

07-40 CONTROL SYSTEM

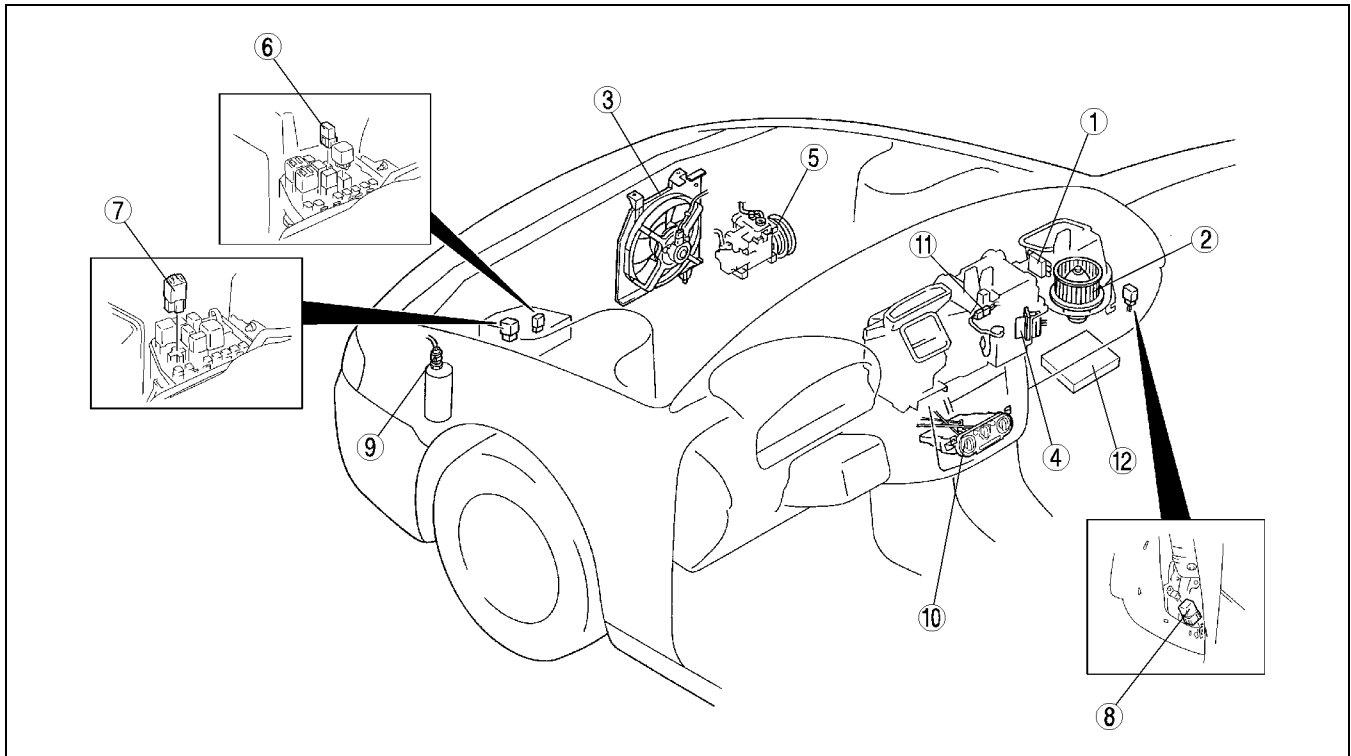
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CONTROL SYSTEM

CONTROL SYSTEM LOCATION INDEX

A3U074001070W01



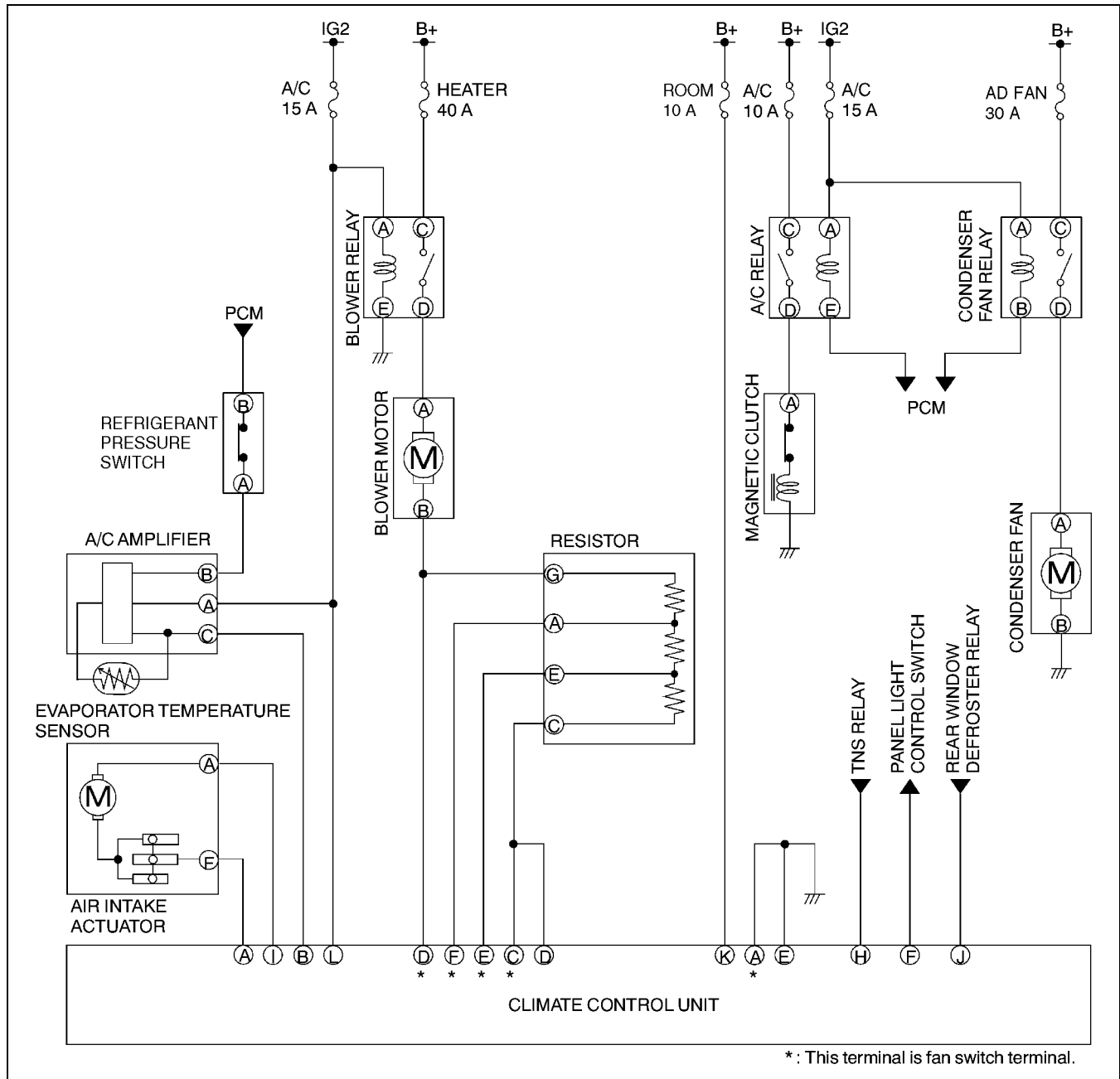
Z3U0740W001

1	Air intake actuator (See 07-40-3 AIR INTAKE ACTUATOR REMOVAL/INSTALLATION) (See 07-40-4 AIR INTAKE ACTUATOR INSPECTION)
2	Blower motor (See 07-40-4 BLOWER MOTOR REMOVAL/INSTALLATION) (See 07-40-5 BLOWER MOTOR INSPECTION)
3	Condenser fan (See 07-40-5 CONDENSER FAN REMOVAL/INSTALLATION) (See 07-40-5 CONDENSER FAN INSPECTION)
4	Resistor (See 07-40-6 RESISTOR REMOVAL/INSTALLATION) (See 07-40-6 RESISTOR INSPECTION)
5	Magnetic clutch (See 07-40-6 MAGNETIC CLUTCH DISASSEMBLY/ASSEMBLY) (See 07-40-7 MAGNETIC CLUTCH ADJUSTMENT) (See 07-40-8 MAGNETIC CLUTCH INSPECTION)
6	A/C relay (See 09-21-5 RELAY INSPECTION)

7	Condenser fan relay (See 09-21-5 RELAY INSPECTION)
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9	Refrigerant pressure switch (See 07-40-9 REFRIGERANT PRESSURE SWITCH REMOVAL/INSTALLATION) (See 07-40-9 REFRIGERANT PRESSURE SWITCH INSPECTION)
10	Climate control unit (See 07-40-9 CLIMATE CONTROL UNIT REMOVAL) (See 07-40-10 CLIMATE CONTROL UNIT INSTALLATION) (See 07-40-10 CLIMATE CONTROL UNIT DISASSEMBLY/ASSEMBLY) (See 07-40-11 CLIMATE CONTROL UNIT INSPECTION)
11	A/C amplifier (See 07-40-13 A/C AMPLIFIER INSPECTION)
12	PCM (See 01-40B-7 PCM REMOVAL/INSTALLATION [FS]) (See 01-40A-7 PCM REMOVAL/INSTALLATION [ZM]) (See 01-40B-7 PCM INSPECTION [FS]) (See 01-40A-7 PCM INSPECTION [ZM])

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System Wiring Diagram



Z3U0740W002

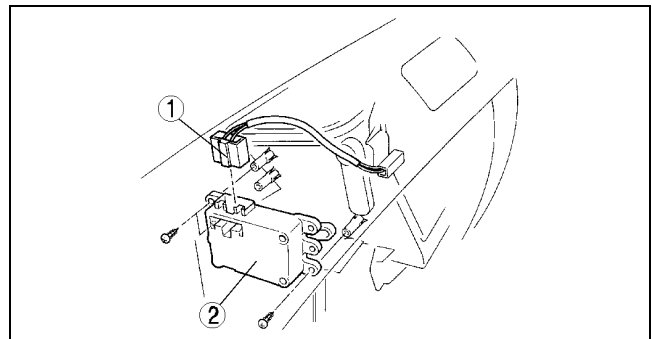
AIR INTAKE ACTUATOR REMOVAL/INSTALLATION

A3U074061060W01

1. Disconnect the negative battery cable.
2. Remove the cooling unit. (See 07-11-3 COOLING UNIT REMOVAL/INSTALLATION.)
3. Remove in the order indicated in the table.

1	Connector
2	Air intake actuator

4. Install in the reverse order of removal.



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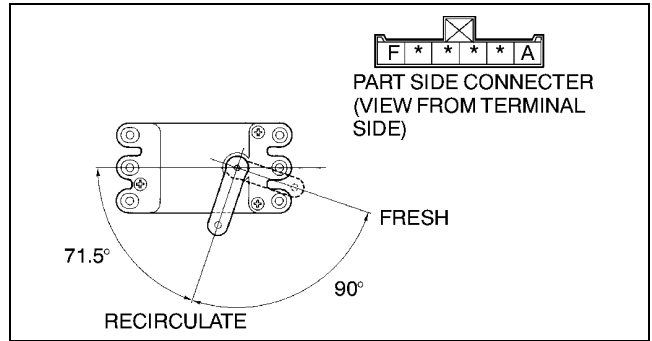
CONTROL SYSTEM

AIR INTAKE ACTUATOR INSPECTION

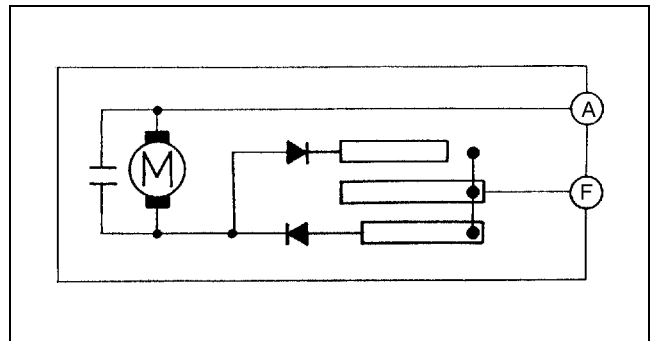
A3U074061060W02

1. Remove the air intake actuator. (See 07-40-3 AIR INTAKE ACTUATOR REMOVAL/INSTALLATION.)
2. Connect B+ to terminal A or F and ground to terminal F or A of the air intake actuator.
3. Verify that the air intake actuator operates as shown below.

Connection		Movement
B+	GND	
A	F	FRESH → RECIRCULATE
F	A	RECIRCULATE → FRESH



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Z3U0740W005

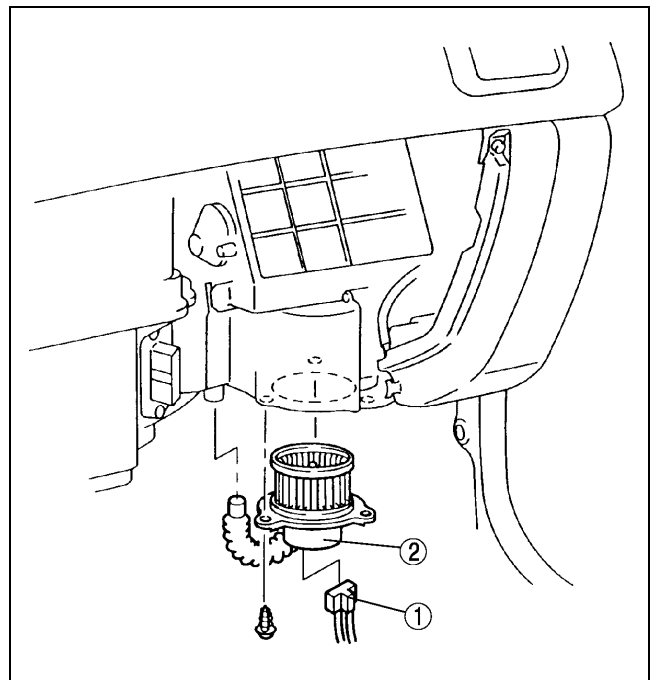
BLOWER MOTOR REMOVAL/INSTALLATION

A3U074061020W01

1. Disconnect the negative battery cable.
2. Remove the glove compartment.
3. Remove in the order indicated in the table.

1	Connector
2	Blower motor

4. Install in the reverse order of removal.



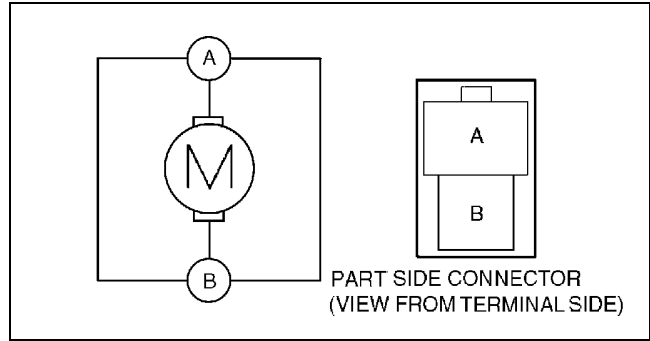
X3U740WA1

CONTROL SYSTEM

BLOWER MOTOR INSPECTION

A3U074061020W02

1. Disconnect the blower motor connector.
2. Connect B+ to terminal A and ground to terminal B of the blower motor and verify its operation.
 - If not as specified, replace the blower motor.



Y3U740WA0

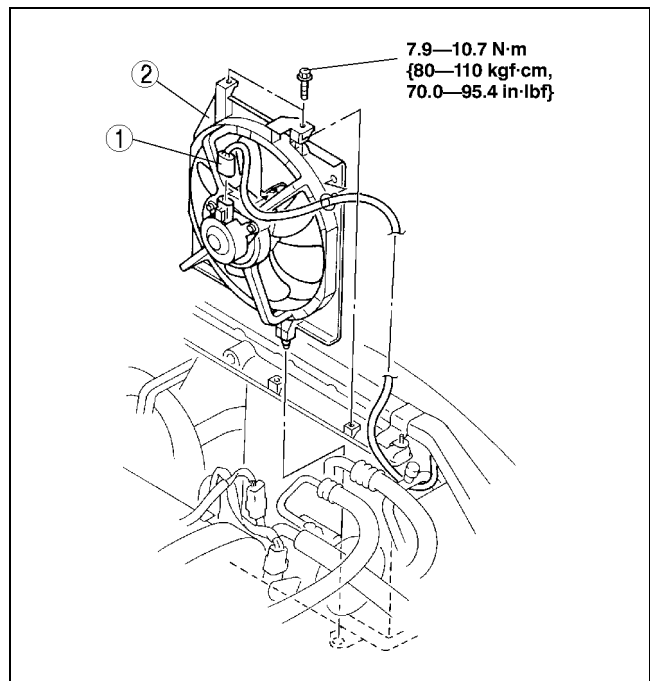
CONDENSER FAN REMOVAL/INSTALLATION

A3U074061710W01

1. Disconnect the negative battery cable.
2. Remove the fresh-air duct.
3. Remove in the order indicated in the table.

1	Connector
2	Condenser fan

4. Install in the reverse order of removal.

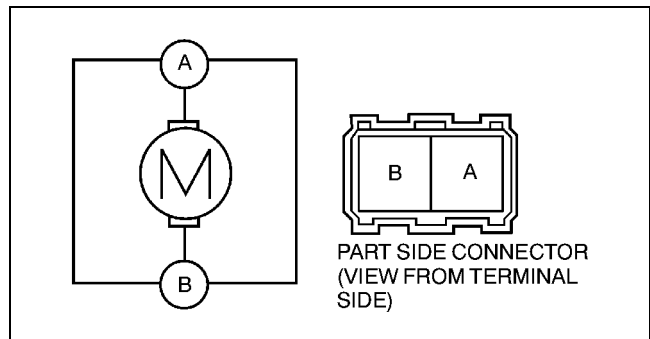


Z3U0740W006

CONDENSER FAN INSPECTION

A3U074061710W02

1. Disconnect the condenser fan connector.
2. Connect B+ to terminal A and ground to terminal B of the condenser fan and verify its operation.
 - If not as specified, replace the condenser fan.



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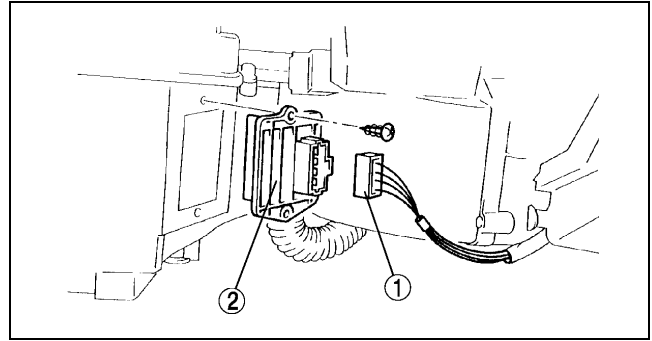
RESISTOR REMOVAL/INSTALLATION

A3U074061015W01

1. Disconnect the negative battery cable.
2. Remove the glove compartment.
3. Remove in the order indicated in the table.

1	Connector
2	Resistor

4. Install in the reverse order of removal.



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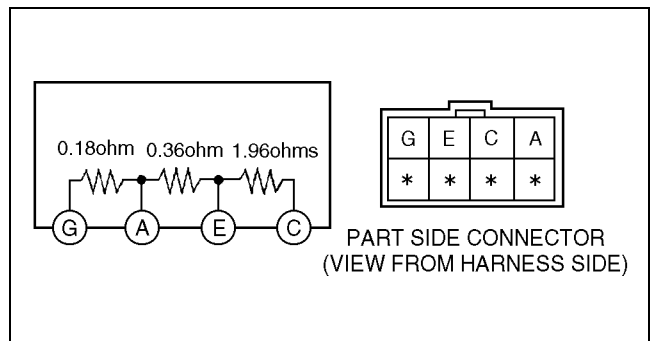
RESISTOR INSPECTION

A3U074061015W02

1. Remove the glove compartment.
2. Disconnect the resistor connector.
3. Verify that the resistance between the terminals of the resistor is as indicated in the table.

Terminal	Resistance (ohm)
G-A	0.17—0.19
G-E	0.51—0.58
G-C	2.35—2.70

- If not as specified, replace the resistor.



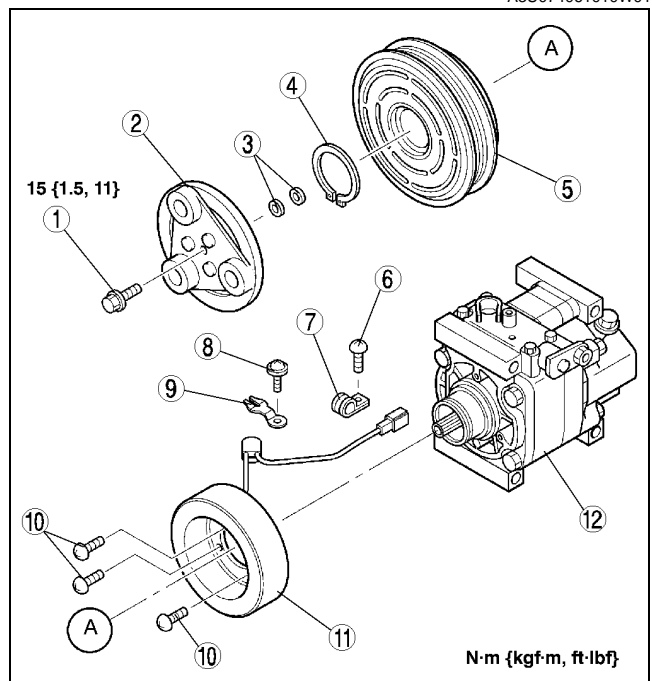
Z6E8540W002

MAGNETIC CLUTCH DISASSEMBLY/ASSEMBLY

A3U074061010W01

1. Disassemble in the order indicated in the table.

1	Bolt (See 07-40-7 Bolt Removal/Installation Note)
2	Pressure plate
3	Shim
4	Snap ring (See 07-40-7 Snap Ring Installation Note)
5	A/C compressor pulley
6	Screw (See 07-40-7 Screw Installation Note)
7	Clip
8	Screw (See 07-40-7 Screw Installation Note)
9	Clamp (See 07-40-7 Clamp Installation Note)
10	Screw (See 07-40-7 Screw Installation Note)
11	Stator and thermal protector (See 07-40-7 Stator and Thermal Protector Removal Note) (See 07-40-7 Stator and Thermal Protector Installation Note)
12	A/C compressor body



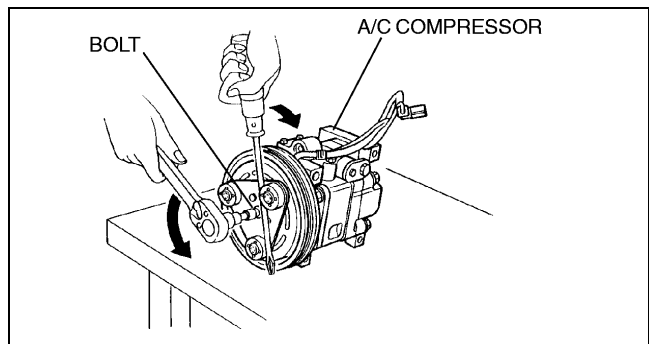
Z3U0740W009

2. Assemble in the reverse order of disassembly.
3. Adjust the magnetic clutch clearance. (See 07-40-7 MAGNETIC CLUTCH ADJUSTMENT.)

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Bolt Removal/Installation Note

1. When removing or installing the bolt, hold the pressure plate in place as shown in the figure.
2. When installing a new A/C compressor body, replace the bolt.



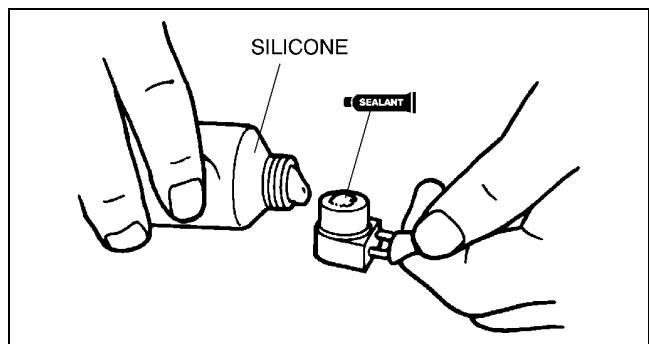
X3U740WA8

Stator and Thermal Protector Removal Note

1. After removing the thermal protector, completely remove the silicone adhering to the A/C compressor side.

Stator and Thermal Protector Installation Note

1. Apply **approximately 1 g {0.04 oz}** of silicone (Shin-Etsu Silicone KE-347W or similar)



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Screw Installation Note

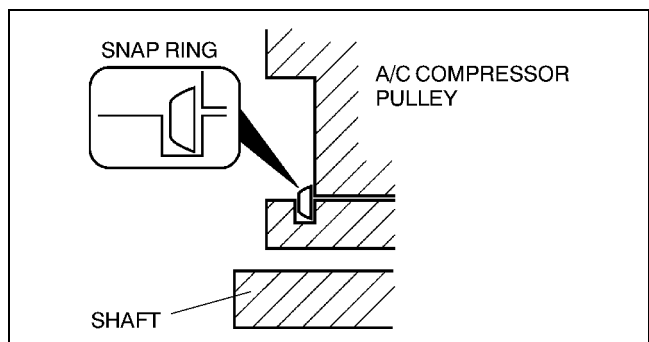
1. When installing a new stator and thermal protector, replace the screw.

Clamp Installation Note

1. When installing a new stator and thermal protector, replace the clamp.

Snap Ring Installation Note

1. When installing a new pressure plate, A/C compressor pulley, stator and thermal protector, or A/C compressor body, replace the snap ring.



Z3U0740W011

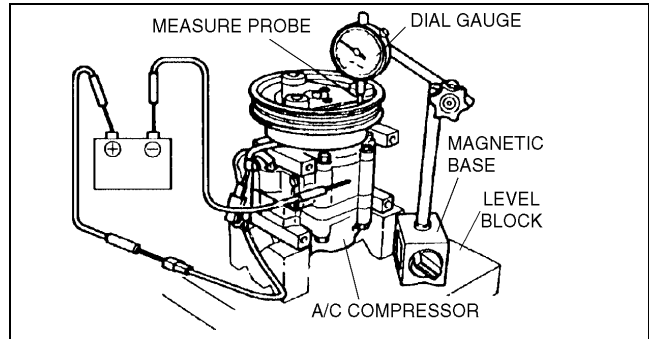
MAGNETIC CLUTCH ADJUSTMENT

1. Set the A/C compressor on a level block.
2. Turn on the magnetic clutch by connecting the B+ to the magnetic clutch connector terminal and the ground to the A/C compressor body.

A3U074061010W02

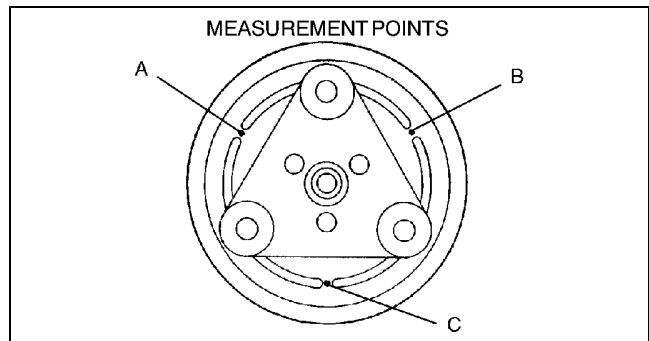
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3. Fix a dial gauge on a magnetic base and set the measuring probe onto point A on the pressure plate surface.
4. Turn off the magnetic clutch by disconnecting the ground from the A/C compressor body, then measure the dial gauge readings.



X3U740WA9

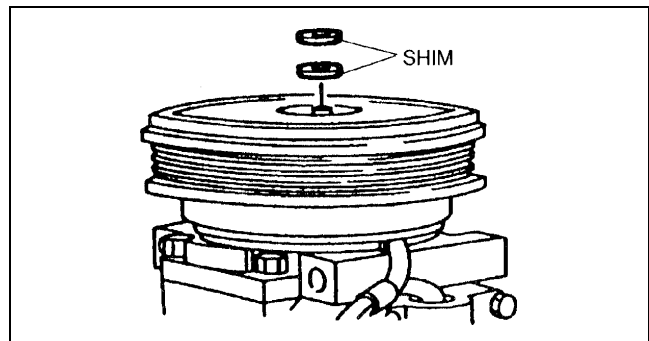
5. Measure the clearance for points B and C on the pressure plate surface by repeating the above Steps 2 through 4.



Z3U0740W020

6. Verify that the clearance is within the specification.
 - If not within the specification, remove the pressure plate and adjust the clearance by changing the shim (**0.2 mm {0.008 in}**, **0.5 mm {0.02 in}**) or the number of shims. (See 07-40-6 MAGNETIC CLUTCH DISASSEMBLY/ASSEMBLY.)

Clearance
0.4—0.6 mm {0.016—0.023 in}

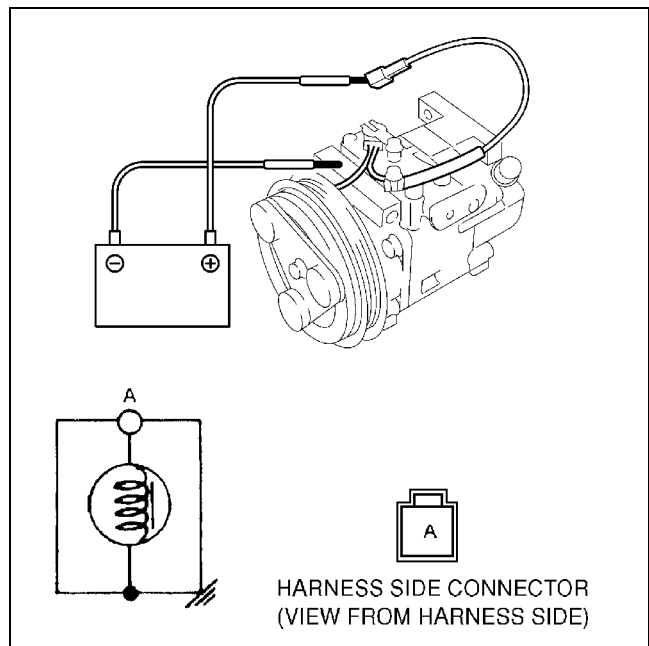


X3U740WAB

A3U074061010W03

MAGNETIC CLUTCH INSPECTION

1. Disconnect the magnetic clutch connector.
2. Connect B+ to terminal A of magnetic clutch and ground to the A/C compressor body.
3. Verify that the magnetic clutch operates.
 - If not as specified, replace the stator and thermal protector.



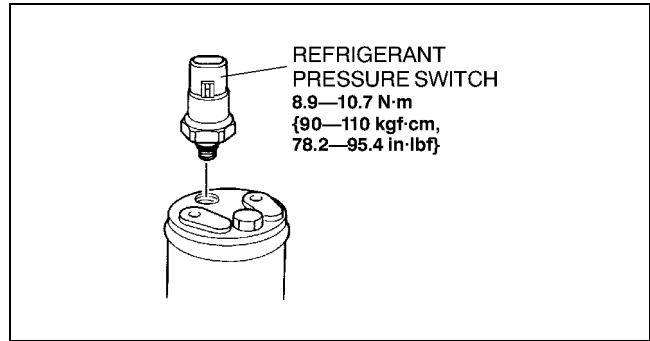
Z3U0740W012

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REFRIGERANT PRESSURE SWITCH REMOVAL/INSTALLATION

A3U074061503W01

1. Disconnect the negative battery cable.
2. Remove the receiver/drier. (See 07-11-13 RECEIVER/DRIER REMOVAL/INSTALLATION.)
3. Remove the refrigerant pressure switch. (See 07-40-9 Refrigerant Pressure Switch Installation Note)
4. Install in the reverse order of removal.



A3U0740W001

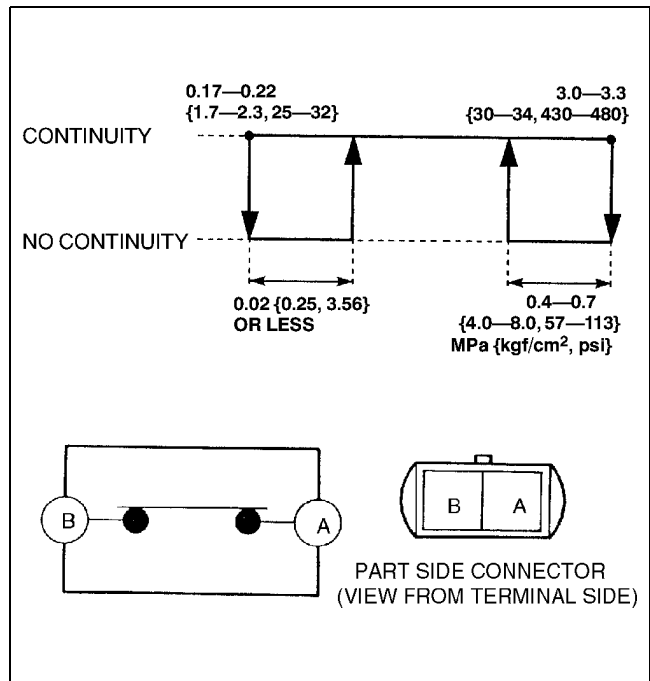
Refrigerant Pressure Switch Installation Note

1. Apply compressor oil to the O-ring and connect the joint.

REFRIGERANT PRESSURE SWITCH INSPECTION

A3U074061503W02

1. Install the manifold gauge set.
2. Disconnect the refrigerant pressure switch connector.
3. Verify the high-pressure side reading of the manifold gauge and continuity between the terminals of the refrigerant pressure switch.
 - If not as specified, replace the refrigerant pressure switch.

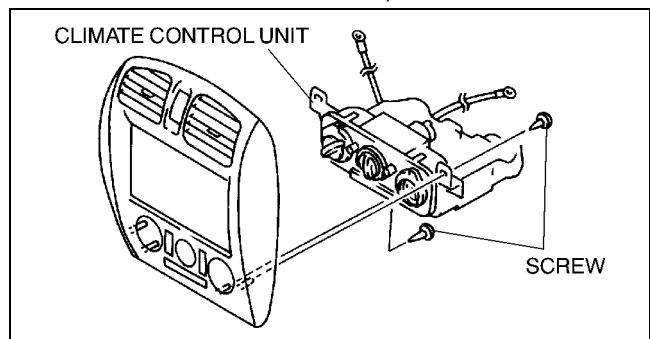


Z3U0740W014

CLIMATE CONTROL UNIT REMOVAL

A3U074061190W01

1. Disconnect the negative battery cable.
2. Disconnect the air mix and airflow mode wires from each wire clamp and link.
3. Remove the center panel. (See 09-17-4 CENTER PANEL REMOVAL/INSTALLATION.)
4. Remove the screws and the climate control unit.



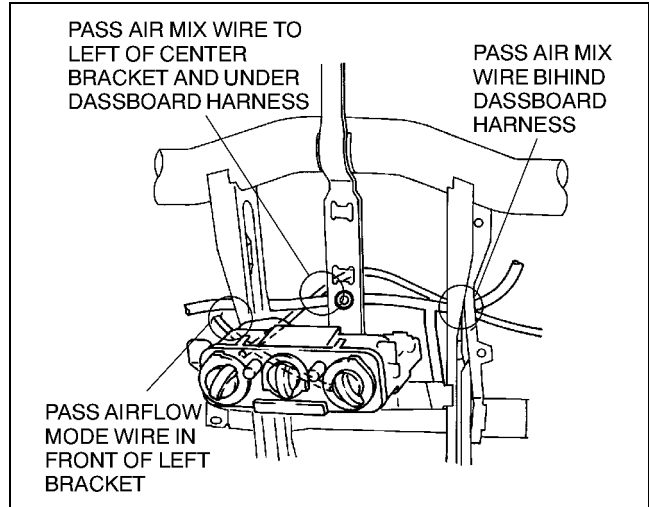
Z3U0740W015

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CLIMATE CONTROL UNIT INSTALLATION

A3U074061190W02

1. Install the climate control unit to the center panel.
2. Pass each wire through the following routes then connect to each unit.
3. Connect the climate control unit connectors.
4. Install the center panel.
5. Adjust the climate control unit wire. (See 07-40-11 CLIMATE CONTROL UNIT WIRE ADJUSTMENT.)
6. Connect the negative battery cable.



Z3U0740W016

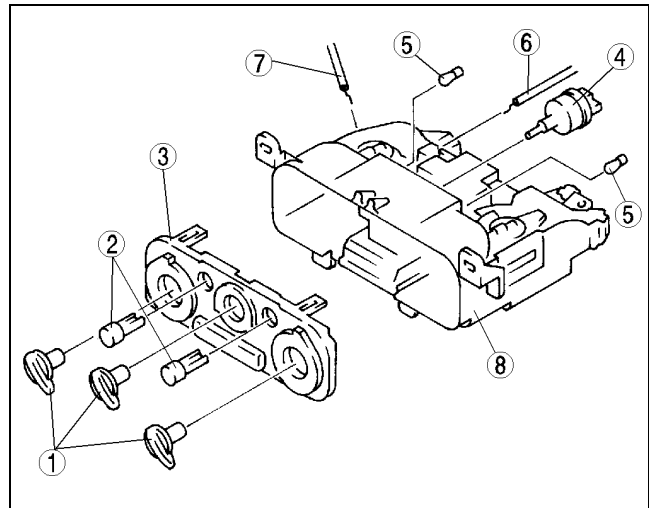
CLIMATE CONTROL UNIT DISASSEMBLY/ASSEMBLY

A3U074061190W03

1. Disassemble in the order indicated in the table.

1	Dial
2	Knob
3	Panel
4	Fan switch
5	Illumination bulb
6	Air mix wire (See 07-40-10 Wire Disassembly Note) (See 07-40-11 Wire Assembly Note)
7	Airflow mode wire (See 07-40-10 Wire Disassembly Note) (See 07-40-11 Wire Assembly Note)
8	Body

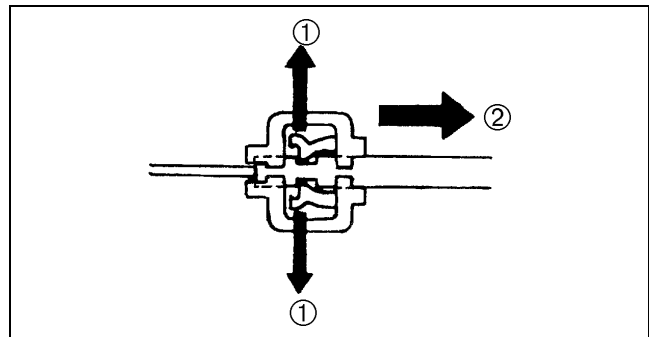
2. Assemble in the reverse order of disassembly.



Y3E8540W028

Wire Disassembly Note

1. Disassemble the wires in the order indicated in the table.

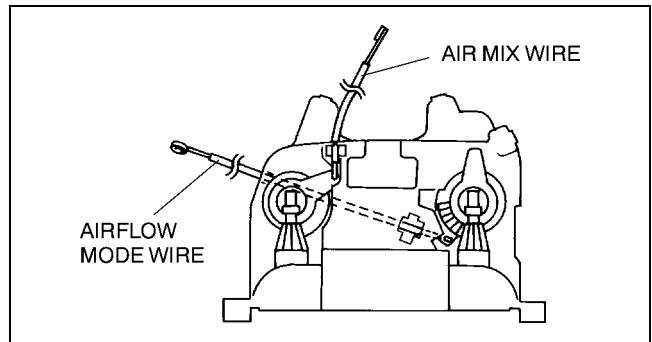


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Wire Assembly Note

1. Assemble the wires in the order indicated in the table.



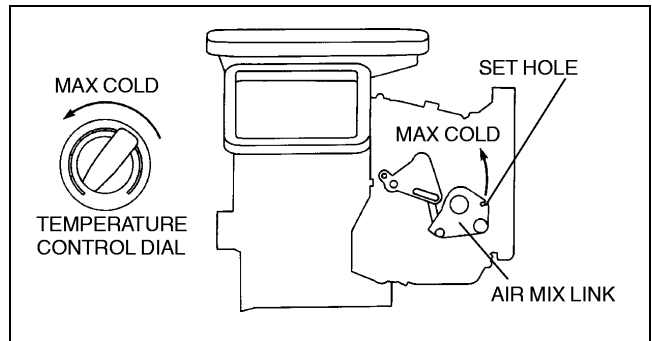
Z3U0740W018

CLIMATE CONTROL UNIT WIRE ADJUSTMENT

Air Mix Wire

1. Set the temperature control dial at max cold.
2. Set the air mix link to max cold in the direction shown by the arrow and insert a screwdriver at the set hole.
3. Connect the air mix wire to air mix link.
4. Clamp the air mix wire to wire clamp.
5. Verify that the temperature control dial moves its full stroke.

A3U074061190W04

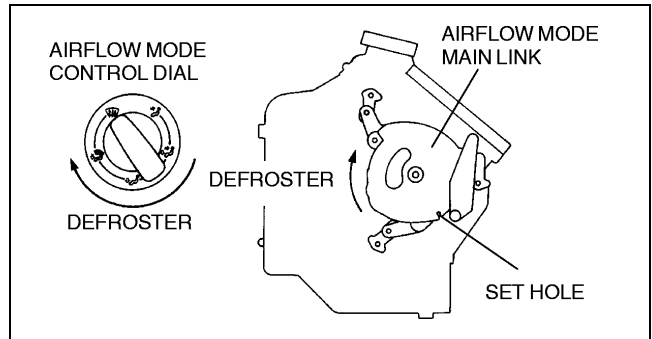


X3U740WB0

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Airflow Mode Wire

1. Set the airflow mode control dial at defroster.
2. Set the airflow mode main link to defroster in the direction shown by the arrow and insert a screwdriver at the set hole.
3. Connect the airflow mode wire to airflow mode main link.
4. Clamp the airflow mode wire to wire clamp.
5. Verify that the airflow mode control dial moves its full stroke.



X3U740WB1

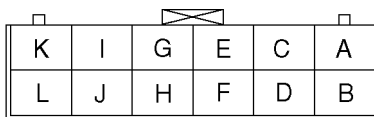
CLIMATE CONTROL UNIT INSPECTION

A3U074061190W05

1. Remove the climate control unit.
2. Connect the climate control unit connector.
3. Turn the ignition switch to ON position.
4. Measure the voltage at each climate control unit terminal and refer to the terminal voltage list.
 - If not as specified, inspect the parts listed under "Action" and the related wiring harness.
 - If there is any malfunction, replace the climate control unit.

CONTROL SYSTEM

Terminal voltage list (Reference)



PART SIDE CONNECTOR
(VIEW FROM HARNESS SIDE)

Y3E8540W027

Terminal	Signal	Connected to	Test condition	Voltage (V)	Action
A	Fresh signal	Air intake actuator	RECIRCULATE	0.3	<ul style="list-style-type: none"> Inspect air intake actuator Inspect related harness
			FRESH	11.3	
B	A/C signal	A/C amplifier	Fan switch ON, A/C switch ON	1.45	<ul style="list-style-type: none"> Inspect for continuity or short circuit (Climate control unit—A/C amplifier: B—C) Inspect A/C amplifier
			Fan switch OFF	10.3	
C	—	—	—	—	—
D	A/C signal	Fan switch	Fan switch OFF	B+	<ul style="list-style-type: none"> Inspect for continuity or short circuit (Climate control unit—Fan switch, Resistor: D—C, C) Inspect fan switch Inspect resistor Inspect related harness
			Fan switch 1st	0.12	
			Fan switch 2nd	0.65	
			Fan switch 3rd	0.60	
			Fan switch 4th	0.30	
E	GND	Ground	Under any condition	Below 1.0	<ul style="list-style-type: none"> Inspect for continuity (A/C amplifier—Ground: E—GND) Inspect related harness
F	TNS signal	Panel light control switch	Light switch ON and panel light control switch at max. illumination	0.2	<ul style="list-style-type: none"> Inspect for continuity or short circuit (Climate control unit—Panel light control switch: F—C) Inspect panel light control switch Inspect related harness
			Light switch ON and panel light control switch at min. illumination	9.7	
			Light switch OFF	0.1	
G	—	—	—	—	—
H	TNS signal	TNS relay	Light switch ON	B+	<ul style="list-style-type: none"> Inspect for continuity or short circuit (Climate control unit—TNS relay: H—C) Inspect TNS relay Inspect headlight switch Inspect related harness
			Light switch OFF	Below 1.0	<ul style="list-style-type: none"> Inspect for short circuit (Climate control unit—TNS relay: H—C) Inspect TNS relay Inspect headlight switch
I	Recirculate signal	Air intake actuator	RECIRCULATE	11.3	<ul style="list-style-type: none"> Inspect air intake actuator Inspect related harness
			FRESH	0.3	
J	Rear window defroster relay control signal	Rear window defroster relay	Rear window defroster switch ON	0.1	<ul style="list-style-type: none"> Inspect for continuity or short circuit (Climate control unit—Rear window defroster relay: J—E) Inspect rear window defroster relay Inspect related harness
			Rear window defroster switch OFF	B+	
K	Power supply	ROOM 10 A fuse	Under any condition	B+	<ul style="list-style-type: none"> Inspect ROOM 10 A fuse Inspect related harness

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Terminal	Signal	Connected to	Test condition	Voltage (V)	Action
L	IG2	A/C 15 A fuse	Ignition switch at ON position	B+	<ul style="list-style-type: none"> Inspect for continuity (Climate control unit—Fuse: L—A/C 15 A fuse) Inspect A/C 15 A fuse Inspect related harness
			Ignition switch at LOCK position	0.1	<ul style="list-style-type: none"> Inspect for short circuit (Climate control unit—Fuse: L—A/C 15 A fuse)

Fan switch

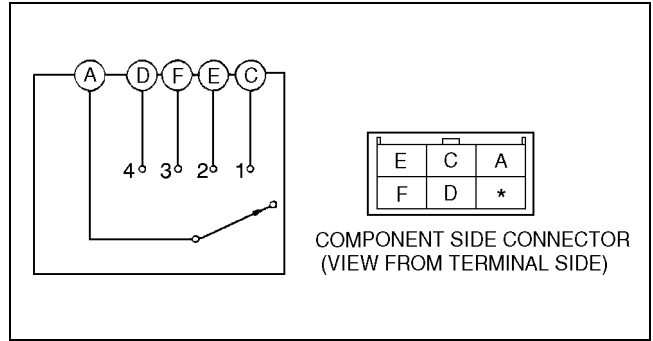
- Remove the climate control unit.
- Inspect for continuity between the fan switch terminals using an ohmmeter.

○—○ : Continuity

Switch position	Terminal				
	A	C	E	F	D
0					
1	○—○				
2	○—○		○—○		
3	○—○			○—○	
4	○—○				○—○

Y3E8540W026

- If not as specified, replace the fan switch.



Y3E8540W025

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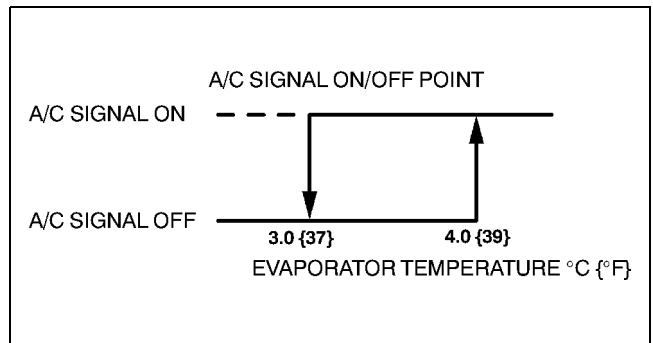
A/C AMPLIFIER INSPECTION

A3U074061790W01

Note

- A/C amplifier controls A/C signal as shown in the figure at right.

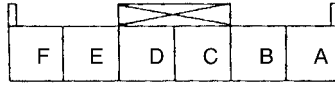
- Remove the glove compartment.
- Pull out the A/C amplifier with the connector still connected.
- Turn the ignition switch to ON position.
- Measure the voltage at each A/C amplifier terminal or climate control unit terminal and refer to the terminal voltage list.
 - If not as specified, inspect the parts listed under "Action" and the related wiring harness.
 - If there is no malfunction under "Action", replace the A/C amplifier.



Z3U0740W019

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Terminal Voltage List (Reference)



PART SIDE CONNECTOR
(VIEW FROM HARNESS SIDE)

Y3E8540W024

Terminal	Signal	Connected to	Test condition	Voltage (V)	Action
A	IG2	A/C 15 A fuse	Ignition switch at ON position	B+	<ul style="list-style-type: none"> Inspect for continuity or short circuit (Fuse —A/C amplifier:A/C 15 A fuse —A) Inspect A/C 15 A fuse Inspect related harness
			Ignition switch at LOCK position	Below 1.0	
B	A/C signal	Refrigerant pressure switch	Fan switch at 1st position, A/C switch ON	0.6	<ul style="list-style-type: none"> Inspect for continuity or short circuit (PCM—Refrigerant pressure switch:4F—B) (Refrigerant pressure switch—A/C amplifier:A—B) Inspect terminal voltage of A/C amplifier (C) Inspect refrigerant pressure switch Inspect PCM (See 01–40B–7 PCM INSPECTION [FS]) (See 01–40A–7 PCM INSPECTION [ZM]) Inspect related harness
			Fan switch OFF	12	
C	A/C switch	A/C switch	Fan switch OFF	11.5	<ul style="list-style-type: none"> Inspect for short circuit (A/C amplifier—climate control unit: C—B) Inspect terminal voltage of A/C amplifier (A)
			Fan switch at 1st position, A/C switch ON	0.6	
D	—	—	—	—	—
E	—	—	—	—	—
F	—	—	—	—	—