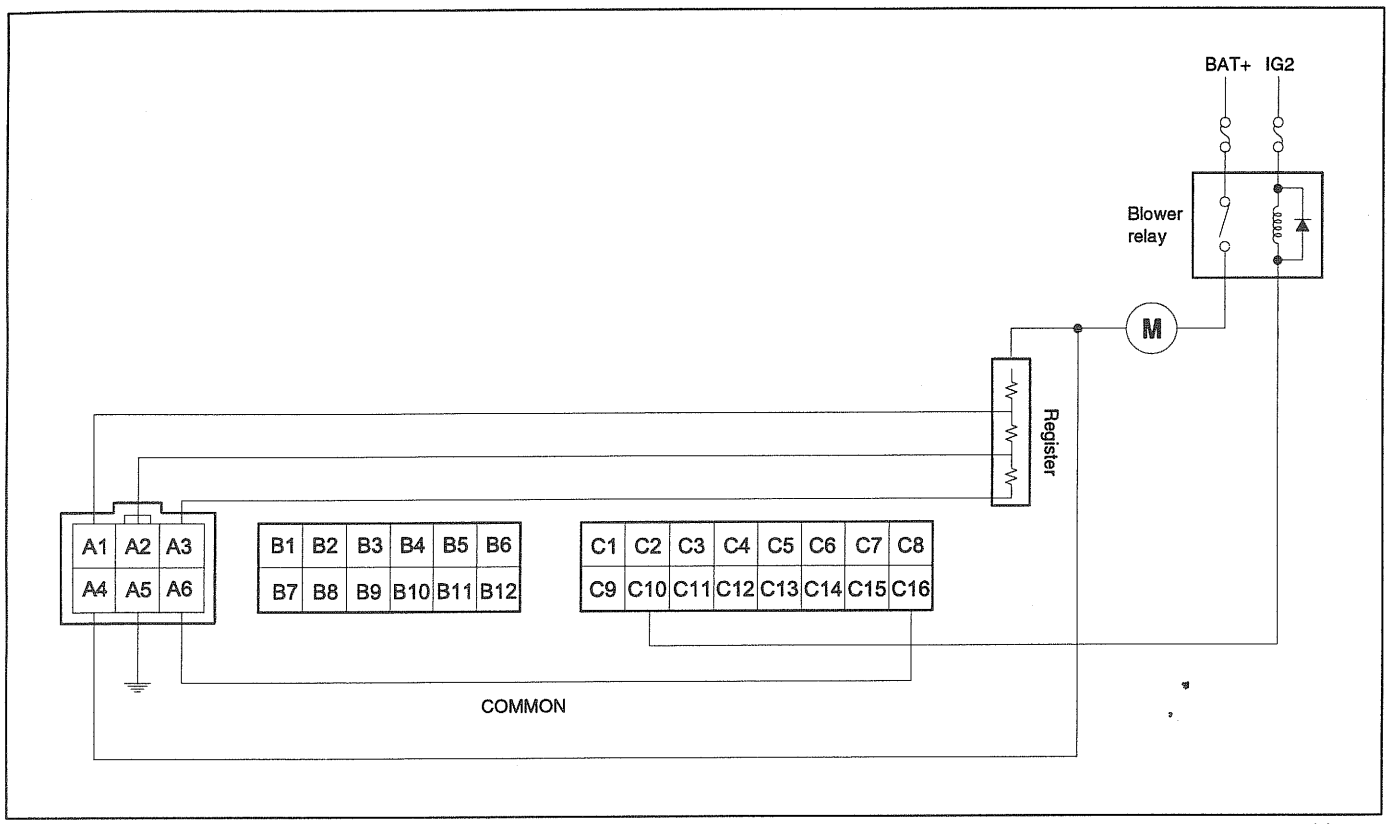
CHECK POINT BY TYPE EBCAA3EE

BLOWER CHECK



EQQE595A

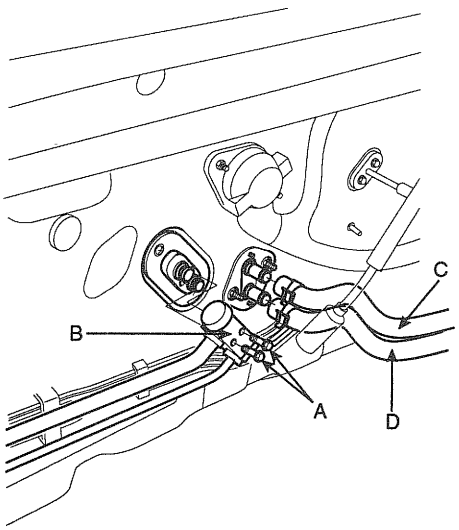
When the blower is turned ON, blower relay becomes turned ON and battery voltage is supplied to the blower motor upper part. The current determined by the supplied battery voltage, blower motor, and register ground runs to GND through the blower motor and the selected blower single resister.

TROUBLESHOOTING

Symptoms	Possible causes	How to check
Blower malfunction	Short wire of register	
Blower wind is discharged despite switching OFF	Open circuit of blower switch	With switch OFF, check the connection between each terminal and GND/COMMON terminal

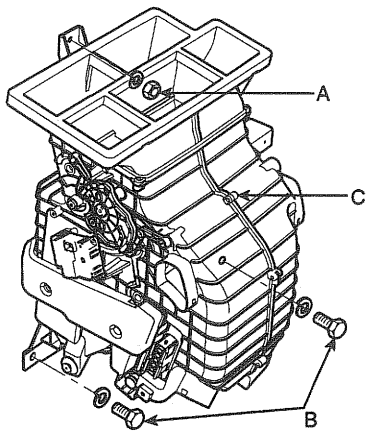
REPLACEMENT E36BCDE9

1. Recover the refrigerant with a recovery/recycling/charging station (see page HA-23).
2. When the engine is cool, drain the engine coolant from the radiator.
3. Disconnect the negative cable from the battery.
4. Remove the bolts(A) and the expansion valve(B) from the evaporator core.
   Plug or cap the lines immediately after disconnecting them to avoid moisture and dust contamination.



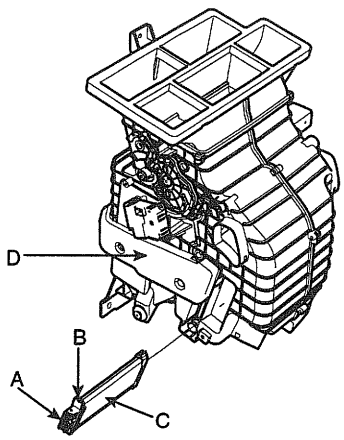
KQQE301A

5. Disconnect the inlet(C) and outlet(D) heater hoses from the heater unit.
   Engine coolant will run out when the hoses are disconnected ; drain it into a clean drip pan. Be sure not to let coolant spill on electrical parts or painted surfaces. If any coolant spills, rinse it off immediately.
6. Remove the crash pad (see BD group - crash pad).
7. Remove the cross member.
8. Remove the mounting nut(A), the mounting bolts(B) and heater & evaporator unit(C).



KQQE301C

9. Remove the connector(A). (Only PTC heater type)
   Remove the self-tapping screws(B) and the PTC unit(C) or cover.



KQQE301D

10. Remove the side bracket(D).

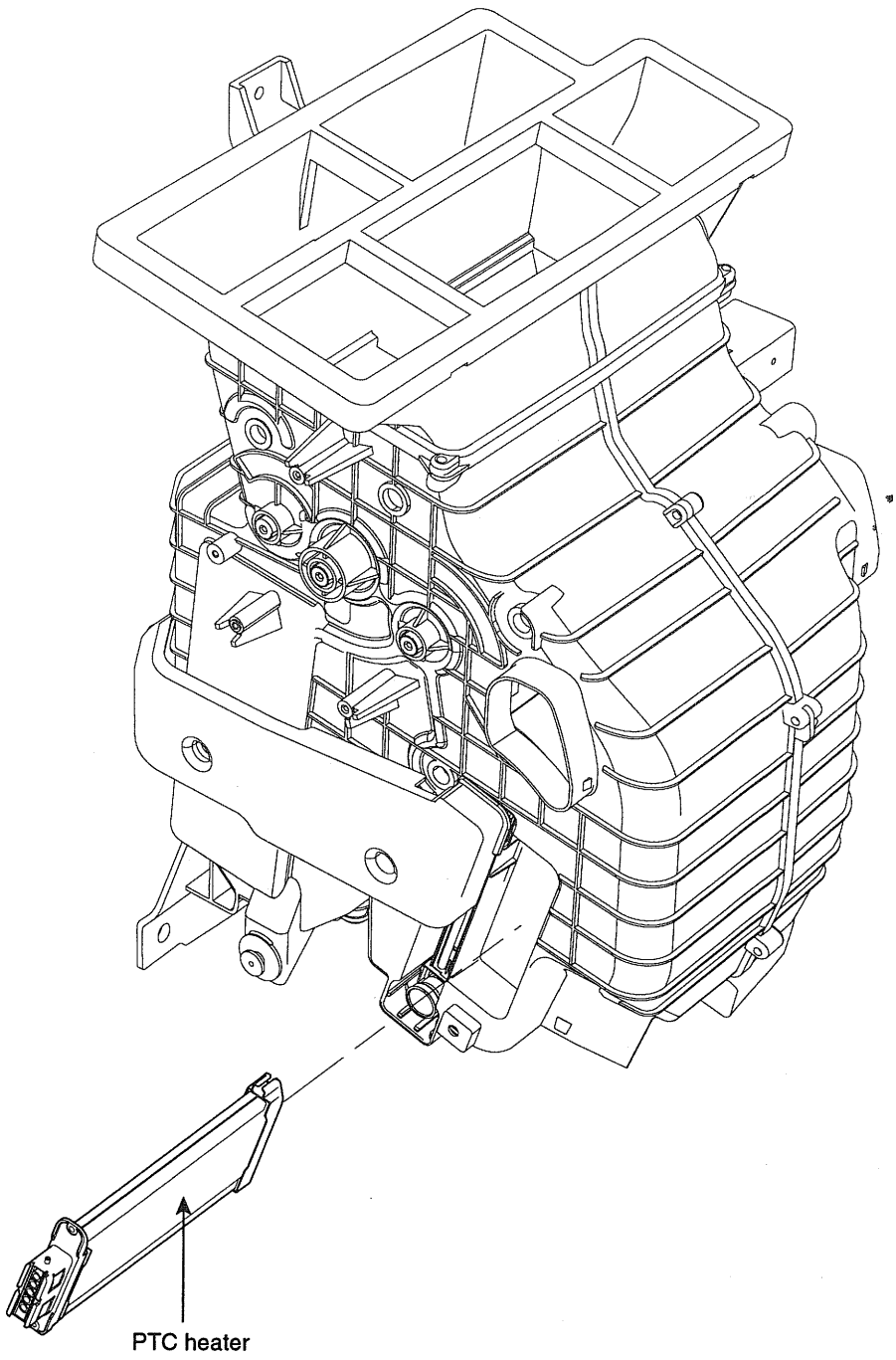
11. Remove the clip and lower cover.
    Be careful not to bend the inlet and outlet pipes during heater core and evaporator core removal.

12. Install the heater core and evaporator core in the reverse order of removal.

13. Install in the reverse order of removal, and note these items :
    - If you're installing a new evaporator, add refrigerant oil.
    - Replace the O-rings with new ones at each fitting, and apply a thin coat of refrigerant oil before installing them. Be sure to use the right O-rings for R-134a to avoid leakage.
    - Immediately after using the oil, replace the cap on the container, and seal it to avoid moisture absorption.
    - Do not spill the refrigerant oil on the vehicle ; it may damage the paint ; if the refrigerant oil contacts the paint, wash it off immediately.
    - Apply sealant to the grommets.
    - Make sure that there is no air leakage.
    - Charge the system (see page HA-24), and test its performance (see page HA-22).
    - Do not interchange the inlet and outlet heater hoses and install the hose clamps securely.
    - Refill the cooling system with engine coolant.

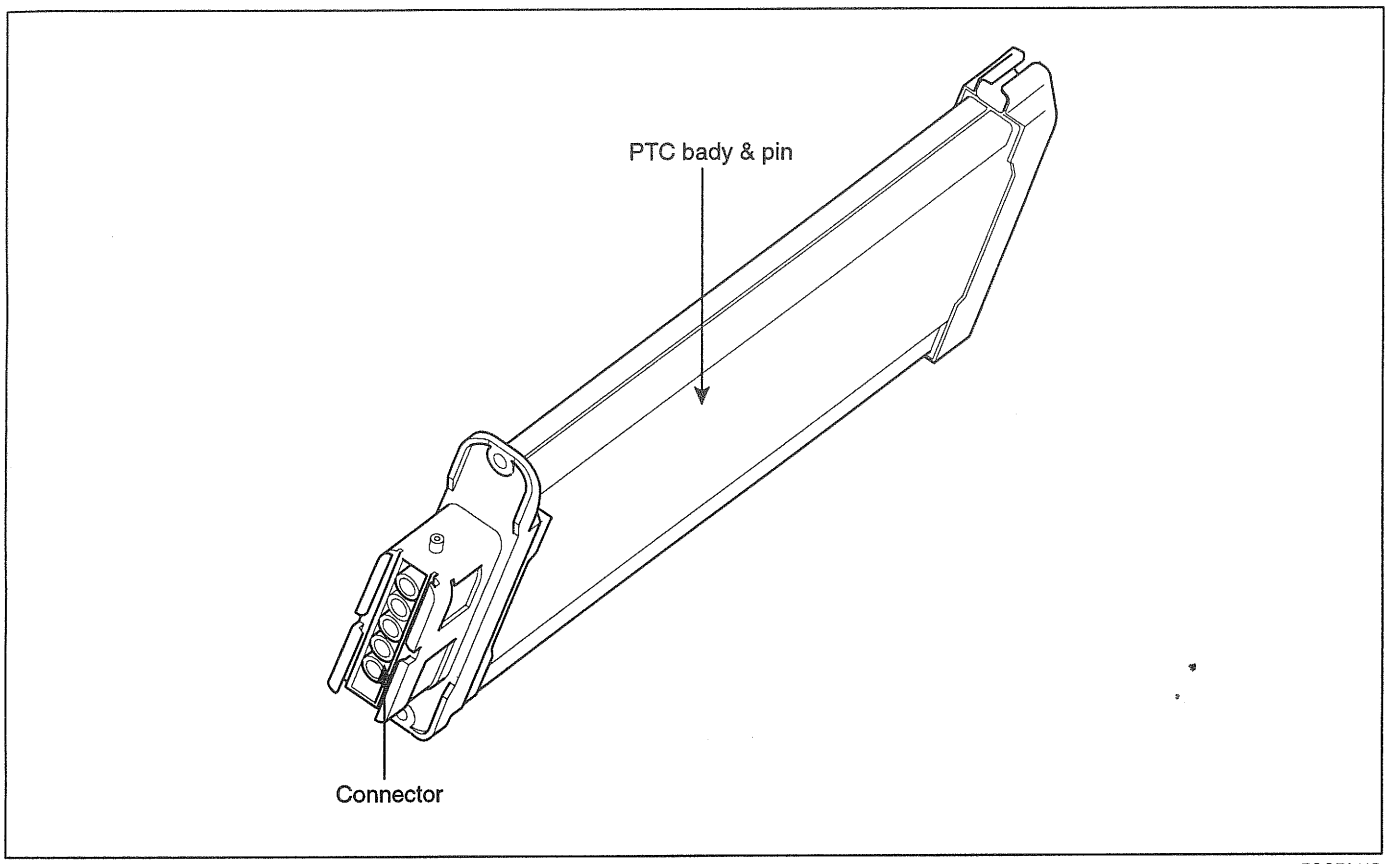
PTC (POSITIVE TEMPERATURE COEFFICIENT) HEATER

COMPONENT LOCATION E7C9AB2E



EQQE341A

COMPONENTS E76FEDE7



EQQE341B

DESCRIPTION E12666CB

- Voltage range : 9 ~ 16V
- Normal voltage : 13.5
- Max. surface temperature : 165°C (Max.)
- Power : 900w +5%/-10%

<Condition of working >

- Temperature of ambient air : below 5°C
- Temperature of cooling water : up to 70°C
- Blower motor : ON

- Core size : 180.5L x 73.6W x 16.6T

Durability

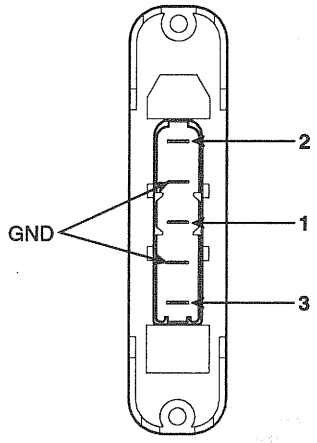
POWER IN RATE (P) = VOLTAGE X CURRENT

	I (A)	P (W)
Total	90 ± 10%	900 ± 10%
1	30 ± 10%	300 ± 10%
2	30 ± 10%	300 ± 10%
3	30 ± 10%	300 ± 10%

<Test condition >

- Voltage : 13.5 ± 0.1V
- T (ambient) : 23 ± 3°C
- Humidity : 25 ~ 75%
- T (air intake) : 0 ± 2°C

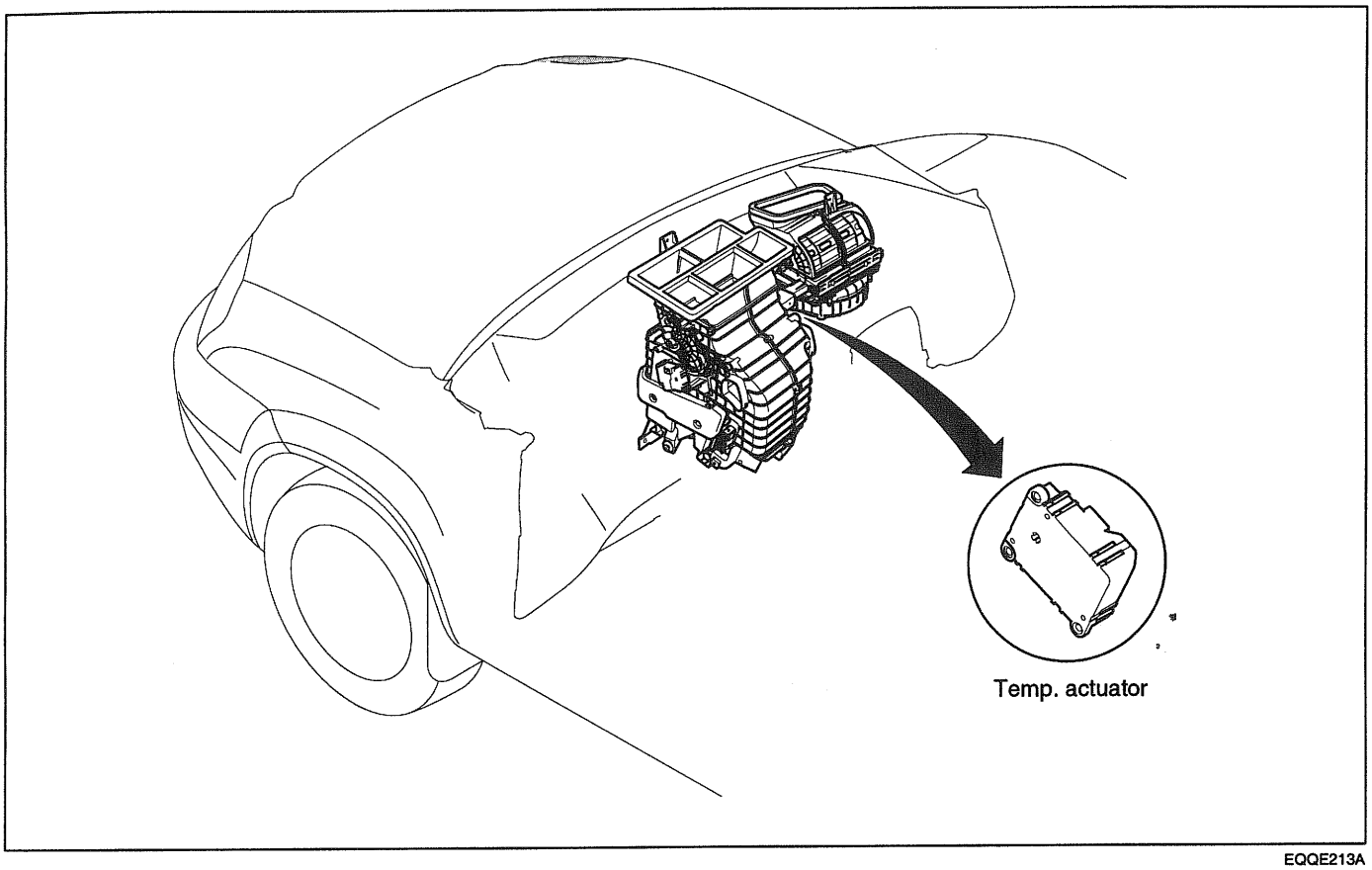
CONNECTOR E7ACEAFF



KQQE340A

TEMPERATURE CONTROL ACTUATOR

COMPONENT LOCATION EEA2A3B4

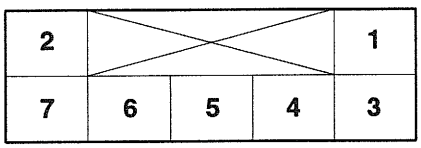


EQQE213A

DESCRIPTION E9FA7177

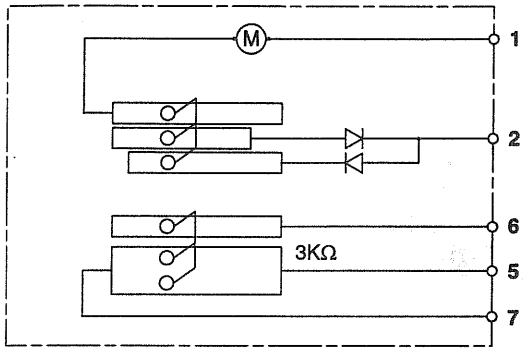
- Rate voltage : DC 12V
- Rate load : 1.5 kgf·cm
- Operating time : 4 + 1.0 sec.
- Rate current : Max. 0.1A
- Lock current : Max. 0.55A
- Locked torque : Max. 6kgf·cm
- Noise : Max. 43dB
- Use voltage : DC 10 ~ 15V
- Use temp. : -40 ~ 80°C

CONNECTOR E33BDD4A



KQSE211D

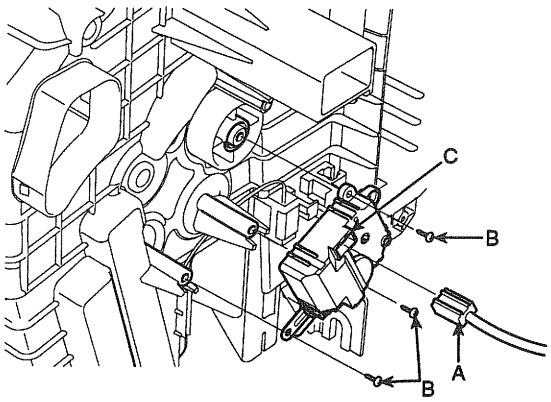
CIRCUIT DIAGRAM ECEF68DD



KQQE213B

REPLACEMENT EE7F6DED

1. Disconnect the 7P connector(A) from the temp. actuator(C). Remove the self-tapping screws(B) and the temp. actuator(C) from the heater unit.

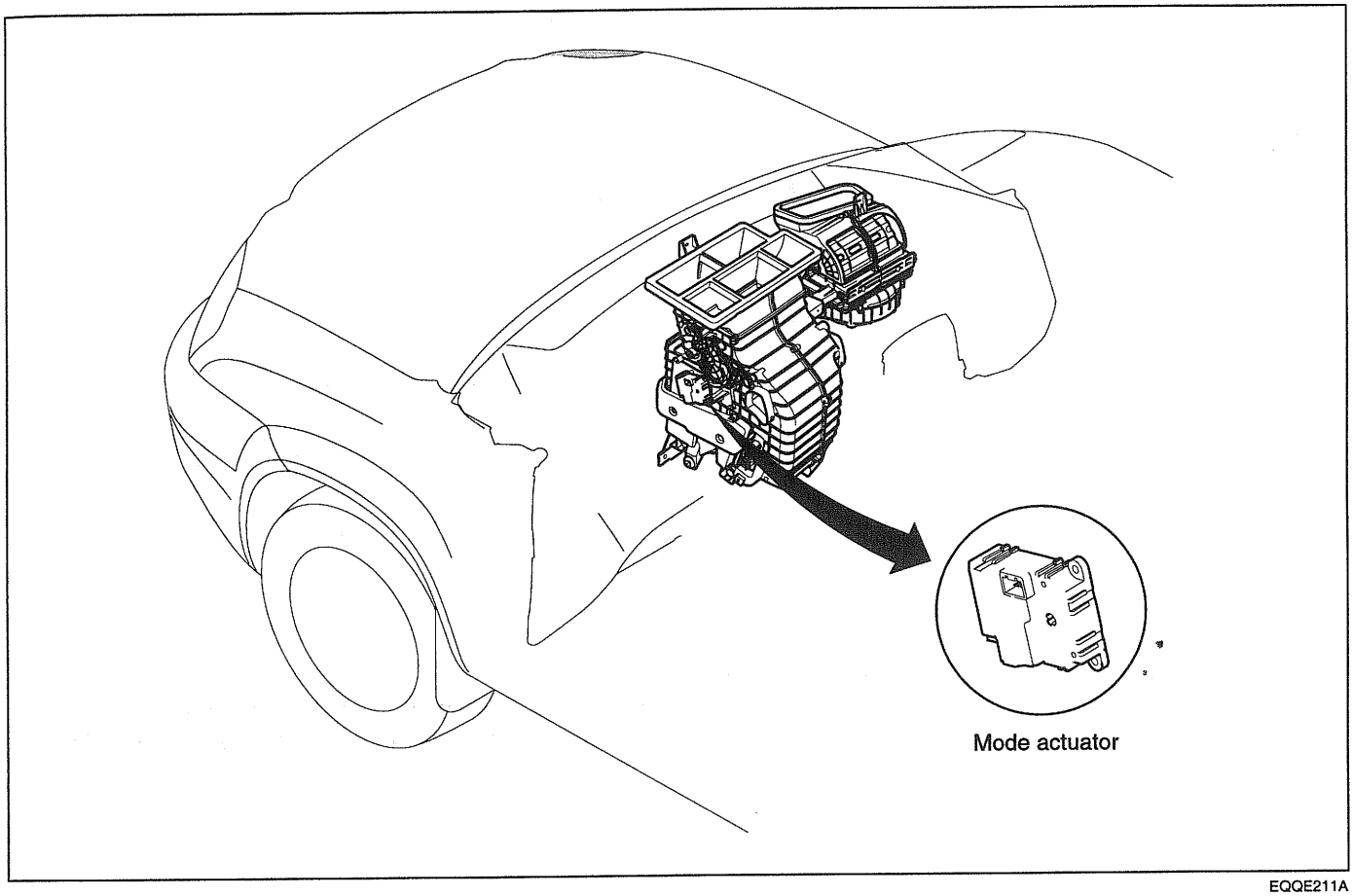


KQQE213C

2. Install in the reverse order of removal. After installation, make sure temp. actuator(C) runs smoothly.

MODE CONTROL ACTUATOR

COMPONENT LOCATION ECCC054E



EQQE211A

DISCRIPTION E6F9A564

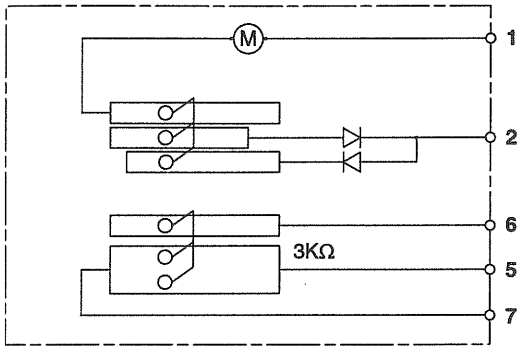
- Rate voltage : DC 12V
- Rate load : 1.5 kgf·cm
- Operating time : 4 + 1.0 sec.
- Rate current : Max. 0.1A
- Lock current : Max. 0.55A
- Locked torque : Max. 6kgf·cm
- Noise : Max. 43dB
- Use voltage : DC 10 ~ 15V
- Use temp. : -40 ~ 80°C

CONNECTOR E228DD3D

2				1
7	6	5	4	3

KQSE211D

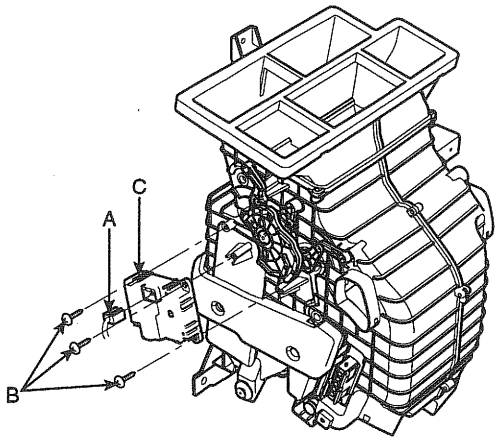
CIRCUIT DIAGRAM EC61E8DD



KQQE213B

REPLACEMENT EAF3FA8A

1. Remove the 7P connector(A) from the mode actuator(C). Remove the self-tapping screw(B) and the mode actuator(C) from the heater unit.



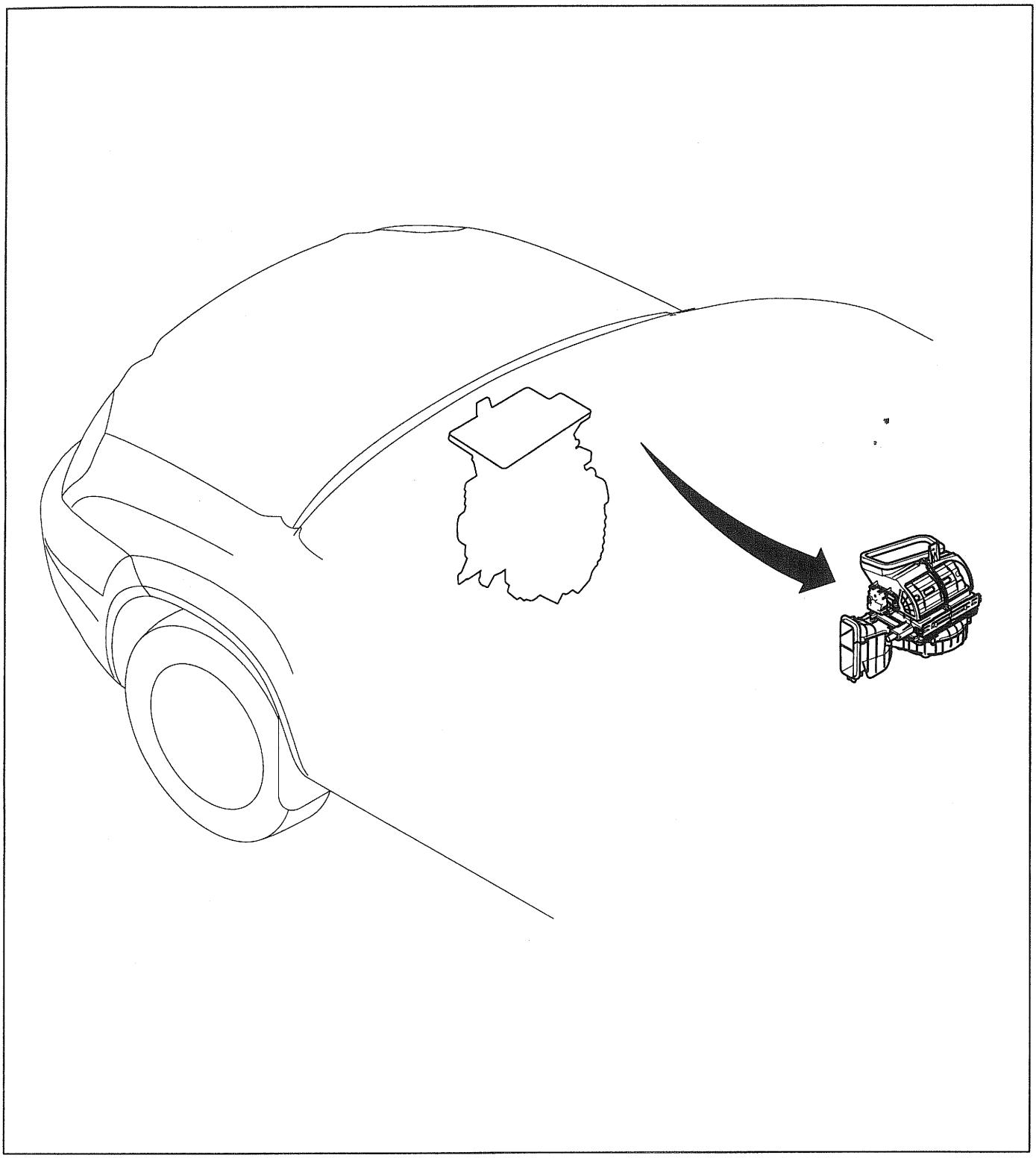
KQQE211E

2. Install in the reverse order of removal. After installation, make sure the mode actuator(C) runs smoothly.

BLOWER CONTROLS

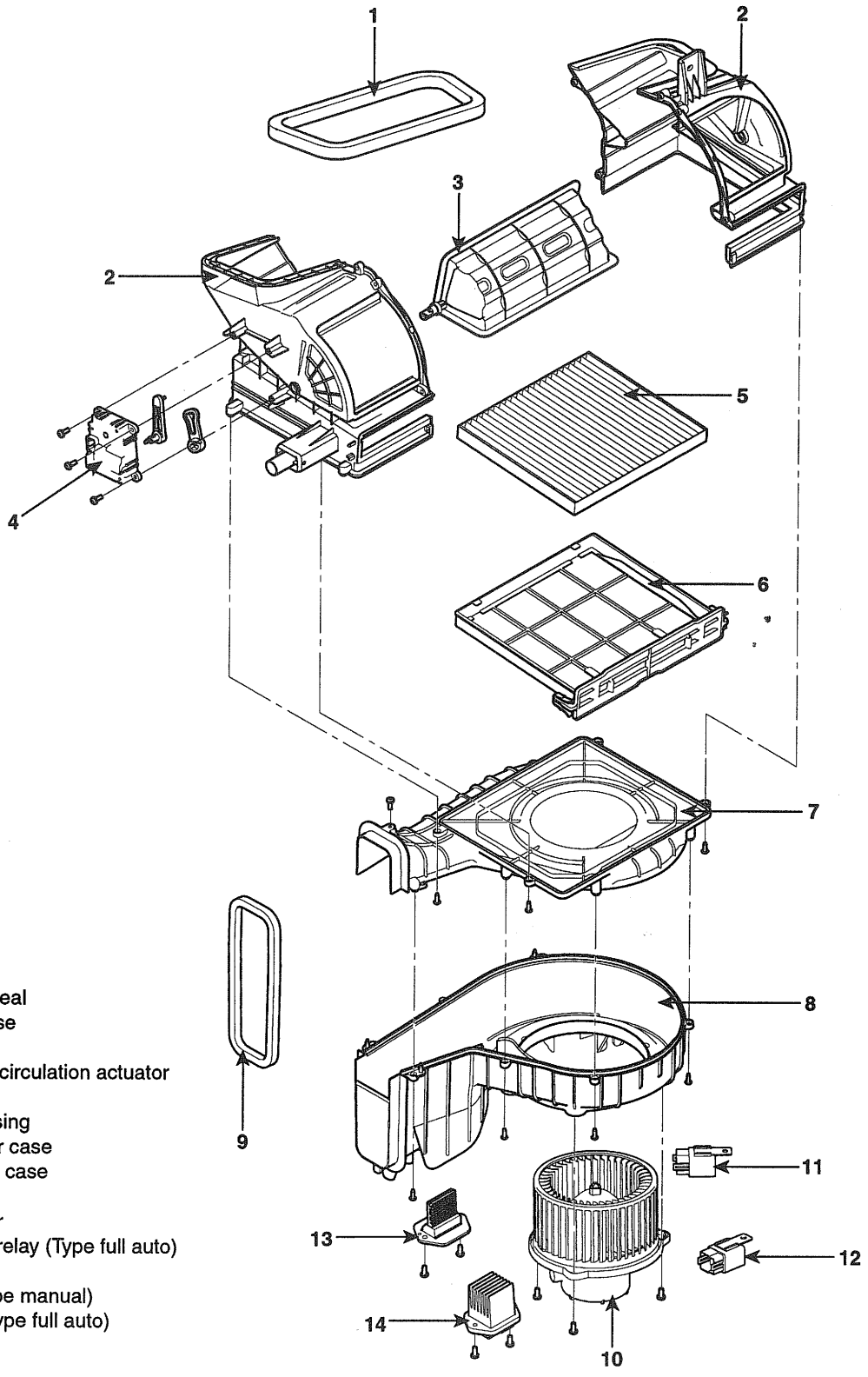
BLOWER UNIT

COMPONENT LOCATION E6AAD472



KQQE400A

COMPONENTS E0CC9B81

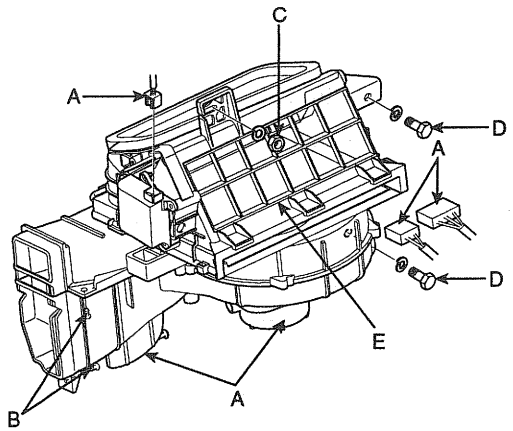


1. Outlet duct seal
2. Inlet duct case
3. Inlet door
4. Fresh and recirculation actuator
5. Air filter
6. Air filter housing
7. Blower upper case
8. Blower lower case
9. Blower seal
10. Blower motor
11. High blower relay (Type full auto)
12. Blower relay
13. Register (Type manual)
14. Power TR (Type full auto)

EQQE400B

REPLACEMENT E5D4C986

1. Disconnect the negative cable from the battery.
2. Remove the crash pad (see BD group - crash pad).
3. Disconnect the connectors from the blower relay the blower motor, the blower resistor (or power transistor) and the fresh and recirculation actuator.
   Remove the self-tapping screws(A), the mounting nut(B), the mounting bolt(C) and the blower unit(D).



EQKE401A

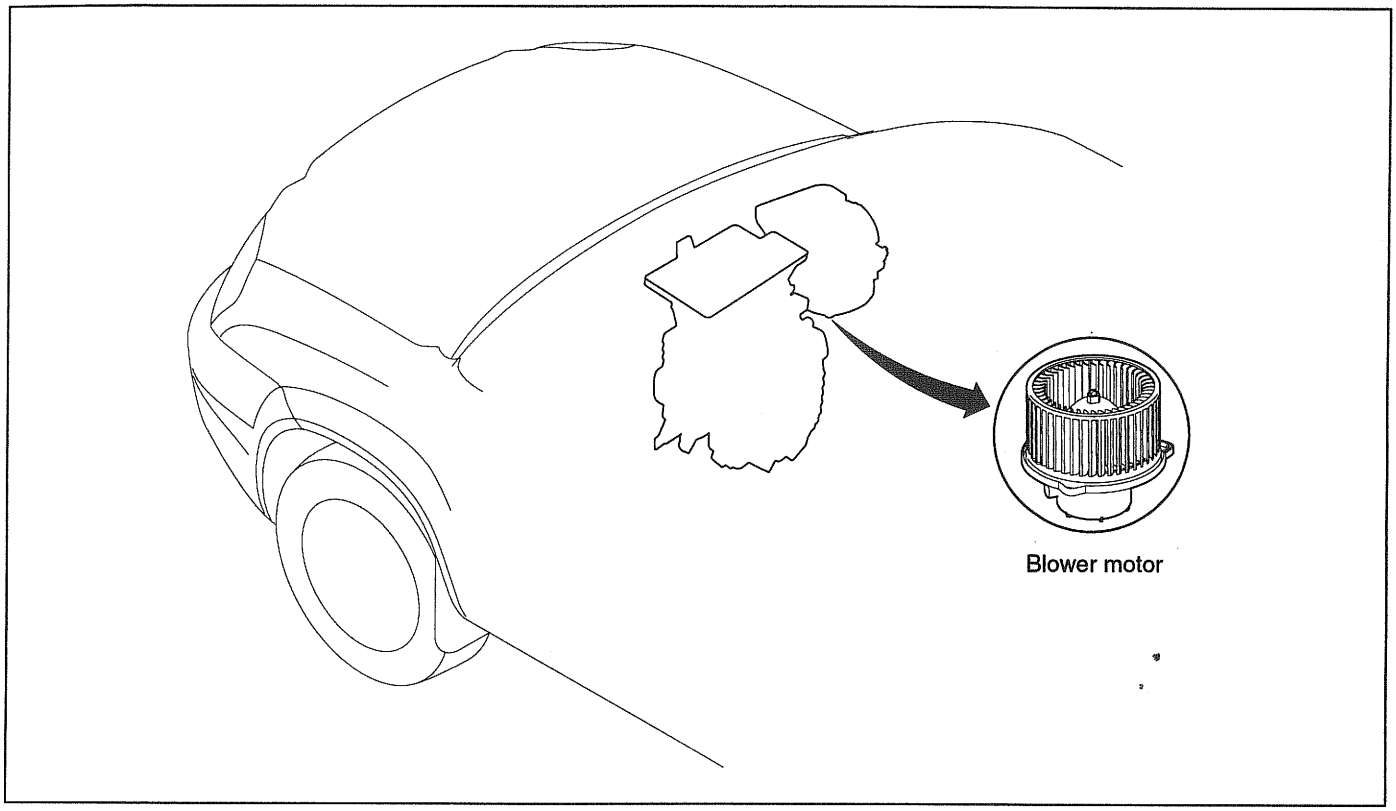
NOTE

Make sure that there is no air leaking out of the blower and duct joints.

4. Install in the reverse order of removal.

BLOWER MOTOR

COMPONENT LOCATION E6A3E42A



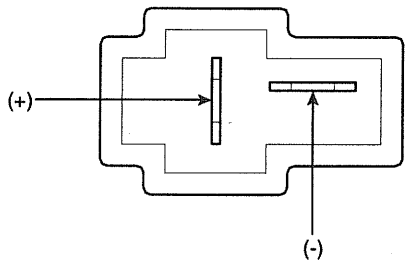
EQQE202A

DESCRIPTION EAB7013F

Moter : Magnet ø68.2

Item	Specifications
Time rating	Continuous
Rated voltage	DC 12V
Speed in rated load	3,000 ± 10% RPM
Power in rated	250W grade
Rotation direction	CCW

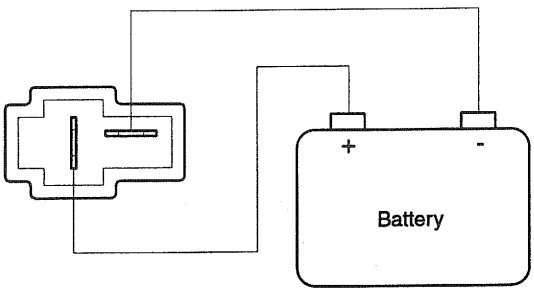
CONNECTOR ED4E59C4



EQKE202B

INSPECTION E1CC2EC4

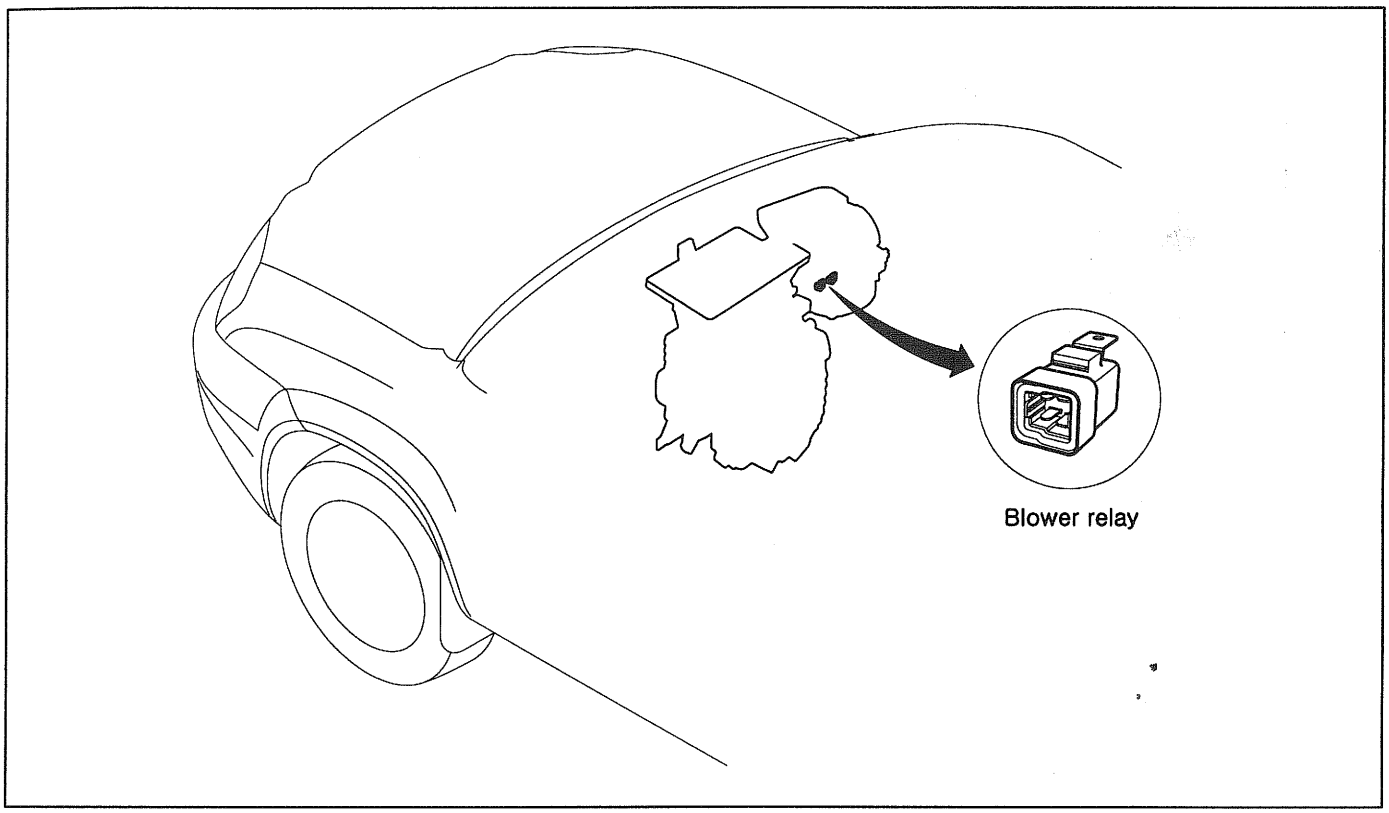
Connect the battery voltage and check the blower motor rotation.



EQKE202C

BLOWER RELAY

COMPONENT LOCATION EC983CFA



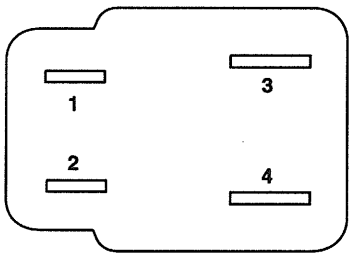
EQQE201A

DESCRIPTION EB5FC1A2

There should be continuity between No.3 and No.4 terminals when power and ground are connected to the No.1 and No.2 terminals, and there should be no continuity when power is disconnected.

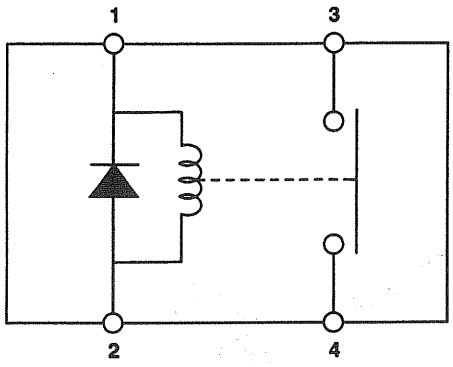
- Rated voltage : DC 12V
- Rated load current : DC 12V, 25A (Motor lord)

CONNECTOR EE69F91E



EQKE201B

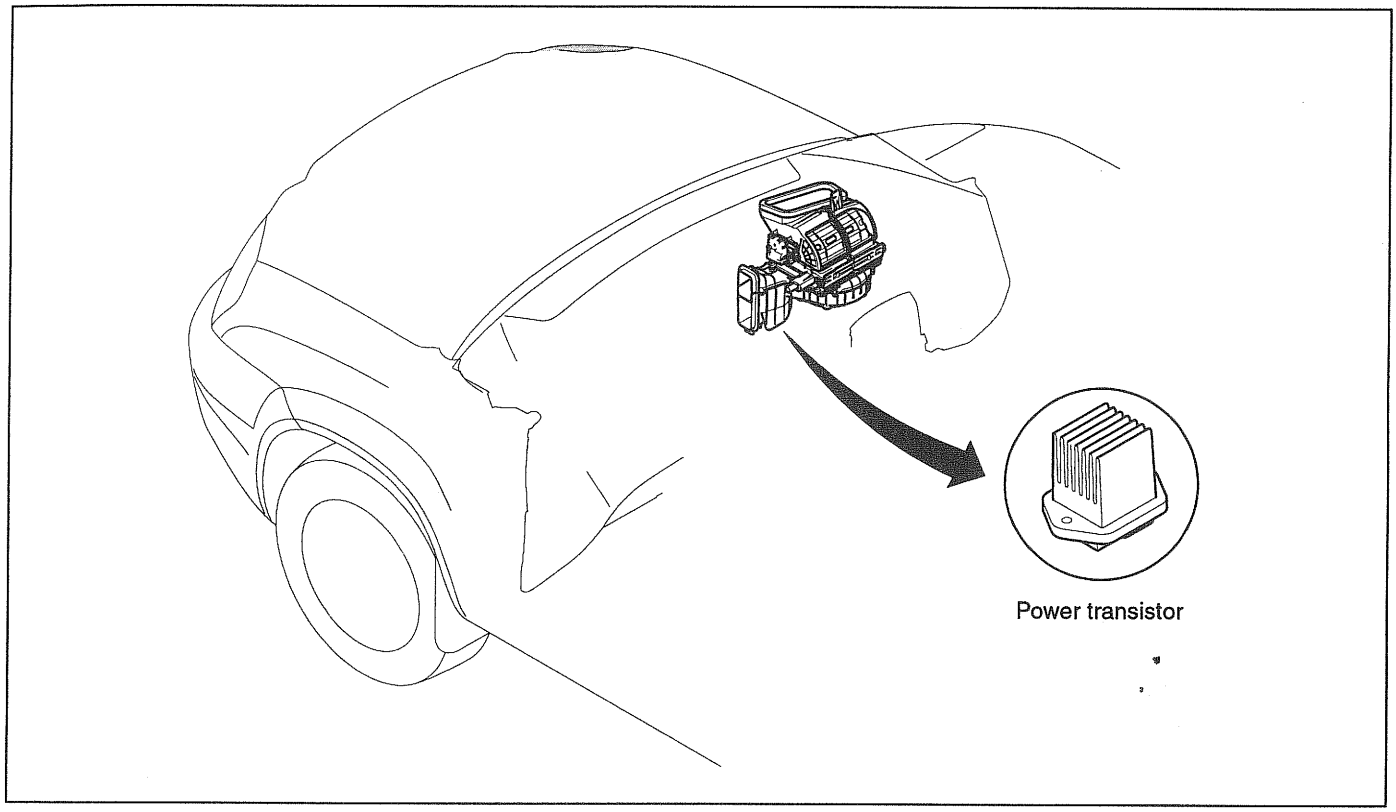
CIRCUIT DIAGRAM EF2F87B4



EQKE201C

POWER TRANSISTOR

COMPONENT LOCATION E1B011E7

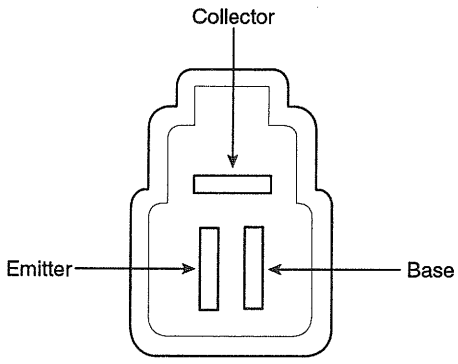


EQQE206A

DESCRIPTION E630698B

- Rated voltage : DC 12V
- Working voltage range : DC 9 ~ 16V
- Working temp. range : -30 ~ 60°C
- Resistance temp. range : -40 ~ 85°C

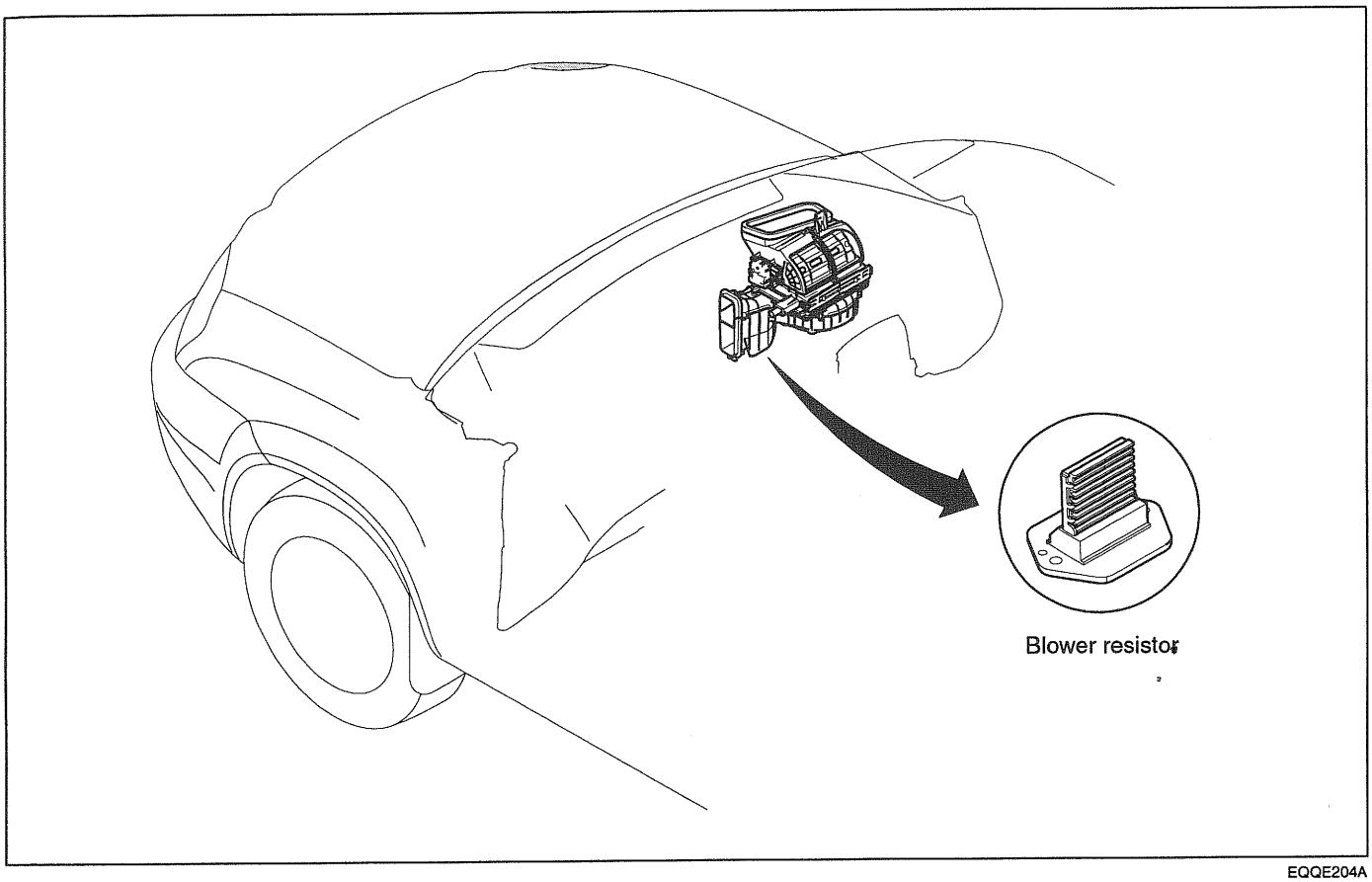
CONNECTOR EFDEB31D



EQKE206C

BLOWER RESISTOR

COMPONENT LOCATION E48A4448

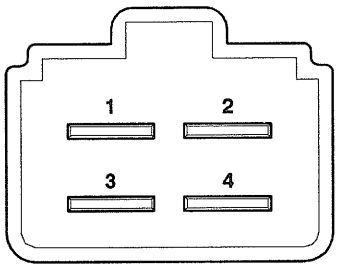


EQQE204A

DESCRIPTION E34B4A50

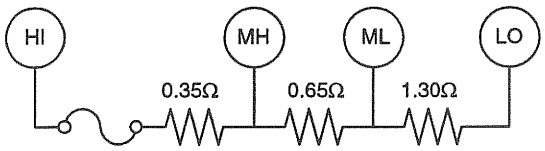
- Rated voltage : DC 12V
- Rated load : Blower motor
- Standard test Temp. : 20°C
- Operation Temp. : -30 ~ +70°C

CONNECTOR E8DBFF64



EQKE204C

CIRCUIT DIAGRAM E0B2FE6B



Fuse temp 183 ± 5°C

EQQE204D

INSPECTION EE9E8CE8

Measure terminal-to-terminal resistance of the blower resistor.
If measured resistance is not within specification, the blower resistor must be replaced. (After removing the resistor)

Terminal / Speed / Ohmmeter indication	1	2	3	4	Resistance (Ω)
	ML	MH	LO	HI	
Continuity is indicated			○—○		2.30%
	○—			—○	1.00%
		○—		—○	0.35%

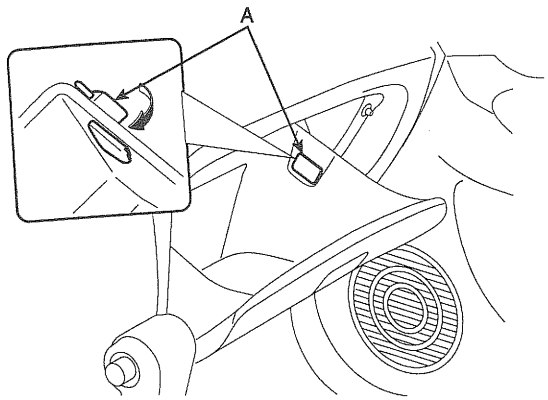
Note
○—○ : Indicates that there is continuity between points.

EQQE204E

A/C AIR FILTER

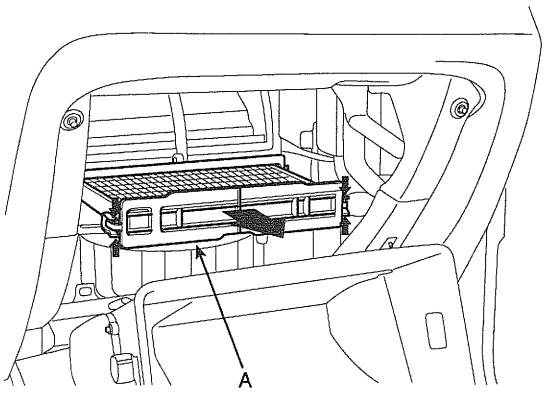
REPLACEMENT E05F4BBE

1. Open the glove box, remove the glove box stopper(A) in the lower crash pad(assist seat side), and completely lower the glove box.



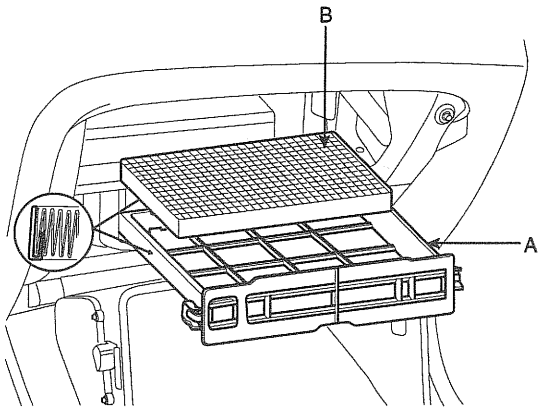
KQQE411A

2. Remove the A/C air filter assembly(A).



KQQE411B

3. Remove the A/C air filter(B) from the filter housing(A). Replace the A/C air filter according to the maintenance schedule in the owner's manual.

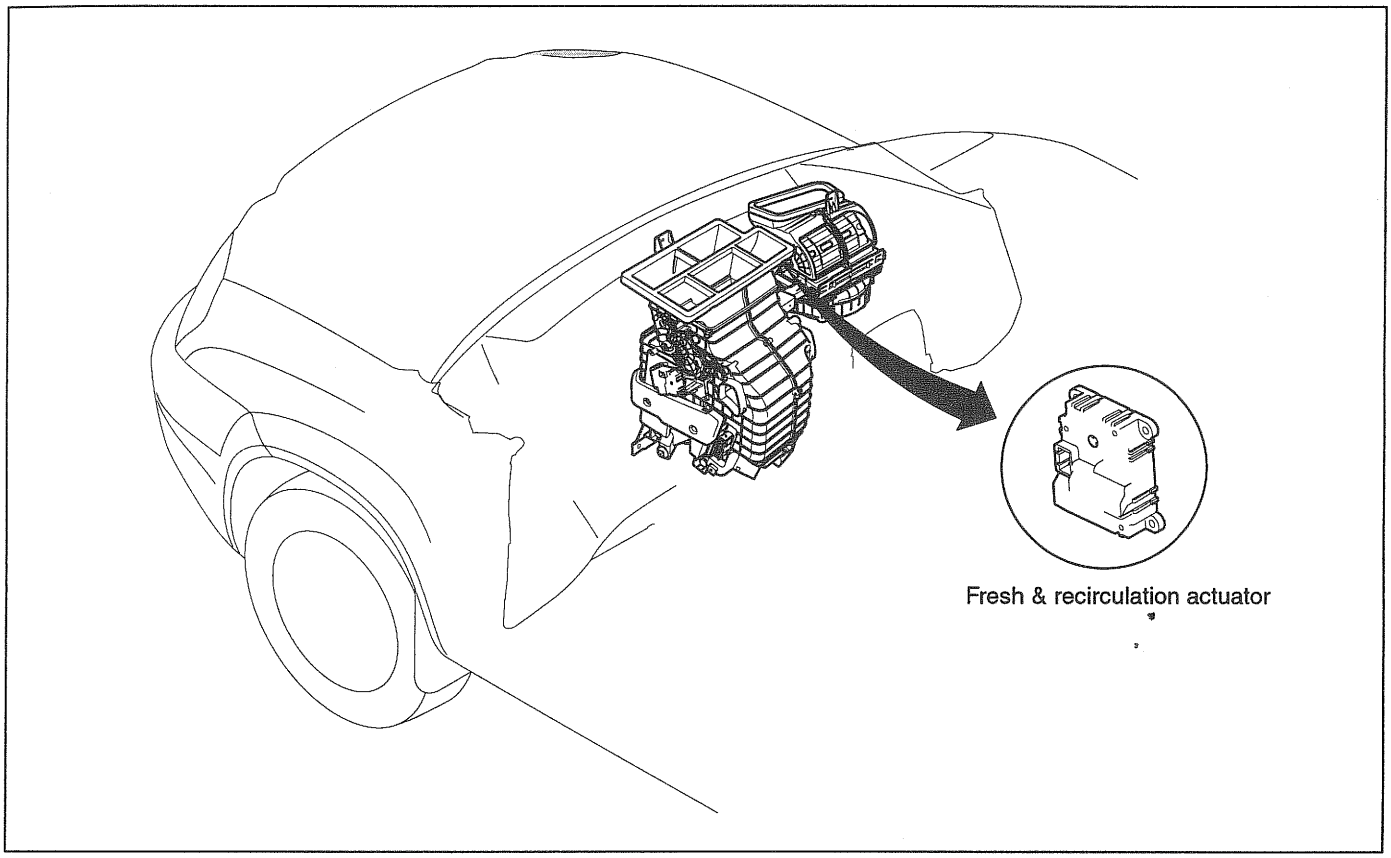


KQQE411C

4. Install in the reverse order of removal.
Make sure that there is no air leaking out of the blower unit.

FRESH AND RECIRCULATION ACTUATOR

COMPONENT LOCATION EACB0C6D

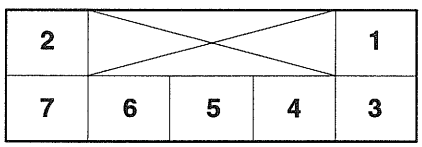


EQQE214A

DESCRIPTION E9FD434A

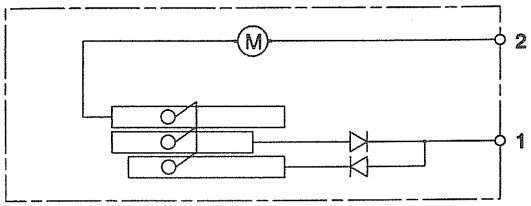
General performance
- Rate voltage : DC 12V
- Rate load : 1.5kgf·cm
- Operating time : 3.5 + 1.0 sec.
- Rate current : Max. 0.1A
- Lock current : Max. 0.55A
- Locked torque : Max. 6kgf·cm
- Noise : Max. 43dB
- Use voltage : DC 10 ~ 15V
- Use temp. : -40 ~ 80°C

CONNECTOR E9396EE5



KQSE211D

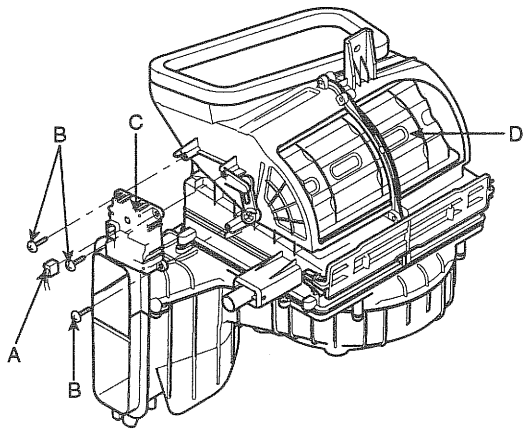
CIRCUIT DIAGRAM E8ABEADB



KQQE214B

REPLACEMENT EA9ADC27

1. Disconnect the 7P connector(A) from the inlet actuator(C). Remove the self-tapping screws(B) and the inlet actuator(C) from the blower unit(D).

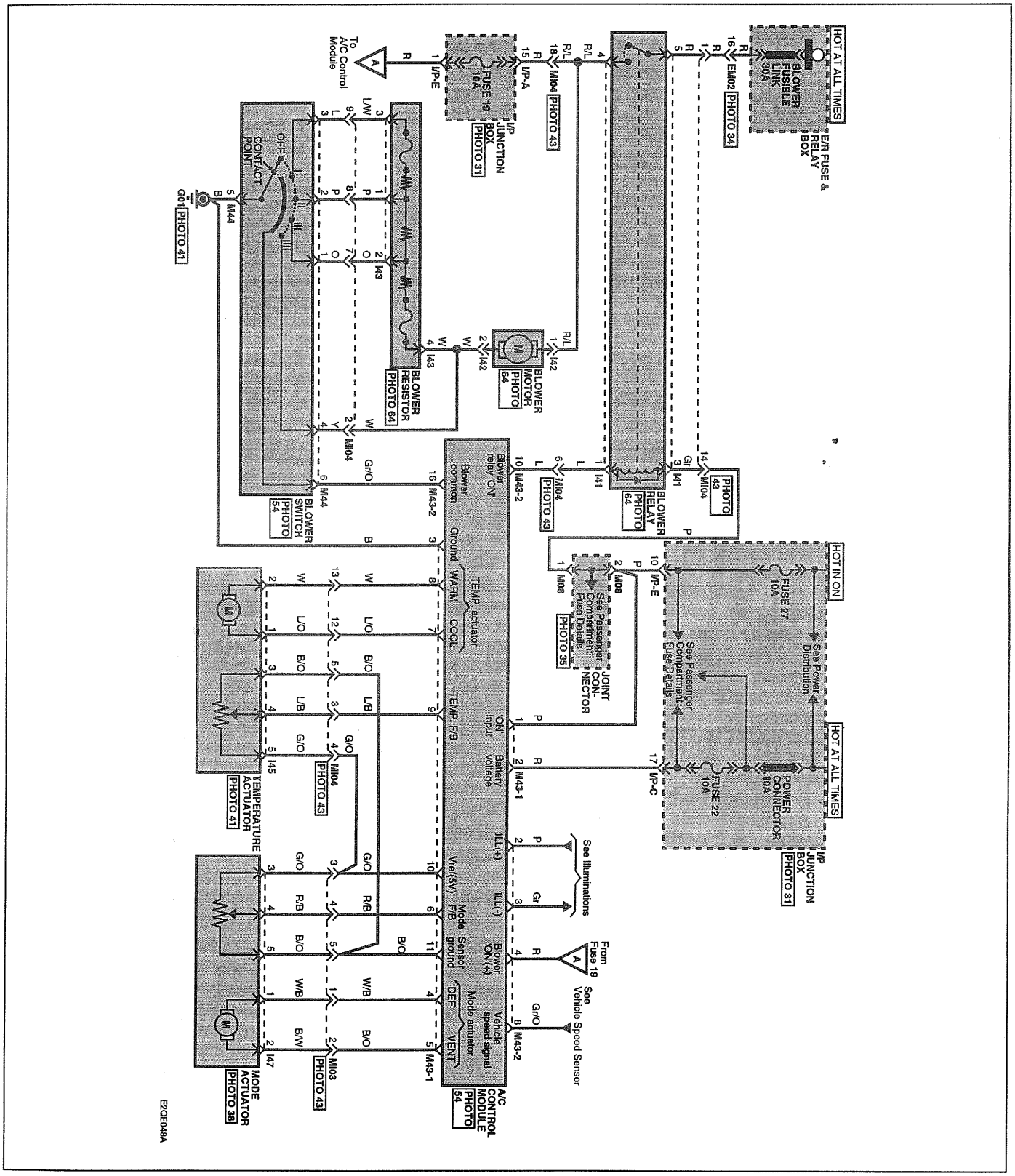


KQQE214E

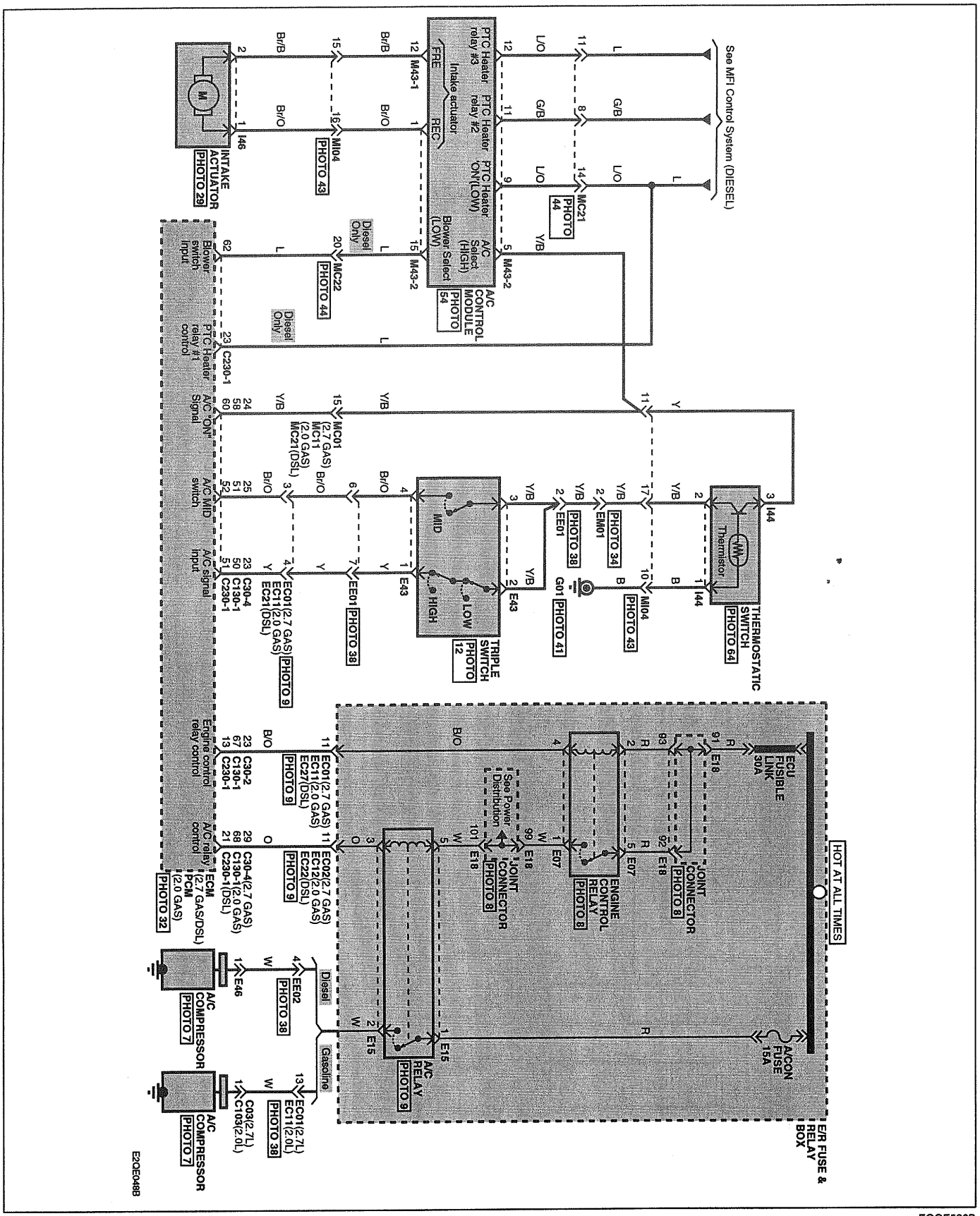
2. Install in the reverse order of removal. After installation, make sure the inlet actuator(C) runs smoothly.

BLOWER AND A/C CONTROLS (MANUAL)

CIRCUIT DIAGRAM E7B294DD



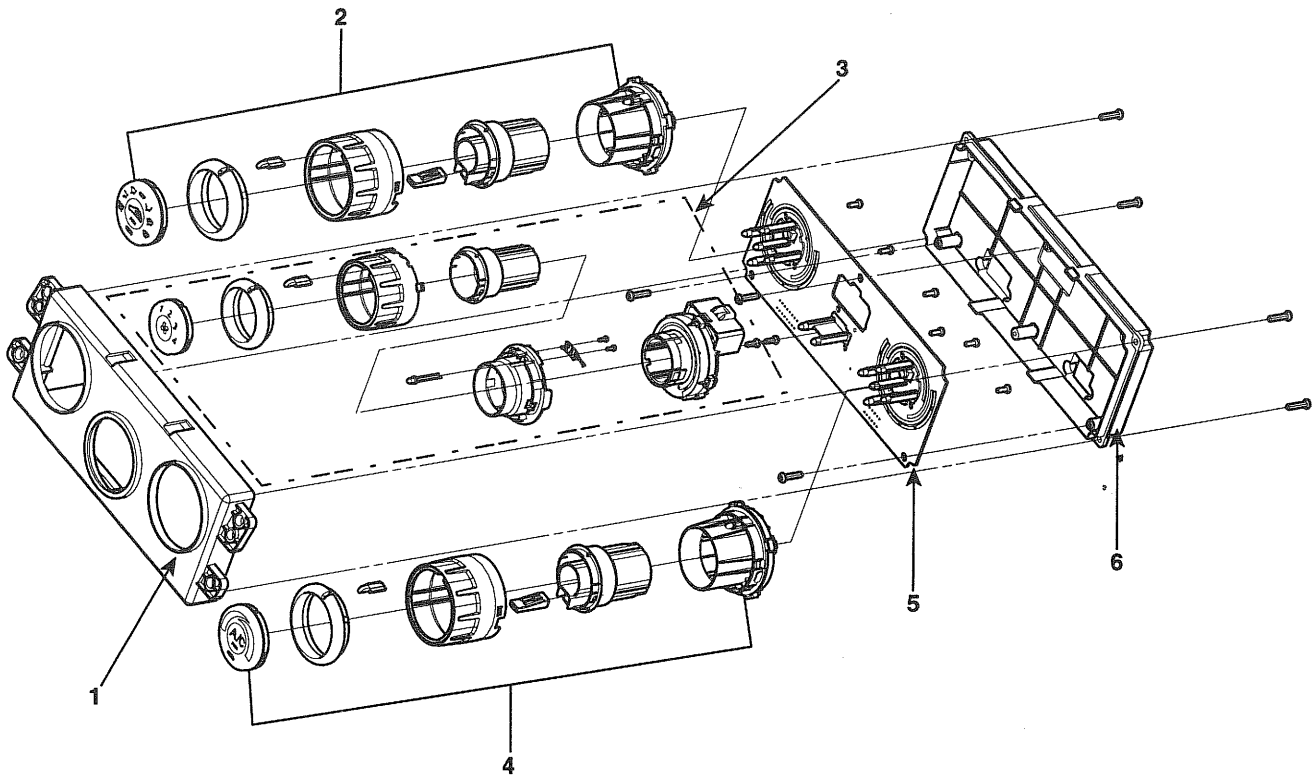
EQQE500A


See MFI Control System (DIESEL)
HOT AT ALL TIMES
E/R FUSE & RELAY BOX
ECU FUSIBLE LINK 30A
A/CON FUSE 15A
THERMOSTATIC SWITCH
PHOTO 64
Thermistor
I44
PHOTO 34
EM01
PHOTO 38
EE01
G01
PHOTO 41
M104
PHOTO 43
JOINT CONNECTOR
PHOTO 8
E18
E07
ENGINE CONTROL RELAY
PHOTO 8
A/C RELAY
PHOTO 9
E15
TRIPLE SWITCH
PHOTO 12
MID
LOW
HIGH
E43
EE01
PHOTO 38
EC01(2.7 GAS)
EC11(2.0 GAS)
EC21(DSL)
PHOTO 9
MC01 (2.7 GAS)
MC11 (2.0 GAS)
MC21(DSL)
C230-1
C30-4
C136-1
A/C MID switch
A/C signal input
PTC Heater relay #1 control
A/C "ON" Signal
Blower switch Input
Diesel Only
A/C CONTROL MODULE
PHOTO 54
PTC Heater relay #3
PTC Heater relay #2
PTC Heater "ON"(LOW)
A/C Select (HIGH)
Blower Select (LOW)
Intake actuator
FRE
REC
M43-1
M43-2
MC22
PHOTO 44
M104
PHOTO 43
I46
INTAKE ACTUATOR
PHOTO 29
EC02(2.7 GAS)
EC12(2.0 GAS)
EC22(DSL)
C30-4(2.7 GAS)
C130-1(2.0 GAS)
C230-1(DSL)
ECM (2.7 GAS/DSL) PCM (2.0 GAS)
PHOTO 32
Engine control relay control
A/C relay control
See Power Distribution
JOINT CONNECTOR
EE02
E46
A/C COMPRESSOR
PHOTO 7
EC01(2.7L)
EC11(2.0L)
C03(2.7L)
C103(2.0L)
Diesel
Gasoline
E2QE048B

EQQE500B

CONTROL PANEL

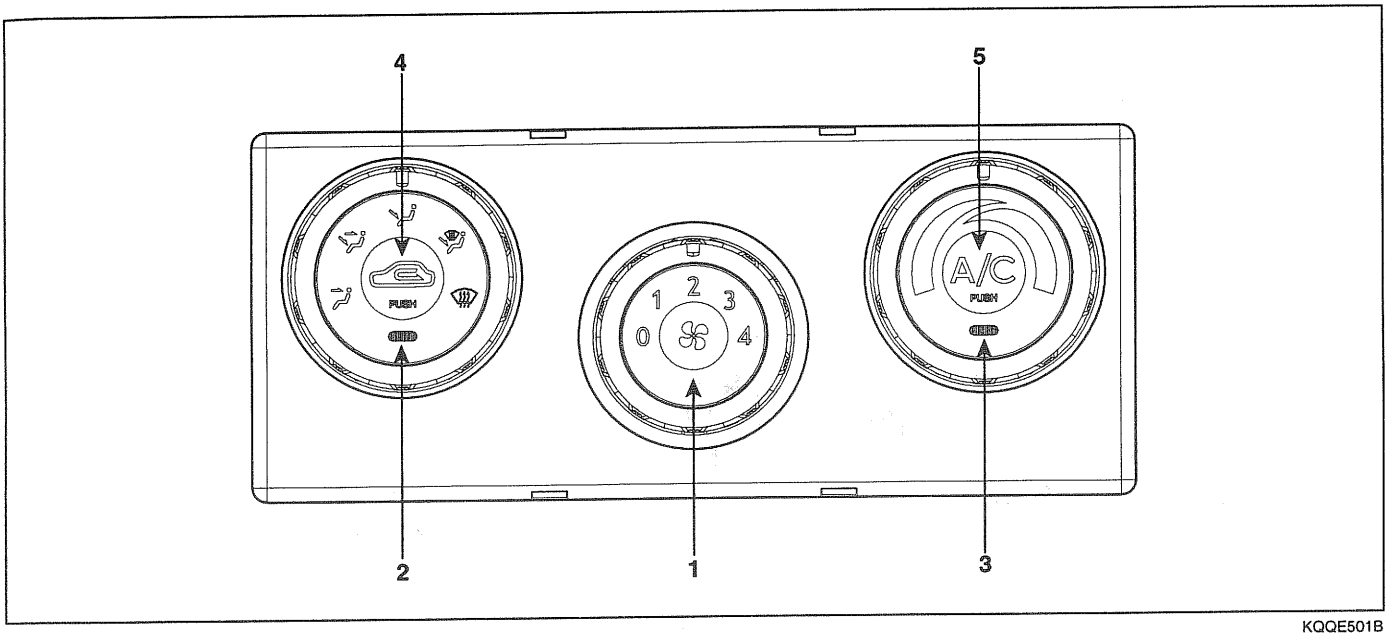
COMPONENTS E4D0CF3F



1. Panel
2. Mode select knob & intake switch
3. Blower speed knob
4. Temperature select knob & A/C switch
5. Inlet panel
6. Housing

EQQE501A

DESCRIPTION EADEA649



KQQE501B

1. **BLOWER SWITCH**
   The blower switch controls the blowing level of the air conditioning system by controlling blower motor speed. The switch has an electrical circuit containing a resister that will regulate blower motor input voltage to control the motor speed.

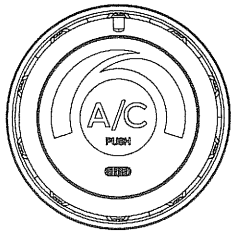
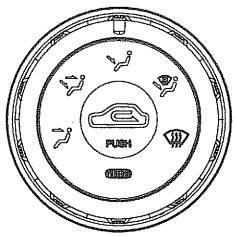
2. **MODE SWITCH**
   The mode switch controls air conditioning system discharge location. The switch contains an electrical circuit to control an actuator that is connected to the mode door for discharge control.

3. **TEMPERATURE SWITCH**
   The temperature switch controls the temperature door position that will be used to regulate the air conditioning system's discharge air temperature. The switch includes a rack & pinion and a cable.

4. **INTAKE SWITCH**
   The intake switch controls the intake door used to regulate the intake air flow of the air conditioning system. The switch contains an electrical circuit used to control the actuator that is connected to the intake door.

5. **AIR CONDITIONING SWITCH**
   The air conditioning switch controls the on/off position of the air conditioning system compressor. The switch contains an electrical circuit that will switch on/off the power supply to the relay that is connected to the compressor.

SWITCH OPERATION AND FEATURES

Switch	Feature	Switch selection	Function
A/C switch	 KQQE590A	A/C switch pushing	• Indicator ON • A/C operate
		A/C switch pushing with A/C ON	• Indicator OFF • A/C non-operate
Fresh and recirculation switch	 KQQE590B	Switch pushing	• Indicator ON • Shift to recirculation mode
		Switch pushing with switch ON	• Indicator OFF • Shift to fresh mode