



AUTOMATIC AIR CONDITIONING

SYSTEM OUTLINE

1. HEATER BLOWER MOTOR OPERATION

CURRENT IS APPLIED AT ALL TIMES THROUGH THE **FL HEATER** FUSE TO **TERMINAL 1** OF THE HEATER RELAY. WHEN THE IGNITION SW IS TURNED ON, CURRENT FLOWS THROUGH THE **GAUGE** FUSE TO **TERMINAL 3** OF THE HEATER RELAY → **TERMINAL 5** → **TERMINAL HR** OF THE A/C AUTOMATIC AMPLIFIER. AT THE SAME TIME, CURRENT ALSO FLOWS FROM THE **GAUGE** FUSE TO **TERMINAL IG** OF THE A/C AUTOMATIC AMPLIFIER AND **TERMINAL 4** OF THE BLOWER HI RELAY → **TERMINAL 3** → **TERMINAL FR** OF THE A/C AUTOMATIC AMPLIFIER.

(LOW SPEED OPERATION)

WHEN THE BLOWER SW IS PUSHED TO **LO** POSITION, THE CURRENT TO **TERMINAL HR** OF THE A/C AUTOMATIC AMPLIFIER FLOWS TO **TERMINAL GND** OF THE A/C AUTOMATIC AMPLIFIER → **GROUND** AND TURNS THE HEATER RELAY ON. AS A RESULT, THE CURRENT TO **TERMINAL 1** OF THE HEATER RELAY FLOWS TO **TERMINAL 2** → **TERMINAL 1** OF THE BLOWER MOTOR → **TERMINAL 2** → **TERMINAL 1** OF THE A/C POWER TRANSISTOR → **TERMINAL 2** → **GROUND**, CAUSING THE BLOWER MOTORS TO ROTATE AT LOW SPEED.

(HIGH SPEED OPERATION)

WHEN THE BLOWER SW IS PUSHED **HI** POSITION, THE CURRENT TO **TERMINAL HR** OF THE A/C AUTOMATIC AMPLIFIER FLOWS TO **TERMINAL GND** OF THE A/C AUTOMATIC AMPLIFIER → **GROUND** AND TURNS THE HEATER RELAY ON. AT THE SAME TIME, THE CURRENT TO **TERMINAL 4** OF THE BLOWER HI RELAY ALSO FLOWS TO **TERMINAL 3** OF THE RELAY **TERMINAL FR** OF THE A/C AUTOMATIC AMPLIFIER → **TERMINAL GND** → **GROUND** AND TURNS THE BLOWER HI RELAY ON. AS A RESULT, THE CURRENT TO **TERMINAL 1** OF THE HEATER RELAY FLOWS TO **TERMINAL 2** → **TERMINAL 1** OF THE BLOWER MOTORS → **TERMINAL 2** → **TERMINAL 1** OF THE BLOWER HI 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 IS PUSHED TO **M1** OR **M2** POSITION, THE CURRENT TO **TERMINAL HR** OF THE A/C AUTOMATIC AMPLIFIER FLOWS TO **TERMINAL GND** → **GROUND** AND TURNS THE HEATER RELAY ON. THEN, THE CURRENT TO **TERMINAL IG** OF THE A/C AUTOMATIC AMPLIFIER FLOWS TO **TERMINAL BLW** → **TERMINAL 3** OF THE A/C POWER TRANSISTOR → **TERMINAL 2** → **GROUND**. AS A RESULT, THE CURRENT TO **TERMINAL 1** OF THE HEATER RELAY FLOWS TO → **TERMINAL 2** → **TERMINAL 1** OF THE BLOWER MOTOR → **TERMINAL 2** → **TERMINAL 1** OF THE A/C POWER TRANSISTOR → **TERMINAL 2** → **GROUND** AND THE BLOWER MOTOR IS ROTATED AT MEDIUM SPEED BY THE A/C AUTOMATIC AMPLIFIER CONTROLLING THE CURRENT FLOWING FROM **TERMINAL 3** OF THE A/C POWER TRANSISTOR TO **TERMINAL 2**.

(DEF SYNCHRONIZED CONTROL FUNCTION)

WHEN THE DEF SW IN THE MODE SELECTION SW IS PUSHED, A SIGNAL IS INPUT INTO **TERMINAL DEF** OF THE A/C AUTOMATIC AMPLIFIER. THIS CAUSES THE A/C ON AND THE BLOWER SW IS TURNED TO AUTO MODE.

(AUTO FUNCTION)

WHEN THE AUTO SW IN THE HEATER CONTROL SW IS PUSHED, A SIGNAL IS INPUT INTO **TERMINAL B AUTO** OF THE A/C AUTOMATIC AMPLIFIER. AT THE SAME TIME, THE ROOM TEMP. DECIDED BY THE HEATER CONTROL SW IS INPUT INTO **TERMINAL TSET** OF THE A/C AUTOMATIC AMPLIFIER AS A SIGNAL. A SIGNAL OF THE A/C SOLAR SENSOR IS INPUT INTO **TERMINAL TS** OF THE A/C AUTOMATIC AMPLIFIER AND A SIGNAL OF THE A/C ROOM TEMP. SENSOR IS INPUT INTO **TERMINAL TR** OF THE A/C AUTOMATIC AMPLIFIER. AS A RESULT, A/C SYSTEM IS ACTIVATED BY THE SIGNAL OF EACH SENSOR TO GET ROOM TEMP. DECIDED BY THE HEATER CONTROL SW AND THE A/C SYSTEM TAKES THE PROPER MEASURES FOR IT.

2. OPERATION OF AIR INLET CONTROL SERVO MOTOR

(SWITCHING FROM FRESH TO RECIRC)

WITH IGNITION SW TURNED ON, WHEN THE RECIRC SW IS PUSHED, CURRENT FLOWS FROM THE **GAUGE** FUSE TO **TERMINAL 1** OF THE AIR INLET CONTROL SERVO MOTOR → **TERMINAL 3** → **TERMINAL REC** OF THE A/C AUTOMATIC AMPLIFIER → **TERMINAL GND** → **GROUND**. THE MOTOR ROTATES AND THE DAMPER MOVES TO THE **RECIRC** SIDE. WHEN THE DAMPER IS MOVED TO THE **RECIRC** POSITION, THE CIRCUIT IS CUT OFF INSIDE THE SERVO MOTOR AND THE DAMPER STOPS AT THAT POSITION.

(SWITCHING FROM RECIRC TO FRESH)

WITH THE IGNITION SW TURNED ON, WHEN THE FRESH SW IS PUSHED, CURRENT FLOWS FROM **TERMINAL 1** OF THE AIR INLET CONTROL SERVO MOTOR → **TERMINAL 2** → **TERMINAL FRS** OF THE A/C AUTOMATIC AMPLIFIER → **TERMINAL GND** → **GROUND**, THE MOTOR ROTATES AND THE DAMPER MOVES TO THE **FRESH** SIDE. WHEN THE DAMPER IS MOVED TO THE **FRESH** POSITION, THE CIRCUIT IS CUT OFF INSIDE THE SERVO MOTOR AND THE DAMPER STOPS AT THAT POSITION.

3. OPERATION OF AIR VENT MODE CONTROL SERVO MOTOR

WITH THE IGNITION SW TURNED ON, CURRENT FLOWS FROM **GAUGE** FUSE TO **TERMINAL 5** OF THE AIR VENT MODE CONTROL SERVO MOTOR → **TERMINAL 6** → **GROUND**, AND THE DAMPER MOVES TO THE POSITION OF THE MODE SELECTION SW ON THE CONTROL SW WHICH IS ON. WHEN THE FOOT SW OF THE HEATER CONTROL SW IS TURNED ON WITH THE **DEF** POSITION, A SIGNAL IS INPUT FROM **TERMINAL 7** OF THE AIR VENT MODE CONTROL SERVO MOTOR TO **TERMINAL (B) 4** OF THE HEATER CONTROL SW. AS A RESULT, THE SERVO MOTOR OPERATES UNTIL THE DAMPER REACHES TO **DEF** POSITION. WHEN THIS OCCURS, THE SIGNAL TO THE HEATER CONTROL SW IS SHUT OFF AND ROTATION OF THE MOTOR STOPS. SWITCHING TO OTHER MOVEMENT IS CONTROLLED BY THE SERVO MOTOR ACCORDING TO THE FOLLOWING SIGNALS:

1. **FACE** POSITION, A SIGNAL INPUT FROM **TERMINAL 1** OF THE SERVO MOTOR TO **TERMINAL (B) 14** OF THE HEATER CONTROL SW.
2. **BI-LEVEL** POSITION, A SIGNAL INPUT FROM **TERMINAL 2** OF THE SERVO MOTOR TO **TERMINAL (A) 12** OF THE HEATER CONTROL SW.
3. **FOOT** POSITION, A SIGNAL INPUT FROM **TERMINAL 3** OF THE SERVO MOTOR TO **TERMINAL (A) 7** OF THE HEATER CONTROL SW.
4. **FOOT/DEF** POSITION, A SIGNAL INPUT FROM **TERMINAL 4** OF THE SERVO MOTOR TO **TERMINAL (B) 11** OF THE HEATER CONTROL SW.

4. OPERATION OF AIR MIX CONTROL SERVO MOTOR

WHEN THE TEMPERATURE SW IS TURNED TO THE “COOL” SIDE, THE CURRENT FLOWS FROM **TERMINAL 1** OF THE A/C SYSTEM AMPLIFIER → **TERMINAL 4** OF THE AIR MIX CONTROL SERVO MOTOR → **TERMINAL 5** → **TERMINAL 6** OF THE A/C SYSTEM AMPLIFIER AND MOTOR ROTATES. THE DAMPER OPENING ANGLE AT THIS TIME IS INPUT FROM **TERMINAL 2** OF THE SERVO MOTOR TO **TERMINAL TP** OF THE A/C AUTOMATIC AMPLIFIER. THIS IS USED TO DETERMINE THE DAMPER **STOP** POSITION AND MAINTAIN THE SET TEMPERATURE.

WHEN THE TEMPERATURE SW IS TURNED TO THE “WARM” SIDE, THE CURRENT FLOWS FROM **TERMINAL 6** OF THE A/C SYSTEM AMPLIFIER → **TERMINAL 5** OF THE AIR MIX CONTROL SERVO MOTOR → **TERMINAL 4** → **TERMINAL 1** OF THE A/C SYSTEM AMPLIFIER AND MOTOR ROTATES, ROTATING THE MOTOR IN REVERSE AND SWITCHING THE DAMPER FROM COOL TO WARM SIDE.

5. AIR CONDITION OPERATION

THE A/C AUTOMATIC AMPLIFIER RECEIVES VARIOUS SIGNALS, I.E., THE ENGINE RPM FROM THE IGNITER, OUTLET TEMPERATURE SIGNAL FROM THE A/C AMBIENT TEMP. SENSOR, COOLANT TEMPERATURE FROM THE A/C THERMISTOR, ETC.

WHEN THE ENGINE IS STARTED AND THE A/C SW IS ON, A SIGNAL IS INPUT TO THE A/C AUTOMATIC AMPLIFIER. AS A RESULT, THE SAME GROUND CIRCUIT IN THE A/C AUTOMATIC AMPLIFIER IS CLOSED.

AT THE SAME TIME, THE ENGINE CONTROL MODULE DETECTS THE A/C MAGNETIC CLUTCH IS ON AND THE A/C AUTOMATIC AMPLIFIER OPERATES.

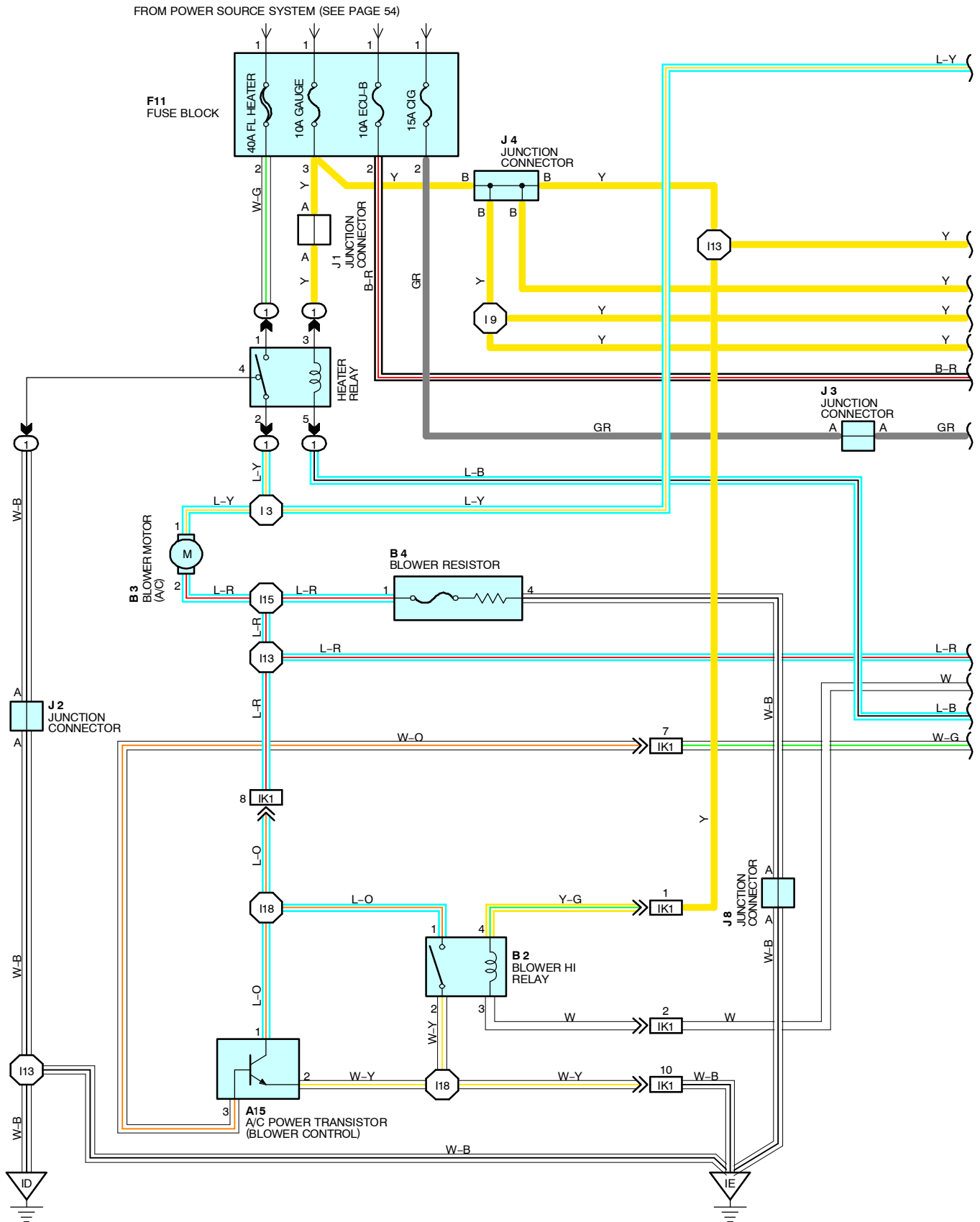
OPEN DIRECTION TO AVOID LOWERING THE ENGINE RPM DURING A/C OPERATING.

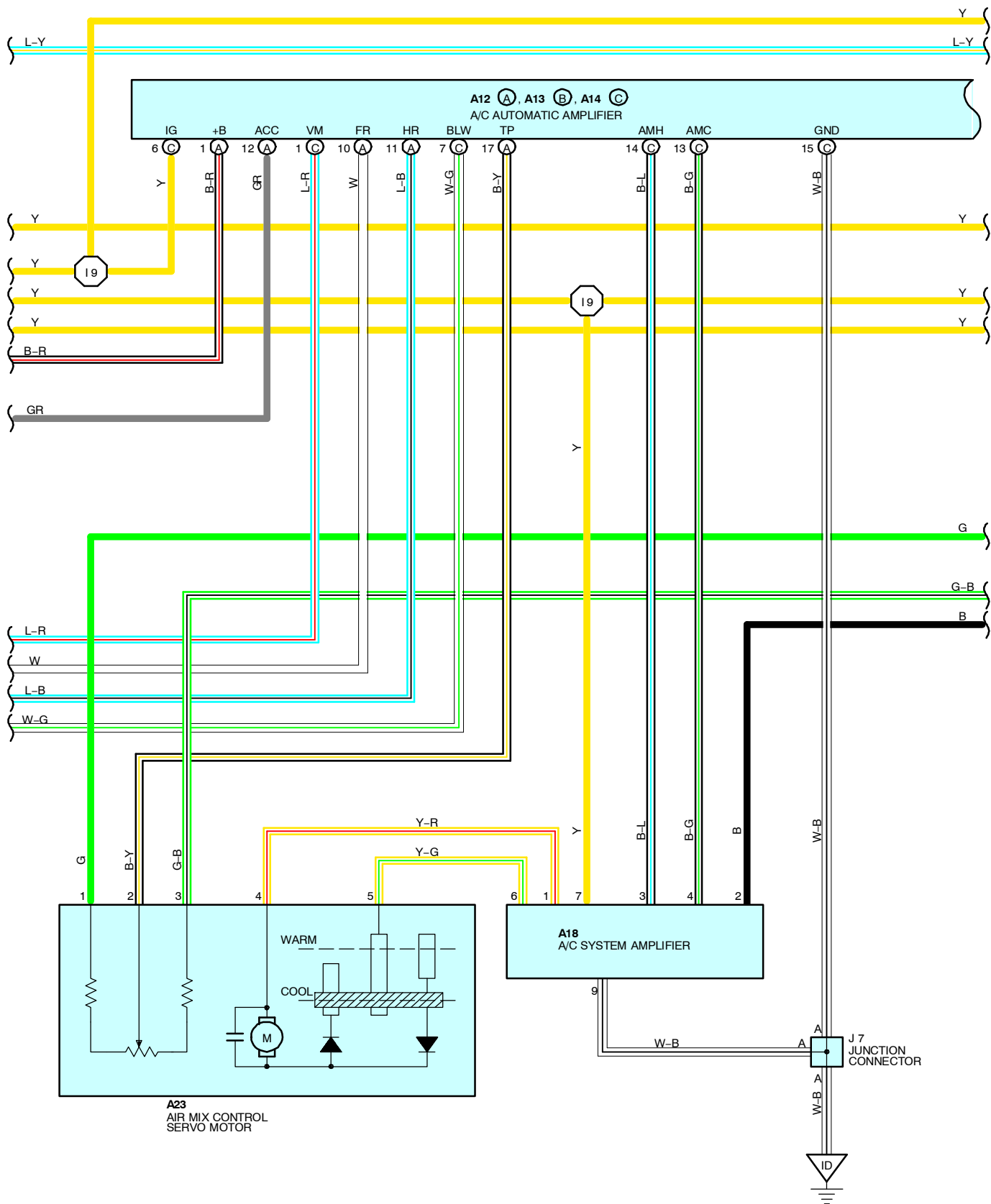
IF THE A/C AUTOMATIC AMPLIFIER DETECTS THE FOLLOWING CONDITIONS, IT STOPS THE AIR CONDITIONING.

- THE TEMPERATURE AT THE AIR VENTS IS 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 DECREASES.
- RAPID ACCELERATION OCCURS.



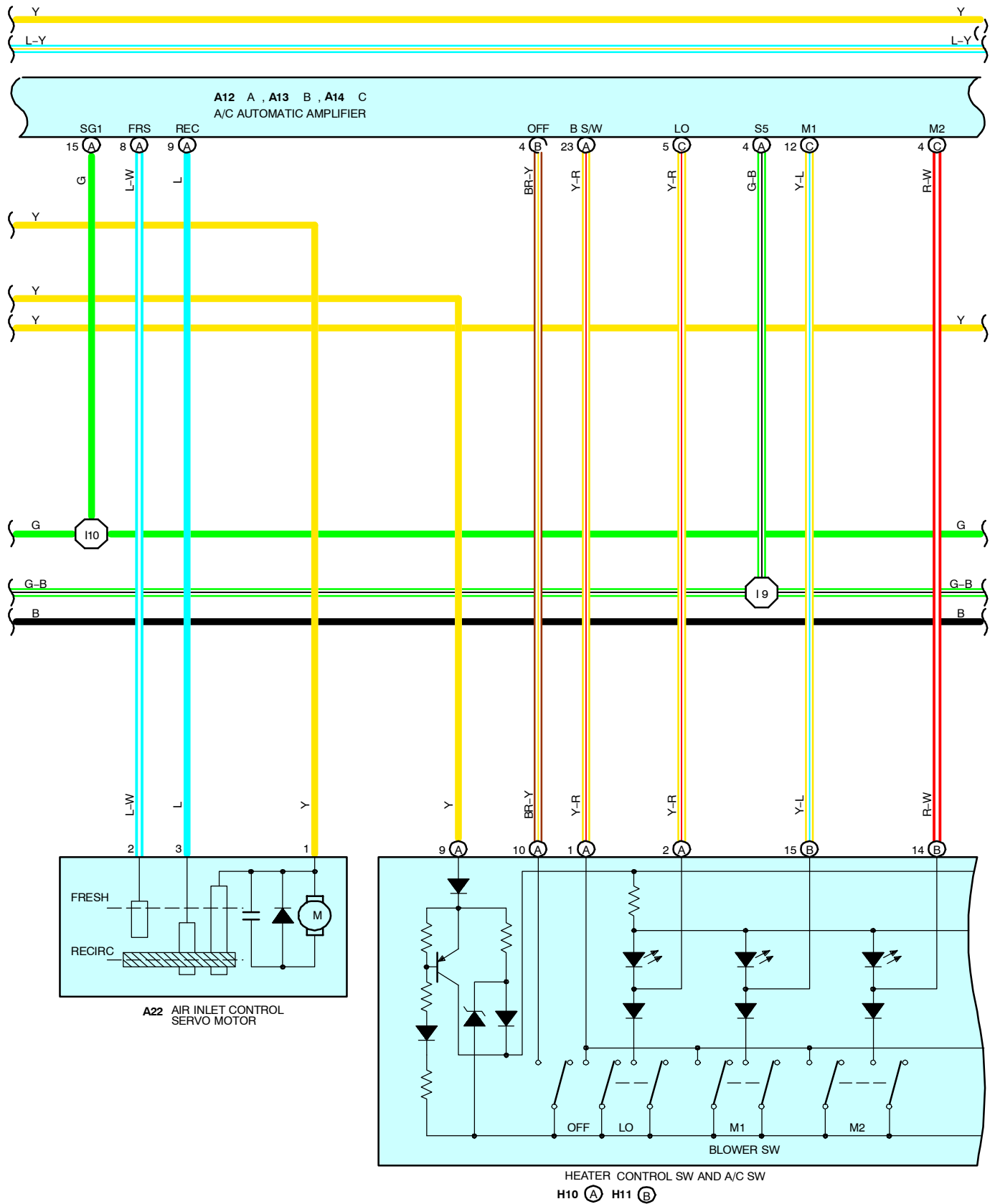
AUTOMATIC AIR CONDITIONING

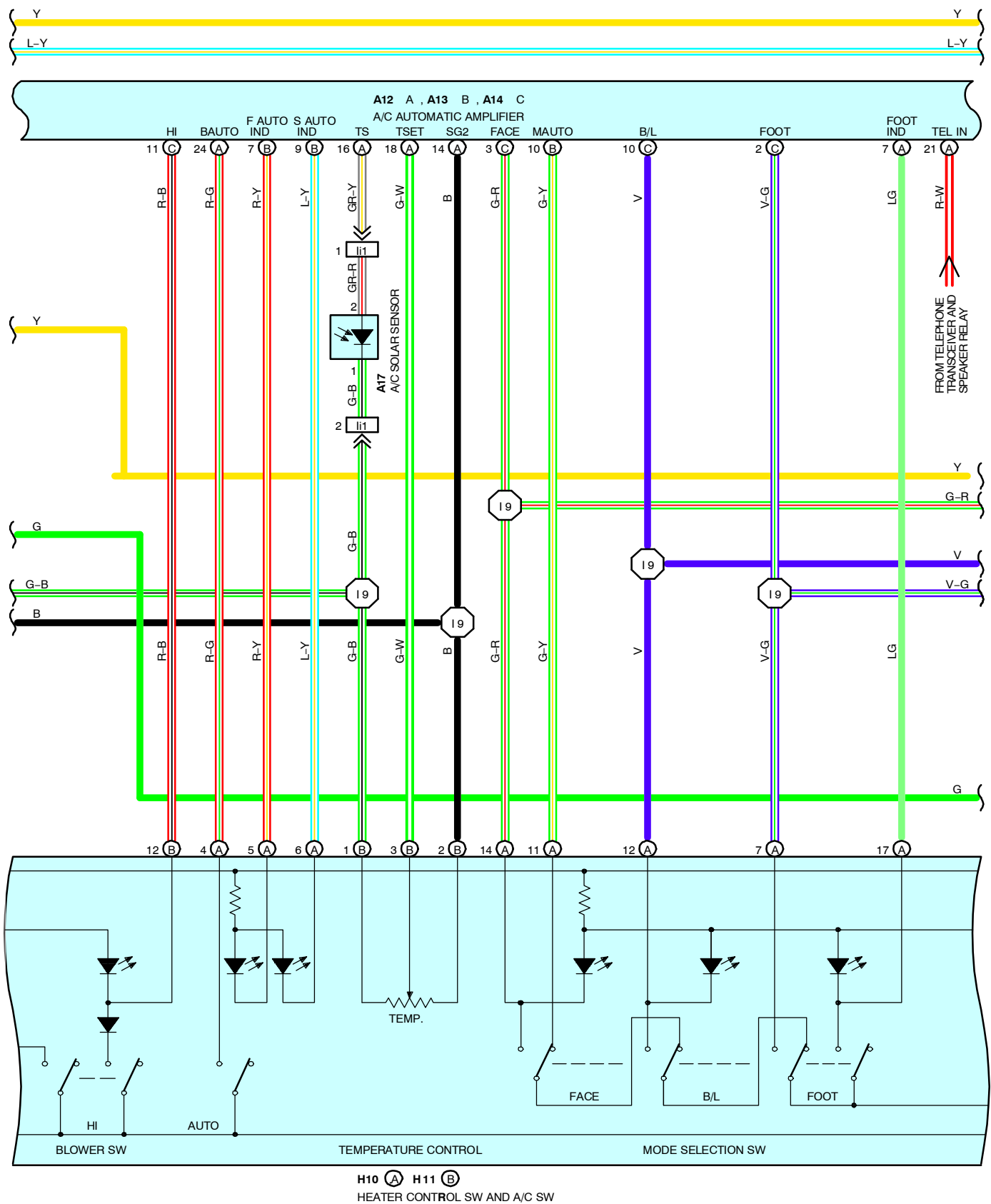






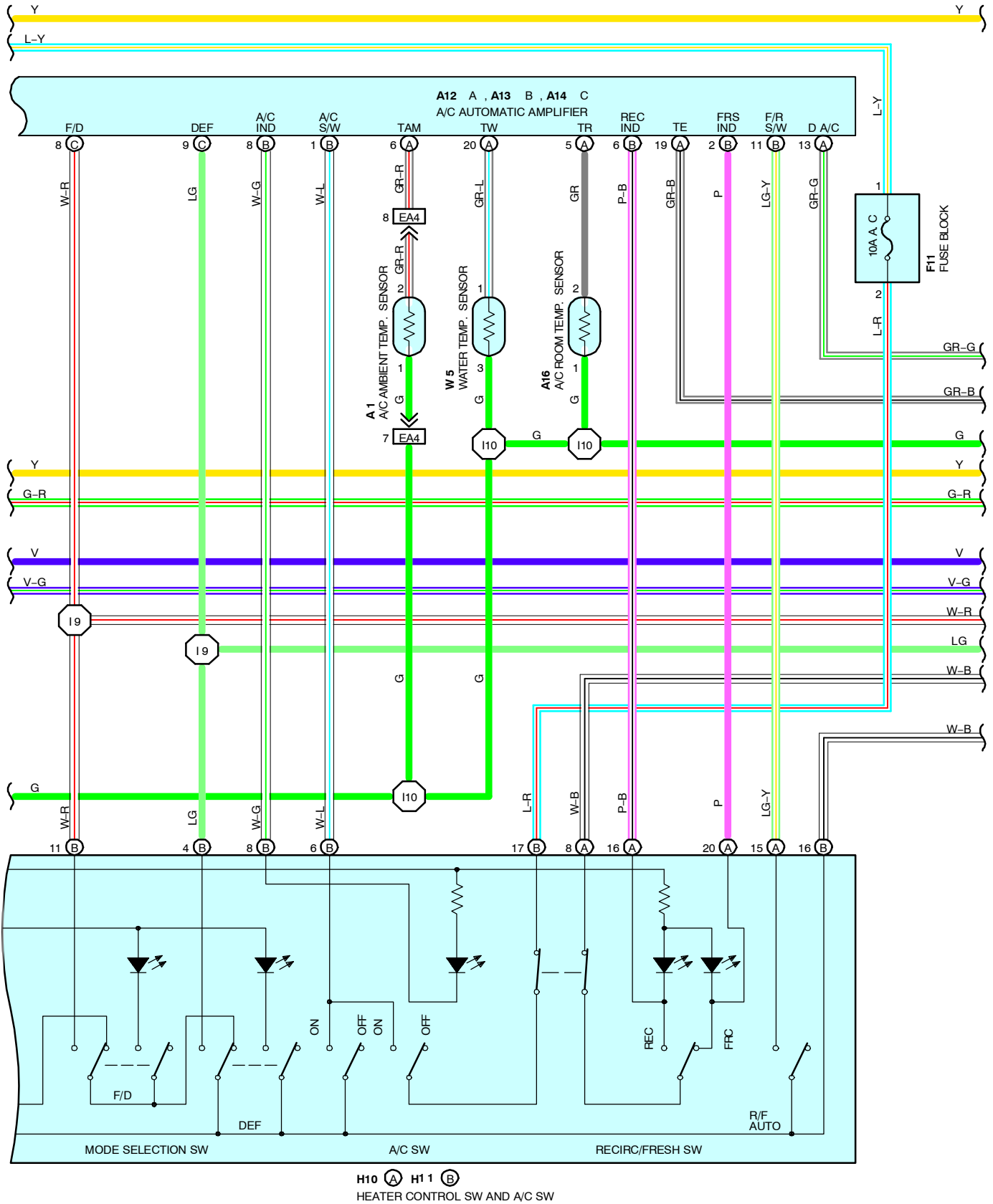
AUTOMATIC AIR CONDITIONING







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SERVICE HINTS

A 2 A/C DUAL PRESSURE SW

1-4: OPEN ABOVE APPROX. **2.0 KG/CM² (28.4 PSI, 196 KPA)** OR **32 KG/CM² (455 PSI, 3138 KPA)**

A 3 A/C MAGNETIC CLUTCH

1-GROUND : APPROX. **3.7 Ω**

A12 (A), A13 (B) , A14 (C) A/C AUTOMATIC 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

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

BLW-GROUND: BELOW **1.5 VOLTS** WITH THE IGNITION SW ON AND TURN THE BLOWER MOTOR

S5-GROUND : **4-6 VOLTS** WITH THE IGNITION SW ON

SG1-GROUND: ALWAYS CONTINUITY

FRS-GROUND: APPROX. **12 VOLTS** WITH THE FRESH SW **ON**

REC-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

AMH-AMC : **1.3- 1.9 VOLTS** WITH THE IGNITION SW OFF

A15 A/C POWER TRANSISTOR (BLOWER CONTROL)

1-3 : APPROX. **2.0-2.4 Ω**

○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
A 1	22	A29	24	H10 A	25
A 2	22	A22	24	H11 B	25
A 3	22	A23	24	J 1	25
A11	24	A24	24	J 2	25
A12 A	24	B 2	24	J 3	25
A13 B	24	B 3	24	J 4	25
A14 C	24	B 4	24	J 7	25
A15	24	C16	24	J 8	25
A16	24	E 7	24	S11	25
A17	24	E 8	24	W 4	23
A18	24	F11	25	W 5	25

○ : RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
1	20	R/B NO.1 (LEFT KICK PANEL)

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EA1	30	COWL WIRE AND ENGINE ROOM MAIN WIRE (LEFT FENDER)
EA4	30	COWL WIRE AND ENGINE ROOM MAIN WIRE (RIGHT FENDER)
ED1	30	OIL PRESSURE SWITCH WIRE AND ENGINE ROOM MAIN WIRE (NEAR THE AIR CLEANER)
IK1	34	COWL WIRE AND A/C SUB WIRE (BEHIND GLOVE BOX)
IK2		
IL1	34	ENGINE WIRE AND COWL WIRE (BEHIND GLOVE BOX)
IL2		
IL1	34	SOLAR SENSOR SUB WIRE AND COWL WIRE (BEHIND GLOVE BOX)



: GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
EC	30	AIR INTAKE CHAMBER
ID	32	LEFT KICK PANEL
IE	32	RIGHT KICK PANEL



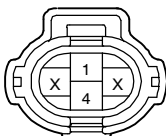
: SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I 3	34	COWL WIRE	I13	34	COWL WIRE
I 9			I14		
I10			I15		
I12			I18	34	A/C SUB WIRE

A1 BLACK



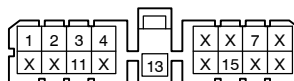
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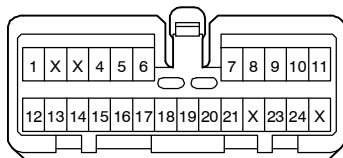
A3 GRAY



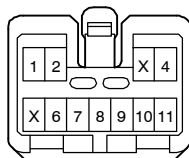
A11



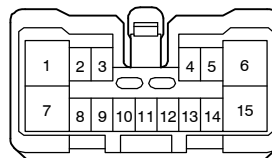
A12 A



A13 B



A14 C



A15



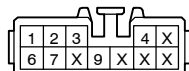
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A17



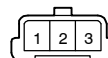
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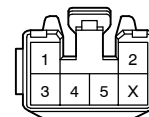
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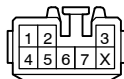
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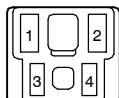
A23



A24



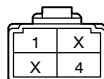
B 2



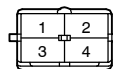
B 3



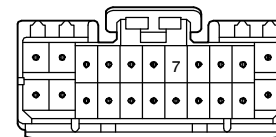
B 4 BLACK



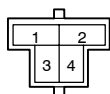
C16



E 7 DARK GRAY



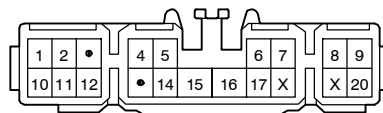
E 8



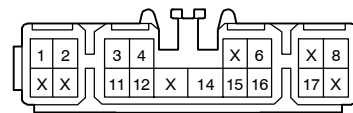
F11

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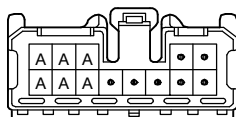
H10 A



H11 B BLUE



J1



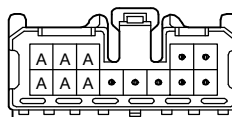
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J2 BLUE



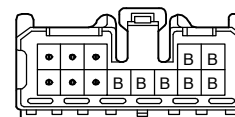
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J3



(HINT : SEE PAGE 7)

J4



(HINT : SEE PAGE 7)

J7 BLUE



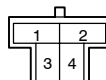
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J8 BLUE



(HINT : SEE PAGE 7)

S11



W 4 GRAY



W 5

