

GROUP 55B

AUTOMATIC AIR  
CONDITIONING

CONTENTS

GENERAL DESCRIPTION.....	55B-2	SPECIAL TOOLS .....	55B-19
AUTOMATIC A/C DIAGNOSIS .....	55B-4	SENSORS.....	55B-21
INTRODUCTION.....	55B-4	REMOVAL AND INSTALLATION .....	55B-21
AUTOMATIC AIR CONDITIONING TROUBLESHOOTING STRATEGY .....	55B-4	INSPECTION.....	55B-21
DIAGNOSTIC FUNCTION .....	55B-4	OTHER PARTS.....	55B-22
DIAGNOSTIC TROUBLE CODE CHART..	55B-8	OTHER PARTS MAINTENANCE SERVICE POINTS .....	55B-22
DIAGNOSTIC TROUBLE CODE PROCEDURES.....	55B-9		
DATA LIST REFERENCE TABLE .....	55B-12		
ACTUATOR TEST .....	55B-16		
CHECK AT A/C-ECU TERMINAL.....	55B-17		

## GENERAL DESCRIPTION

M1552000100696

The blower, heater, and evaporator have been integrated with the heater and A/C system to achieve greater fan power and noise reduction.

ITEM	SPECIFICATION
Heater control assembly	Dial type
Compressor mode	MSC90CAS
Compressor type	Scroll type
Refrigerant and quantity g (oz)	R-134a (HFC-134a), 480 –520 (16.9 –18.3)

## SAFETY PRECAUTIONS

**⚠ WARNING**

***Wear safety goggles and gloves when servicing the refrigeration system to prevent severe damage to eyes and hands.***

Because R-134a refrigerant is a hydro fluorocarbon (HFC) which contains hydrogen atoms in place of chlorine atoms, it will not cause damage to the ozone layer.

Ozone filters out harmful radiation from the sun. To assist in protecting the ozone layer, Mitsubishi Motors Corporation recommends an R-134a refrigerant recycling device.

Refrigerant R-134a is transparent and colorless in both the liquid and vapor state. Since it has a boiling point of  $-29.8^{\circ}\text{C}$  ( $-21.64^{\circ}\text{F}$ ) at atmospheric pressure, it will be a vapor at all normal temperatures and pressures. The vapor is heavier than air, non-flammable, and non-explosive. The following precautions must be observed when handling R-134a.

**⚠ WARNING**

***Do not heat R-134a above  $40^{\circ}\text{C}$  ( $104.0^{\circ}\text{F}$ ) or it may catch fire and explode.***

R-134a evaporates so rapidly at normal atmospheric pressures and temperatures that it tends to freeze anything it contacts. For this reason, extreme care must be taken to prevent any liquid refrigerant from contacting the skin and especially the eyes. Always wear safety goggles when servicing the refrigeration part of the A/C system. Keep a bottle of sterile mineral oil handy when working on the refrigeration system.

1. Should any liquid refrigerant get into your eyes, use a few drops of mineral oil to wash them out. R-134a is rapidly absorbed by the oil.
2. Next, splash your eyes with plenty of cold water.
3. Call your doctor immediately even if irritation has ceased.

**⚠ CAUTION**

**Keep R-134a containers upright when charging the system.**

In most instances, moderate heat is required to bring the pressure of the refrigerant in its container above the pressure of the system when charging or adding refrigerant.

A bucket or large pan of hot water not over  $40^{\circ}\text{C}$  ( $104.0^{\circ}\text{F}$ ) is all the heat required for this purpose. Do not heat the refrigerant container with a blow torch or any other means that would raise temperature and pressure above this temperature. Do not weld or steam-clean on or near the system components or refrigerant lines.

**⚠ WARNING**

***A leak detector for R-134a should be used to check for refrigerant gas leaks.***

**⚠ CAUTION**

**Do not allow liquid refrigerant to touch bright metal or it will be stained.**

When metering R-134a into the refrigeration system, keep the supply tank or cans in an upright position. If the refrigerant container is on its side or upside down, liquid refrigerant will enter the system and damage the compressor.

Refrigerant will tarnish bright metal and chrome surfaces, and in combination with moisture can severely corrode all metal surfaces.

## OPERATION

## CONDENSER FAN AND RADIATOR FAN CONTROL

The ECM judges the required revolution speed of radiator fan motor and condenser fan motor using the input signals transmitted from A/C switch, output shaft speed sensor and engine coolant temperature sensor.

## COMPRESSOR CONTROL

### When operating the A/C switch

- The air thermo sensor, which senses the temperature of the air flowing out of the evaporator, deactivates the compressor at 1° C (33.8° F) or below.
- A/C-ECU detect refrigerant pressure by A/C pressure sensor and turns OFF when the refrigerant pressure becomes excessively high or low, thus protecting the compressor circuit (See Table below).

- When the air thermo sensor is activated, and the ignition switch, blower switch, and A/C switch are ON, the A/C compressor clutch relay is energized.

### When operating the mode selection dial

- The A/C will work when the mode selection dial is set to the "Defroster" or "Defroster/foot" position, or the temperature control dial is set to the "MAX A/C" position. In other dial positions, when the A/C switch is turned on, the A/C will work.

### A/C Compressor Clutch Relay ON Conditions

Ignition switch (IG2)		ON	<i>NOTE: A/C compressor clutch relay is de-energized when any one switch, sensor or control unit shown on the left turns off.</i> <i>NOTE: The components marked by * communicate with the ECU. If the air thermo sensor detects a temperature of 1 °C (33.8 °F), the A/C-ECU will turn off the A/C compressor clutch relay.</i>
Blower switch		ON	
A/C switch, mode selection dial defroster, defroster/foot position or temperature control MAX A/C		ON	
Air thermo sensor		*	
Pressure detected by A/C pressure sensor	2.94 MPa (427psi) or less (If the refrigerant pressure exceeds 2.94 MPa (427psi), A/C compressor clutch relay is not ON condition until the refrigerant pressure has been measured up to 2.35 MPa (341psi) a or less.)	ON	
	0.19 MPa (27psi) or more (If the refrigerant pressure falls short of 0.19 MPa (27psi), A/C compressor clutch relay is not ON condition until the refrigerant pressure has been measured up to 0.22 MPa (32psi) or more.)		
A/C compressor clutch relay driving transistor (within powertrain control module)		ON	

## AUTOMATIC A/C DIAGNOSIS

### INTRODUCTION

M1554006200103

After air is taken in through the air selection damper, it is fed to the evaporator by the blower fan and motor and cooled. The air cooled by the evaporator is mixed appropriately with the warmed air which pass through the heater core to achieve a comfortable temperature. If the A/C does not operate or the cooled air is not discharged, the system components or relay may be faulty.

### AUTOMATIC AIR CONDITIONING TROUBLESHOOTING STRATEGY

M1554004700652

Use these steps to plan your diagnostic strategy. If you follow them carefully, you will be sure that you have exhausted most of the possible ways to find a heater, air conditioning and ventilation fault.

1. Gather information from the customer.
2. Verify that the condition described by the customer exists.
3. Find the malfunction by following the Symptom Chart.
4. Verify malfunction is eliminated.

### DIAGNOSTIC FUNCTION

M1552019800369

#### HOW TO CONNECT THE SCAN TOOL (M.U.T.-III)

##### Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

##### **CAUTION**

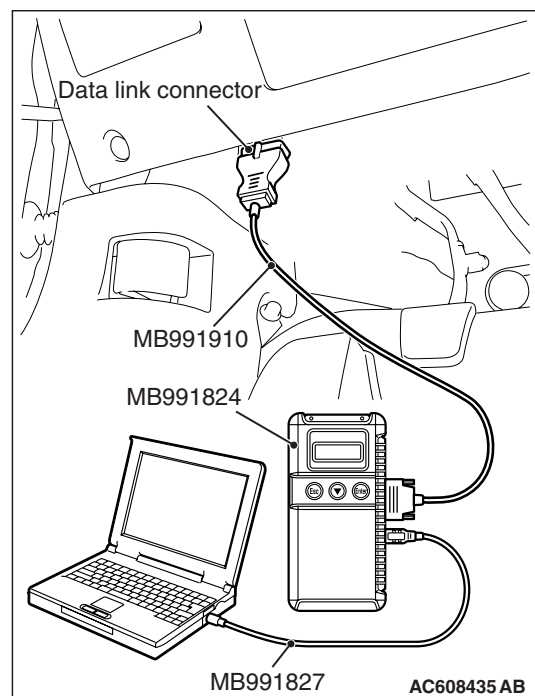
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

1. Ensure that the ignition switch is at the "LOCK" (OFF) position.
2. Start up the personal computer.
3. Connect special tool MB991827 to special tool MB991824 and the personal computer.
4. Connect special tool MB991910 to special tool MB991824
5. Connect special tool MB991910 to the data link connector.
6. Turn the power switch of special tool MB991824 to the "ON" position.

*NOTE: When the special tool MB991824 is energized, the special tool MB991824 indicator light will be illuminated in a green color.*

7. Start the M.U.T.-III system on the personal computer.

*NOTE: Disconnecting the scan tool special tool MB991824 is the reverse of the connecting sequence, making sure that the ignition switch is at the "LOCK" (OFF) position.*



## HOW TO READ AND ERASE DIAGNOSTIC TROUBLE CODES

### Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

### CAUTION

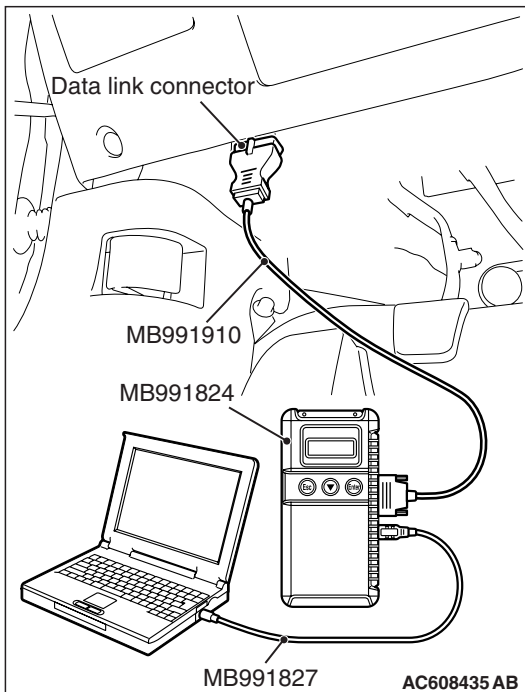
To prevent damage to scan tool MB991958, always turn the ignition switch to the "LOCK" (OFF) position before connecting or disconnecting scan tool MB991958.

*NOTE: If the battery voltage is low, diagnostic trouble codes will not be output. Check the battery if scan tool MB991958 does not display.*

1. Connect the scan tool MB991958 to the data link connector.
2. Turn the ignition switch to the "ON" position.
3. Select "System select" from the start-up screen.
4. Select "From 2006 MY" of "Model Year." When the "Vehicle Information" is displayed, check the contents.
5. Select "AUTO A/C" from "System List," and press the "OK" button.

*NOTE: When the "Loading Option Setup" list is displayed, check the applicable item.*

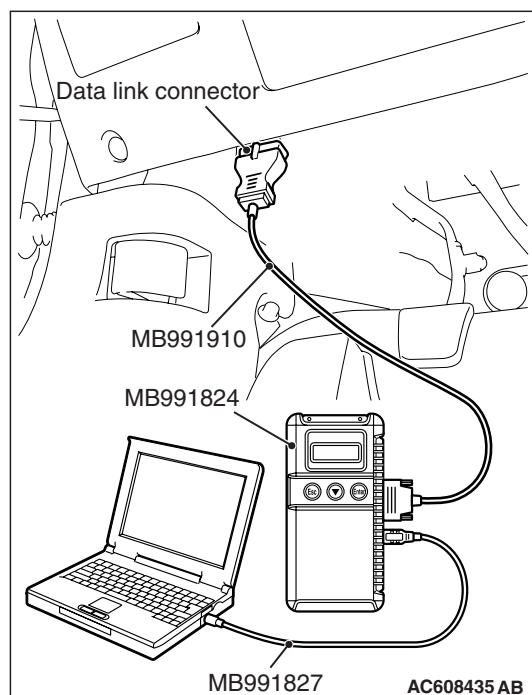
6. Select "Diagnostic Trouble Code" to read the DTC.
7. If a DTC is set, it is shown.
8. Choose "Erase DTCs" to erase the DTC.



## HOW TO READ DATA LIST

### Required Special Tools:

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

**⚠ 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 the scan tool MB991958 to the data link connector.
2. Turn the ignition switch to the "ON" position.
3. Select "Interactive Diagnosis" from the start-up screen.
4. Select "System Select."  
Select "AUTO A/C" from "System List," and press the "OK" button.
5. Select "Data List."
6. Choose an appropriate item and select the "OK" button.

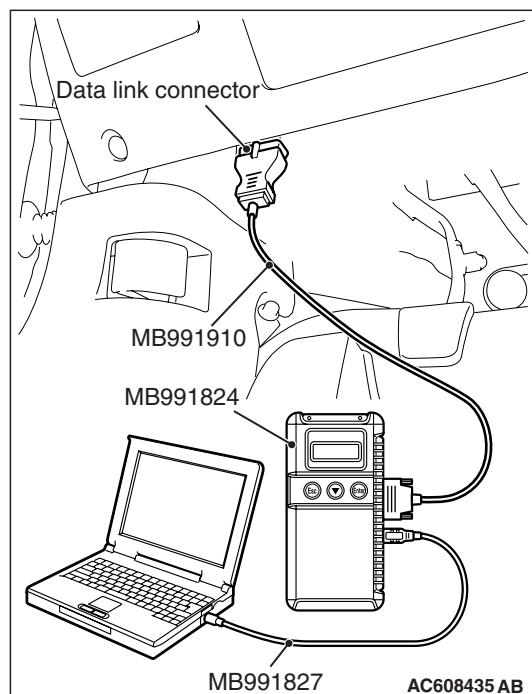
**HOW TO PERFORM ACTUATOR TEST****Required Special Tools:**

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A (Vehicles with CAN communication system)

**⚠ 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 the scan tool MB991958 to the data link connector.
2. Turn the ignition switch to the "ON" position.
3. Select "System Select."
4. Select "AUTO A/C" from "System List," and press the "OK" button.
5. Choose "Actuator Test" from "AUTO A/C" screen.
6. Choose an appropriate item and select the "OK" button.





## DIAGNOSTIC TROUBLE CODE CHART

**⚠ CAUTION**

During diagnosis, a DTC code associated with another system may be set when the ignition switch is turned on with connector(s) disconnected. After completing the repair, confirm all systems for DTC code(s). If DTC code(s) are set, erase them all.

Diagnostic trouble code No.	Diagnostic item	Reference page
B10C0	Interior temperature sensor system (short circuit)	<a href="#">P.55B-9</a>
B10C1	Interior temperature sensor system (open circuit)	<a href="#">P.55B-9</a>
B1000	Control panel communication error	Refer to GROUP 55A diagnostic trouble code chart <a href="#">P.55A-9</a>
B1003	Mode dial SW error	
B1018	Temperature control dial SW error	
B1021	Fan dial SW error	
B1031	Air thermo sensor system (short circuit)	
B1032	Air thermo sensor system (open circuit)	
B1034*	Ambient air temperature sensor system (short circuit)	
B1035*	Ambient air temperature sensor system (open circuit)	
B1079	Refrigerant leaks	
B2214	Control panel failure	
B223B	Control panel improperly assembled	
U1415	Coding not completed	
U0019	Bus off (CAN1)	
U0141	ETACS-ECU time-out	
U0151	SRS-ECU time-out	
U0154	Occupant classification-ECU time-out	
U0155	Combination meter time-out	
U0168	WCM time-out	
U0184	Audio time-out	
U0195	Satellite radio tuner time-out	
U0197	Hands free module time-out	

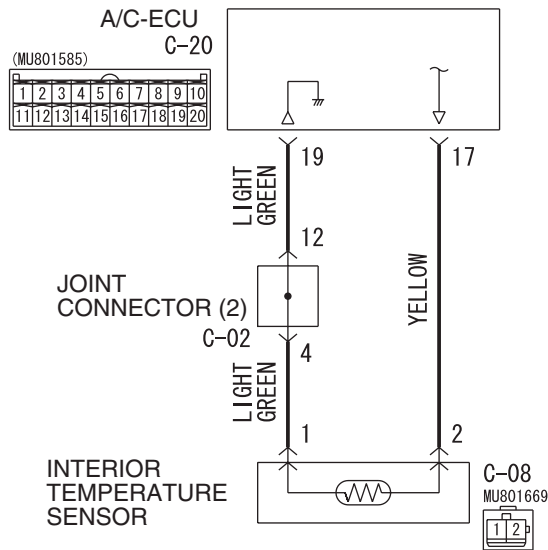
*NOTE: The diagnostic trouble codes marked by \* are set from the ETACS-ECU.*



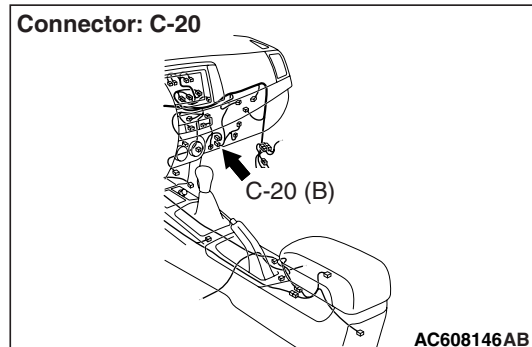
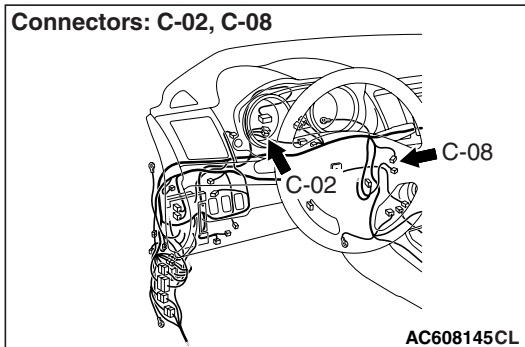
## DIAGNOSTIC TROUBLE CODE PROCEDURES

### DTC B10C0, B10C1: Interior Temperature Sensor System

Interior Temperature Sensor Circuit



W8G55M012A



### DTC SET CONDITION

- DTC B10C0 is set if there is a short circuit in the interior temperature sensor input circuit.
- DTC B10C1 is set if there is a defective connector connection, or if there is an open circuit in the harness.

### TECHNICAL DESCRIPTION (COMMENT)

#### Current trouble

- The A/C-ECU, the interior temperature sensor, or connector(s) or wiring between the two may be defective.

**Past trouble**

- If DTC B10C0 or B10C1 is stored as a past trouble, carry out diagnosis with particular emphasis on wiring and connector(s) between the A/C-ECU and the interior temperature sensor. If the connectors and wiring are normal, and obviously the ECU is the cause of the trouble, replace the ECU. If in doubt, do not replace the ECU.

**TROUBLESHOOTING HINT**

- Malfunction of connector.
- Malfunction of the harness.
- Malfunction of the interior temperature sensor.
- Malfunction of the A/C-ECU.

**DIAGNOSIS****Required Special Tool:**

- MB991958: Scan Tool (M.U.T.-III Sub Assembly)
  - MB991824: Vehicle Communication Interface (V.C.I.)
  - MB991827: M.U.T.-III USB Cable
  - MB991910: M.U.T.-III Main Harness A

---

**STEP 1. 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.**

Use scan tool MB991958 to diagnose the CAN bus lines.

- (1) Connect scan tool MB991958. Refer to "How to connect the Scan Tool (M.U.T.-III) [P.55B-4](#)."
- (2) Turn the ignition switch to "ON" position.
- (3) Diagnose the CAN bus line.

**Q: Is the check result satisfactory?**

**YES :** Go to Step 2.

**NO :** Repair the CAN bus lines. Repair the CAN bus lines (Refer to GROUP 54C, Diagnosis-Can Bus Diagnostic Chart [P.54C-17](#)).

---

**STEP 2. Recheck for diagnostic trouble code.**

Recheck if the DTC is set.

- (1) Erase the DTC.
- (2) Turn the ignition switch to "ON" position.
- (3) Check if the DTC is set.

**Q: Is the check result satisfactory?**

**YES :** It can be assumed that this malfunction is intermittent. Refer to GROUP 00, How to Use Troubleshooting/Inspection Service Points –How to Cope with Intermittent Malfunctions [P.00-14](#).

**NO :** Go to Step 3.

**STEP 3. Check interior temperature sensor connector C-08 and A/C-ECU connector C-20 for loose, corroded or damaged terminals, or terminals pushed back in the connector.**

**Q: Are interior temperature sensor connector C-08 and A/C-ECU connector C-20 in good condition?**

**YES :** Go to Step 4.

**NO :** Repair or replace the connector. Refer to GROUP 00E, Harness Connector Inspection [P.00E-2](#).

**STEP 4. Check the wiring harness between A/C-ECU connector C-20 (terminals 17 and 19) and interior temperature sensor connector C-08 (terminals 2 and 1).**

*NOTE: Also check joint connector C-02 for loose, corroded, or damaged terminals, or terminals pushed back in the connector. If joint connector C-02 is damaged, repair or replace the connector as described in GROUP 00E, Harness Connector Inspection [P.00E-2](#).*

- Check the sensor signal line and ground line for open and short circuit.

**Q: Is the wiring harness between A/C-ECU connector C-20 (terminals 17 and 19) and interior temperature sensor connector C-08 (terminals 2 and 1) in good condition?**

**YES :** Go to Step 5.

**NO :** Repair the wiring harness.

**STEP 5. Check the interior temperature sensor.**

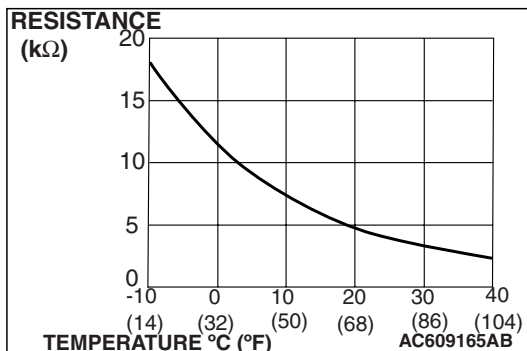
Measure the resistance between connector terminals 1 and 2 under at least two different temperatures. The resistance values should generally match those in the graph.

*NOTE: The temperature at the check should not exceed the range in the graph.*

**Q: Is the interior temperature sensor in good condition?**

**YES :** Replace the A/C-ECU. Then go to Step 6.

**NO :** Replace the interior temperature sensor. Then go to Step 6.



**STEP 6. Recheck for diagnostic trouble code.**

Check again if the DTC is set.

- (1) Connect scan tool MB991958 to the data link connector
- (2) Turn the ignition switch to the "ON" position.
- (3) Check if the DTC is set.
- (4) Turn the ignition switch to the "LOCK" (OFF) position.

**Q: Is the check result satisfactory?**

**YES :** The procedure is complete.

**NO :** Return to Step 1.

## DATA LIST REFERENCE TABLE

M1554005101247

Scan tool display	Item No.	Inspection status	The display contents under normal conditions
Engine speed	17	—	Displays correct engine speed.
Ambient temperature sensor	19	—	Ambient temperature is the same as scan tool displayed temperature
Air thermo sensor	20	—	Evaporator outlet temperature is the same as scan tool displayed temperature.
Interior temperature sensor	21	—	Interior temperature is the same as scan tool displayed temperature
Temperature setting	23		Displays air conditioning set temperature.
ETC sensor	24	—	Engine coolant temperature is the same as scan tool displayed temperature.
Vehicle speed	26	—	Displays vehicle speed.
A/C Compressor drive request	27	Compressor ON	ON
		Compressor OFF	OFF
Air conditioning switch	28	Air conditioning switch ON	ON
		Air conditioning switch OFF	OFF
Refrigerant leak	29	—	Normal
Idle up request	34	—	Displays idle-up request signal.
Rear heater SW light*	35	—	—
PTC heater 1*	36	—	—
PTC heater 2*	37	—	—
PTC heater 3*	38	—	—
In/out select damp poten (target)	45	—	Displays outside/inside air selection damper target position.
In/out select damp potentiometer	46	—	Displays outside/inside air selection damper position.
Air outlet c/o potentiometer	55	—	Displays air outlet changeover damper position.

<b>Scan tool display</b>	<b>Item No.</b>	<b>Inspection status</b>	<b>The display contents under normal conditions</b>
Air outlet c/o potentio. (Target)	56	—	Displays air outlet changeover damper target position.
Low pressure judgment	57	—	Normal
Rear defogger switch	60	Rear window defogger switch ON	ON
		Rear window defogger switch OFF	OFF
Pressure sensor	61	—	Displays refrigerant pressure.
Air mix potentiometer	63	—	Displays the air mix damper position.
Photo sensor*	67	—	-
Front blower fan	68	—	Displays blower motor condition.
Front blower fan (Target)	69	—	Displays blower motor target value.
Refrigerant pressure	73	—	Displays refrigerant pressure status.
Condenser fan	74	—	Displays condenser fan running condition.
Temp. set dial position	76	—	Displays the set temperature output value on the control panel.
A/C Panel type	77	—	Dial/Auto/RHD
Fan set dial position	78	—	Displays the air volume output value on the control panel.
Air outlet c/o set dial position	79	—	Displays output value to the air outlet changeover dial on the control panel.
Fan set dial operation flag	80	—	ON when the air volume adjusting dial is operated
A/C SW operation flag	81	—	ON when the air conditioning switch is operated
Temp. set dial operation flag	82	—	ON when the air conditioning switch is operated
Defogger flag	83	—	ON when the air outlet changeover dial is set to the DEF position.

Scan tool display	Item No.	Inspection status	The display contents under normal conditions
In/out air c/o SW operation flag	84	—	ON when the inside air/outside air changeover switch is operated
Rear defogger SW operation flag	87	—	ON when the rear window switch is operated
Rear defogger SW light	88	—	Displays rear window switch indicator status.
A/C SW light	89	—	Displays air conditioning switch indicator status.
In/out air c/o SW light	90	—	Displays the status of the inside air/outside air changeover switch indicator.
A/C Compressor drive flag	91	—	ON when the compressor is activated.
Wiper operation flag	92	—	ON when the wiper is operated.
Ignition position information	93	—	Ignition switch position status
Power source voltage	94	—	Displays power supply voltage.
IOD fuse equipment flag	95	—	IOD fuse status
A/T lock up open request	96	—	—
System operation time	100	—	—
Compressor use times	101	—	—
Rear defogger use times	102	—	—
In/out air c/o poten drive time	103	—	—
Air outlet c/o poten drive time	104	—	—
Air mix potentiometer drive time	105	—	—
Hot state time (Interior TEMP.)	106	—	—
Cold state time (Interior TEMP.)	107	—	—
Hot state time (Ambient TEMP.)	108	—	—
Cold state time (Ambient TEMP.)	109	—	—
Maximum ambient temperature	110	—	—

<b>Scan tool display</b>	<b>Item No.</b>	<b>Inspection status</b>	<b>The display contents under normal conditions</b>
Minimum ambient temperature	111	—	—
Maximum Engine coolant TEMP.	112	—	—
Engine high speed time	113	—	—
Maximum Engine speed	114	—	—
High pressure drive time	115	—	—
High pressure cut times	116	—	—
Maximum pressure (kPa)	117	—	—
A/C use rate	118	—	—
Compressor operation rate	119	—	—
Eco operation rate	120	—	—
Recirc use rate	121	—	—
A/C operation times	122	—	—
In/out air c/o operation times	123	—	—
Mode dial operation times	124	—	—
Blower fan dial operation times	125	—	—
TEMP. set dial operation times	126	—	—
FACE mode use rate	127	—	—
B/L mode use rate	128	—	—
FOOT mode use rate	129	—	—
D/F mode use rate	130	—	—
DEF mode use rate	131	—	—
Fan OFF use rate	132	—	—
Fan 1-2step use rate	133	—	—
Fan 3-4step use rate	134	—	—
Fan 5-6step use rate	135	—	—
Fan 7-8step use rate	136	—	—
Temp 1-7 step use rate	137	—	—
Temp 8-10step use rate	138	—	—
Temp 11-13 step use rate	139	—	—
Temp 17-19step use rate	140	—	—
Temp 20-22step use rate	141	—	—
Temp 23-29step use rate	142	—	—
PTC heater1 use times*	143	—	—

Scan tool display	Item No.	Inspection status	The display contents under normal conditions
PTC heater2 use times*	144	—	—
PTC heater3 use times*	145	—	—
Fan LO driving time	146	—	—
Fan M1 driving time	147	—	—
Fan M2 driving time	148	—	—
Fan HI driving time	149	—	—
Rear PTC heater counter*	150	—	—

NOTE: \* shows that it is displayed but not used.

## ACTUATOR TEST

M1554005201136

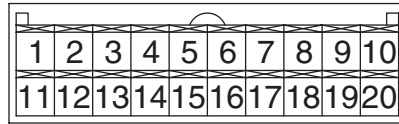
Item No.	Check items	Driven content
2	idle up request	Idle-up request signal
5	In/out selection damper	The moving position of outside/inside air selection damper motor
6	Air mix damper motor	The moving position of air mix damper motor
7	Front blower fan	The amount of blower motor rotation
8	Air outlet c/o damper	Air outlet changeover damper motor moving position
10	Condenser fan	The amount of condenser fan rotation
11	Air conditioning	A/C switch selection position
12	Rear defogger switch	Rear window defogger switch selection position
13	A/T lock open request	-



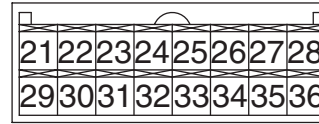
**CHECK AT A/C-ECU TERMINAL**

M1552010302318

C-20



C-19



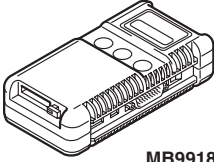
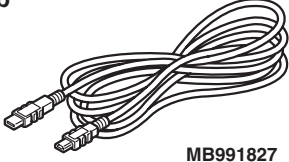
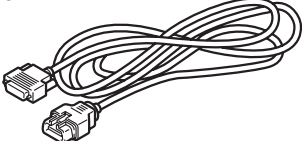
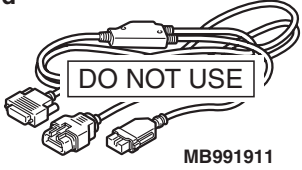
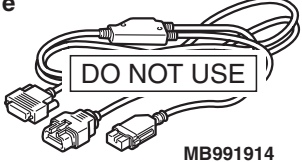
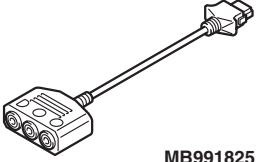
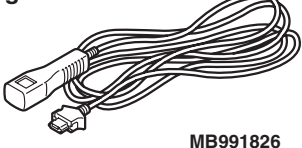
AC210339AF


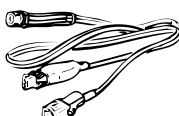
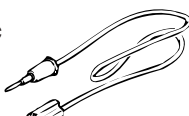

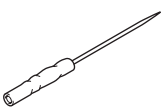
Terminal No.	Check items	Check conditions	Normal conditions
1	Power transistor (DRAIN)	Air volume control dial: Maximum air volume	0 to 2 V
2	Power transistor (GATE)	Air volume control dial: Maximum air volume	Battery voltage
3 –8	–	–	–
9	A/C control panel (input)	–	–
10	A/C control panel (input)	–	–
11, 12	–	–	–
13	Battery power supply	Always	Battery voltage
14	Ground	Always	1 V or less
15	IG1 power supply	Ignition switch: IG1	Battery voltage
16	A/C pressure sensor input	Refer to <a href="#">P.55A-173</a> .	Refer to <a href="#">P.55A-173</a> .
17	Interior temperature sensor	Sensor probe temperature: 25° C (77° F) (4.0 kΩ)	2.1 to 2.7 V
18	–	–	–
19	Sensor ground	Always	1 V or less
20	A/C pressure sensor power supply	Ignition switch: IG2	5 V
21	Fin thermo sensor ground	Always	1 V or less
22	Fin thermo sensor	Sensor probe temperature: 25° C (77° F) (4.0 kΩ)	2.1 to 2.7 V
23	–	–	–
24	Motor for air outside/inside air circulation switching damper	–	–
25	Motor for air outside/inside air circulation switching damper	–	–
26	Motor for air outside/inside air circulation switching damper	–	–

Terminal No.	Check items	Check conditions	Normal conditions
27	Motor for air outside/inside air circulation switching damper	—	—
28	Air mix damper motor	—	—
29	Motor power supply	—	—
30	Air outlet changeover damper motor	—	—
31	Air outlet changeover damper motor	—	—
32	Air outlet changeover damper motor	—	—
33	Air outlet changeover damper motor	—	—
34	Air mix damper motor	—	—
35	Air mix damper motor	—	—
36	Air mix damper motor	—	—

## SPECIAL TOOLS

M1552000600787

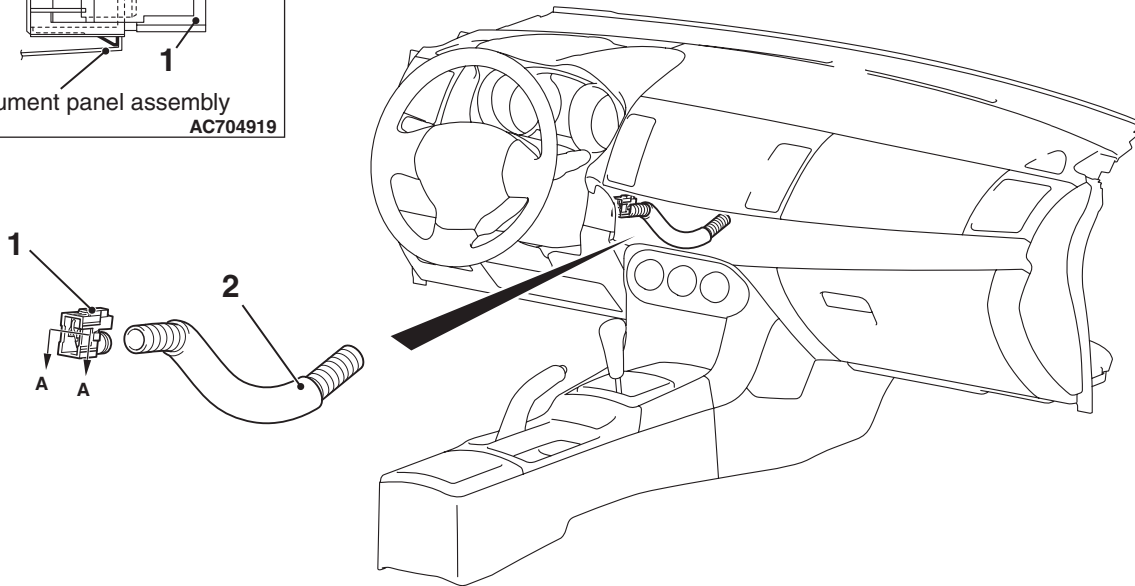
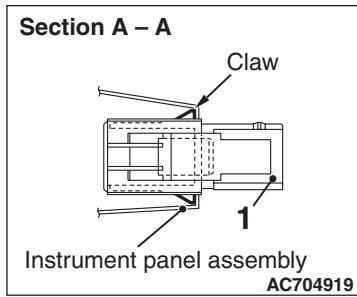
Tool	Tool number and name	Supersession	Application
<p>a</p>  <p style="text-align: center;">MB991824</p> <p>b</p>  <p style="text-align: center;">MB991827</p> <p>c</p>  <p style="text-align: center;">MB991910</p> <p>d</p>  <p style="text-align: center;">MB991911</p> <p>e</p>  <p style="text-align: center;">MB991914</p> <p>f</p>  <p style="text-align: center;">MB991825</p> <p>g</p>  <p style="text-align: center;">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 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><b>⚠ CAUTION</b></p> <p><b>M.U.T.-III main harness A (MB991910) should be used. M.U.T.-III main harness B and C should not be used for this vehicle.</b></p> <p>DTC, data list and actuator test check.</p>

Tool	Tool number and name	Supersession	Application
<p>a</p>  <p>b</p>  <p>c</p>  <p>d</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. Check harness</p> <p>b. LED harness</p> <p>c. LED harness adapter</p> <p>d. Probe</p>	General service tool (jumper)	<p>Continuity check and voltage measurement at harness wire or connector</p> <p>a. For checking connector pin contact pressure</p> <p>b. For checking power supply circuit</p> <p>c. For checking power supply circuit</p> <p>d. For connecting a locally sourced tester</p>
 <p>MB992006</p>	<p>MB992006</p> <p>Extra fine probe</p>	—	Continuity check and voltage measurement at harness wire or connector

## SENSORS

### REMOVAL AND INSTALLATION

M1554001900550



AC710091AE

#### Interior temperature sensor removal steps

- Lower panel (Refer to GROUP 52A, Instrument panel [P.52A-3](#)).

#### Interior temperature sensor removal steps (Continued)

1. Interior temperature sensor
2. Aspirator hose

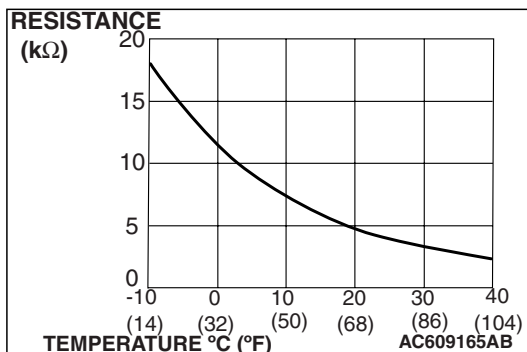
### INSPECTION

M1554002000260

#### INTERIOR TEMPERATURE SENSOR CHECK

When the resistance between the sensor terminals is measured under two or more temperature conditions, the resistance should approximately satisfy the illustrated values.

**NOTE:** The temperature conditions when checking should not exceed the range shown in the diagram.



## OTHER PARTS

## OTHER PARTS MAINTENANCE SERVICE POINTS

M1554004000642

The following maintenance service points are the same as for the manual A/C.

Item		Reference page
On-vehicle service	Refrigerant level test	<a href="#">P.55A-173</a>
	Air conditioning compressor clutch test	<a href="#">P.55A-173</a>
	Simple inspection of the a/c pressure sensor	<a href="#">P.55A-173</a>
	Compressor drive belt adjustment	<a href="#">P.55A-174</a>
	Charging, discharging	<a href="#">P.55A-174</a>
	Performance test	<a href="#">P.55A-175</a>
	Refrigerant leak repair	<a href="#">P.55A-176</a>
	Compressor noise check	<a href="#">P.55A-177</a>
	Power relay continuity check	<a href="#">P.55A-178</a>
	Idle-up operation check	<a href="#">P.55A-179</a>

Item	Reference page
Heater control unit	<a href="#">P.55A-180</a>
Heater unit and blower assembly	<a href="#">P.55A-181</a>
Motors and transistor	<a href="#">P.55A-186</a>
Ambient air temperature sensor	<a href="#">P.55A-188</a>
A/C-ECU	<a href="#">P.55A-189</a>
Compressor and tension pulley	<a href="#">P.55A-195</a>
Condenser	<a href="#">P.55A-200</a>
Refrigerant line	<a href="#">P.55A-202</a>
Ducts	<a href="#">P.55A-204</a>
Rear ventilation duct	<a href="#">P.55A-204</a>