

GROUP 54B

SIMPLIFIED WIRING
SYSTEM (SWS)

CONTENTS

GENERAL INFORMATION	54B-2	FLASHER TIMER	54B-37
SPECIAL TOOL	54B-3	INSPECTION PROCEDURE I-3: Flasher Timer: One of the turn-signal lights does not illuminate. . .	54B-37
SYMPTOM CHART	54B-6	FOG LIGHT	54B-55
INPUT SIGNAL CHART	54B-6	GENERAL DESCRIPTION CONCERNING THE FOG LIGHT	54B-55
SYMPTOM PROCEDURES	54B-7	INSPECTION PROCEDURE J-5: The Rear Fog Light do not Illuminate Normally.	54B-56
HEADLIGHT AND TAILLIGHT	54B-7	INSPECTION PROCEDURE J-6: The Rear Fog Light Indicator does not Illuminate Normally.	54B-63
INSPECTION PROCEDURE H-6: Headlight and Taillight: The taillights, the position lights or the license plate light do not illuminate.....	54B-7	INPUT SIGNAL PROCEDURES.....	54B-67
INSPECTION PROCEDURE H-7: Headlight and Taillight: One of the headlights does not illuminate.	54B-27	INSPECTION PROCEDURE N-11: ETACS-ECU does not Receive Any Signal from the Rear Fog Light Switch.	54B-67

GENERAL INFORMATION

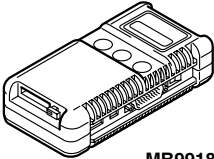
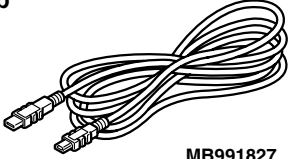
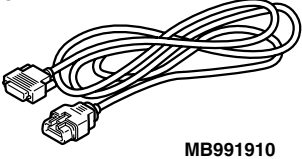
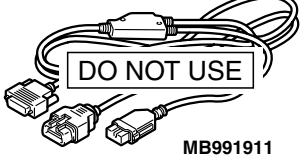
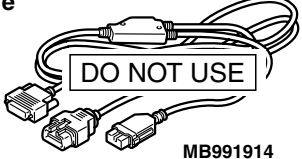
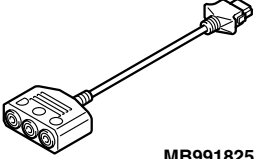
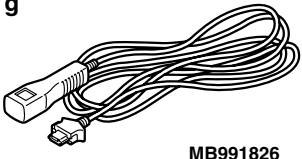
M1549000101280

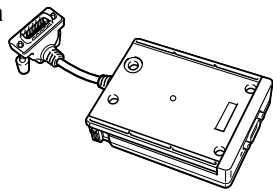
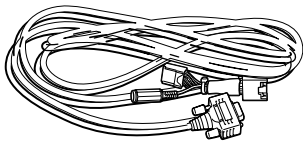
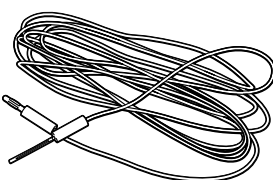
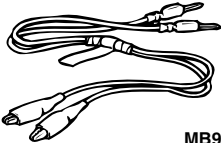

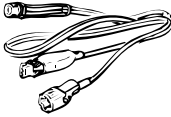
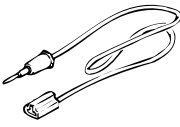
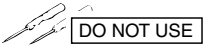
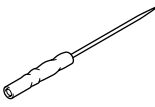
OUTLINE OF CHANGE

Due to the addition of rear fog light and the change of headlight, position light, license plate light and turn-signal light, the service procedures have been added. And, keyless entry horn answerback function is deleted. The other service procedures are the same as before

SPECIAL TOOL

M1549000301563

TOOL	TOOL NUMBER AND NAME	SUPERSESSON	APPLICATION
<p>a</p>  <p>MB991824</p> <p>b</p>  <p>MB991827</p> <p>c</p>  <p>MB991910</p> <p>d</p>  <p>MB991911</p> <p>e</p>  <p>MB991914</p> <p>f</p>  <p>MB991825</p> <p>g</p>  <p>MB991826 MB991958</p>	<p>MB991958</p> <p>a. MB991824</p> <p>b. MB991827</p> <p>c. MB991910</p> <p>d. MB991911</p> <p>e. MB991914</p> <p>f. MB991825</p> <p>g. MB991826</p> <p>M.U.T.-III sub assembly</p> <p>a. Vehicle communication interface (V.C.I.)</p> <p>b. M.U.T.-III USB cable</p> <p>c. M.U.T.-III main harness A (Vehicles with CAN communication system)</p> <p>d. M.U.T.-III main harness B (Vehicles without CAN communication system)</p> <p>e. M.U.T.-III main harness C (for Daimler Chrysler models only)</p> <p>f. M.U.T.-III measurement adapter</p> <p>g. M.U.T.-III trigger harness</p>	<p>MB991824-KIT</p> <p><i>NOTE: G: MB991826 M.U.T.-III Trigger Harness is not necessary when pushing V.C.I. ENTER key.</i></p>	<p>SWS communication line check (ECU check and service data)</p> <p>⚠ CAUTION</p> <p>For vehicles with CAN communication, use M.U.T.-III main harness A to send simulated vehicle speed. If you connect M.U.T.-III main harness B instead, the CAN communication does not function correctly.</p>

TOOL	TOOL NUMBER AND NAME	SUPERSESSION	APPLICATION
<p>a</p>  <p>b</p>  <p>c</p>  <p align="right">B991813</p>	<p>MB991813</p> <p>a. MB991806</p> <p>b. MB991812</p> <p>c. MB991822</p> <p>SWS monitor kit</p> <p>a. SWS monitor cartridge</p> <p>b. SWS monitor harness (for column-ECU)</p> <p>c. Probe harness</p>	—	SWS communication line check (ECU check and service data)
 <p align="right">MB991529</p>	<p>MB991529</p> <p>Diagnostic trouble code check harness</p>	Tool not necessary if the scan tool (M.U.T.-III) is available	Checking input signal when using a voltmeter
<p>a</p>  <p>b</p>  <p>c</p>  <p>d</p>  <p align="center">DO NOT USE</p> <p align="right">MB991223</p>	<p>MB991223</p> <p>a. MB991219</p> <p>b. MB991220</p> <p>c. MB991221</p> <p>d. MB991222</p> <p>Harness set</p> <p>a. Test harness</p> <p>b. LED harness</p> <p>c. LED harness adaptor</p> <p>d. Probe</p>	General service tools	<p>Continuity check and voltage measurement at harness wire or connector for loose, corroded or damaged terminals, or terminals pushed back in the connector.</p> <p>A: Connector pin contact pressure inspection</p> <p>B: Power circuit inspection</p> <p>C: Power circuit inspection</p> <p>D: Commercial tester connection</p>
 <p align="right">MB992006</p>	<p>MB992006</p> <p>Extra fine probe</p>	General service tool	Making voltage and resistance measurement during troubleshooting

SYMPTOM CHART

M1549000802334

FUNCTION SYSTEM

SYSTEM	SYMPTOM	INSPECTION PROCEDURE	REFERENCE PAGE
Headlight and taillight	The taillights, the position lights or the license plate lights do not illuminate.	H-6	
	One of the headlights does not illuminate.	H-7	
Flasher timer	One of the turn-signal lights does not illuminate.	I-3	
Fog light	General description concerning the fog light	—	
	The rear fog light do not illuminate normally.	J-5	
	The rear fog light indicator does not illuminate normally.	J-6	

INPUT SIGNAL CHART

M1549024201140

SCAN TOOL OR VOLTMETER

If a problem is found in the Pulse Check, observe the table below.

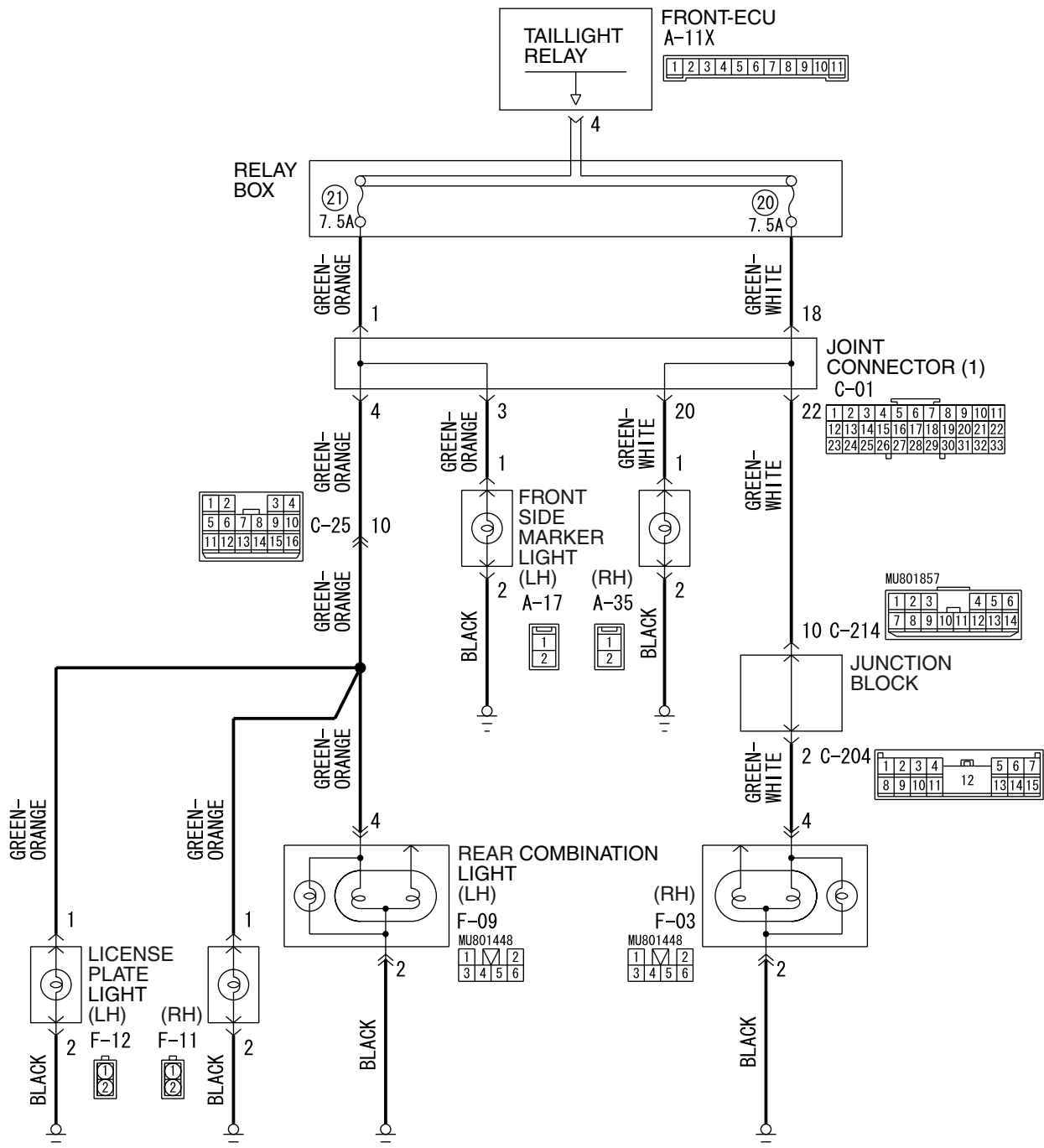
SYMPTOM	INSPECTION PROCEDURE	REFERENCE PAGE
ETACS-ECU does not receive any signal from the rear fog light switch.	N-11	

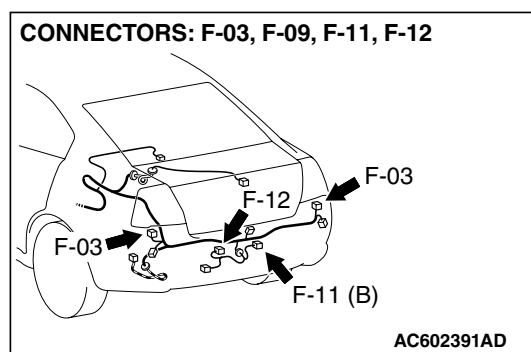
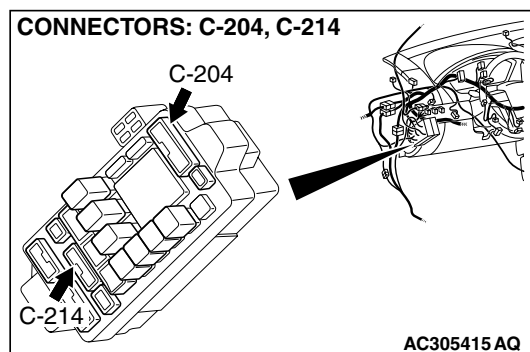
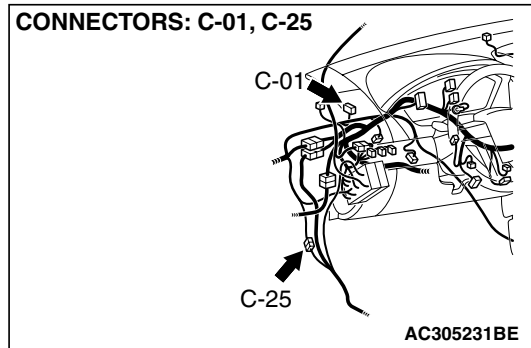
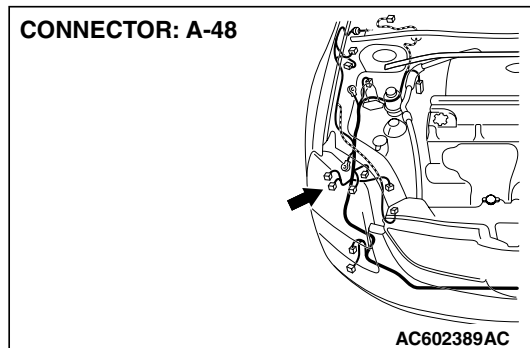
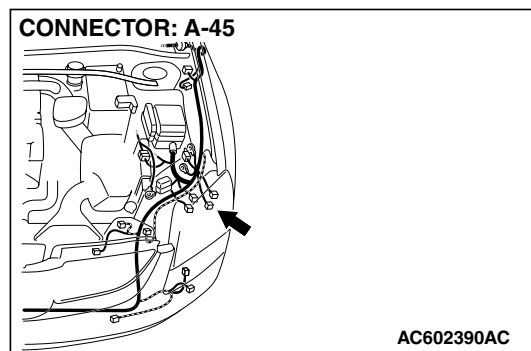
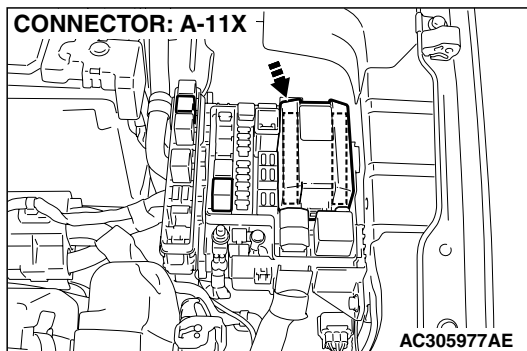
SYMPTOM PROCEDURES

HEADLIGHT AND TAILLIGHT

INSPECTION PROCEDURE H-6: Headlight and Taillight: The taillights, the position lights or the license plate light do not illuminate.

Taillights, Position Lights and License Plate Lights Circuit



**TECHNICAL DESCRIPTION (COMMENT)**

If the taillights, the position lights or the license plate lights do not illuminate, their bulb may be defective.

TROUBLESHOOTING HINTS

- The rear taillight light bulb may be defective

- The position light bulb may be defective
- The license plate light bulb may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

DIAGNOSIS**Required Special Tool:**

- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check the operation of each light.

Q: Which light does not illuminate?

taillight (LH), position light (LH) and license plate lights :

Go to Step 2.

taillight (RH) and position light (RH) : Go to Step 4.

taillight (LH) and license plate lights : Go to Step 6.

taillight (LH) : Go to Step 8.

taillight (RH) : Go to Step 13.

position light (LH) : Go to Step 19.

position light (RH) : Go to Step 25.

license plate lights : Go to Step 31.

license plate light (LH) : Go to Step 33.

license plate light (RH) : Go to Step 39.

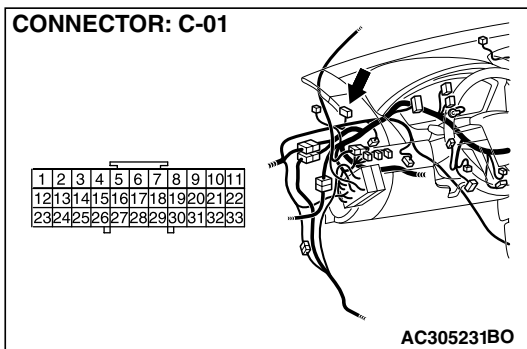
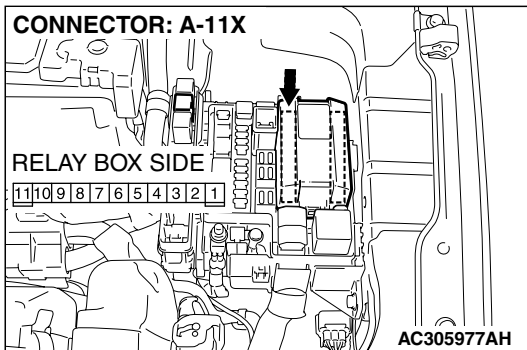
All lights : Refer to Inspection Procedure H-1 "The taillights do not illuminate normally."

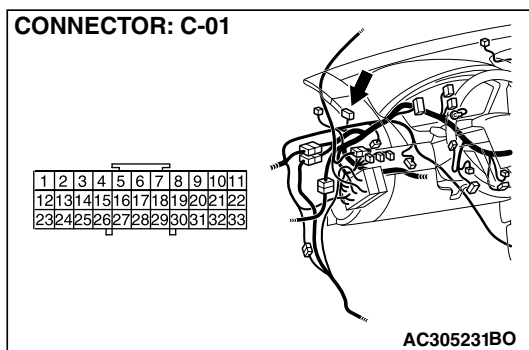
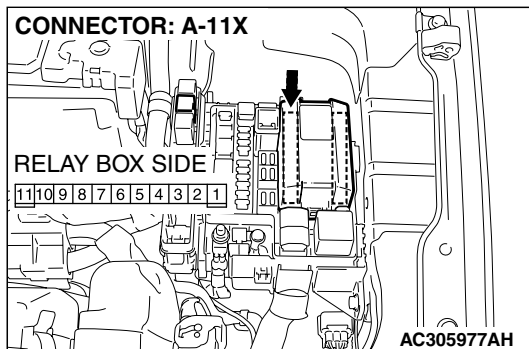
STEP 2. Check joint connector C-01 and front-ECU connector A-11X for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are joint connector C-01 and front-ECU connector A-11X in good condition?

YES : Go to Step 3.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. The position light (LH), the taillight (LH) and the license plate lights should illuminate normally.



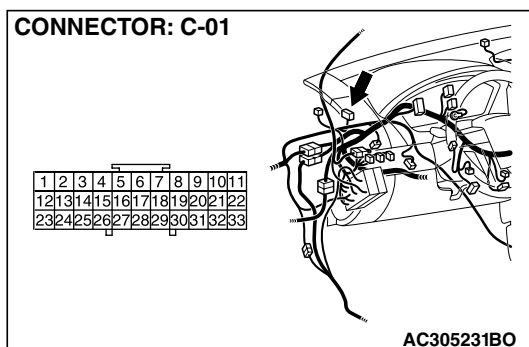
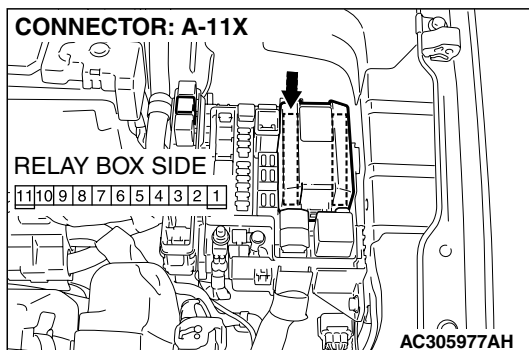


STEP 3. Check the wiring harness between joint connector C-01 (terminal 1) and front-ECU connector A-11X (terminal 4).

Q: Is the wiring harness between joint connector C-01 (terminal 1) and front-ECU connector A-11X (terminal 4) in good condition?

YES : No action is necessary and testing is complete.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. The position light (LH), the taillight (LH) and the license plate lights should illuminate normally.

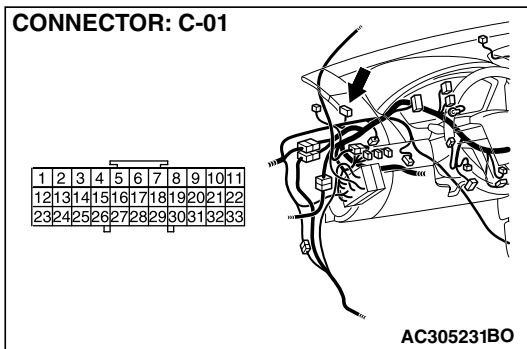
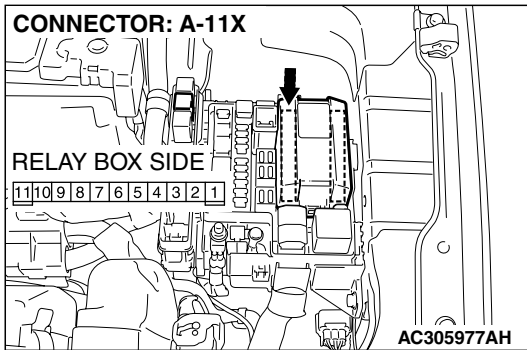


STEP 4. Check joint connector C-01 and front-ECU connector A-11X for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are joint connector C-01 and front-ECU connector A-11X in good condition?

YES : Go to Step 5.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. The position light (RH) and the taillight (RH) should illuminate normally.

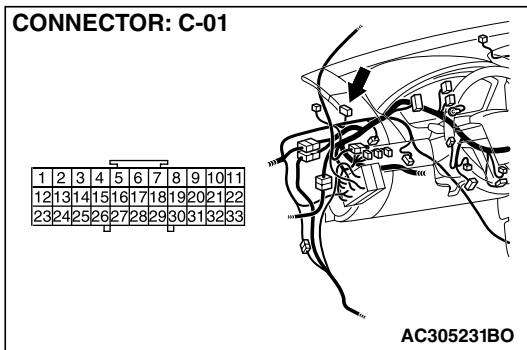


STEP 5. Check the wiring harness between joint connector C-01 (terminal 18) and front-ECU connector A-11X (terminal 4).

Q: Is the wiring harness between joint connector C-01 (terminal 18) and front-ECU connector A-11X (terminal 4) in good condition?

YES : No action is necessary and testing is complete.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. The position light (RH) and the taillight (RH) should illuminate normally.



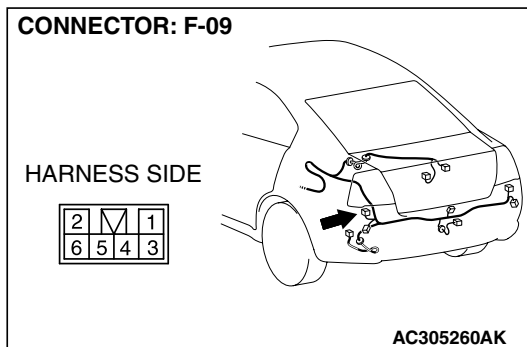
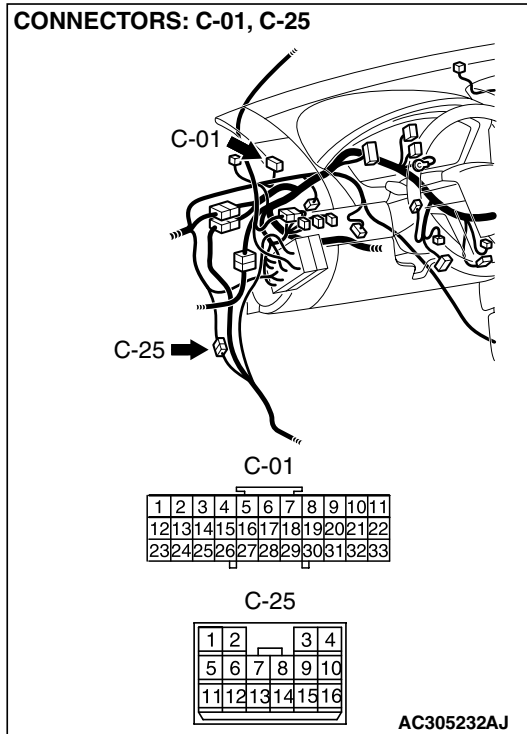
STEP 6. Check joint connector C-01 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is joint connector C-01 in good condition?

YES : Go to Step 7.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. The taillight (LH) and the license plate lights should illuminate normally.

STEP 7. Check the wiring harness between joint connector C-01 (terminal 4) and rear combination light (LH) connector F-09 (terminal 4).

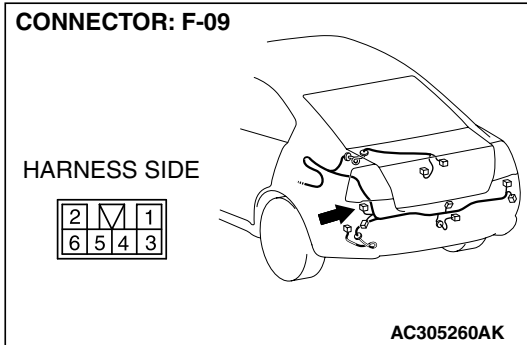


NOTE: Also check intermediate connector C-25 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If intermediate connector C-25 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection.

Q: Is the wiring harness between joint connector C-01 (terminal 4) and rear combination light (LH) connector F-09 (terminal 4) in good condition?

YES : No action is necessary and testing is complete.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. The taillight (LH) and the license plate lights should illuminate normally.



STEP 8. Check rear combination light (LH) connector F-09 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is rear combination light (LH) connector F-09 in good condition?

YES : Go to Step 9.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Check that the taillight (LH) illuminates normally.

STEP 9. Check the tail light bulb (LH).

- (1) Remove the tail light bulb (LH).
- (2) Verify that the tail light bulb (LH) is not damaged or burned out.

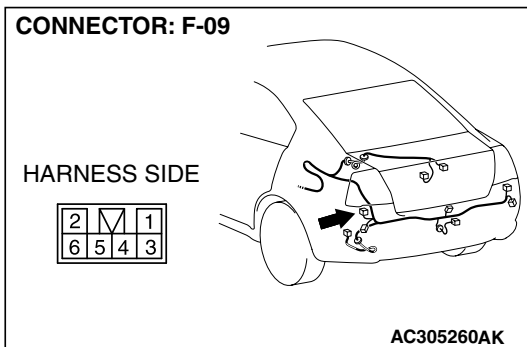
Q: Is the tail light bulb (LH) in good condition?

YES : Go to Step 10.

NO : Replace the tail light bulb (LH). Verify that the taillight (LH) illuminates normally.

STEP 10. Check the ground circuit to the rear combination light (LH). Measure the resistance at rear combination light (LH) connector F-09.

- (1) Disconnect rear combination light (LH) connector F-09 and measure the resistance available at the wiring harness side of the connector.



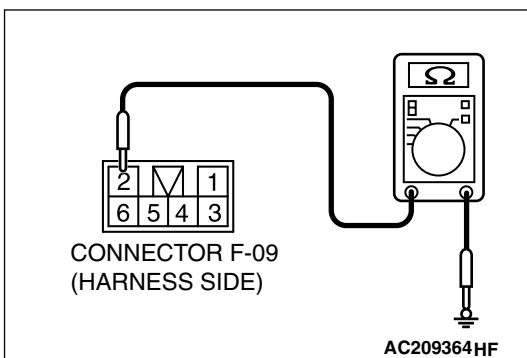
- (2) Measure the resistance value between terminal 2 and ground.

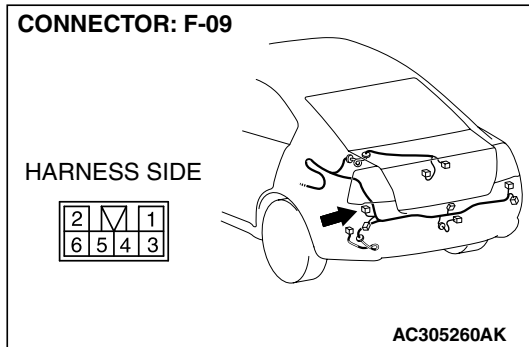
- The resistance should be 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 12.

NO : Go to Step 11.



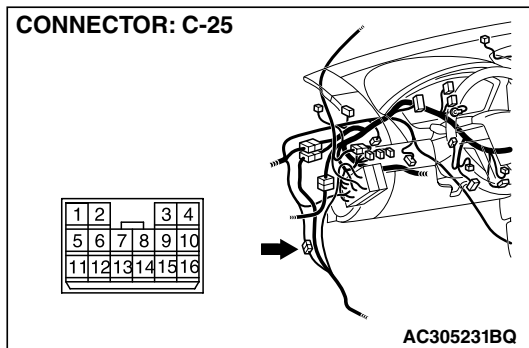


STEP 11. Check the wiring harness between rear combination light (LH) connector F-09 (terminal 2) and ground.

Q: Is the wiring harness between rear combination light (LH) connector F-09 (terminal 2) and ground in good condition?

YES : Replace the rear combination light socket (LH). Verify that the taillight (LH) illuminates normally.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the taillight (LH) illuminates normally.

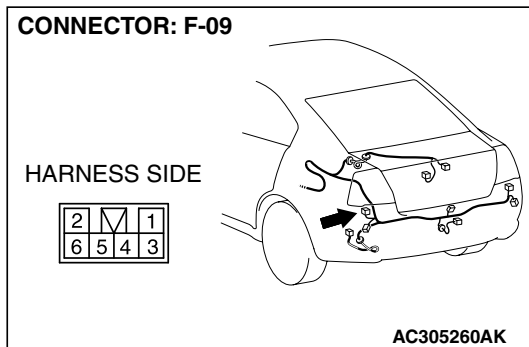


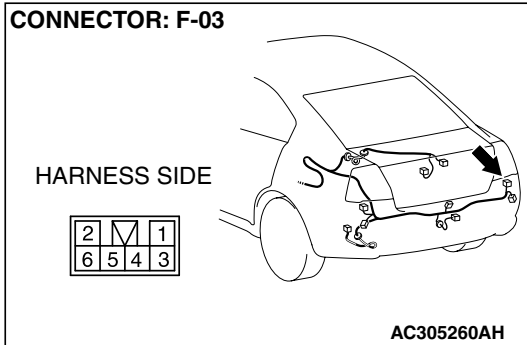
STEP 12. Check the wiring harness between rear combination light (LH) connector F-09 (terminal 4) and intermediate connector C-25 (terminal 10).

Q: Is the wiring harness between rear combination light (LH) connector F-09 (terminal 4) and intermediate connector C-25 (terminal 10) in good condition?

YES : Replace the rear combination light socket (LH). Verify that the taillight (LH) illuminates normally.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the taillight (LH) illuminates normally.





STEP 13. Check rear combination light (RH) connector F-03 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is rear combination light (RH) connector F-03 in good condition?

YES : Go to Step 14.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Check that the taillight (RH) illuminates normally.

STEP 14. Check the taillight bulb (RH).

- (1) Remove the taillight bulb (RH).
- (2) Verify that the taillight bulb (RH) is not damaged or burned out.

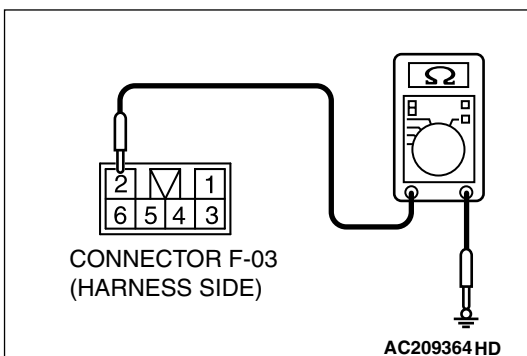
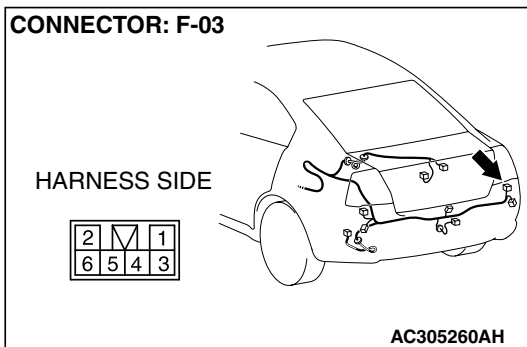
Q: Is the taillight bulb (RH) in good condition?

YES : Go to Step 15.

NO : Replace the taillight bulb (RH). Verify that the taillight (RH) illuminates normally.

STEP 15. Check the ground circuit to the rear combination light (RH). Measure the resistance at rear combination light (RH) connector F-03.

- (1) Disconnect rear light (RH) connector F-03 and measure the resistance available at the wiring harness side of the connector.



- (2) Measure the resistance value between terminal 2 and ground.

- The resistance should be 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

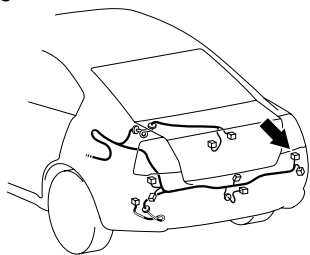
YES : Go to Step 17.

NO : Go to Step 16.

CONNECTOR: F-03

HARNESS SIDE

2	1
6	3



AC305260AH

STEP 16. Check the wiring harness between rear combination light (RH) connector F-03 (terminal 2) and ground.

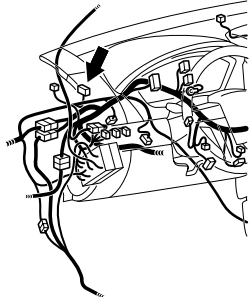
Q: Is the wiring harness between rear combination light (RH) connector F-03 (terminal 2) and ground in good condition?

YES : Replace the rear combination light socket (RH). Verify that the taillight (RH) illuminates normally.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the taillight (RH) illuminates normally.

CONNECTOR: C-01

1	2	3	4	5	6	7	8	9	10	11
12	13	14	15	16	17	18	19	20	21	22
23	24	25	26	27	28	29	30	31	32	33



AC305231BO

STEP 17. Check joint connector C-01 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is joint connector C-01 in good condition?

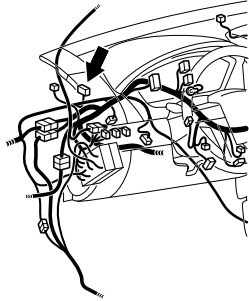
YES : Go to Step 18.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Check that the taillight (RH) illuminates normally.

STEP 18. Check the wiring harness between rear combination light (RH) connector F-03 (terminal 4) and joint connector C-01 (terminal 22).

CONNECTOR: C-01

1	2	3	4	5	6	7	8	9	10	11
12	13	14	15	16	17	18	19	20	21	22
23	24	25	26	27	28	29	30	31	32	33

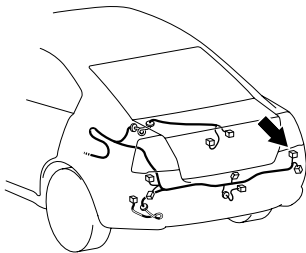


AC305231BO

CONNECTOR: F-03

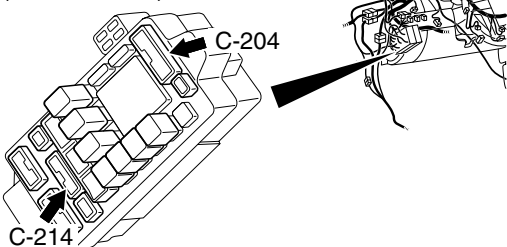
HARNESS SIDE

2	M	1
6	5	4
3		



AC305260AH

CONNECTORS: C-204, C-214
JUNCTION BLOCK
(FRONT VIEW)



HARNESS SIDE
C-204

7	6	5		4	3	2	1
15	14	13	12	11	10	9	8

HARNESS SIDE
C-214

6	5	4		3	2	1
14	13	12	11	10	9	8
7						

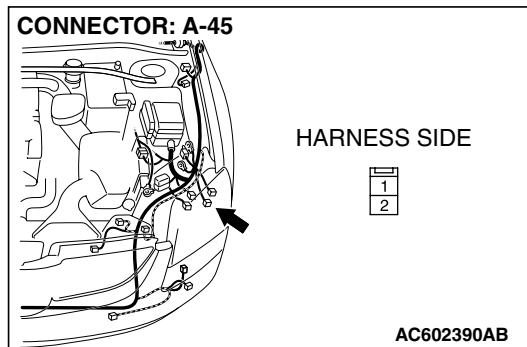
AC305416AG

NOTE: Also check junction block connectors C-204 and C-214 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-204 or C-214 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection.

Q: Is the wiring harness between rear combination light (RH) connector F-03 (terminal 4) and joint connector C-01 (terminal 22) in good condition?

YES : Replace the rear combination light socket (RH). Verify that the taillight (RH) illuminates normally.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the taillight (RH) illuminates normally.



STEP 19. Check position light (LH) connector A-45 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is position light (LH) connector A-45 in good condition?

YES : Go to Step 20.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Check that the position light (LH) illuminates normally.

STEP 20. Check the position light bulb (LH).

- (1) Remove the position light bulb (LH).
- (2) Verify that the position light bulb (LH) is not damaged or burned out.

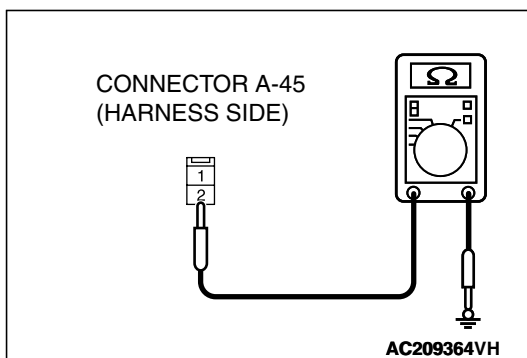
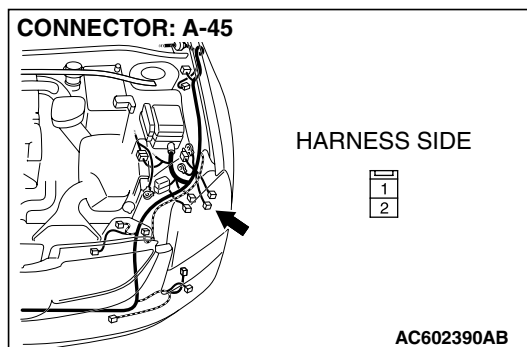
Q: Is the position light bulb (LH) in good condition?

YES : Go to Step 21.

NO : Replace the position light bulb (LH). Verify that the position light (LH) illuminates normally.

STEP 21. Check the ground circuit to the position light (LH). Measure the resistance at position light (LH) connector A-45.

- (1) Disconnect position light (LH) connector A-45 and measure the resistance available at the wiring harness side of the connector.



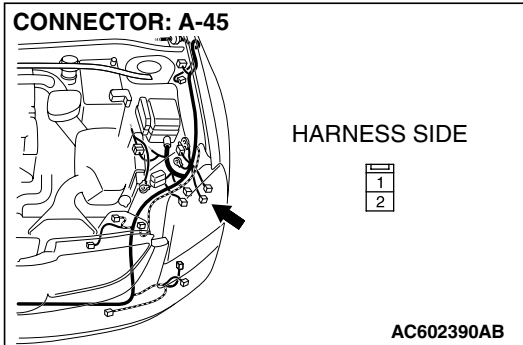
- (2) Measure the resistance value between terminal 2 and ground.

- The resistance should be 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 23.

NO : Go to Step 22.

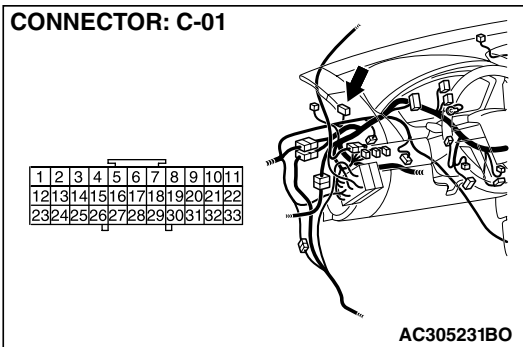


STEP 22. Check the wiring harness between position light (LH) connector A-45 (terminal 2) and ground.

Q: Is the wiring harness between position light (LH) connector A-45 (terminal 2) and ground in good condition?

YES : Replace the position light socket (LH). Verify that the position light (LH) illuminates normally.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the position light (LH) illuminates normally.

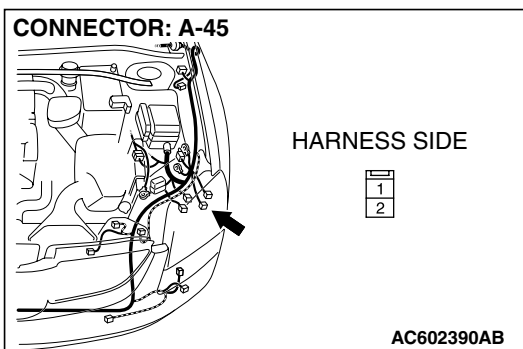


STEP 23. Check joint connector C-01 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is joint connector C-01 in good condition?

YES : Go to Step 24.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Check that the position light (LH) illuminates normally.

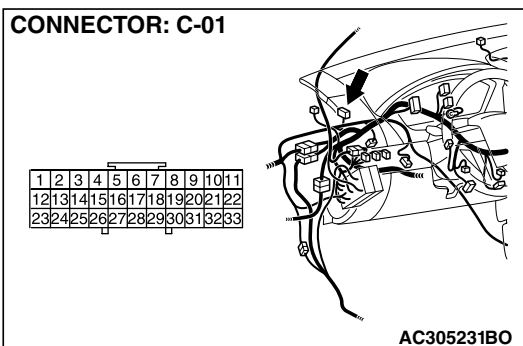


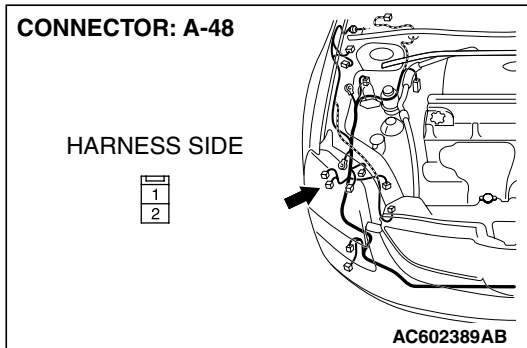
STEP 24. Check the wiring harness between position light (LH) connector A-45 (terminal 1) and joint connector C-01 (terminal 3).

Q: Is the wiring harness between position light (LH) connector A-45 (terminal 1) and joint connector C-01 (terminal 3) in good condition?

YES : No action is necessary and testing is complete.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the position light (LH) illuminates normally.





STEP 25. Check position light (RH) connector A-48 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is position light (RH) connector A-48 in good condition?

YES : Go to Step 26.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Check that the position light (RH) illuminates normally.

STEP 26. Check the position light bulb (RH).

- (1) Remove the position light bulb (RH).
- (2) Verify that the position light bulb (RH) is not damaged or burned out.

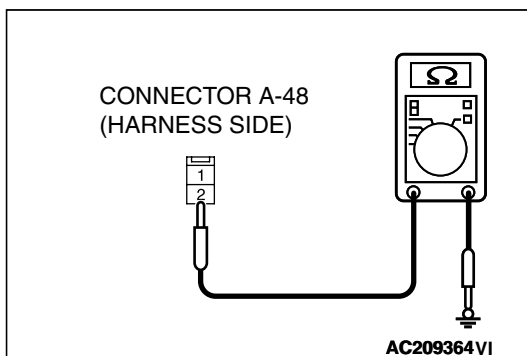
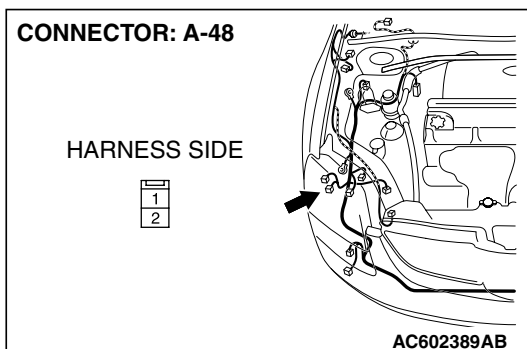
Q: Is the position light bulb (RH) in good condition?

YES : Go to Step 27.

NO : Replace the front side marker light bulb (RH). Verify that the position light (RH) illuminates normally.

STEP 27. Check the ground circuit to the position light (RH). Measure the resistance at position light (RH) connector A-48.

- (1) Disconnect position light (RH) connector A-48, and measure the resistance available at the harness side of the connector.



- (2) Measure the resistance value between terminal 2 and ground.

- The resistance should be 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

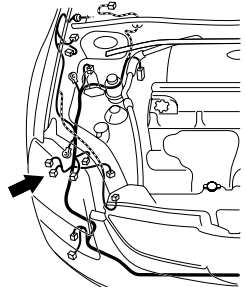
YES : Go to Step 29.

NO : Go to Step 28.

CONNECTOR: A-48

HARNESS SIDE

1
2



AC602389AB

STEP 28. Check the wiring harness between position light light (RH) connector A-48 (terminal 2) and ground.

Q: Is the wiring harness between position light (RH) connector A-48 (terminal 2) and ground in good condition?

YES : Replace the position light socket (RH). Verify that the position light (RH) illuminates normally.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the position light (RH) illuminates normally.

STEP 29. Check joint connector C-01 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

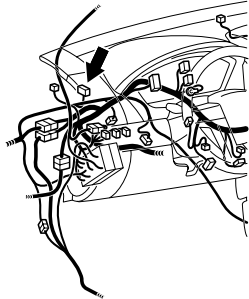
Q: Is joint connector C-01 in good condition?

YES : Go to Step 30.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Check that the position light (RH) illuminates normally.

CONNECTOR: C-01

1	2	3	4	5	6	7	8	9	10	11
12	13	14	15	16	17	18	19	20	21	22
23	24	25	26	27	28	29	30	31	32	33



AC305231BO

STEP 30. Check the wiring harness between position light light (RH) connector A-48 (terminal 1) and joint connector C-01 (terminal 19).

Q: Is the wiring harness between position light (RH) connector A-48 (terminal 1) and joint connector C-01 (terminal 19) in good condition?

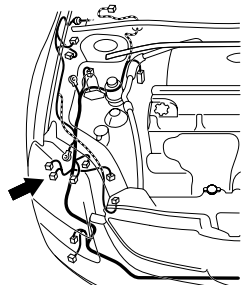
YES : No action is necessary and testing is complete.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the position light (RH) illuminates normally.

CONNECTOR: A-48

HARNESS SIDE

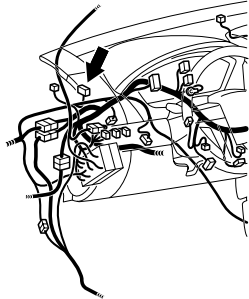
1
2



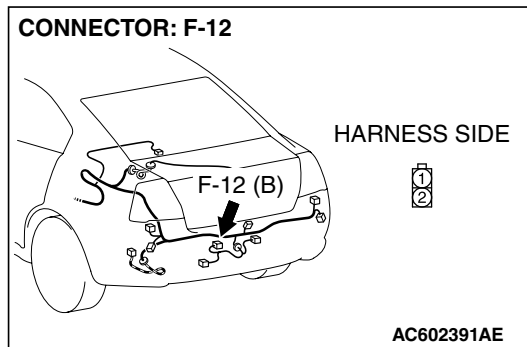
AC602389AB

CONNECTOR: C-01

1	2	3	4	5	6	7	8	9	10	11
12	13	14	15	16	17	18	19	20	21	22
23	24	25	26	27	28	29	30	31	32	33



AC305231BO

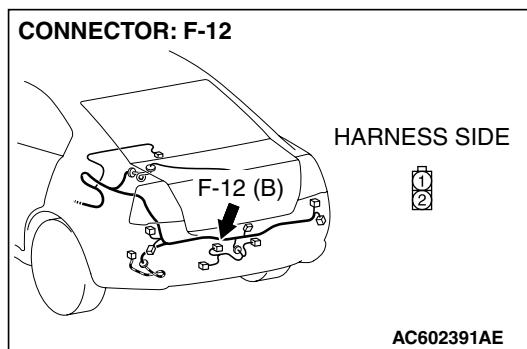


STEP 31. Check license plate light (LH) connector F-12 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is license plate light (LH) connector F-12 in good condition?

YES : Go to Step 32.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Check that the license plate lights illuminate normally.

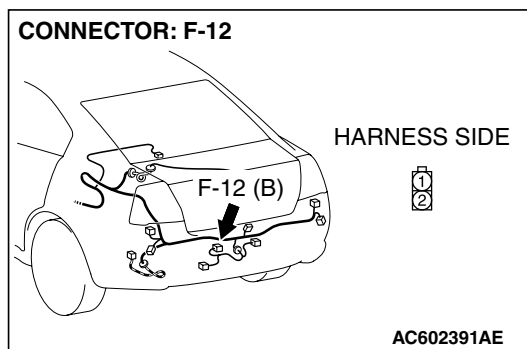


STEP 32. Check the wiring harness between license plate light (LH) connector F-06 (terminal 2) and ground.

Q: Is the wiring harness between license plate light (LH) connector F-06 (terminal 2) and ground in good condition?

YES : Replace the license plate light socket. Verify that the license plate lights illuminate normally.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the license plate lights illuminate normally.



STEP 33. Check license plate light (LH) connector F-12 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is license plate light (LH) connector F-12 in good condition?

YES : Go to Step 34.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Check that the license plate light (LH) illuminate normally.

STEP 34. Check the license plate light (LH) bulb.

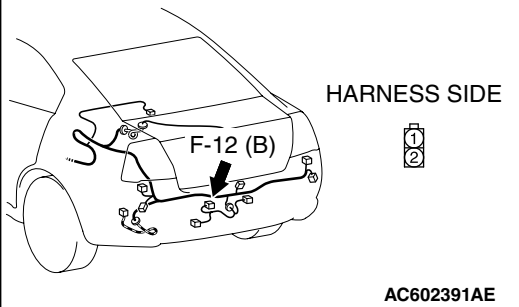
- (1) Remove the license plate light (LH) bulb.
- (2) Verify that the license plate light (LH) bulb is not damaged or burned out.

Q: Is the license plate light bulb in good condition?

YES : Go to Step 35.

NO : Replace the license plate light (LH) bulb. Verify that the license plate lights illuminate normally.

CONNECTOR: F-12



STEP 35. Check the ground circuit to the license plate light (LH). Measure the resistance at license plate light (LH) connector F-12.

- (1) Disconnect license plate light (LH) connector F-12 and measure the resistance available at the wiring harness side of the connector.

- (2) Measure the resistance value between terminal 2 and ground.

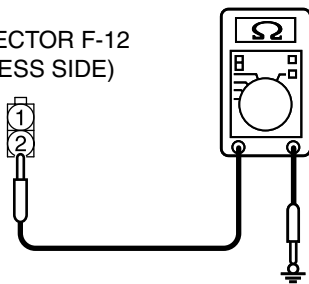
- The resistance should be 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

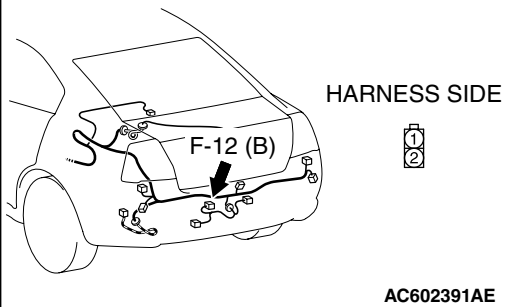
YES : Go to Step 37.

NO : Go to Step 36.

**CONNECTOR F-12
(HARNESS SIDE)**



CONNECTOR: F-12



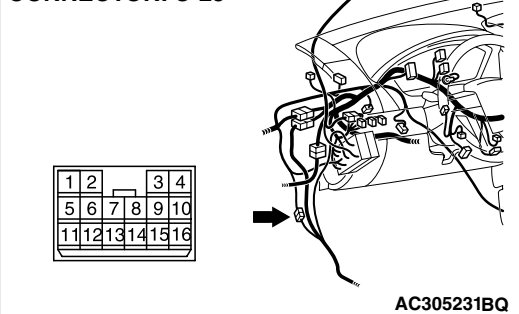
STEP 36. Check the wiring harness between license plate light connector (LH) F-12 (terminal 2) and ground.

Q: Is the wiring harness between license plate light (LH) connector F-12 (terminal 2) and ground in good condition?

YES : Replace the license plate light socket. Verify that the license plate light (LH) illuminate normally.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the license plate light (LH) illuminate normally.

CONNECTOR: C-25



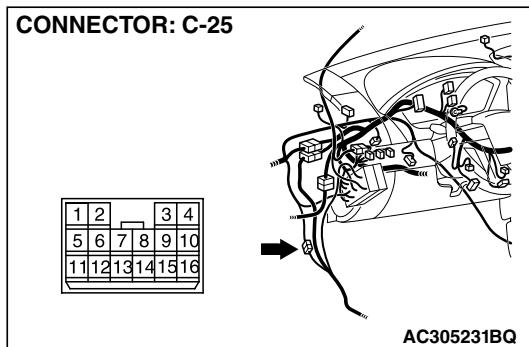
STEP 37. Check intermediate connector C-25 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is intermediate connector C-25 in good condition?

YES : Go to Step 38.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Check that the license plate light (LH) illuminate normally.

CONNECTOR: C-25



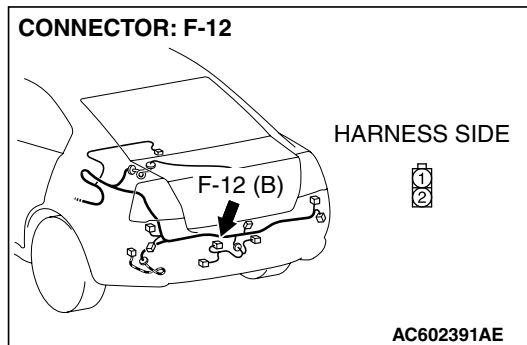
STEP 38. Check the wiring harness between license plate light (LH) connector F-12 (terminal 1) and intermediate connector C-25 (terminal 10).

Q: Is the wiring harness between license plate light (LH) connector F-12 (terminal 1) and intermediate connector C-25 (terminal 10) in good condition?

YES : Replace the license plate light socket. Verify that the license plate light illuminate normally.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the license plate light (LH) illuminate normally.

CONNECTOR: F-12



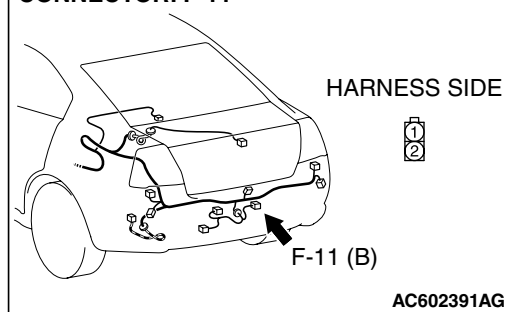
STEP 39. Check license plate light (RH) connector F-11 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is license plate light (RH) connector F-11 in good condition?

YES : Go to Step 40.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Check that the license plate light (LH) illuminate normally.

CONNECTOR: F-11



STEP 40. Check the license plate light (RH) bulb.

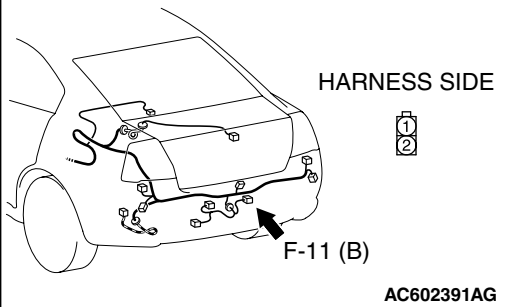
- (1) Remove the license plate light (RH) bulb.
- (2) Verify that the license plate light (RH) bulb is not damaged or burned out.

Q: Is the license plate light bulb in good condition?

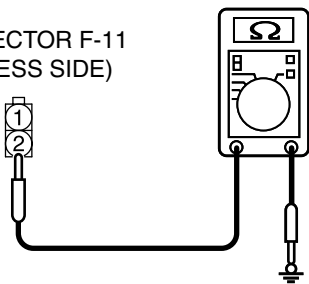
YES : Go to Step 41.

NO : Replace the license plate light (RH) bulb. Verify that the license plate lights illuminate normally.

CONNECTOR: F-11



**CONNECTOR F-11
(HARNESS SIDE)**



STEP 41. Check the ground circuit to the license plate light (RH). Measure the resistance at license plate light (RH) connector F-11.

(1) Disconnect license plate light (RH) connector F-11 and measure the resistance available at the wiring harness side of the connector.

(2) Measure the resistance value between terminal 2 and ground.

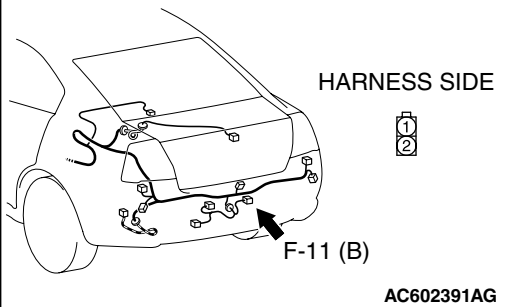
- The resistance should be 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 43.

NO : Go to Step 42.

CONNECTOR: F-11



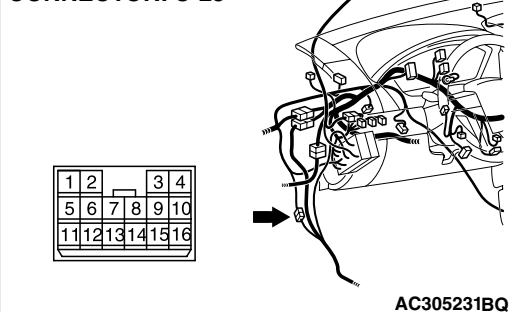
STEP 42. Check the wiring harness between license plate light connector (RH) F-11 (terminal 2) and ground.

Q: Is the wiring harness between license plate light (RH) connector F-11 (terminal 2) and ground in good condition?

YES : Replace the license plate light socket. Verify that the license plate light (RH) illuminate normally.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the license plate light (RH) illuminate normally.

CONNECTOR: C-25



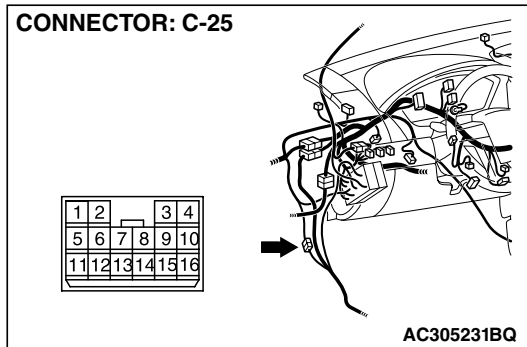
STEP 43. Check intermediate connector C-25 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is intermediate connector C-25 in good condition?

YES : Go to Step 44.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Check that the license plate light (RH) illuminate normally.

CONNECTOR: C-25



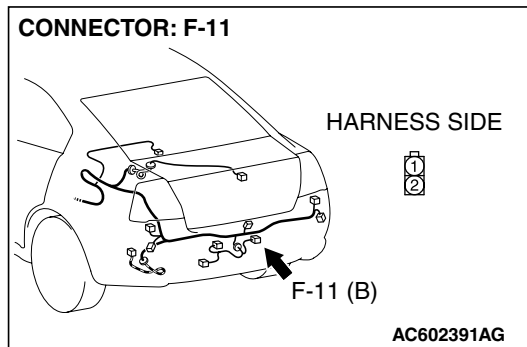
STEP 44. Check the wiring harness between license plate light (RH) connector F-11 (terminal 1) and intermediate connector C-25 (terminal 10).

Q: Is the wiring harness between license plate light (RH) connector F-11 (terminal 1) and intermediate connector C-25 (terminal 10) in good condition?

YES : Replace the license plate light socket. Verify that the license plate light illuminate normally.

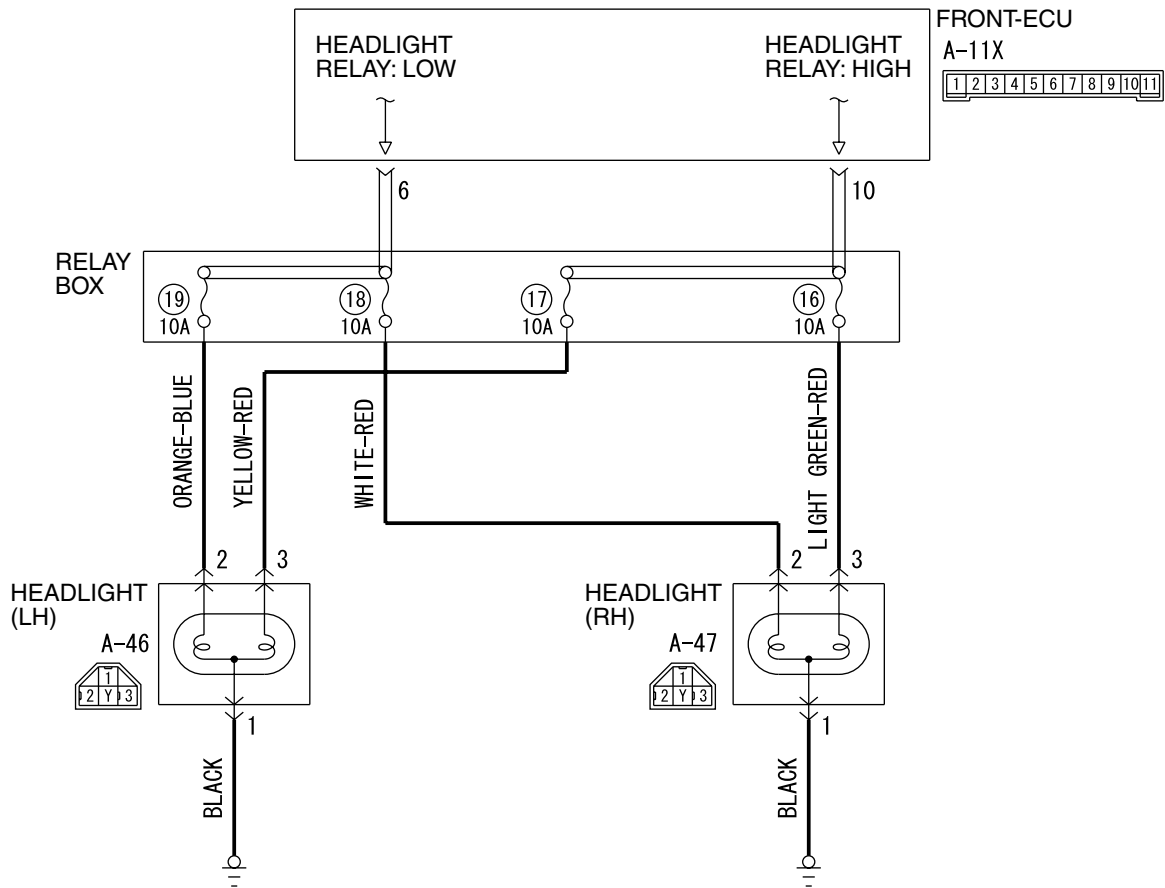
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the license plate light (RH) illuminate normally.

CONNECTOR: F-11

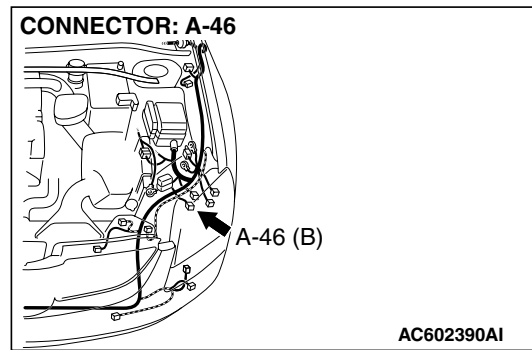
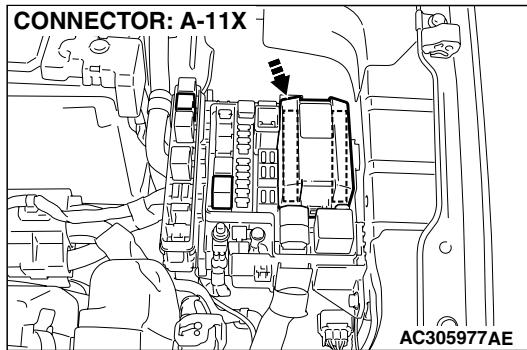


INSPECTION PROCEDURE H-7: Headlight and Taillight: One of the headlights does not illuminate.

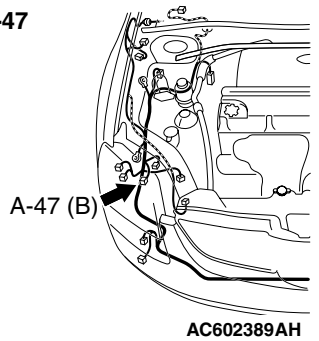
Headlights Circuit



W7P54M173A



CONNECTOR: A-47

**TECHNICAL DESCRIPTION (COMMENT)**

If one of the headlights does not illuminate, a headlight bulb may be defective.

TROUBLESHOOTING HINTS

- The headlight bulb may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

DIAGNOSIS**Required Special Tool:**

- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check the headlight operation.**Q: Which of the headlights does not illuminate?**

LH (low and high beam) : Go to Step 2.

RH (low and high beam) : Go to Step 5.

LH (only low-beam) : Go to Step 8.

RH (only low-beam) : Go to Step 11.

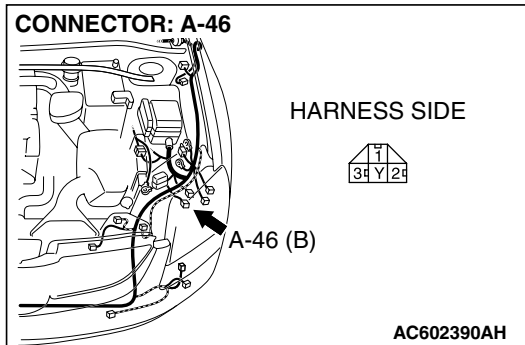
LH (only high-beam) : Go to Step 14.

RH (only high-beam) : Go to Step 17.

Low beam only (both RH and LH) : Refer to Inspection Procedure H-2 "The headlights (low-beam) do not illuminate normally."

High beam only (both RH and LH) : Refer to Inspection Procedure H-3 "The headlights (high-beam) do not illuminate normally."

High beam indicator light : Refer to Inspection Procedure H-8 "The high-beam indicator light does not illuminate."



STEP 2. Check headlight (LH) connector A-46 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is headlight (LH) connector A-46 in good condition?

YES : Go to Step 3.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Check that the headlights illuminate normally.

STEP 3. Check headlight (LH) bulb.

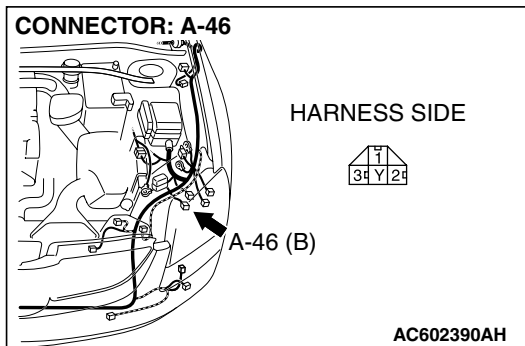
(1) Remove the headlight (LH) bulb.

(2) Verify that the headlight (LH) bulb is not damaged or burned out.

Q: Is headlight (LH) bulb normal?

YES : Go to Step 4.

NO : Replace the headlight (LH) bulb. Verify that the headlights illuminate normally.

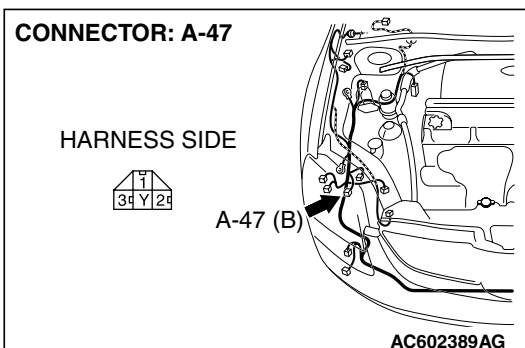


STEP 4. Check the wiring harness between headlight (LH) connector A-46 (terminal 1) and ground.

Q: Is the wiring harness between headlight (LH) connector A-46 (terminal 1) and ground in good condition?

YES : No action is necessary and testing is complete.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the headlights illuminate normally.



STEP 5. Check headlight (RH) connector A-47 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

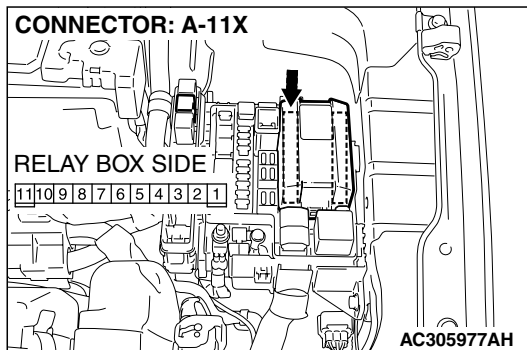
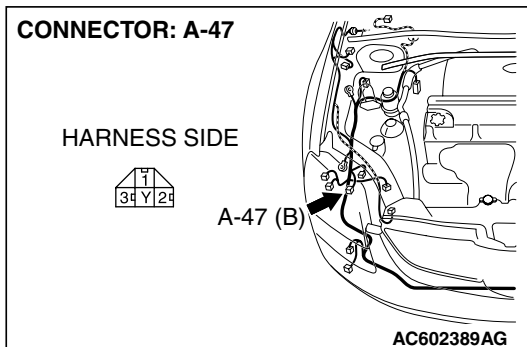
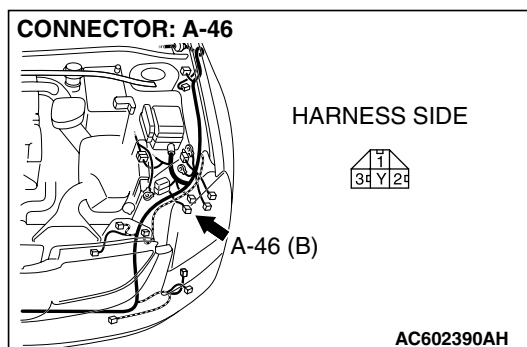
Q: Is headlight (RH) connector A-47 in good condition?

YES : Go to Step 6.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Check that the headlights illuminate normally.

STEP 6. Check the headlight (RH) bulb.

- (1) Remove the headlight (RH) bulb.
- (2) Verify that the headlight (RH) bulb is not damaged or burned out.

Q: Is headlight (RH) bulb normal?**YES** : Go to Step 7.**NO** : Replace the headlight (RH) bulb. Verify that the headlights illuminate normally.**STEP 7. Check the wiring harness between headlight (RH) connector A-47 (terminal 1) and ground.****Q: Is the wiring harness between headlight (RH) connector A-47 (terminal 1) and ground in good condition?****YES** : No action is necessary and testing is complete.**NO** : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the headlights illuminate normally.**STEP 8. Check headlight (LH) connector A-46 and front-ECU connector A-11X for loose, corroded or damaged terminals, or terminals pushed back in the connector.****Q: Are headlight (LH) connector A-46 and front-ECU connector A-11X in good condition?****YES** : Go to Step 9.**NO** : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Check that the headlights illuminate normally.

STEP 9. Check headlight (LH) bulb.

- (1) Remove the headlight (LH) bulb.
- (2) Verify that the headlight (LH) bulb is not damaged or burned out.

Q: Is headlight (LH) bulb normal?

YES : Go to Step 10.

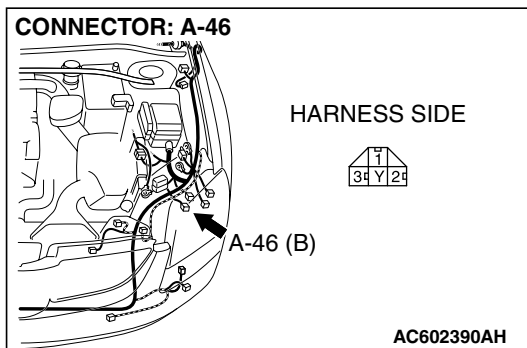
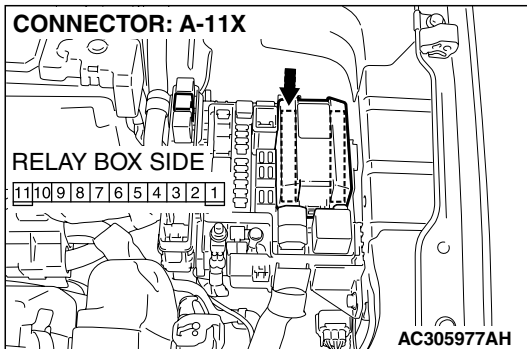
NO : Replace the headlight (LH) bulb. Verify that the headlights illuminate normally.

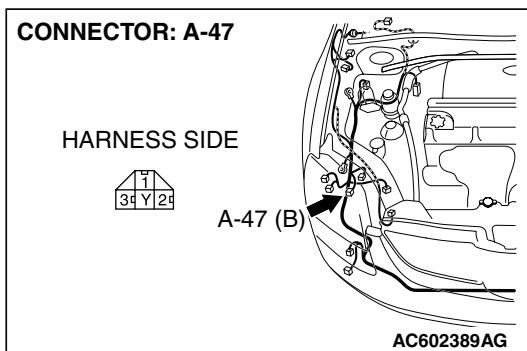
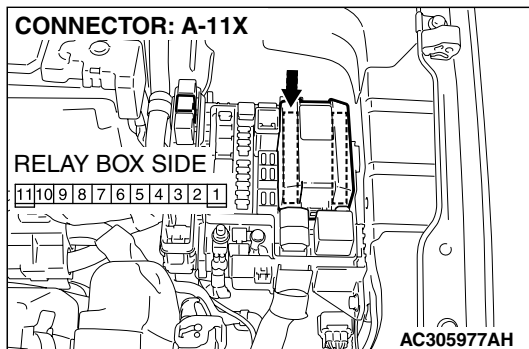
STEP 10. Check the wiring harness between headlight (LH) connector A-46 (terminal 2) and front-ECU connector A-11X (terminal 6).

Q: Is the wiring harness between headlight (LH) connector A-46 (terminal 2) and front-ECU connector A-11X (terminal 6) in good condition?

YES : No action is necessary and testing is complete.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the headlights illuminate normally.





STEP 11. Check headlight (RH) connector A-47 and front-ECU connector A-11X for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are headlight (RH) connector A-47 and front-ECU connector A-11X in good condition?

YES : Go to Step 12.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Check that the headlights illuminate normally.

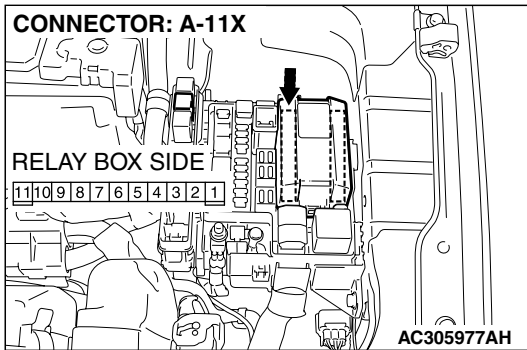
STEP 12. Check the headlight (RH) bulb.

- (1) Remove the headlight (RH) bulb.
- (2) Verify that the headlight (RH) bulb is not damaged or burned out.

Q: Is headlight (RH) bulb normal?

YES : Go to Step 13.

NO : Replace the headlight (RH) bulb. Verify that the headlights illuminate normally.

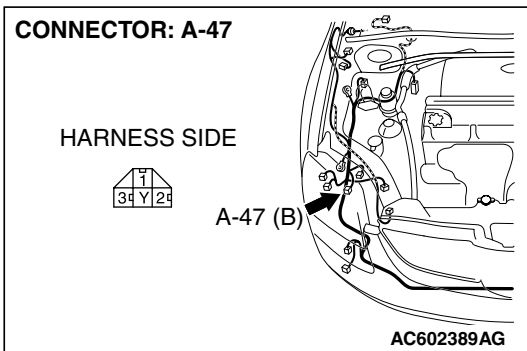


STEP 13. Check the wiring harness between headlight (RH) connector A-47 (terminal 2) and front-ECU connector A-11X (terminal 6).

Q: Is the wiring harness between headlight (RH) connector A-47 (terminal 2) and front-ECU connector A-11X (terminal 6) in good condition?

YES : No action is necessary and testing is complete.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the headlights illuminate normally.

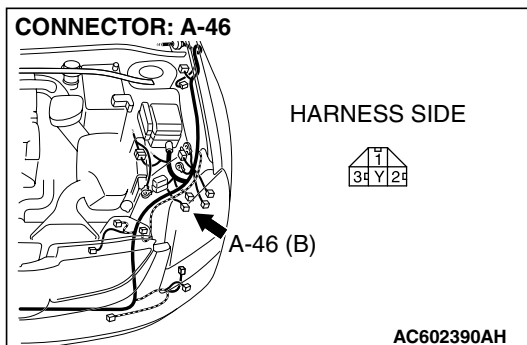
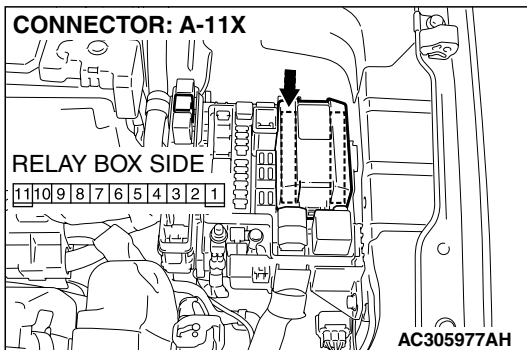


STEP 14. Check headlight (LH) connector A-46 and front-ECU connector A-11X for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are headlight (LH) connector A-46 and front-ECU connector A-11X in good condition?

YES : Go to Step 15.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Verify that the headlights illuminate normally.



STEP 15. Check headlight (LH) bulb.

- (1) Remove the headlight (LH) bulb.
- (2) Verify that the headlight (LH) bulb is not damaged or burned out.

Q: Is headlight (LH) bulb normal?

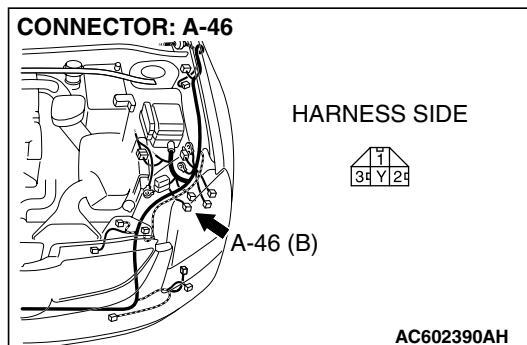
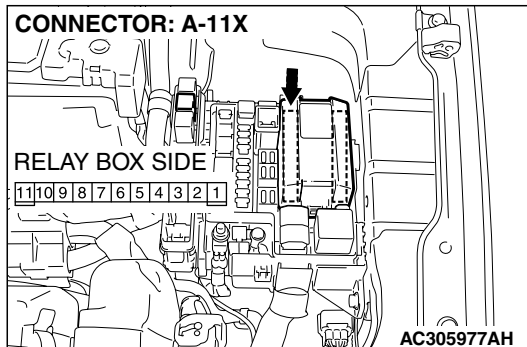
YES : Go to Step 16.

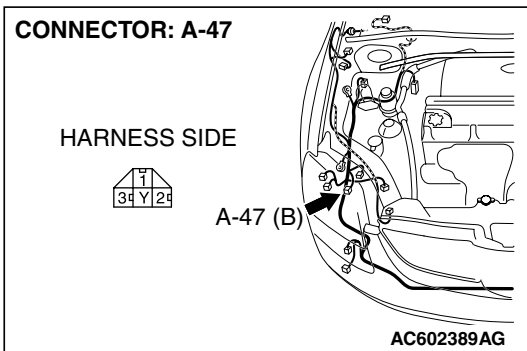
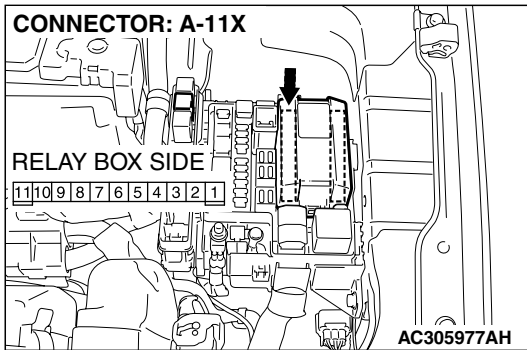
NO : Replace the headlight (LH) bulb. Verify that the headlights illuminate normally.

STEP 16. Check the wiring harness between headlight (LH) connector A-46 (terminal 3) and front-ECU connector A-11X (terminal 10).**Q: Is the wiring harness between headlight (LH) connector A-46 (terminal 3) and front-ECU connector A-11X (terminal 10) in good condition?**

YES : No action is necessary and testing is complete.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the headlights illuminate normally.





STEP 17. Check headlight (RH) connector A-47 and front-ECU connector A-11X for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Are headlight (RH) connector A-47 and front-ECU connector A-11X in good condition?

YES : Go to Step 18.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Verify that the headlights illuminate normally.

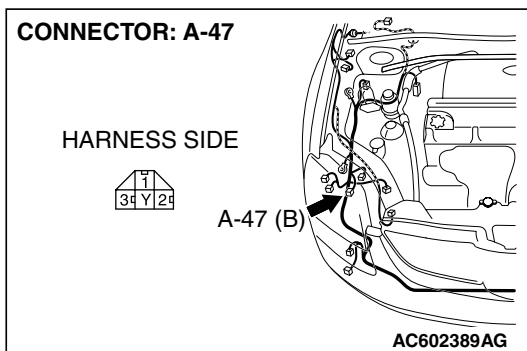
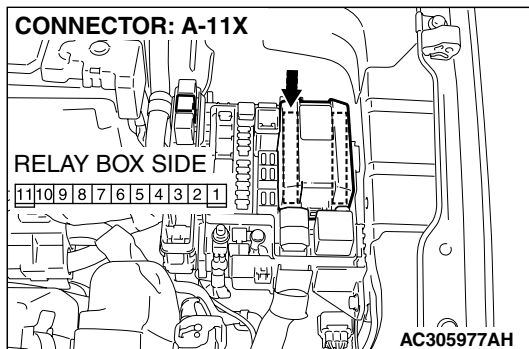
STEP 18. Check the headlight (RH) bulb.

- (1) Remove the headlight (RH) bulb.
- (2) Verify that the headlight (RH) bulb is not damaged or burned out.

Q: Is headlight (RH) bulb normal?

YES : Go to Step 19.

NO : Replace the headlight (RH) bulb. Verify that the headlights illuminate normally.

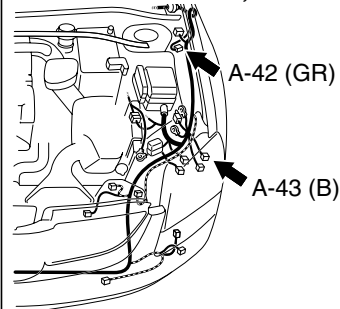


STEP 19. Check the wiring harness between headlight (RH) connector A-47 (terminal 3) and front-ECU connector A-11X (terminal 10).

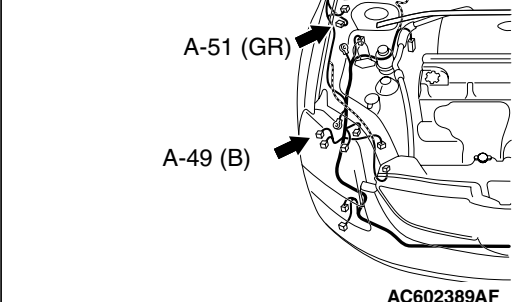
Q: Is the wiring harness between headlight (RH) connector A-47 (terminal 3) and front-ECU connector A-11X (terminal 10) in good condition?

YES : No action is necessary and testing is complete.

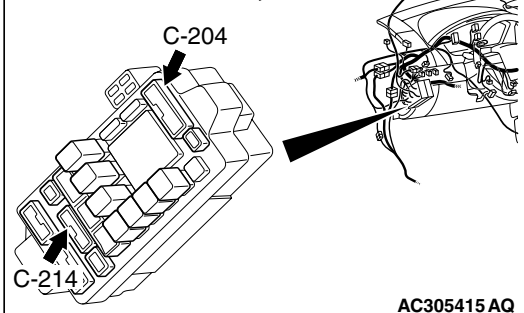
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the headlights illuminate normally.

CONNECTORS: A-42, A-43

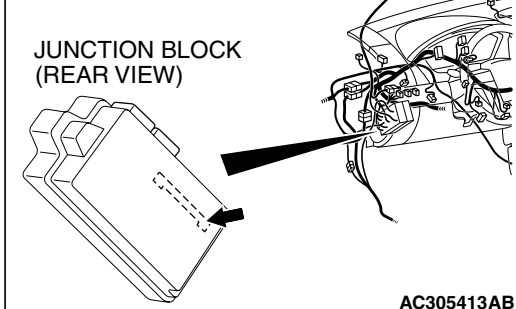
AC602390AG

CONNECTORS: A-49, A-51

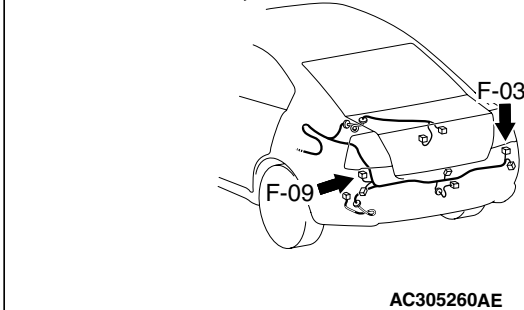
AC602389AF

CONNECTORS: C-204, C-214

AC305415AQ

CONNECTOR: C-219

AC305413AB

CONNECTORS: F-03, F-09

AC305260AE

TECHNICAL DESCRIPTION (COMMENT)

If the right or left turn-signal light does not illuminate, their bulb may be defective.

TROUBLESHOOTING HINTS

- The turn-signal light bulb may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector

DIAGNOSIS**Required Special Tool:**

- MB991223: Harness Set
- MB992006: Extra Fine Probe

STEP 1. Check the hazard warning light.

Q: Which turn-signal light does not illuminate?

Front turn-signal light (LH) : Go to Step 2.

Front turn-signal light (RH) : Go to Step 8.

Rear turn-signal light (LH) : Go to Step 14.

Rear turn-signal light (RH) : Go to Step 20.

Side turn-signal light (LH) : Go to Step 26.

Side turn-signal light (RH) : Go to Step 32.

Turn-signal indicators : Refer to Inspection Procedure I-4
"The turn-signal light indicator does not illuminate normally."

LH side or RH side only : Refer to Inspection Procedure I-1
"Turn-signal lights do not flash when the turn-signal light switch is turned on."

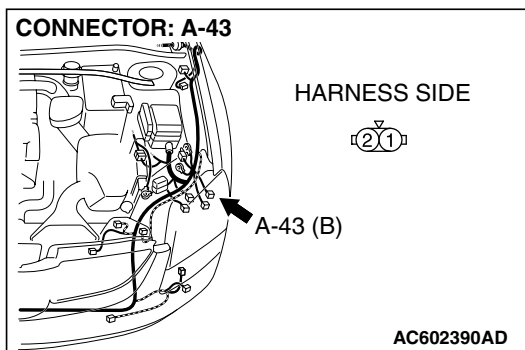
Both LH and RH sides : Refer to Inspection Procedure I-2
"Hazard warning lights do not flash when the hazard warning light switch is turned on."

STEP 2. Check front turn signal light (LH) connector A-43 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is front turn signal light (LH) connector A-43 in good condition?

YES : Go to Step 3.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Verify that the turn-signal lights illuminate normally.



STEP 3. Check the front turn-signal light bulb (LH).

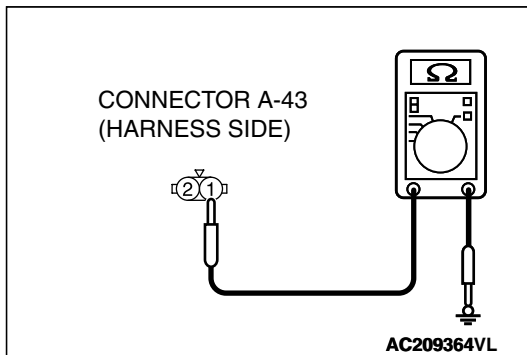
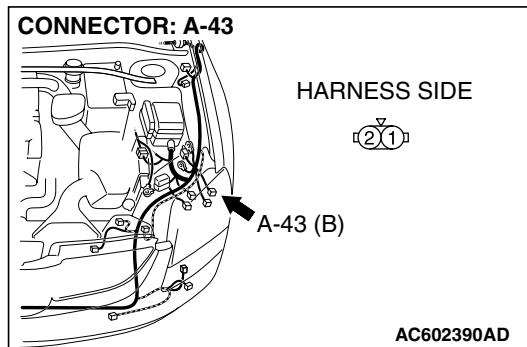
(1) Remove the front turn-signal (LH) light bulb.

(2) Verify that the front turn-signal light bulb (LH) is not damaged or burned out.

Q: Is the front turn-signal (LH) light bulb in good condition?

YES : Go to Step 4.

NO : Replace the front turn-signal (LH) light bulb. Verify that the turn-signal lights illuminate normally.



STEP 4. Check the ground circuit to the ETACS-ECU. Measure the resistance at front turn signal light (LH) connector A-43.

(1) Disconnect front turn signal light (LH) connector A-43 and measure the resistance available at the wiring harness side of the connector.

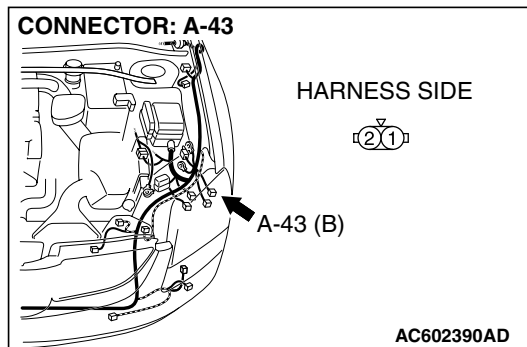
(2) Measure the resistance value between terminal 1 and ground.

- The resistance should be 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 6.

NO : Go to Step 5.

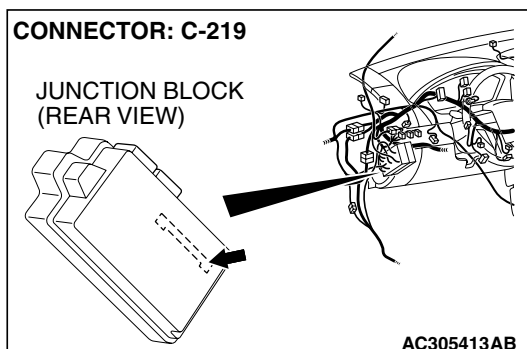


STEP 5. Check the wiring harness between front turn signal light (LH) connector A-43 (terminal 1) and ground.

Q: Is the wiring harness between front turn signal light (LH) connector A-43 (terminal 1) and ground in good condition?

YES : Replace the front turn signal light socket (LH). Verify that the turn-signal lights illuminate normally.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.



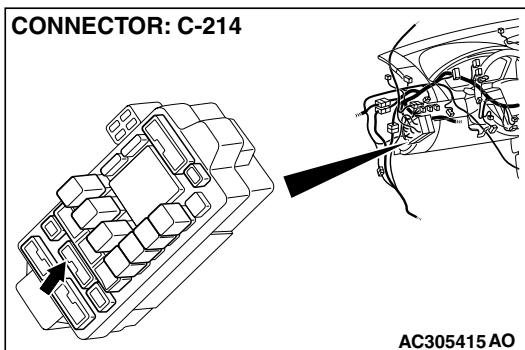
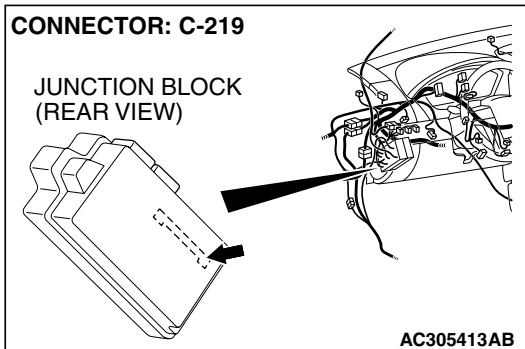
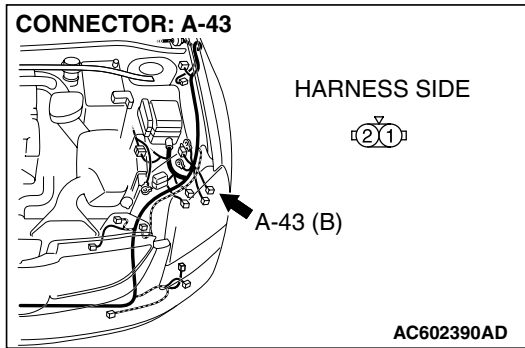
STEP 6. Check ETACS-ECU connector C-219 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-219 in good condition?

YES : Go to Step 7.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Verify that the turn-signal lights illuminate normally.

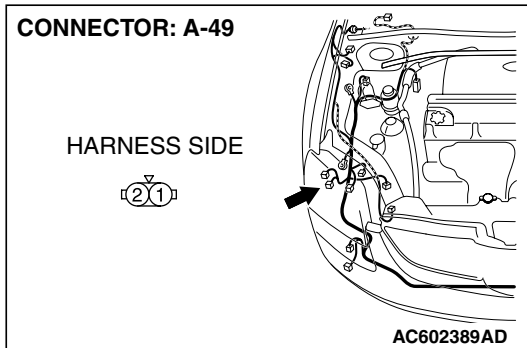
STEP 7. Check the wiring harness between front turn signal light (LH) connector A-43 (terminal 2) and ETACS-ECU connector C-219 (terminal 14).



NOTE: Also check junction block connector C-214 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-214 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection.

Q: Is the wiring harness between front turn signal light (LH) connector A-43 (terminal 2) and ETACS-ECU connector C-219 (terminal 14) in good condition?

- YES :** Replace the front turn signal light socket (LH). Verify that the turn-signal lights illuminate normally.
- NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.



STEP 8. Check front turn signal light (RH) connector A-49 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is front turn signal light (RH) connector A-49 in good condition?

YES : Go to Step 9.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Verify that the turn-signal lights illuminate normally.

STEP 9. Check the front turn-signal light bulb (RH).

- (1) Remove the front turn-signal (RH) light bulb.
- (2) Verify that the front turn-signal light bulb (RH) is not damaged or burned out.

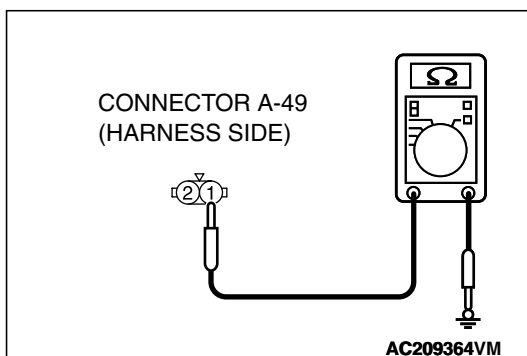
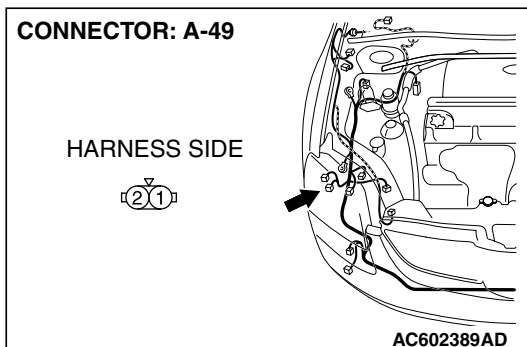
Q: Is the front turn-signal (RH) light bulb in good condition?

YES : Go to Step 10.

NO : Replace the front turn-signal (RH) light bulb. Verify that the turn-signal lights illuminate normally.

STEP 10. Check the ground circuit to the front turn signal light (RH). Measure the resistance at front turn signal light (RH) connector A-49.

- (1) Disconnect front turn signal light (RH) connector A-49 and measure the resistance available at the wiring harness side of the connector.



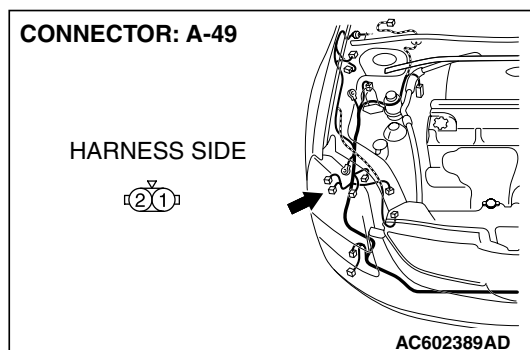
- (2) Measure the resistance value between terminal 1 and ground.

- The resistance should be 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 12.

NO : Go to Step 11.

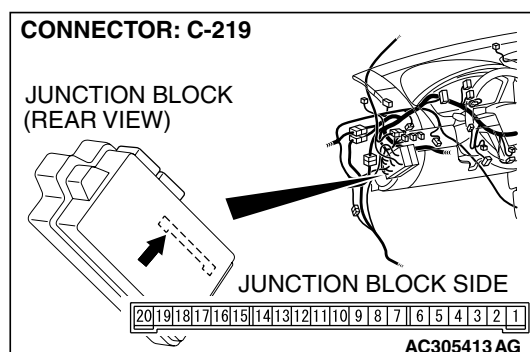


STEP 11. Check the wiring harness between front turn signal light (RH) connector A-49 (terminal 1) and ground.

Q: Is the wiring harness between front turn signal light (RH) connector A-49 (terminal 1) and ground in good condition?

YES : Replace the front turn signal light socket (RH). Verify that the turn-signal lights illuminate normally.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.

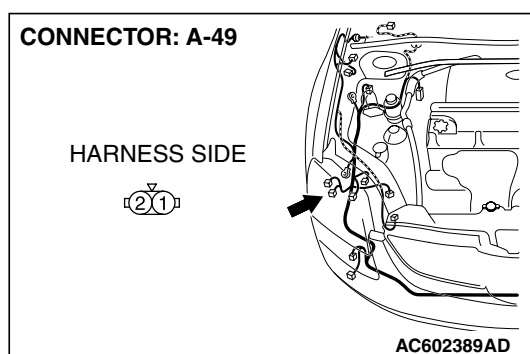


STEP 12. Check ETACS-ECU connector C-219 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

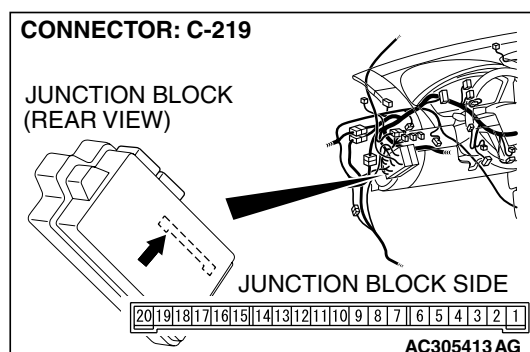
Q: Is ETACS-ECU connector C-219 in good condition?

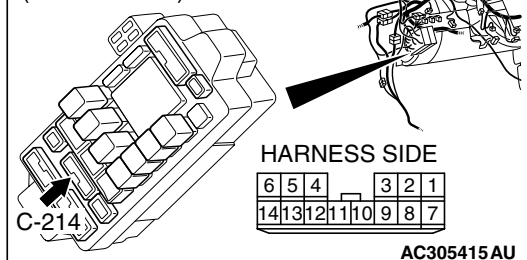
YES : Go to Step 13.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Verify that the turn-signal lights illuminate normally.



STEP 13. Check the wiring harness between front turn signal light (RH) connector A-49 (terminal 2) and ETACS-ECU connector C-219 (terminal 9).



CONNECTOR: C-214
JUNCTION BLOCK
(FRONT VIEW)

NOTE: Also check junction block connector C-214 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-214 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection.

Q: Is the wiring harness between front turn signal light (RH) connector A-49 (terminal 2) and ETACS-ECU connector C-219 (terminal 9) in good condition?

YES : Replace the front turn signal light socket (RH). Verify that the turn-signal lights illuminate normally.

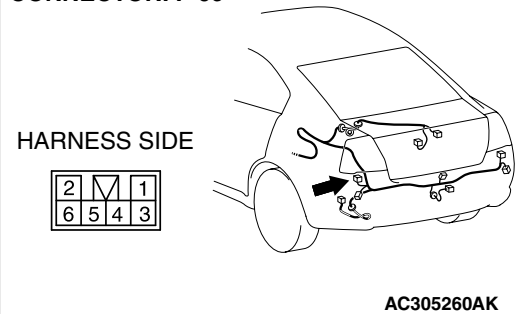
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.

STEP 14. Check rear combination light (LH) connector F-09 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is rear combination light (LH) connector F-09 in good condition?

YES : Go to Step 15.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Verify that the turn-signal lights illuminate normally.

CONNECTOR: F-09

STEP 15. Check the rear turn-signal light bulb (LH).

- (1) Remove the rear turn-signal (LH) light bulb.
- (2) Verify that the rear turn-signal light bulb (LH) is not damaged or burned out.

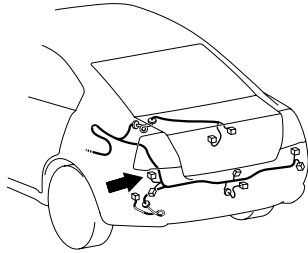
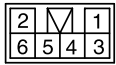
Q: Is the rear turn-signal (LH) light bulb in good condition?

YES : Go to Step 16.

NO : Replace the rear turn-signal (LH) light bulb. Verify that the turn-signal lights illuminate normally.

CONNECTOR: F-09

HARNESS SIDE



AC305260AK

STEP 16. Check the ground circuit to the rear combination light (LH). Measure the resistance at rear combination light (LH) connector F-09.

(1) Disconnect rear combination light (LH) connector F-09 and measure the resistance available at the wiring harness side of the connector.

(2) Measure the resistance value between terminal 2 and ground.

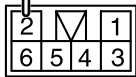
- The resistance should be 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 18.

NO : Go to Step 17.

CONNECTOR F-09
(HARNESS SIDE)



AC209364HF

STEP 17. Check the wiring harness between rear combination light (LH) connector F-09 (terminal 2) and ground.

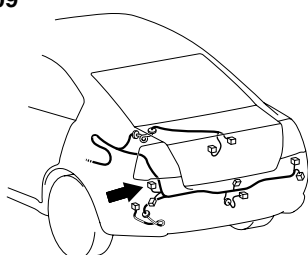
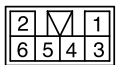
Q: Is the wiring harness between rear combination light (LH) connector F-09 (terminal 2) and ground in good condition?

YES : Replace the rear combination light socket assembly (LH). Verify that the turn-signal lights illuminate normally.

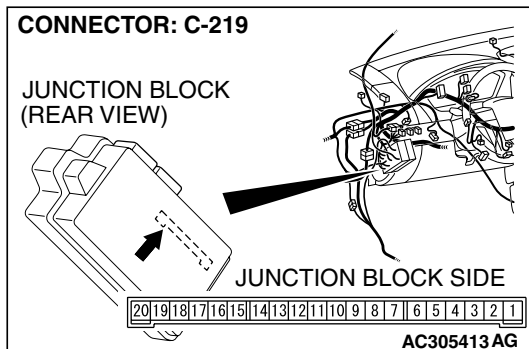
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.

CONNECTOR: F-09

HARNESS SIDE



AC305260AK

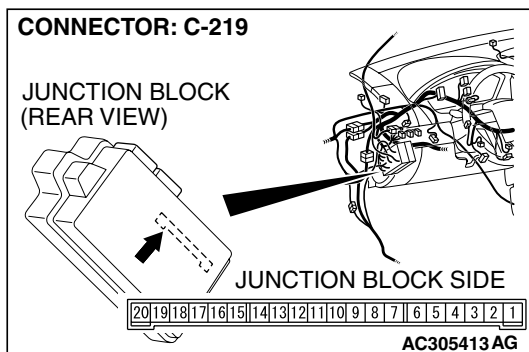


STEP 18. Check ETACS-ECU connector C-219 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

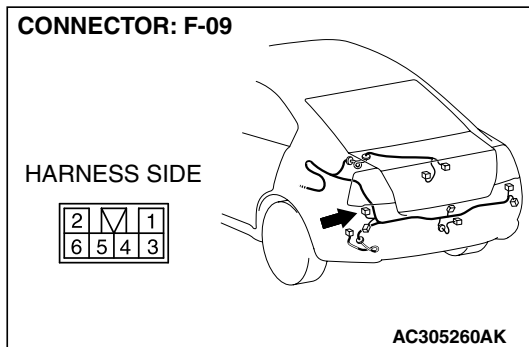
Q: Is ETACS-ECU connector C-219 in good condition?

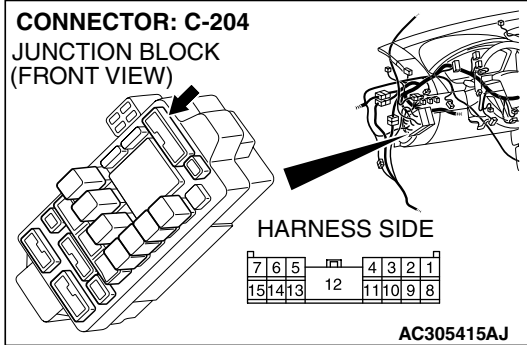
YES : Go to Step 19.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Verify that the turn-signal lights illuminate normally.



STEP 19. Check the wiring harness between rear combination light (LH) connector F-09 (terminal 5) and ETACS-ECU connector C-219 (terminal 14).



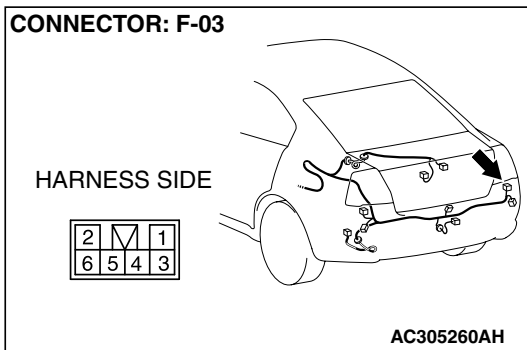


NOTE: Also check junction block connector C-204 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-204 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection.

Q: Is the wiring harness between rear combination light (LH) connector F-09 (terminal 1) and ETACS-ECU connector C-219 (terminal 14) in good condition?

YES : Replace the rear combination light socket assembly (LH). Verify that the turn-signal lights illuminate normally.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.



STEP 20. Check rear combination light (RH) connector F-03 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is rear combination light (RH) connector F-03 in good condition?

YES : Go to Step 21.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Verify that the turn-signal lights illuminate normally.

STEP 21. Check the rear turn-signal light bulb (RH).

- (1) Remove the rear turn-signal (RH) light bulb.
- (2) Verify that the rear turn-signal light bulb (RH) is not damaged or burned out.

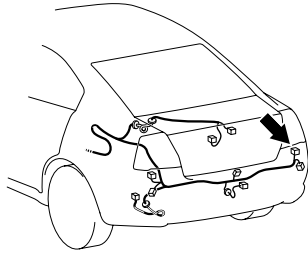
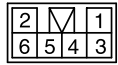
Q: Is the rear turn-signal (RH) light bulb in good condition?

YES : Go to Step 22.

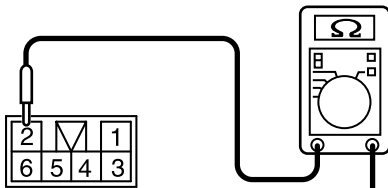
NO : Replace the rear turn-signal (RH) light bulb. Verify that the turn-signal lights illuminate normally.

CONNECTOR: F-03

HARNESS SIDE



AC305260AH

CONNECTOR F-03
(HARNESS SIDE)

AC209364HD

STEP 22. Check the ground circuit to the rear turn-signal light (RH). Measure the resistance at rear combination light (RH) connector F-03.

(1) Disconnect rear combination light (RH) connector F-03 and measure the resistance available at the harness side of the connector.

(2) Measure the resistance value between terminal 2 and ground.

- The resistance should be 2 ohms or less.

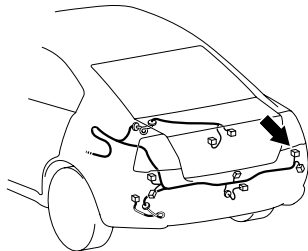
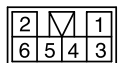
Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 24.

NO : Go to Step 23.

CONNECTOR: F-03

HARNESS SIDE



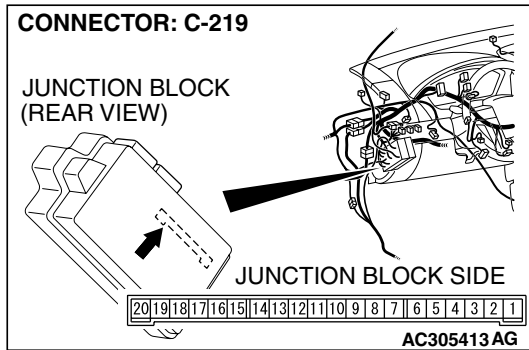
AC305260AH

STEP 23. Check the wiring harness between rear combination light (RH) connector F-03 (terminal 2) and ground.

Q: Is the wiring harness between rear combination light (RH) connector F-03 (terminal 2) and ground in good condition?

YES : Replace the rear combination light socket assembly (RH). Verify that the turn-signal lights illuminate normally.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.

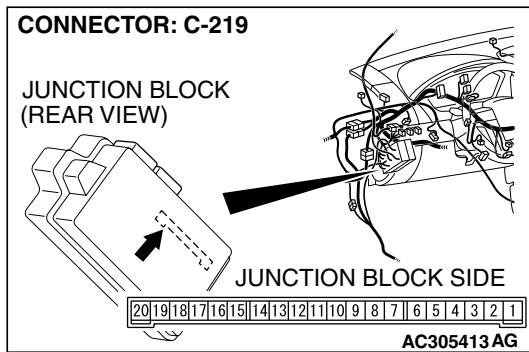


STEP 24. Check ETACS-ECU connector C-219 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

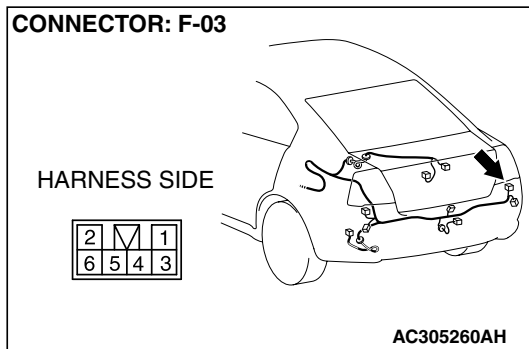
Q: Is ETACS-ECU connector C-219 in good condition?

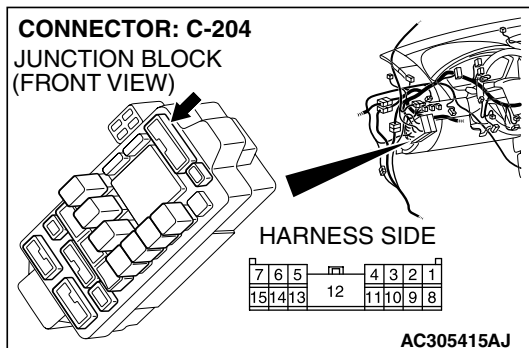
YES : Go to Step 25.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Verify that the turn-signal lights illuminate normally.



STEP 25. Check the wiring harness between rear combination light (RH) connector F-03 (terminal 5) and ETACS-ECU connector C-219 (terminal 9).



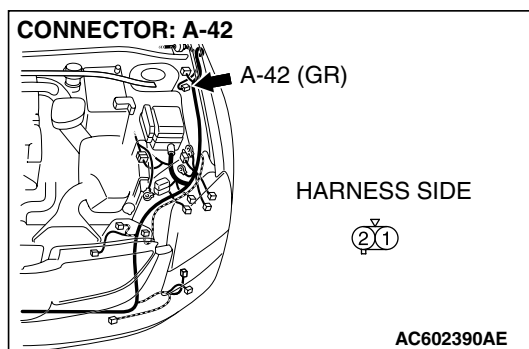


NOTE: Also check junction block connector C-204 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-204 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection.

Q: Is the wiring harness between rear combination light (RH) connector F-03 (terminal 5) and ETACS-ECU connector C-219 (terminal 9) in good condition?

YES : Replace the rear combination light socket assembly (RH). Verify that the turn-signal lights illuminate normally.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.



STEP 26. Check side turn signal light (LH) connector A-42 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is side turn signal light (LH) connector A-42 in good condition?

YES : Go to Step 27.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Verify that the turn-signal lights illuminate normally.

STEP 27. Check the side turn-signal light bulb (LH).

- (1) Remove the side turn-signal (LH) light bulb.
- (2) Verify that the side turn-signal light bulb (LH) is not damaged or burned out.

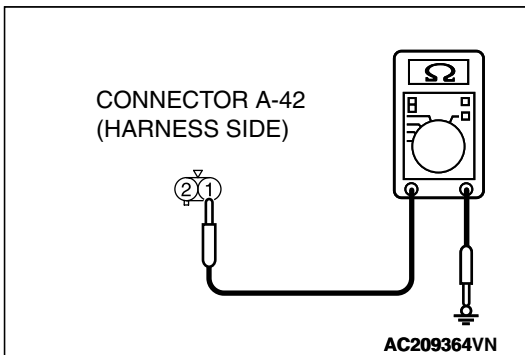
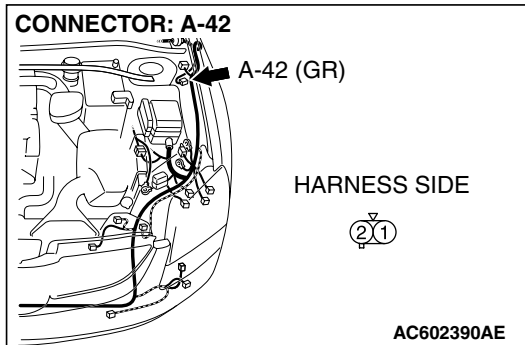
Q: Is the side turn-signal (LH) light bulb in good condition?

YES : Go to Step 28.

NO : Replace the side turn-signal (LH) light bulb. Verify that the turn-signal lights illuminate normally.

STEP 28. Check the ground circuit to the ETACS-ECU. Measure the resistance at side turn signal light (LH) connector A-42.

- (1) Disconnect side turn signal light (LH) connector A-43 and measure the resistance available at the wiring harness side of the connector.



- (2) Measure the resistance value between terminal 1 and ground.
- The resistance should be 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 30.

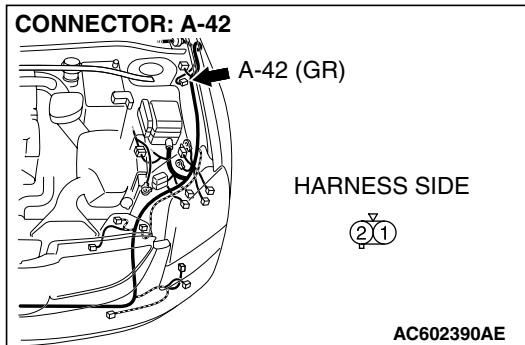
NO : Go to Step 29.

STEP 29. Check the wiring harness between side turn signal light (LH) connector A-42 (terminal 1) and ground.

Q: Is the wiring harness between side turn signal light (LH) connector A-42 (terminal 1) and ground in good condition?

YES : Replace the side turn signal light socket (LH). Verify that the turn-signal lights illuminate normally.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.

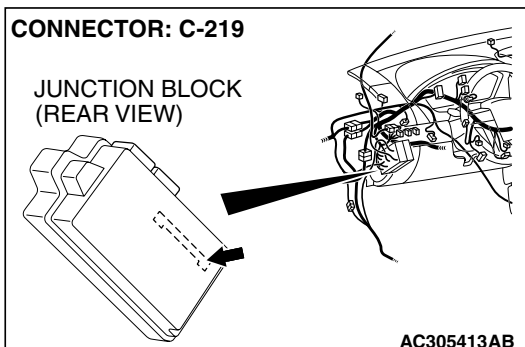


STEP 30. Check ETACS-ECU connector C-219 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

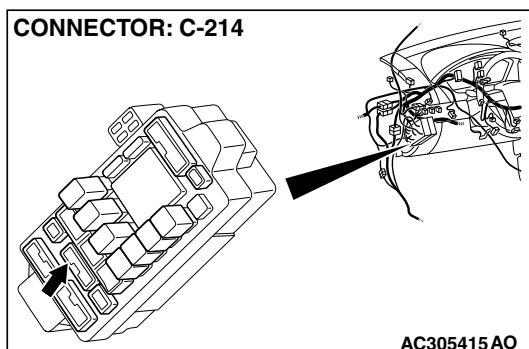
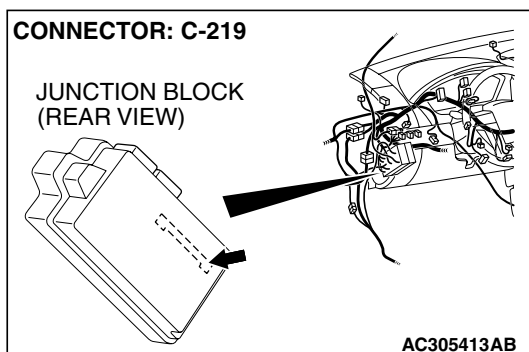
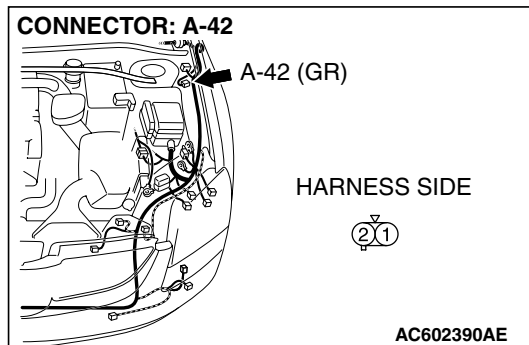
Q: Is ETACS-ECU connector C-219 in good condition?

YES : Go to Step 31.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Verify that the turn-signal lights illuminate normally.



STEP 31. Check the wiring harness between side turn signal light (LH) connector A-42 (terminal 2) and ETACS-ECU connector C-219 (terminal 14).

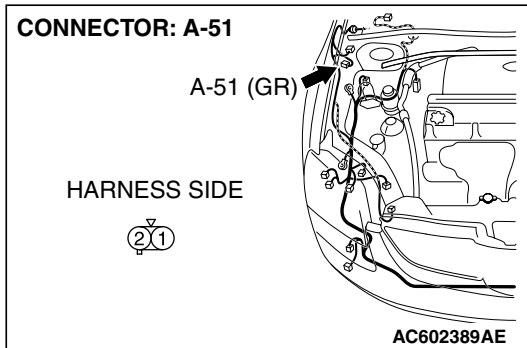


NOTE: Also check junction block connector C-214 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-214 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection.

Q: Is the wiring harness between side turn signal light (LH) connector A-42 (terminal 2) and ETACS-ECU connector C-219 (terminal 14) in good condition?

YES : Replace the side turn signal light socket (LH). Verify that the turn-signal lights illuminate normally.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.



STEP 32. Check side turn signal light (RH) connector A-51 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is side turn signal light (RH) connector A-51 in good condition?

YES : Go to Step 33.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Verify that the turn-signal lights illuminate normally.

STEP 33. Check the side turn-signal light bulb (RH).

- (1) Remove the side turn-signal (RH) light bulb.
- (2) Verify that the side turn-signal light bulb (RH) is not damaged or burned out.

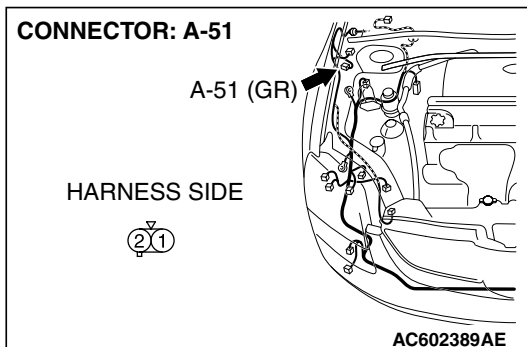
Q: Is the side turn-signal (RH) light bulb in good condition?

YES : Go to Step 34.

NO : Replace the side turn-signal (RH) light bulb. Verify that the turn-signal lights illuminate normally.

STEP 34. Check the ground circuit to the side turn signal light (RH). Measure the resistance at side turn signal light (RH) connector A-51.

- (1) Disconnect side turn signal light (RH) connector A-51 and measure the resistance available at the wiring harness side of the connector.



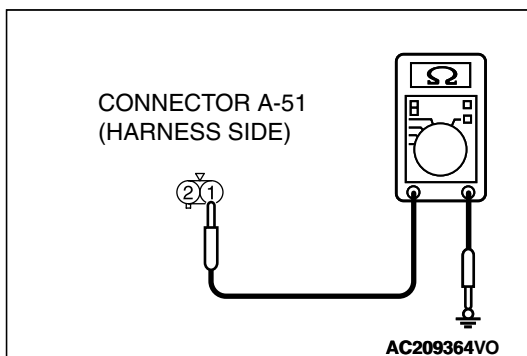
- (2) Measure the resistance value between terminal 1 and ground.

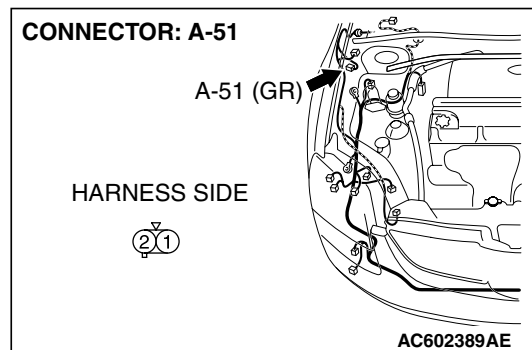
- The resistance should be 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 36.

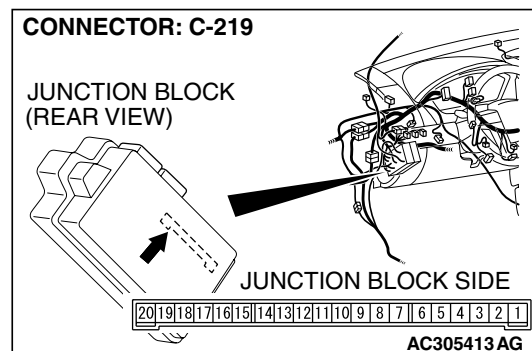
NO : Go to Step 35.





STEP 35. Check the wiring harness between side turn signal light (RH) connector A-51 (terminal 1) and ground.
Q: Is the wiring harness between side turn signal light (RH) connector A-51 (terminal 1) and ground in good condition?

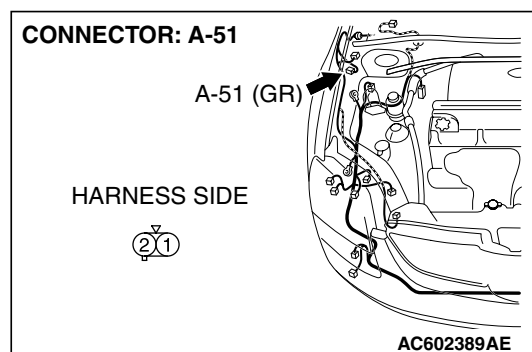
- YES :** Replace the side turn signal light socket (RH). Verify that the turn-signal lights illuminate normally.
- NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.



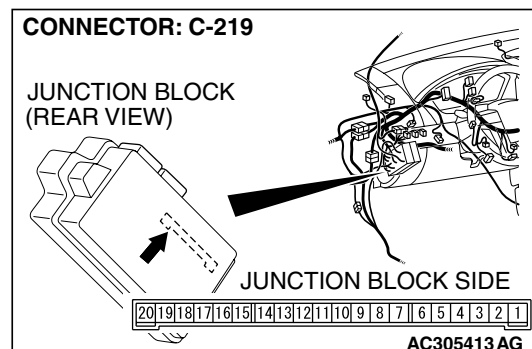
STEP 36. Check ETACS-ECU connector C-219 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

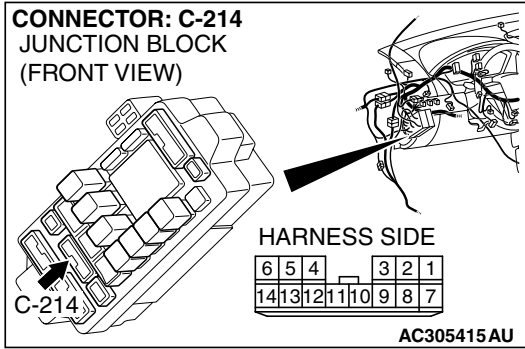
Q: Is ETACS-ECU connector C-219 in good condition?

- YES :** Go to Step 37.
- NO :** Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Verify that the turn-signal lights illuminate normally.



STEP 37. Check the wiring harness between side turn signal light (RH) connector A-51 (terminal 2) and ETACS-ECU connector C-219 (terminal 9).





NOTE: Also check junction block connector C-214 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-214 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection.

Q: Is the wiring harness between side turn signal light (RH) connector A-51 (terminal 2) and ETACS-ECU connector C-219 (terminal 9) in good condition?

- YES :** Replace the side turn signal light socket (RH). Verify that the turn-signal lights illuminate normally.
- NO :** The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the turn-signal lights illuminate normally.

FOG LIGHT

GENERAL DESCRIPTION CONCERNING THE FOG LIGHT

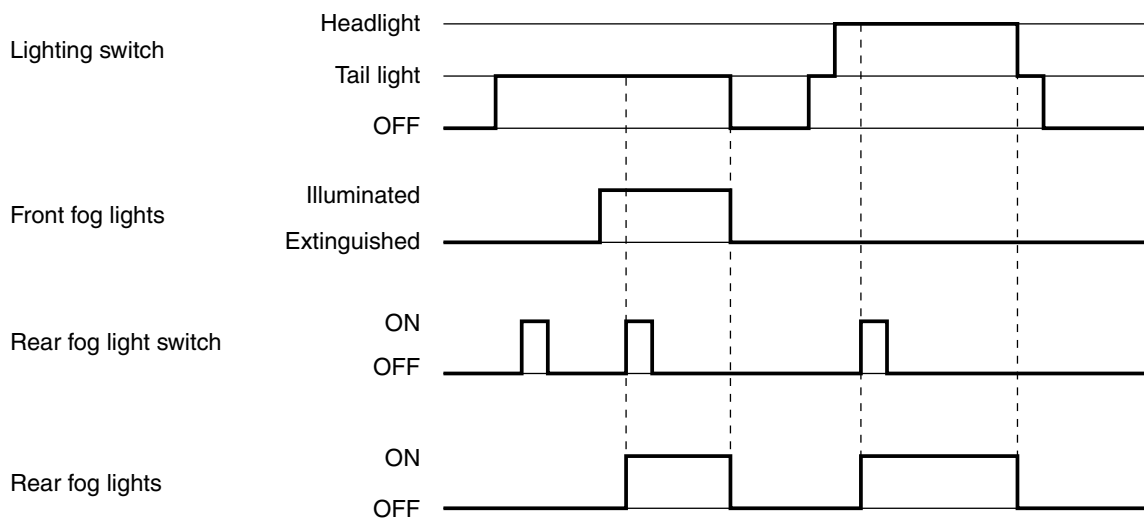
M154 90214 00294

ECU FUNCTIONS AND CONTROLS IN THE SWS

Following functions are controlled by ECUs of SWS.

FUNCTION		CONTROL ECU	FUNCTION DESCRIPTION
Fog light	Rear fog light control	ETACS-ECU, front-ECU, column switch	
	Rear fog light indicator		

Rear fog light control



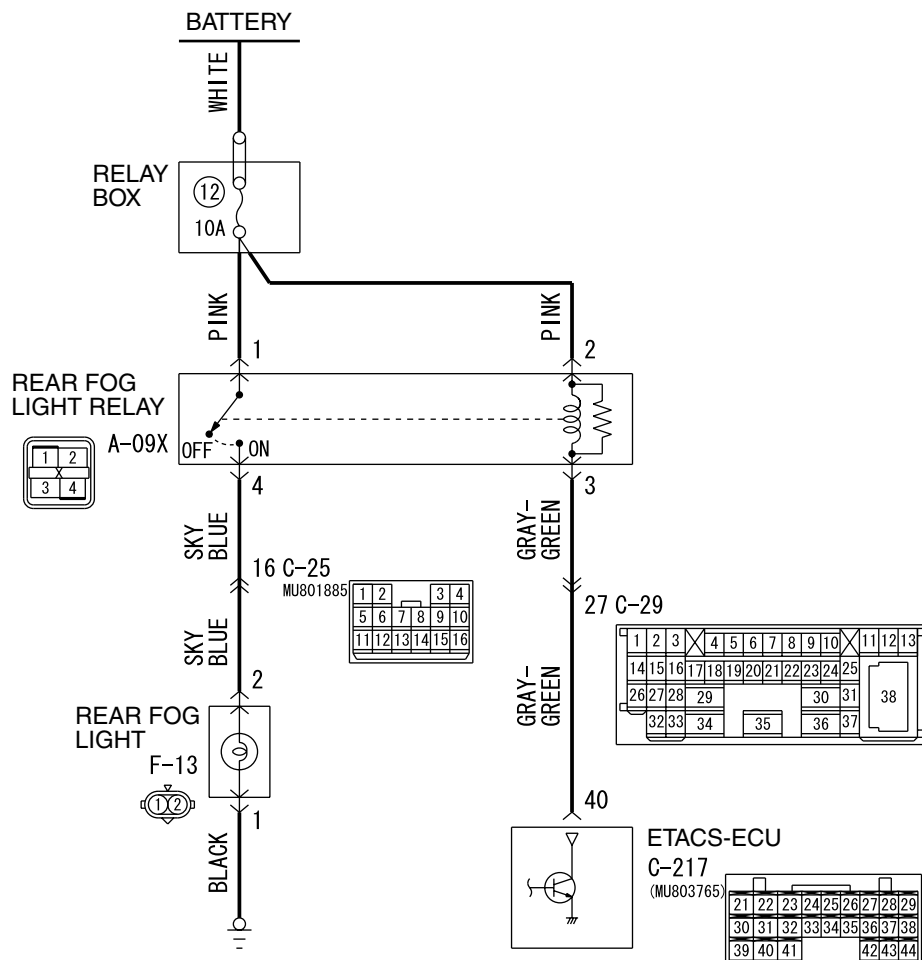
AC212279AB

If the rear fog light switch is turned ON when the headlight or the front fog light is turned ON, the rear fog light is switched ON and OFF alternatively.

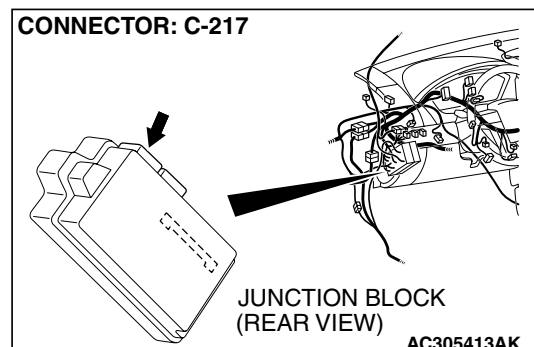
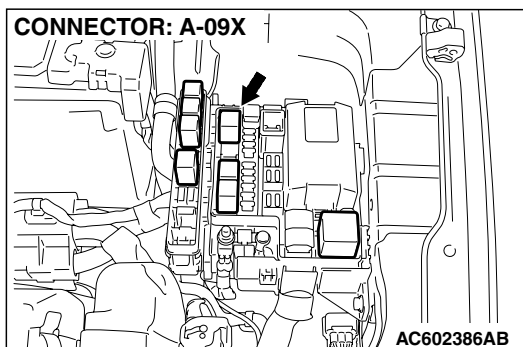
If the headlight and the front fog light are turned OFF, the rear fog light is turned OFF at the same time.

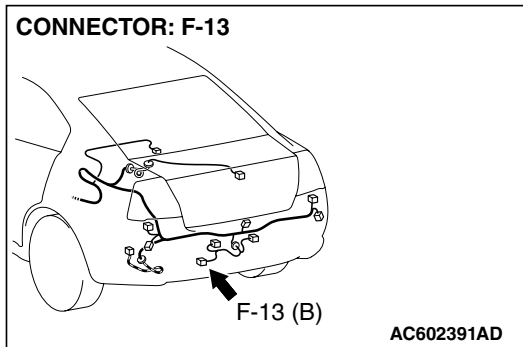
REAR FOG LIGHT INDICATOR

The ETACS-ECU outputs the rear fog light indicator ON signal to the combination meter through CAN communication in synchronization with the rear fog light operation. The combination meter receives the transmitted signal and turns ON or OFF the fog light indicator.

INSPECTION PROCEDURE J-5: The Rear Fog Light do not Illuminate Normally.**Rear Fog Light Circuit**

W7P54M175A





CIRCUIT OPERATION

- The ETACS-ECU sends a rear fog light illumination request signal ("LIGHT ON" signal) to the ETACS-ECU when the rear fog light switch is turned on while the taillights are illuminating.
- Then the ETACS-ECU switches on its relay to illuminate the rear fog light.

TECHNICAL DESCRIPTION (COMMENT)

If the headlights illuminate at low beam, the rear fog light relay, the rear fog light switch, the front-ECU or the ETACS-ECU may be defective.

TROUBLESHOOTING HINTS

- Trouble in input signal system
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector
- The rear fog light relay may be defective
- The front-ECU may be defective
- The ETACS-ECU may be defective

DIAGNOSIS

Required Special Tools:

- MB991223: Harness Set
- MB992006: Extra Fine Probe
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
 - MB991824: V.C.I.
 - MB991827: M.U.T.-III USB Cable
 - MB991910: M.U.T.-III Main Harness A
- MB991813: SWS Monitor Kit
 - MB991806: SWS Monitor Cartridge
 - MB991812: SWS Monitor Harness (For Column-ECU)
 - MB991822: Probe Harness

STEP 1. Check the taillight operation.

Q: Do the taillights illuminate normally?

YES : Go to Step 2.

NO : Check the taillights and the headlights (Refer to trouble symptom chart).

STEP 2. Use scan tool MB991958 to select "ECU COMM Check" on the SWS monitor display.

Check the following ECUs:

- ETACS-ECU
- Column-ECU

⚠ CAUTION

To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958. Connect special tool MB991910 before connecting special tool MB991812. Be sure to connect special tool MB991806 after turning on special tool MB991824.

- (1) Connect the special tool. Refer to "How to connect SWS monitor."
- (2) Turn the ignition switch to the "ON" position.
- (3) Operate scan tool MB991958 according to the procedure below to display "ECU COMM Check."

 - a. Select "Interactive Diagnosis."
 - b. Select "System select."
 - c. Select "SWS."
 - d. Select "SWS MONITOR."
 - e. Select "ECU COMM Check."

- (4) Scan tool MB991958 should show "OK" on the "ECU COMM Check" menus for both the "ETACS ECU" and the "COLUMN ECU" menus.

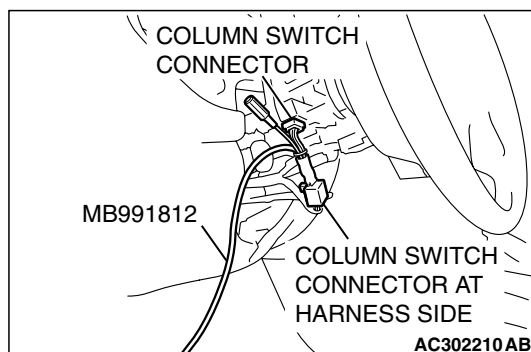
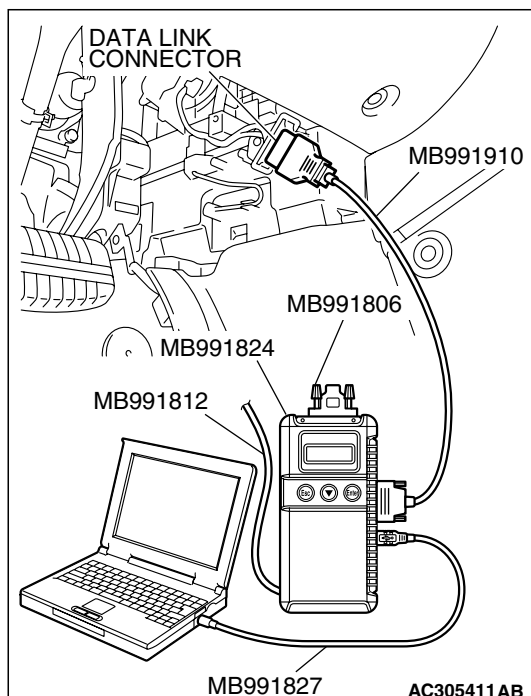
OK: "OK" is displayed for all the items

Q: Is "OK" displayed for both the "ETACS ECU" and "COLUMN ECU" menus?

"OK" is displayed for all the items : Go to Step 3.

"NG" is displayed on the "COLUMN ECU" menu. : Refer to Inspection Procedure A-2 "Communication with the column switch (column-ECU) is not possible."

"NG" is displayed on the "ETACS ECU" menu. : Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible."



STEP 3. ETACS switch data by using the SWS monitor

Check the input signals below, which are related to the rear fog light.

- Rear fog light switch: from OFF to ON

ITEM NO.	ITEM NAME	NORMAL CONDITIONS
Item 11	Rear fog light switch	OFF to ON (only when switch is operated)

OK: Normal condition is displayed.

Q: Is the check result normal?

YES : Go to Step 4.

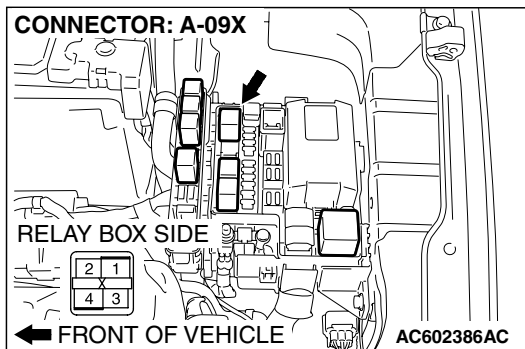
NO : Refer to inspection procedure N-11 "The rear fog light switch signal is not received."

STEP 4. Check rear fog light relay connector A-09X for loose, corroded or damaged terminals, or terminals pushed back in the connector.

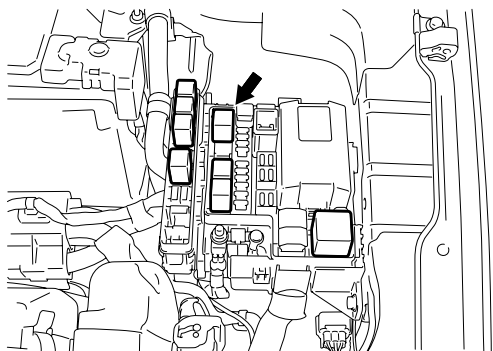
Q: Is rear fog light relay connector A-09X in good condition?

YES : Go to Step 5.

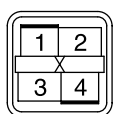
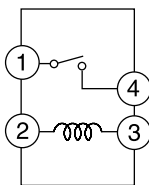
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Verify that the rear fog light illuminate normally.



CONNECTOR: A-09X



FOG LIGHT RELAY

FRONT OF
VEHICLE →

AC602388AB

STEP 5. Check the rear fog light relay.

BATTERY VOLTAGE	TESTER CONNECTION	SPECIFIED CONDITION
Not applied	1 – 4	Open circuit
<ul style="list-style-type: none"> Connect terminal 2 to the positive battery terminal Connect terminal 3 to the negative battery terminal 	1 – 4	Less than 2 ohm

Q: Is the rear fog light relay in good condition?

YES : Go to Step 6.

NO : Replace the rear fog light relay. Verify that the rear fog light illuminate normally.

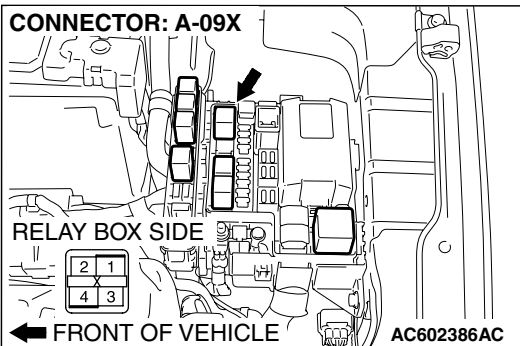
STEP 6. Check the battery power supply circuit to the rear fog light relay. Measure the voltage at rear fog light relay connector A-09X.

⚠ CAUTION

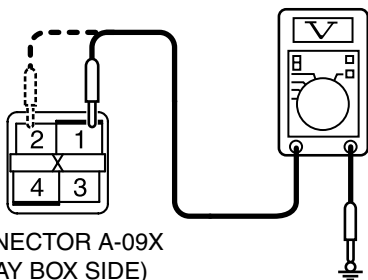
The top and bottom of the rear fog light relay are difficult to identify. Prior to inspection, confirm the triangle mark on the relay box.

(1) Removal the rear fog light relay and measure the voltage available at the relay box side of the connector.

CONNECTOR: A-09X



AC602386AC

CONNECTOR A-09X
(RELAY BOX SIDE)

AC209365SW

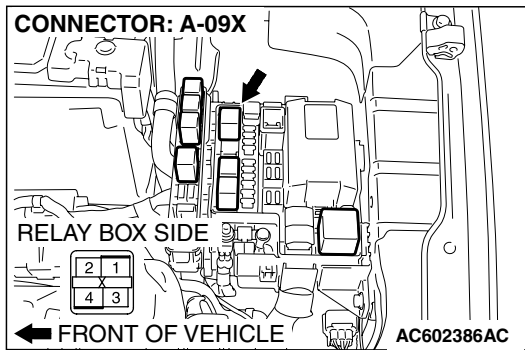
(2) Measure the voltage between terminal 1 and ground, and also between terminal 2 and ground.

- The voltage should measure approximately 12 volts (battery positive voltage).

Q: Is the measured voltage approximately 12 volts (battery positive voltage)?

YES : Go to Step 8.

NO : Go to Step 7.

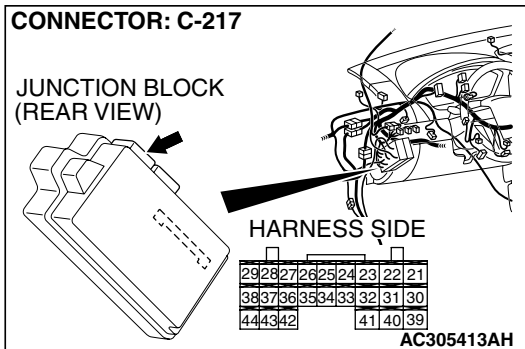


STEP 7. Check the wiring harness between rear fog light relay connector A-09X (terminals 1 and 2) and the battery.

Q: Is the wiring harness between rear fog light relay connector A-09X (terminals 1 and 2) and the battery in good condition?

YES : No action is necessary and testing is complete.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the rear fog light illuminate normally.

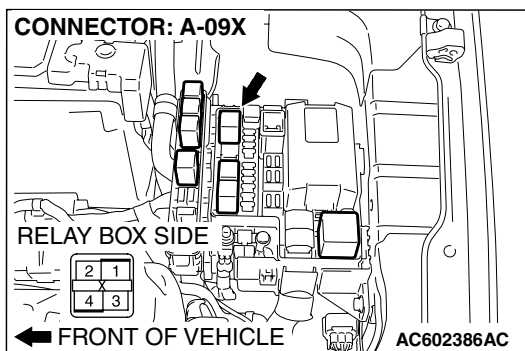


STEP 8. Check ETACS-ECU connector C-217 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is ETACS-ECU connector C-217 in good condition?

YES : Go to Step 9.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Verify that the rear fog light illuminate normally.

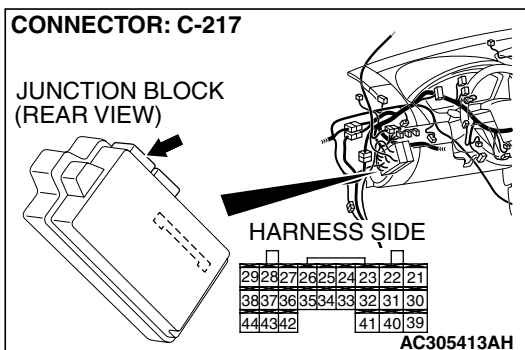


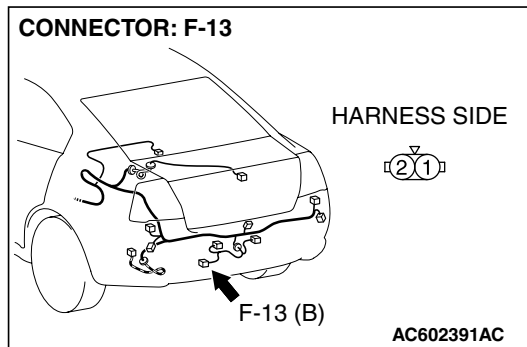
STEP 9. Check the wiring harness between rear fog light relay connector A-09X (terminal 3) and ETACS-ECU connector C-217 (terminal 40).

Q: Is the wiring harness between rear fog light relay connector A-09X (terminal 3) and ETACS-ECU connector C-217 (terminal 40) in good condition?

YES : Go to Step 10.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the rear fog light illuminate normally.



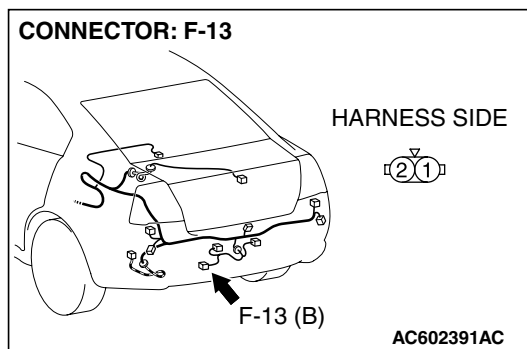


STEP 10. Check rear fog light connector F-13 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is rear fog light connector F-13 in good condition?

YES : Go to Step 11.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Verify that the rear fog light illuminate normally.



STEP 11. Check the ground circuit to the rear fog light. Measure the resistance at rear fog light connector F-13.

(1) Disconnect rear fog light connector F-13 and measure the resistance available at the wiring harness side of the connector.

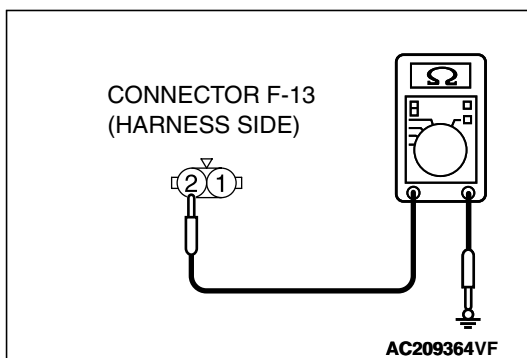
(2) Measure the resistance value between terminal 1 and ground.

- The resistance should be 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 13.

NO : Go to Step 12.

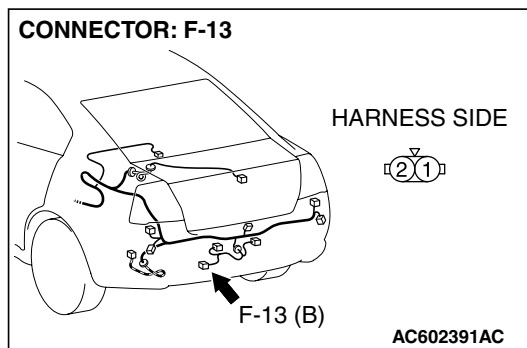


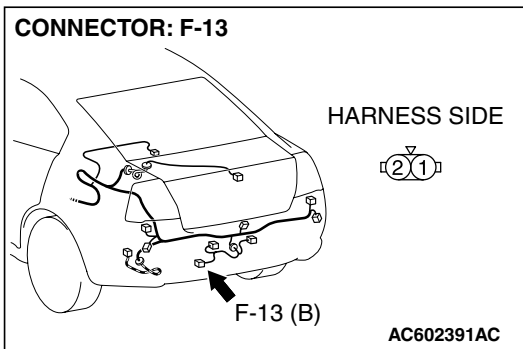
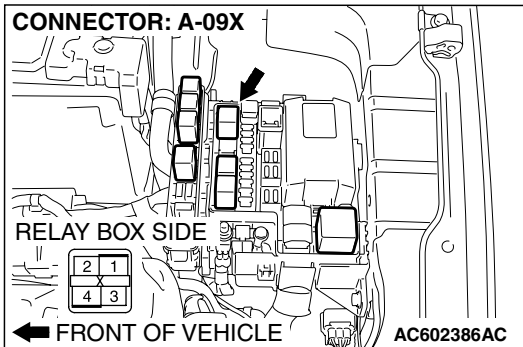
STEP 12. Check the wiring harness between rear fog light connector F-13 (terminal 1) and ground.

Q: Is the wiring harness between rear fog light connector F-13 (terminal 1) and ground in good condition?

YES : Replace the rear fog light. Verify that the rear fog light illuminates normally.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the rear fog light illuminates normally.





STEP 13. Check the wiring harness between rear fog light relay connector A-09X (terminal 4) and rear fog light connector F-13 (terminal 2).

Q: Is the wiring harness between rear fog light relay connector A-09X (terminal 4) and rear fog light connector F-13 (terminal 2) in good condition?

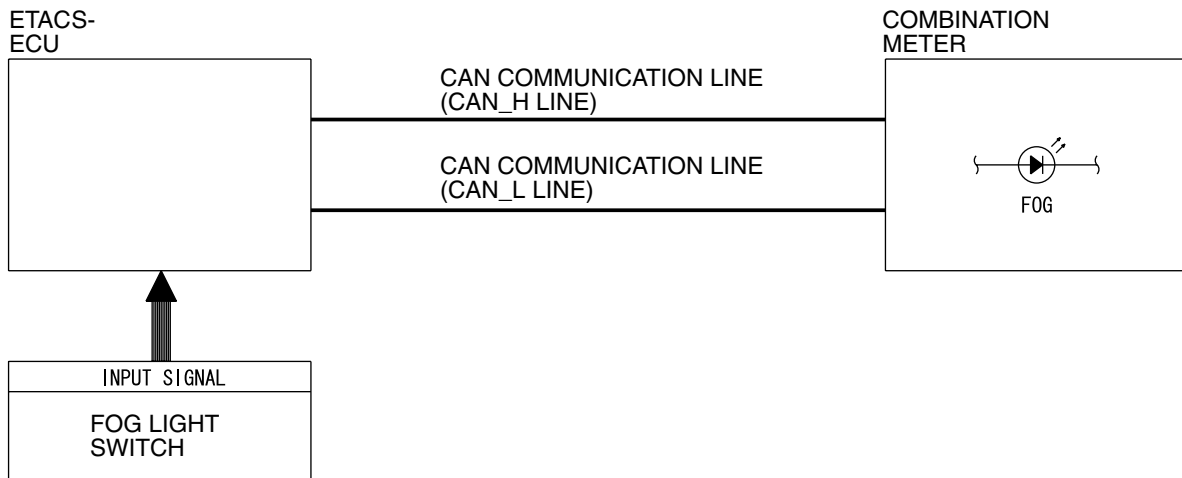
YES : Replace the ETACS-ECU. When the ETACS-ECU is replaced, register the encrypted code. Refer to GROUP 54A, Encrypted Code Registration Criteria Table. Verify that the rear fog light illuminate normally.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the rear fog light illuminate normally.

INSPECTION PROCEDURE J-6: The Rear Fog Light Indicator does not Illuminate Normally.

NOTE: This troubleshooting procedure requires the use of scan tool MB991958 and SWS monitor kit MB991813. For details on how to use the SWS monitor, refer to "How to use SWS monitor."

Fog Light Indicator Light Circuit



W4P54M76AA

CIRCUIT OPERATION

At the same time that the rear fog light are illuminated, the ETACS-ECU sends a signal to illuminate the rear fog light indicator via the CAN bus line.

TECHNICAL DESCRIPTION (COMMENT)

If the rear fog light indicator does not illuminate normally, connector(s), wiring harness in the CAN bus lines, the ETACS-ECU or the combination meter may be defective.

TROUBLESHOOTING HINTS

- Trouble in input signal system
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector
- The combination meter may be defective
- The ETACS-ECU may be defective

DIAGNOSIS**Required Special Tools:**

- MB991223: Harness Set
- MB992006: Extra Fine Probe
- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
 - MB991824: V.C.I.
 - MB991827: M.U.T.-III USB Cable
 - MB991910: M.U.T.-III Main Harness A
- MB991813: SWS Monitor Kit
 - MB991806: SWS Monitor Cartridge
 - MB991812: SWS Monitor Harness (For Column-ECU)
 - MB991822: Probe Harness

STEP 1. Check the rear fog light.

When the fog light switch is operated, check that the rear fog light illuminate/go off normally.

Q: Are the fog lights operating properly?

YES : Go to Step 2.

NO : First, repair the rear fog lights. Refer to Inspection Procedure J-5 "The rear fog light do not illuminate normally."

STEP 2. Using scan tool MB991958, diagnose the CAN bus line.

⚠ CAUTION

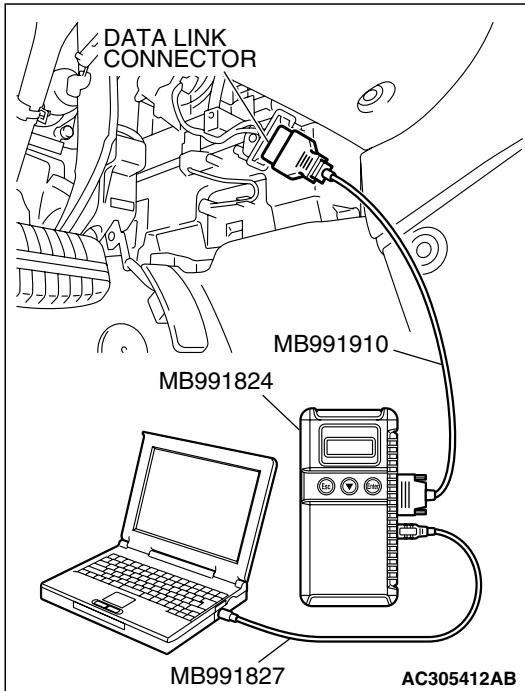
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

- (1) Connect scan tool MB991958. Refer to "How to connect SWS monitor."
- (2) Turn the ignition switch to the "ON" position.
- (3) Diagnose the CAN bus line.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the CAN bus line found to be normal?

YES : Go to Step 3.

NO : Repair the CAN bus line (Refer to GROUP 54C, Diagnosis).



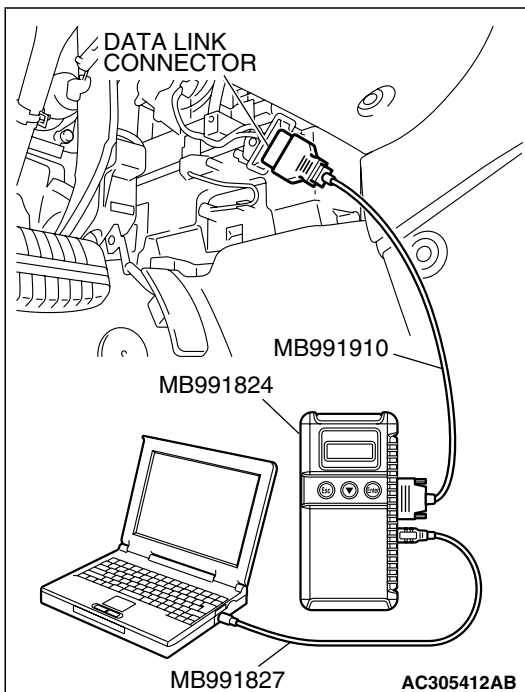
STEP 3. Using scan tool MB991958, read the combination meter diagnostic trouble code.

- (1) Check whether a combination meter-related DTC is set.
- (2) Turn the ignition switch to the "ON" position.
Check whether the combination meter-related DTC is set.
- (3) Turn the ignition switch to the "LOCK" (OFF) position.

Q: Is the DTC set?

YES : Diagnose the combination meter. Refer to GROUP 54A – Diagnosis.

NO : Go to Step 4.

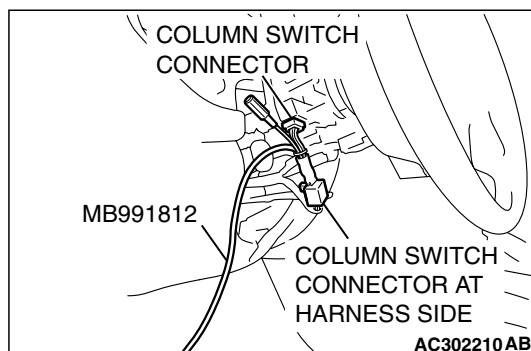
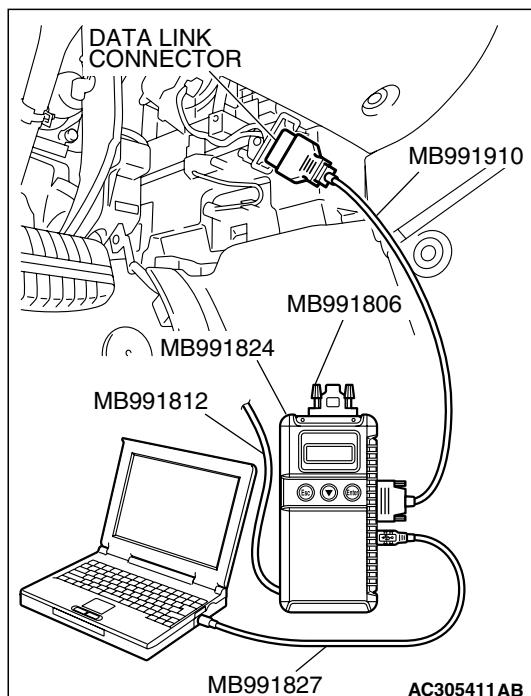


STEP 4. Use scan tool MB991958 to select "ECU COMM Check" on the SWS monitor display.

Check the ETACS-ECU.

⚠ CAUTION**Connect special tool MB991910 before connecting special tool MB991812. Be sure to connect special tool MB991806 after turning on special tool MB991824.**

- (1) Connect the SWS monitor. Refer to "How to connect SWS monitor."
- (2) Turn the ignition switch to the "ON" position.
- (3) Operate scan tool MB991958 according to the procedure below to display "ECU COMM Check."
 - a. Select "Interactive Diagnosis."
 - b. Select "System select."
 - c. Select "SWS."
 - d. Select "SWS MONITOR."
 - e. Select "ECU COMM Check."
- (4) Scan tool MB991958 should show "OK" on the "ECU COMM Check" menu for the "ETACS ECU" menu.

Q: Is "OK" displayed for the "ETACS ECU" menu?**YES :** Go to Step 5.**NO :** Refer to Inspection Procedure A-3 "Communication with the ETACS-ECU is not possible."**STEP 5. Replace the combination meter.**

- (1) Replace the combination meter.
- (2) Check that the rear fog light indicator light illuminates normally.

Q: Is the fog light indicator light operating properly?**YES :** No action is necessary and testing is complete.**NO :** Replace the ETACS-ECU. When the ETACS-ECU is replaced, register the encrypted code. Refer to GROUP 54A, Encrypted Code Registration Criteria Table. Check that the rear fog light indicator light illuminates normally.

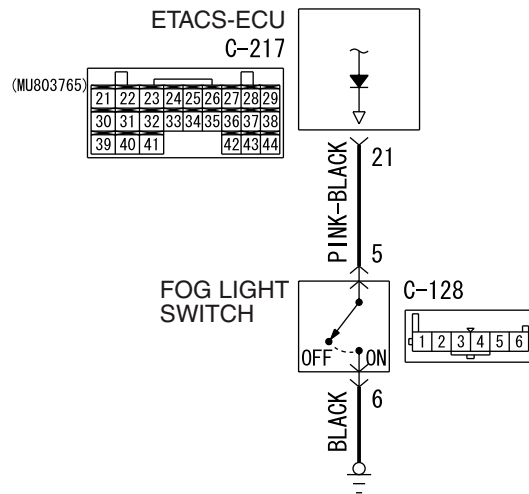
INPUT SIGNAL PROCEDURES

INSPECTION PROCEDURE N-11: ETACS-ECU does not Receive Any Signal from the Rear Fog Light Switch.

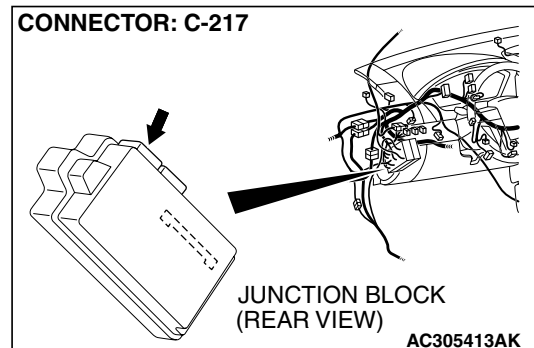
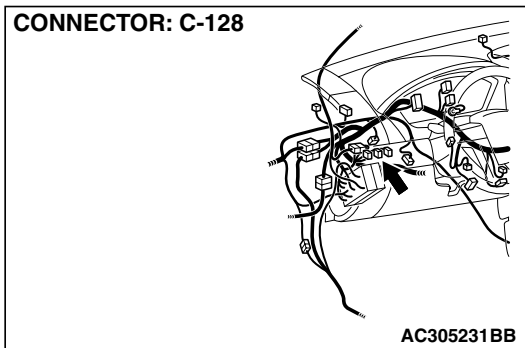
⚠ CAUTION

Whenever the ECU is replaced, ensure that the input signal circuit is normal.

Rear Fog Light Switch Input Circuit



W7P54M176A



CIRCUIT OPERATION

The ETACS-ECU operates the rear fog light according to signal from the fog light switch.

TECHNICAL DESCRIPTION (COMMENT)

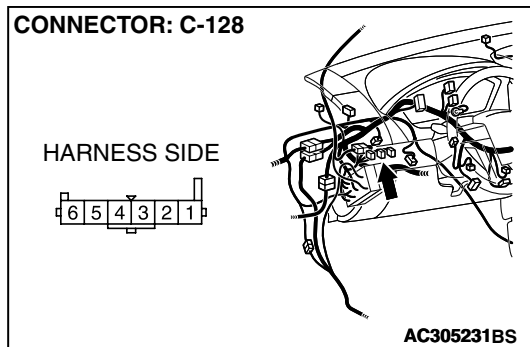
If the signal is not normal, the rear fog light do not work normally. If the signal is not normal, the rear fog light switch or the ETACS-ECU may be defective.

TROUBLESHOOTING HINTS

- The fog light switch may be defective
- The wiring harness or connectors may have loose, corroded, or damaged terminals, or terminals pushed back in the connector
- The ETACS-ECU may be defective

DIAGNOSIS**Required Special Tools:**

- MB991223: Harness Set
- MB992006: Extra Fine Probe

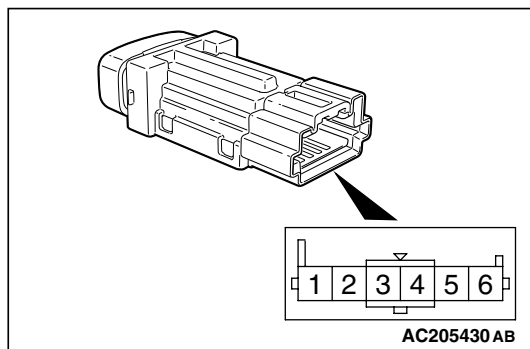
CONNECTOR: C-128

STEP 1. Check fog light switch connector C-128 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

Q: Is fog light switch connector C-128 in good condition?

YES : Go to Step 2.

NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. Repair the fog light switch. If the rear fog light switch operates normally, a correct signal is sent from the rear fog light switch.



STEP 2. Check the rear fog light switch.

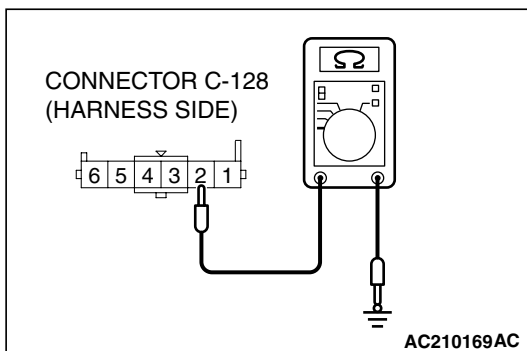
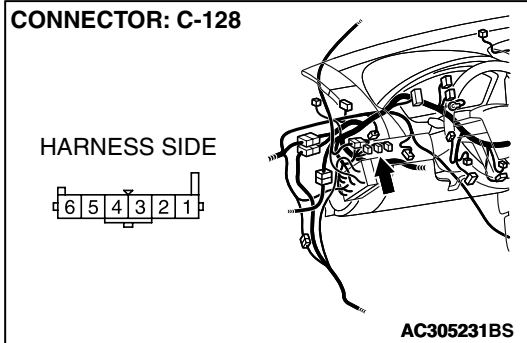
Remove the fog light switch. Refer to GROUP 54A, Fog light. Then check continuity between the switch terminals.

SWITCH POSITION	TESTER CONNECTION	SPECIFIED CONDITION
Released	5 – 6	Open circuit
Pressed	5 – 6	Less than 2 ohms

Q: Is the rear fog light switch in good condition?

YES : Go to Step 3.

NO : Repair the fog light switch. If the rear fog light switch operates normally, a correct signal is sent from the rear fog light switch.



STEP 3. Check the ground circuit to the fog light switch. Measure the resistance at fog light switch connector C-128.

(1) Disconnect fog light switch connector C-128 and measure the resistance available at the wiring harness side of the connector.

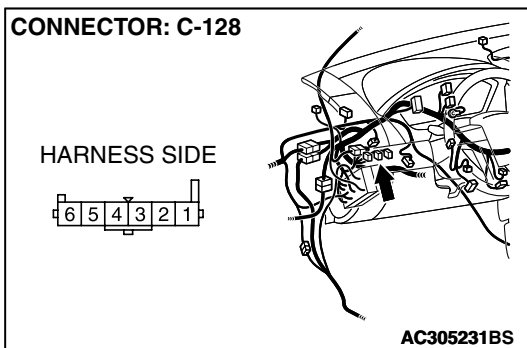
(2) Measure the resistance value between terminal 2 and ground.

- The resistance should be 2 ohms or less.

Q: Is the measured resistance less than 2 ohm?

YES : Go to Step 5.

NO : Go to Step 4.

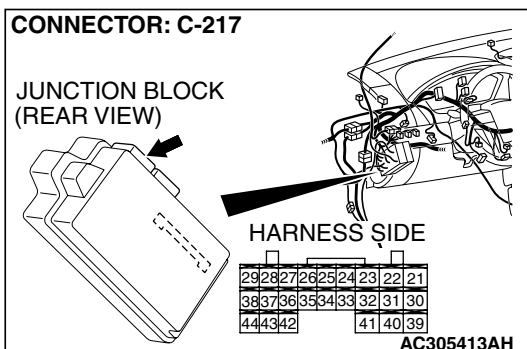


STEP 4. Check the wiring harness between fog light switch connector C-128 (terminal 6) and ground.

Q: Is the wiring harness between fog light switch connector C-128 (terminal 6) and ground in good condition?

YES : No action is necessary and testing is complete.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the rear fog light switch operates normally, a correct signal is sent from the rear fog light switch.



STEP 5. Check ETACS-ECU connector C-217 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

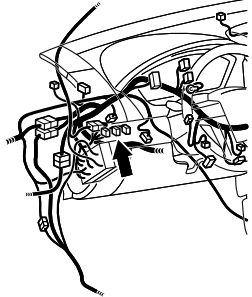
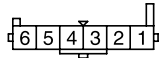
Q: Is ETACS-ECU connector C-217 in good condition?

YES : Go to Step 6.

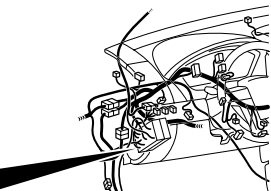
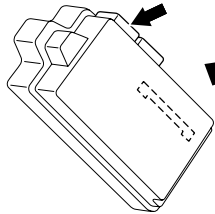
NO : Repair or replace the damaged component(s). Refer to GROUP 00E, Harness Connector Inspection. If the rear fog light switch operates normally, a correct signal is sent from the rear fog light switch.

CONNECTOR: C-128

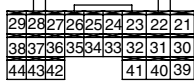
HARNESS SIDE



AC305231BS

CONNECTOR: C-217JUNCTION BLOCK
(REAR VIEW)

HARNESS SIDE



AC305413AH

STEP 6. Check the wiring harness between fog light switch connector C-128 (terminal 1) and ETACS-ECU connector C-217 (terminal 54).

Q: Is the wiring harness between fog light switch connector C-128 (terminal 1) and ETACS-ECU connector C-217 (terminal 21) in good condition?

YES : Replace the ETACS-ECU. When the ETACS-ECU is replaced, register the encrypted code. Refer to GROUP 54A, Encrypted Code Registration Criteria Table. If the rear fog light switch operates normally, a correct signal is sent from the rear fog light switch.

NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. If the rear fog light switch operates normally, a correct signal is sent from the rear fog light switch.