

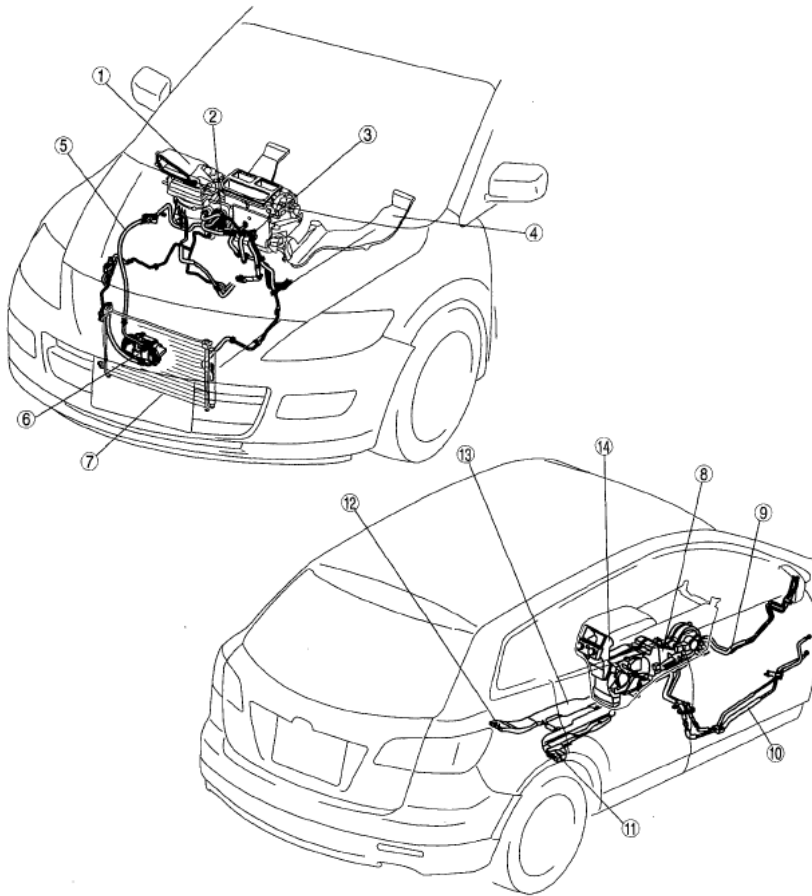
**2008 HVAC**

**Basic System - Mazda CX-9**

**HVAC BASIC SYSTEM LOCATION INDEX**

# 2008 Mazda CX-9 Grand Touring

## 2008 HVAC Basic System - Mazda CX-9



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13	Rear heat duct No.2 (See 07-11-9 REAR HEAT DUCT COMPONENT REMOVAL/INSTALLATION.)
14	Rear cooler duct (See 07-11-11 REAR COOLER DUCT REMOVAL/INSTALLATION.)

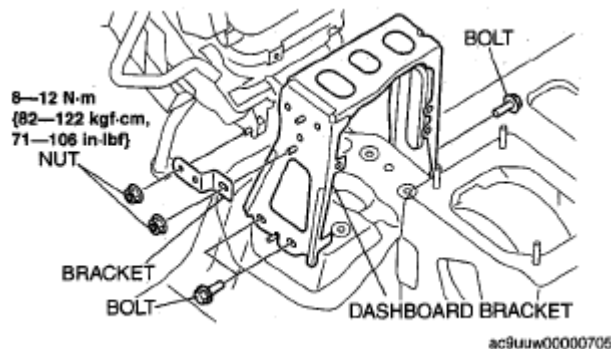
**Fig. 1: Identifying HVAC Basic System Location Index**

### FRONT A/C UNIT REMOVAL/INSTALLATION

1. Disconnect the negative battery cable.
2. Discharge the refrigerant. (See **REFRIGERANT CHARGING** .)
3. Drain the engine coolant. (See **ENGINE COOLANT REPLACEMENT [MZI-3.7]** .)
4. 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** .)
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  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** .)
5. Disconnect the front door wiring harness connector (Driver side). (See **FRONT DOOR MODULE REMOVAL/INSTALLATION** .)
6. Remove the brake switch from the brake pedal with the brake switch connector connected. (See **BRAKE PEDAL REMOVAL/INSTALLATION** .)
7. Remove the selector lever component. (See **SELECTOR LEVER COMPONENT REMOVAL/INSTALLATION** .)
8. Remove the windshield wiper arm. (See **WINDSHIELD WIPER ARM AND BLADE** .)

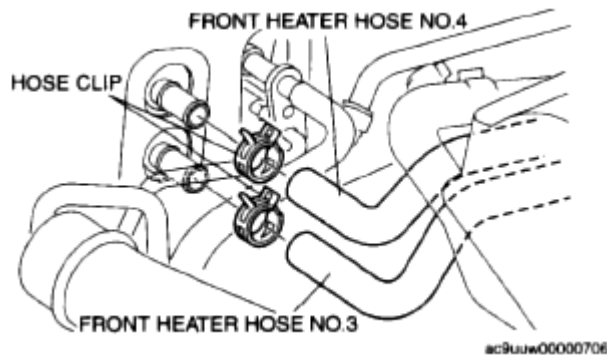
**REMOVAL/INSTALLATION** .)

9. Remove the cowl grille. (See **COWL GRILLE REMOVAL/INSTALLATION** .)
10. Remove the windshield wiper motor. (See **WINDSHIELD WIPER MOTOR REMOVAL/INSTALLATION** .)
11. Remove the dashboard. (See **DASHBOARD REMOVAL/INSTALLATION** .)
12. Remove the rear heat duct fasteners and slide the rear heat duct rearward. (See **REAR HEAT DUCT COMPONENT REMOVAL/INSTALLATION.**)
13. Disconnect the drain hose.
14. Remove the nuts.
15. Remove the bracket.
16. Remove the bolts.
17. Remove the dashboard bracket.



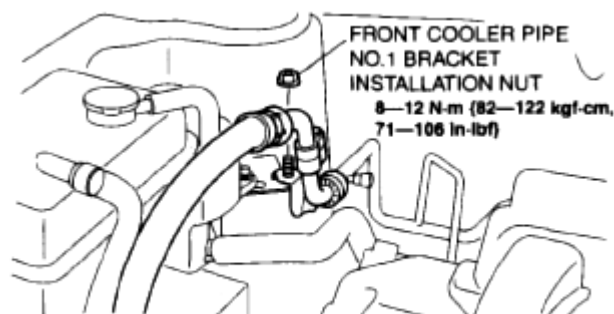
**Fig. 2: Identifying Dashboard Bracket, Nuts, Bolts & Torque Specifications**

18. Remove the hose clips.
19. Remove the front heater hose No.3 and front heater hose No.4. (See **HEATER PIPE AND HOSE COMPONENT REMOVAL/INSTALLATION.**)



**Fig. 3: Identifying Hose Clips Of Front Heater Hose No.3 & Front Heater Hose No.4**

20. Remove the front cooler pipe No.1 bracket installation nut.



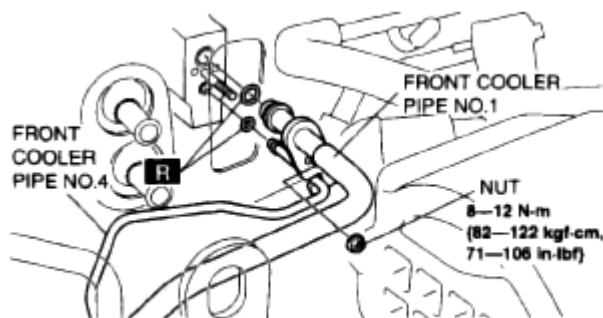
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**Fig. 4: Identifying Front Cooler Pipe No.1 Bracket Installation Nut & Torque Specifications**

21. Remove the nut.
22. Remove the front cooler pipe No.1 and front cooler pipe No.4. (See **REFRIGERANT LINE REMOVAL/INSTALLATION.**)

**CAUTION:**

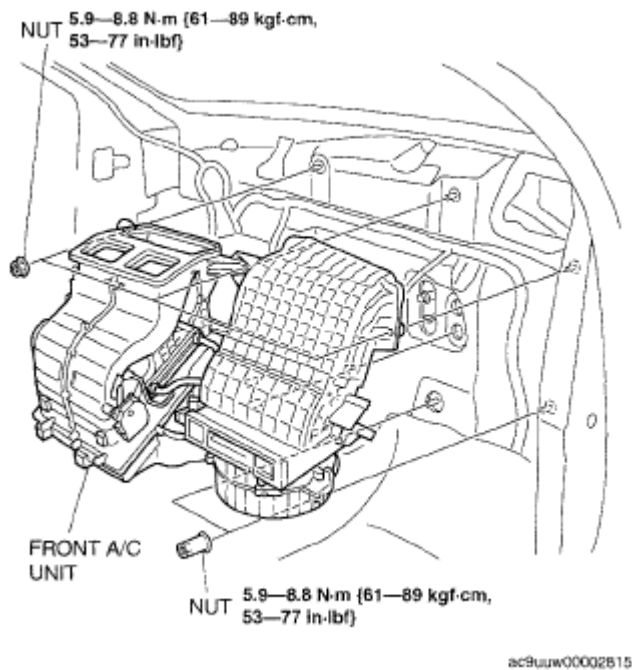
- If moisture or foreign material enters the refrigeration cycle, cooling ability will be lowered and abnormal noise or other malfunction could occur. Always plug open fittings immediately after removing any refrigeration cycle parts.



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**Fig. 5: Identifying Front Cooler Pipe No.1, Front Cooler Pipe No.4 & Torque Specifications**

23. Remove the nuts.
24. Remove the front A/C unit. Do not allow compressor oil to spill.



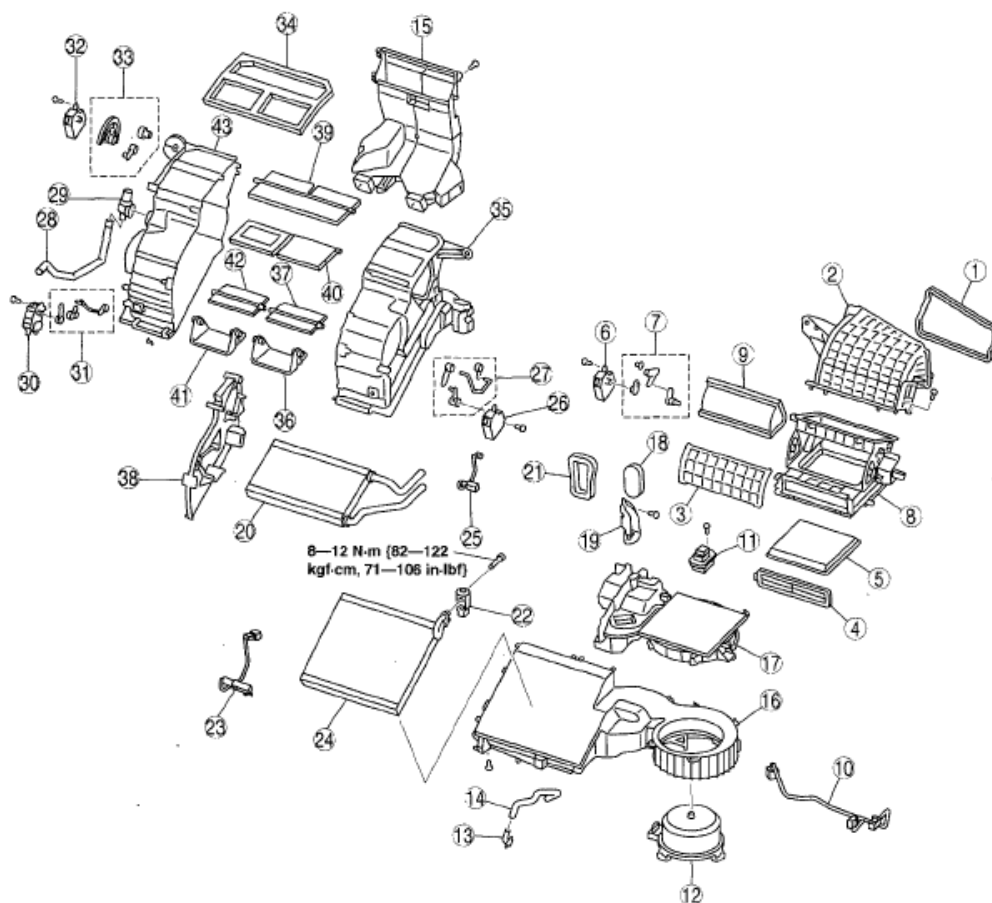
**Fig. 6: Identifying Front A/C Unit Nuts & Torque Specifications**

## **FRONT A/C UNIT DISASSEMBLY/ASSEMBLY**

1. Disassemble in the order indicated in the table.
2. Assemble in the reverse order of disassembly.

## 2008 Mazda CX-9 Grand Touring

### 2008 HVAC Basic System - Mazda CX-9



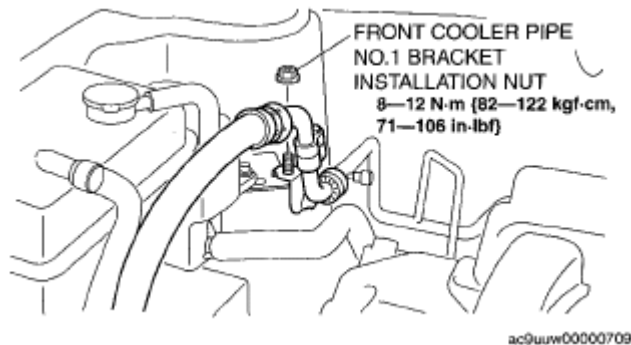
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1	Adhesive polyurethane (1)
2	Blower case (1)
3	Blower case cover (1)
4	Blower case cover (2)
5	Air filter
6	Air intake actuator
7	Air intake link set
8	Blower case (2)
9	Air intake door
10	Harness (2)
11	Front power MOS FET
12	Front blower motor
13	Grommet
14	Drain hose
15	Duct
16	A/C case (4)
17	Blower case (3)
18	Polyurethane foam (1)

19	A/C case bracket (2)
20	Front heater core
21	Polyurethane foam (2)
22	Front expansion valve
23	Front evaporator sensor
24	Front evaporator
25	Harness (1)
26	Passenger-side front air mix actuator
27	Air mix link set
28	Air hose
29	Air hose duct
30	Driver-side front air mix actuator
31	Air mix link set
32	Front airflow mode actuator
33	Airflow mode link set
34	Polyurethane foam (3)
35	A/C case (2)
36	Passenger-side air mix door (1)
37	Passenger-side air mix door (2)
38	A/C case (3)
39	Front airflow mode door (2)
40	Front airflow mode door (1)
41	Driver-side air mix door (1)
42	Driver-side air mix door (2)
43	A/C case (1)

**Fig. 7: Identifying Front A/C Unit Components & Torque Specifications****FRONT EXPANSION VALVE REMOVAL/INSTALLATION**

1. Disconnect the negative battery cable.
2. Discharge the refrigerant from the system. (See **REFRIGERANT RECOVERY** .) (See **REFRIGERANT CHARGING** .)
3. Remove the following parts:
  1. Windshield wiper blade (See **WINDSHIELD WIPER ARM AND BLADE REMOVAL/INSTALLATION** )
  2. Cowl grille (See **COWL GRILLE REMOVAL/INSTALLATION** .)
  3. Windshield wiper motor (See **WINDSHIELD WIPER MOTOR REMOVAL/INSTALLATION** .)
  4. Cowl panel (See **COWL PANEL REMOVAL/INSTALLATION** .)
  5. Front cooler pipe No.1 bracket installation nut

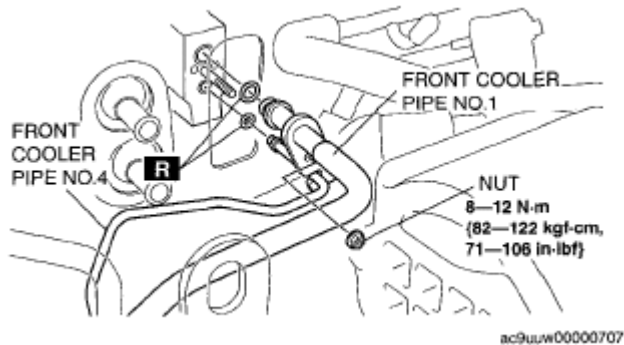
**Fig. 8: Identifying Front Cooler Pipe No.1 Bracket Installation Nut & Torque Specifications**

6. Nut
7. Front cooler pipe No.1 and front cooler pipe No.4 (See **REFRIGERANT LINE REMOVAL/INSTALLATION** .)

**CAUTION:**

- If moisture or foreign material enters the refrigeration cycle, cooling ability will be lowered and abnormal noise or other malfunction could occur. Always plug open fittings immediately after removing any refrigeration cycle parts.

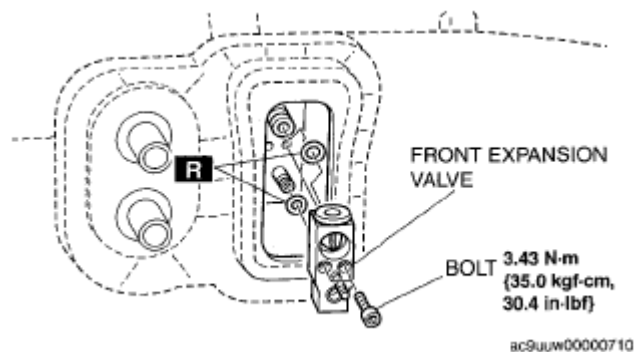




**Fig. 9: Identifying Front Cooler Pipe No.1, Front Cooler Pipe No.4 & Torque Specifications**

4. Remove the bolts.
5. Remove the front expansion valve. Do not allow compressor oil to spill.
6. Install in the reverse order of removal.
7. Perform the refrigerant system performance test.

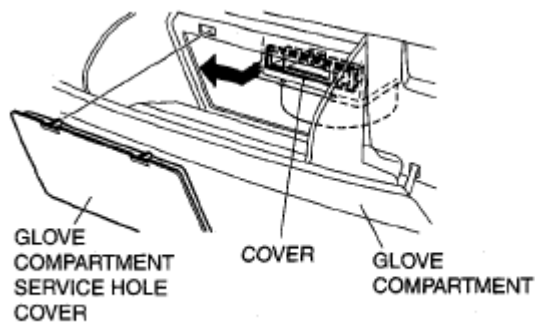
(See **REFRIGERANT SYSTEM PERFORMANCE TEST** .)



**Fig. 10: Identifying Front Expansion Valve, Bolts & Torque Specifications**

## **AIR FILTER REMOVAL/INSTALLATION**

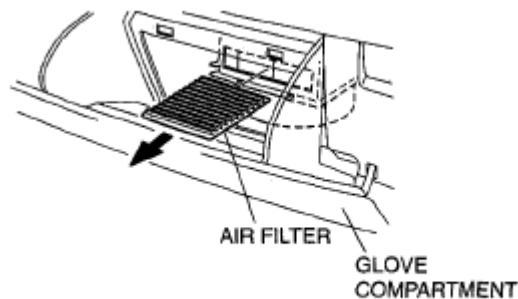
1. Remove the glove compartment service hole cover.
2. Remove the cover in the direction of the arrow.



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**Fig. 11: Identifying Glove Compartment Service Hole Cover**

3. Remove the air filter in the direction of the arrow.
4. Install in the reverse order of removal.



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**Fig. 12: Identifying Air Filter Remove Direction**

## AIR FILTER INSPECTION

1. Verify that there is no damage, excessive dirt, or abnormal odor on the air filter.
  - If there is any malfunction, replace the air filter.

**NOTE:**

- The air filter cannot be reused by cleaning it with water or compressed air.

## FRONT EVAPORATOR INSPECTION

1. Inspect the front evaporator for damage, cracks, and oil leakage.
  - If there is any malfunction, replace the front evaporator.
2. Visually inspect the fins for bending.
  - If there is any bending, use the end of a flathead screwdriver to straighten the fins.

## FRONT HEATER CORE INSPECTION

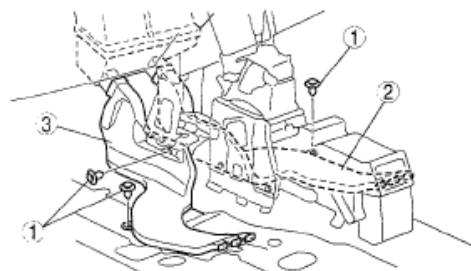
1. Inspect the front heater core for damage, cracks, and water leakage.
  - If there is any malfunction, replace the front heater core.
2. Visually inspect the fins for bending.
  - If there is any bending, use the end of a flathead screwdriver to straighten the fins.
3. Visually inspect the heater hose for deformation.
  - Repair with pliers if there is deformation. If there is any malfunction, replace the front heater core.

## REAR HEAT DUCT COMPONENT REMOVAL/INSTALLATION

### REAR HEAT DUCT NO.1

1. Disconnect the negative battery cable.
2. Remove the following parts:
  1. Front seat (See **FRONT SEAT REMOVAL/INSTALLATION** .)
  2. Front scuff plate inner (See **FRONT SCUFF PLATE REMOVAL/INSTALLATION** .)
  3. Front side trim (See **FRONT SIDE TRIM REMOVAL/INSTALLATION** .)
  4. Decoration panel (See **DECORATION PANEL REMOVAL/INSTALLATION** .)
  5. Front console box mat (See **FRONT CONSOLE BOX MAT REMOVAL/INSTALLATION** .)
  6. Indicator panel (See **INDICATOR PANEL REMOVAL/INSTALLATION** .)
  7. Front console box (See **FRONT CONSOLE BOX REMOVAL/INSTALLATION** .)
  8. Dashboard under cover (See **DASHBOARD UNDER COVER REMOVAL/INSTALLATION** .)
  9. Side wall (See **SIDE WALL REMOVAL/INSTALLATION** .)
  10. Console panel (See **CONSOLE PANEL REMOVAL/INSTALLATION** .)
  11. Console cover (See **CONSOLE COVER REMOVAL/INSTALLATION** .)
  12. Console (See **CONSOLE REMOVAL/INSTALLATION** .)
  13. Dust cover (See **STEERING WHEEL AND COLUMN REMOVAL/INSTALLATION** .)
3. Turn floor covering over. (See **FLOOR COVERING REMOVAL/INSTALLATION** .)
4. Remove in the order indicated in the table.
5. Install in the reverse order of removal.

1	Fastener
2	Rear heat duct No.1 (RH)
3	Rear heat duct No.1 (LH)

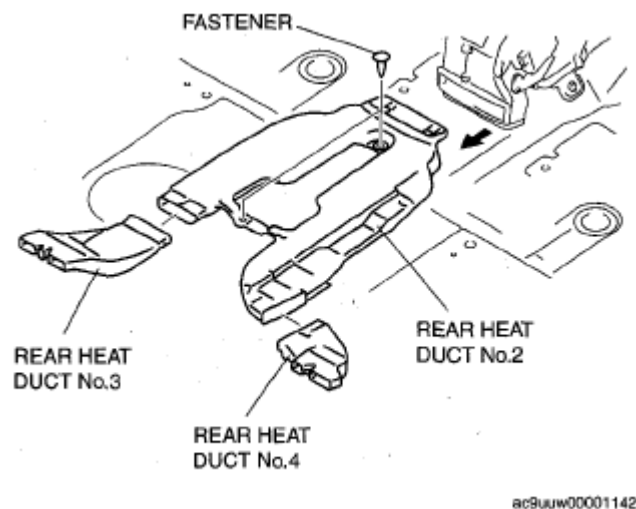


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**Fig. 13: Identifying Rear Heat Duct No.1 Remove Order**

**REAR HEAT DUCT NO.2, NO.3 AND NO.4**

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. Second-row seat (See **SECOND-ROW SEAT REMOVAL/INSTALLATION** .)
  11. Edge cover (See **LONG SLIDER REMOVAL/INSTALLATION** .)
  12. Long slider cover (See **LONG SLIDER REMOVAL/INSTALLATION** .)
  13. Third-row seat (See **THIRD-ROW SEAT REMOVAL/INSTALLATION** .)
  14. Trunk box (See **TRUNK BOX REMOVAL/INSTALLATION** .)
  15. Seat side box (See **SEAT SIDE BOX REMOVAL/INSTALLATION** .)
  16. Trunk end trim (See **TRUNK END TRIM REMOVAL/INSTALLATION** .)
  17. Third-row seat (See **THIRD-ROW SEAT REMOVAL/INSTALLATION** .)
  18. Rear scuff plate inner (See **REAR SCUFF PLATE REMOVAL/INSTALLATION** .)
  19. Third-row seat belt lower anchor installation bolt (See **THIRD-ROW SEAT BELT REMOVAL/INSTALLATION** .)
  20. Trunk side trim (See **TRUNK SIDE TRIM REMOVAL/INSTALLATION** .)
3. Remove the two rear A/C unit retaining bolts on the rear side.
4. Turn floor covering over. (See **FLOOR COVERING REMOVAL/INSTALLATION** .)
5. Remove the long slider. (See **LONG SLIDER REMOVAL/INSTALLATION** .)
6. Remove the fasteners.
7. Lift the rear side of the rear A/C unit and remove the rear heater duct No.2.
8. Remove the rear heat duct No.3.
9. Remove the rear heat duct No.4.
10. Install in the reverse order of removal.



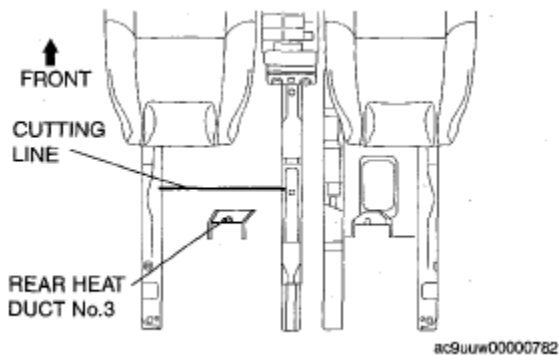
**Fig. 14: Identifying Rear Heater Duct No.2**

**WHEN REMOVING THE REAR HEATER DUCT NO.3 ONLY**

1. Disconnect the negative battery cable.
2. Remove the following parts:
  1. Second-row seat (LH) (See **SECOND-ROW SEAT REMOVAL/INSTALLATION** .)
  2. Edge cover (See **LONG SLIDER REMOVAL/INSTALLATION** .)
  3. Long slider cover (See **LONG SLIDER REMOVAL/INSTALLATION** .)
3. Cut away the floor covering as shown in the figure.

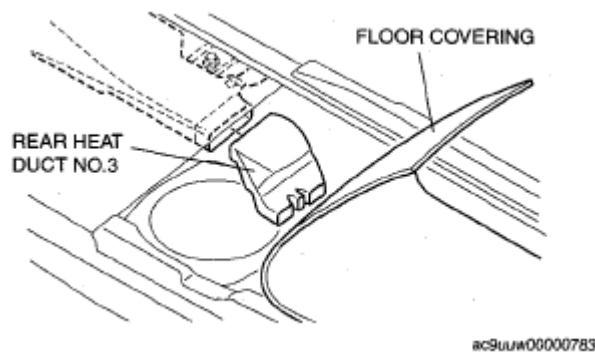
**NOTE:**

- The cut part does not need to match up when installing the floor covering.



**Fig. 15: Identifying Floor Covering Cut**

4. Turn floor covering over.
5. Remove the rear heat duct No.3.
6. Install in the reverse order of removal.



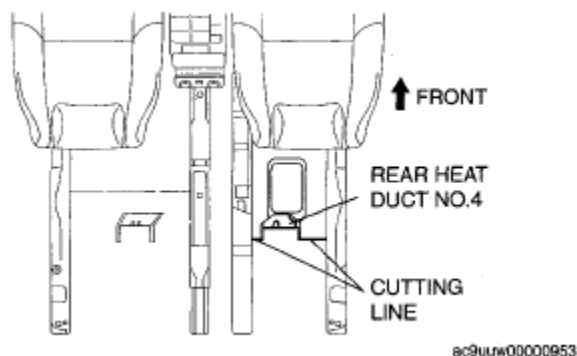
**Fig. 16: Identifying Rear Heat Duct No.3**

**WHEN REMOVING THE REAR HEATER DUCT NO.4 ONLY**

1. Disconnect the negative battery cable.
2. Remove the following parts:
  1. Second-row seat (RH) (See **SECOND-ROW SEAT REMOVAL/INSTALLATION** .)
  2. Edge cover (See **LONG SLIDER REMOVAL/INSTALLATION** .)
  3. Long slider cover (See **LONG SLIDER REMOVAL/INSTALLATION** .)
3. Cut away the floor covering as shown in the figure.

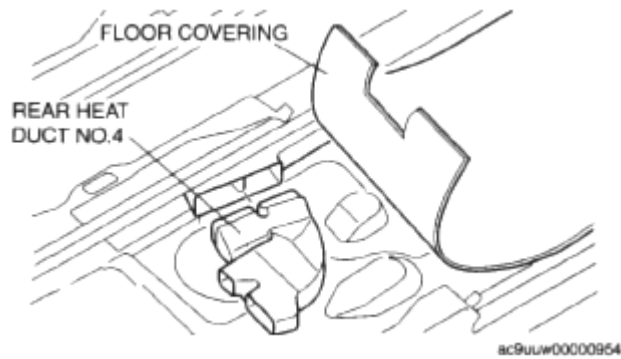
**NOTE:**

- **The cut part does not need to match up when installing the floor covering.**



**Fig. 17: Identifying Floor Covering Cutting Line**

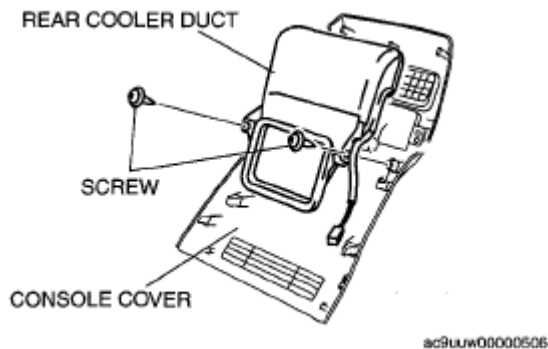
4. Turn floor covering over.
5. Remove the rear heat duct No.4.
6. Install in the reverse order of removal.



**Fig. 18: Identifying Rear Heat Duct No.4**

## REAR COOLER DUCT REMOVAL/INSTALLATION

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



**Fig. 19: Identifying Rear Cooler Duct**

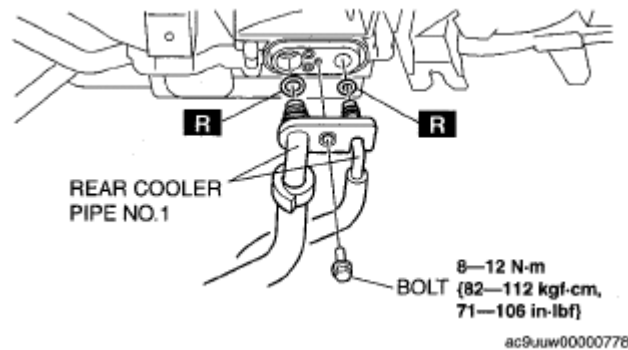
## REAR A/C UNIT REMOVAL/INSTALLATION

1. Disconnect the negative battery cable.
2. Evacuate the refrigerant from the system. (See REFRIGERANT RECOVERY .) (See REFRIGERANT CHARGING .)
3. Drain the engine coolant. (See ENGINE COOLANT REPLACEMENT [MZI-3.7] .)
4. 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 (Passenger side) (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** .)
  10. Selector lever component (See **SELECTOR LEVER COMPONENT REMOVAL/INSTALLATION** .)
5. Remove the bolt.
  6. Remove the rear cooler pipe No.1. Do not allow compressor oil to spill.

**CAUTION:**

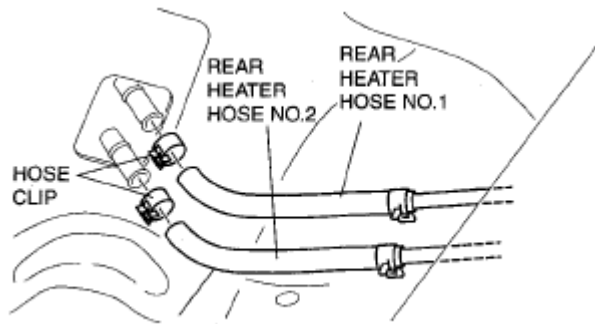
- If moisture or foreign material enters the refrigeration cycle, cooling ability will be lowered and abnormal noise will occur. Always immediately plug open fittings after removing any refrigeration cycle parts to keep moisture or foreign material out of the cycle.



**Fig. 20: Identifying Rear Cooler Pipe No.1 & Torque Specifications**

7. Jack up the vehicle.
8. Remove the hose clip.
9. Remove the rear heater hose No.1 and No.2.





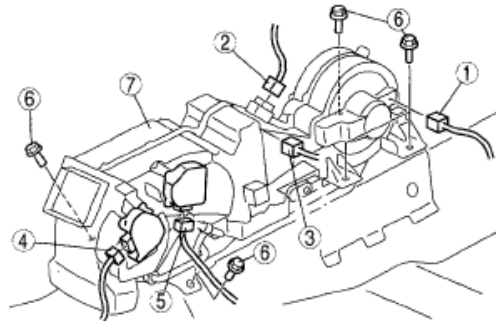
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**Fig. 21: Identifying Rear Heater Hose No.1 & No.2**

10. Remove in the order indicated in the table
11. Install in the reverse order of removal.
12. Perform the refrigerant system performance test.

(See **REFRIGERANT SYSTEM PERFORMANCE TEST** .)

1	Rear blower motor connector
2	Rear power MOS FET connector
3	Rear evaporator temperature sensor connector
4	Rear airflow mode actuator connector
5	Rear air mix actuator connector
6	Bolt
7	Rear A/C unit



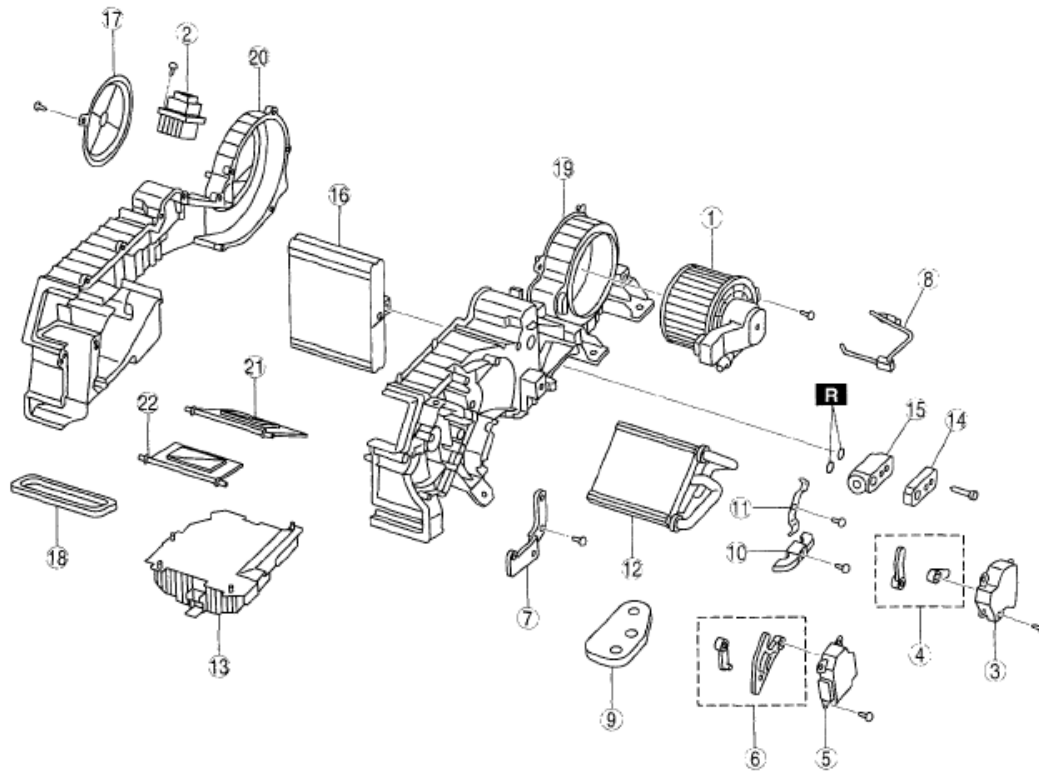
⑥: 5.9—8.8 N·m (61—89 kgf·cm, 53—77 in·lbf)

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**Fig. 22: Identifying Rear A/C Unit Removal Order & Torque Specifications**

## REAR A/C UNIT DISASSEMBLY/ASSEMBLY

1. Disassemble in the order indicated in the table.
2. Assemble in the reverse order of disassembly.



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1	Rear blower motor
2	Rear power MOS FET
3	Rear air mix actuator
4	Rear air mix link set
5	Rear airflow mode actuator
6	Rear airflow mode link set
7	Case bracket
8	Rear evaporator temperature sensor
9	Polyurethane foam
10	Rear A/C case bracket
11	Bracket

12	Rear heater core
13	Rear A/C case (3)
14	Rear expansion valve seal
15	Rear expansion valve
16	Rear evaporator
17	Rear A/C case (4)
18	Adhesive polyurethane
19	Rear A/C case (1)
20	Rear A/C case (2)
21	Air mix door
22	Airflow mode door

**Fig. 23: Identifying Rear A/C Unit Components**

## REAR EVAPORATOR INSPECTION

1. Inspect for cracks, damage, and oil leakage.
  - If any are found, replace the rear evaporator.
2. Inspect for bent fins.
  - If any are bent, use a flathead screwdriver to straighten them.

## REAR HEATER CORE INSPECTION

1. Inspect for cracks, damage, and coolant leakage.
  - If any are found, replace the rear heater core.

2. Inspect for bent fins.
  - If any are bent, use a flathead screwdriver to straighten them.
3. Verify that the rear heater core inlet and "outlet are not distorted or damaged.
  - If they are distorted or damaged, repair then using pliers.

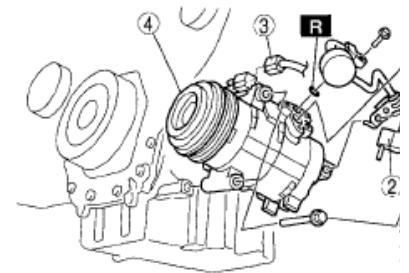
## A/C COMPRESSOR REMOVAL/INSTALLATION

1. Disconnect the negative battery cable.
2. Discharge the refrigerant. (See **REFRIGERANT CHARGING** .)
3. Remove the drive belt. (See **DRIVE BELT REMOVAL/INSTALLATION [MZI-3.7]** .)
4. Remove the front cooler hose (Hi). (See **REFRIGERANT LINE REMOVAL/INSTALLATION.**)
5. Remove in the order indicated in the table. Do not allow compressor oil to spill.

**CAUTION:**

- If moisture or foreign material enters the refrigeration cycle, cool ability will be lowered and abnormal noise or other malfunction occur. Always plug open fittings immediately after removing any refrigeration cycle parts.

1	Front cooler hose (LO) (See 07-11-17 REFRIGERANT LINE REMOVAL/ INSTALLATION.)
2	Front cooler pipe No.2 (See 07-11-17 REFRIGERANT LINE REMOVAL/ INSTALLATION.)
3	A/C compressor connector
4	A/C compressor (See 07-11-14 A/C Compressor Installation Note.)



**Fig. 24: Identifying A/C Compressor Components & Torque Spec**

6. Install in the reverse order of removal.
7. Perform the refrigerant system performance test.

(See **REFRIGERANT SYSTEM PERFORMANCE TEST** .)

## A/C COMPRESSOR INSTALLATION NOTE

**CAUTION:**

- Due to the high moisture-absorption characteristics of the compressor oil, it may absorb moisture if left over a long period of time thereby negatively affecting A/C operation. Drain the compressor oil and refill within 10 min. of each other.

1. Rotate new A/C compressor shaft six to eight revolutions while collecting refrigerant oil in a clean measuring device. Use this refrigerant oil to refill new compressor. Do not allow refrigerant oil to become

contaminated.

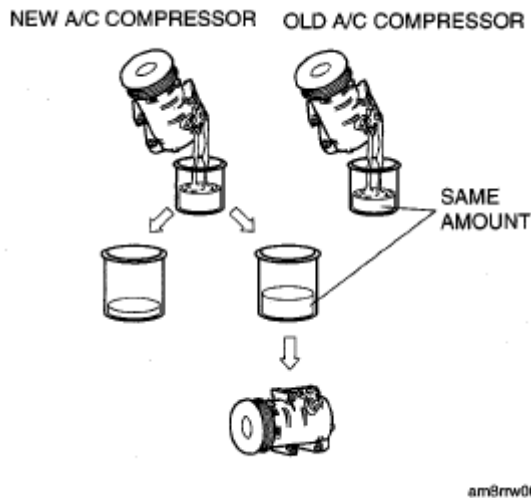
2. Rotate old A/C compressor shaft six to eight revolutions while collecting refrigerant oil in a separate, clean measuring device.
3. Compare those oil amounts. The amount of the oil drained from the new A/C compressor should be greater than the old one.
4. Pour the same amount oil of drained from the old A/C compressor back into the new A/C compressor.

### A/C compressor oil type

- **DENSO OIL8**

### A/C compressor oil sealed volume (approx. quantity)

- **160 ml {160 cc, 5.41 fl oz}**



**Fig. 25: Comparing A/C Compressor Oil Amounts**

## CONDENSER REMOVAL/INSTALLATION

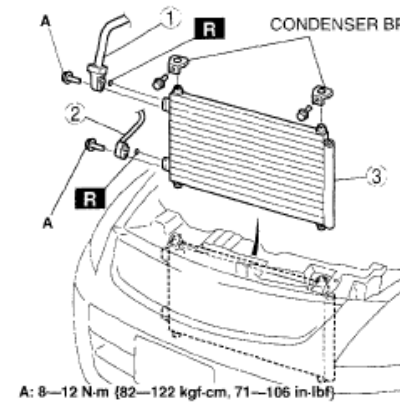
1. Disconnect the negative battery cable.
2. Discharge the refrigerant. (See **REFRIGERANT CHARGING** .)
3. Drain the engine coolant. (See **ENGINE COOLANT REPLACEMENT [MZI-3.7]** .)
4. Remove the air cleaner and fresh air duct component. (See **INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [MZI-3.7]** .)
5. Remove the cooling fan component. (See **FAN MOTOR INSPECTION [MZI-3.7]** .)
6. Disconnect the ATF oil cooler hose from the radiator.
7. Remove the radiator. (See **RADIATOR REMOVAL/INSTALLATION [MZI-3.7]** .)
8. Remove the nut and disconnect front cooler pipes No.3 and No.4. (See **REFRIGERANT LINE REMOVAL/INSTALLATION.**)

9. Remove the front cooler pipe No.3 bracket. (See **REFRIGERANT LINE REMOVAL/INSTALLATION.**)
10. Remove the bolts and two condenser brackets.
11. Remove in the order indicated in the table. Do not allow remaining compressor oil in the refrigerant line to spill.

**CAUTION:**

- If moisture or foreign material enters the refrigeration cycle, cool ability will be lowered and abnormal noise or other malfunction occur. Always plug open fittings immediately after removing any refrigeration cycle parts.

1	Front cooler hose (H) (See 07-11-17 REFRIGERANT LINE REMOVAL/ INSTALLATION.)
2	Front cooler pipe No.3 (See 07-11-17 REFRIGERANT LINE REMOVAL/ INSTALLATION.)
3	Condenser



**Fig. 26: Identifying Condenser Components & Torque Specificati**

12. Install in the reverse order of removal.
13. Refill the engine coolant. (See **ENGINE COOLANT REPLACEMENT [MZI-3.7]** .)
14. Inspect for engine coolant leakage. (See **ENGINE COOLANT LEAKAGE INSPECTION [MZI-3.7]** .)
15. Inspect the ATF level. (See **AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [AW6A-EL, AW6AX-EL]** .)
16. Perform the refrigerant system performance test. (See **REFRIGERANT SYSTEM PERFORMANCE TEST** .)

## CONDENSER INSPECTION

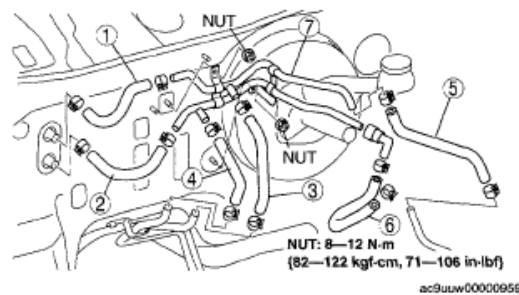
1. Inspect the condenser for cracks, damage, and oil leakage.
  - If there is any malfunction, replace the condenser.
2. Visually inspect the fins for clogging of foreign material.
  - If any fins are clogged, remove the foreign material.
3. Visually inspect the fins for bending.

- If there is any bending, use the end of a flathead screwdriver to straighten fins.

## HEATER PIPE AND HOSE COMPONENT REMOVAL/INSTALLATION

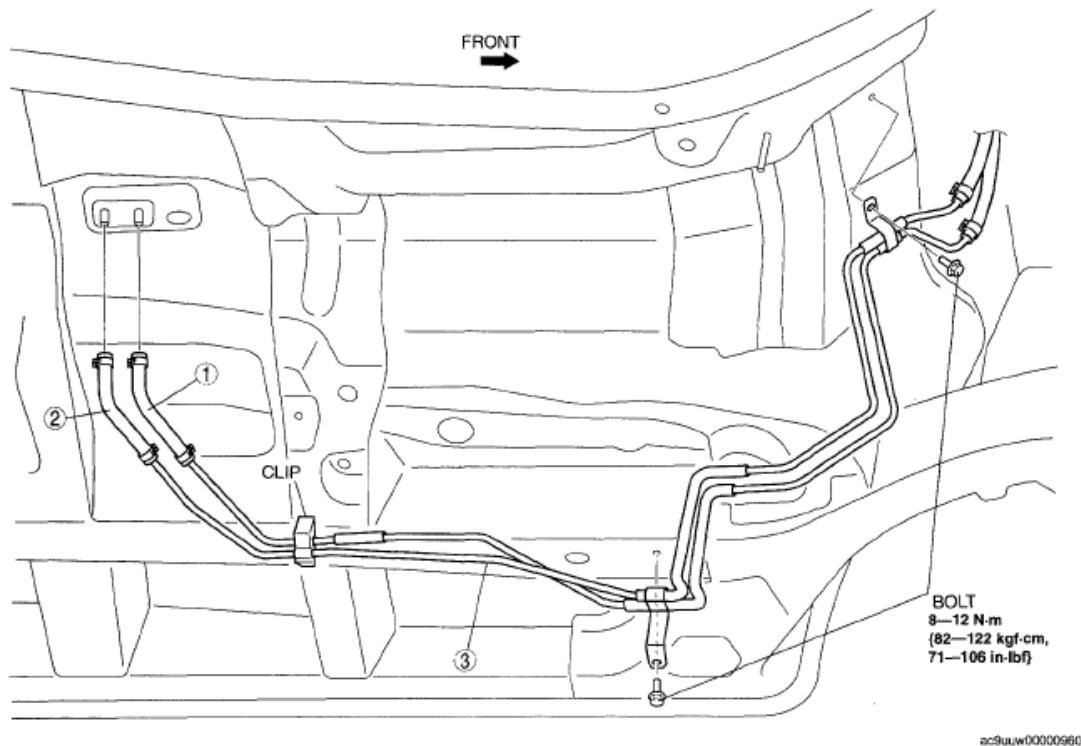
1. Remove the battery. (See **BATTERY REMOVAL/INSTALLATION [MZI-3.7]** .)
2. Drain the engine coolant. (See **ENGINE COOLANT REPLACEMENT [MZI-3.7]** .)
3. Remove the following parts:
  1. Windshield wiper arm and blade. (See **WINDSHIELD WIPER ARM AND BLADE REMOVAL/INSTALLATION** .)
  2. Cowl grille (See **COWL GRILLE REMOVAL/INSTALLATION** .)
  3. Windshield wiper motor (See **WINDSHIELD WIPER MOTOR REMOVAL/INSTALLATION** .)
  4. Cowl panel (See **COWL PANEL REMOVAL/INSTALLATION** .)
4. Remove in the order indicated in the table.

1	Front heater hose No.4 (See 07-11-17 Heater Pipe and Hose Installation Note.)
2	Front heater hose No.3 (See 07-11-17 Heater Pipe and Hose Installation Note.)
3	Front heater hose No.6 (See 07-11-17 Heater Pipe and Hose Installation Note.)
4	Front heater hose No.5 (See 07-11-17 Heater Pipe and Hose Installation Note.)
5	Front heater hose No.2 (See 07-11-17 Heater Pipe and Hose Installation Note.)
6	Front heater hose No.1 (See 07-11-17 Heater Pipe and Hose Installation Note.)
7	Front heater pipe (See 07-11-17 Heater Pipe and Hose Installation Note.)



**Fig. 27: Identifying Heater Pipe, Hose Component Removal/Installation Order & Torque Specifications**

5. Jack up the vehicle.
6. Under guard (LH) (See **CHARCOAL CANISTER, CANISTER VENT (CV) SOLENOID VALVE, AIR FILTER COMPONENT REMOVAL/INSTALLATION [MZI-3.7]** )



1	Front heater hose No.1 (See 07-11-17 Heater Pipe and Hose Installation Note.)
2	Front heater hose No.2 (See 07-11-17 Heater Pipe and Hose Installation Note.)

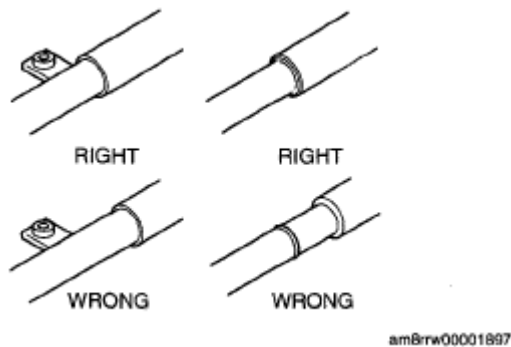
3	Front heater pipe (See 07-11-17 Heater Pipe and Hose Installation Note.)
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**Fig. 28: Identifying Front Heater Pipe, Hose Removal/Installation Order & Torque Specifications**

7. Install in the reverse order of removal.
8. Inspect for engine coolant leakage. (See **ENGINE COOLANT LEAKAGE INSPECTION [MZI-3.7]** .)

#### HEATER PIPE AND HOSE INSTALLATION NOTE

- Insert the heater pipe into the heater hose until the hose reaches the bracket or the protrusion on the pipe.
- When the rear heater pipe is removed, bleed the air from the rear heater pipe thoroughly after refilling the engine coolant to prevent air from being trapped in the rear heater pipe.



**Fig. 29: Identifying Heater Pipe & Hose**

## REFRIGERANT LINE REMOVAL/INSTALLATION

1. Disconnect the negative battery cable.
2. Discharge the refrigerant. (See **REFRIGERANT CHARGING** .)
3. Drain the engine coolant. (See **ENGINE COOLANT REPLACEMENT [MZI-3.7]** .)
4. Remove the following parts:
  1. Windshield wiper arm and blade (See **WINDSHIELD WIPER ARM AND BLADE REMOVAL/INSTALLATION** .)
  2. Cowl grille (See **COWL GRILLE REMOVAL/INSTALLATION** .)
  3. Windshield wiper motor (See **WINDSHIELD WIPER MOTOR REMOVAL/INSTALLATION** .)
  4. Cowl panel (See **COWL PANEL REMOVAL/INSTALLATION** .)
  5. Air cleaner and fresh air duct component (See **INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [MZI-3.7]** .)
  6. Cooling fan component (See **COOLING FAN COMPONENT REMOVAL/INSTALLATION [MZI-3.7]** .)
5. Disconnect the ATF oil cooler hose from the radiator.
6. Remove the radiator (See **RADIATOR REMOVAL/INSTALLATION [MZI-3.7]** .)
7. Remove the condenser. (See **CONDENSER REMOVAL/INSTALLATION** .)
8. Remove the coolant reserve tank retaining bolts and move the coolant reserve tank.
9. Remove the power steering oil pump retaining bolt and nut and move the power steering oil pump. (See **POWER STEERING OIL PUMP REMOVAL/INSTALLATION** .)
10. Do not allow remaining compressor oil in the piping and connecting parts to spill, and remove in the order indicated in the table.

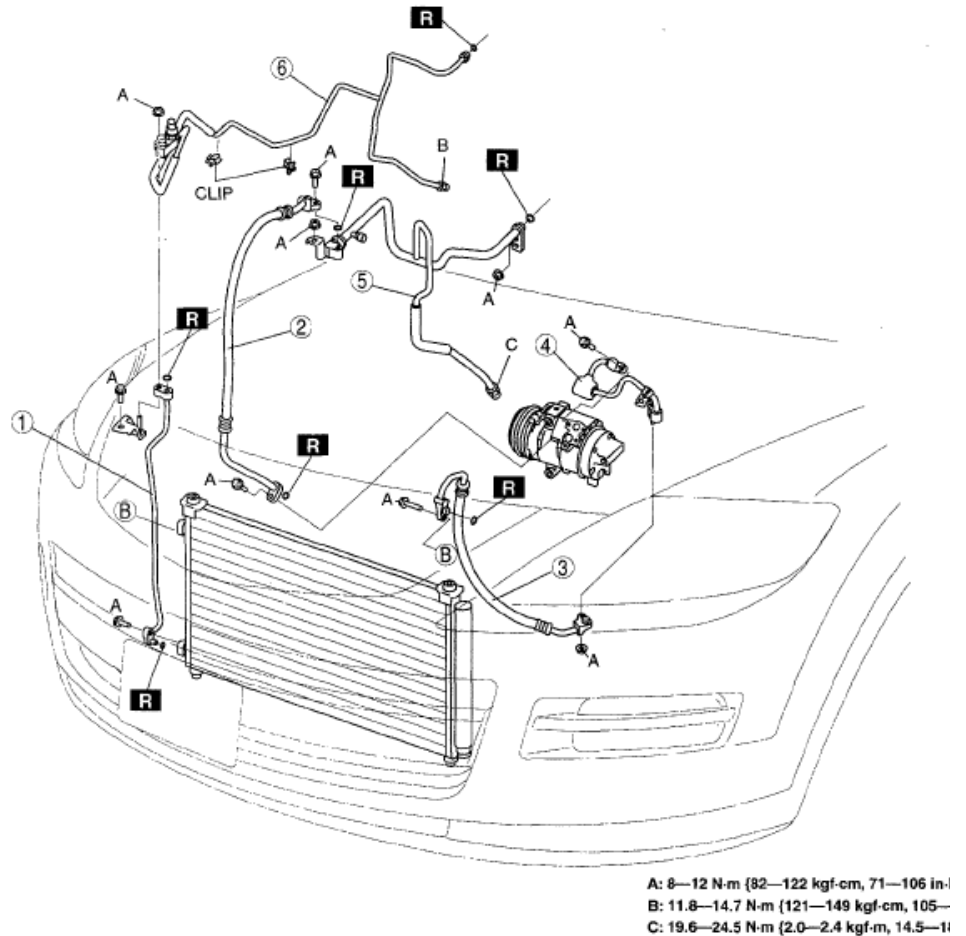
### CAUTION:

- If moisture or foreign material enters the refrigeration cycle, cool ability will be lowered and abnormal noise or other malfunction occur. Always plug open fittings immediately after removing any refrigeration cycle parts.



## 2008 Mazda CX-9 Grand Touring

2008 HVAC Basic System - Mazda CX-9



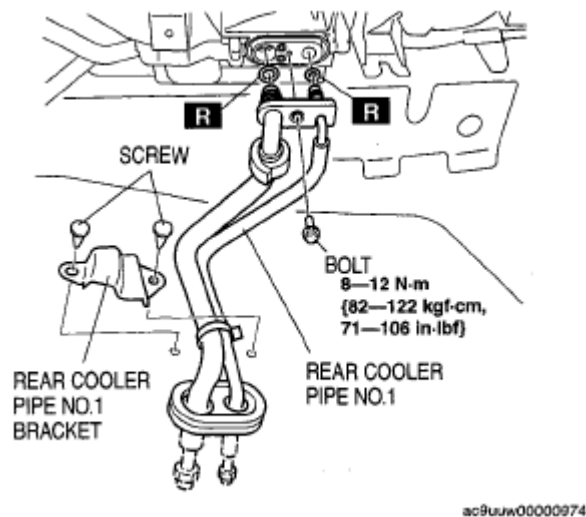
1	Front cooler pipe No.3 (See 07-11-20 Refrigerant Line Removal Note.) (See 07-11-20 Refrigerant Line Installation Note.)
2	Front cooler hose (LO) (See 07-11-20 Refrigerant Line Removal Note.) (See 07-11-20 Refrigerant Line Installation Note.)
3	Front cooler hose (HI) (See 07-11-20 Refrigerant Line Removal Note.) (See 07-11-20 Refrigerant Line Installation Note.)

4	Front cooler pipe No.2 (See 07-11-20 Refrigerant Line Removal Note.) (See 07-11-20 Refrigerant Line Installation Note.)
5	Front cooler pipe No.1 (See 07-11-20 Refrigerant Line Removal Note.) (See 07-11-20 Refrigerant Line Installation Note.)
6	Front cooler pipe No.4 (See 07-11-20 Refrigerant Line Removal Note.) (See 07-11-20 Refrigerant Line Installation Note.)

**Fig. 30: Identifying Refrigerant Line Removal/Installation Order & Specifications**

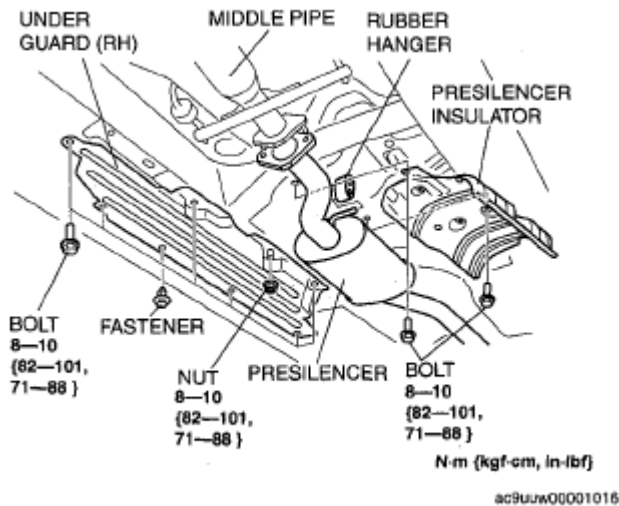
11. Remove the following parts, depending on rear cooler pipe to be removed.
  1. Decoration panel (See **DECORATION PANEL REMOVAL/INSTALLATION** .)
  2. Front console box mat (See **FRONT CONSOLE BOX MAT REMOVAL/INSTALLATION** .)
  3. Indicator panel (See **INDICATOR PANEL REMOVAL/INSTALLATION** .)
  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 seat (passenger side) (See **FRONT SEAT REMOVAL/INSTALLATION** .)
  11. Bolt
  12. Screws
  13. Rear cooler pipe No.1 bracket.
12. Jack up the vehicle.



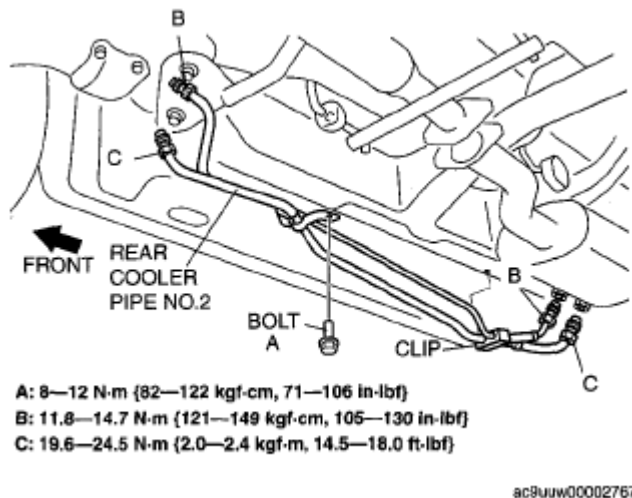
**Fig. 31: Identifying Rear Cooler Pipe & Torque Specifications**

13. Remove the nuts and disconnect the presilencer and middle pipe.
14. Disconnect the rubber hanger.
15. Remove the bolts and presilencer insulator.
16. Remove the bolts.
17. Remove the nut and fastener.
18. Remove the under guard (RH).
19. Remove the transverse member retaining bolts and set the transverse member out of the way. (See **TRANSVERSE MEMBER REMOVAL/INSTALLATION** .)



**Fig. 32: Identifying Presilencer, Middle Pipe & Torque Specifications**

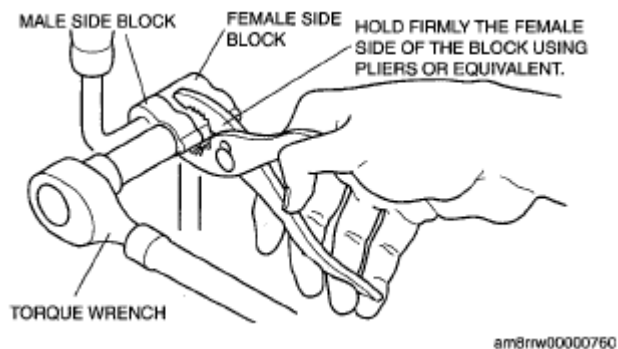
20. Remove the bolt.
21. Remove the clip.
22. Disconnect rear cooler pipe No.1 and remove rear cooler pipes No.2 and No.1.
23. Install in the reverse order of removal.
24. Inspect for engine coolant leakage. (See **ENGINE COOLANT LEAKAGE INSPECTION [MZI-3.7]** .)
25. Inspect the ATF level. (See **AUTOMATIC TRANSAXLE FLUID (ATF) INSPECTION [AW6A-EL, AW6AX-EL]** .)
26. Perform the refrigerant system performance test. (See **REFRIGERANT SYSTEM PERFORMANCE TEST** .)



**Fig. 33: Identifying Rear Cooler Pipes No.2, No.1 & Torque Specifications**

**Block joint type**

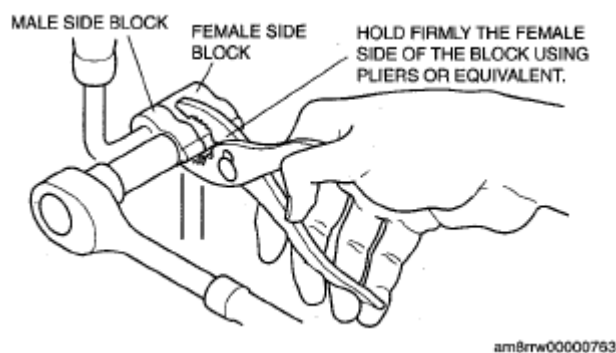
1. Disconnect the block joint type pipes by grasping the female side of the block with pliers or similar tool and holding firmly, and then remove the connection bolt or nut.



**Fig. 34: Disconnecting Block Joint Type Pipes By Grasping Female Side Of Block**

**REFRIGERANT LINE INSTALLATION NOTE**

1. Temporarily tighten the joint bolt by hand.
2. Connect the block joint type pipes by grasping the female side of the block with pliers or similar tool and holding firmly, and then tighten the connection bolt or nut with a torque wrench.



**Fig. 35: Connecting Block Joint Type**