

## GROUP 55A

# HEATER, AIR CONDITIONER AND VENTILATION

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### WARNINGS REGARDING SERVICING OF SUPPLEMENTAL RESTRAINT SYSTEM (SRS) EQUIPPED VEHICLES

#### **WARNING**

- *Improper service or maintenance of any component of the SRS, or any SRS-related component, can lead to personal injury or death to service personnel (from inadvertent firing of the air bag) or to the driver and passenger (from rendering the SRS inoperative).*
- *Service or maintenance of any SRS component or SRS-related component must be performed only at an authorized MITSUBISHI dealer.*
- *MITSUBISHI dealer personnel must thoroughly review this manual, and especially its GROUP 52B - Supplemental Restraint System (SRS) before beginning any service or maintenance of any component of the SRS or any SRS-related component.*

#### NOTE

The SRS includes the following components: SRS air bag control unit, SRS warning light, front impact sensors, air bag module, clock spring, and interconnecting wiring. Other SRS-related components (that may have to be removed/installed in connection with SRS service or maintenance) are indicated in the table of contents by an asterisk (\*).

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## SERVICE SPECIFICATIONS

M1552000300269

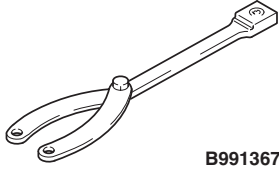
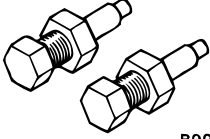

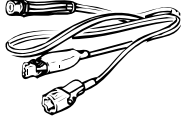
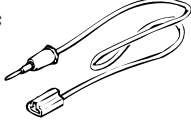

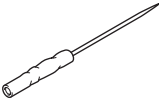
Item			Standard value
Idle speed r/min			700 ± 100
Idle-up speed r/min			850 ± 100
Resistor (for blower motor) Ω	LO		2.54
	ML		1.24
	MH		0.6
Air gap (magnetic clutch) mm			0.3 – 0.5
A/C cooling temperature switch operating temperature °C	2400-except MIVEC	2 Ω or less	less than 150
		No continuity	150 or more (up to 120°C when temperature drops)
	2400-MIVEC	2 Ω or less	less than 155
		No continuity	155 or more (up to 125°C when temperature drops)

## LUBRICANTS

M1552000400460

Item	Specified lubricant		Quantity
Compressor refrigerant unit lubricant	SUN PAG 56	Except MIVEC	120 mL
		MIVEC	140 mL
Each connection of refrigerant line	SUN PAG 56		As required
Refrigerant	R134a (HFC-134a)		550 ± 20 g

## SPECIAL TOOLS

Tool	Tool number	Name	Application
 <p>B991367</p>	MB991367	Special spanner	Armature mounting nut of compressor removal and installation
 <p>B991386</p>	MB991386	Pin	Armature mounting nut of compressor removal and installation
<p>a</p>  <p>b</p>  <p>c</p>  <p>d</p>  <p>DO NOT USE</p> <p>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. Check harness</p> <p>b. LED harness</p> <p>c. LED harness adapter</p> <p>d. Probe</p>	<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>	MB992006	Extra fine probe	Continuity check and voltage measurement at harness wire or connector

# TROUBLESHOOTING

## DIAGNOSIS TROUBLESHOOTING FLOW

M1552009600342

Refer to GROUP 00 – How to Use Troubleshooting/Inspection Service Points [P.00-5](#).

## SYMPTOM CHART

M1552009900622

*NOTE: Refer to GROUP 14, Trouble shooting for the condenser fan [P.14-4](#).*

Symptom	Inspection Procedure	Reference Page
When the ignition switch is "ON" the A/C does not operate.	1.	<a href="#">P.55A-5</a>
Inside/outside air selection is not possible.	2.	<a href="#">P.55A-6</a>
When the A/C is operating, temperature inside the passenger compartment does not decrease (cool air is not emitted).	3.	<a href="#">P.55A-7</a>
Blower fan and motor do not turn.	4.	<a href="#">P.55A-11</a>
Blower air amount cannot be changed	5.	<a href="#">P.55A-13</a>
The A/C indicator flashes.	6.	<a href="#">P.55A-14</a>
Rear window defogger function does not operate.	7.	<a href="#">P.55A-14</a>
Rear window defogger Timer function does not operate.	8.	<a href="#">P.55A-16</a>
Malfunction of the A/C-ECU power supply system.	9.	<a href="#">P.55A-17</a>
Condenser Fan does not operate.	10.	Refer to GROUP 14 <a href="#">P.14-4</a>

## SYMPTOM PROCEDURES

### Inspection Procedure 1: When the Ignition Switch is "ON" the A/C does not Operate.

#### COMMENTS ON TROUBLE SYMPTOM

The blower system or the compressor system may be defective if there is no cool air coming from the spit hole.

#### PROBABLE CAUSES

- Malfunction of blower motor
- Malfunction of A/C compressor

#### DIAGNOSIS PROCEDURE

**Check that the blower motor operation when the blower switch is moved to the "HI" position.**

- (1) Turn the ignition switch to the "ON" position.
- (2) Turn the blower switch to the "HI" position.

**Q: Does the blower motor operate when the blower switch is moved to the "HI" position?**

**YES :** Refer to Inspection procedure 3 "When the A/C is operating, temperature inside the passenger compartment does not decrease (cool air not emitted) [P.55A-7](#)."

**NO :** Refer to Inspection procedure 4 "Blower fan and motor do not turn [P.55A-11](#)."

---

**Inspection Procedure 2: Outside/Inside Air Selection is not possible.**

---

**COMMENTS ON TROUBLE SYMPTOM**

If the outside/inside air selection damper motor does not operate normally, the outside/inside air selection damper motor system may be defective.

**PROBABLE CAUSES**

- Malfunction of the outside/inside air selection damper motor
- Damaged the wiring harness or connectors
- Malfunction of the manual A/C control panel (A/C-ECU)

**DIAGNOSIS PROCEDURE**

---

**STEP 1. Check the rear window defogger and A/C operations.**

**Q: Do the rear window defogger and A/C work normally?**

**YES :** Go to Step 2.

**NO :** Refer to Inspection procedure 9  
"Malfunction of the A/C-ECU power supply system [P.55A-17](#)."

---

**STEP 2. Measure the voltage at C-311 outside/inside air selection damper control motor connector.**

- (1) Disconnect C-311 outside/inside air selection damper control motor connector, and measure the voltage at the harness side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Measure the voltage between terminal 7 and earth.

**OK: System voltage**

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

**YES :** Go to Step 5.

**NO :** Go to Step 3.

---

**STEP 3. Connector check: C-311 outside/inside air selection damper control motor connector**

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

**YES :** Go to Step 4.

**NO :** Repair or replace the connector.

---

**STEP 4. Check the wiring harness between C-311 outside/inside air selection damper control motor connector (terminal 7) and the ignition switch (IG2).**

*NOTE: Prior to the wiring harness inspection, check intermediate connector C-10, junction block connectors C-205 and C-203, and repair if necessary.*

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

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction [P.00-5](#)).

**NO :** Repair the wiring harness.

---

**STEP 5. Check the outside/inside air selection damper control motor**

Refer to [P.55A-39](#).

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

**YES :** Go to Step 6.

**NO :** Replace the outside/inside air selection damper control motor.

---

**STEP 6. Connector check: C-311 outside/inside air selection damper control motor connector and C-06 A/C-ECU**

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

**YES :** Go to Step 7.

**NO :** Repair or replace the connector.

---

**STEP 7. Check the wiring harness between C-311 outside/inside air selection damper control motor connector (terminals 6 and 4) and C-06 A/C-ECU (terminals 2 and 3).**

*NOTE: Prior to the wiring harness inspection, check intermediate connector C-10, and repair if necessary.*

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

**YES :** Replace the manual A/C control panel (A/C-ECU).

**NO :** Repair the wiring harness.

---

**Inspection Procedure 3: When the A/C is Operating, Temperature Inside the Passenger Compartment does not Decrease (Cool Air is not Emitted).**

---

**COMMENTS ON TROUBLE SYMPTOM**

If cool air is not distributed when the A/C switch is on, the air thermo sensor or the A/C compressor relay system may be defective.

**PROBABLE CAUSES**

- Improper amount of refrigerant
- Malfunction of the air thermo sensor
- Malfunction of the A/C pressure sensor
- Malfunction of the A/C compressor relay
- Malfunction of the A/C refrigerant temperature switch
- Malfunction of the magnetic clutch
- Malfunction of the manual A/C control panel (A/C-ECU)
- Damaged the wiring harness or connectors
- Malfunction of the engine-A/T-ECU

**DIAGNOSIS PROCEDURE**

---

**STEP 1. Check the rear window defogger and outside/inside air selection damper control motor operation.**

**Q: Do the rear window defogger and outside/inside air selection damper control motor work normally?**

**YES :** Go to Step 2.

**NO :** Refer to Inspection procedure 9  
"Malfunction of the A/C-ECU power supply system [P.55A-17](#)."

---

**STEP 2. Check the blower motor operation.**

**Q: Does the blower motor work normally?**

**YES :** Go to Step 3.

**NO :** Refer to Inspection procedure 4 "Blower fan and motor do not turn [P.55A-11](#)."

---

**STEP 3. Check the A/C compressor.**

Check the A/C compressor for compressor oil leaks.

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

**YES :** Go to Step 4.

**NO :** Replace the A/C compressor or the expansion valve.

---

**STEP 4. Measure the voltage at B-27 A/C compressor connector.**

- (1) Disconnect B-27 A/C compressor connector and measure the voltage at the relay box side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Disconnect C-112 engine-A/T-ECU connector, and earth terminal 21. <Except MIVEC>
- (4) Disconnect C-134 engine-A/T-ECU connector, and earth terminal 16. <MIVEC (except for GCC)>
- (5) Disconnect C-134 engine-A/T-ECU connector, and earth terminal 8. <MIVEC (vehicles for GCC)>
- (6) Measure the voltage between terminal 1 and earth.

**OK: System voltage**

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

**YES :** Go to Step 19.

**NO :** Go to Step 5.

---

**STEP 5. Check the A/C compressor relay continuity.**

Refer to [P.55A-27](#).

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

**YES :** Go to Step 6.

**NO :** Replace the A/C compressor relay.

---

**STEP 6. Measure the voltage at B-18X A/C compressor relay connector.**

- (1) Disconnect B-18X A/C compressor connector and measure the voltage at the relay box side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Measure the voltage between terminal 3 and earth.

**OK: System voltage**

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

**YES :** Go to Step 9.

**NO :** Go to Step 7.

---

**STEP 7. Connector check: B-18X A/C compressor relay connector**

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

**YES :** Go to Step 8.

**NO :** Repair or replace the connector.

---

**STEP 8. Check the wiring harness between B-18X A/C compressor relay connector (terminal 3) and the ignition switch (IG2).**

*NOTE: Prior to the wiring harness inspection, check junction block connectors C-203, C-205 <L.H. drive vehicles>, C-202 <R.H. drive vehicles> and intermediate connector C-106, and repair if necessary.*

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

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction [P.00-5](#)).

**NO :** Repair the wiring harness.

---

**STEP 9. Measure the voltage at B-18X A/C compressor relay connector.**

- (1) Disconnect B-18X A/C compressor connector and measure the voltage at the wiring harness side.
- (2) Measure the voltage between terminal 4 and earth.

**OK: System voltage**

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

**YES :** Go to Step 12.

**NO :** Go to Step 10.

---

**STEP 10. Connector check: B-18X A/C compressor relay connector**

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

**YES :** Go to Step 11.

**NO :** Repair or replace the connector.

---

**STEP 11. Check the wiring harness between B-18X A/C compressor relay connector (terminal 4) and the battery.**

*NOTE: Prior to the wiring harness inspection, check intermediate connector A-14, and repair if necessary.*

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

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction [P.00-5](#)).

**NO :** Repair the wiring harness.

---

**STEP 12. Connector check: B-18X A/C compressor relay connector and B-27 A/C compressor connector**

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

**YES :** Go to Step 13.

**NO :** Repair or replace the connector.

---

**STEP 13. Check the wiring harness between B-18X A/C compressor relay connector (terminal 1) and B-27 A/C compressor connector (terminal 1).**

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

**YES <Except MIVEC> :** Go to Step 14.

**YES <MIVEC> :** Go to Step 16.

**NO :** Repair the wiring harness.

---

**STEP 14. Connector check: C-112 engine-A/T-ECU connector and B-18X A/C compressor relay connector**

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

**YES :** Go to Step 15.

**NO :** Repair or replace the connector.

---

**STEP 15. Check the wiring harness between B-18X A/C compressor relay connector (terminal 2) and C-112 engine-A/T-ECU connector (terminal 21).**

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

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction [P.00-5](#)).

**NO :** Repair the wiring harness.

---

**STEP 16. Connector check: C-134 engine-A/T-ECU connector and B-18X A/C compressor relay connector**

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

**YES <Except for GCC> :** Go to Step 17.

**YES <Vehicles for GCC> :** Go to Step 18.

**NO :** Repair or replace the connector.

---

**STEP 17. Check the wiring harness between B-18X A/C compressor relay connector (terminal 2) and C-134 engine-A/T-ECU connector (terminal 16).**

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

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction [P.00-5](#)).

**NO :** Repair the wiring harness.



---

**STEP 18. Check the wiring harness between B-18X A/C compressor relay connector (terminal 2) and C-134 engine-A/T-ECU connector (terminal 8).**

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

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction [P.00-5](#))

**NO :** Repair the wiring harness.

---

**STEP 19. Measure the voltage at C-06 A/C-ECU connector.**

- (1) Disconnect C-06 A/C compressor connector and measure the voltage at the relay box side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Disconnect C-112 engine-A/T-ECU connector, and earth terminal 21. <Except MIVEC>
- (4) Disconnect C-134 engine-A/T-ECU connector, and earth terminal 16. <MIVEC (except for GCC)>
- (5) Disconnect C-134 engine-A/T-ECU connector, and earth terminal 8. <MIVEC (vehicles for GCC)>
- (6) Measure the voltage between terminal 7 and earth.

**OK: System voltage**

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

**YES :** Go to Step 22.

**NO :** Go to Step 20.

---

**STEP 20. Connector check: B-18X A/C compressor relay connector and C-06 A/C-ECU connector**

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

**YES :** Go to Step 21.

**NO :** Repair or replace the connector.

---

**STEP 21. Check the wiring harness between B-18X A/C compressor relay connector (terminal 1) and C-06 A/C-ECU connector (terminal 7).**

*NOTE: Prior to the wiring harness inspection, check intermediate connector C-104, and repair if necessary.*

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

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction [P.00-5](#)).

**NO :** Repair the wiring harness.

---

**STEP 22. Measure the voltage at C-06 A/C-ECU connector.**

- (1) Disconnect C-06 A/C-ECU connector and measure the voltage at the relay box side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Turn the blower switch to the "ON" position.
- (4) Measure the voltage between terminal 8 and earth.

**OK: System voltage**

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

**YES :** Go to Step 25.

**NO :** Go to Step 23.

---

**STEP 23. Connector check: C-11 resistor connector and C-06 A/C-ECU connector**

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

**YES :** Go to Step 24.

**NO :** Repair or replace the connector.

---

**STEP 24. Check the wiring harness between C-11 resistor connector (terminal 4) and C-06 A/C-ECU connector (terminal 8).**

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

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00-How to Cope with Intermittent Malfunction [P.00-5](#))

**NO :** Repair the wiring harness.

---

**STEP 25. Check the magnetic clutch operation.**

Refer to [P.55A-21](#).

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

**YES :** Go to Step 26.

**NO :** Replace the compressor magnet clutch.

---

**STEP 26. Check the refrigerant temperature switch.**

Refer to [P.55A-47](#).

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

**YES :** Go to Step 27.

**NO :** Replace the refrigerant temperature switch.

---

**STEP 27. Check the air thermo sensor.**

Refer to [P.55A-43](#).

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

**YES :** Go to Step 28.

**NO :** Replace the air thermo sensor.

---

**STEP 28. Connector check: C-10 air thermo sensor connector and C-06 A/C-ECU connector****Q: Is the check result normal?****YES :** Go to Step 29.**NO :** Repair or replace the connector.

---

**STEP 29. Check the wiring harness between C-10 air thermo sensor connector (terminals 1, 3, 4 and 5) and C-06 A/C-ECU connector (terminals 14, 16 and 13).****Q: Is the check result normal?****YES :** Go to Step 30.**NO :** Repair the wiring harness.

---

**STEP 30. Check the refrigerant level.**Refer to [P.55A-21](#).**Q: Is the check result normal?****YES :** Go to Step 31.**NO :** Refrigerant Draining and Refilling (Refer to [P.55A-25](#) and [P.55A-22](#).)

---

**STEP 31. Check the A/C pressure sensor operation.**Refer to [P.55A-22](#).**Q: Is the check result normal?****YES :** Go to Step 32.**NO :** Replace the A/C pressure sensor.

---

**STEP 32 Connector check: A-02 A/C pressure sensor connector and C-06 A/C-ECU connector****Q: Is the check result normal?****YES :** Go to Step 33.**NO :** Repair or replace the connector.

---

**STEP 33. Check the wiring harness between A-02 A/C pressure sensor connector (terminal 2) and C-06 A/C-ECU connector (terminal 15).***NOTE: Prior to the wiring harness inspection, check intermediate connector C-116, and repair if necessary.***Q: Is the check result normal?****YES <Except MIVEC> :** Go to Step 34.**YES <MIVEC> :** Go to Step 37.**NO :** Repair the wiring harness.

---

**STEP 34. Connector check: C-110, C-111 engine-A/T-ECU connector and C-06 A/C-ECU connector****Q: Is the check result normal?****YES :** Go to Step 35.**NO :** Repair or replace the connector.

---

**STEP 35. Check the wiring harness between C-110 engine-A/T-ECU connector (terminal 83) and C-06 A/C-ECU connector (terminal 4).***NOTE: Prior to the wiring harness inspection, check intermediate connector C-104, and repair if necessary.***Q: Is the check result normal?****YES :** Go to Step 36.**NO :** Repair the wiring harness.

---

**STEP 36. Check the wiring harness between C-111 engine-A/T-ECU connector (terminal 61) and C-06 A/C-ECU connector (terminal 5).***NOTE: Prior to the wiring harness inspection, check intermediate connector C-104, and repair if necessary.***Q: Is the check result normal?****YES :** Replace the manual air conditioner control panel (A/C-ECU) or engine-A/T-ECU.**NO :** Repair the wiring harness.

---

**STEP 37. Connector check: C-136 engine-A/T-ECU connector and C-06 A/C-ECU connector****Q: Is the check result normal?****YES :** Go to Step 38.**NO :** Repair or replace the connector.

---

**STEP 38. Check the wiring harness between C-136 engine-A/T-ECU connector (terminal 69 and 78) and C-06 A/C-ECU connector (terminal 4 and 5).***NOTE: Prior to the wiring harness inspection, check intermediate connector C-104, and repair if necessary.***Q: Is the check result normal?****YES :** Replace the manual A/C control panel (A/C-ECU) or engine-A/T-ECU.**NO :** Repair the wiring harness.

---

**Inspection Procedure 4: Blower Fan and Motor do not Turn.**

---

**COMMENTS ON TROUBLE SYMPTOM**

If the blower fan and motor does not turn when the blower switch is operated, the blower switch may be defective.

**PROBABLE CAUSES**

- Malfunction of the blower relay
- Malfunction of the blower switch
- Damaged the wiring harness or connectors
- Malfunction of the blower motor

**DIAGNOSIS PROCEDURE**

---

**STEP 1. Check that the blower motor operates when the blower switch is moved to the "4 (HI) " position.**

- (1) Turn the ignition switch to the "ON" position.
- (2) Turn the blower switch to the "4 (HI) " position.

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

**YES :** Refer to Inspection procedure 5 "Blower air amount cannot be changed [P.55A-13](#)."

**NO :** Go to Step 2.

---

**STEP 2. Measure the resistance at C-12 blower motor connector in order to the earth circuit to the blower motor.**

- (1) Disconnect C-12 blower motor connector, and measure the voltage at the wiring harness side.
- (2) Measure the resistance value between terminal 2 and earth.

**OK: 2 ohms or less**

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

**YES :** Go to Step 5.

**NO :** Go to Step 3.

---

**STEP 3. Connector check: C-12 blower motor connector**

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

**YES :** Go to Step 4.

**NO :** Repair or replace the connector.

---

**STEP 4. Check the wiring harness between C-12 blower motor connector (terminal 2) and earth.**

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

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction [P.00-5](#)).

**NO :** Repair the wiring harness.

---

**STEP 5. Measure the voltage at C-12 blower motor connector.**

- (1) Disconnect C-12 blower motor connector, and measure the voltage at the wiring harness side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Turn the blower switch to the "4 (HI) " position.
- (4) Measure the voltage between terminal 1 and earth.

**OK: System voltage**

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

**YES :** Go to Step 21.

**NO :** Go to Step 6.

---

**STEP 6. Check the blower relay continuity.**

Refer to [P.55A-27](#).

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

**YES :** Go to Step 7.

**NO :** Replace the blower relay.

---

**STEP 7. Measure the voltage at C-207 blower relay connector.**

- (1) Disconnect C-207 blower relay connector, and measure the voltage at the junction block side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Measure the voltage between terminal 1 and earth.

**OK: System voltage**

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

**YES :** Go to Step 10.

**NO :** Go to Step 8.

---

**STEP 8. Connector check: C-207 blower relay connector**

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

**YES :** Go to Step 9.

**NO :** Repair or replace the connector.

**STEP 9. Check the wiring harness between C-207 blower relay connector (terminal 1) and the ignition switch (IG2).**

*NOTE: Prior to the wiring harness inspection, check junction block connector C-203, and repair if necessary.*

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

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00-How to Cope with Intermittent Malfunction [P.00-5](#)).

**NO :** Repair the wiring harness.

**STEP 10. Measure the resistance at C-207 blower relay connector.**

- (1) Disconnect C-207 blower relay connector, and measure the voltage at the wiring harness side.
- (2) Measure the resistance value between terminal 3 and earth.

**OK: 2 ohms or less**

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

**YES :** Go to Step 13.

**NO :** Go to Step 11.

**STEP 11. Connector check: blower relay connector C-207.****Q: Is the check result normal?**

**YES :** Go to Step 12.

**NO :** Repair or replace the connector.

**STEP 12. Check the wiring harness between blower relay connector C-207 (terminal 3) and earth.**

*NOTE: Prior to the wiring harness inspection, check junction block connectors C-205, and repair if necessary.*

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

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction [P.00-5](#)).

**NO :** Repair the wiring harness.

**STEP 13. Measure the voltage at C-207 blower relay connector.**

- (1) Disconnect C-207 blower relay connector, and measure the voltage at the junction block side.
- (2) Measure the voltage between terminal 5 and earth.

**OK: System voltage**

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

**YES :** Go to Step 16.

**NO :** Go to Step 14.

**STEP 14. Connector check: C-207 blower relay connector****Q: Is the check result normal?**

**YES :** Go to Step 15.

**NO :** Repair or replace the connector.

**STEP 15. Check the wiring harness between C-207 blower relay connector (terminal 5) and fusible link (1).**

*NOTE: Prior to the wiring harness inspection, check intermediate connectors C-116 <L.H. drive vehicles>, C-125 <R.H. drive vehicles>, A-14 <R.H. drive vehicles> and junction block connector C-204, and repair if necessary.*

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

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction [P.00-5](#)).

**NO :** Repair the wiring harness.

**STEP 16. Check the blower switch continuity.**

Refer to [P.55A-32](#).

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

**YES :** Go to Step 17.

**NO :** Replace the blower switch.

**STEP 17. Connector check: C-08 blower switch connector and C-207 blower relay connector****Q: Is the check result normal?**

**YES :** Go to Step 18.

**NO :** Repair or replace the connector.

---

**STEP 18. Check the wiring harness between C-08 blower switch connector (terminal 2) and C-207 blower relay connector (terminal 4).**

*NOTE: Prior to the wiring harness inspection, check junction block connectors C-203, and repair if necessary.*

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

**YES :** Go to Step 19.

**NO :** Repair the wiring harness.

---

**STEP 19. Connector check: C-12 blower motor connector and C-08 blower switch connector**

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

**YES :** Go to Step 20.

**NO :** Repair or replace the connector.

---

**STEP 20. Check the wiring harness between C-12 blower motor connector (terminal 1) and C-08 blower switch connector (terminal 6).**

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

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00-How to Cope with Intermittent Malfunction [P.00-5](#)).

**NO :** Repair the wiring harness.

---

**STEP 21. Check the blower fan and motor operation.**

When battery voltage is applied between the terminals, check that the motor operates. Also check that there is no abnormal.

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

**YES :** Replace the blower motor..

**NO :** The trouble can be an intermittent malfunction (Refer to GROUP 00-How to Cope with Intermittent Malfunction [P.00-5](#)).

---

### Inspection Procedure 5: Blower Air Amount cannot be Changed.

---

#### COMMENTS ON TROUBLE SYMPTOM

If the blower air amount can not be changed when the blower switch is operated, the blower switch may be defective.

#### PROBABLE CAUSES

- Malfunction of the resistor
- Damaged the wiring harness or connectors
- Malfunction of the blower switch

#### DIAGNOSIS PROCEDURE

---

**STEP 1. Check that the blower motor operates when the blower switch is moved to the "4 (HI)" position.**

- (1) Turn the ignition switch to the "ON" position.
- (2) Turn the blower switch to the "4 (HI) " position.

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

**YES :** Go to Step 2.

**NO :** Refer to Inspection procedure 4 "Blower fan and motor does not turn [P.55A-11](#)."

---

**STEP 2. Check the blower switch continuity.**

Refer to [P.55A-32](#).

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

**YES :** Go to Step 3.

**NO :** Replace the blower switch.

---

**STEP 3. Check the resistor resistance value.**

Refer to [P.55A-39](#).

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

**YES :** Go to Step 4.

**NO :** Replace the resistor.

---

**STEP 4. Connector check: C-08 blower switch connector and C-11 resistor connector**

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

**YES :** Go to Step 5.

**NO :** Repair or replace the connector.

---

**STEP 5. Check the wiring harness between C-08 blower switch connector (terminals 1, 4 and 5) and C-11 resistor connector (terminals 4, 1 and 3).**

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

**YES :** Go to Step 6.

**NO :** Repair the wiring harness.

---

**STEP 6. Connector check: C-11 resistor connector and C-12 blower motor connector****Q: Is the check result normal?****YES :** Go to Step 7.**NO :** Repair or replace the connector.

---

**STEP 7. Check the wiring harness between C-12 blower motor connector (terminal 1) and C-11 resistor connector (terminal 2).****Q: Is the check result normal?****YES :** No action to be taken.**NO :** Repair the wiring harness.

---

**Inspection Procedure 6: The A/C Indicator Flashes.**

---

**COMMENTS ON TROUBLE SYMPTOM**

If the A/C indicator flashes then the possible causes may be due to a defective A/C pressure system or insufficient refrigerant gas.

**PROBABLE CAUSES**

- Malfunction of the A/C pressure sensor
- Malfunction of the air thermo sensor
- Malfunction of the manual A/C control panel (A/C-ECU)

**DIAGNOSIS PROCEDURE**

---

**STEP 1. Check the A/C pressure sensor operation.**Refer to [P.55A-22](#).**Q: Is the check result normal?****YES :** Go to Step 2.**NO :** Replace the A/C pressure sensor.

---

**STEP 2. Check the air thermo sensor.**Refer to [P.55A-43](#).**Q: Is the check result normal?****YES :** Go to Step 3.**NO :** Replace the air thermo sensor.

---

**STEP 3. Check the refrigerant level.**Refer to [P.55A-21](#).**Q: Is the check result normal?****YES :** Replace the manual A/C control panel (A/C-ECU).**NO :** Correct the refrigerant level (Refer to [P.55A-26](#)).

---

**Inspection Procedure 7: Rear Window Defogger Function does not Operate.**

---

**COMMENTS ON TROUBLE SYMPTOM**

If the rear window defogger does not operate when the rear window defogger switch is turned on, the rear window defogger relay system may be defective.

**PROBABLE CAUSES**

- Malfunction of the rear window defogger relay
- Malfunction of the rear window defogger
- Damaged the wiring harness or connectors
- Malfunction of the manual A/C control panel (A/C-ECU)

**DIAGNOSIS PROCEDURE**

---

**STEP 1. Check the A/C and outside/inside air selection damper control motor operation.****Q: Is the check result normal?****YES :** Go to Step 2.**NO :** Refer to Inspection procedure 9 "Malfunction of the A/C-ECU Power Supply system [P.55A-17](#)."



---

**STEP 2. Measure the voltage at F-04 rear window defogger connector.**

- (1) Disconnect F-04 rear window defogger connector, and measure the voltage at the harness side.
- (2) Disconnect C-06 A/C-ECU connector, and earth terminal 1.
- (3) Measure the voltage between terminal 1 and earth.

**OK: System voltage**

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

**YES :** Go to Step 14.

**NO :** Go to Step 3.

---

**STEP 3. Check the rear window defogger relay continuity.**

Refer to [P.55A-27](#).

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

**YES :** Go to Step 4.

**NO :** Replace the rear window defogger relay.

---

**STEP 4. Measure the voltage at C-206 rear window defogger relay connector.**

- (1) Disconnect C-206 rear window defogger relay connector, and measure the voltage at the junction block side.
- (2) Measure the voltage between terminal 5 and earth.

**OK: System voltage**

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

**YES :** Go to Step 7.

**NO :** Go to Step 5.

---

**STEP 5. Connector check: C-206 rear window defogger relay connector**

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

**YES :** Go to Step 6.

**NO :** Repair or replace the connector.

---

**STEP 6. Check the wiring harness between C-206 rear window defogger relay connector (terminal 5) and the fusible link (1).**

*NOTE: Prior to the wiring harness inspection, check intermediate connector C-116 <L.H. drive vehicles>, C-125 <R.H. drive vehicles>, A-14 <R.H. drive vehicles> junction block connector C-204, and repair if necessary.*

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

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction [P.00-5](#)).

**NO :** Repair the wiring harness.

---

**STEP 7. Measure the voltage at rear window defogger relay connector C-206.**

- (1) Disconnect C-206 rear window defogger relay connector, and measure the voltage at the junction block side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Measure the voltage between terminal 1 and earth.

**OK: System voltage**

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

**YES :** Go to Step 10.

**NO :** Go to Step 8.

---

**STEP 8. Connector check: C-206 rear window defogger relay connector**

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

**YES :** Go to Step 9.

**NO :** Repair or replace the connector.

---

**STEP 9. Check the wiring harness between C-206 rear window defogger relay connector (terminal 1) and ignition switch (IG2).**

*NOTE: Prior to the wiring harness inspection, check junction block connector C-203, and repair if necessary.*

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

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00-How to Cope with Intermittent Malfunction [P.00-5](#)).

**NO :** Repair the wiring harness.

---

**STEP 10. Connector check: C-206 rear window defogger relay connector and C-06 A/C-ECU connector.**

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

**YES :** Go to Step 11.

**NO :** Repair or replace the connector.

---

**STEP 11. Check the wiring harness between C-206 rear window defogger relay connector (terminal 3) and C-06 A/C-ECU connector (terminal 1).**

*NOTE: Prior to the wiring harness inspection, check junction block connector C-205, and repair if necessary.*

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

**YES :** Go to Step 12.

**NO :** Repair or replace the wiring harness.

---

**STEP 12. Connector check: C-206 rear window defogger relay connector and F-04 rear window defogger connector**

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

**YES :** Go to Step 13.

**NO :** Repair or replace the connector.

---

**STEP 13. Check the wiring harness between C-206 rear window defogger relay connector (terminal 4) and F-04 rear window defogger connector (terminal 1).**

*NOTE: Prior to the wiring harness inspection, check junction block connector C-209 <L.H. drive vehicles> and C-221 <R.H. drive vehicles>, and repair if necessary.*

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

**YES :** Replace the manual air conditioner control panel (A/C-ECU).

**NO :** Repair or replace the wiring harness.

---

**STEP 14. Measure the resistance at F-01 rear window defogger connector to check the earth circuit to the rear window defogger connector.**

(1) Disconnect F-01 rear window defogger connector, and measure at the wiring harness side.

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

**OK: 2 ohms or less**

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

**YES :** Go to Step 17.

**NO :** Go to Step 15.

---

**STEP 15. Connector check: F-01 rear window defogger connector**

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

**YES :** Go to Step 16.

**NO :** Repair or replace the connector.

---

**STEP 16. Check the wiring harness between F-01 rear window defogger connector (terminal 1) and earth.**

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

**YES :** Check that the rear window defogger system works normally.

**NO :** Repair or replace the wiring harness.

---

**STEP 17. Check the rear window defogger.**

Refer to GROUP 54A – Rear window defogger [P.54A-107](#).

**Q: Does the rear window defogger work normally?**

**YES :** Replace the manual A/C control panel (A/C-ECU).

**NO :** Repair the rear window defogger.

---

### Inspection Procedure 8: Rear Window Defogger Timer Function does not Operate.

---

#### COMMENTS ON TROUBLE SYMPTOM

Turn ON the rear window defogger switch. If the defogger does not shut off after roughly 11 minutes then the defogger timer is malfunctioning.

#### PROBABLE CAUSES

- Malfunction of the manual A/C control panel (A/C-ECU)

#### DIAGNOSIS PROCEDURE

Replace the A/C-ECU.



---

**Inspection Procedure 9: Malfunction of the A/C-ECU Power Supply System.**

---

**COMMENTS ON TROUBLE SYMPTOM**

The A/C-ECU power system may be defective if the air conditioner, rear window defogger, and outside/inside air selection damper motor all do not operate normally.

**PROBABLE CAUSES**

- Damaged the wiring harness or connectors
- Malfunction of the manual A/C control panel (A/C-ECU)

**DIAGNOSIS PROCEDURE**

---

**STEP 1. Measure the voltage at C-06 A/C-ECU connector.**

- (1) Disconnect C-06 A/C-ECU connector and measure the voltage at the harness side.
- (2) Turn the ignition switch to the "ON" position.
- (3) Measure the voltage between terminal 10 and earth.

**OK: System voltage**

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

**YES :** Go to Step 4.

**NO :** Go to Step 2.

---

**STEP 2. Connector check: C-06 A/C-ECU connector**

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

**YES :** . Go to Step 3.

**NO :** . Repair or replace the connector.

---

**STEP 3. Check the wiring harness between C-06 A/C-ECU connector (terminal 10) and the ignition switch (IG2).**

*NOTE: . Prior to the wiring harness inspection, check junction block connectors C-205 and C-203, and repair if necessary.*

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

**YES :** . The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction [P.00-5](#)).

**NO :** . Repair the wiring harness.

---

**STEP 4. Measure the resistance at C-06 A/C-ECU connector in order to check the earth circuit to the A/C-ECU.**

- (1) Disconnect C-06 A/C-ECU connector, and measure at the wiring harness side.

- (2) Measure the resistance between terminal 12 and earth.

**OK: 2 ohms or less**

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

**YES :** Replace the manual A/C control panel (A/C-ECU).

**NO :** Go to Step 5.

---

**STEP 5. Connector check: C-06 A/C-ECU connector**

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

**YES :** Go to Step 6.

**NO :** Repair or replace the connector.

---

**STEP 6. Check the wiring harness between C-06 A/C-ECU connector (terminal 12) and the earth.**

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

**YES :** The trouble can be an intermittent malfunction (Refer to GROUP 00 – How to Cope with Intermittent Malfunction [P.00-5](#)).

**NO :** Repair the wiring harness.

## CHECK AT ECU TERMINAL

M1552010300947

&lt;Except MIVEC&gt;

&lt;C-112&gt;

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	34	35			

&lt;C-111&gt;

41	42	43				44	45	46
47	48	49	50	51	52	53	54	55
56	57	58	59	60	61	62	63	64
65	66							

&lt;C-110&gt;

71	72	73	74				75	76	77
78	79	80	81	82	83	84	85	86	87
88	89	90	91	92	93	94	95	96	97
98									

AC300194

Terminal No.	Check items	Check conditions	Normal conditions
18	Output to fan controller	Air conditioner switch: OFF	4.9 – 5.1 V
		Air conditioner switch: ON	0 V
21	Output to A/C compressor	A/C compressor relay: OFF	System voltage
		A/C compressor relay: ON	0 V
46	A/C pressure sensor power supply	Always	4.9 – 5.1 V
57	A/C pressure sensor earth	Always	0 V
61	Input from A/C-ECU (A/C2)	When the A/C is under low load	System voltage
62	Input from A/C pressure sensor	2.6MPa	3.9 V
83	Input from A/C-ECU (A/C1)	When the A/C is in operation (When the air thermo sensor detects 3°C or more).	System voltage

**<MIVEC>**

<C-134>

1	2	JAE		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	

<C-136>

61	62	JAE		63	64
65	66	67	68	69	70
71	72	73	74	75	76
77	78	79	80	81	82
83	84	85	86	87	88
89					

<C-137>

91	92	JAE		93	94	95
96	97	98	99	100	101	102
103	104	105	106	107	108	109
110	111	112	113	114	115	116
117	118	119	120	121	122	123
124	125	126	127	128	129	130

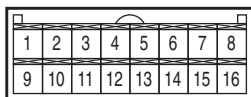
AC504474AB

Terminal No.	Check items	Check conditions	Normal conditions
8*1	Output to A/C compressor	A/C compressor relay: OFF	System voltage
		A/C compressor relay: ON	0 V
16*2	Output to A/C compressor	A/C compressor relay: OFF	System voltage
		A/C compressor relay: ON	0 V
17	Output to fan controller	Air conditioner switch: OFF	4.9 – 5.1 V
		Air conditioner switch: ON	0 V
69	Input from A/C-ECU (A/C1)	When the A/C is in operation (When the air thermo sensor detects 3°C or more).	System voltage
78	Input from A/C-ECU (A/C2)	When the A/C is under low load	System voltage
96	A/C pressure sensor earth	Always	0 V
97	A/C pressure sensor power supply	Always	4.9 – 5.1 V
118	Input from A/C pressure sensor	2.6MPa	3.9 V

NOTE: \*1: Except for GCC and Argentina

NOTE: \*2: Vehicles for GCC and Argentina

&lt;C-06&gt;



AC300861AB

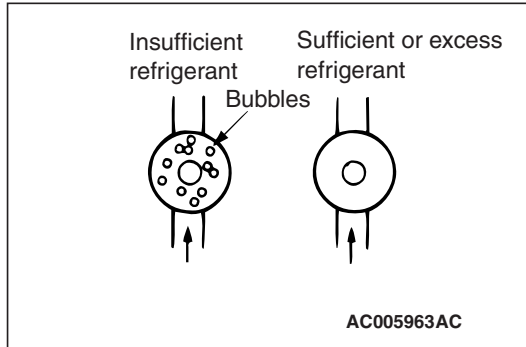
Terminal No.	Check item	Checking requirement	Normal condition
1	Rear window defogger switch	Rear window defogger switch: ON	0 V
		Rear window defogger switch: OFF	System voltage
2	Outside/Inside air changeover damper motor (outside air)	When the damper is moved to the inside air recirculation position	0 V
		When the damper is moved to the outside air inside air intake position	System voltage
3	Outside/Inside air changeover damper motor (inside air)	When the damper is moved to the inside air recirculation position	System voltage
		When the damper is moved to the outside air inside air intake position	0 V
4	Output to the engine-A/T-ECU (A/C1)	A/C stopped	0 V
		<ul style="list-style-type: none"> <li>• A/C switch: ON</li> <li>• Blower switch: ON</li> </ul>	System voltage
5	Output to the engine-A/T-ECU (A/C2)	When the A/C is under low load	System voltage
		When the A/C is under high load	0 V
6	Power supply to the A/C illumination	Lighting switch: ON	System voltage
7	-	-	-
8	Blower switch (Io)	blower switch: Io	System voltage
9	-	-	-
10	Power supply to the ignition switch (IG2)	Ignition switch: ON	System voltage
11	Earth to the A/C illumination	Always	0 V
12	Earth	Always	0 V
13	Air thermo sensor (outlet side)	Sensor probe temperature 25°C (1.5 kΩ)	2.2 V
14	Air thermo sensor (inlet side)	Sensor probe temperature 25°C (1.5 kΩ)	2.2 V
15	-	-	-
16	Earth to the air thermo sensor	Always	0 V

## ON-VEHICLE SERVICE

### SIGHT GLASS REFRIGERANT LEVEL TEST

M1552008400323

1. Start the engine.
2. Operate the air-conditioner, and then set the temperature to maximum cooling.
3. Hold the engine speed at 1500 r/min.



4. Check the refrigerant level (bubble state) through the sight glass.

#### **CAUTION**

Use the low-pressure service valve.

Items	State
Insufficient	Many bubbles are seen. If refrigerant is extremely low, it appears white.
Sufficient or excess refrigerant	No bubbles are seen.

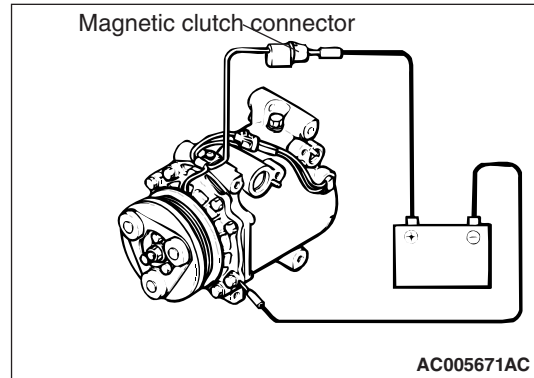
#### NOTE:

- (1) If insufficient, replenish the refrigerant as follows.
  - a. Replenish until bubbles disappear from the sight glass.
  - b. After the bubbles disappear from the sight glass, replenish 100 g of refrigerant.
- (2) If excessive, replenish the refrigerant as follows.
  - a. Drain the refrigerant until bubbles can be seen through the sight glass.
  - b. Replenish until bubbles disappear from the sight glass.
  - c. After the bubbles disappear from the sight glass, replenish 100 g of refrigerant.

### MAGNETIC CLUTCH TEST

M1552008500472

1. Disconnect the magnetic clutch connector to the magnetic clutch.



2. Connect positive battery voltage directly to the connector for the magnetic clutch.
3. If the magnetic clutch is normal, there will be a "click." If the pulley and armature do not make contact ("click"), there is a malfunction.

### COMPRESSOR DRIVE BELT ADJUSTMENT

M1552001000670

Refer to GROUP 11A, On-vehicles Service – Drive Belts Tension Check and Adjustment [P.11A-8](#).

<Except MIVEC>

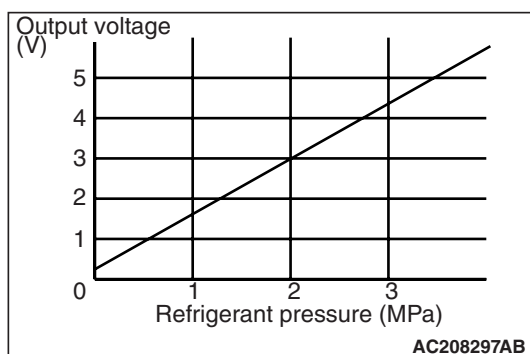
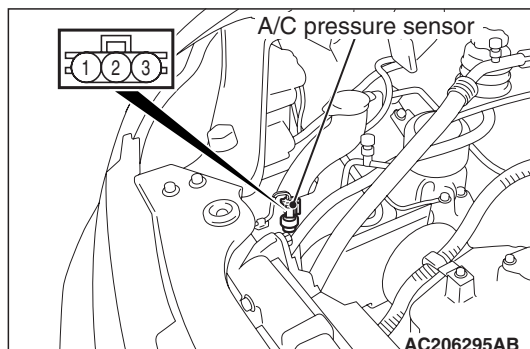
Refer to GROUP 11E, On-vehicles Service – Drive Belts Tension Check and Adjustment [P.11C-8](#).

<MIVEC>

SIMPLE INSPECTION OF THE A/C  
PRESSURE SENSOR

M1552014700130

1. Assemble a manifold gauge onto the high pressure service valve.
2. Turn ON the engine and then turn ON the air conditioner switch.

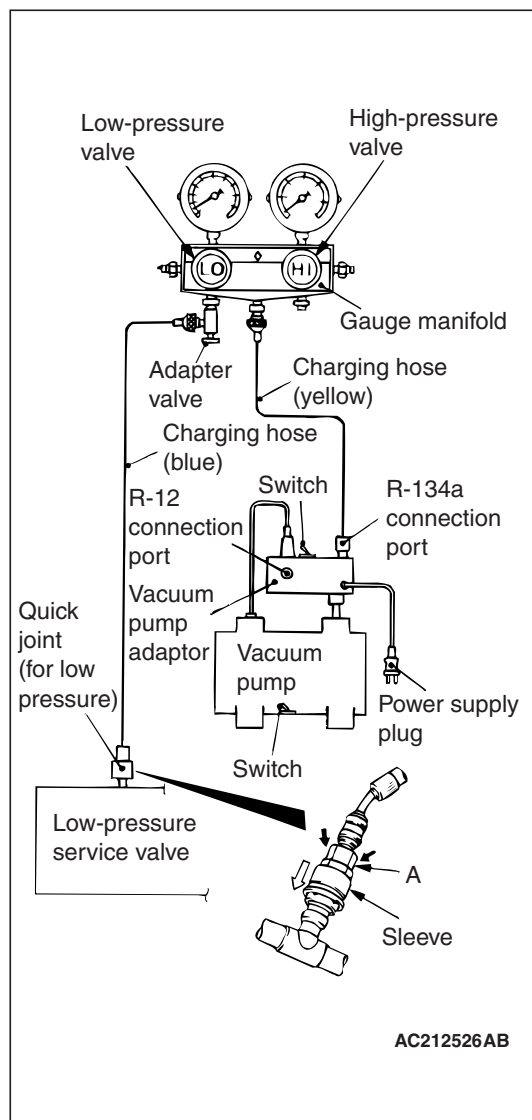


3. Check to see that the voltage between the A/C pressure sensor terminal No.2 and body earth reflects the specifications of the Figure.

**NOTE:** The allowance shall be defined as  $\pm$  five percents.

## CHARGING

M1552001200522



1. With the handles turned back all the way (valve closed), install the adaptor valve to the low-pressure side of the gauge manifold.
2. Connect the charging hose (blue) to the adaptor valve.
3. Connect the quick joint (for low-pressure) to the charging hose (blue).

**CAUTION**

- Use tools that are suited to R134a.
  - To install the quick joint, press section When connecting, run your hand along the hose while pressing to ensure that there are no bends in the hose.
4. Connect the quick joint (for low-pressure) to the low- pressure service valve.

**NOTE:** The low-pressure service valve should be connected to the flexible suction hose.

5. Close the high and low-pressure valves of the gauge manifold.

**CAUTION**

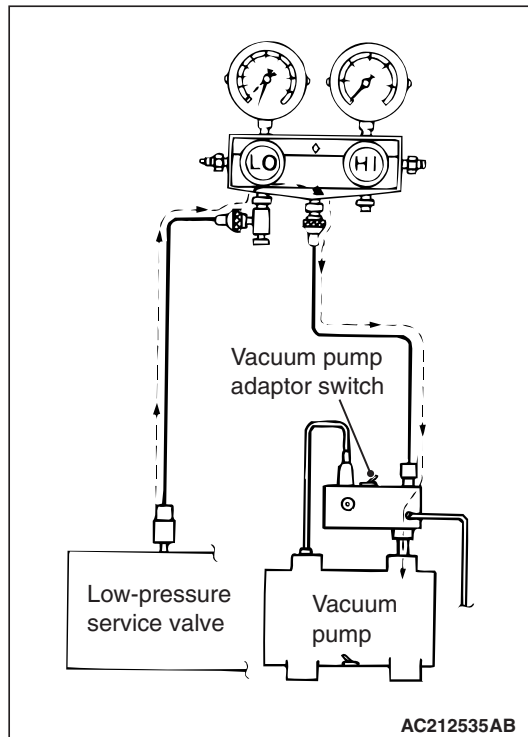
Be sure to connect the power plug of the vacuum pump to the vacuum pump adapter, and then connect the power plug of the adapter to a 100-V outlet.

6. Install the vacuum pump adaptor to the vacuum pump.
7. Connect the charging hose (yellow) to the R-134a connection port of the vacuum pump adaptor.
8. Tighten the adaptor valve handle (valve open).
9. Open the low-pressure valve of the gauge manifold.
10. Turn the power switch of the vacuum pump to the ON position.

*NOTE: Even if the vacuum pump power switch is turned ON, the vacuum pump will not operate because of the power supply connection in step (6).*

**CAUTION**

Do not operate the compressor for evacuation.



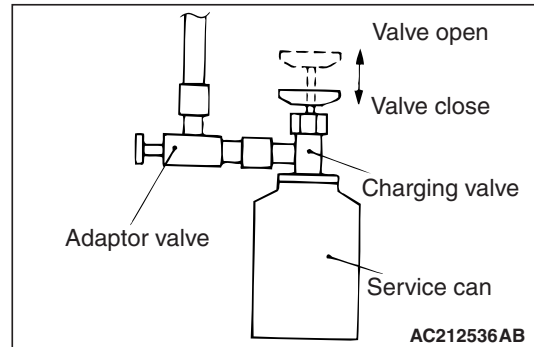
11. Turn the vacuum pump adaptor switch to the R134a side to start the vacuum pump.

12. Evacuate to a vacuum reading of 100 kPa or higher (takes approx. 10 minutes).

**CAUTION**

Do not operate the compressor in the vacuum condition; damage may occur.

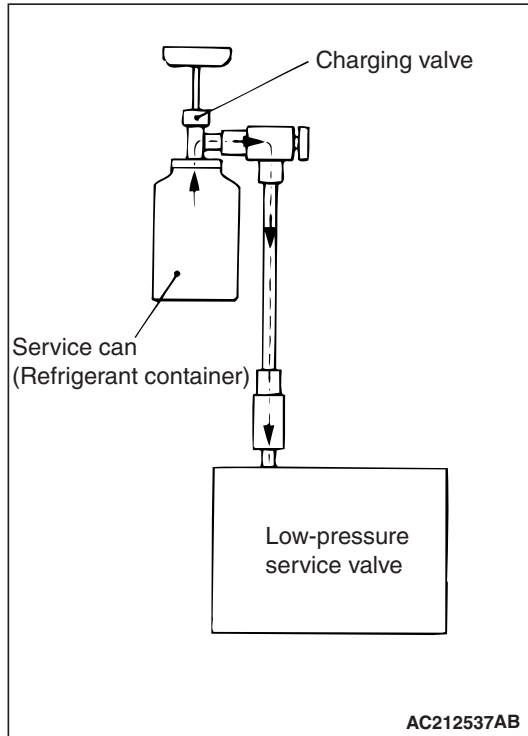
13. Loosen the valve of the adaptor valve fully (valve closed), and turn off the vacuum pump adapter switch. Then leave it for five minutes.
14. Check the system for proper sealing (negative pressure should not decrease).



15. Connect the service can valve to the service can with the handle loosened fully (valve closed).
16. Turn the handle of the adaptor valve back all the way (valve closed), remove it from the gauge manifold and install the service can.
17. Tighten the handle of the charging valve (valve closed) to puncture the service can.

**⚠ CAUTION**

If the service can is inverted, liquid refrigerant may be drawn into the compressor damaging it by liquid compression. Keep the service can upright to ensure that refrigerant is charged in gas state.



18. Turn the handle of the charging valve back (valve open) and tighten the handle of the adaptor valve (valve open) to charge the system with refrigerant.
19. If the refrigerant is not drawn in, turn the handle of the adaptor valve back all the way (valve closed).
20. Check for gas leaks using a leak detector. If a gas leak is detected, re-tighten the connections, and then repeat the charging procedure from evacuation in step (11).

**⚠ CAUTION**

The leak detector for R-134a should be used.

21. Start the engine.
22. Operate the A/C and set to the lowest temperature (MAX. COOL).
23. Fix the engine speed at 1,500 r/min.

**⚠ CAUTION**

If the service can is inverted, liquid refrigerant may be drawn into the compressor damaging it by liquid compression. Keep the service can upright to ensure that refrigerant is charged in gas state.

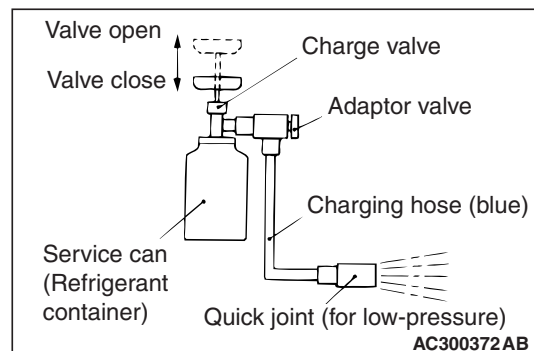
24. Tighten the handle of the adaptor valve (valve open) to charge the required volume of refrigerant.

25. After charging with refrigerant, turn the handle of the adaptor valve back all the way (valve closed).
26. Tighten the charging valve handle (valve closed). Remove the quick joint (for low-pressure) from the low-pressure service valve.
27. Remove the service can.

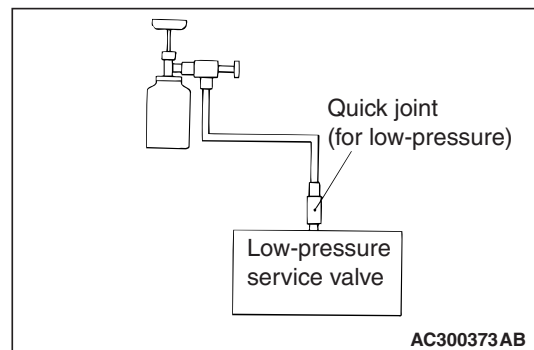
*NOTE: If the service can is not emptied completely, keep the handles of the charging valve and adaptor valve closed for the next charging.*

## CORRECTING LOW REFRIGERANT LEVEL IN CASE THE SERVICE CAN IN USED

M1552014600069



1. Install the charge valve with the handle turned all the way back (valve open) to the service can.
2. Install the adaptor valve with the handle turned all the way back (valve close) to the charging valve.
3. Connect the charging hose (blue) to the adaptor valve.
4. Connect the charging hose (blue) to the quick joint (for low-pressure).
5. Tighten the handle of the charge valve (valve close), and pierce the service can.
6. Turn the handle of the adaptor valve to bleed the air.



7. Install the quick joint (for low-pressure) to the low-pressure service valve.

*NOTE: The low-pressure service valve should be connected to the suction hose.*



8. Start the engine.
9. Operate the air conditioner and set at the lowest temperature (MAX. COOL).
10. Fix the engine speed at 1,500 r/min.
11. Tighten the handle of the adaptor valve (valve open), and replenish refrigerant while checking the quantity through the sight glass.
12. After replenishing is completed, turn the handle of the adaptor valve all the way back (valve close), and remove the quick joint.

*NOTE: When there is remainder of refrigerant in the service can, keep it for next use with the charge value and the valve of the adaptor valve being closed.*

## DISCHARGING SYSTEM

M1552013000064

Use the refrigerant recovery unit to discharge refrigerant gas from the system.

*NOTE: Refer to the Refrigerant Recovery and Recycling Unit instruction Manual for operation of the unit.*

## REFILLING OF OIL IN THE A/C SYSTEM

M1552020000118

Too little oil will provide inadequate compressor lubrication and cause a compressor failure. Too much oil will increase discharge air temperature.

When a compressor is installed at the factory, it contains 120 mL <Except MIVEC> or 140 mL <MIVEC> of compressor oil. While the A/C system is in operation, the oil is carried through the entire system by the refrigerant. Some of this oil will be trapped and retained in various parts of the system.

When the following system components are changed, it is necessary to add oil to the system to replace the oil being removed with the component.

**Compressor oil: SUN PAG 56**

**Quantity**

**Evaporator: 60 mL**

**Condenser: 15 mL**

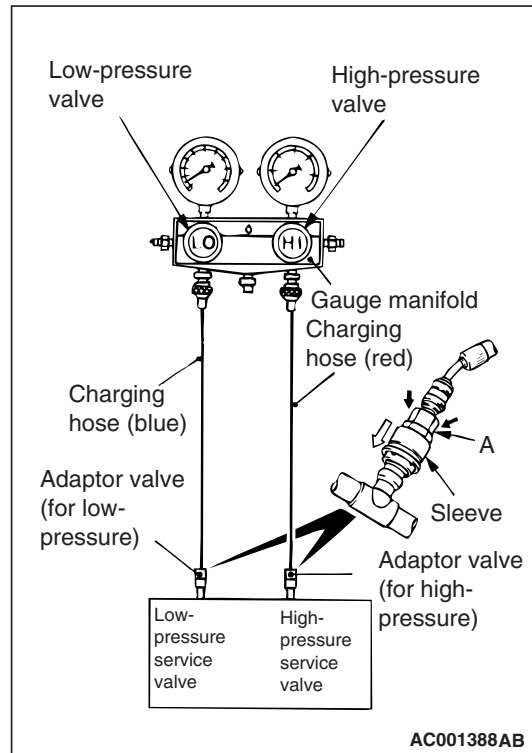
**Flexible suction hose: 10 mL**

**Receiver: 10 mL**

## PERFORMANCE TEST

M1552001400311

1. The vehicles to be tested should be in a place that is not in direct sunlight.



2. Close the high and low-pressure valve of the gauge manifold.
3. Connect the charging hose (blue) to the low-pressure valve and connect the charging hose (red) to the high-pressure valve of the gauge manifold.
4. Install the quick joint (for low-pressure) to the charging hose (blue), and connect the quick joint (for high-pressure) to the charging hose (red).

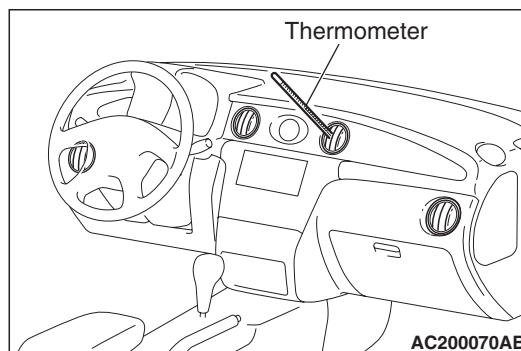
### **CAUTION**

- To connect the quick joint, press section A firmly against the service valve until a click is heard.
- When connecting, run your hand along the hose while pressing to ensure that there are no bends in the hose.

*NOTE: The high-pressure service valve is on the A/C pipe and the low-pressure service valve is on the suction hose.*

5. Connect the quick joint (for low-pressure) to the low-pressure service valve and connect the quick joint (for high-pressure) to the high-pressure service valve.
6. Start the engine.
7. Set the A/C controls as follows:
  - A/C switch: A/C – ON position

- Mode selection: FACE position
  - Temperature control: MAXIMUM COOLING position
  - Air selection: RECIRCULATION position
  - Blower switch: "4" (Fast) position
- Adjust engine speed to 1,500 r/min with A/C clutch engaged.
  - Engine should be warmed up with doors and windows opened.



- Insert a thermometer in the centre air outlet and operate the engine for 20 minutes.

*NOTE: If the clutch cycles, take the reading before the clutch disengages.*

- Note the discharge air temperature.

## Performance Temperature Chart

Garage ambient temperature °C	20	25	30	35
Discharge air temperature °C	8.0 – 11.0	12.0 – 16.0	17.0 – 21.0	22.5 – 27.5
Compressor high pressure kPa	740 – 840	950 – 1,050	1,160 – 1,300	1,360 – 1,550
Compressor low pressure kPa	150 – 190	190 – 240	240 – 300	300 – 375

## REFRIGERANT LEAK REPAIR PROCEDURE

M1552001500255

### LOST CHARGE

If the system has lost all charge due to a leak:

- Evacuate the system (Refer to P.55A-25).
- Charge the system with  $550 \pm 20$  g of refrigerant.
- Check for leaks.
- Discharge the system.
- Repair leaks.

#### **CAUTION**

**Replacement filter-drier units must be sealed while in storage. The drier used in these units will saturate water quickly upon exposure to the atmosphere. When installing a drier, have all tools and supplies ready for quick assembly to avoid keeping the system open any longer than necessary.**

- Replace receiver drier.
- Evacuate and charge system.

### LOW CHARGE

If the system has not lost all of its refrigerant charge; locate and repair all leaks. If it is necessary to increase the system pressure to find the leak (because of an especially low charge) add refrigerant. If it is possible to repair the leak without discharging the refrigerant system, use the procedure for correcting low refrigerant level.

### HANDLING TUBING AND FITTINGS

Kinks in the refrigerant tubing or sharp bends in the refrigerant hose lines will greatly reduce the capacity of the entire system. High pressures are produced in the system when it is operating. Extreme care must be exercised to make sure that all connections are pressure tight. Dirt and moisture can enter the system when it is opened for repair or replacement of lines or components. The following precautions must be observed. The system must be completely discharged before opening any fitting of connection in the refrigeration system. Open fittings with caution even after the system has been discharged. If any pressure is noticed as a fitting is loosened, allow trapped pressure to bleed off very slowly. Never attempt to rebend formed lines to fit. Use the correct line for the installation you are servicing. A good rule for the flexible hose lines is keep the radius of all bends at least 10 times the diameter of the hose.

Sharper bends will reduce the flow of refrigerant. The flexible hose lines should be routed so that they are at least 80 mm from the exhaust manifold. It is good practice to inspect all flexible hose lines at least once a year to make sure they are in good condition and properly routed.  
On standard plumbing fittings with O-rings, these O-rings are not reusable.

COMPRESSOR NOISE CHECK

M1552008700249

You must first know the conditions when the noise occurs. These conditions are: weather, vehicle speed, in gear or neutral, engine temperature or any other special conditions.  
Noises that develop during A/C operation can often be misleading. For example: what sounds like a failed front bearing or connecting rod, may be caused by loose bolts, nuts, mounting brackets, or a loose clutch assembly. Verify accessory drive belt tension (power steering or alternator).  
Improper accessory drive belt tension can cause a misleading noise when the compressor is engaged and little or no noise when the compressor is disengaged.  
Drive belts are speed-sensitive. That is, at different engine speeds, and depending upon belt tension, belts can develop unusual noises that are often mistaken for mechanical problems within the compressor.

ADJUSTMENT

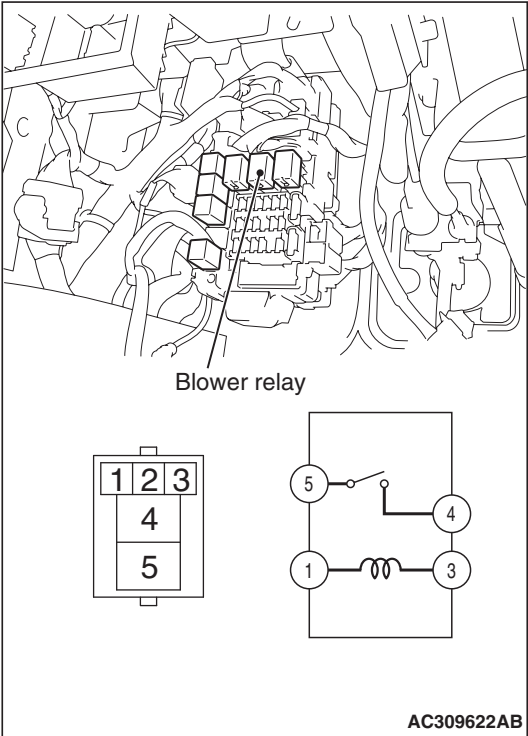
1. Select a quiet area for testing. Duplicate conditions as much as possible. Switch the compressor on and off several times to clearly identify compressor noise. To duplicate high ambient conditions (high head pressure), restrict air flow through the condenser. Install a manifold gauge set to make sure discharge pressure doesn't exceed 2,070 kPa.
2. Tighten all compressor mounting bolts, clutch mounting bolt, and compressor drive belt. Check to assure clutch coil is tight (no rotation or wobble).
3. Check refrigerant hoses for rubbing or interference that can cause unusual noises.
4. Check refrigerant charge (Refer to [P.55A-21](#)).

5. Recheck compressor noise as in Step 1.
6. If noise still exists, loosen compressor mounting bolts and retighten. Repeat Step 1.
7. If noise continues, replace compressor and repeat Step 1.

POWER RELAY CHECK

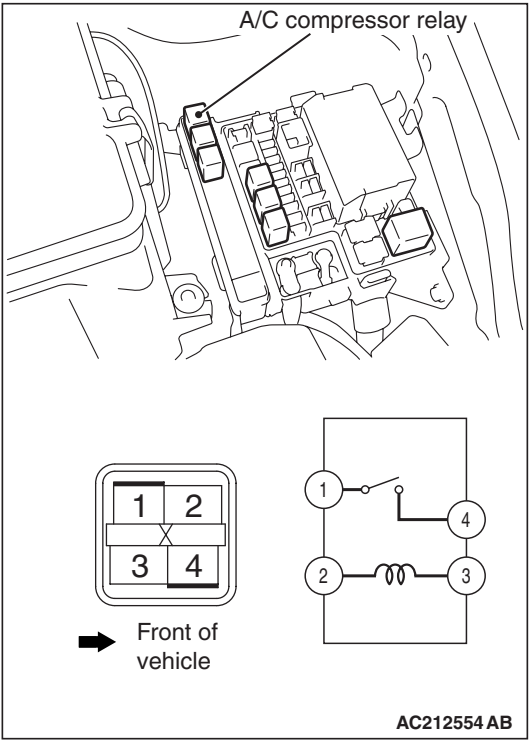
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BLOWER RELAY CONTINUITY CHECK

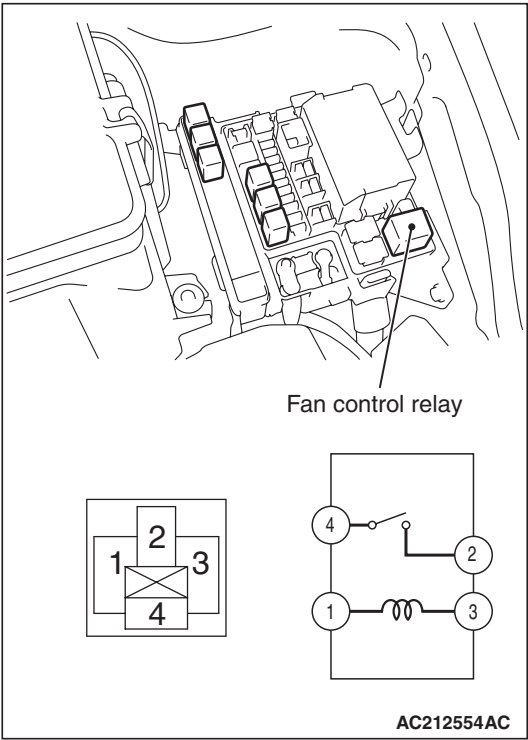


Battery voltage	Tester connection	Specified condition
Not applied	4 – 5	Open circuit
<ul style="list-style-type: none"><li>• Connect terminal 1 to the positive battery terminal</li><li>• Connect terminal 3 to the negative battery terminal</li></ul>	4 – 5	Less than 2 ohms

A/C COMPRESSOR RELAY CONTINUITY  
CHECK



FAN CONTROL RELAY CONTINUITY  
CHECK



Battery voltage	Tester connection	Specified condition
Not applied	1 – 4	Open circuit
<ul style="list-style-type: none"><li>Connect terminal 3 to the positive battery terminal</li><li>Connect terminal 2 to the negative battery terminal</li></ul>	1 – 4	Less than 2 ohms

Battery voltage	Tester connection	Specified condition
Not applied	2 – 4	Open circuit
<ul style="list-style-type: none"><li>Connect terminal 1 to the positive battery terminal</li><li>Connect terminal 3 to the negative battery terminal</li></ul>	2 – 4	Less than 2 ohms

## IDLE-UP OPERATION CHECK

M1552001600661

1. Before inspection and adjustment, set vehicle in the following condition:
  - Engine coolant temperature: 80 – 90 °C
  - Lamps, electric cooling fan and accessories: Set to OFF
  - Transmission: Neutral ("N" or "P" for vehicles with A/T)
  - Steering wheel: Straightforward
2. Check whether or not the idle speed is the standard value.

Refer to GROUP 11A, On-vehicle Service – IDLE SPEED CHECK P.11C-13. <2000>

Refer to GROUP 11A, On-vehicle Service – Idle Speed and Idle Mixture Check and Adjustment P.11A-12. <Except MIVEC>

Refer to GROUP 11E, On-vehicle Service – Idle Speed Check P.11C-13. <MIVEC>

**Standard value: 700 ± 100 r/min**

3. When the A/C is running after turning the A/C switch to ON, and the blower switch to the 3(MH) or 4(HI) position, check to be sure that the idle speed is at the standard value.

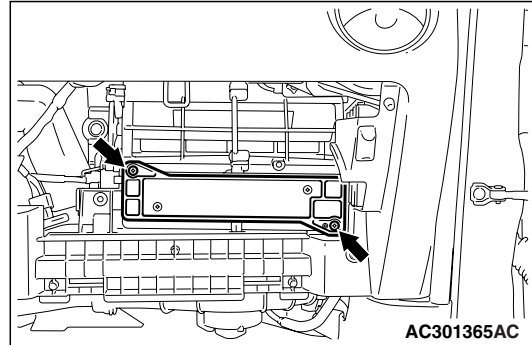
**Standard value: 850 ± 100 r/min**

*NOTE: It is not necessary to make an adjustment, because the idling speed is automatically adjusted by the ISC system. If, however, a deviation from the standard value occurs for some reason, check the ISC system.*

## CLEAN AIR FILTER REPLACEMENT PROCEDURE

M1552020100201

1. Remove the glove box. (Refer to GROUP 52A, Instrument Panel P.52A-3 <L.H. drive vehicles>, P.52A-9 <R.H. drive vehicles>)

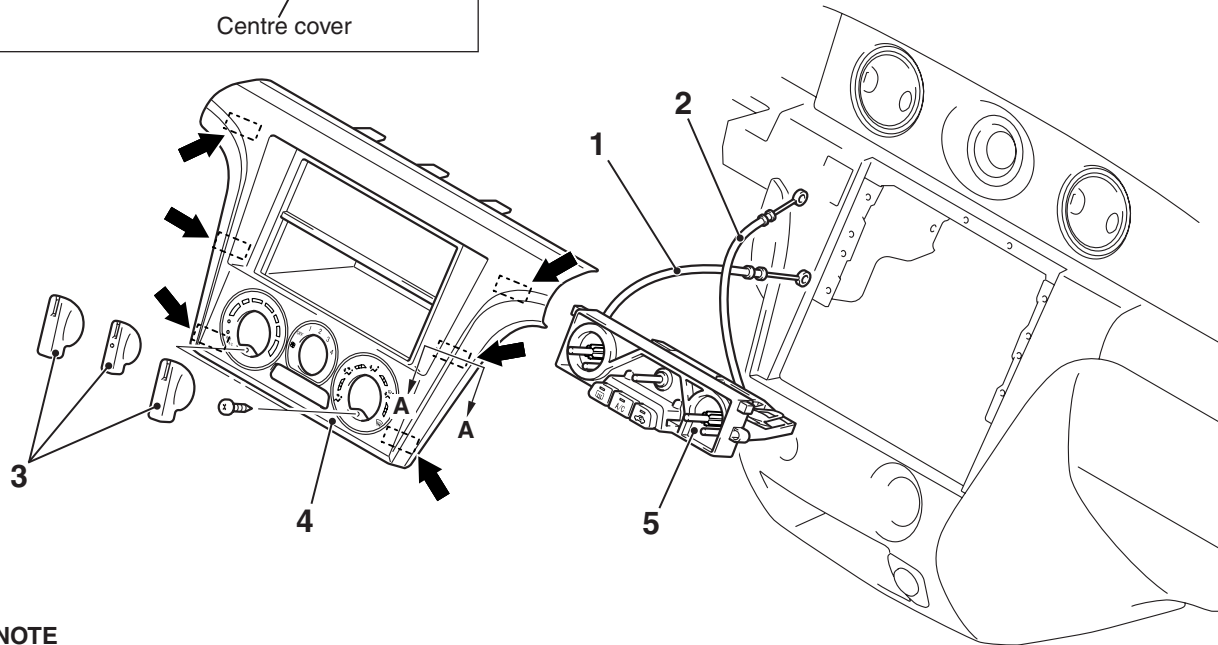
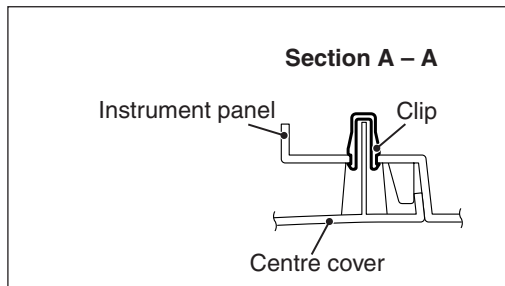


2. Remove the two screws as shown, and replace the clean air filter.
3. Install the glove box.

# HEATER CONTROL ASSEMBLY AND A/C SWITCH

## REMOVAL AND INSTALLATION

M1552002400295

**NOTE**

➡ : Clip positions

**Removal steps**

- >>B<< 1. Air mix door cable connection
- >>A<< 2. Blower vent changeover damper cable connection
3. Knob

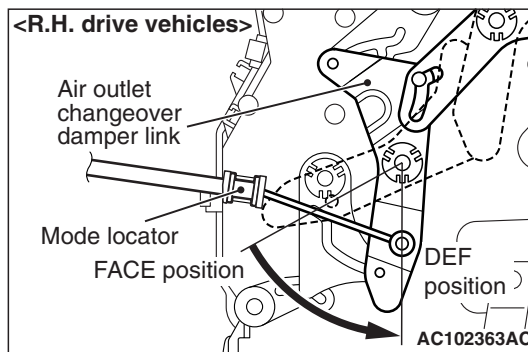
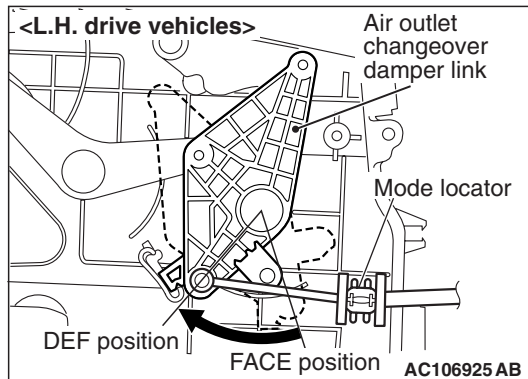
**Removal steps (Continued)**

4. Centre panel
5. Manual A/C control panel assembly

AC106926AF

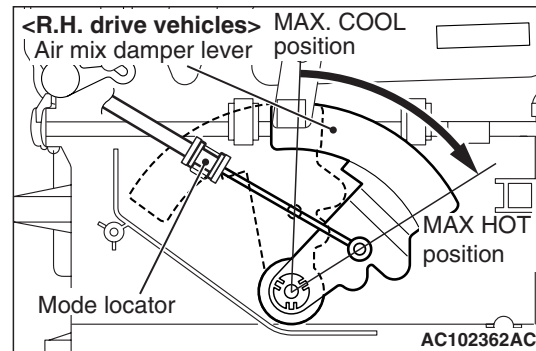
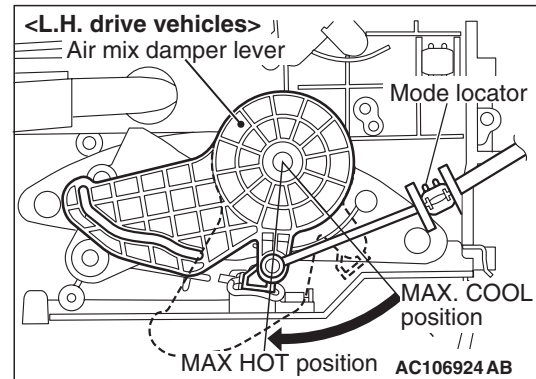


**INSTALLATION SERVICE POINT**  
**>>A<< BLOWER VENT CHANGEOVER**  
**DAMPER CABLE**



1. Set the heater control assembly's blower vent changeover knob to the DEF position.
2. Set the heater unit's blower vent changeover damper relay to the DEF position (turn the damper relay to the left until it stops) and install the cable.
3. Set the mode locator to the heater unit case and secure with a clip.

**>>B<< AIR MIX DOOR CABLE**  
**CONNECTION**

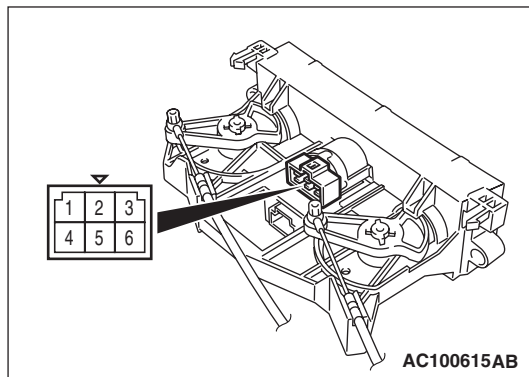


1. Turn the heater control assembly's temperature adjustment knob all the way to the HOT side.
2. Set the heater unit's air mix door lever to the MAX HOT position (turn the damper lever as the left illustration) and attach the cable.
3. Set the mode locator to the heater unit case and secure with a clip.

## INSPECTION

M1552014300604

## BLOWER SWITCH CONTINUITY CHECK

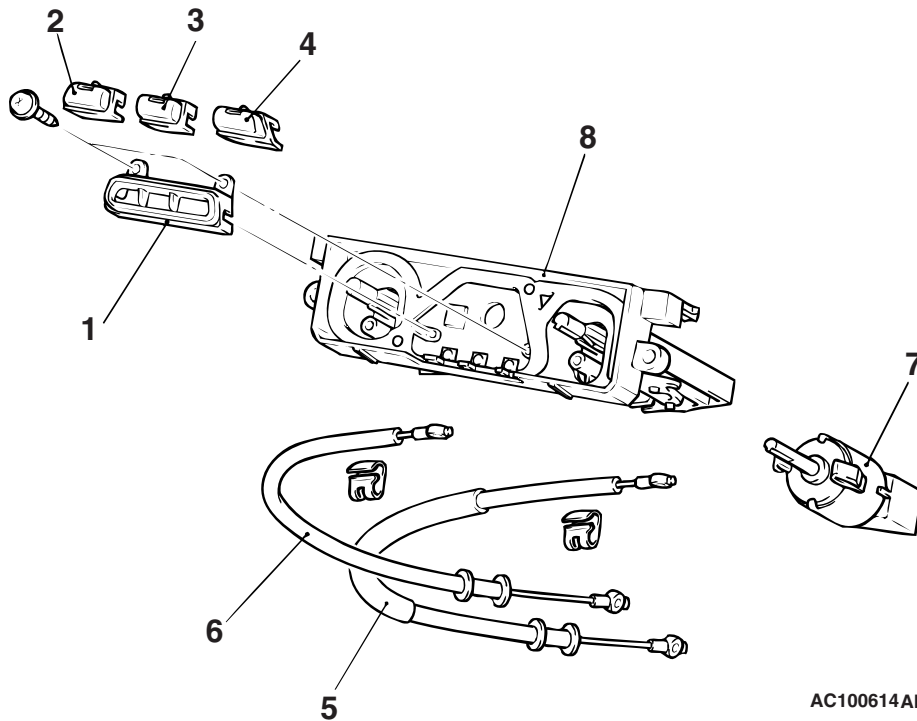


Switch position	Tester connection	Specified condition
0 (OFF)	1 – 2, 2 – 4, 2 – 5, 2 – 6	Open circuit
1 (LO)	1 – 2	Less than 2 ohms
2 (ML)	2 – 4	Less than 2 ohms
3 (MH)	2 – 5	Less than 2 ohms
4 (HI)	2 – 6	Less than 2 ohms



## DISASSEMBLY AND REASSEMBLY

M1552014200135



### Disassembly steps

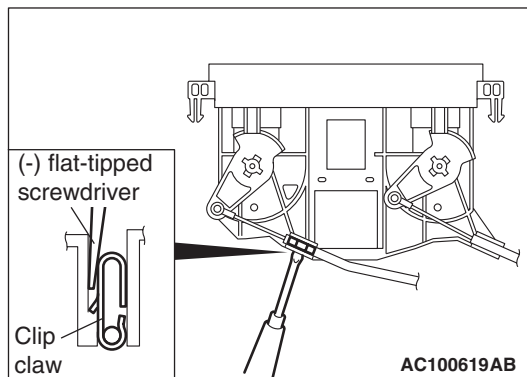
1. Switch panel
2. Rear window defogger switch
3. Air conditioner switch
4. Outside/Inside air selection switch
- <<A>> 5. Blower vent changeover damper cable
- <<A>> 6. Air mix damper cable

### Disassembly steps (Continued)

7. Blower switch assembly
8. Manual A/C control panel (A/C-ECU)

## DISASSEMBLY SERVICE POINT <<A>> BLOW VENT CHANGEOVER DAMPER CABLE AND AIR MIX DAMPER CABLE REMOVAL

the inside of the control base and prize out the clip claw to disconnect the cables.



Insert a flat-tipped screwdriver into the clip through

# HEATER UNIT, HEATER CORE, BLOWER ASSEMBLY AND EVAPORATOR UNIT

## REMOVAL AND INSTALLATION

M1552011600509

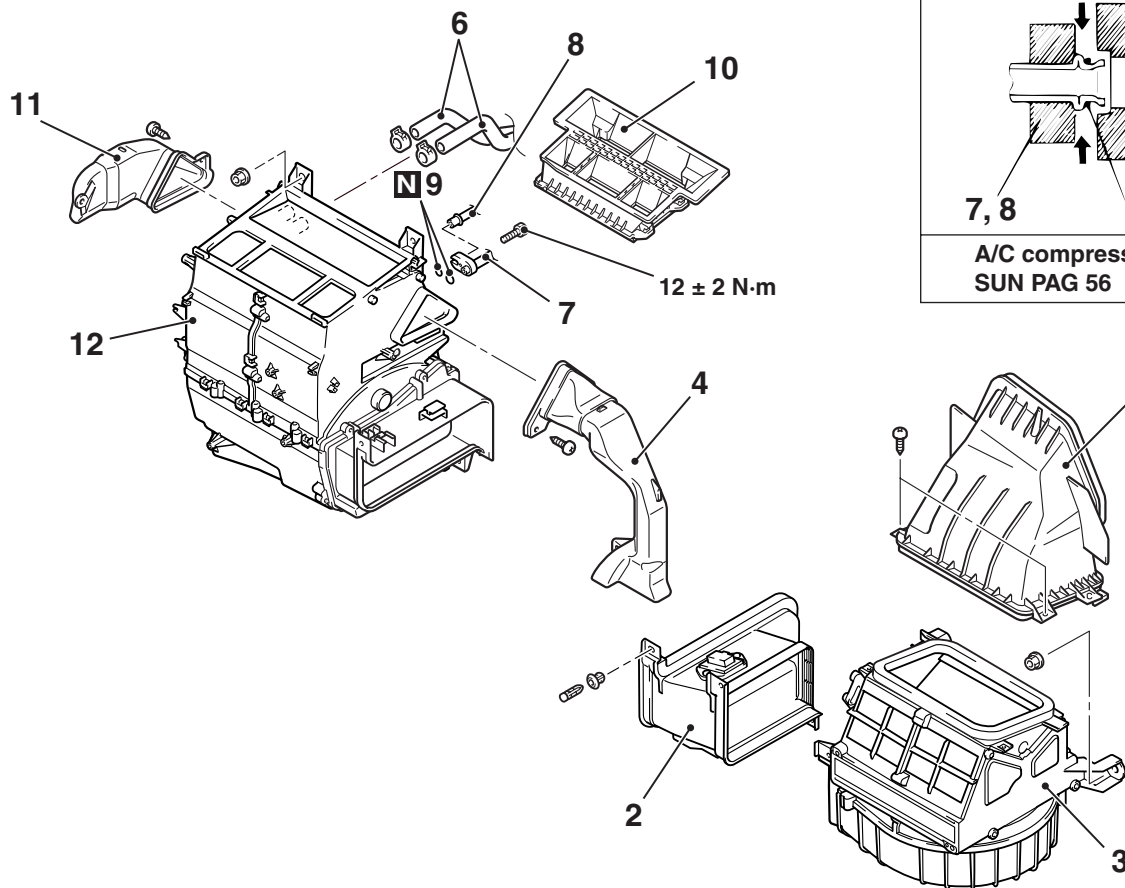
### **⚠ WARNING**

*When removing and installing the heater unit, do not let it bump against the SRS-ECU or the components.*

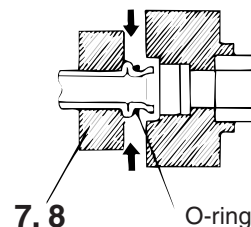
#### Pre-removal and Post-installation Operation

- Refrigerant draining and Refilling (Refer to Charging P.55A-22 and Discharging P.55A-25).
- Engine coolant Draining and Refilling (Refer to GROUP 14, On vehicles service P.14-10).
- Instrument Panel Removal and Installation (Refer to GROUP 52A, Instrument Panel P.52A-3 <L.H.drive vehicles> or P.52A-9 <R.H.drive vehicles>).
- Air cleaner cover and air flow sensor assembly Removal and Installation (Refer to GROUP 15, Air cleaner P.15-3 <Except MIVEC>, P.15-4 <MIVEC>).

<L.H. drive vehicles>

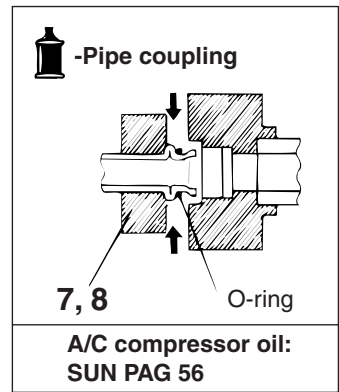
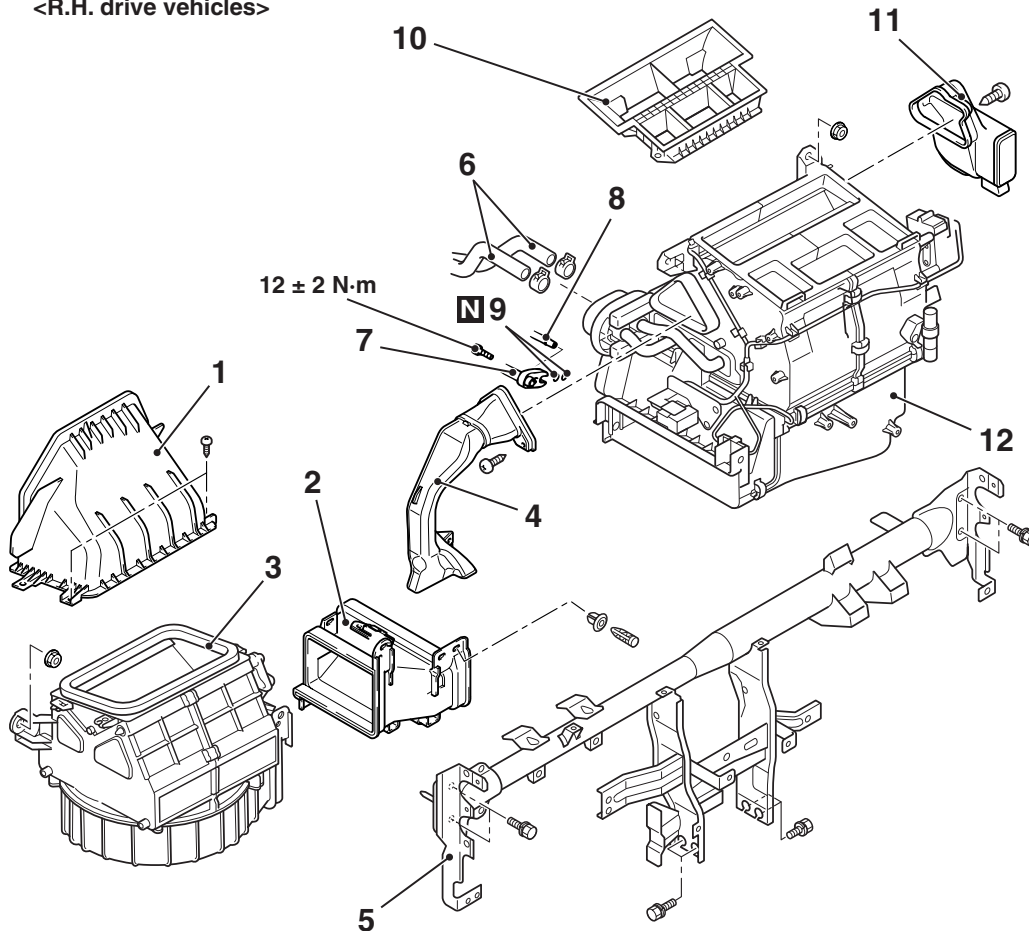


-Pipe coupling



A/C compressor oil:  
SUN PAG 56

<R.H. drive vehicles>



AC212326AD

#### Removal steps

1. Intake duct
2. Joint duct
3. Blower assembly
4. Foot duct <front passenger's side>
5. Front deck crossmember
6. Heater hose connection

<<A>>

<<A>>

#### Removal steps (Continued)

7. Liquid pipe B connection
8. Flexible suction hose connection
9. O-ring
10. Centre duct
11. Foot duct <driver's side>
12. Heater case

## REMOVAL SERVICE POINT

### <<A>> FLEXIBLE SUCTION HOSE AND LIQUID PIPE B DISCONNECTION

#### ⚠ CAUTION

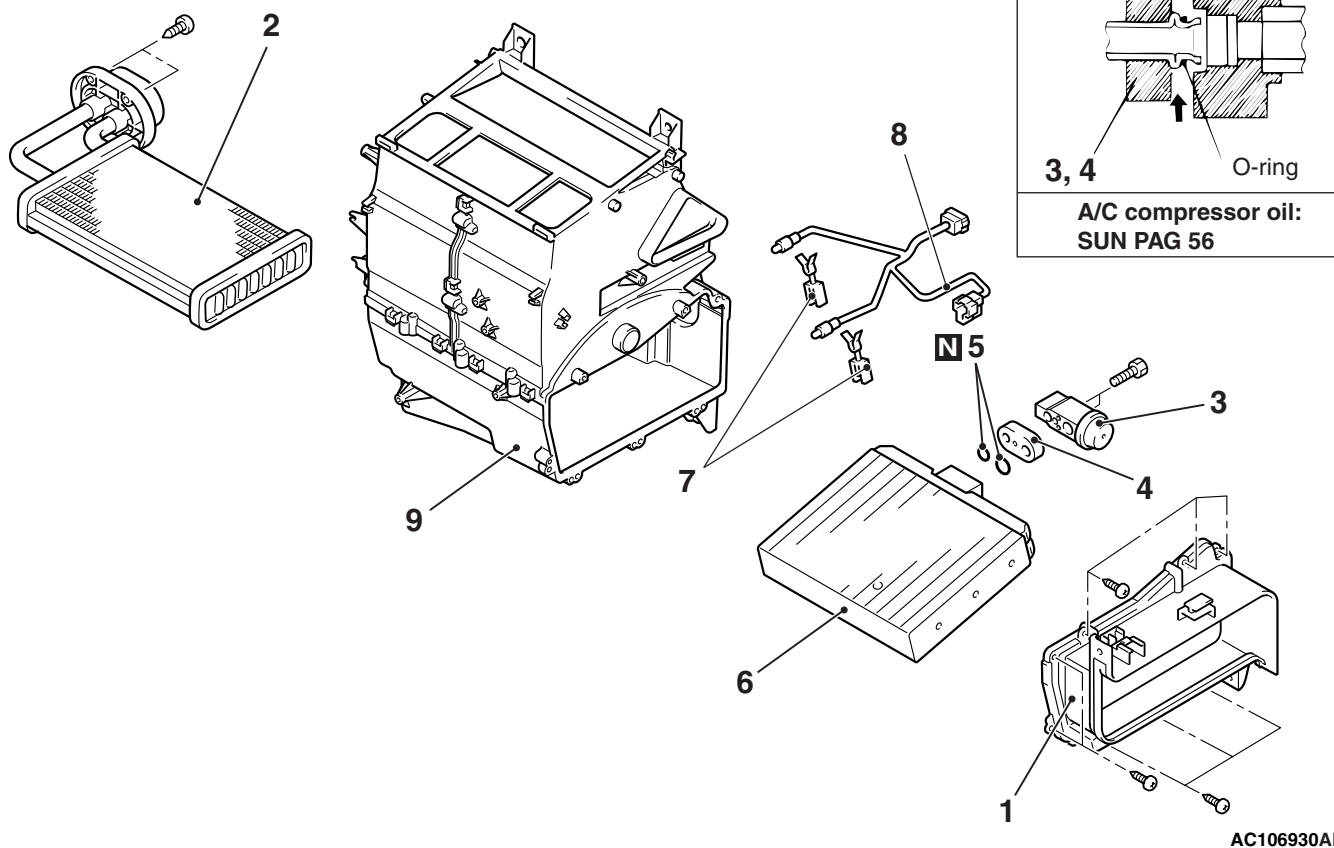
As the compressor oil and receiver are highly moisture absorbent, use a non-porous material to plug the hose and nipples.

To prevent the entry of dust or other foreign bodies, plug the dismantled hose and the nipples of the expansion valves.

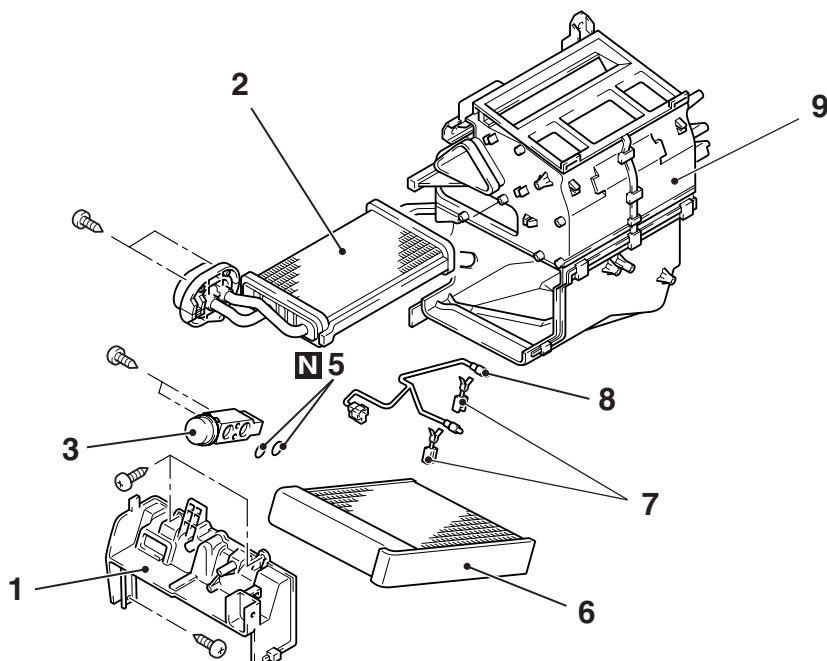
### DISASSEMBLY AND REASSEMBLY

M1551005400172

&lt;L.H. drive vehicles&gt;



&lt;R.H. drive vehicles&gt;



**Disassembly steps**

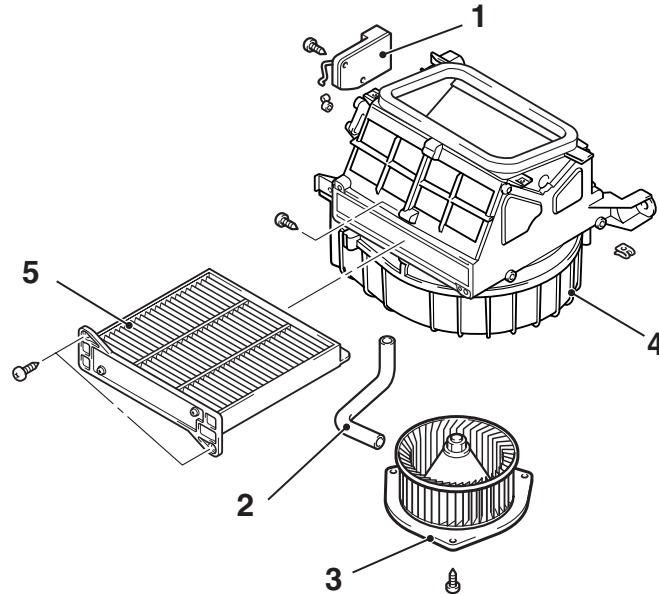
1. Evaporator cover
2. Heater core
3. Expansion valve
4. Joint
5. O-ring

**Disassembly steps (Continued)**

6. Evaporator
7. Air thermo sensor clip
8. Air thermo sensor
9. Heater case

**DISASSEMBLY AND REASSEMBLY**

M1551005500276



**Disassembly steps**

1. Outside/inside air selection damper control motor
2. Hose

**Disassembly steps (Continued)**

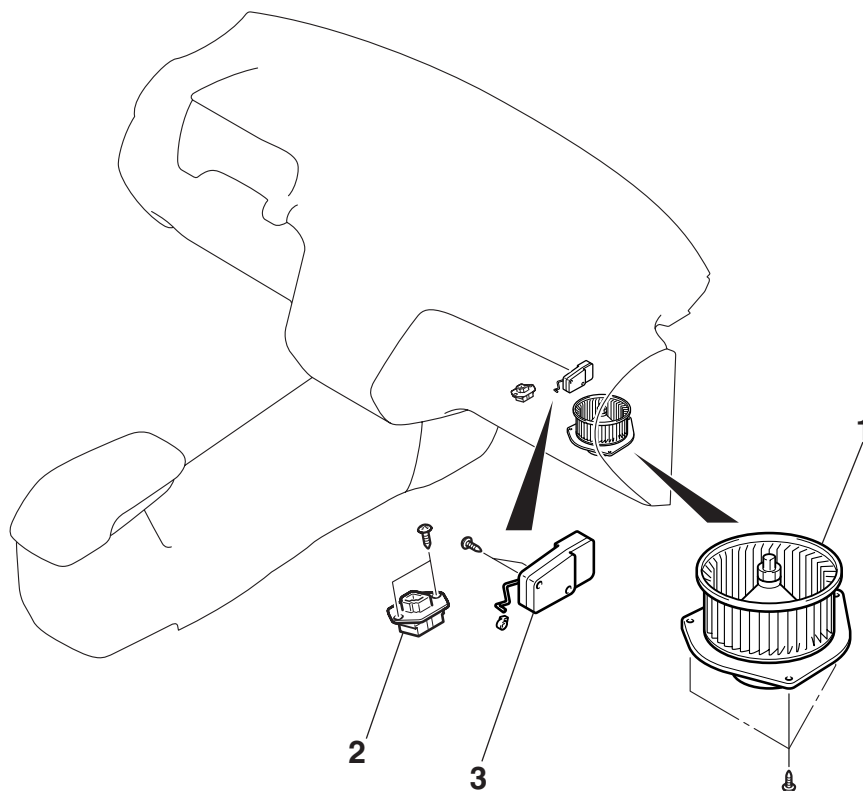
3. Blower motor
4. Blower case
5. Clean air filter

AC504459AB

# RESISTOR, BLOWER MOTOR AND OUTSIDE/INSIDE AIR SELECTION DAMPER CONTROL MOTOR

## REMOVAL AND INSTALLATION

M1551002800364



AC200968AB

**Blower motor removal step**

1. Blower motor

**Resistor removal step**

- Glove box (Refer to GROUP 52A, Instrument Panel [P.52A-3](#) <L.H.drive vehicles> or [P.52A-9](#) <R.H.drive vehicles>).
2. Resistor

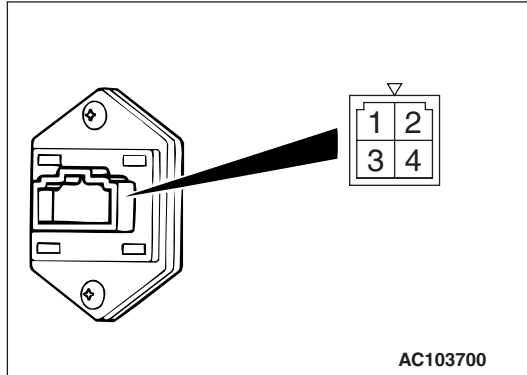
**Outside/inside air selection damper control motor removal step**

- Glove box (Refer to GROUP 52A, Instrument Panel [P.52A-3](#) <L.H.drive vehicles> or [P.52A-9](#) <R.H.drive vehicles>).
3. Outside/inside air selection damper control motor

## INSPECTION

### RESISTER CHECK

M1551006300253

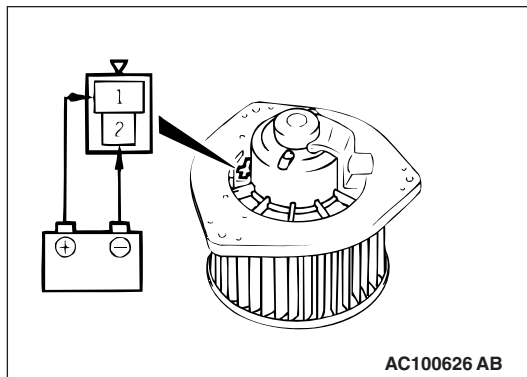


Use an ohmmeter to measure the resistance between the terminals. Check that the measured value is at the standard value.

**Standard value:**

Measurement terminal	Standard value ( $\Omega$ )
Between terminals 2 and 4 (LO)	2.54
Between terminals 1 and 2 (ML)	1.24
Between terminals 2 and 3 (MH)	0.6

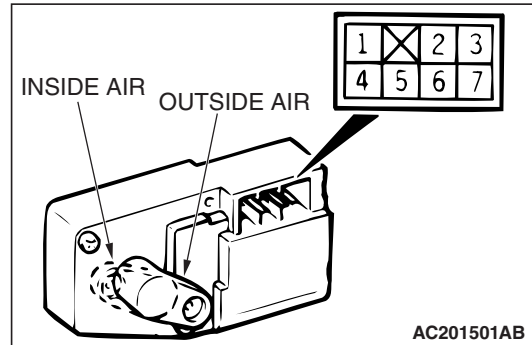
### BLOWER FAN AND MOTOR CHECK



When battery voltage is applied between the terminals, check that the motor operates. Also, check that there is no abnormal noise.

### OUTSIDE/INSIDE AIR SELECTION DAMPER CONTROL MOTOR CHECK <L.H. drive vehicles>

**⚠ CAUTION**

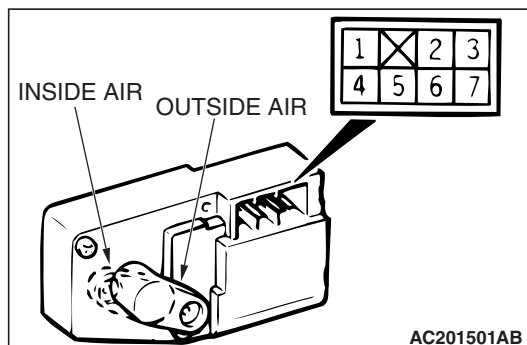


**Cut off the battery voltage when the damper is in the inside/outside air position.**

Lever position	Battery connection	Lever operation
At the inside position	<ul style="list-style-type: none"> <li>• Connect terminal 7 to the positive battery terminal</li> <li>• Connect terminal 4 to the negative battery terminal</li> </ul>	The lever moves from the inside position to the outside position
At the outside position	<ul style="list-style-type: none"> <li>• Connect terminal 7 to the positive battery terminal</li> <li>• Connect terminal 6 to the negative battery terminal</li> </ul>	The lever moves from the outside position to the inside position

**OUTSIDE/INSIDE AIR SELECTION  
DAMPER CONTROL MOTOR CHECK**

&lt;R.H. drive vehicles&gt;

**CAUTION**

**Cut off the battery voltage when the damper is in the inside/outside air position.**

Lever position	Battery connection	Lever operation
At the inside position	<ul style="list-style-type: none"><li>• Connect terminal 7 to the positive battery terminal</li><li>• Connect terminal 6 to the negative battery terminal</li></ul>	The lever moves from the inside position to the outside position
At the outside position	<ul style="list-style-type: none"><li>• Connect terminal 7 to the positive battery terminal</li><li>• Connect terminal 4 to the negative battery terminal</li></ul>	The lever moves from the outside position to the inside position



# EVAPORATOR ASSEMBLY

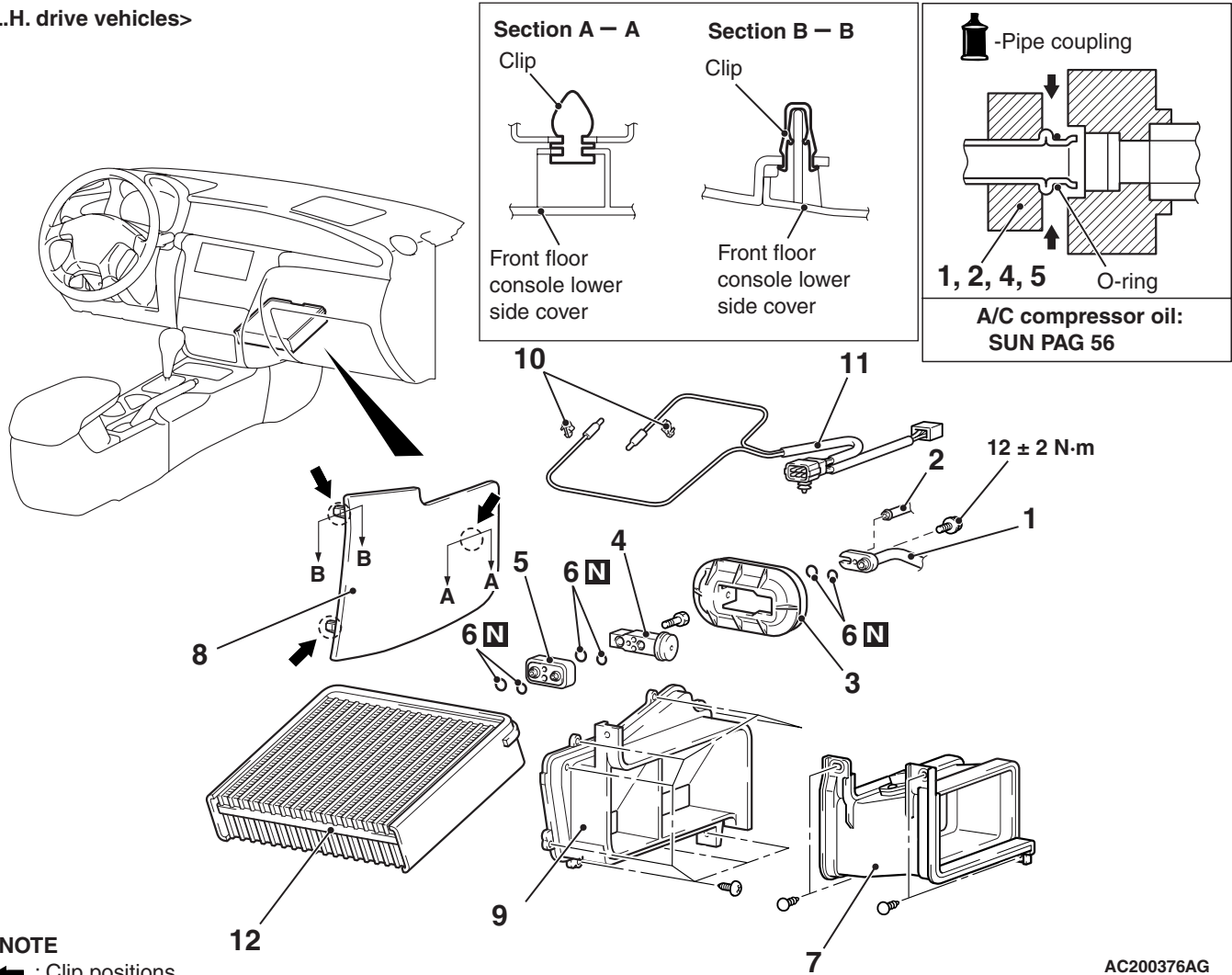
## REMOVAL AND INSTALLATION

M1552003600485

### Pre-removal and Post-installation Operation

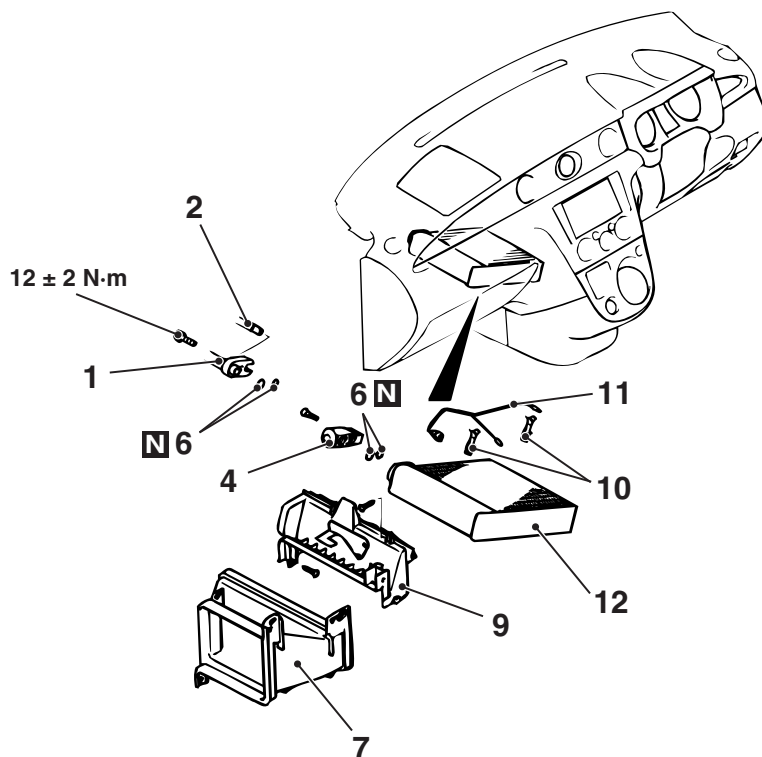
- Refrigerant draining and Refilling (Refer to Charging [P.55A-22](#) and Discharging [P.55A-25](#)).
- Air cleaner cover and air flow sensor assembly Removal and Installation (Refer to GROUP 15, Air cleaner [P.15-3](#) <Except MIVEC>, [P.15-4](#) <MIVEC>).

<L.H. drive vehicles>



AC200376AG

&lt;R.H. drive vehicles&gt;



AC101304AB

**Removal steps**

- <<A>>  
<<A>>  
<<A>>  
<<A>>  
<<A>>
1. Flexible suction hose connection
  2. Liquid pipe B connection
  3. Expansion valve cover
  4. Expansion valve
  5. Joint
  6. O-ring
  - Glove box (Refer to GROUP 52A, Instrument Panel [P.52A-3](#) <L.H. drive vehicles>, [P.52A-9](#) <R.H. drive vehicles>).

**Removal steps (Continued)**

7. Joint duct
- Foot duct <driver's side>
8. Front floor console lower side cover
9. Evaporator cover
10. Air thermo sensor clip
11. Air thermo sensor
12. Evaporator

## REMOVAL SERVICE POINT

### <<A>> FLEXIBLE SUCTION HOSE AND LIQUID PIPE B DISCONNECTION

#### ⚠ CAUTION

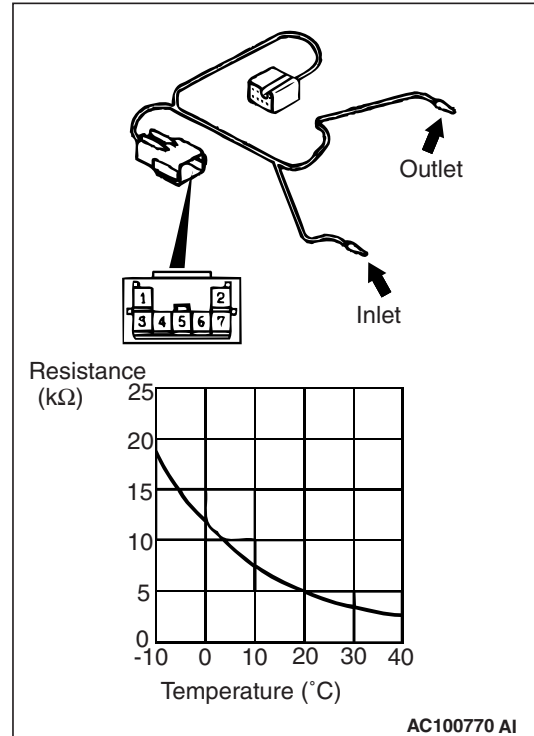
As the compressor oil and receiver are highly moisture absorbent, use a non-porous material to plug the hose and nipples.

To prevent the entry of dust or other foreign bodies, plug the dismantled hose and the nipples of the expansion valves.

## INSPECTION

M1552014300615

### AIR THERMO SENSOR INSPECTION



#### INLET SIDE

Measure the resistance between connector terminals 1 and 3 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.*

#### OUTLET SIDE

Measure the resistance between connector terminals 4 and 5 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.*

# COMPRESSOR ASSEMBLY AND TENSION PULLEY

## REMOVAL AND INSTALLATION

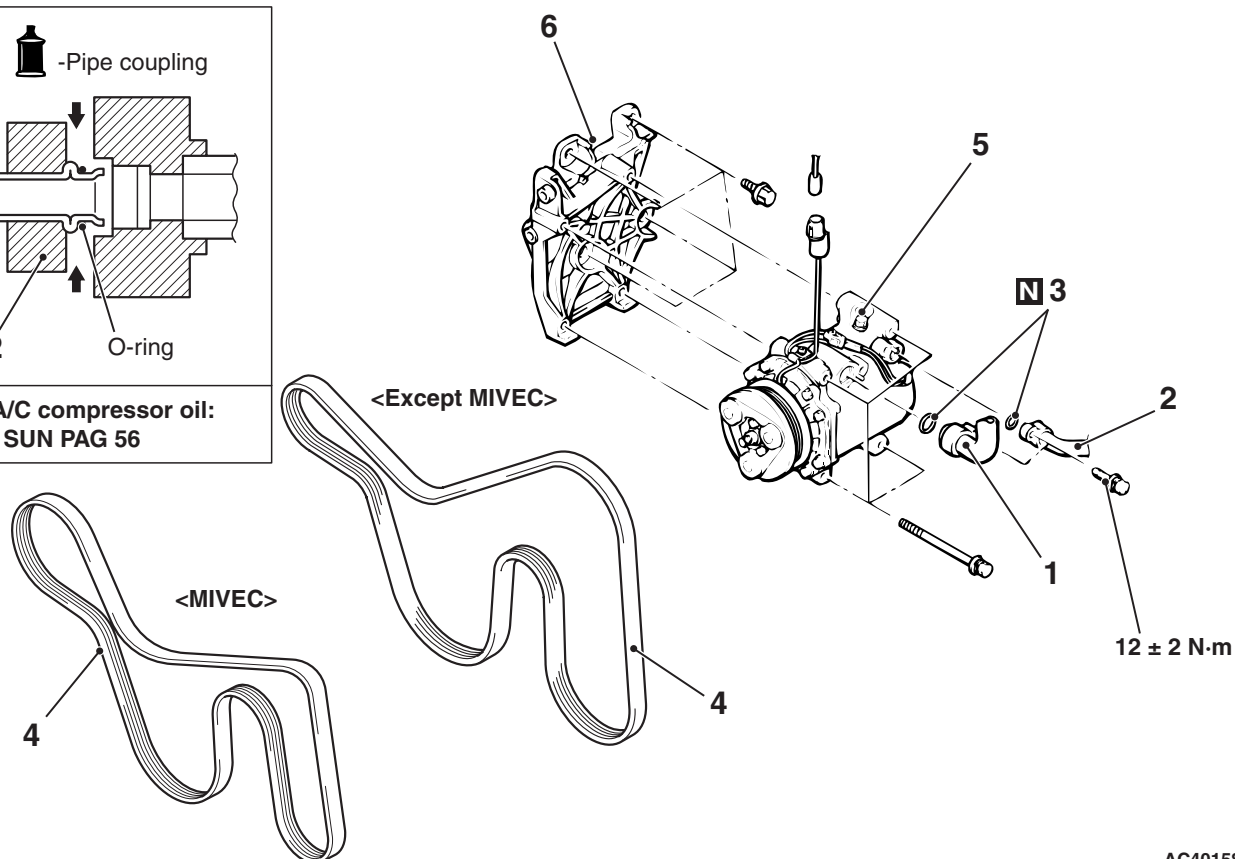
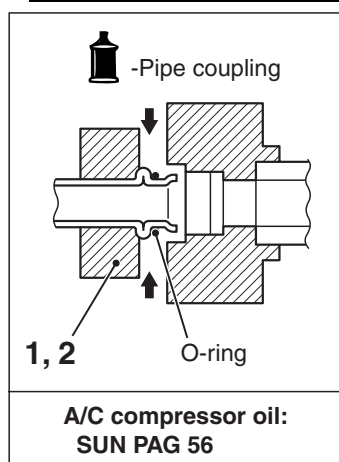
M1552004100513

**Pre-removal Operation**

- Refrigerant Discharging (Refer to [P.55A-22](#)).

**Post-installation Operation**

- Drive Belt Tension Adjustment (Refer to GROUP 11A, Maintenance Service – Drive Belt [P.11A-8](#) ). <Except MIVEC>
- Drive Belt Tension Adjustment (Refer to GROUP 11E, Maintenance Service – Drive Belt [P.11C-8](#) ). <MIVEC>
- Refrigerant Charging (Refer to [P.55A-22](#)).



AC401589AE

&lt;&lt;A&gt;&gt;

&lt;&lt;A&gt;&gt;

**Removal steps**

- Flexible suction hose connection
- Flexible discharge hose connection
- O ring

&lt;&lt;B&gt;&gt;

&lt;&lt;C&gt;&gt;

&gt;&gt;A&lt;&lt;

**Removal steps (Continued)**

- Drive belt
- A/C compressor
- A/C compressor bracket

## REMOVAL SERVICE POINTS

### <<A>> FLEXIBLE SUCTION HOSE AND FLEXIBLE DISCHARGE HOSE DISCONNECTION

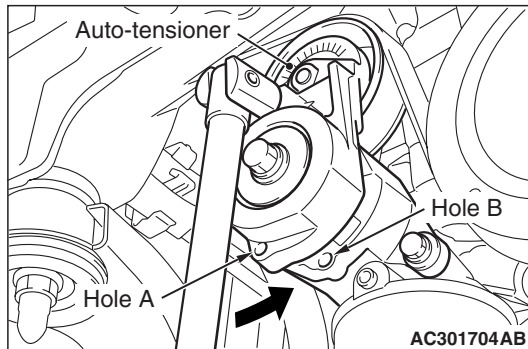
#### **CAUTION**

As the compressor oil and receiver are highly moisture absorbent, use a non-porous material to plug the hose and nipples.

To prevent the entry of dust or other foreign bodies, plug the dismantled hoses and compressor nipples.

### <<B>> DRIVE BELT REMOVAL

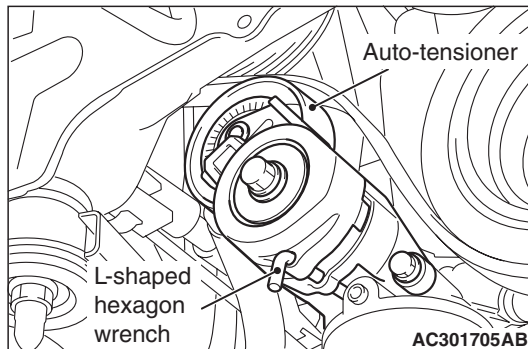
The following operations will be needed due to the introduction of the serpentine drive system with the drive belt auto-tensioner.



1. Securely insert the spindle handle or ratchet handle with a 12.7 mm insertion angle into the jig hole of the auto-tensioner.
2. Rotate the auto-tensioner anti-clockwise and align hole A with hole B.

#### **CAUTION**

To reuse the drive belt, draw an arrow indicating the rotating direction (clockwise) on the back of the belt using chalk, etc.



3. Insert an L-shaped hexagon wrench, etc. into the hole to fix and then remove the drive belt.

### <<C>> COMPRESSOR REMOVAL

Take care not to spill any compressor oil when removing the compressor.

## INSTALLATION SERVICE POINT

### >>A<< A/C COMPRESSOR INSTALLATION

If a new compressor is installed, first adjust the amount of oil according to the procedures described below, and then install the compressor.

1. Measure the amount (X mL) of oil within the removed compressor.
2. Drain (from the new compressor) the amount of oil calculated according to the following formula, and then install the new compressor.

New compressor oil amount = 120 mL <Except MIVEC> or 140 mL <MIVEC>

$$120 \text{ mL} - X \text{ mL} = Y \text{ mL} <2400> \text{ or } 140 \text{ mL} - X \text{ mL} = Y \text{ mL} <\text{MIVEC}>$$

**NOTE:** Y mL indicates the amount of oil in the refrigerant line, the condenser, the evaporator, etc.

**NOTE:** When replacing the following parts at the same times as the compressor, subtract the rated oil amount of the each part from Y mL and discharge from the new compressor.

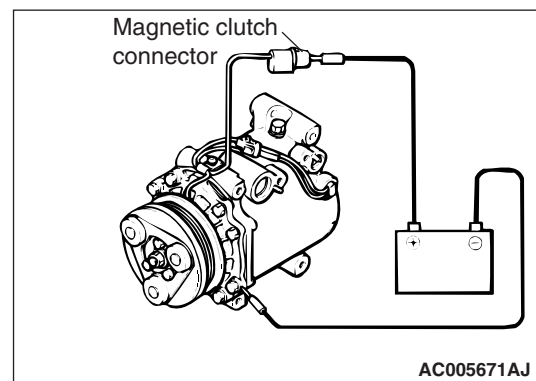
#### Quantity:

- Evaporator: 60 mL
- Condenser: 15 mL
- Suction hose: 10 mL
- Receiver: 10 mL

## INSPECTION

M1552014301812

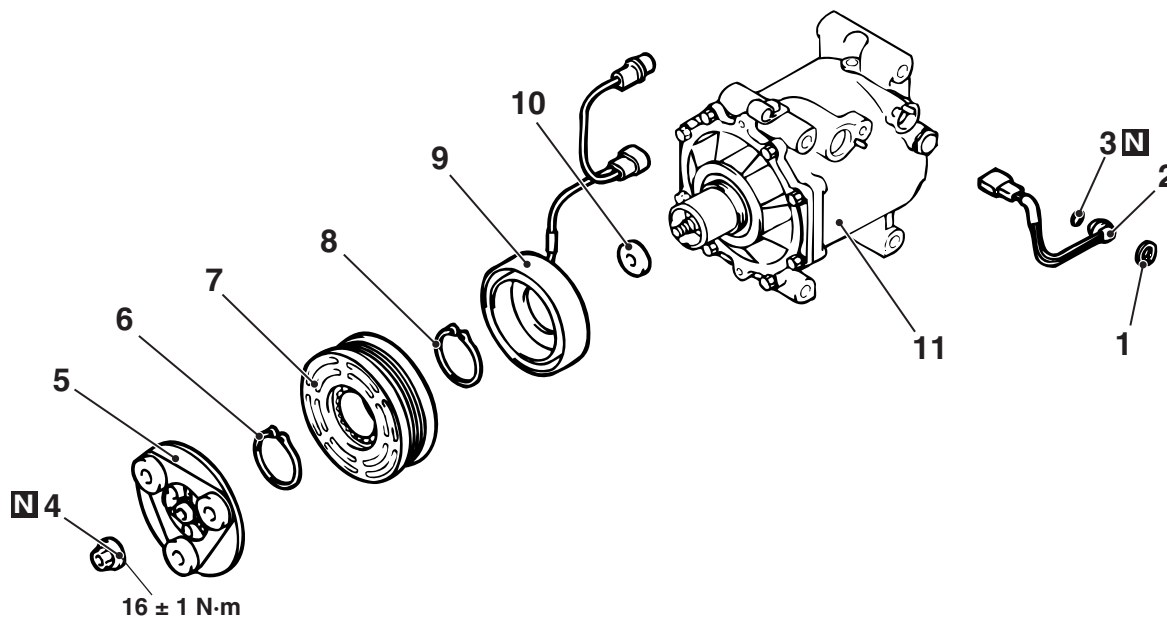
### COMPRESSOR MAGNETIC CLUTCH OPERATION CHECK



Connect the compressor connector terminal to the battery positive (+) terminal and earth the battery's negative (-) terminal to the compressor unit. At that time, the magnetic clutch should make a definite operating sound.

## DISASSEMBLY AND REASSEMBLY

M1552004600369



AC100630AB

**Cooling temperature switch  
disassembly steps**

1. Snap ring
2. Cooling temperature switch
3. O-ring

**Magnetic clutch disassembly**

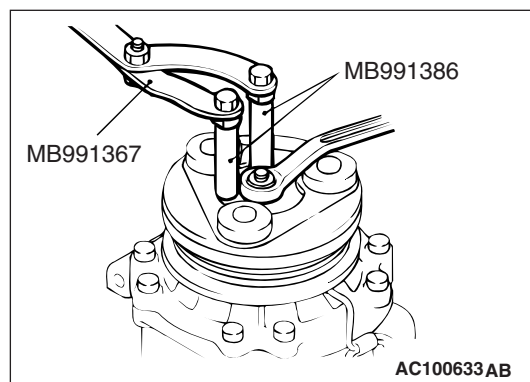
- >>D<< • Air gap adjustment
- <<A>> >>C<< 4. Self-locking nut

**Magnetic clutch disassembly**

- >>B<< 5. Armature
6. Snap ring
7. Rotor
- >>A<< 8. Snap ring
9. Field core
10. Shim
11. A/C compressor

## DISASSEMBLY SERVICE POINT

## &lt;&lt;A&gt;&gt; SELF-LOCKING NUT REMOVAL

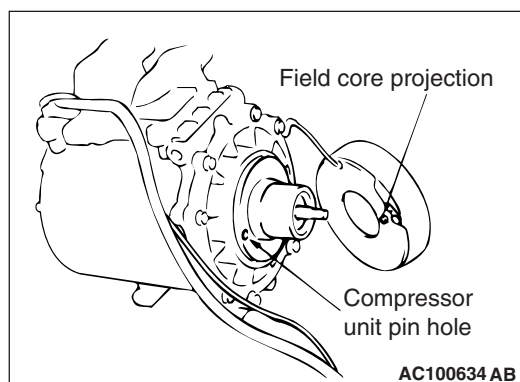


Use the special tool to remove the self-locking nut.

- Special spanner (MB991367)
- Pin (MB991386)

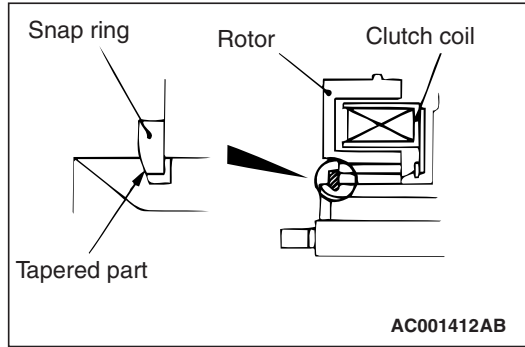
## ASSEMBLY SERVICE POINTS

## &gt;&gt;A&lt;&lt; FIELD CORE ATTACHMENT



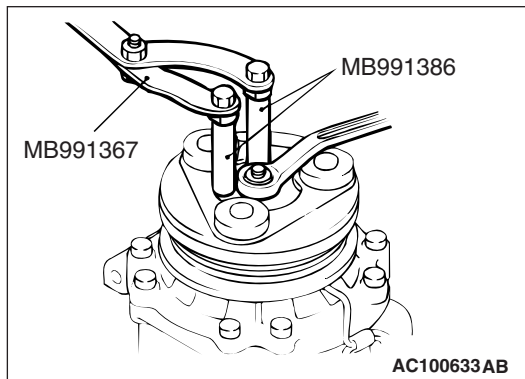
Line up the pin hole on the compressor unit with the field core projection and attach.

## >>B<< SNAP RING INSTALLATION



Using snap ring pliers, fit the snap ring so that the snap ring's tapered part is on the outside.

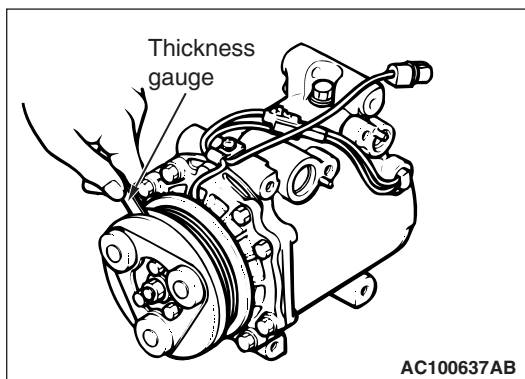
## >>C<< SELF-LOCKING NUT INSTALLATION



Use the special tool to install the self-locking nut.

- Special spanner (MB991367)
- Pin (MB991386)

## >>D<< AIR GAP ADJUSTMENT



Apply voltage from the battery to the magnetic clutch and check that the clutch air gap is inside the standard value. If outside the standard value, use a shim to adjust the gap.

**Standard value: 0.3 – 0.5 mm**

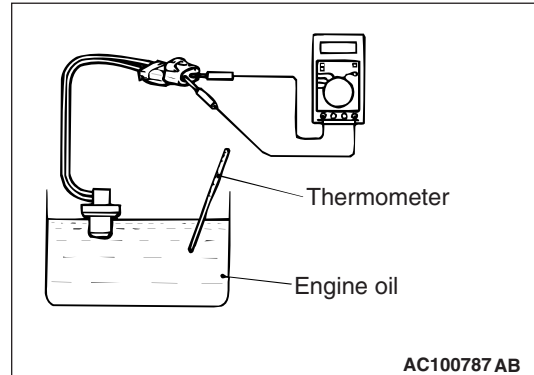
## INSPECTION

M1552014302127

### COOLING TEMPERATURE SWITCH

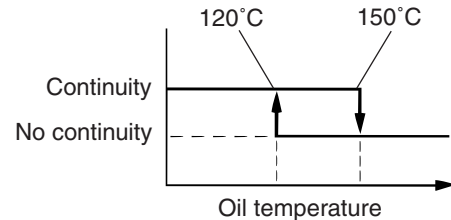
**CAUTION**

Do not heat more than necessary.



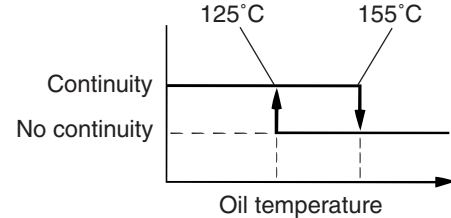
1. Dip the metal part of the cooling temperature switch into engine oil and increase the oil temperature using a gas burner or similar.

<Except MIVEC>



AC100810AR

<MIVEC>



AC100810AQ

2. When the oil temperature reaches the standard value, check that voltage is supplied between the terminals.



Standard value:  
<Except MIVEC>

Item	Temperature
Less than 2 ohms	Slightly below 150°C
No continuity	150°C or more

*NOTE: When the oil temperature is 150°C or more and there is no continuity, the resistance will not be 2Ω or lower until the oil temperature reduces to 120°C or less.*

<MIVEC>

Item	Temperature
Less than 2 ohms	Slightly below 155°C
No continuity	155°C or more

*NOTE: When the oil temperature is 155°C or more and there is no continuity, the resistance will not be 2Ω or lower until the oil temperature reduces to 125°C or less.*

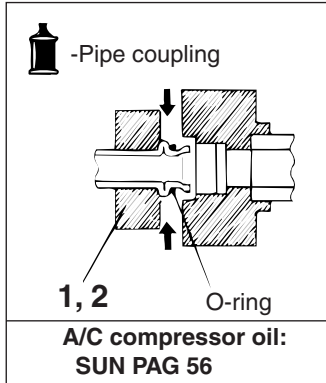
# CONDENSER AND CONDENSER FAN MOTOR REMOVAL AND INSTALLATION

M1552006700663

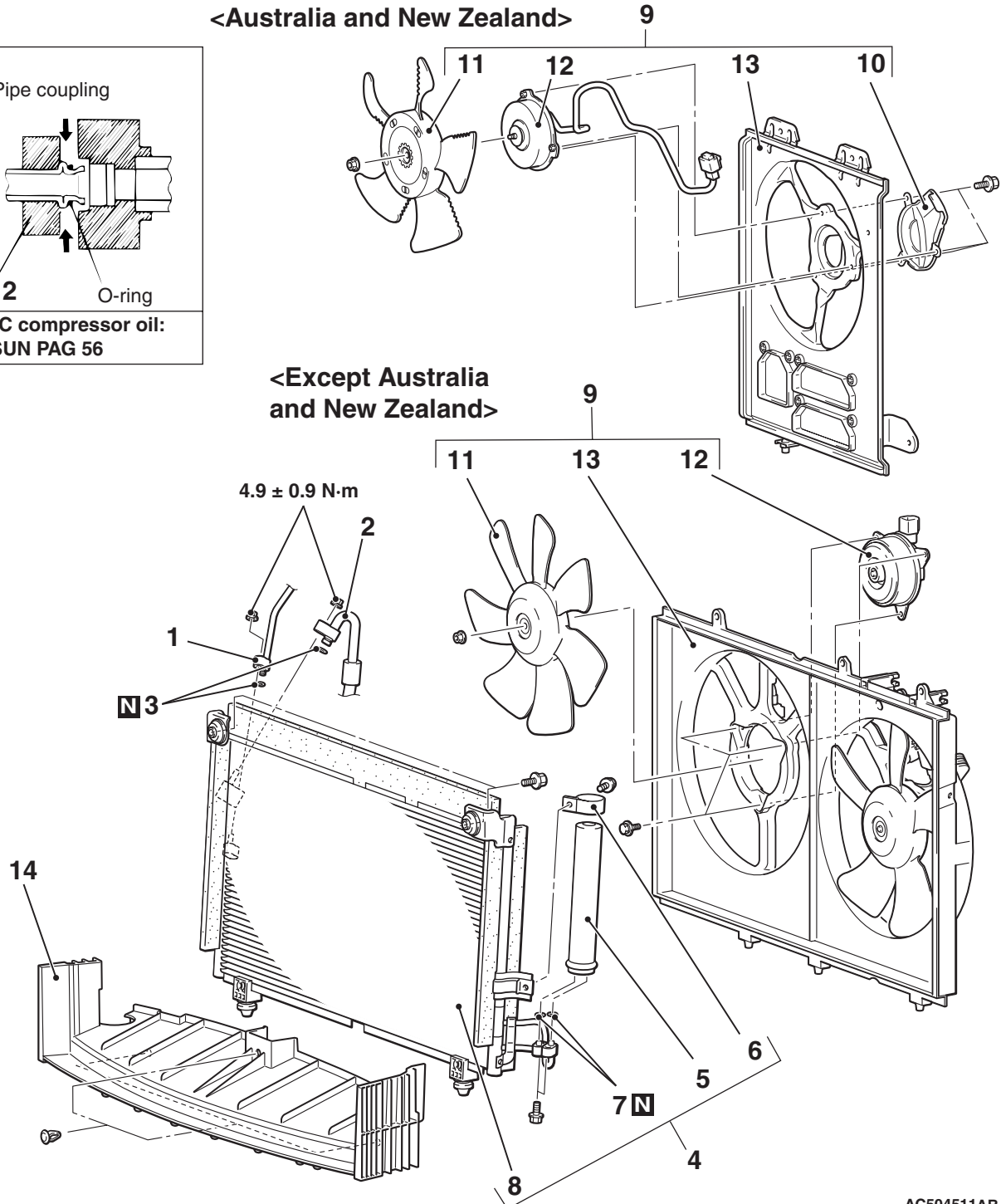
## Pre-removal and Post-installation Operation

- Refrigerant draining and Refilling (Refer to Charging [P.55A-22](#) and Discharging [P.55A-25](#)).
- Air cleaner cover and air flow sensor assembly Removal and Installation (Refer to GROUP 15, Air cleaner [P.15-3](#) <Except MIVEC>, [P.15-4](#) <MIVEC>).

### <Australia and New Zealand>



### <Except Australia and New Zealand>



- Condenser removal steps**
- <<A>> 1. Liquid pipe A connection  
<<A>> 2. Flexible discharge hose connection  
3. O-ring  
>>A<< 4. Condenser assembly  
5. Receiver  
6. Clamp  
7. O-ring  
8. Condenser

**Fan shroud assembly removal steps**

9. Fan shroud assembly  
10. Heat protector  
11. Fan  
12. Fan motor  
13. Fan shroud

**Air guide panel removal steps**

- Front bumper (Refer to 51, Front bumper P.51-3).
14. Air guide panel

## REMOVAL SERVICE POINT

### <<A>> FLEXIBLE SUCTION HOSE AND LIQUID PIPE A DISCONNECTION

**⚠ CAUTION**

As the compressor oil and receiver are highly moisture absorbent, use a non-porous material to plug the hose and nipples.

To prevent the entry of dust or other foreign bodies, plug the dismantled hose and condenser assembly nipples.

## INSTALLATION SERVICE POINT

### >>A<< CONDENSER INSTALLATION

When replacing the condenser, refill it with a specified amount of compressor oil and install it. (to the vehicle).

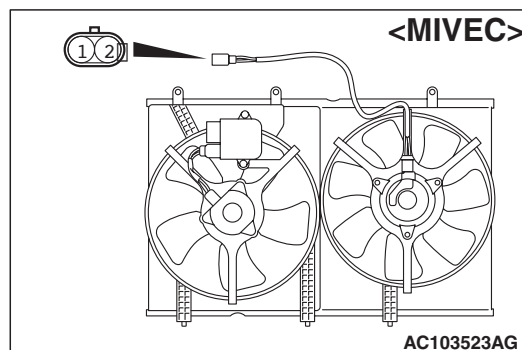
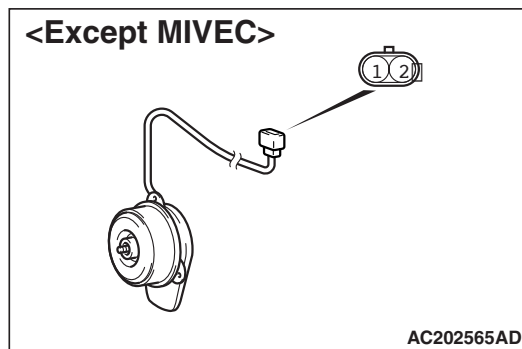
**Compressor oil: SUN PAG 56**

**Quantity: 15 mL**

## INSPECTION

M1552014302116

### CONDENSER FAN MOTOR CHECK



Check to be sure that the condenser fan motor operates when battery voltage is applied to terminal 2 and terminal 1 earthed.

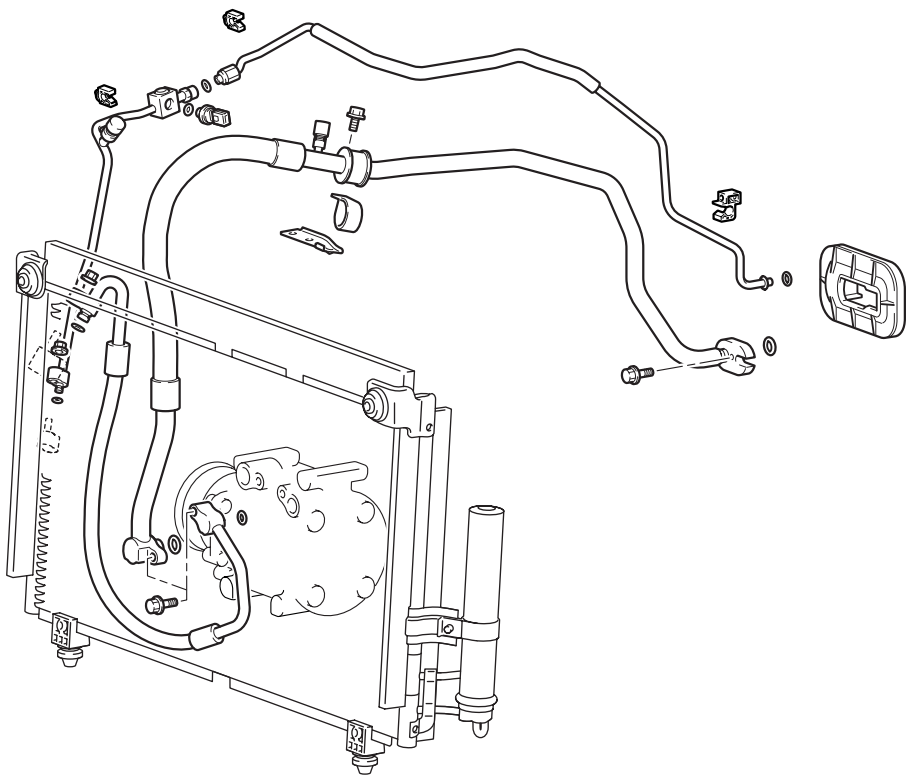
REFRIGERANT LINE

REMOVAL AND INSTALLATION

M1552006401052

Pre-removal and Post-installation Operation

- Refrigerant Draining and Refilling (Refer to Charging and Discharging [P.55A-22](#)).
- Air cleaner cover and air flow sensor assembly Removal and Installation (Refer to GROUP 15, Air cleaner [P.15-3](#) <Except MIVEC>, [P.15-4](#) <MIVEC>).
- Radiator Grille Removal and Installation (Refer to GROUP 51, Radiator Grille [P.51-10](#)).



AC106868

- |             |    |                         |
|-------------|----|-------------------------|
| <<A>>       | 1. | A/C pressure sensor     |
| <<A>>       | 2. | Flexible discharge hose |
| <<A>> >>A<< | 3. | Flexible suction hose   |
| <<A>>       | 4. | Liquid pipe B           |

- |       |    |                  |
|-------|----|------------------|
| <<A>> | 5. | Evaporator cover |
|       | 6. | Liquid pipe A    |
|       | 7. | O-ring           |

**REMOVAL SERVICE POINT****<<A>> HOSE/PIPE DISCONNECTION**

**As the compressor oil and receiver are highly moisture absorbent, use a non-porous material to plug the hose and nipples.**

To prevent the entry of other foreign bodies, plug the condenser, compressor, and expansion valve nipples.

**INSTALLATION SERVICE POINT****>>A<< SUCTION HOSE INSTALLATION**

When replacing the suction hose, refill them with a specified amount of compressor oil, and then install them.

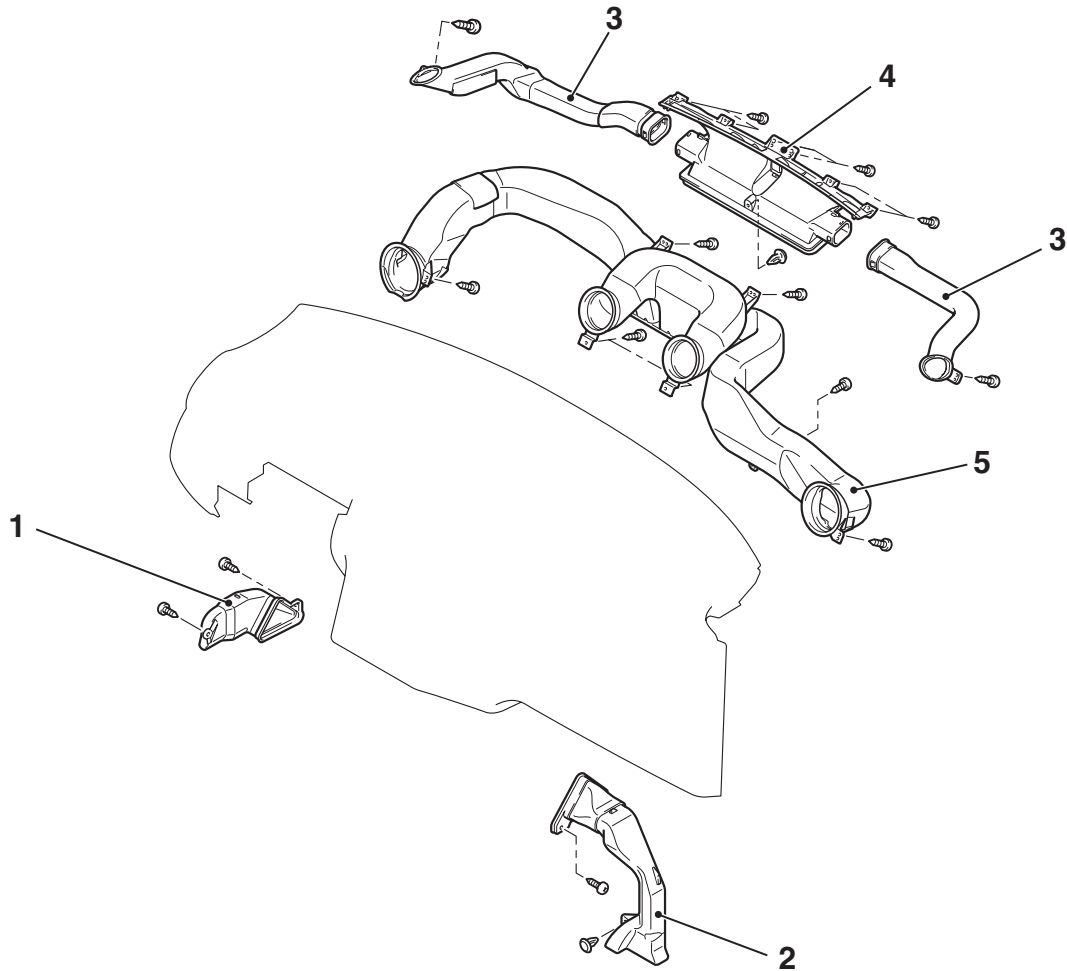
**Compressor oil: SUN PAG 56**

**Quantity: Suction hose: 10 cm<sup>3</sup>**

# VENTILATORS

## REMOVAL AND INSTALLATION

M1553001600493



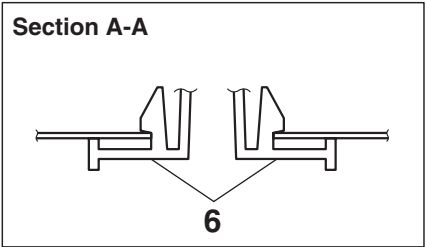
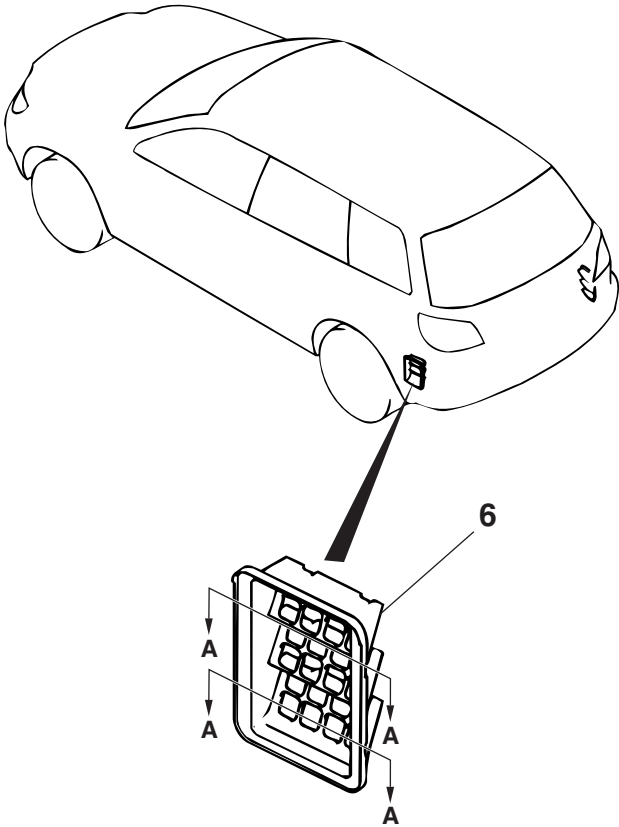
AC212499AB

### Foot duct and rear heater duct removal steps

- Instrument lower cover (Refer to GROUP 52A – Instrument Panel [P.52A-3](#) <L.H. drive vehicles>, [P.52A-9](#) <R.H. drive vehicles>).
1. Foot duct <driver's side>
  - Glove box (Refer to GROUP 52A, instrument panel [P.52A-3](#) <L.H. drive vehicles>, [P.52A-9](#) <R.H. drive vehicles>).
  2. Foot duct <front passenger's side>

### Defroster nozzle and distribution duct removal steps

- Instrument Panel (Refer to 52A, Instrument panel [P.52A-3](#) <L.H. drive vehicles>, [P.52A-9](#) <R.H. drive vehicles>).
3. Side defroster duct
  4. Defroster nozzle
  5. Distribution duct



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6. Rear ventilation duct