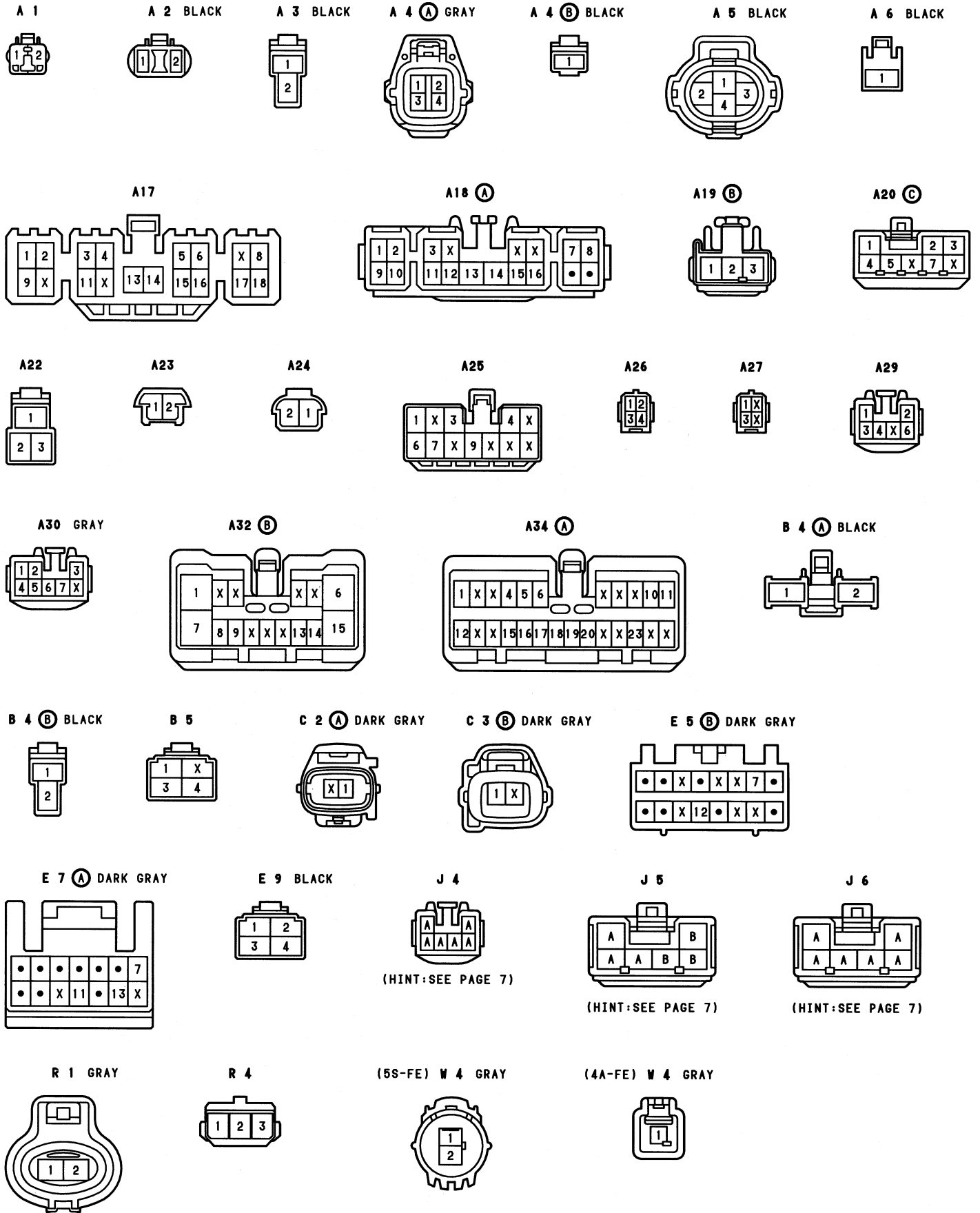
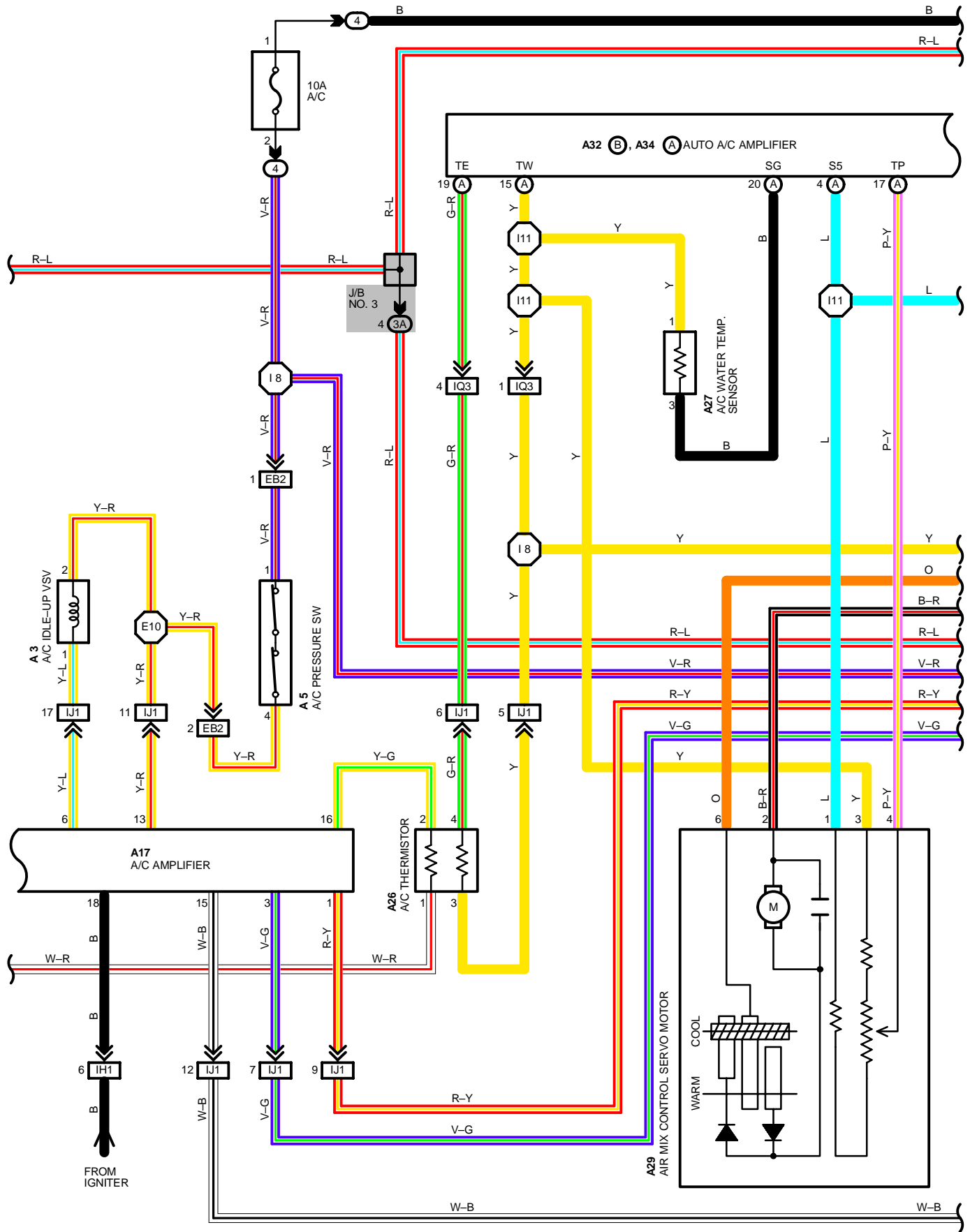


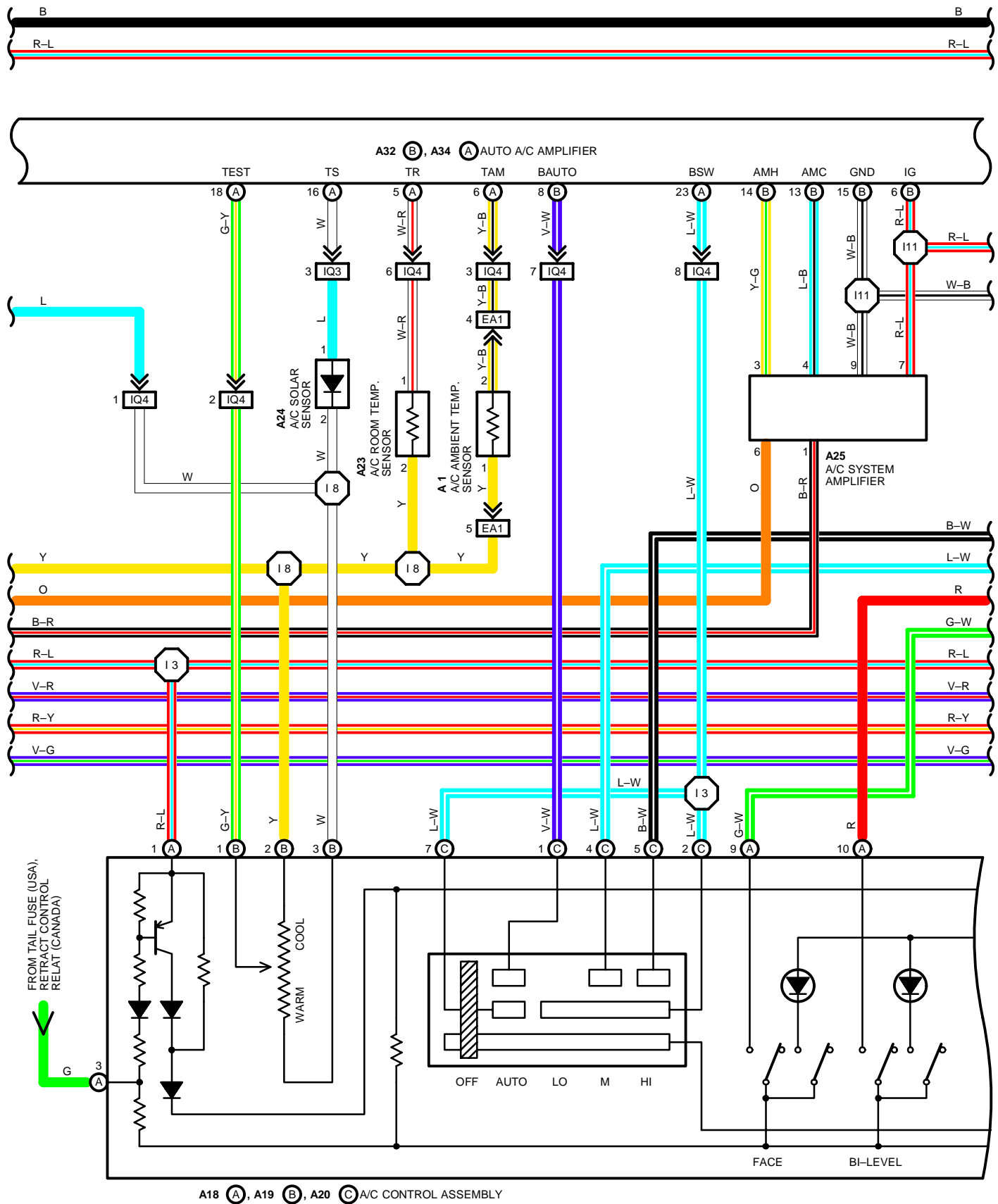
RADIATOR FAN AND AIR CONDITIONER (AUTOMATIC AIR CONDITIONER, FOR DIAL TYPE OF BLOWER CONTROL SW)



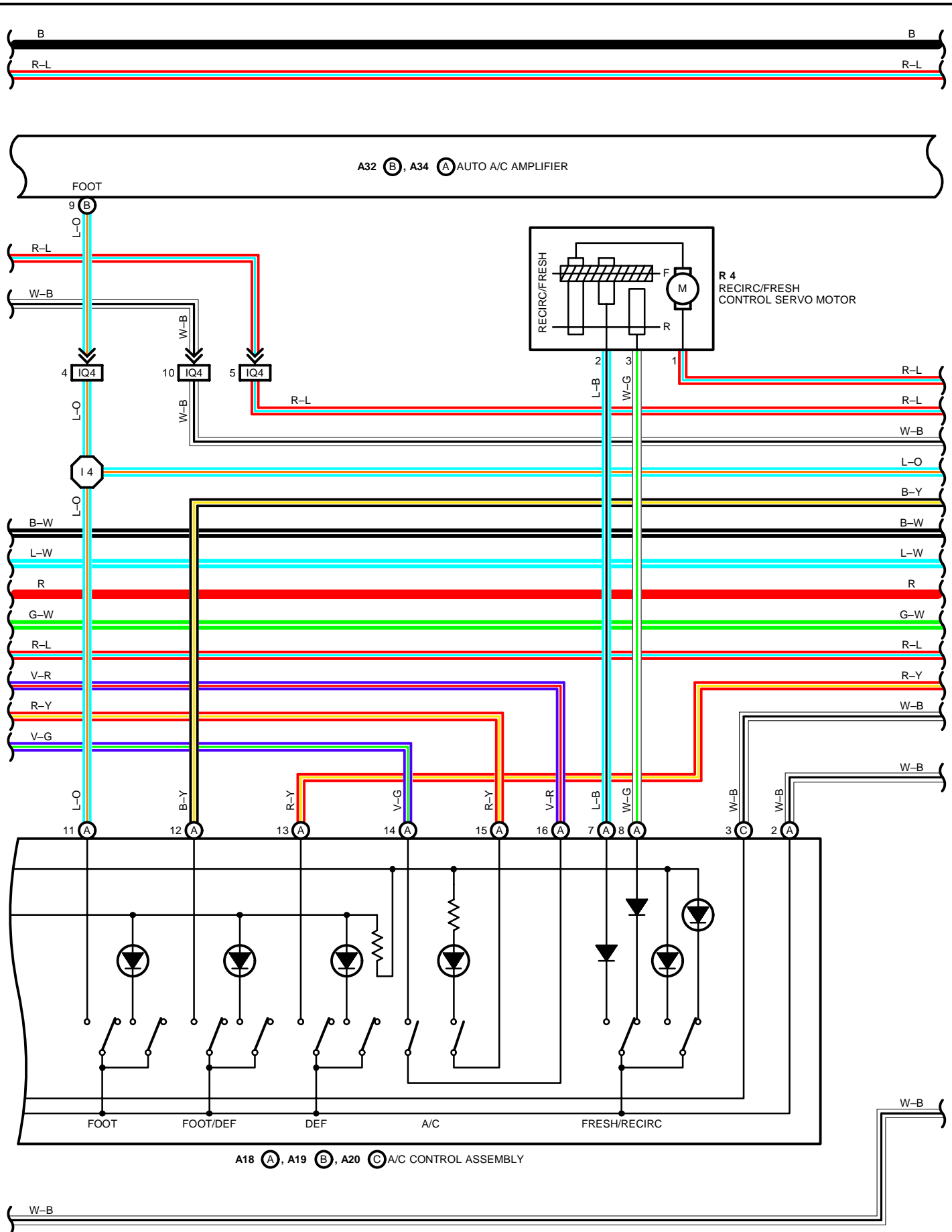




RADIATOR FAN AND AIR CONDITIONER (AUTOMATIC AIR CONDITIONER, FOR DIAL TYPE OF BLOWER CONTROL SW)



A18 (A), A19 (B), A20 (C) A/C CONTROL ASSEMBLY







**SYSTEM OUTLINE****1. COOLING FAN OPERATION**

WHEN THE IGNITION SW IS TURNED ON, THE CURRENT FROM IGN FUSE FLOWS TO **TERMINAL 3** OF RADIATOR FAN RELAY NO. 1 → **TERMINAL 4** → **TERMINAL 3** OF THE A/C PRESSURE SW → **TERMINAL 2** → **TERMINAL 1** OF WATER TEMP. SW (FOR FANS CONTROL) → **TERMINAL 2** (5S-FE) → **GROUND**, FROM **TERMINAL 2** OF A/C FAN RELAY NO. 2 → **TERMINAL 4** → **TERMINAL 3** OF A/C PRESSURE SW → **TERMINAL 2** → **TERMINAL 1** OF WATER TEMP. SW (FOR FANS CONTROL) → **TERMINAL 2** (5S-FE) → **GROUND**, CAUSING RELAY NO. 1 AND RELAY NO. 2 OF EACH FAN TO TURN ON.

**\* OPERATION AT LOW SPEED**

WHEN THE A/C SW (A/C CONTROL ASSEMBLY) IS TURNED ON AND THE AIR CONDITIONER OPERATES, THE CURRENT FLOWS FROM GAUGE FUSE FLOWS TO **TERMINAL 2** OF A/C MAGNET CLUTCH RELAY → **TERMINAL 3** → **TERMINAL 8** OF A/C AMPLIFIER CAUSING A/C MAGNET CLUTCH RELAY TO TURN ON.

AT THAT TIME, THE CURRENT FROM GAUGE FUSE FLOWS TO **TERMINAL 4** OF A/C MAGNET CLUTCH RELAY → **TERMINAL 1** → **TERMINAL 4** OF A/C MAGNET CLUTCH → **GROUND**, AND FROM **TERMINAL 1** OF A/C MAGNET CLUTCH RELAY → **TERMINAL 2** OF A/C FAN RELAY NO. 3 → **TERMINAL 3** → **GROUND**.

AS A RESULT, A/C MAGNET CLUTCH AND A/C FAN RELAY NO. 3 TURNS ON AND THE CURRENT FLOWS FROM FL CDS FAN → **TERMINAL 2** OF A/C CONDENSER FAN MOTOR → **TERMINAL 1** → **TERMINAL 4** OF A/C FAN RELAY NO. 3 → **TERMINAL 1** → **TERMINAL 1** OF A/C FAN RELAY NO. 2 → **TERMINAL 5** → **TERMINAL 2** OF A/C CONDENSER FAN MOTOR → **TERMINAL 1** → **GROUND**, FLOWING TO EACH FAN MOTOR IN SERIES, CAUSING THE COOLING FAN TO ROTATE AT LOW SPEED.

**\* OPERATION AT HIGH SPEED**

DURING A/C OPERATION, WHEN THE PRESSURE OF A/C COMPRESSOR BECOMES HIGHER THAN NORMAL PRESSURE (MORE THAN 14.3 KG/CM<sup>2</sup> 1401 KPA, 203 PSI), THE A/C PRESSURE SW TURNS OFF.

AS A RESULT, FAN RELAY NO. 1 AND NO. 2 TURNS OFF AND THE CURRENT FLOWS FROM FL RDI FAN → **TERMINAL 1** OF RADIATOR FAN RELAY NO. 1 → **TERMINAL 2** → **TERMINAL 2** OF RADIATOR FAN MOTOR → **TERMINAL 1** → **GROUND**, AND FROM FL CDS FAN → **TERMINAL 2** OF A/C CONDENSER FAN MOTOR → **TERMINAL 1** → **TERMINAL 4** OF A/C FAN RELAY NO. 3 → **TERMINAL 1** → **TERMINAL 1** OF A/C FAN RELAY NO. 2 → **TERMINAL 3** → **GROUND**, FLOWING TO EACH FAN MOTOR IN PARALLEL CAUSING THE COOLING FAN TO ROTATE AT HIGH SPEED. WHEN THE ENGINE COOLANT TEMPERATURE BECOMES MORE THAN ABOUT 90° C (194° F), THE WATER TEMP. SW TURNS OFF AND THE SAME OPERATION AS ABOVE IS PERFORMED.

**2. HEATER BLOWER MOTOR OPERATION (DIAL TYPE BLOWER CONTROL SW (W/ AUTO A/C))**

CURRENT IS APPLIED AT ALL TIMES THROUGH THE HEATER FUSE TO **TERMINAL 5** OF HEATER RELAY. WHEN THE IGNITION SW IS TURNED ON, CURRENT FLOWS THROUGH GAUGE FUSE TO **TERMINAL 3** OF HEATER RELAY → **TERMINAL 1** → **TERMINAL HR** OF A/C AUTO AMPLIFIER. AT THE SAME TIME, CURRENT ALSO FLOWS FROM GAUGE FUSE TO **TERMINAL IG** OF A/C AUTO AMPLIFIER, **TERMINAL B2** OF A/C CONTROL ASSEMBLY AND **TERMINAL A1** OF A/C CONTROL ASSEMBLY.

**\* LOW SPEED OPERATION (OPERATION AT MANUAL)**

CURRENT TO **TERMINAL 3** OF HEATER RELAY FLOWING TO TERMINAL OF HEATER RELAY → **TERMINAL B2** OF A/C CONTROL ASSEMBLY → **TERMINAL B3** → **GROUND** AND TURNS THE HEATER RELAY ON.

THIS CAUSES THE CURRENT TO **TERMINAL 5** OF THE HEATER RELAY TO FLOW TO **TERMINAL 4** OF HEATER RELAY → **TERMINAL 2** (5S-FE) OR **TERMINAL 1** (4A-FE) OF BLOWER MOTOR → MOTOR → **TERMINAL 1** (5S-FE) OR **TERMINAL 2** (4A-FE) → **TERMINAL 1** OF BLOWER RESISTOR → **TERMINAL 4** → **GROUND**, CAUSING THE BLOWER MOTOR TO ROTATE AT LOW SPEED.

**\* HIGH SPEED OPERATION (OPERATION AT MANUAL)**

CURRENT TO **TERMINAL 3** OF HEATER RELAY FLOWS TO **TERMINAL 1** OF HEATER RELAY → **TERMINAL B2** OF A/C CONTROL ASSEMBLY → **TERMINAL B3** → **GROUND**, TURNING THE HEATER RELAY ON.

AT THE SAME TIME, CURRENT FLOWING TO **TERMINAL 5** OF THE HEATER RELAY FLOWS TO **TERMINAL 4** → **TERMINAL 2** (5S-FE) OR **TERMINAL 1** (4A-FE) OF BLOWER MOTOR → **TERMINAL 1** (5S-FE) OR **TERMINAL 2** (4S-FE) → **TERMINAL B5** OF A/C CONTROL ASSEMBLY → **TERMINAL B3** → **GROUND**, CAUSING THE BLOWER MOTOR TO ROTATE AT HIGH SPEED.

**\* MEDIUM SPEED OPERATION (OPERATION AT MANUAL M1, M2)**

THE CURRENT TO **TERMINAL 3** OF HEATER RELAY FLOWS TO **TERMINAL 1** OF HEATER RELAY → **TERMINAL B2** OF A/C CONTROL ASSEMBLY → **TERMINAL B3** → **GROUND** AND TURNS THE HEATER RELAY ON.

AS A RESULT, THE CURRENT TO **TERMINAL 5** OF HEATER RELAY FLOWS TO **TERMINAL 4** → **TERMINAL 2** (5S-FE) OR **TERMINAL 1** (4A-FE) OF BLOWER MOTOR → **TERMINAL 1** (5S-FE) OR **TERMINAL 2** (4A-FE) → **TERMINAL 1** OF BLOWER RESISTOR → **TERMINAL 3** → **TERMINAL B4** OF A/C CONTROL ASSEMBLY → **TERMINAL B3** → **GROUND** AND CAUSES THE BLOWER MOTOR TO ROTATE AT MEDIUM SPEED.



\* AUTO FUNCTION

WHEN THE AUTO SW (A/C CONTROL ASSEMBLY) IS TURNED ON, SIGNALS ARE INPUT TO **TERMINAL BSW** OF A/C AUTO AMPLIFIER AND **TERMINAL B** AUTO OF A/C AUTO AMPLIFIER CONTROLLING THE CURRENT FLOW FROM **TERMINAL BLW** OF THE A/C AUTO AMPLIFIER TO **TERMINAL 3** OF POWER TRANSISTOR → **TERMINAL 2** → **GROUND**, THE A/C AUTO AMPLIFIER CONTROLS THE BLOWER MOTOR STEPLESSLY.

### 3. OPERATION OF RECIRC/FRESH CONTROL SERVO MOTOR

(SWITCHING FROM FRESH TO RECIRC)

WITH IGNITION SW TURNED ON, THE CURRENT FLOWS FROM GAUGE FUSE TO **TERMINAL 1** OF RECIRC/FRESH CONTROL SERVO MOTOR. WHEN THE RECIRC/FRESH SW IS SWITCHED TO THE RECIRC SIDE, THE CURRENT FLOWS FROM **TERMINAL 1** OF RECIRC/FRESH CONTROL SERVO MOTOR → **TERMINAL 2** → **TERMINAL A18** OF RECIRC/FRESH CONTROL SERVO MOTOR → **TERMINAL A2** → **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 1** OF RECIRC/FRESH CONTROL SERVO MOTOR → **TERMINAL 3** → **TERMINAL A8** OF A/C CONTROL ASSEMBLY → **TERMINAL A2** → **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 GAUGE FUSE TO **TERMINAL 5** OF AIR VENT MODE CONTROL SERVO MOTOR → **TERMINAL 6** → **GROUND**, AND THE DAMPER MOVES TO THE POSITION OF THE MODE SELECTION SW OF THE CONTROL ASSEMBLY SWITCH IS ON.

WHEN THE MODE SELECTION SW OF A/C CONTROL ASSEMBLY IS MOVED TO **DEF** POSITION FROM THE DAMPER IN THE **FACE** POSITION, THE CURRENT FLOWS FROM **TERMINAL 7** OF AIR VENT MODE CONTROL SERVO MOTOR TO **TERMINAL A13** OF A/C CONTROL ASSEMBLY → **TERMINAL C2** → **GROUND**.

AS A RESULT, THE SERVO MOTOR OPERATES UNTIL THE DAMPER REACHES **DEF** POSITION.

WHEN THIS OCCURS THE CURRENT 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 FLOWING CURRENT:

1. **FOOT/DEF** POSITION: THE CURRENT FLOWS FROM **TERMINAL 4** OF SERVO MOTOR TO **TERMINAL A12** OF A/C CONTROL ASSEMBLY.
2. **FOOT** POSITION: THE CURRENT FLOWS FROM **TERMINAL 3** OF SERVO MOTOR TO **TERMINAL A11** OF A/C CONTROL ASSEMBLY.
3. **BI-LEVEL** POSITION: THE CURRENT FLOWS FROM **TERMINAL 2** OF SERVO MOTOR TO **TERMINAL A10** OF A/C CONTROL ASSEMBLY.

### 5. OPERATION OF AIR MIX CONTROL SERVO MOTOR

WHEN THE TEMPERATURE CONTROL VOLUME IS TURNED TO THE COOL SIDE, A SIGNAL IS INPUT TO **TERMINAL TEST** OF A/C AUTO AMPLIFIER FROM **TERMINAL C1** OF A/C CONTROL ASSEMBLY.

AS A RESULT, THE CURRENT FLOWS FROM **TERMINAL MH** OF A/C AUTO AMPLIFIER TO **TERMINAL 2** OF AIR MIX CONTROL SERVO MOTOR → **TERMINAL 6** → **TERMINAL MC** OF A/C AUTO AMPLIFIER → **TERMINAL GND** → **GROUND**. CAUSING THE AIR MIX CONTROL SERVO MOTOR TO ROTATE.

AT THIS TIME IS INPUT THE DAMPER OPENING ANGLE FROM **TERMINAL 4** OF SERVO MOTOR TO **TERMINAL TP** OF A/C AUTO AMPLIFIER THIS IS USED TO DETERMINE THE DAMPER **STOP** POSITION AND MAINTAIN THE SET TEMPERATURE.

WHEN THE TEMPERATURE CONTROL VOLUME IS TURNED TO THE WARM SIDE, IN A/C SYSTEM AMPLIFIER THE CURRENT FLOWS FROM SERVO MOTOR → **TERMINAL MC** OF A/C AUTO AMPLIFIER → **TERMINAL 6** OF AIR MIX CONTROL SERVO MOTOR → **TERMINAL 2** → **TERMINAL MH** OF A/C AUTO AMPLIFIER → **TERMINAL GND** → **GROUND**, ROTATING THE MOTOR IN REVERSE AND SWITCHING THE DAMPER FROM COOL TO WARM SIDE.

**6. AIR CONDITIONER OPERATION**

THE A/C AMPLIFIER RECEIVES VARIOUS SIGNALS, THE ENGINE RPM SIGNAL FROM THE IGNITER, OUTLET TEMPERATURE SIGNAL FROM THE A/C THERMISTOR, COOLANT TEMPERATURE FROM THE WATER TEMP. SENSOR, AND THE LOCK SIGNAL FM THE A/C COMPRESSOR, ETC.

WHEN THE ENGINE IS STARTED AND THE A/C SW (A/C CONTROL ASSEMBLY) IS TURNED ON, THE CURRENT FLOWS FROM A/C FUSE TO **TERMINAL 3** OF A/C AMPLIFIER.

AS A RESULT, THE CURRENT FLOWING FROM **TERMINAL 3** OF A/C MAGNET CLUTCH RELAY TO **TERMINAL 8** OF A/C AMPLIFIER FLOWS FROM **TERMINAL 15** OF A/C AMPLIFIER TO GROUND AND TURNS IN THE MAGNET CLUTCH RELAY.

BECAUSE THE MAGNET CLUTCH IS ON, THE A/C COMPRESSOR OPERATES, CAUSING THE CURRENT FLOWING FROM A/C IDLE-UP VSV TO **TERMINAL 6** OF A/C AMPLIFIER TO FLOW TO **TERMINAL 15** OF A/C AMPLIFIER → **GROUND**, AND TURNS ON THE VSV TO AVOID LOWERING THE ENGINE RPM DURING AIR CONDITIONER OPERATION.

WHEN ANY OF THE FLOWING SIGNALS ARE INPUT TO THE A/C AMPLIFIER, THE AMPLIFIER OPERATES TO TURN OFF THE AIR CONDITIONER:

- \* ENGINE HIGH RPM SIGNAL
- \* 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.

**SERVICE HINTS****A 4 A/C MAGNET CLUTCH**

4-GROUND : APPROX. 3.7 Ω

**A 5 A/C PRESSURE SW**

3-2 : OPEN ABOVE APPROX. 13.5 KG/CM<sup>2</sup> (192 PSI, 1323 KPA)

CLOSED BELOW APPROX. 10 KG/CM<sup>2</sup> (142 PSI, 980 KPA)

1-4 : OPEN WITH PRESSURE LESS THAN 2.1 KG/CM<sup>2</sup> (30 PSI, 206 KPA) OR ABOVE 27 KG/CM<sup>2</sup> (384 PSI, 2648 KPA)

**A17 A/C AMPLIFIER**

8-15 : CONTINUITY WITH A/C SW (A/C CONTROL ASSEMBLY) ON AND IGNITION SW **ON** POSITION

14-15 : ALWAYS CONTINUITY

14-GROUND: ALWAYS CONTINUITY

15-GROUND: ALWAYS CONTINUITY

13-GROUND: APPROX. 12 VOLTS WITH IGNITION SW ON

**A23 A/C ROOM TEMP. SENSOR**

1-2 : APPROX. 1.7 KΩ AT 25°C (77°F)

**A26 A/C THERMISTOR**

1-2, 3-4 : APPROX. 4852 Ω AT 0°C (59°F)

APPROX. 2341 Ω AT 15°C (59°F)

APPROX. 1500 Ω AT 25°C (77°F)

**A29 AIR MIX CONTROL SERVO MOTOR**

2-GROUND : APPROX. 12 VOLTS WITH TEMPERATURE CONTROL VOLUME AT **WARM** TO **COOL** POSITION

6-GROUND : APPROX. 12 VOLTS WITH TEMPERATURE CONTROL VOLUME AT **COOL** TO **WARM** POSITION

1-3 : ALWAYS APPROX. 6 KΩ

**A32(B), A34(A) AUTO A/C AMPLIFIER**

B-GROUND : APPROX. 12 VOLTS WITH IGNITION SW AT **ACC** OR **ON** POSITION

IG-GROUND : APPROX. 12 VOLTS WITH IGNITION SW AT **ON** POSITION

HR-GROUND : CONTINUITY WITH BLOWER SW (A/C CONTROL ASSEMBLY) ON OR AUTO SW (A/C CONTROL ASSEMBLY) ON

S5-GROUND : APPROX. 5 VOLTS WITH IGNITION SW ON

SG-GROUND : ALWAYS CONTINUITY

REC-GROUND: APPROX. 12 VOLTS WITH A/C CONTROL ASSEMBLY AT **RECIRC** POSITION

FRS-GROUND : APPROX. 12 VOLTS WITH A/C CONTROL ASSEMBLY AT **FRESH** POSITION

GND-GROUND: ALWAYS CONTINUITY

**B 5 BLOWER RESISTOR**

1-3 : APPROX. 0.84 Ω

3-4 : APPROX. 1.48 Ω

**W 4 WATER TEMP. SW (FOR FANS CONTROL)**

1-2 : OPEN ABOVE APPROX. 90°C (194°F)

CLOSED BELOW APPROX. 83°C (181.4°F)

 : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
A 1	26 (5S-FE), 27 (4A-FE)	A23	28	C 2	A 26 (5S-FE), 27 (4A-FE)
A 2	26 (5S-FE), 27 (4A-FE)	A24	28	C 3	B 26 (5S-FE), 27 (4A-FE)
A 3	26 (5S-FE), 27 (4A-FE)	A25	28	E 5	B 29
A 4	A 26	A26	28	E 7	A 29
	B 27	A27	28	E 9	29
A 5	26 (5S-FE), 27 (4A-FE)	A29	28	J 4	29
A 6	26 (5S-FE), 27 (4A-FE)	A30	28	J 5	29
A17	28	A32	B 28	J 6	29
A18	A 28	A34	A 28	R 1	26 (5S-FE), 27 (4A-FE)
A19	B 28	B 4	A 28	R 4	29
A20	C 28		B 28	W 4	26 (5S-FE), 27 (4A-FE)
A22	28	B 5	28		

 : RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
4	24	R/B NO. 4 (RIGHT KICK PANEL)
5	24	R/B NO. 5 (ENGINE COMPARTMENT FRONT RIGHT)

 : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1A	18	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)
1E		
1H	18	ENGINE ROOM MAIN WIRE AND J/B NO. 1 (LEFT KICK PANEL)
2A	20	ENGINE ROOM MAIN WIRE AND J/B NO. 2 (NEAR THE BATTERY)
2C	20	ENGINE WIRE AND J/B NO. 2 (NEAR THE BATTERY)
2D	20	ENGINE ROOM MAIN WIRE AND J/B NO. 2 (NEAR THE BATTERY)
2E		
3A	22	COWL WIRE AND J/B NO. 3 (BEHIND COMBINATION METER)

 : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EA1	32 (5S-FE)	COWL WIRE AND ENGINE ROOM MAIN WIRE (FRONT SIDE OF RIGHT FRONT FENDER)
	34 (4A-FE)	
EB2	32 (5S-FE)	ENGINE WIRE AND COWL WIRE (REAR SIDE OF RIGHT FRONT FENDER)
	34 (4A-FE)	
IG1	36	ENGINE WIRE AND COWL WIRE (UNDER THE ENGINE ECU)
IH1	36	ENGINE WIRE AND A/C NO. 1 WIRE (BEHIND THE GLOVE BOX)
IJ1	36	COWL WIRE AND A/C NO. 1 WIRE (BEHIND THE GLOVE BOX)
IJ2		
IQ3	36	COWL WIRE AND A/C NO. 2 WIRE (BESIDE HEATER UNIT)
IQ4		

 : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
EA	32 (5S-FE)	FRONT RIGHT FENDER
	34 (4A-FE)	
EB	32 (5S-FE)	FRONT LEFT FENDER
ID	36	LEFT KICK PANEL
IG	36	R/B NO. 4 SET BOLT

 : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
E 2	32 (5S-FE)	ENGINE ROOM MAIN WIRE	I 2	36	COWL WIRE
	34 (4A-FE)		I 3		
E 3	32 (5S-FE)		I 4		
	34 (4A-FE)		I 7	36	ENGINE WIRE
E 4	32 (5S-FE)		I 8	36	COWL WIRE
	34 (4A-FE)		I11	36	A/C NO. 2 WIRE
E10	32 (5S-FE)	COWL WIRE	I12	36	A/C NO. 1 WIRE
	34 (4A-FE)				