GALANT

WORKSHOP MANUAL

FOREWORD

This Workshop manual contains procedures for service mechanics, including removal, disassembly, inspection, adjustment, reassembly and installation. Use the following manuals in combination with this manual as required.

TECHNICAL INFORMATION MANUAL

BODY REPAIR MANUAL

PARTS CATALOGUE

All information, illustrations and product descriptions contained in this manual are current as at the time of publication. We, however, reserve the right to make changes at any time without prior notice or obligation.

GROUP INDEX

 June 2006

MITSUBISHI MOTORS CORPORATION

GROUP 11B

ENGINE OVERHAUL

CONTENTS

ITEM NO.	M.U.T.-III SCAN TOOL DISPLAY	DATA ITEM	UNIT or STATE
C0	Fuel system status (bank1)	Fuel system status (bank1)	• Open loop
			• Closed loop
			• Open loop-drive condition
			• Open loop-DTC set
			• Closed loop-O2 (rear) failed
C1	Fuel system status (bank2)	Fuel system status (bank2)	• Open loop
			• Closed loop
			• Open loop-drive condition
			• Open loop-DTC set
			• Closed loop-O2 (rear) failed
C2	Calculated load value	Calculated load value	%
C3	ECT sensor	Engine coolant temperature sensor	°C or °F
C4	Short term fuel trim (bank1)	Short term fuel trim (bank1)	%
C6	Long term fuel trim (bank1)	Long term fuel trim (bank1)	%
C8	Short term fuel trim (bank2)	Short term fuel trim (bank2)	%
CA	Long term fuel trim (bank2)	Long term fuel trim (bank2)	%
CC	MAP sensor	Manifold absolute pressure sensor	kPa or inHg
CD	Crankshaft position sensor	Crankshaft position sensor	r/m
CE	Vehicle speed	Vehicle speed	km/h or mph
CF	Spark advance	Spark advance	deg
D0	Intake air temperature sensor	Intake air temperature sensor	°C or °F
D1	Time since engine running	Time since engine running	sec
D6	EVAP. emission purge SOL. duty	Evaporative emission purge control solenoid duty	%

OBD- II DRIVE CYCLE

All kinds of diagnostic trouble codes (DTCs) can be monitored by carrying out a short drive according to the following 24 drive cycle patterns. In other words, doing such a drive regenerates any kind of trouble which involves illuminating the Malfunction Indicator Lamp (SERVICE ENGINE SOON) and verifies the repair procedure has eliminated [the trouble the Malfunction Indicator Lamp (SERVICE ENGINE SOON) is no longer illuminated].

M.U.T.-III SCAN TOOL DISPLAY	ITEM NO.	INSPECTION ITEM	INSPECTION REQUIREMENT		NORMAL CONDITION	INSPECTION PROCEDURE NO.
APP sensor (sub)	BF	Accelerator pedal position sensor (sub)	Ignition switch: "ON"	Release the accelerator pedal	9 – 19%	Code No. P2127, P2128
				Depress the accelerator pedal gradually	Increases in response to the pedal depression stroke	
				Depress the accelerator pedal fully	74% or more	
Barometric pressure sensor	BB	Barometric pressure sensor	Ignition switch: "ON"	Engine stopped [At altitude of 0 m (0 ft.)]	101 kPa (29.8 in.Hg)	Code No. P2228, P2229
				Engine stopped [At altitude of 600 m (1,969 ft.)]	95 kPa (28.1 in.Hg)	
				Engine stopped [At altitude of 1,200 m (3,937 ft.)]	88 kPa (26.0 in.Hg)	
				Engine stopped [At altitude of 1,800 m (5,906 ft.)]	81 kPa (23.9 in.Hg)	
Brake light switch	74	Brake light switch	Ignition switch: "ON"	Depress the brake pedal fully	ON	–
				Release the brake pedal	OFF	
Calculated load value	73	Calculated load value	Engine: warming up	Engine: idling	10% – 30%	–
				2,500 r/min	10% – 30%	
Closed throttle position switch	84	Closed throttle position switch	Ignition switch: "ON"	Depress the accelerator pedal	OFF	–
				Release the accelerator pedal	ON	
Cranking signal	79	Cranking signal (ignition switch-ST)	Ignition switch: "ON"	Engine: stopped	OFF	Procedure No. 30
				Engine: cranking	ON	

M.U.T.-III SCAN TOOL DISPLAY	ITEM NO.	INSPECTION ITEM	INSPECTION REQUIREMENT		NORMAL CONDITION	INSPECTION PROCEDURE NO.
TP sensor (main) learned value	14	Throttle position sensor (main) mid opening learning value	This item shows the throttle valve opening learning value when the vehicle enters into the limp home mode.			–
TP sensor (sub)	15	Throttle position sensor (sub)	• Remove the intake air hose at the throttle body • Disconnect the throttle position sensor connector, and then connect terminals numbers No. 3, No. 4, No. 5 and No. 6 with the use of the special tool: MB991658. • Ignition switch: "ON"	Fully close the throttle valve with your finger	2,200 – 2,800 mV	Code No. P0222, P0223
				Fully open the throttle valve with your finger	4,600 mV or more	

ON-VEHICLE SERVICE

EVAPORATVE EMISSION VENTILATION SOLENOID CHECK

M1131012800365

The description in this section is not used for the vehicle for Russia.

SPECIFICATION(S)

GENERAL SPECIFICATION(S)

M1131000201068

ITEM		SPECIFICATION
Throttle body	Throttle bore mm (in.)	60 (2.4)
	Throttle position sensor	Hall element type
	Throttle actuator control motor	DC motor type, having brushes
Powertrain control module (PCM)	Identification model No.	E6T41690
Sensors	Mass airflow sensor	Heat sensitizing type
	Barometric pressure sensor	Semiconductor type
	Intake air temperature sensor	Thermistor type
	Engine coolant temperature sensor	Thermistor type
	Heated oxygen sensor	Zirconia type
	Accelerator pedal position sensor	Hall element type
	Transmission range switch	Contact switch type
	Camshaft position sensor	Magneto resistance element type
	Crankshaft position sensor	Magneto resistance element type
	Knock sensor	Piezoelectric type
	Power steering pressure switch	Contact switch type
	Manifold absolute pressure sensor	Semiconductor type
	Engine oil pressure switch	Contact switch type
Actuators	Multiport fuel injection (MFI) relay	Contact switch type
	Fuel pump relay	Contact switch type
	Throttle actuator control motor relay	Contact switch type
	Injector type and number	Electromagnetic type, 4
	Injector identification mark	IDH322S
	Engine oil control valve	Duty cycle type solenoid valve
	Exhaust gas recirculation (EGR) valve	Stepper motor type
	Evaporative emission purge solenoid	Duty cycle type solenoid valve

GENERAL INFORMATION

M1372000100832

Steering angle has been changed. Others are same as basic vehicles.

ON-VEHICLE SERVICE

STEERING ANGLE CHECK

M1372001100868

ITEM	Standard value
Inner wheel	34°12' ± 2°00'
Outer wheel (reference)	28°36'

SPECIFICATIONS

SERVICE SPECIFICATION

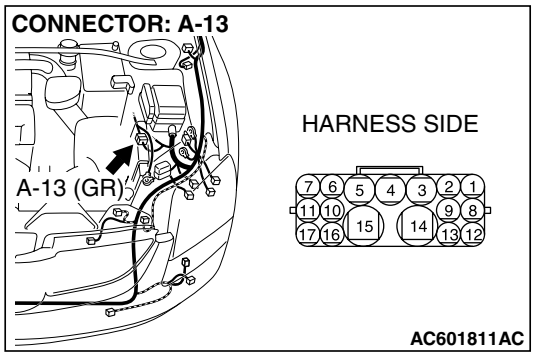
M1372000300966

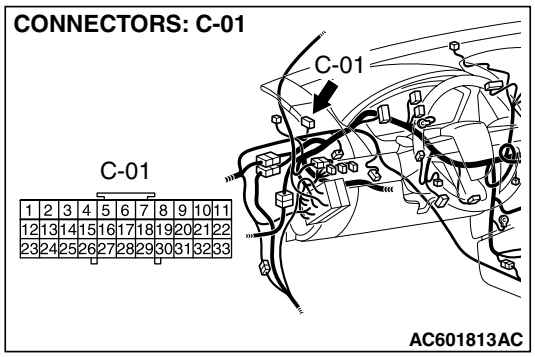
ITEM		STANDARD VALUE	LIMIT
Steering angle	Inside wheel	34°12' ± 2°00'	–
	Outside wheel (reference)	28°36'	–

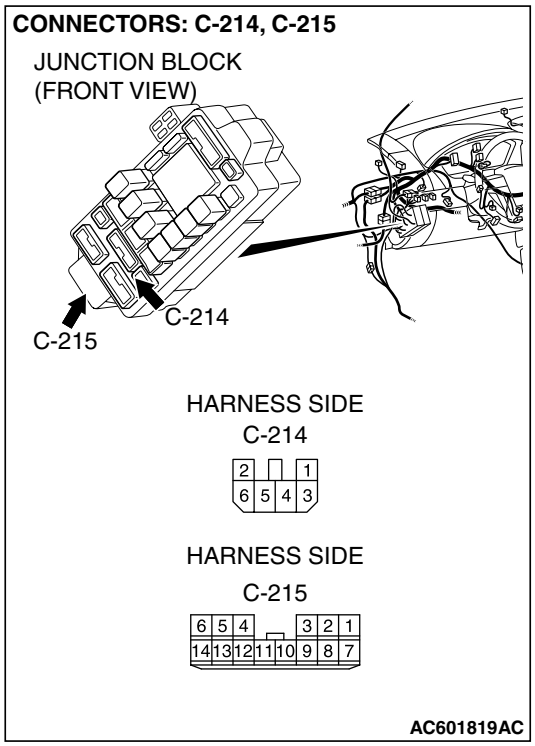
GROUP 52A

INTERIOR

CONTENTS







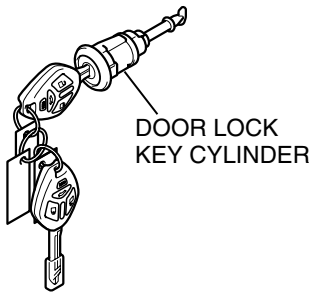
NOTE: Also check junction block connectors C-214, C-215, joint connector C-01, intermediate connectors A-13 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connectors C-214, C-215, joint connector C-01, intermediate connectors A-13 are damaged, Repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection.

Q: Is the wiring harness between transmission range switch connector B-110 (terminal 8) and the ignition switch (IG1) in good condition?

YES : No action is necessary and testing is complete.

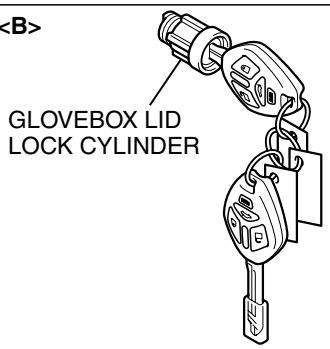
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary.

<A>



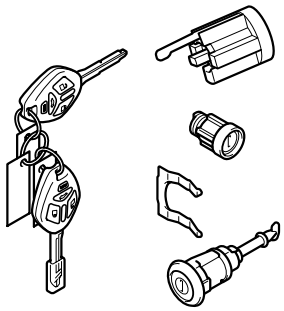
AC500530AB

<B>

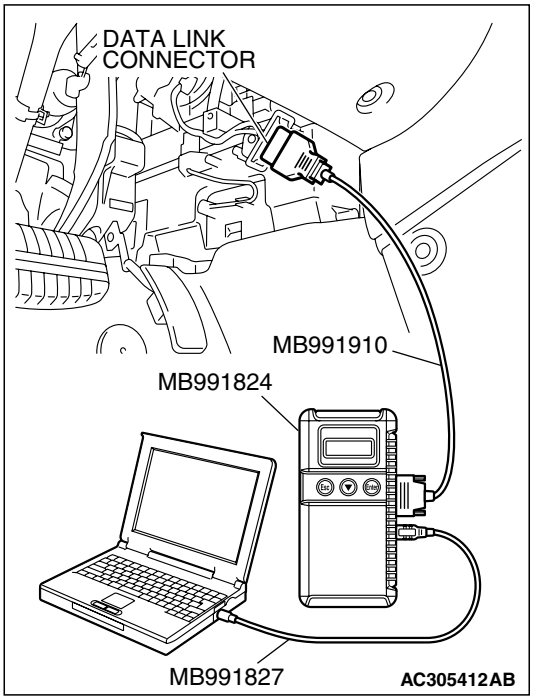


AC500529 AB

<C>



AC500531 AD



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⚠ CAUTION

- **Do not register the ignition keys other than the ignition key that starts the engine. (When replacing by the door lock key cylinder of illustration <A> or the glove box lid lock cylinder of illustration <B>, the engine cannot start if the encrypted code is registered with the bar code on the ignition key supplied simultaneously. If the ignition key using for each lock cylinder and starting engine is used as a common ignition key, replace by the key set of illustration <C>.)**
- **After the ignition key registration is finished, discard the barcode plate correctly at Mitsubishi dealer. The barcode plate has important information of the immobilizer system. Therefore, improper disposal of the barcode plate may decrease the security level.**
- **When the transmitter is replaced, the transmitter must be registered after registering the encrypted code. For the registration of the transmitter, refer to GROUP 42, How to Register Secret Code.**

Required Special Tools:

- 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

⚠ CAUTION

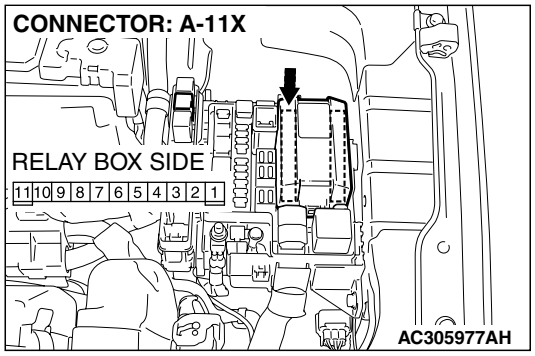
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

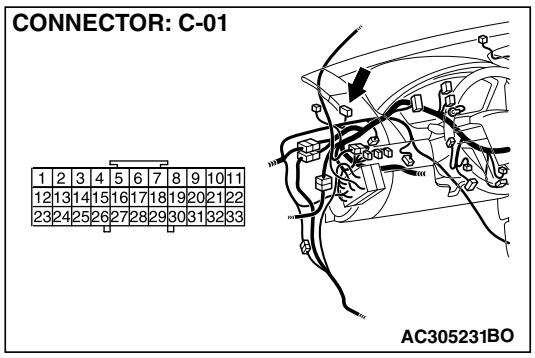
1. Connect scan tool MB991958 to the data link connector.
2. Turn the ignition switch to the "ON" position.

GROUP 54B

SIMPLIFIED WIRING SYSTEM (SWS)

CONTENTS



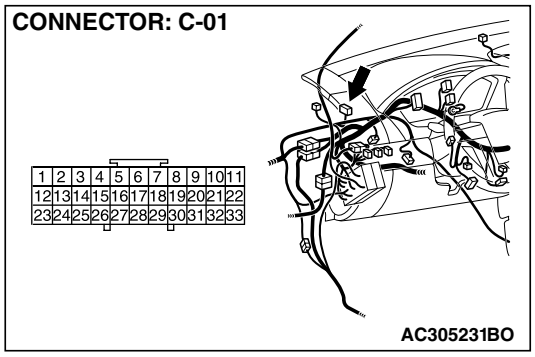


STEP 5. Check the wiring harness between joint connector C-01 (terminal 18) and front-ECU connector A-11X (terminal 4).

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.

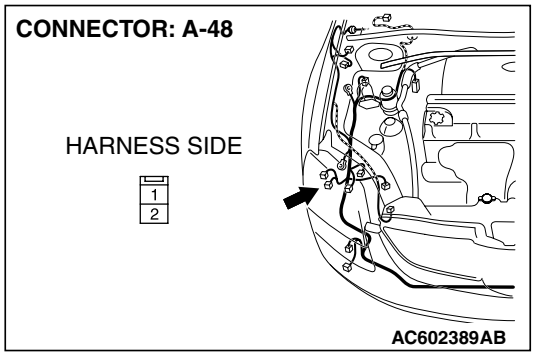


STEP 6. Check joint connector C-01 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

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.

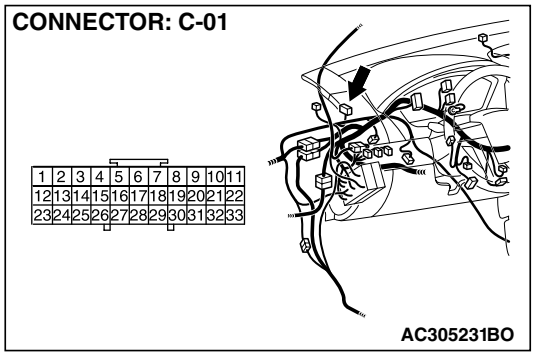


STEP 28. Check the wiring harness between position light light (RH) connector A-48 (terminal 2) and ground.

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.

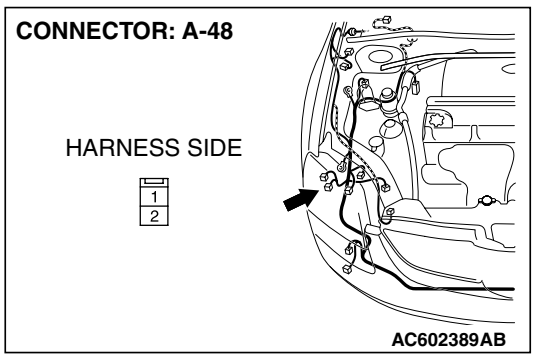


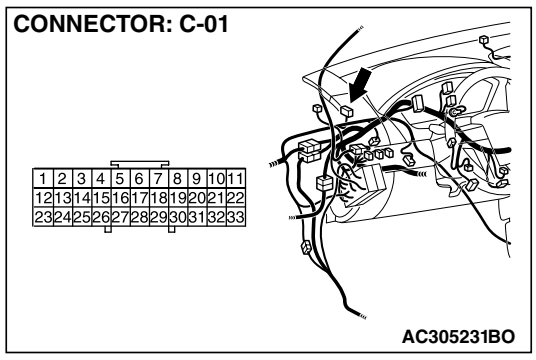
STEP 29. Check joint connector C-01 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

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.





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.

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.

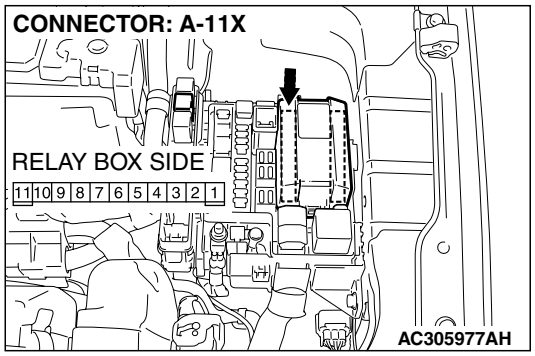
Q: Is headlight (LH) bulb normal?

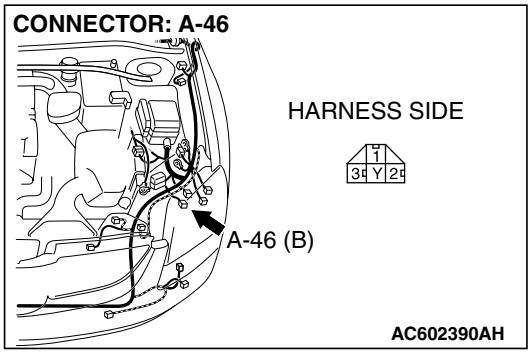
YES : Go to Step 10.
NO : Replace the headlight (LH) bulb. Verify that the headlights illuminate normally.

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

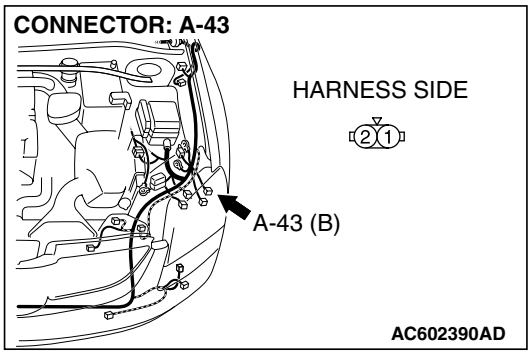
Q: Is the wiring harness between headlight (LH) connector A-46 (terminal 2) and front-ECU connector A-11X (terminal 6) in good condition?

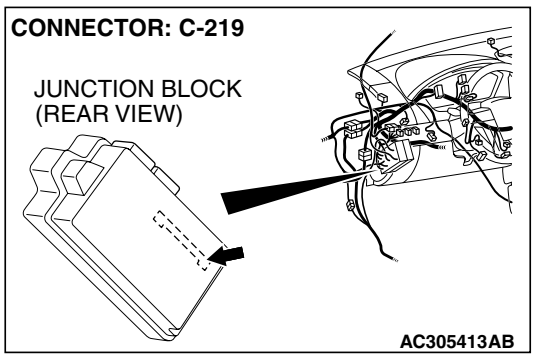
YES : No action is necessary and testing is complete.
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify that the headlights illuminate normally.

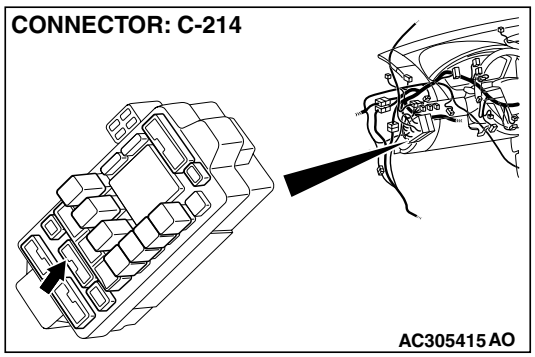




STEP 7. Check the wiring harness between front turn signal light (LH) connector A-43 (terminal 2) and ETACS-ECU connector C-219 (terminal 14).







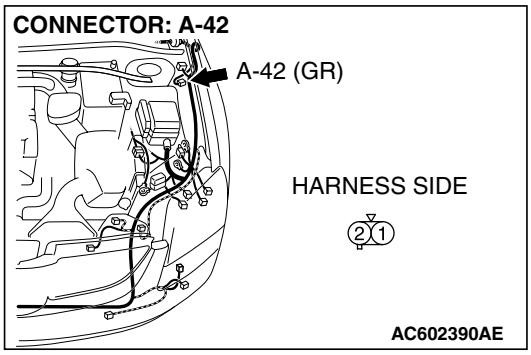
NOTE: Also check junction block connector C-214 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If junction block connector C-214 is damaged, repair or replace the damaged component(s) as described in GROUP 00E, Harness Connector Inspection.

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?

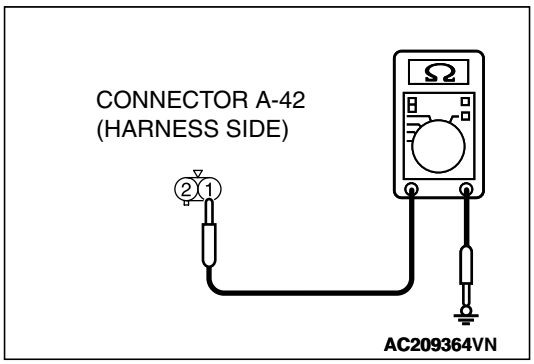
YES : Replace the front turn signal light socket (LH). Verify that the turn-signal lights illuminate normally.

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 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.

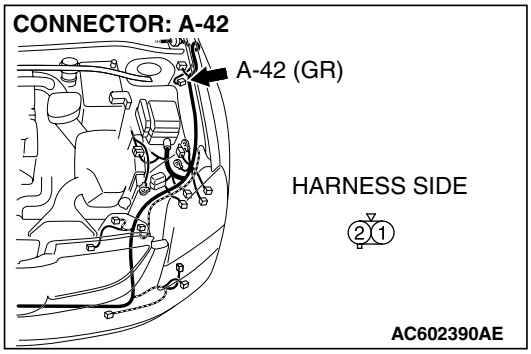


(2) Measure the resistance value between terminal 1 and ground.
- The resistance should be 2 ohms or less.

Q: Is the measured resistance 2 ohms or less?

YES : Go to Step 30.
NO : Go to Step 29.

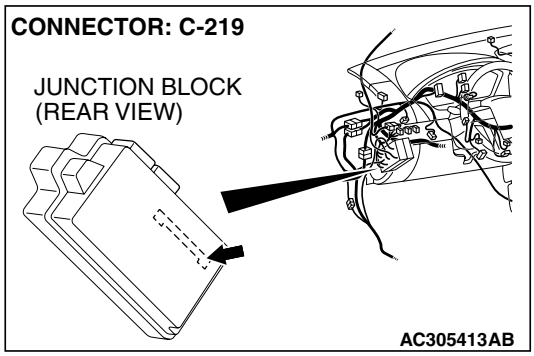
STEP 29. Check the wiring harness between side turn signal light (LH) connector A-42 (terminal 1) and ground.



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

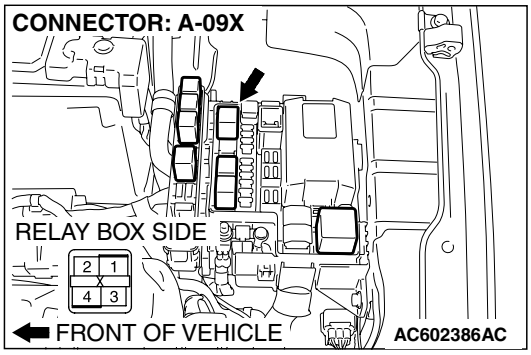
YES : Replace the side turn signal light socket (LH). Verify that the turn-signal lights illuminate normally.
NO : The wiring harness may be damaged or the connector(s) may have loose, corroded or damaged terminals, or terminals pushed back in the connector. Repair the wiring harness as necessary. Verify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

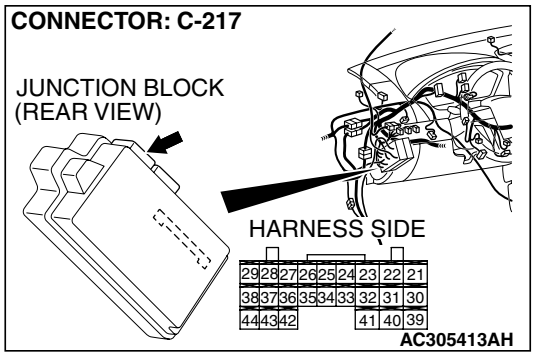


STEP 7. Check the wiring harness between rear fog light relay connector A-09X (terminals 1 and 2) and the battery.

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.

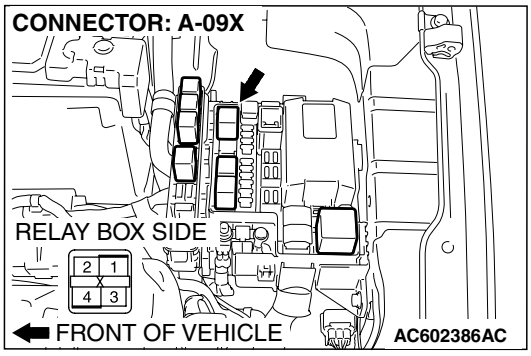


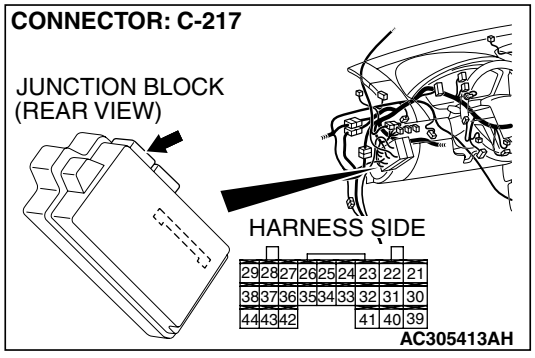
STEP 8. Check ETACS-ECU connector C-217 for loose, corroded or damaged terminals, or terminals pushed back in the connector.

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.

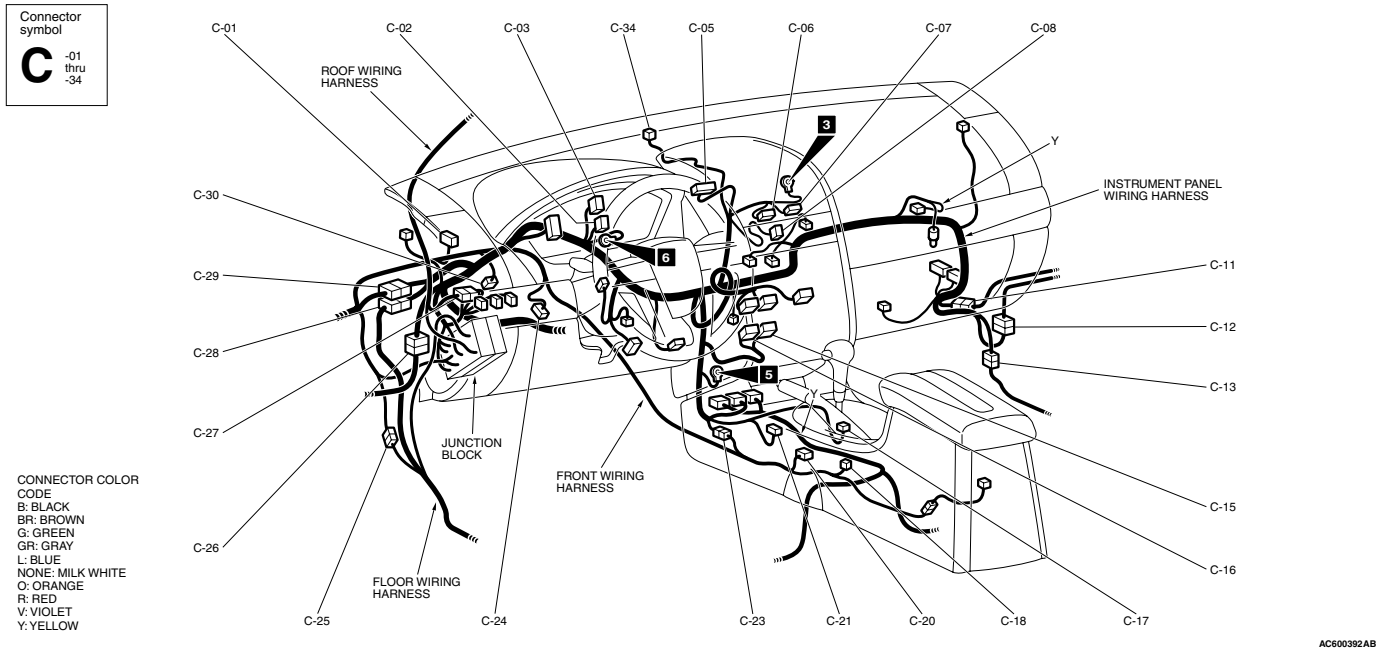
GROUP 55B

AUTOMATIC AIR CONDITIONING

CONTENTS

DASH PANEL <VEHICLES FOR RUSSIA>

M1801000602106



C-01	(33)	J/C (1)
C-02	(22)	J/C (3)
C-03	(33)	J/C (2)
C-05	(20-B)	MULTI CENTER DISPLAY UNIT
C-06	(3)	AIR BAG OFF INDICATOR LIGHT (PASSENGER'S SIDE)
C-07	(4)	SEAT BELT WARNING LIGHT (PASSENGER'S SIDE)
C-08	(4)	HAZARD WARNING LIGHT SWITCH
C-11	(2)	INSTRUMENT PANEL WIRING HARNESS AND FRONT WIRING HARNESS COMBINATION
C-12	(19)	INSTRUMENT PANEL WIRING HARNESS AND FRONT DOOR WIRING HARNESS (RH) COMBINATION
C-13	(8)	INSTRUMENT PANEL WIRING HARNESS AND FLOOR WIRING HARNESS COMBINATION
C-15	(20-B)	A/C-ECU
C-16	(16-B)	A/C-ECU
C-17	(2)	ACCESSORY SOCKET (1)
C-18	(1-B)	PARKING BRAKE SWITCH
C-20	(8)	SHIFT SWITCH ASSEMBLY
C-21	(9)	HEATED SEAT SWITCH
C-23	(8)	INSTRUMENT PANEL WIRING HARNESS AND FRONT WIRING HARNESS COMBINATION
C-24	(6-B)	ACCELERATOR PEDAL POSITION SENSOR
C-25	(16)	FRONT WIRING HARNESS AND FLOOR WIRING HARNESS COMBINATION
C-26	(32)	INSTRUMENT PANEL WIRING HARNESS AND FRONT DOOR WIRING HARNESS (LH) COMBINATION
C-27	(4)	INSTRUMENT PANEL WIRING HARNESS AND ROOF WIRING HARNESS COMBINATION
C-28	(43)	INSTRUMENT PANEL WIRING HARNESS AND FLOOR WIRING HARNESS COMBINATION
C-29	(38)	INSTRUMENT PANEL WIRING HARNESS AND FRONT WIRING HARNESS COMBINATION
C-30	(4)	STOPLIGHT SWITCH
C-34	(2)	PHOTO SENSOR

NO.	POWER SUPPLY CIRCUIT	NAME	RATED CAPACITY (A)	HOUSING COLOR	LOAD CIRCUIT
1	–	Fuse	–	–	–
2	–		–	–	–
3	Fusible link No.28		30	Green	Audio amplifier
4	Fusible link No.5		20	Yellow	Sunroof assembly
5	Fusible link No.1		30	Green	Capacitor and rear window defogger
6			30	Green	Blower motor and resistor
7			–	–	–
8			–	–	–
9			15	Blue	Accessory socket
10			15	Blue	Data link connector and ETACS-ECU
11	Ignition switch (ACC)		15	Blue	ETACS-ECU
12			–	–	–
13	Ignition switch (IG2)		7.5	Brown	Automatic anti-dazzling mirror and sunroof assembly
14	Ignition switch (ACC)		7.5	Brown	Remote controlled mirror
15			–	–	–
16			–	–	–
17	Ignition switch (IG1)		7.5	Brown	Fuel pump relay and powertrain control module
18	Ignition switch (ACC)		–	–	–
19	Fusible link No.1 (Fuse No.5 in junction block)		7.5	Brown	Remote controlled mirror (mirror heater)
20	Ignition switch (IG2)		7.5	Brown	A/C compressor clutch relay, A/C-ECU, blower relay, condenser fan motor, fan control relay, front-ECU, heated seat relay, outside/inside air selection damper control motor, radiator fan relay and rear window defogger relay
21	Ignition switch (IG1)		–	–	–

REAR FOG LIGHT <VEHICLES FOR RUSSIA>

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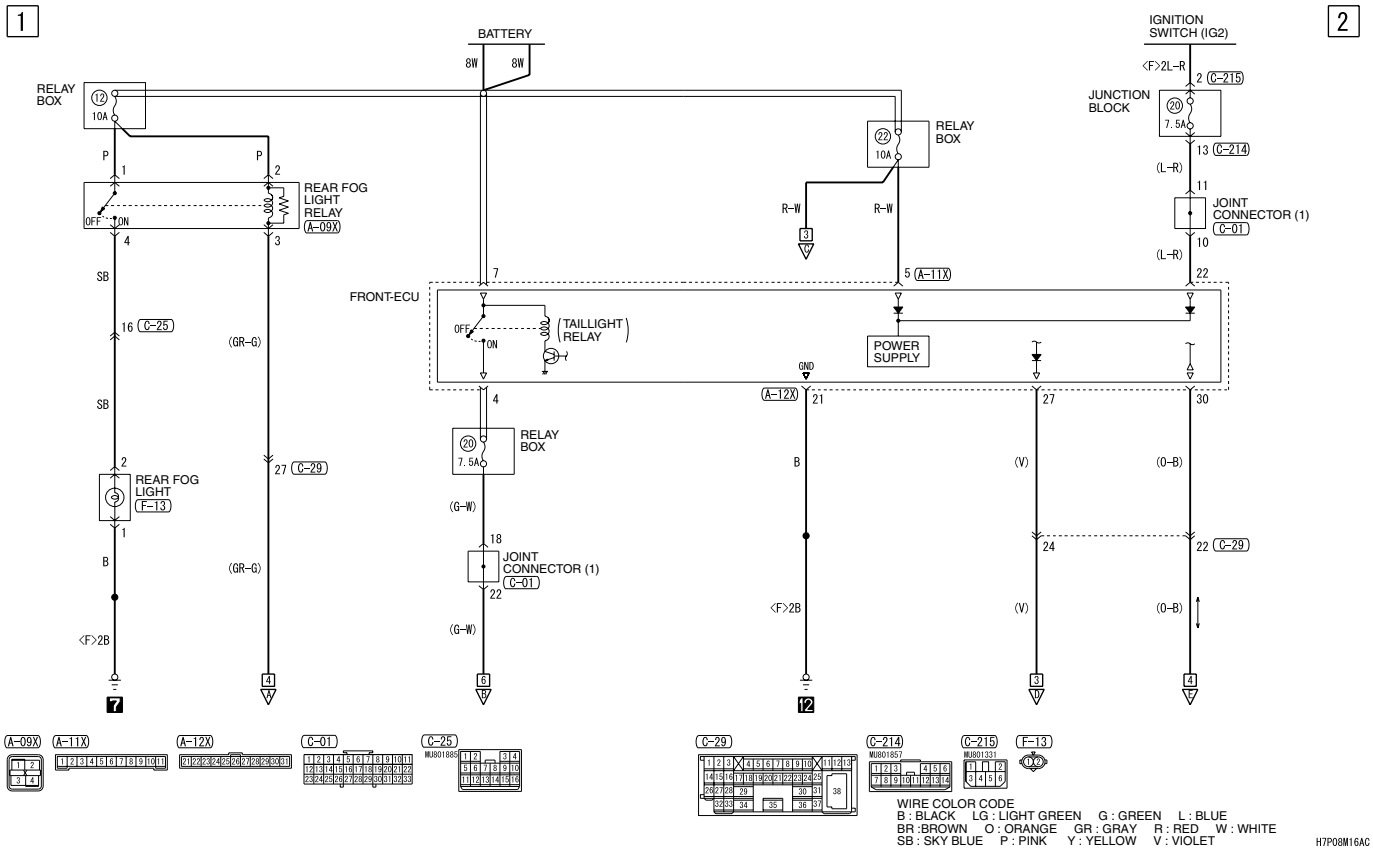

TSB Revision