

REAR VIEW MONITOR SYSTEM

PRECAUTION

NOTICE:

When disconnecting the cable from the negative (-) battery terminal, initialize the following system(s) after the cable is reconnected.

System Name	See procedure
Lighting System	LI-17
Sliding Roof System	RF-22 and RF-4
Power Windows Control System	WS-12
Power Back Door System	ED-33
Back Door Closer System	ED-6
Electrical Back Door Outside System	ED-69

PARTS LOCATION

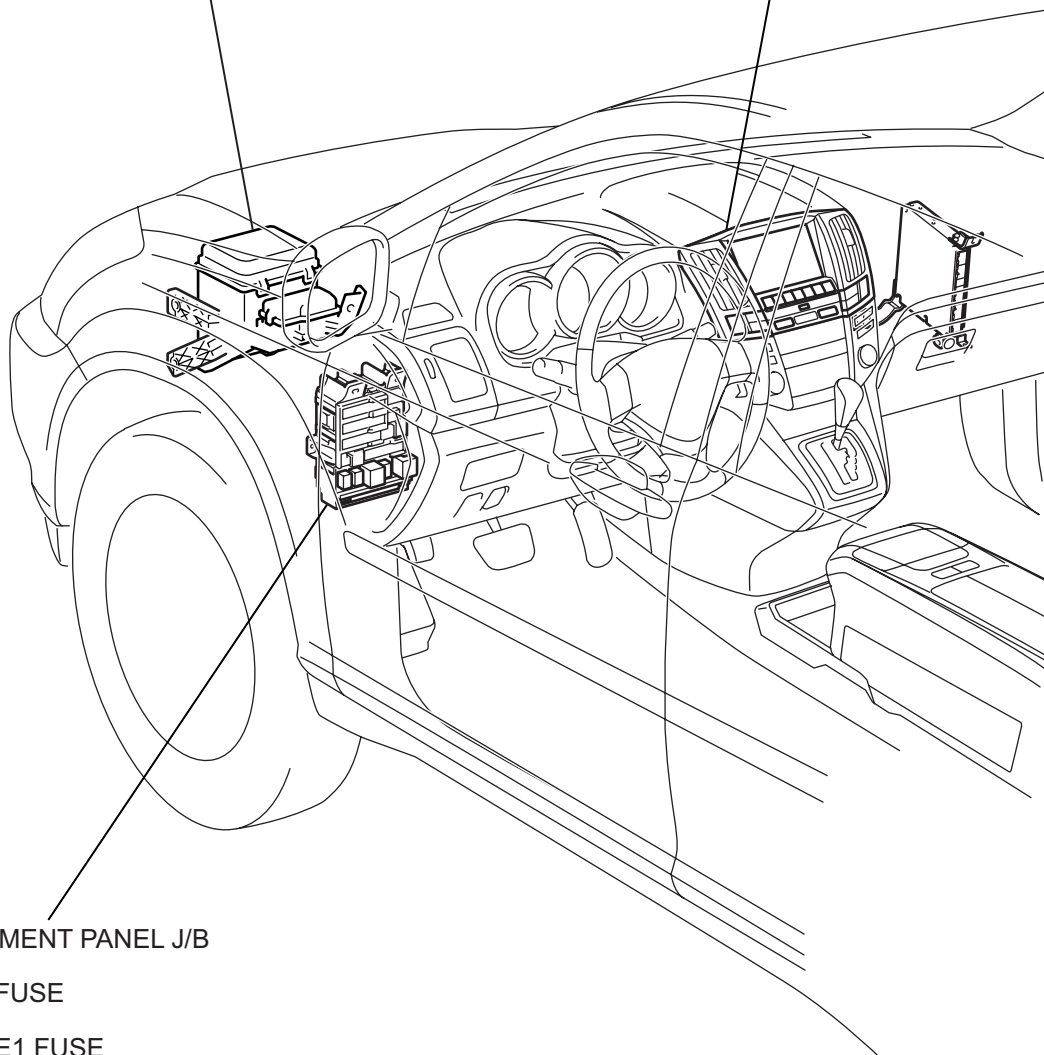
FUSIBLE LINK BLOCK

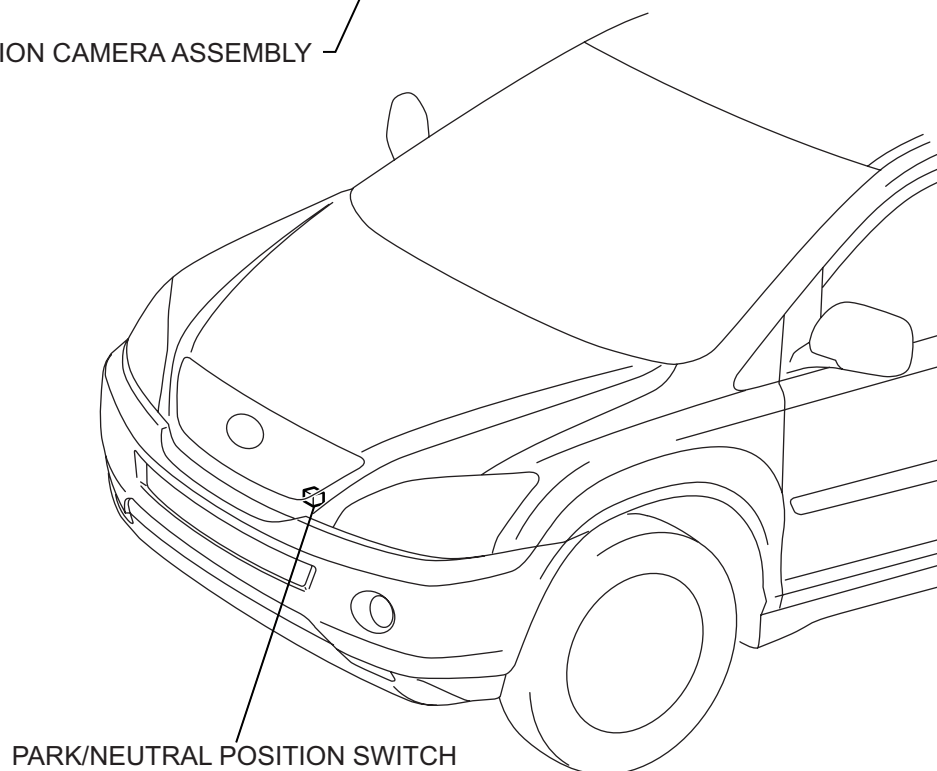
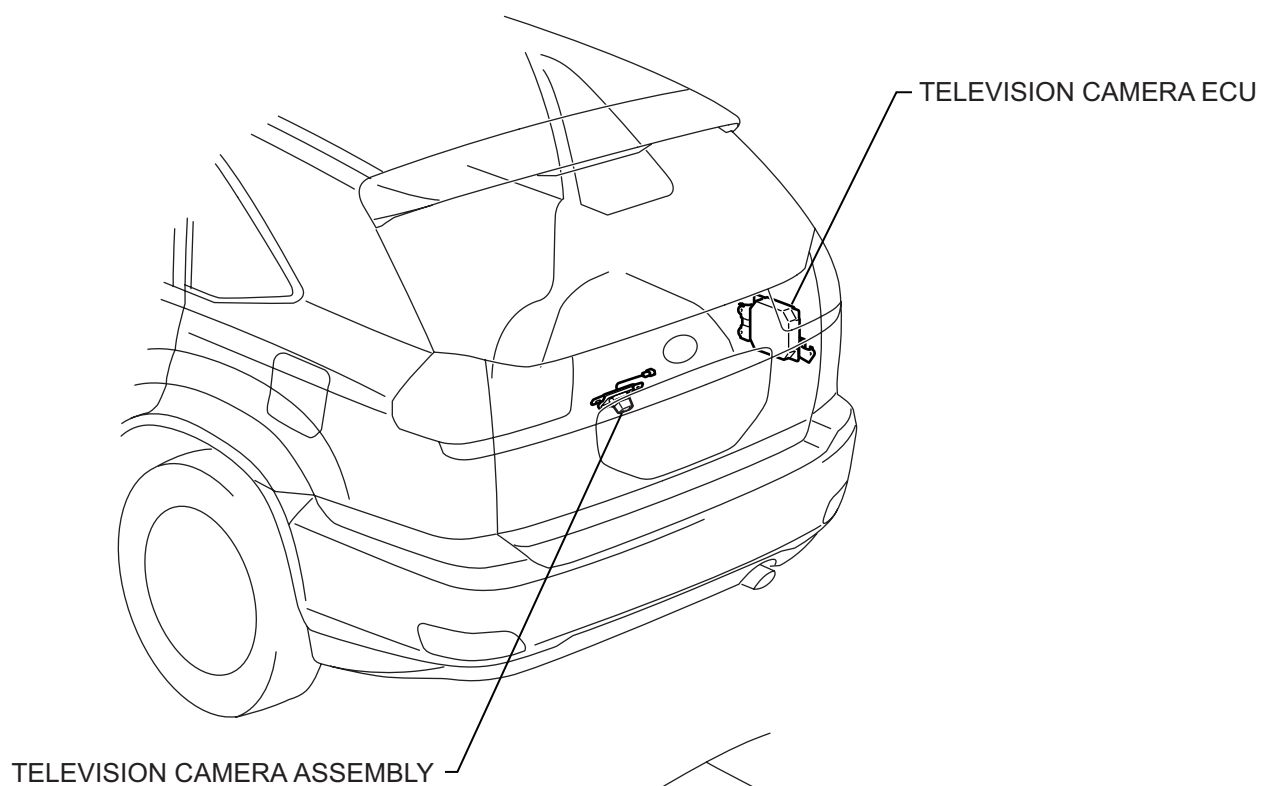
- ALT FUSE
- RADIO NO.1 FUSE
- INP-J/B FUSE

MULTI-DISPLAY ASSEMBLY

INSTRUMENT PANEL J/B

- RAD2 FUSE
- GAUGE1 FUSE
- ACC RELAY
- IG1 RELAY
- AM1 FUSE

**PM**



PM

SYSTEM DESCRIPTION

1. GENERAL

- (a) To assist the driver in parking the vehicle by monitoring the rear view, this system has a television camera mounted on the back door to display the rear view of the vehicle on the multi-display assembly.
- (b) This system consists of the following components: television camera ECU, television camera assembly and multi-display assembly.
- (c) This system is equipped with a self-diagnosis system, which is operated on a dedicated window that appears on the display panel, just as in the navigation system.

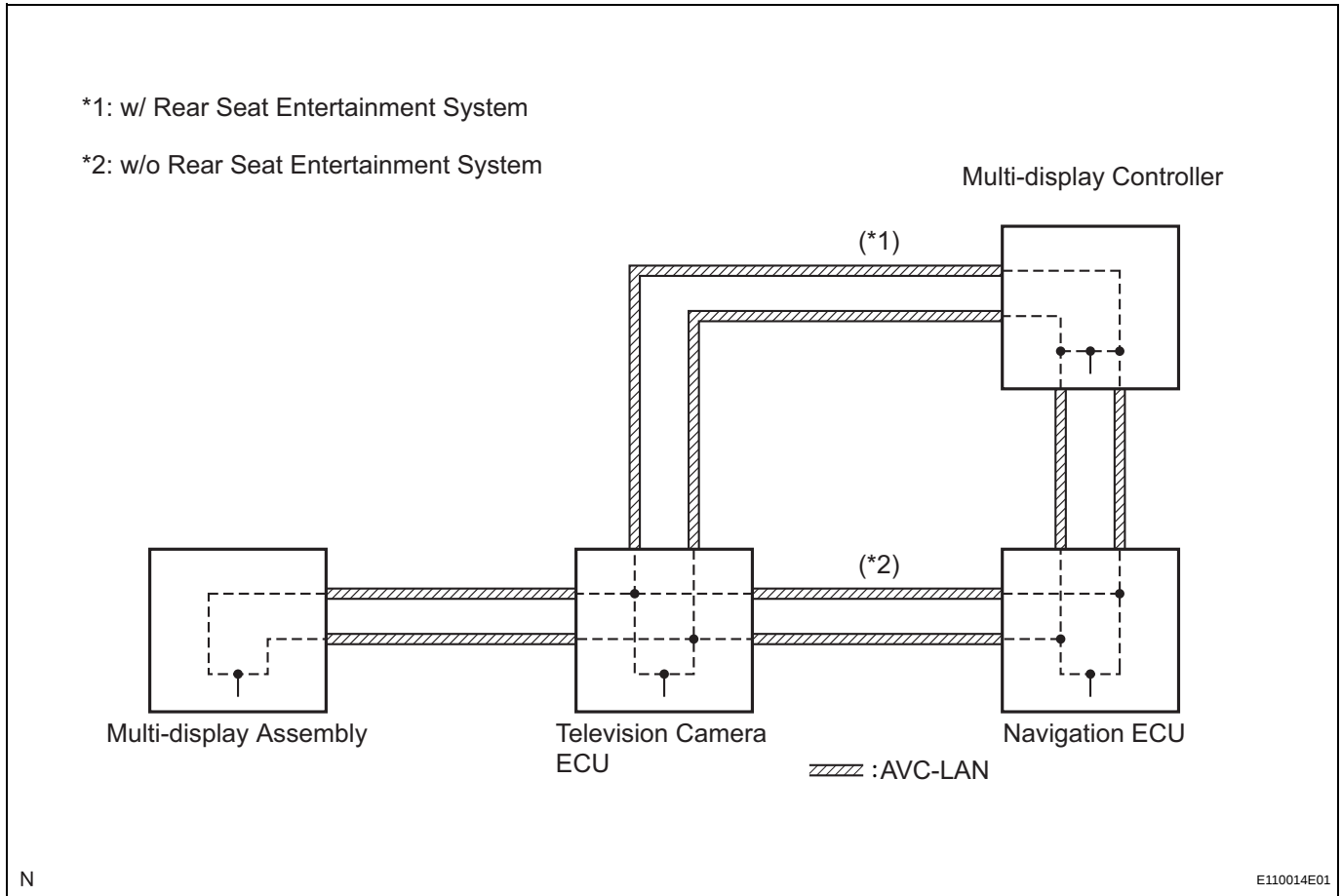
2. FUNCTION OF COMPONENTS

- (a) The television camera ECU controls the system by using information from the following components.

Item	Function
Television Camera Assembly	- Mounted on the back door to transmit the rear view of the vehicle to the television camera ECU. - A color video camera that uses a CCD (Charge Coupled Device) and a wide-angle lens.
Television Camera ECU	Transmits video signals, which contain a composite of the rear view of the vehicle taken with the television camera and the warning message, to the multi-display.
Multi-display Assembly	Receives video signals containing a composite of the rear view of the vehicle and the warning message from the television camera ECU, and displays them on the display panel
Park/Neutral Position Switch	Transmits a reverse shift position signal to the television camera ECU through communication.

3. COMMUNICATION SYSTEM

- (a) This rear view monitor system communicates between the components by AVC-LAN.



4. DIAGNOSTIC FUNCTION

- (a) This rear view monitor system has a diagnostic function (displayed in "NAVIGATION SYSTEM" of the multi-display assembly).
- (b) A three-digit "unit code (physical address)" number (in hexadecimal notation) is set in each component that makes up AVC-LAN.
- (c) A two-digit "logical address" number (in hexadecimal notation) is set in each function of the components that make up the AVC-LAN.

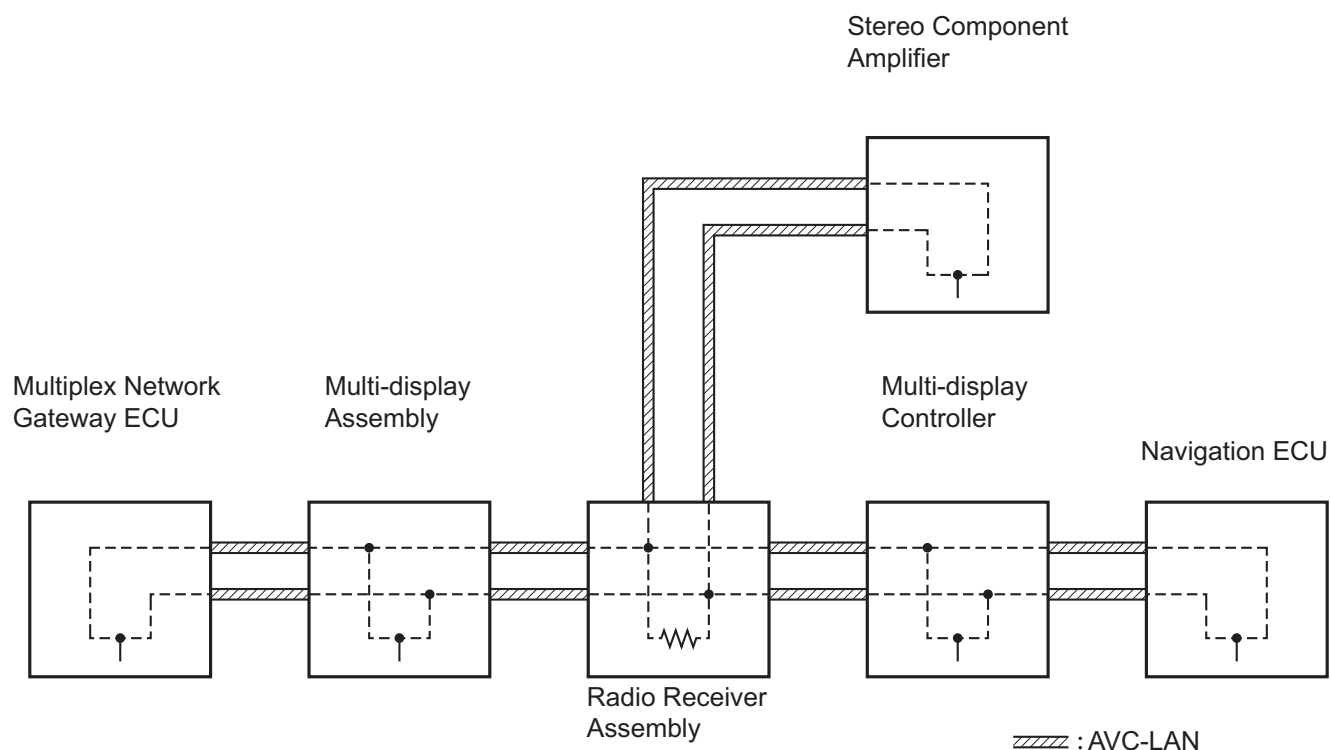
5. OUTLINE OF AVC-LAN

(a) What is AVC-LAN?

AVC-LAN is the abbreviation for Audio Visual Communication-Local Area Network. This is a unified standard co-developed by 6 audio manufacturers associated with Toyota Motor Corporation.

The unified standard includes signals such as audio, visual, and signals for switch indication and communication.

Example:



N

E110002E02

(b) Objectives

Recently, developments in car audio systems have been rapid and functions have been changed drastically. The conventional system has been switched to the multi-media type such as a navigation system. At the same time, customers want to upgrade their audio systems. This is the factor that lies behind this standardization.

The concrete objectives are explained below.

- (1) When products by different manufacturers were combined, malfunctions such as sound failure occurred. This problem can be solved by standardization of signals.
- (2) Various types of after market products are available.

- (3) Because of the above, each manufacturer has been able to concentrate on developing products in their strongest field. This has enabled the development of inexpensive products.
 - (4) In general, a new product developed by one particular manufacturer could not be used due to a lack of compatibility with other manufacturers products. By developing this new standard, users can enjoy a range of compatible products from different manufacturers anytime they want.
- HINT:

- When +B short or GND short is detected in AVC-LAN circuit, communication stops, and the audio system does not function normally.
- When audio system is not equipped with a navigation system, the multi-display assembly is the master unit. When the audio system is equipped with a navigation system, the radio receiver assembly is the master unit.
- The radio receiver assembly is equipped with a resistor (60 to 80 Ω) for communication.
- The car audio system using AVC-LAN circuit has a diagnosis function.
- Each product has its own specified number called a physical address (three-digit number). Numbers are also allotted to each function within a product, which are called logical addresses (two-digit number).

6. NOTES FOR REAR VIEW MONITOR

- (a) Notes for rear view monitor.
 - (1) The rear view monitor may not function properly if subjected to a severe blow by any hard object.
 - (2) Do not "scrub" the cover part of the camera (resin made). Scrubbing it may scratch the cover and affect the image. Prevent organic solvents, waxes, bond removing solvents, or glass coating from adhering to the cover. Clean it off immediately, and wash with water.
 - (3) Exposing the camera to sudden temperature change may affect proper function.
 - (4) A clear image may not appear if the camera is dirty with snow, mud, etc. In that case, wash with water and wipe off. Use a detergent to remove dirt if necessary.
- (b) Images are difficult to discern even in normal conditions if:
 - (1) Camera screen is frosted over (the image immediately after turning the ignition switch to the ON position may be blurred or darker than normal).
 - (2) A strong beam of light, such as a sunbeam or headlight, hits the camera.

- (3) It is too dark around the camera (at night, etc.).
- (4) The ambient temperature around the camera is either too high or too low.

HINT:

When a strong light, such as a sunbeam reflected off the vehicle's body, hits the camera, the image may be blurred. This is called the "SMEAR" phenomenon, peculiar to the CCD camera.

HOW TO PROCEED WITH TROUBLESHOOTING

1 VEHICLE BROUGHT TO WORKSHOP

NEXT

2 CUSTOMER PROBLEM ANALYSIS

NEXT

3 CHECK AND CLEAR DTCs

(a) Refer to the diagnostic check/clear (See page [PM-13](#)).

NEXT

4 PROBLEM SYMPTOM CONFIRMATION



SYMPTOM DOES NOT OCCUR (Go to step 5)



SYMPTOM OCCURS (Go to step 6)

5 SYMPTOM SIMULATION

NEXT

6 CHECK DTC



DTC IS OUTPUT (Go to step 10)



DTC IS NOT OUTPUT (Go to step 7)

7 CHECK IF THE SAME SYMPTOM APPEARS IN THE NAVIGATION SYSTEM

(a) Refer to the LEXUS navigation system (See page [NS-34](#)).



The symptom appears (Follow the navigation symptom chart to perform troubleshooting)



The symptom does not appear (Go to step 8)

8

PROBLEM SYMPTOMS TABLE

(a) Refer to the problem symptoms table (See page [PM-9](#)).



The corresponding symptom exists (Go to step 10)



The corresponding symptom does not exist (Go to step 9)

9

BASED ON THE MALFUNCTION SYMPTOM, PERFORM TROUBLESHOOTING BELOW

(a) Terminals of ECU (See page [PM-10](#)).

NEXT

10

ADJUSTMENT, REPAIR OR REPLACE

NEXT

11

CONFIRMATION TEST

NEXT

END

PROBLEM SYMPTOMS TABLE

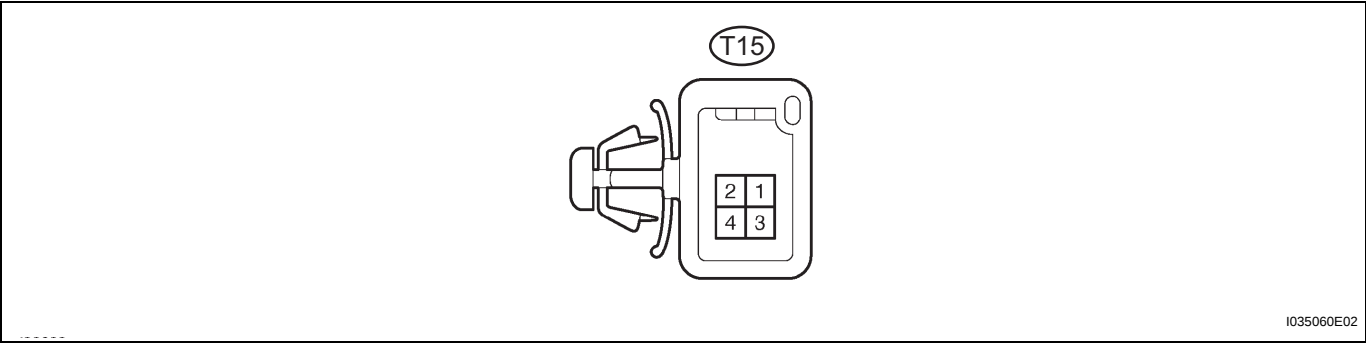
REAR VIEW MONITOR SYSTEM

Symptom	Suspected area	See page
When shift lever is in R position, rear view monitor image is not displayed (Screen is not black).	1. Power source circuit	PM-27
	2. Reverse signal (CAN communication system)	PM-22
	3. Replace television camera ECU	PM-32
When shift lever is in R position, rear view monitor image is not displayed (Screen is black).	1. Display signal circuit between television camera assembly and television camera ECU	PM-24
When shift lever is not in R position, rear view monitor image is displayed.	1. Reverse signal (CAN communication system)	PM-22
	2. Replace television camera ECU	PM-32
Problem with the rear view monitor image (color, disorder of picture).	1. Display signal circuit between television camera assembly and television camera ECU	PM-24
	2. Display signal circuit between television camera ECU and multi-display	PM-24
	3. Replace multi-display assembly	AV-234

TERMINALS OF ECU

1. TELEVISION CAMERA ASSEMBLY

(a) Disconnect the T15 camera connector.



(b) Measure the voltage and resistance of each terminal of the wire harness side connector.

Standard:

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified value
CGND (T15-3) - Body ground	W - Body ground	Power ground	Always	Below 1 Ω
CB+ (T15-4) - CGND (T15-3)	B - W	Power source	IG switch ON, shift lever R position	Approx. 6 V

If the result is not as specified, there may be a malfunction on the wire harness side.

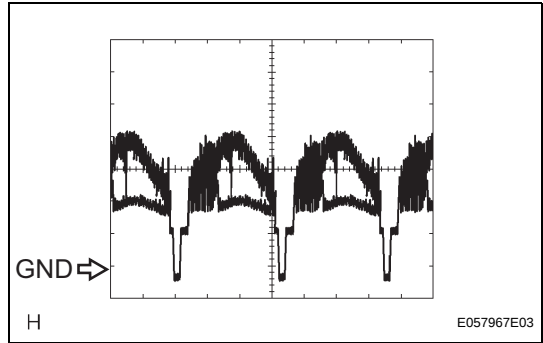
- (c) Reconnect the T15 camera connector.
(d) Measure the voltage and frequency of each terminal of the connector.

Standard:

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified value
CV+ (T15-2) - CV- (T15-1)	R - Shielded	Display signal	IG switch ON, shift lever R position	See waveform 1

If the result is not as specified, the camera may have a malfunction.

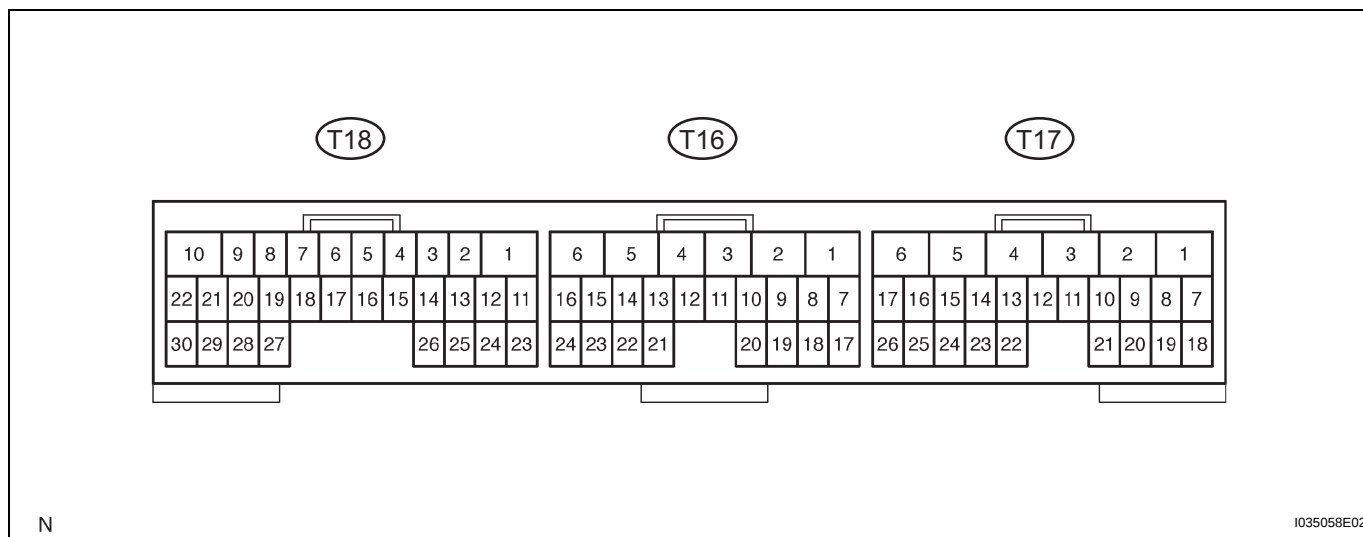
- (e) Reference:
Oscilloscope waveform
(1) Waveform 1



Item	Content
Measure terminal	CV+ - CV-
Measure set	0.2 V/DIV, 0.2 μS/DIV
Condition	Ignition switch: ON, Shift lever: R position

2. TELEVISION CAMERA ECU

(a) Disconnect the T16, T17 and T18 ECU connector.



(b) Measure the voltage and resistance of each terminal of the wire harness side connector.

Standard:

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified value
TX+ (T16-17) - Body ground	GR - Body ground	AVC-LAN control bus	Always	10 kΩ or higher
TX- (T16-18) - Body ground	B - Body ground	AVC-LAN control bus	Always	10 kΩ or higher
TX1- (T16-23) - Body ground	Y - Body ground	AVC-LAN control bus	Always	10 kΩ or higher
TX1+ (T16-24) - Body ground	R - Body ground	AVC-LAN control bus	Always	10 kΩ or higher
+B (T17-1) - GND1 (T17-6)	L - W-B	Battery Supply	Always	10 to 14 V
IG (T17-2) - GND1 (T17-6)	B - W-B	IG signal input	IG switch ON	10 to 14 V
ACC (T17-3) - GND1 (T17-6)	P - W-B	ACC signal input	IG switch ON or ACC	10 to 14 V
GND1 (T17-6) - Body ground	W-B - Body ground	Power ground	Always	Below 1 Ω

If the result is not as specified, there may be a malfunction on the wire harness side.

(c) Reconnect the T16, T17 and T18 ECU connector.
 (d) Measure the voltage and frequency of each terminal of the connector.

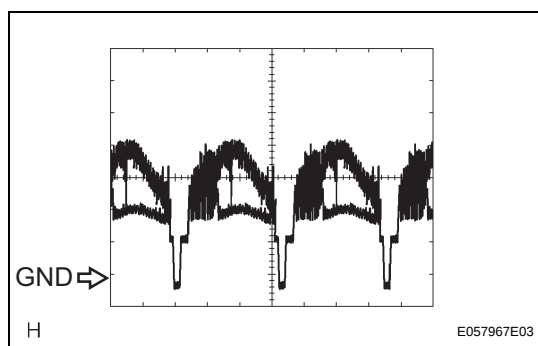
Standard:

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified value
VG (T16-7) - GND1 (T17-6)	Shielded - W-B	Display signal output ground (Shielded)	Always	Below 1 Ω
R (T16-8) - GND1 (T17-6)	G - W-B	Display signal output (Red)	While displaying map or back monitor	See waveform 2
G (T16-9) - GND1 (T17-6)	W - W-B	Display signal output (Green)	While displaying map or back monitor	See waveform 2
B (T16-10) - GND1 (T17-6)	R - W-B	Display signal output (Blue)	While displaying map or back monitor	See waveform 2
B1 (T16-13) - GND1 (T17-6)	R - W-B	Display signal input (Blue)	While displaying map	See waveform 2
G1 (T16-14) - GND1 (T17-6)	W - W-B	Display signal input (Green)	While displaying map	See waveform 2
R1 (T16-15) - GND1 (T17-6)	G - W-B	Display signal input (Red)	While displaying map	See waveform 2

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified value
VG1 (T16-16) - GND1 (T17-6)	Shielded - W-B	Display signal input ground (Shielded)	Always	Below 1 Ω
SYNC (T16-19) - GND1 (T17-6)	B - W-B	Synchronized signal output	While displaying map or back monitor	See waveform 3
VR (T16-20) - GND1 (T17-6)	Y - W-B	Display signal output ground	Always	Below 1 Ω
VR1 (T16-21) - GND1 (T17-6)	Y - W-B	Display signal input ground	Always	Below 1 Ω
SYN1 (T16-22) - GND1 (T17-6)	B - W-B	Synchronized signal input	While displaying map	See waveform 3
CGND (T18-21) - GND1 (T17-6)	W - W-B	Television camera ground	Always	Below 1 Ω
CB+ (T18-22) - GND1 (T17-6)	B - W-B	Power source to television camera	IG switch ON, shift lever R position	Approx. 6 V
CV- (T18-29) - GND1 (T17-6)	Shielded - W-B	Television camera ground (Shielded)	Always	Below 1 Ω
CV+ (T18-30) - GND1 (T17-6)	R - W-B	Display signal of television camera input	IG switch ON, shift lever R position	See waveform 1

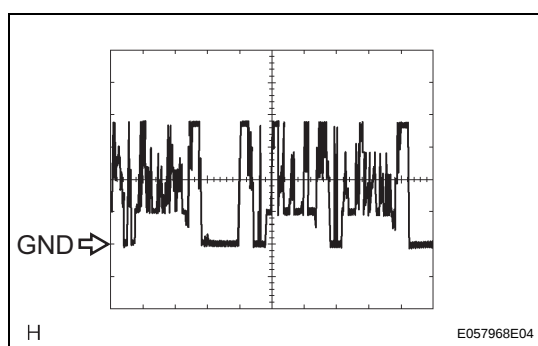
If the result is not as specified, the television camera ECU may have a malfunction.

- (e) Reference:
Oscilloscope waveform
(1) Waveform 1



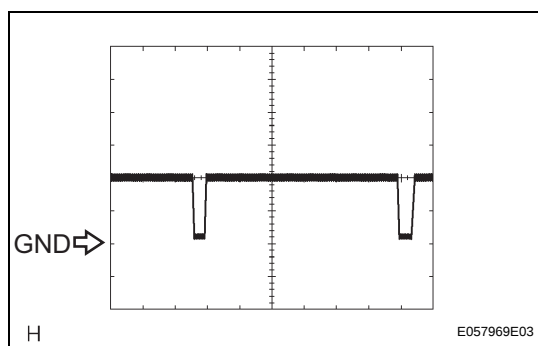
Item	Content
Measure terminal	CV+ - GND1
Measure set	0.2 V/DIV, 0.2 μ S/DIV
Condition	Ignition switch: ON, Shift lever: R position

- (2) Waveform 2



Item	Content
Terminal	R, G, B, R1, G1, B1, - GND1
Measure set	200 mV/DIV, 10 μ S/DIV
Condition	Image is being displayed (Rear view monitor system or navigation system).

- (3) Waveform 3



Item	Content
Terminal	SYNC, SYN1 - GND1
Measure set	500 mV/DIV, 10 μ S/DIV
Condition	Image is being displayed (Rear view monitor system or navigation system).

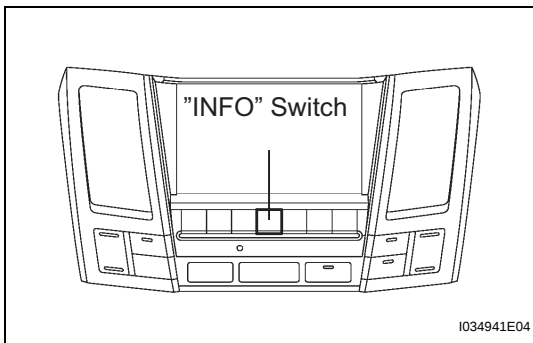
DTC CHECK / CLEAR

1. START DIAGNOSTIC MODE

- (a) There are 2 methods to start diagnostic mode. Start the mode by using one of them.

HINT:

- Illustrations may differ from the actual vehicle depending on the device settings and options. Therefore, some detailed areas may not be shown exactly the same as on the actual vehicle.
- After the ignition switch is turned on, check that the map is displayed before starting the diagnostic mode. Otherwise, some items cannot be checked.

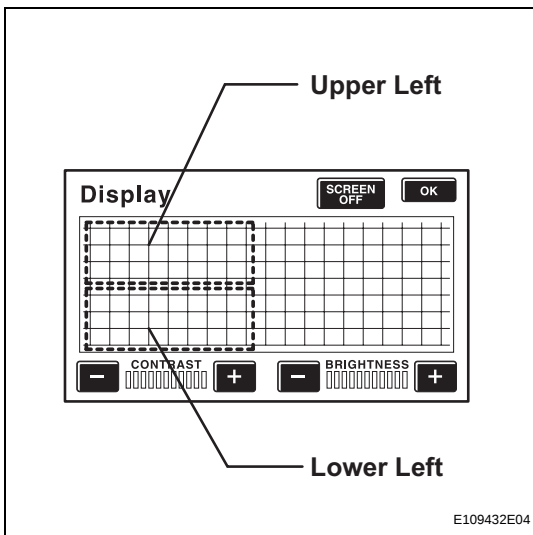


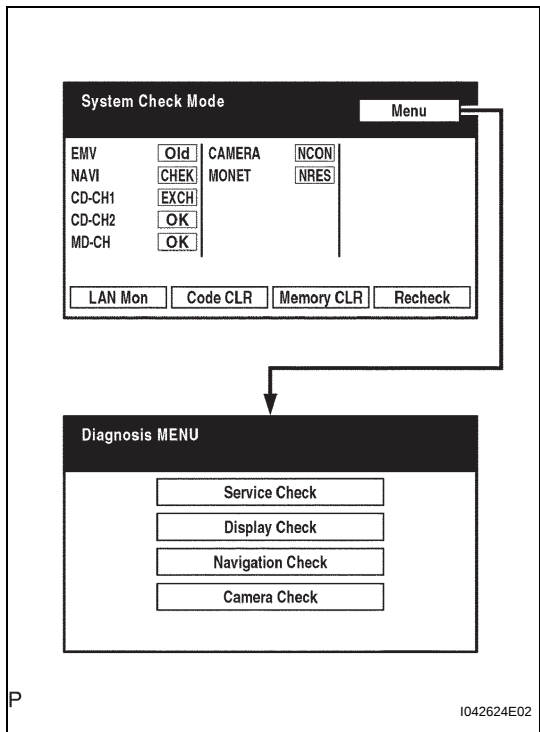
(b) Method 1

- (1) Turn the ignition switch ON.
- (2) While pressing and holding "INFO" switch, operate the light control switch, OFF → TAIL → OFF → TAIL → OFF.
- (3) The diagnostic mode starts and the service check screen ("System Check Mode") will be displayed. Service inspection starts automatically and the result will be displayed.

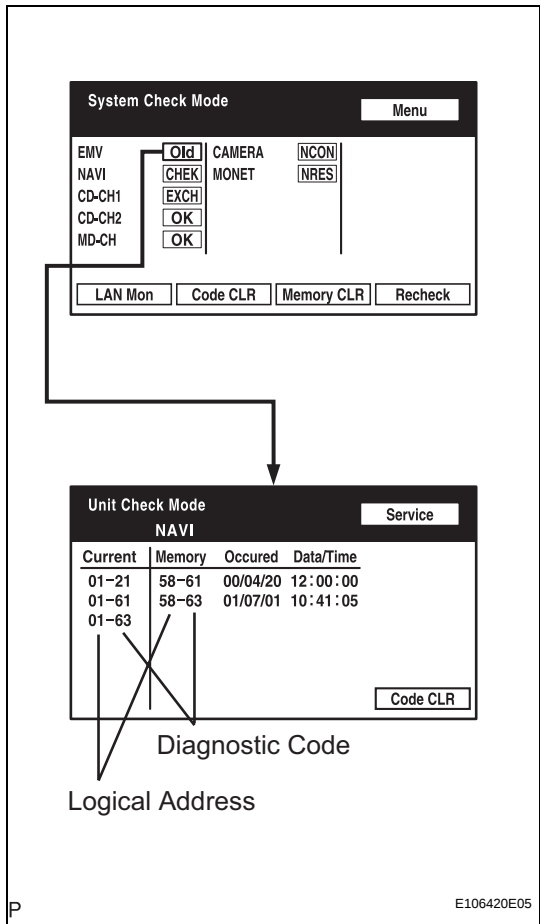
(c) Method 2

- (1) Turn the ignition switch ON.
- (2) Switch to the "Display quality adjustment" screen.
- (3) From the display quality adjustment screen, touch the corners of the screen in the following order: upper left → lower left → upper left → lower left → upper left → lower left.
- (4) The diagnostic mode starts and "Service Check" screen will be displayed. Service inspection starts automatically and the result will be displayed.

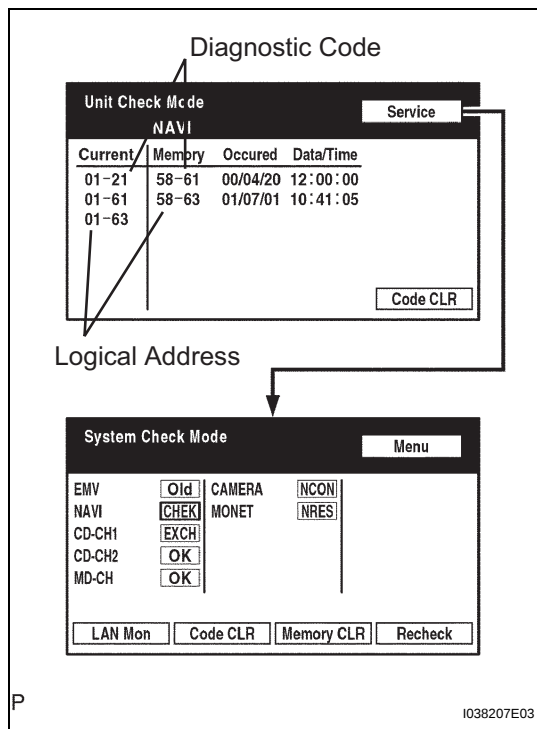




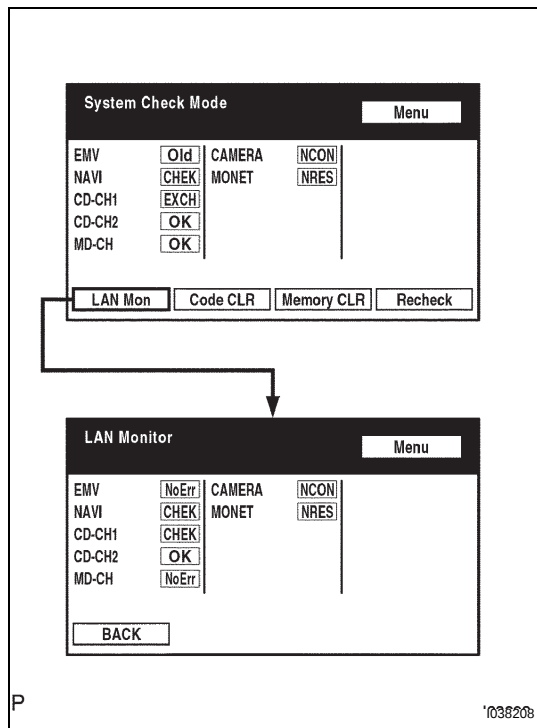
- (d) Diagnosis MENU
- (1) Diagnostic screen will be displayed by pressing the menu switch on the service check screen.



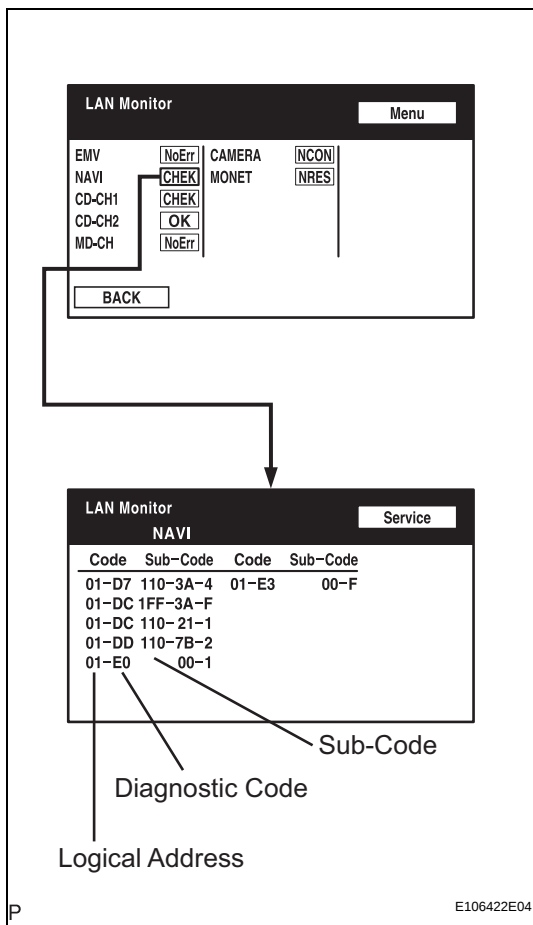
- (e) Read the system check result.
- (1) If all check results are "EXCH," "CHEK" or "Old," touch the display to check the contents on the "Unit Check Mode" screen and record them on the customer problem analysis check sheet.
- HINT:
- If all check results are "OK," go to communication DTC check (go to step PROCEDURE 1).
 - If a device name is not known, its physical address is displayed.



(2) If "EXCH", "CHEK" and "Old" as well as "OK" exist, press the service switch to return to the "System Check Mode". Then, check the "Unit Check Mode" screen and record them on the customer problem analysis check sheet.



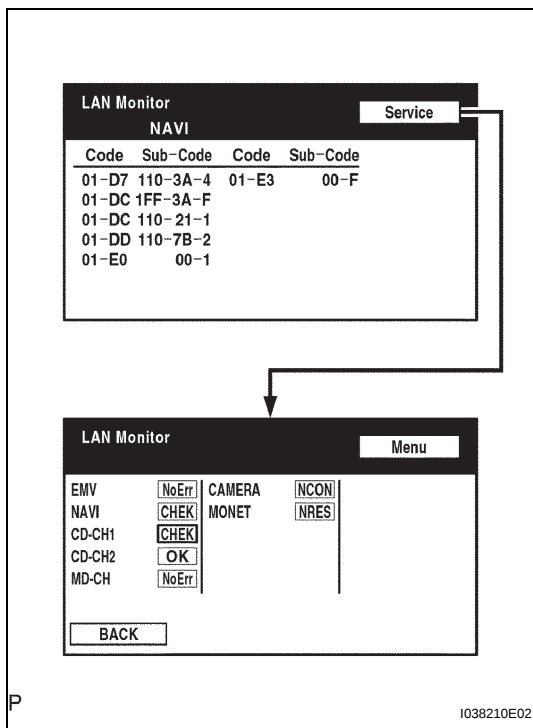
- (f) Read the communication diagnostic check result (PROCEDURE 1).
- (1) Return to the "System Check Mode", and press "LAN Mon" switch to enter the LAN monitor screen.



(2) If the result is "CHEK" or "Old," touch the result switch to check the contents on the individual communication diagnostic screen and record them on the customer problem analysis check sheet.

HINT:

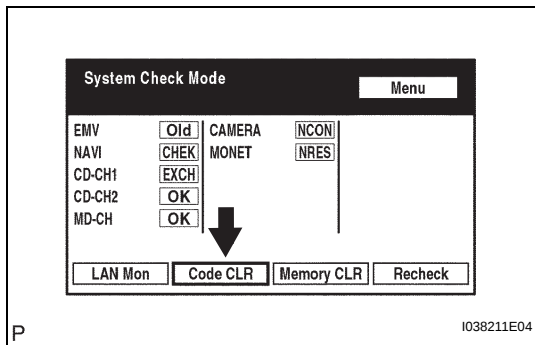
- If all check results are "No Err," the system judges that no DTC exists.
- The sub-code (relevant device) will be indicated by its physical address.



(3) If check results of other devices are "CHEK," press the "Service" switch to return to the original "LAN Monitor" screen. Then, check the individual communication diagnostic screen for the next device and record the result on the customer problem analysis check sheet.

2. FINISH DIAGNOSTIC MODE

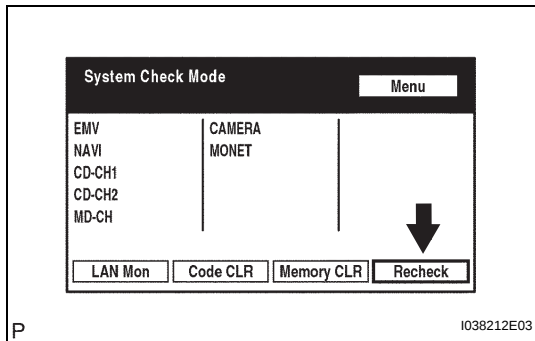
- There are 2 methods to end diagnostic mode.
 - Method 1
 - Turn the ignition switch off.
 - Method 2
 - Press and hold the "Display" switch for 3 seconds.



3. DTC CLEAR/RECHECK

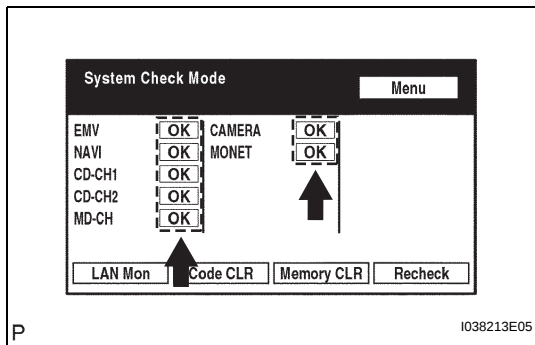
(a) Clear DTC

- (1) Press the "Code CLR" switch for 3 seconds.
- (2) Check result is cleared.

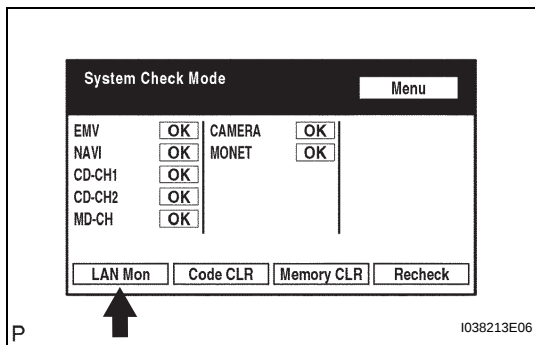


(b) Recheck

- (1) Press the "Recheck" switch.

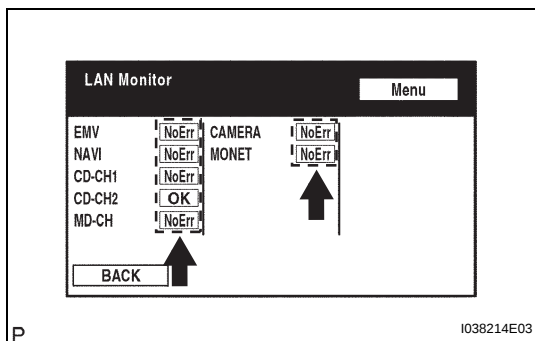


- (2) Confirm that all diagnostic codes are "OK" when the check results are displayed. If a code other than "OK" is displayed, troubleshoot again.



- (3) Press the "LAN Mon" switch to change to "LAN Monitor" mode.

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- (4) Confirm that all diagnostic codes are "No Err". If a code other than "No Err" is displayed, troubleshoot again.

FAIL-SAFE CHART

If the television camera ECU detects a malfunction, the fail safe functions shown in the table below are activated.

Malfunction parts	Detecting condition	Function
Television camera assembly	Transmission of television camera malfunction signal	Stops signal reception and displays a dark screen
Television camera ECU	Malfunction of television camera ECU unit	Stops system operation

DIAGNOSTIC TROUBLE CODE CHART

HINT:

DTC is displayed on the multi-display.

TELEVISION CAMERA ECU (physical address: 280)

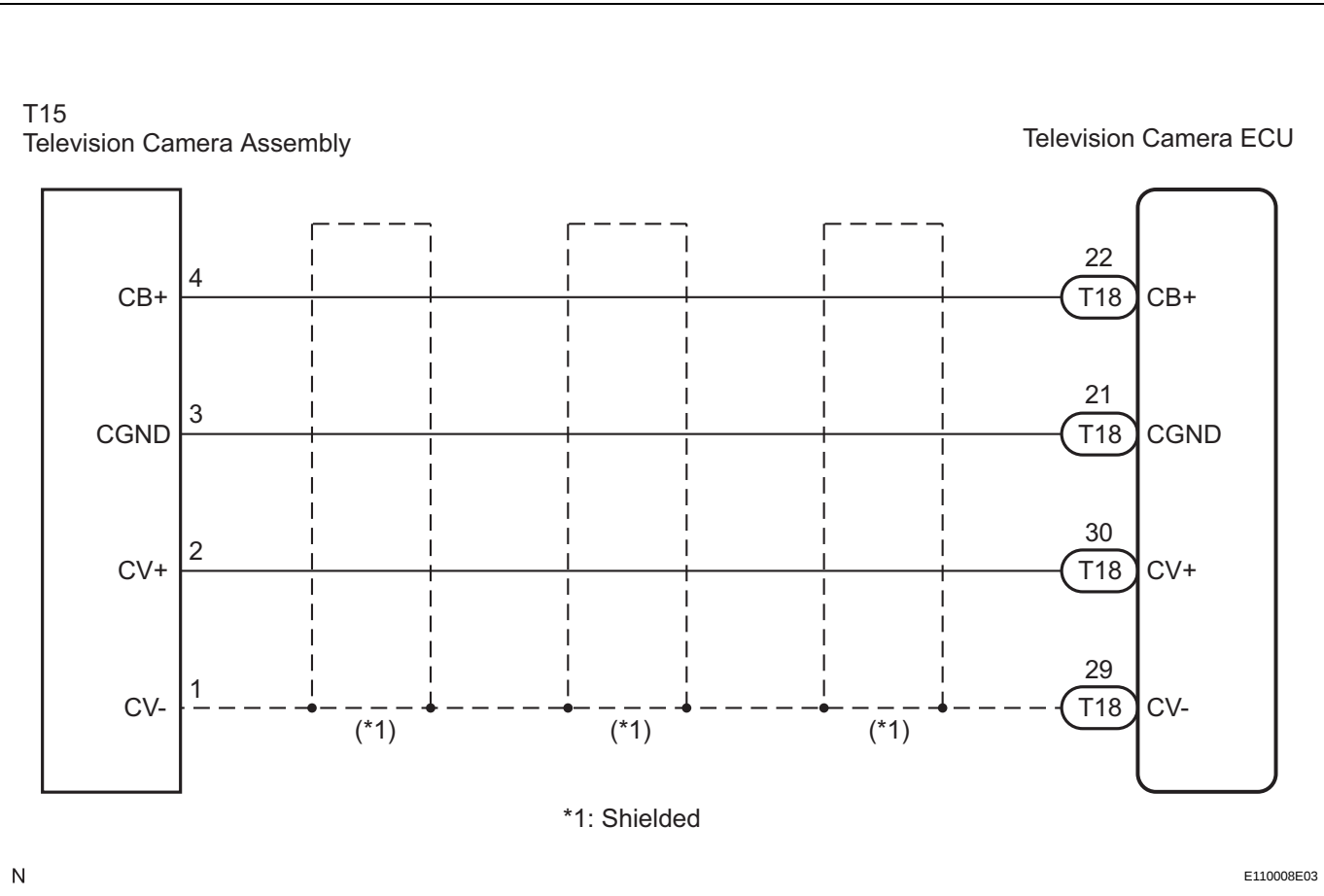
DTC No.	Detection Item	Condition	See page
5C-40	Camera Picture Error	Synchronous signal from the camera cannot be transmitted.	PM-19

DTC	5C-40	Camera Picture Error
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DESCRIPTION

DTC	DTC Detection Condition	Trouble Area
5C-40	Synchronous signal from the camera cannot be transmitted	Television camera ECU Television camera assembly Wire harness

WIRING DIAGRAM



1	CHECK NAVIGATION DISPLAY
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- (a) Check whether navigation display appears properly or not.
- OK:**
The navigation display properly appears.
- HINT:
- When the navigation display has trouble, inspect the circuit between the television camera ECU and multi-display assembly (See page [NS-159](#)).
 - When the navigation display is normal, inspect the circuit between the television camera ECU and television camera assembly by following the steps below.

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INSPECT "DISPLAY SIGNAL CIRCUIT" OF LEXUS NAVIGATION SYSTEM

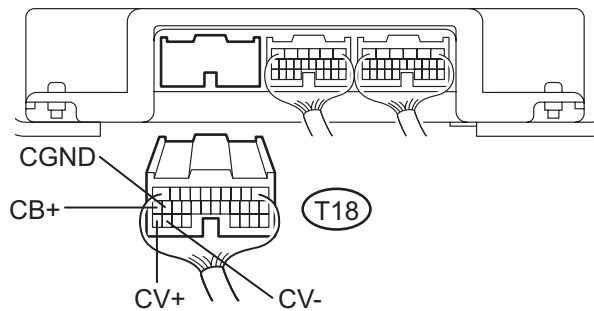
OK

2

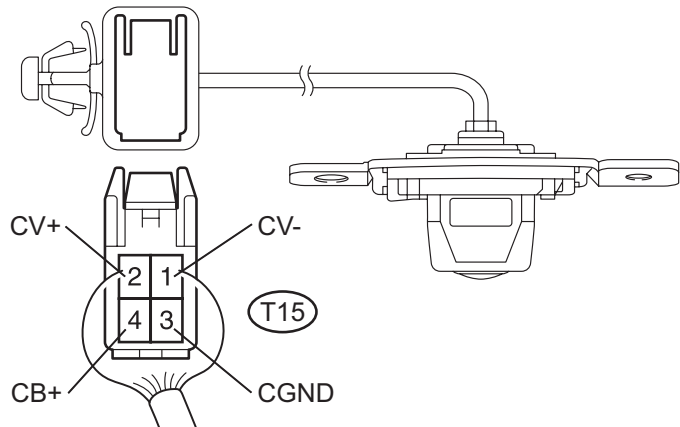
CHECK HARNESS AND CONNECTOR (TELEVISION CAMERA ECU AND TELEVISION CAMERA ASSEMBLY)

- (a) Disconnect the T18 connector from the television camera ECU.
- (b) Disconnect the T15 connector from the television camera assembly.

Television Camera ECU:



Television Camera Assembly:



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- (c) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection (Terminal No.)	Condition	Specified condition
CB+ (T18-22) - CB+ (T15-4)	Always	Below 1 Ω
CGND (T18-21) - CGND (T15-3)	Always	Below 1 Ω
CV+ (T18-30) - CV+ (T15-2)	Always	Below 1 Ω
CV- (T18-29) - CV- (T15-1)	Always	Below 1 Ω
CB+ (T18-22) - Body ground	Always	10 k Ω or higher
CGND (T18-21) - Body ground	Always	10 k Ω or higher
CV+ (T18-30) - Body ground	Always	10 k Ω or higher
CV- (T18-29) - Body ground	Always	10 k Ω or higher

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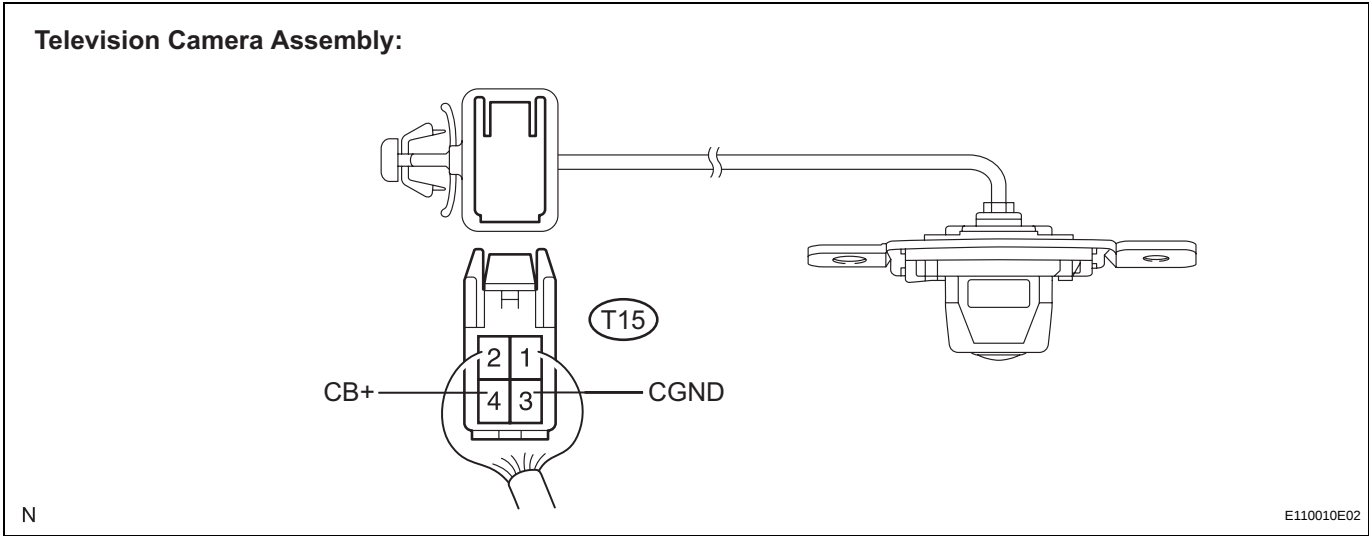
REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

3

INSPECT TELEVISION CAMERA ECU

- (a) Connect the T18 connector to the television camera ECU.



- (b) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester connection (Terminal No.)	Condition	Specified condition
CB+ (T15-4) - CGND (T15-3)	IG SW ON, shift lever R position	Approx. 6 V

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REPLACE TELEVISION CAMERA ECU

OK

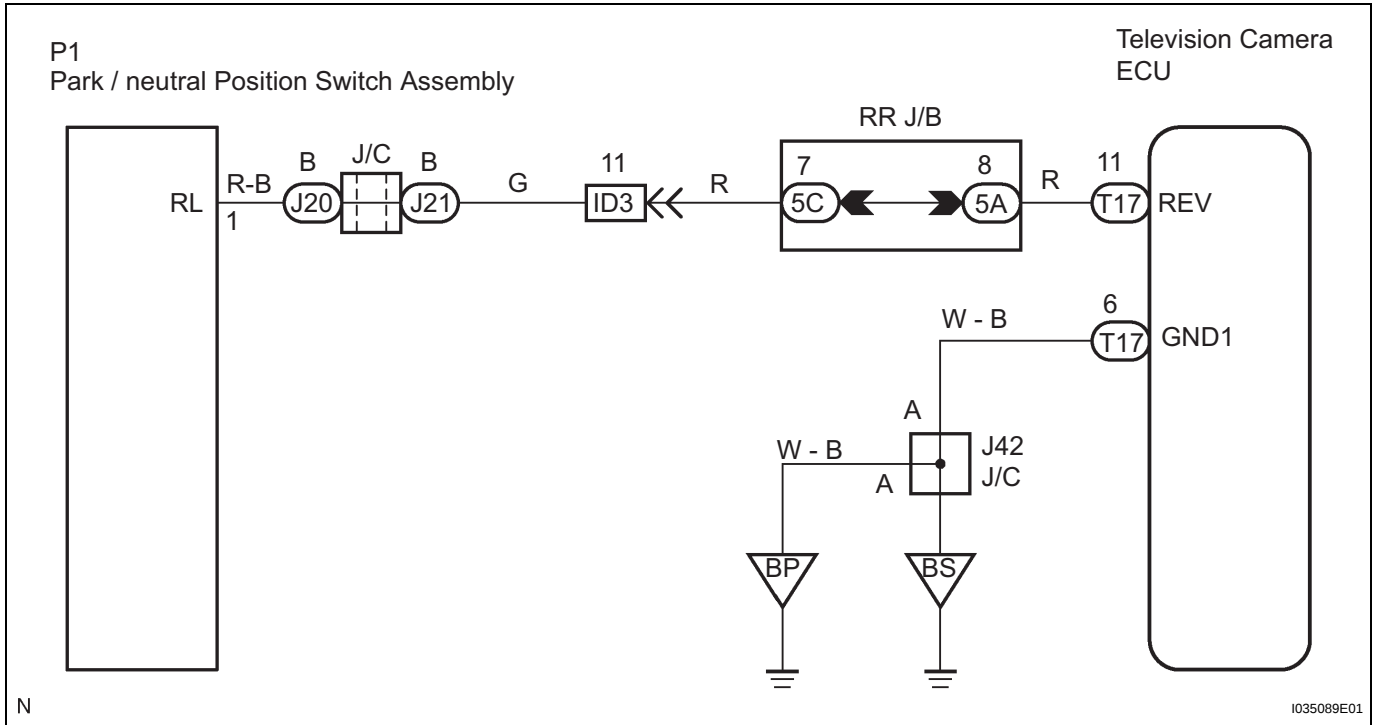
REPLACE TELEVISION CAMERA ASSEMBLY

Reverse Signal Circuit

DESCRIPTION

The television camera ECU receives the reverse signal from the park / neutral position switch.

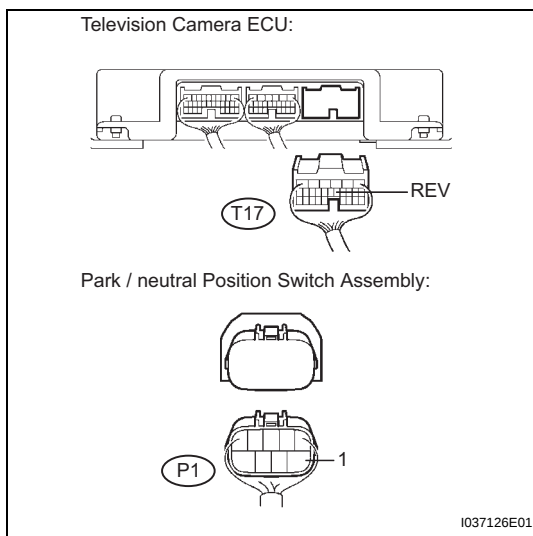
WIRING DIAGRAM



1

CHECK HARNESS AND CONNECTOR (TELEVISION CAMERA ECU - PARK / NEUTRAL POSITION SWITCH)

PM



- Disconnect the T17 connector from the television camera ECU.
- Disconnect the P1 connector from the park / neutral position switch assembly.
- Measure the resistance according to the value(s) in the table below.

Resistance

Tester Connection (Terminal No.)	Condition	Specified Condition
REV (T17-11) - 1 (P1-1)	Always	Below 1 Ω
REV (T17-11) - Body ground	Always	10 k Ω or higher

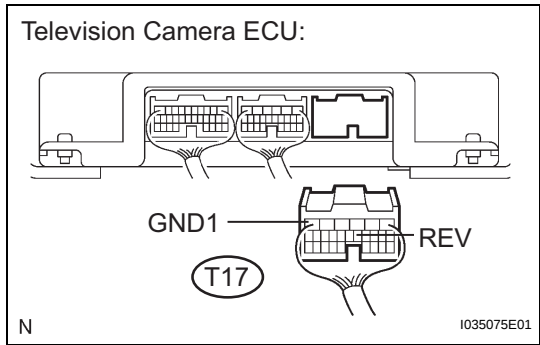
NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

2

INSPECT TELEVISION CAMERA ECU (REVERSE SIGNAL INPUT)



- (a) Connect the P1 connector to the park / neutral position switch assembly.
- (b) Measure the resistance according to the value(s) in the table below.

Resistance

Tester Connection (Terminal No.)	Condition	Specified Condition
GND1 (T17-6) - Body ground	Always	Below 1 Ω

- (c) Measure the voltage according to the value(s) in the table below.

Voltage

Tester Connection (Terminal No.)	Condition	Specified Condition
REV (T17-11) -GND1 (T17-6)	IG SW ON, shift lever R position	10 to 14 V

NG

INSPECT PARK / NEUTRAL POSITION SWITCH ASSEMBLY

OK

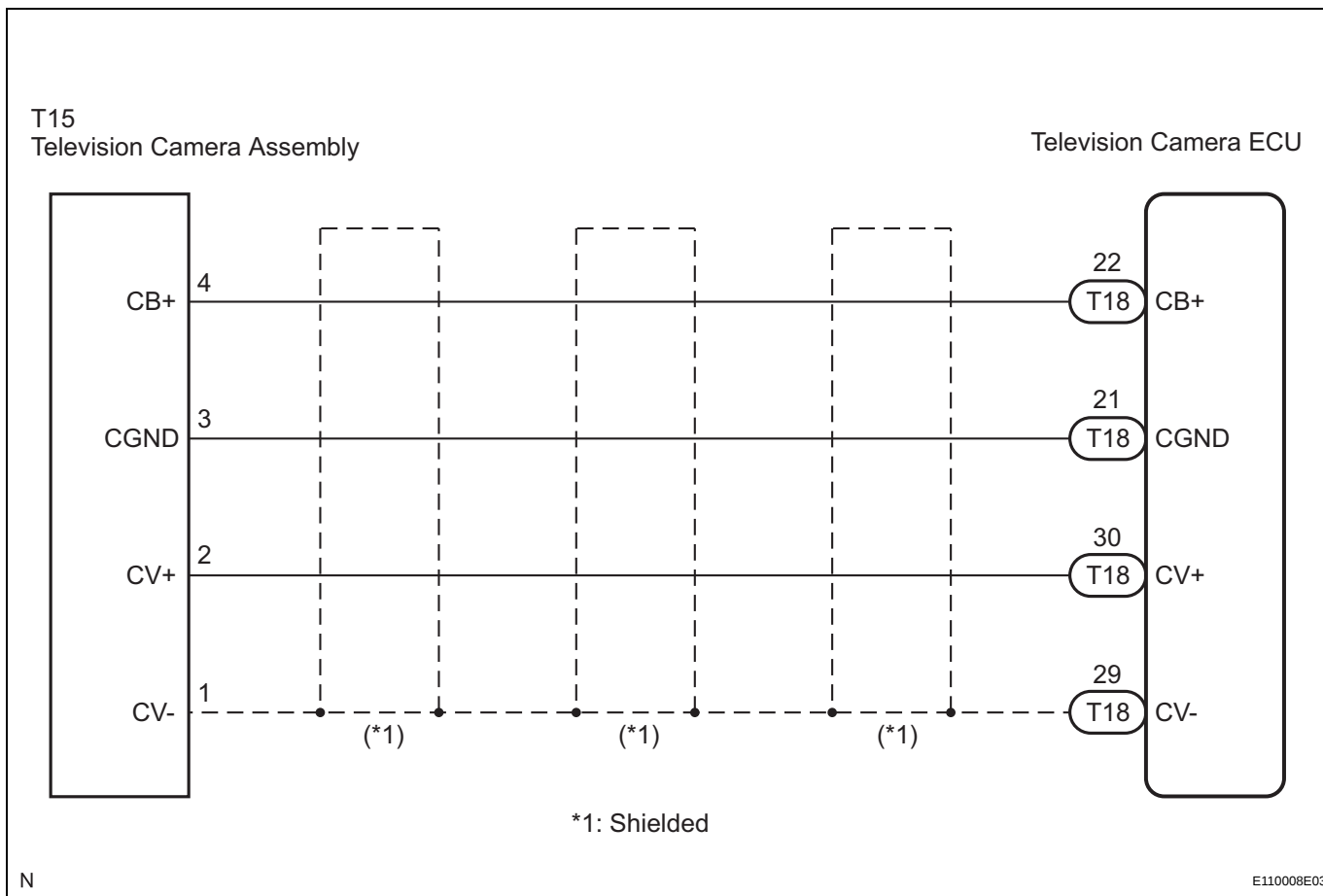
RETURN TO THE ORIGINAL INSPECTION FLOW BECAUSE THE CHECK RESULT IS NORMAL

Display Signal Circuit between Television Camera ECU and Television Camera Assembly

DESCRIPTION

This is the display signal circuit of the television camera assembly.

WIRING DIAGRAM



1

CHECK NAVIGATION DISPLAY

- (a) Check whether navigation display appears properly or not.

OK:

The navigation display properly appears.

HINT:

- When the navigation display has trouble, inspect the circuit between the television camera ECU and multi-display assembly (See page [NS-159](#)).
- When the navigation display is normal, inspect the circuit between the television camera ECU and television camera assembly by following the steps below.

NG

INSPECT "DISPLAY SIGNAL CIRCUIT" OF LEXUS NAVIGATION SYSTEM

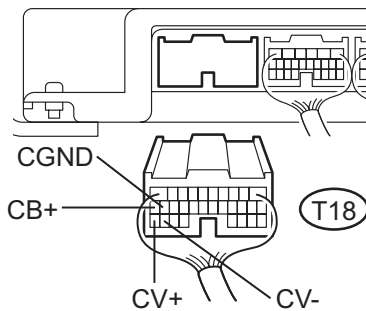
OK

2

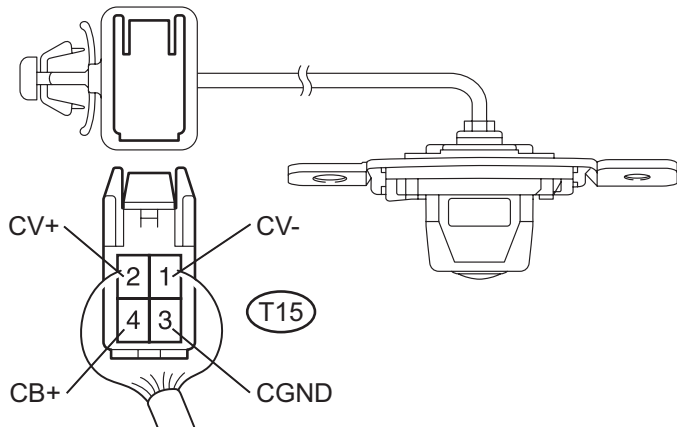
CHECK HARNESS AND CONNECTOR (TELEVISION CAMERA ECU AND TELEVISION CAMERA ASSEMBLY)

- Disconnect the T18 connector from the television camera ECU.
- Disconnect the T15 connector from the television camera assembly.

Television Camera ECU:



Television Camera Assembly:



N

E110009E02

- Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection (Terminal No.)	Condition	Specified condition
CB+ (T18-22) - CB+ (T15-4)	Always	Below 1 Ω
CGND (T18-21) - CGND (T15-3)	Always	Below 1 Ω
CV+ (T18-30) - CV+ (T15-2)	Always	Below 1 Ω
CV- (T18-29) - CV- (T15-1)	Always	Below 1 Ω
CB+ (T18-22) - Body ground	Always	10 k Ω or higher
CGND (T18-21) - Body ground	Always	10 k Ω or higher
CV+ (T18-30) - Body ground	Always	10 k Ω or higher
CV- (T18-29) - Body ground	Always	10 k Ω or higher

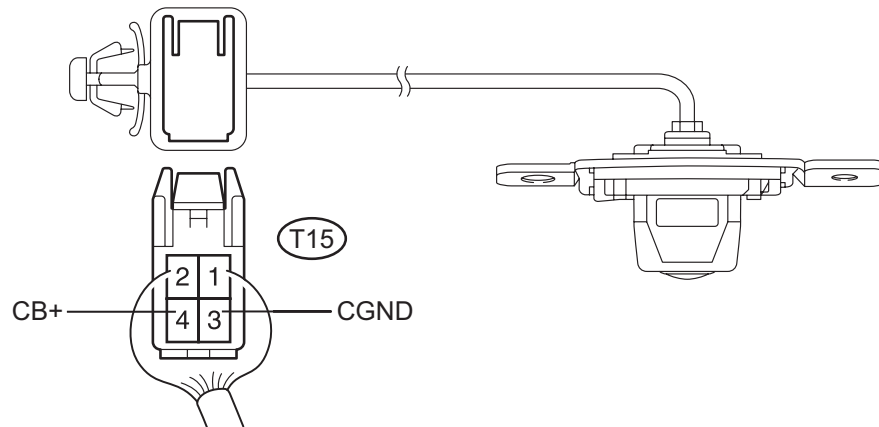
NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

3 INSPECT TELEVISION CAMERA ECU

- (a) Connect the T18 connector to the television camera ECU.

Television Camera Assembly:

N

E110010E02

- (b) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester connection (Terminal No.)	Condition	Specified condition
CB+ (T15-4) - CGND (T15-3)	IG SW ON, shift lever R position	Approx. 6 V

NG

REPLACE TELEVISION CAMERA ECU

OK

PM

4 REPLACE TELEVISION CAMERA ASSEMBLY

- (a) After replacing the television camera assembly with a normally functioning assembly, check that the parking assist monitor system can operate normally.

OK:**Malfunction disappears**

NG

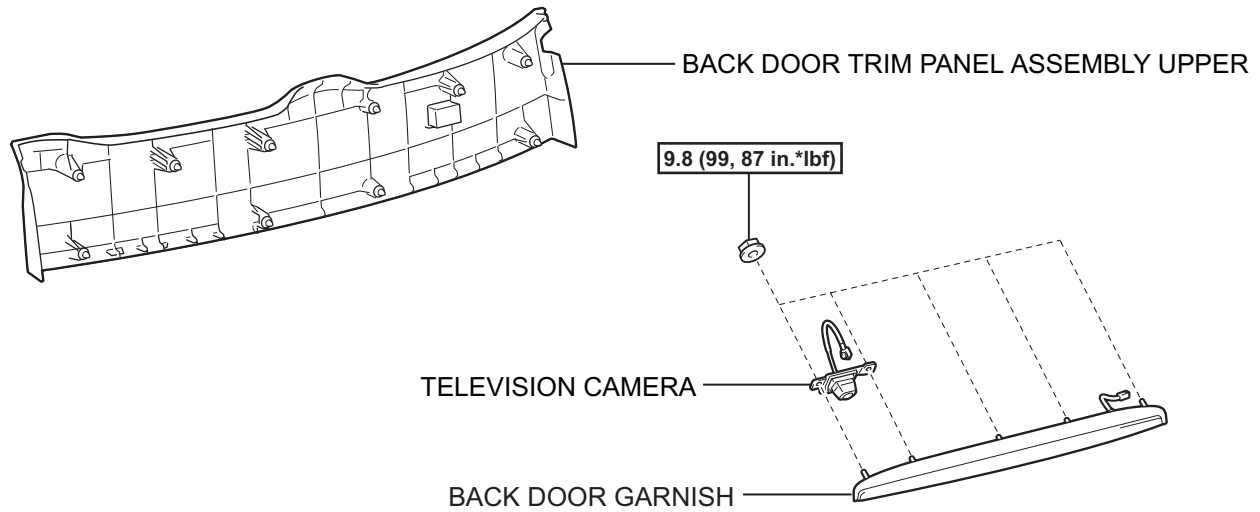
RETURN TO THE ORIGINAL INSPECTION FLOW BECAUSE THE CHECK RESULT IS NORMAL

OK

NORMAL (TELEVISION CAMERA ASSEMBLY DEFECTIVE)

TELEVISION CAMERA

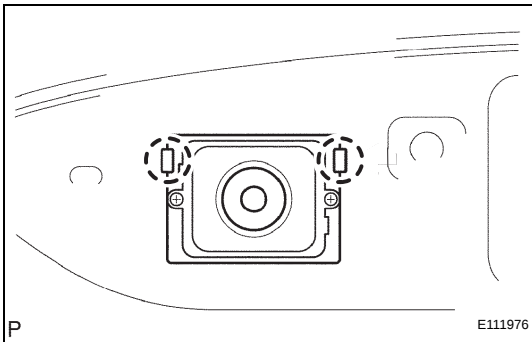
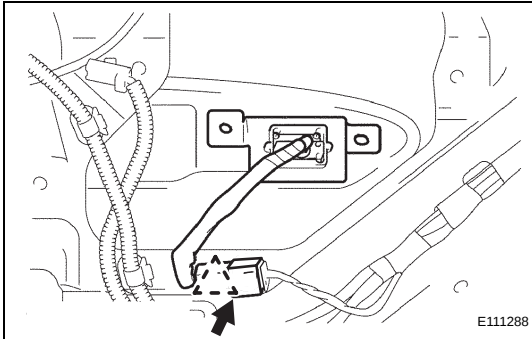
COMPONENTS



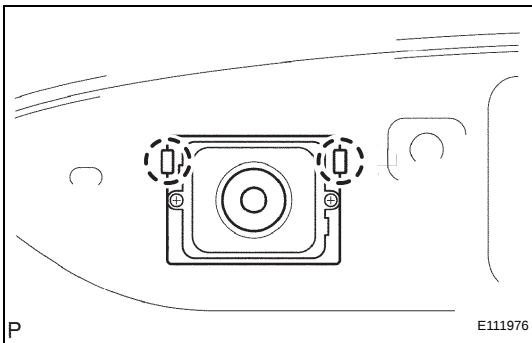
N*m (kgf*cm, ft.*lbf) : Specified torque

REMOVAL

1. REMOVE BACK DOOR TRIM PANEL ASSEMBLY UPPER (See page [ED-124](#))
2. REMOVE BACK DOOR GARNISH (See page [ET-35](#))
3. REMOVE TELEVISION CAMERA
 - (a) Disconnect the connector and disengage the clamp.

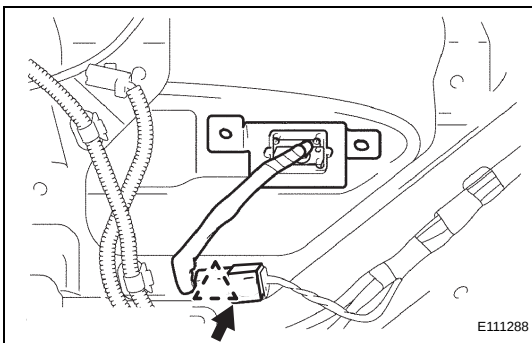


- (b) Disengage the 2 claws and remove the television camera.



INSTALLATION

1. INSTALL TELEVISION CAMERA
 - (a) Engage the 2 claws and install the television camera.



- (b) Engage the clamp and connect the connector.

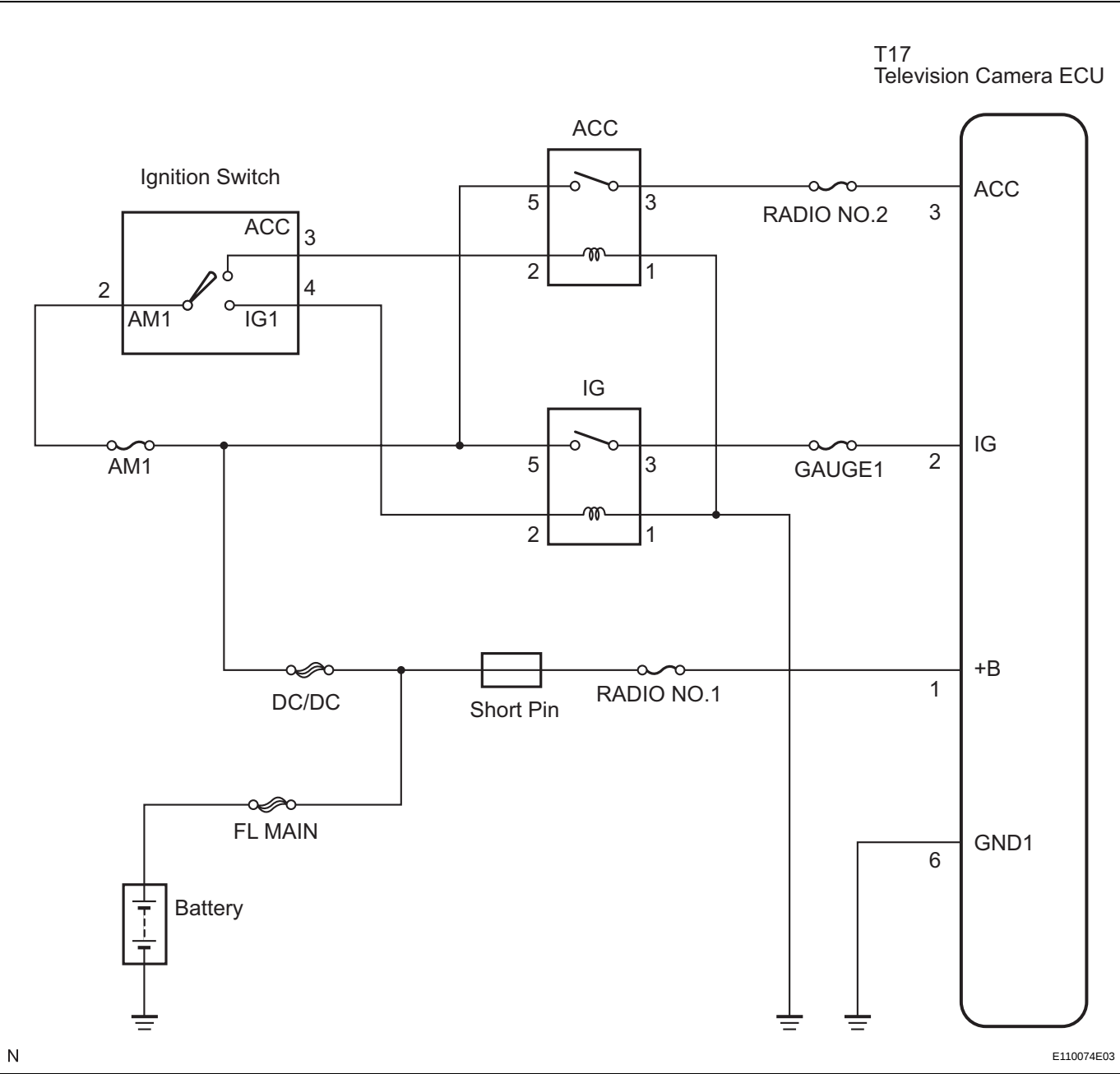
2. INSTALL BACK DOOR GARNISH (See page [ET-35](#))
3. INSTALL BACK DOOR TRIM PANEL ASSEMBLY UPPER

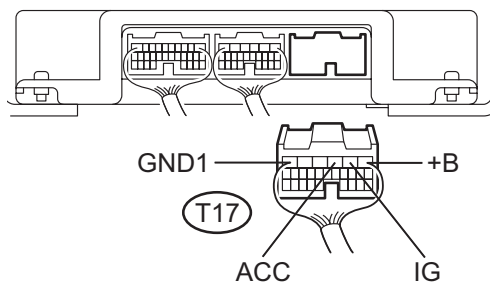
Television Camera ECU Power Source Circuit

DESCRIPTION

This circuit is the power source circuit to operate the television camera ECU.

WIRING DIAGRAM



1**CHECK HARNESS AND CONNECTOR (BATTERY, BODY GROUND AND TELEVISION CAMERA ECU)****Television Camera ECU:**

- (a) Disconnect the T17 connector from the television camera ECU.
- (b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection (Terminal No.)	Condition	Specified condition
GND1 (T17-6) - Body ground	Always	Below 1 Ω

- (c) Measure the voltage according to the value(s) in the table below.

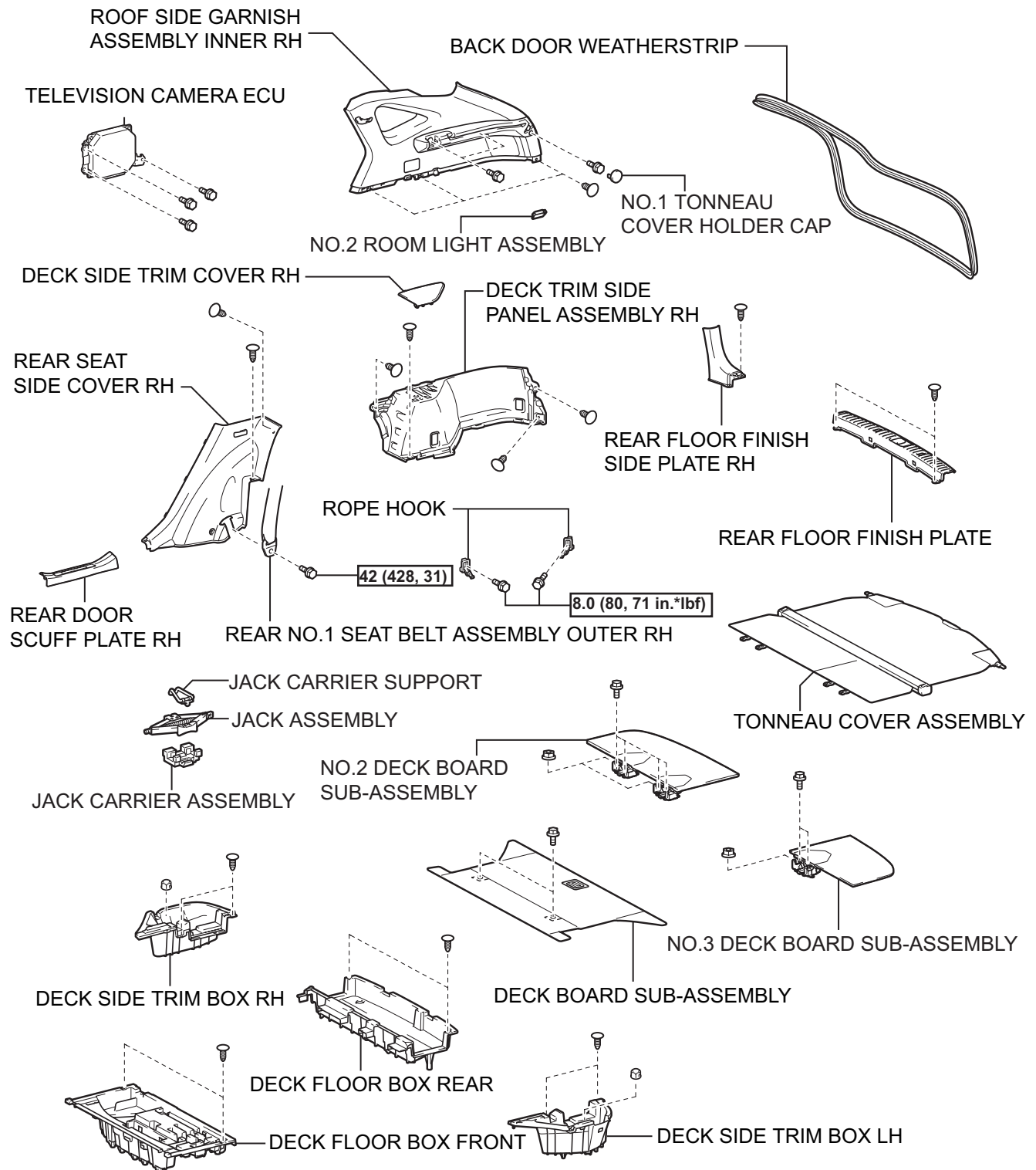
Standard voltage

Tester connection (Terminal No.)	Condition	Specified condition
+B (T17-1) - GND1 (T17-6)	Always	10 to 16 V
IG (T17-2) - GND1 (T17-6)	IG SW ON	10 to 16 V
ACC (T17-3) - GND1 (T17-6)	IG SW ACC	10 to 16 V

NG**REPAIR HARNESS OR CONNECTOR****OK****RETURN TO THE ORIGINAL INSPECTION FLOW BECAUSE THE CHECK RESULT IS NORMAL**

TELEVISION CAMERA ECU

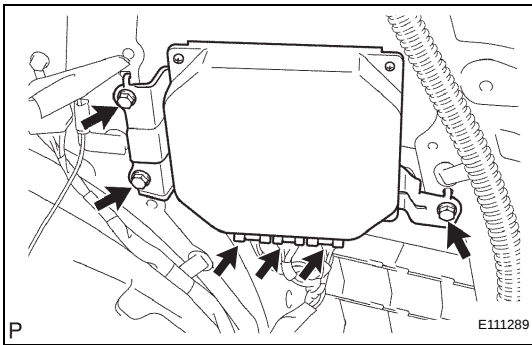
COMPONENTS



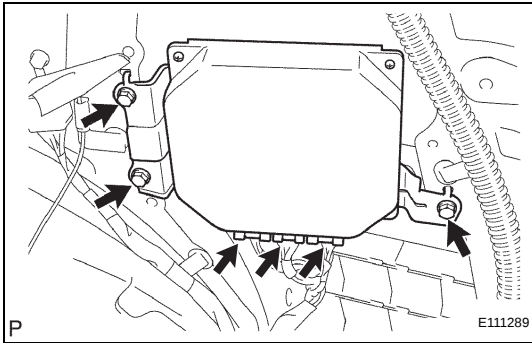
N*m (kgf*cm, ft.*lbf) : Specified torque

REMOVAL

1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL
(See page [RS-1](#))
2. REMOVE REAR DOOR SCUFF PLATE RH (See page [IR-6](#))
3. REMOVE DECK BOARD SUB-ASSEMBLY (See page [IR-7](#))
4. REMOVE TONNEAU COVER ASSEMBLY
5. REMOVE DECK FLOOR BOX FRONT (See page [IR-8](#))
6. REMOVE DECK FLOOR BOX REAR (See page [IR-8](#))
7. REMOVE NO.2 DECK BOARD SUB-ASSEMBLY (See page [IR-8](#))
8. REMOVE NO.3 DECK BOARD SUB-ASSEMBLY (See page [IR-8](#))
9. REMOVE BACK DOOR WEATHERSTRIP
10. REMOVE JACK CARRIER SUPPORT
11. REMOVE JACK ASSEMBLY
12. REMOVE JACK CARRIER ASSEMBLY
13. REMOVE DECK SIDE TRIM BOX LH (See page [IR-8](#))
14. REMOVE DECK SIDE TRIM BOX RH
15. REMOVE REAR FLOOR FINISH PLATE (See page [IR-8](#))
16. REMOVE REAR FLOOR FINISH SIDE PLATE RH
17. REMOVE DECK SIDE TRIM COVER RH
18. SEPARATE REAR NO.1 SEAT BELT ASSEMBLY OUTER RH (See page [SB-33](#))
19. REMOVE REAR SEAT SIDE COVER RH (See page [IR-9](#))
20. REMOVE ROPE HOOK (See page [IR-9](#))
21. REMOVE DECK TRIM SIDE PANEL ASSEMBLY RH (See page [IR-9](#))
22. REMOVE NO.2 ROOM LIGHT ASSEMBLY (See page [IR-9](#))
23. REMOVE NO.1 TONNEAU COVER HOLDER CAP
24. ROOF SIDE GARNISH ASSEMBLY INNER RH (See page [IR-9](#))

**25. REMOVE TELEVISION CAMERA ECU**

- (a) Disconnect the 3 connectors.
- (b) Remove the 3 bolts and the television camera ECU.

**INSTALLATION****1. INSTALL TELEVISION CAMERA ECU**

- (a) Install the television camera with the 3 bolts.
- (b) Connect the 3 connectors.

2. INSTALL ROOF SIDE GARNISH ASSEMBLY INNER RH**3. INSTALL NO.1 TONNEAU COVER HOLDER CAP****4. INSTALL NO.2 ROOM LIGHT ASSEMBLY****5. INSTALL DECK TRIM SIDE PANEL ASSEMBLY RH****6. INSTALL ROPE HOOK****7. INSTALL REAR SEAT SIDE COVER RH****8. INSTALL REAR NO.1 SEAT BELT ASSEMBLY OUTER RH (See page [SB-33](#))****9. INSTALL DECK SIDE TRIM COVER RH****10. INSTALL REAR FLOOR FINISH SIDE PLATE RH****11. INSTALL REAR FLOOR FINISH PLATE****12. INSTALL DECK SIDE TRIM BOX LH****13. INSTALL DECK SIDE TRIM BOX RH****14. INSTALL JACK CARRIER ASSEMBLY****15. INSTALL JACK ASSEMBLY****16. INSTALL JACK CARRIER SUPPORT****17. INSTALL BACK DOOR WEATHERSTRIP****18. INSTALL NO.3 DECK BOARD SUB-ASSEMBLY****19. INSTALL NO.2 DECK BOARD SUB-ASSEMBLY****20. INSTALL DECK FLOOR BOX REAR****21. INSTALL DECK FLOOR BOX FRONT****22. INSTALL TONNEAU COVER ASSEMBLY****23. INSTALL DECK BOARD SUB-ASSEMBLY****24. INSTALL REAR DOOR SCUFF PLATE RH****25. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL**

26. PERFORM INITIALIZATION**NOTICE:**

Some systems need initialization when disconnecting the cable from negative battery terminal. (See page [PM-1](#))