1. COOLING FAN OPERATION
When the Ignition SW is turned **ON** , the current from IGN Fuse flows to **TERMINAL 3** of Cooling Fan Relay no.3 **--> TERMINAL1 --> TERMINAL 1** of water temp. SW (for Cooling Fan **--> TERMINAL 2 --> GROUND** , from **TERMINAL 1** of Cooling Fan Relay no.2 **--> TERMINAL 2 --> TERMINAL 2** of water temp. SW (for Cooling Fan) **--> TERMINAL 1 --> GROUND** , and also from **TERMINAL 2** of Cooling Fan Relay no.1 **--> TERMINAL 2 --> TERMINAL 2** of A/C pressure SW (high pressure) **--> TERMINAL 3 --> GROUND** , causing Cooling Fan Relays no.1, 2 and 3 to turn **ON** . At that time, the current from FL RDI fan flows to **TERMINAL 3** of Cooling Fan Relay no.2 and **TERMINAL 1** of Cooling Fan Motor no.1 **--> TERMINAL 1 --> TERMINAL 4** of Cooling Fan Relay no.3 **--> TERMINAL 5 --> TERMINAL 3** of Cooling Fan Relay no.1.

***** Operation at low speed
During A/C operation, when the pressure of A/C Compressor becomes higher more than **1323 kPa** , **13.5 kg/cm2 192 psi**) than normal pressure the A/C high pressure SW turns **OFF** . As a result, Cooling Fan Relay no.1 turns **OFF** and the current flows from FL RDI Fan **--> TERMINAL 2** of Cooling Fan Motor no.1 **--> TERMINAL 1 --> TERMINAL 4** of Cooling Fan Relay no.3 **--> TERMINAL 5 --> TERMINAL 3** of Cooling Fan Relay no.1 **--> TERMINAL 4 --> TERMINAL 2** of Cooling Fan Motor no.2 **--> TERMINAL 1 --> GROUND** , flowing to the Fan Motor in series, causing the Cooling Fan to rotate at low speed.

***** Operation at high speed
When the engine coolant temperature becomes more than about **90°** C (**194°** F), the water temp. SW turns **OFF** . As a result, Cooling Fan Relays no.2 and no.3 turn **OFF** , and current flows from FL RDI fan to **TERMINAL 2** of Cooling Fan Motor no.1 **--> TERMINAL 1 --> TERMINAL 4** of Cooling Fan Relay no.3

--> **TERMINAL 2** --> **GROUND** . At the same time, current flows from FL RDI Fan to **TERMINAL 3** of Cooling Fan Relay no.2 --> **TERMINAL 4** --> **TERMINAL 2** of Cooling Fan Motor no.2 --> **TERMINAL 1** --> **GROUND** , the current flowing to the Fan Motor in parallel causing the Cooling Fan to rotate at high speed.

2. HEATER BLOWER MOTOR OPERATION
Current is applied at all times through FL Heater to **TERMINAL 5** of Heater Relay. When the Ignition SW is turned **ON** , current flows through Heater Fuse to **TERMINAL 3** of Heater Relay --> **TERMINAL 1** --> **TERMINAL HR** of A/C Control Assembly. At the same time, current also flows from Heater Fuse to **TERMINAL IG+** of A/C Control Assembly and --> **TERMINAL 3** of extra high speed Relay --> **TERMINAL 5** --> **TERMINAL FR** of A/C Control Assembly.

* Low speed operation
When the Blower SW (A/C Control Assembly) is moved to low speed position, the current to **TERMINAL HR** of A/C Control Assembly flows to **TERMINAL GND** of A/C Control Assembly --> **GROUND** and turns the Heater Relay **ON** . As a result, the current to **TERMINAL 5** of Heater Relay flows to **TERMINAL 4** of Relay --> **TERMINAL 2** of Blower Motor --> **TERMINAL 1** --> **TERMINAL 1** of Blower Resistor --> **TERMINAL 2** --> **GROUND** and causes the Blower Motor to rotate at low speed.

* High speed operation
When the Blower SW (A/C Control Assembly) is moved to **HIGH SPEED** position, the current to **TERMINAL HR** of A/C Control Assembly flows to **TERMINAL GND** of A/C Control Assembly --> **GROUND** and turns the Heater Relay **ON** . At the same time, the current to **TERMINAL 3** of extra high

speed Relay also flows to **TERMINAL 5** of Relay --> **TERMINAL FR** of A/C Control Assembly --> **TERMINAL GND** --> **GROUND** and turns the extra high speed Relay **ON** . As a result, the current to **TERMINAL 5** of Heater Relay flows to **TERMINAL 4** --> **TERMINAL 2** of Blower Motor --> **TERMINAL 1** --> **TERMINAL 1** of extra high speed Relay --> **TERMINAL 2** --> **GROUND** without passing through the Blower resistor, causing the Blower Motor to rotate at high speed.

* Medium speed operation
When the Blower SW (A/C Control Assembly) is moved to **MED** position, the current to **TERMINAL HR** of A/C Control Assembly flows to **TERMINAL GND** --> **GROUND** and turns the Heater Relay **ON** . Then, the current to **TERMINAL IG+** of A/C Control Assembly flows to **TERMINAL BLW** --> **TERMINAL B-2** of Power Transistor --> **TERMINAL A-1** --> **GROUND** .

As a result, the current to **TERMINAL 5** of Heater Relay flows to **TERMINAL 4** --> **TERMINAL 2** of Blower Motor --> **TERMINAL 1** --> **TERMINAL A-2** of power transistor --> **TERMINAL A-1** --> **GROUND** and Blower Motor is rotated at medium speed by the A/C Control Assembly controlling the current flow from **TERMINAL B-2** of power transistor to **TERMINAL A-1** .

* Auto function
When the auto SW in Heater control SW (A/C Control Assembly) is selected, the current flow is the same for **MED** position, but the A/C Control Assembly decides the appropriate air flow volume according to the set temperature and the input signals from each Sensor. by controlling the current flow from **TERMINAL BLW** of the A/C Control Assembly to **TERMINAL B-2** of power transistor --> **TERMINAL A-1** --> **GROUND** , the A/C Control Assembly controls the Blower Motor steplessly.

3. OPERATION OF AIR INLET CONTROL SERVO MOTOR
(Switching from Fresh to RECIRC)
With Ignition SW turned **ON** , the current

flows from Heater Fuse to **TERMINAL IG+** of A/C Control Assembly. When the RECIRC/FRESH SW is switched to the RECIRC side, the current flows from **TERMINAL IG+** of A/C Control Assembly **--> TERMINAL MREC --> TERMINAL 5** of air inlet control Servo Motor **--> TERMINAL 4 --> TERMINAL MFRS** of A/C Control Assembly **--> TERMINAL GND --> GROUND** , the Motor rotates and the Damper moves to the RECIRC side. When it is in the **RECIRC** position, the current is cut inside the Servo Motor and the Damper stops at that position.

(Switching from RECIRC to Fresh)
With Ignition SW **ON** , when the **RECIRC/FRESH** SW is switched to the fresh side, the current flows from **TERMINAL IG+** of A/C Control Assembly **--> TERMINAL MFRS --> TERMINAL 4** of air inlet control Servo Motor **--> TERMINAL 5 --> TERMINAL MREC** of A/C Control Assembly **--> TERMINAL GND --> GROUND** , the Motor rotates and the Damper moves to the fresh side. When it is in the FRESH position, the current is cut inside the Servo Motor and the Damper stops at that position.

4. OPERATION OF AIR VENT MODE CONTROL SERVO MOTOR
With Ignition SW turned **ON** , the current flows from Heater Fuse to **TERMINAL 6** of air vent mode control Servo Motor **TERMINAL 7 --> GROUND** , and the Damper moves to the position of the mode selection SW of the Control Assembly which is **ON** .

When the DEF SW of A/C Control Assembly is turned **ON** , with the Damper in the face position, a signal is input from **TERMINAL 5** of Air Vent Mode Control Servo Motor to **TERMINAL DEF** of A/C Control Assembly. As a result, the Servo Motor operates until the Damper reaches DEF position. When this occurs the signal to the A/C Control Assembly is shut **OFF** and rotation of the Motor stops.

Switching to other modes is controlled by the Servo Motor according to the following signals.

1. **FOOT/DEF** position, a signal input from **TERMINAL 4** of Servo Motor to **TERMINAL F/D** of A/C Control Assembly.
2. **FOOT** position, a signal input from **TERMINAL 3** of Servo Motor to **TERMINAL FOOT** of A/C Control Assembly.

5. OPERATION OF AIR MIX CONTROL SERVO MOTOR
When the temperature control SW is pushed to the "cool" side, the current flows from **TERMINAL MC** of A/C Control Assembly **--> TERMINAL 2** of air mix control Servo Motor --> Motor **--> TERMINAL 6 --> TERMINAL MH** of A/C Control Assembly **--> GROUND** and the Motor rotates. The Damper opening angle at this time is input from **TERMINAL 4** of Servo Motor to **TERMINAL TP** of A/C Control Assembly, this is used to determine the DAMPER STOP position and maintain the set temperature.

When the temperature control SW is pushed to the "warm" side, the current flows from Servo Motor --> **TERMINAL MH** of A/C Control Assembly --> **TERMINAL 6** of Air Mix Control Servo Motor --> Motor --> **TERMINAL 2** --> **TERMINAL MC** of A/C Control Assembly, rotating the Motor in reverse and switching the Damper from "cool" to "warm" side.

6. AIR CONDITIONING OPERATION
   The A/C Control Assembly receives various signals. i.e.. the engine rpm signal from the Igniter, outlet temperature signal from the A/C Thermistor, engine coolant temperature from the water temp. Sensor, and the lock signal from the A/C compressor, etc.
   When the engine is started and the A/C SW (A/C Control Assembly) is turned **ON** , a signal is input to the ECU inside the A/C Control Assembly. As a result, the GROUND circuit in A/C Control Assembly is closed and current flows from Heater Fuse to **TERMINAL 1** of Magnetic Clutch Relay --> **TERMINAL 3** --> **TERMINAL ACMG** of Engine Control Module (Engine and Electronic Controlled Transmission ECU) --> **TERMINAL GND** --> **GROUND** , turning the Magnetic Clutch Relay **ON** , so that the Magnetic Clutch is **ON** and the A/C compressor operates.
   At the same time, the Engine Control Module (Engine and Electronic Controlled Transmission ECU) detects the Magnetic Clutch operating and rotates the idle air control (ISC) step Motor in the open direction to avoid lowering the engine rpm during air conditioning operation.
   When any of the following signals are input to the A/C Control Assembly, the Control Assembly operates to turn **OFF** the air conditioning.

***** Engine high rpm signal
***** Engine coolant high temp. signal is high.
***** A signal that the temperature at the air outlet is low.

***** A signal that there is a large difference between Engine rpm and Compressor rpm.

***** A signal that the refrigerant pressure is abnormally high or low.