

AIR CONDITIONING

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دیجیتال خودرو

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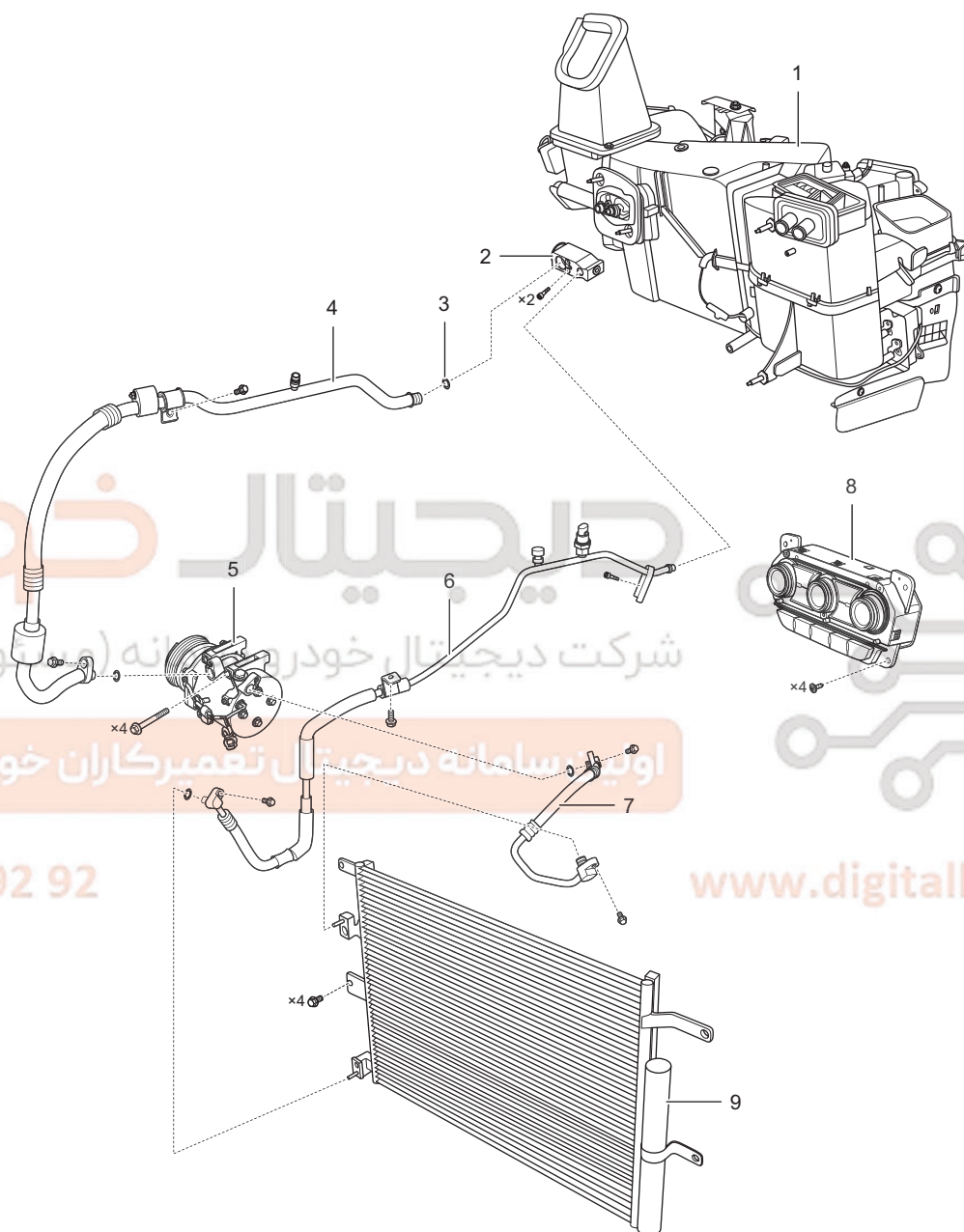
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GENERAL INFORMATION

Description

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1 - HVAC Assembly	2 - Expansion Valve
3 - O-ring	4 - Evaporator to Compressor Line Assembly
5 - Compressor Assembly	6 - Condenser to Evaporator Line Assembly
7 - Compressor to Condenser Line Assembly	8 - Center Control Integration Panel Assembly
9 - Condenser Assembly (w/ Receiver Drier)	

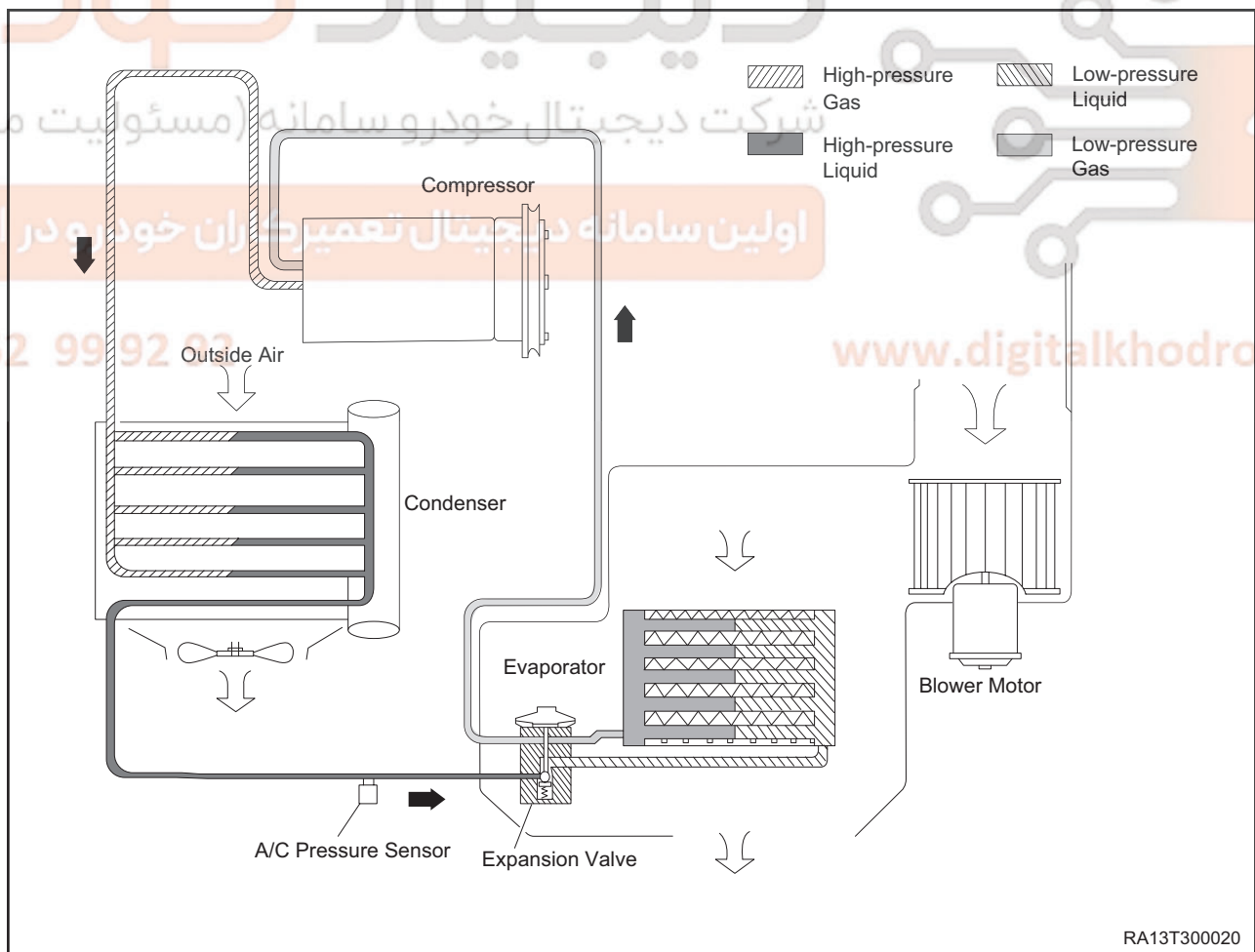
1. System composition

30 Power A/C and automatic A/C are available for this model. A/C system consists of following four parts:

Air conditioning and distribution system: air mixing and distributor part of HVAC, inner/outer circulation inlet, outlet and air filter. Control system: center control integration panel assembly, A/C control module assembly (for automatic A/C), inner/outer circulation damper servo motor, defroster damper servo motor, face damper servo motor, mix damper servo motor, blower, blower speed resistance, A/C pressure sensor, evaporator temperature sensor, room temperature sensor (for automatic A/C), outside temperature sensor (for automatic A/C) and solar sensor (for automatic A/C).

Heating system: heater core assembly, heating inlet hose, heating outlet hose and engine cooling circulation system.

Cooling system: compressor assembly, condenser assembly (w/ receiver drier), expansion valve, evaporator core assembly and A/C high/low pressure line.

2. Operation

Outside fresh air enters air inlet filter assembly through cowl top opening at the left side of windshield base. Fresh air flows through evaporator core and heater core, and then enters vehicle through outlets on instrument panel and floor. Intake air volume can be adjusted by blower speed switch on center control integration panel assembly. Turn on the compressor assembly by pressing A/C switch on center control integration panel assembly. Refrigerant is compressed by compressor assembly and converted into high temperature/pressure gas, which is then condensed into high pressure liquid in the condenser. Then the liquid is filtered and dried by receiver drier (integrated with condenser) and delivered to expansion valve and becomes low-pressure liquid through throttling and depressurization. Finally the liquid enters evaporator in vehicle and absorbs heat and evaporates, thus refrigeration is achieved. A/C heating is realized by engine coolant circulation system. Heater core is a main component of heating system. With engine running, engine coolant flows from engine water pump to heater core, and the heater core transmits the heat from engine coolant to the air that flows through heater core. At this time, A/C switch is off. The air flowing through heater core becomes hot wind through heat exchanging, thus providing heating. Temperature adjustment control mechanism can be controlled by rotating temperature adjustment knob. Mix damper closes when temperature adjustment knob is rotated counterclockwise to MAX COOL position. If airflow does not flow through heater core, the heat transmission will not occur. When rotating temperature adjustment knob clockwise from MAX COOL position, the mix damper will open slowly, allowing air to flow through gap of heater core. Most of airflow is heated in this way and discharged air becomes warmer. When temperature adjustment knob is rotated counterclockwise to MAX HOT position, the mix damper is fully opened and all air flows through heat core, thus air is heated. Mode knob on A/C control panel is used to direct air with temperature adjusted through selected outlets.

Specifications

Torque Specifications

Description	Torque (N·m)
A/C Line I Fixing Bolt at HVAC	9 ± 1
Hose Clamp Fixing Bolt	9 ± 1
Connecting Pressure Plate Fixing Nut	9 ± 1
Compressor Fixing Bolt	25 ± 3
Compressor Intake and Exhaust Line Fixing Bolt	25 ± 3
Condenser Fixing Nut	5 ± 1
A/C Line Fixing Bolt	9 ± 1

Refrigerant Charging Specification

Description	Charging Capacity (g)
R134a Refrigerant	$350 \pm 10\text{g}$

Refrigerant Oil Charging Specifications

Description	Charging Capacity (ml)
Evaporator Replacement	10
Compressor Assembly Replacement	108-135
Condenser Replacement	10
A/C Line Replacement	5

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Tools

Special Tool

Refrigerant Recycling Machine

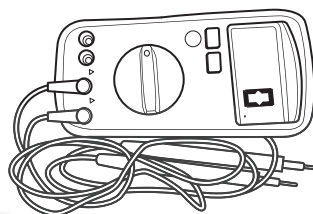


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General Tool

Digital Multimeter

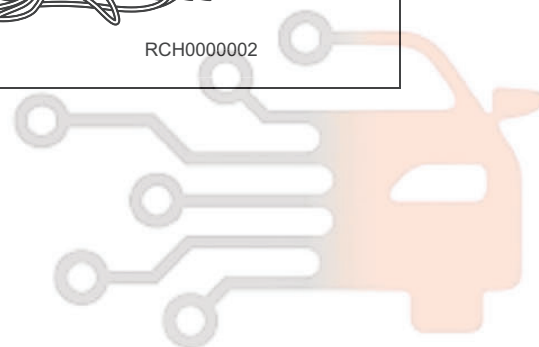


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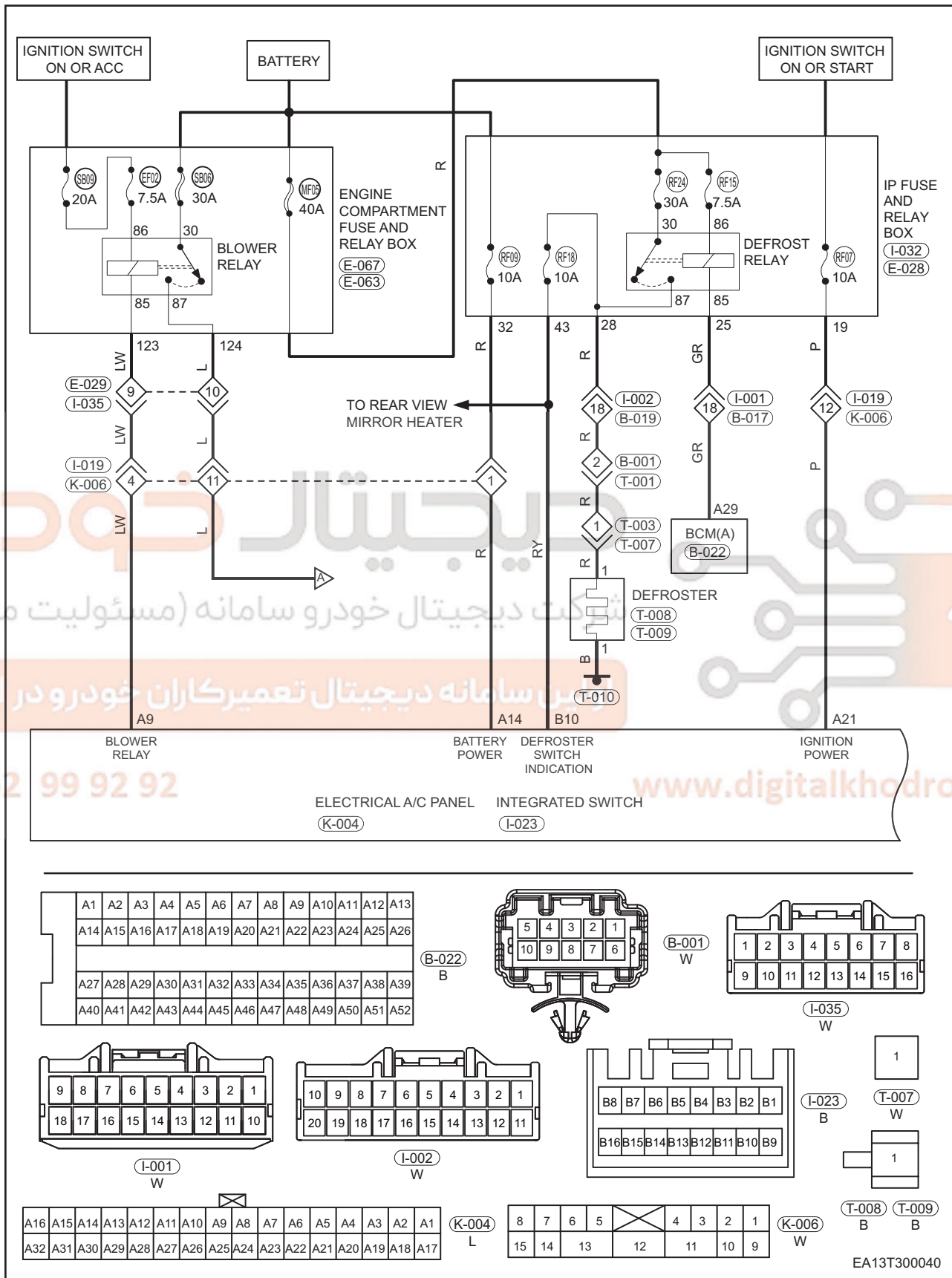


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Circuit Diagram

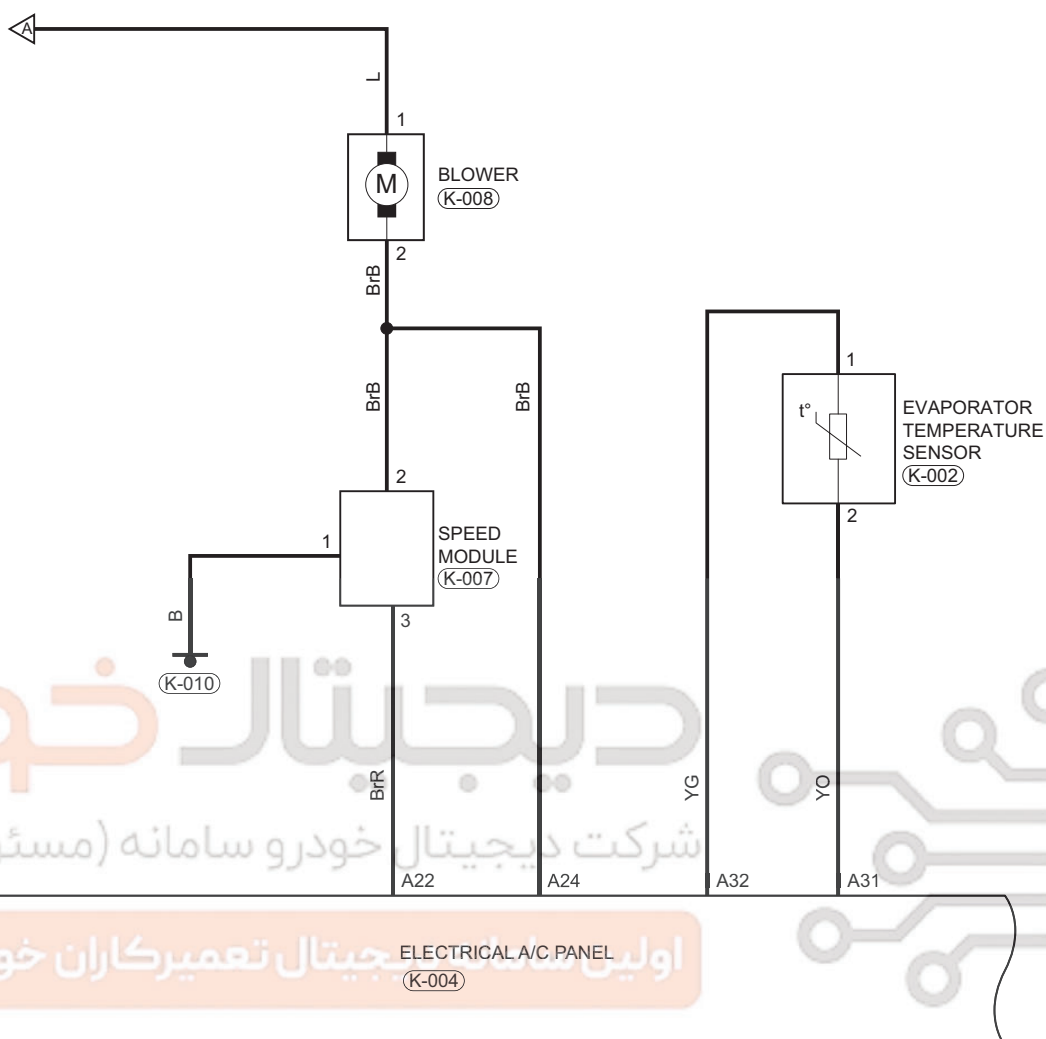
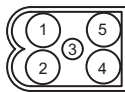
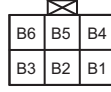
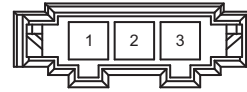
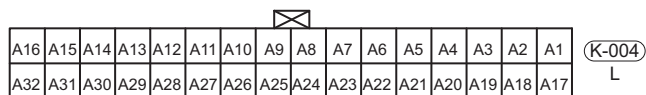
Power A/C System (Page 1 of 5)



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Power A/C System (Page 2 of 5)

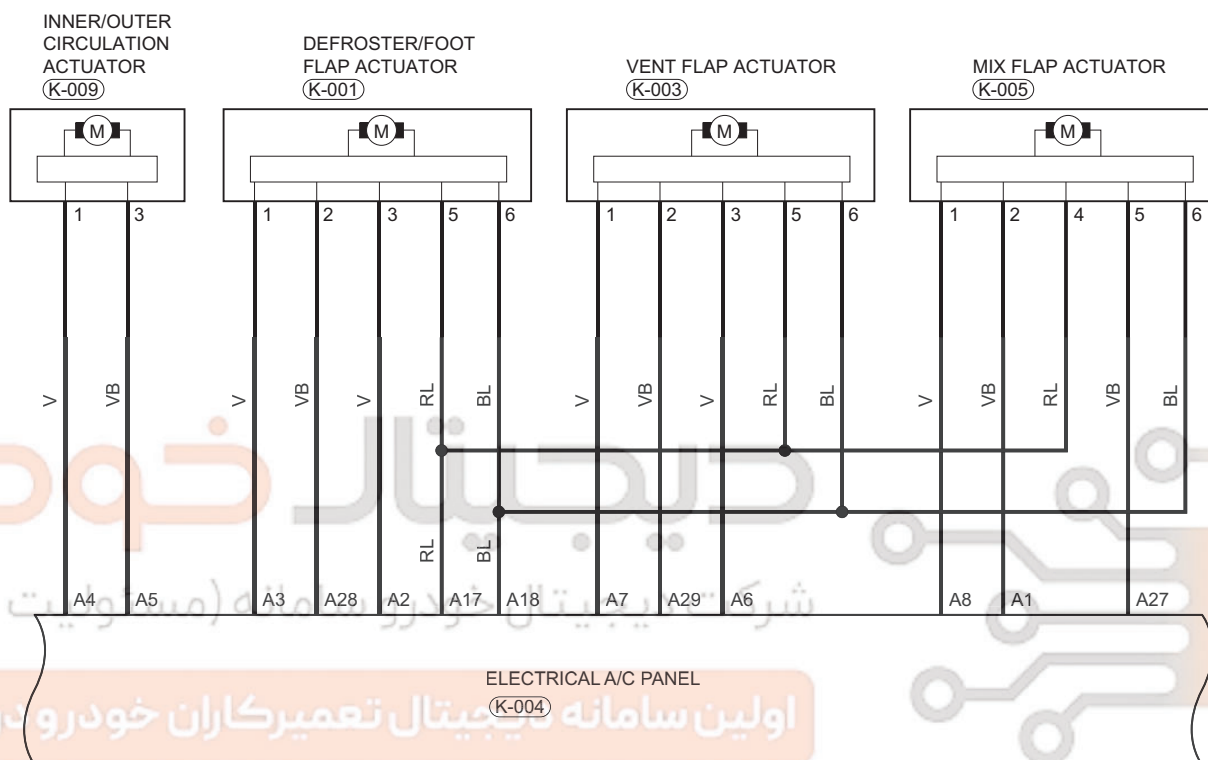
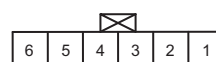
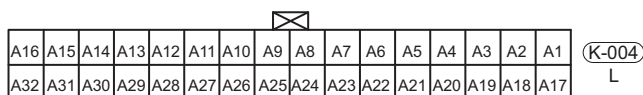
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W(K-008)
W(K-011)
W(K-013)
W(K-007)
B(K-004)
L

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Power A/C System (Page 3 of 5)

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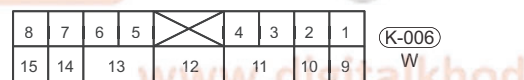
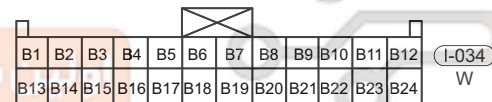
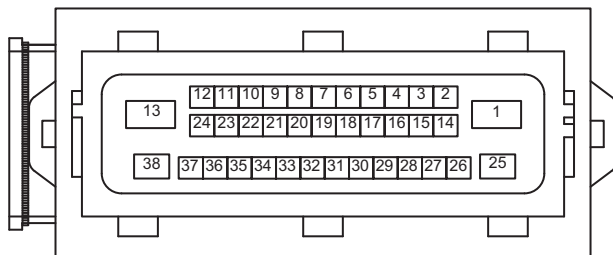
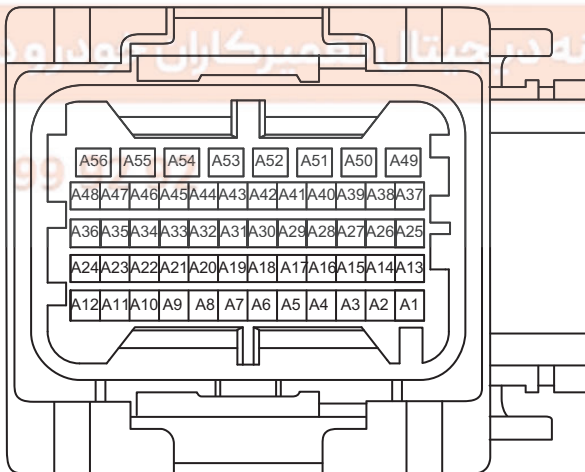
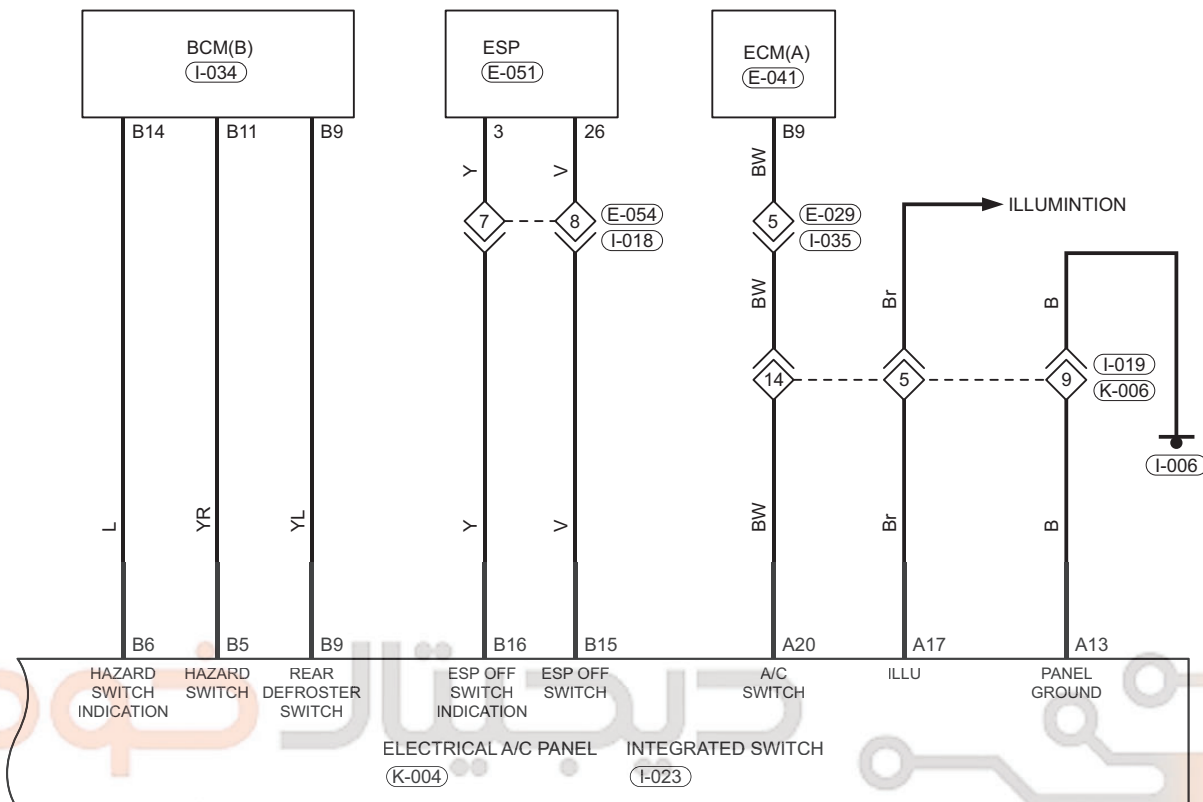
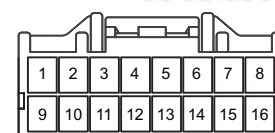
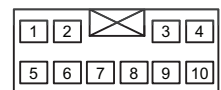
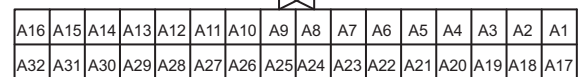
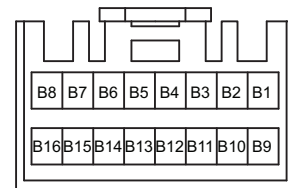
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Power A/C System (Page 4 of 5)

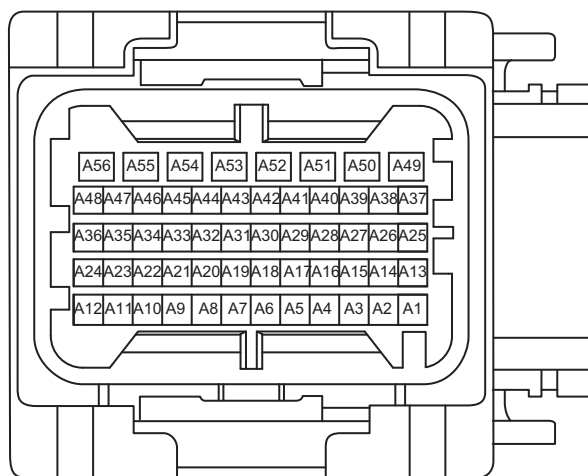
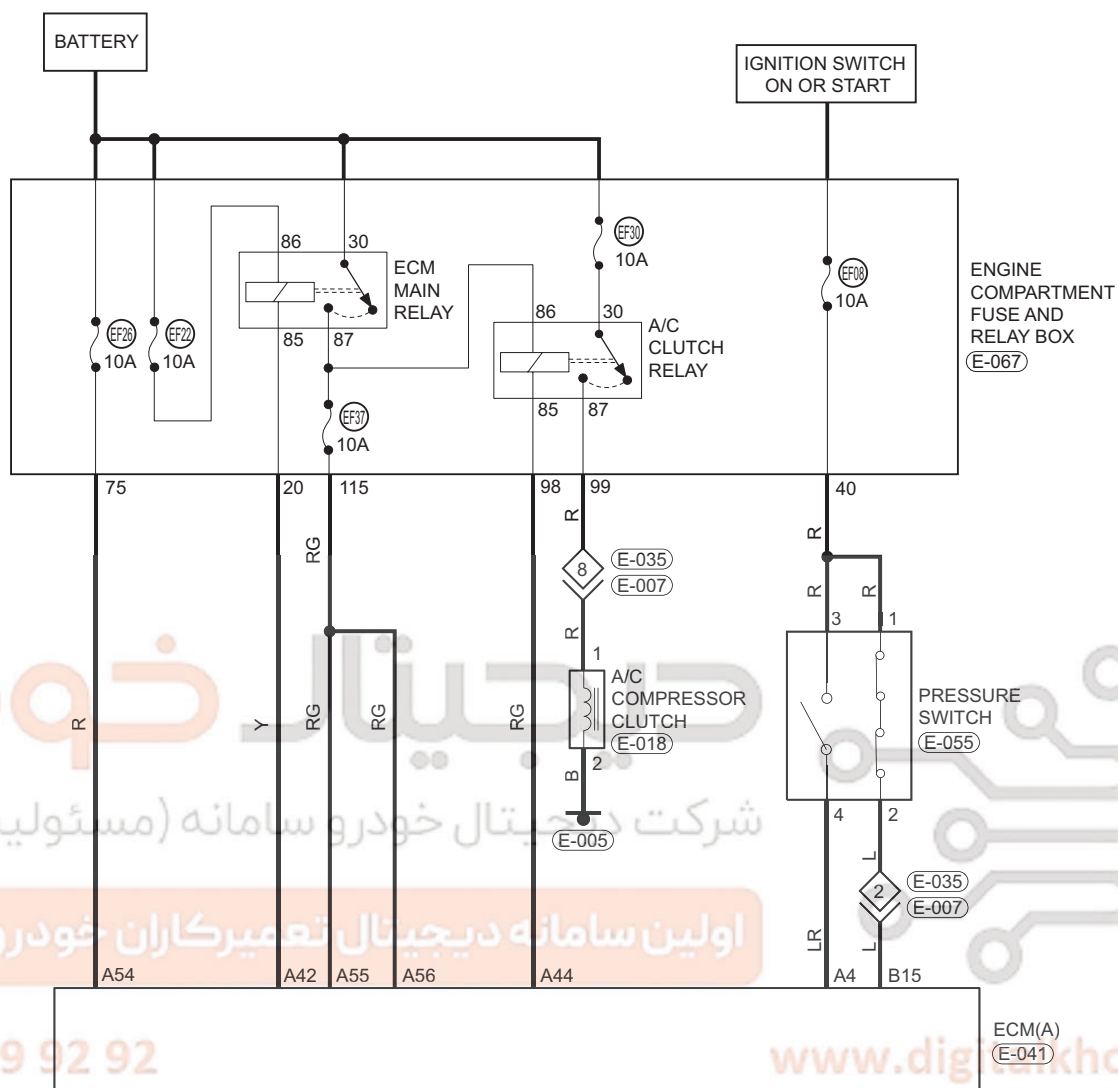
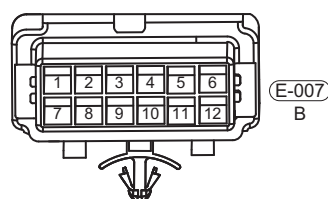
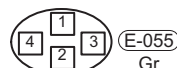
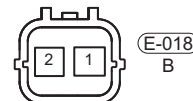
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B(I-035)
W(I-018)
W(K-004)
L(E-051)
B(I-023)
B

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Power A/C System (Page 5 of 5)

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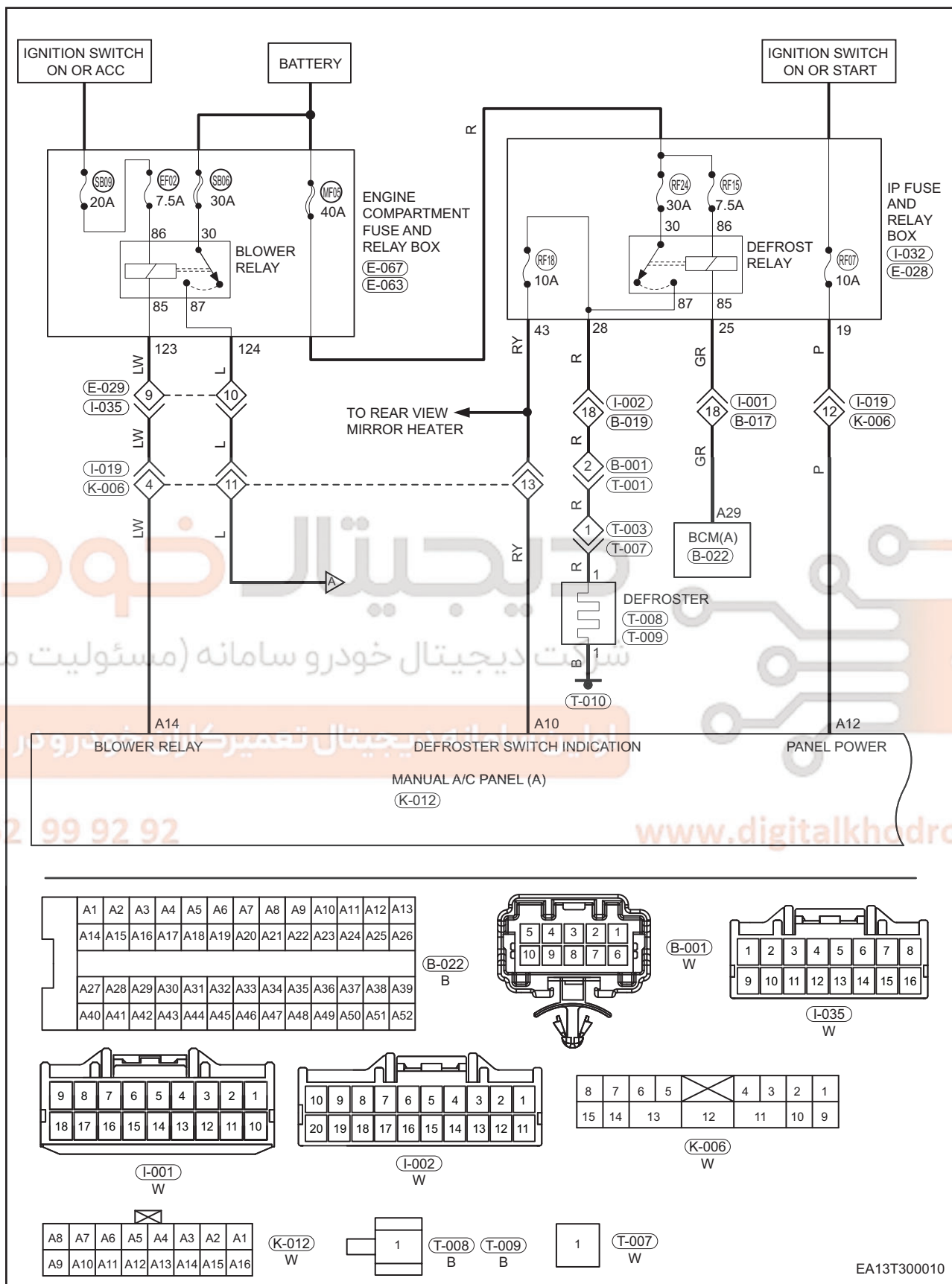
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BE-007
BE-055
GrE-018
B

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Manual A/C system (Page 1 of 3)

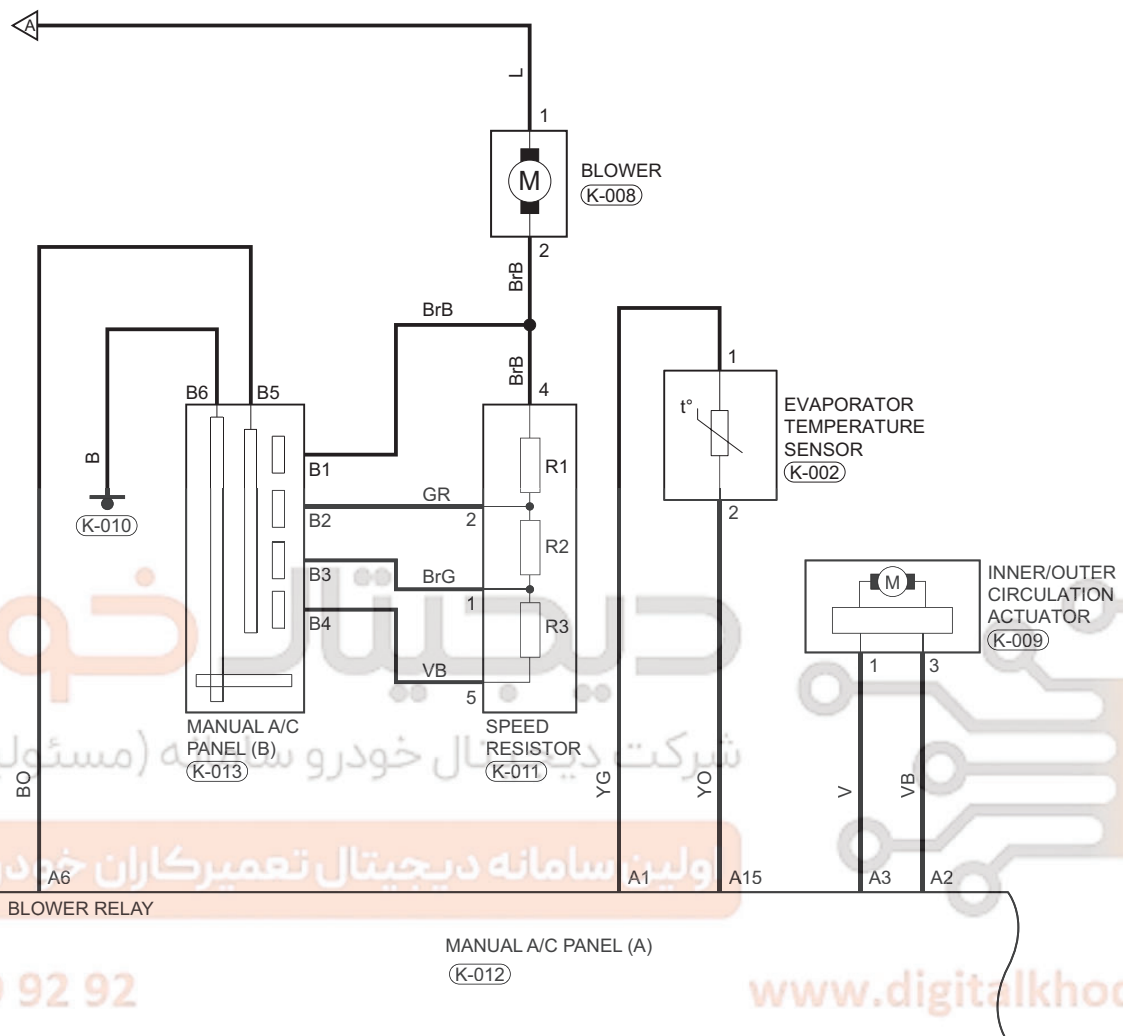
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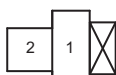
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Manual A/C system (Page 2 of 3)

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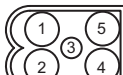
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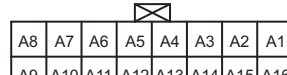
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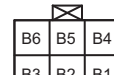
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(K-011)
W



(K-012)
W



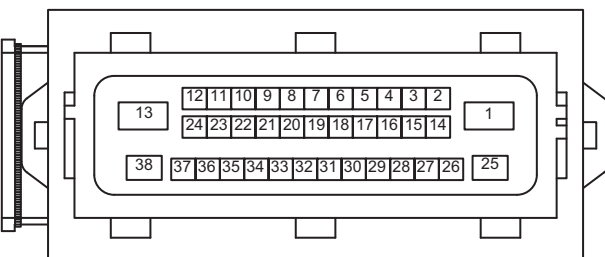
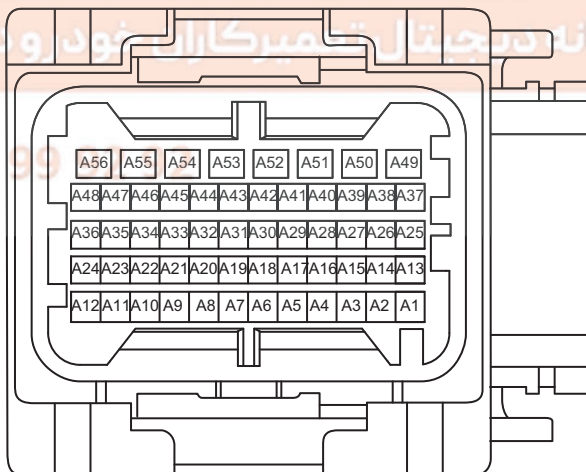
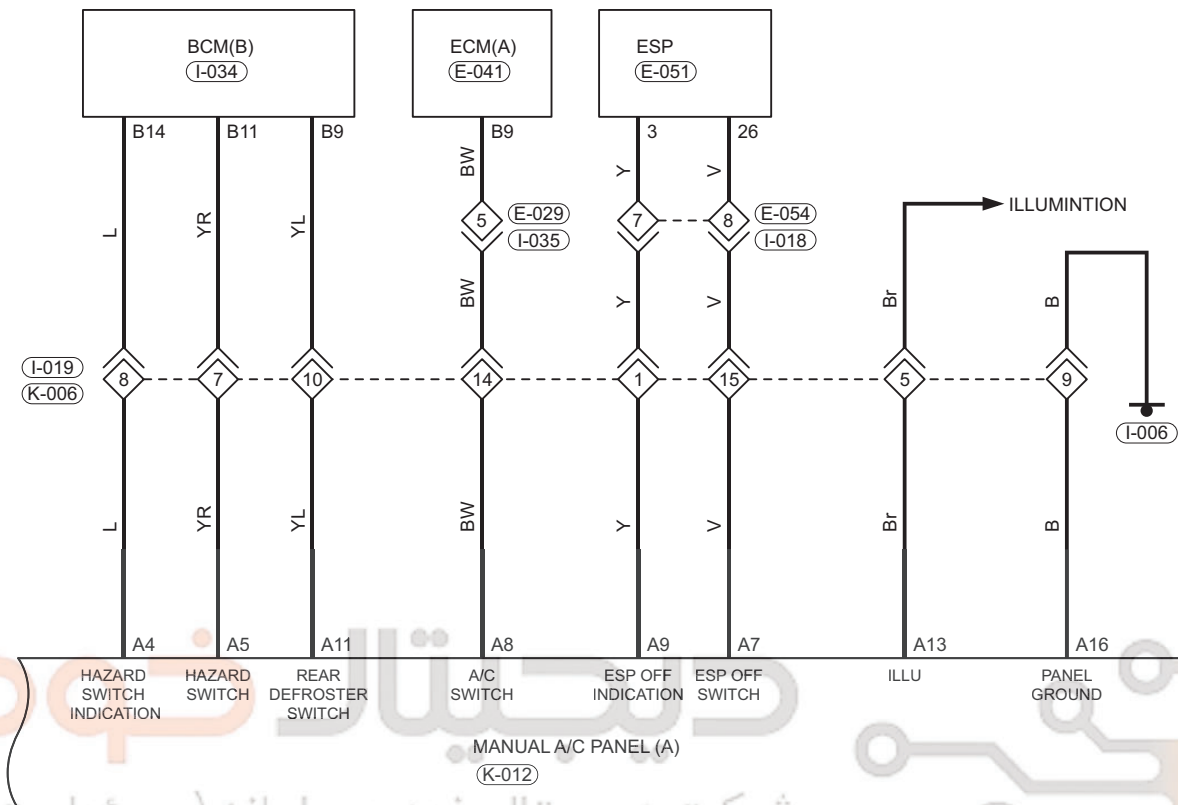
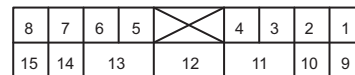
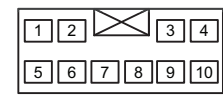
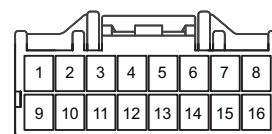
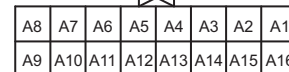
(K-013)
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Manual A/C system (Page 3 of 3)

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(E-041)
B(E-051)
B

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DIAGNOSIS & TESTING

Problem Symptoms Table

HINT:

Use symptoms table below to help determine cause of problem. Check each suspected area in sequence. Repair or adjust faulty components, or replace as necessary.

Symptom	Suspected Area	See page
A/C no heating	Blower fuse (damaged)	55-30
	Blower relay (damaged)	55-30
	Blower speed switch (damaged)	30-28
	Blower motor (damaged)	30-31
	Mix damper control mechanism (stuck or damaged)	30-36
	Heating pipe (blocked or damaged)	30-46
	Heater core assembly (blocked or damaged)	30-46
	Wire harness or connector (open or short)	-
A/C no cooling	Leak in system	30-22
	Refrigerant (overcharged)	30-25
	A/C pressure sensor (damaged)	30-54
	Evaporator temperature sensor (damaged)	30-49
	A/C switch (damaged)	30-28
	Compressor assembly fuse (damaged)	55-30
	Compressor assembly relay (damaged)	55-30
	Compressor assembly belt (loose)	30-56
	Compressor assembly (damaged)	30-56
	Condenser assembly (blocked or damaged)	30-58
	Expansion valve (blocked or frosted)	30-42
	Evaporator core assembly (blocked or damaged)	30-42
	Wire harness or connector (open or short)	-
A/C intermittent cooling	Moisture in system	-

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Symptom	Suspected Area	See page
A/C insufficient cooling	Leak in system	30-22
	Refrigerant (insufficient)	30-25
	Refrigerant (overcharged)	30-25
	Air in refrigerant	30-22
	Moisture in refrigerant	30-25
	Condenser (dirty or blocked)	30-58
	Expansion valve (dirty or blocked)	30-42
	Evaporator core (dirty or blocked)	30-42
	A/C high/low pressure line (dirty or blocked)	30-54
	Blower speed switch (damaged)	30-31
	Blower motor (damaged)	30-31
	Compressor assembly belt (loose)	30-56
	Compressor assembly belt (slip)	30-56
Too much noise in system	Compressor assembly clutch bearing (worn and excessive clearance)	-
	Compressor assembly solenoid coil (faulty or loose joint)	-
	Compressor assembly belt (over tightened)	30-56
	Compressor assembly mounting bolt (loose)	30-56
	Cooling fan blade (distorted)	12-23
	Refrigerant oil (insufficient)	30-27
	Refrigerant oil (excessive)	30-27
Pressure at low pressure side switches between normal and vacuum during operation	Moisture in refrigerant (excessive)	30-25
Pressure is low for low pressure side and high pressure side, cooling performance is insufficient	A/C system (leaked)	30-22
	Refrigerant (insufficient)	30-25
Pressure is low for low pressure side and high pressure side, frost exists on line from condenser to A/C unit	Condenser (dirty or blocked)	30-58
Vacuum occurs at low pressure side, and pressure at high pressure side is too low, frost exists on lines on both sides of condenser or expansion valve	Moisture in refrigerant (excessive)	30-25
	Expansion valve (dirty or blocked)	30-42
Pressure is too high for low pressure side and high pressure side	Expansion valve (faulty)	-
	Refrigerant oil (excessive)	30-27

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Symptom	Suspected Area	See page
Pressure at low pressure side is normal or slightly low, and pressure at high pressure side is too high	Condenser surface (dirty)	30-58
	Cooling fan (not operating)	-
	Refrigerant (overcharged)	30-25
	Air in refrigerant	30-25
	Engine (overheating)	-
Pressure at low pressure side is too high and pressure at high pressure side is too low	Compressor assembly belt (slip)	07-20
	Compressor assembly (faulty)	30-56
Pressure at low pressure side is too low, and pressure at high pressure side is too high	A/C high pressure line (blocked)	30-54
	Expansion valve (faulty)	-

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Diagnosis Procedure

HINT:

HINT: Use following procedures to troubleshoot the A/C system.

1	Vehicle brought to workshop
---	-----------------------------

NEXT

2	Check battery voltage
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Standard voltage: 11 to 14 V

If voltage is below 11 V, recharge or replace battery before proceeding to next step.

NEXT

3	Customer problem analysis
---	---------------------------

NEXT

4	Check for DTCs (current DTC and history DTC)
---	--

DTC occurs	For current DTC, go to step 6
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NO DTC	For history DTC, go to step 7
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5	Problem repair (for no DTC), then go to step8
---	---

NEXT

6	Troubleshoot according to Diagnostic TroubleCode (DTC) chart, then go to step 8
---	---

NEXT

7	Troubleshoot according to Problem SymptomsTable, then go to step 8
---	--

NEXT

8	Adjust, repair or replace
---	---------------------------

NEXT

9	Conduct test and confirm malfunction hasbeen repaired
---	---

NEXT

10	End
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A/C System Function

1. Self-diagnosis Function

a. Power A/C

- Enter self-diagnosis button definition: Inner circulation + AC, starting method: long press combination button 5S.
- Enter self-diagnosis conditions: with A/C blower ON.
- Enter self-diagnosis successfully: A/C and inner/outer circulation indicator remains on until self-diagnosis ends.
- Deactivation condition: Air speed adjustment knob operation is not available during self-diagnosis, and exit self-diagnosis mode only when knob is rotated to OFF.
- Self-diagnosis ends: Panel AC and inner/outer circulation indicator blink 3 times with 0.5 s interval after malfunction displays for 5 s, and then exit self-diagnosis mode.

Self-diagnosis DTC definition:

AC and Inner/Outer Circulation Indicator Condition	Definition
Indicator off	System is normal
AC indicator comes on, and circulation indicator goes off	Blower malfunction
AC indicator goes off, and circulation indicator comes on	Mix damper adjustment fails
AC indicator comes on, and circulation indicator blinks once	(Face) mode damper adjustment fails
AC indicator comes on, and inner/outer circulation indicator blinks twice	(Defrost) mode damper adjustment fails
AC indicator comes on, and inner/outer circulation indicator blinks 3 times	Inner/outer circulation damper adjustment fails
AC indicator comes on, and inner/outer circulation indicator blinks 4 times	Evaporator temperature sensor malfunction (open or short)

Ground Inspection

Groundings are very important to entire circuit system, which are normal or not can seriously affect the entire circuit system. Ground points are often exposed to moisture, dirt and other corrosive environments. Corrosion (rust) and oxidation may increase load resistance. This situation will seriously affect normal operation of circuit. Check the ground points as follows:

1. Remove ground bolt or nut.
2. Check all contact surfaces for tarnish, dirt and rust, etc.
3. Clean as necessary to ensure that contacting is in good condition.
4. Reinstall ground bolt or nut securely.
5. Check if add-on accessories interfere with ground circuit.
6. If several wire harnesses are crimped into one ground terminal, check for proper crimps. Make sure all wire harnesses are clean, securely fastened and providing a good ground path.

ON-VEHICLE SERVICE

On-vehicle Inspection

HINT:

- A/C refrigerant lines and hoses are used to transfer refrigerant among A/C system components. Any twist or bend in refrigerant lines and hoses will reduce performance of A/C system and refrigerant flow in system.
- There remains high pressure in refrigerant when A/C compressor assembly is operating. It is necessary to ensure that each connecting part in A/C system is sealed well. Check all system lines at least once a year to ensure that they are in good condition and properly routed. Refrigerant lines and hoses cannot be repaired and must be replaced if leakage or damage exists.

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1. General inspection

- Check if there is any oil or dust in each joint of A/C line. If this occurs, there may be leakage.
- Check if condenser surface is dirty and if fins are deformed.
- Check if there are harsh noises while compressor assembly is operating normally.
- Temperature difference should be noticeable by touching intake line and exhaust line of compressor assembly with hand. Normally, temperature of low pressure line is relatively low and that of high pressure line is relatively hot. If you feel the temperature of intake duct and exhaust duct of condenser with hand, under normal conditions, temperature of intake duct is higher than that of exhaust duct. If you feel the temperature difference between expansion valve inlet and outlet line with hand, under normal conditions, temperature of expansion valve inlet line is relatively hot and that of outlet line is relatively cool, and the temperature difference between them is noticeable. Using pressure gauge set, check the refrigerant pressure. If you feel the temperature difference between expansion valve inlet and outlet line with hand, under normal conditions, temperature of expansion valve inlet line is relatively hot and that of outlet line is relatively cool, and the temperature difference between them is noticeable.

2. Using pressure gauge set, check the refrigerant pressure.

- Connect manifold pressure gauge set. After following conditions are met, read pressure values on pressure gauge. Measurement Condition:
 - Inner/Outer circulation switch is in outer circulation position.
 - Engine runs at approximately 2000 rpm.
 - Adjust temperature knob to Max. Cool.
 - Set blower speed control switch to highest band.
 - Turn on A/C switch.

Observe pressure values on pressure gauge. In normal condition, low pressure value is 0.15 - 0.20 Mpa and high pressure value is 1.3 - 1.7 Mpa.

Compressor Assembly Noise Inspection

When checking noise related to A/C system, you must first know the conditions under which the noise occurs. These conditions include: weather, vehicle speed, engine speed, engine temperature and any other special conditions. Loud noises during A/C operation can often mislead someone. For example, some sounds, like a failed bearing, may be caused by loose bolts, mounting brackets or a loose compressor assembly.

CAUTION

- A/C compressor assembly must be replaced if any abnormal noise is heard from compressor assembly.
- Noise may occur from drive belt at different engine speeds, and you may mistake it for a noise from A/C compressor assembly.

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1. Select a quiet place for testing.
2. Duplicate customer's feedback information as much as possible.
3. Turn A/C system on and off several times to clearly identify compressor assembly noise.
4. Check the condition of compressor assembly belt.
5. Check compressor assembly hub, pulley and bearing assembly. Make sure hub and pulley are aligned correctly, and pulley bearing is securely installed to A/C compressor assembly.
6. Check if refrigerant line routes incorrectly, and if it is damaged or has an interference that could result in an abnormal noise. Also, check refrigerant line for twist or bend, otherwise the refrigerant will be limited to flow, which will cause a noise.
7. Loosen all compressor assembly tightening bolts and retighten them.
8. If noise occurs when liquid refrigerant in A/C suction line is under a slugging condition, replace the condenser and check refrigerant oil level and charging condition for refrigerant.
9. If slugging condition still exists after replacing condenser, replace A/C compressor assembly.

WARNING

- DO NOT race engine when vacuum pump operates or vacuum exists in A/C system. Failure to do so may result in a serious damage to A/C compressor assembly.

Refrigerant Leakage Inspection

⚠ WARNING

- DO NOT perform pressure test or leakage test to R134a service device or vehicle A/C system with compressed air. Mixture of air and R134a is inflammable at high pressure. This mixture has potential danger, and it may cause a fire or explosion, resulting in vehicle damage, personal injury or death.
- Avoid inhaling vapor or moisture from the A/C refrigerant and refrigerant oil.
- Only use special service device to discharge R134a system. If system discharges unexpectedly, ventilate work place before servicing.

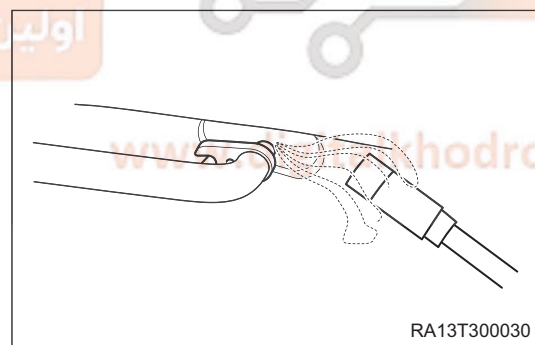
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👁 CAUTION

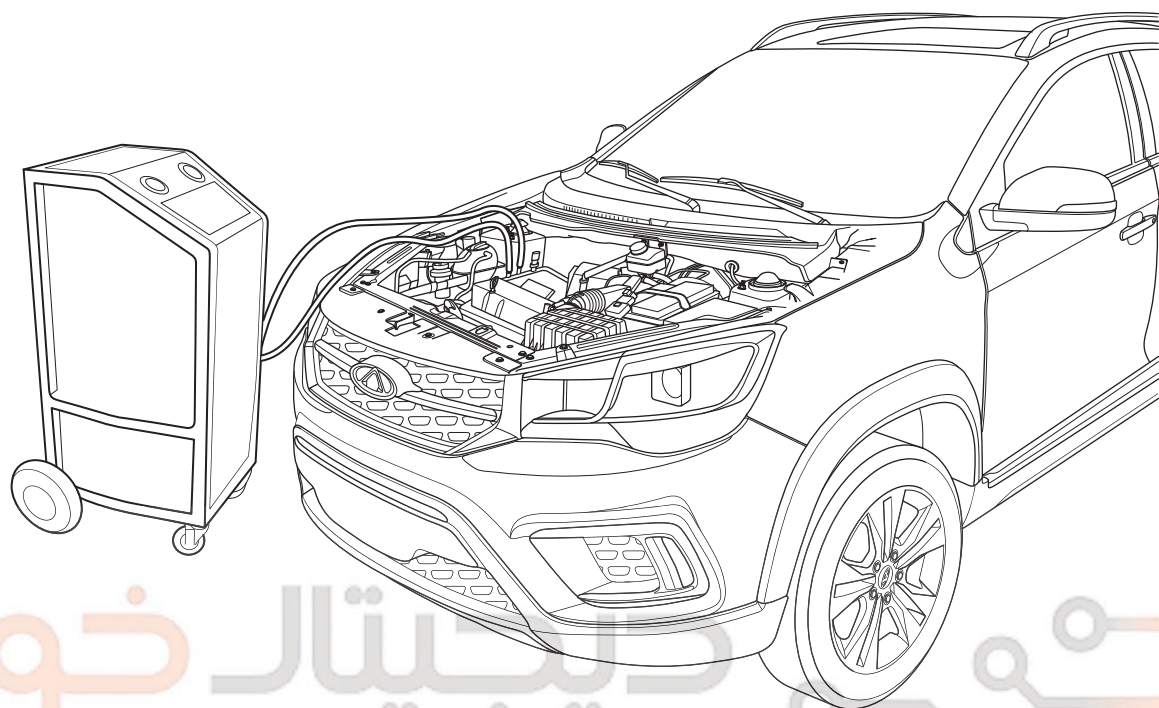
- If A/C refrigerant filling amount is empty or low, A/C system may have leak. Check all A/C lines, joints and parts for remaining oil. The remaining oil is indication mark of A/C system leaking position.

Check refrigerant for leakage.

1. After recharging refrigerant, use gas leak detector to check refrigerant gas for leakage.
2. Perform operations under following conditions:
 - Stop engine.
 - Ensure ventilation is well (gas leak detector may react to volatile gases which are not from refrigerant, such as gasoline vapor or exhaust gas).
 - Repeat test for 2 or 3 times.
 - Make sure there is some refrigerant remaining in refrigeration system.



3. Place gas leak detector near the joint of A/C line, and check A/C line for leakage. If gas leak detector makes a sound, it indicates that a leakage exists. Repair or replace leaked A/C line as necessary.
4. Disconnect A/C pressure sensor connector, and use same procedures to check A/C pressure sensor for leakage. Replace A/C pressure sensor as necessary.
5. Insert gas leak detector into evaporator tank assembly, and use same procedures to check evaporator for leakage. Clean or replace evaporator core assembly as necessary.
6. Use same procedures to check condenser for leakage. Clean or replace evaporator assembly as necessary.



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Refrigerant Recovering/Draining

WARNING

- Take extra care when servicing A/C system under high pressure.
- There is refrigerant under high pressure in A/C system. It must be serviced by professional technician. Otherwise, a wrong service procedure may cause a serious danger or fatal injury.
- If A/C system pressure is released unexpectedly, ventilate work area before servicing. In a closed work place, if a large amount of refrigerant is discharged, it may cause oxygen reduction and result in smothering, causing a serious or fatal injury.

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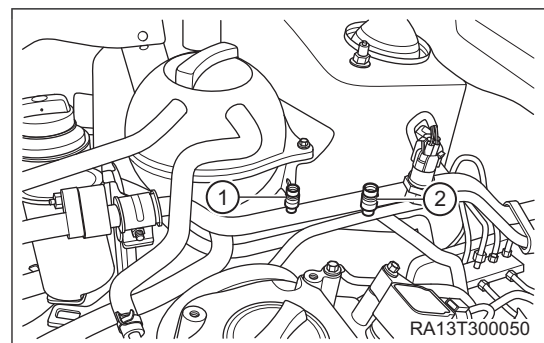
ENVIRONMENTAL PROTECTION

- Never drain refrigerant in A/C system into the atmosphere directly, and avoid environmental contamination.

CAUTION

- It is necessary to recover refrigerant with R134a refrigerant special recycling machine.
- DO NOT work near open flames.
- Always dispose of recovered refrigerant as specified.
- Never charge R-12 to refrigerant system which is designed to use R134a. The refrigerants are incompatible, which could damage A/C system.
- DO NOT race engine when vacuum pump operates or vacuum exists in A/C system. Otherwise, A/C compressor assembly will be damaged seriously.

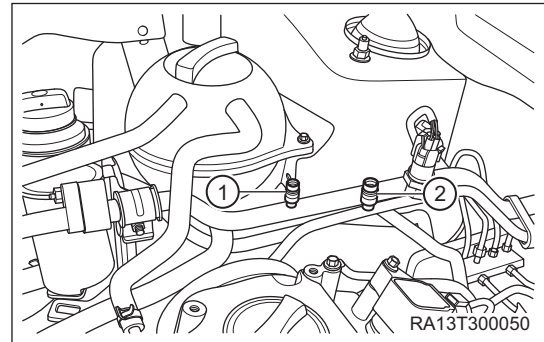
1. Open hood and loosen joint cover of A/C high/low pressure line.
2. Connect refrigerant recycling machine to A/C high/low pressure line joint.
 - a. Connect red connector to A/C high pressure line joint (1).
 - b. Connect blue connector to A/C low pressure line joint (2).



3. Open high pressure valve and low pressure valve of refrigerant recycling machine.
4. Choose "recovering" item on machine and make it start to operate.
5. Check low pressure value on pressure gauge to ensure that recycling is completed, and then turn off machine.
6. Disconnect the connection between refrigerant recycling machine and A/C line joint.
7. Reinstall cover onto refrigerant line joint.

Vacuum Pumping

1. Open hood and loosen joint cover of A/C high/low pressure line.
2. Connect refrigerant recycling machine to A/C high/low pressure line joint.
 - a. Connect red connector to A/C high pressure line joint (1).
 - b. Connect blue connector to A/C low pressure line joint (2).



3. Open high pressure valve and low pressure valve of refrigerant recycling machine.
4. Choose "vacuum pumping" item on machine and the time setting is 15 minutes, then choose OK and make it start to operate.
5. Wait for 10 minutes after completing operation, and check if there is any change in A/C system vacuum. If there is any change, A/C system leakage may exist, you should check and repair the A/C system. If there is no change, proceed to perform refrigerant charging procedures.

Refrigerant Recharging

CAUTION

- A small amount of refrigerant oil in A/C system will be discharged when recovering and draining refrigerant. When filling A/C system, be sure to supplement refrigerant oil, as some amount of oil are lost during recovering.
- DO NOT fill excessive refrigerant. Otherwise, it will cause excessive pressure to compressor assembly, resulting in compressor assembly noise and A/C system failure.
- Always perform vacuum pumping before recharging refrigerant.

1. Perform vacuum pumping with a vacuum pump.
2. Add refrigerant oil after checking that there is no leakage in A/C system.
3. Perform vacuum pumping for 3 minutes again after adding refrigerant oil, then charge refrigerant.
4. Choose "charging" item on machine and set the amount of charging to specified value, then choose "OK" and make it start to operate.
5. Open suction valve and close discharging valve, and then open the charging valve to allow refrigerant to flow into system.
6. When delivery of refrigerant has stopped, close charging valve.
7. If charged refrigerant is not delivered to specified position, start engine to operate A/C compressor assembly.
8. Open charging valve to deliver the remaining refrigerant to A/C system.

30 - AIR CONDITIONING

⚠ WARNING

- At this time, do not open exhaust (high pressure) valve. Failure to do so may result in personal injury or even death.

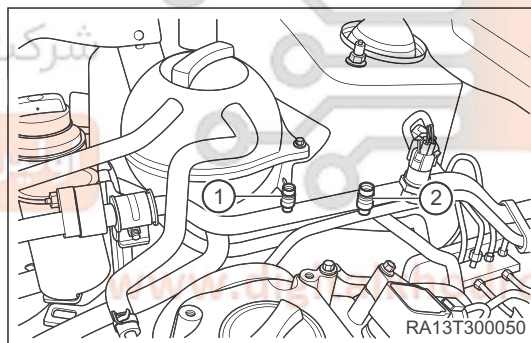
9. Perform A/C system pressure test after charging.
10. Remove connecting pipe for refrigerant charging after test is completed.
11. Reinstall cover onto A/C line joint.

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Refrigerant Oil Recovering**👁 CAUTION**

- Special service equipment for R134a refrigerant must be used.
- Always keep work area in good ventilation, because A/C system is easy to leak.
- Always dispose of recovered refrigerant as specified.
- Refrigerant oil must be charged after replacing A/C system components or recovering refrigerant.

1. Open engine hood and loosen joint cover of A/C high/low pressure line.
2. Connect refrigerant recycling machine to A/C high/low pressure line joint.
 - a. Connect red connector to A/C high pressure line joint (1).
 - b. Connect blue connector to A/C low pressure line joint (2).



3. Open high pressure valve and low pressure valve of refrigerant recycling machine.
4. Recover refrigerant oil according to instructions on machine.
5. Record amount of recovered refrigerant oil.
6. Disconnect the connection between refrigerant recycling machine and A/C line joint.
7. Reinstall joint cover onto refrigerant line joint.

Refrigerant Oil Charging

Refrigerant Oil Charging Amount Specifications

Item	A/C Compressor Assembly Replacement	Condenser Replacement	Evaporator Replacement	Line Replacement
Refrigerant Oil Charging Amount	It is necessary to pour out 50 ml of refrigerant oil from new compressor assembly	10 ml	10 ml	5 ml

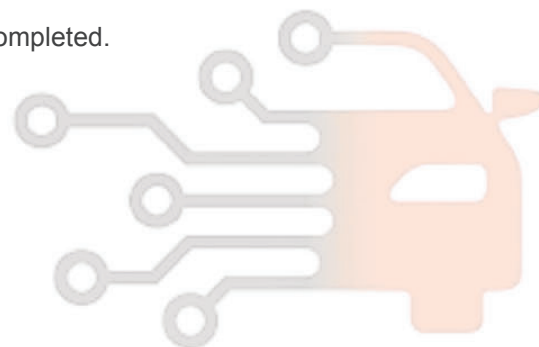
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1. Perform vacuum pumping with a vacuum pump. Wait for 10 minutes after completing operation, and check if there is any change in A/C system pressure. If there is any change, A/C system leakage may exist, you should check and repair the A/C system. If there is no change, proceed to perform refrigerant charging procedures.
2. Open suction valve and close exhaust valve, and then open the charging valve to allow refrigerant oil to flow into system.
3. Close charging valve after refrigerant oil charging is completed.
4. Perform vacuum pumping again for 3 minutes.
5. Continue to perform refrigerant charging procedures after operation is completed.

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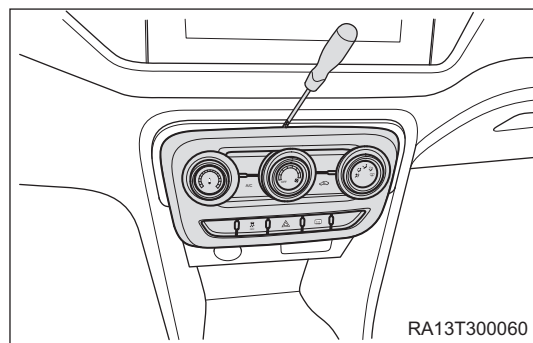
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A/C Control Panel Assembly (for Manual A/C)

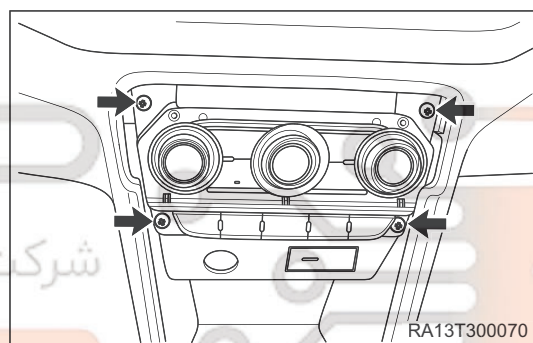
Removal

1. Turn off all electrical equipment and the ignition switch.
2. Disconnect the negative battery cable.
3. Remove the A/C control panel.

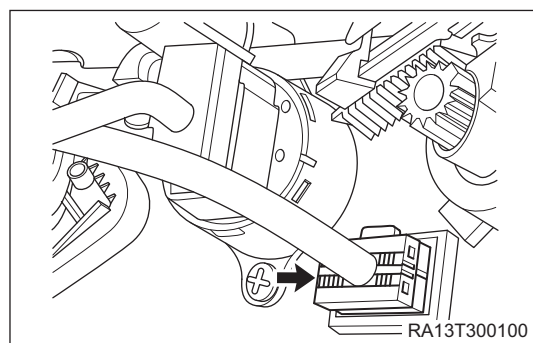
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- a. Using an interior crow plate, pry up the A/C control panel cover (arrow).
- b. Remove 4 fixing screws (arrow) from A/C control panel.



- c. Remove the auxiliary fascia console front left extension panel assembly (See page 46-8).
- d. Pry off select cable holder from mix damper servo mechanism, and press bottom pin of servo mechanism and then remove connector .
- e. Remove the glove box assembly (See page 46-12).
- f. Pry off select cable holder from mode damper servo mechanism, and press bottom pin of servo mechanism and then remove connector .
- g. Disconnect A/C control panel assembly connector (arrow) and remove A/C control panel assembly.



Installation

Installation is in the reverse order of removal.

CAUTION

- Be sure to install fixing clips on upper part of center control integration panel assembly in place during installation.
- Be sure to align positioning pin on upper part of center control integration panel assembly with positioning hole on instrument panel when installing.

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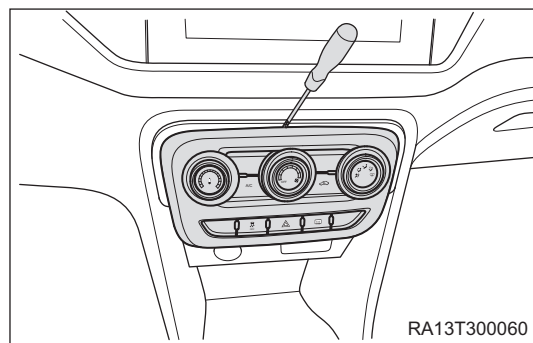
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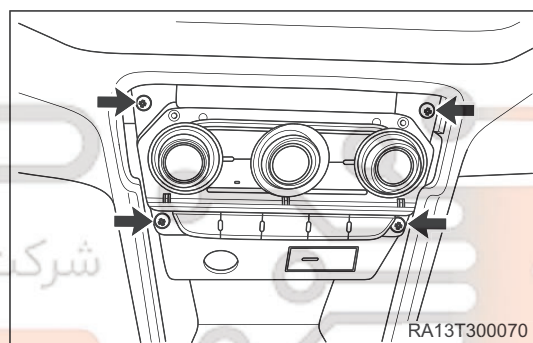
A/C Control Panel Assembly (for Power A/C)**Removal**

1. Turn off all electrical equipment and the ignition switch.
2. Disconnect the negative battery cable.
3. Remove the A/C control panel.

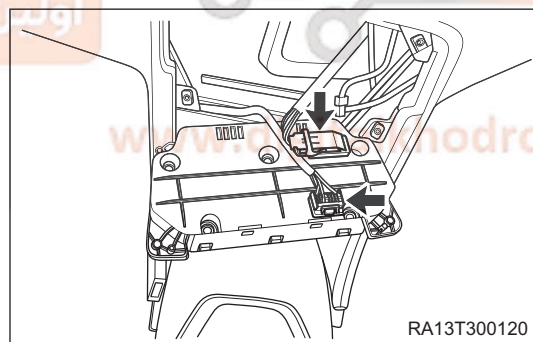
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- a. Using an interior crow plate, pry up the A/C control panel cover (arrow).
- b. Remove 4 fixing screws (arrow) from A/C control panel.



- c. Disconnect 2 A/C control panel assembly connectors (arrow) and remove A/C control panel assembly.

**Installation**

Installation is in the reverse order of removal.

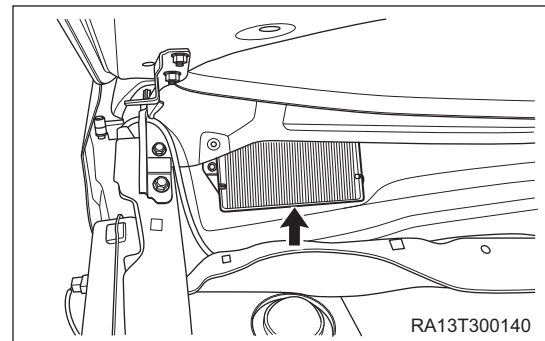
CAUTION

- Be sure to install fixing clips on upper part of center control integration panel assembly in place during installation.
- Be sure to align positioning pin on upper part of center control integration panel assembly with positioning hole on instrument panel when installing.

A/C Element

Removal

1. Remove the front windshield support cover plate (See page 49-29).
2. Remove the A/C element (arrow).



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Installation

Installation is in the reverse order of removal.

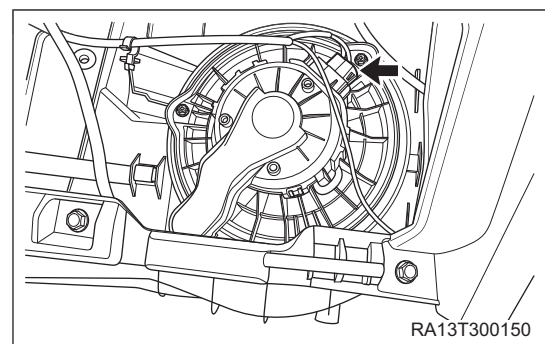
CAUTION

- Be sure to check A/C element for dirt when installing. Clean it as necessary.
- If A/C element is too dirty or damaged, replace it with a new one.

Blower Assembly

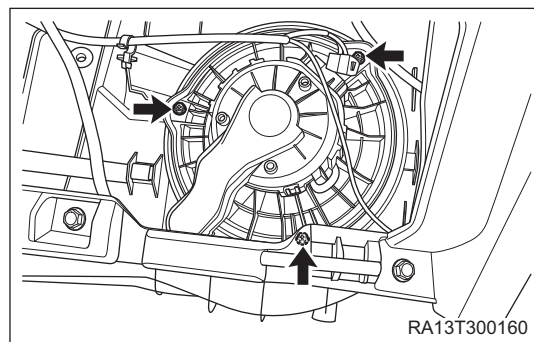
Removal

1. Turn off all electrical equipment and the ignition switch.
2. Disconnect the negative battery cable.
3. Remove the glove box assembly (See page 46-12).
4. Remove the blower assembly.
 - a. Disconnect the blower assembly connector (arrow).



30 - AIR CONDITIONING

- b. Remove 3 fixing screws (arrow) from blower assembly.

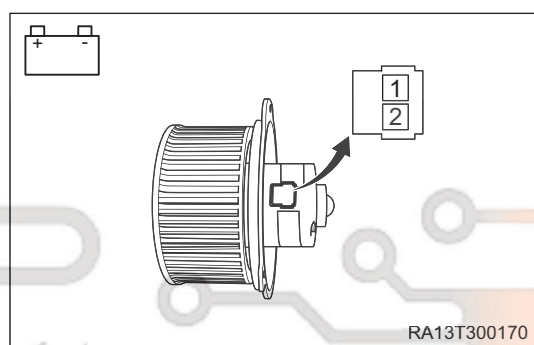


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- c. Remove the blower assembly.

Inspection

1. Check the blower motor.
 - a. Remove the blower assembly.
 - b. Connect positive (+) battery lead to terminal 1 and negative (-) battery lead to terminal 2. Check that blower motor operates smoothly.

**Installation**

Installation is in the reverse order of removal.

CAUTION

- Tighten fixing screws to specified torque.

Blower Speed Resistor (for Power A/C)

Removal

WARNING

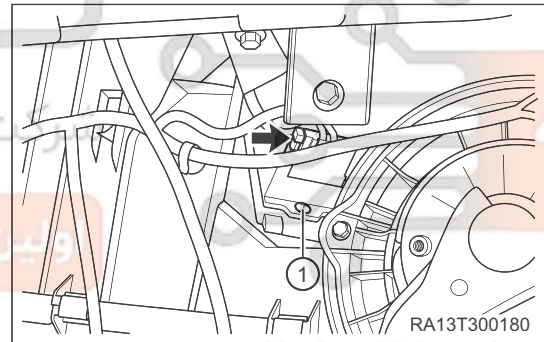
- During normal operation, blower speed resistor may be very hot. Turn off blower and wait for a few minutes to cool it before diagnosing or servicing, in order to avoid burns.

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CAUTION

- DO NOT operate blower assembly, when removing blower speed resistor from vehicle. Failure to do so may result in damage to blower assembly.

1. Turn off all electrical equipment and the ignition switch.
2. Disconnect the negative battery cable.
3. Remove the glove box assembly ([See page 46-12](#)).
4. Remove the blower speed resistor.
 - a. Disconnect blower speed resistor connectors (arrow), and remove blower speed resistor fixing screw (1).



- b. Remove the blower speed resistor.

Installation

Installation is in the reverse order of removal.

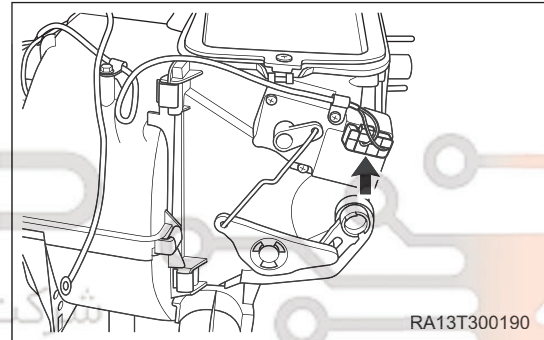
CAUTION

- Tighten fixing screws to specified torque.

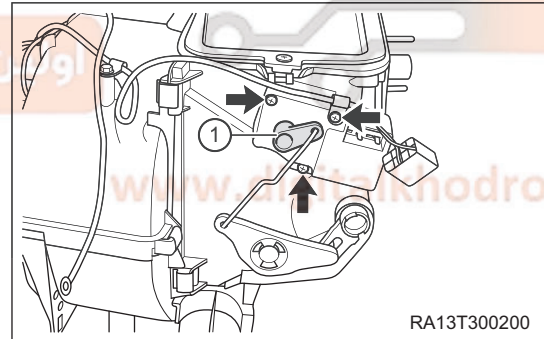
Inner/Outer Circulation Damper Servo Motor (for Power A/C)

Removal

1. Recover refrigerant from A/C system (See page 30-22).
2. Turn off all electrical equipment and the ignition switch.
3. Disconnect the negative battery cable.
4. Remove the driver airbag (See page 31-45).
5. Remove the steering wheel assembly (See page 28-8).
6. Remove the steering column (See page 28-13).
7. Remove the auxiliary fascia console assembly (See page 46-8).
8. Remove the instrument panel assembly (See page 46-11).
9. Remove the instrument panel crossmember assembly (See page 46-17).
10. Remove the HVAC assembly.
11. Remove the inner/outer circulation damper servo motor (for power A/C).
 - a. Disconnect the inner/outer circulation damper servo motor connector (arrow).



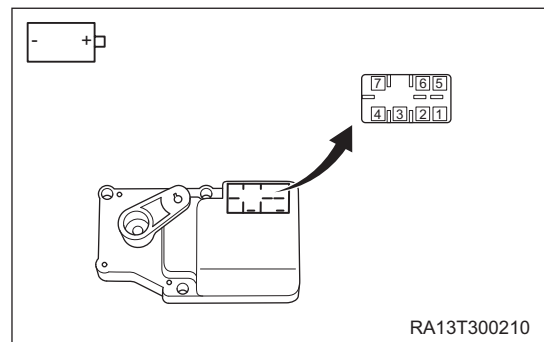
- b. Remove 3 fixing screws (arrow) and detach clip (1) from inner/outer circulation damper servo motor.



- c. Remove the inner/outer circulation damper servo motor.

Inspection

1. Check the inner/outer circulation damper servo motor.
 - a. Connect a few dry batteries (approximately 5 V) in series. Connect positive (+) battery lead to terminal 1 and negative (-) lead to terminal 3. Check that inner/outer circulation damper servo motor operates smoothly clockwise.
 - b. Connect a few dry batteries (approximately 5 V) in series. Connect positive (+) battery lead to terminal 3 and negative (-) lead to terminal 1. Check that inner/outer circulation damper servo motor operates smoothly counterclockwise.



If there are any abnormalities, replace inner/outer circulation damper servo motor.

Installation

Installation is in the reverse order of removal.

CAUTION

- Tighten fixing screws to specified torque.
- When installing, apply a small amount of grease to contact surface between inner/outer circulation damper servo motor lever and inner/outer circulation damper set, to ensure the motor operates smoothly.

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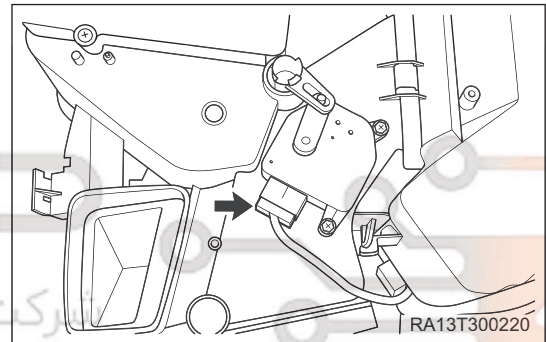
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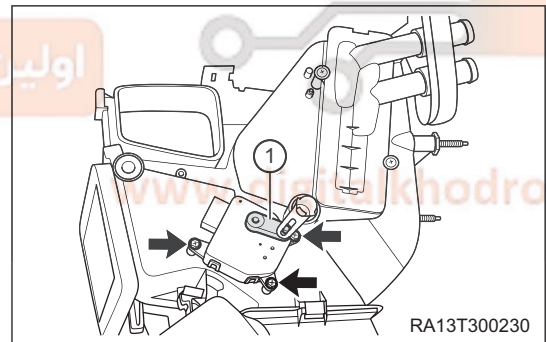
Mix Damper Servo Motor (for Power A/C)

Removal

1. Recover refrigerant from A/C system (See page 30-25).
2. Turn off all electrical equipment and the ignition switch.
3. Disconnect the negative battery cable.
4. Remove the driver airbag (See page 31-45).
5. Remove the steering wheel assembly (See page 28-8).
6. Remove the steering column (See page 28-13).
7. Remove the auxiliary fascia console assembly (See page 46-8).
8. Remove the instrument panel assembly (See page 46-11).
9. Remove the instrument panel crossmember assembly (See page 46-17).
10. Remove the HVAC assembly.
11. Remove the mix damper servo motor.
 - a. Disconnect the mix damper servo motor connector (arrow).



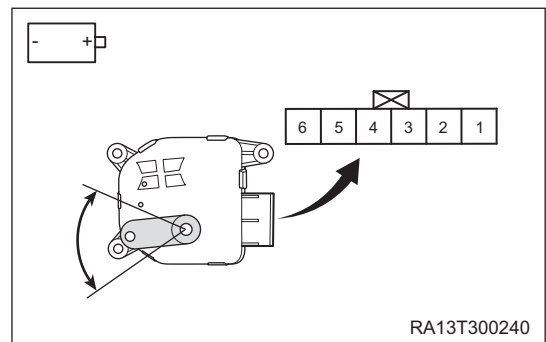
- b. Remove 3 fixing screws (arrow) and detach lever (1) from mix damper servo motor.



- c. Remove the mix damper servo motor.

Inspection

1. Check the mix damper servo motor.
 - a. Connect a few dry batteries (approximately 5 V) in series. Connect positive (+) battery lead to terminal 6 and negative (-) lead to terminal 4. Check that mix damper servo motor operates smoothly clockwise.
 - b. Connect a few dry batteries (approximately 5 V) in series. Connect positive (+) battery lead to terminal 4 and negative (-) lead to terminal 6. Check that mix damper servo motor operates smoothly counterclockwise.



If there are any abnormalities, replace mix damper servo motor.

Installation

Installation is in the reverse order of removal.

CAUTION

- Tighten fixing screws to specified torque.
- When installing, apply a small amount of grease to contact surface between mix damper servo motor lever and inner/outer circulation damper set, to ensure the motor operates smoothly.

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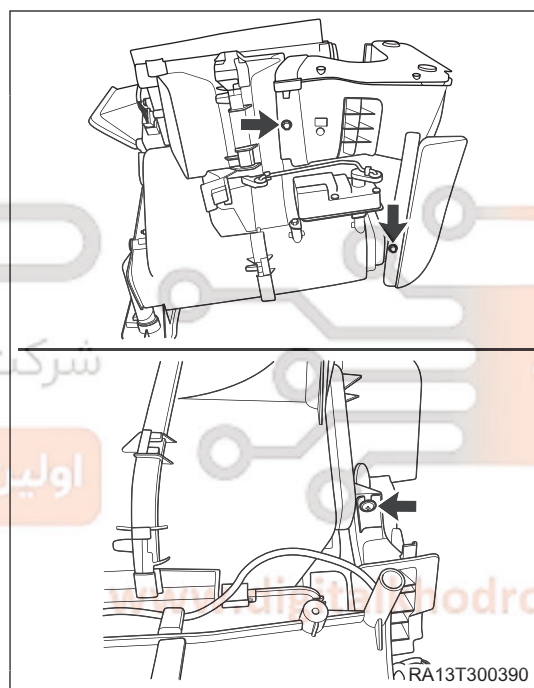
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Face Damper Servo Motor (for Power A/C)

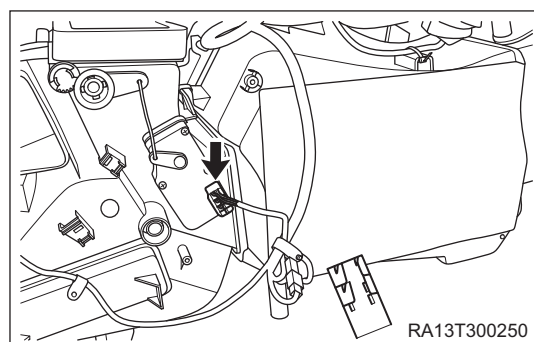
Removal

1. Recover refrigerant from A/C system (See page 30-22).
2. Turn off all electrical equipment and the ignition switch.
3. Disconnect the negative battery cable.
4. Remove the driver airbag (See page 31-45).
5. Remove the steering wheel assembly (See page 28-8).
6. Remove the steering column (See page 28-13).
7. Remove the auxiliary fascia console assembly (See page 46-8).
8. Remove the instrument panel assembly (See page 46-11).
9. Remove the instrument panel crossmember assembly (See page 46-17).
10. Remove the HVAC assembly.
11. Remove 3 fixing screws (arrow) from foot fan shield, and remove foot fan shield.

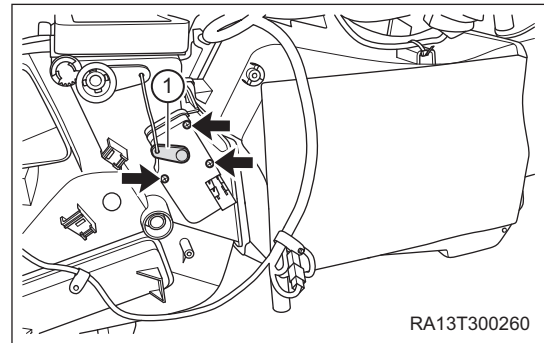
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12. Remove the face damper servo motor.
 - a. Disconnect the face damper servo motor connector (arrow).



- b. Remove 3 fixing screws (arrow) and detach lever clip (1) from face damper servo motor.

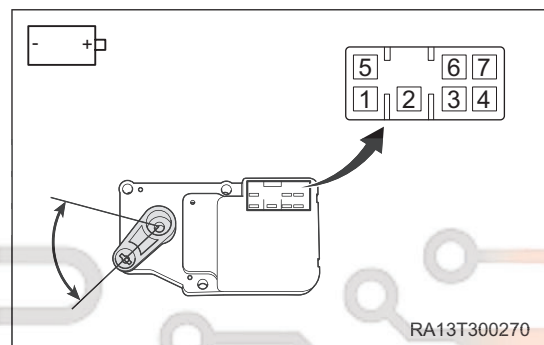


- c. Remove the face damper servo motor.

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Inspection

1. Check the face damper servo motor.
 - a. Connect a few dry batteries (approximately 5 V) in series. Connect positive (+) battery lead to terminal 6 and negative (-) lead to terminal 4. Check that face damper servo motor operates smoothly clockwise.
 - b. Connect a few dry batteries (approximately 5 V) in series. Connect positive (+) battery lead to terminal 4 and negative (-) lead to terminal 6. Check that face damper servo motor operates smoothly counterclockwise.



If there are any abnormalities, replace face damper servo motor.

Installation

Installation is in the reverse order of removal.

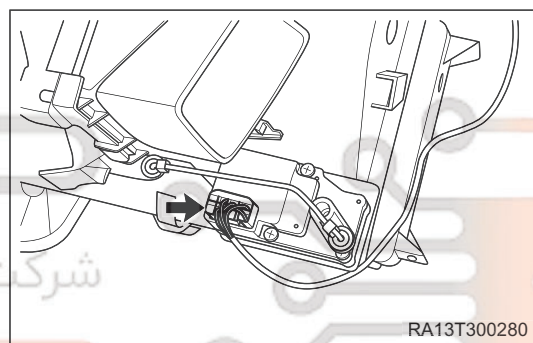
CAUTION

- Tighten fixing screws to specified torque.
- When installing, apply a small amount of grease to contact surface between face damper servo motor lever and inner/outer circulation damper set, to ensure the motor operates smoothly.

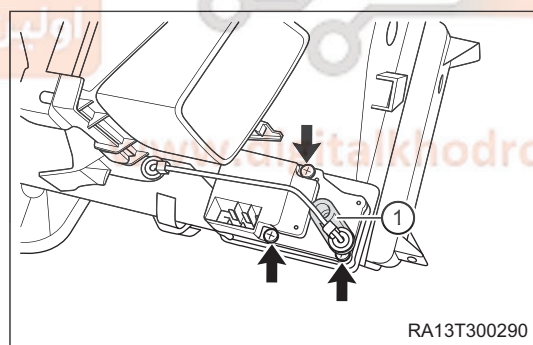
Defrost Damper Servo Motor (for Power A/C)

Removal

1. Recover refrigerant from A/C system (See page 30-22).
2. Turn off all electrical equipment and the ignition switch.
3. Disconnect the negative battery cable.
4. Remove the driver airbag (See page 31-45).
5. Remove the steering wheel assembly (See page 28-8).
6. Remove the steering column (See page 28-13).
7. Remove the auxiliary fascia console assembly (See page 46-8).
8. Remove the instrument panel assembly (See page 46-11).
9. Remove the instrument panel crossmember assembly (See page 46-17).
10. Remove the HVAC assembly.
11. Remove the foot fan shield (See page 30-38).
12. Remove the defrost damper servo motor.
 - a. Disconnect the defrost damper servo motor connector (arrow).



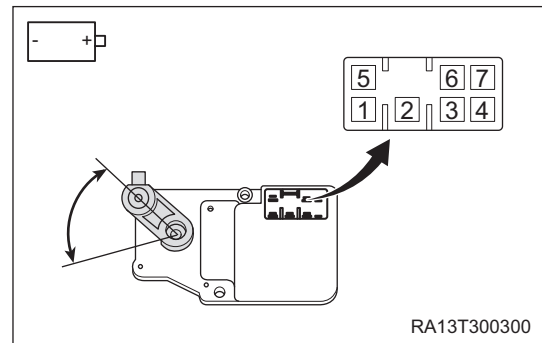
- b. Remove 3 fixing screws (arrow) and detach lever clip (1) from defrost damper servo motor.



- c. Remove the face damper servo motor.

Inspection

1. Check the defrost damper servo motor.
 - a. Connect a few dry batteries (approximately 5 V) in series. Connect positive (+) battery lead to terminal 6 and negative (-) lead to terminal 4. Check that defrost damper servo motor operates smoothly clockwise.
 - b. Connect a few dry batteries (approximately 5 V) in series. Connect positive (+) battery lead to terminal 4 and negative (-) lead to terminal 6. Check that defrost damper servo motor operates smoothly counterclockwise.



30

If there are any abnormalities, replace defrost damper servo motor.

Installation

Installation is in the reverse order of removal.

CAUTION

- Tighten fixing screws to specified torque.
- When installing, apply a small amount of grease to contact surface between defrost damper servo motor lever and inner/outer circulation damper set, to ensure the motor operates smoothly.

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30 - AIR CONDITIONING

HVAC Assembly

Removal

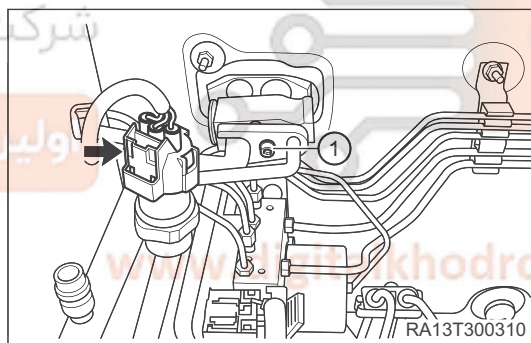
 CAUTION

- Special service equipment for R134a refrigerant must be used to recover/charge refrigerant.
- Be careful not to damage hoses during removal and installation.
- Always keep work area in good ventilation.
- Disconnected A/C line and connecting part should be sealed, to prevent foreign matter from entering.

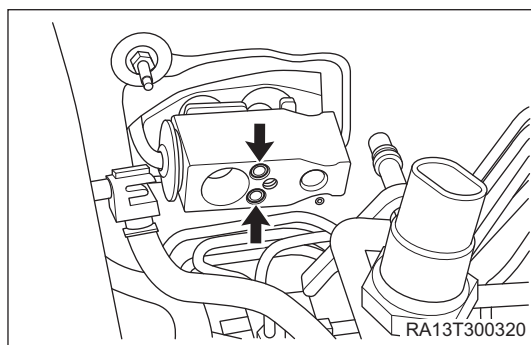
30

1. Recover refrigerant from A/C system (See page 30-22).
2. Turn off all electrical equipment and the ignition switch.
3. Disconnect the negative battery cable.
4. Remove the driver airbag (See page 31-45).
5. Remove the steering wheel assembly (See page 28-8).
6. Remove the steering column (See page 28-13).
7. Remove the auxiliary fascia console assembly (See page 46-8).
8. Remove the instrument panel assembly (See page 46-11).
9. Remove the instrument panel crossmember assembly (See page 46-17).
10. Remove the HVAC assembly.

- a. Disconnect A/C high/low pressure switch connector (arrow), and remove fixing bolt (1) between A/C high/low pressure line and expansion valve.

(Tightening torque: $9 \pm 1.5 \text{ N}\cdot\text{m}$)

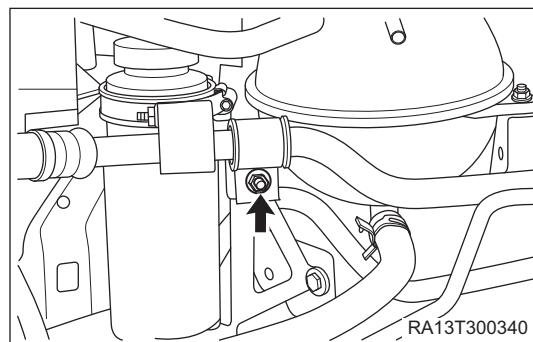
- b. Remove 2 fixing bolts (arrow) between expansion valve and expansion valve mounting pressure plate.

(Tightening torque: $9 \pm 1.5 \text{ N}\cdot\text{m}$)

30 - AIR CONDITIONING

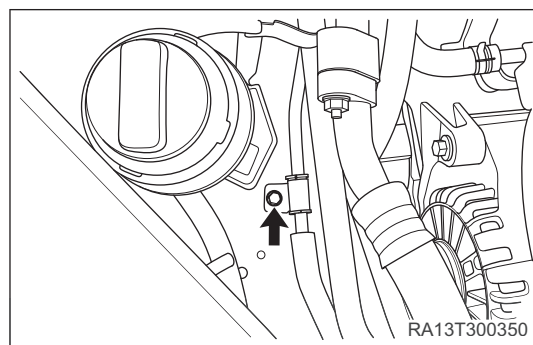
- c. Remove 1 fixing nut (arrow) from A/C low pressure line.

(Tightening torque: $9 \pm 1.5 \text{ N}\cdot\text{m}$)

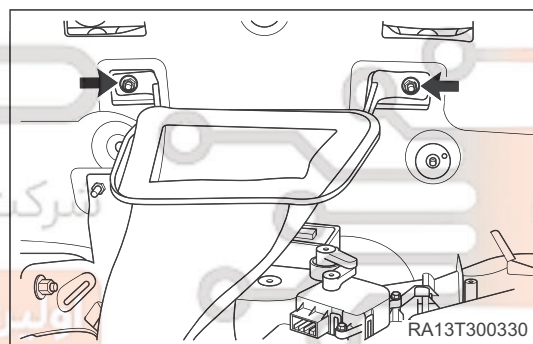


- d. Remove 1 fixing bolt (arrow) from A/C high pressure line.

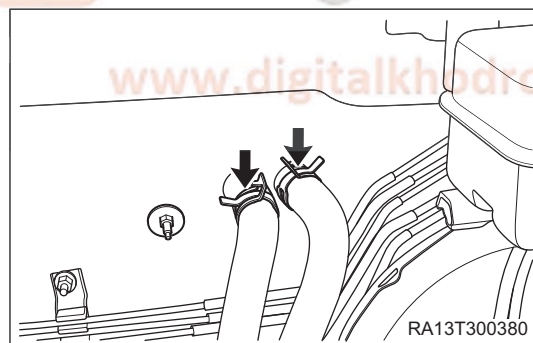
(Tightening torque: $9 \pm 1.5 \text{ N}\cdot\text{m}$)



- e. Remove 2 fixing nuts from defroster duct assembly, and remove defroster duct assembly.

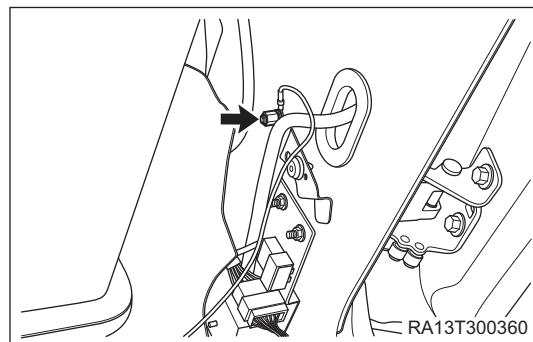


- f. Using snap spring calipers, disengage fixing clamps (arrow) from heating inlet and outlet hoses, to detach inlet and outlet hoses.



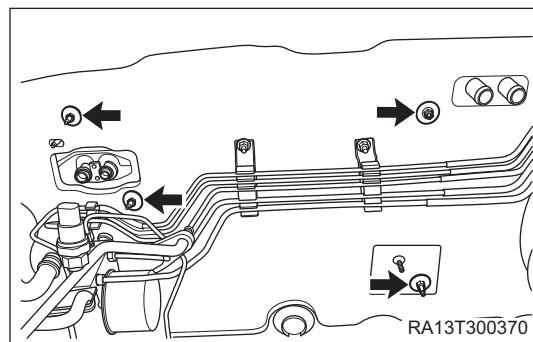
- g. Remove fixing nut (arrow) from A/C wire harness ground point, and disengage ground wire.

(Tightening torque: $7 \pm 1.5 \text{ N}\cdot\text{m}$)



30 - AIR CONDITIONING

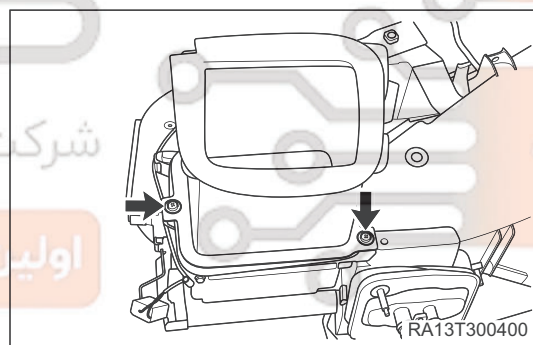
- h. Remove 4 fixing nuts (arrow) between HAVC and body.



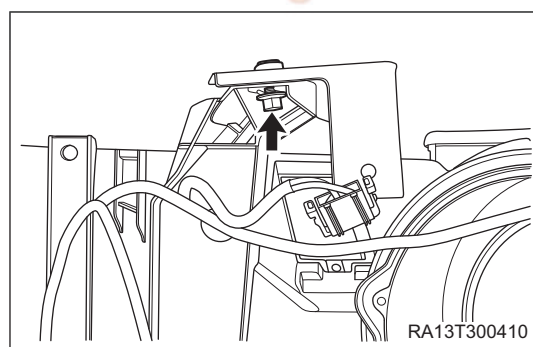
- i. Carefully remove HVAC assembly from cabin.

Disassembly

1. Remove the blower assembly (See page 30-31).
2. Remove the blower speed resistor (See page 30-33).
3. Remove the inner/outer circulation damper servo motor (See page 30-34).
4. Remove the mix damper servo motor (See page 30-36).
5. Remove the face damper servo motor (See page 30-38).
6. Remove the defrost damper servo motor (See page 30-40).
7. Remove the air inlet connecting duct assembly.
 - a. Remove 2 fixing screws (arrow) from air inlet connecting duct assembly.
(Tightening torque: $1.5 \pm 0.5 \text{ N}\cdot\text{m}$)



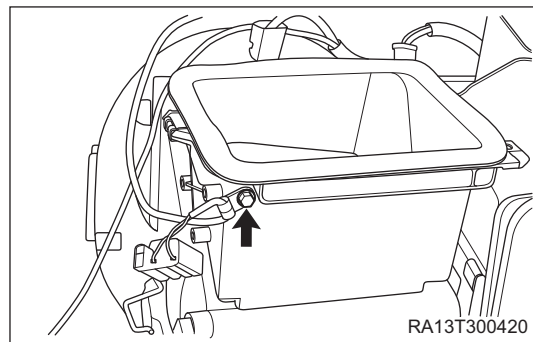
- b. Remove the air inlet connecting duct assembly.
8. Remove 1 fixing bolt (arrow) from HAVC fixing bracket.



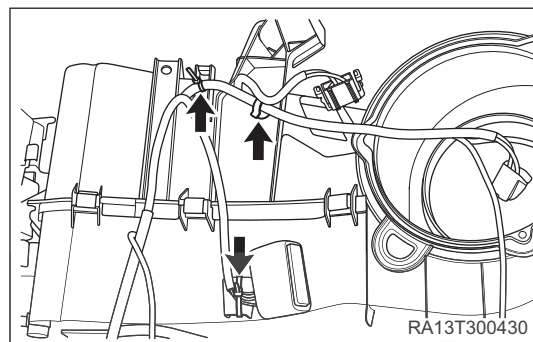
9. Remove the power A/C wire harness assembly.

- a. Remove fixing screw (arrow) from mix damper motor wire harness clip.

(Tightening torque: 1.5 ± 0.5 N·m)

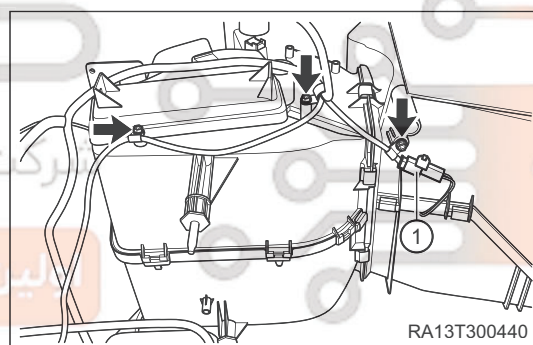


- b. Remove 3 fixing clips (arrow) from power A/C wire harness.



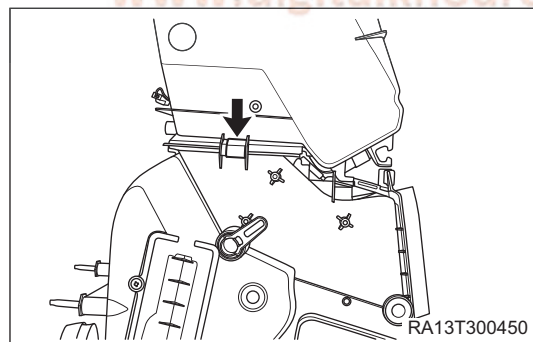
- c. Remove 3 fixing screws (arrow) from power A/C wire harness clip, and disconnect evaporator temperature sensor (1).

(Tightening torque: 1.5 ± 0.5 N·m)



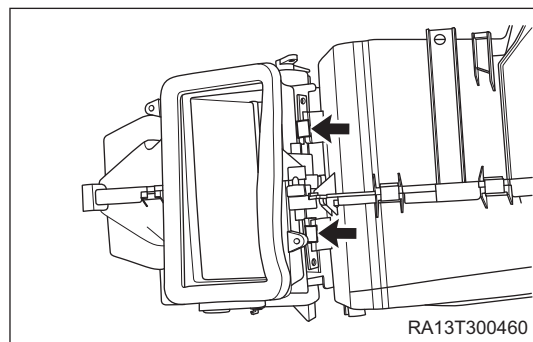
10. Separate evaporator housing assembly from blower housing assembly.

- a. Remove 1 coupling clip (arrow) between evaporator housing assembly and blower housing.



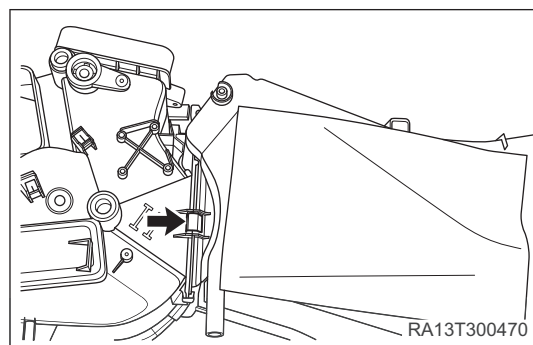
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- b. Remove 2 coupling clips (arrow) between evaporator housing assembly and blower housing.

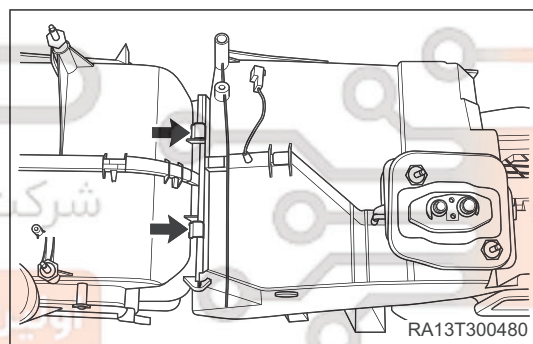


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- c. Remove 1 coupling clip (arrow) between evaporator housing assembly and blower housing.

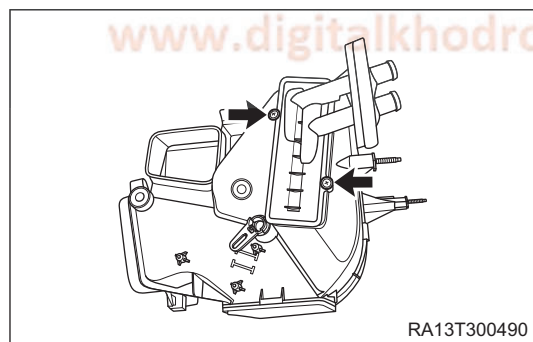


- d. Remove 2 coupling clips (arrow) between evaporator housing assembly and blower housing.



11. Remove the heater core.

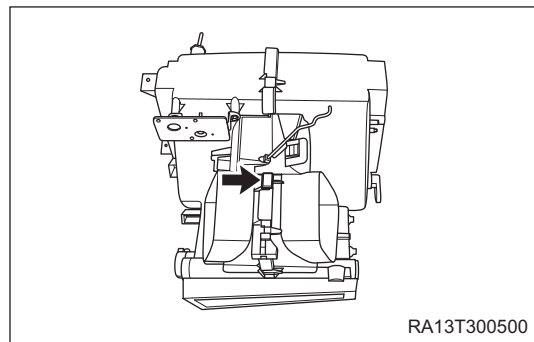
- a. Remove 2 fixing screws (arrow) from heater core.
(Tightening torque: $1.5 \pm 0.5 \text{ N}\cdot\text{m}$)



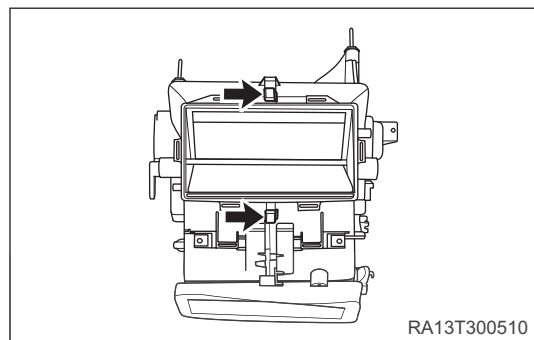
- b. Remove the heater core.

12. Remove mix damper, defrost damper and face damper set.

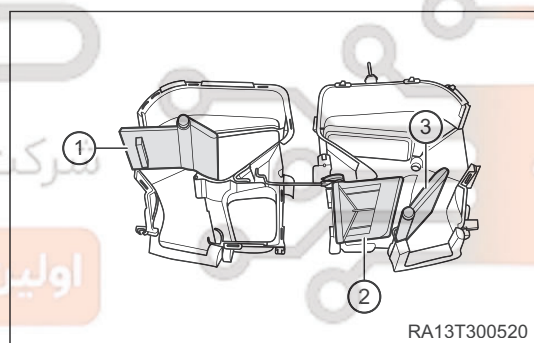
a. Remove 1 coupling clip (arrow) from heater core housing.



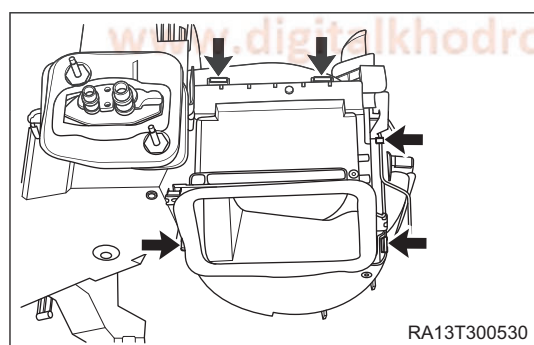
b. Remove 2 coupling clips (arrow) from heater core housing.



c. Disassemble heater core housing and remove mix damper (1), defrost damper (2) and face damper (3).



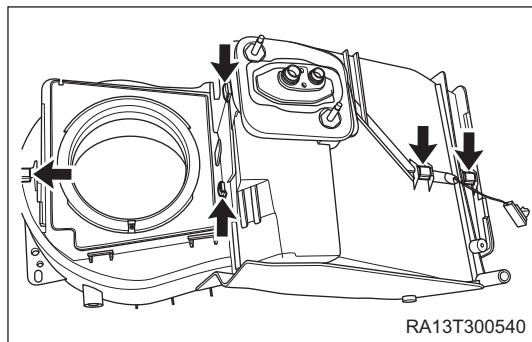
13. Remove 5 coupling clips (arrow) from inner/outer circulation damper set, and remove inner/outer circulation damper set.



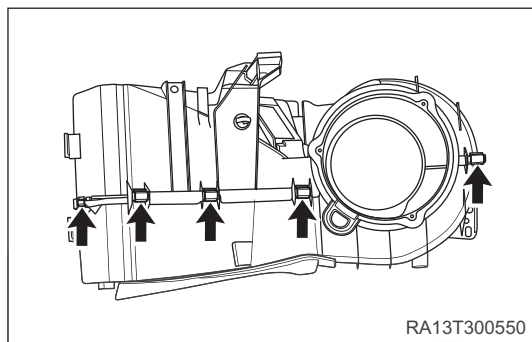
30 - AIR CONDITIONING

14. Remove the evaporator core.

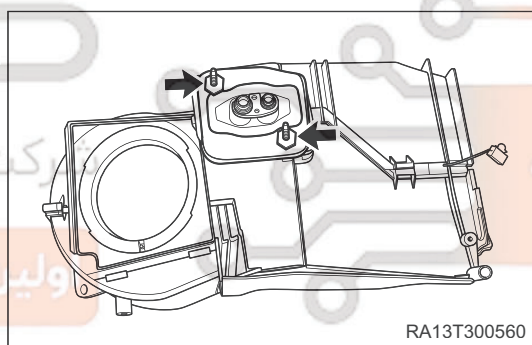
- a. Remove 6 coupling clips from evaporator core housing.



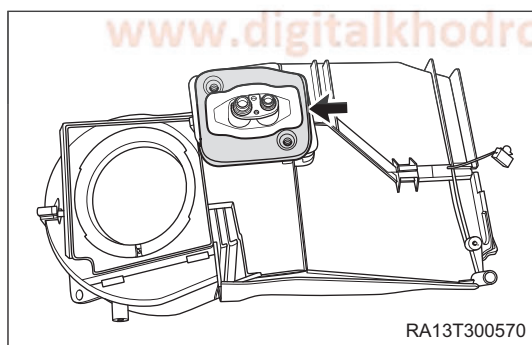
- b. Remove 5 coupling clips from evaporator core housing.



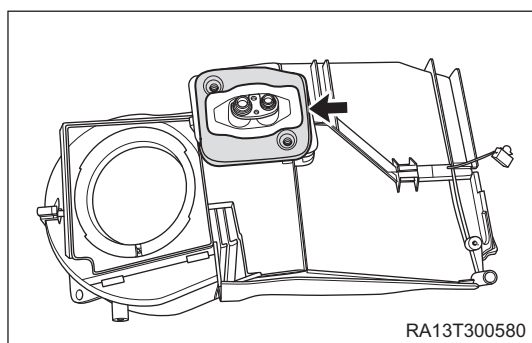
- c. Remove 2 coupling screws (arrow) between evaporator core housing and body, and remove blower washer (1).



- d. Remove fixing pressure plate (arrow) from evaporator core housing.

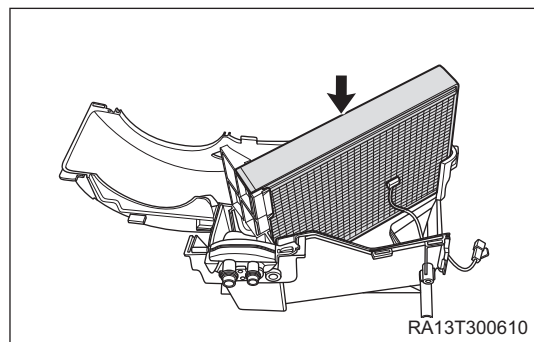


- e. Remove spacer (arrow) from evaporator core housing.

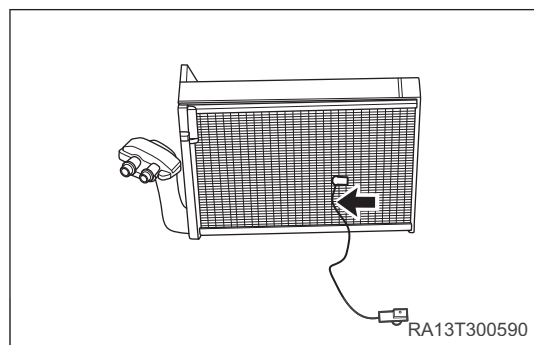


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- f. Disassemble evaporator core housing and remove evaporator core (arrow).



- g. Remove evaporator temperature sensor (arrow) from evaporator core.

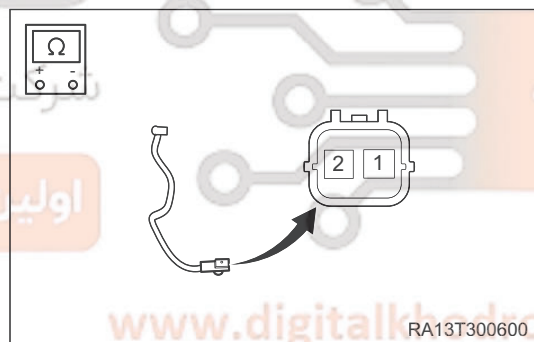


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Inspection

1. Check the evaporator temperature sensor.
 - a. Using ohm band of digital multimeter, measure resistance of evaporator temperature sensor according to table below.

Standard Resistance



Multimeter Connection	Temperature (°C)	Specified Condition (KΩ)
Terminal 1 - Terminal 2	-5	8.6577
Terminal 1 - Terminal 2	0	6.6500
Terminal 1 - Terminal 2	5	5.1501
Terminal 1 - Terminal 2	10	4.0207
Terminal 1 - Terminal 2	15	3.1630
Terminal 1 - Terminal 2	20	2.5065

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HINT:

Resistance decreases as temperature increases.

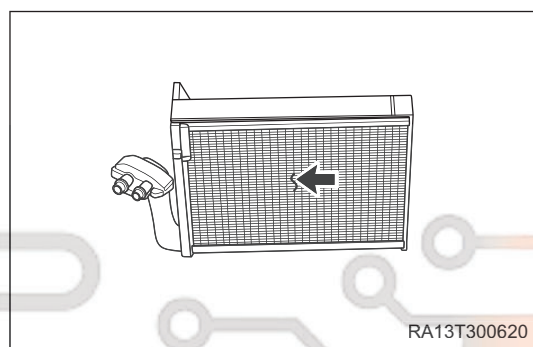
CAUTION

- Resistance value may change even if sensor is touched slightly. Make sure sensor connector is held firmly.
- During measurement, sensor temperature must be almost the same as ambient temperature.

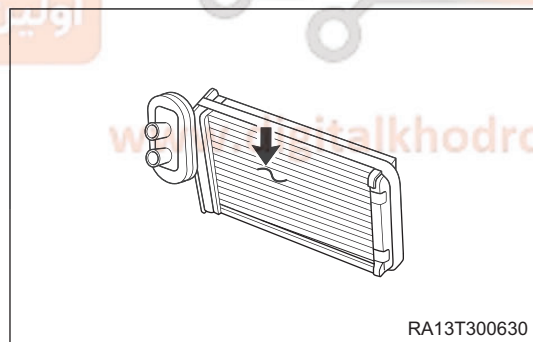
30

If result is not as specified, replace evaporator temperature sensor.

1. Check the evaporator core assembly.
 - a. Check if evaporator core assembly is cracked, damaged and leaked.
If any problem is found, replace evaporator core assembly.
 - b. Check fin for bends.
If any fin is bent, carefully straighten it with a screwdriver or pliers.



2. Check the heater core assembly.
 - a. Check if heater core assembly is cracked, damaged or leaked.
Check if heater core assembly is cracked, damaged or leaked.
 - b. Check fin for bends.
If any fin is bent, carefully straighten it with a screwdriver or pliers.



3. Check the damper control mechanism assembly.
 - a. Check if inner/outer circulation damper adjustment mechanism is stuck, deformed, damaged or if it has fallen out. Replace as necessary.
 - b. Check if temperature damper adjustment mechanism is stuck, deformed, damaged or if it has fallen out. Replace as necessary.
 - c. Check if mode damper adjustment mechanism set is stuck, deformed, damaged or if it has fallen out. Replace as necessary.
 - d. Check if inner/outer circulation/temperature/face/defrost/foot damper set is stuck, deformed, damaged or if it has fallen out. Replace as necessary.

Assembly

Assembly is in the reverse order of disassembly.

CAUTION

- If evaporator core is to be reused, do not insert the evaporator temperature sensor into a location where it was previously inserted. Insert it to a location that is 1 fin to the right or left of its previous location.
- During installation, apply a small amount of grease to contact surface of the inner/outer circulation damper adjustment mechanism, to ensure that it can operate smoothly.
- During installation, apply a small amount of grease to contact surface of the mix damper adjustment mechanism set, to ensure that it can operate smoothly.
- During installation, apply a small amount of grease to contact surface of the face damper adjustment mechanism, to ensure that it can operate smoothly.
- During installation, apply a small amount of grease to contact surface of the defrost damper adjustment mechanism, to ensure that it can operate smoothly.
- Always check that inner/outer circulation damper mechanism assembly operates normally after installation.
- Always check that mix damper mechanism assembly operates normally after installation.
- Always check that face damper mechanism assembly operates normally after installation.
- Always check that defrost damper mechanism assembly operates normally after installation.

Installation

Installation is in the reverse order of removal.

CAUTION

- Tighten fixing bolts and nuts to specified torques.
- It is necessary to replace refrigerant line O-ring, when installing refrigerant line. Failure to do so may result in refrigerant leaks.
- Only use specified O-ring, as it is made of special materials for R134a system.
- Only use recommended refrigerant oil which is applicable to A/C compressor assembly on vehicle.
- Be sure to recharge refrigerant and check for refrigerant leakage after installation.
- Recharge engine cooling system and check for coolant leakage after installation.

A/C Low Pressure Line

Removal

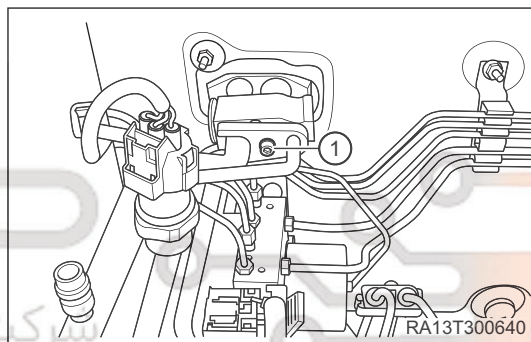
CAUTION

- Special service equipment for R134a refrigerant must be used to recover/charge refrigerant.
- Always keep work area in good ventilation.
- Disconnected A/C line and connecting part should be sealed, to prevent foreign matter from entering.

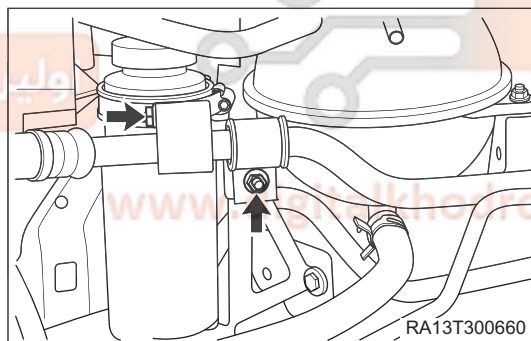
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1. Recover refrigerant from A/C system (See page 30-22).
2. Turn off all electrical equipment and the ignition switch.
3. Disconnect the negative battery cable.
4. Remove the A/C low pressure line (compressor to evaporator).

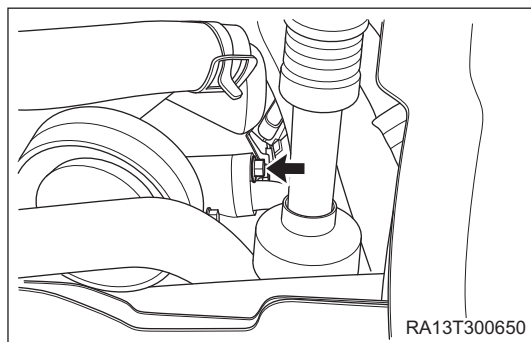
- a. Remove fixing bolt (arrow) between A/C high/low pressure line and expansion valve, and disengage A/C high/low pressure line.



- b. Remove 1 fixing nut (arrow) from A/C low pressure line, and remove coupling bolt (1) between A/C low pressure line and A/C high pressure line.



- c. Remove the A/C low pressure line I .
- d. Remove fixing bolt (arrow) between A/C low pressure line and compressor assembly, and disengage A/C low pressure line from compressor assembly.
(Tightening torque: $25 \pm 4 \text{ N}\cdot\text{m}$)



- e. Remove the A/C low pressure line II .

Installation

Installation is in the reverse order of removal.

CAUTION

- Tighten fixing bolts and nuts to specified torques.
- It is necessary to replace refrigerant line O-ring, when installing refrigerant line. Failure to do so may result in refrigerant leaks.
- Lubricate new rubber O-ring with clean refrigerant oil and install it to refrigerant line joint.
- Only use specified O-ring, as it is made of special materials for R134a system.
- Only use recommended refrigerant oil which is applicable to A/C compressor assembly on vehicle.
- Perform recharging for A/C system and check for refrigerant leakage.

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A/C High Pressure Line

Removal

CAUTION

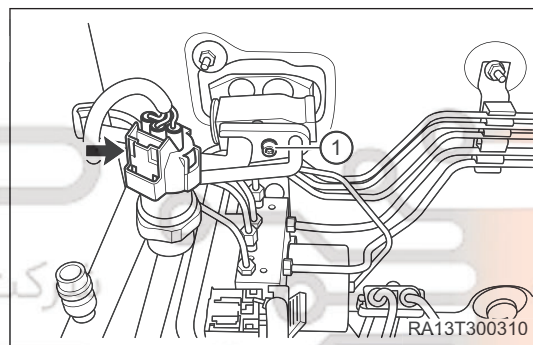
- Special service equipment for R134a refrigerant must be used to recover/charge refrigerant.
- Always keep work area in good ventilation.
- Disconnected A/C line and connecting part should be sealed, to prevent foreign matter from entering.

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1. Recover refrigerant from A/C system (See page 30-22).
2. Turn off all electrical equipment and the ignition switch.
3. Disconnect the negative battery cable.
4. Remove the front bumper assembly (See page 49-7).
5. Remove the A/C high pressure line (expansion valve to condenser).

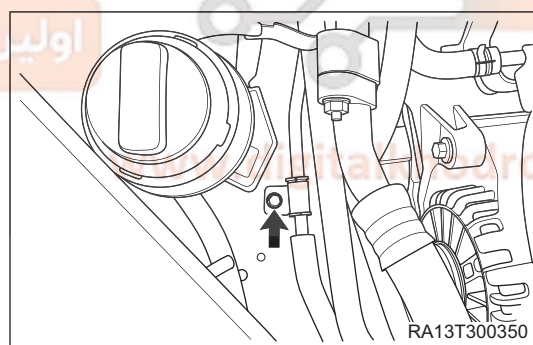
- a. Disconnect A/C high/low pressure switch connector (arrow), and remove fixing bolt (1) between A/C high/low pressure line and expansion valve.

(Tightening torque: $9 \pm 1.5 \text{ N}\cdot\text{m}$)



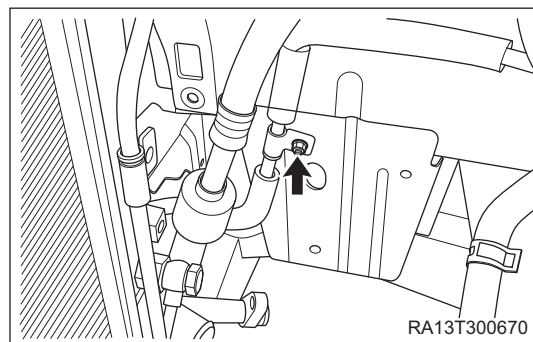
- b. Remove coupling bolt (arrow) between A/C high/low pressure line set bracket and body, and disengage A/C high pressure line I.

(Tightening torque: $9 \pm 1.5 \text{ N}\cdot\text{m}$)



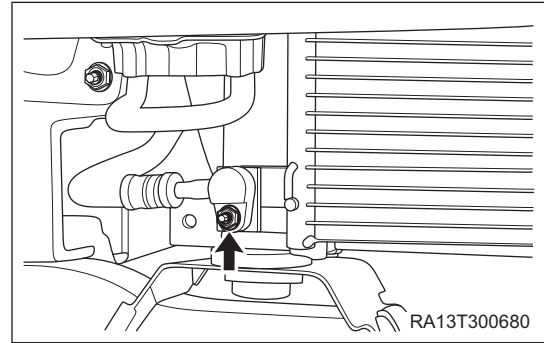
- c. Remove coupling bolt (arrow) between A/C high/low pressure line set bracket and body, and disengage A/C high pressure line I.

(Tightening torque: $9 \pm 1.5 \text{ N}\cdot\text{m}$)



- d. Remove fixing bolt (arrow) between A/C high pressure line I and condenser assembly, and disengage A/C high pressure line I from condenser assembly.

(Tightening torque: $9 \pm 1.5 \text{ N}\cdot\text{m}$)



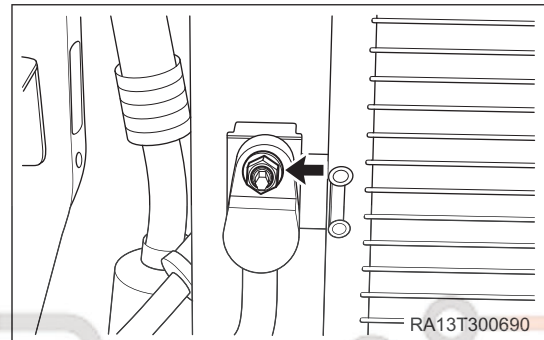
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- e. Remove the A/C high pressure line I (condenser to evaporator).

6. Remove the A/C high pressure line II (compressor to condenser).

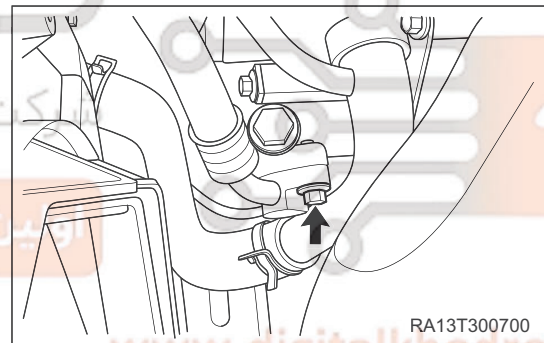
- a. Remove fixing bolt (arrow) between A/C high pressure line II and condenser assembly, and disengage A/C high pressure line II from condenser assembly.

(Tightening torque: $9 \pm 1.5 \text{ N}\cdot\text{m}$)



- b. Remove fixing bolt (arrow) between A/C high pressure line II and compressor assembly, and disengage A/C high pressure line II from compressor assembly.

(Tightening torque: $25 \pm 4 \text{ N}\cdot\text{m}$)



- c. (Tightening torque: $25 \pm 4 \text{ N}\cdot\text{m}$)

Installation

Installation is in the reverse order of removal.

CAUTION

- Tighten fixing bolts and nuts to specified torques.
- It is necessary to replace refrigerant line O-ring, when installing refrigerant line. Failure to do so may result in refrigerant leaks.
- Lubricate new rubber O-ring with clean refrigerant oil and install it to refrigerant line joint.
- Only use specified O-ring, as it is made of special materials for R134a system.
- Only use recommended refrigerant oil which is applicable to A/C compressor assembly on vehicle.
- Perform recharging for A/C system and check for refrigerant leakage.

Compressor Assembly

WARNING

- Be sure to follow safety precautions before performing this procedure. Failure to do so may result in serious personal injury or even death.

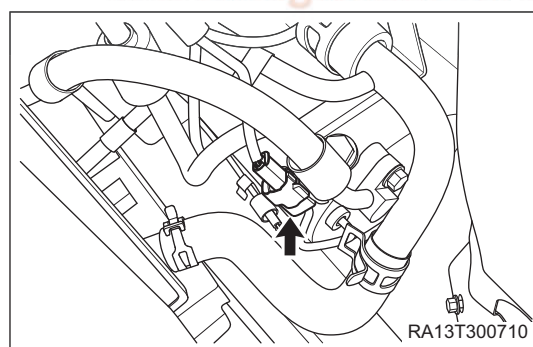
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CAUTION

- Special service equipment for R134a refrigerant must be used to recover/charge refrigerant.
- Always keep work area in good ventilation.
- Disconnected A/C line and connecting part should be sealed, to prevent foreign matter from entering.
- If A/C compressor assembly has an internal malfunction, it is necessary to replace A/C fluid line. Failure to do so may result in a serious damage to A/C compressor assembly.
- When replacing compressor assembly, it is necessary to measure the refrigerant oil amount removed from new A/C compressor assembly.

Removal

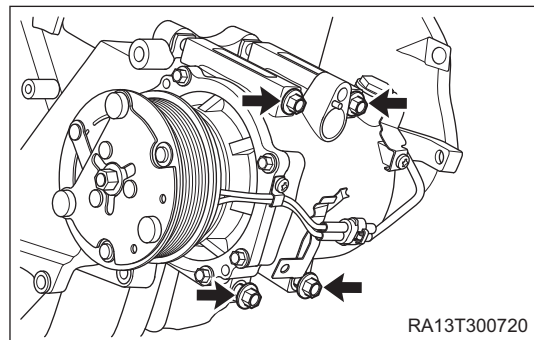
1. Recover refrigerant from A/C system ([See page 30-22](#)).
2. Turn off all electrical equipment and the ignition switch.
3. Disconnect the negative battery cable.
4. Remove the accessory drive belt ([See page 07-20](#)).
5. Remove the generator assembly ([See page 16-10](#)).
6. Remove the front bumper assembly ([See page 49-7](#)).
7. Remove the tank upper crossmember assembly ([See page 12-15](#)).
8. Remove the electromagnetic fan assembly ([See page 12-22](#)).
9. Remove the compressor assembly
 - a. Disconnect compressor assembly wire harness connector (arrow) and remove A/C compressor.



- b. Remove 2 fixing bolts (arrow) between A/C low pressure line and compressor assembly, and disengage A/C low pressure line from compressor assembly ([See page 30-54](#)).
- c. Remove 2 fixing bolts (arrow) between A/C high pressure line and compressor assembly, and disengage A/C high pressure line from compressor assembly ([See page 30-54](#)).

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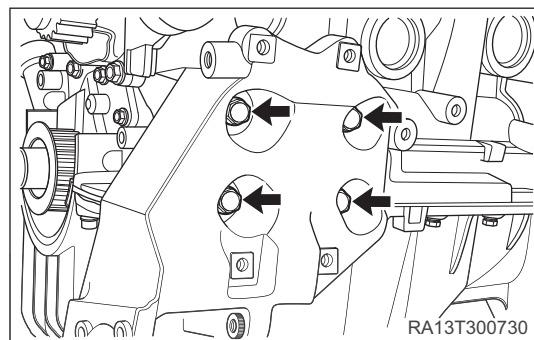
- d. Remove 4 fixing bolts (arrow) between compressor assembly and mounting bracket.
(Tightening torque: 25 ± 4 N·m)



30

10. Remove the compressor assembly mounting bracket.

- a. Remove 3 fixing bolts (arrow) between compressor mounting bracket and engine.
(Tightening torque: 40 ± 5 N·m)



- b. Remove the compressor assembly mounting bracket.

Installation

Installation is in the reverse order of removal.

CAUTION

- Tighten fixing bolts and nuts to specified torques.
- It is necessary to replace refrigerant line O-ring, when installing refrigerant line. Failure to do so may result in refrigerant leaks.
- Lubricate new rubber O-ring with clean refrigerant oil and install it to refrigerant line joint.
- Only use specified O-ring, as it is made of special materials for R134a system.
- Only use recommended refrigerant oil which is applicable to A/C compressor assembly on vehicle.
- When installing a new compressor assembly, always remove a certain amount of refrigerant oil from new A/C compressor assembly as specified.
- Perform recharging for A/C system and check for refrigerant leakage.

Condenser Assembly (w/ Receiver Drier)

Removal

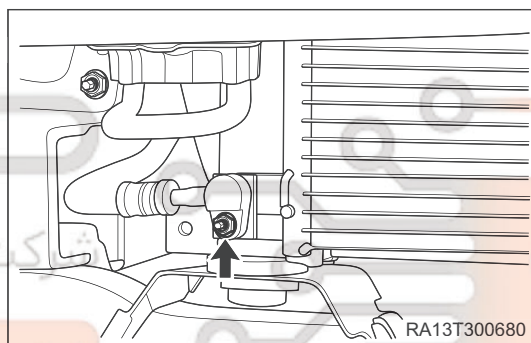
⚠ WARNING

- Be sure to follow safety precautions before performing this procedure. Failure to do so may result in serious personal injury or even death.
- Always keep work area in good ventilation.
- Disconnected A/C line and connecting part should be sealed, to prevent foreign matter from entering.

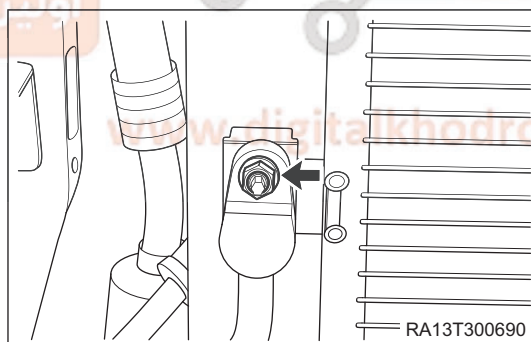
30

1. Recover refrigerant from A/C system (See page 30-22).
2. Turn off all electrical equipment and the ignition switch.
3. Disconnect the negative battery cable.
4. Remove the front bumper assembly (See page 49-7).
5. Remove the condenser assembly (w/ receiver drier).

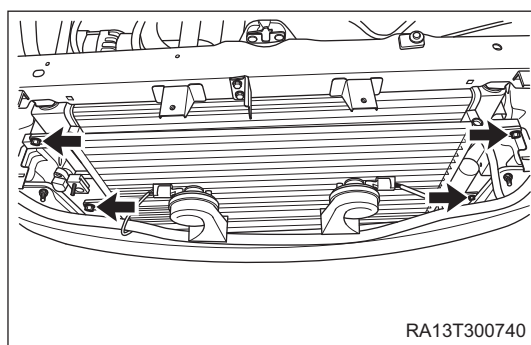
- a. Remove fixing bolt (arrow) between A/C high pressure line I and condenser assembly, and disengage A/C high pressure line I from condenser assembly.
(Tightening torque: $9 \pm 1.5 \text{ N}\cdot\text{m}$)



- b. Remove fixing bolt (arrow) between A/C high pressure line II and condenser assembly, and disengage A/C high pressure line II from condenser assembly.
(Tightening torque: $9 \pm 1.5 \text{ N}\cdot\text{m}$)



- c. Remove 4 fixing bolts (arrow) between radiator assembly and condenser assembly.
(Tightening torque: $7 \pm 1 \text{ N}\cdot\text{m}$)



- d. Carefully remove condenser assembly (w/ receiver drier) from below.

Inspection

1. Check the condenser fins.
 - a. If condenser fins are dirty, wash with water. And then dry fins with compressed air.

CAUTION

- DO NOT damage condenser fins.

Installation

Installation is in the reverse order of removal.

CAUTION

- Tighten fixing bolts and nuts to specified torques.
- It is necessary to replace refrigerant line O-ring, when installing refrigerant line. Failure to do so may result in refrigerant leaks.
- Lubricate new rubber O-ring with clean refrigerant oil and install it to refrigerant line joint.
- Only use specified O-ring, as it is made of special materials for R134a system.
- Only use recommended refrigerant oil which is applicable to A/C compressor assembly on vehicle.
- Perform recharging for A/C system and check for refrigerant leakage.

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