2008 HVAC

Control System (HVAC) - Mazda CX-9

HVAC CONTROL SYSTEM LOCATION INDEX

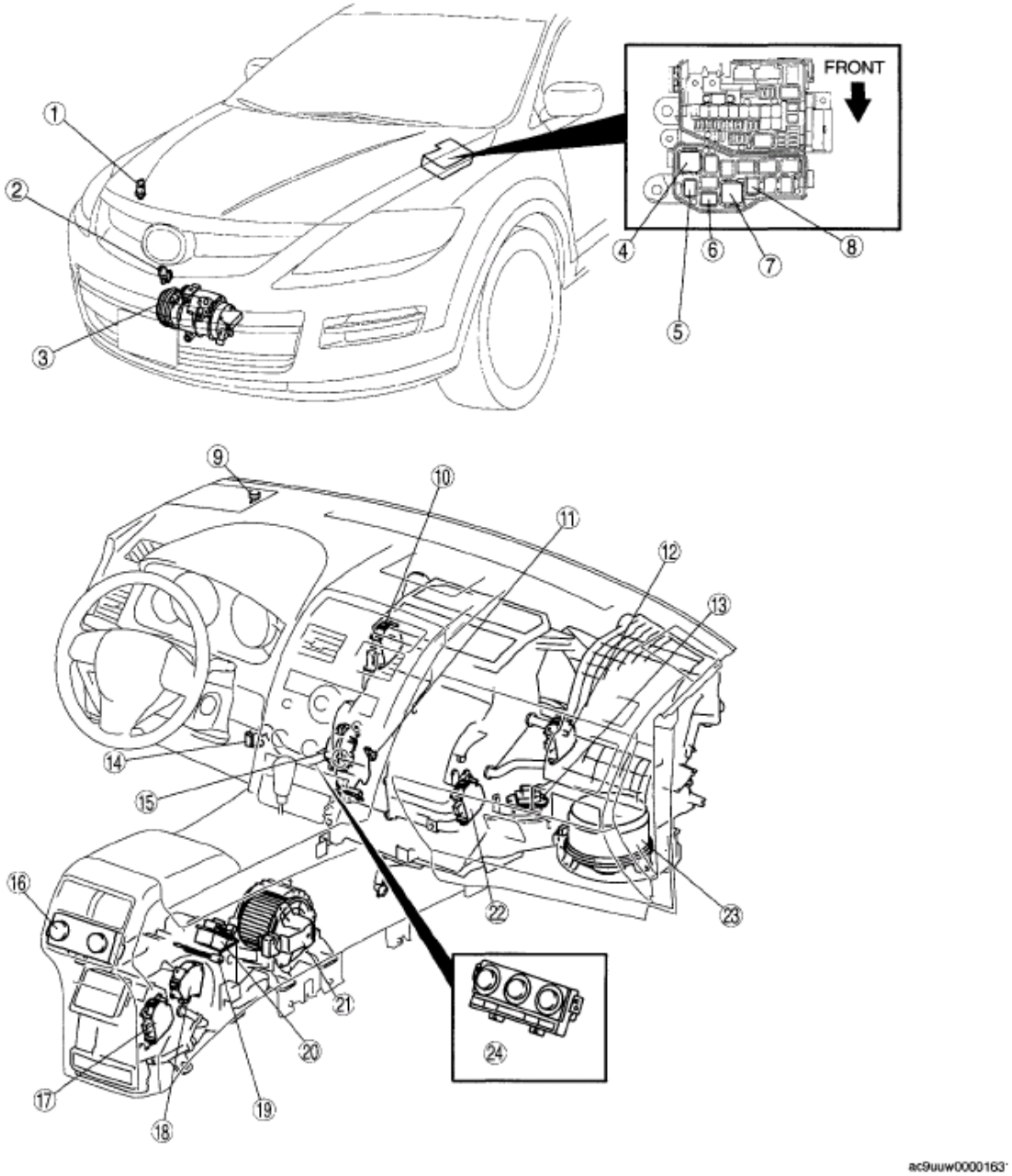


Fig. 1: Identifying HVAC Control System Location Index (1 Of 2)
Courtesy of MAZDA MOTORS CORP.

1	Refrigerant pressure switch (See 07-40-22 REFRIGERANT PRESSURE SWITCH REMOVAL/INSTALLATION.) (See 07-40-22 REFRIGERANT PRESSURE SWITCH INSPECTION.)
2	Ambient temperature sensor (See 07-40-18 AMBIENT TEMPERATURE SENSOR REMOVAL/INSTALLATION.) (See 07-40-19 AMBIENT TEMPERATURE SENSOR INSPECTION.)
3	Magnetic clutch (See 07-40-15 MAGNETIC CLUTCH DISASSEMBLY/ASSEMBLY.) (See 07-40-16 MAGNETIC CLUTCH ADJUSTMENT.) (See 07-40-17 MAGNETIC CLUTCH INSPECTION.)
4	Front blower relay (See 09-21-6 RELAY INSPECTION.)
5	Rear window defroster relay (See 09-21-6 RELAY INSPECTION.)
6	A/C relay (See 09-21-6 RELAY INSPECTION.)
7	Rear blower relay (See 09-21-6 RELAY INSPECTION.)
8	Seat warmer relay (See 09-21-6 RELAY INSPECTION.)
9	Solar radiation sensor (See 07-40-17 SOLAR RADIATION SENSOR REMOVAL/INSTALLATION.) (See 07-40-18 SOLAR RADIATION SENSOR INSPECTION.)
10	Front airflow mode actuator (See 07-40-9 FRONT AIRFLOW MODE ACTUATOR REMOVAL/INSTALLATION.) (See 07-40-10 FRONT AIRFLOW MODE ACTUATOR INSPECTION.)
11	Front evaporator temperature sensor (See 07-40-20 FRONT EVAPORATOR TEMPERATURE SENSOR REMOVAL/INSTALLATION.) (See 07-40-20 FRONT EVAPORATOR TEMPERATURE SENSOR INSPECTION.)
12	Air intake actuator (See 07-40-4 AIR INTAKE ACTUATOR REMOVAL/INSTALLATION.) (See 07-40-4 AIR INTAKE ACTUATOR INSPECTION.)
13	Front power MOS FET (See 07-40-13 FRONT POWER METAL OXIDE SEMICONDUCTOR FIELD EFFECT TRANSISTOR (POWER MOS FET) REMOVAL/INSTALLATION.) (See 07-40-14 FRONT POWER METAL OXIDE SEMICONDUCTOR FIELD EFFECT TRANSISTOR (POWER MOS FET) INSPECTION.)
14	Cabin temperature sensor (See 07-40-19 CABIN TEMPERATURE SENSOR REMOVAL/INSTALLATION.) (See 07-40-20 CABIN TEMPERATURE SENSOR INSPECTION.)
15	Driver-side front air mix actuator (See 07-40-5 FRONT AIR MIX ACTUATOR REMOVAL/INSTALLATION.) (See 07-40-6 FRONT AIR MIX ACTUATOR INSPECTION.)
16	Rear climate control unit (See 07-40-30 REAR CLIMATE CONTROL UNIT REMOVAL/INSTALLATION.) (See 07-40-30 REAR CLIMATE CONTROL UNIT INSPECTION.)
17	Rear airflow mode actuator (See 07-40-11 REAR AIRFLOW MODE ACTUATOR REMOVAL/INSTALLATION.) (See 07-40-11 REAR AIRFLOW MODE ACTUATOR INSPECTION.)
18	Rear air mix actuator (See 07-40-8 REAR AIR MIX ACTUATOR REMOVAL/INSTALLATION.) (See 07-40-8 REAR AIR MIX ACTUATOR INSPECTION.)
19	Rear evaporator temperature sensor (See 07-40-21 REAR EVAPORATOR TEMPERATURE SENSOR REMOVAL/INSTALLATION.) (See 07-40-21 REAR EVAPORATOR TEMPERATURE SENSOR INSPECTION.)
20	Rear power MOS FET (See 07-40-14 REAR POWER METAL OXIDE SEMICONDUCTOR FIELD EFFECT TRANSISTOR (POWER MOS FET) REMOVAL/INSTALLATION.) (See 07-40-15 REAR POWER METAL OXIDE SEMICONDUCTOR FIELD EFFECT TRANSISTOR (POWER MOS FET) INSPECTION.)
21	Rear blower motor (See 07-40-12 REAR BLOWER MOTOR REMOVAL/INSTALLATION.) (See 07-40-12 FRONT BLOWER MOTOR INSPECTION.)
22	Passenger-side front air mix actuator (See 07-40-5 FRONT AIR MIX ACTUATOR REMOVAL/INSTALLATION.) (See 07-40-6 FRONT AIR MIX ACTUATOR INSPECTION.)
23	Front blower motor (See 07-40-12 FRONT BLOWER MOTOR REMOVAL/INSTALLATION.) (See 07-40-12 FRONT BLOWER MOTOR INSPECTION.)
24	Front climate control unit (See 07-40-23 FRONT CLIMATE CONTROL UNIT REMOVAL/INSTALLATION.) (See 07-40-23 FRONT CLIMATE CONTROL UNIT INSPECTION.)

Fig. 2: Identifying HVAC Control System Location Index (2 Of 2)
Courtesy of MAZDA MOTORS CORP.

AIR INTAKE ACTUATOR REMOVAL/INSTALLATION

1. Disconnect the negative battery cable.
2. Remove the dashboard under cover. (Passenger side) (See **DASHBOARD UNDER COVER REMOVAL/INSTALLATION** .)
3. Remove the glove compartment. (See **GLOVE COMPARTMENT REMOVAL/INSTALLATION** .)
4. Insert a flathead screwdriver as shown in the figure and detach the fuse block tab by prying it in the direction of the arrow.
5. Press the fuse block and remove it from the bracket.
6. Set the fuse block out of the way.

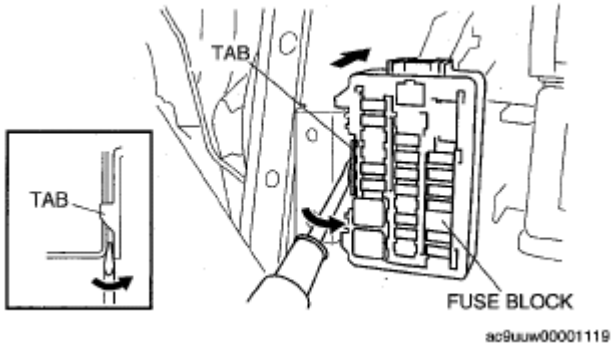


Fig. 3: Detaching Fuse Block Tab
Courtesy of MAZDA MOTORS CORP.

7. Remove in the order indicated in the table.

1	Air intake actuator connector
2	Screw
3	Air intake actuator

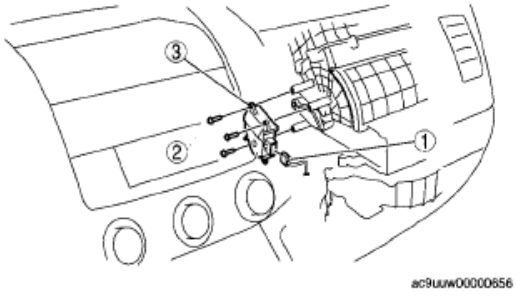


Fig. 4: Identifying Air Intake Actuator Removal Order
Courtesy of MAZDA MOTORS CORP.

8. Install in the reverse order of removal.

AIR INTAKE ACTUATOR INSPECTION

1. Connect battery positive voltage to air intake actuator terminal G, connect terminal A (or C) to ground, and then verify that the air intake actuator operates as shown in the table.

- If the operation condition is not normal, replace the air intake actuator.

AIR INTAKE ACTUATOR OPERATION

Terminal			Air intake actuator operation
A	C	G	
Ground	-	B+	RECIRCULATE --> FRESH
-	Ground	B+	FRESH --> RECIRCULATE

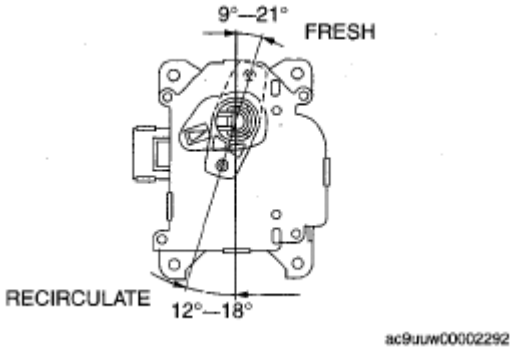


Fig. 5: Inspecting Air Intake Actuator
Courtesy of MAZDA MOTORS CORP.

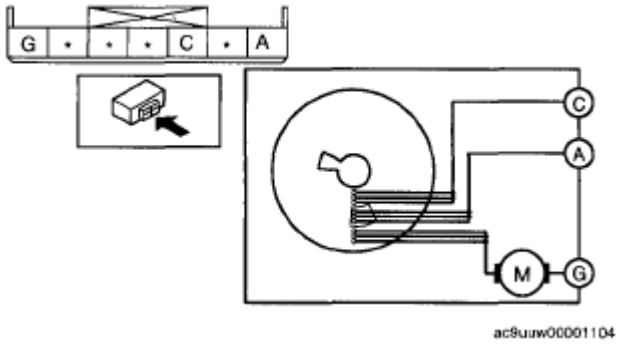


Fig. 6: Air Intake Actuator Circuit Diagram
Courtesy of MAZDA MOTORS CORP.

FRONT AIR MIX ACTUATOR REMOVAL/INSTALLATION

DRIVER SIDE

1. Disconnect the negative battery cable.
2. Remove the following parts:
    1. Dashboard under cover (Driver side) (See **DASHBOARD UNDER COVER REMOVAL/INSTALLATION** .)
    2. Side wall (See **SIDE WALL REMOVAL/INSTALLATION** .)

3. Console panel (LH) (See **CONSOLE PANEL REMOVAL/INSTALLATION** .)
4. Hood release lever (See **HOOD LATCH AND RELEASE LEVER REMOVAL/INSTALLATION** .)
5. Lower panel (See **LOWER PANEL REMOVAL/INSTALLATION** .)

3. Remove in the order indicated in the table.

1	Driver-side front air mix actuator connector
2	Screw
3	Driver-side front air mix actuator

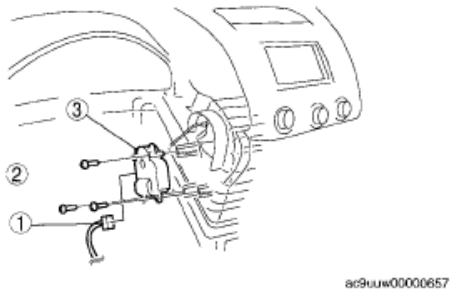


Fig. 7: Identifying Front Air Mix Actuator Removal Order - Driver Side
Courtesy of MAZDA MOTORS CORP.

4. Install in the reverse order of removal.

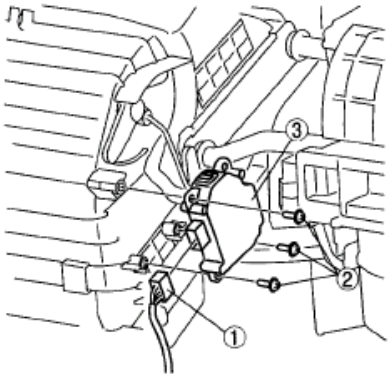
PASSENGER SIDE

1. Disconnect the negative battery cable.
2. Remove the following parts:
   1. Decoration panel (See **DECORATION PANEL REMOVAL/INSTALLATION** .)
   2. Front console box mat (See **FRONT CONSOLE BOX MAT REMOVAL/INSTALLATION** .)
   3. Indicator panel (See **INDICATOR PANEL REMOVAL/INSTALLATION** .)
   4. Front console box (See **FRONT CONSOLE BOX REMOVAL/INSTALLATION** .)
   5. Dashboard under cover (See **DASHBOARD UNDER COVER REMOVAL/INSTALLATION** .)
   6. Side wall (See **SIDE WALL REMOVAL/INSTALLATION** .)
   7. Console panel (See **CONSOLE PANEL REMOVAL/INSTALLATION** .)
   8. Console cover (See **CONSOLE COVER REMOVAL/INSTALLATION** .)
   9. Console (See **CONSOLE REMOVAL/INSTALLATION** .)
   10. Front scuff plate inner (See **FRONT SCUFF PLATE REMOVAL/INSTALLATION** .)
   11. Front side trim (See **FRONT SIDE TRIM REMOVAL/INSTALLATION** .)
   12. Glove compartment (See **GLOVE COMPARTMENT REMOVAL/INSTALLATION** .)
   13. Hood release lever (See **HOOD LATCH AND RELEASE LEVER REMOVAL/INSTALLATION** .)
   14. Lower panel (See **LOWER PANEL REMOVAL/INSTALLATION** .)
   15. Lower column cover (See **COLUMN COVER REMOVAL/INSTALLATION** .)
   16. Driver-side air bag module (See **DRIVER-SIDE AIR BAG MODULE REMOVAL/INSTALLATION** .)

17. Steering wheel (See **STEERING WHEEL AND COLUMN REMOVAL/INSTALLATION** .)
18. Combination switch (See **COMBINATION SWITCH REMOVAL/INSTALLATION** .)
19. Center panel (See **CENTER PANEL REMOVAL/INSTALLATION** .)
20. Meter hood (See **METER HOOD REMOVAL/INSTALLATION** .)
21. Instrument cluster (See **INSTRUMENT CLUSTER REMOVAL/INSTALLATION** .)
22. Audio unit (See **AUDIO UNIT REMOVAL/INSTALLATION** .)
23. Steering shaft (See **STEERING WHEEL AND COLUMN REMOVAL/INSTALLATION** .)
24. A-pillar trim (See **A-PILLAR TRIM REMOVAL/INSTALLATION** .)
25. Side panel (See **SIDE PANEL REMOVAL/INSTALLATION** .)

3. Disconnect the front door wiring harness connector (Driver side). (See **FRONT DOOR MODULE REMOVAL/INSTALLATION** .)
4. Disconnect the dashboard harness connectors.
5. Remove the brake switch from the brake pedal with the brake switch connector connected. (See **BRAKE PEDAL REMOVAL/INSTALLATION** .)
6. Remove the selector lever component. (See **SELECTOR LEVER COMPONENT REMOVAL/INSTALLATION** .)
7. Remove the windshield wiper arm and blade. (See **WINDSHIELD WIPER ARM AND BLADE REMOVAL/INSTALLATION** .)
8. Remove the cowl grille. (See **COWL GRILLE REMOVAL/INSTALLATION** .)
9. Remove the windshield wiper motor. (See **WINDSHIELD WIPER MOTOR REMOVAL/INSTALLATION** .)
10. Remove the dashboard. (See **DASHBOARD REMOVAL/INSTALLATION** .)
11. Remove in the order indicated in the table.
12. Install in the reverse order of removal.

1	Passenger-side front air mix actuator connector
2	Screw
3	Passenger-side front air mix actuator



ac9uuw00001040

Fig. 8: Identifying Front Air Mix Actuator Remove Order - Passenger Side
Courtesy of MAZDA MOTORS CORP.

FRONT AIR MIX ACTUATOR INSPECTION

DRIVER SIDE

1. Connect battery positive voltage to front air mix actuator terminal F (or G), connect terminal G (or F) to ground, and then verify that the front air mix actuator operates as shown in the table.
   - If the operation condition is not normal, replace the front air mix actuator.

FRONT AIR MIX ACTUATOR OPERATION

Terminal		Front air mix actuator operation
F	G	
B+	Ground	HOT --> COLD
Ground	B+	COLD --> HOT

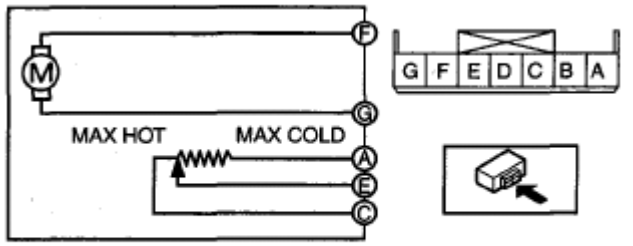


Fig. 9: Front Air Mix Actuator Circuit Diagram - Driver Side
Courtesy of MAZDA MOTORS CORP.

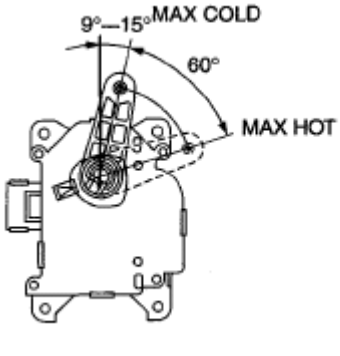


Fig. 10: Inspecting Front Air Mix Actuator - Driver Side
Courtesy of MAZDA MOTORS CORP.

2. Verify that the resistance between terminals A and E, and E and C matches the front air mix actuator operation as shown in the graph.
   - If the operation condition and resistance are not normal, replace the front air mix actuator.

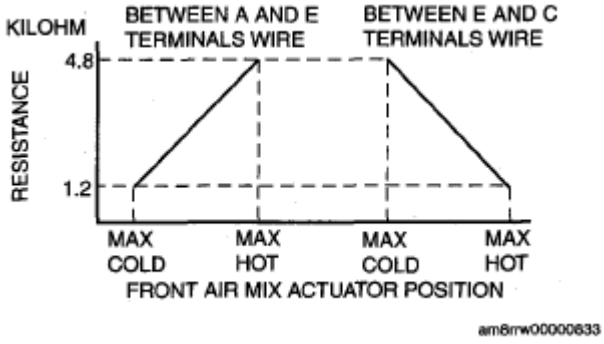


Fig. 11: Front Air Mix Actuator Operation Terminals A & E With E & C Resistance Graph - Driver Side
Courtesy of MAZDA MOTORS CORP.

PASSENGER SIDE

1. Connect battery positive voltage to front air mix actuator terminal F (or G), connect terminal G (or F) to ground, and then verify that the front air mix actuator operates as shown in the table.
   - If the operation condition is not normal, replace the front air mix actuator.

FRONT AIR MIX ACTUATOR OPERATION

Terminal		Front air mix actuator operation
F	G	
B+	Ground	COLD --> HOT
Ground	B+	HOT --> COLD

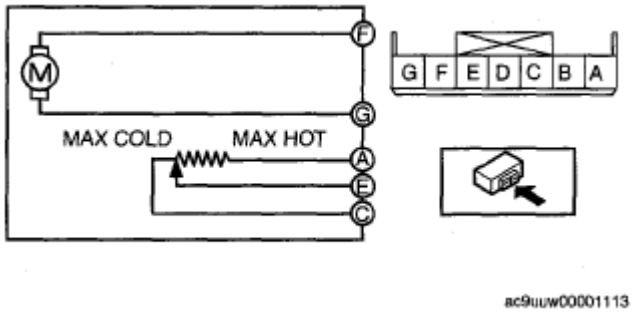


Fig. 12: Front Air Mix Actuator Circuit Diagram - Passenger Side
Courtesy of MAZDA MOTORS CORP.

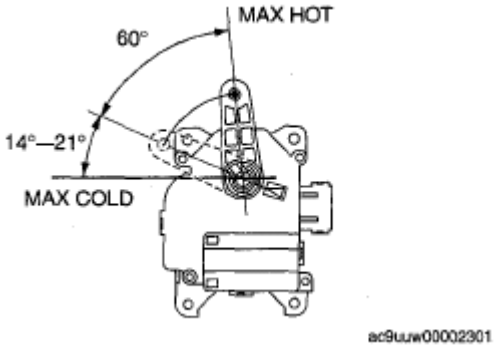


Fig. 13: Inspecting Front Air Mix Actuator - Passenger Side
Courtesy of MAZDA MOTORS CORP.

2. Verify that the resistance between terminals A and E, and E and C matches the front air mix actuator operation as shown in the graph.
    - If the operation condition and resistance are not normal, replace the front air mix actuator.

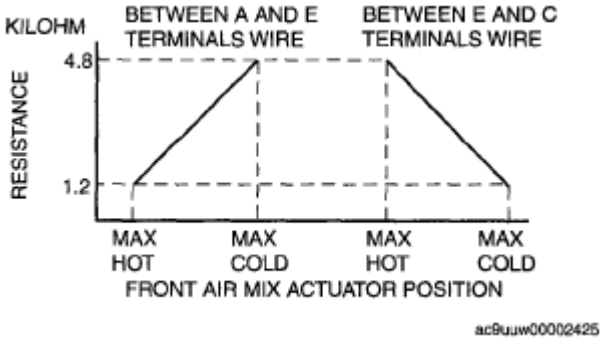


Fig. 14: Front Air Mix Actuator Operation Terminals A & E With E & C Resistance Graph - Passenger Side
Courtesy of MAZDA MOTORS CORP.

REAR AIR MIX ACTUATOR REMOVAL/INSTALLATION

1. Slide the passenger-side front seat to the maximum forward end.
2. Disconnect the negative battery cable.
3. Remove the following parts:
    1. Decoration panel (See **DECORATION PANEL REMOVAL/INSTALLATION** .)
    2. Front console box mat (See **FRONT CONSOLE BOX MAT REMOVAL/INSTALLATION** .)
    3. Indicator panel (See **INDICATOR PANEL REMOVAL/INSTALLATION** .)
    4. Front console box (See **FRONT CONSOLE BOX REMOVAL/INSTALLATION** .)
    5. Dashboard under cover (See **DASHBOARD UNDER COVER REMOVAL/INSTALLATION** .)
    6. Side wall (See **SIDE WALL REMOVAL/INSTALLATION** .)
    7. Console panel (See **CONSOLE PANEL REMOVAL/INSTALLATION** .)

8. Console cover (See **CONSOLE COVER REMOVAL/INSTALLATION** .)
9. Console (See **CONSOLE REMOVAL/INSTALLATION** .)

4. Remove in the order indicated in the table.
5. Install in the reverse order of removal.

1	Rear air mix actuator connector
2	Screw
3	Rear air mix actuator

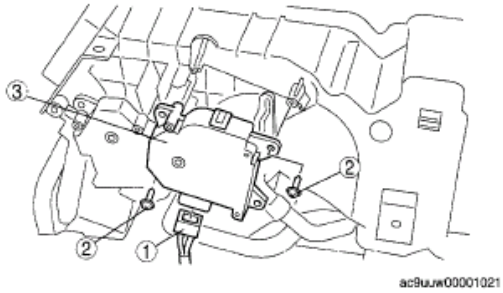


Fig. 15: Identifying Rear Air Mix Actuator Removal Order
Courtesy of MAZDA MOTORS CORP.

REAR AIR MIX ACTUATOR INSPECTION

1. Connect battery positive voltage to rear air mix actuator terminal F (or G), connect terminal G (or F) to ground, and then verify that the rear air mix actuator operates as shown in the table.
   - If the operation condition is not normal, replace the rear air mix actuator.

REAR AIR MIX ACTUATOR OPERATION

Terminal		Rear air mix actuator operation
F	G	
B+	Ground	HOT --> COLD
Ground	B+	COLD --> HOT

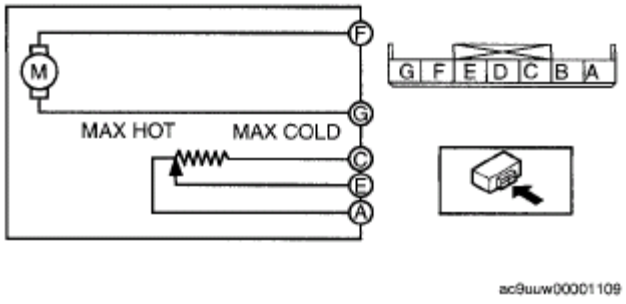


Fig. 16: Rear Air Mix Actuator Circuit Diagram
Courtesy of MAZDA MOTORS CORP.

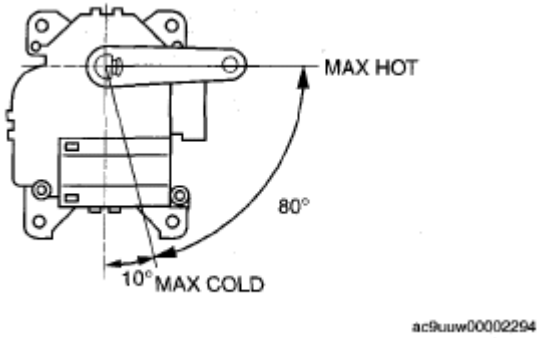


Fig. 17: Rear Air Mix Actuator Inspection
Courtesy of MAZDA MOTORS CORP.

2. Verify that the resistance between the terminals terminals C and E, and E and A matches the rear air mix actuator operation as shown in the graph.
    - If the operation condition and resistance are not normal, replace the rear air mix actuator.

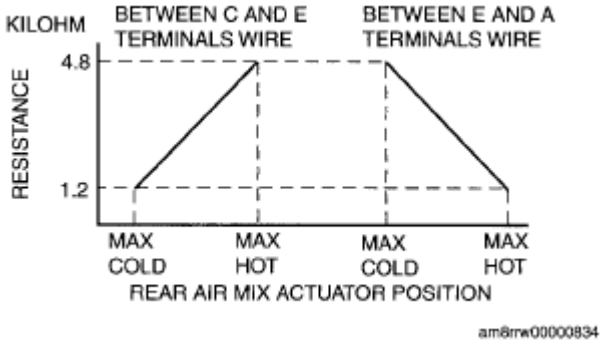


Fig. 18: Rear Air Mix Actuator Operation Terminals C & E With E & A Resistance Graph
Courtesy of MAZDA MOTORS CORP.

FRONT AIRFLOW MODE ACTUATOR REMOVAL/INSTALLATION

1. Disconnect the negative battery cable.
2. Remove the following parts:
    1. Decoration panel (See **DECORATION PANEL REMOVAL/INSTALLATION** .)
    2. Front console box mat (See **FRONT CONSOLE BOX MAT REMOVAL/INSTALLATION** .)
    3. Indicator panel (See **INDICATOR PANEL REMOVAL/INSTALLATION** .)
    4. Front console box (See **FRONT CONSOLE BOX REMOVAL/INSTALLATION** .)
    5. Dashboard under cover (See **DASHBOARD UNDER COVER REMOVAL/INSTALLATION** .)
    6. Side wall (See **SIDE WALL REMOVAL/INSTALLATION** .)
    7. Console panel (See **CONSOLE PANEL REMOVAL/INSTALLATION** .)
    8. Console cover (See **CONSOLE COVER REMOVAL/INSTALLATION** .)
    9. Console (See **CONSOLE REMOVAL/INSTALLATION** .)

10. Front scuff plate inner (See **FRONT SCUFF PLATE REMOVAL/INSTALLATION** .)
11. Front side trim (See **FRONT SIDE TRIM REMOVAL/INSTALLATION** .)
12. Glove compartment (See **GLOVE COMPARTMENT REMOVAL/INSTALLATION** .)
13. Hood release lever (See **HOOD LATCH AND RELEASE LEVER REMOVAL/INSTALLATION** .)
14. Lower panel (See **LOWER PANEL REMOVAL/INSTALLATION** .)
15. Lower column cover (See **COLUMN COVER REMOVAL/INSTALLATION** .)
16. Driver-side air bag module (See **DRIVER-SIDE AIR BAG MODULE REMOVAL/INSTALLATION** .)
17. Steering wheel (See **STEERING WHEEL AND COLUMN REMOVAL/INSTALLATION** .)
18. Combination switch (See **COMBINATION SWITCH REMOVAL/INSTALLATION** .)
19. Center panel (See **CENTER PANEL REMOVAL/INSTALLATION** .)
20. Meter hood (See **METER HOOD REMOVAL/INSTALLATION** .)
21. Instrument cluster (See **INSTRUMENT CLUSTER REMOVAL/INSTALLATION** .)
22. Audio unit (See **AUDIO UNIT REMOVAL/INSTALLATION** .)
23. Steering shaft (See **STEERING WHEEL AND COLUMN REMOVAL/INSTALLATION** .)
24. A-pillar trim (See **A-PILLAR TRIM REMOVAL/INSTALLATION** .)
25. Side panel (See **SIDE PANEL REMOVAL/INSTALLATION** .)

3. Disconnect the front door wiring harness connector (Driver side). (See **FRONT DOOR MODULE REMOVAL/INSTALLATION** .)
4. Disconnect the dashboard harness connectors.
5. Remove the brake switch from the brake pedal with the brake switch connector connected. (See **BRAKE PEDAL REMOVAL/INSTALLATION** .)
6. Remove the selector lever component. (See **SELECTOR LEVER COMPONENT REMOVAL/INSTALLATION** .)
7. Remove the windshield wiper arm and blade. (See **WINDSHIELD WIPER ARM AND BLADE REMOVAL/INSTALLATION** .)
8. Remove the cowl grille. (See **COWL GRILLE REMOVAL/INSTALLATION** .)
9. Remove the windshield wiper motor. (See **WINDSHIELD WIPER MOTOR REMOVAL/INSTALLATION** .)
10. Remove the dashboard. (See **DASHBOARD REMOVAL/INSTALLATION** .)
11. Remove in the order indicated in the table.
12. Install in the reverse order of removal.

1	Front airflow mode actuator connector
2	Screw
3	Front airflow mode actuator

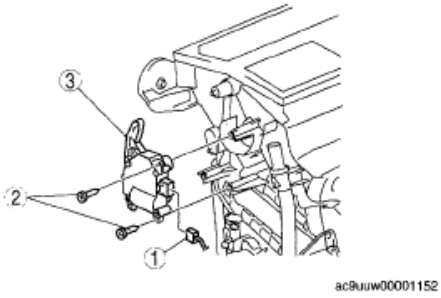


Fig. 19: Identifying Front Airflow Mode Actuator Removal Order
Courtesy of MAZDA MOTORS CORP.

FRONT AIRFLOW MODE ACTUATOR INSPECTION

1. Connect battery positive voltage to front airflow mode actuator terminal F (or G), connect terminal G (or F) to ground, and then verify that the front airflow mode actuator operates as shown in the table.
   - If the operation condition is not normal, replace the front airflow mode actuator.

FRONT AIRFLOW MODE ACTUATOR OPERATION

Terminal		Front airflow mode actuator operation
F	G	
B+	Ground	VENT --> DEFROSTER
Ground	B+	DEFROSTER --> VENT

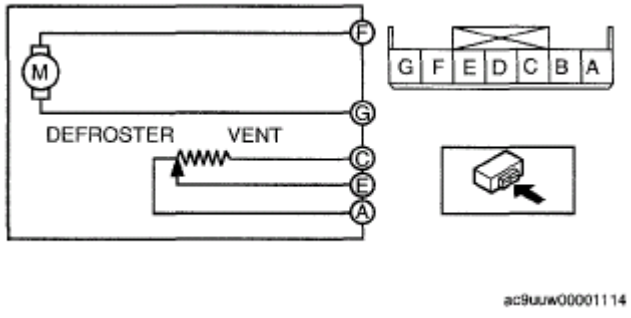


Fig. 20: Front Airflow Mode Actuator Circuit Diagram
Courtesy of MAZDA MOTORS CORP.

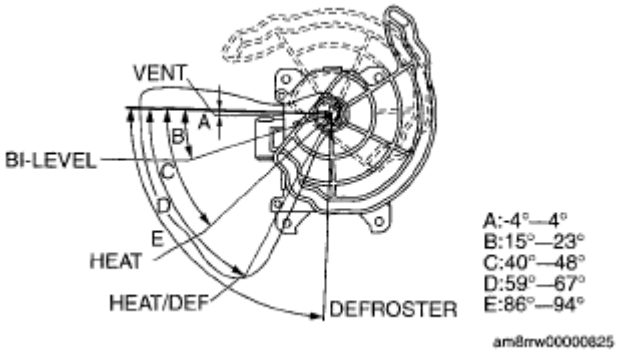


Fig. 21: Inspecting Front Airflow Mode Actuator
Courtesy of MAZDA MOTORS CORP.

2. Verify that the resistance between terminals C and E, and E and A matches the front airflow mode actuator operation as shown in the graph.
    - If the operation condition and resistance are not normal, replace the front airflow mode actuator.

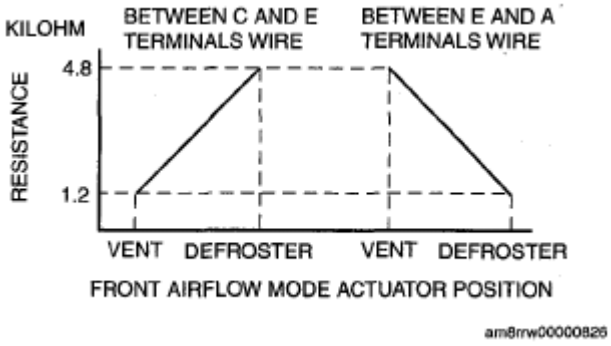


Fig. 22: Front Airflow Mode Actuator Operation Terminals C & E With E & A Resistance Graph
Courtesy of MAZDA MOTORS CORP.

REAR AIRFLOW MODE ACTUATOR REMOVAL/INSTALLATION

1. Slide the passenger-side front seat to the maximum forward end.
2. Disconnect the negative battery cable.
3. Remove the following parts:
    1. Decoration panel (See **DECORATION PANEL REMOVAL/INSTALLATION** .)
    2. Front console box mat (See **FRONT CONSOLE BOX MAT REMOVAL/INSTALLATION** .)
    3. Indicator panel (See **INDICATOR PANEL REMOVAL/INSTALLATION** .)
    4. Front console box (See **FRONT CONSOLE BOX REMOVAL/INSTALLATION** .)
    5. Dashboard undercover (See **DASHBOARD UNDER COVER REMOVAL/INSTALLATION** .)
    6. Side wall (See **SIDE WALL REMOVAL/INSTALLATION** .)
    7. Console panel (See **CONSOLE PANEL REMOVAL/INSTALLATION** .)

8. Console cover (See **CONSOLE COVER REMOVAL/INSTALLATION** .)
9. Console (See **CONSOLE REMOVAL/INSTALLATION** .)

4. Remove in the order indicated in the table.
5. Install in the reverse order of removal.

1	Rear airflow mode actuator connector
2	Screw
3	Rear airflow mode actuator

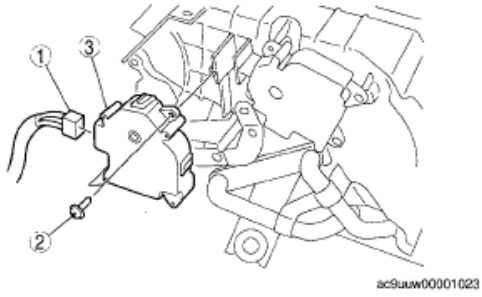


Fig. 23: Identifying Rear Airflow Mode Actuator Removal Order
Courtesy of MAZDA MOTORS CORP.

REAR AIRFLOW MODE ACTUATOR INSPECTION

1. Connect battery positive voltage to rear airflow mode actuator terminal F (or G), connect terminal G (or F) to ground, and then verify that the rear airflow mode actuator operates as shown in the table.
   - If the operation condition is not normal, replace the rear airflow mode actuator.

REAR AIRFLOW MODE ACTUATOR OPERATION

Terminal		Rear airflow mode actuator operation
F	G	
B+	Ground	VENT --> HEAT
Ground	B+	HEAT --> VENT

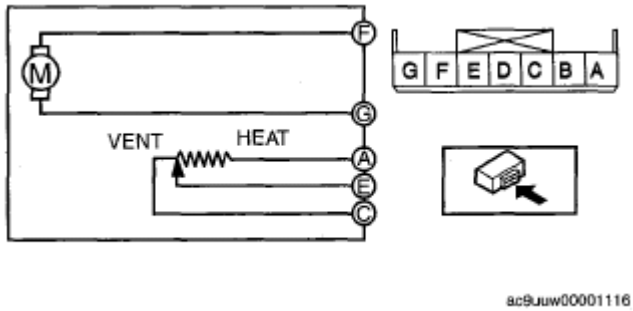


Fig. 24: Rear Airflow Mode Actuator Circuit Diagram
Courtesy of MAZDA MOTORS CORP.

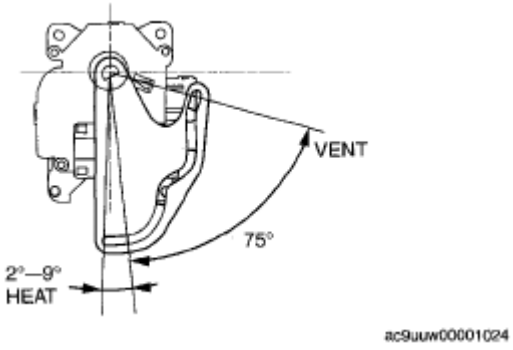


Fig. 25: Rear Airflow Mode Actuator Inspection
Courtesy of MAZDA MOTORS CORP.

2. Verify that the resistance between terminals A and E, and E and C matches the rear airflow mode actuator operation as shown in the graph.
    - If the operation condition and resistance are not normal, replace the rear airflow mode actuator.

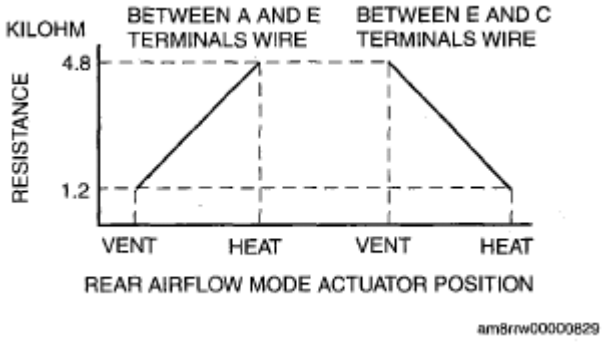


Fig. 26: Rear Airflow Mode Actuator Operation Terminals A & E With E & C Resistance Graph
Courtesy of MAZDA MOTORS CORP.

FRONT BLOWER MOTOR REMOVAL/INSTALLATION

1. Disconnect the negative battery cable.
2. Remove the dashboard under cover, (passenger side) (See **DASHBOARD UNDER COVER REMOVAL/INSTALLATION** .)
3. Remove in the order indicated in the table.
4. Install in the reverse order of removal.

1	Front blower motor connector
2	Screw
3	Front blower motor

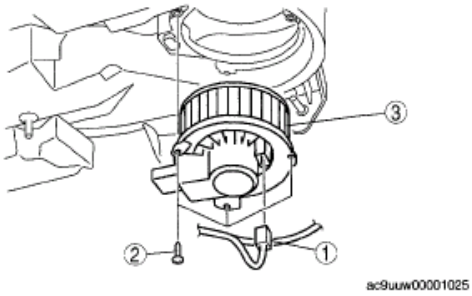


Fig. 27: Identifying Front Blower Motor Removal Order
Courtesy of MAZDA MOTORS CORP.

FRONT BLOWER MOTOR INSPECTION

1. Connect battery positive voltage to front blower motor terminal B, connect terminal A to ground, and then verify its operation.
   - If there is any malfunction, replace the front blower motor.

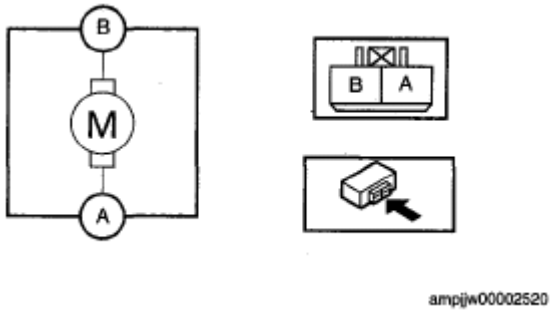


Fig. 28: Inspecting Front Blower Motor
Courtesy of MAZDA MOTORS CORP.

REAR BLOWER MOTOR REMOVAL/INSTALLATION

1. Disconnect the negative battery cable.
2. Remove the following parts:
   1. Decoration panel (See **DECORATION PANEL REMOVAL/INSTALLATION** .)
   2. Front console box mat (See **FRONT CONSOLE BOX MAT REMOVAL/INSTALLATION** .)
   3. Indicator panel (See **INDICATOR PANEL REMOVAL/INSTALLATION** .)
   4. Front console box (See **FRONT CONSOLE BOX REMOVAL/INSTALLATION** .)
   5. Dashboard under cover (See **DASHBOARD UNDER COVER REMOVAL/INSTALLATION** .)
   6. Side wall (See **SIDE WALL REMOVAL/INSTALLATION** .)
   7. Console panel (See **CONSOLE PANEL REMOVAL/INSTALLATION** .)
   8. Console cover (See **CONSOLE COVER REMOVAL/INSTALLATION** .)
   9. Console (See **CONSOLE REMOVAL/INSTALLATION** .)

10. Selector lever component (See **SELECTOR LEVER COMPONENT REMOVAL/INSTALLATION** .)

3. Remove in the order indicated in the table.
4. Install in the reverse order of removal.

1	Rear blower motor connector
2	Screw
3	Rear blower motor

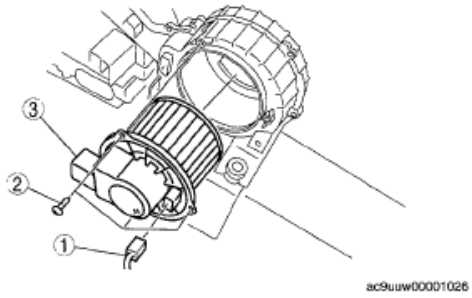


Fig. 29: Identifying Rear Blower Motor Removal Order
Courtesy of MAZDA MOTORS CORP.

REAR BLOWER MOTOR INSPECTION

1. Connect battery positive voltage to rear blower motor terminal B, connect terminal A to ground, and then verify its operation.
   - If there is any malfunction, replace the rear blower motor.

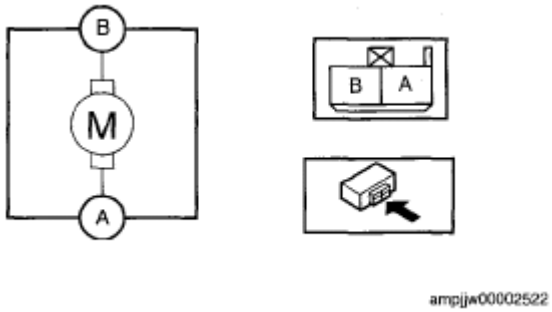


Fig. 30: Inspecting Rear Blower Motor
Courtesy of MAZDA MOTORS CORP.

FRONT POWER METAL OXIDE SEMICONDUCTOR FIELD EFFECT TRANSISTOR (POWER MOS FET) REMOVAL/INSTALLATION

1. Disconnect the negative battery cable.
2. Remove the dashboard under cover, (passenger side) (See **DASHBOARD UNDER COVER REMOVAL/INSTALLATION** .)
3. Remove the glove compartment. (See **GLOVE COMPARTMENT REMOVAL/INSTALLATION** .)
4. Insert a flathead screwdriver as shown in the figure and detach the fuse block tab by prying it in the direction of the arrow.

5. Press the fuse block and remove it from the bracket.
6. Set the fuse block out of the way.

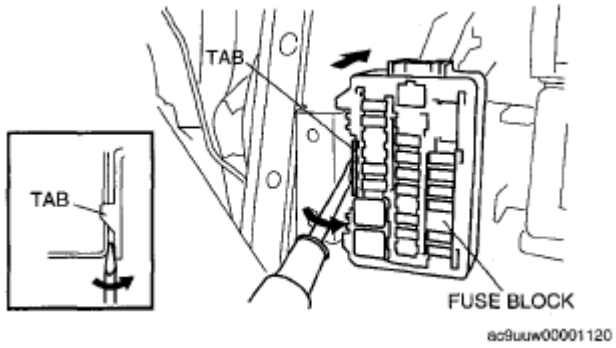


Fig. 31: Detaching Fuse Block Tab
Courtesy of MAZDA MOTORS CORP.

7. Remove in the order indicated in the table.
8. Install in the reverse order of removal.

1	Front power MOS FET connector
2	Screw
3	Front power MOS FET

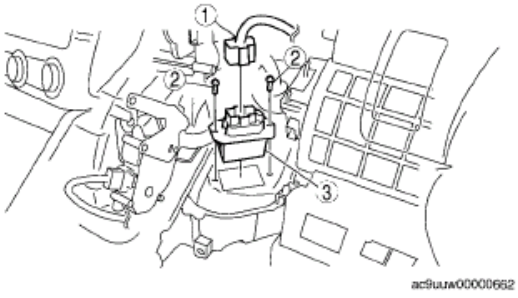


Fig. 32: Front Power Metal Oxide Semiconductor Field Effect Transistor (Power Mos Fet) Removal Order
Courtesy of MAZDA MOTORS CORP.

FRONT POWER METAL OXIDE SEMICONDUCTOR FIELD EFFECT TRANSISTOR (POWER MOS FET) INSPECTION

1. Verify that the continuity between the front power MOS FET terminals is as indicated in the table.
   - If there is any malfunction, replace the front power MOS FET.
   - If the blower motor operation is not normal even though no malfunction can be verified, inspect the front climate control unit.

FRONT POWER MOS FET TERMINALS CONTINUITY CHART

Tester lead		Resistance (kilohm)
+	-	
A	B	2.2

A	E	Continuity detected
A	F	Continuity detected
B	A	2.2
B	E	Continuity detected
B	F	Continuity detected
E	A	infinity
E	B	infinity
E	F	11
F	A	infinity
F	B	infinity
F	E	11

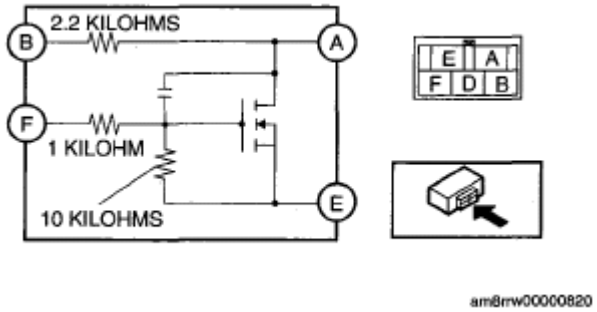


Fig. 33: Inspecting Front Power Metal Oxide Semiconductor Field Effect Transistor (Power Mos Fet)
Courtesy of MAZDA MOTORS CORP.

REAR POWER METAL OXIDE SEMICONDUCTOR FIELD EFFECT TRANSISTOR (POWER MOS FET) REMOVAL/INSTALLATION

1. Disconnect the negative battery cable.
2. Remove the following parts:
    1. Decoration panel (See **DECORATION PANEL REMOVAL/INSTALLATION** .)
    2. Front console box mat (See **FRONT CONSOLE BOX MAT REMOVAL/INSTALLATION** .)
    3. Indicator panel (See **INDICATOR PANEL REMOVAL/INSTALLATION** .)
    4. Front console box (See **FRONT CONSOLE BOX REMOVAL/INSTALLATION** .)
    5. Dashboard under cover (See **DASHBOARD UNDER COVER REMOVAL/INSTALLATION** .)
    6. Side wall (See **SIDE WALL REMOVAL/INSTALLATION** .)
    7. Console panel (See **CONSOLE PANEL REMOVAL/INSTALLATION** .)
    8. Console cover (See **CONSOLE COVER REMOVAL/INSTALLATION** .)
    9. Console (See **CONSOLE REMOVAL/INSTALLATION** .)
3. Remove in the order indicated in the table.
4. Install in the reverse order of removal.

1	Rear power MOS FET connector
2	Screw
3	Rear power MOS FET

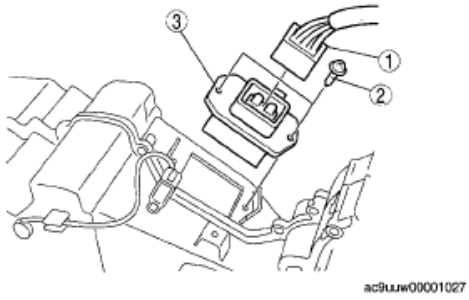


Fig. 34: Identifying Rear Power Metal Oxide Semiconductor Field Effect Transistor (Power Mos Fet) Removal Order
Courtesy of MAZDA MOTORS CORP.

REAR POWER METAL OXIDE SEMICONDUCTOR FIELD EFFECT TRANSISTOR (POWER MOS FET) INSPECTION

1. Verify that the continuity between the rear power MOS FET terminals is as indicated in the table.
   - If there is any malfunction, replace the rear power MOS FET.
   - If the blower motor operation is not normal even though no malfunction can be verified, inspect the front climate control unit.

REAR POWER MOS FET TERMINALS CONTINUITY CHART

Tester lead		Resistance (kilohm)
+	-	
A	B	infinity
A	C	11
A	D	infinity
B	A	Continuity detected
B	C	Continuity detected
B	D	1.5
C	A	11
C	B	infinity
C	D	infinity
D	A	Continuity detected
D	B	1.5
D	C	Continuity detected

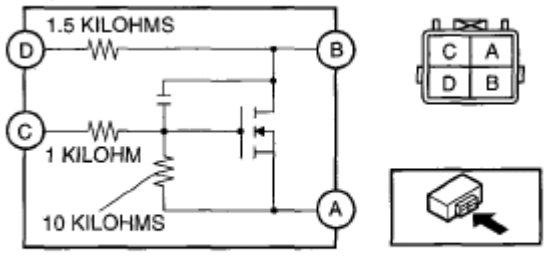


Fig. 35: Inspecting Rear Power Metal Oxide Semiconductor Field Effect Transistor (Power Mos Fet)
Courtesy of MAZDA MOTORS CORP.

MAGNETIC CLUTCH DISASSEMBLY/ASSEMBLY

1. Install the **SST (49 L061 001)** or a commercially available filter wrench as shown in the figure and remove the bolt.

When Using SST

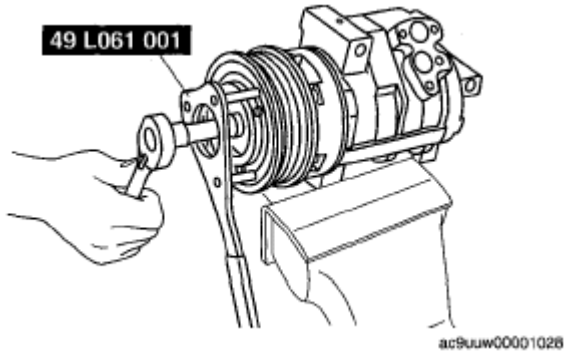


Fig. 36: Removing Pressure Plate Bolt
Courtesy of MAZDA MOTORS CORP.

When Using Filter Wrench

2. Insert an appropriate bolt into the pressure plate thread hole and tighten it until the pressure plate is removed.

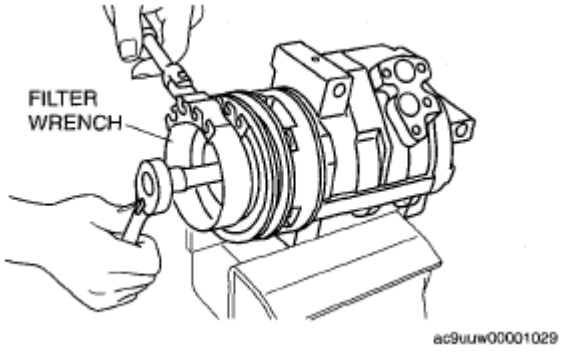


Fig. 37: Removing Pressure Plate
Courtesy of MAZDA MOTORS CORP.

3. Disassemble in the order indicated in the table.

1	Bolt
2	Pressure plate
3	Shim
4	Snap ring
5	A/C compressor pulley
6	Snap ring (See 07-40-16 Snap Ring Installation Note.)
7	Stator
8	A/C compressor body

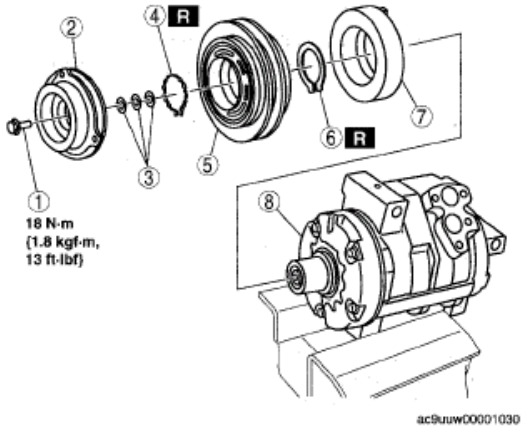


Fig. 38: Identifying Pressure Plate Disassembly Order & Torque Specifications
Courtesy of MAZDA MOTORS CORP.

4. Assemble in the reverse order of disassembly.
5. Adjust the magnetic clutch clearance. (See **MAGNETIC CLUTCH ADJUSTMENT**.)

SNAP RING INSTALLATION NOTE

1. Install the snap ring so that the tapered area is on the pressure plate side.

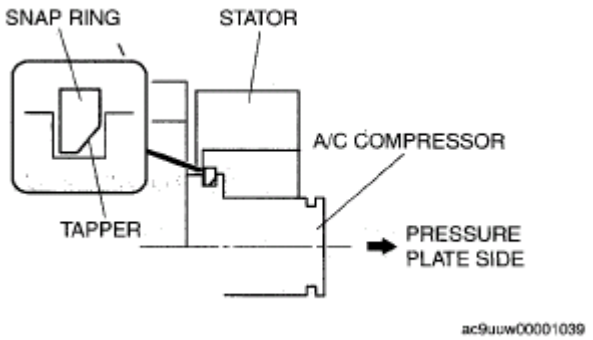


Fig. 39: Identifying Snap Ring & Tapered Area
Courtesy of MAZDA MOTORS CORP.

MAGNETIC CLUTCH ADJUSTMENT

1. Secure the A/C compressor to the vise.
2. Secure the magnet base to the vise and install the dial gauge to the position shown in the figure.
3. Set the dial gauge to 0.
4. Connect battery voltage to stator terminal A and the A/C compressor body to ground to operate the magnet clutch.
5. Verify that the dial gauge graduation is within the standard.
    - If the clearance is not within the specification, adjust the clearance by changing the type or number of shims.

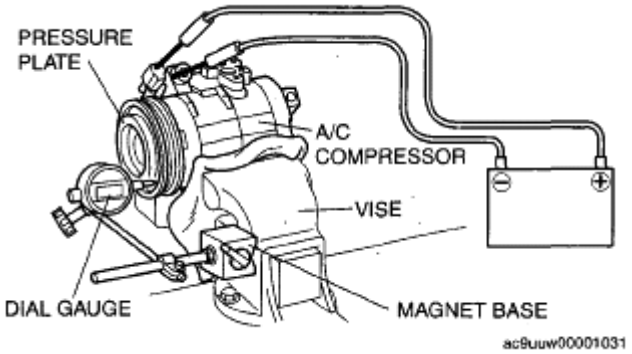


Fig. 40: Adjusting Magnetic Clutch
Courtesy of MAZDA MOTORS CORP.

Magnetic clutch clearance

0.35-0.65 mm {0.014-0.025 in}

MAGNETIC CLUTCH INSPECTION

1. Connect battery positive voltage to magnetic clutch terminal A, connect terminal B to ground.

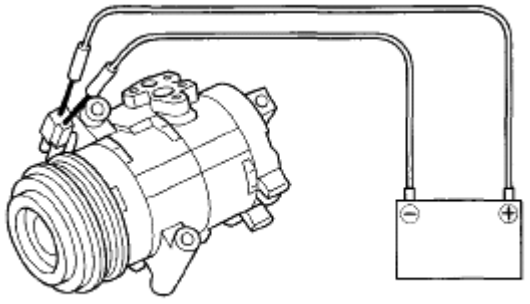


Fig. 41: View Of Battery Positive Voltage To Magnetic Clutch Terminal A & Terminal B
Courtesy of MAZDA MOTORS CORP.

2. Verify that the magnetic clutch operates.
    - If there is any malfunction, replace the magnetic clutch.

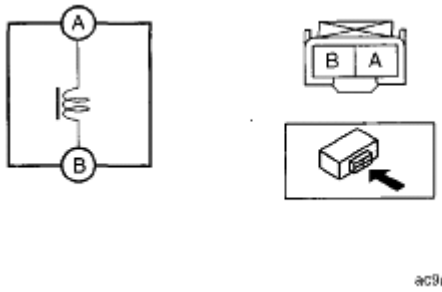


Fig. 42: Inspecting Magnetic Clutch Operation
Courtesy of MAZDA MOTORS CORP.

SOLAR RADIATION SENSOR REMOVAL/INSTALLATION

1. Disconnect the negative battery cable.
2. Remove the cover from the dashboard using a fiathead screwdriver wrapped with protective tape.
3. Detach the solar radiation sensor connector tab in the position shown in the figure and disconnect the solar radiation sensor connector.
4. Press the solar radiation sensor tab and remove the solar radiation sensor from the cover.
5. Install in the reverse order of removal.

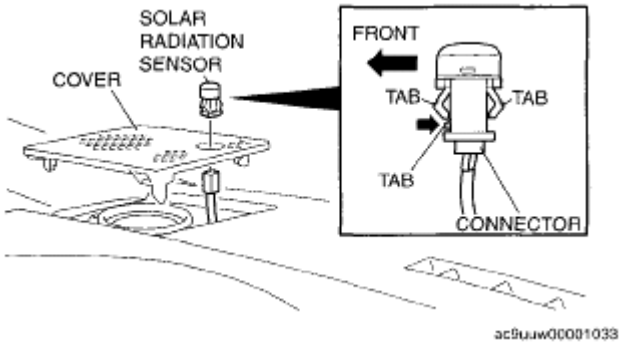


Fig. 43: View Of Solar Radiation Sensor
Courtesy of MAZDA MOTORS CORP.

SOLAR RADIATION SENSOR INSPECTION

1. Using a tester, connect the positive (+) lead to solar radiation sensor terminal A, the negative (-) lead to terminal B or C, then measure the resistance.
   - If the resistance is not normal, replace the solar radiation sensor.

   Resistance

   except infinity ohms

2. Block the light to the solar radiation sensor, connect the positive (+) lead of a tester to solar radiation sensor terminal B or C and negative (-) lead to terminal A, then measure the resistance.
   - If the resistance is not normal, replace the solar radiation sensor.

   Resistance

   infinity ohms (no continuity)

3. Expose the solar radiation sensor to natural sunlight.
4. Using a tester, connect the positive (+) lead to solar radiation sensor terminal B or C, the negative (-) lead to terminal A, then measure the resistance.
   - If the resistance is not normal, replace the solar radiation sensor.

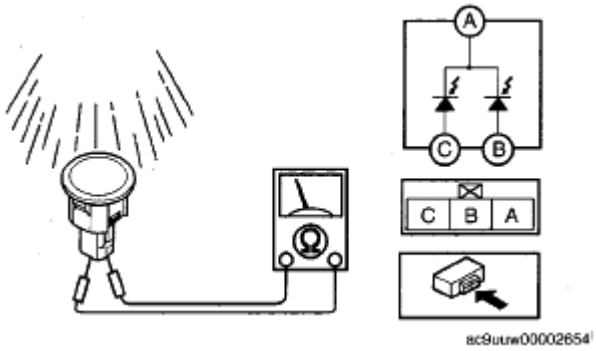


Fig. 44: Measuring Solar Radiation Sensor Terminal Resistance
Courtesy of MAZDA MOTORS CORP.

Resistance

except infinity ohms

AMBIENT TEMPERATURE SENSOR REMOVAL/INSTALLATION

1. Disconnect the negative battery cable.
2. Remove the under cover.
3. Remove in the order indicated in the table.

1	Ambient temperature sensor connector
2	Ambient temperature sensor

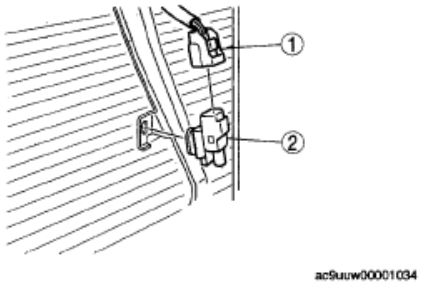


Fig. 45: Identifying Ambient Temperature Sensor Removal Order
Courtesy of MAZDA MOTORS CORP.

4. Install in the reverse order of removal.

AMBIENT TEMPERATURE SENSOR INSPECTION

1. Measure the temperature around the ambient temperature sensor and measure the resistance between the ambient temperature sensor terminal.
   - If the characteristics of the ambient temperature sensor are not as shown in the graph, replace the ambient temperature sensor.

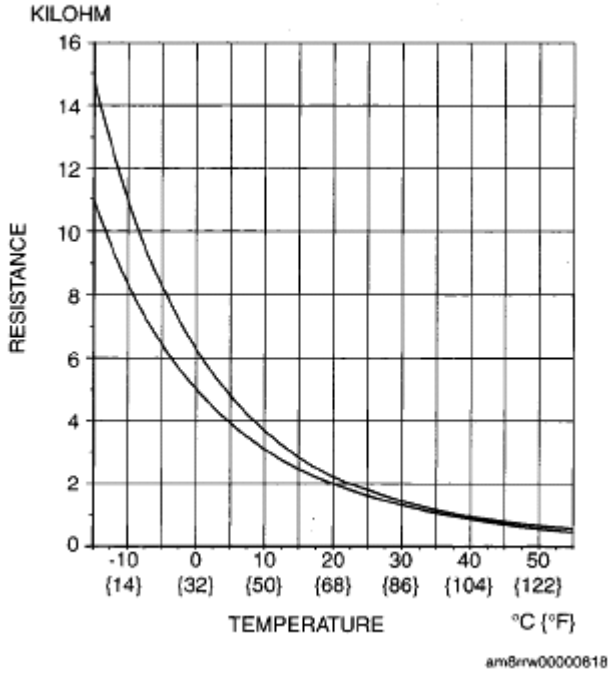


Fig. 46: Ambient Temperature Sensor Temperature & Resistance Graph
Courtesy of MAZDA MOTORS CORP.

CABIN TEMPERATURE SENSOR REMOVAL/INSTALLATION

1. Disconnect the negative battery cable.
2. Remove the following parts:
    1. Dashboard under cover (Driver side) (See **DASHBOARD UNDER COVER REMOVAL/INSTALLATION** .)
    2. Side wall (See **SIDE WALL REMOVAL/INSTALLATION** .)
    3. Console panel (LH) (See **CONSOLE PANEL REMOVAL/INSTALLATION** .)
    4. Hood release lever (See **HOOD LATCH AND RELEASE LEVER REMOVAL/INSTALLATION** .)
    5. Lower panel (See **LOWER PANEL REMOVAL/INSTALLATION** .)
3. Remove the screw.
4. Remove the cabin temperature sensor cover in the direction of the arrow.
5. Remove the cabin temperature sensor.
6. Install in the reverse order of removal.

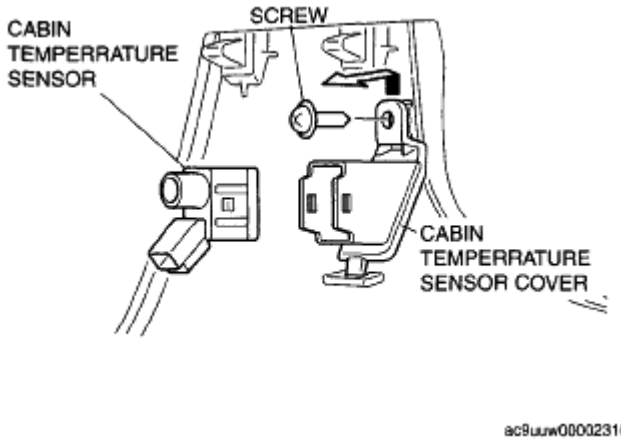


Fig. 47: Identifying Cabin Temperature Sensor & Cover
Courtesy of MAZDA MOTORS CORP.

CABIN TEMPERATURE SENSOR INSPECTION

1. Measure the temperature around the cabin temperature sensor and measure the resistance between cabin temperature sensor terminal.
    - If the characteristics of the cabin temperature sensor are not as shown in the graph, replace the cabin temperature sensor.

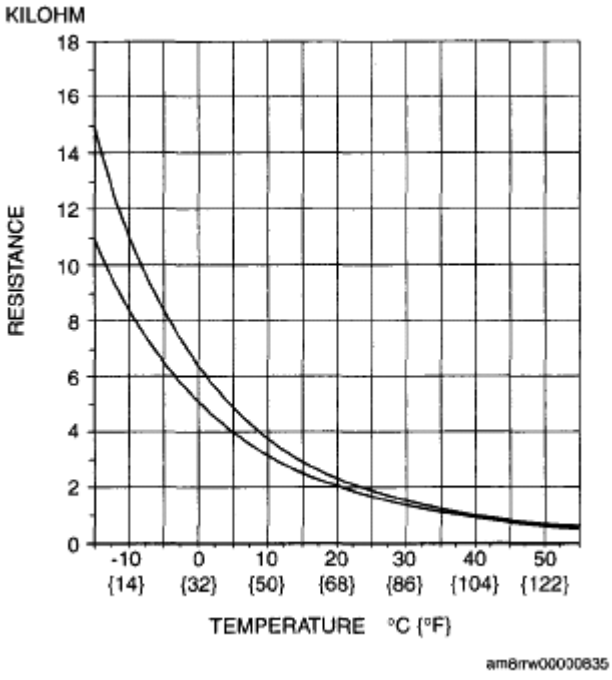


Fig. 48: Cabin Temperature Sensor Temperature & Resistance Graph
Courtesy of MAZDA MOTORS CORP.

FRONT EVAPORATOR TEMPERATURE SENSOR REMOVAL/INSTALLATION

1. Remove the front evaporator temperature sensor from the front A/C unit. (See **FRONT A/C UNIT DISASSEMBLY/ASSEMBLY** .)

FRONT EVAPORATOR TEMPERATURE SENSOR INSPECTION

1. Set the fan speed MAX HI.
2. Set the temperature control at MAX COLD.
3. Set the RECIRCULATE mode.
4. Turn the A/C switch off.
5. Close all doors and windows.
6. Wait for **5 min.**
7. Remove the glove compartment (See **GLOVE COMPARTMENT REMOVAL/INSTALLATION** .)
8. Disconnect the front evaporator temperature sensor connector.
9. Measure the temperature at the blower inlet.
10. Measure the resistance between the front evaporator temperature sensor terminals.
    - If the resistance is not as shown in the graph, replace the front evaporator temperature sensor.

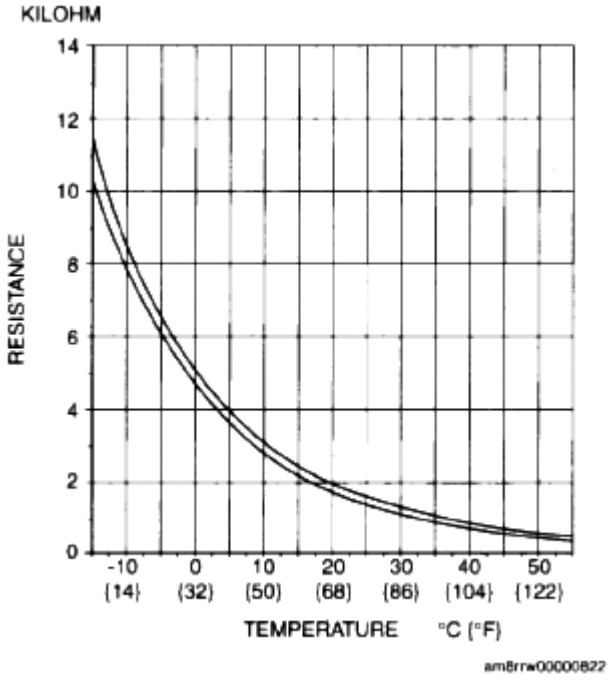


Fig. 49: Front Evaporator Temperature Sensor Temperature & Resistance Graph
Courtesy of MAZDA MOTORS CORP.

REAR EVAPORATOR TEMPERATURE SENSOR REMOVAL/INSTALLATION

1. Disconnect the negative battery cable.
2. Remove the following parts:
    1. Decoration panel (See **DECORATION PANEL REMOVAL/INSTALLATION** .)
    2. Front console box mat (See **FRONT CONSOLE BOX MAT REMOVAL/INSTALLATION** .)
    3. Indicator panel (See **INDICATOR PANEL REMOVAL/INSTALLATION** .)
    4. Front console box (See **FRONT CONSOLE BOX REMOVAL/INSTALLATION** .)
    5. Side wall (See **SIDE WALL REMOVAL/INSTALLATION** .)
    6. Dashboard under cover (See **DASHBOARD UNDER COVER REMOVAL/INSTALLATION** .)
    7. Console panel (See **CONSOLE PANEL REMOVAL/INSTALLATION** .)
    8. Console cover (See **CONSOLE COVER REMOVAL/INSTALLATION** .)
    9. Console (See **CONSOLE REMOVAL/INSTALLATION** .)
3. Disconnect the rear evaporator temperature sensor connector and remove it from the rear A/C unit.
4. Insert a flathead screwdriver as shown in the figure and remove the clip by prying it off.
5. Remove the rear evaporator temperature sensor.
6. Install in the reverse order of removal.

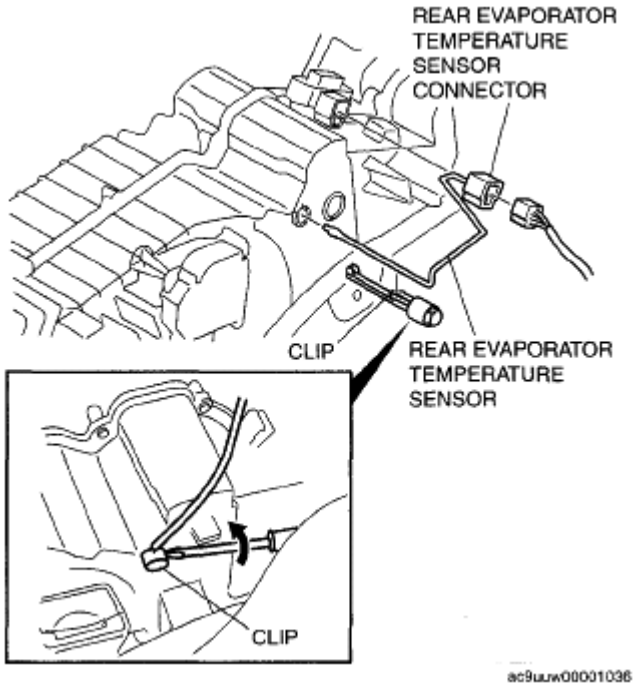


Fig. 50: Identifying Rear Evaporator Temperature Sensor & Connector
Courtesy of MAZDA MOTORS CORP.

REAR EVAPORATOR TEMPERATURE SENSOR INSPECTION

1. Measure the temperature at the blower inlet.
2. Measure the resistance between the rear evaporator temperature sensor terminals.
   - If the resistance is not as shown in the graph, replace the rear evaporator temperature sensor.

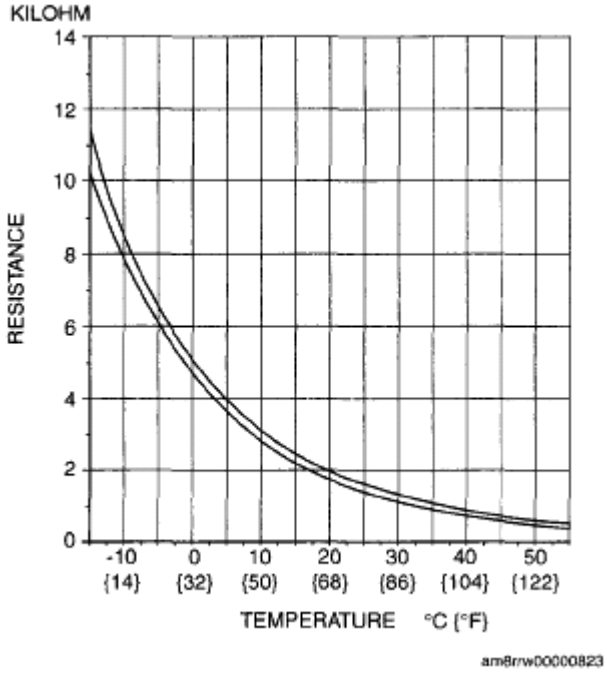


Fig. 51: Rear Evaporator Temperature Sensor Resistance & Temperature Graph
Courtesy of MAZDA MOTORS CORP.

REFRIGERANT PRESSURE SWITCH REMOVAL/INSTALLATION

1. Disconnect the negative battery cable.
2. Discharge the refrigerant from the system. (See **REFRIGERANT RECOVERY** .) (See **REFRIGERANT CHARGING** .)
3. Grasp the piping block using pliers and remove the pressure switch using a spanner.
4. Disconnect the refrigerant pressure switch connector.
5. Remove in the order indicated in the table.

1	Refrigerant pressure switch connector
2	Refrigerant pressure switch (See 07-40-22 Refrigerant Pressure Switch Installation Note.)

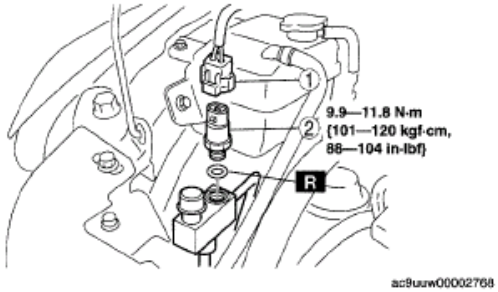


Fig. 52: Identifying Refrigerant Pressure Switch Components & Torque Specifications
Courtesy of MAZDA MOTORS CORP.

6. Install in the reverse order of removal.
7. Perform the refrigerant system performance test. (See **REFRIGERANT SYSTEM PERFORMANCE TEST** .)

REFRIGERANT PRESSURE SWITCH INSTALLATION NOTE

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

REFRIGERANT PRESSURE SWITCH INSPECTION

1. Install the manifold.
2. Disconnect the refrigerant pressure switch connector.
3. Verify the high-pressure side reading of the gauge and continuity between the refrigerant pressure switch terminals.
    - If there is any malfunction, replace the refrigerant pressure switch.

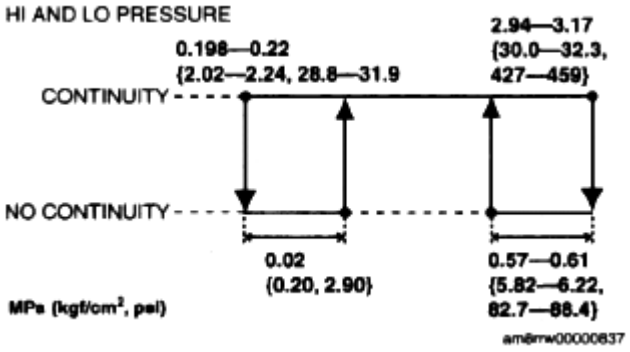


Fig. 53: Refrigerant Pressure Switch Terminals Continuity Chart (1 Of 3)
Courtesy of MAZDA MOTORS CORP.

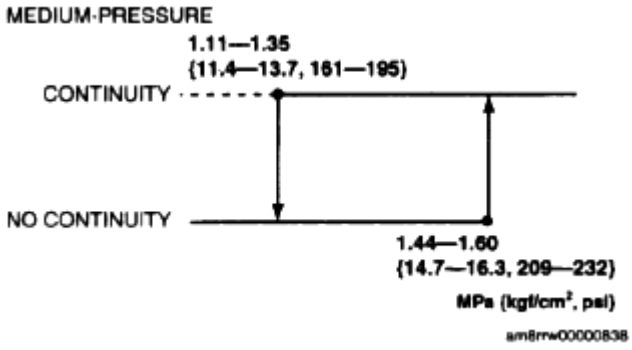


Fig. 54: Refrigerant Pressure Switch Terminals Continuity Chart (2 Of 3)
Courtesy of MAZDA MOTORS CORP.

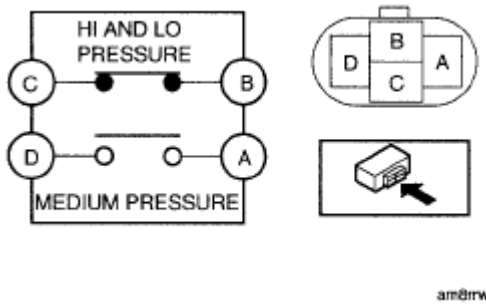


Fig. 55: Refrigerant Pressure Switch Terminals Continuity Chart (3 Of 3)
Courtesy of MAZDA MOTORS CORP.

FRONT CLIMATE CONTROL UNIT REMOVAL/INSTALLATION

1. Disconnect the negative battery cable.
2. Remove the following parts:
    1. Decoration panel (See **DECORATION PANEL REMOVAL/INSTALLATION** .)
    2. Front console box mat (See **FRONT CONSOLE BOX MAT REMOVAL/INSTALLATION** .)
    3. Indicator panel (See **INDICATOR PANEL REMOVAL/INSTALLATION** .)
    4. Front console box (See **FRONT CONSOLE BOX REMOVAL/INSTALLATION** .)
    5. Center panel (See **CENTER PANEL REMOVAL/INSTALLATION** .)
3. Remove the screws.
4. Remove the front climate control unit.
5. Install in the reverse order of removal.

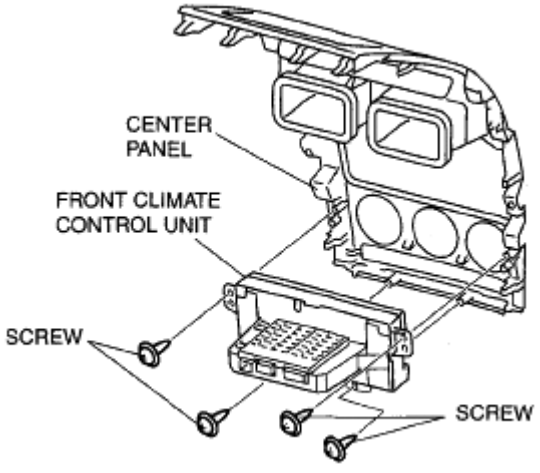


Fig. 56: Identifying Front Climate Control Unit & Screws
Courtesy of MAZDA MOTORS CORP.

FRONT CLIMATE CONTROL UNIT INSPECTION

1. Connect the front climate control unit connector.
2. Turn the ignition switch to the ON position.
3. Connect the negative (-) lead of the tester to body ground.
4. By inserting the positive (+) lead of the tester into each front climate control unit terminal, measure the voltage according to the terminal voltage table.
    - If there is any malfunction, inspect the parts under "Inspection item (s)".
        - If the parts under "Inspection item (s)" are found to be normal, replace the front climate control unit.

TERMINAL VOLTAGE TABLE (REFERENCE)

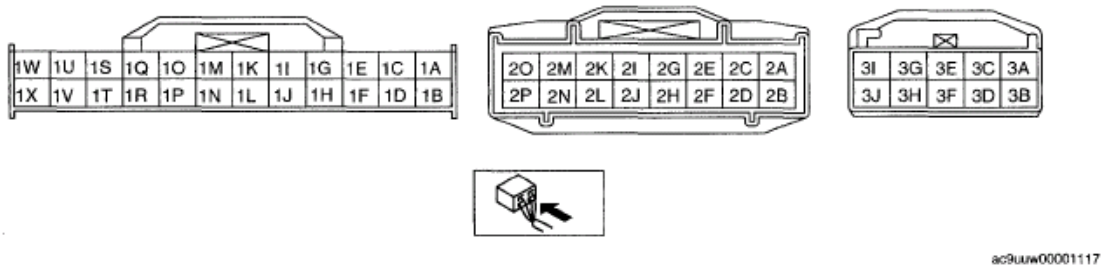


Fig. 57: Identifying Front Climate Control Unit Terminal
Courtesy of MAZDA MOTORS CORP.

TERMINAL VOLTAGE REFERENCE

Terminal	Signal name	Connected to	Measurement condition	Voltage (V)	Inspection item (s)
1A	Motor operation	Driver-side front air mix actuator	Temperature control dial (driver side): Moving towards COLD	1.0 or less	• Wiring harness: continuity, short circuit (Front climate control unit-driver-side front air mix actuator: 1A-G, 1F-F) • Driver-side front air mix actuator
			Temperature control dial (driver side): Moving towards HOT	B+	
1B	B+	BCM	Under any condition	B+	• Wiring harness: continuity, short circuit (Front climate control unit-BCM: 1B-5H) • BCM
1C	Motor operation	Passenger-side front air mix actuator	Temperature control dial (passenger side): Moving towards COLD	B+	• Wiring harness: continuity, short circuit (Front climate control unit-passenger-side front air mix actuator:
			Temperature control		

			dial (passenger side): Moving towards HOT	1.0 or less	1C-G, 1E-F) • Passenger-side front air mix actuator
1D	Seat warmer (LH) on/off	Seat warmer relay	Seat warmer switch off	B+	• Wiring harness: continuity, short circuit (Front climate control unit-seat warmer (LH) relay (relay block): 1D-A) • Seat warmer (LH) relay
			Seat warmer switch on	1.0 or less	
1E	Motor operation	Passenger-side front air mix actuator	Temperature control dial (passenger side): Moving towards COLD	1.0 or less	• Wiring harness: continuity, short circuit (Front climate control unit-passenger-side front air mix actuator: 1C-G, 1E-F) • Passenger-side front air mix actuator
			Temperature control dial (passenger side): Moving towards HOT	B+	
1F	Motor operation	Driver-side front air mix actuator	Temperature control dial (driver side): Moving towards COLD	B+	• Wiring harness: continuity, short circuit (Front climate control unit-driver-side front air mix actuator: 1A-G, 1F-F) • Driver-side front air mix actuator
			Temperature control dial (driver-side): Moving towards HOT	1.0 or less	
1G	Motor operation	Rear air mix actuator	Temperature control dial (rear side): Moving towards COLD	B+	• Wiring harness: continuity, short circuit (Front climate control unit-Rear air mix actuator: 1G-F, 1I-G) • Rear air mix actuator
			Temperature control dial (rear side): Moving towards HOT	1.0 or less	
1H	Motor operation	Front airflow mode actuator	Defroster switch on	1.0 or less	• Wiring harness: continuity, short circuit (Front climate control unit-front airflow mode actuator: 1H-G, 1J-F) • Front airflow mode actuator
			Mode switch: Moving towards VENT	B+	
			Temperature control		

1I	Motor operation	Rear air mix actuator	dial (rear side): Moving towards COLD	1.0 or less	• Wiring harness: continuity, short circuit (Front climate control unit-Rear air mix actuator: 1G-F, 1I-G) • Rear air mix actuator
			Temperature control dial (rear side): Moving towards HOT	B+	
1J	Motor operation	Front airflow mode actuator	Defroster switch on	B+	• Wiring harness: continuity, short circuit (Front climate control unit-front airflow mode actuator: 1H-G, U-F) • Front airflow mode actuator
			Mode switch: Moving towards VENT	1.0 or less	
1K	Seat warmer (RH) on/off	Seat warmer relay	Seat warmer switch off	B+	• Wiring harness: continuity, short circuit (Front climate control unit-seat warmer (RH) relay (main fuse block): 1K-A) • Seat warmer (RH) relay
			Seat warmer switch on	1.0 or less	
1L	Motor operation	Rear airflow mode actuator	Temperature control dial (rear side): Moving towards HOT	B+	• Wiring harness: continuity, short circuit (Front climate control unit-Rear airflow mode actuator: 1L-G, 1N-F) • Rear airflow mode actuator
			Temperature control dial (rear side): Moving towards COLD	1.0 or less	
1M	Motor operation	Air intake actuator	REC switch: Switched to RECIRCULATE	B+	• Wiring harness: continuity, short circuit (Front climate control unit-air intake actuator: 1M-A, 10-C) • Air intake actuator
			REC switch: Switched to FRESH	1.0 or less	
1N	Motor operation	Rear airflow mode actuator	Temperature control dial (rear side): Moving towards HOT	1.0 or less	• Wiring harness: continuity, short circuit (Front climate control unit-Rear airflow mode actuator: 1L-G, 1N-F) • Rear airflow mode actuator
			Temperature control dial (rear side): Moving towards	B+	

			COLD			
1O	Motor operation	Air intake actuator	REC switch: Switched to RECIRCULATE		1.0 or less	• Wiring harness: continuity, short circuit (Front climate control unit-air intake actuator: 1M-A, 1O-C) • Air intake actuator
			REC switch: Switched to FRESH		B+	
1P	Front blower motor feedback	Front power MOS FET	Airflow volume control dial	Off	Approx. 7.3	1. Wiring harness: continuity, short circuit (Front climate control unit-front power MOS FET: 1P C, 1R A) 2. Wiring harness: continuity (Front power MOS FET-body ground: D-ground) 3. Front power MOS FET 4. Front blower motor 5. Front blower relay 6. HEATER 50 A fuse
				1st.	Approx. 5.4	
				2nd.	Approx. 4.6	
				3rd.	Approx. 3.7	
				4th.	Approx. 2.9	
				5th.	Approx. 2.0	
				6th.	Approx. 1.1	
				7th,	1.0 or less	
1Q	Rear window defroster switch	Rear window defroster relay	Rear window defroster switch on		1.0 or less	• Wiring harness: continuity, short circuit (Front climate control unit-rear window defroster relay (main fuse block): 1Q-A) • Rear window defroster relay
			Rear window defroster switch off		B+	• Front climate control unit: terminal voltage (1W, 1X)
1R	Front blower fan speed control	Front power MOS FET	Airflow volume control dial	Off	1.0 or less	• Front climate control unit: terminal voltage (1P)
				1st.	Approx. 2.1	
				2nd.	Approx. 2.2	
				3rd.	Approx. 2.3	
				4th.	Approx.	

					2.4	
				5th.	Approx. 2.5	
				6th.	Approx. 2.7	
				7th.	Approx. 10.7	
1S	A/C	Refrigerant pressure switch	Fan switch on, A/C switch on		1.0 or less	• Front climate control unit: terminal voltage (1W, 1X)
			Fan switch off		B+	• Wiring harness: continuity, short circuit (Front climate control unit-refrigerant pressure switch: 1S-B) (Refrigerant pressure switch-PCM: C-1B) • Refrigerant pressure switch • PCM: terminal voltage (1B)
1T	Rear blower motor feedback	Rear power MOS FET	Rear airflow volume control dial	Off	Approx. 8.5	1. Wiring harness: continuity, short circuit (Front climate control unit-rear power MOS FET: 1T D, 1V C) 2. Wiring harness: continuity (Rear power MOS FET-body ground: A-ground) 3. Rear power MOS FET 4. Rear blower motor 5. Rear blower relay 6. R.HEATER 40 A fuse
				1st.	Approx. 6.1	
				2nd.	Approx. 4.8	
				3rd.	Approx. 3.6	
				4th.	Approx. 1.9	
				5th.	1.0 or less	
1U	On-board diagnostic signal	Check connector	Check connector is shorted.		1.0 or less	• Wiring harness: continuity (Front climate control unit-check connector: 1U-A)
			Other		B+	• Wiring harness: short circuit (Front climate control unit-check connector: 1U-A)

						• Front climate control unit: terminal voltage (1W, 1X)
1V	Rear blower fan speed control	Rear power MOS FET	Rear airflow volume control dial	Off	1.0 or less	• Front climate control unit: terminal voltage (1T)
				1st.	Approx. 2.1	
				2nd.	Approx. 2.2	
				3rd.	Approx. 2.2	
				4th.	Approx. 2.3	
				5th.	Approx. 2.4	
1W	IG2	A/C 7.5 A fuse	Ignition switch is at ON position		B+	• Wiring harness: continuity, short circuit (Front climate control unit-fuse: 1W-A/C 7.5 A) • A/C 7.5 A fuse
			Ignition switch is at LOCK position		1.0 or less	
1X	Ground	Body ground	Under any condition: Inspect for continuity to ground		1.0 or less	• Wiring harness: continuity (Front climate control unit-ground: 1X-ground)
2A	ECT sensor signal	Instrument cluster	Because this terminal is for communication, good/no good judgment by terminal voltage is not possible.			-
2B	+5V	• Driver-side front air mix actuator • Passenger-side front air mix actuator • Front airflow mode actuator • Solar radiation	Under any condition		5.0	• Wiring harness: short circuit (Front climate control unit-driver-side front air mix actuator, passenger-side front air mix actuator, front airflow mode actuator, solar radiation sensor, rear air mix actuator, rear airflow mode actuator: 2B-A, A, A, C, A, A) • Driver-side front air mix actuator • Passenger-side front

		sensor • Rear air mix actuator • Rear airflow mode actuator			air mix actuator • Front airflow mode actuator • Solar radiation sensor • Rear air mix actuator • Rear airflow mode actuator
2C	Information display signal	Information display	Because this terminal is for communication, good/no good judgment by terminal voltage is not possible.		-
2D	Potentiometer input	Rear airflow mode actuator	Temperature control dial (rear side): Moving towards COLD	Approx. 0.5	• Wiring harness: continuity, short circuit (Front climate control unit-rear airflow mode actuator: 2D-E) • Rear airflow mode actuator • Front climate control unit: terminal voltage (2B)
			Temperature control dial (rear side): Moving towards medium temperature	Approx. 2.4	
			Temperature control dial (rear side): Moving towards HOT	Approx. 4.3	
2E	Potentiometer input	Front airflow mode actuator	Mode switch: Moving towards VENT	Approx. 1.0	• Wiring harness: continuity, short circuit (Front climate control unit-front airflow mode actuator: 2E-E) • Front airflow mode actuator • Front climate control unit: terminal voltage (2B)
			Mode switch: Moving towards BI-LEVEL	Approx. 1.9	
			Mode switch: Moving towards HEAT	Approx. 2.5	
			Mode switch: Moving towards HEAT/DEF	Approx. 3.3	
			Defroster switch on	Approx. 4.0	
2F	Potentiometer input	Driver-side front air mix actuator	Temperature control dial (driver side): Set temperature at MAX COLD	4.0	• Wiring harness: continuity, short circuit (Front climate control unit-driver-side front air mix actuator: 2F-E) • Driver-side front air

			Temperature control dial (driver side): Set temperature at MAX HOT	1.0	mix actuator • Front climate control unit: terminal voltage (2B)
2G	Potentiometer input	Passenger-side front air mix actuator	Temperature control dial (passenger side): Set temperature at MAX COLD	1.0	• Wiring harness: continuity, short circuit (Front climate control unit-passenger-side front air mix actuator: 2G-E) • Passenger-side front air mix actuator • Front climate control unit: terminal voltage (2B)
			Temperature control dial (passenger side): Set temperature at MAX HOT	4.0	
2H	Front evaporator temperature sensor input	Front evaporator temperature sensor	Compared with temperature detected by front evaporator temperature sensor	Refer to	• Wiring harness: continuity (Front climate control unit--front evaporator temperature sensor: 2H-B, 2P-A) • Wiring harness: short circuit (Front climate control unit-front evaporator temperature sensor: 2H-B) • Front evaporator temperature sensor
21	Ambient temperature sensor input	Ambient temperature sensor	Compared with temperature detected by ambient temperature sensor	Refer to	• Wiring harness: continuity (Front climate control unit-ambient temperature sensor: 21-B, 2P-A) • Wiring harness: short circuit (Front climate control unit-ambient temperature sensor: 21-B) • Ambient temperature sensor
					• Wiring harness: continuity (Front climate control unit-rear evaporator

					temperature sensor: 2J-B, 2P-A) • Wiring harness: short circuit (Front climate control unit-rear evaporator temperature sensor: 2J-B) • Rear evaporator temperature sensor
2J	Rear evaporator temperature sensor input	Rear evaporator temperature sensor	Compared with temperature detected by rear evaporator temperature sensor	Refer to	
2K	Cabin temperature sensor input	Cabin temperature sensor	Compared with temperature detected by cabin temperature sensor	Refer to	• Wiring harness: continuity (Front climate control unit-cabin temperature sensor: 2K-B, 2P-A) • Wiring harness: short circuit (Front climate control unit-cabin temperature sensor: 2K-B) • Cabin temperature sensor
2L	-	-	-	-	-
2M	Solar radiation sensor(LH) input	Solar radiation sensor	Natural sunlight shined directly on the solar radiation sensor	4.0	• Wiring harness: continuity (Front climate control unit-solar radiation sensor: 2M-C, 2B-A) • Front climate control unit: terminal voltage (2B) • Solar radiation sensor
			Blocking light to solar radiation sensor	1.0 or less	
2N	Potentiometer input	Rear air mix actuator	Temperature control dial (rear side): Set temperature at MAX COLD	1.3	• Wiring harness: continuity, short circuit (Front climate control unit-rear air mix actuator: 2N-E) • Rear air mix actuator • Front climate control unit: terminal voltage (2B)
			Temperature control dial (rear side): Set temperature at MAX HOT	4.0	
			Natural sunlight shined directly on the solar radiation	4.0	• Wiring harness: continuity (Front climate control unit-

2O	Solar radiation sensor (RH) input	Solar radiation sensor	sensor		solar radiation sensor: 20-B, 2B-A) • Front climate control unit: terminal voltage (2B) • Solar radiation sensor
			Blocking light to solar radiation sensor	1.0 or less	
2P	Sensor ground	• Driver-side front air mix actuator • Passenger-side front air mix actuator • Front airflow mode actuator • Ambient temperature sensor • Cabin temperature sensor • Front evaporator temperature sensor • Rear air mix actuator • Rear airflow mode actuator • Rear evaporator temperature sensor	Under any condition: Inspect for continuity to ground	1.0 or less	• Front climate control unit: terminal voltage (1X)
3A	-	-	-	-	-
3B	-	-	-	-	-
	Rear climate	Rear climate	Rear control switch on	B+	• Wiring harness: continuity (Front climate control unit-rear climate control unit: 3C-F)
					• Wiring harness: short

3C	control unit display	control unit	Rear control switch	off	1.0 or less	circuit (Front climate control unit-rear climate control unit: 3C-F) • Front climate control unit: terminal voltage (1W, 1X)
3D	TNS signal	TNS relay	Turn the headlight switch to the off position		1.0 or less	• Wiring harness: short circuit (Front climate control unit-TNS relay (main fuse block): 3D-D) • ILLUMI 10 A fuse • TNS relay • Headlight switch
			Turn the headlight switch to the TNS position		B+	• Wiring harness: continuity, short circuit (Front climate control unit-TNS relay (main fuse block): 3D-D) • ILLUMI 10 A fuse • TNS relay • Headlight switch
3E	Rear fan control volume	Rear climate control unit	Airflow volume control dial	Off	1.0 or less	• Front climate control unit: terminal voltage (1T) • Wiring harness: continuity, short circuit (Front climate control unit-rear climate control unit: 3E-A) • Rear climate control unit
				1st.	Approx. 1.3	
				Max HI	Approx. 4.0	
3F	TNS signal	Rear climate control unit	Turn the headlight switch to the off position		1.0 or less	• Wiring harness: continuity, short circuit (Front climate control unit-rear climate control unit: 3F-H) • TNS relay • Headlight switch
			Turn the headlight switch to the TNS position		B+	
			Temperature control dial (rear side):		1.0 or	• Wiring harness:

3G	Rear temperature control volume	Rear climate control unit	Moving towards COLD	less	continuity, short circuit (Front climate control unit-rear airflow mode actuator: 3G-C) • Rear climate control unit • Front climate control unit: terminal voltage (2B)
			Temperature control dial (rear side): Moving towards medium temperature	Approx. 2.5	
			Temperature control dial (rear side): Moving towards HOT	Approx. 4.2	
3H	+5 V	Rear climate control unit	Under any condition	5.0	• Wiring harness: continuity (Front climate control unit-ground: 3H-ground)
3I	Ground	Rear climate control unit	Under any condition: Inspect for continuity to ground	1.0 or less	• Wiring harness: continuity (Front climate control unit-rear climate control unit: 31-E)
3J	Panel light control input	Instrument cluster	Turn the headlight switch to the off position	1.0 or less	• Wiring harness: continuity, short circuit (Front climate control unit-instrument cluster: 3J-1I) • TNS relay • Headlight switch
			Turn the headlight switch to the TNS position	B+	

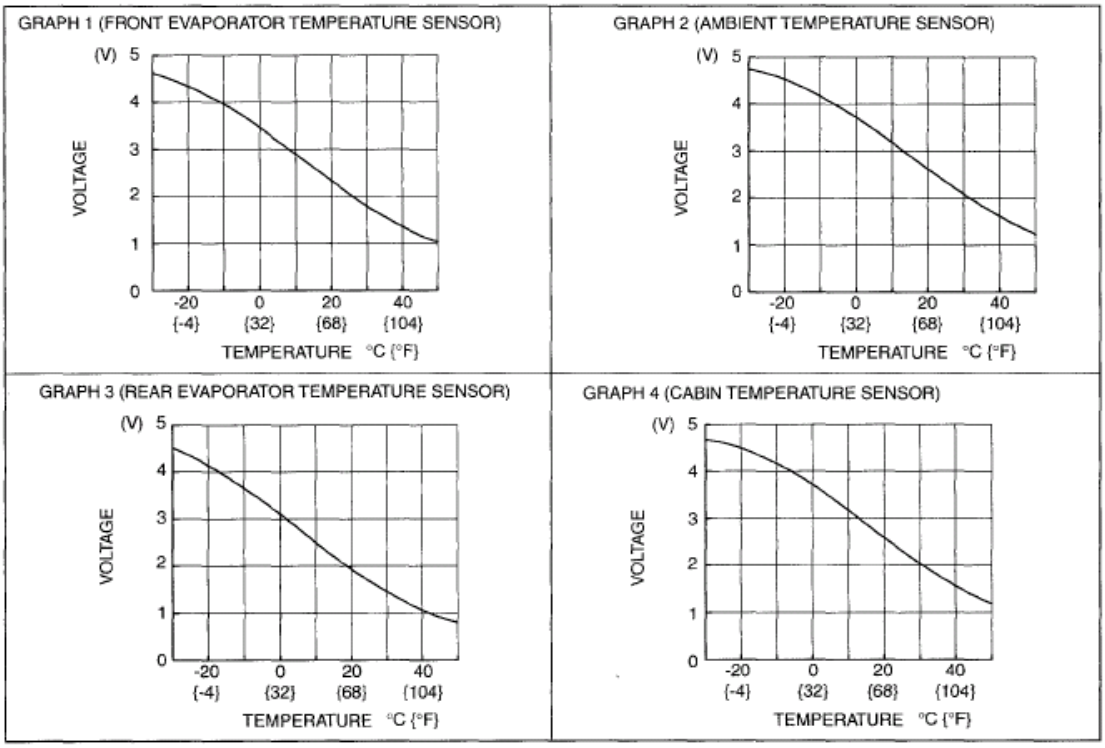


Fig. 58: Temperature Sensors Graph Chart
Courtesy of MAZDA MOTORS CORP.

REAR CLIMATE CONTROL UNIT REMOVAL/INSTALLATION

1. Disconnect the negative battery cable.
2. Remove the console cover. (See **CONSOLE COVER REMOVAL/INSTALLATION** .)
3. Remove the rear cooler duct. (See **REAR COOLER DUCT REMOVAL/INSTALLATION** .)
4. Remove the screws.
5. Remove the rear climate control unit.
6. Install in the reverse order of removal.

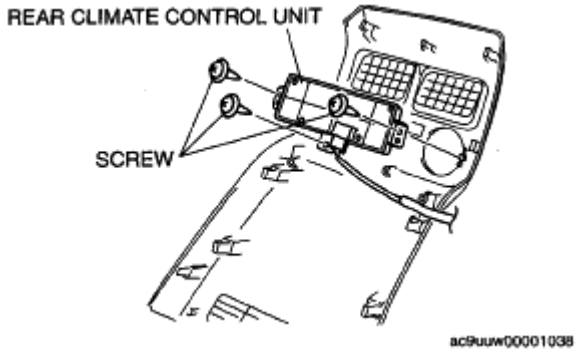


Fig. 59: Identifying Rear Climate Control Unit & Screws

Courtesy of MAZDA MOTORS CORP.

REAR CLIMATE CONTROL UNIT INSPECTION

1. Connect the rear climate control unit connector.
2. Turn the ignition switch to the ON position.
3. Connect the negative (-) lead of the tester to body ground.
4. By inserting the positive (+) lead of the tester into each rear climate control unit terminal, measure the voltage according to the terminal voltage table.
    - If there is any malfunction, inspect the parts under "Inspection item (s)".
        - If the parts under "Inspection item (s)" are found to be normal, replace the rear climate control unit.

TERMINAL VOLTAGE TABLE (REFERENCE)

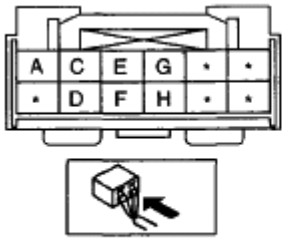


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Fig. 60: Identifying Rear Climate Control Unit Terminals
Courtesy of MAZDA MOTORS CORP.

TERMINAL VOLTAGE REFERENCE

Terminal	Signal name	Connected to	Measurement condition		Voltage (V)	Inspection item (s)
A	Rear fan control volume	Front climate control unit	Airflow volume control dial	Off	1.0 or less	• Front climate control unit: terminal voltage (1T) • Wiring harness: continuity, short circuit (Front climate control
				1st.	Approx. 1.3	

				Max HI	Approx. 4.0	unit-rear climate control unit: 3E-A) • Rear climate control unit
B	-	-	-		-	-
C	Rear temperature control volume	Front climate control unit	Temperature control dial: Moving towards COLD		1.0 or less	• Wiring harness: continuity, short circuit (Front climate control unit-rear airflow mode actuator: 3G-C) • Rear climate control unit • Front climate control unit: terminal voltage (2B)
			Temperature control dial: Moving towards medium temperature		Approx. 2.5	
			Temperature control dial: Moving towards HOT		Approx. 4.2	
D	+5V	Front climate control unit	Under any condition		5.0	• Front climate control unit: terminal voltage (3H) • Wiring harness: continuity (Front

					climate control unit-rear climate control unit: 3H-D)
E	Ground	Front climate control unit	Under any condition: Inspect for continuity to ground	1.0 or less	• Wiring harness: continuity (Front climate control unit-rear climate control unit: 31-E)
F	Rear climate control unit display	Front climate control unit	Rear control switch on	B+	• Wiring harness: continuity (Front climate control unit-rear climate control unit: 3C-F)
			Rear control switch off	1.0 or less	• Wiring harness: short circuit (Front climate control unit-rear climate control unit: 3C-F) • Front climate control unit: terminal

					voltage (1W, 1X)
G	Panel light control input	Instrument cluster	Turn the headlight switch to the off position	1.0 or less	• Wiring harness: continuity, short circuit (Rear climate control unit-instrument cluster: G-1I) • TNS relay • Headlight switch
			Turn the headlight switch to the TNS position	B+	
H	TNS signal	Front climate control unit	Turn the headlight switch to the off position	1.0 or less	• Wiring harness: continuity, short circuit (Front climate control unit-rear climate control unit: 3F-H) • TNS relay • Headlight switch
			Turn the headlight switch to the TNS position	B+	
I	-	-	-	-	-
J	-	-	-	-	-