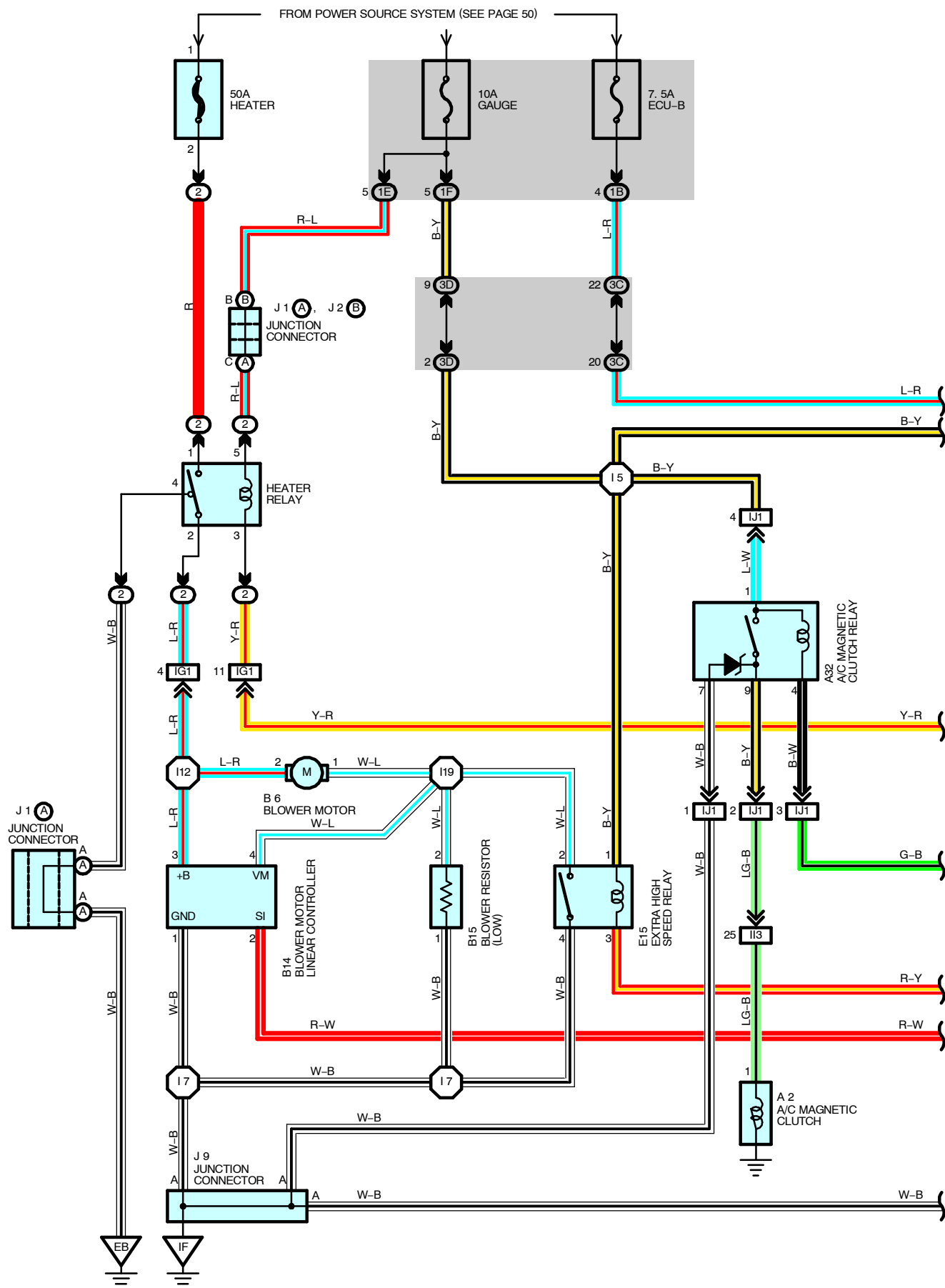
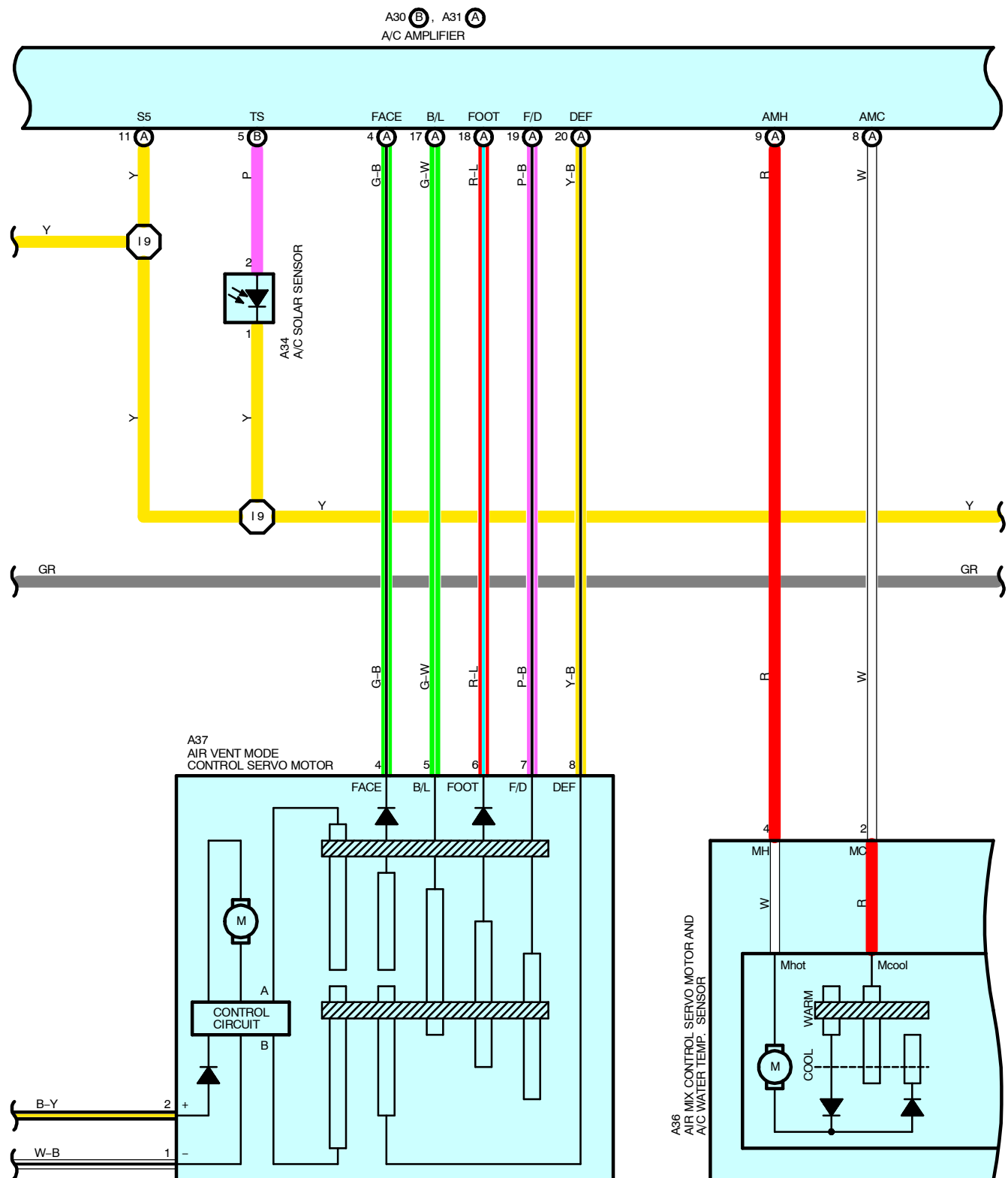
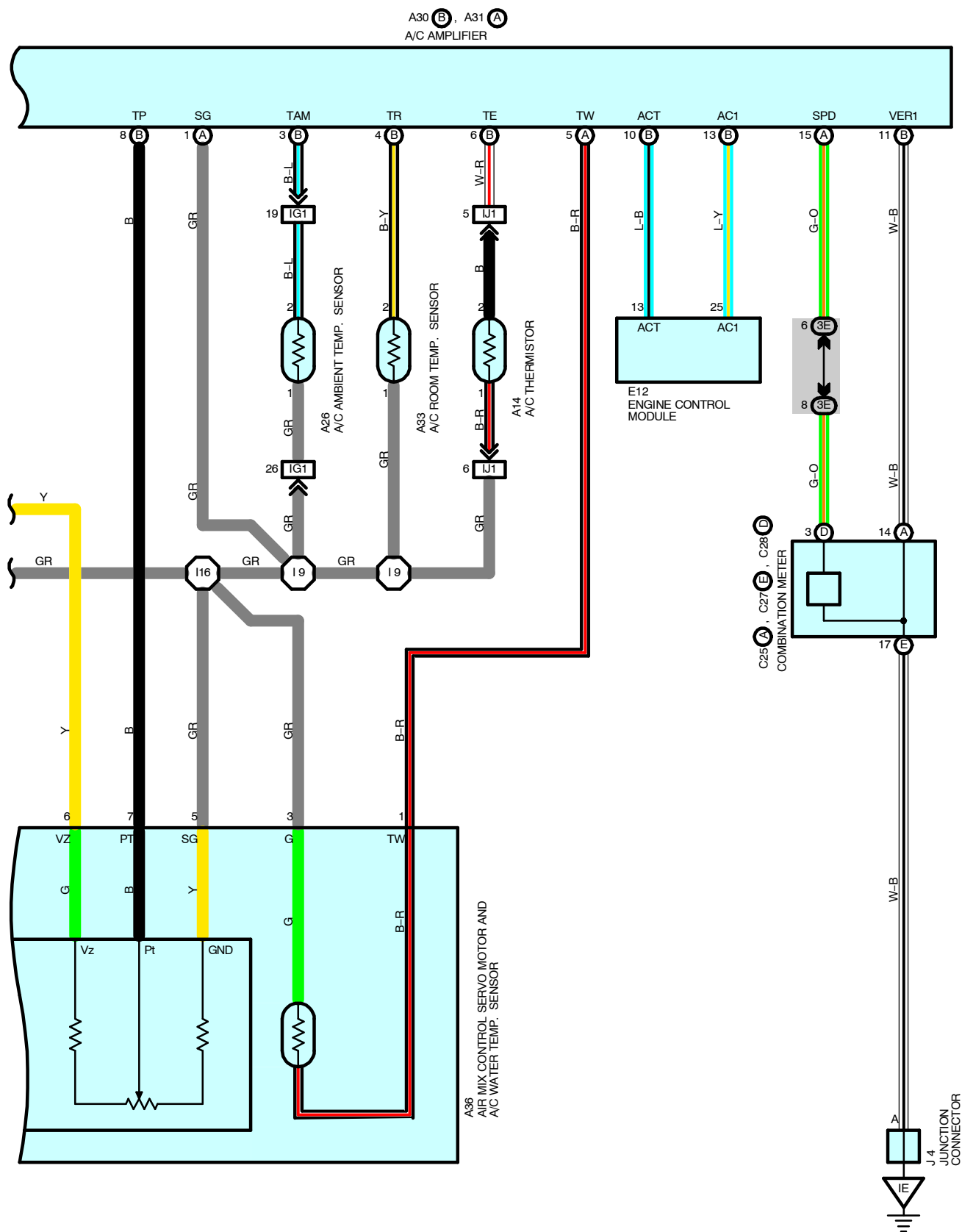




AUTOMATIC AIR CONDITIONING





AUTOMATIC AIR CONDITIONING

SYSTEM OUTLINE

1. HEATER BLOWER MOTOR OPERATION

Current is applied at all times through HEATER fuse to TERMINAL 1 of the HEATER relay. When the ignition SW is turned on, current flows through the GAUGE fuse to TERMINAL 5 of the HEATER relay to TERMINAL 3 to TERMINAL HR of the A/C amplifier. At the same time, current also flows from GAUGE fuse to TERMINAL IG+ of the A/C amplifier.

* Low speed operation

When the blower SW (Heater control panel SW) is pushed to LOW SPEED position, the current to TERMINAL HR of the A/C amplifier flows to TERMINAL GND of the A/C amplifier to GROUND and turns the HEATER relay on. As a result, the current to TERMINAL 1 of the HEATER relay flows to TERMINAL 2 of the relay to TERMINAL 2 of the blower motor to TERMINAL 1 to TERMINAL 2 of the blower resistor (Low) to TERMINAL 1 to GROUND and causes the blower motor to rotate at low speed.

* High speed operation

When the blower SW (Heater control panel SW) is pushed to HIGH SPEED position, the current to TERMINAL HR of the A/C amplifier flows to TERMINAL GND of the A/C amplifier to GROUND and turns the HEATER relay on. As a result, the current to TERMINAL 1 of the HEATER relay flows to TERMINAL 2 to TERMINAL 2 of the blower motor to TERMINAL 1 to TERMINAL 4 of the blower motor linear controller to TERMINAL 2 to TERMINAL BLW of the A/C amplifier (Which is activated when the blower SW is pushed to high speed position) to TERMINAL GND to GROUND without passing through the blower resistor (Low), causing the blower motor to rotate at high speed.

2. AIR INLET CONTROL SERVO MOTOR OPERATION

(Switching from FRESH to RECIRC)

With the ignition SW turned on, the current flows from GAUGE fuse to TERMINAL IG+ of the A/C amplifier to TERMINAL AIR to TERMINAL 1 of the air inlet control servo motor to TERMINAL 2 to TERMINAL AIF of the A/C amplifier to TERMINAL GND to GROUND, the motor rotates and the damper moves to the RECIRC side. When the damper operates with the heater control panel SW at RECIRC position, the damper position signal is input from TERMINAL 3 of the servo motor to TERMINAL TPI of the A/C amplifier. As a result, current to the servo motor circuit is cut off by the A/C amplifier, so the damper stops at that position.

(Switching from RECIRC to FRESH)

With the ignition SW turned on, when the heater control panel SW is switched to the FRESH side, the current flows from TERMINAL IG+ of the A/C amplifier to TERMINAL AIF to TERMINAL 2 of the air inlet control servo motor to TERMINAL 1 to TERMINAL AIR of the A/C amplifier to TERMINAL GND to GROUND, The motor rotates and the damper stops at that position.

3. AIR VENT MODE CONTROL SERVO MOTOR OPERATION

When the ignition SW turned on, the current flows from GAUGE fuse to TERMINAL IG+ of the A/C amplifier.

(Switching from DEF to FACE)

The current flows from TERMINAL FACE of the A/C amplifier to TERMINAL 4 of the air vent mode control servo motor to TERMINAL 8 to TERMINAL DEF of the A/C amplifier to TERMINAL GND to GROUND. The motor rotates and the damper moves to the FACE side. When the damper operates with the heater control panel SW at FACE position, the damper position signal is input from TERMINAL 8 of the servo motor to the TERMINAL DEF of the A/C amplifier. As a result, current to the servo motor circuit is cut off by the A/C amplifier, so the damper stops at that position.

(Switching from FACE to DEF)

The current flows from TERMINAL DEF of the A/C amplifier to TERMINAL 8 of the air vent control servo motor to TERMINAL 4 to TERMINAL FACE of the A/C amplifier to TERMINAL GND to GROUND, the motor rotates and the damper stops at that position.

4. AIR MIX CONTROL SERVO MOTOR OPERATION

When the temperature control SW (Heater control panel SW) is turned to the "COOL" side the current flows from TERMINAL AMC of the A/C amplifier to TERMINAL 2 of the air mix control servo motor to motor to TERMINAL 4 to TERMINAL AMH of the A/C amplifier to GROUND and the motor rotates. The damper opening angle at this time is input from TERMINAL 7 of the servo motor to TERMINAL TP of the A/C amplifier, this is used to determine the DAMPER STOP position and maintain the set temperature.

When the temperature control SW (Heater control panel SW) is turned to the "HOT" side, the current flows from servo motor to TERMINAL AMH of the A/C amplifier to TERMINAL 4 of the air mix control servo motor to motor to TERMINAL 2 to TERMINAL AMC of the A/C amplifier, rotating the motor in reverse and switching the damper from "COOL" to "HOT" side.

5. AIR CONDITIONING OPERATION

The A/C amplifier receives various signals, I.E., the engine RPM from the engine control module, outside air temperature signal from the A/C ambient temp. sensor, coolant temperature from the engine control module and the lock signal from the A/C compressor, etc.

When the engine is started and the A/C SW (Heater control panel SW) is on, a signal is input to the A/C amplifier.

As a result, the ground circuit in A/C amplifier is closed and current flows from GAUGE fuse to TERMINAL 1 of the A/C magnetic clutch relay to TERMINAL 4 to TERMINAL MGC of the A/C amplifier to TERMINAL GND to GROUND, turning the A/C 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 detects the magnetic clutch is on and the A/C compressor operates.

If the A/C amplifier detects the following conditions, it stops the air conditioning:

- * Evaporator outlet air is too low.
- * There is a marked difference between the compressor speed and the engine speed.
- * The refrigerant pressure is abnormally high or abnormally low.
- * The engine speed is too low.
- * Rapid acceleration occurs.

SERVICE HINTS

A1 A/C DUAL PRESSURE SW

1-2 : Open above approx. **2.0 kgf/cm² (28 psi, 196 kpa)** or **32 kgf/cm² (455 psi, 3138 kpa)**

A2 A/C MAGNETIC CLUTCH

1-GROUND : Approx. **3.7 Ω**

A30 (B), A31 (A) A/C AMPLIFIER

B-GROUND : Always approx. **12 volts**

IG+ -GROUND : Approx. **12 volts** with the ignition SW at **ON** position

HR -GROUND : Approx. **12 volts** with the ignition SW at **ON** position and do not turn the blower motor

Below **1 volts** with the ignition SW at **ON** position and turn the blower motor

PSW-GROUND : Below **1 volts** with the ignition SW at **ON** position

AC1-GROUND : Below **1 volts** at start the engine, operate the compressor

+ **OR MORE** volts at start the engine, do not operate the compressor

BLW-GROUND : Below **1.5 volts** with the ignition SW on and turn the blower motor

S5-SG : **4-6 volts** with the ignition SW at **ON** position

SG-GROUND : Always continuity

AMH-AMC : **1.3-1.9 volts** with the ignition SW off

AIF-GROUND : Approx. **12 volts** with the FRESH SW on

AIR-GROUND : Approx. **12 volts** with the RECIRC SW on

FACE-GROUND : Approx. **12 volts** with the FACE SW on

DEF-GROUND : Approx. **12 volts** with the DEF SW on

GND-GROUND : Always continuity

○ : PARTS LOCATION

Code		See Page		Code		See Page		Code		See Page	
A1		28 (5VZ-FE)		A34		32		E12		33	
		30 (3RZ-FE)		A35		32		E15		33	
A2		28 (5VZ-FE)		A36		32		J1	A	29 (5VZ-FE)	
		30 (3RZ-FE)		A37		32				31 (3RZ-FE)	
A14		32		B6		32		J2	B	29 (5VZ-FE)	
A26		28 (5VZ-FE)		B14		32				31 (3RZ-FE)	
A30	B	32		B15		32		J4		33	
A31	A	32		C25	A	32		J9		33	
A32		32		C27	E	32					
A33		32		C28	D	32					

○ : RELAY BLOCKS

Code	See Page	Relay Blocks (Relay Block Location)
2	22	Engine Room R/B (Engine Compartment Left)

AUTOMATIC AIR CONDITIONING

: JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

Code	See Page	Junction Block and Wire Harness (Connector Location)
1B	24	Cowl Wire and Driver Side J/B (Lower Finish Panel)
1E	24	Engine Room Main Wire and Driver Side J/B (Lower Finish Panel)
1F	24	Cowl Wire and Driver Side J/B (Lower Finish Panel)
3C	26	Cowl Wire and Center J/B (Near the Steering Column Tube)
3D		
3E		

: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
IG1	42	Engine Room Main Wire and Cowl Wire (Left Kick Panel)
II3	42	Engine Wire and Cowl Wire (On the Glove Box)
IJ1	42	Cowl Wire and A/C Sub Wire (Near the A/C Unit)

: GROUND POINTS

Code	See Page	Ground Points Location
EB	38 (5VZ-FE)	Front Left Fender
	40 (3RZ-FE)	
IE	42	Cowl Side Panel LH
IF	42	Cowl Side Panel RH

: SPLICE POINTS

Code	See Page	Wire Harness with Splice Points	Code	See Page	Wire Harness with Splice Points
I5	42	Cowl Wire	I12	42	Cowl Wire
I7			I16		
I9			I19		

