is detected. | <ul style="list-style-type: none"> ● Inspect GPS antenna and replace if necessary. (When no continuity is identified between connector's core and sealed part, GPS antenna is normal.) ● If GPS antenna is normal, replace navigation ECU. |
| 58 (Navigation ECU) | 42 | Map Disc Error | Data cannot be read for a specified time due to scratches or dirt on disc surface or insertion of music CD. | <ul style="list-style-type: none"> ● Inspect disc and replace if necessary. (Visually check disc surface and wipe it with soft cloth.) |
| 58 (Navigation ECU) | 43 | Vehicle speed sensor Signal Error | Input error of vehicle speed sensor signal is detected. (When no vehicle speed sensor signal has been input for a specified time.) | <ul style="list-style-type: none"> ● Check the vehicle speed signal in the diagnosis system mode. ● Inspect wire harness for vehicle speed signal. ● If wire harness is normal, replace navigation ECU. |
| 58 (Navigation ECU) | 44 | Player Error | Malfunction of player continues for a specified length of time. | <ul style="list-style-type: none"> ● Check if disc can be inserted/taken out or not. If not, replace navigation ECU. ● When the same code is detected in recheck after deleting the DTC memory. |
| 58 (Navigation ECU) | 45 | Player Temp. Too High | Readout cannot be done because temperature around player's pickup (reading part) is too high. | <ul style="list-style-type: none"> ● With IG switch OFF, leave vehicle in cool shaded place for a while and recheck. After deleting the DTC memory, If same code detected, replace navigation ECU. |

| | | | | |
|----------------------------------|----|---|---|--|
| 01 (Communication Control) | D6 | Absence of Master | Component in which this code is recorded has been disconnected from system with ignition in ACC or ON. Or, when this code was recorded, multi-display assembly was disconnected. | <ul style="list-style-type: none"> ● Check harness for power supply system of multi display. ● Check harness for communication system of multi display. ● Check harness for power supply system of navigation ECU. ● Check harness for communication system of navigation ECU. |
| 01 *6 (Communication Control) | D7 | Connection Check Error | Component in which this code is recorded has been disconnected from system after engine start. Or, when this code was recorded, multi-display assembly was disconnected. D6 | <ul style="list-style-type: none"> ● Check harness for power supply system of multi display. ● Check harness for communication system of multi display. ● Check harness for power supply system of navigation ECU. ● Check harness for communication system of navigation ECU. |
| 01 (Communication Control) | DC | Transmission Error | Transmission to component shown by auxiliary code has been failed. (This code does not necessarily mean actual failure.) | If same auxiliary code is recorded in other component(s), check harness for power supply and communication system of components shown sub code. |
| 01 (Communication Control) | DD | Master Reset (Momentary Interruption) | After engine is started, multi-display assembly was disconnected from system. | <ul style="list-style-type: none"> ● Check harness for power supply system of multi-display assembly. ● Check harness for communication system of multi-display assembly. ● If error occurs frequently, replace multi-display assembly. |
| 01 (Communication Control) | DF | Master Error | Due to defective condition of component with a display, master function is switched to audio equipment. Error occurs in communication between sub-master (audio) and master component. | <ul style="list-style-type: none"> ● Check harness for power supply of multi-display assembly. ● Check harness for communication system of multi-display assembly. ● Check harness for communication system between multi-display assembly and sub-master component. |
| 01 (Communication Control) | E0 | Registration Completion Instruction Error | "Registration Completion Instruction" command from multi display cannot be received. | Since this DTC is provided for engineering, it may be detected when no actual failure exists. |
| 01 (Communication Control) | E2 | ON/OFF Instruction Parameter Error | Error is detected in ON/OFF control command from multi-display assembly. | Replace multi-display assembly. |
| 01 (Communication Control) | E3 | Registration Request Transmission | <ul style="list-style-type: none"> ● Registration Request command is output from slave component. ● By reception of connection check instruction, Registration Request command is output from sub-master component. | Since this DTC is provided for engineering, it may be detected when no actual failure exists. |
| 01 (Communication Control) | E4 | Plural Frame Abort | Plural frame transmission is aborted. | <ul style="list-style-type: none"> ● Since this DTC is provided for engineering purpose, it may be detected when no actual failure exists. |

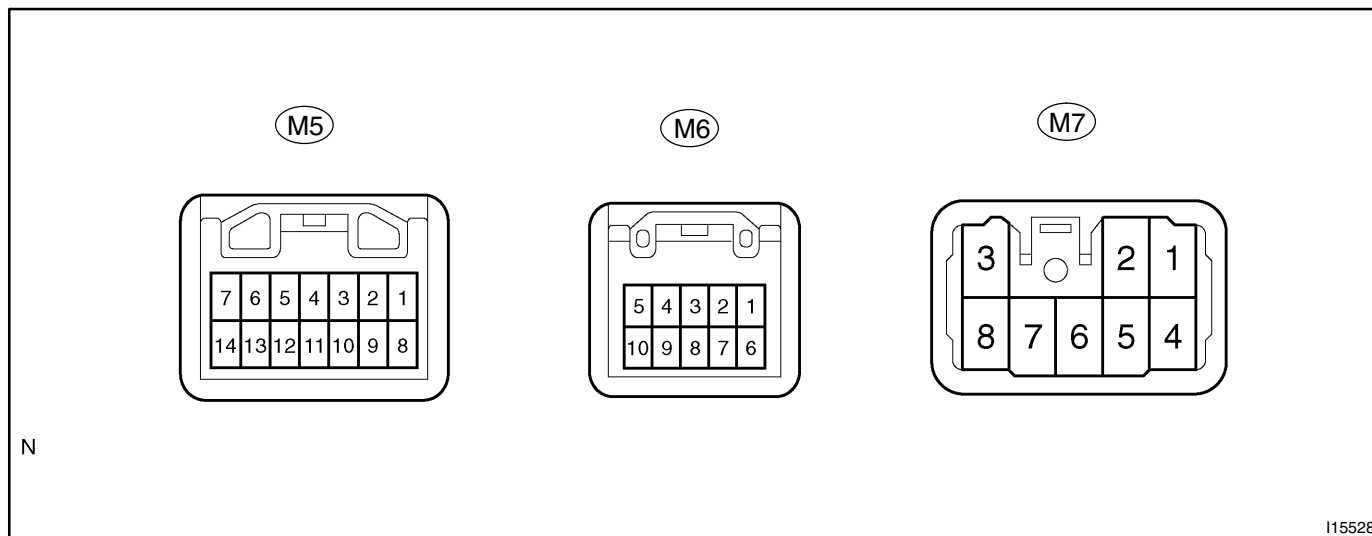
*6: When 210 sec. has passed after pulling out the power supply connector of the master component with the ignition switch in ACC or ON, this code is stored.

PARTS LOCATION



TERMINALS OF ECU

MULTI DISPLAY



N

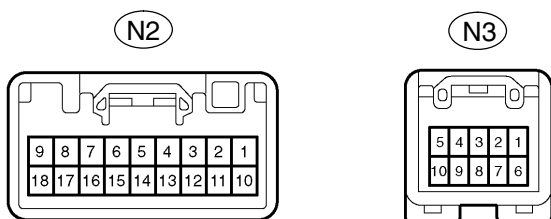
I15528

| Symbols (Terminals NO.) | Condition | STD Voltage (V) | Problem symptom when open circuit is detected. |
|-----------------------------|---|---|--|
| | | | Problem symptom when short circuit is detected. |
| TX+ (M5-3) | Ignition switch ACC or ON | About 2.5 V | Screen is in disorder. |
| TX3+ (M5-4) | Ignition switch ACC or ON | About 2.5 V | Screen is in disorder. |
| SPD ↔ GND (M5-5 ↔ M7-6) | Ignition switch ON, and driving wheel rotated slowly | Repeatedly changes from below 1 to 9 V | Fuel efficiency cannot be calcu- lated. |
| TX- (M5-10) | Ignition switch ACC or ON | About 2.5 V | Screen is in disorder. |
| TX3- (M5-11) | Ignition switch ACC or ON | About 2.5 V | Screen is in disorder. |
| PKB ↔ GND (M5-13 ↔ M7-6) | Parking brake switch ON (parking brake lever released) | 5 V | The system cannot enter Diagno- sis System mode. |
| TC ↔ GND (M5-14 ↔ M7-6) | Ignition switch OFF and connect thermals TC and E1 of diagnosis check connector | Continuity | Navigation system is normal. The system cannot exit Service Check mode. |
| VR ↔ VG (M6-1 ↔ M6-6) | Constant | Continuity | Screen noise or other types of noise occur. |
| R ↔ VG (M6-2 ↔ M6-6) | Diagnosis display check screen is white (Using an oscilloscope) | $0.7\text{ V} \pm 0.1\text{ V} *2$ | Screen color turns to blue. |
| B ↔ VG (M6-3 ↔ M6-6) | Diagnosis display check screen is white (Using an oscilloscope) | $0.7\text{ V} \pm 0.1\text{ V} *2$ | Screen color turns to yellow. |
| TX1+ (M6-5) | AVC-LAN communication circuit | – | Navigation system does not oper- ate. |
| VG ↔ GND (M6-6 ↔ M7-6) | Constant | Continuity | Screen noise or other types of noise occur. Navigation system does not op- eration. |
| G ↔ VG (M6-7 ↔ M6-6) | Diagnosis display check screen is white (Using an oscilloscope) | $0.7\text{ V} \pm 0.1\text{ V} *2$ | Screen color turns to red-purple. |

DIAGNOSTICS – LEXUS NAVIGATION SYSTEM

| | | | |
|---|---|------------------|--|
| SYNC ↔ VG (M6-8 ↔ M6-6) | Display ON (Using an oscilloscope) | 0.5 V – 1.3 V *1 | Screen is in disorder |
| TX1-(M6-10) | AVC-LAN communication circuit | – | Navigation system does not operate. |
| +B1 ↔ GND (M7-1 ↔ M7-6) | Constant | 10 – 14 V | Navigation system does not operate. |
| IG ↔ GND (M7-2 ↔ M7-6) | Ignition switch ON | 10 – 14 V | Navigation system does not operate. |
| DR ↔ GND (M7-3 ↔ M7-6) | Light control switch TAIL or HEAD and cover the top of automatic light control sensor | 9 V or more | No problem is identified in the display. |
| ACC ↔ GND (M7-4 ↔ M7-6) | Ignition switch ACC | 10 – 14 V | Navigation system does not operate. |
| GND ↔ Body ground (M7-6 ↔ Body ground) | Constant | Below 1 V | Audio system is normal. |
| TAIL ↔ GND (M7-8 ↔ M7-6) | Light control switch TAIL or HEAD | 9 V or more | Switching between Night and Day mode cannot be done. |

NAVIGATION ECU

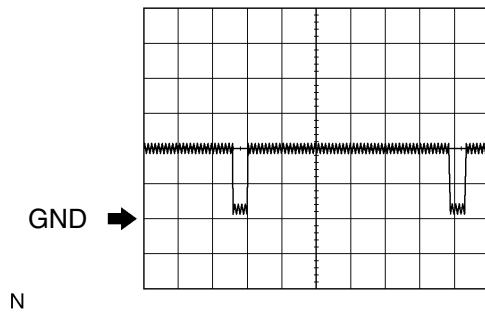


N

I15499

| Symbols (Terminals NO.) | Condition | STD Voltage (V) | Problem symptom when open circuit is detected. |
|--|--|---|--|
| | | | Problem symptom when short circuit is detected. |
| AUI+ ↔ GND (N2-1 ↔ N2-17) | Radio switch ON | 5 – 7 V | Driver's side speaker does not sound. |
| AUO+ ↔ GND (N2-2 ↔ N2-17) | Radio switch ON | 5 – 7 V | Driver's side speaker does not sound. |
| SPD ↔ GND (N2-5 ↔ N2-17) | Ignition switch ON and driving wheel rotated slowly | Repeatedly changes from below 1 to 9 V | Navigation operation is available during, or a cursor on present site does not move. |
| +B ↔ GND (N2-9 ↔ N2-17) | Constant | 10 – 14 V | The set route can not be memo- rized. (The route disappears by turning the ignition switch OFF.) Fuse is blown. |
| AUI- ↔ GND (N2-10 ↔ N2-17) | Radio switch ON | 5 – 7 V | Driver's side speaker does not sound. |
| AUO- ↔ GND (N2-11 ↔ N2-17) | Radio switch ON | 5 – 7 V | Driver's side speaker does not sound. |
| REV ↔ GND (N2-14 ↔ N2-17) | A/T shift position R | 5 V | The direction of advance of the ve- hicle is different from that of the cursor. |
| GND ↔ Body ground (N2-17 ↔ Body ground) | Constant | Below 1 V | Audio system is normal. |
| ACC ↔ GND (N2-18 ↔ N2-17) | Ignition switch ACC or ON | 10 – 14 V | Audio system does not sound. |
| VR ↔ VG (N3-1 ↔ N3-6) | Constant | Continuity | Screen noise or other types of noise occur. Navigation system does not op- eration. |
| R ↔ VG (N3-2 ↔ N3-6) | Diagnosis display check screen is white (Using an oscilloscope) | 0.7 V ± 0.1 V*1 | Screen color turns to blue. |

| | | | |
|-------------------------------|---|----------------------------|--|
| +B ↔ GND (N3-3 ↔ N2-17) | Constant | 10 – 14 V | The set route can not be memorized. (The route disappears by turning the ignition switch OFF.) Fuse is blown. |
| B ↔ VG (N3-3 ↔ N3-6) | Diagnosis display check screen is white (Using an oscilloscope) | $0.7 \pm 0.1 \text{ V}^*2$ | Screen color turns to yellow. |
| TX1+ ↔ GND (N3-5 ↔ N2-17) | Ignition switch ACC or ON | 2 – 3 V | Navigation system does not operate. |
| VG ↔ GND (N3-6 ↔ N2-17) | Constant | Continuity | Screen noise or other types of noise occur. Navigation system does not operation. |
| G ↔ VG (N3-7 ↔ N3-6) | Diagnosis display check screen is white (Using an oscilloscope) | $0.7 \pm 0.1 \text{ V}^*2$ | Screen color turns to red-purple. |
| SYNC ↔ VG (N3-8 ↔ N3-6) | Display ON (Using an oscilloscope) | $0.5 - 1.3 \text{ V}^*1$ | Screen is in disorder. |
| TX1- ↔ GND (N3-10 ↔ N2-17) | Ignition switch ACC or ON | 2 – 3 V | Navigation system does not operate. |

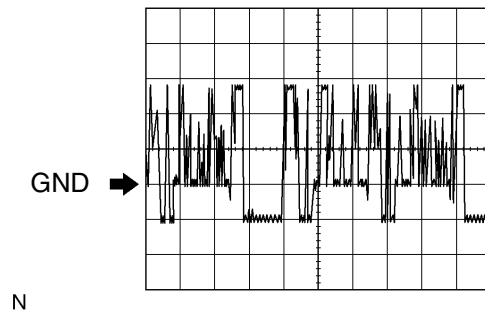


Oscilloscope

*1: wave1

- Measure terminal: SYNC ↔ GND1
- Measure set: 500 mV/DIV 10 μs/DIV
- Condition: Navigation display is displayed

I15531



*2: wave2

- Measure terminal: R, G, B ↔ GND1
- Measure set: 200 mV/DIV 10 μs/DIV
- Condition: Navigation map is switched

I15532

PROBLEM SYMPTOMS TABLE

| Flow chart No. | Symptom | See page |
|----------------|---|----------|
| 1 | Black screen (Nothing displayed) | DI-757 |
| 2 | No sound with POWER switch pressed. ("Audio OFF" on audio screen) | DI-758 |
| 3 | No navigation screen displayed when "MAP", "Menu", or "DEST" switch pressed. (Screen cannot be switched.) | DI-759 |
| 4 | No corresponding screen displayed when "Audio" or "Information" switch pressed. | DI-762 |
| 5 | No navigation displayed, "Audio OFF" on audio screen and no audio sound. | DI-763 |
| 6 | Screen cannot be dimmed in night time. | DI-765 |
| 7 | Navigation screen not stabilized. (Synchronous error) | DI-767 |
| 8 | Color on navigation screen is unusual (RGB signal error) | DI-768 |
| 9 | Black screen appears when "MAP", "Menu" or "DEST" switch pressed. | DI-770 |
| 10 | Sound of radio, cassette tape or CD only cannot be heard from speaker. | DI-771 |
| 11 | No sound (radio, cassette tape, CD) can be heard from driver side door speaker only. | DI-772 |
| 12 | Map DISC cannot be inserted. | DI-774 |
| 13 | MAP screen display does not appear. (Disc Caution screen does not change.) | DI-776 |
| 14 | Map is displayed in white or blue screen. (Switches and vehicle position mark is displayed.) | DI-777 |
| 15 | Touch switch does not function. (Navigation screen only) | DI-778 |
| 16 | The screen cannot change to the night mode color. | DI-780 |
| 17 | Vehicle position is deviated from correct point badly. | DI-781 |
| 18 | GPS mark does not appear. | DI-784 |
| 19 | No voice navigation. | DI-786 |
| 20 | Vehicle position rotates without control. (Map rotates without control) | DI-787 |
| 21 | Driving direction is opposite to moving direction of vehicle position mark. | DI-789 |
| 22 | Radio reception poor. | DI-790 |
| 23 | Cassette tape cannot be inserted. | DI-791 |
| 24 | Cassette tape cannot be eject. | DI-792 |
| 25 | CD cannot be inserted. | DI-794 |
| 26 | CD cannot be eject. | DI-795 |
| 27 | No AM, FM or CD screen is displayed. | DI-796 |

CIRCUIT INSPECTION

1. Black screen (Nothing displayed)

INSPECTION PROCEDURE

1 Check the RADIO No. 2 and DOME fuse.

NG

Replace the fuse.

OK

2 Check multi display.

PREPARATION:

Disconnect the multi display connector.

CHECK:

Check voltage terminals +B.

OK:

+B: 10 – 14 V

CHECK:

Check voltage terminal ACC when turn ignition switch ACC or ON position.

OK:

ACC: 10 – 14 V

CHECK:

Check continuity terminal GND.

OK:

GND: Continuity

NG

Replace or repair wire harness or connector.

OK

Replace the multi display.

2. No sound with POWER switch pressed. ("Audio OFF" on audio screen)

INSPECTION PROCEDURE

1 Service check mode. (Check radio receiver assembly)

NG

Troubleshoot for each diagnosis.

OK

2 Check the radio receiver assembly.

PREPARATION:

Disconnect the radio receiver assembly connector.

CHECK:

Check voltage terminals +B.

OK:

+B: 10 – 14 V

CHECK:

Check voltage terminal ACC when turn ignition switch ACC or ON position.

OK:

ACC: 10 – 14 V

CHECK:

Check continuity terminal GND.

OK:

GND: Continuity

NG

Replace or repair wire harness or connector.

OK

Replace the radio receiver assembly.

3. No navigation screen displayed when "MAP", "Menu", or "DEST" switch pressed. (Screen cannot be switched.)

INSPECTION PROCEDURE

1 Service check mode. (Check the navigation ECU)

NG Troubleshoot for each diagnosis.

OK Go to step 6.

Ncon

2 Check the navigation ECU.

PREPARATION:

Disconnect the navigation ECU connector.

CHECK:

Check voltage terminals +B.

OK:

+B: 10 – 14 V

CHECK:

Check voltage terminal ACC when turn ignition switch ACC or ON position.

OK:

ACC: 10 – 14 V

CHECK:

Check continuity terminal GND.

OK:

GND: Continuity

NG Replace or repair wire harness or connector.

OK

| | |
|----------|----------------------------------|
| 3 | Check the navigation ECU. |
|----------|----------------------------------|

CHECK:

Check terminal R, G and B.

OK:

R, G, B: See "Navigation ECU" of "TERMINAL OF ECU".

| | |
|-----------|------------------------------------|
| NG | Replace the navigation ECU. |
|-----------|------------------------------------|

| |
|-----------|
| OK |
|-----------|

| | |
|----------|---------------------------------|
| 4 | Check the multi display. |
|----------|---------------------------------|

PREPARATION:

Disconnect the multi display connector.

CHECK:

Check voltage terminals +B.

OK:

+B: 10 – 14 V

CHECK:

Check voltage terminal ACC when turn ignition switch ACC or ON position.

OK:

ACC: 10 – 14 V

CHECK:

Check continuity terminal GND.

OK:

GND: Continuity

| | |
|-----------|---|
| NG | Replace or repair wire harness or connector. |
|-----------|---|

| |
|-----------|
| OK |
|-----------|

| | |
|----------|---------------------------------|
| 5 | Check the multi display. |
|----------|---------------------------------|

CHECK:

Check terminal R, G and B.

OK:

R, G, B: See "multi display" of "TERMINAL OF ECU".

| | |
|-----------|-----------------------------------|
| NG | Replace the multi display. |
|-----------|-----------------------------------|

| |
|-----------|
| OK |
|-----------|

Replace the multi display.

6 All of the switches (MAP, Menu, DEST etc.) does not function.

No Replace the center cluster module control.

Yes

7 Check each switch (A/C switch e.t.c.) of the center cluster module control does not function.

No Replace the center cluster module control.

Yes

Replace the multi display.

4. No corresponding screen displayed when "Audio" or "Information" switch pressed.**INSPECTION PROCEDURE**

1 Check "AVC-LAN communication circuit" (See page DI-798).

NG

Replace or repair AVC-LAN circuit.

OK

2 "Audio" and "Information" switch does not function.

NG

Replace the center cluster module control.

OK

3 Check each switch (A/C switch e.t.c.) of the center cluster module control does not function.

NG

Replace the center cluster module control.

OK

Replace the multi display.

5. No navigation displayed, "Audio OFF" on audio screen and no audio sound.

INSPECTION PROCEDURE

1 Service check mode.

NG

Troubleshoot for each diagnosis.

OK

2 Check the radio receiver assembly.

PREPARATION:

Disconnect the radio receiver assembly connector.

CHECK:

Check voltage terminals +B.

OK:

+B: 10 – 14 V

CHECK:

Check voltage terminal ACC when turn ignition switch ACC or ON position.

OK:

ACC: 10 – 14 V

CHECK:

Check continuity terminal GND.

OK:

GND: Continuity

NG

Replace or repair wire harness.

OK

3 Check "AVC-LAN communication circuit" (See page DI-798).

NG

Replace the AVC-LAN circuit or radio receiver assembly.

OK

Replace the multi display.

6. Screen cannot be dimmed in night time.

INSPECTION PROCEDURE

- | | |
|----------|---|
| 1 | Check if the screen is dimmed at night. (With the light control switch ON), do all screens except the navigation screen appear in Night Mode?) |
|----------|---|

NG

Check the light control switch.

OK

- | | |
|----------|---------------------------------|
| 2 | Check the multi display. |
|----------|---------------------------------|

CHECK:

Check terminal TAIL.

OK:

TAIL: See "Multi display" of "TERMINAL OF ECU".

NG

Replace or repair wire harness.

OK

- | | |
|----------|---------------------------------|
| 3 | Check the multi display. |
|----------|---------------------------------|

PREPARATION:

Disconnect the multi display connector.

CHECK:

Check voltage terminals +B.

OK:

+B: 10 – 14 V

CHECK:

Check voltage terminal ACC when turn ignition switch ACC or ON position.

OK:

ACC: 10 – 14 V

CHECK:

Check continuity terminal GND.

OK:

GND: Continuity

NG

Replace or repair wire harness.



Replace the multi display.

7. Navigation screen not stabilized (Synchronous error).

INSPECTION PROCEDURE

| | |
|---|---------------------------|
| 1 | Check the navigation ECU. |
|---|---------------------------|

CHECK:

Check terminals +B.

OK:

+B: 10 – 14 V

CHECK:

Check terminal ACC when turn ignition switch ACC or ON position.

OK:

ACC: 10 – 14 V

CHECK:

Check terminal SYNC, VR or VG.

OK:

SYNC, VR, VG: See "Navigation ECU" of "TERMINAL OF ECU"

NG

Replace the wire harness when all terminals are faulty. Replace the wire harness when the SYNC terminal is faulty.

OK

Replace the multi display.

8. Color on navigation screen is unusual (RGB signal error).

INSPECTION PROCEDURE

1 Display check mode (Color bar check).

NG

Replace the multi display.

2 Navigation check mode (Color bar check).

NG

Go to step 4.

OK

3 Check the screen setting. (Day or Night mode)

OK

Normal.

NG

4 Check the navigation ECU.

CHECK:

Check terminals +B.

OK:

+B: 10 – 14 V

CHECK:

Check terminal ACC when turn ignition switch ACC or ON position.

OK:

ACC: 10 – 14 V

CHECK:

Check terminal R, G, B, VR or VG.

OK:

R, G, B, VR or VG: See "Navigation ECU" of "TERMINAL OF ECU"

NG

Replace the wire harness when all terminals are faulty. Replace the wire harness when SYNC terminal is faulty.

OK

Replace the multi display.

9. Black screen appears when "Present Location", "Menu" or "Set Designation" switch pressed.**INSPECTION PROCEDURE**

| | |
|---|---------------------------|
| 1 | Check the navigation ECU. |
|---|---------------------------|

CHECK:

Check terminals +B.

OK:**+B: 10 – 14 V****CHECK:**

Check terminal ACC when turn ignition switch ACC or ON position.

OK:**ACC: 10 – 14 V****CHECK:**

Check terminal R, G, B, VR or VG.

OK:**R, G, B, VR or VG: See "Navigation ECU" of "TERMINAL OF ECU"****NG****Replace the wire harness when all terminals are faulty. Replace the wire harness when SYNC terminal is faulty.****OK****Replace the multi display.**

10. Sound of radio, cassette tape or CD only cannot be heard from speaker.

INSPECTION PROCEDURE

| | |
|----------|---|
| 1 | Check the radio receiver assembly. |
|----------|---|

PREPARATION:

Disconnect the radio receiver assembly connector.

CHECK:

Check voltage terminals +B.

OK:

+B: 10 – 14 V

CHECK:

Check voltage terminal ACC when turn ignition switch ACC or ON position.

OK:

ACC: 10 – 14 V

CHECK:

Check continuity terminal GND.

OK:

GND: Continuity

| | |
|-----------|---|
| NG | Replace or repair wire harness or connector. |
|-----------|---|

| |
|-----------|
| OK |
|-----------|

Replace the radio receiver assembly.

11. No sound (radio, cassette tape, CD) can be heard from driver side door speaker only.

INSPECTION PROCEDURE

1 Service check mode.

NG

Troubleshoot for each diagnosis.

OK

2 Check wire harness (between navigation ECU and radio receiver assembly).

PREPARATION:

Disconnect the navigation ECU and radio receiver assembly connector.

CHECK:

- (a) Check continuity between terminal AUI+ of navigation ECU connector and terminal FL+ of radio receiver assembly.
- (b) Check continuity between terminal AUI- of navigation ECU connector and terminal FL- of radio receiver assembly.

OK:

Continuity

NG

Replace or repair wire harness.

OK

3 Check the navigation system voice.

OK

Go to step 6.

NG

| | |
|----------|--|
| 4 | Check wire harness (between navigation ECU and driver side door speaker). |
|----------|--|

PREPARATION:

Disconnect the navigation ECU and driver side door speaker connector.

CHECK:

- (a) Check continuity between terminal AUO+ of navigation ECU connector and terminal 1 of driver side door speaker.
- (b) Check continuity between terminal AUO- of navigation ECU connector and terminal 2 of driver side door speaker.

OK:

Continuity

| | |
|-----------|--|
| NG | Replace or repair wire harness. |
|-----------|--|

| |
|-----------|
| OK |
|-----------|

| | |
|----------|--|
| 5 | Check the driver side door speaker. |
|----------|--|

| | |
|-----------|-----------------------------|
| NG | Replace the speaker. |
|-----------|-----------------------------|

| |
|-----------|
| OK |
|-----------|

| |
|------------------------------------|
| Replace the navigation ECU. |
|------------------------------------|

| | |
|----------|----------------------------------|
| 6 | Check the navigation ECU. |
|----------|----------------------------------|

CHECK:

Check terminal AUO+, AUO-, AUI+ and AUI-.

OK:

AUO+, AUO-, AUI+ and AUI-: See "Navigation ECU" of "TERMINAL OF ECU".

| | |
|-----------|------------------------------------|
| NG | Replace the navigation ECU. |
|-----------|------------------------------------|

| |
|-----------|
| OK |
|-----------|

| |
|---|
| Replace the radio receiver assembly. |
|---|

12. Map DISC cannot be inserted.

INSPECTION PROCEDURE

1 Check the MAP DISC.

NG

Replace the MAP DISC.

OK

2 Insert a MAP DISC without tilt.

OK

Normal.

NG

3 Check the navigation ECU.

PREPARATION:

Disconnect the navigation ECU connector.

CHECK:

Check voltage terminals +B.

OK:

+B: 10 – 14 V

CHECK:

Check voltage terminal ACC when turn ignition switch ACC or ON position.

OK:

ACC: 10 – 14 V

CHECK:

Check continuity terminal GND.

OK:

GND: Continuity

NG

Replace or repair wire harness.

OK

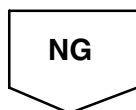
Replace the navigation ECU.

13. MAP screen display does not appear. (Disc Caution screen does not change)

INSPECTION PROCEDURE

| | |
|---|--|
| 1 | Take appropriate measures according to the caution screen. |
|---|--|

| | |
|----|---------|
| OK | Normal. |
|----|---------|



| | |
|---|-----------------|
| 2 | Check map DISC. |
|---|-----------------|

| | |
|----|-------------------|
| NG | Replace the disc. |
|----|-------------------|



| |
|-----------------------------|
| Replace the navigation ECU. |
|-----------------------------|

CAUTION SCREEN

| CAUTION MESSAGE | CAUSE | CORRECTIVE ACTION |
|--|---|--|
| Cover is open. Close it. | The cover of the map disk slot is open. | Close the cover, |
| No disc is set. Set a map disc. | No map disk is inserted. | Insert a proper map disc. |
| Data cannot be read properly. Check it for scratches or dirt. | Data cannot be read because the map disc is dirty or scratched. | Wipe off dirt on the both disc surface with soft cloth. |
| Data cannot be read. Check the correct map disc is set. | Something other than map disc is inserted. | Insert a correct map disc. |
| Due to high temperature of the player, data cannot be read. | Pick-up part of the player is heated to a high temperature. | Stop the vehicle at a shaded cool place and turn the ignition switch OFF. When confirming that the temperature of the navigation ECU has been lowered, turn the ignition switch ON. |
| Data cannot be read. Contact your sales dealer. | The player cannot read data from the map disc temporarily. | Turn the ignition switch OFF and ON.*1 |

*1: If the same caution screen appears again after turning the ignition switch ON, replace the navigation ECU.

14. Map is displayed in white or blue screen. (Switches and vehicle position mark is displayed)

INSPECTION PROCEDURE

1 Set the map scale to the max.

OK

Normal.

HINT:

Correct the current position and check it again.

NG

2 Wipe the disc with a soft cloth, insert it again, and turn the ignition switch ON from OFF.

NG

Replace the disc.

OK

Normal.

HINT:

If the trouble still occurs, replace the navigation ECU.

15. Navigation screen cannot change to the night mode color.

INSPECTION PROCEDURE

1 Check the setting. (Is it set to Day Mode in screen adjustment?)

Yes → Normal.

No

2 Check if the screen is dimmed at night. (With the light control switch ON, do all screens except the navigation screen appear in Night Mode?)

NG → Go to step 5.

OK

3 Does the beep sound by operating switches on the navigation screen?

OK → Replace the navigation ECU.

NG

4 Check "AVC-LAN communication circuit" (See page DI-798).

NG → Replace or repair AVC-LAN circuit.

OK

Replace the navigation ECU.

| | |
|----------|---------------------------------|
| 5 | Check the multi display. |
|----------|---------------------------------|

CHECK:

Check terminal TAIL.

OK:

TAIL: See "Multi Display" of "TERMINAL OF ECU".

| | |
|-----------|-----------------------------------|
| OK | Replace the multi display. |
|-----------|-----------------------------------|

| |
|-----------|
| NG |
|-----------|

| |
|--|
| Replace or repair wire harness. |
|--|

16. Touch switch does not function. (Navigation screen only)**INSPECTION PROCEDURE**

1 Display check mode (Touch switch, Touch point screen).

NG

Replace the multi display.

OK

2 Check "AVC-LAN communication circuit" (See page DI-798).

NG

Replace or repair AVC-LAN circuit.

OK

Replace the navigation ECU.

17. Vehicle position is deviated from correct point badly.

INSPECTION PROCEDURE

| | |
|----------|---|
| 1 | Check the mark display. (At a place with a fine view, is GPS mark displayed or not?) |
|----------|---|

No → **Go to step 7.**

Yes

| | |
|----------|--|
| 2 | Does the trouble occur in the specific area or not? |
|----------|--|

Yes → **Normal. (If the vehicle is positioned in the place where it is difficult to be identified, the current vehicle position may be incorrectly displayed.)**

No

| | |
|----------|---|
| 3 | Check the setting (Color of the automatic calibration button on the calibration screen). |
|----------|---|

Green → **Normal. (Drive the vehicle (10 km or more) until calibration is completed.)**

Blue

| | |
|----------|---|
| 4 | Service check mode. (Is "58-43" displayed in the unit check mode of the navigation ECU?) |
|----------|---|

Yes → **Troubleshoot for each diagnosis.**

No

5 Navigation check mode (vehicle signal check mode: SPD).

NG

Replace or repair speed sensor wire harness.

OK

6 Is there anything such as a film stuck to the window or any metal object on the instrument panel?

Yes

Reception may be affected by a screen such as a film.

No

7 Recurrence Test (Confirm the phenomenon) (Correct the current position and drive the vehicle for a while with the GPS mark displayed).

OK

Normal.

NG

Replace the navigation ECU.

8 Check if the harness is caught or sharply bent or not.

NG

Navigation antenna is surely connected.

OK

9 Check optional components. (Does it become if the optionals such as the theft deterrent system is removed?)

Yes

Remove or change the position of the components.

HINT:

Some optionals receive radio signals, and if this happens, GPS reception may be affected.

No

10 Service check mode. (Is "80-40, 41" is displayed in the unit check mode of the navigation ECU?)

Yes

Troubleshoot for each diagnosis.

No

Replace the navigation antenna.

HINT:

If the trouble still occurs, replace the navigation ECU.

18. GPS mark does not appear.

INSPECTION PROCEDURE

1 Check the mark display. (At a place with a fine view, is GPS mark displayed or not?)

Yes

Normal.

No

2 Is there anything such as a film stuck to the window or any metal object on the instrument panel?

Yes

Reception may be affected by a screen such as a film.

No

3 Check if the harness is caught or sharply bent or not.

NG

Navigation antenna is surely connected.

OK

4 Check optional components. (Does it become normal if the optionals such as the theft deterrent system is removed?)

Yes

Remove or change the position of the components.

HINT:

Some optionals receive radio signals, and if this happens, GPS reception may be affected.

No

5 Service check mode. (Is "80-40, 41" is displayed in the unit check mode of the navigation ECU?)

Yes

Troubleshoot for each diagnosis.

No

Replace the navigation antenna.

HINT:

If the trouble still occurs, replace the navigation ECU.

19. No voice navigation.

INSPECTION PROCEDURE

1 Set the volume to the max in the menu screen.

OK

Normal. (Voice navigation is not available. No destination is set, or the vehicle is running off the route.)

NG

2 Check wire harness (navigation ECU and driver side door speaker).

PREPARATION:

Disconnect the navigation ECU connector and driver side door speaker connector.

CHECK:

- (a) Check continuity between terminal AUO+ of navigation ECU connector and terminal 1 of driver side door speaker.
- (b) Check continuity between terminal AUO- of navigation ECU connector and terminal 2 of driver side door speaker.

OK:

Continuity

NG

Replace or repair wire harness.

OK

3 Check the sound. (Check if the radio sound can be heard from the driver side door speaker.)

OK

Replace the navigation ECU.

NG

Replace the speaker.

20. Vehicle position rotates without control. (Map rotates without control)

INSPECTION PROCEDURE

| | |
|----------|---|
| 1 | Recheck. (While not rotating the vehicle, turn the ignition switch ON from OFF again.) |
|----------|---|

| | |
|-----------|--|
| OK | Normal. (While the vehicle was turning, the ignition switch was turned ON.) |
|-----------|--|

NG

| | |
|----------|---|
| 2 | System check mode. (Is "58-10" is displayed in the unit check mode of the navigation ECU?) |
|----------|---|

| | |
|------------|------------------------------------|
| Yes | Replace the navigation ECU. |
|------------|------------------------------------|

No

| | |
|----------|---|
| 3 | System check mode. (Is "58-43" is displayed in the unit check mode of the navigation ECU?) |
|----------|---|

| | |
|------------|--|
| Yes | Replace and repair SPD terminal wire harness. |
|------------|--|

No

| | |
|----------|---|
| 4 | Navigation check mode (vehicle signal check mode: SPD and gyro). |
|----------|---|

| | |
|-----------|------------------------------------|
| OK | Replace the navigation ECU. |
|-----------|------------------------------------|

NG

Replace or repair wire harness.

21. Driving direction is opposite to moving direction of vehicle position mark.

INSPECTION PROCEDURE

1 Navigation check mode (vehicle signal check mode REV).

OK

Replace the navigation ECU.

NG

2 Check the navigation ECU.

CHECK:

Check terminal REV.

OK:

REV: See "Navigation ECU" of "TERMINAL OF ECU".

OK

Replace the navigation ECU.

NG

Replace or repair wire harness.

22. Radio reception poor.

INSPECTION PROCEDURE

1 Check the reception. (Select an AM or FM station band which signals are strong)

Yes

An electric wave environment is bad.

No

2 Are there any additional installation parts? (Telephone antenna, etc.)

Yes

Does the condition get better if removing them?
Influence of additional installation parts.

No

3 Is the contact of the plug jack of the radio OK?

NG

Take a measure for contact.

OK

Is the antenna cord caught or broken?

23. Cassette tape cannot be inserted.

INSPECTION PROCEDURE

1 Is there a foreign object inside tape player?

Yes

Remove foreign object.

No

2 Is auto search button radio operating normally?

NG

Radio assembly faulty.

OK

3 Check the cassette tape for deformation or peeling-off of the label.

NG

Replace cassette.

OK

4 Is the tape slack?

NG

Remove slack before using.

OK

Replace the radio receiver assembly.

24. Cassette tape cannot be eject.

INSPECTION PROCEDURE

1 Check if RADIO No. 2 or DOME fuse is OK?

NG

Replace fuse.

OK

2 Is not the cassette tape caught on the cluster panel?

YES

Remove the cassette tape.

NO

3 Check the radio receiver assembly.

PREPARATION:

Disconnect the radio receiver assembly connector.

CHECK:

Check voltage terminals +B.

OK:

+B: 10 – 14 V

CHECK:

Check voltage terminal ACC when turn ignition switch ACC or ON position.

OK:

ACC: 10 – 14 V

CHECK:

Check continuity terminal GND.

OK:

GND: Continuity

NG**Replace or repair wire harness.**

HINT:

When sending it for repair, leave as it is without attempting to take it out by force.

OK**Replace the radio receiver assembly.**

25. CD magazine cannot be inserted.

INSPECTION PROCEDURE

1 Is CD magazine already inserted?

YES

Eject CD magazine.

NO

2 Check the CD auto changer assembly.

PREPARATION:

Disconnect the CD auto changer assembly connector.

CHECK:

Check voltage terminals +B.

OK:

+B: 10 – 14 V

CHECK:

Check voltage terminal ACC when turn ignition switch ACC or ON position.

OK:

ACC: 10 – 14 V

CHECK:

Check continuity terminal GND.

OK:

GND: Continuity

NG

Replace or repair wire harness.

OK

Replace the CD auto changer assembly.

HINT:

When sending it for repair, leave as it is without attempting to take it out by force.

26. CD magazine cannot be eject.

INSPECTION PROCEDURE

| | |
|----------|---|
| 1 | Check if RADIO No. 1 fuse is OK? |
|----------|---|

NG → **Replace fuse.**

OK

| | |
|----------|--|
| 2 | Check the CD auto changer assembly. |
|----------|--|

PREPARATION:

Disconnect the CD auto changer assembly connector.

CHECK:

Check voltage terminals +B.

OK:

+B: 10 – 14 V

CHECK:

Check voltage terminal ACC when turn ignition switch ACC or ON position.

OK:

ACC: 10 – 14 V

CHECK:

Check continuity terminal GND.

OK:

GND: Continuity

NG → **Replace or repair wire harness.**

OK

Replace or repair the CD auto changer assembly.

HINT:

When sending it for repair, leave as it is without attempting to take it out by force.

27. No AM, FM or CD screen is displayed.**INSPECTION PROCEDURE**

- | | |
|----------|---|
| 1 | Check the sound. (Check if the sound of the radio, cassette or CD can be heard.) |
|----------|---|

OK**System check mode. (Check radio receiver assembly)****NG**

- | | |
|----------|---|
| 2 | Check the radio receiver assembly. |
|----------|---|

PREPARATION:

Disconnect the radio receiver assembly connector.

CHECK:

Check voltage terminals +B.

OK:**+B: 10 – 14 V****CHECK:**

Check voltage terminal ACC when turn ignition switch ACC or ON position.

OK:**ACC: 10 – 14 V****CHECK:**

Check continuity terminal GND.

OK:**GND: Continuity****NG****Replace or repair wire harness.****OK**

3**Check "AVC-LAN communication circuit" (See page DI-798).****NG****Replace or repair AVC-LAN circuit.****OK****Replace the radio receiver assembly.**

AVC-LAN (Communication bus) Circuit

CIRCUIT DESCRIPTION

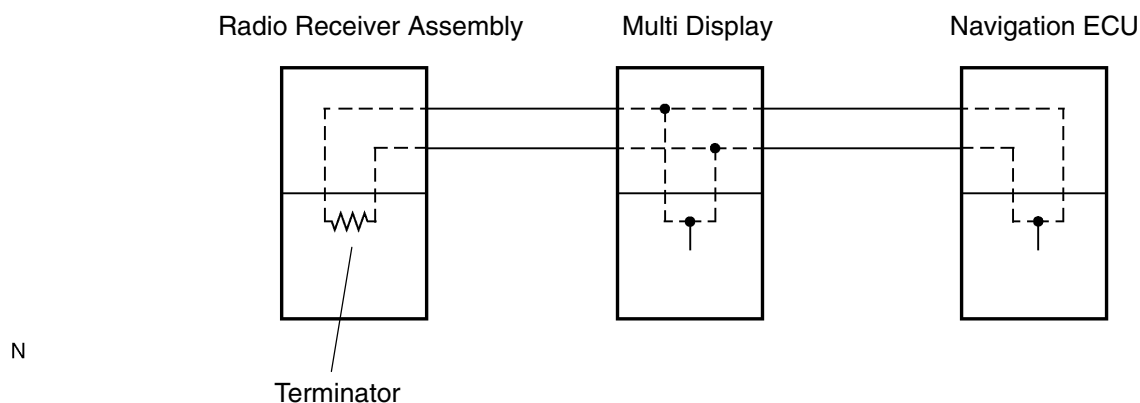
Each unit of navigation system connected with AVC-LAN (communication bus) transfers the signal of each switch by communication.

When +B short and GND short occur in this AVC-LAN, navigation system will not function normally as the communication is discontinued.

In this AVC-LAN, multi display becomes the master of the communication, and the radio receiver assembly has a terminator necessary for transmitting the communication.

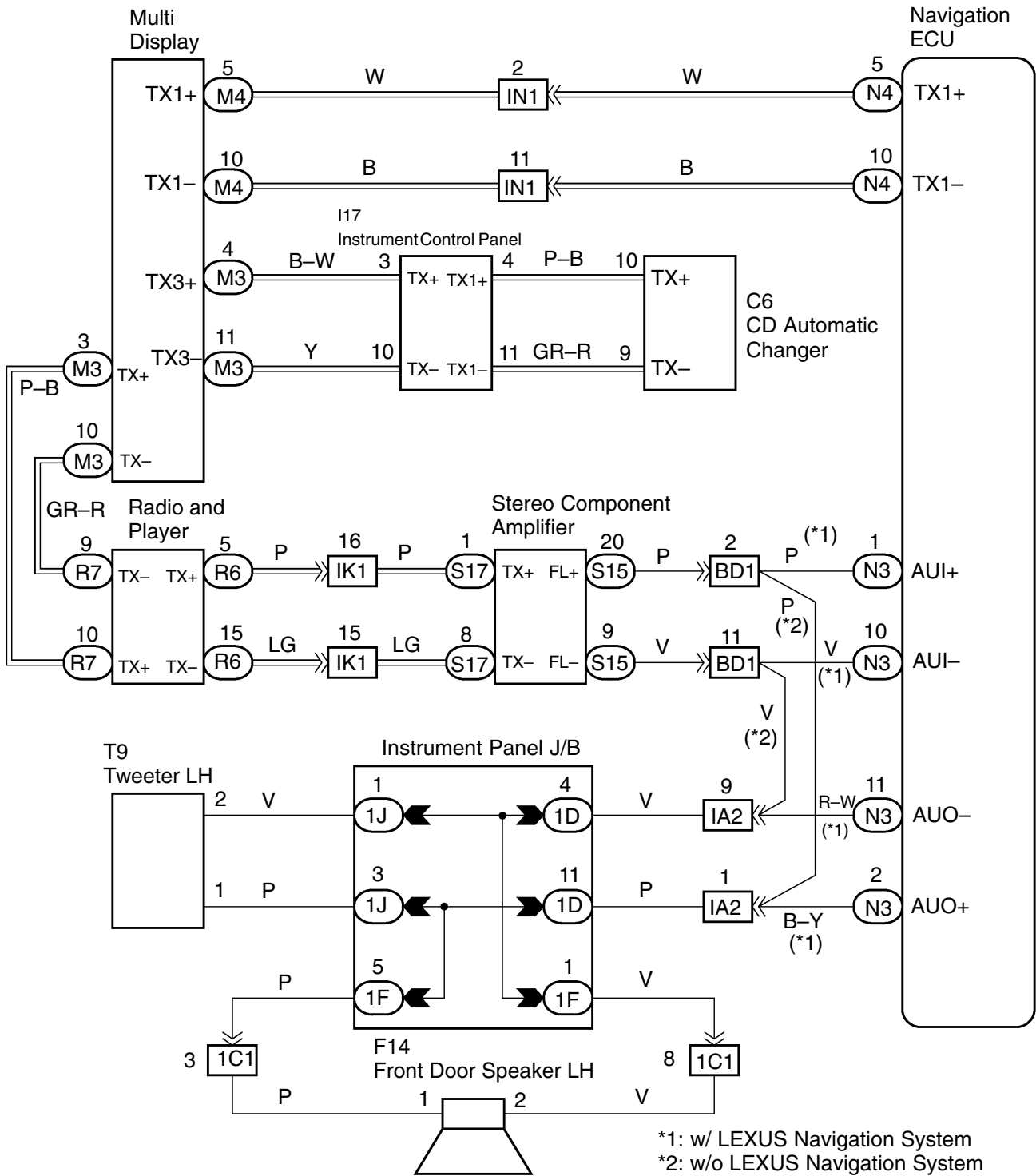
multi display is connected between navigation ECU and radio receiver assembly, navigation system has the structure that makes communication impossible without navigation ECU, multi display or radio receiver assembly.

AVC-LAN



WIRING DIAGRAM

LHD Vehicle:



*1: w/ LEXUS Navigation System
 *2: w/o LEXUS Navigation System

==== : AVC-LAN circuit

C

I19279

INSPECTION PROCEDURE

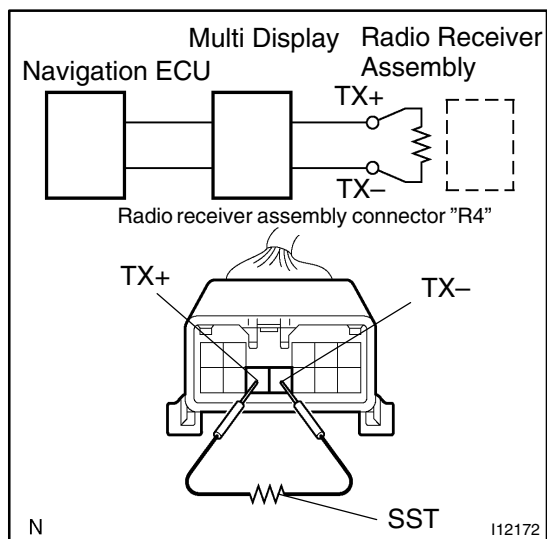
| | |
|----------|--|
| 1 | Check wire harness and connector between radio receiver assembly and navigation ECU (See page IN-32). |
|----------|--|

NG**Repair or replace wire harness or connector between radio receiver assembly and navigation ECU.****OK**

| | |
|----------|--|
| 2 | Check wire harness and connector between multi display and navigation ECU (See page IN-32). |
|----------|--|

NG**Repair or replace wire harness or connector between multi display and navigation ECU.****OK**

3 Skip radio receiver assembly and check AVC-LAN.



PREPARATION:

- Connect Multi Display connector.
- Disconnect radio receiver assembly "R" connector.
- Using SST (Navigation Check Wire P/N 09843-18050), connect the terminal TX+ to terminal TX- of "R4" connector of radio receiver assembly.

CHECK:

Operate the panel switch and the touch switch of the display and check that the navigation functions.
(Check that AVC-LAN is recovered.)

OK

Replace the radio receiver assembly.

NG

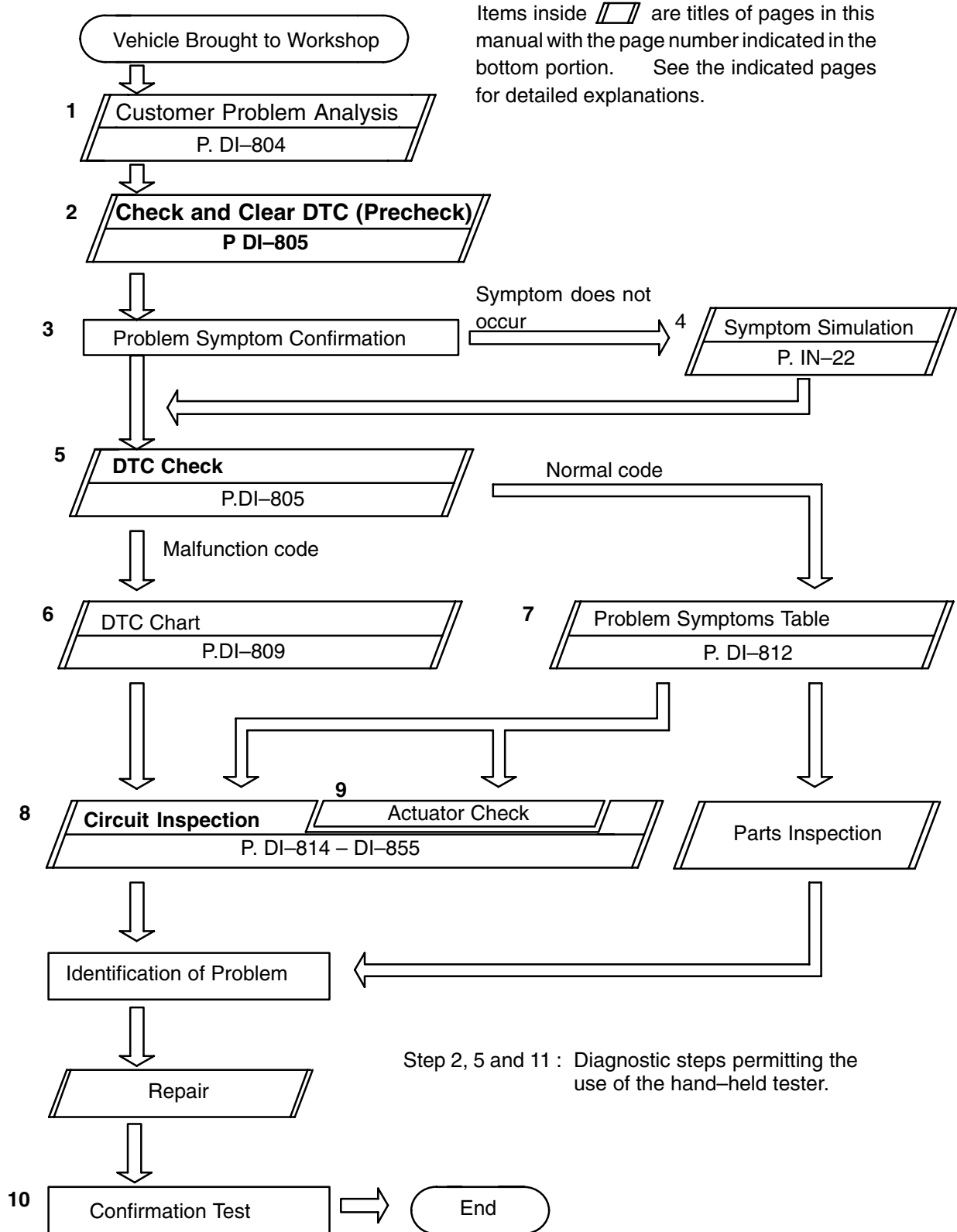
Replace the Navigation ECU.

AIR CONDITIONING SYSTEM

HOW TO PROCEED WITH TROUBLESHOOTING

DI3FP-02

Perform troubleshooting in accordance with the procedure on the following page.



Step 2, 5 and 11 : Diagnostic steps permitting the use of the hand-held tester.

CUSTOMER PROBLEM ANALYSIS CHECK

AIR CONDITIONING SYSTEM Check Sheet

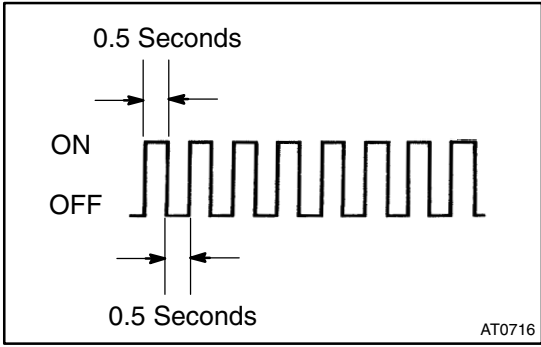
Inspector's name: _____

| | | | |
|-------------------------|-----|-------------------|----------|
| Customer's Name | | Registration No. | |
| | | Registration Year | |
| | | Frame No. | |
| Date vehicle Brought In | / / | Odometer Reading | km Miles |

| | |
|-------------------------------|--|
| Date of Problem Occurrence | / / |
| How Often does Problem Occur? | <input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent (times a day) |
| Weather | <input type="checkbox"/> Fine <input type="checkbox"/> Cloudy <input type="checkbox"/> Snowy <input type="checkbox"/> Various / Other |
| Outdoor Temperature | <input type="checkbox"/> Hot <input type="checkbox"/> Warm <input type="checkbox"/> Cool <input type="checkbox"/> Cold (Approx. °F / °C) |

| | | |
|----------|-------------------------------|--|
| Symptoms | Air Flow Control is Faulty | <input type="checkbox"/> Blower motor does not operation <input type="checkbox"/> Blower motor speed does not change (Always Hi, Always Med, Always Lo) |
| | Temperature Control is Faulty | <input type="checkbox"/> Cabin temperature does not go down <input type="checkbox"/> Cabin temperature does not rise <input type="checkbox"/> Response is slow |
| | Air Inlet Control is Faulty | <input type="checkbox"/> Cannot change between FRS and REC (Always Fresh or always Recirculating) |
| | Vent Control is Faulty | <input type="checkbox"/> Mode will not chage <input type="checkbox"/> Will not enter the desired mode |

| | | |
|-----------|----------|---|
| DTC Check | 1st Time | <input type="checkbox"/> Normal Code <input type="checkbox"/> Malfunction Code (Code) |
| | 2nd Time | <input type="checkbox"/> Normal Code <input type="checkbox"/> Malfunction Code (Code) |



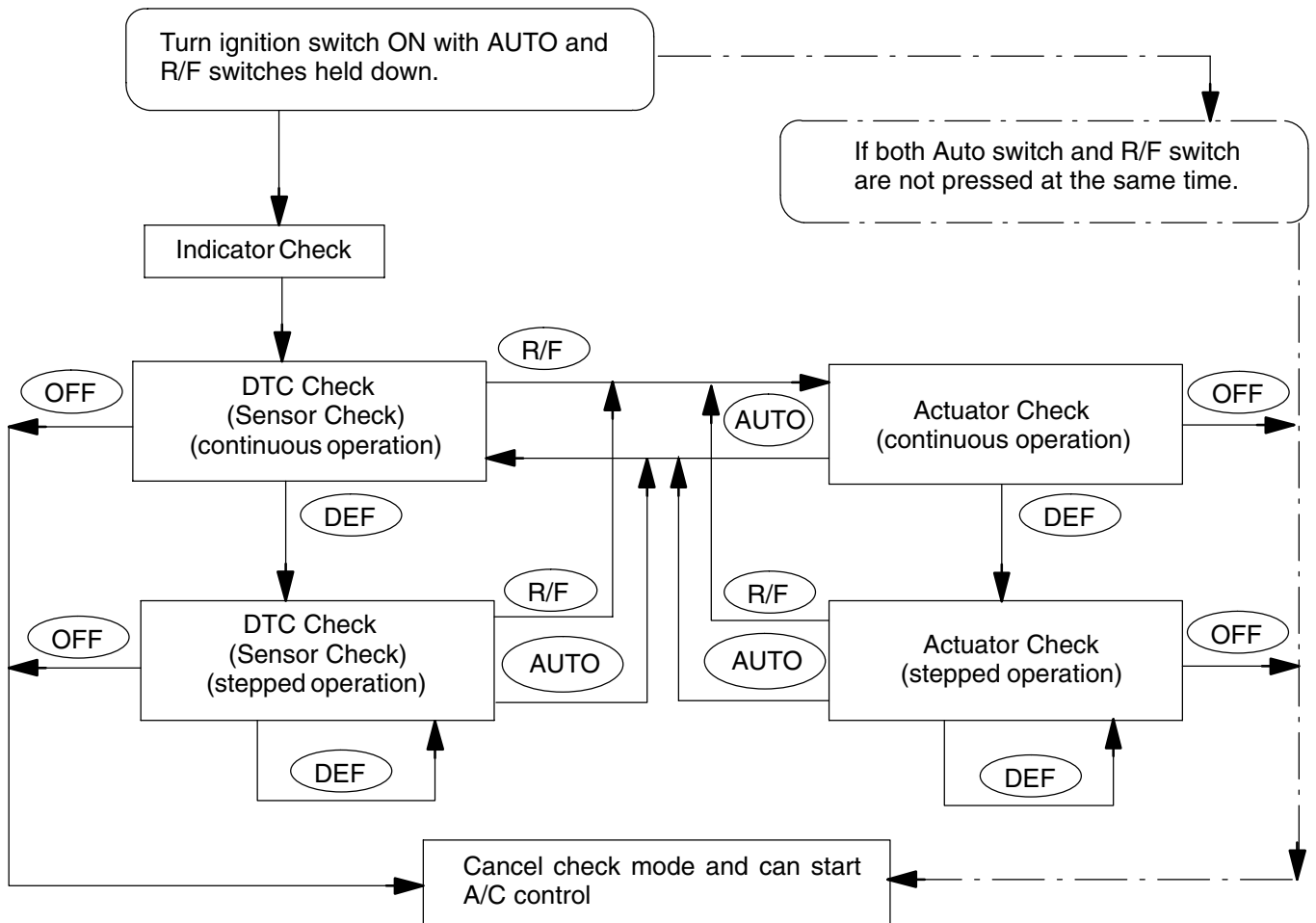
PRE-CHECK

1. WARNING FOR A/C COMPRESSOR LOCK

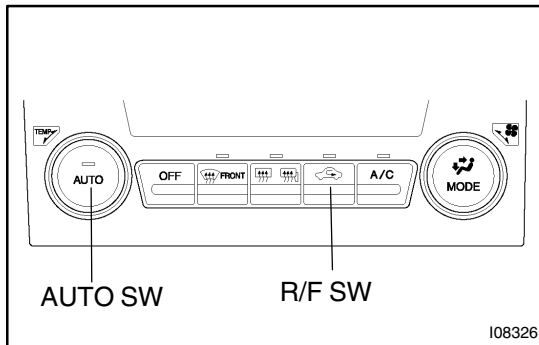
If compressor lock occurs during A/C operation, the A/C switch indicator on the A/C control assembly starts blinking. When this occurs, check for compressor lock (DTC B1422/22) using diagnosis trouble code check then proceed to inspect the circuit or the component. Compressor lock sensor circuit. → (See page DI-826)

2. LIST OF OPERATION METHODS

By operating each of the A/C control switches as shown in the diagram below, it is possible to enter the diagnosis check mode.

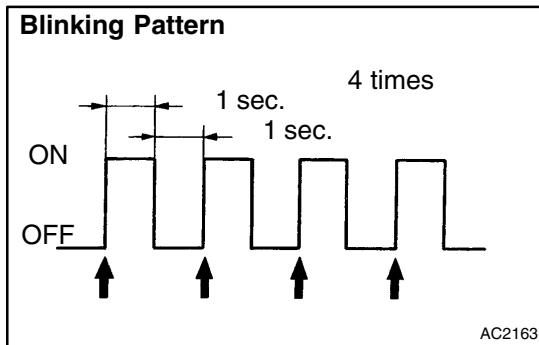


○ : Indicates a switch operation.



3. INDICATOR CHECK

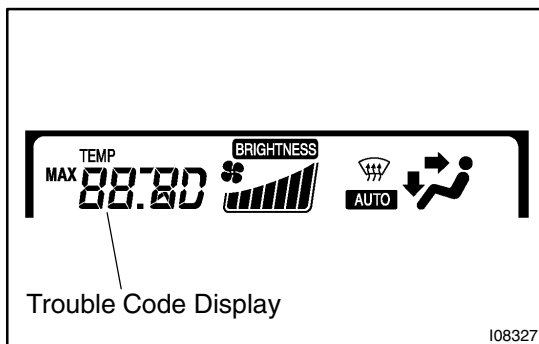
- (a) Turn the ignition switch on while pressing the A/C control AUTO switch and R/F SW simultaneously.



- (b) Check that all the indicators light up and go off at 1 second intervals 4 times in succession.

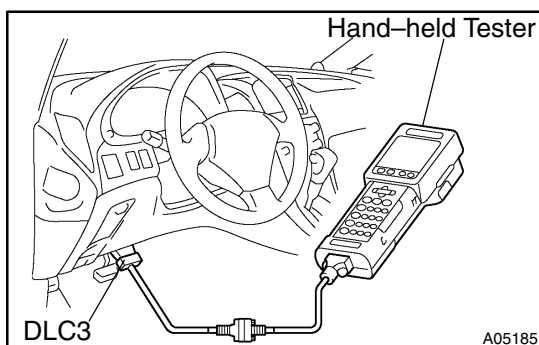
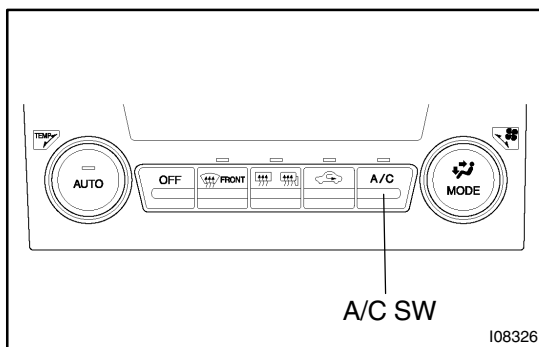
HINT:

- After the indicator check is ended, the diagnostic trouble code check begins automatically.
- Press the OFF switch when desiring to cancel the check mode.



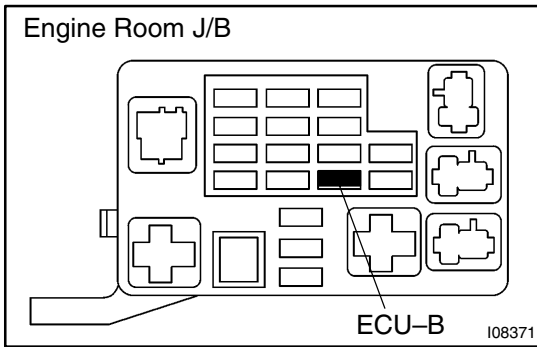
4. DTC CHECK (SENSOR CHECK)

- (a) Perform an indicator check. After the indicator check is completed, the system enters the DTC check mode automatically.
- (b) Read the DTC displayed on the panel. Refer to the list of DTCs on page DI-809 when reading the DTCs. (DTCs are out put at the temperature display.)
- If the slower display is desired, press the Driver Side Temp. Control Switch and change it to step operation. Each time the Driver Side Temp. Control switch is pressed, the display changes by 1 step.

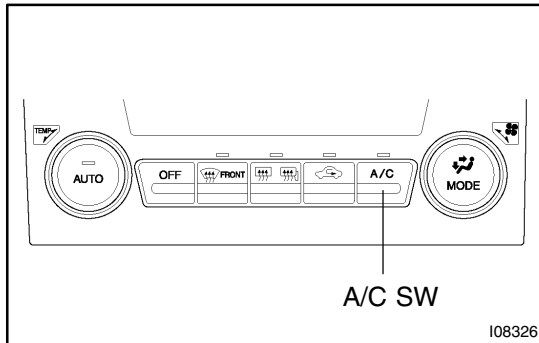
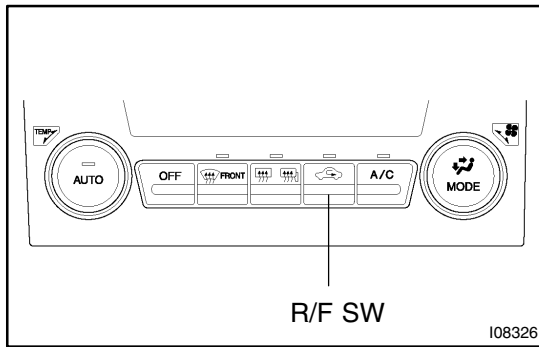


5. DTC CHECK USING HAND-HELD TESTER

- (a) Hook up the hand-held tester to the DLC3.
- (b) Read the diagnostic trouble codes by following the prompts on the tester screen.
- Please refer to the hand-held tester operator's manual for further details.

**6. CLEARING DTC**

- (a) Pull out the ECU-B fuse in Engine Room J/B for 10 sec. or longer to clear diagnostic the DTC's memory.
- (b) After reinserting the fuse, check that the normal code is output.



7. ACTUATOR CHECK

- After entering the sensor check mode, press the R/F switch.
- Since each damper, motor and relay automatically operates at 1 second intervals beginning in order from 20 in the temperature display, check the temperature and air flow visually and by hand.
If a slower display is desired, press the A/C switch and change it to step operation. Each time the A/C switch is pressed, the display changes by 1 step.

HINT:

- Code are displayed in order from the smaller to the larger numbers.
- To cancel the check mode, press the Off switch.

| Step No. | Display code | Conditions | | | | | |
|----------|--------------|--------------|---------------------|------------------|------------------|-----------------|-----------------------|
| | | Blower motor | Air flow vent | Max. cool damper | Air inlet damper | Magnetic clutch | Air mix damper |
| 1 | 0 | 0 | FACE | 0% open | FRESH | OFF | Cool side (-10% open) |
| 2 | 1 | 1 | ↑ | ↑ | ↑ | ↑ | ↑ |
| 3 | 2 | 17 | ↑ | 100% open | R/F (54.5% open) | ON | ↑ |
| 4 | 3 | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ |
| 5 | 4 | ↑ | ↑ | ↑ | (RECIRC) | ↑ | Cool / Hot (50% open) |
| 6 | 5 | ↑ | ↑ | ↑ | ↑ | ↑ | ↑ |
| 7 | 6 | ↑ | FOOT*1 (52.0% open) | ↑ | ↑ | ↑ | Hot side (110% open) |
| 8 | 7 | ↑ | FOOT*2 (31.0% open) | ↑ | ↑ | ↑ | ↑ |
| 9 | 8 | ↑ | FOOT/DEF | ↑ | ↑ | ↑ | ↑ |
| 10 | 9 | 31 | DEF | ↑ | ↑ | ↑ | ↑ |

*1: There is air flow from defroster.

*2: There is no air flow from defroster.

DIAGNOSTIC TROUBLE CODE CHART

If malfunction code is displayed during the DTC check, check the circuit listed for that code in the table below (Proceed to the page given for that circuit.)

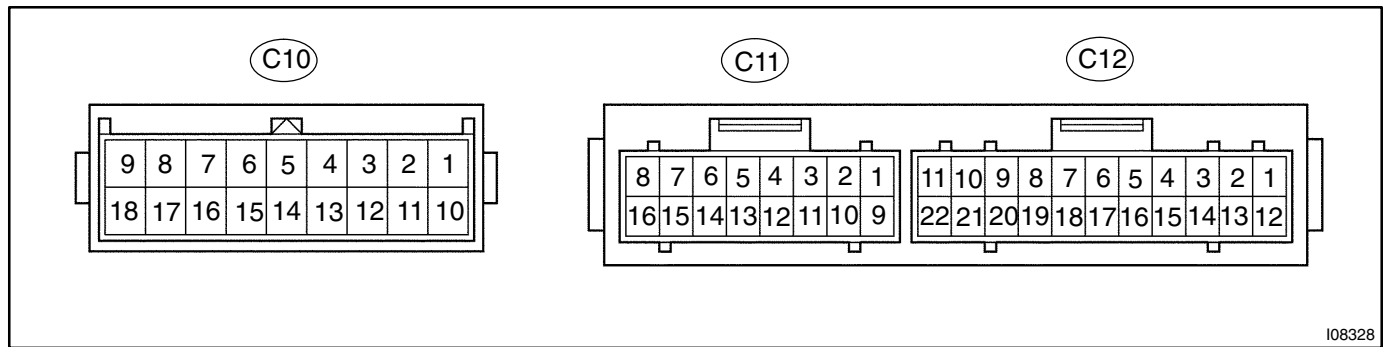
| DTC No. (See page) | Detection Item | Trouble Area | Memory |
|-------------------------|--|--|-------------------------|
| 00 | Normal | – | – |
| B1411/11 *1 (DI-814) | Room temperature sensor circuit | <ul style="list-style-type: none"> Room temp. sensor Harness or connector between room temp. sensor and A/C ECU (Combination Meter ECU) A/C ECU (Combination Meter ECU) | ○ (8.5 min. or more) |
| B1412/11*2 (DI-817) | Ambient temperature sensor circuit | <ul style="list-style-type: none"> Ambient temp. sensor Harness or connector between ambient temp. sensor and A/C ECU (Combination Meter ECU) A/C ECU (Combination Meter ECU) | ○ (8.5 min. or more) |
| B1413/13 (DI-820) | Evaporator temperature sensor circuit | <ul style="list-style-type: none"> Evaporator temp. sensor Harness or connector between evaporator temp. sensor and A/C ECU (Combination Meter ECU) A/C ECU (Combination Meter ECU) | ○ (8.5 min. or more) |
| B1421/21 *3 (DI-823) | Solar sensor circuit | <ul style="list-style-type: none"> Solar sensor Harness or connector between solar sensor and A/C ECU (Combination Meter ECU) A/C ECU (Combination Meter ECU) | – |
| | | | ○ (8.5 min. or more) |
| B1422/22 *4 (DI-826) | All conditions below are detected for 3 sec. or more (a) Engine speed: 450 rpm or more (b) Ratio between engine and compressor rpm deviates 20% or more in comparison to normal operation. | <ul style="list-style-type: none"> Compressor drive belt Compressor lock sensor Compressor Harness and connector between A/C ECU (Combination Meter ECU) and compressor, compressor lock sensor A/C ECU (Combination Meter ECU) | – |
| B1423/23 (DI-829) | Open in pressure sensor circuit Abnormal refrigerant pressure [below 196 kPa (2.0 kgf/cm ² , 28 psi) over 3,140 kPa (32.0 kgf/cm ² , 455 psi)] | <ul style="list-style-type: none"> Pressure switch Harness or connector between pressure switch and A/C ECU (Combination Meter ECU) Refrigerant pipe line A/C ECU (Combination Meter ECU) | – |
| B1431/31 (DI-832) | Air mix damper position sensor circuit | <ul style="list-style-type: none"> Air mix damper position sensor A/C ECU (Combination Meter ECU) Harness or connector between air mix damper position sensor and A/C ECU (Combination Meter ECU) | ○ (1 min. or more) |
| B1432/32 (DI-835) | Air inlet damper position sensor circuit | <ul style="list-style-type: none"> Air inlet damper position sensor circuit A/C ECU (Combination Meter ECU) Harness or connector between air inlet damper position sensor and A/C ECU (Combination Meter ECU) | ○ (1 min. or more) |
| B1433/33 (DI-838) | Air outlet damper position sensor circuit | <ul style="list-style-type: none"> Air outlet damper position sensor circuit A/C ECU (Combination Meter ECU) Harness or connector between max cool damper position sensor and A/C ECU (Combination Meter ECU) | ○ (1 min. or more) |
| B1441/41 (DI-841) | Air mix damper control servomotor circuit (Passenger side) | <ul style="list-style-type: none"> Air mix damper control servomotor Air mix damper position sensor Harness and connector between A/C ECU (Combination Meter ECU) and air mix position sensor Harness and connector between A/C ECU (Combination Meter ECU) and mix damper control servomotor A/C ECU (Combination Meter ECU) | ○ (15secs. or more) |

| | | | |
|----------------------|--|--|--|
| B1442/42 (DI-844) | Air inlet damper control servomotor | <ul style="list-style-type: none"> • Air inlet damper control servomotor • Air inlet damper position sensor • Harness and connector between A/C ECU (Combination Meter ECU) and air inlet position sensor • Harness and connector between A/C ECU (Combination Meter ECU) and air inlet damper control servomotor • A/C ECU (Combination Meter ECU) | <p style="text-align: center;">○</p> <p style="text-align: center;">(15 secs. or more)</p> |
| B1443/43 (DI-844) | Air outlet damper control servomotor circuit | <ul style="list-style-type: none"> • Air outlet damper control servomotor • Air outlet damper position sensor • Harness and connector between A/C ECU (Combination Meter ECU) and air outlet position sensor • Harness and connector between A/C ECU (Combination Meter ECU) and air outlet servomotor • A/C ECU (Combination Meter ECU) | <p style="text-align: center;">○</p> <p style="text-align: center;">(15secs. or more)</p> |

HINT:

- *¹ If the room temp. is approx. -20°C (-4°F) or lower, DTC B1411/11 may be output even though the system is normal.
- *² If the ambient temperature is approx. -50°C (-58°F) or lower, a DTC may be output even though the system is normal.
- *³ If the check is being performed in a dark place, DTC B1421/21 (solar sensor circuit abnormal) could be displayed. In this case, perform DTC check again while shining a light, such as an inspection light, on the solar sensor. If DTC B1421/21 is still displayed, there could be trouble in the solar sensor circuit.
- *⁴ Compressor lock (DTC B1422/22) is indicated only for a current malfunction. (See page DI-826) To confirm DTC B1422/22, perform the following steps.
 - (1) With the engine ON, enter the DTC check mode.
 - (2) Press the R/F switch to enter actuator check mode, and set the operation to Step No. 3.
 - (3) Press the AUTO switch to return to DTC check mode.
 - (4) The DTC is displayed after approx. 3 secs.
- *⁵ The A/C control assembly memorizes the DTC of the respective malfunction when it occurs for period of time indicated in the brackets.

TERMINALS OF ECU



I08328

| Symbols (Terminals No.) | Wiring Color | Condition | STD Voltage (V) |
|--------------------------------|--------------|--|-----------------|
| IG ↔ GND (C12-1 ↔ C12-11) | R-W ↔ BR | IG ON. | 10 - 14 V |
| B ↔ GND (C12-3 ↔ C12-11) | W-L ↔ BR | Constant | 10 - 14 V |
| BLW ↔ GND (C12-4 ↔ C12-11) | P-L ↔ BR | IG ON. Turn the blower SW ON. | 1 - 3 V |
| TAM ↔ SG-5 (C12-7 ↔ C12-16) | B-R ↔ W-R | Ambient temp.: 25 °C (77 °F) | 1.35 - 1.75 V |
| | | Ambient temp.: 40 °C (104 °F) | 0.85 - 1.25 V |
| TR ↔ SG-3 (C11-3 ↔ C11-9) | G-R ↔ G-W | Room temp.: 25 °C (77 °F) | 1.8 - 2.2 V |
| | | Room temp.: 40 °C (104 °F) | 1.2 - 1.6 V |
| TPI ↔ SG-2 (C11-11 ↔ C11-1) | GR ↔ B-W | Push REC switch. | 3.5 - 4.5 V |
| | | Push FRS switch | 0.5 - 1.5 V |
| AIR ↔ GND (C11-12 ↔ C12-11) | R ↔ BR | Push FRS switch | 10 - 14 V |
| | | Push REC switch | Below 1.0 V |
| AIF ↔ GND (C11-13 ↔ C12-11) | BR-Y ↔ BR | Push FRS switch | Below 1.0 V |
| | | Push REC switch | 10 - 14 V |
| TS ↔ S5-3 (C11-15 ↔ C11-16) | Y-B ↔ L | Sensor subjected to electric light | 0.8 - 4.3 V |
| | | Sensor covered by a cloth | Below 0.8 V |
| TE ↔ SG-1 (C10-2 ↔ C10-10) | G-W ↔ B-R | Evaporator temp.: 0 °C (32 °F) | 2.0 - 2.4 V |
| | | Evaporator temp.: 15 °C (59 °F) | 1.4 - 1.8 V |
| TPO ↔ SG-1 (C10-4 ↔ C10-10) | LG-R ↔ B-R | IG ON. Air outlet mode: FACE | 3.5 - 4.5 V |
| | | IG ON. Push front DEF switch. | 0.5 - 1.5 V |
| AOD ↔ GND (C10-5 ↔ C12-11) | LG-B ↔ BR | IG ON. Air outlet mode: FACE | Below 1.0 V |
| | | IG ON. Air outlet mode: DEF | 10 - 14 V |
| AOF ↔ GND (C10-6 ↔ C12-11) | R-W ↔ BR | IG ON. Air outlet mode: FACE | 10 - 14 V |
| | | IG ON. Air outlet mode: DEF | Below 1.0 V |
| TP ↔ SG-1 (C10-7 ↔ C10-10) | R-L ↔ B-R | IG ON. Temp. control switch: Max. COOL | 3.5 - 4.5 V |
| | | IG ON. Temp. control switch: Max. HOT | 0.5 - 1.5 V |
| AMH ↔ GND (C10-8 ↔ C12-11) | Y-R ↔ BR | IG ON. Temp. control switch: Max. HOT | 10 - 14 V |
| | | IG ON. Temp. control switch: Max. COOL | Below 1.0 V |
| AMC ↔ GND (C10-9 ↔ C12-11) | Y-B ↔ BR | IG ON. Temp. control switch: Max. COOL | 10 - 14 V |
| | | IG ON. Temp. control switch: Max. HOT | Below 1.0 V |

PROBLEM SYMPTOMS TABLE

| Symptom | Suspect Area | See page |
|--|--|--|
| Whole functions of the A/C system does not operate | 1. A/C ECU (Combination meter ECU) 2. IG power source circuit | IN-32 |
| Air Flow Control: No blower operation | 1. IG power source circuit 2. Heater main relay 3. Body ECU 4. Blower motor circuit 5. Blower motor controller 4. A/C ECU (Combination meter ECU) | AC-71 DI-676 DI-852 DI-852 IN-32 |
| Air Flow Control: No blower control | 1. Heater main relay 2. Body ECU 3. Blower motor circuit 4. Blower motor controller 5. A/C ECU (Combination meter ECU) | AC-71 DI-676 DI-852 DI-852 IN-32 |
| Air Flow Control: Insufficient air flow | 1. Blower motor circuit 2. Blower moto controller | DI-852 DI-852 |
| Temperature Control: No cool air comes out | 1. Refrigerant volume 2. Drive belt tension 3. Refrigeration system inspection with manifold gauge set 4. Compressor circuit 5. Pressure switch circuit 6. Compressor lock sensor circuit 7. Air mix damper position sensor circuit 8. Air mix damper control servomotor circuit 9. Room temp. sensor circuit 10. Ambient temp. sensor circuit 11. A/C ECU (Combination meter ECU) | AC-22 AC-15 AC-3 DI-855 DI-829 DI-826 DI-832 DI-841 DI-814 DI-817 IN-32 |
| Temperature Control: No warm air comes out | 1. Air mix damper position sensor circuit 2. Air mix damper control servomotor circuit 3. Room temp. sensor circuit 4. Ambient temp. sensor circuit 5. Evaporator temp. sensor circuit 6. A/C ECU (Combination meter ECU) | DI-832 DI-841 DI-814 DI-817 DI-820 IN-32 |
| Temperature Control: Output air is warmer or cooler that the set temperature or response is slow | 1. Refrigerant volume 2. Drive belt tension 3. Refrigeration system inspection with manifold gauge set 4. Cooling fan system 5. Solar sensor circuit 6. Room temp. sensor circuit 7. Ambient temp. sensor circuit 8. Evaporator temp. sensor circuit 9. Air mix damper position sensor circuit 10. Air mix damper control servomotor circuit 11. Air inlet damper position sensor circuit 12. Air inlet damper control servomotor circuit 13. Condenser 14. Evaporator 15. Heater radiator 16. Expansion valve 17. A/C ECU (Combination meter ECU) | AC-22 AC-15 AC-3 CO-25 DI-823 DI-814 DI-817 DI-820 DI-832 DI-841 DI-835 DI-844 AC-52 AC-23 AC-23 AC-58 IN-32 |

DIAGNOSTICS – AIR CONDITIONING SYSTEM

| Symptom | Suspect Area | See page |
|--|--|---|
| Temperature Control: No temperature control (only Max. cool or Max. warm) | <ol style="list-style-type: none"> 1. Room temp. sensor circuit 2. Ambient temp. sensor circuit 3. Air mix damper position sensor circuit 4. Air mix damper control servomotor circuit 5. A/C ECU (Combination meter ECU) | DI-814 DI-817 DI-832 DI-841 IN-32 |
| No air inlet control | <ol style="list-style-type: none"> 1. Air inlet damper position sensor circuit 2. Air inlet damper control servomotor circuit 3. A/C ECU (Combination meter ECU) | DI-835 AC-52 IN-32 |
| No air flow mode | <ol style="list-style-type: none"> 1. Air outlet damper position sensor circuit 2. Air outlet damper control servomotor circuit 3. A/C ECU (Combination meter ECU) | DI-838 DI-847 IN-32 |
| Engine idle up does not occur, or is continuous | <ol style="list-style-type: none"> 1. Compressor circuit 2. ECM | DI-855 IN-32 |
| Blinking of A/C indicator | <ol style="list-style-type: none"> 1. Compressor circuit 2. Compressor lock sensor circuit 2. A/C ECU (Combination meter ECU) | DI-855 DI-826 IN-32 |
| Set temp. value displayed does not change up with operation of temp. control switch. | A/C ECU (Combination meter ECU) | IN-32 |
| DTC not recorded. Set mode is cleared when IG switch is turned off. | <ol style="list-style-type: none"> 1. Back-up power source circuit 2. Combination meter ECU | DI-850 IN-32 |

CIRCUIT INSPECTION

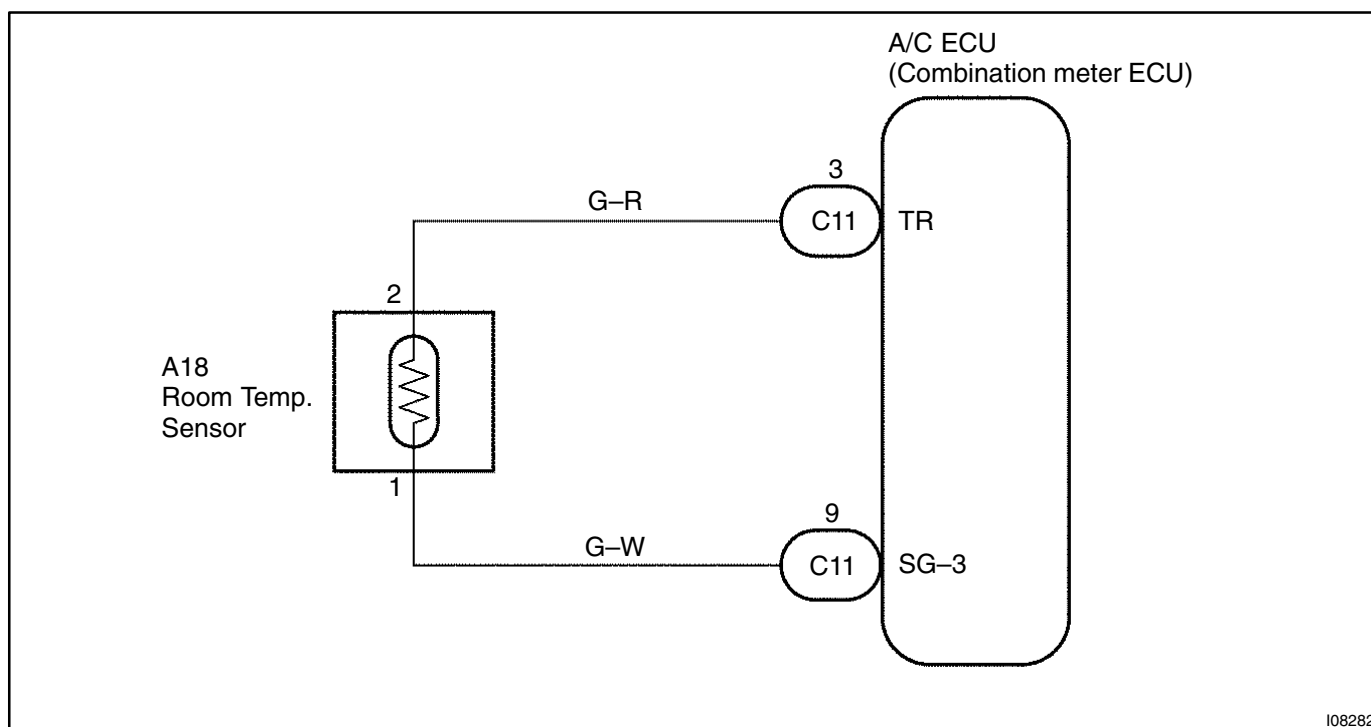
| | | |
|------------|-----------------|--|
| DTC | B1411/11 | Room Temperature Sensor Circuit |
|------------|-----------------|--|

CIRCUIT DESCRIPTION

This sensor detects the temperature inside the cabin and sends the appropriate signals to the A/C ECU (Combination meter ECU).

| DTC No. | Detection Item | Trouble Area |
|----------|---|---|
| B1411/11 | Open or short in room temperature sensor circuit. | <ul style="list-style-type: none"> • Room temperature sensor. • Harness or connector between room temperature sensor and A/C ECU (Combination meter ECU). • A/C ECU (Combination meter ECU). |

WIRING DIAGRAM



108282

INSPECTION PROCEDURE

HINT:

In case of using the hand-held tester, start the inspection step 1 and in case of not using the hand-held tester, start from step 2.

1 Check room temp. sensor using hard-held tester.

PREPARATION:

Connect the hard-held tester to the DLC3.

CHECK:

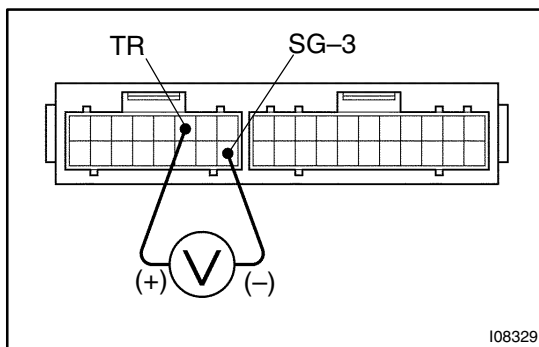
Check the room temp. sensor using DATA LIST.

OK

Check and replace A/C ECU (Combination meter ECU).

NG

2 Check voltage between terminals TR and SG-3 of A/C ECU (Combination meter ECU) connector.



PREPARATION:

Remove A/C ECU (Combination meter ECU) with connectors still connected.

CHECK:

- Turn ignition switch ON.
- Measure voltage between terminals TR and SG-3 of A/C ECU (Combination meter ECU) connector at each temperature.

OK:

Voltage :

at 25°C (77°F) : 1.8 – 2.2 V

at 40°C (104°F) : 1.2 – 1.6 V

HINT:

As the temperature increases, the voltage decreases.

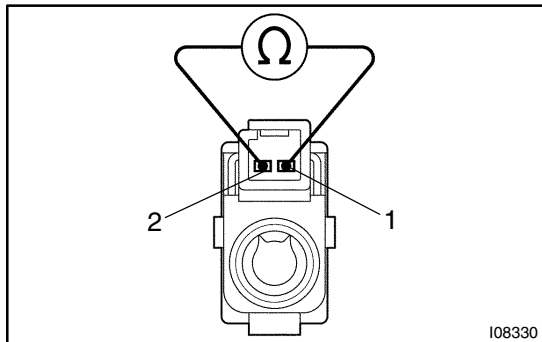
NG

Go to step 3.

OK

Proceed to next circuit inspection shown on problem symptoms table (See page DI-812). However, if DTC B1411/11 is displayed, check and replace A/C ECU (Combination meter ECU).

3 Check room temperature sensor.



PREPARATION:

Disconnect room temperature sensor connector.

CHECK:

Measure resistance between terminals 1 and 2 of room temperature sensor connector at each temperature.

OK:

Resistance :

at 25°C (77°F) : 1.61 – 1.78 kΩ

at 50°C (122°F) : 0.55 – 0.65 kΩ

HINT:

As the temperature increases, the resistance decreases.

NG

Replace room temperature sensor.

OK

4 Check harness and connector between A/C ECU (Combination meter ECU) and room temperature sensor (See page IN-32).

NG

Repair or replace harness or connector.

OK

Check and replace A/C ECU (Combination meter ECU).

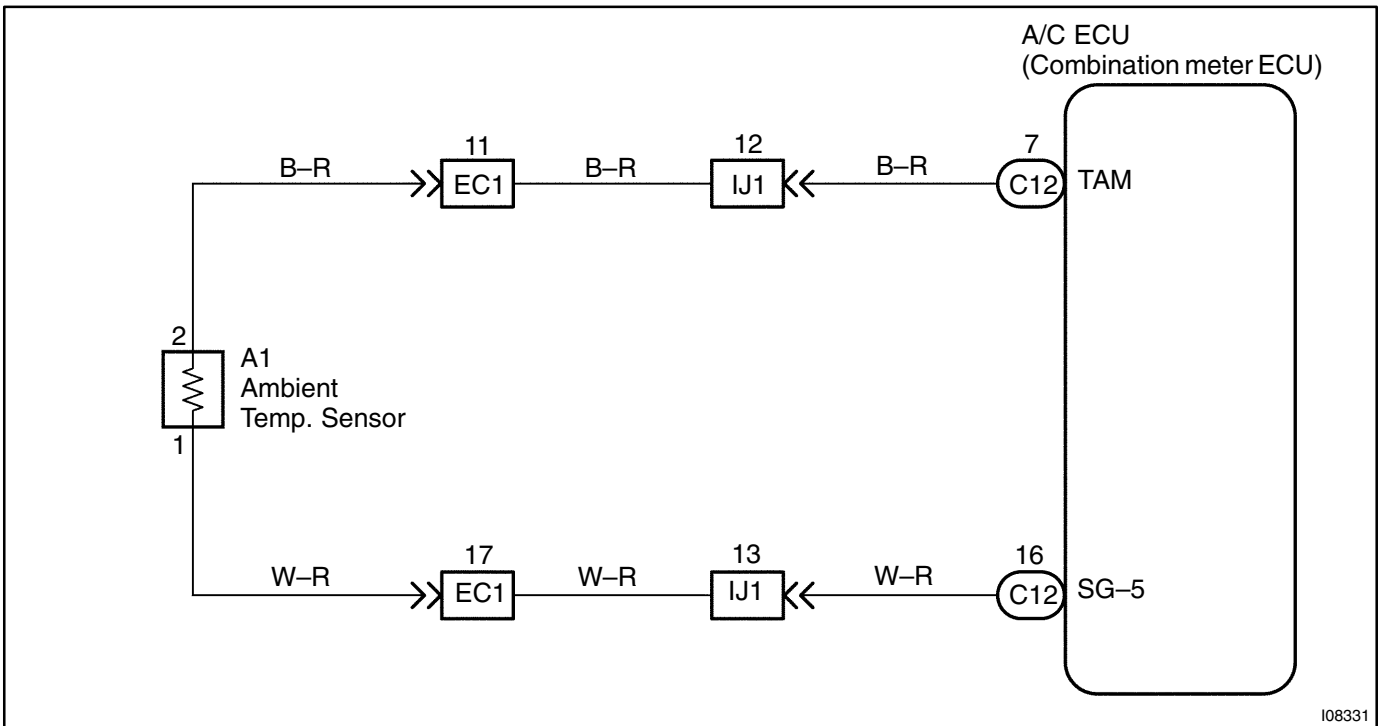
| | | |
|------------|-----------------|---|
| DTC | B1412/12 | Ambient Temperature Sensor Circuit |
|------------|-----------------|---|

CIRCUIT DESCRIPTION

This sensor detects the ambient temperature and sends the appropriate signals to the A/C ECU (Combination meter ECU).

| DTC No. | Detection Item | Trouble Area |
|----------|--|---|
| B1412/12 | Open or short in ambient temperature sensor circuit. | <ul style="list-style-type: none"> Ambient temperature sensor. Harness or connector between ambient temperature sensor and A/C ECU (Combination meter ECU) A/C ECU (Combination meter ECU) |

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

In case of using the hand-held tester, start the inspection step 1 and in case of not using the hand-held tester, start from step 2.

| | |
|----------|---|
| 1 | Check ambient temp. sensor using hand-held tester. |
|----------|---|

PREPARATION:

Connect the hand-held tester to the DLC3.

CHECK:

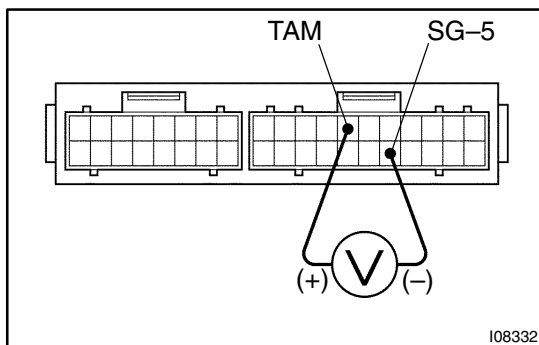
Check the ambient temp. sensor using DATA LIST.

OK

Check and replace A/C ECU (Combination meter ECU).

NG

| | |
|----------|---|
| 2 | Check voltage between terminals TAM and SG-5 of A/C ECU (combination meter ECU). |
|----------|---|



PREPARATION:

Remove A/C ECU with connectors still connected.

CHECK:

- (a) Turn ignition switch ON.
- (b) Measure voltage between terminals TAM and SG-5 of A/C ECU connector at each temperature.

OK:

Voltage :

at 25°C (77°F) : 1.35 – 1.75 V

at 40°C (104°F) : 0.85 – 1.25 V

HINT:

As the temperature increases, the voltage decreases.

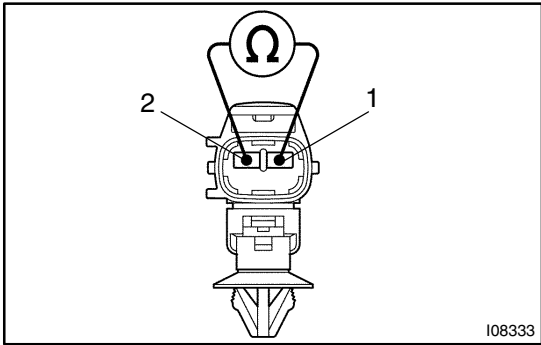
NG

Go to step 3.

OK

Proceed to next circuit inspection shown on problem symptoms table (See page DI-812). However, if DTC B1412/12 is displayed, check and replace ECM and A/C ECU (Combination meter ECU).

3 Check ambient temperature sensor.



PREPARATION:

Disconnect ambient temperature sensor connector.

CHECK:

Measure resistance between terminals 1 and 2 of ambient temperature sensor connector at each temperature.

OK:

Resistance :

at 25°C (77°F) : 1.6 – 1.8 kΩ

at 50°C (122°F) : 0.5 – 0.7 kΩ

HINT:

As the temperature increases, the resistance decreases.

NOTICE:

When installing the ambient temperature sensor, be sure to connect the sensor connector before connecting the battery.

NG → Replace ambient temperature sensor.

OK

4 Check harness and connector between A/C ECU (combination meter ECU) and ambient temperature sensor (See page IN-32).

NG → Repair or replace harness or connector.

OK

Check and replace A/C ECU (Combination meter ECU).

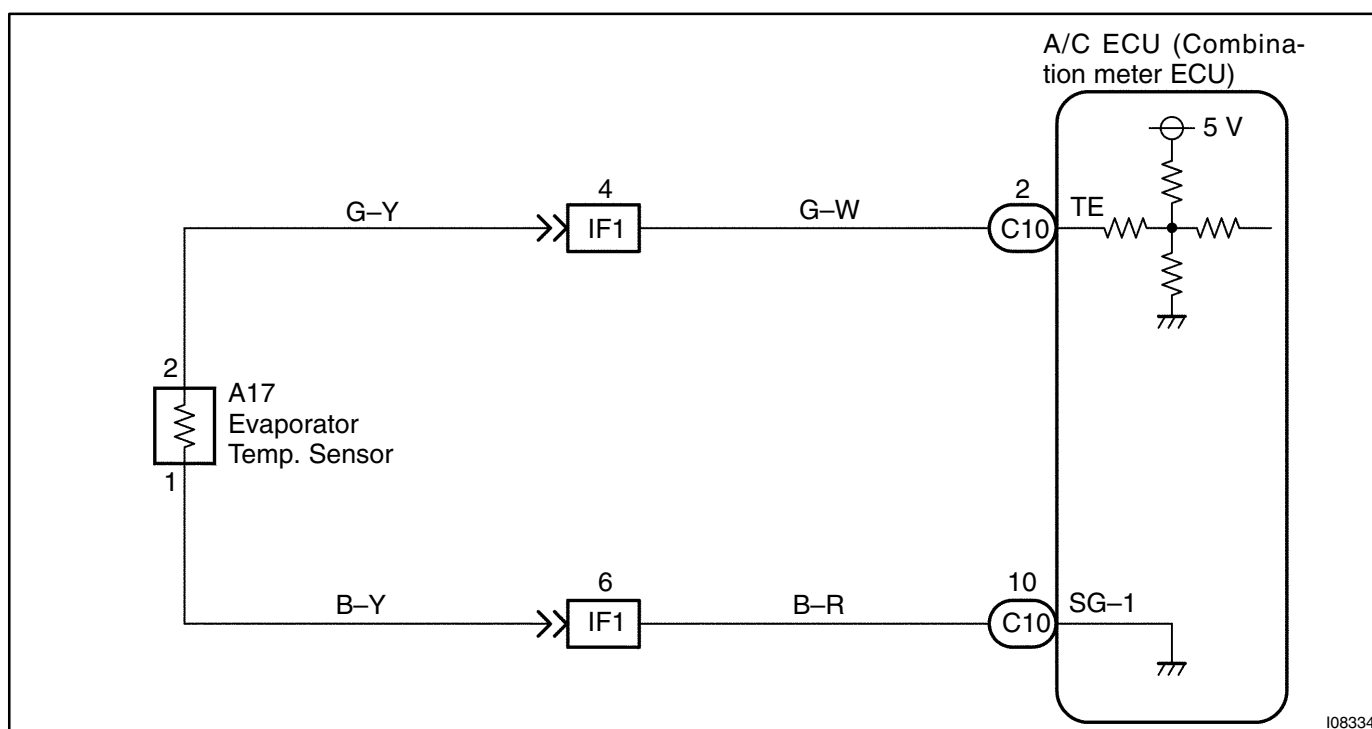
| | | |
|------------|-----------------|--|
| DTC | B1413/13 | Evaporator Temperature Sensor circuit |
|------------|-----------------|--|

CIRCUIT DESCRIPTION

This sensor detects the temperature inside the cooling unit and sends the appropriate signals to the A/C ECU (Combination meter ECU).

| DTC No. | Detection Item | Trouble Area |
|----------|---|---|
| B1413/13 | Open or short in evaporator temperature sensor circuit. | <ul style="list-style-type: none"> • Evaporator temperature sensor. • Harness or connector between evaporator temperature sensor and A/C ECU (Combination meter ECU). • A/C ECU (Combination meter ECU). |

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

In case of using the hand-held tester start the inspection step 1 and in case of not using the hand-held tester, start from step 2.

| | |
|----------|--|
| 1 | Check evaporator temp. sensor using hand-held tester. |
|----------|--|

PREPARATION:

Connect the hand-held tester to the DLC3.

CHECK:

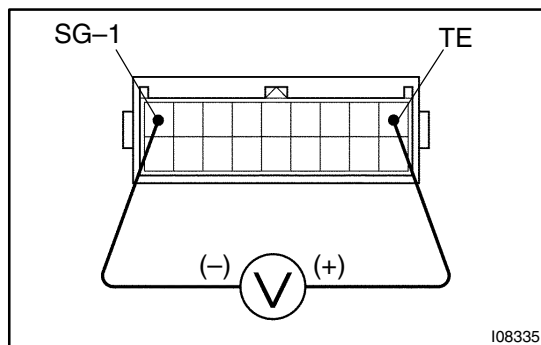
Check the evaporator temp. sensor using DATA LIST.

OK

Check and replace A/C ECU (Combination meter ECU).

NG

| | |
|----------|--|
| 2 | Check voltage between terminals TE and SG-1 of A/C ECU (Combination meter ECU) connector. |
|----------|--|



PREPARATION:

Remove A/C ECU with connectors still connected.

CHECK:

- (a) Turn ignition switch ON.
- (b) Measure voltage between terminals TE and SG-1 of A/C ECU connector at each temperature.

OK:

Voltage :

at 0°C (32°F) : 2.0 – 2.4 V

at 15°C (59°F) : 1.4 – 1.8 V

HINT:

As the temperature increases, the voltage decreases.

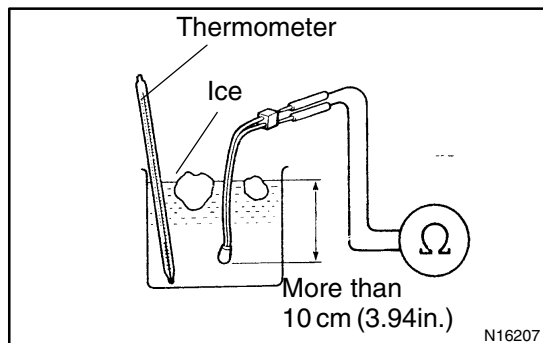
NG

Go to step 3.

OK

Proceed to next circuit inspection shown on problem symptoms table (See page DI-812). However, if DTC B1413/13 is displayed, check and replace A/C ECU (Combination meter ECU).

3 Check evaporator temperature sensor.



PREPARATION:

Remove evaporator temperature sensor (See page AC-67).

CHECK:

Measure resistance between terminals 1 and 2 of evaporator temperature sensor connector at each temperature.

OK:

Resistance :

at 0°C (32°F) : 4.5 – 5.2 kΩ

at 15°C (59°F) : 2.0 – 2.7 kΩ

HINT:

As the temperature increases, the resistance decreases.

NG

Replace evaporator temperature sensor.

OK

4 Check harness and connector between A/C ECU (Combination meter ECU) and evaporator temperature sensor (See page IN-32).

NG

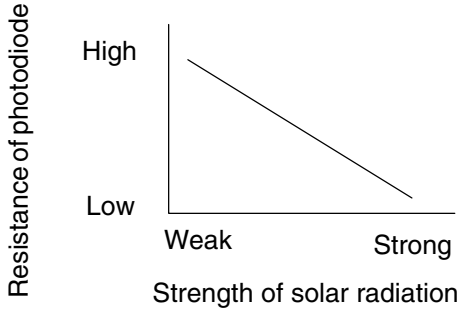
Repair or replace harness or connector.

OK

Check and replace A/C ECU (Combination meter ECU).

| | | |
|------------|-----------------|-----------------------------|
| DTC | B1421/21 | Solar Sensor Circuit |
|------------|-----------------|-----------------------------|

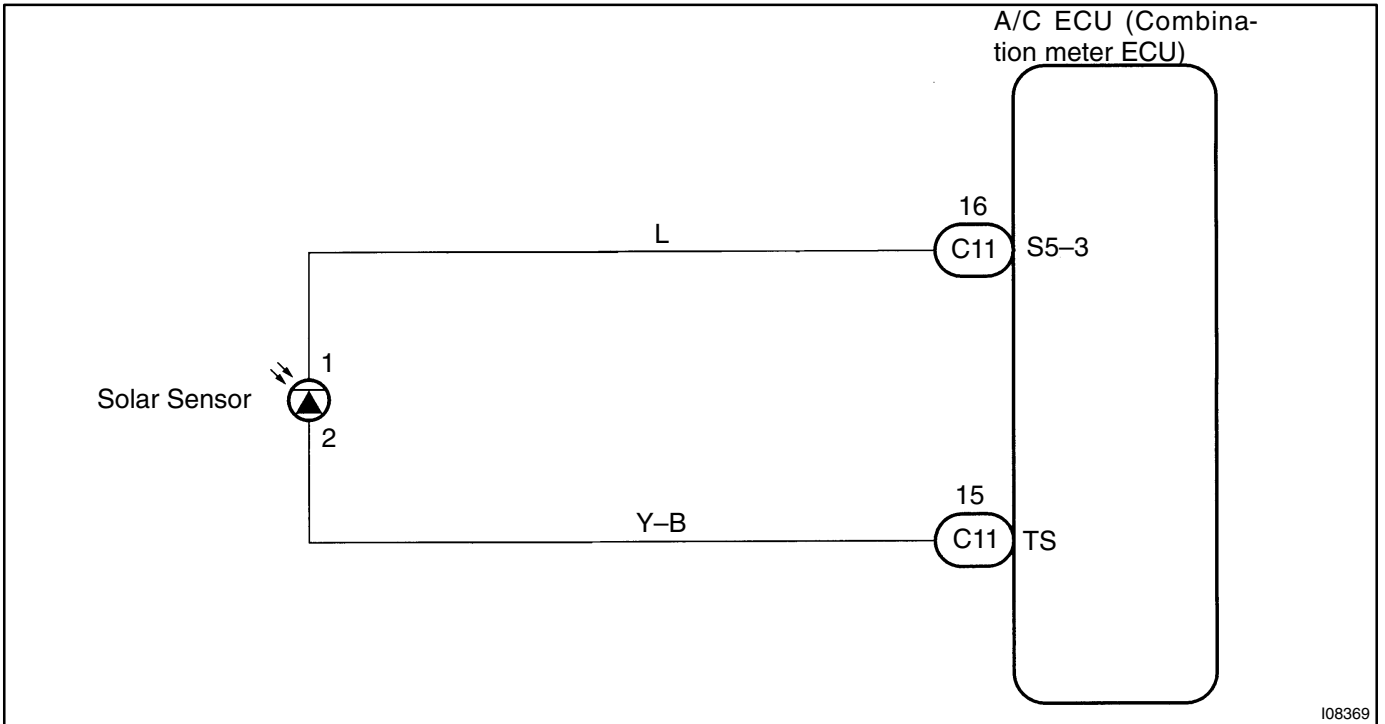
CIRCUIT DESCRIPTION



A photo diode in the solar sensor detects solar radiation and sends signals to the A/C ECU (Combination meter ECU).

| DTC No. | Detection Item | Trouble Area |
|----------|--|---|
| B1421/21 | Open or short in solar sensor circuit. Please note that display of diagnostic trouble code 21 is not abnormal when the sensor is not receiving solar radiation. | <ul style="list-style-type: none"> • Solar sensor. • Harness or connector between solar sensor and A/C ECU (Combination meter ECU). • A/C ECU (Combination meter ECU). |

WIRING DIAGRAM



108369

INSPECTION PROCEDURE

HINT:

In case of using the hand-held tester, start the inspection step 1 and in case of not using the hand-held tester, start from step 2.

| | |
|----------|---|
| 1 | Check solar sensor using hand-held tester. |
|----------|---|

PREPARATION:

Connect the hand-held tester to the DLC3.

CHECK:

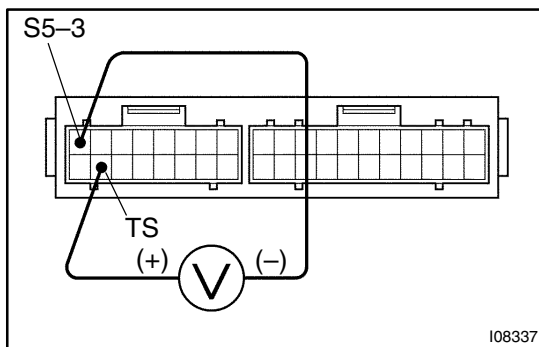
Check the solar sensor using DATA LIST.

OK

Check and replace A/C ECU (Combination meter ECU).

NG

| | |
|----------|--|
| 2 | Check voltage between terminals TS and S5-3 of A/C ECU (Combination meter ECU) connector. |
|----------|--|



PREPARATION:

Remove A/C ECU with connectors still connected.

CHECK:

- (a) Turn ignition switch ON.
- (b) Measure voltage between terminals TS and S5-3 of A/C ECU connector when the solar sensor is subjected to an electric light, and when the sensor is covered by a cloth.

OK:

| Condition | Voltage |
|------------------------------------|-------------|
| Sensor subjected to electric light | 0.8 – 4.3 V |
| Sensor covered by a cloth | Below 0.8 V |

HINT:

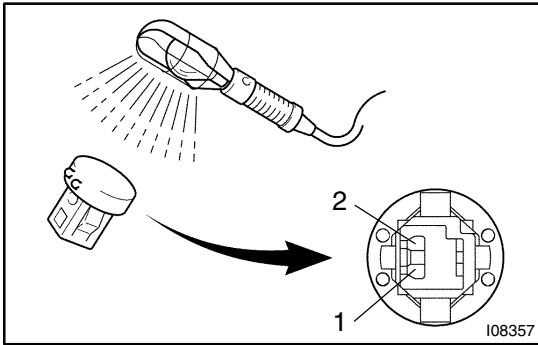
As the inspection light is moved away from the sensor, the voltage increases.

NG

go to step 3.

OK

Proceed to next circuit inspection shown on problem symptoms table (See page DI-812). However, if DTC B1421/21 is displayed, check and replace A/C ECU (Combination meter ECU).

3 Check solar sensor.**PREPARATION:**

Remove solar sensor.

CHECK:

- (a) Cover the sensor by a cloth.
- (b) Measure resistance between terminals 1 and 2 of solar sensor connector.

HINT:

Connect positive (+) lead of ohmmeter to terminal 1 and negative (-) lead to terminal 2 of the solar sensor.

OK:

Resistance : $\infty \Omega$ (no continuity)

PREPARATION:

- (a) Remove the cloth from the solar sensor and subject the sensor to electric light.
- (b) Measure resistance.

OK:

Resistance : Approx. 4 k Ω (continuity)

HINT:

As the electric light is moved away from the sensor, the resistance increases.

NG**Replace solar sensor.****OK****4 Check harness and connector between A/C ECU (Combination meter ECU) and solar sensor (See page IN-32).****NG****Repair or replace harness or connector.****OK**

Check and replace A/C ECU (Combination meter ECU).

| | | |
|------------|-----------------|---------------------------------------|
| DTC | B1422/22 | Compressor Lock Sensor Circuit |
|------------|-----------------|---------------------------------------|

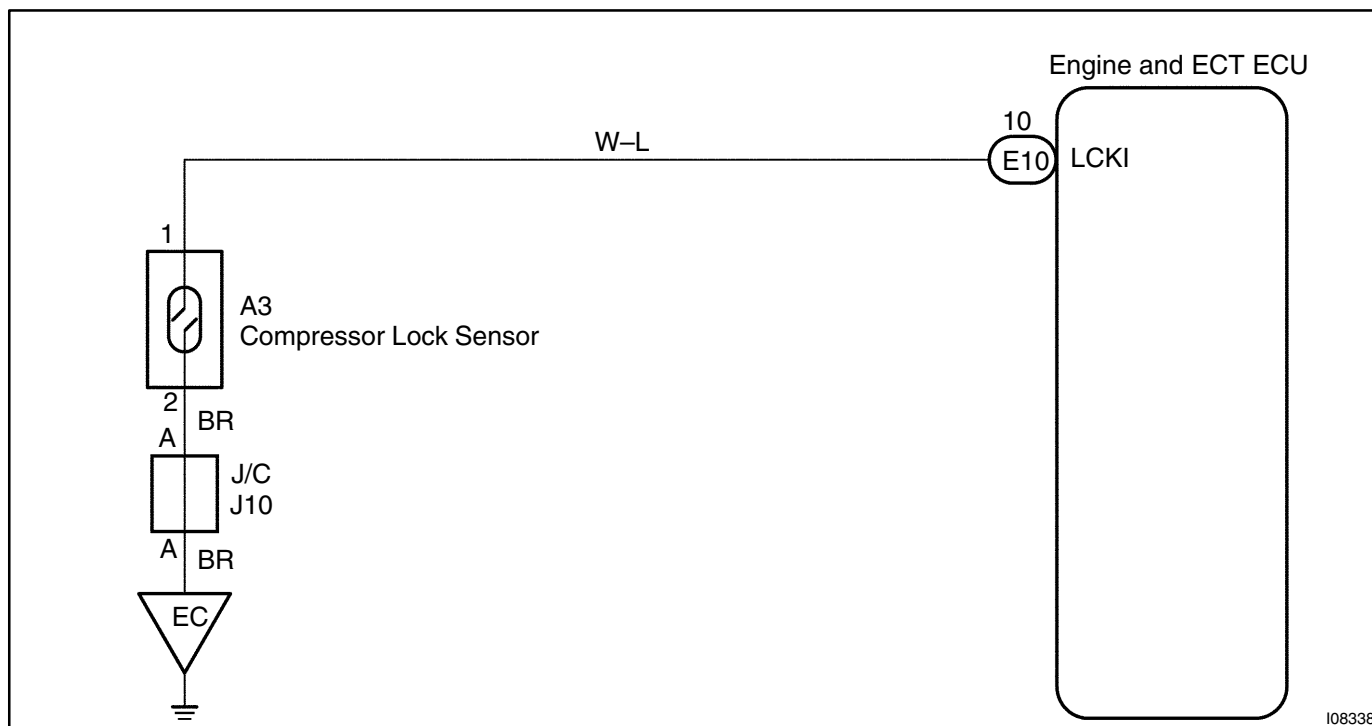
CIRCUIT DESCRIPTION

This sensor sends 4 pulses per engine revolution to the engine and ECT ECU.

If the number ratio of the compressor speed divided by the engine speed is smaller than a predetermined value, the engine and ECT ECU turns the compressor OFF. And, the indicator flashes at about 1 second intervals.

| DTC No. | Detection Item | Trouble Area |
|----------|---|--|
| B1422/22 | All conditions below are detected for 3 secs. or more (a) Engine speed : 450rpm or more (b) Ratio between engine and compressor speed deviates 20% or more in comparison to normal operation. | <ul style="list-style-type: none"> • Compressor. • Compressor drive belt. • Compressor lock sensor. • Harness and connector between compressor and engine and ECT ECU. • Harness and connector between engine and ECT ECU and A/C ECU (Combination meter ECU). • Engine and ECT ECU. • A/C ECU (Combination meter ECU). |

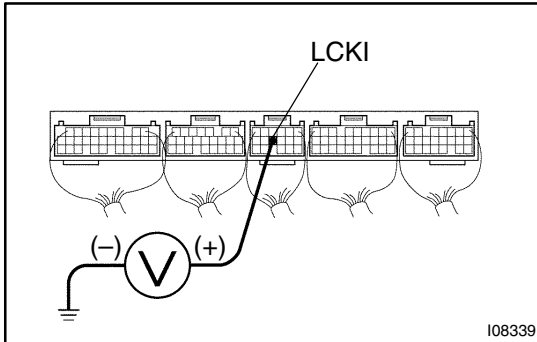
WIRING DIAGRAM



108338

INSPECTION PROCEDURE

1 Check voltage between terminal LCKI of engine and ECT ECU and body ground.

**CHECK:**

- Start engine.
- Push AUTO SW.
- Measure voltage between terminal LCKI of engine and ECT ECU connector and body ground when A/C switch is ON.

OK:

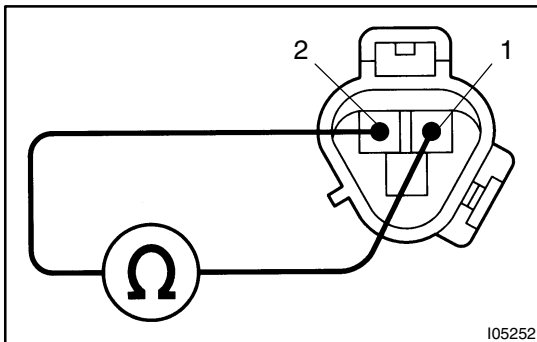
Voltage : 10 – 14 V

OK

Proceed to next circuit inspection shown on problem symptoms table (See page DI-812).

NG

2 Check compressor lock sensor.

**PREPARATION:**

- Jack up the vehicle.
- Disconnect compressor lock sensor connector.

CHECK:

Measure resistance between terminals 1 and 2 of compressor lock sensor connector.

OK:

Resistance :

at 20°C (68°F) : 990 – 1210 Ω

at 100°C (212°F) : 1280 – 1550 Ω

NG

Replace compressor lock sensor.

OK

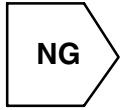
3 Check harness and connectors between engine and ECT ECU and compressor lock sensor (See page IN-32).

NG

Repair or replace harness or connector.

OK

| | |
|---|---|
| 4 | Check harness and connectors between engine and ECT ECU and A/C ECU (Combination meter ECU). (See page IN-32). |
|---|---|



Repair or replace harness or connector.



Check and replace engine and ECT ECU and A/C ECU (Combination meter ECU).

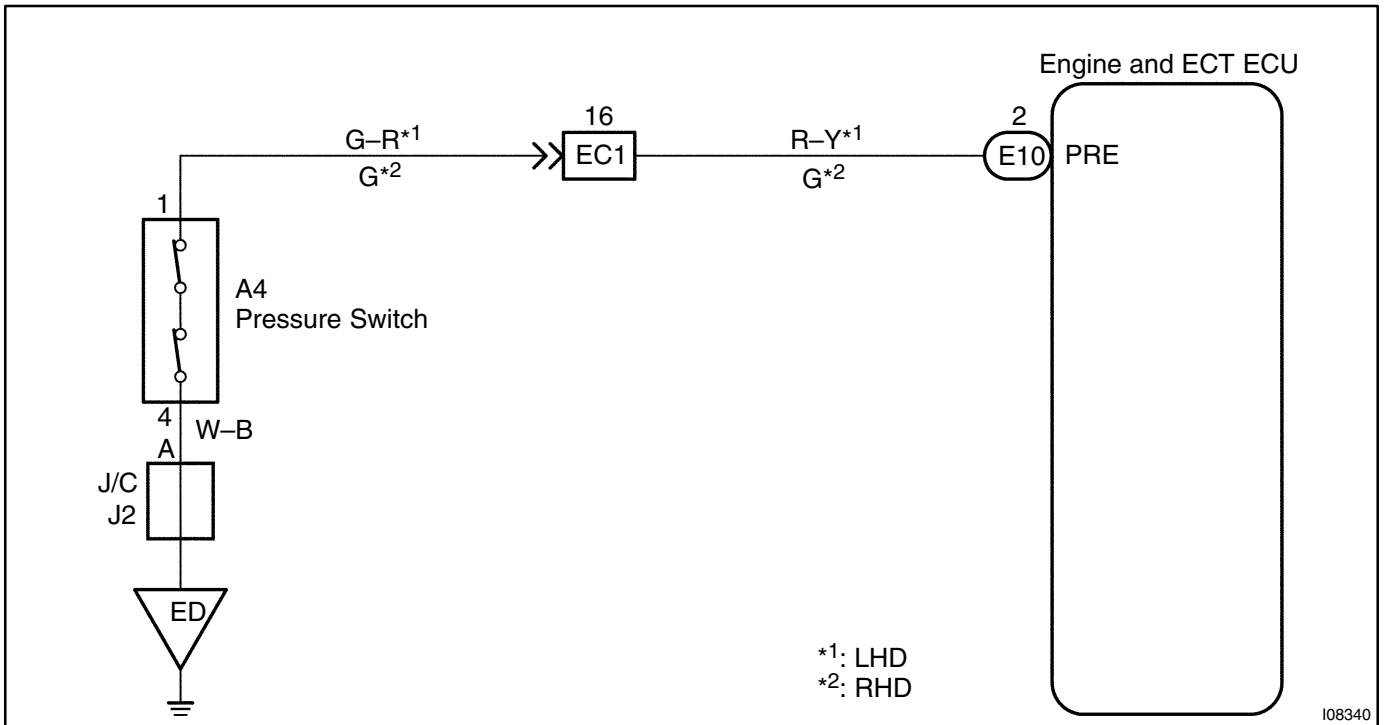
| | | |
|------------|-----------------|--------------------------------|
| DTC | B1423/23 | Pressure Switch Circuit |
|------------|-----------------|--------------------------------|

CIRCUIT DESCRIPTION

The pressure switch sends the appropriate signals to the engine and ECT ECU when the A/C refrigerant pressure drops too low or rises too high. When the engine and ECT ECU receives these signals, it outputs signals via the engine and ECT ECU to switch OFF the compressor relay and turns the magnetic clutch OFF.

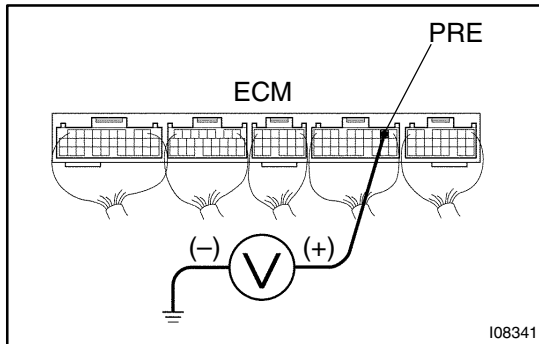
| DTC No. | Detection Item | Trouble Area |
|----------|---|---|
| B1423/23 | <ul style="list-style-type: none"> • Open in pressure sensor circuit. • Abnormal refrigerant pressure. below 196 kPa (2.0 kgf/cm², 31 psi) over 3,140 kPa (32.0 kgf/cm², 455 psi) | <ul style="list-style-type: none"> • Pressure switch. • Harness or connector between pressure switch and engine and ECT ECU. • Refrigerant pipe line. • Engine and ECT ECU. |

WIRING DIAGRAM



INSPECTION PROCEDURE

| | |
|----------|--|
| 1 | Check voltage between terminal PRE of engine and ECT ECU and body ground. |
|----------|--|

**PREPARATION:**

Install the manifold gauge set.

CHECK:

- (a) Turn ignition switch ON.
- (b) Check voltage between terminal PRE of engine and ECT ECU connector and body ground when A/C gas pressure is changed.

OK:

The voltage changes with gas pressure, as shown in the diagram below.

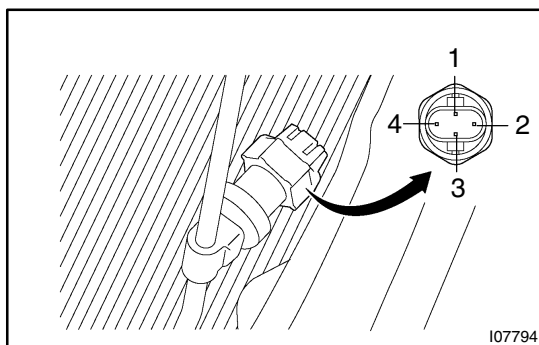
| Low Pressure Cut Side | Reference : High Pressure Cut Side |
|--|--|
| ON (0V) 196 kPa ↓ ↑ 225 kPa OFF (12V) | ON (0V) 2,550 kPa ↑ ↓ 3,140 kPa OFF (12V) |

OK

Proceed to next circuit inspection shown on problem symptoms table (See page DI-812).

NG

| | |
|----------|-------------------------------|
| 2 | Check pressure switch. |
|----------|-------------------------------|

**PREPARATION:**

Disconnect pressure switch connector.

CHECK:

- (a) Turn ignition switch ON.
- (b) Check continuity between terminals 1 and 4 of pressure switch when A/C gas pressure is changed.

OK:

The continuity changes with gas pressure as shown below.

| Low Pressure Cut Side | Reference : High Pressure Cut Side |
|---|---|
| ON (continuity) 181 kPa ↓ ↑ 211 kPa OFF (continuity) | ON (continuity) 2,550 kPa ↑ ↓ 3,140 kPa OFF (continuity) |

NG

Repair or replace harness or connector.

OK

| | |
|----------|--|
| 3 | Check harness and connector between engine and ECT ECU and pressure switch, pressure switch and body ground (See page IN-32). |
|----------|--|

| | |
|-----------|--|
| NG | Repair or replace harness or connector. |
|-----------|--|

| |
|-----------|
| OK |
|-----------|

| | |
|----------|--|
| 4 | Check harness and connector between engine and ECT ECU and A/C ECU (Combination meter ECU). (See page IN-32). |
|----------|--|

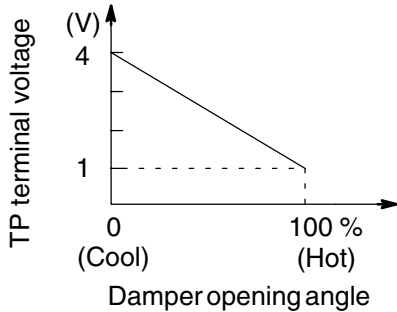
| | |
|-----------|--|
| NG | Repair or replace harness or connector. |
|-----------|--|

| |
|-----------|
| OK |
|-----------|

| |
|--|
| Check and replace engine and ECT ECU. |
|--|

| | | |
|------------|-----------------|---|
| DTC | B1431/31 | Air Mix Damper Position Sensor Circuit |
|------------|-----------------|---|

CIRCUIT DESCRIPTION

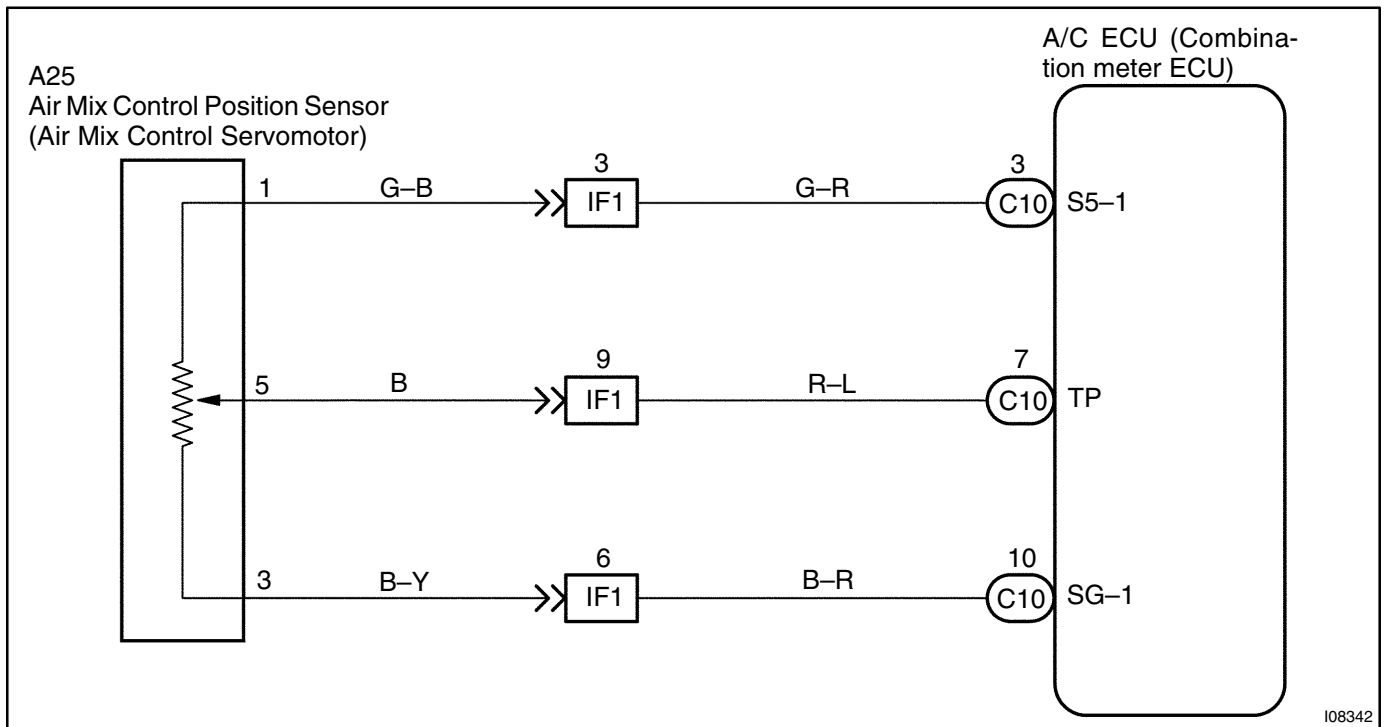


This sensor detects the position of the air mix damper and sends the appropriate signals to the A/C ECU (Combination meter ECU).

The position sensor is built into the air mix damper control servomotor assembly.

| DTC No. | Detection Item | Trouble Area |
|----------|--|---|
| B1431/31 | Short to ground or power source circuit in air mix damper position sensor circuit. | <ul style="list-style-type: none"> • Air mix damper position sensor. • Harness or connector between air mix damper control servomotor assembly and A/C ECU (Combination meter ECU). • A/C ECU (Combination meter ECU). |

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

In case of using the hand-held tester, start the inspection from step1 and in case of not using the hand-held tester, start from step2.

| | |
|----------|--|
| 1 | Check air mix damper position using hand-held tester. |
|----------|--|

PREPARATION:

Connect the hand-held tester to the DLC3.

CHECK:

Check the current position of air mix damper and the target position of air mix damper (Passenger Side).

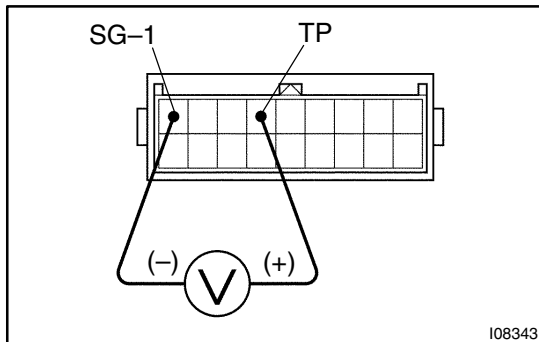
OK:

The current position and target position are almost similar.

| | |
|-----------|---|
| OK | Check and replace A/C ECU (Combination meter ECU). |
|-----------|---|

NG

| | |
|----------|--|
| 2 | Check voltage between terminals TP and SG-1 of A/C ECU (Combination meter ECU) connector. |
|----------|--|



PREPARATION:

Remove A/C ECU with connectors still connected.

CHECK:

- (a) Turn ignition switch ON.
- (b) Change the set temperature to activate the air mix damper control servomotor, and measure the voltage between terminals TP and SG-1 of A/C ECU connector each time when the set temperature is changed.

OK:

| Set Temperature | Voltage |
|-----------------|-------------|
| Max. cool | 3.5 – 4.5 V |
| Max. hot | 0.5 – 1.5 V |

HINT:

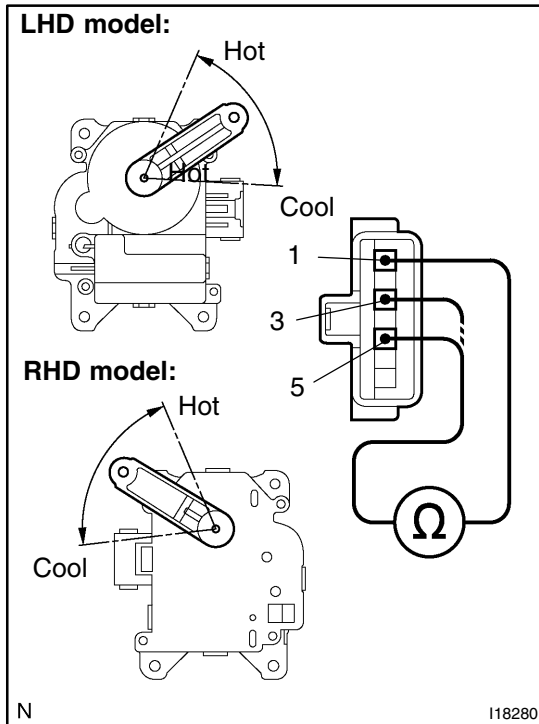
As the set temperature increases, the voltage decreases.

| | |
|-----------|----------------------|
| NG | Go to step 3. |
|-----------|----------------------|

Ok

Proceed to next circuit inspection shown on problem symptoms table (See page DI-812). However, if DTC B1431/31 displayed, check and replace A/C ECU (Combination meter ECU).

3 Check air mix damper position sensor.



PREPARATION:

- Remove heater unit (See page AC-27).
- Disconnect air mix damper control servomotor assembly connector.

CHECK:

Measure resistance between terminals 1 and 3 of air mix damper control servomotor assembly connector.

OK:

Resistance : 4.2 – 7.8 kΩ

CHECK:

While operating air mix damper control servomotor, following the procedure on page DI-841, measure resistance between terminals 1 and 5 of air mix damper control servomotor assembly connector.

OK:

| Position | Resistance |
|-----------|--------------|
| Max. cool | 3.6 – 6.8 kΩ |
| Max. hot | 0.5 – 1.1 kΩ |

HINT:

As the air mix damper control servomotor moves from cool side to hot side, the resistance decreases.

NG

Replace air mix damper control servomotor assembly.

OK

4 Check harness and connector between A/C ECU (Combination meter ECU) and air mix damper control servomotor assembly (See page IN-32).

NG

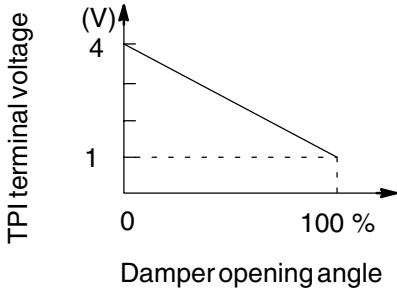
Repair or replace harness or connector.

OK

Check and replace A/C ECU (Combination meter ECU).

| | | |
|------------|-----------------|---|
| DTC | B1432/32 | Air Inlet Damper Position Sensor Circuit |
|------------|-----------------|---|

CIRCUIT DESCRIPTION

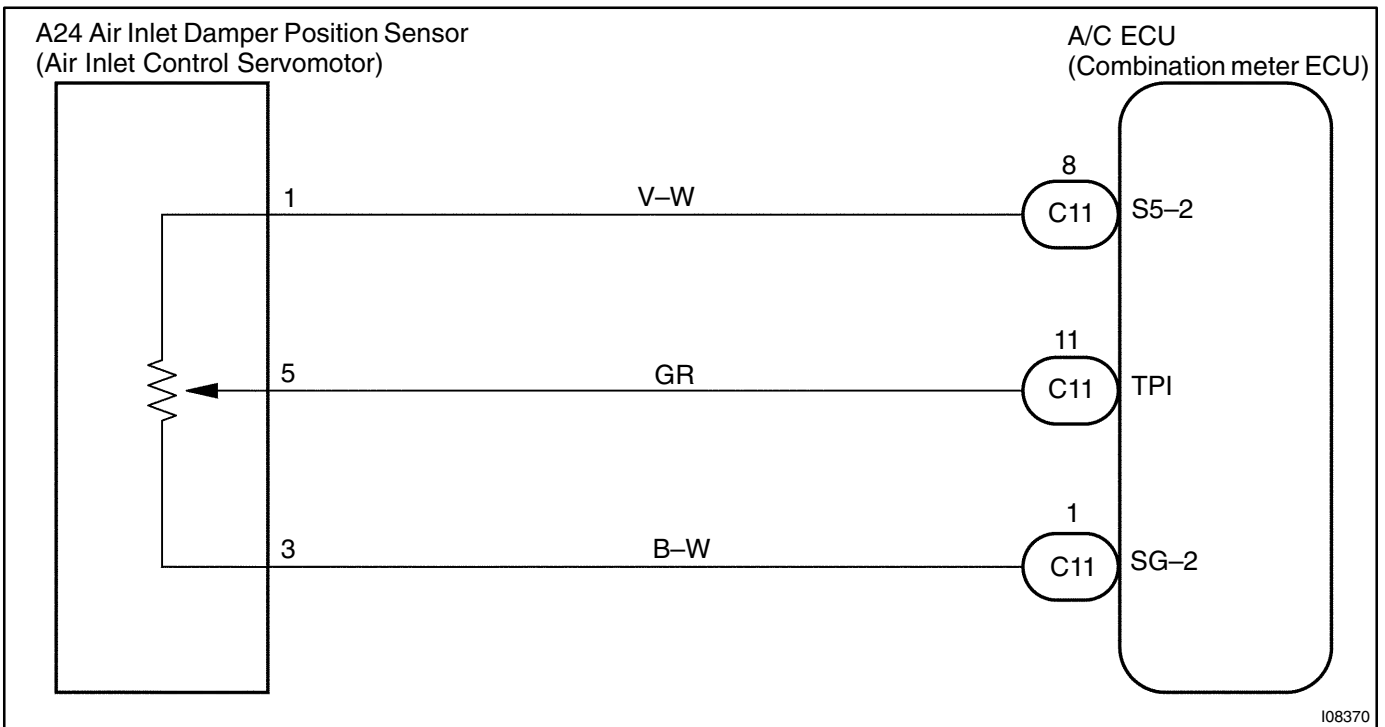


This sensor detects the position of the air inlet damper and sends the appropriate signals to the A/C ECU (Combination meter ECU).

The position sensor is built into the air inlet damper control servomotor assembly.

| DTC No. | Detection Item | Trouble Area |
|----------|--|---|
| B1432/32 | Short to ground or power source circuit in air inlet damper position sensor circuit. | <ul style="list-style-type: none"> • Air inlet damper position sensor. • Harness or connector between air inlet damper control servomotor assembly and A/C ECU (Combination meter ECU). • A/C ECU (Combination meter ECU). |

WIRING DIAGRAM



108370

INSPECTION PROCEDURE

HINT:

In case of using the hand-held tester, start the inspection from step1 and in case of not using the hand-held tester, start from step2.

| | |
|----------|--|
| 1 | Check air inlet damper position using hand-held tester. |
|----------|--|

PREPARATION:

Connect the hand-held tester to the DLC3.

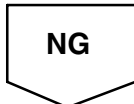
CHECK:

Check the current position of air inlet damper and the target position of air inlet damper.

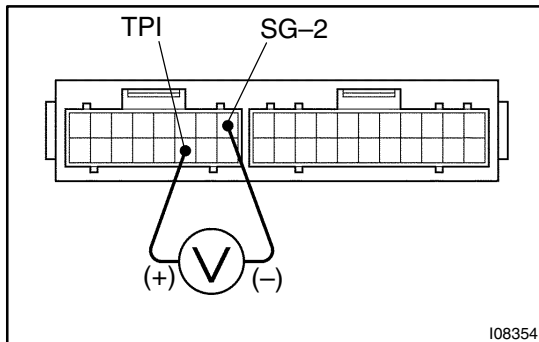
OK:

The current position and target position are almost similar.

| | |
|-----------|---|
| OK | Check and replace A/C ECU (Combination meter ECU). |
|-----------|---|



| | |
|----------|---|
| 2 | Check voltage between terminals TPI and SG-2 of A/C ECU (Combination meter ECU) connector. |
|----------|---|



PREPARATION:

Remove A/C ECU with connectors still connected.

CHECK:

- (a) Turn ignition switch ON.
- (b) Press REC/FRS switch to change air inlet between fresh and recirculation air, and measure voltage between terminals TPI and SG-2 of A/C ECU when the air inlet damper control servomotor operates.

OK:

| FRS-REC Switch | Voltage |
|----------------|-------------|
| REC | 3.5 – 4.5 V |
| FRS | 0.5 – 1.5 V |

HINT:

As the air inlet damper control servomotor is moved from REC side to FRS side, the voltage decreases.

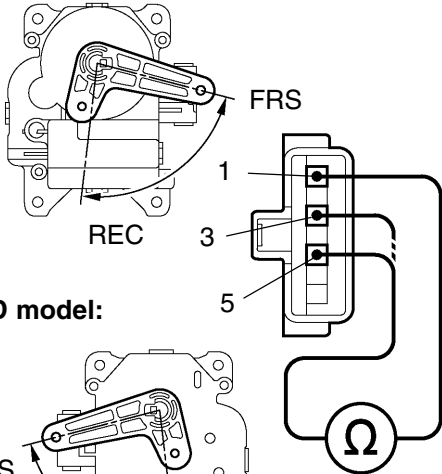
| | |
|-----------|----------------------|
| NG | Go to step 3. |
|-----------|----------------------|



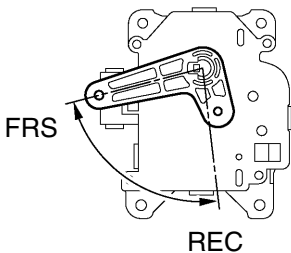
| |
|---|
| <p>Proceed to next circuit inspection shown on problem symptoms table (See page DI-812). However, if DTC B1432/32 is displayed, check and replace A/C ECU (Combination meter ECU).</p> <p>LEXUS RX300 (RM785E)</p> |
|---|

3 Check air inlet damper position sensor.

LHD model:



RHD model:



N

118281

PREPARATION:

- Remove blower unit unit (See page AC-36).
- Disconnect air inlet damper control servomotor assembly connector.

CHECK:

Measure resistance between terminals 1 and 3 of air inlet damper control servomotor assembly connector.

OK:

Resistance : 4.2 – 7.8 kΩ

CHECK:

While operating air inlet damper control servomotor, following the procedure on page DI-844, measure resistance between terminals 1 and 5 of air inlet damper control servomotor assembly connector.

OK:

Resistance

| Damper Position | Resistance |
|-----------------|--------------|
| REC side | 3.1 – 5.8 kΩ |
| FRS side | 0.8 – 1.6 kΩ |

HINT:

As the air inlet damper control servomotor moves from REC side to FRS side, the resistance decreases.

NG

Replace air inlet damper control servomotor assembly.

OK

4 Check harness and connectors between A/C ECU (Combination meter ECU) and air inlet damper control servomotor assembly (See page IN-32).

NG

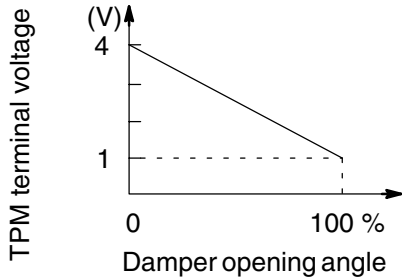
Repair or replace harness or connector.

OK

Check and replace A/C ECU (Combination meter ECU).

| | | |
|------------|-----------------|--|
| DTC | B1433/33 | Air Outlet Damper Position Sensor Circuit |
|------------|-----------------|--|

CIRCUIT DESCRIPTION

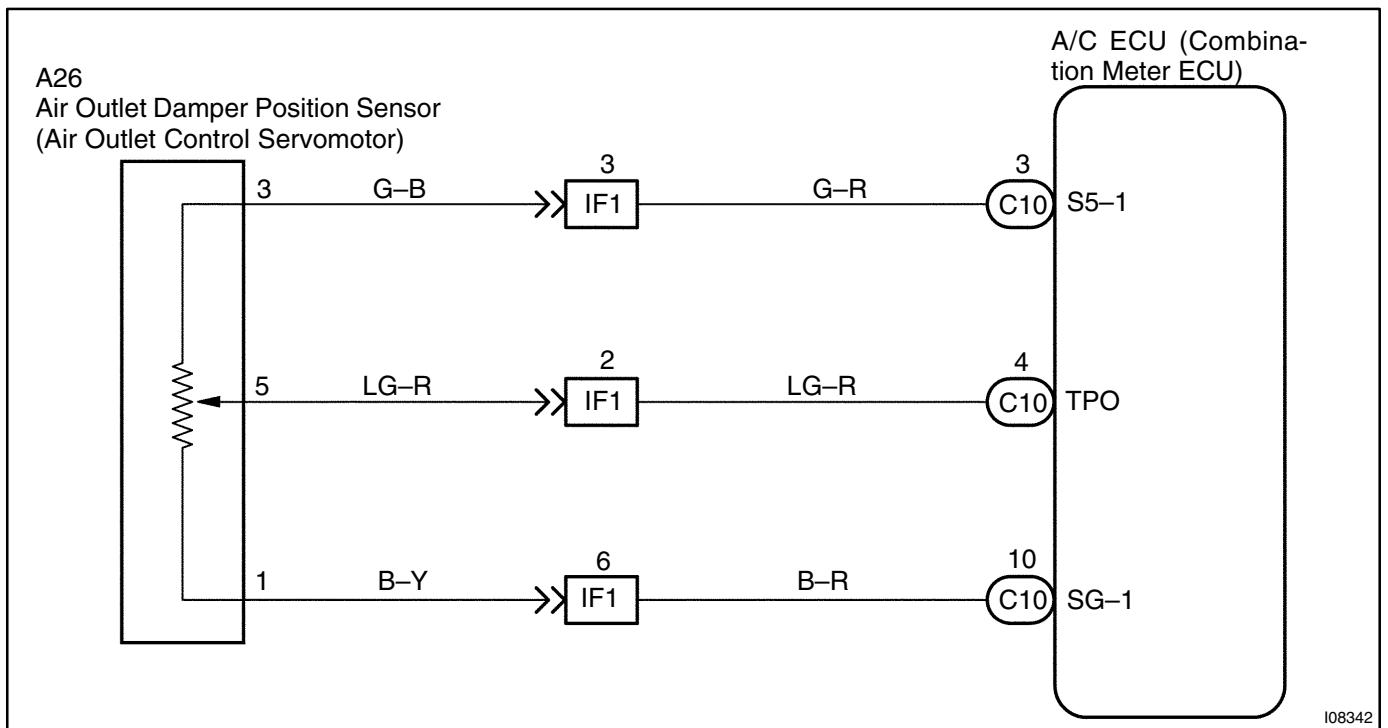


This sensor detects the position of the air mix damper and sends the appropriate signals to the A/C ECU (Combination meter ECU).

The position sensor is built into the air outlet damper control servomotor assembly.

| DTC No. | Detection Item | Trouble Area |
|----------|---|---|
| B1433/33 | Short to ground or power source circuit in air outlet damper position sensor circuit. | <ul style="list-style-type: none"> • Air outlet damper position sensor. • Harness or connector between air outlet damper control servomotor assembly and A/C ECU (Combination meter ECU). • A/C ECU (Combination meter ECU). |

WIRING DIAGRAM



108342

INSPECTION PROCEDURE

HINT:

In case of using the hand-held tester, start the inspection from step1 and in case of not using the hand-held tester, start from step2.

| | |
|----------|---|
| 1 | Check air outlet damper position using hand-held tester. |
|----------|---|

PREPARATION:

Connect the hand-held tester to the DLC3.

CHECK:

Check the current position of air outlet damper and the target position of air outlet damper.

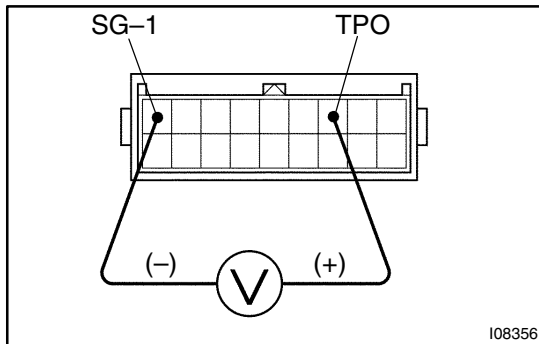
OK:

The current position and target position are almost similar.

| | |
|-----------|---|
| OK | Check and replace A/C ECU (Combination meter ECU). |
|-----------|---|

NG

| | |
|----------|---|
| 2 | Check voltage between terminals TPO and SG-1 of A/C ECU (Combination meter ECU) connector. |
|----------|---|



PREPARATION:

- (a) Remove A/C ECU with connectors still connected.
- (b) Turn ignition switch ON.

CHECK:

Measure the voltage between terminals TPO and SG-1 of A/C ECU.

OK:

| Air outlet position | Voltage |
|---------------------|-------------|
| FACE | 3.5 – 4.5 V |
| DEF | 0.5 – 1.5 V |

HINT:

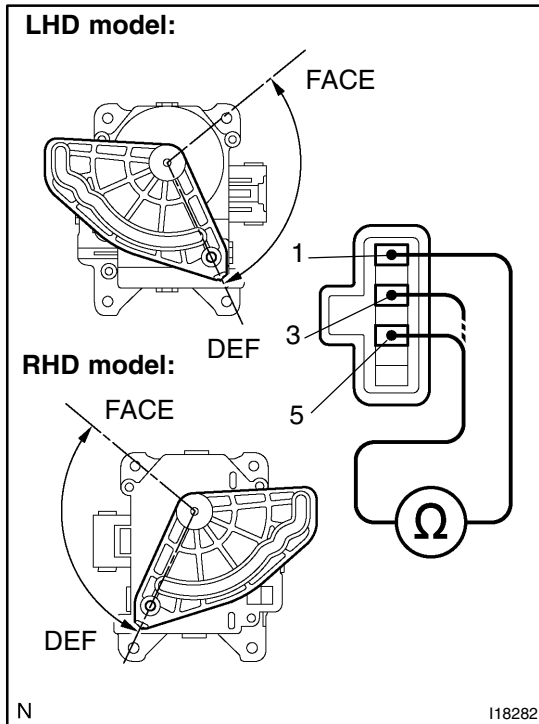
As the air outlet damper control servomotor is moved from VENT side to DEF side, the voltage decreases gradually without interruption.

| | |
|-----------|----------------------|
| NG | Go to step 3. |
|-----------|----------------------|

OK

| |
|--|
| Proceed to next circuit inspection shown on problem symptoms table (See page DI-812). However, if DTC B1433/33 is displayed, check and replace A/C ECU (Combination meter ECU). |
|--|

3 Check air outlet damper position sensor.



PREPARATION:

- Remove A/C unit (See page AC-63).
- Disconnect air outlet damper control servomotor assembly connector.

CHECK:

Measure resistance between terminals 1 and 3 of air outlet servomotor assembly connector.

OK:

Resistance : 4.2 – 7.8 k Ω

CHECK:

While operating air outlet damper control servomotor as in the procedure on page DI-847, measure resistance between terminals 1 and 3 of air outlet damper control servomotor.

OK:

Resistance:

| Damper Position | Resistance |
|-----------------|----------------------|
| DEF | 0.5 – 1.1 k Ω |
| FACE | 3.6 – 6.8 k Ω |

HINT:

As the air outlet servomotor moves from DEF side to FACE side, the resistance decreases gradually without interruption.

NG

Replace air outlet damper control servomotor.

OK

4 Check harness and connector between A/C ECU (Combination meter ECU) and air outlet damper control servomotor assembly (See page IN-32).

NG

Repair or replace harness or connector.

OK

Check and replace A/C ECU (Combination meter ECU).

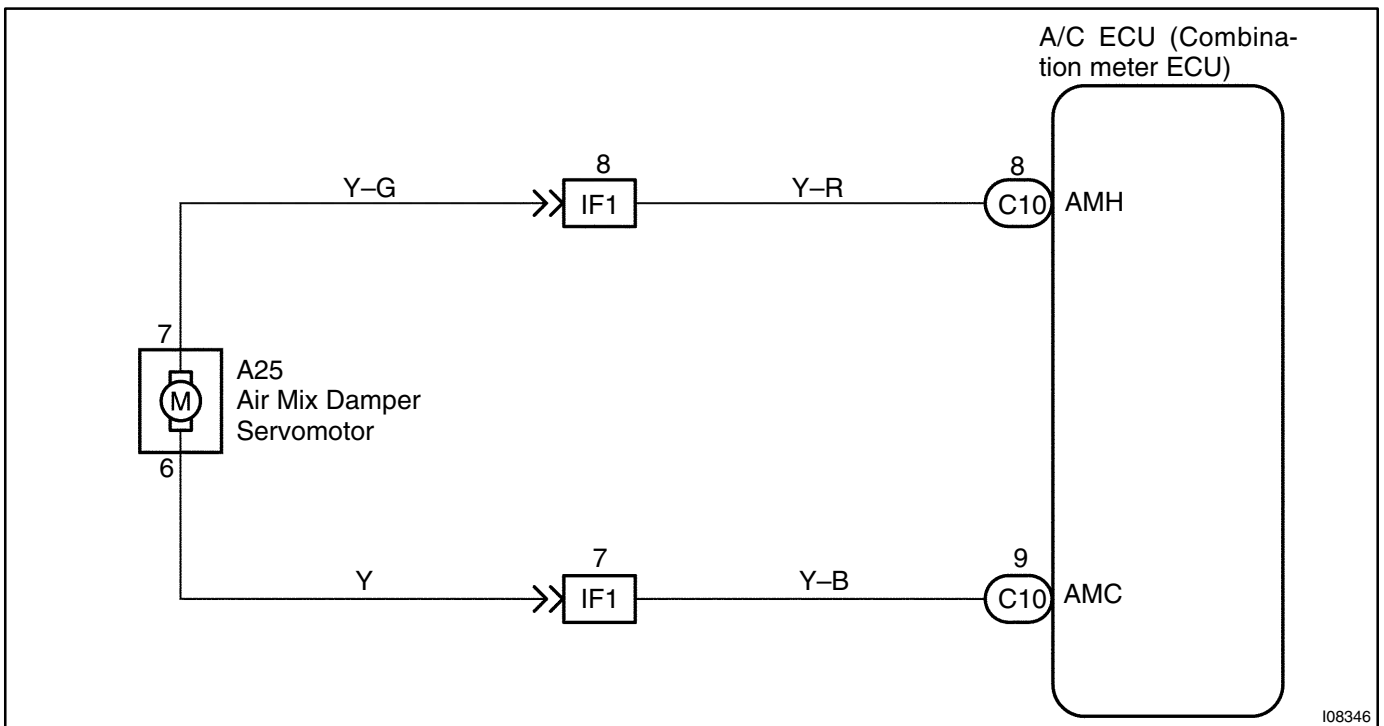
| | | |
|------------|-----------------|--|
| DTC | B1441/41 | Air Mix Damper Control Servomotor Circuit |
|------------|-----------------|--|

CIRCUIT DESCRIPTION

The air mix damper control servomotor is controlled by the A/C ECU (Combination meter ECU) and moves the air mix damper to the desired position.

| DTC No. | Detection Item | Trouble Area |
|----------|--|--|
| B1441/41 | Air mix damper position sensor value does not change even if A/C ECU (Combination meter ECU) operates air mix damper control servomotor. | <ul style="list-style-type: none"> • Air mix damper control servomotor. • Air mix damper position sensor. • Harness or connector between A/M damper control servomotor and A/C ECU (Combination meter ECU) • Harness or connector between A/M damper position sensor and A/C ECU (Combination meter ECU) • A/C ECU (Combination meter ECU). |

WIRING DIAGRAM



INSPECTION PROCEDURE

1 Actuator check.

PREPARATION:

- Warm up the engine.
- Set to the actuator check mode (See page DI-805).
- Press the A/C switch and change it to step operation.

CHECK:

Press the A/C switch and check the operation of the air mix damper and the condition of the blower.

OK:

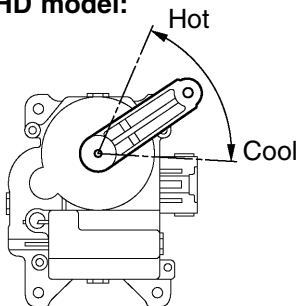
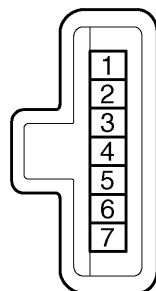
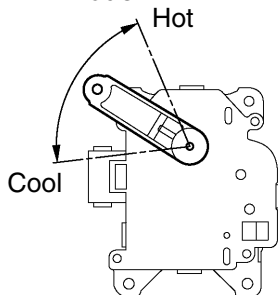
| Display Code | Air Mix Damper | Condition |
|--------------|---------------------|--------------------|
| 0 – 3 | 0% (Fully closed) | Cool air comes out |
| 4 – 5 | 50% | |
| 6 – 9 | 100% (Fully opened) | Warm air comes out |

OK

Proceed to next circuit inspection shown on problem symptoms table (See page DI-812).

NG

2 Check air mix damper control servomotor.

LHD model:**RHD model:****PREPARATION:**

Remove air mix damper control servomotor (See page AC-62).

CHECK:

Connect positive (+) lead to terminal 7 and negative (-) lead to terminal 6.

OK:

The lever turns smoothly to Hot side.

CHECK:

Connect positive (+) lead to terminal 6 and negative (-) lead to terminal 7.

OK:

The lever turns smoothly to Cool side.

NG

Replace air mix damper control servomotor assembly.

OK

3**Check harness and connector between A/C ECU (Combination meter ECU) and air mix damper control servomotor assembly (See page IN-32).****NG****Repair or replace harness or connector.****OK****Check and replace A/C ECU (Combination meter ECU).**

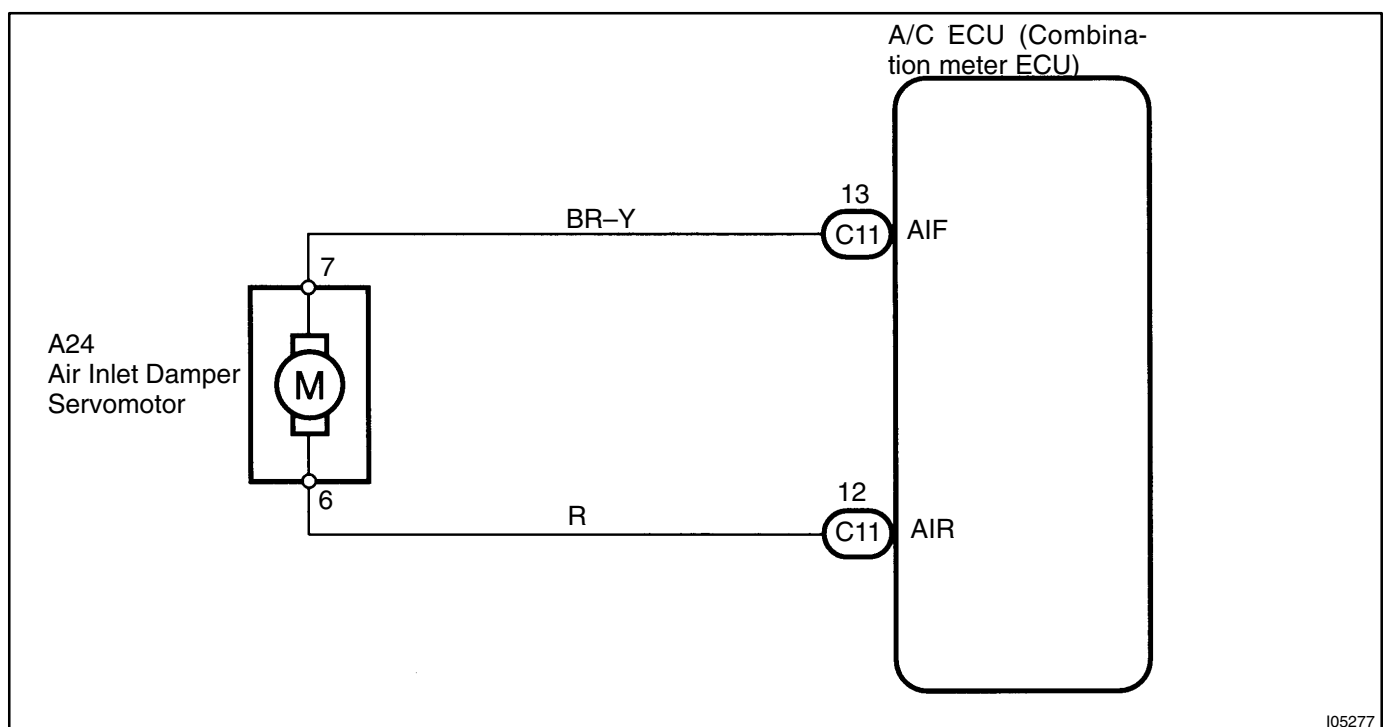
| | | |
|------------|-----------------|--|
| DTC | B1442/42 | Air Inlet Damper Control Servomotor Circuit |
|------------|-----------------|--|

CIRCUIT DESCRIPTION

The air inlet damper control servomotor is controlled by the A/C ECU (Combination meter ECU) and moves the air inlet damper to the desired position.

| DTC No. | Detection item | Trouble Area |
|----------|--|---|
| B1442/42 | Air inlet damper position sensor value does not change even if A/C ECU (Combination meter ECU) operated air inlet damper control servomotor. | <ul style="list-style-type: none"> • Air inlet damper position sensor. • Harness or connector between air inlet damper control servomotor assembly and A/C ECU (Combination meter ECU). • A/C ECU (Combination meter ECU). |

WIRING DIAGRAM



105277

INSPECTION PROCEDURE

| | |
|----------|------------------------|
| 1 | Actuator check. |
|----------|------------------------|

PREPARATION:

- (a) Remove glove box to see and check the air inlet damper operation.
- (b) Set to the actuator check mode (See page DI-805).
- (c) Press the A/C switch and change it to step operation.

CHECK:

Press the A/C switch in order and check the operation of air inlet damper.

OK:

| Display Code | Air Inlet Damper |
|--------------|------------------|
| 0 - 1 | FRS |
| 2 | F/R |
| 3 - 5 | REC |
| 6 - 9 | FRS |

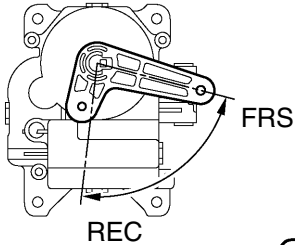
OK

Proceed to next circuit inspection shown on problem symptoms table (See page DI-812).

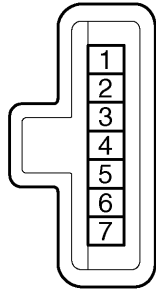
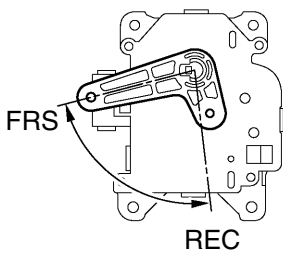
NG

2 Check air inlet damper control servomotor.

LHD model:



RHD model:



PREPARATION:

- (a) Remove blower unit (See page AC-38).
- (b) Disconnect the air inlet damper control servomotor assembly connector.

CHECK:

Connect positive (+) lead to terminal 6 and negative (-) lead to terminal 7.

OK:

The lever moves smoothly to REC position.

CHECK:

Connect positive (+) lead to terminal 7 and negative (-) lead to terminal 6.

OK:

The lever moves smoothly to FRS position.

N

I18284

NG

Replace air inlet damper control servomotor assembly.

OK

3 Check harness and connector between A/C ECU (Combination meter ECU) and air inlet damper control servomotor (See page IN-32).

NG

Repair or replace harness or connector.

OK

Check and replace A/C ECU (Combination meter ECU).

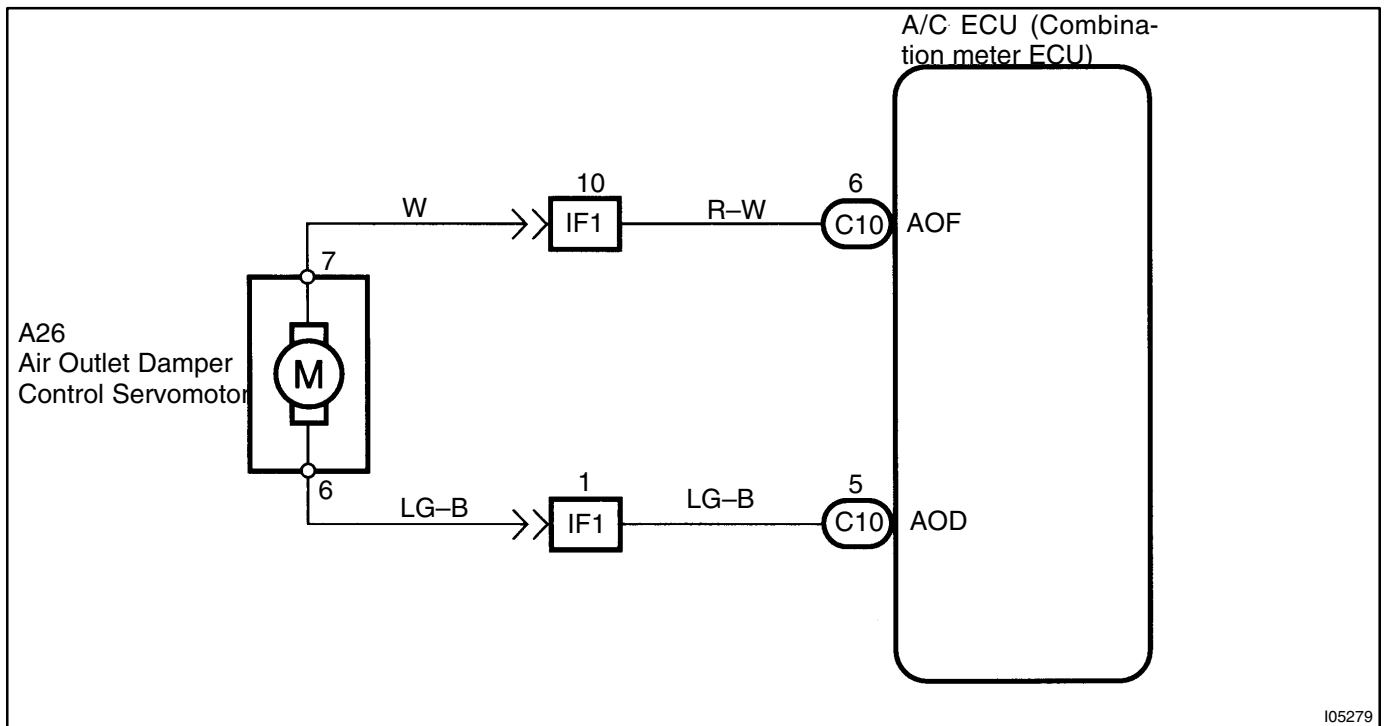
| | | |
|------------|-----------------|---|
| DTC | B1443/43 | Air Outlet Damper Control Servomotor Circuit |
|------------|-----------------|---|

CIRCUIT DESCRIPTION

This circuit turns the servomotor and changes each mode damper position by the signals from the A/C ECU (Combination meter ECU). When the AUTO switch is on, the A/C ECU (Combination meter ECU) changes the mode automatically between (FACE), (BI-LEVEL) and (FOOT) according to the temperature setting.

| DTC No. | Detection Item | Trouble Area |
|----------|--|--|
| B1443/43 | Air outlet damper position sensor value does not change even if A/C ECU (Combination meter ECU) operated air outlet damper control servomotor. | <ul style="list-style-type: none"> • Air outlet damper control servomotor. • Air outlet damper position sensor. • Harness or connector between air outlet damper control servomotor and A/C ECU (Combination meter ECU) • Harness or connector between air outlet damper position sensor and A/C ECU (Combination meter ECU) • A/C ECU (Combination meter ECU). |

WIRING DIAGRAM



105279

INSPECTION PROCEDURE

| | |
|----------|------------------------|
| 1 | Actuator check. |
|----------|------------------------|

| Display Code | Air Flow |
|--------------|----------|
| 0 ~ 4 | FACE |
| 5 | BI-LEVEL |
| 6, 7 | FOOT |
| 8 | FOOT DEF |
| 9 | DEF |

PREPARATION:

- (a) Set to the actuator check mode (See page DI-805).
- (b) Press the A/C switch and change to step operation.

CHECK:

Press the A/C switch and check the condition of air flow.

OK:

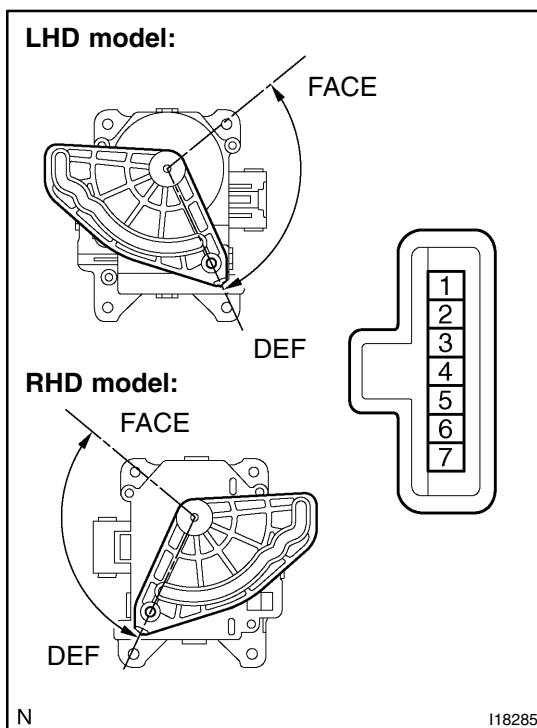
The mode changes with the change in the temperature display as shown in the table.

OK

Proceed to next circuit inspection shown on problem symptoms table (See page DI-812).

NG

| | |
|----------|--|
| 2 | Check air outlet damper control servomotor. |
|----------|--|

**PREPARATION:**

- (a) Remove A/C unit. (See page AC-63).
- (b) Disconnect the air outlet damper control servomotor assembly connector.

CHECK:

Connect positive (+) lead to terminal 7 and negative (-) lead to terminal 6.

OK:

The lever moves smoothly to FACE position.

CHECK:

Connect positive (+) lead to terminal 6 and negative (-) lead to terminal 7.

OK:

The lever moves smoothly to DEF position.

NG

Replace air outlet servomotor.

OK

| | |
|---|--|
| 3 | Check for open and short in harness and connector between A/C ECU (Combination meter ECU) and outlet servomotor, outlet damper control servomotor and battery, outlet damper control servomotor and body ground (See page IN-32). |
|---|--|

NG

Repair or replace harness or connector.

OK

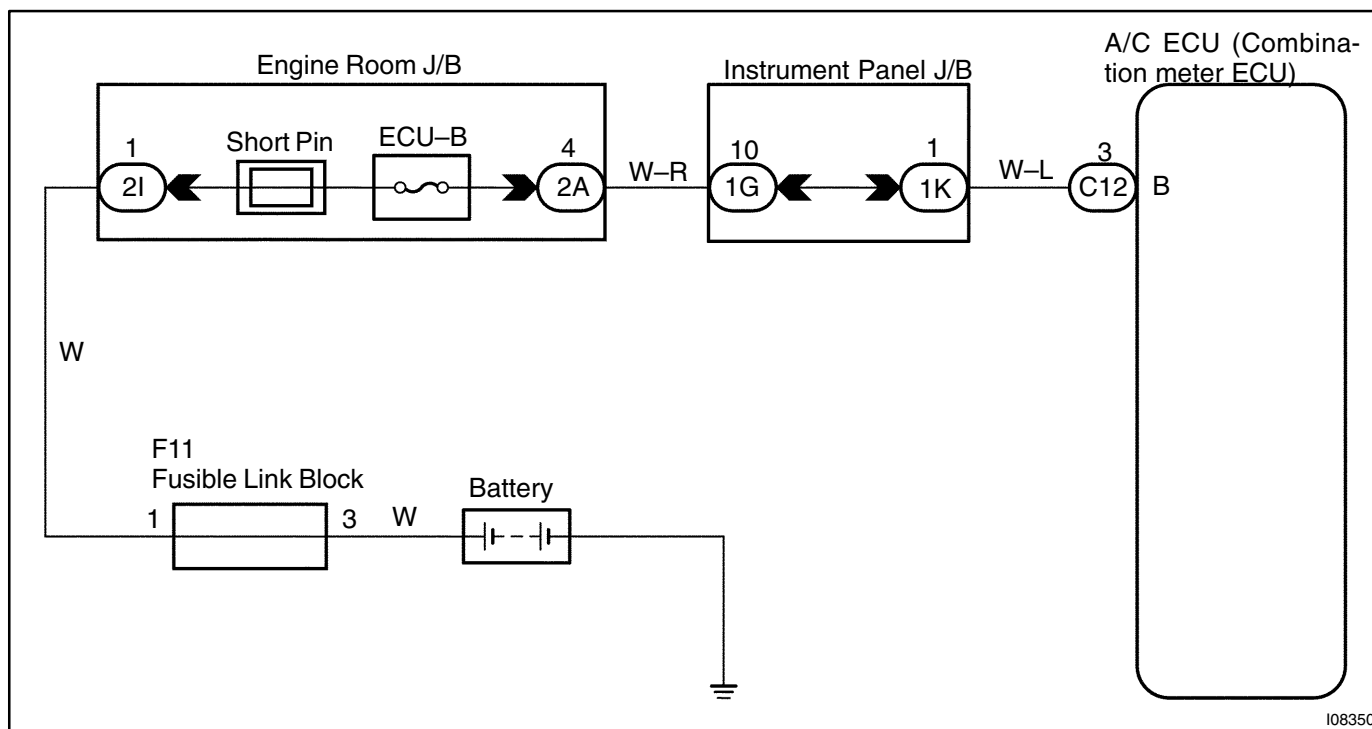
Check and replace A/C ECU (Combination meter ECU).

Back Up Power Source Circuit

CIRCUIT DESCRIPTION

This is the backup power source for the A/C ECU (Combination meter ECU). Power is supplied even when the ignition switch is off and is used for diagnostic trouble code memory, etc.

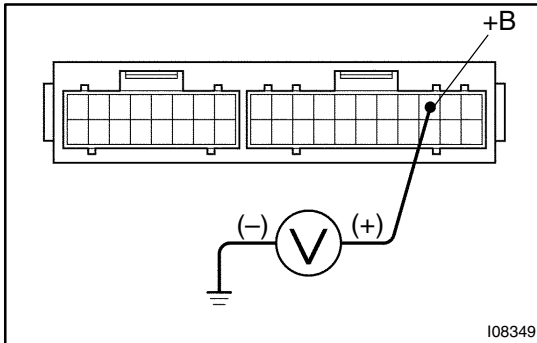
WIRING DIAGRAM



108350

INSPECTION PROCEDURE

- 1 Check voltage between terminal +B of A/C ECU (Combination meter ECU) connector and body ground.**

**PREPARATION:**

Remove the A/C ECU (Combination meter ECU) with connector still connected.

CHECK:

Measure voltage between terminal +B of A/C ECU (Combination meter ECU) connector and body ground.

OK:

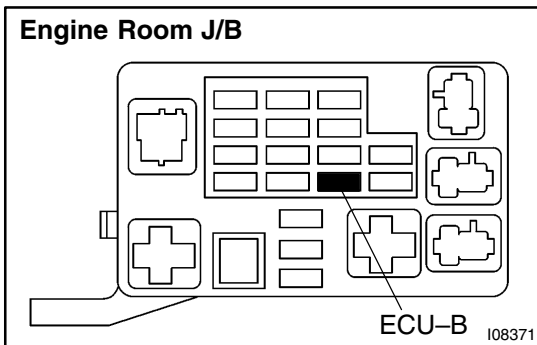
Voltage : Battery voltage

OK

Proceed to next circuit inspection shown on problem symptoms table (See page DI-812).

NG

- 2 Check ECU-B fuse.**

**PREPARATION:**

Remove ECU-B fuse from Engine Room J/B.

CHECK:

Check continuity of ECU-B fuse.

OK:

Continuity

NG

Check for short in all the harness and components connected to the ECU-B fuse (See attached wiring diagram).

OK

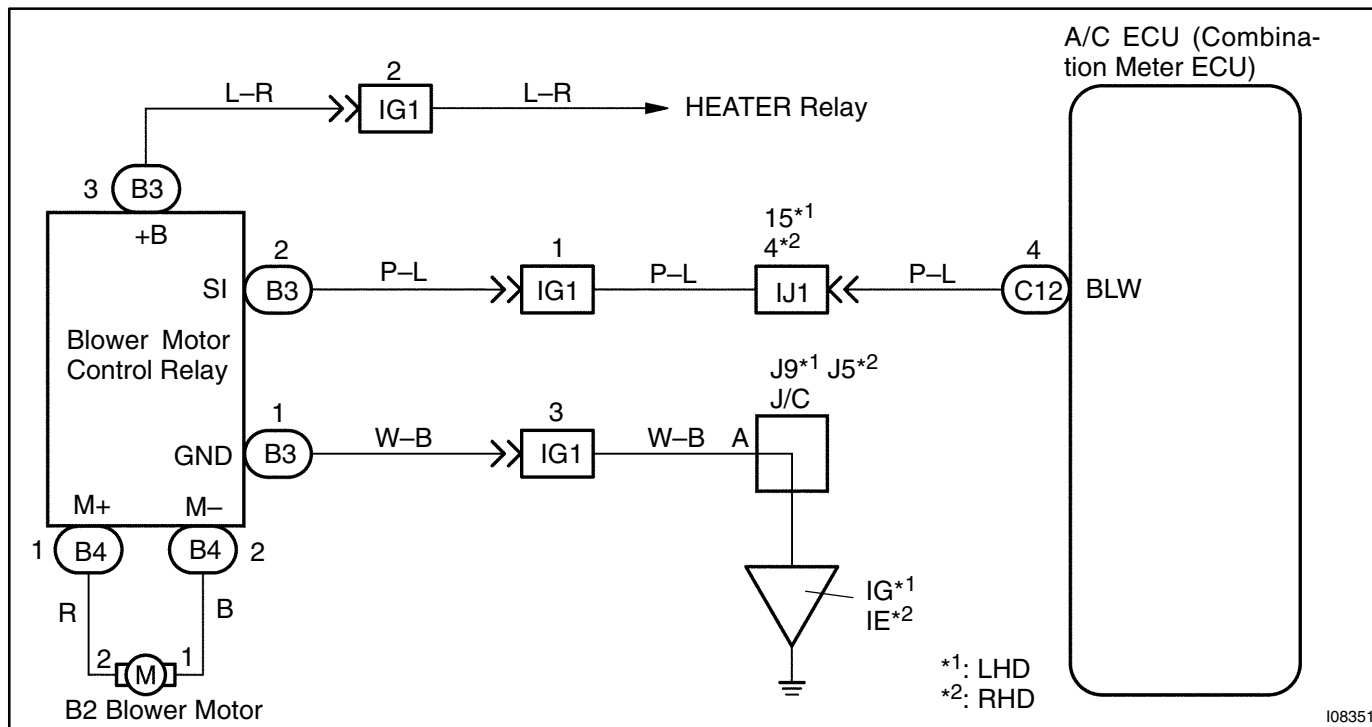
Check and repair harness and connector between A/C ECU (Combination meter ECU) and battery.

Blower Motor Circuit

CIRCUIT DESCRIPTION

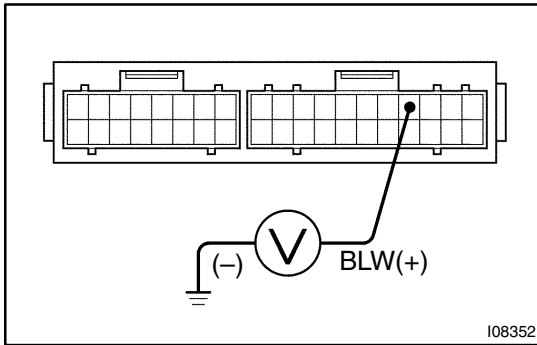
This is the power source for the blower motor.

WIRING DIAGRAM



INSPECTION PROCEDURE

- | | |
|----------|---|
| 1 | Check voltage between terminal BLW of A/C ECU (Combination meter ECU) connector and body ground. |
|----------|---|

**PREPARATION:**

Remove the A/C ECU (Combination meter ECU) with connector still connected.

CHECK:

- (a) Turn ignition switch ON.
- (b) Operate blower motor.
- (c) Measure voltage between terminal BLW of A/C ECU (Combination meter ECU) and body ground.

OK:

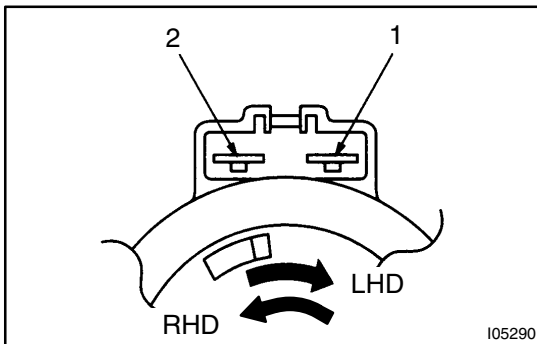
Voltage : 1 ± 3 V

OK

Proceed to next circuit inspection shown on problem symptoms table (See page DI-812).

NG

- | | |
|----------|----------------------------|
| 2 | Check blower motor. |
|----------|----------------------------|

**PREPARATION:**

Remove blower motor (See page AC-36).

CHECK:

Connect the positive (+) lead from the battery to terminal 2 of blower motor connector and the negative (-) lead to terminal 1.

OK:

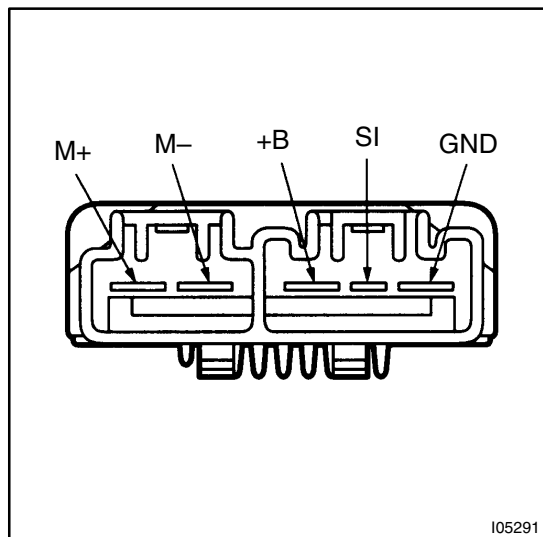
Blower motor operates smoothly.

NG

Replace blower motor.

OK

3 Check blower motor control relay.



PREPARATION:

Remove blower motor control relay with connectors still connected.

CHECK:

- (a) Turn ignition switch ON.
- (b) Operate blower motor (High blower speed).

OK:

| Terminals | Standard Value |
|-------------------|-----------------|
| GND ↔ Body Ground | Continuity |
| +B ↔ Body Ground | Battery Voltage |
| +M ↔ Body Ground | Battery Voltage |
| M+ ↔ M- | Battery Voltage |
| SI ↔ Body Ground | 1 – 3 V |

NG

Replace blower motor relay.

OK

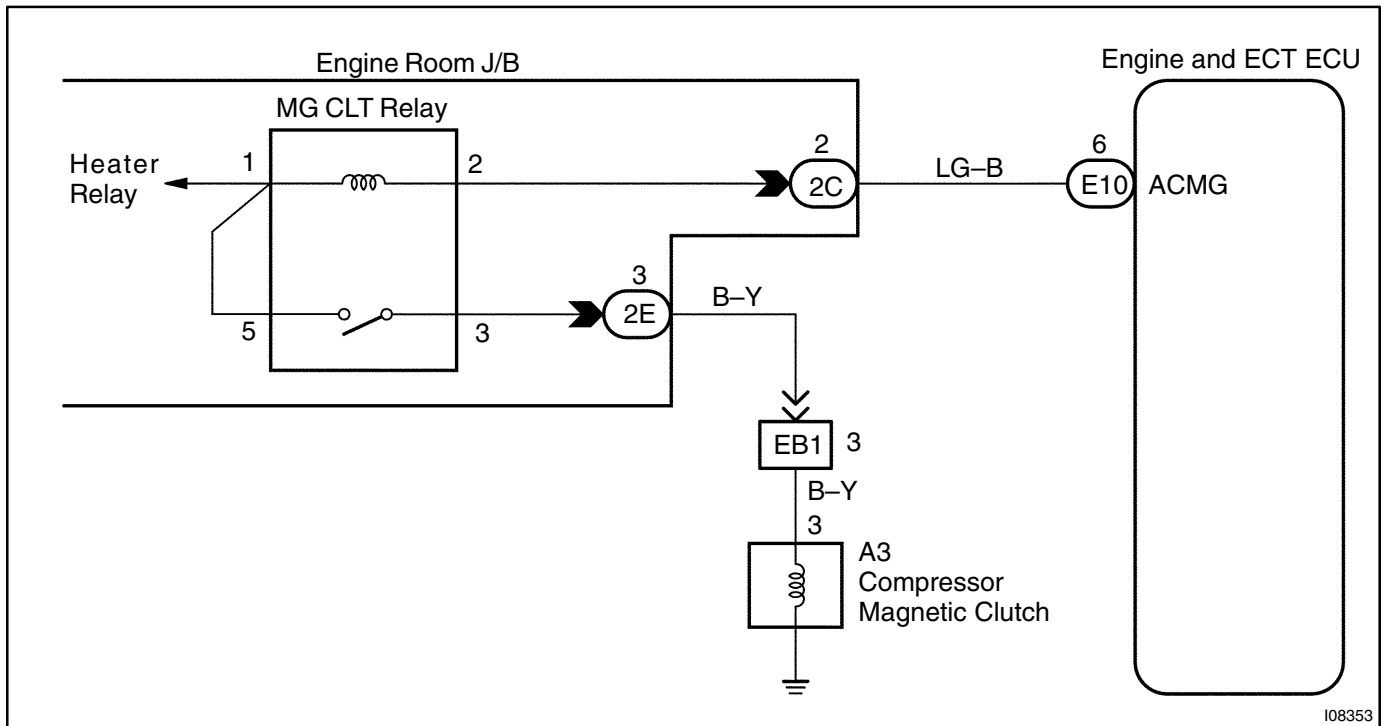
Repair or replace harness or connector.

Compressor Circuit

CIRCUIT DESCRIPTION

The A/C ECU (Combination meter ECU) outputs the magnetic clutch ON signal from terminal MGC to the engine and ECT ECU. When the engine and ECT ECU receives this signal, it sends a signal from terminal ACMG and switches the A/C magnetic clutch relay ON, thus turning the A/C compressor magnetic clutch ON.

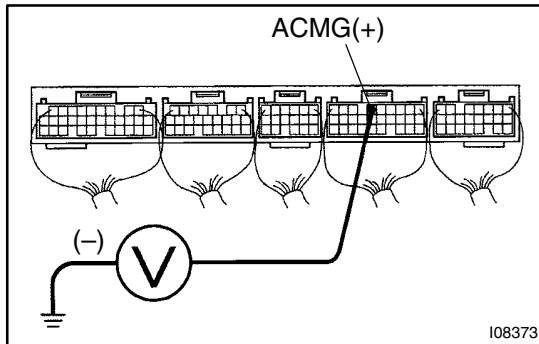
WIRING DIAGRAM



108353

INSPECTION PROCEDURE

1 Check voltage between terminal ACMG of engine and ECT ECU.

**CHECK:**

- Start engine.
- Push AUTO SW.
- Measure voltage between terminal ACMG of engine and ECT ECU connector and body ground when A/C switch is ON and OFF.

OK:

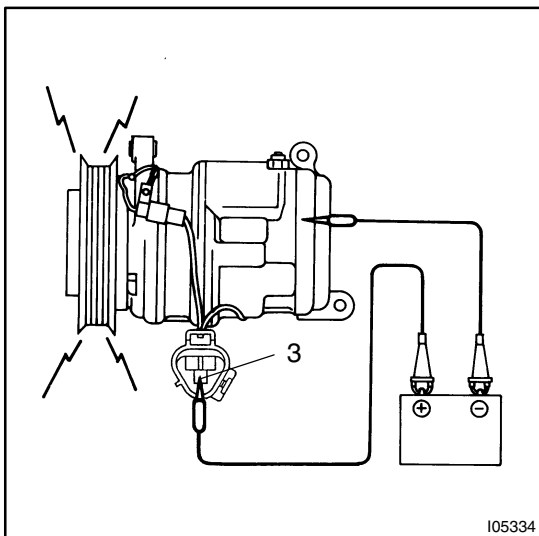
| A/C switch | Voltage |
|------------|----------|
| ON | 10 – 4 V |
| OFF | 0 V |

OK

Check and replace engine and ECT ECU and/or A/C ECU (Combination meter ECU).

NG

2 Check A/C compressor magnetic clutch.

**PREPARATION:**

Disconnect magnetic clutch connector.

CHECK:

Connect positive (+) lead connected to battery to magnetic clutch connector terminal 3.

OK:

Magnetic clutch is energized.

NG

Repair A/C compressor magnetic clutch.

OK

3 Check harness and connector between A/C compressor and compressor relay (See page IN-32).

NG

Repair or replace harness or connector.

OK

4 Check harness and connector between compressor relay and engine and ECT ECU (See page IN-32).

NG

Repair or replace harness or connector.

OK

5 Check harness and connector between engine and ECT ECU and A/C compressor assembly (See page IN-32).

NG

Repair or replace harness or connector.

OK

Check and replace engine and ECT ECU and/or A/C ECU (Combination meter ECU).