

ABBREVIATIONS

The following abbreviations are used in this manual.

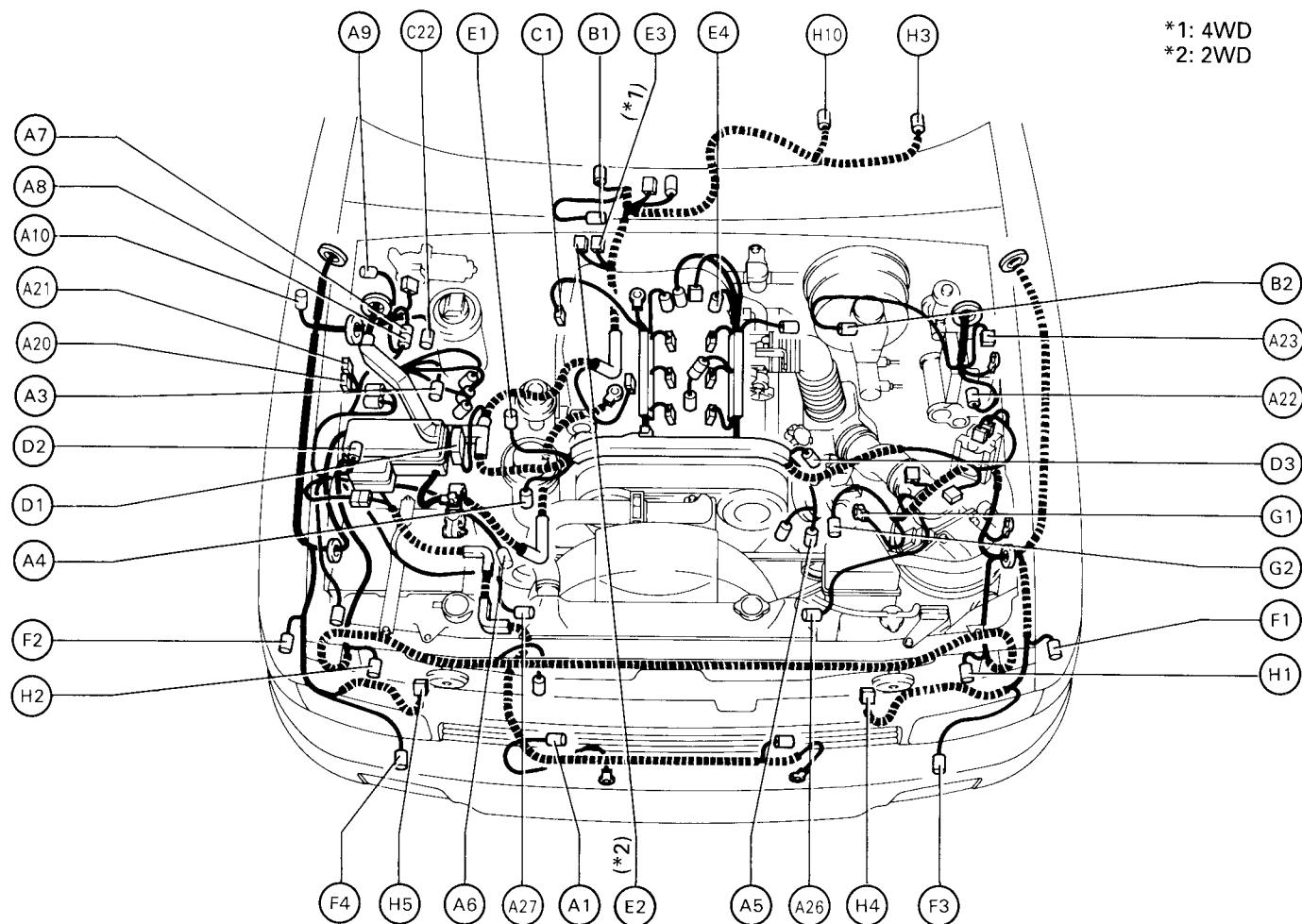
ABS	=	Anti-Lock Brake System
A/C	=	Air Conditioning
ADD	=	Automatic Disconnecting Differential
A/T	=	Automatic Transmission
COMB.	=	Combination
ECU	=	Electronic Control Unit
EFI	=	Electronic Fuel Injection
EGR	=	Exhaust Gas Recirculation
FPU	=	Fuel Pressure Up
J/B	=	Junction Block
LH	=	Left-Hand
MFI	=	Multiport Fuel Injection
M/T	=	Manual Transmission
O/D	=	Overdrive
PAIR	=	Pulsed Secondary Air Injection
R/B	=	Relay Block
RH	=	Right-Hand
SW	=	Switch
TEMP.	=	Temperature
VSV	=	Vacuum Switching Valve
w/	=	With
w/o	=	Without
2WD	=	Two Wheel Drive
4WD	=	Four Wheel Drive

- * The titles given inside the components are the names of the terminals (terminal codes) and are not treated as being abbreviations.

ELECTRICAL WIRING ROUTING

Position of Parts in Engine Compartment

[3VZ-E]



*1: 4WD
*2: 2WD

- A 1 A/C Condenser Fan Motor
- A 3 A/C Idle Up VSV
- A 4 A/C Magnetic Clutch
- A 5 ADD Indicator SW
- A 6 ABS Actuator (Rear Wheel ABS)
- A 7 ABS Check Connector
- A 8 ABS Check Connector
- A 9 ABS Relay (Rear Wheel ABS)
- A 10 Auto Antenna Motor
- A 20 ABS Relay (4Wheel ABS)
- A 21 ABS Relay (4Wheel ABS)
- A 22 ABS Actuator (4Wheel ABS)
- A 23 ABS Actuator (4Wheel ABS)
- A 26 ABS Speed Sensor Front Left (4Wheel ABS)
- A 27 ABS Speed Sensor Front Right (4Wheel ABS)

- B 1 Back-Up Light SW (for M/T)
- B 2 Brake Fluid Level SW
- C 1 Cold Start Injector
- C 22 Cruise Control Actuator (Motor Type)
- D 1 Data Link Connector 1 (Check Connector)
- D 2 Daytime Running Light Resistor (for Canada)
- D 3 Distributor (for 3VZ-E)

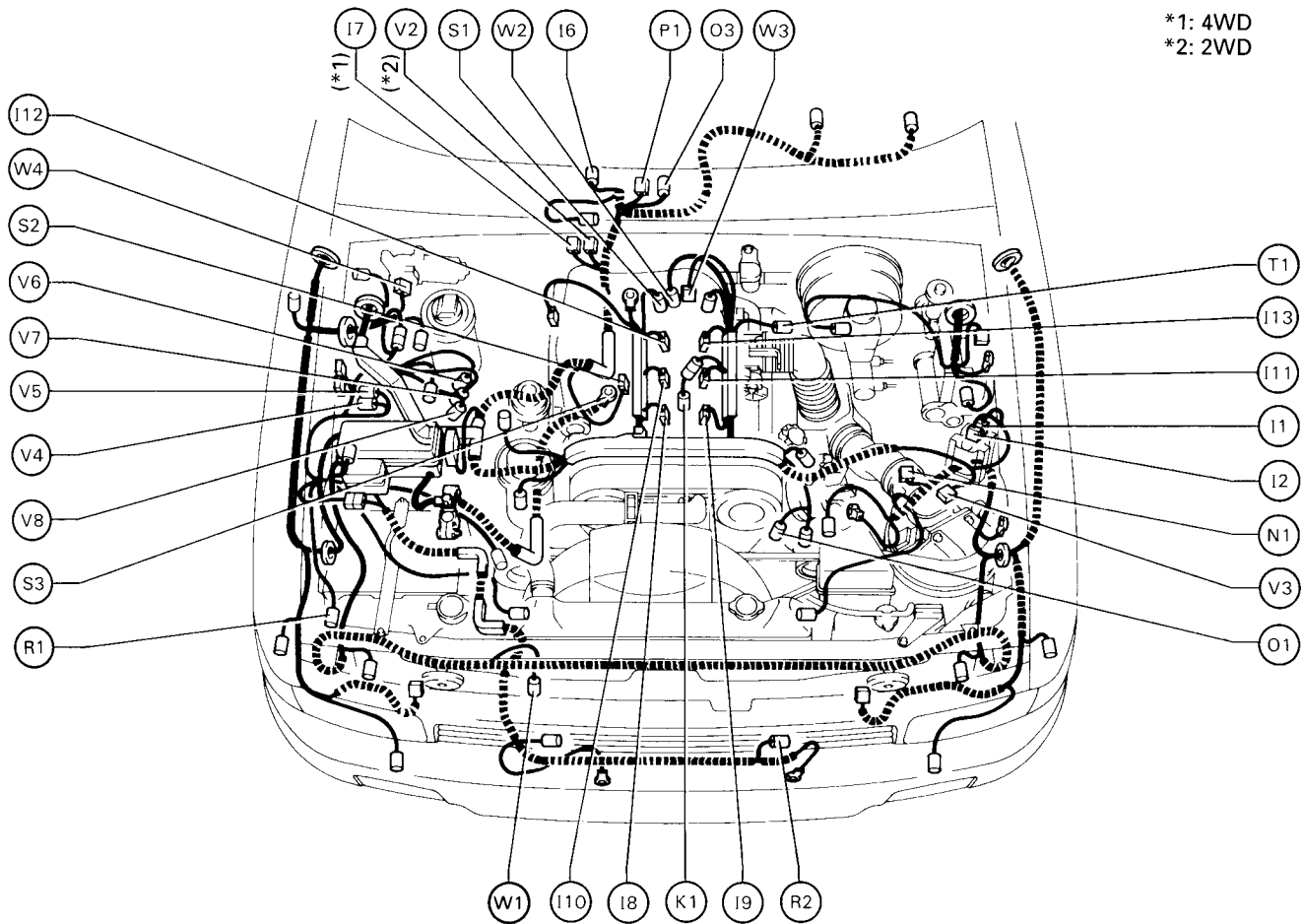
- E 1 EGR Gas Temp. Sensor
- E 2 Electronically Controlled Transmission Solenoid (for 3VZ-E 2WD, 22R-E)
- E 3 Electronically Controlled Transmission Solenoid and Vehicle Speed Sensor (for 3VZ-E 4WD)
- E 4 Engine Coolant Temp. Sensor (EFI Water Temp. Sensor)

- F 1 Front Parking Light LH
- F 2 Front Parking Light RH
- F 3 Front Turn Signal Light LH
- F 4 Front Turn Signal Light RH

- G 1 Generator (Alternator)
- G 2 Generator (Alternator)

- H 1 Headlight LH
- H 2 Headlight RH
- H 3 Heated Oxygen Sensor (Oxygen Sensor) Main
- H 4 Horn LH
- H 5 Horn RH
- H 10 Heated Oxygen Sensor (Oxygen Sensor) Sub

Position of Parts in Engine Compartment



*1: 4WD
*2: 2WD

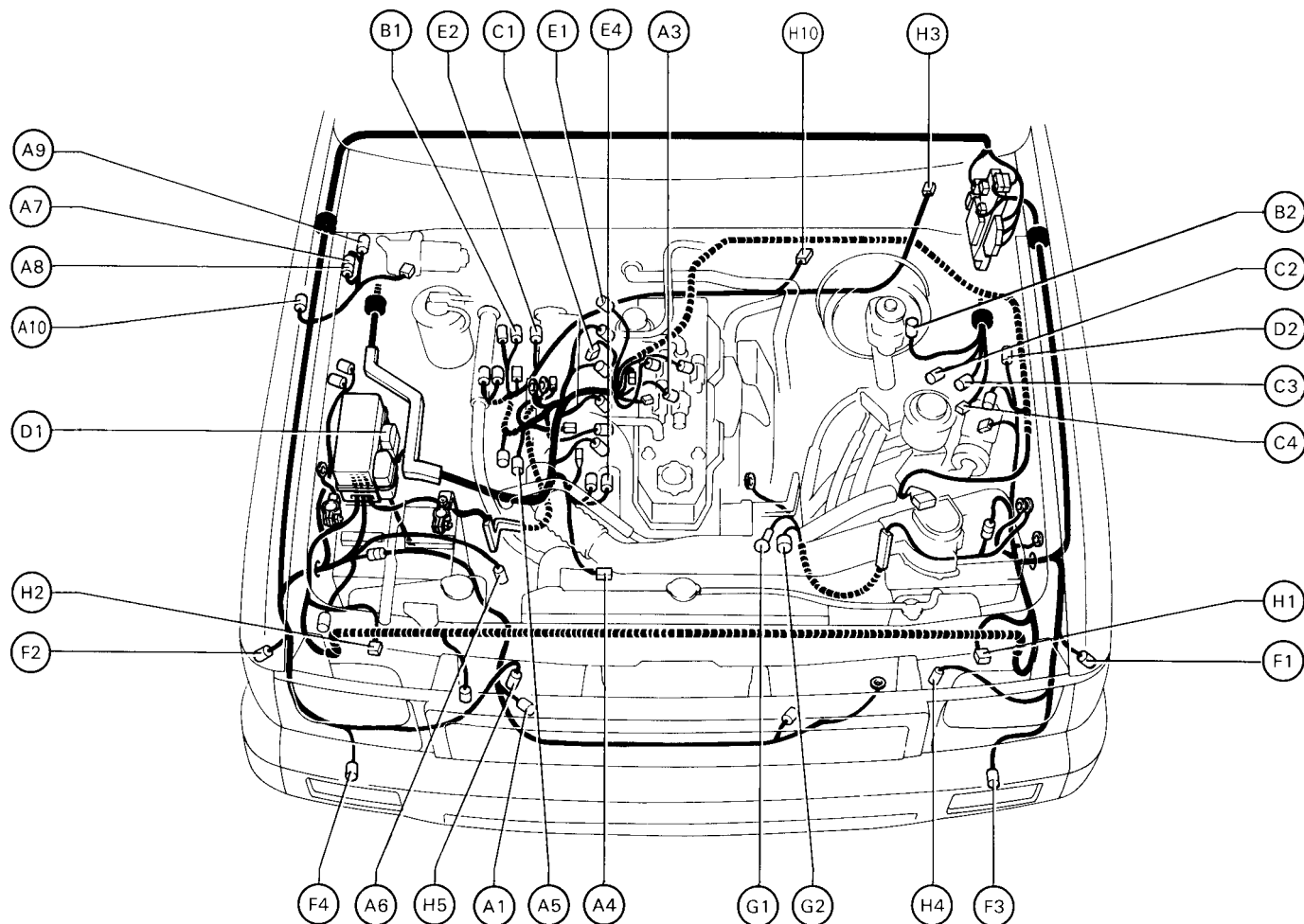
- I 1 Igniter (for 3VZ-E)
- I 2 Ignition Coil (for 3VZ-E)
- I 6 Indicator SW (for Transfer, M/T)
- I 7 Indicator SW (for Transfer Position, A/T 3VZ-E),
Transfer Fluid Temp. Sensor (for 3VZ-E) and
Transfer Oil Pressure SW (for ADD 3VZ-E)
- I 8 Injector No. 1
- I 9 Injector No. 2
- I 10 Injector No. 3
- I 11 Injector No. 4
- I 12 Injector No. 5 (for 3VZ-E)
- I 13 Injector No. 6 (for 3VZ-E)
- K 1 Knock Sensor
- N 1 Noise Filter (for Ignition)
- O 1 Oil Pressure SW
- O 3 Oil Temp. Sensor (for 4WD A/T 3VZ-E)
- P 1 Park/Neutral Position SW (Neutral Start SW) and
Back-Up Light SW (for A/T)

- R 1 Rear Washer Motor
- R 2 Resistor (for Condenser Fan)
- S 1 Start Injector Time SW
- S 2 Starter
- S 3 Starter
- T 1 Throttle Position Sensor
- V 2 Vehicle Speed Sensor (Speed Sensor) (for
Electronically Controlled Transmission)
- V 3 Volume Air Flow (Air Flow Meter)
- V 4 VSV (for 2WD, ADD)
- V 5 VSV (for 4WD, ADD)
- V 6 VSV (for PAIR)
- V 7 VSV (for EGR)
- V 8 VSV (for FPU)
- W 1 Washer Motor
- W 2 Water Temp. SW (for 3VZ-E)
- W 3 Water Temp. Sensor
- W 4 Wiper Motor

ELECTRICAL WIRING ROUTING

Position of Parts in Engine Compartment

[22R-E]



- A 1 A/C Condenser Fan Motor
- A 3 A/C Idle-Up VSV
- A 4 A/C Magnetic Clutch
- A 5 ADD Indicator SW
- A 6 ABS Actuator
- A 7 ABS Check Connector
- A 8 ABS Check Connector
- A 9 ABS Relay
- A 10 Auto Antenna Motor

- B 1 Back-Up Light SW (for M/T)
- B 2 Brake Fluid Level SW

- C 1 Cold Start Injector
- C 2 Cruise Control Actuator
- C 3 Cruise Control Vacuum Pump
- C 4 Cruise Control Vacuum SW

- D 1 Data Link Connector 1 (Check Connector)
- D 2 Daytime Running Light Resistor (for Canada)

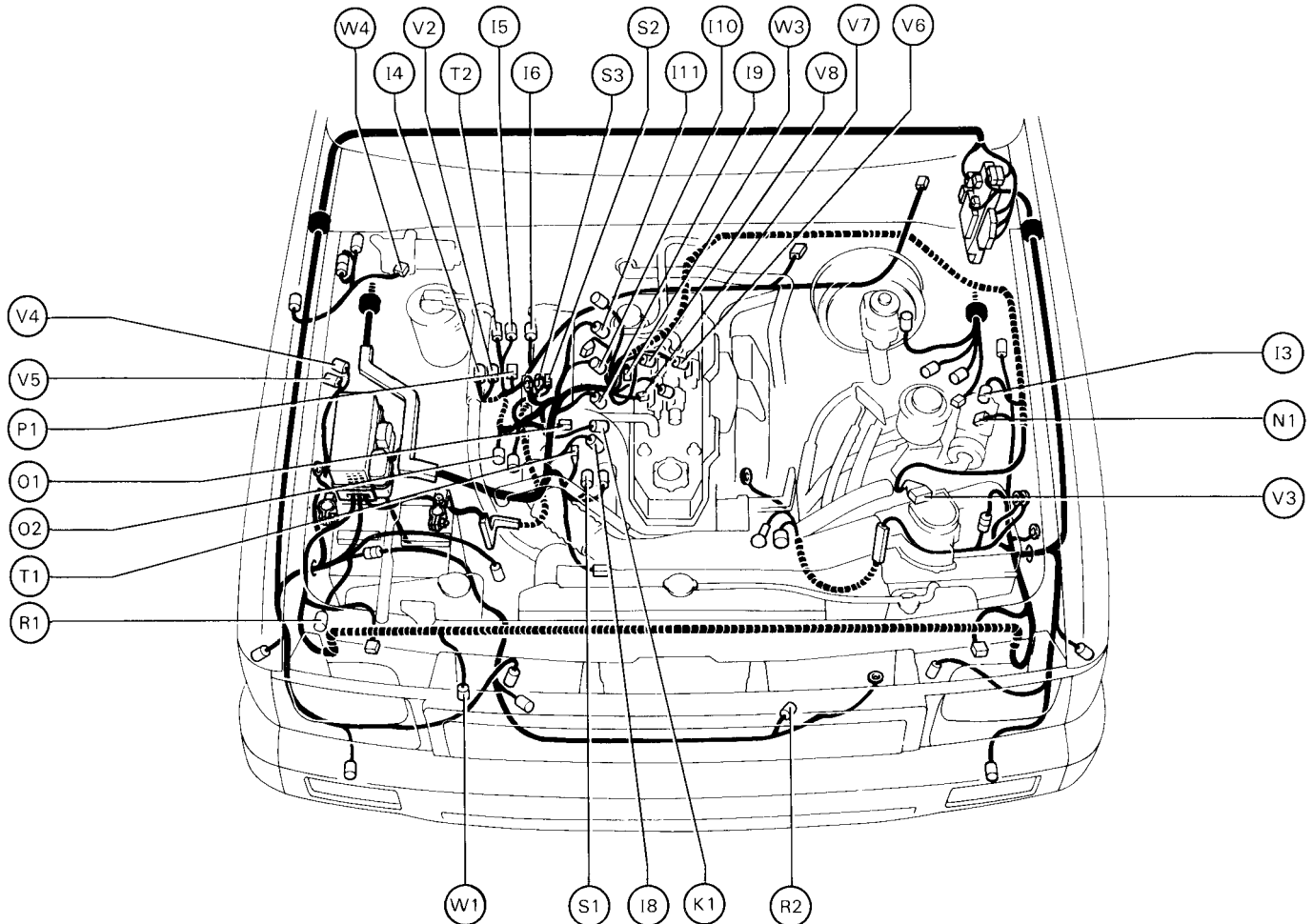
- E 1 EGR Gas Temp. Sensor
- E 2 Electronically Controlled Transmission Solenoid (for 22R-E)
- E 4 Engine Coolant Temp. Sensor (EFI Water Temp. Sensor)

- F 1 Front Parking Light LH
- F 2 Front Parking Light RH
- F 3 Front Turn Signal Light LH
- F 4 Front Turn Signal Light RH

- G 1 Generator (Alternator)
- G 2 Generator (Alternator)

- H 1 Headlight LH
- H 2 Headlight RH
- H 3 Heated Oxygen Sensor (Oxygen Sensor) Main
- H 4 Horn LH
- H 5 Horn RH
- H 10 Heated Oxygen Sensor (Oxygen Sensor) Sub

Position of Parts in Engine Compartment



- I 3 Ignition Coil and Igniter (for 22R-E)
- I 4 Indicator SW (for Transfer, A/T 22R-E) and Transfer Oil Pressure SW (for ADD, w/ Electronically Controlled Transmission 22R-E)
- I 5 Indicator SW (for Transfer L4 Position SW) (for A/T 22R-E)
- I 6 Indicator SW (for Transfer, M/T)
- I 8 Injector No. 1
- I 9 Injector No. 2
- I 10 Injector No. 3
- I 11 Injector No. 4

K 1 Knock Sensor

N 1 Noise Filter (for Ignition)

O 1 Oil Pressure SW

O 2 Oil Temp. SW (for 4WD A/T 22R-E)

P 1 Park/Neutral Position SW (Neutral Start SW) and Back-Up Light SW (for A/T)

R 1 Rear Washer Motor

R 2 Resistor (for Condenser Fan)

S 1 Start Injector Time SW

S 2 Starter

S 3 Starter

T 1 Throttle Position Sensor

T 2 Transfer Neutral Position SW

V 2 Vehicle Speed Sensor (Speed Sensor) (for Electronically Controlled Transmission of 22R-E)

V 3 Volume Air Flow (Air Flow Meter)

V 4 VSV (for 2WD, ADD)

V 5 VSV (for 4WD, ADD)

V 6 VSV (for PAIR)

V 7 VSV (for EGR)

V 8 VSV (for FPU)

W 1 Washer Motor

W 3 Water Temp. Sender

W 4 Wiper Motor

ELECTRICAL WIRING ROUTING

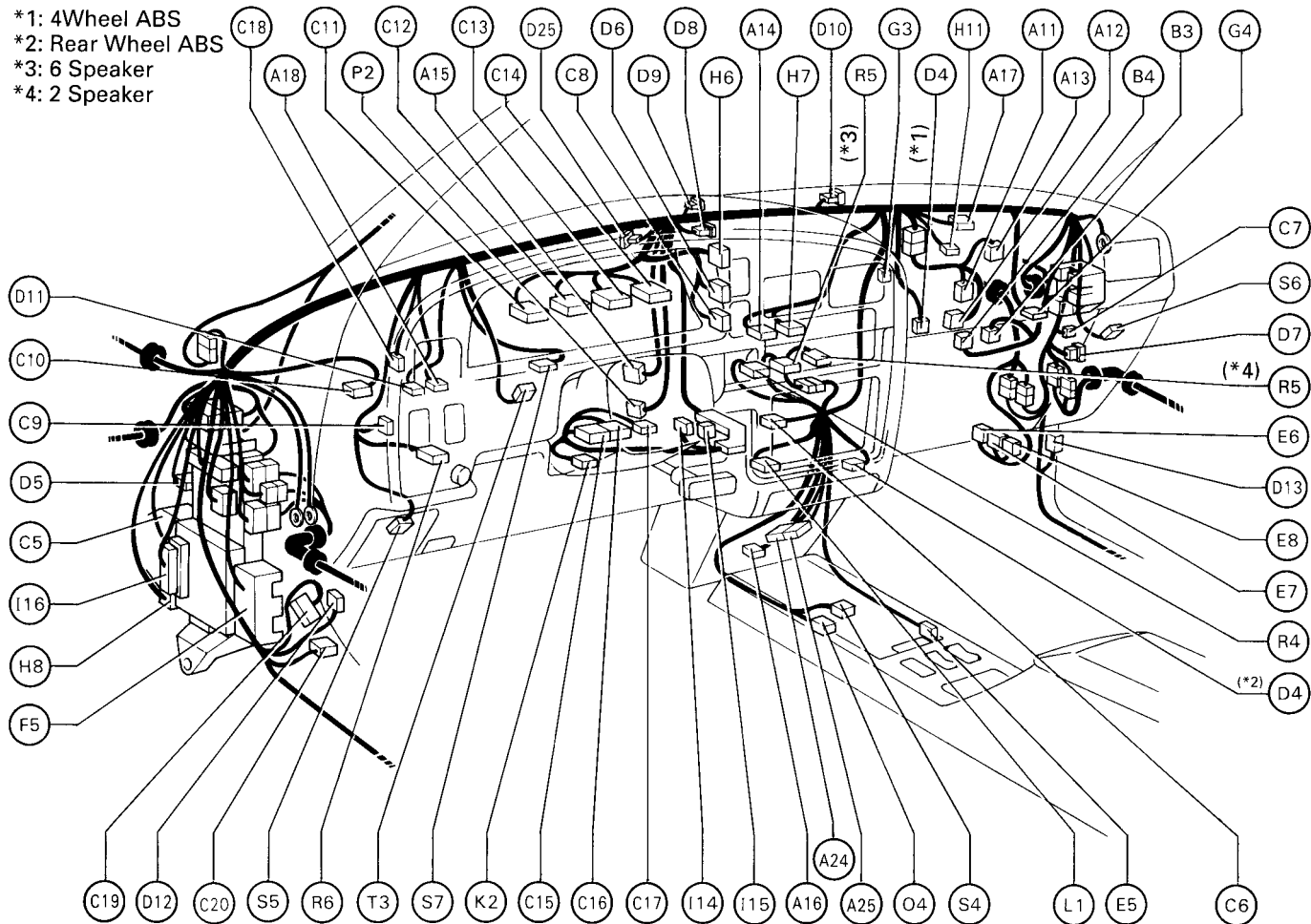
Position of Parts in Instrument Panel

*1: 4Wheel ABS

*2: Rear Wheel ABS

*3: 6 Speaker

*4: 2 Speaker

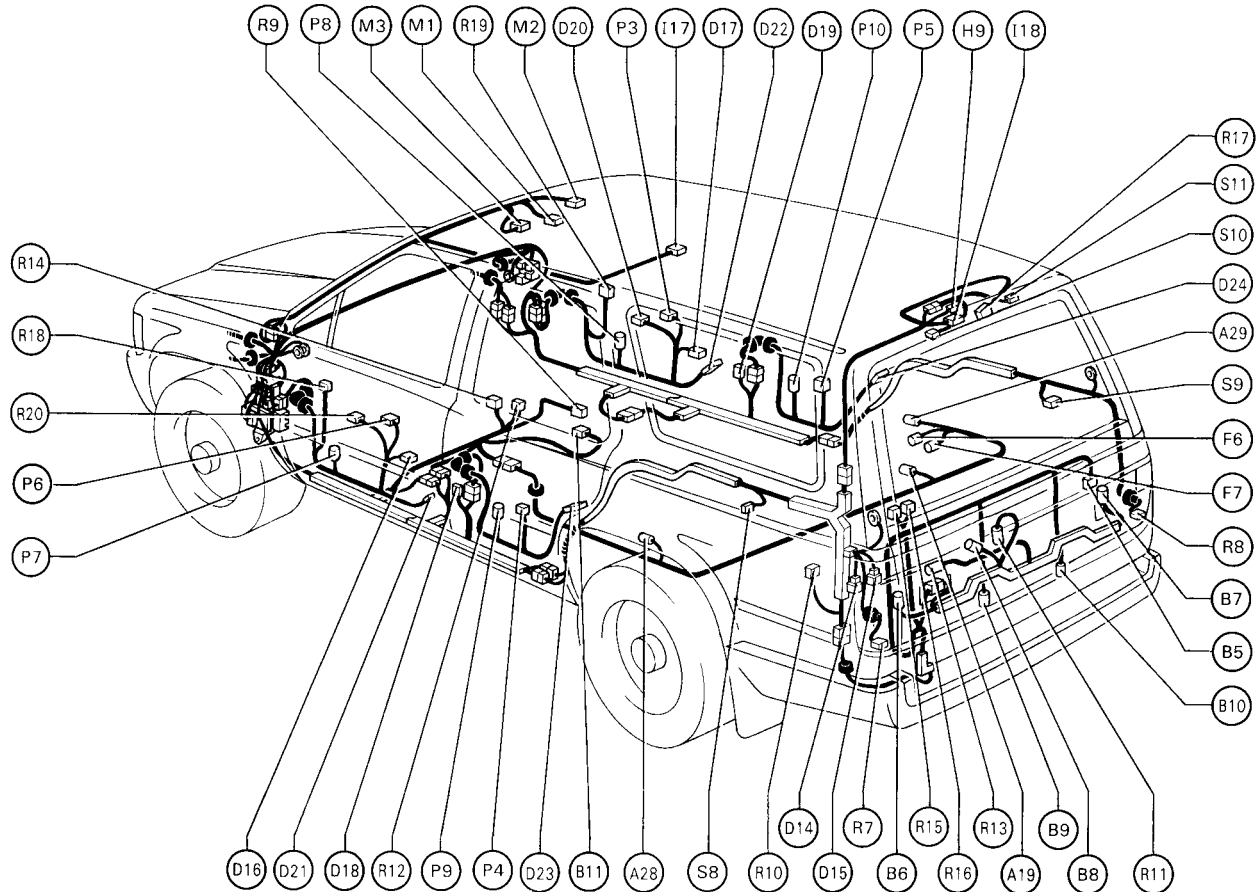


- A 11 A/C Amplifier
- A 12 A/C Cut Relay (for 4WD A/T of 3VZ-E)
- A 13 A/C Thermistor and A/C Triple Pressure SW (A/C Dual and Single Pressure SW)
- A 14 A/C SW
- A 15 ADD Control Relay
- A 16 ABS Deceleration Sensor (Rear Wheel ABS)
- A 17 ABS ECU (Rear Wheel ABS)
- A 18 Auto Antenna Control Relay
- A 24 ABS ECU (4Wheel ABS)
- A 25 ABS ECU (4Wheel ABS)
- B 3 Blower Motor
- B 4 Blower Resistor
- C 5 Cassette Relay Block (Defogger Relay, POWER Fuse)
- C 6 Cigarette Lighter
- C 7 Circuit Opening Relay
- C 8 Clock
- C 9 Clutch Start Cansel SW
- C 10 Clutch Start SW
- C 11 Combination Meter
- C 12 Combination Meter
- C 13 Combination Meter
- C 14 Combination Meter
- C 15 Combination SW
- C 16 Combination SW
- C 17 Combination SW
- C 18 Cruise Control Clutch SW

- C 19 Cruise Control ECU
- C 20 Cruise Control Main Relay
- D 4 Daytime Running Light Relay (Main)
- D 5 Daytime Running Light Relay No. 4
- D 6 Defogger SW
- D 7 Diode (for ADD)
- D 8 Diode (for Power Window)
- D 9 Diode No. 1 (for Daytime Running Light System)
- D 10 Diode No. 2 (for Daytime Running Light System)
- D 11 Door Control Relay
- D 12 Door Courtesy SW Front LH
- D 13 Door Courtesy SW Front RH
- D 25 Diode (for Rear Power Window)
- E 5 Electronically Controlled Transmission Pattern Select SW
- E 6 Engine Control Module (Engine and Electronically Controlled Transmission ECU (A/T), Engine ECU (M/T))
- E 7 Engine Control Module (Engine and Electronically Controlled Transmission ECU (A/T), Engine ECU (M/T))
- E 8 Engine Control Module (Engine and Electronically Controlled Transmission ECU (A/T), Engine ECU (M/T))
- F 5 Fuse Block (20A DEFOG, 15A REAR ANTI LOCK, 20A ECU-IG)

- G 3 Glove Box Light
- G 4 Glove Box Light SW
- H 6 Hazard SW
- H 7 Heater Blower SW
- H 8 Horn Relay
- H 11 Headlight Auto Cut ECU (4Wheel ABS)
- I 14 Ignition Key Cylinder Light
- I 15 Ignition SW and Unlock Warning SW
- I 16 Integration Relay
- K 2 Key Interlock Solenoid
- L 1 Light Reminder Relay
- O 4 O/D Main SW
- P 2 Parking Brake SW
- R 3 Radio
- R 4 Radio and Player
- R 5 Radio and Player
- R 6 Rheostat
- S 4 Shift Lock ECU
- S 5 Speaker LH
- S 6 Speaker RH
- S 7 Stop Light SW
- T 3 Turn Signal Flasher

Position of Parts in Body



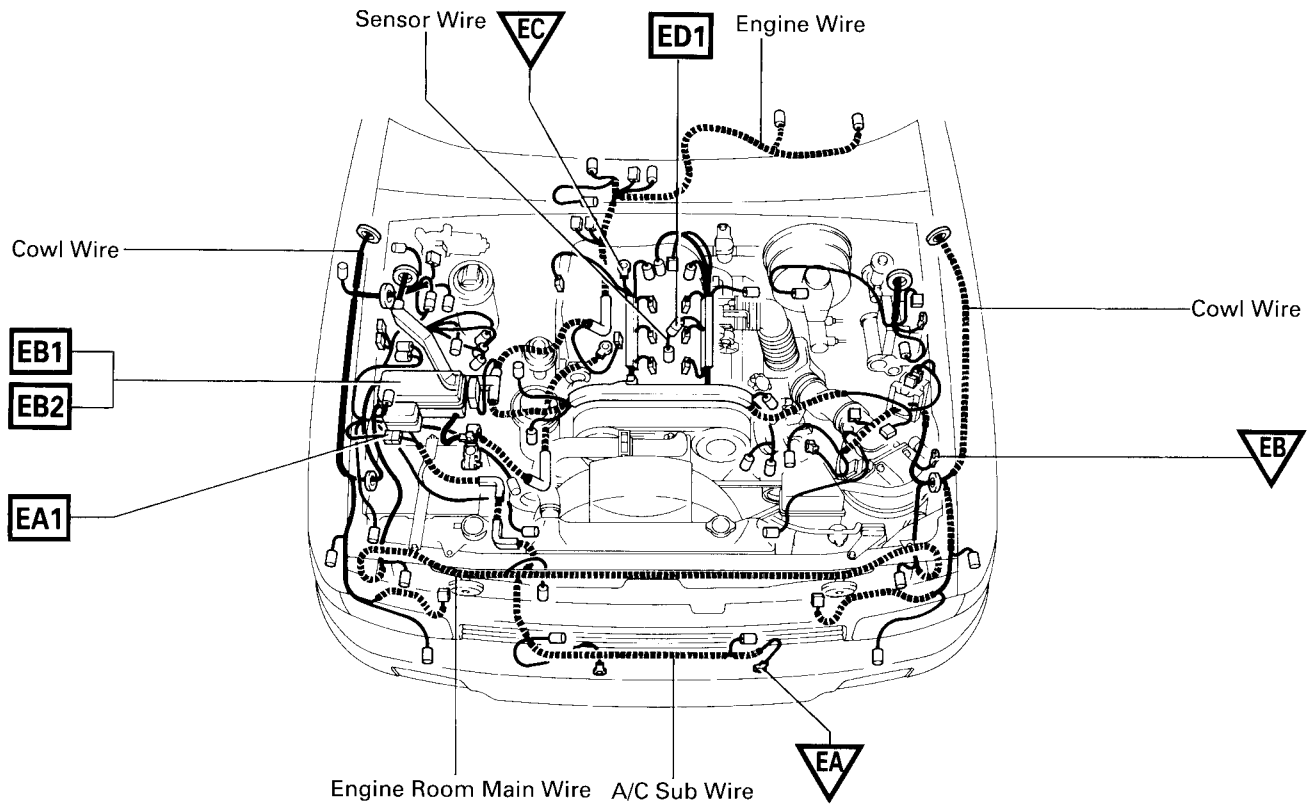
- | | |
|---|--|
| <p>A 19 ABS Speed Sensor (Rear Wheel ABS)</p> <p>A 28 ABS Speed Sensor Rear LH (4Wheel ABS)</p> <p>A 29 ABS Speed Sensor Rear RH (4Wheel ABS)</p>
<p>B 5 Back Door Control SW</p> <p>B 6 Back Door Lock Detection SW LH</p> <p>B 7 Back Door Lock Detection SW RH</p> <p>B 8 Back Door Unlock Warning SW</p> <p>B 9 Back-Up and License Plate Light LH</p> <p>B 10 Back-Up and License Plate Light RH</p> <p>B 11 Buckle SW</p>
<p>D 14 Diode (for Rear Interior Light)</p> <p>D 15 Diode (for Rear Window Defogger)</p> <p>D 16 Door Courtesy Light LH</p> <p>D 17 Door Courtesy Light RH</p> <p>D 18 Door Courtesy SW Rear LH</p> <p>D 19 Door Courtesy SW Rear RH</p> <p>D 20 Door Lock Control SW RH</p> <p>D 21 Door Lock Motor, Door Unlock Detection SW, Door Key Lock and Unlock Detection SW LH</p> <p>D 22 Door Lock Motor, Door Unlock Detection SW, Door Key Lock and Unlock Detection SW RH</p> <p>D 23 Door Lock Motor Rear LH</p> <p>D 24 Door Lock Motor Rear RH</p>
<p>F 6 Fuel Pump</p> <p>F 7 Fuel Sender</p>
<p>H 9 High Mounted Stop Light</p>
<p>I 17 Interior Light (for Front)</p> <p>I 18 Interior Light (for Rear)</p> | <p>M 1 Map Light</p> <p>M 2 Moon Roof Control SW</p> <p>M 3 Moon Roof Motor</p>
<p>P 3 Power Window Control SW Front RH</p> <p>P 4 Power Window Control SW Rear LH</p> <p>P 5 Power Window Control SW Rear RH</p> <p>P 6 Power Window Master SW and Door Lock Control SW</p> <p>P 7 Power Window Motor Front LH</p> <p>P 8 Power Window Motor Front RH</p> <p>P 9 Power Window Motor Rear LH</p> <p>P 10 Power Window Motor Rear RH</p>
<p>R 7 Rear Combination Light LH</p> <p>R 8 Rear Combination Light RH</p> <p>R 9 Rear Heater</p> <p>R 10 Rear Power Window and Rear Wiper Control Relay</p> <p>R 11 Rear Power Window Limit SW</p> <p>R 12 Rear Power Window Lock SW</p> <p>R 13 Rear Power Window Motor</p> <p>R 14 Rear Power Window SW</p> <p>R 15 Rear Window Defogger (+)</p> <p>R 16 Rear Window Defogger (-)</p> <p>R 17 Rear Wiper Motor</p> <p>R 18 Remote Control Mirror LH</p> <p>R 19 Remote Control Mirror RH</p> <p>R 20 Remote Control Mirror SW</p>
<p>S 8 Speaker Rear LH</p> <p>S 9 Speaker Rear RH</p> <p>S 10 Squaker Speaker Rear LH</p> <p>S 11 Squaker Speaker Rear RH</p> |
|---|--|

ELECTRICAL WIRING ROUTING

□ : Location of Connector Joining Wire Harness and Wire Harness

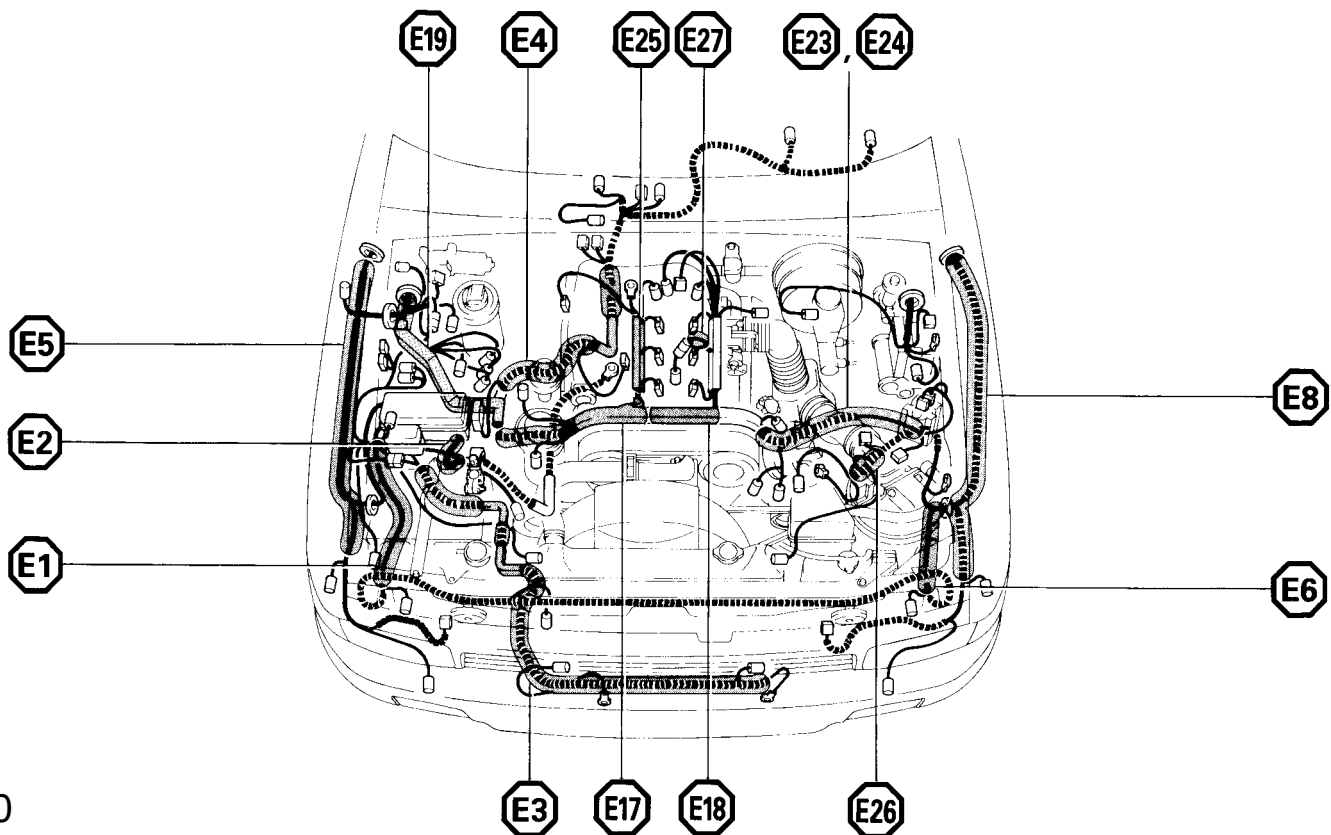
▽ : Location of Ground Points

[3VZ-E]

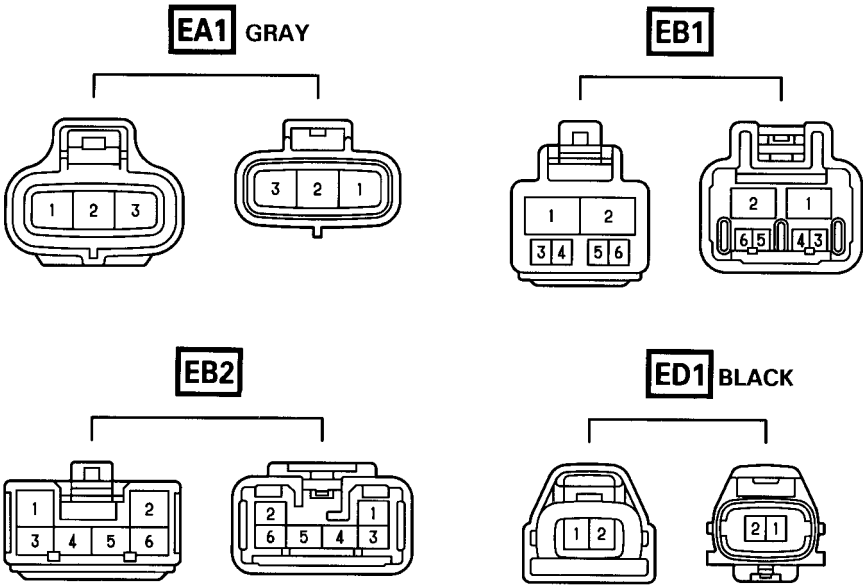


○ : Location of Splice Points

[3VZ-E]



Connector Joining Wire Harness and Wire Harness



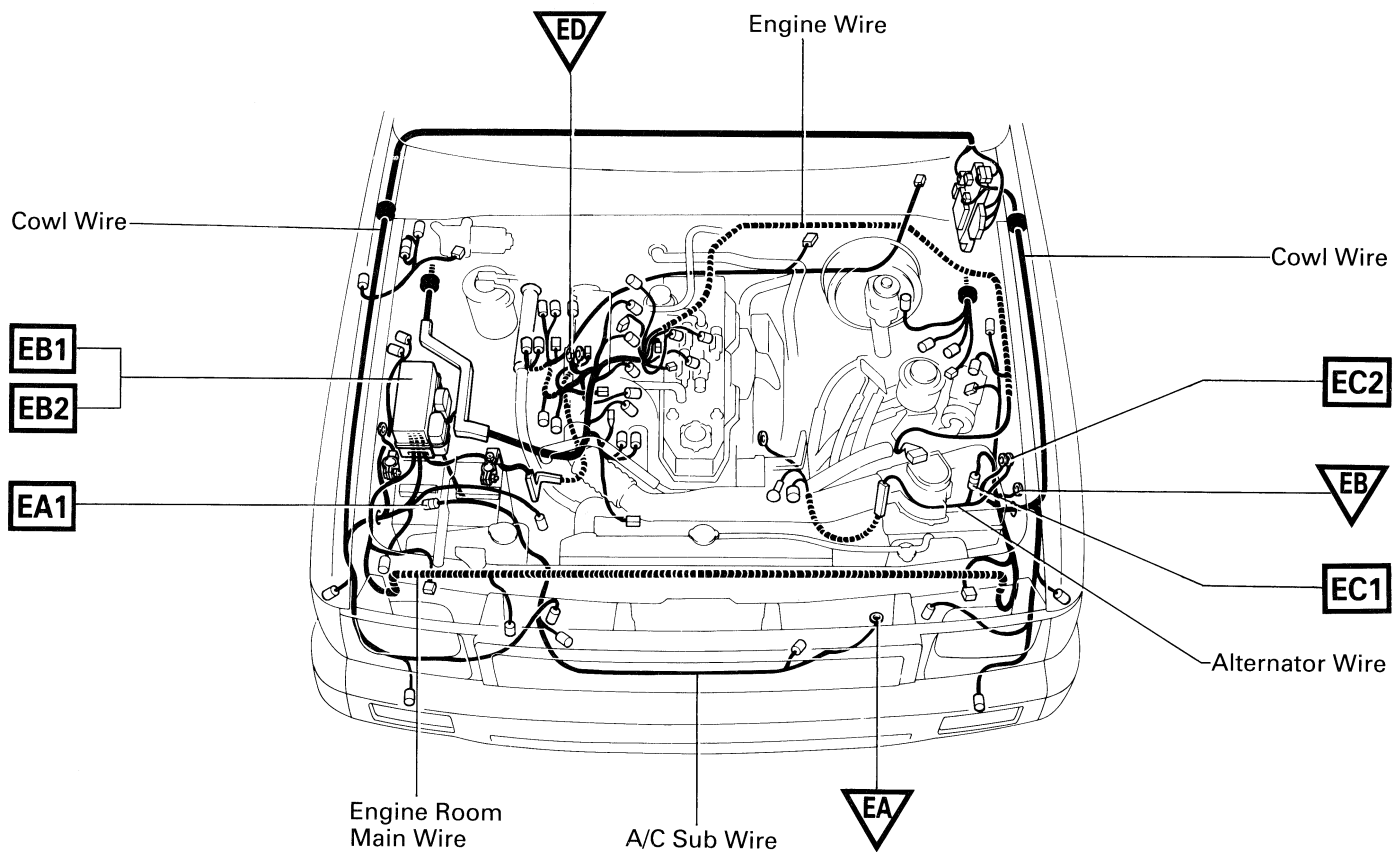
CODE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EA1	COWL WIRE AND A/C SUB WIRE (NEAR THE BATTERY)
EB1	ENGINE ROOM MAIN WIRE AND ALTERNATOR WIRE (FRONT OF LEFT FENDER)
EB2	COWL WIRE AND ENGINE ROOM MAIN WIRE (R/B NO. 2)
ED1	SENSOR WIRE AND ENGINE WIRE (ON THE HEAD COVER)

ELECTRICAL WIRING ROUTING

□ : Location of Connector Joining Wire Harness and Wire Harness

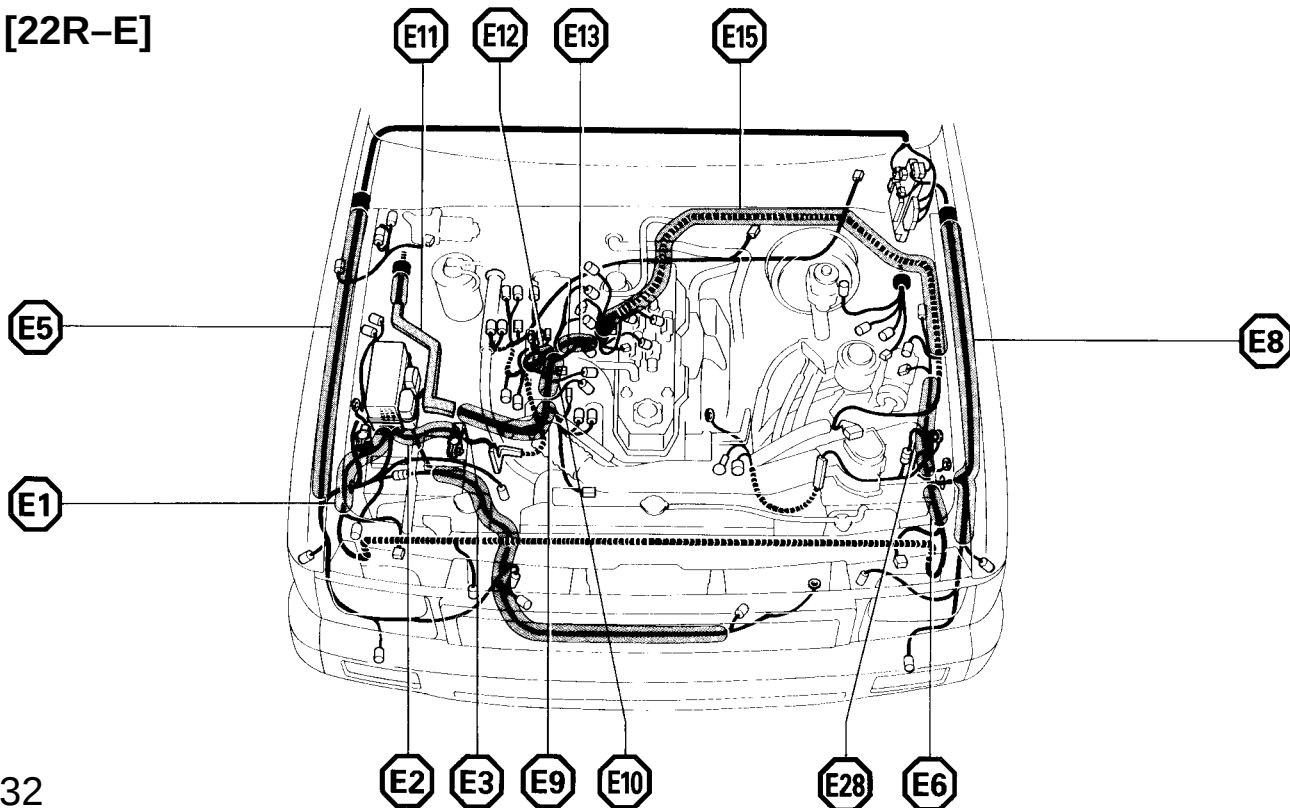
▽ : Location of Ground Points

[22R-E]

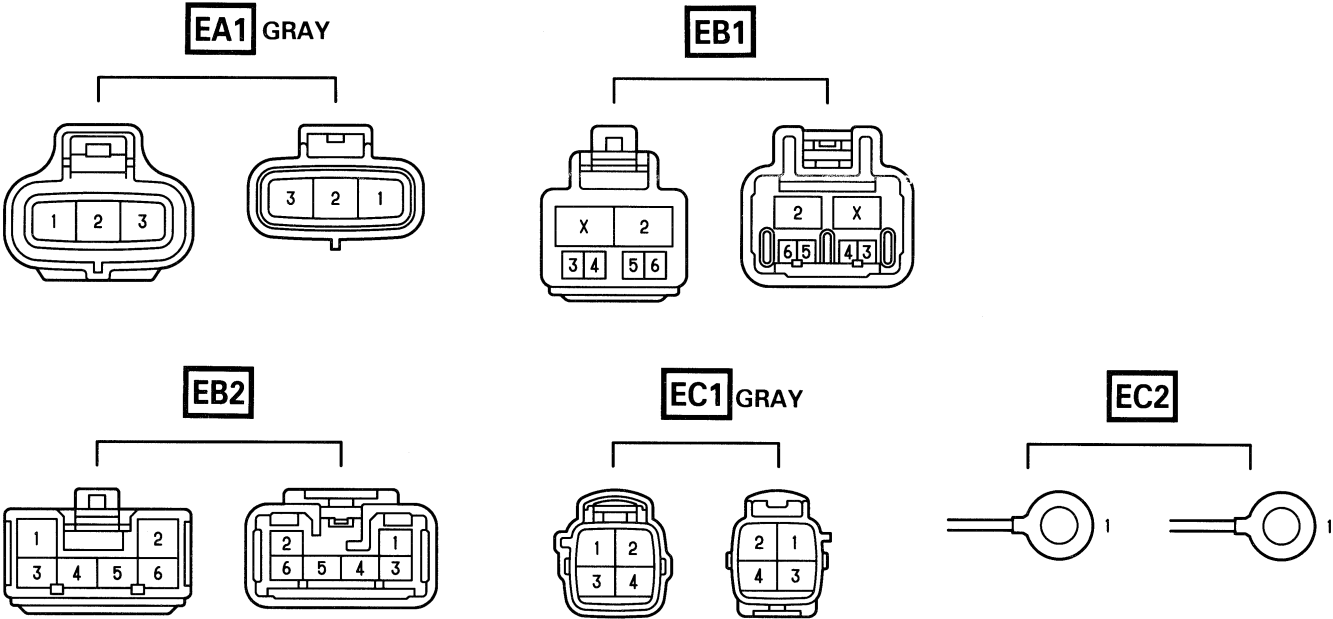


○ : Location of Splice Points

[22R-E]



Connector Joining Wire Harness and Wire Harness

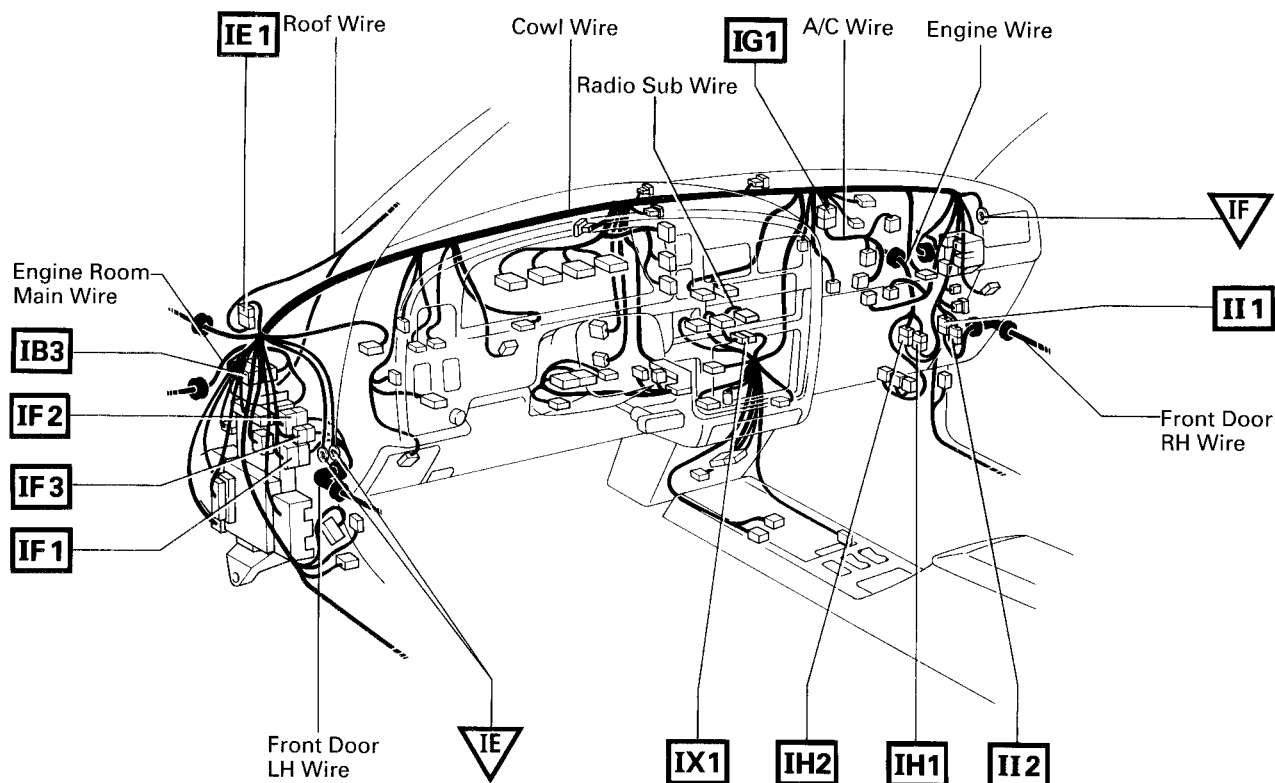


CODE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EA1	COWL WIRE AND A/C SUB WIRE (NEAR THE BATTERY)
EB1	ENGINE ROOM MAIN WIRE AND ALTERNATOR WIRE (FRONT OF LEFT FENDER)
EB2	COWL WIRE AND ENGINE ROOM MAIN WIRE (R/B NO. 2)
EC1	ENGINE ROOM MAIN WIRE AND ALTERNATOR WIRE (FRONT OF LEFT FENDER)
EC2	

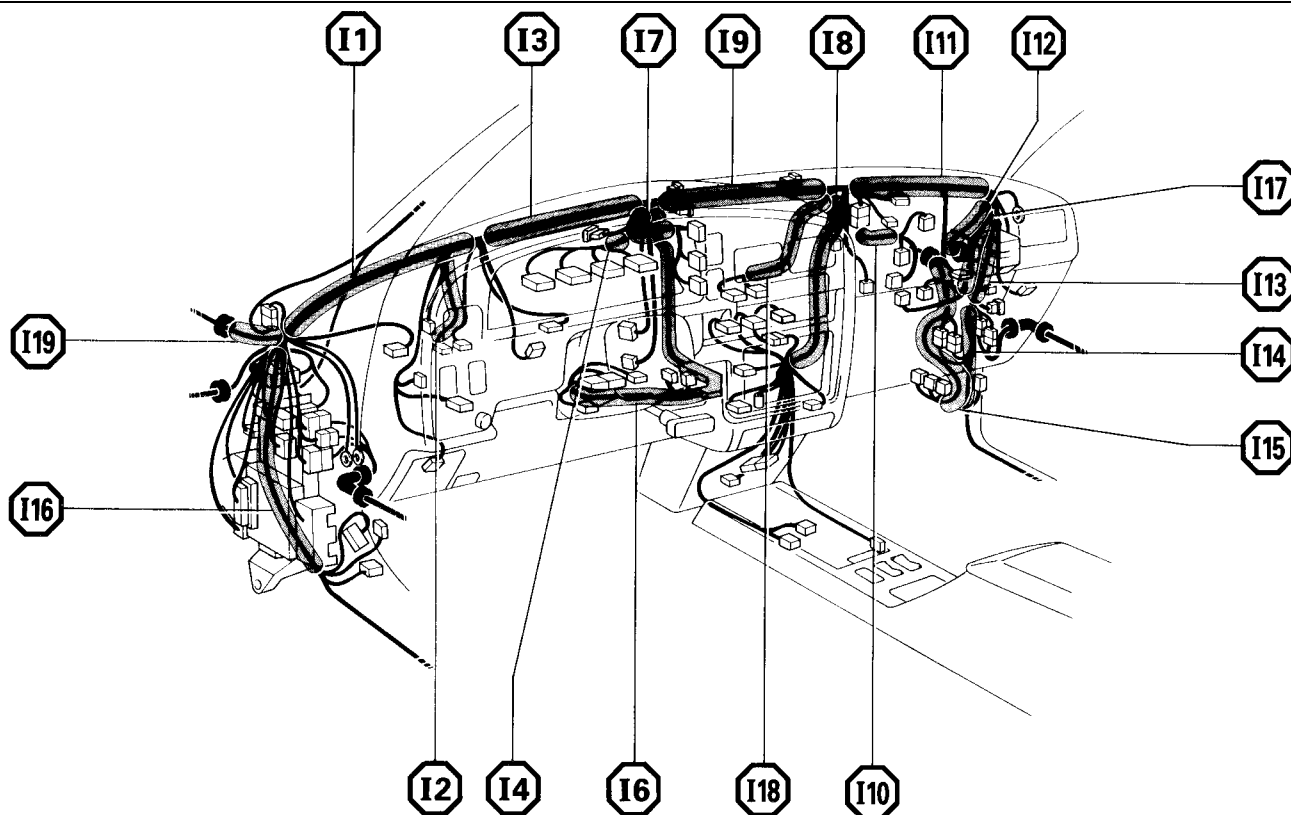
ELECTRICAL WIRING ROUTING

□ : Location of Connector Joining Wire Harness and Wire Harness

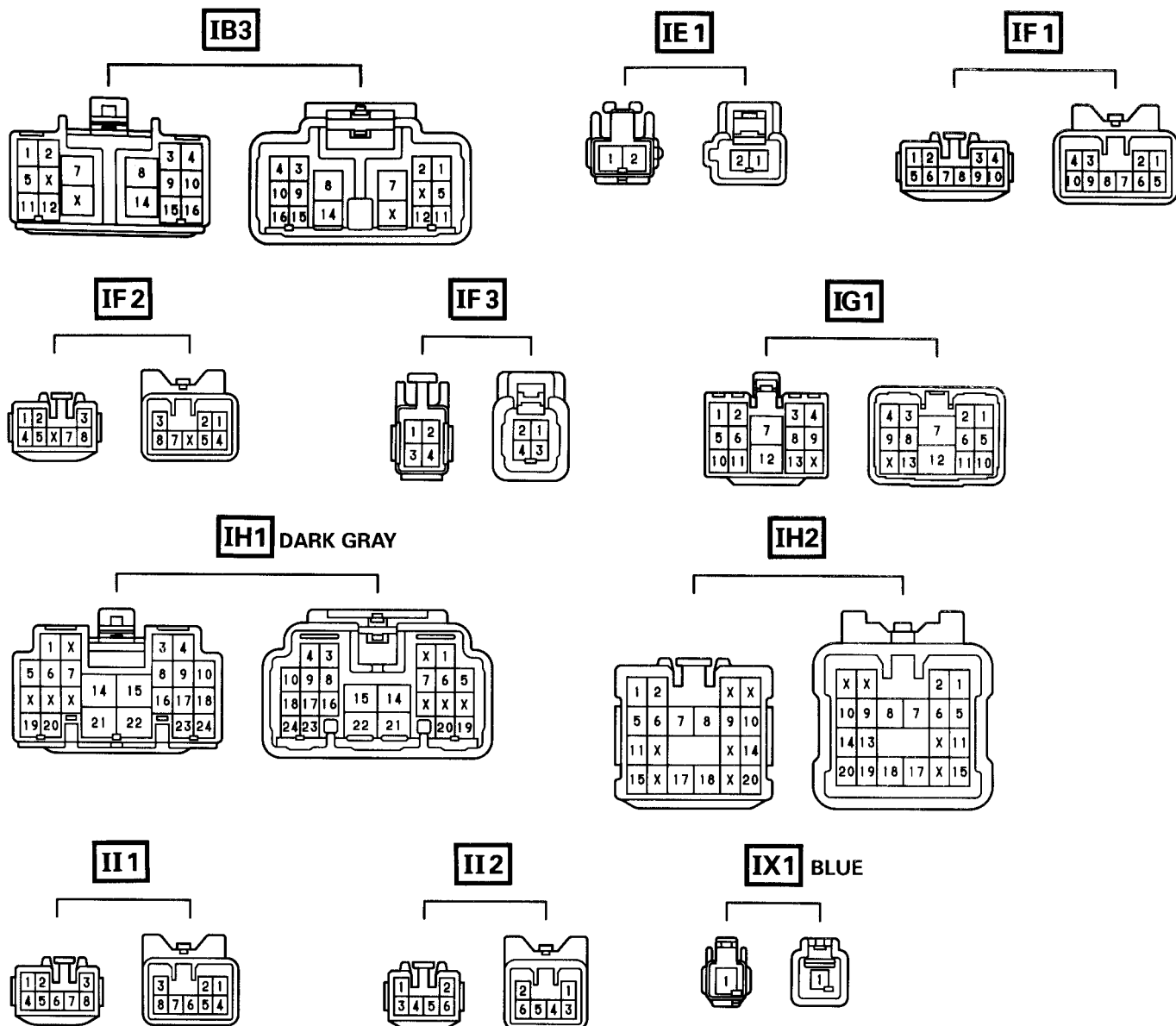
▽ : Location of Ground Points



○ : Location of Splice Points



Connector Joining Wire Harness and Wire Harness

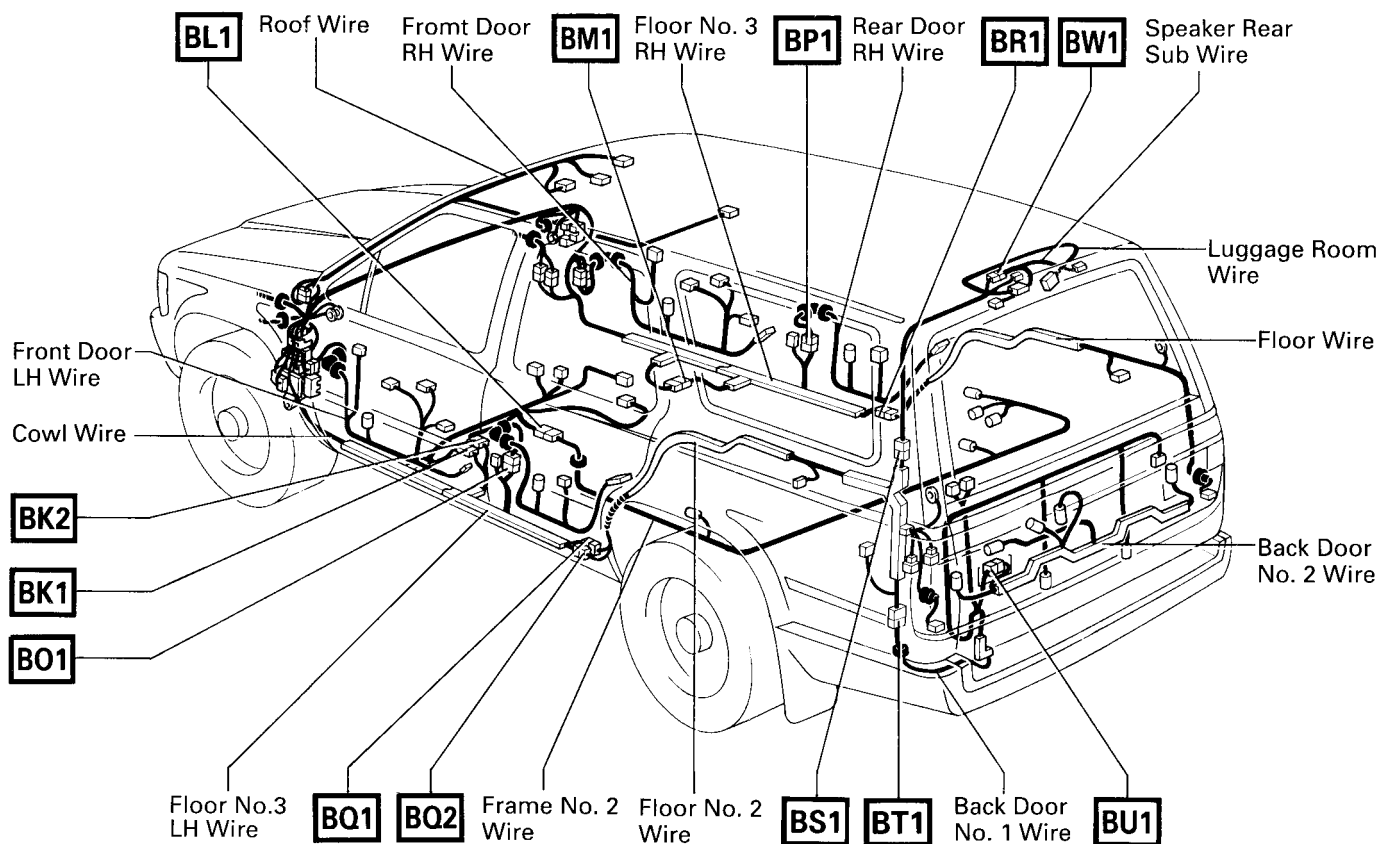


CODE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
IB3	ENGINE ROOM MAIN WIRE AND COWL WIRE
IE1	COWL WIRE AND ROOF WIRE (INSTRUMENT PANEL LEFT)
IF1	FRONT DOOR LH WIRE AND COWL WIRE (LEFT KICK PANEL)
IF2	
IF3	
IG1	COWL WIRE AND A/C WIRE (BEHIND GLOVE BOX)
IH1	ENGINE WIRE AND COWL WIRE (RIGHT KICK PANEL)
IH2	
II1	FRONT DOOR RH WIRE AND COWL WIRE (RIGHT KICK PANEL)
II2	
IX1	COWL WIRE AND RADIO SUB WIRE (INSTRUMENT PANEL BRACE)

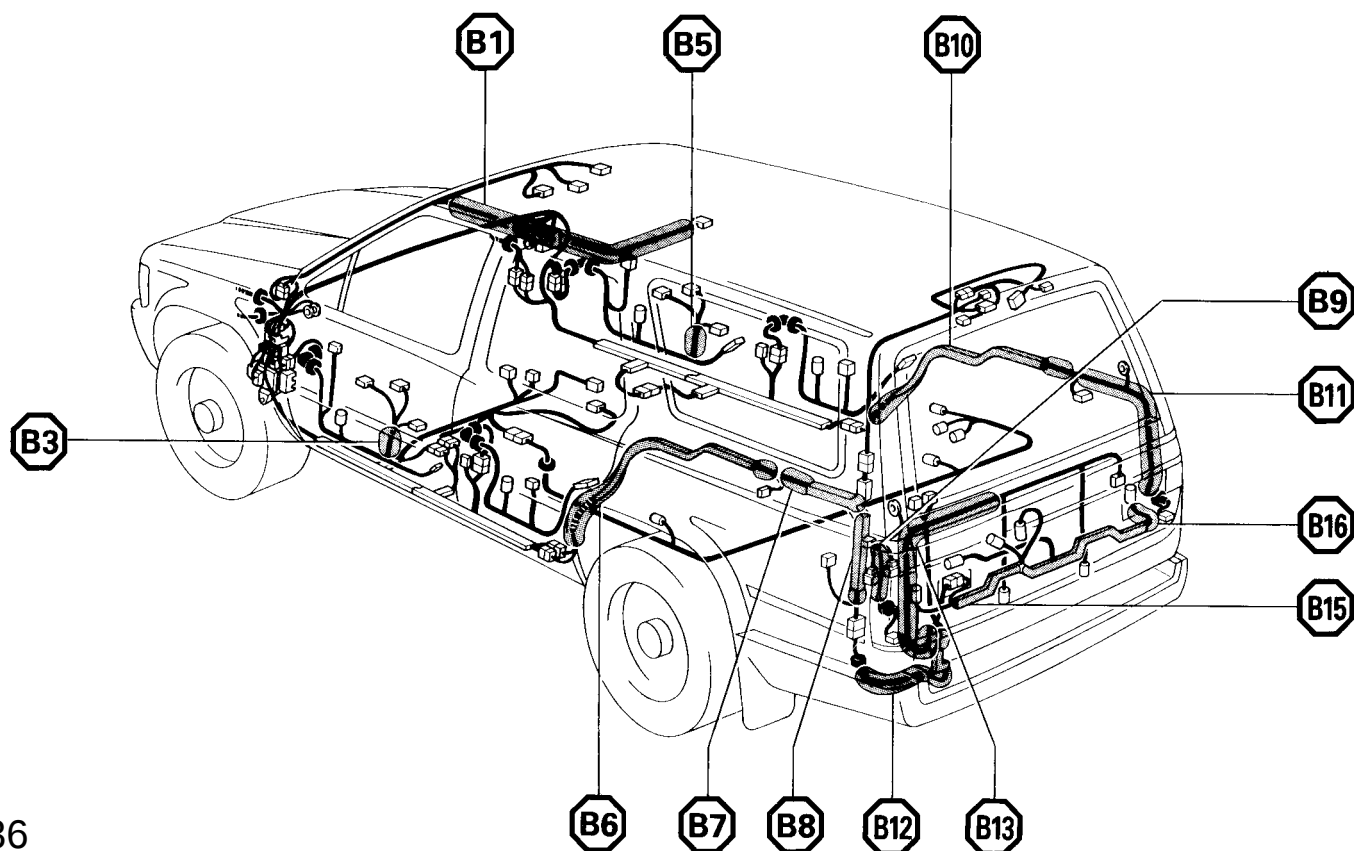
ELECTRICAL WIRING ROUTING

□ : Location of Connector Joining Wire Harness and Wire Harness

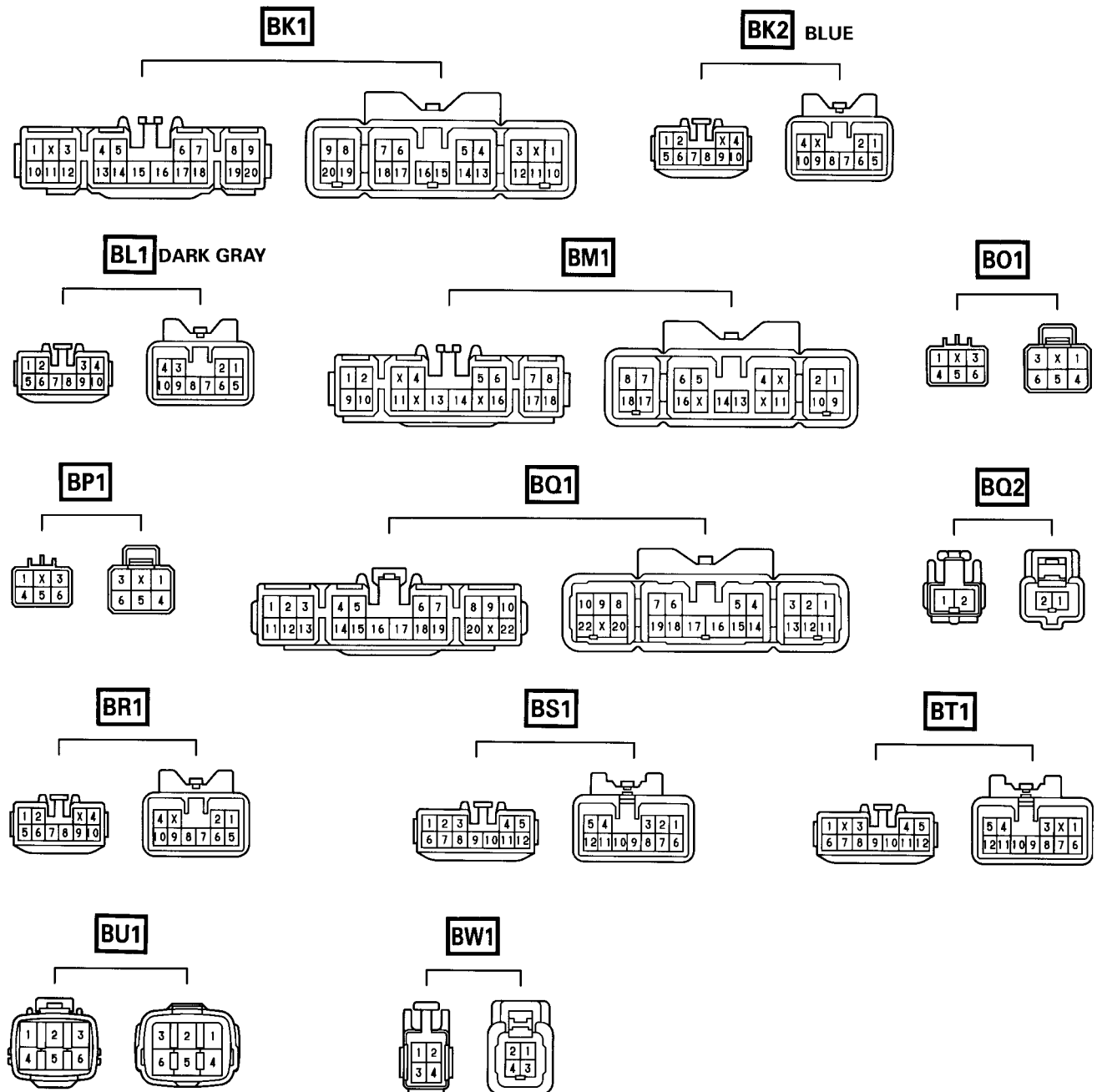
▽ : Location of Ground Points



○ : Location of Splice Points

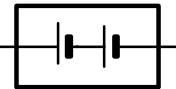
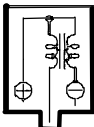
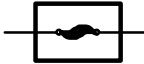


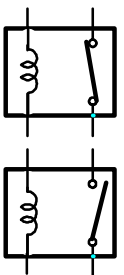
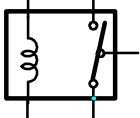
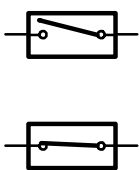
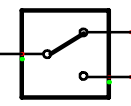
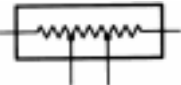
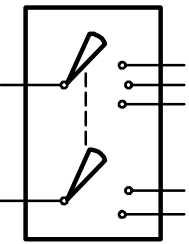
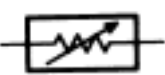
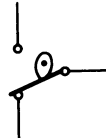
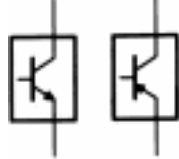
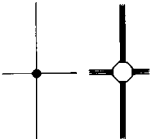
Connector Joining Wire Harness and Wire Harness



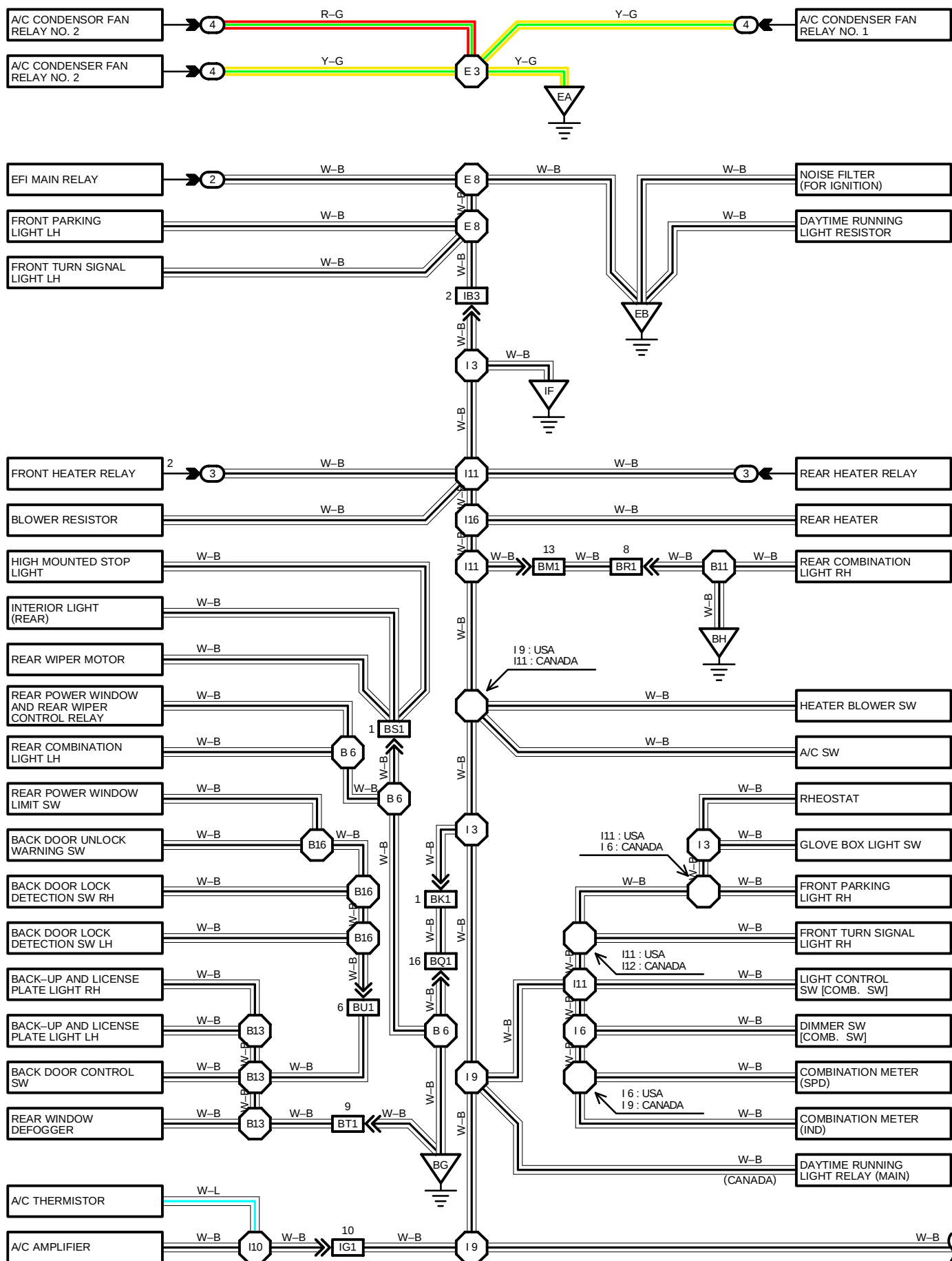
CODE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
BK1	FLOOR NO. 3 LH WIRE AND COWL WIRE (LEFT SIDE OF FRONT LH SEAT)
BK2	COWL WIRE AND FLOOR NO. 3 LH WIRE (LEFT SIDE OF FRONT LH SEAT)
BL1	FRAME NO. 2 WIRE AND COWL WIRE (UNDER THE FRONT LH SEAT)
BM1	FLOOR NO. 3 RH WIRE AND COWL WIRE (RIGHT SIDE OF FRONT RH SEAT)
BO1	REAR DOOR LH WIRE AND FLOOR NO. 3 LH WIRE (LEFT CENTER PILLAR)
BP1	REAR DOOR RH WIRE AND FLOOR NO. 3 RH WIRE (RIGHT CENTER PILLAR)
BQ1	FLOOR NO. 3 LH WIRE AND FLOOR NO. 2 WIRE (LEFT SIDE OF REAR LH SEAT)
BQ2	
BR1	FLOOR NO. 3 RH WIRE AND FLOOR WIRE (RIGHT SIDE OF REAR RH SEAT)
BS1	FLOOR NO. 2 WIRE AND LUGGAGE ROOM WIRE (UNDER LEFT REAR PILLAR)
BT1	BACK DOOR NO. 1 WIRE AND FLOOR NO. 2 WIRE (BESIDE LEFT REAR COMB. LIGHT)
BU1	BACK DOOR NO. 1 WIRE AND BACK DOOR NO. 2 WIRE (BACK DOOR LEFT)
BW1	SPEAKER REAR SUB WIRE AND LUGGAGE ROOM WIRE (INSIDE OF REAR HEADER TRIM)

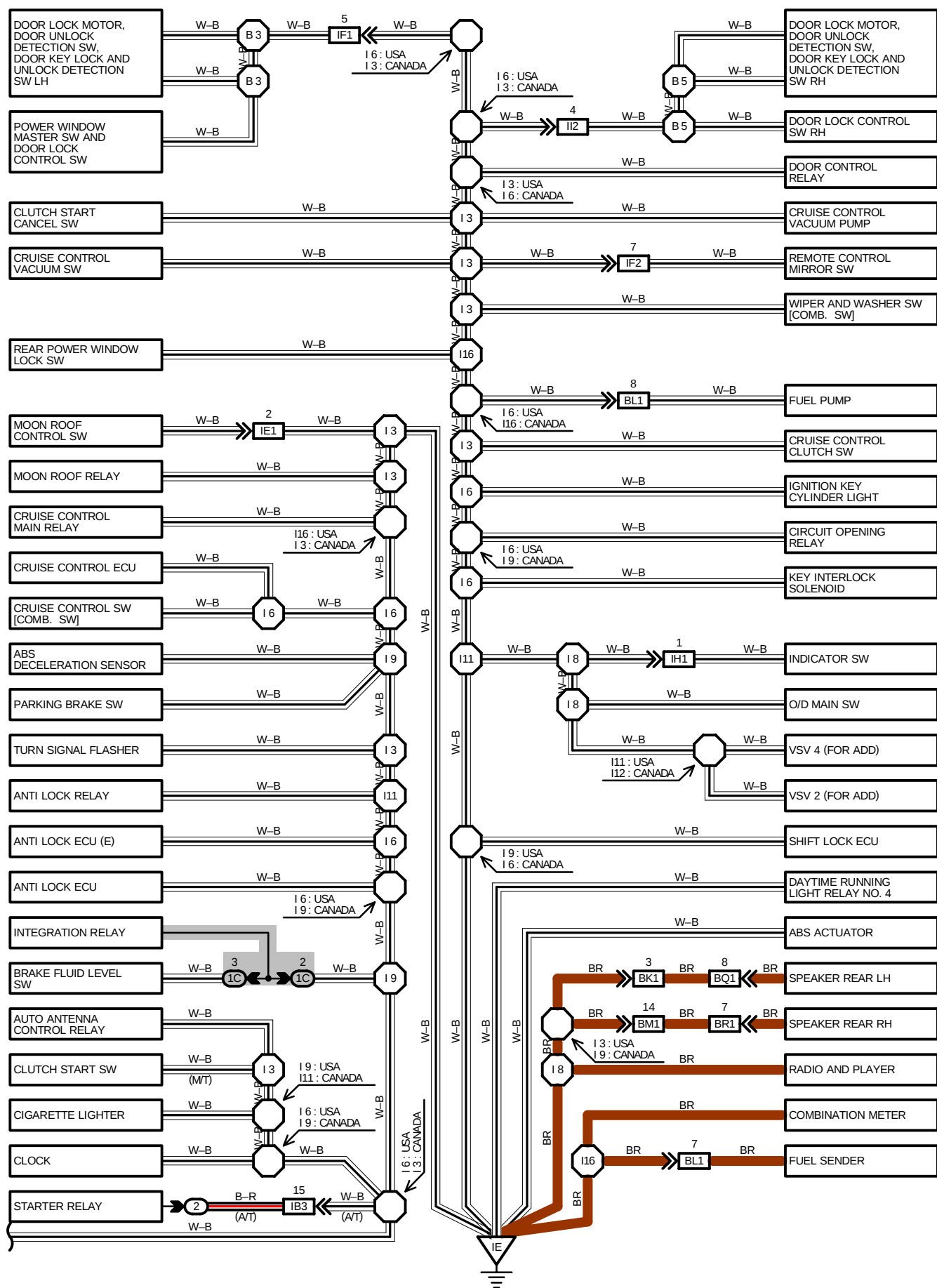
GLOSSARY OF TERMS AND SYMBOLS

 BATTERY Stores chemical energy and converts it into electrical energy. Provides DC current for the auto's various electrical circuits.	HEADLIGHTS Current flow causes a headlight filament to heat up and emit light. A headlight may have either a single (1) filament or a double (2) filament. 1. SINGLE FILAMENT  2. DOUBLE FILAMENT 
 CAPACITOR (Condenser) A small holding unit for temporary storage of electrical voltage.	
 CIGARETTE LIGHTER An electric resistance heating element.	HORN An electric device which sounds a loud audible signal. 
 CIRCUIT BREAKER Basically a reusable fuse, a circuit breaker will heat and open if too much current flows through it. Some units automatically reset when cool, others must be manually reset.	IGNITION COIL Converts low-voltage DC current into high-voltage ignition current for firing the spark plugs. 
 DIODE A semiconductor which allows current flow in only one direction.	
 DIODE, ZENER A diode which allows current flow in one direction but blocks reverse flow only up to a specific voltage. Above that potential, it passes the excess voltage. This acts as a simple voltage regulator.	LIGHT Current flow through a filament causes the filament to heat up and emit light. 
 DISTRIBUTOR, IIA Channels high-voltage current from the ignition coil to the individual spark plugs.	LED (LIGHT EMITTING DIODE) Upon current flow, these diodes emit light without producing the heat of a comparable light. 
 FUSE A thin metal strip which burns through when too much current flows through it, thereby stopping current flow and protecting a circuit from damage.  FUSIBLE LINK A heavy-gauge wire placed in high amperage circuits which burns through on overloads, thereby protecting the circuit. The numbers indicate the cross-section surface area of the wires.  (for Medium Current Fuse) (for High Current Fuse or Fusible Link.)	METER, ANALOG Current flow activates a magnetic coil which causes a needle to move, thereby providing a relative display against a background calibration. 
	METER, DIGITAL Current flow activates one or many LED's, LCD's, or fluorescent displays, which provide a relative or digital display. 
 GROUND The point at which wiring attaches to the Body, thereby providing a return path for an electrical circuit; without a ground, current cannot flow.	MOTOR A power unit which converts electrical energy into mechanical energy, especially rotary motion. 

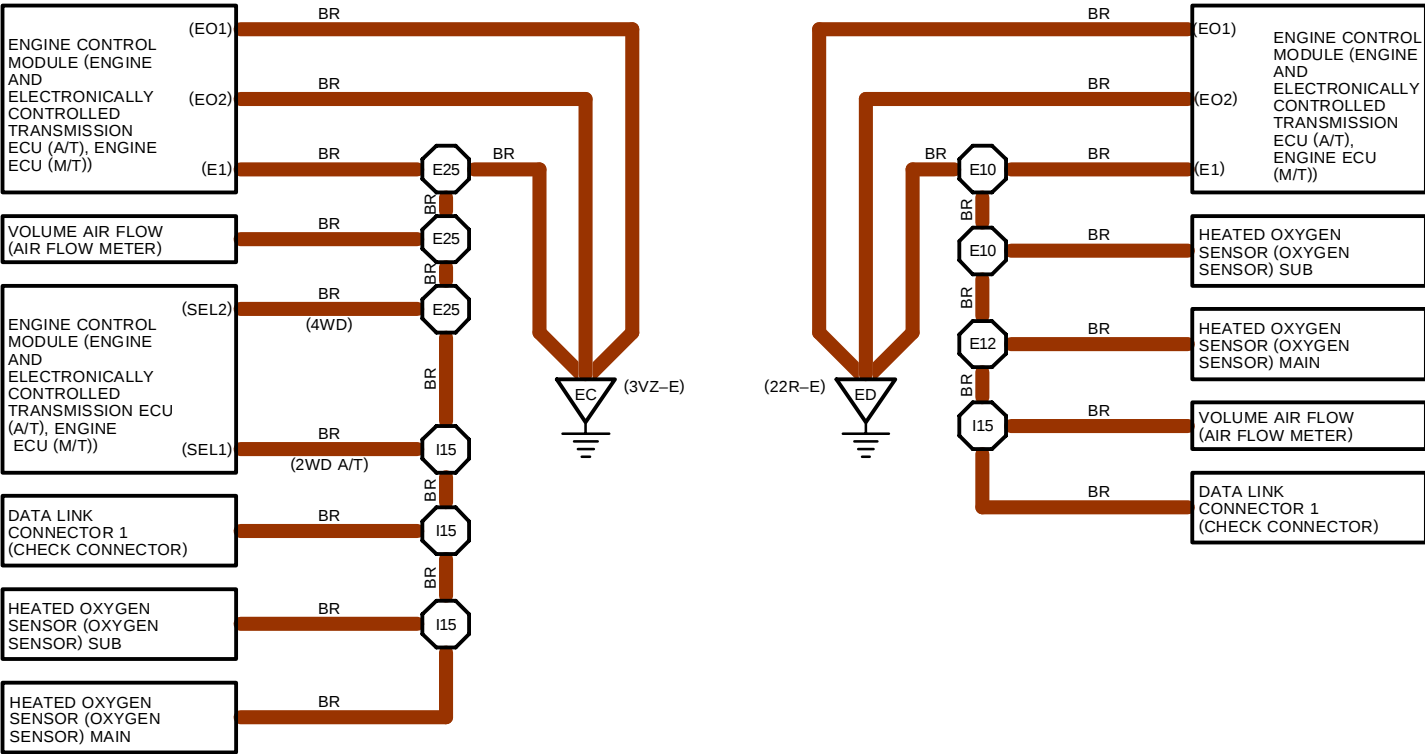
RELAY  1. NORMALLY CLOSED 2. NORMALLY OPEN Basically, an electrically operated switch which may be normally closed (1) or open (2). Current flow through a small coil creates a magnetic field which either opens or closes an attached switch.	SPEAKER  An electromechanical device which creates sound waves from current flow.
RELAY, DOUBLE THROW  A relay which passes current through one set of contacts or the other.	SWITCH, MANUAL  1. NORMALLY OPEN 2. NORMALLY CLOSED Opens and closes circuits, thereby stopping (1) or allowing (2) current flow.
RESISTOR  An electrical component with a fixed resistance, placed in a circuit to reduce voltage to a specific value.	SWITCH, DOUBLE THROW  A switch which continuously passes current through one set of contacts or the other.
RESISTOR, TAPPED  A resistor which supplies two or more different non adjustable resistance values.	SWITCH, IGNITION  A key operated switch with several positions which allows various circuits, particularly the primary ignition circuit, to become operational.
RESISTOR, VARIABLE or RHEOSTAT  A controllable resistor with a variable rate of resistance. Also called a potentiometer or rheostat.	SWITCH, WIPER PARK  Automatically returns wipers to the stop position when the wiper switch is turned off.
SENSOR (Thermistor)  A resistor which varies its resistance with temperature.	TRANSISTOR  A solidstate device typically used as an electronic relay; stops or passes current depending on the voltage applied at "base."
SENSOR, ANALOG SPEED  Uses magnetic impulses to open and close a switch to create a signal for activation of other components.	WIRES (1) NOT CONNECTED  (2) SPLICED  Wires are always drawn as straight lines on wiring diagrams. Crossed wires (1) without a black dot at the junction are not joined; crossed wires (2) with a black dot or octagonal (○) mark at the junction are spliced (joined) connections.
SHORT PIN  Used to provide an unbroken connection within a junction block.	
SOLENOID  An electromagnetic coil which forms a magnetic field when current flows, to move a plunger, etc.	

GROUND POINT





GROUND POINT



 : RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	22	R/B NO. 2 (ENGINE COMPARTMENT RIGHT)
3	23	R/B NO. 3 (RIGHT KICK PANEL)
4	23	R/B NO. 4 (BESIDE R/B NO. 2)

 : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1C	20	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)

 : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
IB3	34	ENGINE ROOM MAIN WIRE AND COWL WIRE
IE1	34	COWL WIRE AND ROOF WIRE (INSTRUMENT PANEL LEFT)
IF1	34	FRONT DOOR LH WIRE AND COWL WIRE (LEFT KICK PANEL)
IF2		
IG1	34	COWL WIRE AND A/C WIRE
IH1	34	ENGINE WIRE AND COWL WIRE (RIGHT KICK PANEL)
II2	34	FRONT DOOR RH WIRE AND COWL WIRE (RIGHT KICK PANEL)
BK1	36	FLOOR NO. 3 LH WIRE AND COWL WIRE (LEFT SIDE OF FRONT LH SEAT)
BL1	36	FRAME NO. 2 WIRE AND COWL WIRE (UNDER THE FRONT LH SEAT)
BM1	36	FLOOR NO. 3 RH WIRE AND COWL WIRE (RIGHT SIDE OF FRONT RH SEAT)
BQ1	36	FLOOR NO. 3 LH WIRE AND FLOOR NO. 2 WIRE (LEFT SIDE OF REAR LH SEAT)
BR1	36	FLOOR NO. 3 RH WIRE AND FLOOR WIRE (RIGHT SIDE OF REAR RH SEAT)
BS1	36	FLOOR NO. 2 WIRE AND LUGGAGE ROOM WIRE (UNDER LEFT REAR PILLAR)
BT1	36	BACK DOOR NO. 1 WIRE AND FLOOR NO. 2 WIRE (BESIDE LEFT REAR COMB. LIGHT)
BU1	36	BACK DOOR NO. 1 WIRE AND BACK DOOR NO. 2 WIRE (BACK DOOR LEFT)

 : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
EA	30 (3VZ-E)	LEFT SIDE OF RADIATOR
	32 (22R-E)	
EB	30 (3VZ-E)	LEFT FENDER
	32 (22R-E)	
EC	30 (3VZ-E)	RH CYLINDER HEAD COVER REAR
ED	32 (22R-E)	INTAKE MANIFOLD
IE	34	LEFT KICK PANEL
IF	34	RIGHT KICK PANEL
BG	36	UNDER LEFT REAR PILLAR
BH	36	UNDER RIGHT REAR PILLAR

 : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
E 3	30 (3VZ-E)	A/C SUB WIRE	I10	34	A/C WIRE
	32 (22R-E)		I11	34	COWL WIRE
E 8	30 (3VZ-E)	ENGINE ROOM MAIN WIRE	I12		
	32 (22R-E)		I15	34	ENGINE WIRE
E10	32 (22R-E)	ENGINE WIRE	I16	34	COWL WIRE
E12			B 2	36	FRONT DOOR LH WIRE
E25			30 (3VZ-E)	B 5	36
I 3	34	COWL WIRE	B 6	36	FLOOR NO. 2 WIRE
I 6			B11	36	FLOOR WIRE
I 8			B13	36	BACK DOOR NO. 1 WIRE
I 9			B16	36	BACK DOOR NO. 2 WIRE

This manual provides information on the electrical circuits installed on vehicles by dividing them into a circuit for each system.

The actual wiring of each system circuit is shown from the point where the power source is received from the battery as far as each ground point. (All circuit diagrams are shown with the switches in the OFF position.)

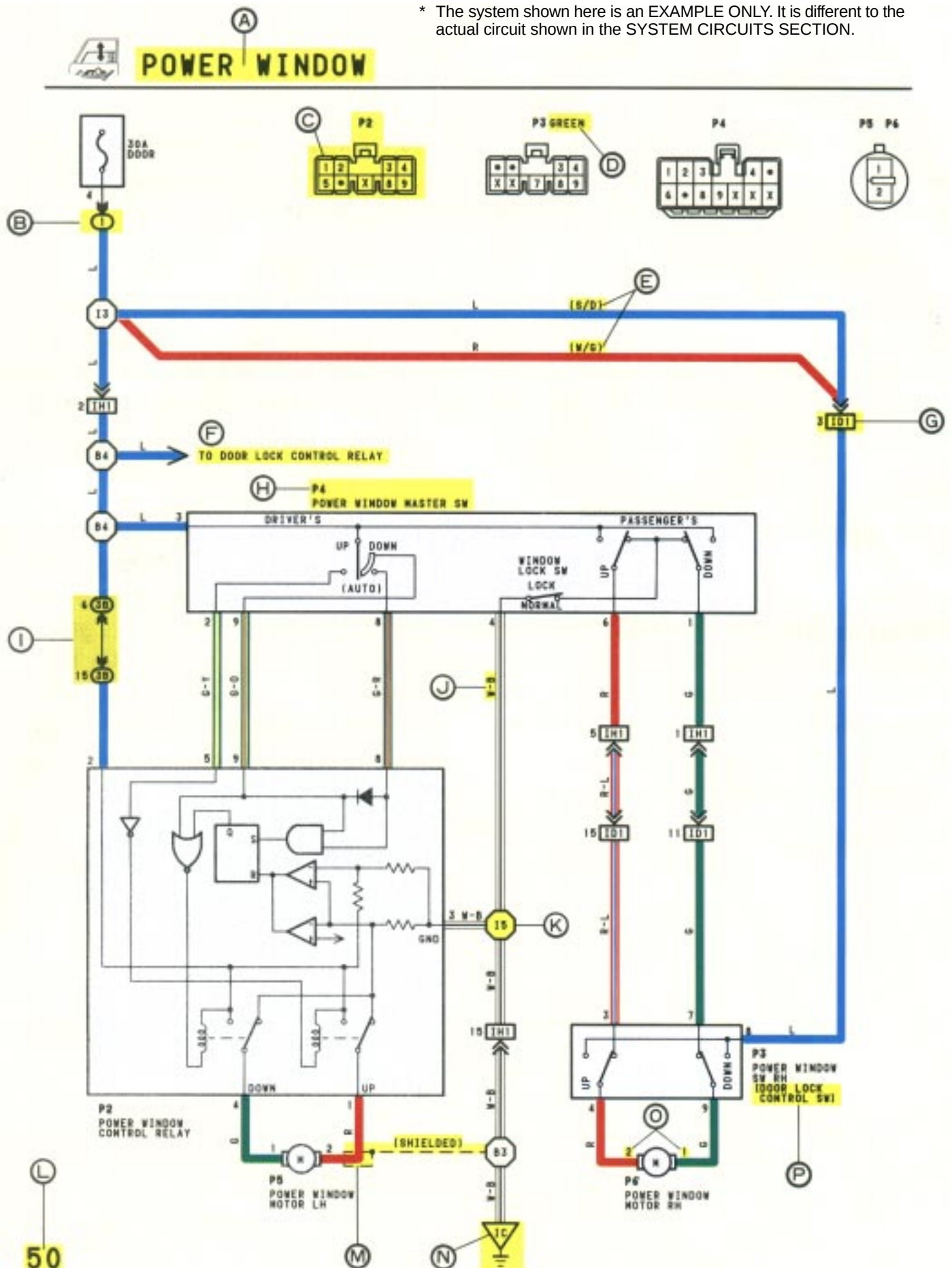
When troubleshooting any problem, first understand the operation of the circuit where the problem was detected (see System Circuit section), the power source supplying power to that circuit (see Power Source section), and the ground points (see Ground Points section). See the System Outline to understand the circuit operation.

When the circuit operation is understood, begin troubleshooting of the problem circuit to isolate the cause. Use Relay Location and Electrical Wire Routing sections to find each part, junction block and wiring harness connectors, wiring harness and wiring harness connectors, splice points, and ground points of each system circuit. Internal wiring for each junction block is also provided for better understanding of connection within a junction block.

Wiring related to each system is indicated in each system circuit by arrows (from __ , to __). When overall connections are required, see the Overall Wiring Diagram at the end of this manual.

HOW TO USE THIS MANUAL

* The system shown here is an EXAMPLE ONLY. It is different to the actual circuit shown in the SYSTEM CIRCUITS SECTION.

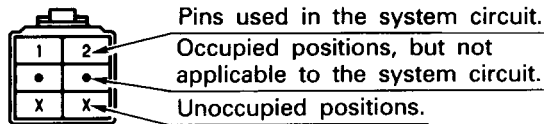


- (A) : System Title
- (B) : Indicates a Relay Block. No shading is used and only the Relay Block No. is shown to distinguish it from the J/B.

Example:  Indicates Relay Block No. 1.

- (C) : Indicates the connector to be connected to a part (the numeral indicates the pin No.)

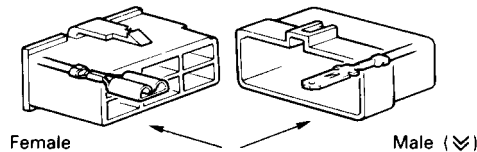
Explanation of pin use.



The pins shown are only for the highest grade, or only include those in the specification.

- (D) : Connector Color
Connectors not indicated are milky white in color.
- (E) : () is used to indicate different wiring and connector, etc. when the vehicle model, engine type, or specification is different.
- (F) : Indicates related system.
- (G) : Indicates the wiring harness and wiring harness connector. The wiring harness with male terminal is shown with arrows (↗).

Outside numerals are pin numbers.

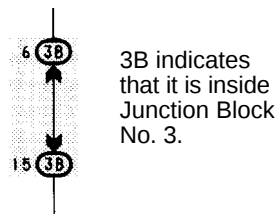


The first letter of the code for each wiring harness and wiring harness connector(s) indicates the component's location, e.g., "E" for the Engine Compartment, "I" for the Instrument Panel and Surrounding area, and "B" for the Body and Surrounding area.

When more than one code has the first and second letters in common, followed by numbers (e.g., IH1, IH2), this indicates the same type of wiring harness and wiring harness connector.

- (H) : Represents a part (all parts are shown in sky blue). The code is the same as the code used in parts position.
- (I) : Junction Block (The number in the circle is the J/B No. and the connector code is shown beside it). Junction Blocks are shaded to clearly separate them from other parts (different junction blocks are shaded differently for further clarification).

Example:



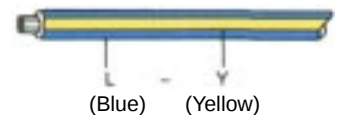
- (J) : Indicates the wiring color.

Wire colors are indicated by an alphabetical code.

B = Black L = Blue R = Red
BR = Brown LG = Light Green V = Violet
G = Green O = Orange W = White
GR = Gray P = Pink Y = Yellow

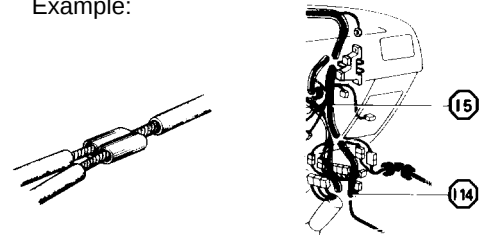
The first letter indicates the basic wire color and the second letter indicates the color of the stripe.

Example: L - Y



- (K) : Indicates a wiring Splice Point (Codes are "E" for the Engine Room, "I" for the Instrument Panel, and "B" for the Body).

Example:



The Location of Splice Point I 5 is indicated by the shaded section.

- (L) : Page No.

- (M) : Indicates a shielded cable.



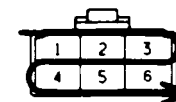
- (N) : Indicates a ground point.

The first letter of the code for each ground point(s) indicates the component's location, e.g., "E" for the Engine Compartment, "I" for the Instrument Panel and Surrounding area, and "B" for the Body and Surrounding area.

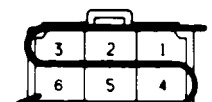
- (O) : Indicates the pin number of the connector.

The numbering system is different for female and male connectors.

Example: Numbered in order from upper left to lower right Numbered in order from upper right to lower left



Female



Male

- (P) : When 2 parts both use one connector in common, the parts connector name used in the wire routing section is shown in square brackets [].

HOW TO USE THIS MANUAL



SYSTEM OUTLINE

WITH THE IGNITION SW TURNED ON, THE CURRENT FLOWS TO TERMINAL 3 OF THE POWER WINDOW MASTER SW, TERMINAL 2 OF THE POWER WINDOW CONTROL RELAY AND TERMINAL 8 OF THE POWER WINDOW SW THROUGH THE DOOR FUSE.

1. DRIVER'S WINDOW "MANUAL UP" OPERATION BY MASTER SW

HOLDING MANUAL SW (DRIVER'S) ON "UP" POSITION LOCATED IN POWER WINDOW MASTER SW, THE CURRENT FLOWS TO TERMINAL 5 OF THE POWER WINDOW CONTROL RELAY THROUGH TERMINAL 3 OF THE MASTER SW → TERMINAL 2 TO OPERATE A POWER WINDOW CONTROL RELAY. THUS THE CURRENT INSIDE THE RELAY FLOWS FROM TERMINAL 2 OF THE RELAY → TERMINAL 1 → TERMINAL 2 OF THE POWER WINDOW MOTOR → TERMINAL 1 → TERMINAL 4 OF THE RELAY → TERMINAL 3 → TO GROUND. THE MOTOR TURNS TO ASCENT THE WINDOW. RELEASING THIS SW, THE ROTATION OF MOTOR IS STOPPED AND THE WINDOWS CAN STOP AT WILL POINT.

(FOR THE "MANUAL DOWN" OPERATION, CURRENT FLOWS IN THE REVERSE DIRECTION BECAUSE THE TERMINALS WHERE IT FLOWS ARE CHANGED).

2. DRIVER'S WINDOW "AUTO DOWN" OPERATION BY MASTER SW

ONCE THE "AUTO DOWN" BUTTON OF THE MASTER SW IS PUSHED, THE CURRENT FLOWS TERMINAL 9 OF THE POWER WINDOW CONTROL RELAY THROUGH TERMINAL 3 OF THE MASTER SW → TERMINALS 8 AND 9 TO OPERATE THE RELAY. THUS THE CURRENT INSIDE THE POWER WINDOW CONTROL RELAY FLOWS FROM TERMINAL 2 OF THE RELAY → TERMINAL 4 → TERMINAL 1 OF THE POWER WINDOW MOTOR → TERMINAL 2 → TERMINAL 1 OF THE RELAY → TERMINAL 3 → TO GROUND. THE MOTOR CONTINUES THE ROTATION ENABLING TO DESCENT THE WINDOW.

THE WINDOW DESCENDS TO THE END POSITION. THE CURRENT WILL BE CUT OFF TO RELEASE THE AUTO DOWN FUNCTION BASED ON THE INCREASING CURRENT BETWEEN TERMINAL 2 OF THE RELAY AND TERMINAL 1 IN RELAY.

3. DRIVER'S WINDOW AUTO DOWN RELEASE OPERATION BY MASTER SW

HOLDING THE MANUAL SW (DRIVER'S) ON "UP" POSITION IN OPERATING AUTO DOWN. THE CURRENT FROM TERMINAL 3 OF THE MASTER SW PASSING TERMINAL 2 FLOWS TERMINAL 5 OF THE RELAY AND RELEASES THE AUTO DOWN FUNCTION IN THE POWER WINDOW CONTROL RELAY. RELEASING THE HAND FROM SW, WINDOW STOPS AND CONTINUING ON TOUCHING SW, THE FUNCTION SWITCHES TO MANUAL UP OPERATION.

4. PASSENGER'S WINDOW UP OPERATION (MASTER SW) AND WINDOW LOCK SW OPERATION

HOLDING PASSENGER'S WINDOW SW (MASTER SW) ON "UP", THE CURRENT FLOWS FROM TERMINAL 3 OF THE MASTER SW PASSING TERMINAL 6 TO TERMINAL 3 OF THE POWER WINDOW SW (PASSENGER'S) → TERMINAL 4 → TERMINAL 2 OF THE MOTOR → TERMINAL 1 → TERMINAL 9 OF THE POWER WINDOW SW → TERMINAL 7 → TERMINAL 1 OF THE MASTER SW → TERMINAL 4 TO GROUND. THE MOTOR RUNS TO ASCENT THE WINDOW. RELEASING THIS SW, THE ROTATION OF MOTOR IS STOPPED AND WINDOW CAN STOP AT WILL PLACE.

SWITCHING THE WINDOW LOCK SW IN "LOCK" POSITION, THE CIRCUIT IS OPENED AND STOPPED THE MOTOR ROTATION.

(FOR THE DOWN OPERATION, CURRENT FLOWS IN THE REVERSE DIRECTION BECAUSE THE TERMINALS WHERE IT FLOWS ARE CHANGED).



SERVICE HINTS

P 2 POWER WINDOW CONTROL RELAY

3-GROUND: ALWAYS CONTINUITY

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

5-GROUND: APPROX. 12 VOLTS WITH IGNITION SW AT ON POSITION AND MASTER SW AT UP POSITION

8-GROUND: APPROX. 12 VOLTS WITH IGNITION SW AT ON POSITION AND MASTER SW AT AUTO DOWN POSITION

9-GROUND: APPROX. 12 VOLTS WITH IGNITION SW AT ON POSITION AND MASTER SW AT DOWN OR AUTO DOWN POSITION

P 4 POWER WINDOW MASTER SW

4-GROUND: ALWAYS CONTINUITY

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

WINDOW LOCK SW

OPEN WITH WINDOW LOCK SW AT LOCK POSITION



: PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
P 2	21	P 4	21	P 6	21
P 3	21	P 5	21		



: RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCK (RELAY BLOCK LOCATION)
1	16	R/B NO. 1 (INSTRUMENT PANEL LEFT SIDE)



: JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
3B	14	J/B NO. 3 AND COWL WIRE (INSTRUMENT PANEL LEFT SIDE)



: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
ID1	26	FRONT DOOR RH WIRE AND COWL WIRE (RIGHT KICK PANEL)
IH1	26	FRONT DOOR LH WIRE AND COWL WIRE (LEFT KICK PANEL)



: GROUND POINTS

CODE	SEE PAGE	GROUND POINT LOCATION
IC	24	COWL LEFT



: SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESSES WITH SPLICE POINTS
I 5	24	COWL WIRE

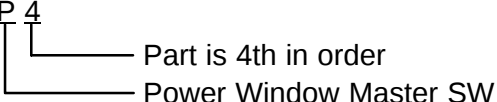
Ⓚ : Explains the system outline.

Ⓡ : Indicates values or explains the function for reference during troubleshooting.

Ⓢ : Indicates the reference page showing the position on the vehicle of the parts in the system circuit.

Example: Part "P4" (Power Window Master SW) is on page 21 of the manual.

- * The letter in the code is from the first letter of the part, and the number indicates its order in parts starting with that letter.

Example: P 4


Ⓣ : Indicates the reference page showing the position on the vehicle of Relay Block Connectors in the system circuit.

Example: Connector "1" is described on page 16 of this manual and is installed on the left side of the instrument panel.

Ⓤ : Indicates the reference page showing the position on the vehicle of J/B and Wire Harness in the system circuit.

Example: Connector "3B" connects the Cowl Wire and J/B No. 3. It is described on page 14 of this manual, and is installed on the instrument panel left side.

Ⓥ : Indicates the reference page describing the wiring harness and wiring harness connector (the female wiring harness is shown first, followed by the male wiring harness).

Example: Connector "ID1" connects the front door RH wire (female) and cowl wire (male). It is described on page 26 of this manual, and is installed on the right side kick panel.

Ⓦ : Indicates the reference page showing the position of the ground points on the vehicle.

Example: Ground point "IC" is described on page 24 of this manual and is installed on the cowl left side.

ⓧ : Indicates the reference page showing the position of the splice points on the vehicle.

Example: Splice point "I 5" is on the Cowl Wire Harness and is described on page 24 of this manual.

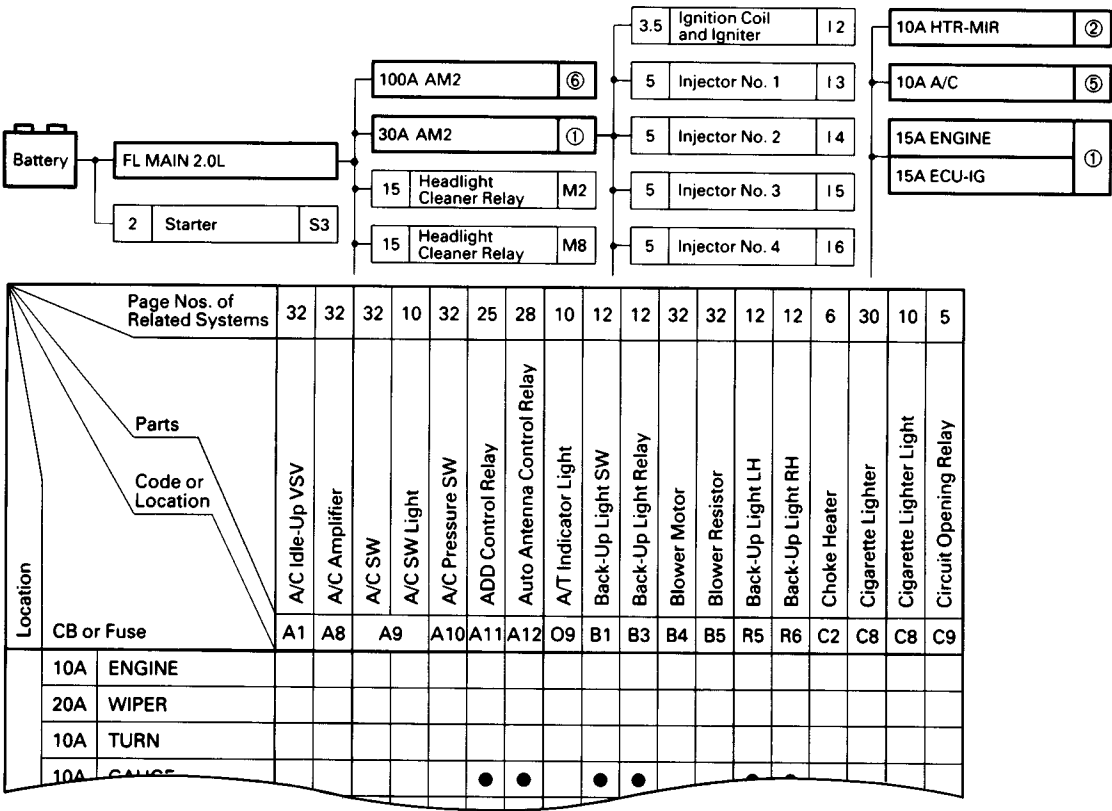
HOW TO USE THIS MANUAL

The “Current Flow Chart” section, describes which parts each power source (fuses, fusible links, and circuit breakers) transmits current to. In the Power Source circuit diagram, the conditions when battery power is supplied to each system are explained. Since all System Circuit diagrams start from the power source, the power source system must be fully understood.

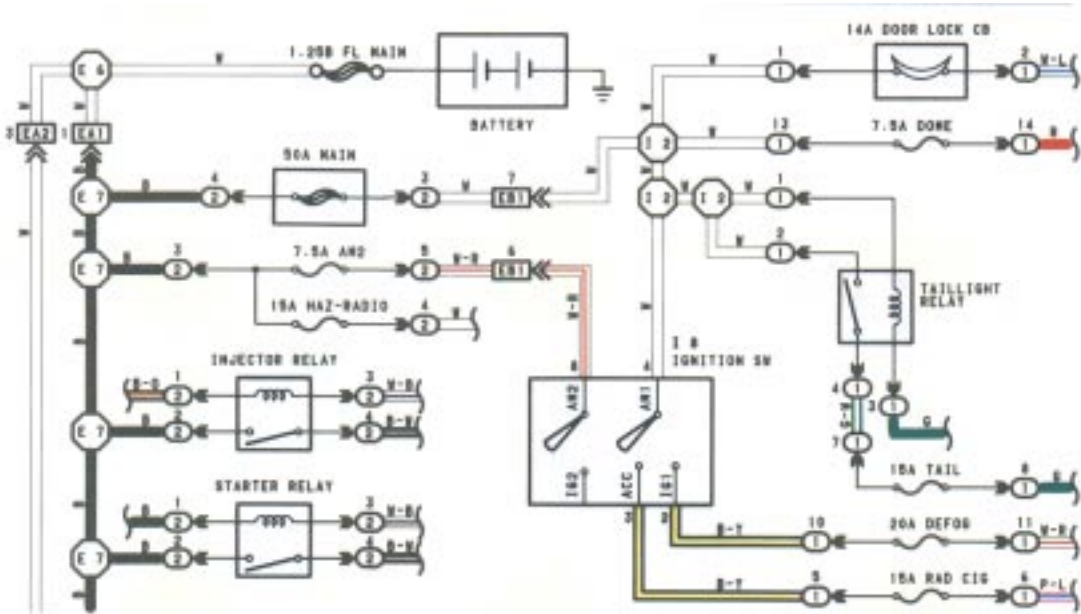
POWER SOURCE (Current Flow Chart)

The chart below shows the route by which current flows from the battery to each electrical source (Fusible Link, Circuit Breaker, Fuse, etc.) and other parts.

The next page and following pages show the parts to which each electrical source outputs current.



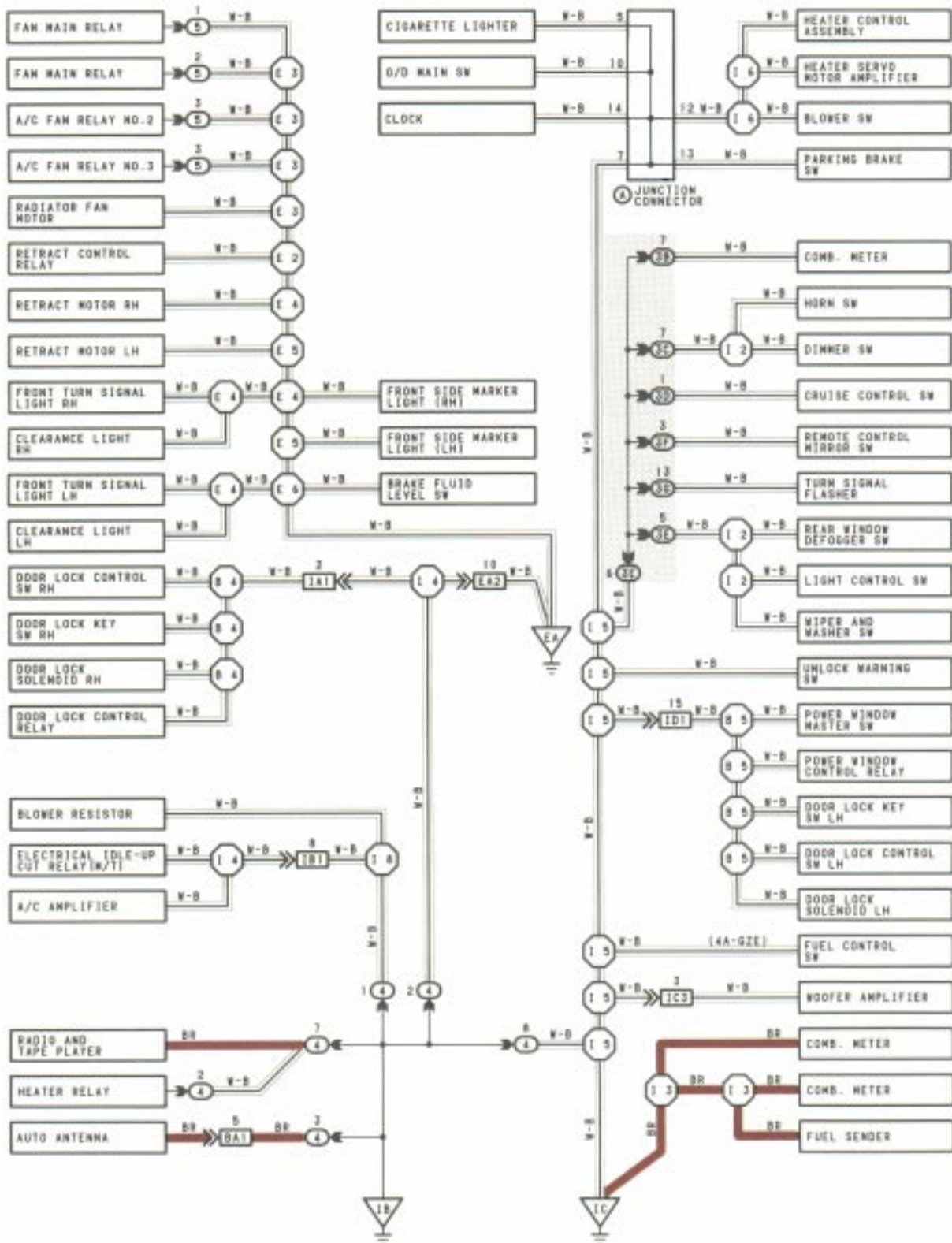
POWER SOURCE



* The system shown here is an EXAMPLE ONLY. It is different to the actual circuit shown in the SYSTEM CIRCUITS SECTION.

The ground points circuit diagram shows the connections from all major parts to the respective ground points. When troubleshooting a faulty ground point, checking the system circuits which use a common ground may help you identify the problem ground quickly. The relationship between ground points ( ,  , and  shown below) can also be checked this way.

GROUND POINTS



* The system shown here is an EXAMPLE ONLY. It is different to the actual circuit shown in the SYSTEM CIRCUITS SECTION.

FOREWORD

This wiring diagram Manual has been prepared to provide information on the electrical system of the 1995 4RUNNER.

Applicable models: RN 130, 131 Series

VZN 120, 130, 131 Series

For service specifications and repair procedures of the above models other than those listed in this manual, refer to the following manuals:

Manual Name	Pub. No.
1995 4RUNNER Repair Manual - Volume 1 - Volume 2 1995 TOYOTA New Car Features	- RM413U1 - RM413U2 - NCF109U

All information in this manual is based on the latest product information at the time of publication. However, specifications and procedures are subject to change without notice.

TOYOTA MOTOR CORPORATION

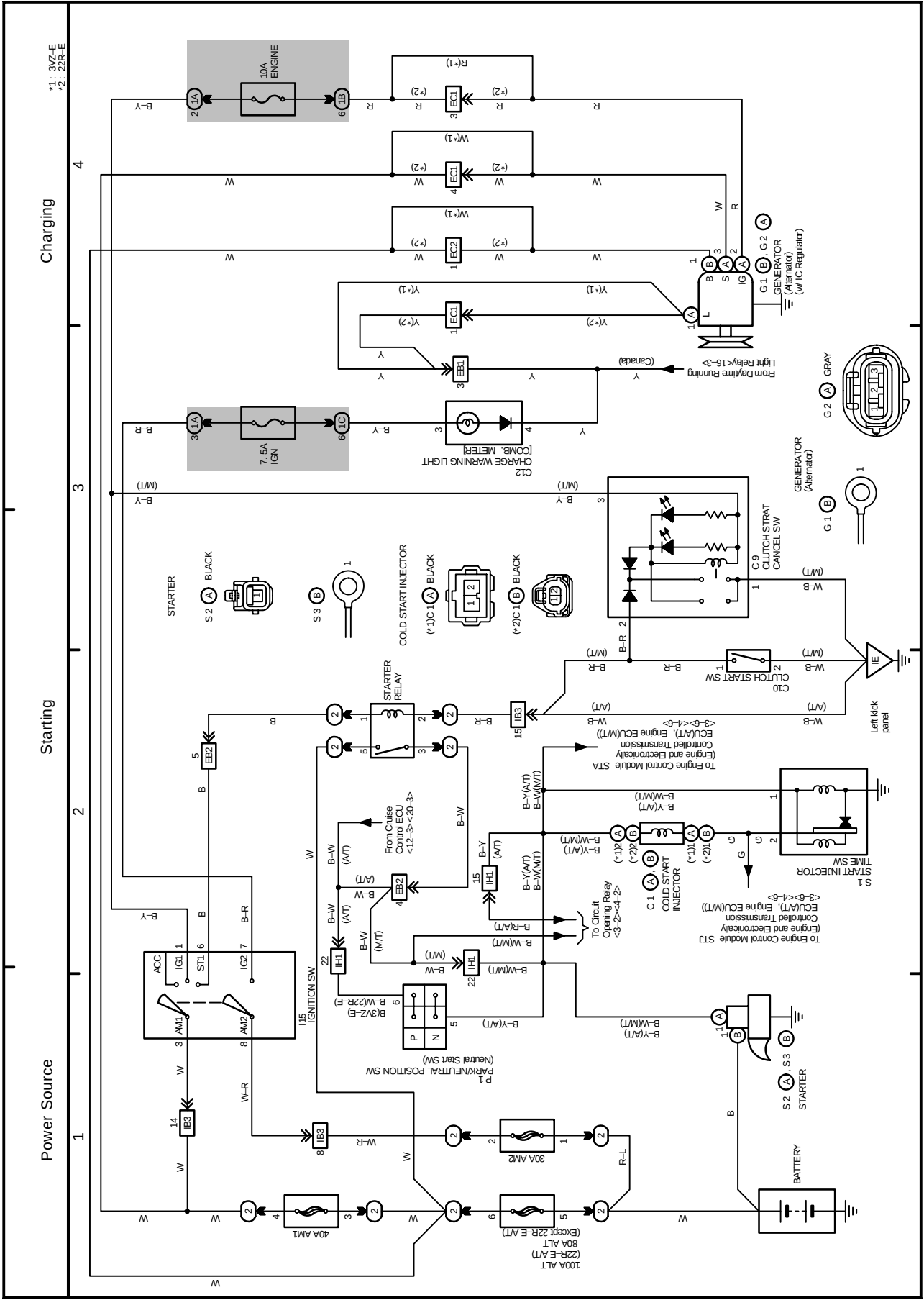
INTRODUCTION

This manual consists of the following 11 sections:

No.	Section	Description
A	INDEX	Index of the contents of this manual.
	INTRODUCTION	Brief explanation of each section.
B	HOW TO USE THIS MANUAL	Instructions on how to use this manual.
C	TROUBLE-SHOOTING	Describes the basic inspection procedures for electrical circuits.
D	ABBREVIATIONS	Defines the abbreviations used in this manual.
E	GLOSSARY OF TERMS AND SYMBOLS	Defines the symbols and functions of major parts.
F	RELAY LOCATIONS	Shows position of the Electronic Control Unit, Relays, Relay Block, etc. This section is closely related to the system circuit.
G	ELECTRICAL WIRING ROUTING	Describes position of Parts Connectors, Splice points, Ground points, etc. This section is closely related to the system circuit.
H	POWER SOURCE (Current Flow Chart)	Describes power distribution from the power supply to various electrical loads.
I	INDEX	Index of the system circuits.
	SYSTEM CIRCUITS	Electrical circuits of each system are shown from the power supply through ground points. Wiring connections and their positions are shown and classified by code according to the connection method. (Refer to the section, "How to use this manual"). The "System Outline" and "Service Hints" useful for troubleshooting are also contained in this section.
J	GROUND POINTS	Shows ground positions of all parts described in this manual.
K	OVERALL WIRING DIAGRAM	Provides circuit diagrams showing the circuit connections.

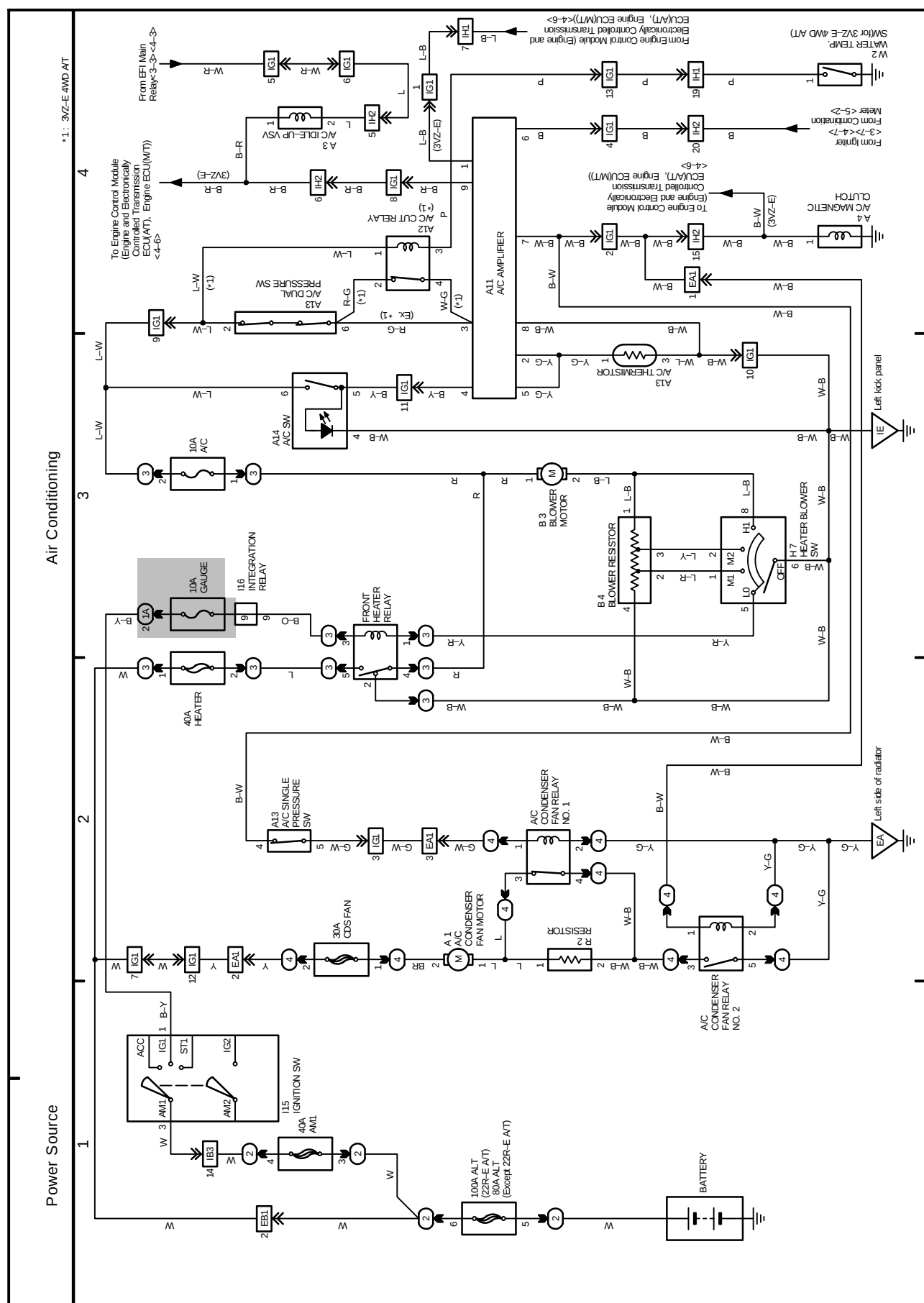
OVERALL ELECTRICAL WIRING DIAGRAM

1 4RUNNER ELECTRICAL WIRING DIAGRAM



OVERALL ELECTRICAL WIRING DIAGRAM

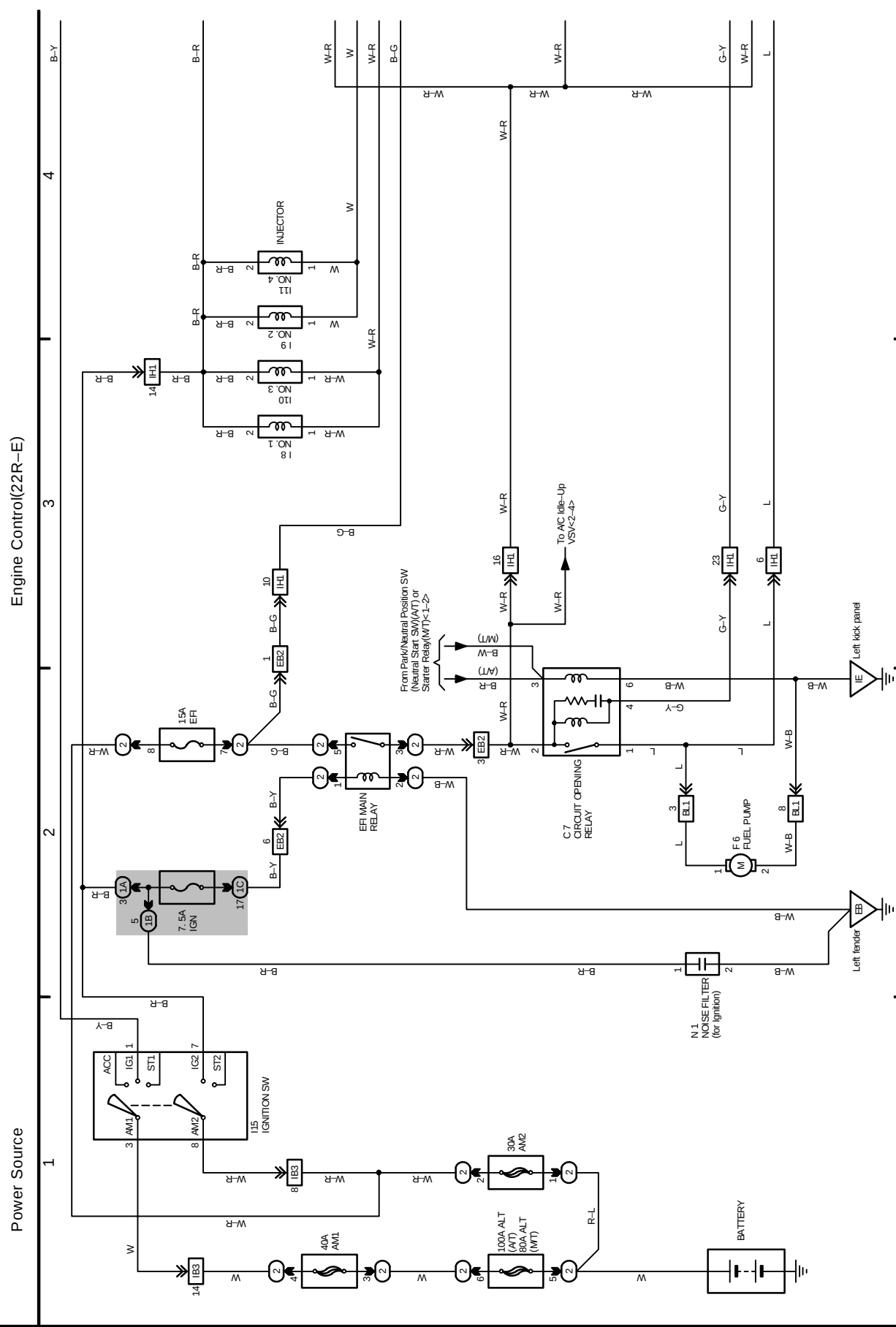
2 4RUNNER



OVERALL ELECTRICAL WIRING DIAGRAM

3 4RUNNER

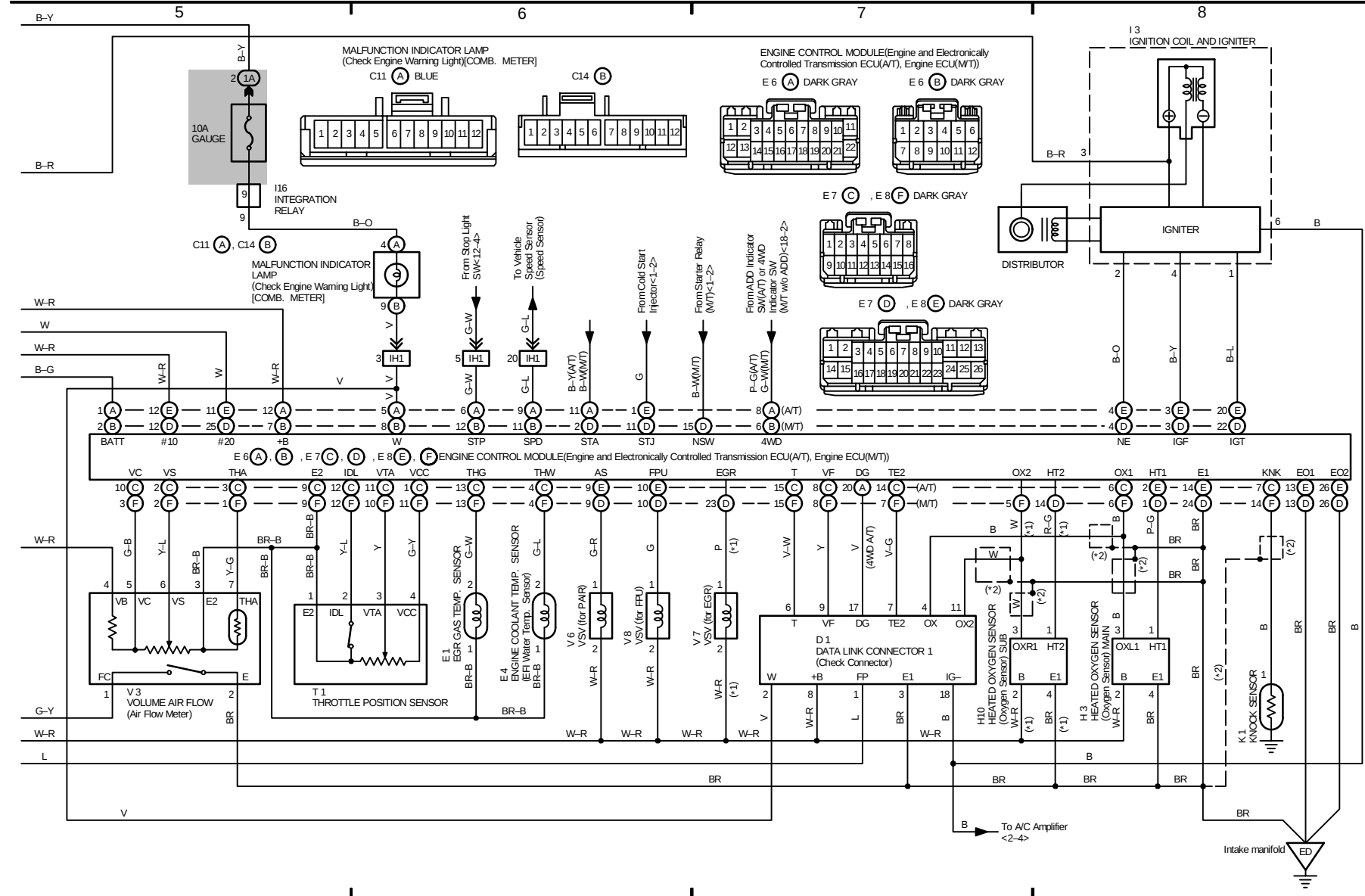
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3 4RUNNER (Cont'd)

Engine Control(22R-E)

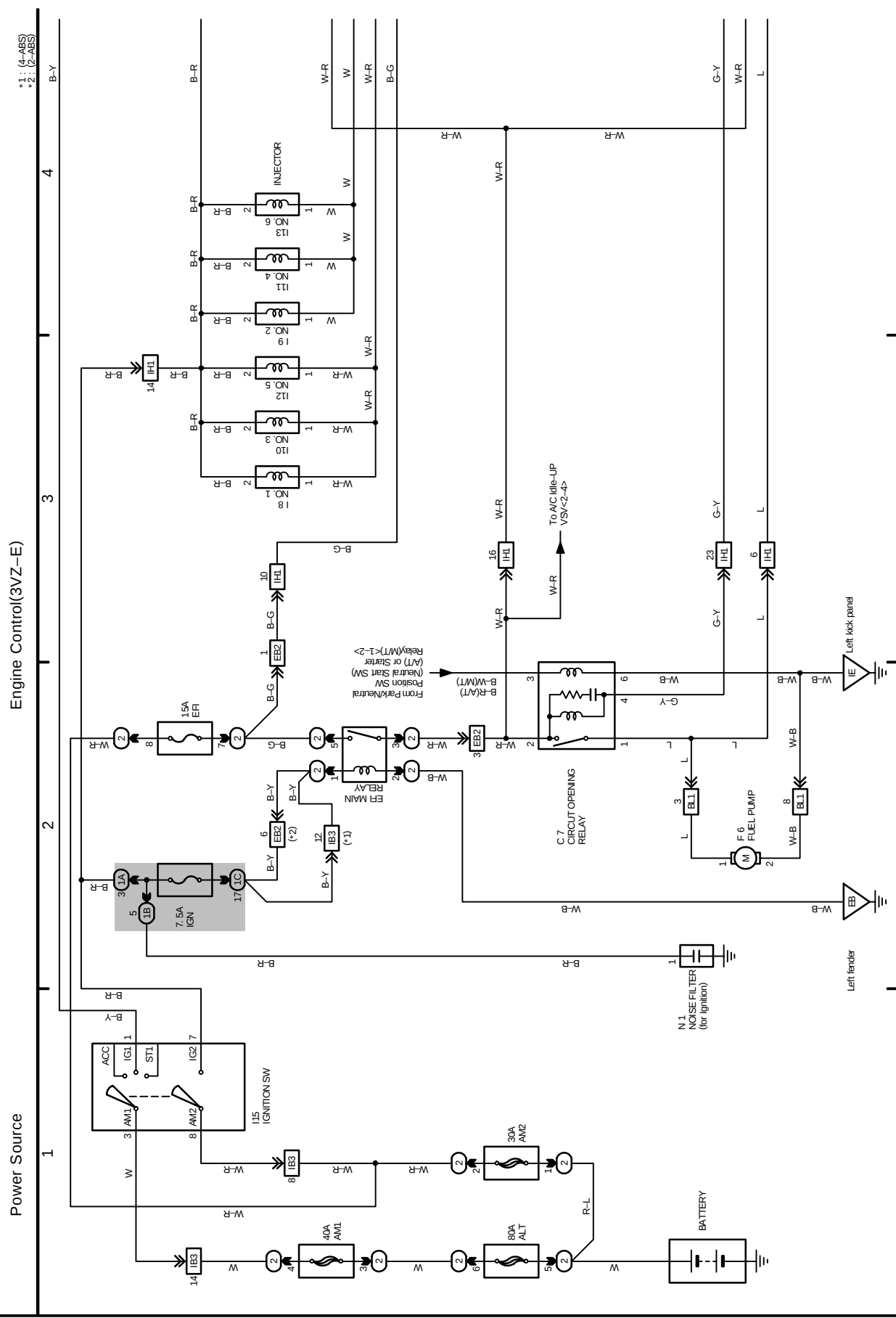
*1: California
*2: Shielded



OVERALL ELECTRICAL WIRING DIAGRAM

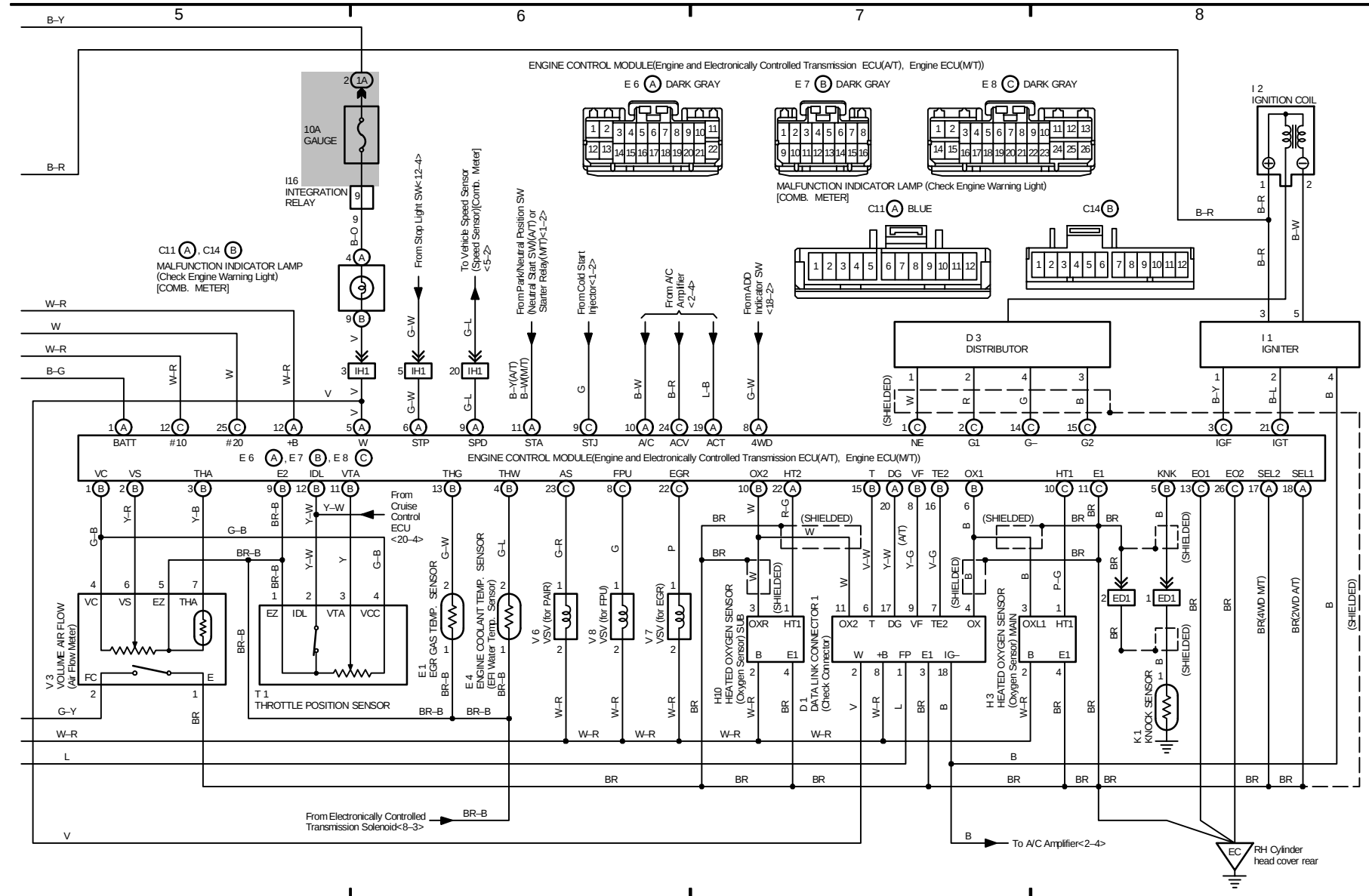
4 4RUNNER

(Cont. next page)



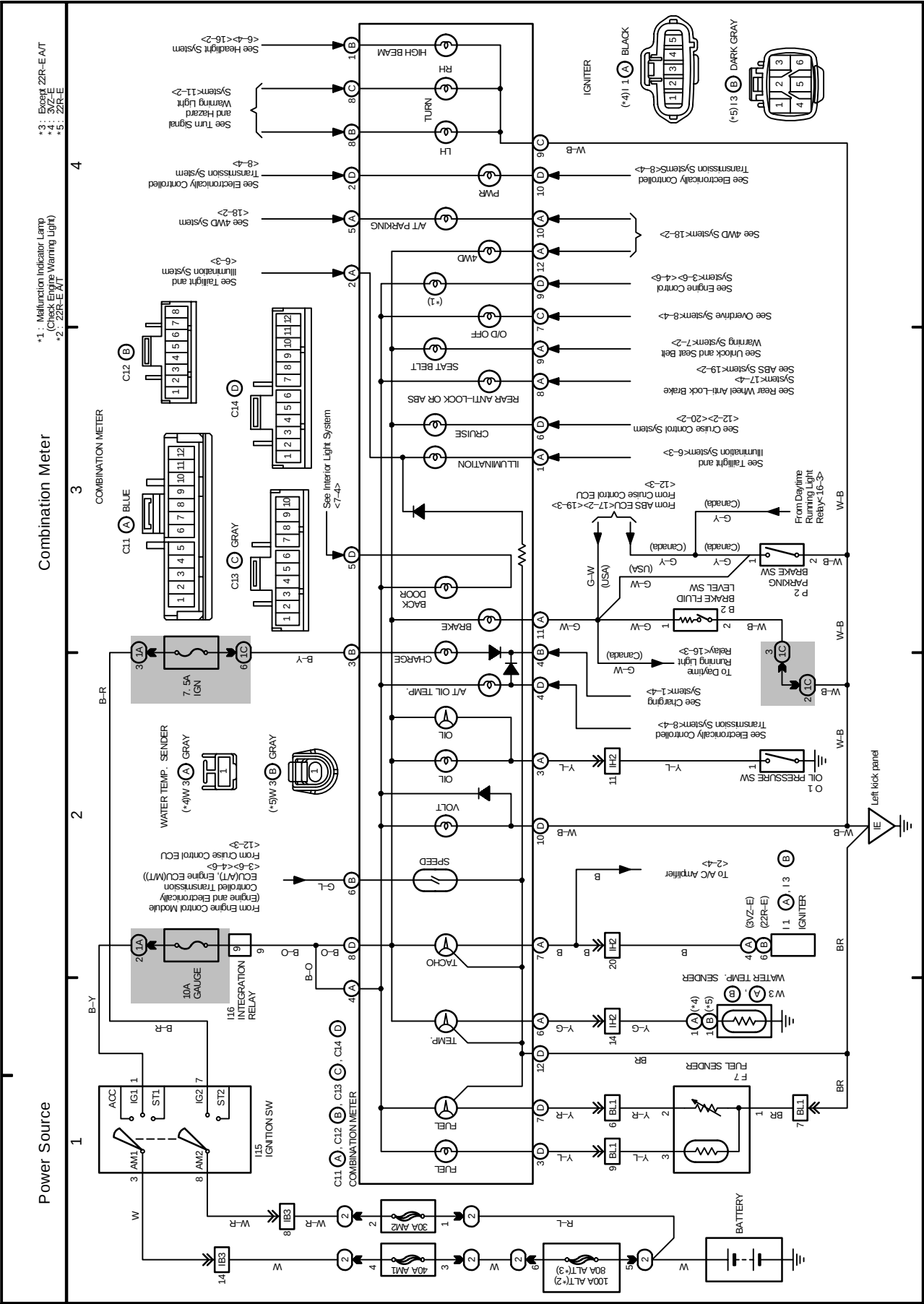
4 4RUNNER(Cont' d)

Engine Control(3VZ-E)

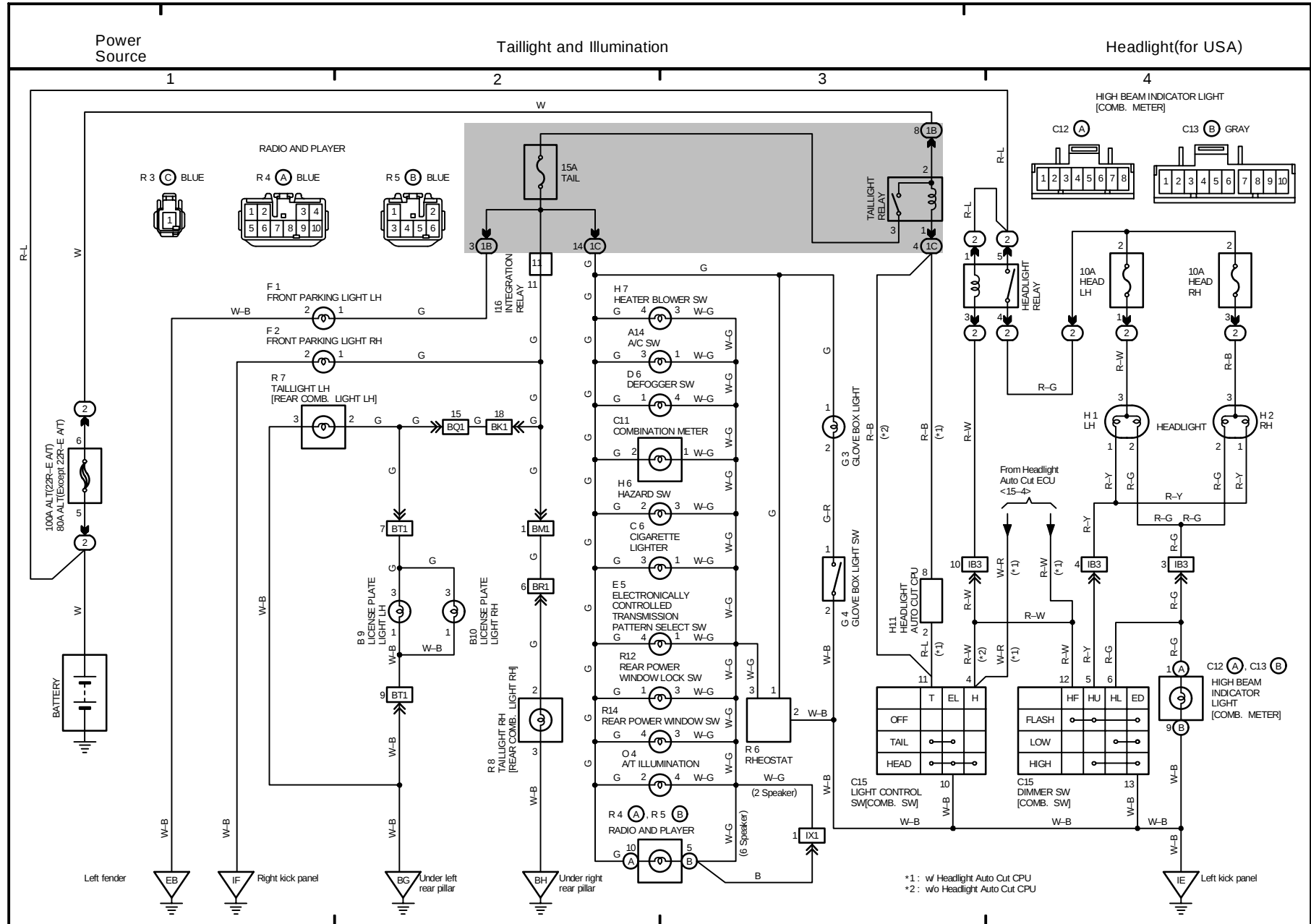


OVERALL ELECTRICAL WIRING DIAGRAM

5 4RUNNER

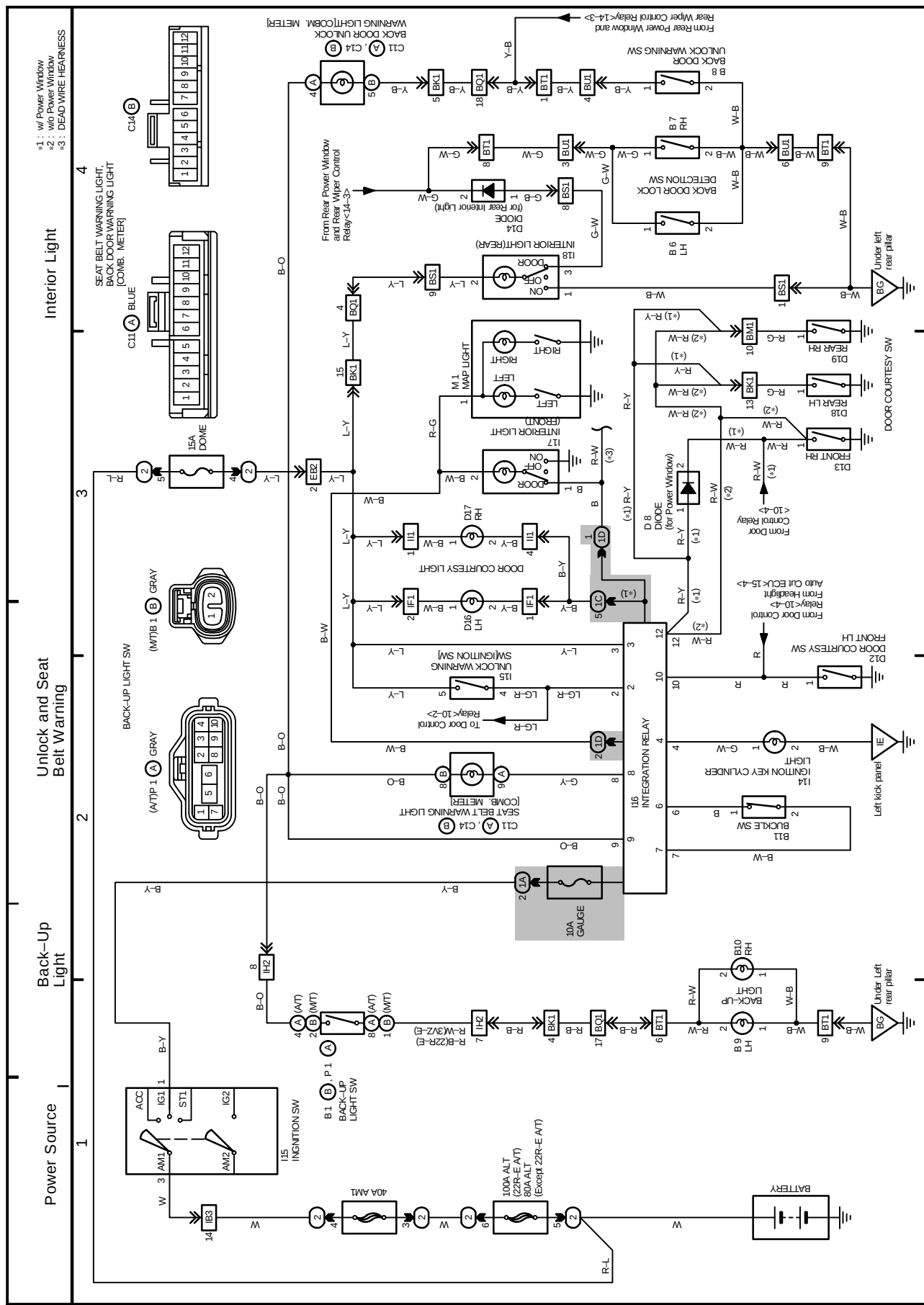


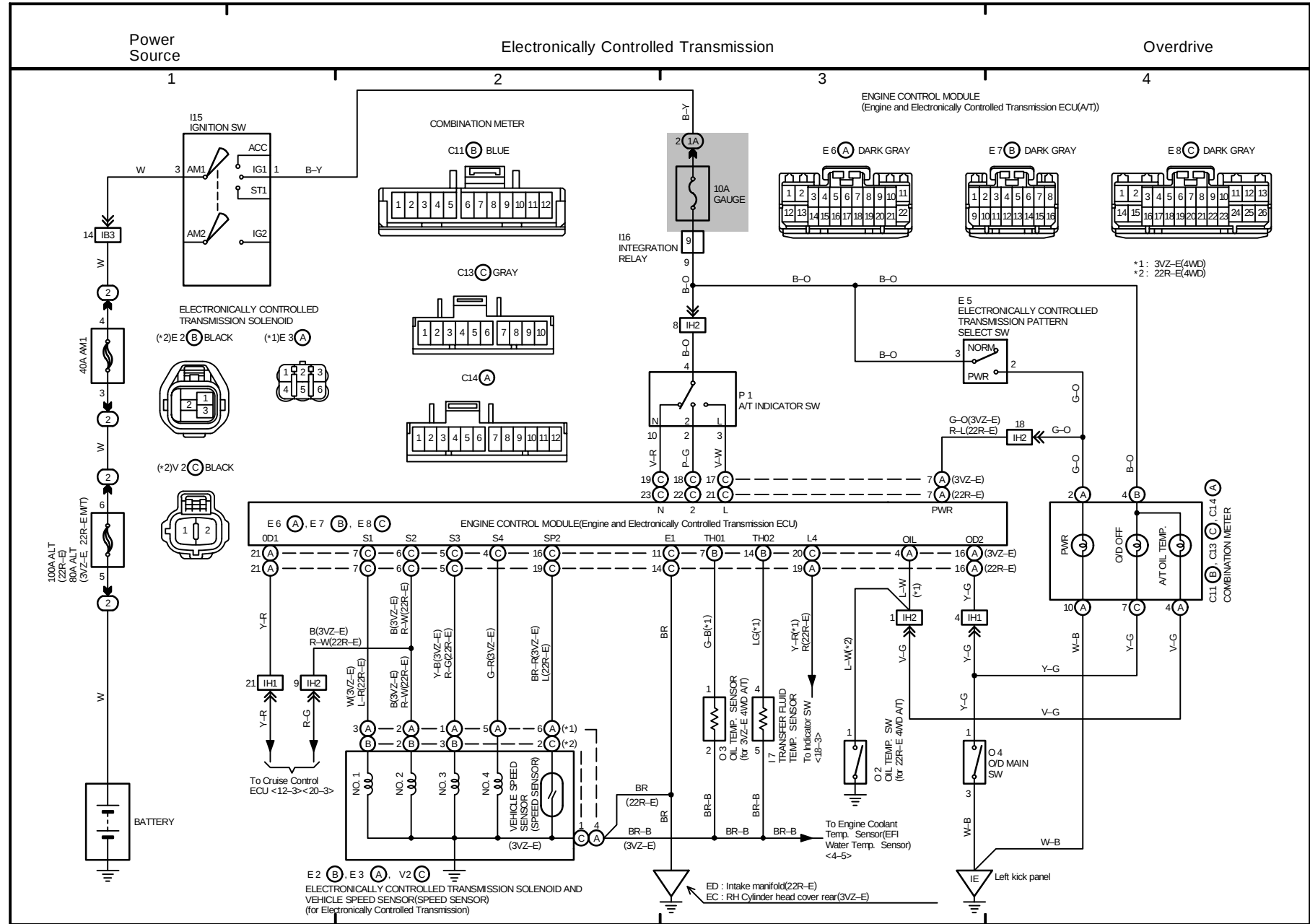
6 4RUNNER



OVERALL ELECTRICAL WIRING DIAGRAM

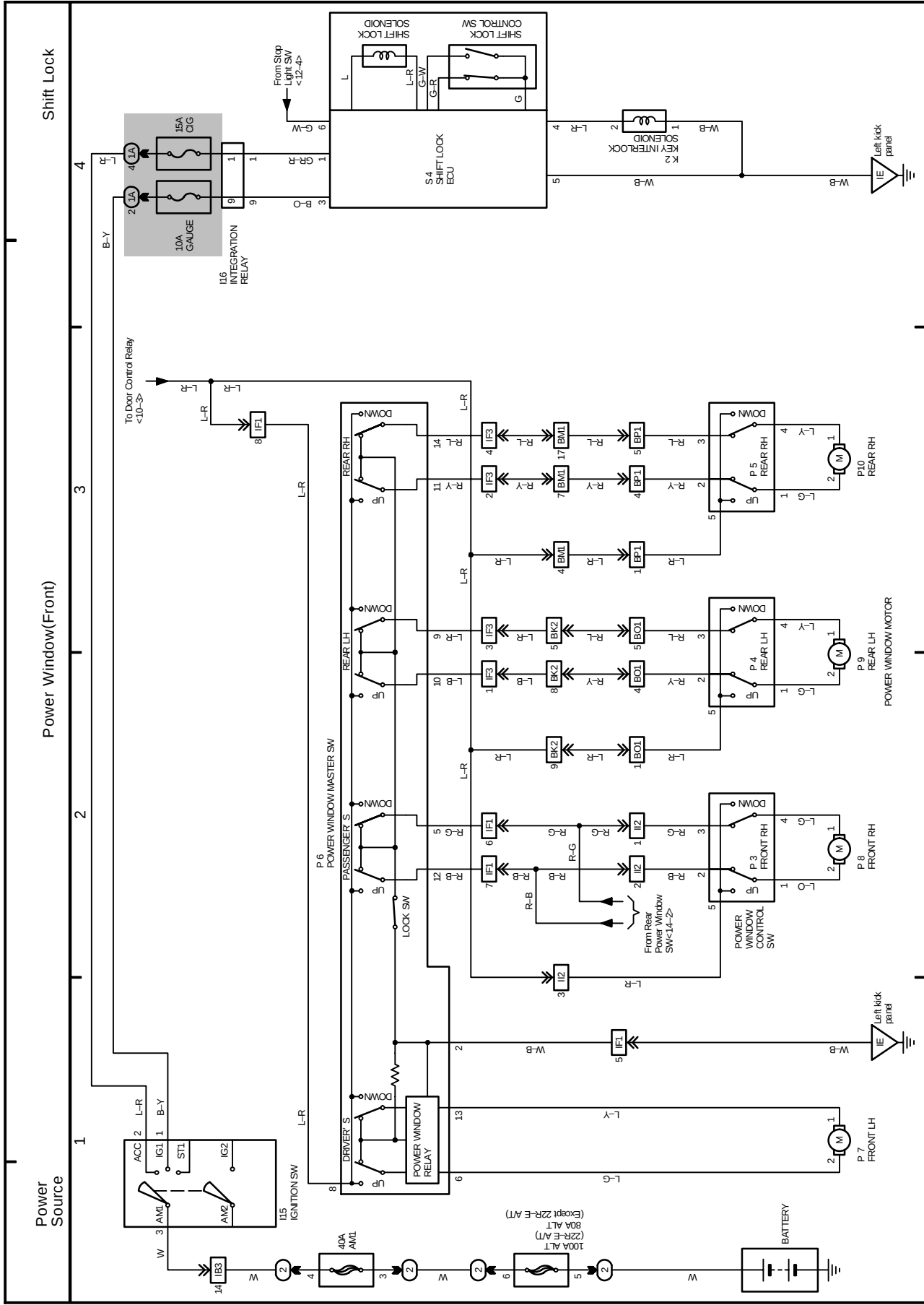
7 4RUNNER





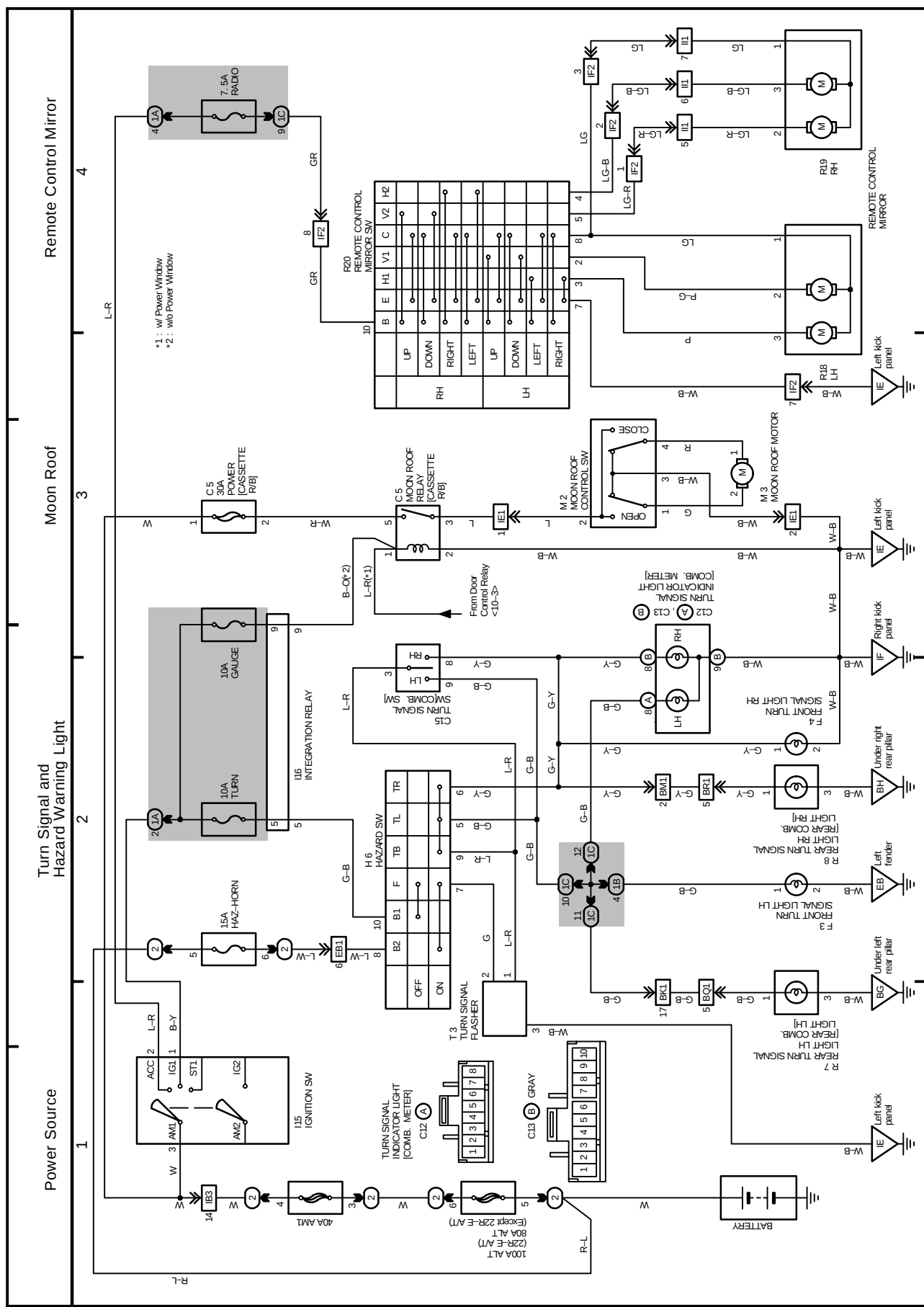
OVERALL ELECTRICAL WIRING DIAGRAM

9 4RUNNER



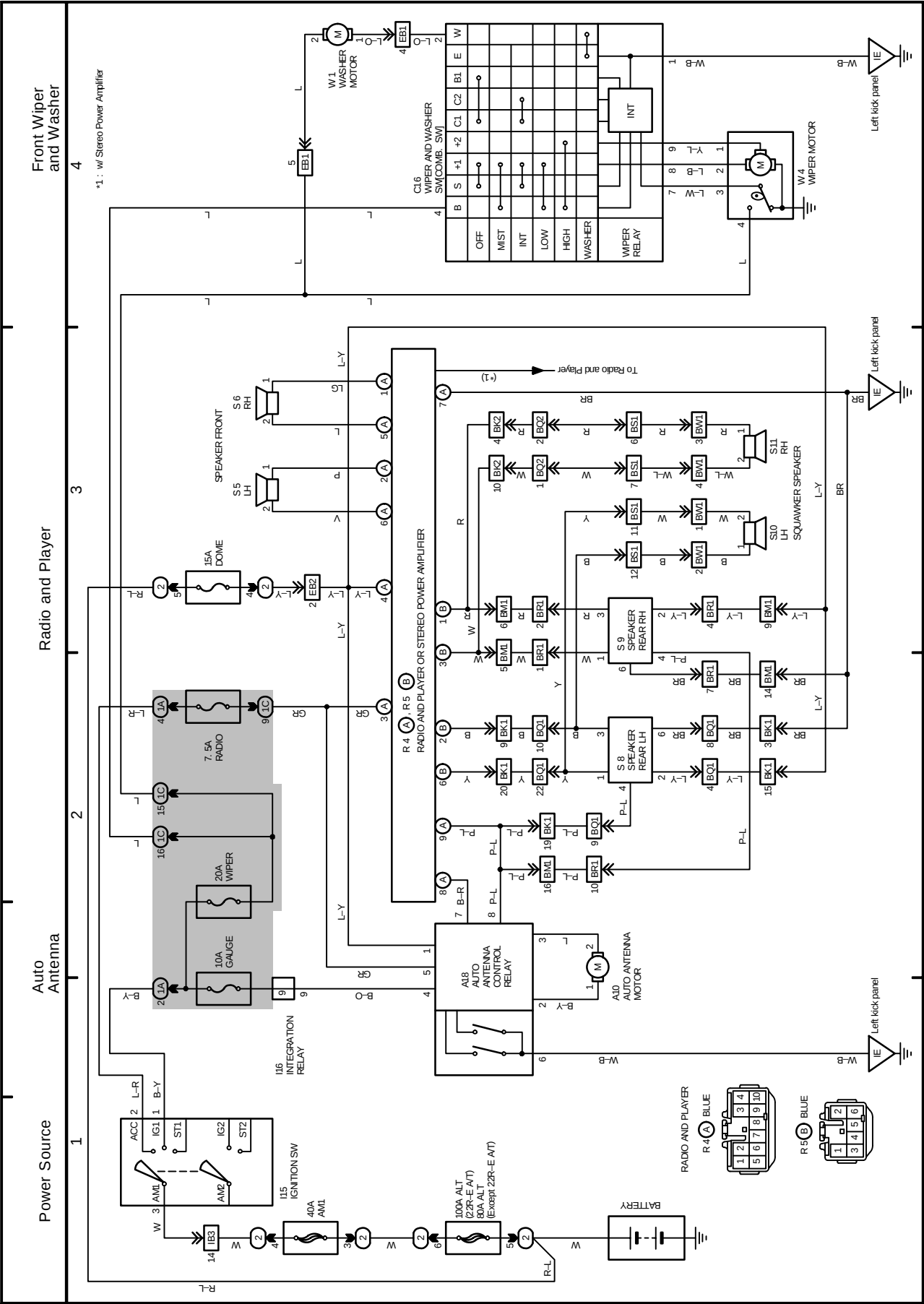
OVERALL ELECTRICAL WIRING DIAGRAM

11 4RUNNER

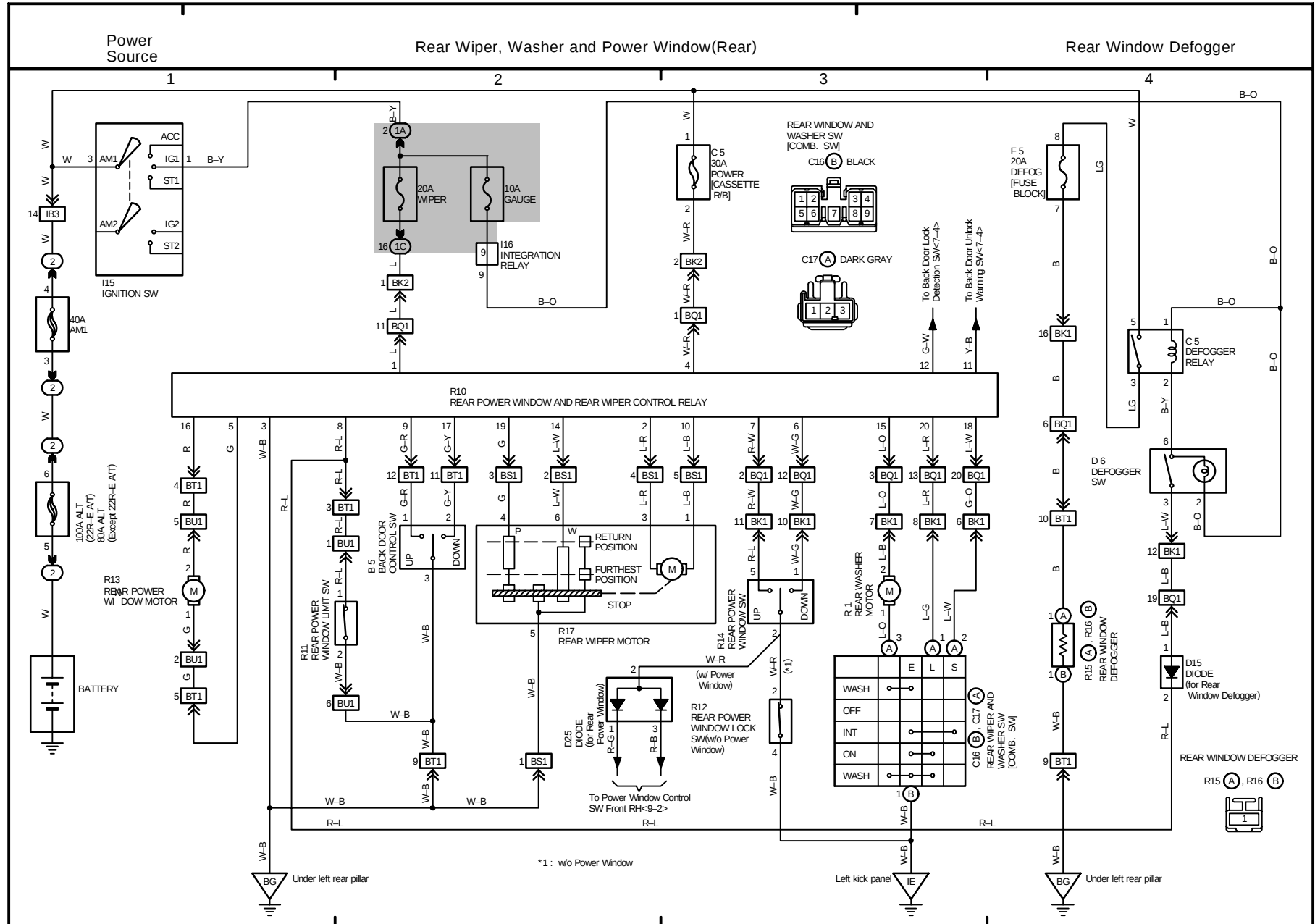


OVERALL ELECTRICAL WIRING DIAGRAM

13 4RUNNER

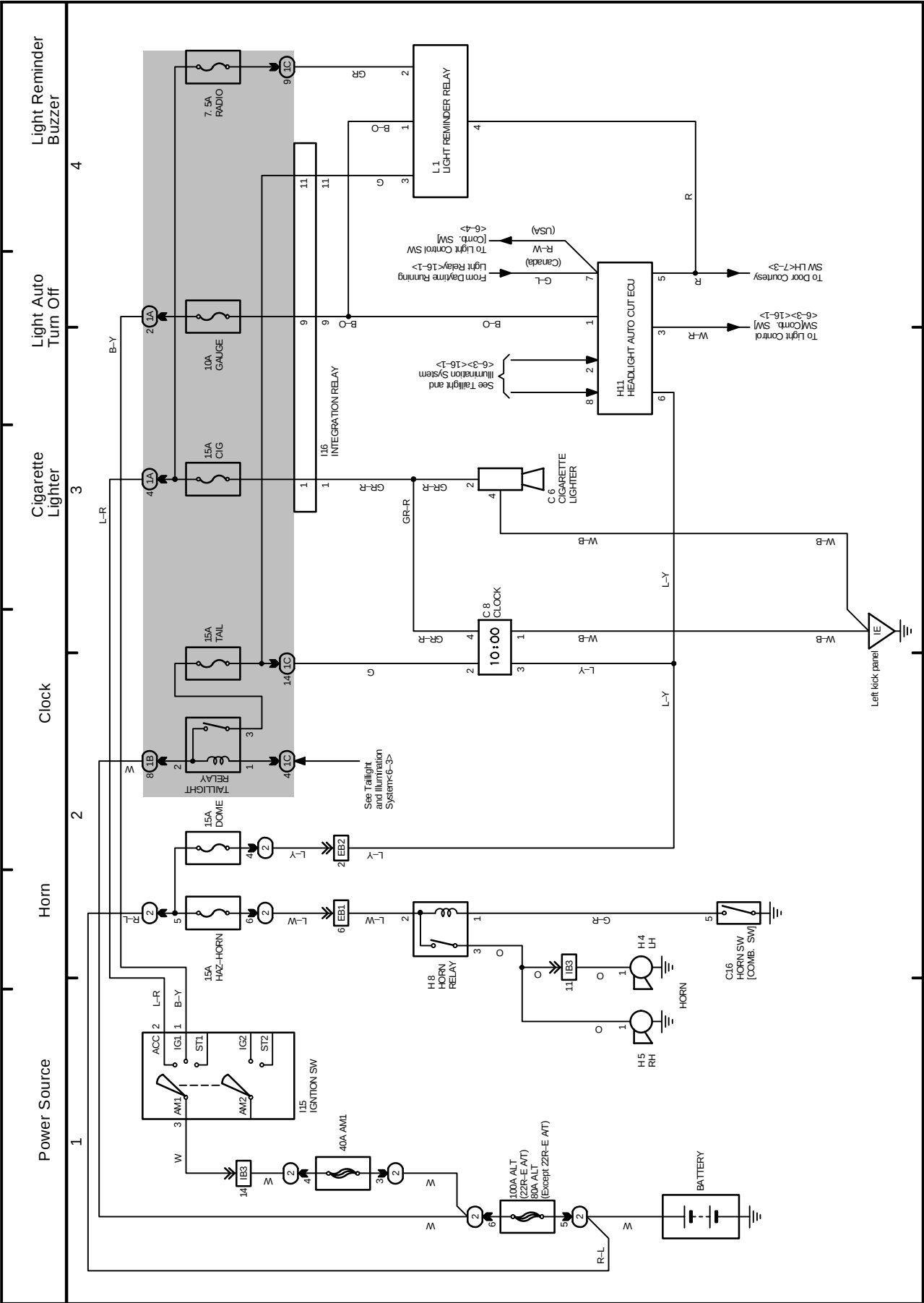


14 4RUNNER

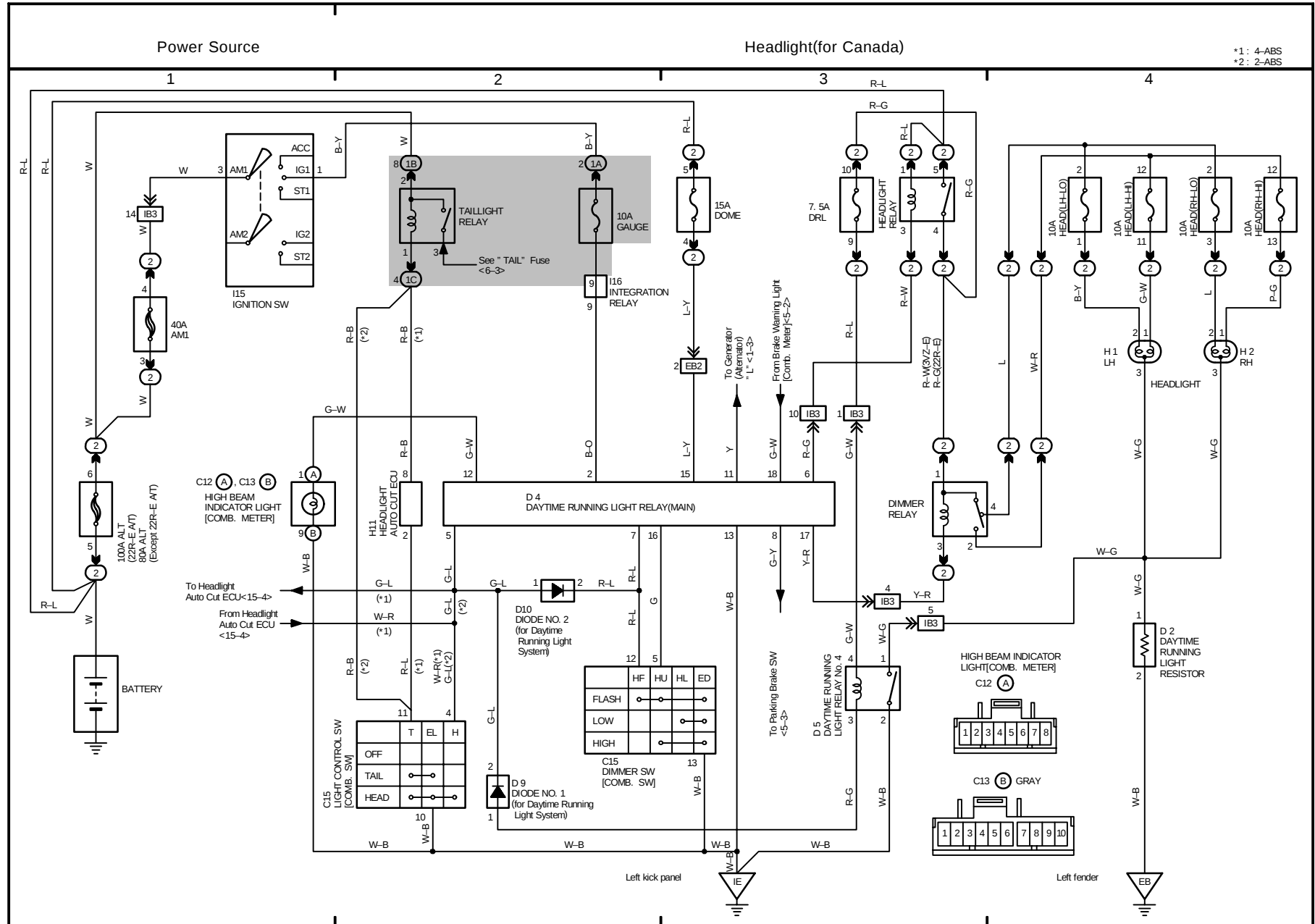


OVERALL ELECTRICAL WIRING DIAGRAM

15 4RUNNER

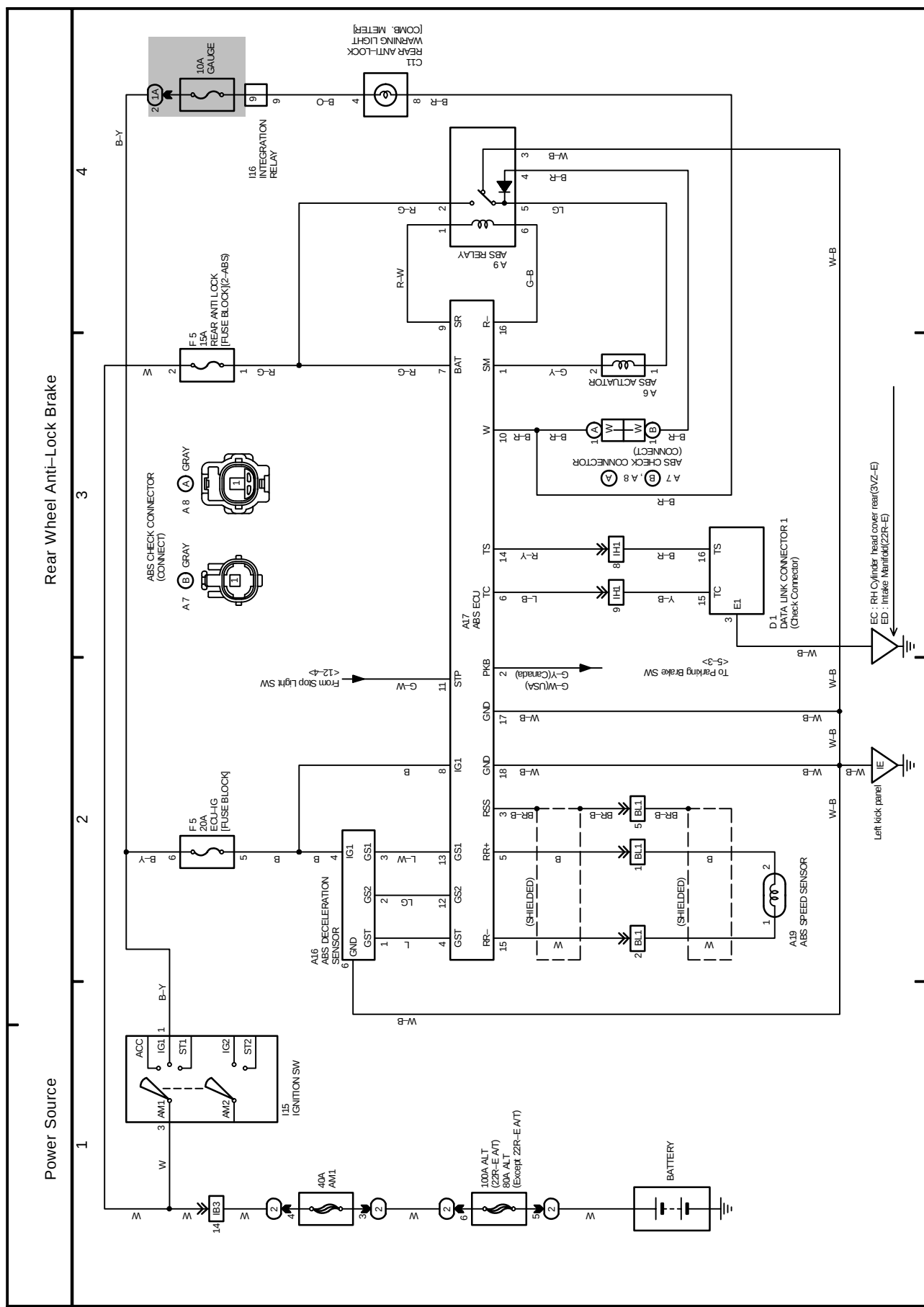


16 4RUNNER

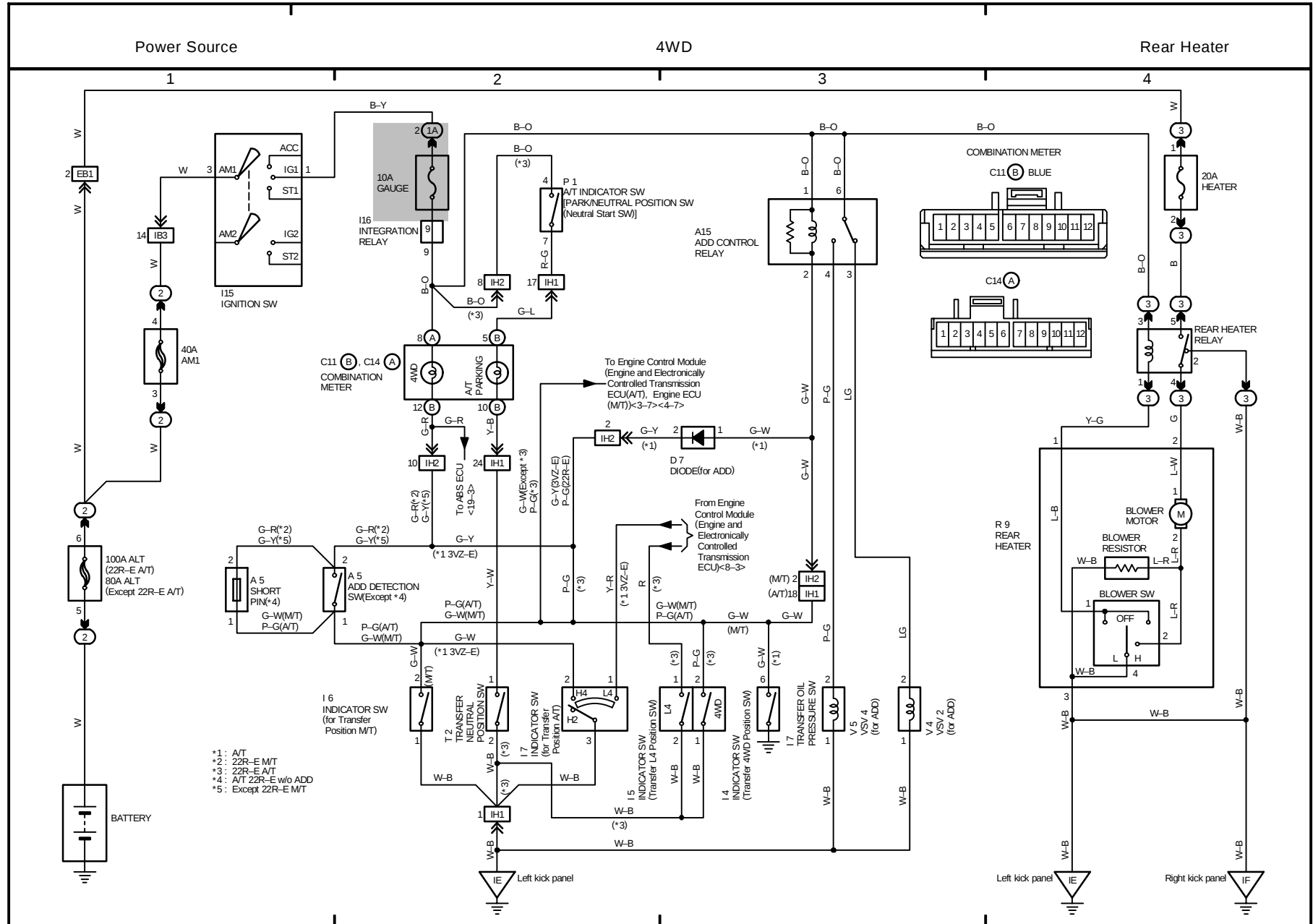


OVERALL ELECTRICAL WIRING DIAGRAM

17 4RUNNER



18 4RUNNER

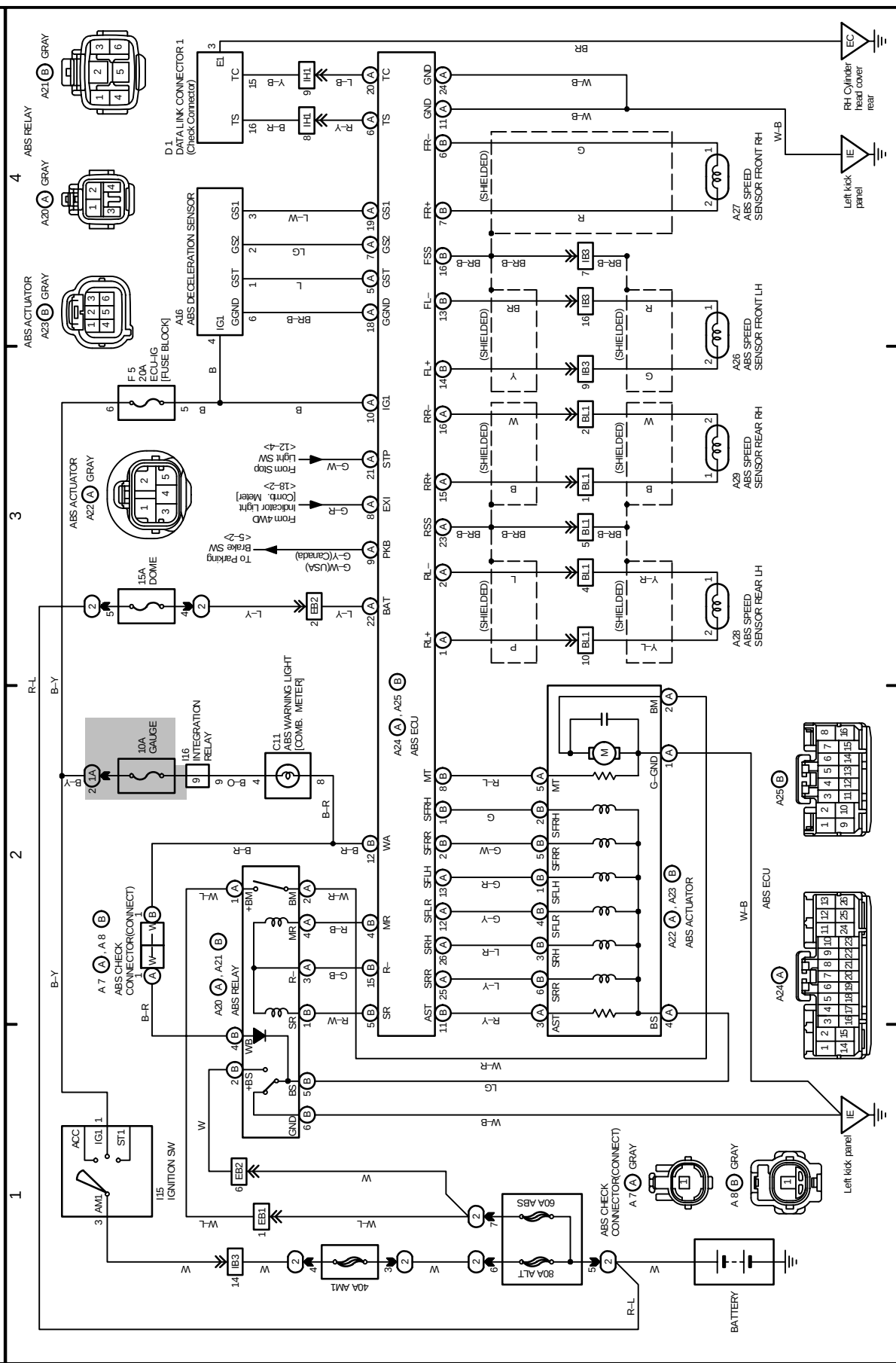


OVERALL ELECTRICAL WIRING DIAGRAM

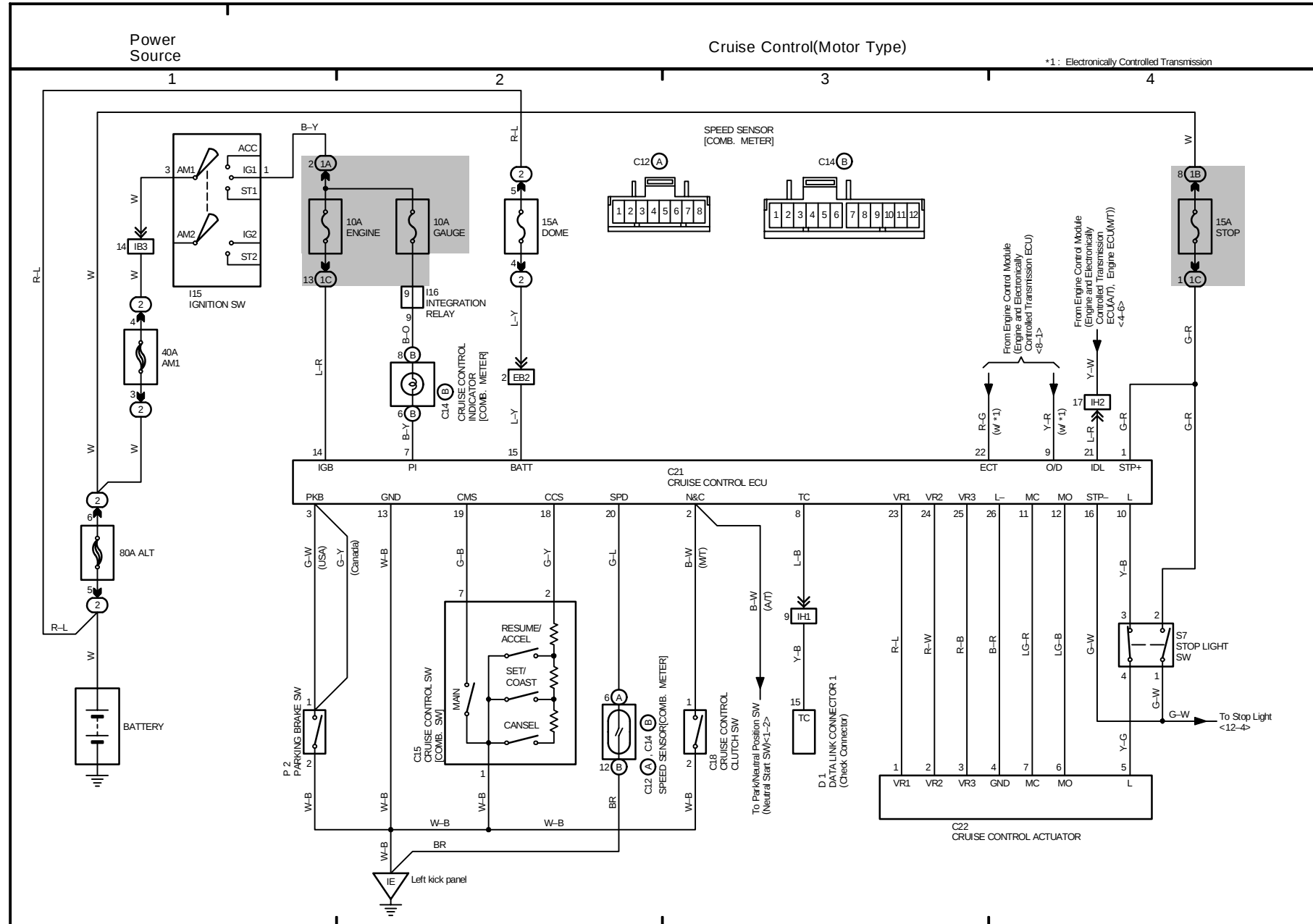
19 4RUNNER

Power Source

ABS (Anti-Lock Brake System)



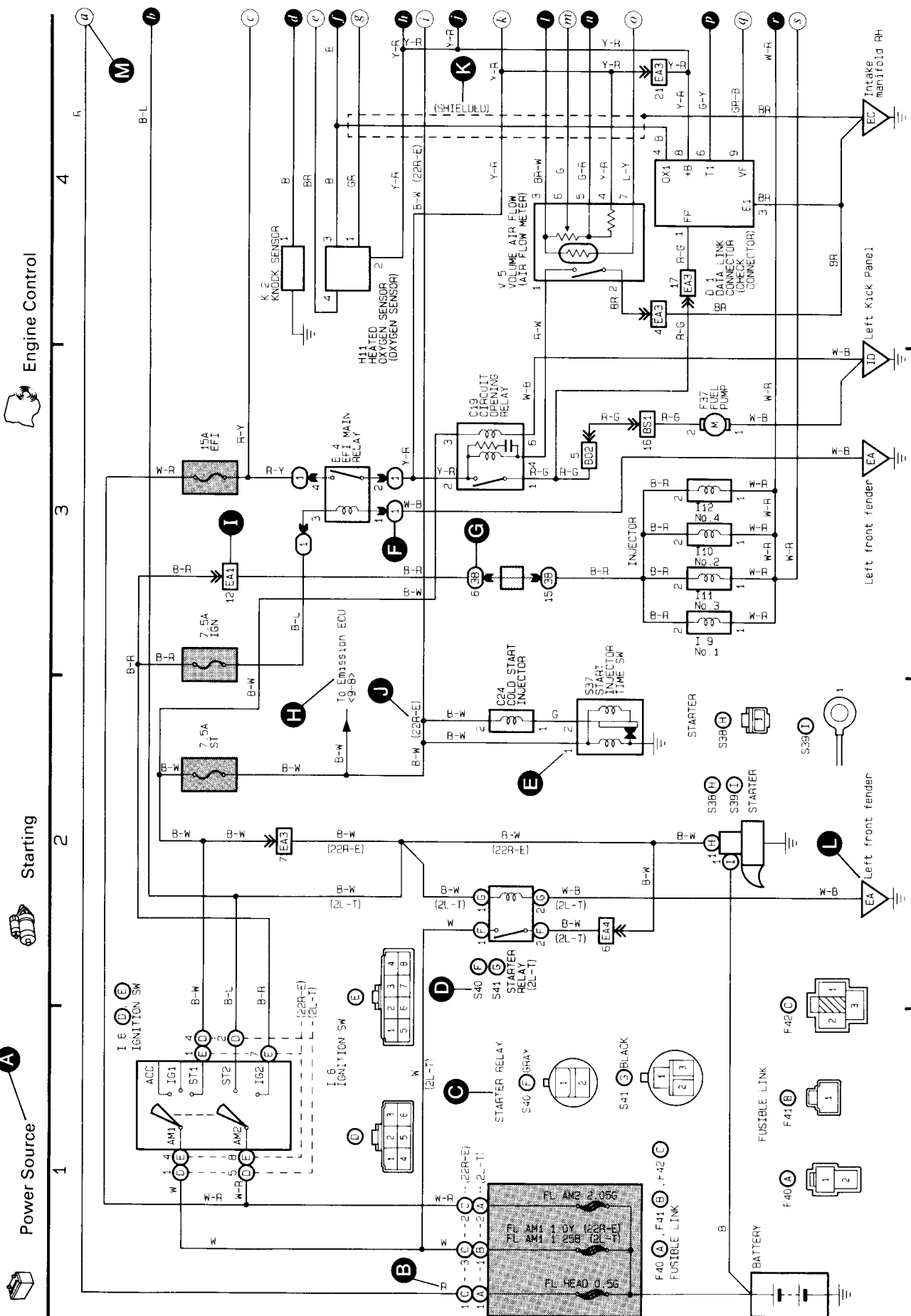
20 4RUNNER



OVERALL ELECTRICAL WIRING DIAGRAM

HOW TO USE THIS SECTION

* The system shown here is an EXAMPLE ONLY. It is different to the actual circuit shown in the wiring diagram section.



A: System Title

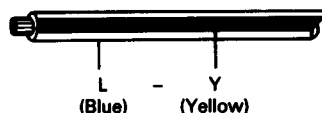
B: Indicates the wiring color.

Wire colors are indicated by an alphabetical code.

B = Black L = Blue R = Red
 BR = Brown LG = Light Green V = Violet
 G = Green O = Orange W = White
 GR = Gray P = Pink Y = Yellow

The first letter indicates the basic wire color and the second letter indicates the color of the stripe.

Example: L - Y

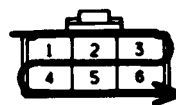


C: Indicates the connector to be connected to a part (the numeral indicates the pin No.)

D: The position of the parts is the same as shown in the wiring diagram and wire routing.

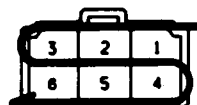
E: Indicates the pin number of the connector. The numbering system is different for female and male connectors.

Example: Numbered in order from upper left to lower right



Female

Numbered in order from upper right to lower left



Male

The numbering system for the overall wiring diagram is the same as above.

F: Indicates a Relay Block. No Shading is used and only the Relay Block No. is shown to distinguish it from the J/B.

Example: ① Indicates Relay Block No. 1.

G: Junction Block (The number in the circle is the J/B No. and connector code is shown beside it). Junction Blocks are shaded to clearly separate them from other parts (different junction blocks are shaded differently for further clarification.).

Example:

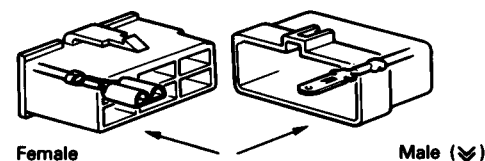


3B indicates that it is inside Junction Block No. 3.

H: Indicates related system.

I: Indicates the wiring harness and wiring harness connector. The wiring harness with male terminal is shown with arrows (↗).

Outside numerals are pin numbers.



J: () is used to indicate different wiring and connector, etc. when the vehicle model, engine type, or specification is different.

K: Indicates a shielded cable.



L: Indicates and located on ground point.

M: The same code occurring on the next page indicates that the wire harness is continuous.

SYSTEM INDEX

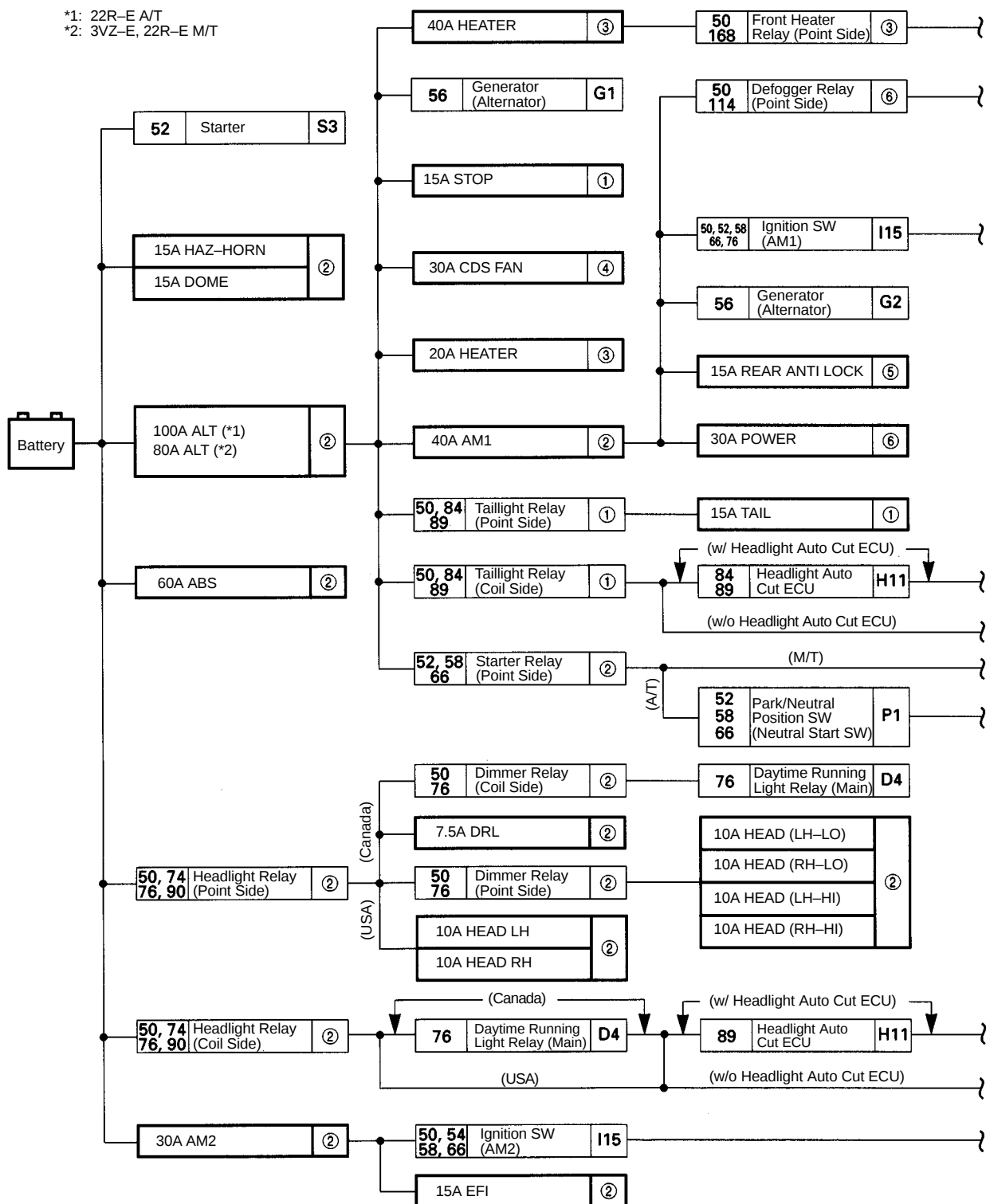
1995 Model (Location No. 1 to 20)

SYSTEMS	LOCATION	SYSTEMS	LOCATION	SYSTEMS	LOCATION
ABS (Anti-Lock Brake System)	19-2	Headlight	16-2 (for Canada) 6-4 (for USA)	Rear Wiper, Washer and Power Window (Rear)	14-2
Air Conditioning	2-3	Horn	15-2	Remote Control Mirror	11-4
Auto Antenna	13-2	Interior Light	7-3	Shift Lock	9-4
Back-Up Light	7-2	Light Auto Turn Off (w/ ABS)	15-4	Starting	1-2
Charging	1-4	Light Reminder Buzzer (w/o ABS)	15-4	Stop Light	12-4
Cigarette Lighter	15-3	Moon Roof	11-3	Taillight and Illumination	6-2
Clock	15-3	Overdrive	8-4	Turn Signal and Hazard Warning Light	11-2
Combination Meter	5-2	Power Source	1-20-1	Unlock and Seat Belt Warning	7-2
Cruise Control	20-2 (Motor Type) 12-2 (Vacuum Type)	Power Window (Front)	9-2	4WD	18-2
Door Lock Control	10-2	Radio and Player	13-2		
Electronically Controlled Transmission	8-2	Rear Heater	18-4		
Engine Control	3-2 (22R-E) 4-2 (3VZ-E)	Rear Wheel Anti-Lock Brake	17-2		
Front Wiper and Washer	13-4	Rear Window Defogger	14-4		

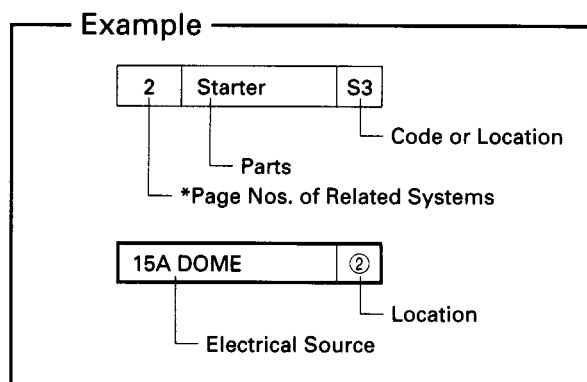
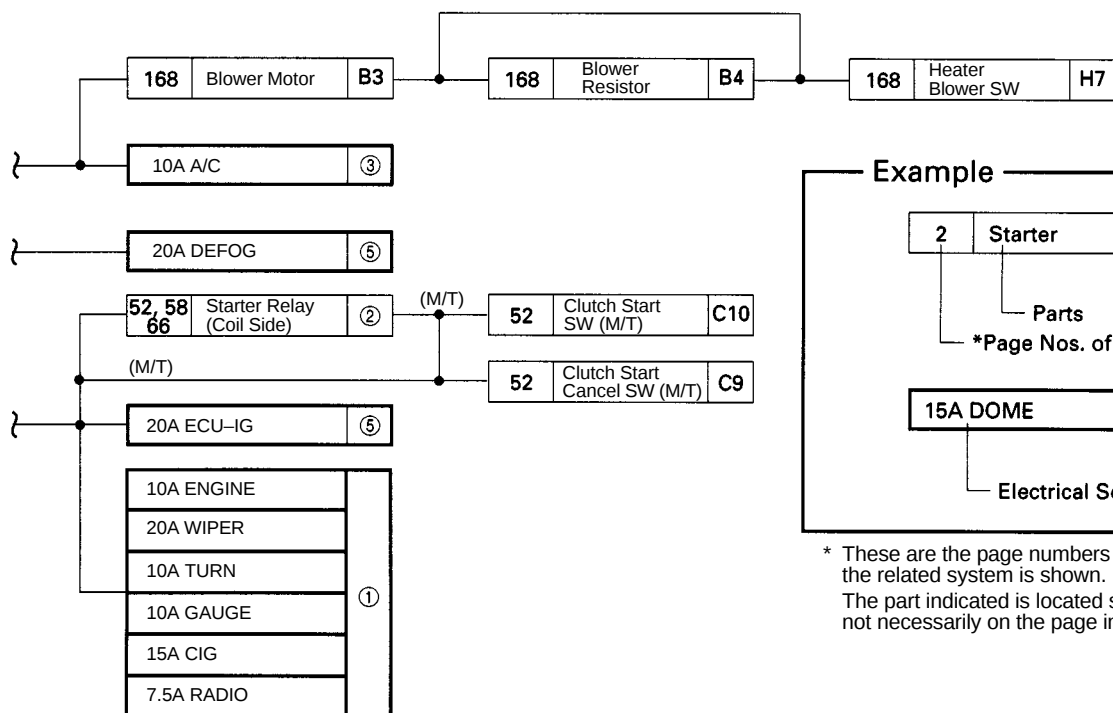
POWER SOURCE (Current Flow Chart)

The chart below shows the route by which current flows from the battery to each electrical source (Fusible Link, Circuit Breaker, Fuse, etc.) and other parts.

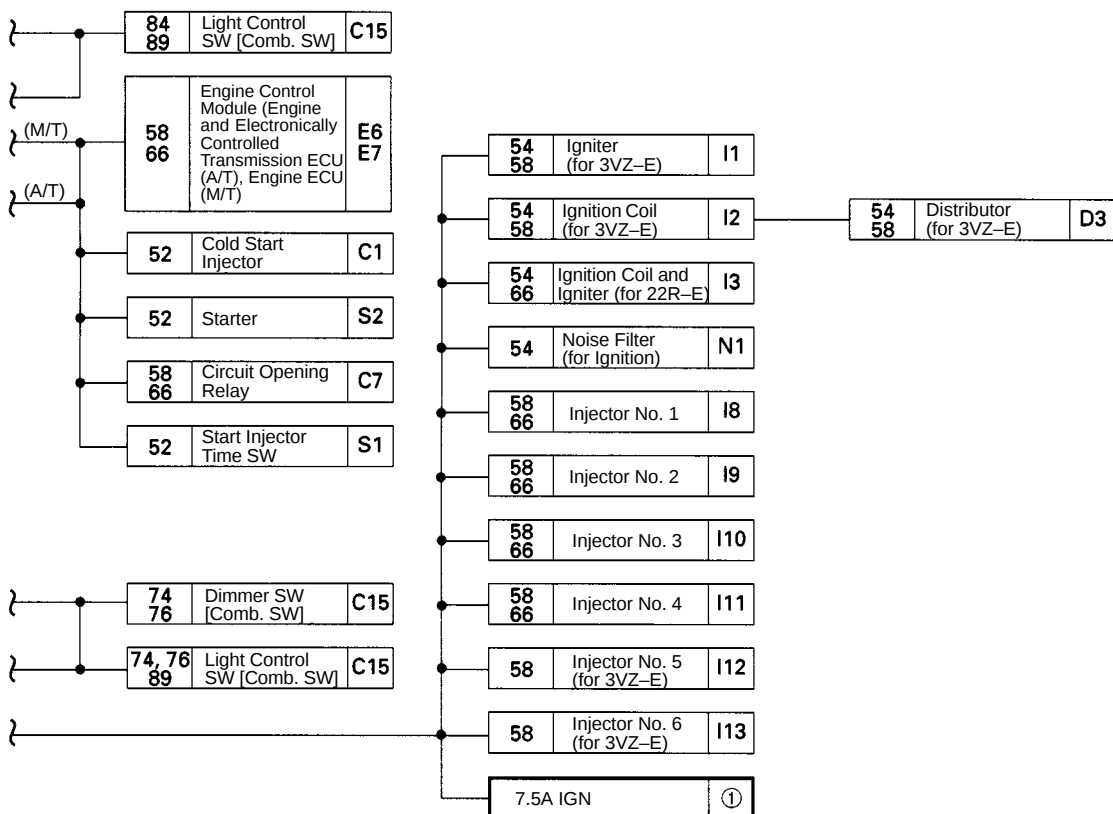
The next page and following pages show the parts to which each electrical source outputs current.



[LOCATION] (1) : J/B No. 1 (See page 20) (2) : R/B No. 2 (See page 22) (3) : R/B No. 3 (See page 23)
(6) : Cassette Relay Block (C5 see on page 20)



* These are the page numbers of the first page on which the related system is shown.
The part indicated is located somewhere in the system, not necessarily on the page indicated here.



(4) : R/B No. 4 (See page 23)

(5) : Fuse Block (F5 see on page 20)

POWER SOURCE (Current Flow Chart)

*1: for Canada

Location			*Page Nos. of Related Systems		Parts		Code or Location		CB or Fuse		168		84 168		158 160		148 152		148		116		152					80		162	
											168		84 168		158 160		148 152		148		116		152					80		162	
			168		84 168		158 160		148 152		148		116		152					80		162									
			168		84 168		158 160		148 152		148		116		152					80		162									
			A/C Condenser Fan Motor	ADD Indicator SW	ABS Actuator (Rear Wheel ABS)	ABS Check Connector	ABS Relay	Auto Antenna Motor	A/C Amplifier	A/C Cut Relay	A/C Thermistor and A/C Triple Pressure SW (A/C Dual and Single Pressure SW)	A/C SW	ADD Control Relay	ABS Deceleration Sensor	ABS ECU (Rear Wheel ABS)	Auto Antenna Control Relay	ABS Relay (4 Wheel ABS)	ABS Actuator (4 Wheel ABS)	ABS ECU (4 Wheel ABS)	Back-Up Light SW (M/T)	Brake Fluid Level SW										
			A1	A5	A6	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17	A18	A20	A21	A22	A24	A25	B1	B2								
①	10A	ENGINE																													
	20A	WIPER																													
	10A	TURN																													
	10A	GAUGE		●	●	●	●						●		●	●		●	●	●	●	●	●								
	15A	CIG																													
	7.5A	RADIO														●															
	7.5A	IGN																													
	15A	STOP													●				●												
	15A	TAIL										●																			
②	10A	HEAD (LH) (USA)																													
	10A	HEAD (RH) (USA)																													
	10A	HEAD (LH-LO) (*1)																													
	10A	HEAD (RH-LO) (*1)																													
	10A	HEAD (LH-HI) (*1)																													
	10A	HEAD (RH-HI) (*1)																													
	15A	HAZ-HORN																													
	15A	DOME						●								●			●												
	15A	EFI																													
	7.5A	DRL (*1)																													
	60A	ABS															●	●	●	●	●										
③	20A	HEATER							●	●	●	●																			
	10A	A/C																													
	40A	HEATER																													
④	30A	CDS-FAN	●																												
⑤	20A	DEFOG																													
	20A	ECU-IG												●	●				●												
	15A	REAR ANTI LOCK			●		●								●																
⑥	30A	POWER																													

* These are the page numbers of the first page on which the related system is shown.
The part indicated is located somewhere in the system, not necessarily on the page indicated here.

[LOCATION] (1) : J/B No. 1 (See page 20) (2) : R/B No. 2 (See page 22) (3) : R/B No. 3 (See page 23)
(6) : Cassette Relay Block (C5 see on page 20)

*1: for Canada

* These are the page numbers of the first page on which the related system is shown.
The part indicated is located somewhere in the system, not necessarily on the page indicated here.

42

*1: for Canada

* These are the page numbers of the first page on which the related system is shown.
The part indicated is located somewhere in the system, not necessarily on the page indicated here.

44

96	94	96	107	162	142	84 142	80 142 158	162	102											168	84 116 118	84	92	82	84	92	82	92	166
Interior Light (for Rear)	Light Reminder Relay	Map Light	Moon Roof Control SW	Moon Roof Motor	Oil Pressure SW	Oil Temp. SW (for 4WD A/T 22R-E)	O/D Main SW	Park/Neutral Position SW (Neutral Start SW) and Back-Up Light SW (A/T)	Parking Brake SW	Power Window Control SW Front RH	Power Window Control SW Front LH	Power Window Control SW Rear RH	Power Window Master SW and Door Lock Control SW	Power Window Motor Front LH	Power Window Motor Front RH	Power Window Motor Rear LH	Power Window Motor Rear RH	Resistor (for Condenser Fan)	Radio and Player	Rheostat	Rear Turn Signal Light LH [Rear Comb. Light LH]	Stop Light LH [Rear Comb. Light LH]	Taillight LH [Rear Comb. Light LH]	Rear Turn Signal Light RH [Rear Comb. Light RH]	Stop Light RH [Rear Comb. Light RH]	Taillight RH [Rear Comb. Light RH]	Rear Heater		
I18	L1	M1	M2	M3	O1	O2	O4	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	R2	R4	R6	R7			R8			R9		
	●				●	●	●	●	●												●			●			●		
	●																	●											
	●						●											●	●			●		●		●			
	●	●																			●			●					
																		●									●		
			●	●						●	●	●	●	●	●	●	●												

(4) : R/B No. 4 (See page23)

(5) : Fuse Block (F5 see on page20)

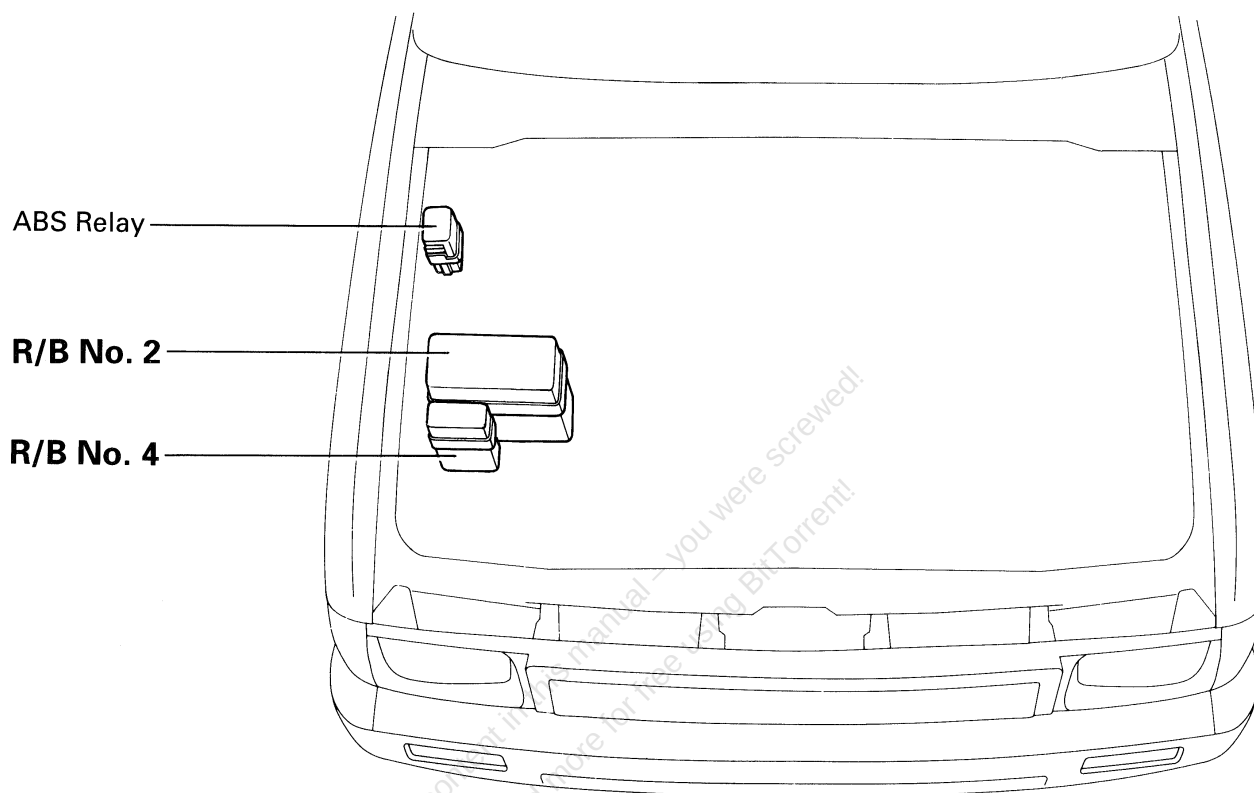
*1: for Canada

* These are the page numbers of the first page on which the related system is shown.
The part indicated is located somewhere in the system, not necessarily on the page indicated here.

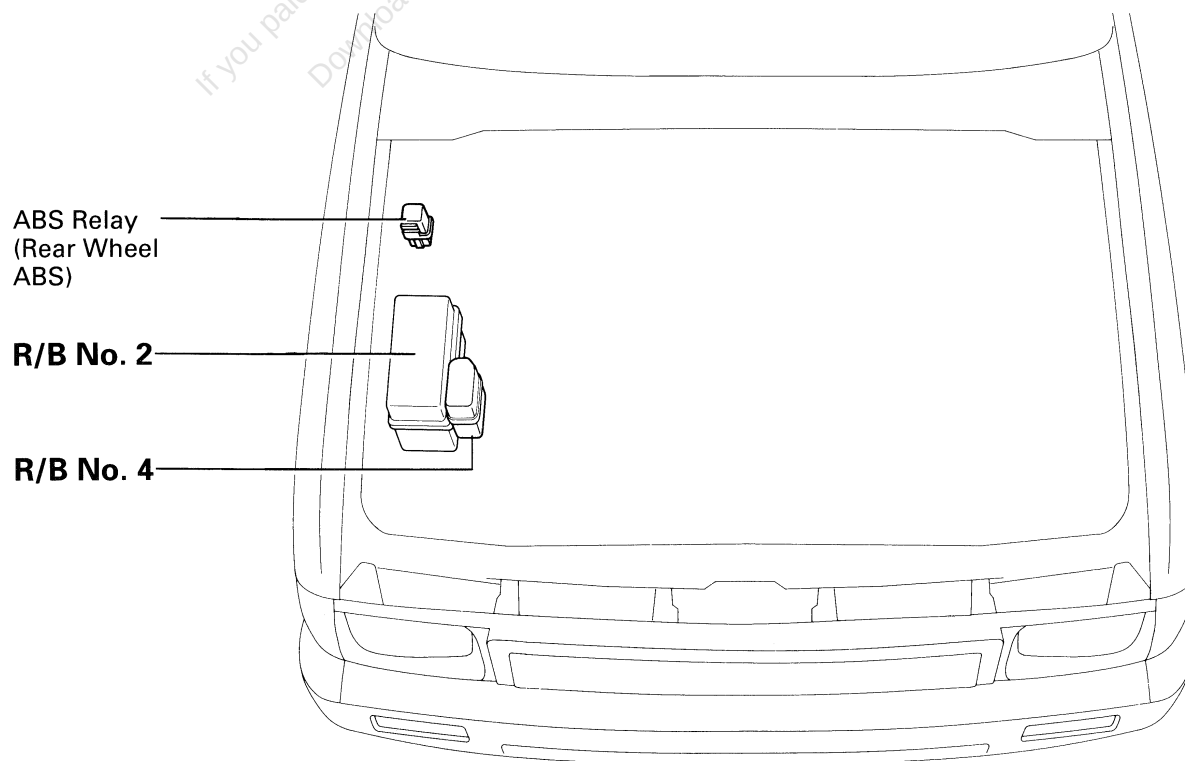
46

RELAY LOCATIONS

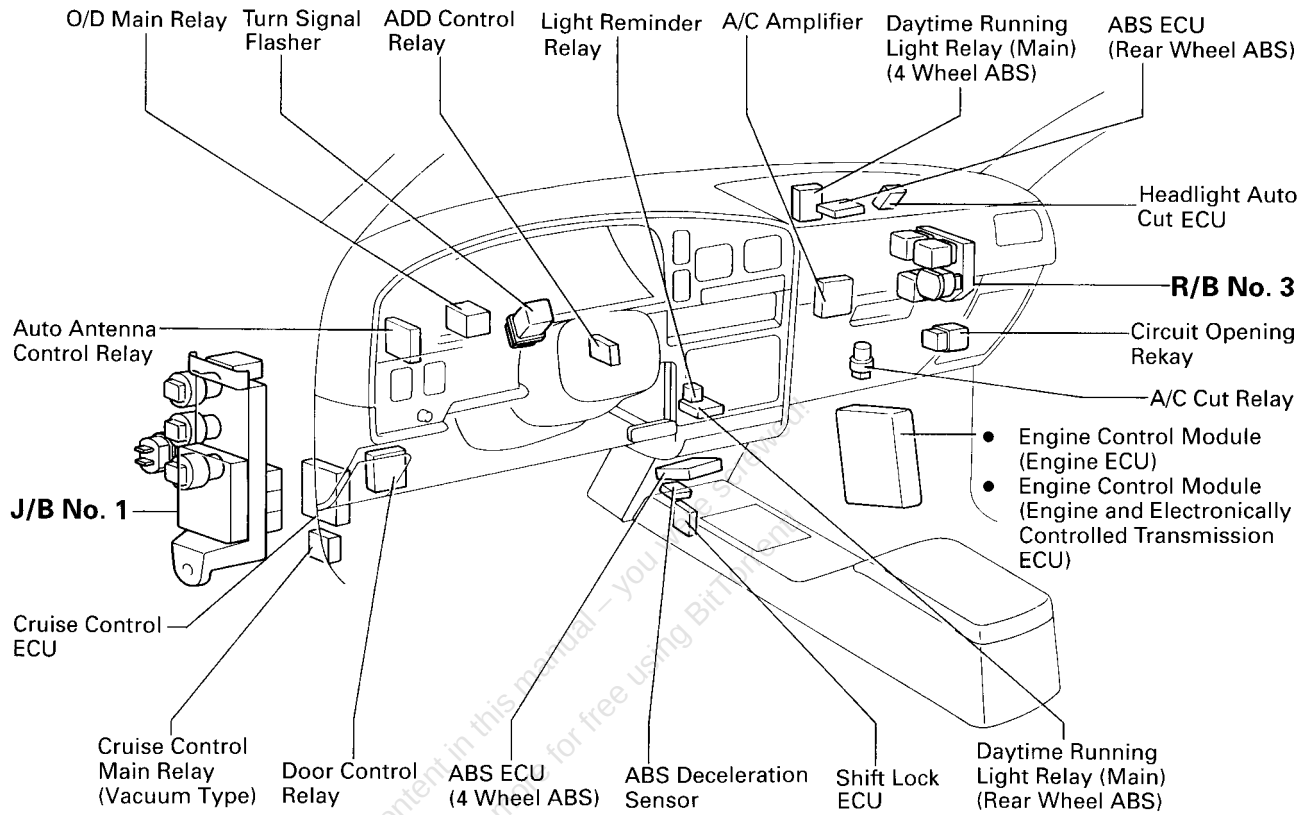
[Engine Compartment] (3VZ-E)



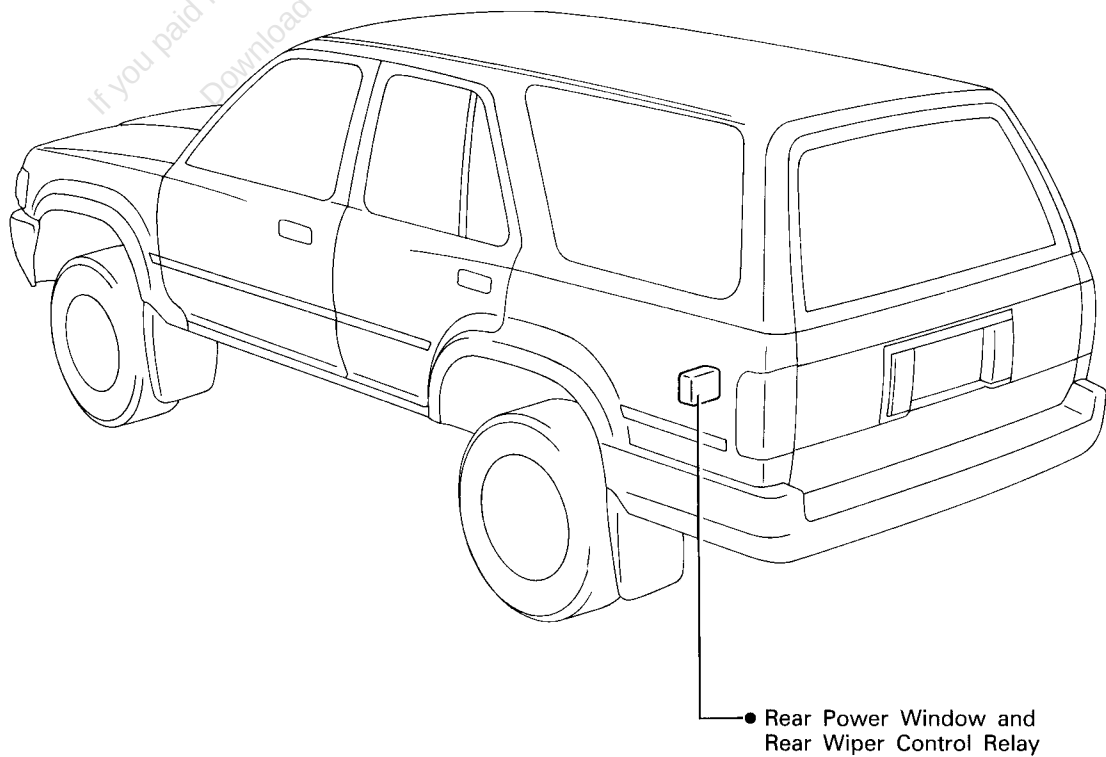
(22R-E)



[Instrument Panel]

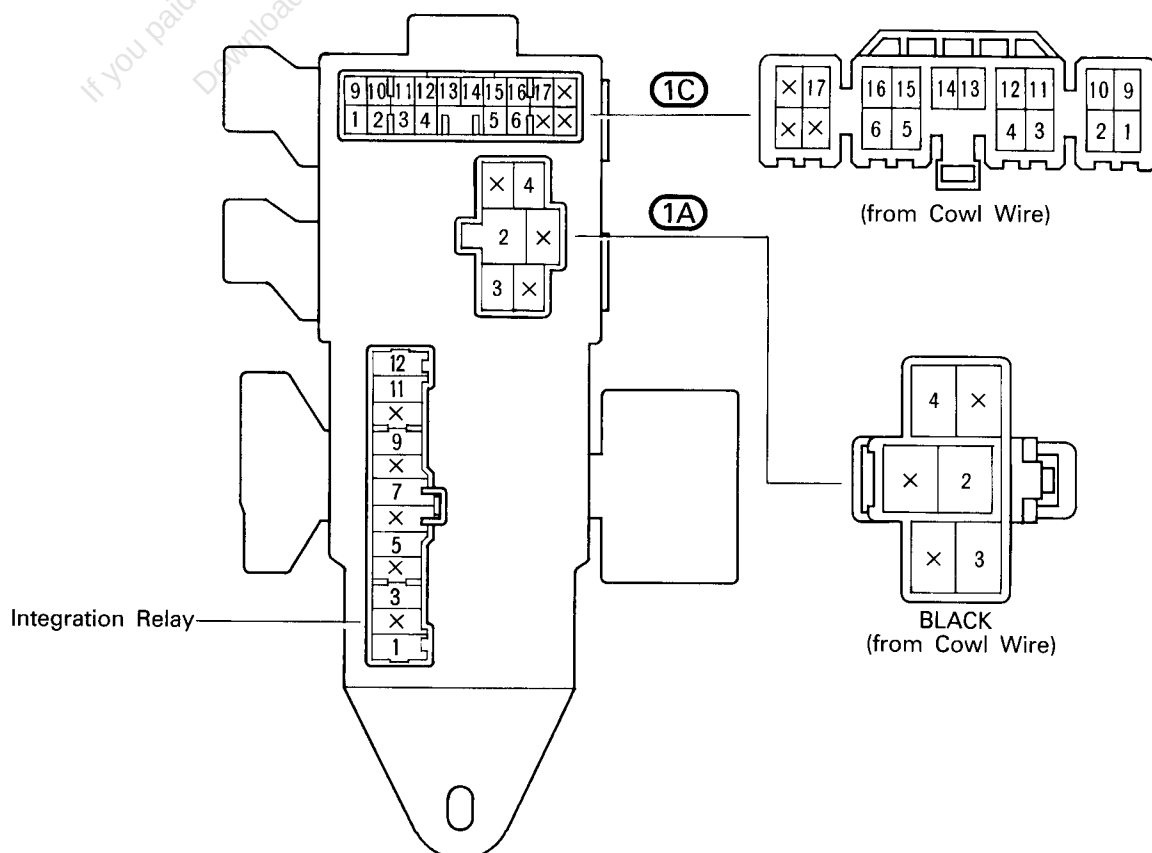
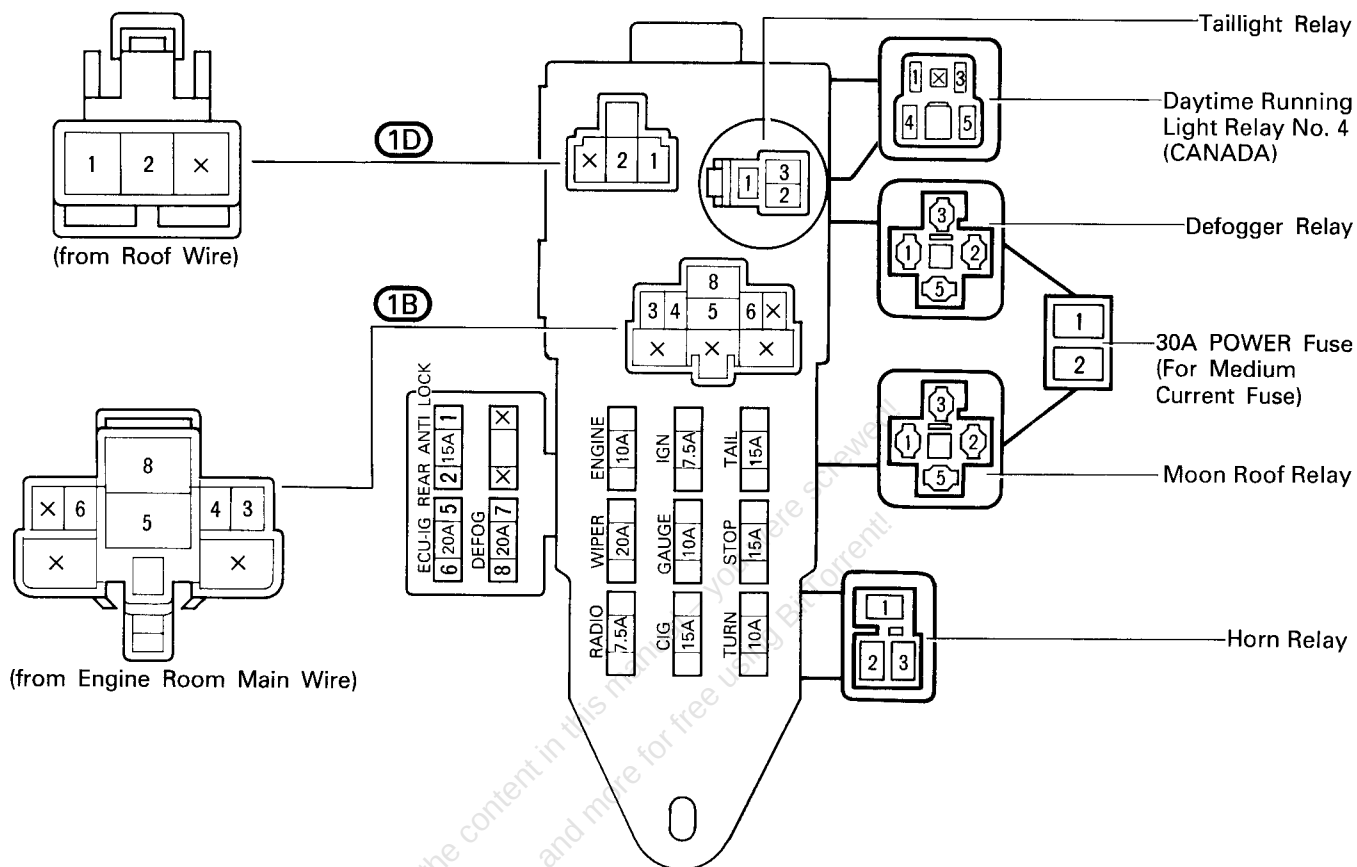


[Body]

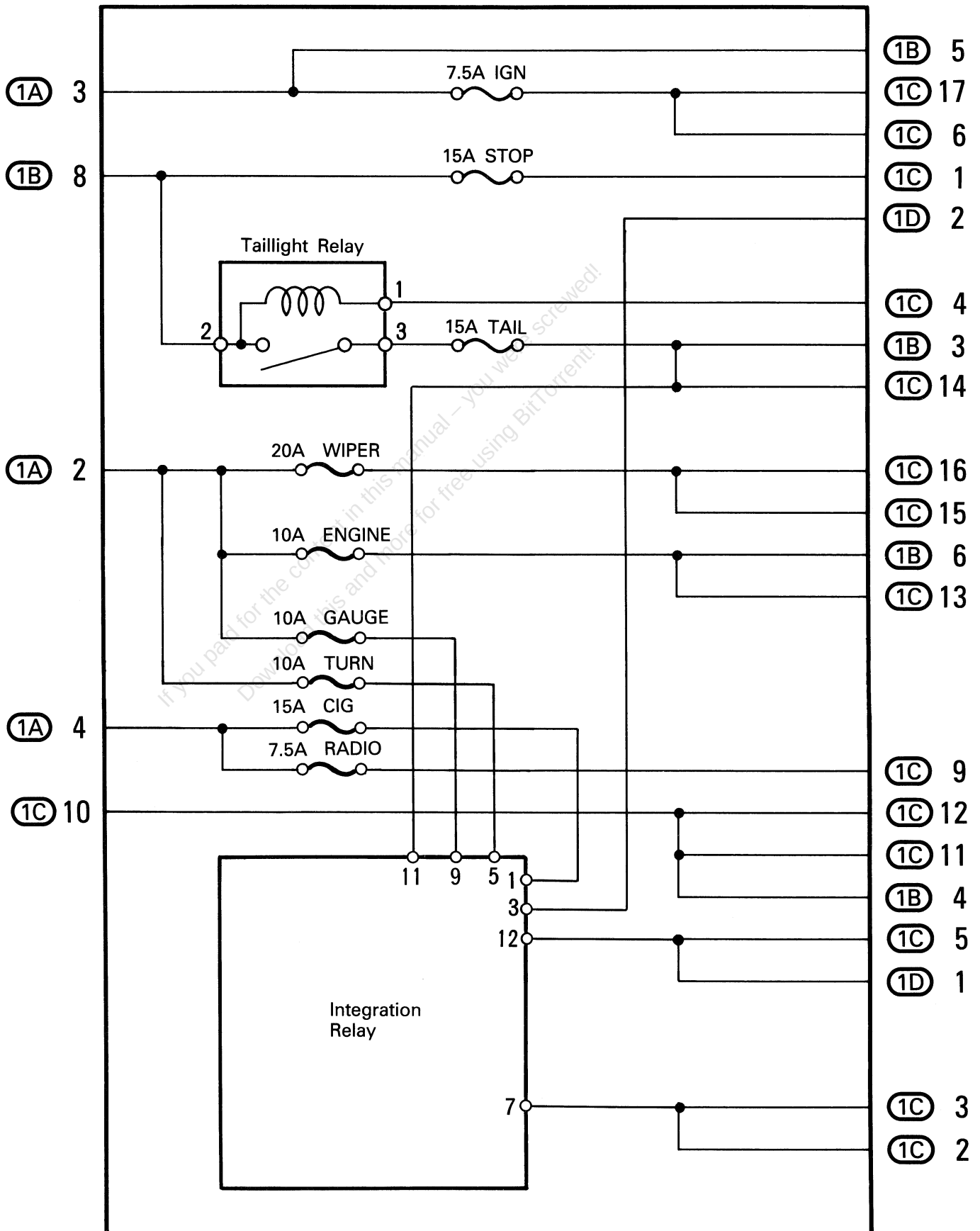


RELAY LOCATIONS

○ : J/B No. 1 Left Kick Panel (See Page 19)



[J/B No. 1 Inner Circuit]



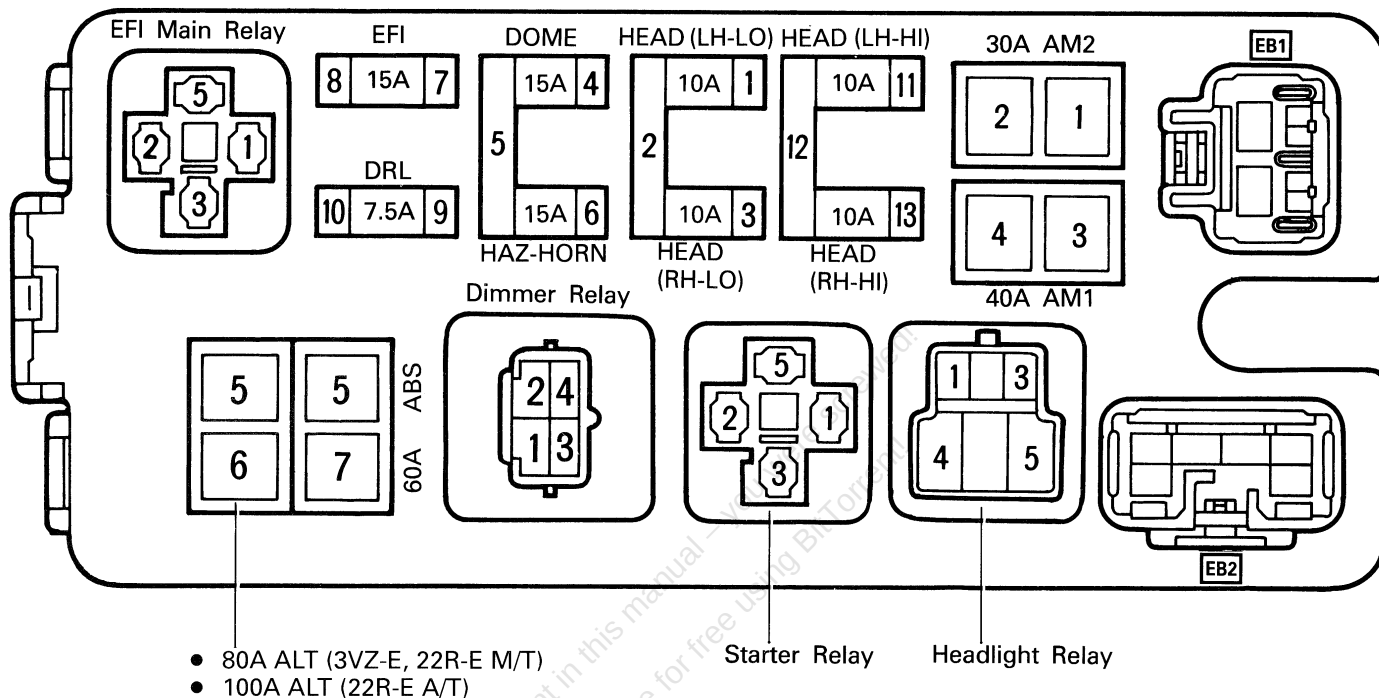
RELAY LOCATIONS

② : R/B No. 2

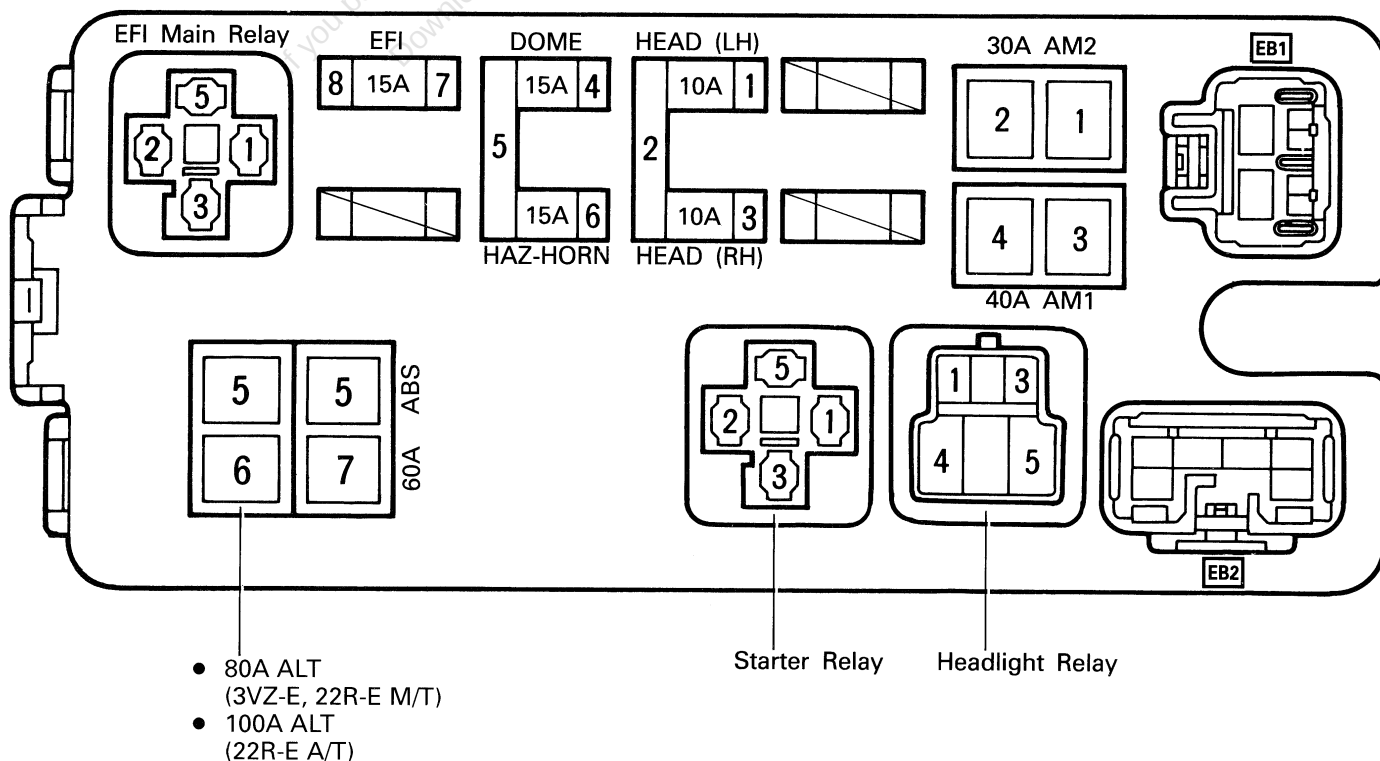
Engine Compartment Right

(See Page 18)

(for USA)

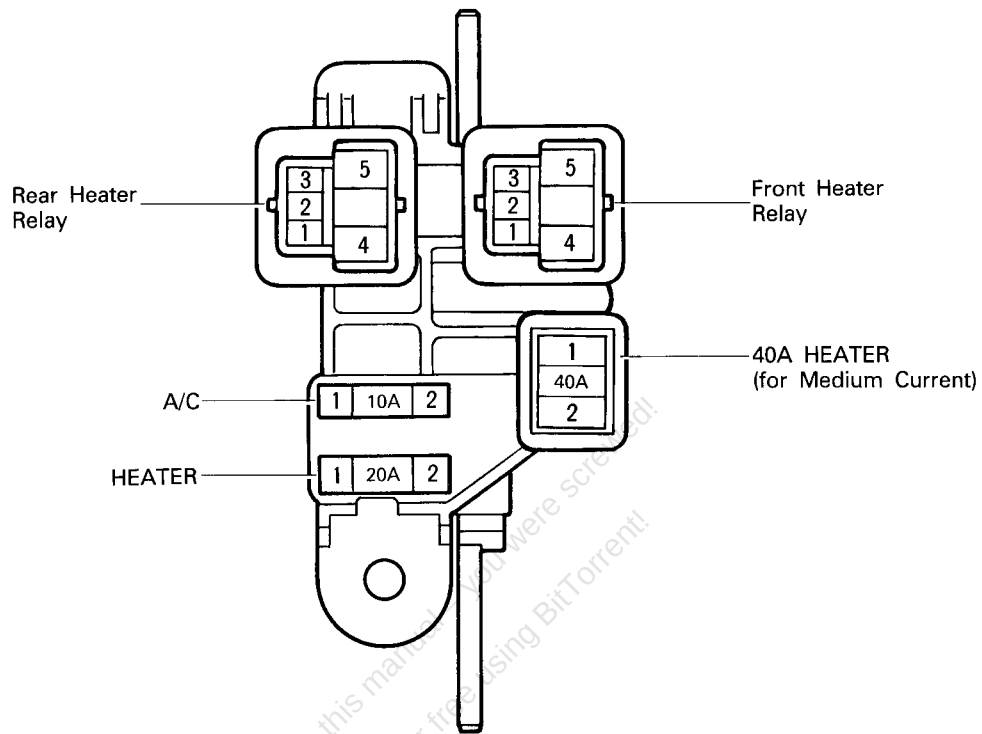


(for CANADA)



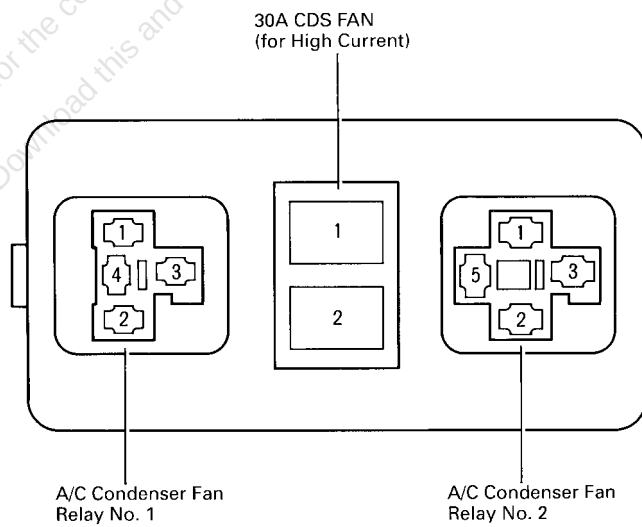
③ : R/B No. 3

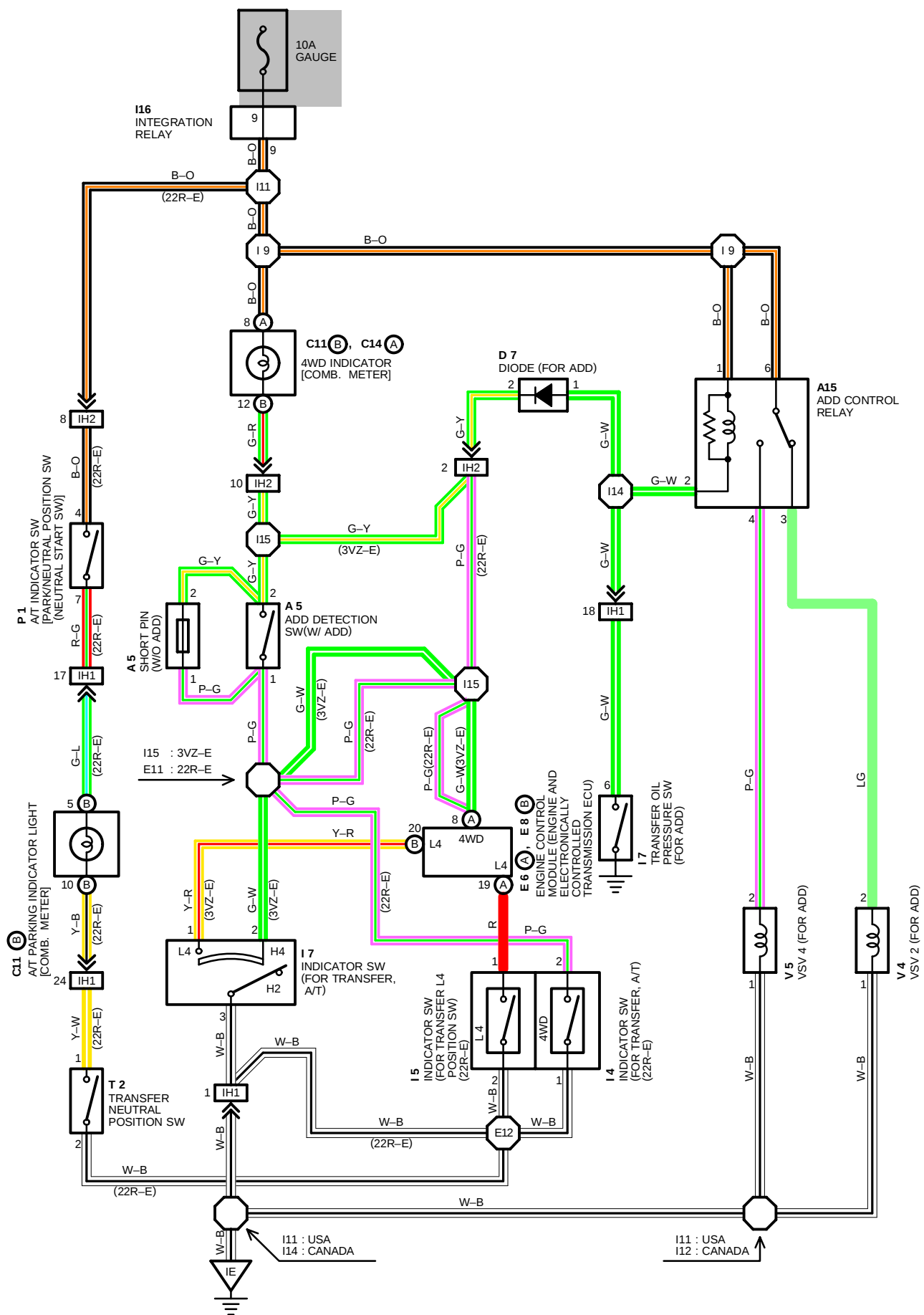
Right Kick Panel (See Page 19)



④ : R/B No. 4

Beside R/B No. 2 (See Page 18)





SERVICE HINTS

A15 ADD CONTROL RELAY

3-6 : CLOSED WITH IGNITION SW AT **OFF** POSITION OR IGNITION SW ON AND INDICATOR SW **H2** POSITION

4-6 : CLOSED WITH IGNITION SW AT **ON** POSITION AND INDICATOR SW **H4** POSITION

○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
A 5	24 (3VZ-E)	E 6	A	28	P 1
	26 (22R-E)	E 8	B	28	T 2
A 15	28	I 4	27 (22R-E)	V 4	25 (3VZ-E)
C11	B	I 5	27 (22R-E)		27 (22R-E)
C14	A	I 7	25 (3VZ-E)	V 5	25 (3VZ-E)
D 7	28	I16	28		27 (22R-E)

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
IH1	34	ENGINE WIRE AND COWL WIRE (RIGHT KICK PANEL)
IH2		

▽ : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
IE	34	LEFT KICK PANEL
IF	34	RIGHT KICK PANEL

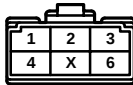
○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
E11	32 (22R-E)	ENGINE WIRE	I12	34	COWL WIRE
E12	32 (22R-E)		I14		
I 9	34	COWL WIRE	I15	34	ENGINE WIRE
I11					

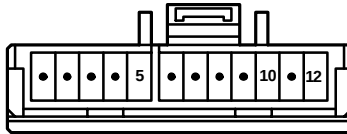
A 5 DARK GRAY



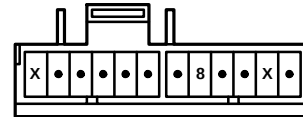
A15



C11 (B) BLUE



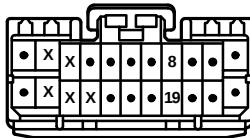
C14 (A)



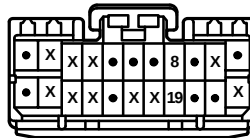
D 7 BLACK



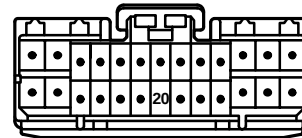
(3VZ-E) E 6 (A) DARK GRAY



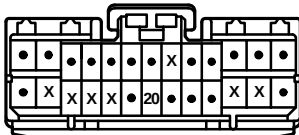
(22R-E) E 6 (A) DARK GRAY



(3VZ-E) E 8 (B) DARK GRAY



(22R-E) E 8 (B) DARK GRAY



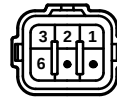
I 4 GRAY



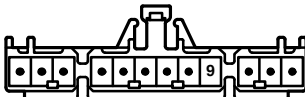
I 5 BLUE



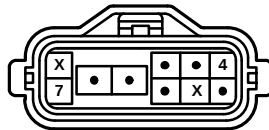
I 7 BLUE



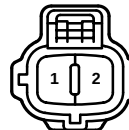
I16



P 1 GRAY



T 2 GRAY

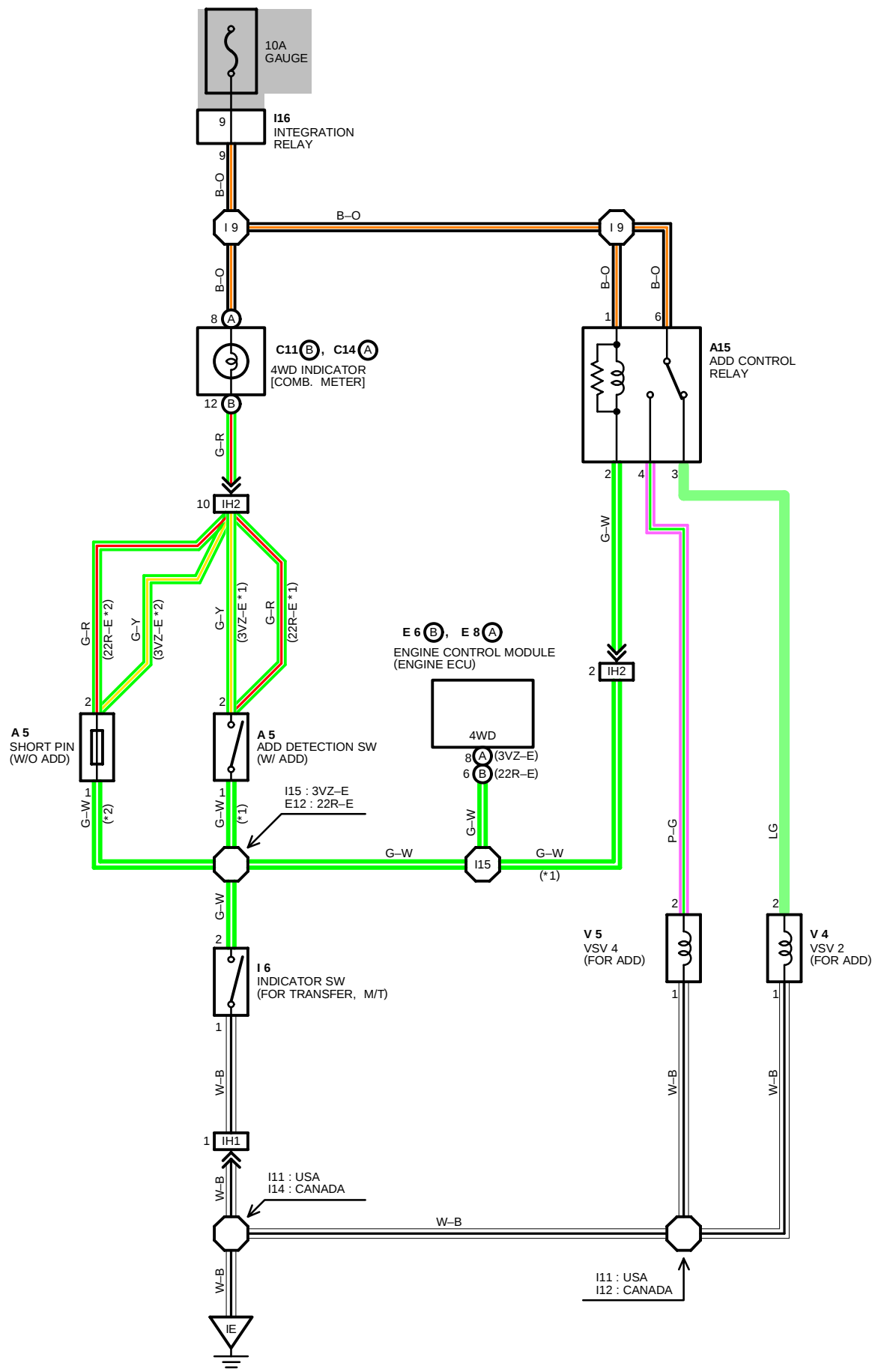


V 4 BROWN



V 5 BLUE





SERVICE HINTS

A15 ADD CONTROL RELAY

3-6: CLOSED WITH IGNITION SW AT **OFF** POSITION OR IGNITION SW ON AND INDICATOR SW **H2** POSITION

4-6: CLOSED WITH IGNITION SW AT **ON** POSITION AND INDICATOR SW **H4**

○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
A 5	24 (3VZ-E)	E 6	B	28	V 4
	26 (22R-E)	E 8	A	28	
A15	28	I 6	25 (3VZ-E)	V 5	25 (3VZ-E)
C11	B		27 (22R-E)		27 (22R-E)
C14	A	I16	28		

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
IH1	34	ENGINE WIRE AND COWL WIRE (RIGHT KICK PANEL)
IH2		

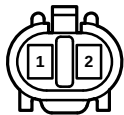
▽ : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
IE	34	LEFT KICK PANEL
IF	34	RIGHT KICK PANEL

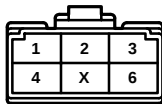
○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
E12	32 (22R-E)	ENGINE WIRE	I12	34	COWL WIRE
I 9	34	COWL WIRE	I14		ENGINE WIRE
I11			I15	34	

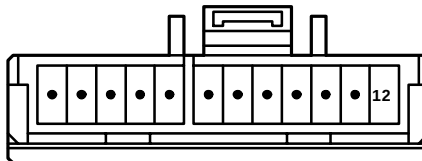
A 5 DARK GRAY



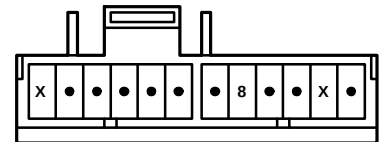
A15



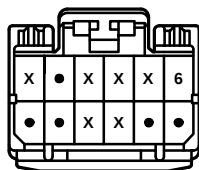
C11 (B) BLUE



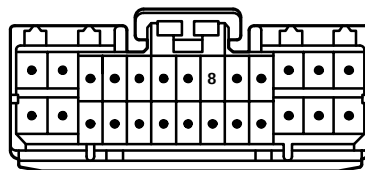
C14 (A)



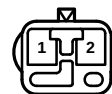
(22R-E) E 6 (B) DARK GRAY



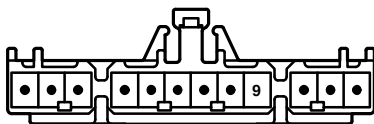
(3VZ-E) E 8 (A) DARK GRAY



I 6 GRAY



I16



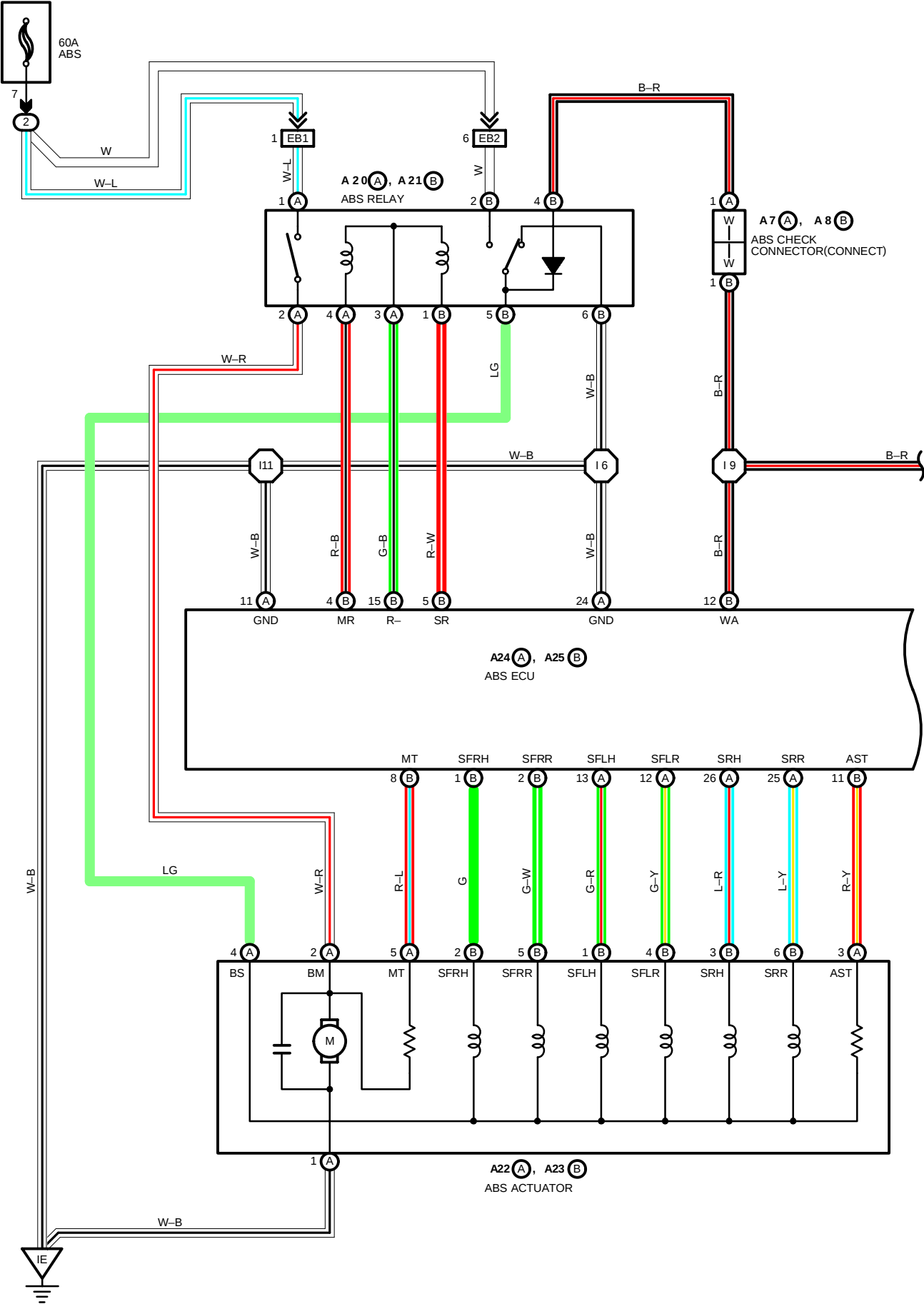
V 4 BROWN

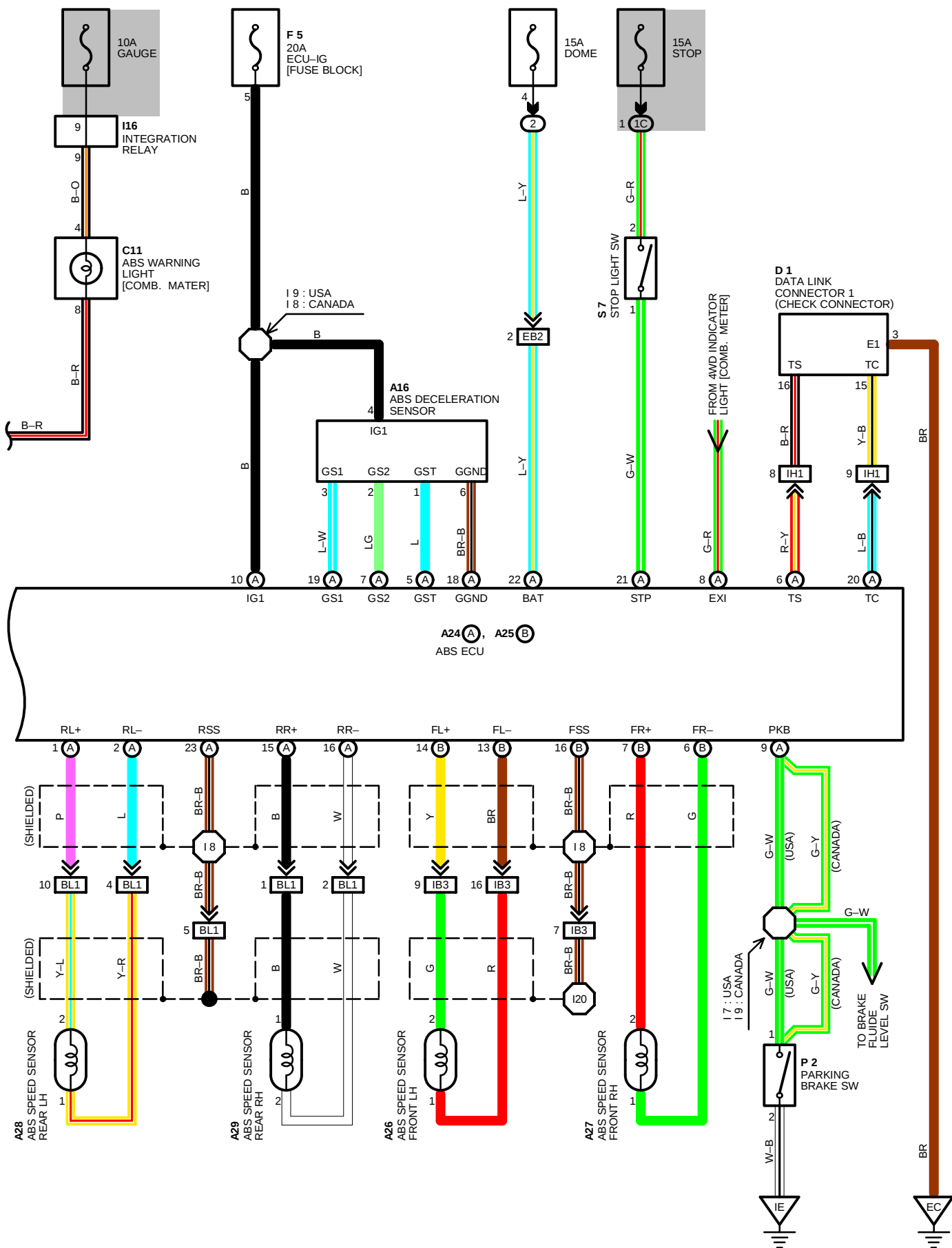


V 5 BLUE



ABS (ANTI-LOCK BRAKE SYSTEM)





ABS (ANTI-LOCK BRAKE SYSTEM)

SYSTEM OUTLINE

THIS SYSTEM CONTROLS THE RESPECTIVE BRAKE FLUID PRESSURES ACTING ON THE DISC BRAKE CYLINDERS OF THE RIGHT FRONT WHEEL, LEFT FRONT WHEEL, RIGHT REAR WHEEL AND LEFT REAR WHEEL WHEN THE BRAKES ARE APPLIED IN A PANIC STOP SO THAT THE WHEELS DO NOT LOCK.

THIS RESULTS IN IMPROVED DIRECTIONAL STABILITY AND STEERABILITY DURING PANIC BRAKING.

1. INPUT SIGNALS

- (1) SPEED SENSOR SIGNAL
THE SPEED OF THE WHEELS IS DETECTED AND INPUT TO **TERMINALS FL+, FR+, RL+ AND RR+** OF THE ABS ECU.
- (2) STOP LIGHT SW SIGNAL
A SIGNAL IS INPUT TO **TERMINAL STP** OF THE ABS ECU WHEN BRAKE PEDAL IS OPERATED.
- (3) PARKING BRAKE SW SIGNAL
A SIGNAL IS INPUT TO **TERMINAL PKB** OF THE ABS ECU WHEN THE PARKING BRAKE IS OPERATED.
- (4) DECELERATION SENSOR SIGNAL
LATERAL ACCELERATION IS DETECTED AND INPUT TO THE ABS ECU.

2. SYSTEM OPERATION

DURING SUDDEN BRAKING, THE ABS ECU WHICH HAS SIGNALS INPUT FROM EACH SENSOR CONTROLS THE CURRENT FLOWING TO THE SOLENOID INSIDE THE ACTUATOR AND LETS THE HYDRAULIC PRESSURE ACTING ON EACH WHEEL CYLINDER ESCAPE TO THE RESERVOIR.

THE PUMP INSIDE THE ACTUATOR IS ALSO OPERATING AT THIS TIME AND IT RETURNS THE BRAKE FLUID FROM THE RESERVOIR TO THE MASTER CYLINDER, THUS PREVENTING LOCKING OF THE VEHICLE WHEELS.

IF THE ECU JUDGES THAT THE HYDRAULIC PRESSURE ACTING ON THE WHEEL CYLINDER IS INSUFFICIENT, THE CURRENT ACTING ON SOLENOID IS CONTROLLED AND THE HYDRAULIC PRESSURE IS INCREASED.

HOLDING OF THE HYDRAULIC PRESSURE IS ALSO CONTROLLED BY THE ECU, BY THE SAME METHOD AS ABOVE, BY REPEATED PRESSURE REDUCTION, HOLDING AND INCREASE ARE REPEATED TO MAINTAIN VEHICLE STABILITY AND TO IMPROVE STEERABILITY DURING SUDDEN BRAKING.

SERVICE HINTS

A 22(A), A 23(B) ABS ACTUATOR

- (A)1-GROUND : ALWAYS CONTINUOUS
- (B)1, (B)3, (B)2-GROUND : APPROX. **5.0 Ω**
- (B)4, (B)5, (B)6-GROUND : APPROX. **2.2 Ω**

A26, A27 ABS SPEED SENSOR FRONT LH, RH

- 1-2: **0.92-1.22 KΩ (20°C, 68°F)**

A28, A29 ABS SPEED SENSOR REAR LH, RH

- 1-2: **0.89-1.29 KΩ (20°C, 68°F)**

A24(A), A25(B) ABS ECU

- (A)10-GROUND : **10-14 VOLTS** WITH IGNITION SW ON
- (A)11, (A)24-GROUND : ALWAYS CONTINUOUS
- (A)22-GROUND : ALWAYS **10-14 VOLTS**
- (A)12, (A)13, (A)25, (A)26, (B) 1, (B) 2-GROUND : **10-14 VOLTS** WITH IGNITION SW ON
- (A) 9-GROUND : CONTINUOUS WITH PARKING BRAKE LEVER PULLED UP
- (A)21-GROUND : **10-14 VOLTS** WITH STOP LIGHT SW ON (BRAKE PEDAL DEPRESSED)

P 2 PARKING BRAKE SW

- 1-2: CLOSED WITH PARKING BRAKE LEVER PULLED UP

S 7 STOP LIGHT SW

- 1-2: CLOSED WITH BRAKE PEDAL DEPRESSED

 : PARTS LOCATION

CODE		SEE PAGE	CODE		SEE PAGE	CODE		SEE PAGE
A 7	A	24 (3VZ-E)	A24	A	28	D 1		24 (3VZ-E)
A 8	B	24 (3VZ-E)	A25	B	28	F 5		28
A16		28	A26		24 (3VZ-E)	I16		28
A20	A	24 (3VZ-E)	A27		24 (3VZ-E)	P 2		28
A21	B	24 (3VZ-E)	A28		29	S 7		28
A22	A	24 (3VZ-E)	A29		29			
A23	B	24 (3VZ-E)	C11		28			

 : RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	22	R/B NO. 2 (ENGINE COMPARTMENT RIGHT)

 : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1C	20	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)

 : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EB1	30 (3VZ-E)	COWL WIRE AND ENGINE ROOM MAIN WIRE (R/B NO. 2)
EB2	30 (3VZ-E)	
IB3	34	ENGINE ROOM MAIN WIRE AND COWL WIRE (LEFT KICK PANEL)
IH1	34	ENGINE WIRE AND COWL WIRE (RIGHT KICK PANEL)
BL1	36	FRAME NO. 2 WIRE AND COWL WIRE (UNDER THE FRONT LH SEAT)

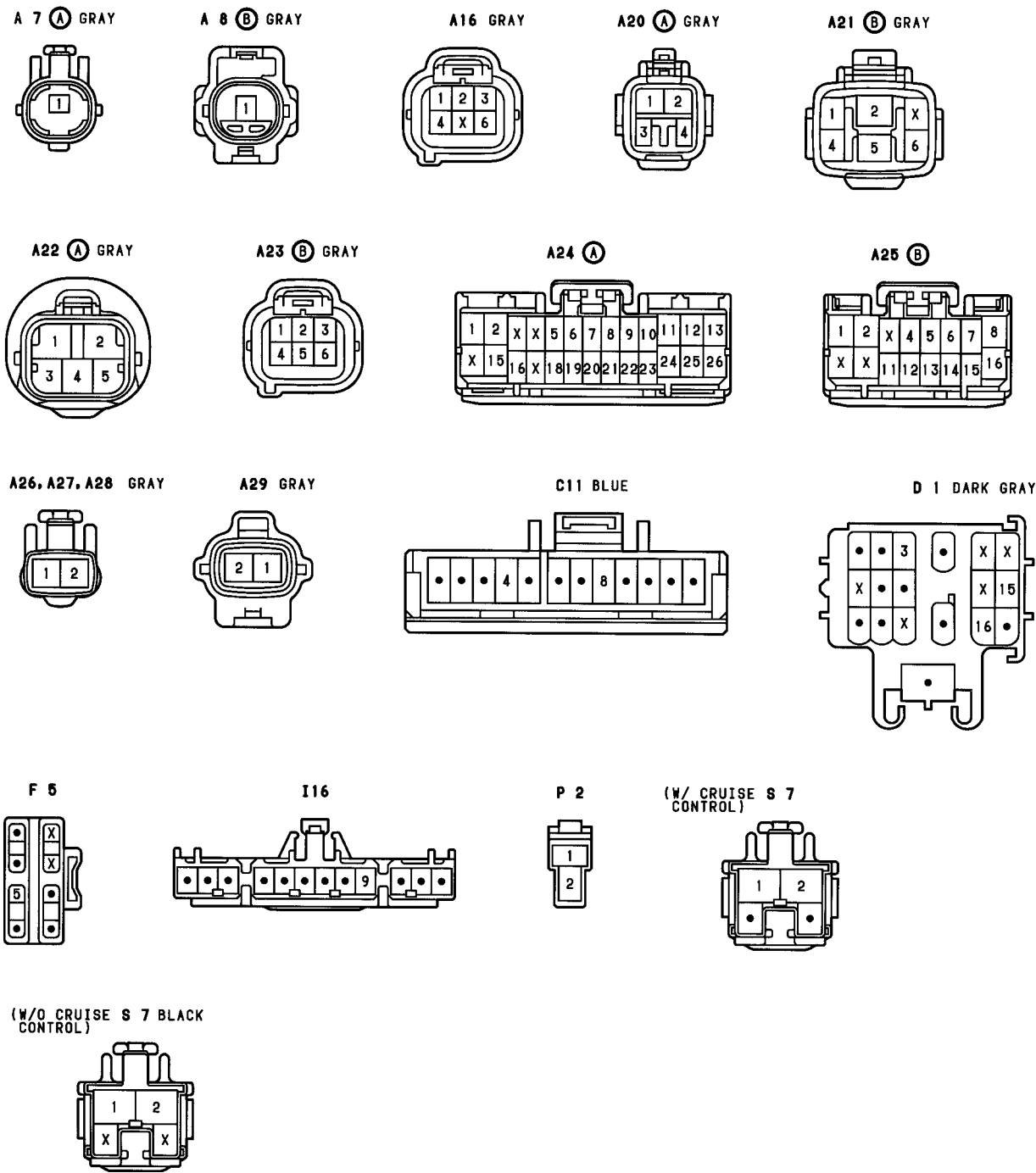
 : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
EC	30 (3VZ-E)	RH CYLINDER HEAD COVER REAR
IE	34	LEFT KICK PANEL

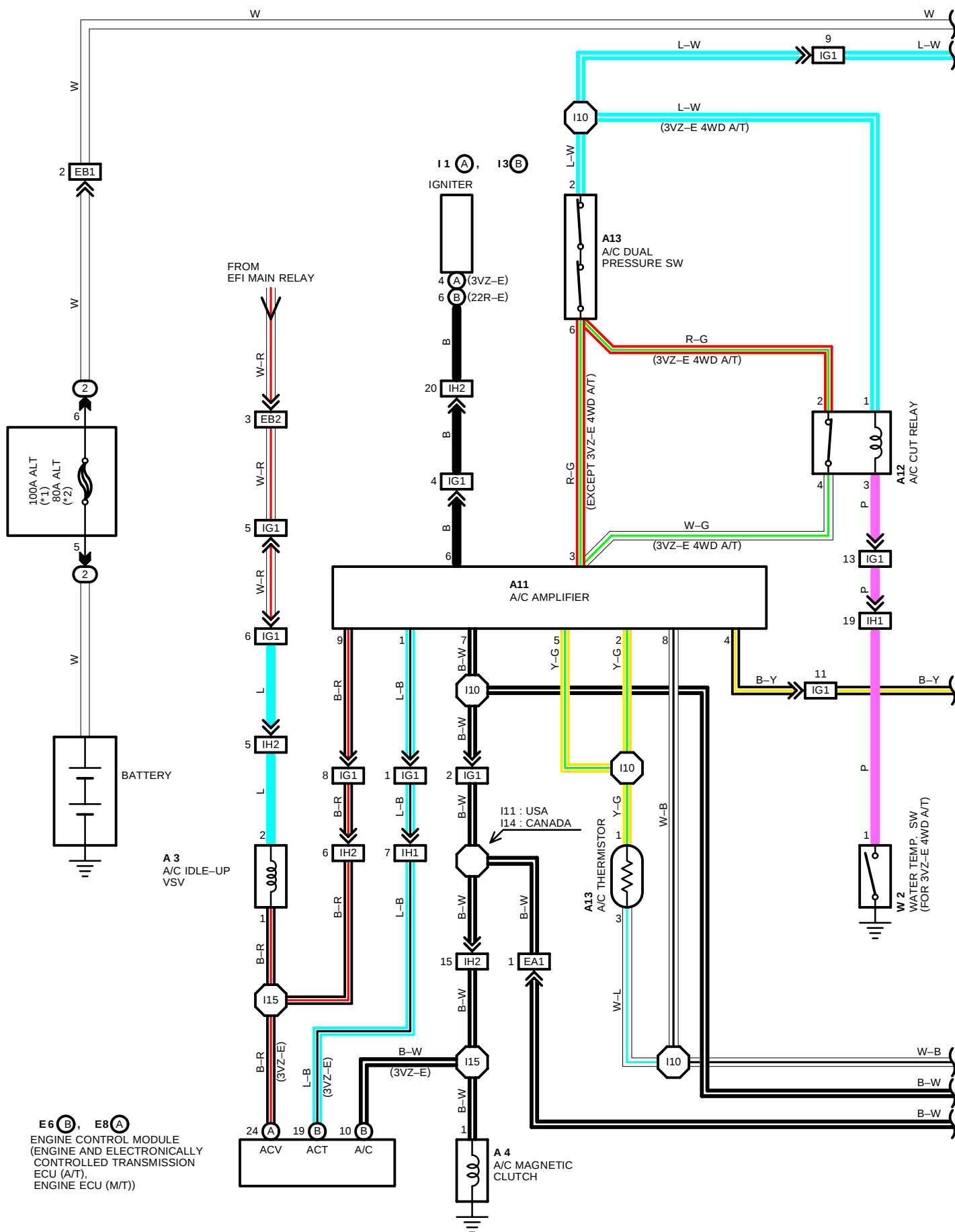
 : SPLICE POINTS

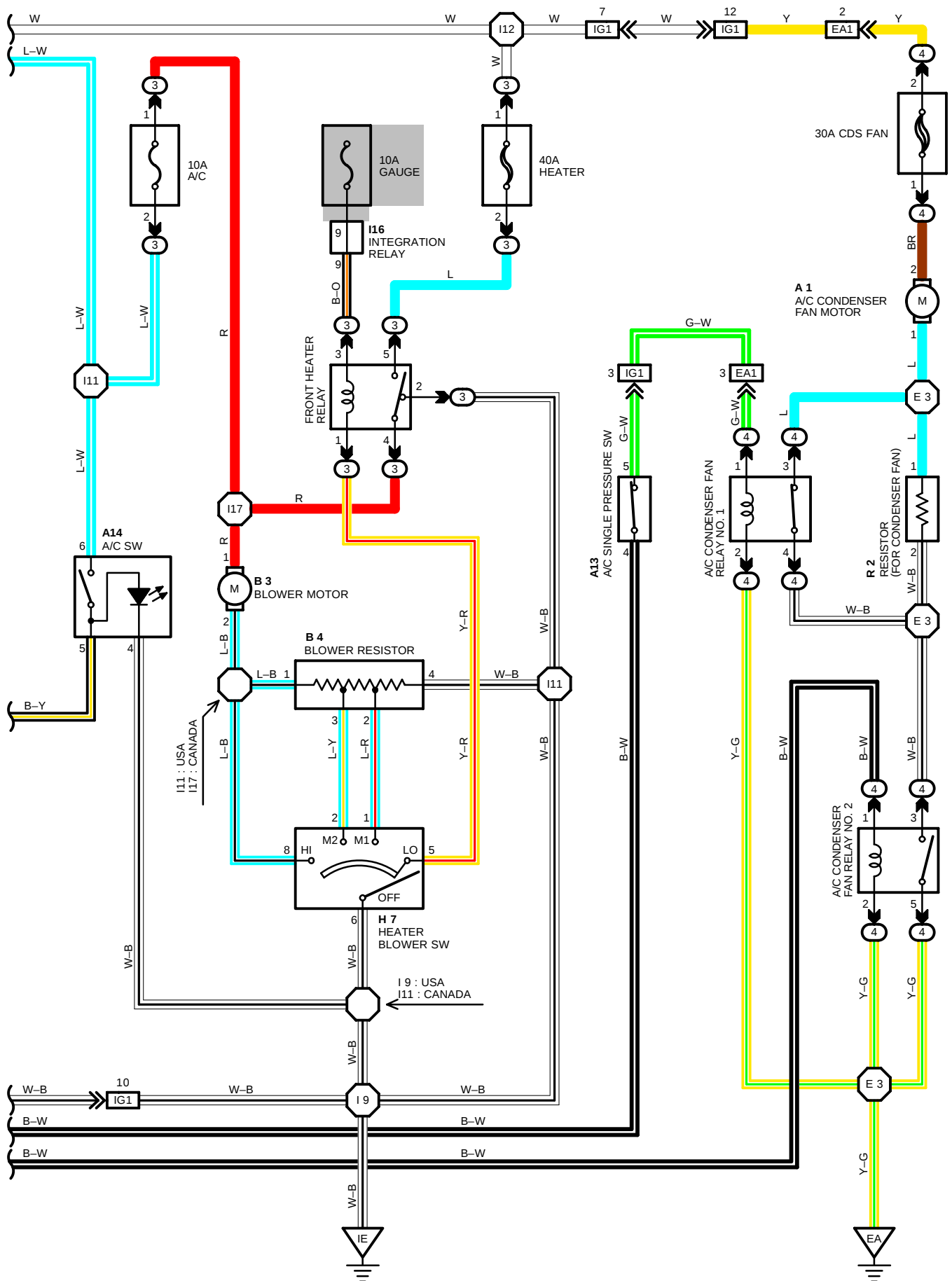
CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I 6	34	COWL WIRE	I 9	34	COWL WIRE
I 7			I11		
I 8			I20	34	ENGINE ROOM MAIN WIRE

ABS (ANTI-LOCK BRAKE SYSTEM)



AIR CONDITIONING





AIR CONDITIONING

SYSTEM OUTLINE

1. HEATER BLOWER MOTOR OPERATION

WITH THE IGNITION SW ON, CURRENT FROM THE **GAUGE** FUSE FLOWS FROM **TERMINAL 3** OF THE FRONT HEATER RELAY → COIL → **TERMINAL 1** → **TERMINAL 5** OF THE HEATER BLOWER SW.

(LOW SPEED OPERATION)

WHEN THE HEATER BLOWER SW IS MOVED TO THE LOW SPEED POSITION, THE CURRENT APPLIED TO **TERMINAL 5** FLOWS FROM **TERMINAL 6** → **GROUND**, CAUSING THE FRONT HEATER RELAY TO COME ON. THEN FROM **HEATER** FUSE THE CURRENT FLOWS FROM **TERMINAL 5** OF THE FRONT HEATER RELAY → **TERMINAL 4** → **TERMINAL 1** OF THE BLOWER MOTOR → **TERMINAL 2** → **TERMINAL 1** OF THE BLOWER RESISTOR → **TERMINAL 4** → **GROUND**, CAUSING THE BLOWER MOTOR TO ROTATE. THIS TIME, THE CURRENT FLOWS AGAINST THE FULL RESISTANCE OF THE BLOWER RESISTOR, SO THE MOTOR TURNS SLOWLY AT LOW SPEED.

(OPERATION AT SPEED M1, M2)

WHEN THE HEATER BLOWER SW IS MOVED TO THE SPEED M1 POSITION, THE CURRENT APPLIED TO **TERMINAL 5** FLOWS FROM **TERMINAL 6** → **GROUND**, TURNING THE FRONT HEATER RELAY TO ON. THEN, THE SAME AS WITH LOW SPEED, CURRENT PASSING THROUGH THE **HEATER** FUSE FROM THE BLOWER MOTOR → **TERMINAL 1** OF THE BLOWER RESISTOR → **TERMINAL 2** → **TERMINAL 1** OF THE BLOWER HEATER SW → **TERMINAL 6** → **GROUND**. THIS TIME, THE RESISTANCE OF THE BLOWER RESISTOR IS LESS THAN IT IS FOR LOW SPEED, SO THE BLOWER MOTOR ROTATES FASTER THAN IT DOES AT LOW SPEED. WITH THE HEATER BLOWER SW IN THE M2 POSITION, CURRENT FLOWING THROUGH THE MOTOR FLOWS FROM **TERMINAL 1** OF THE BLOWER RESISTOR → **TERMINAL 3** → **TERMINAL 2** OF THE HEATER BLOWER SW → **TERMINAL 6** → **GROUND**. THIS TIME, RESISTANCE OF THE BLOWER RESISTOR IS LESS THAN FOR SPEED M1 SO THAT THE BLOWER MOTOR ROTATES EVEN FASTER THAN FOR SPEED M1.

(HIGH SPEED OPERATION)

WITH THE HEATER BLOWER SW IN HIGH SPEED POSITION, UNTIL THE FRONT HEATER RELAY COMES ON AND CURRENT FLOWS TO THE BLOWER MOTOR, OPERATION IS THE SAME AS FOR SPEED M1 AND M2. THE CURRENT PASSING THROUGH THE BLOWER MOTOR FLOWS FROM **TERMINAL 8** OF THE HEATER BLOWER SW → **TERMINAL 6** → **GROUND** WITHOUT FLOWING THROUGH THE BLOWER RESISTOR, SO THAT THE BLOWER MOTOR ROTATES AT THE FASTEST SPEED, HIGH SPEED.

2. AIR CONDITIONING OPERATION

WHEN THE HEATER BLOWER SW IS SET TO ON, CURRENT FROM THE **ALT** FUSE FLOWS THROUGH THE **HEATER** FUSE AND **A/C** FUSE → **TERMINAL 2** OF THE A/C DUAL PRESSURE SW → **TERMINAL 6** → **TERMINAL 3** OF THE A/C AMPLIFIER. THE ENGINE SPEED SIGNAL FROM IGNITER AND THE EVAPRETOR TEMP. SIGNAL FROM THE A/C THERMISTOR ARE ALL SUPPLIED TO THE A/C AMPLIFIER. WHEN THE A/C SW IS TURNED ON, THE A/C SW ON SIGNAL IS SENT TO ACTIVATE THE A/C AMPLIFIER. CURRENT FLOWS FROM THE A/C AMPLIFIER TO THE MAGNETIC CLUTCH, TURNING THE COMPRESSOR ON, AT THE SAME TIME, THE CURRENT APPLIED TO THE A/C IDLE-UP VSV FLOWS THROUGH **TERMINAL 9** OF THE AMPLIFIER → **GROUND**, ACTIVATING THE VSV TO PREVENT ENGINE SPEED DROP IN A/C OPERATION. THE A/C OPERATION IS SHUT OFF WHEN A SIGNAL INDICATING LOW EVAPORETOR TEMP., OR ABNOMALLY HIGH OR LOW REFRIGERANT PRESSURE, IS SUPPLIED WHILE THE ENGINE HIGH SPEED SIGNAL EXISTS. WHEN ONE OF THESE SIGNALS IS RECEIVED, THE AMPLIFIER SHUTS OFF THE A/C OPERATION.

3. CONDENSER OPERATION

CURRENT ALWAYS FLOWS THROUGH THE **CDS FAN** FUSE, **TERMINAL 2** OF THE A/C CONDENSER FAN MOTOR TO **TERMINAL 2** OF A/C CONDENSER FAN RELAY NO. 1.

WHEN THE AIR CONDITIONING IS OPERATED, CURRENT FLOWS THROUGH THE **A/C** FUSE TO **TERMINAL 2** OF THE A/C DUAL PRESSURE SW → **TERMINAL 6** → **TERMINAL 3** OF A/C AMPLIFIER → **TERMINAL 7** → **TERMINAL 1** OF A/C MAGNETIC CLUTCH → **GROUND**, TURNING THE A/C MAGNETIC CLUTCH ON. AT THE SAME TIME CURRENT FLOWS FROM **TERMINAL 7** OF THE A/C AMPLIFIER TO **TERMINAL 1** OF A/C CONDENSER FAN RELAY NO. 2 → **TERMINAL 2** → **GROUND**, ACTIVATING THE RELAY. THIS CAUSES THE CURRENT TO **TERMINAL 4** OF A/C SINGLE PRESSURE SW TO FLOW TO **TERMINAL 5** OF THE SWITCH → **TERMINAL 1** OF A/C CONDENSER FAN RELAY NO. 1 → **TERMINAL 2** → **GROUND**. SO THE CONTACT OF A/C CONDENSER FAN RELAY NO. 1 BECOMES OPEN AND THE CURRENT FLOWING TO **TERMINAL 4** OF THE CONDENSER FAN MOTOR FLOWS TO **TERMINAL 1** OF MOTOR → **TERMINAL 1** OF RESISTOR → **TERMINAL 2** → **TERMINAL 3** OF A/C CONDENSER FAN RELAY NO. 2 → **TERMINAL 5** → **GROUND**. THE CONDENSER FAN MOTOR ROTATES AT LOW SPEED BECAUSE THE CURRENT HAS PASSED THROUGH THE RESISTOR.

IF AT THIS TIME THE PRESSURE APPLIED TO THE A/C SINGLE PRESSURE SW EXCEEDS **15.5 KG/CM²** THE A/C SINGLE PRESSURE SW TURNS OFF AND CONTINUITY TO A/C CONDENSER FAN RELAY NO. 1 IS STOPPED. THIS CLOSES THE CONTACT OF NO. 1 RELAY AND THE CURRENT FROM THE CONDENSER FAN MOTOR FLOWS **TERMINAL 1** OF CONDENSER FAN MOTOR → **TERMINAL 3** OF A/C CONDENSER FAN RELAY NO. 1 → **TERMINAL 4** → **TERMINAL 3** OF A/C CONDENSER FAN RELAY NO. 2 → **TERMINAL 5** → **GROUND**. THE CONDENSER FAN MOTOR ROTATES AT HIGH SPEED BECAUSE THE CURRENT HAS NOT FLOWED THROUGH THE RESISTOR.

SERVICE HINTS

A14 A/C SW

- 6-GROUND : APPROX. **12** VOLTS WITH IGNITION SW AT **ON** POSITION AND HEATER BLOWER SW ON
 4-GROUND : ALWAYS CONTINUOUS
 6-5 : CLOSED WITH A/C SW ON

A13 A/C THERMISTOR AND A/C TRIPLE PRESSURE SW (A/C DUAL AND SINGLE PRESSURE SW)

- 2-6 : OPEN WITH REFRIGERANT PRESSURE AT LESS THAN APPROX. **2.0** KG/CM² (**28** PSI, **196** KPA) OR MORE THAN APPROX. **32** KG/CM² (**454** PSI, **3136** KPA)
 5-4 : OPEN WITH PRESSURE ABOVE **15.5** KG/CM² (**220** PSI, **1520** KPA)
 : CLOSED WITH PRESSURE BELOW **12.5** KG/CM² (**178** PSI, **1226** KPA)

FRONT HEATER RELAY

- (3)4-(3)5: CLOSED WITH IGNITION SW ON AND HEATER BLOWER SW ON
 (3)5-GROUND : ALWAYS APPROX. **12** VOLTS
 (3)3-GROUND : APPROX. **12** VOLTS WITH IGNITION SW AT **ON** POSITION
 (3)2-GROUND : ALWAYS CONTINUOUS

H 7 HEATER BLOWER SW

- 6-5 : CLOSED WITH BLOWER SW AT **LOW** POSITION
 6-1, 5 : CLOSED WITH BLOWER SW AT **M1** POSITION
 6-2, 5 : CLOSED WITH BLOWER SW AT **M2** POSITION
 6-8, 5 : CLOSED WITH BLOWER SW AT **HI** POSITION

A/C CONDENSER FAN RELAY NO. 1

- (4)4-(4)3 : CLOSED WITH CONDENSER FAN MOTOR OFF OR CONDENSER FAN MOTOR AT HIGH SPEED
 : OPEN WITH CONDENSER FAN MOTOR AT LOW SPEED

A/C CONDENSER FAN RELAY NO. 2

- (4)3-(4)5 : CLOSED WITH MAGNETIC CLUTCH ON

A 4 A/C MAGNETIC CLUTCH

- 1-GROUND : APPROX. **3.7** Ω



: PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
A 1	24 (3VZ-E)	A12	28	H 7	28
	26 (22R-E)	A13	28	I 1 A	25 (3VZ-E)
A 3	24 (3VZ-E)	A14	28	I 3 B	27 (22R-E)
	26 (22R-E)	B 3	28	I16	28
A 4	24 (3VZ-E)	B 4	28	R 2	25 (3VZ-E)
	26 (22R-E)	E 6 B	28		27 (22R-E)
A11	28	E 8 A	28	W 2	25 (3VZ-E)



: RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	22	R/B NO. 2 (ENGINE COMPARTMENT RIGHT)
3	23	R/B NO. 3 (RIGHT KICK PANEL)
4	23	R/B NO. 4 (BESIDE R/B NO. 2)



: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EA1	30 (3VZ-E)	COWL WIRE AND A/C SUB WIRE (NEAR THE BATTERY)
	32 (22R-E)	
EB1	30 (3VZ-E)	COWL WIRE AND ENGINE ROOM MAIN WIRE (R/B NO. 2)
	32 (22R-E)	
EB2	30 (3VZ-E)	
	32 (22R-E)	
IG1	34	COWL WIRE AND A/C WIRE (BEHIND GLOVE BOX)
IH1	34	ENGINE WIRE AND COWL WIRE (RIGHT KICK PANEL)
IH2		

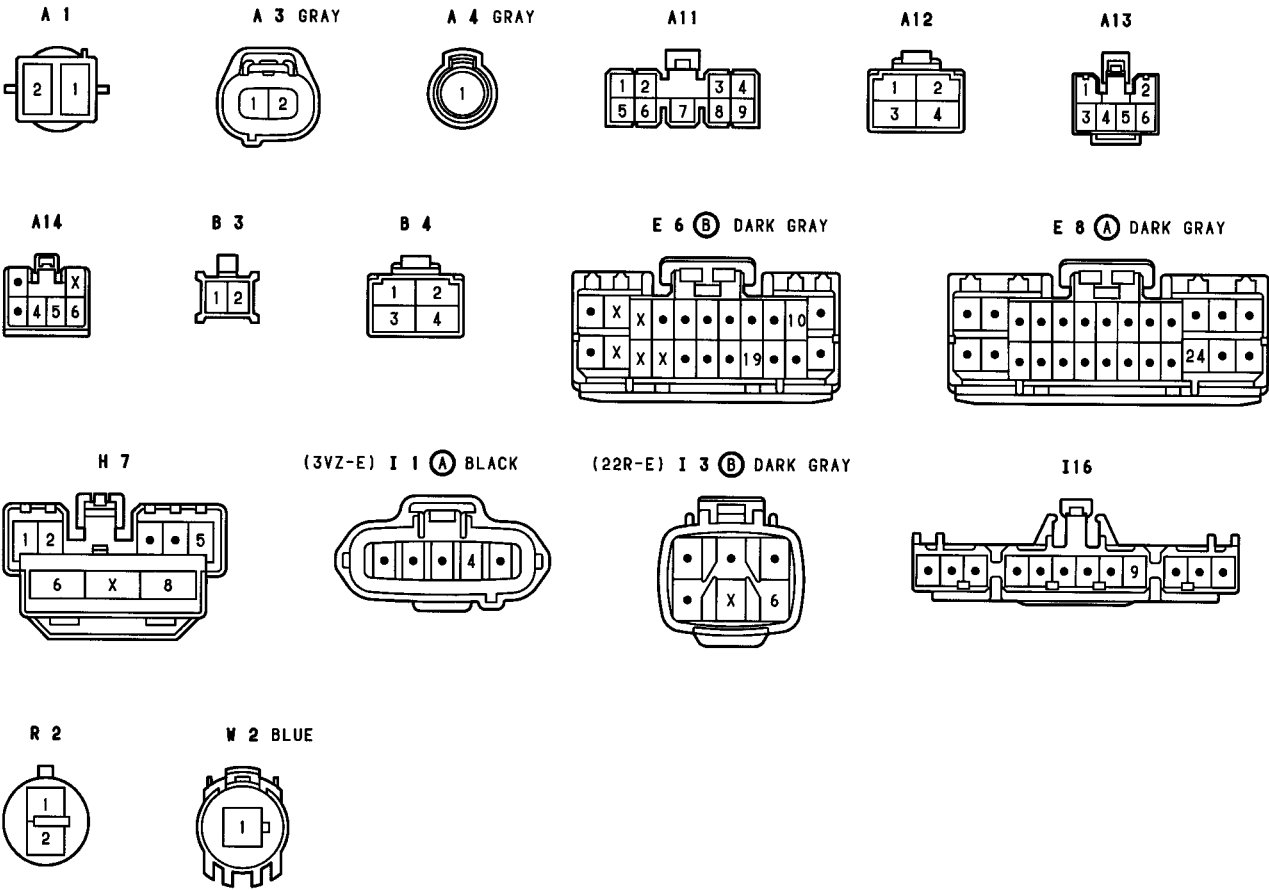
AIR CONDITIONING

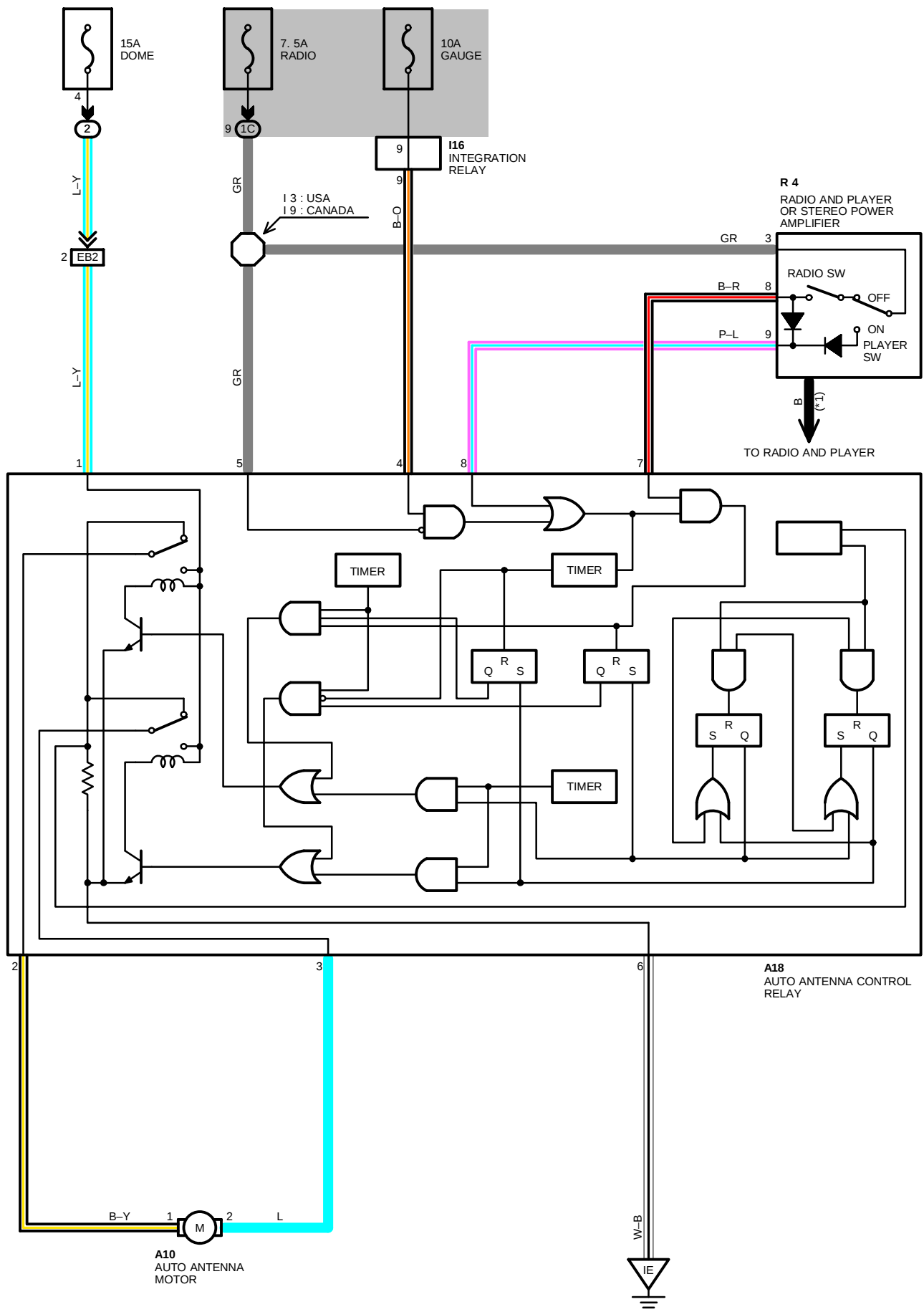
▽ : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
EA	30 (3VZ-E)	LEFT SIDE OF RADIATOR
	32 (22R-E)	
IE	34	LEFT KICK PANEL

⬡ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
E 3	30 (3VZ-E)	A/C SUB WIRE	I12	34	COWL WIRE
	32 (22R-E)		I14		
I 9	34	COWL WIRE	I15	34	ENGINE WIRE
I10	34	A/C WIRE	I17	34	COWL WIRE
I11	34	COWL WIRE			





SERVICE HINTS

A18 AUTO ANTENNA CONTROL RELAY

- 1-GROUND : ALWAYS APPROX. **12** VOLTS
- 5-GROUND : APPROX. **12** VOLTS WITH IGNITION SW AT **ACC** OR **ON** POSITION
- 4-GROUND : APPROX. **12** VOLTS WITH IGNITION SW AT **ON** POSITION
- 6-GROUND : ALWAYS CONTINUOUS
- 2-GROUND : APPROX. **12** VOLTS WITH IGNITION SW AT **ACC** OR **ON** POSITION AND RADIO SW ON AND PLAYER SW OFF UNTIL ANTENNA AT **UPPERMOST** POSITION
- 3-GROUND : APPROX. **12** VOLTS WITH IGNITION SW AT **ACC** OR **ON** POSITION AND RADIO SW OFF AND PLAYER SW ON UNTIL ANTENNA AT **LOWERMOST** POSITION

○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
A10	24 (3VZ-E)	A18	28	R 4	28
	26 (22R-E)	I16	28		

○ : RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	22	R/B NO. 2 (ENGINE COMPARTMENT RIGHT)

○ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1C	20	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EB2	30 (3VZ-E)	COWL WIRE AND ENGINE ROOM MAIN WIRE (R/B NO. 2)
	32 (22R-E)	

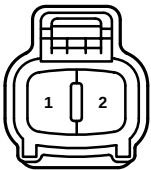
▽ : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
IE	34	LEFT KICK PANEL

○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I3	34	COWL WIRE	I9	34	COWL WIRE

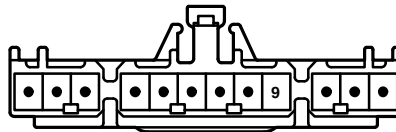
A10 GRAY



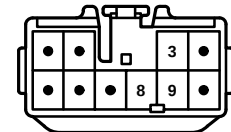
A18



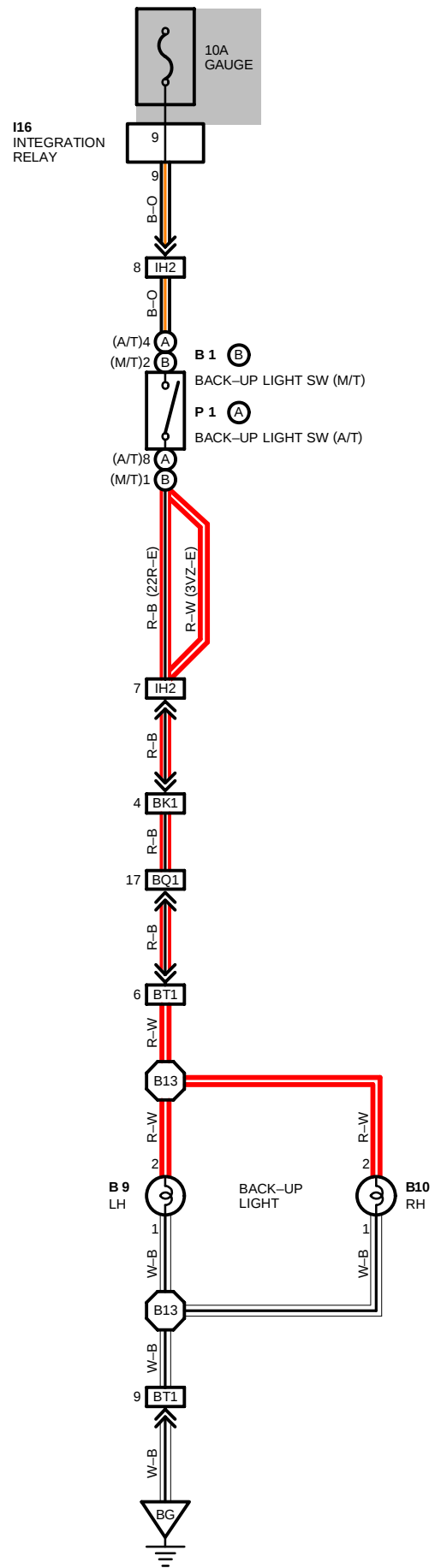
I16



R 4 BLUE



BACK-UP LIGHT



SERVICE HINTS

B 1(B), P 1(A) BACK-UP LIGHT SW

(A) 4-8, (B) 2-1: CLOSED WITH SHIFT LEVER IN R POSITION

○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
B 1	B	B10	29	P 1	A
	24 (3VZ-E)		27 (22R-E)		
	26 (22R-E)	I16	28		
B 9	29	P 1	A	25 (3VZ-E)	

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

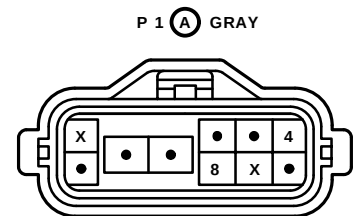
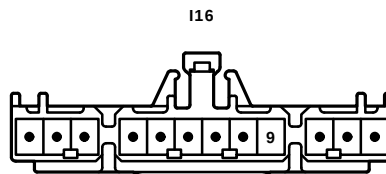
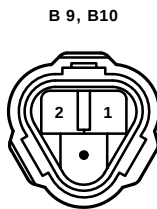
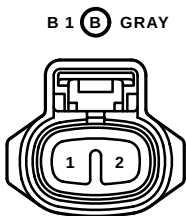
CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
IH2	34	ENGINE WIRE AND COWL WIRE (RIGHT KICK PANEL)
BK1	36	FLOOR NO. 3 LH WIRE AND COWL WIRE (LEFT SIDE OF FRONT LH SEAT)
BQ1	36	FLOOR NO. 3 LH WIRE AND FLOOR NO. 2 WIRE (LEFT SIDE OF REAR LH SEAT)
BT1	36	BACK DOOR NO. 1 WIRE AND FLOOR NO. 2 WIRE (BESIDE LEFT REAR COMB. LIGHT)

▽ : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
BG	36	UNDER LEFT REAR PILLAR

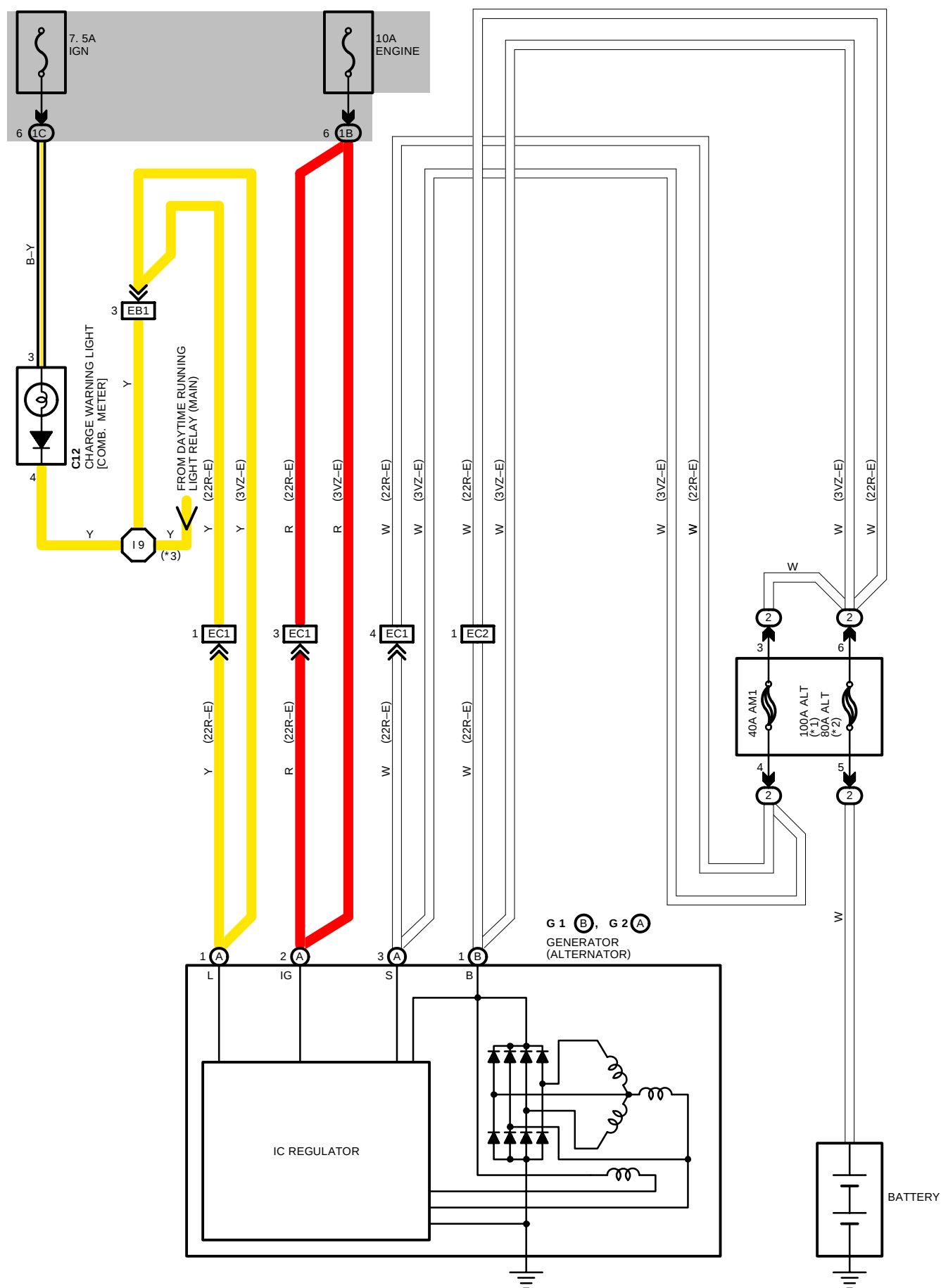
○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
B13	36	BACK DOOR NO. 1 WIRE			



CHARGING

*1 : 22R-E A/T
*2 : 3VZ-E, 22R-E M/T
*3 : CANADA



SERVICE HINTS

G1(B), G2 (A) GENERATOR (ALTERNATOR)

- (A) 3-GROUND : APPROX. 12 VOLTS WITH IGNITION SW AT **ON** POSITION
 (B) 1-GROUND : 13.9–15.1 VOLTS WITH ENGINE RUNNING AT 2000 RPM AND 25°C (77°F)
 13.5–14.3 VOLTS WITH ENGINE RUNNING AT 2000 RPM AND 115°C (239°F)

C12 CHARGE WARNING LIGHT [COMB. METER]

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

○ : PARTS LOCATION

CODE		SEE PAGE		CODE		SEE PAGE		CODE		SEE PAGE	
C12		28		G 1	B	26 (22R-E)		G 2	A	26 (22R-E)	
G 1	B	24 (3VZ-E)		G 2	A	24 (3VZ-E)					

○ : RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	22	R/B NO. 2 (ENGINE COMPARTMENT RIGHT)

○ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

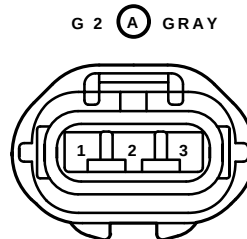
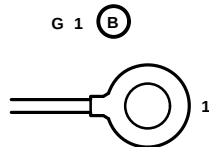
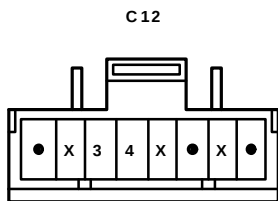
CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1B	20	ENGINE ROOM MAIN WIRE AND J/B NO. 1 (LEFT KICK PANEL)
1C	20	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

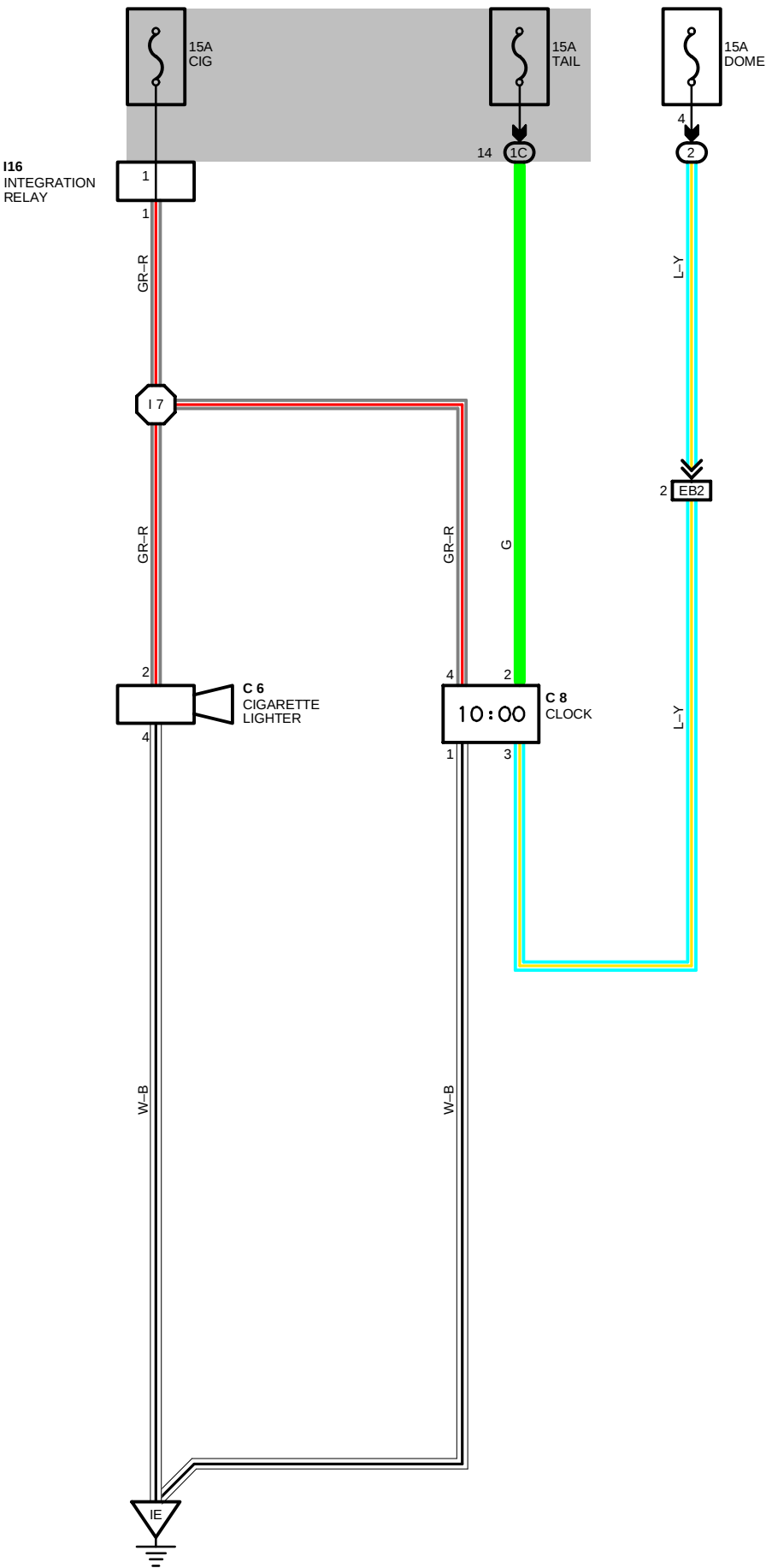
CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EB1	30 (3VZ-E) 32 (22R-E)	COWL WIRE AND ENGINE ROOM MAIN WIRE (R/B NO. 2)
EC1 EC2	32 (22R-E)	ENGINE ROOM MAIN WIRE AND ALTERNATOR WIRE (FRONT OF LEFT FENDER)

○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I 9	34	COWL WIRE			



CIGARETTE LIGHTER AND CLOCK



SERVICE HINTS

C 6 CIGARETTE LIGHTER

- 2-GROUND : APPROX. **12** VOLTS WITH IGNITION SW AT **ON** OR **ACC** POSITION
 4-GROUND : ALWAYS CONTINUOUS

C 8 CLOCK

- 3-GROUND : ALWAYS APPROX. **12** VOLTS (POWER FOR CLOCK)
 4-GROUND : APPROX. **12** VOLTS WITH IGNITION SW AT **ON** OR **ACC** POSITION (POWER FOR INDICATION)
 2-GROUND : APPROX. **12** VOLTS WITH LIGHT CONTROL SW AT **TAIL** OR **HEAD** POSITION
 1-GROUND : ALWAYS CONTINUOUS

○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
C 6	28	C 8	28	I16	28

○ : RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	22	R/B NO. 2 (ENGINE COMPARTMENT RIGHT)

○ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1C	20	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EB2	30 (3VZ-E)	COWL WIRE AND ENGINE ROOM MAIN WIRE (R/B NO. 2)
	32 (22R-E)	

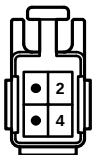
▽ : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
IE	34	LEFT KICK PANEL

○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I 7	34	COWL WIRE			

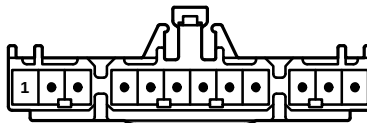
C 6



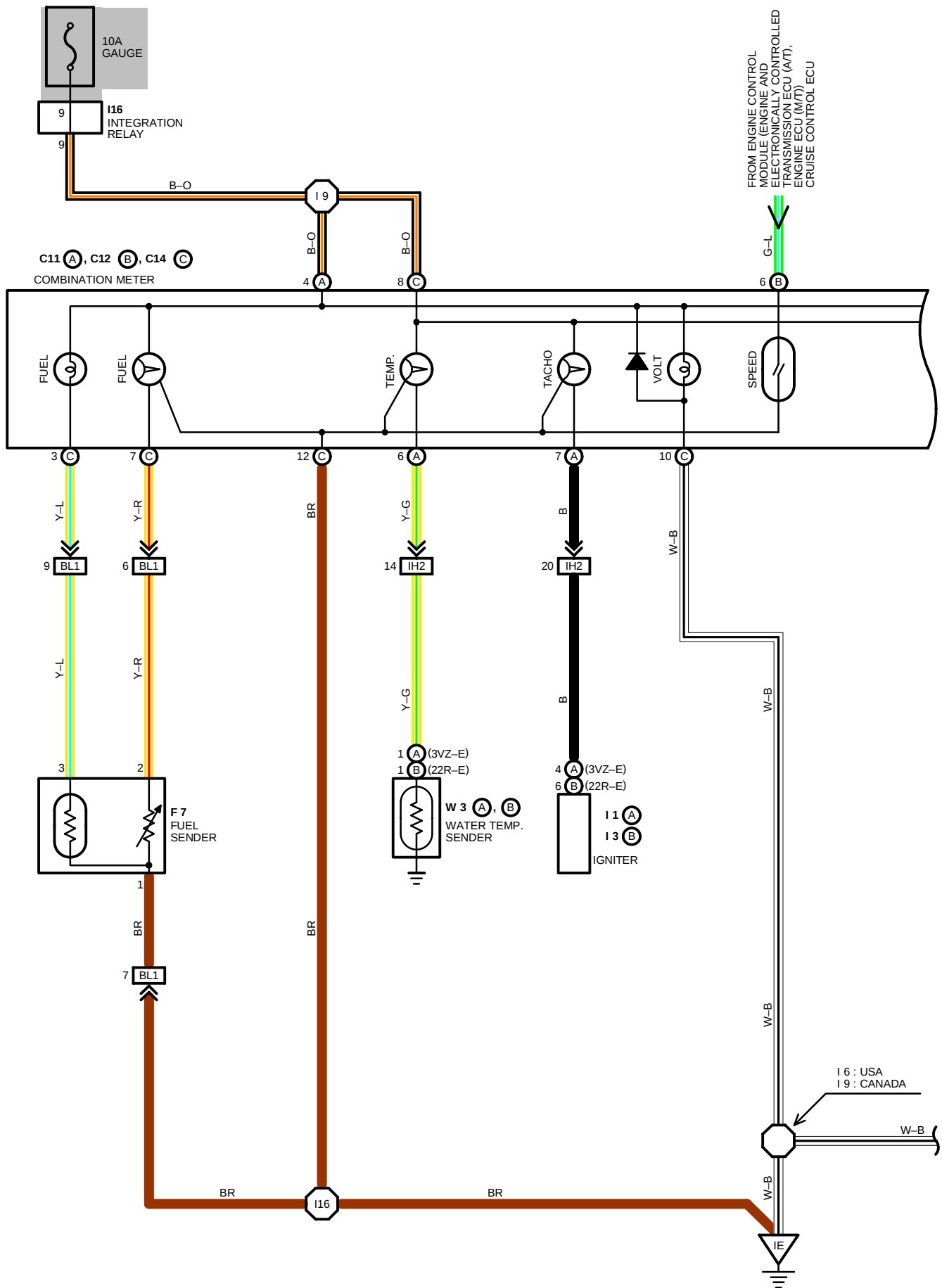
C 8 BLUE

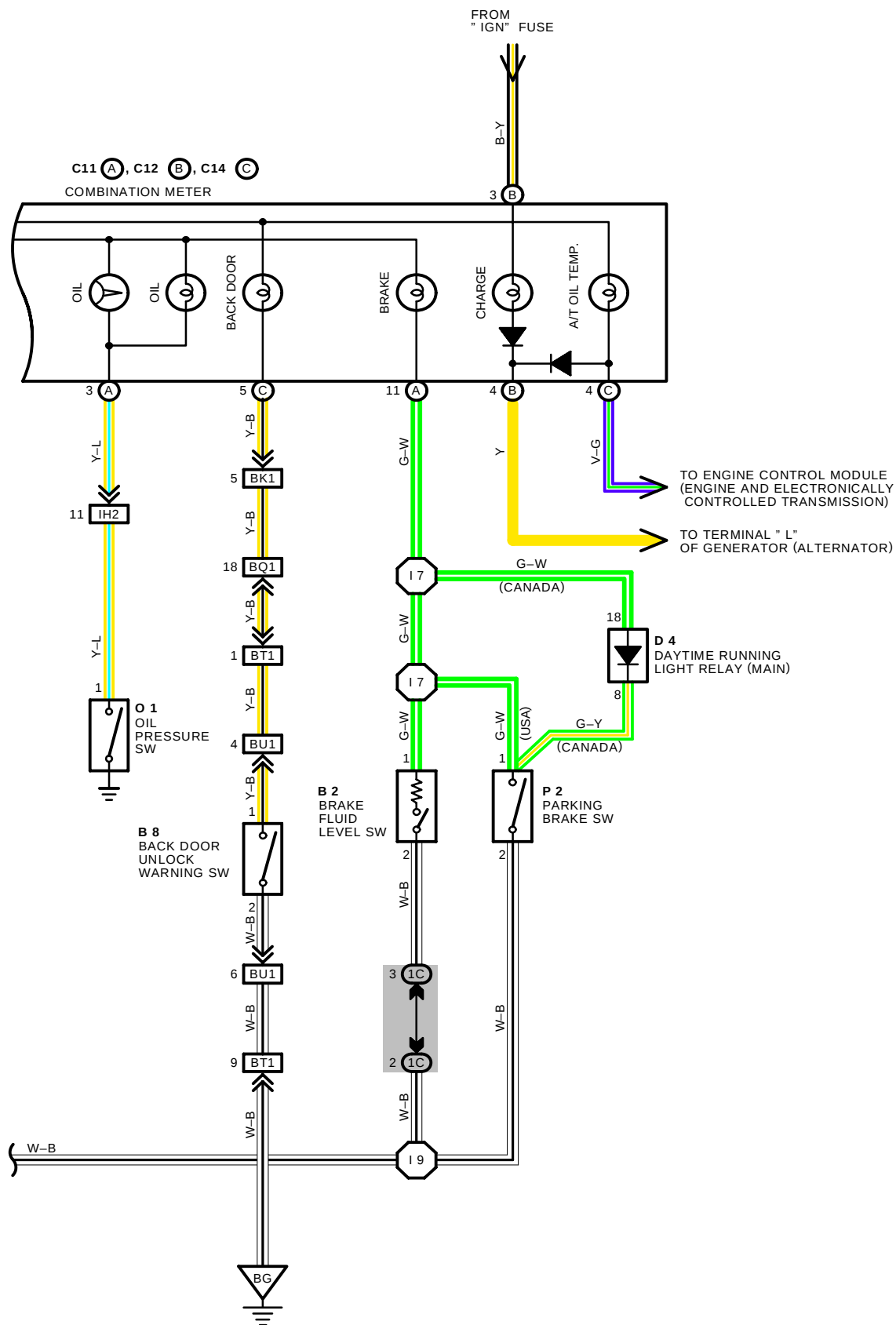


I16



COMBINATION METER





COMBINATION METER

SERVICE HINTS

B 2 BRAKE FLUID LEVEL SW

1-2 : CLOSED WITH FLOAT DOWN

C11(A), C12(B), C14(C) COMBINATION METER

(A) 4, (D) 8-GROUND: APPROX. 12 VOLTS WITH IGNITION SW ON

(D) 10, (D) 12-GROUND: ALWAYS CONTINUOUS

(B) 3-GROUND: APPROX. 12 VOLTS WITH IGNITION SW ON

B 8 BACK DOOR UNLOCK WARNING SW

1-2 : CLOSED WITH BACK DOOR OPEN

P 2 PARKING BRAKE SW

1-2 : CLOSED WITH PARKING BRAKE LEVER PULLED UP

○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
B 2	24 (3VZ-E)	D 4	28	O 1	27 (22R-E)
	26 (22R-E)	F 7	29	P 2	28
B 8	29	I 1 A	25 (3VZ-E)	W 3	A 25 (3VZ-E)
C11 A	28	I 3 B	27 (22R-E)		B 27 (22R-E)
C12 B	28	I16	28		
C14 C	28	O 1	25 (3VZ-E)		

○ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1C	20	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

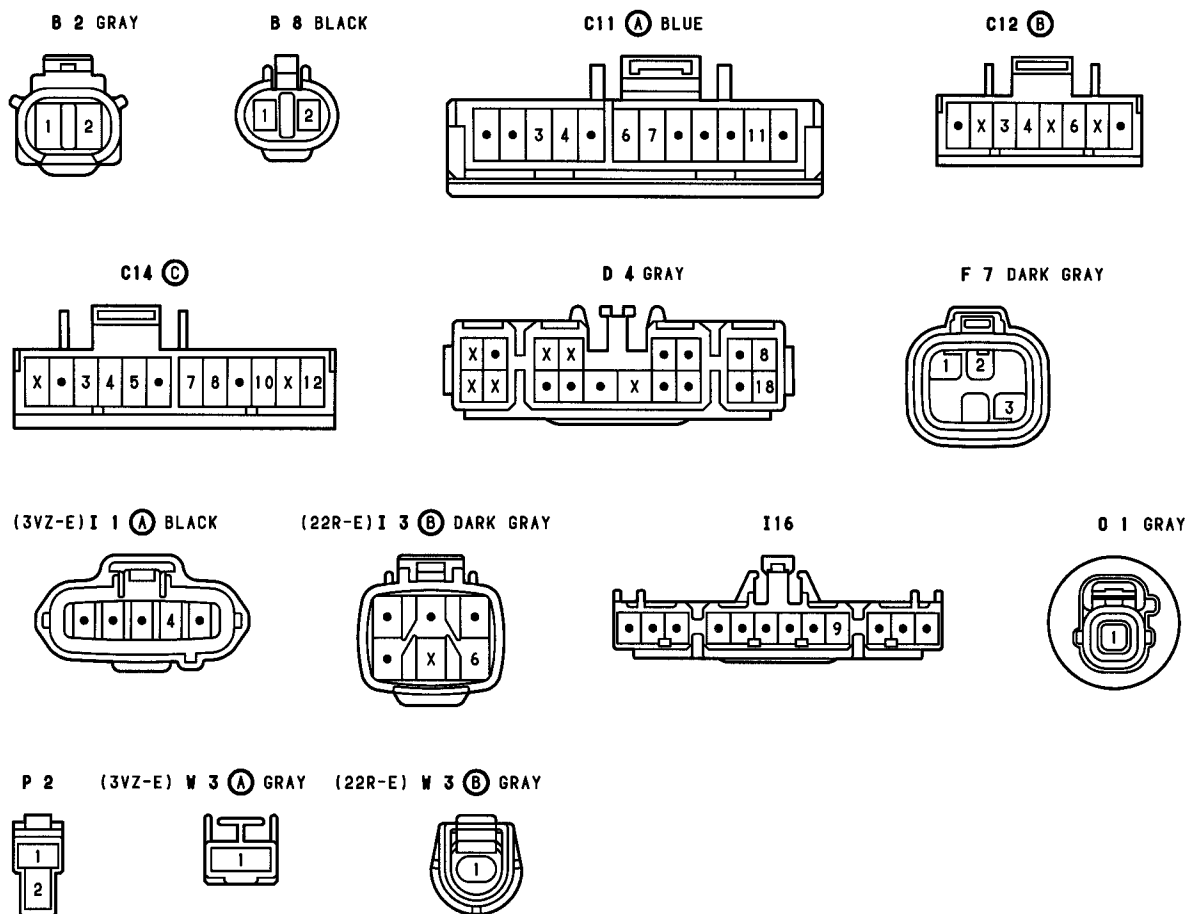
CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
IH2	34	ENGINE WIRE AND COWL WIRE (RIGHT KICK PANEL)
BK1	36	FLOOR NO. 3 LH WIRE AND COWL WIRE (LEFT SIDE OF FRONT LH SEAT)
BL1	36	FRAME NO. 2 WIRE AND COWL WIRE (UNDER THE FRONT LH SEAT)
BQ1	36	FLOOR NO. 3 LH WIRE AND FLOOR NO. 2 WIRE (LEFT SIDE OF REAR LH SEAT)
BT1	36	BACK DOOR NO. 1 WIRE AND FLOOR NO. 2 WIRE (BESIDE LEFT REAR COMB. LIGHT)
BU1	36	BACK DOOR NO. 1 WIRE AND BACK DOOR NO. 2 WIRE (BACK DOOR LEFT)

▽ : GROUND POINTS

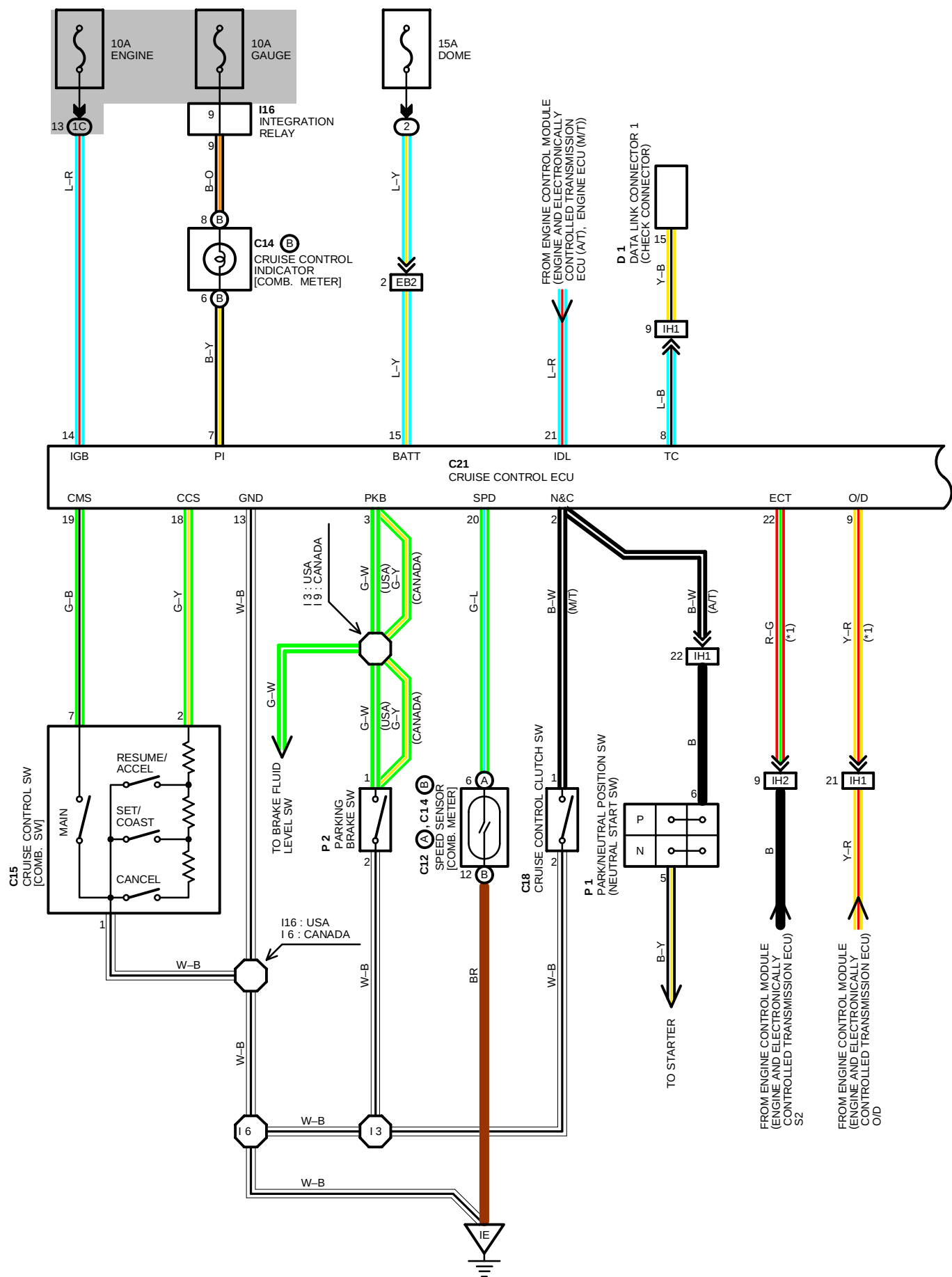
CODE	SEE PAGE	GROUND POINTS LOCATION
IE	34	LEFT KICK PANEL
BG	36	UNDER LEFT REAR PILLAR

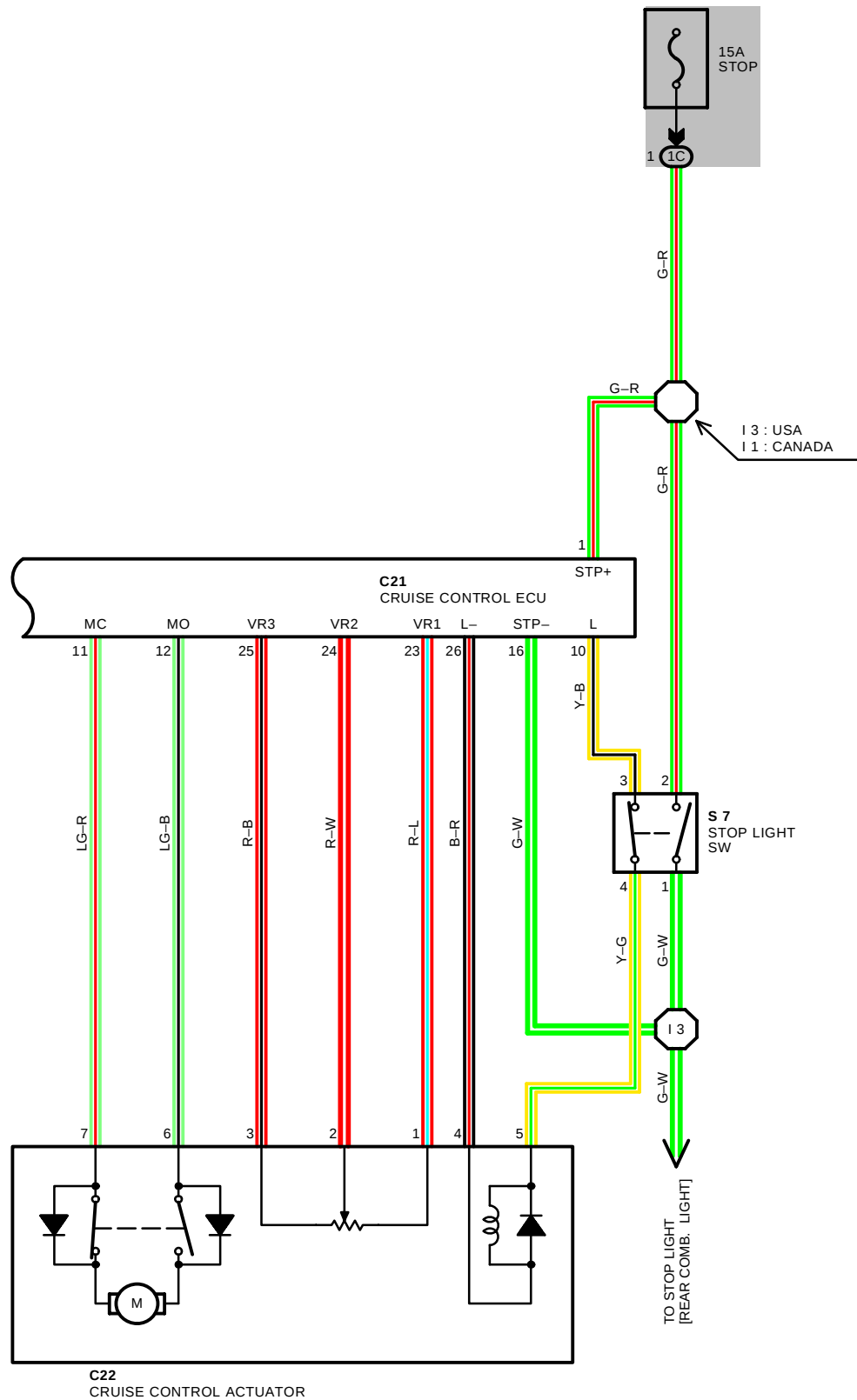
○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I 6	34	COWL WIRE	I 9	34	COWL WIRE
I 7			I16		



CRUISE CONTROL (MOTOR TYPE)





CRUISE CONTROL (MOTOR TYPE)

SYSTEM OUTLINE

CURRENT IS APPLIED AT ALL TIMES THROUGH **STOP** FUSE TO **TERMINAL 1** OF THE CRUISE CONTROL ECU AND **TERMINAL 2** OF STOP LIGHT SW.

WITH THE IGNITION SW TURNED TO ON, THE CURRENT FLOWS THROUGH **GAUGE** FUSE TO **TERMINAL (B) 8** OF CRUISE CONTROL INDICATOR LIGHT [COMB. METER]. THE CURRENT THROUGH **ENGINE** FUSE FLOWS TO **TERMINAL 14** OF CRUISE CONTROL ECU.

WHEN THE IGNITION SW IS ON AND THE CRUISE CONTROL SW [COMB. SW] IS TURNED ON, A SIGNAL IS INPUT FROM **TERMINAL 7** OF CRUISE CONTROL SW TO **TERMINAL 19** OF CRUISE CONTROL ECU. AS A RESULT, THE CRUISE CONTROL ECU FUNCTIONS AND THE CURRENT TO **TERMINAL 14** OF CRUISE CONTROL ECU TO **TERMINAL 13** OF CRUISE CONTROL ECU → **GROUND**, AND THE CRUISE CONTROL SYSTEM IS IN A CONDITION READY FOR OPERATION.

AT THE SAME TIME, THE CURRENT THROUGH THE **GAUGE** FUSE FLOWS FROM **TERMINAL (B) 8** OF CRUISE CONTROL INDICATOR LIGHT [COMB. METER] → **TERMINAL (B) 6** → **TERMINAL 7** OF CRUISE CONTROL ECU → **TERMINAL 13** → TO **GROUND**, CAUSING THE CRUISE CONTROL INDICATOR LIGHT TO LIGHT UP, INDICATING THAT THE CRUISE CONTROL IS READY FOR OPERATION.

1. SET OPERATION

WHEN THE CRUISE CONTROL SW [COMB. SW] IS TURNED ON AND THE SET SW IS PUSHED WITH THE VEHICLE SPEED WITHIN THE SET LIMIT (APPROX. 40KM/H, 25MPH TO 200KM/H, 124MPH), A SIGNAL IS INPUT TO **TERMINAL 18** OF THE CRUISE CONTROL ECU AND THE VEHICLE SPEED AT THE TIME THE SET SWITCH IS RELEASED IS MEMORIZED IN THE ECU AS THE SET SPEED.

2. SET SPEED CONTROL

DURING CRUISE CONTROL DRIVING, THE ECU COMPARES THE SET SPEED MEMORIZED IN THE ECU WITH THE ACTUAL VEHICLE SPEED INPUT INTO **TERMINAL 20** OF THE CRUISE CONTROL ECU FROM THE VEHICLE SPEED SENSOR (SPEED SENSOR) [COMB. METER], AND CONTROLS THE CRUISE CONTROL ACTUATOR TO MAINTAIN THE SET SPEED.

WHEN THE ACTUAL SPEED IS LOWER THAN THE SET SPEED, THE ECU CAUSES THE CURRENT TO THE CRUISE CONTROL ACTUATOR TO FLOW FROM **TERMINAL 12** OF ECU → **TERMINAL 6** OF CRUISE CONTROL ACTUATOR → **TERMINAL 7** → **TERMINAL 11** OF CRUISE CONTROL ECU. AS A RESULT, THE MOTOR IN THE CRUISE CONTROL ACTUATOR IS ROTATED TO OPEN THE THROTTLE VALVE AND THE THROTTLE CABLE IS PULLED TO INCREASE THE VEHICLE SPEED. WHEN THE ACTUAL DRIVING SPEED IS HIGHER THAN THE SET SPEED, THE CURRENT TO CRUISE CONTROL ACTUATOR FLOWS FROM **TERMINAL 11** OF ECU → **TERMINAL 7** OF CRUISE CONTROL ACTUATOR → **TERMINAL 6** → **TERMINAL 12** OF CRUISE CONTROL ECU.

THIS CAUSES THE MOTOR IN THE CRUISE CONTROL ACTUATOR TO ROTATE TO CLOSE THE THROTTLE VALVE AND RETURN THE THROTTLE CABLE TO DECREASE THE VEHICLE SPEED.

3. COAST CONTROL

DURING THE CRUISE CONTROL DRIVING, WHILE THE COAST SW IS ON, THE CRUISE CONTROL ACTUATOR RETURNS THE THROTTLE CABLE TO CLOSE THE THROTTLE VALVE AND DECREASE THE DRIVING SPEED. THE VEHICLE SPEED WHEN THE COAST SW IS TURNED OFF AND IS MEMORIZED AND THE VEHICLE CONTINUES AT THE NEW SET SPEED.

4. ACCEL CONTROL

DURING CRUISE CONTROL DRIVING, WHILE THE ACCEL SW IS TURNED ON, THE CRUISE CONTROL ACTUATOR PULLS THE THROTTLE CABLE TO OPEN THE THROTTLE VALVE AND INCREASE THE DRIVING SPEED. THE VEHICLE SPEED WHEN THE ACCEL SW IS TURNED OFF IS MEMORIZED AND THE VEHICLE CONTINUES AT THE NEW SET SPEED.

5. RESUME CONTROL

UNLESS THE VEHICLE SPEED FALLS BELOW THE MINIMUM SPEED LIMIT (APPROX. 40KM/H, 25MPH) AFTER CANCELING THE SET SPEED BY THE CANCEL SW, PUSHING THE RESUME SW WILL CAUSE THE VEHICLE TO RESUME THE SPEED SET BEFORE CANCELLATION.

6. MANUAL CANCEL MECHANISM

IF ANY OF THE FOLLOWING OPERATIONS OCCURS DURING CRUISE CONTROL OPERATION, THE SAFETY MAGNETIC CLUTCH OF THE ACTUATOR MOTOR TURNS OFF AND THE MOTOR ROTATES TO CLOSE THE THROTTLE VALVE AND THE CRUISE CONTROL IS RELEASED.

- * PLACING THE SHIFT LEVER IN "N" POSITION (PARK/NEUTRAL POSITION SW (NEUTRAL START SW) ON). "SIGNAL INPUT TO **TERMINAL 2** OF ECU"
- * DEPRESSING THE BRAKE PEDAL (STOP LIGHT SW ON). "SIGNAL INPUT TO **TERMINAL 16** OF ECU"
- * PULL UP THE PARKING BRAKE LEVER (PARKING BRAKE SW ON). "SIGNAL INPUT TO **TERMINAL 3** OF ECU"
- * PUSH THE CANCEL SW (CANCEL SW ON). "SIGNAL INPUT TO **TERMINAL 18**"

7. AUTO CANCEL FUNCTION

A) IF ANY OF THE FOLLOWING OPERATE CONDITIONS OCCURS DURING CRUISE CONTROL OPERATION. THE SET SPEED IS ERASED, CURRENT FLOW TO SAFETY MAGNETIC CLUTCH IS STOPPED AND THE CRUISE CONTROL IS RELEASED. (MAIN SW TURNS OFF).

WHEN THIS OCCURS, THE IGNITION SW MUST BE TURNED OFF ONCE BEFORE THE MAIN SW WILL TURN ON.

- * OVER CURRENT TO TRANSISTOR DRIVING MOTOR AND/OR SAFETY MAGNETIC CLUTCH.
- * CURRENT TO CONTROL THE THROTTLE VALVE IN MOTOR BECOMES ALWAYS "ON".
- * OPEN CIRCUIT IN SAFETY MAGNETIC CLUTCH.
- * MOMENTARY INTERRUPTION OF VEHICLE SPEED SIGNAL.
- * THE RESUME SW IS ALREADY ON WHEN THE MAIN SW IS TURNED ON.
- * SHORT CIRCUIT IN CRUISE CONTROL SW.
- * MOTOR DOES NOT OPERATE DESPITE THE MOTOR DRIVE SIGNAL BEING OUTPUT.

B) IF ANY OF THE FOLLOWING CONDITIONS OCCUR DURING CRUISE CONTROL OPERATION, THE SET SPEED IS ERASED AND THE CRUISE CONTROL IS RELEASED. (THE POWER OF SAFETY MAGNETIC CLUTCH IS CUT OFF UNTIL THE SET SW IS "ON" AGAIN.)

- * WHEN THE VEHICLE SPEED FALLS BELOW THE MINIMUM SPEED LIMIT, APPROX. **40 KM/H (25 MPH)**
- * WHEN THE VEHICLE SPEED FALLS MORE THAN **16 KM/H (10 MPH)** BELOW THE SET SPEED, E.G. ON AN UPWARD SLOPE.
- * WHEN POWER TO THE CRUISE CONTROL SYSTEM IS MOMENTARILY CUT OFF.

C) IF ANY OF THE FOLLOWING CONDITIONS OCCURS DURING CRUISE CONTROL OPERATION, THE CRUISE CONTROL IS RELEASED. BUT IN THIS CASE, THE SET SPEED IS NOT ERASED. IF THE VEHICLE SPEED IS MORE THAN THE MINIMUM SPEED LIMIT (APPROX. **40 KM/H 25 MPH**), CRUISE CONTROL OPERATION IS POSSIBLE USING "SET" OR "RESUME" ON THE CONTROL SW.

- * OPEN CIRCUIT FOR **TERMINAL 3** OF CRUISE CONTROL ECU AND **TERMINAL 3** OF STOP LIGHT SW.

8. AUTOMATIC TRANSMISSION CONTROL FUNCTION

* IN OVERDRIVE. IF THE VEHICLE SPEED BECOMES LOWER THAN THE OVERDRIVE CUT SPEED (SET SPEED MINIMUM **4 KM/H, 2.5 MPH**) DURING CRUISE CONTROL OPERATION, SUCH AS DRIVING UP A HILL, THE OVERDRIVE IS RELEASED AND THE POWER INCREASED TO PREVENT A REDUCTION IN VEHICLE SPEED.

* AFTER RELEASING THE OVERDRIVE, THE VEHICLE SPEED BECOMES HIGHER THAN THE OVERDRIVE RETURN SPEED (SET SPEED MINIMUM **2 KM/H, 1.2 MPH**) AND THE ECU JUDGES BY THE SIGNALS FROM POTENTIOMETER OF THE ACTUATOR THAT THE UPWARD SLOPE HAS FINISHED, OVERDRIVE IS RESUMED AFTER APPROXIMATELY **6 SECONDS**.

SERVICE HINTS

C22 CRUISE CONTROL ACTUATOR

- 1-3 : APPROX. **2 K Ω**
- 5-4 : APPROX. **38.5 Ω**

C15 CRUISE CONTROL SW [COMB. SW]

- 7-1 : CONTINUOUS WITH MAIN SW ON
- 2-1 : APPROX. **413 Ω** WITH CANCEL SW ON
- APPROX. **68 Ω** WITH RESUME/ACCEL SW ON
- APPROX. **198 Ω** WITH SET/COAST SW ON

C21 CRUISE CONTROL ECU

- 14-GROUND : APPROX. **12 VOLTS** WITH IGNITION SW AT **ON** POSITION
- 1-GROUND : ALWAYS APPROX. **12 VOLTS**
- 3-GROUND : CONTINUOUS WITH PARKING BRAKE LEVER PULLED UP (ONE OF THE CANCEL SW) OR BRAKE LEVEL WARNING SW ON
- 20-GROUND : **4 PULSE** WITH **1 ROTATION** OF ROTOR SHAFT
- 18-GROUND : APPROX. **419 Ω** WITH CANCEL SW ON IN CONTROL SW
- APPROX. **68 Ω** WITH RESUME/ACCEL SW ON IN CONTROL SW
- APPROX. **198 Ω** WITH SET/COAST SW ON IN CONTROL SW
- 13-GROUND : ALWAYS CONTINUOUS

CRUISE CONTROL (MOTOR TYPE)

 : PARTS LOCATION

CODE		SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
C12	A	28	C21	28	P 1	25 (3VZ-E)
C14	B	28	C22	24 (3VZ-E)	P 2	28
C15		28	D 1	24 (3VZ-E)	S 7	28
C18		28	I16	28		

 : RELAY BLOCKS

CODE			SEE PAGE			RELAY BLOCKS (RELAY BLOCK LOCATION)		
2	22					R/B NO.2 (ENGINE COMPARTMENT RIGHT)		

 : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE			SEE PAGE			JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)		
1C	20					COWL WIRE AND J/B NO.1 (LEFT KICK PANEL)		

 : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

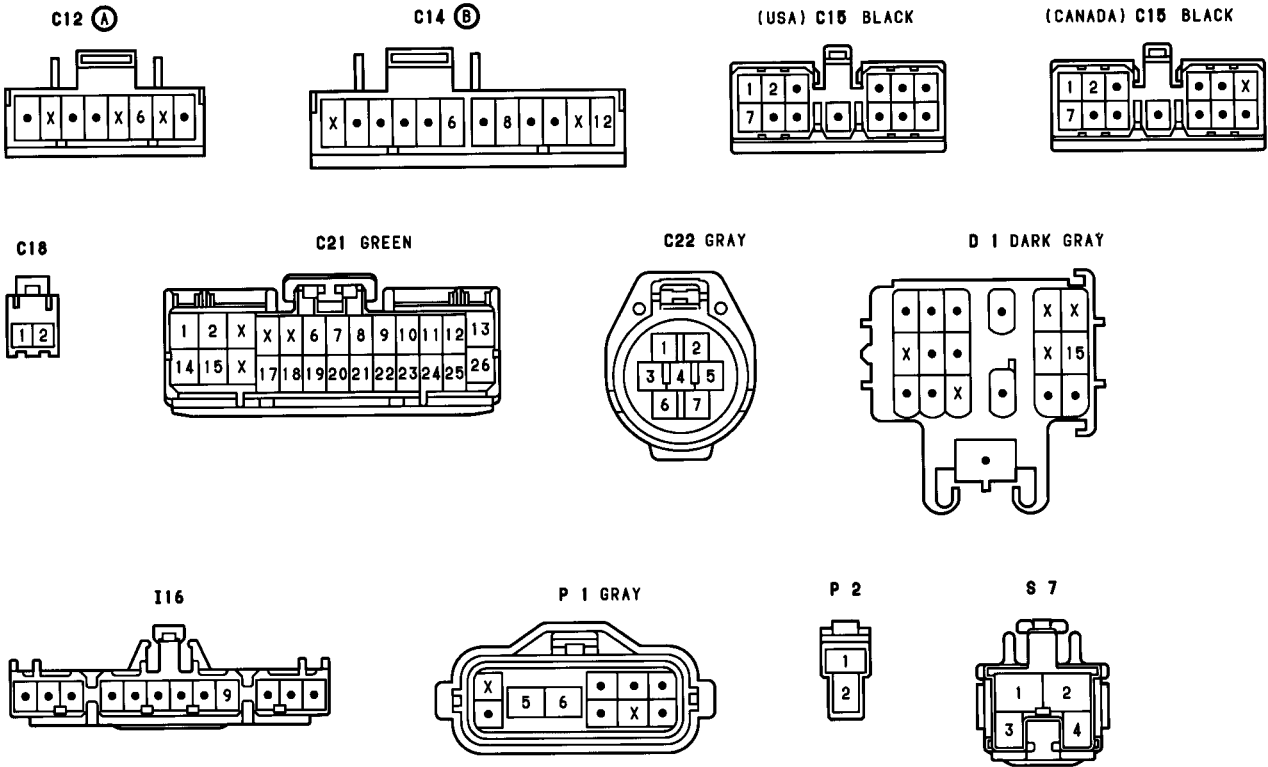
CODE			SEE PAGE			JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)		
EB2	30 (3VZ-E)					COWL WIRE AND ENGINE ROOM MAIN WIRE (R/B NO. 2)		
IH1	34					ENGINE WIRE AND COWL WIRE (RIGHT KICK PANEL)		
IH2								

 : GROUND POINTS

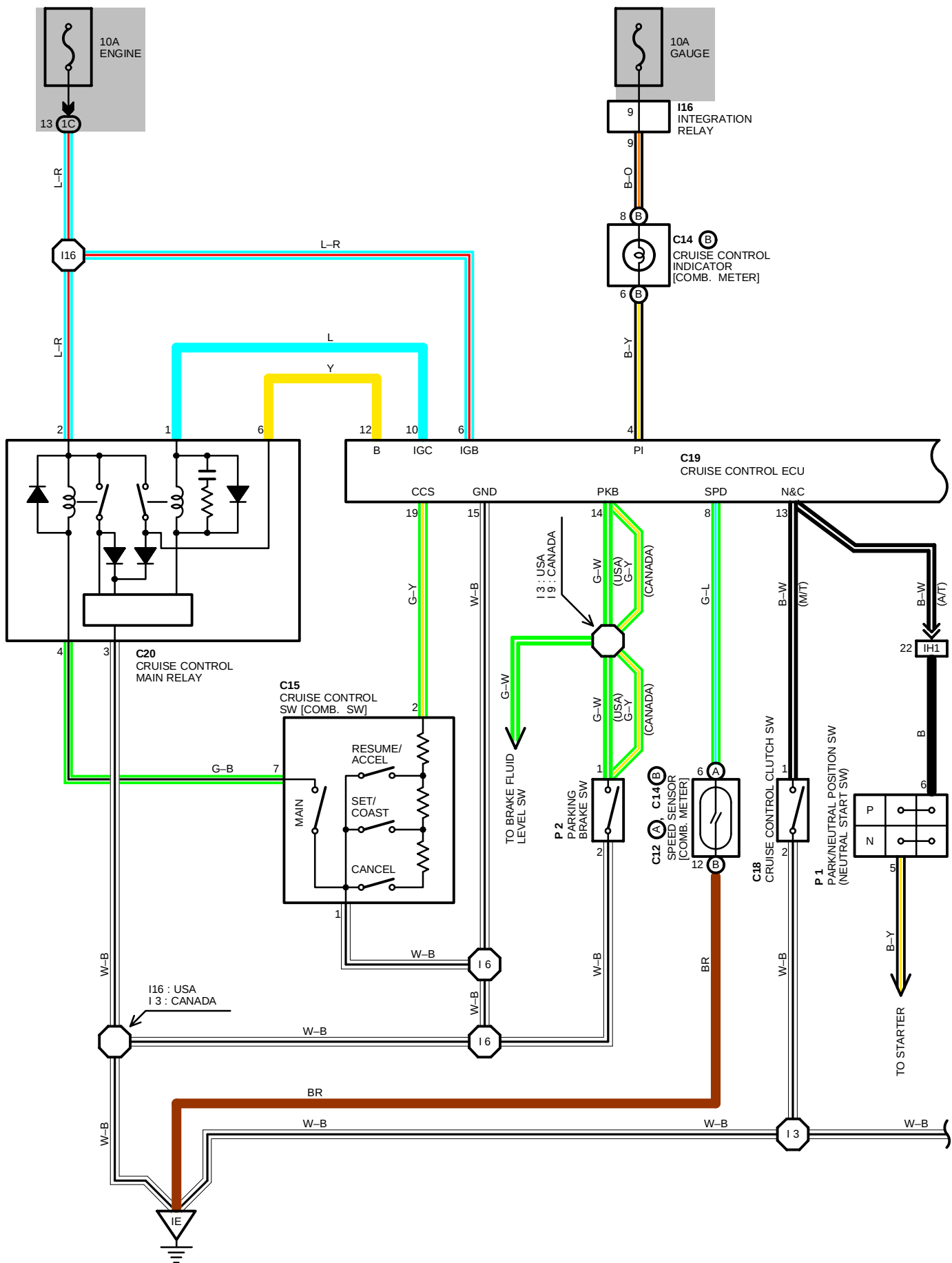
CODE			SEE PAGE			GROUND POINTS LOCATION		
IE	34					LEFT KICK PANEL		

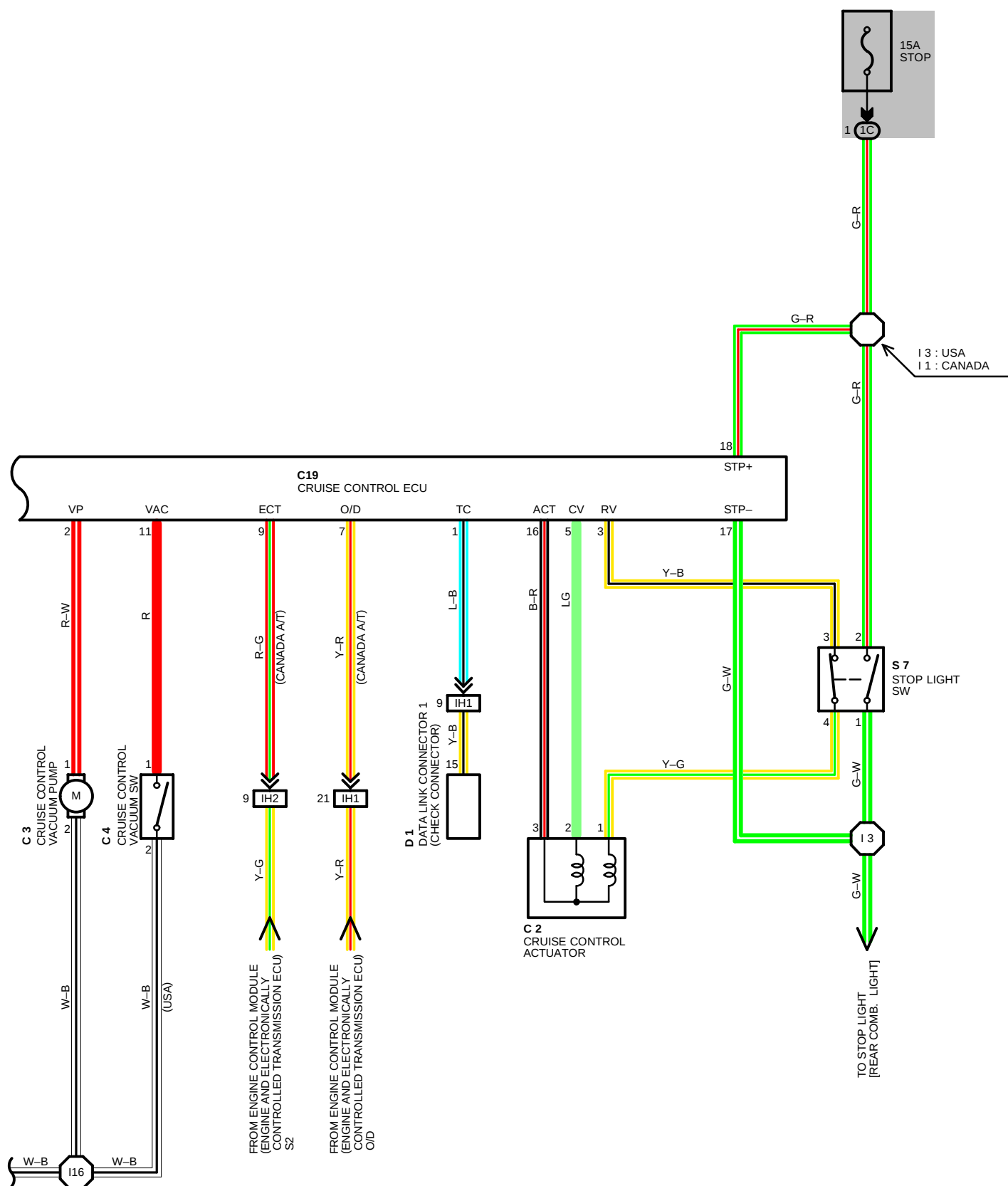
 : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I 1	34	COWL WIRE	I 9	34	COWL WIRE
I 3			I16		
I 6					



CRUISE CONTROL (VACUUM TYPE)





CRUISE CONTROL (VACUUM TYPE)

SYSTEM OUTLINE

WHEN THE IGNITION SW IS TURNED TO ON, THE CURRENT FLOWING THROUGH THE **ENGINE** FUSE FLOWS SIMULTANEOUSLY TO **TERMINAL 6** OF THE ECU AND TO **TERMINAL 2** OF THE CRUISE CONTROL MAIN RELAY. IF AT THIS TIME THE MAIN SW IS TURNED TO ON, THE CURRENT APPLIED TO **TERMINAL 2** FLOWS FROM **TERMINAL 6** OF THE MAIN RELAY → **TERMINAL 12** OF THE ECU, MAINTAINING THE CRUISE CONTROL SYSTEM IN CONSTANT READINESS FOR OPERATION.

SIMULTANEOUSLY, THE CURRENT FLOWING THROUGH THE **GAUGE** FUSE FLOWS TO **TERMINAL (B) 8** OF THE INDICATOR LIGHT (COMB. METER) → **TERMINAL (B) 6** → **TERMINAL 4** OF THE ECU → **TERMINAL 15** → **GROUND**, CAUSING THE INDICATOR LIGHT TO LIGHT UP.

1. CRUISE CONTROL DRIVING

WHEN THE MAIN SW IS TURNED ON AND THE SET SW IS PUSHED IN WITH THE VEHICLE SPEED WITHIN THE SET LIMIT (APPROX. **40KM/H, 25RPM TO 200KM/H, 124MPH**) A SIGNAL IS INPUT TO **TERMINAL 19** OF THE ECU AND THE VEHICLE SPEED AT THAT TIME IS RECORDED IN THE ECU MEMORY AS THE SET SPEED. THE ECU COMPARES THE RECORDED SET SPEED WITH THE ACTUAL VEHICLE SPEED INPUT INTO **TERMINAL 8** FROM THE VEHICLE SPEED SENSOR (SPEED SENSOR) [COMB. METER], AND CONTROLS THE CRUISE CONTROL ACTUATOR IN ORDER TO MAINTAIN THE SET VEHICLE SPEED.

WHEN THE ACTUAL VEHICLE SPEED IS LOWER THAN THE SET SPEED, ECU OPERATION LENGTHENS THE PERIOD OF CURRENT FLOW FROM **TERMINAL 5** OF THE ECU → **TERMINAL 2** OF THE ACTUATOR → THE CONTROL VALVE → **TERMINAL 3** → **TERMINAL 16** OF THE ECU, THE CABLE IS PULLED IN THE DIRECTION FOR OPENING THROUGH VALVE AND THE VEHICLE SPEED INCREASES.

WHEN THE ACTUAL VEHICLE SPEED IS HIGHER THAN THE SET SPEED, A SHORTER PERIOD OF CURRENT FLOW TO THE CONTROL VALVE RETURNS THE CABLE IN THE DIRECTION FOR CLOSING THE THROTTLE VALVE AND THE VEHICLE SPEED DECREASES.

(ACTUATOR OPERATION)

WHEN THE CRUISE CONTROL SYSTEM OPERATES (THE SET SIGNAL IS INPUT), CURRENT FLOWS FROM THE ECU TO THE RELEASE VALVE, CLOSING THE ATMOSPHERIC INTAKE PORT.

WHEN THERE IS CONTINUITY TO THE CONTROL VALVE, VACUUM IS INTRODUCED INSIDE THE ACTUATOR, AND WHEN THERE IS NO CONTINUITY, VACUUM INTAKE STOPS AND ATMOSPHERE IS INTRODUCED. IN OTHER WORDS, THE ACTUATOR (THROTTLE VALVE) IS CONTROLLED BY CHANGING THE RATIO OF CONTINUITY AND NON-CONTINUITY TO THE CONTROL VALVE WITHIN A SPECIFIED PERIOD OF TIME.

(ROLE OF THE VACUUM SW AND VACUUM PUMP.)

WHEN THE VACUUM SW TURNS ON DURING CRUISE CONTROL OPERATION, ITS SIGNAL IS INPUT TO **TERMINAL 11** OF THE ECU SO THAT THE ECU APPLIES CURRENT TO OPERATE THE VACUUM PUMP (**TERMINAL 2** OF THE ECU → **TERMINAL 1** OF THE PUMP → **TERMINAL 2** → **GROUND**) AND SUPPLEMENT THE ENGINE VACUUM WHICH BY ITSELF IS INADEQUATE FOR CONTROL.

2. CANCEL MECHANISM

IF ANY OF THE FOLLOWING OPERATIONS IS PERFORMED DURING CRUISE CONTROL, THEN CONTINUITY TO THE CONTROL VALVE AND THE RELEASE VALVE IS CUT OFF AND CRUISE CONTROL IS RELEASED.

- * DEPRESSING THE CLUTCH PEDAL (CLUTCH SW ON), SIGNAL INPUT TO **TERMINAL 13** OF THE ECU.
- * PLACING THE PARK/NEUTRAL POSITION SW (NEUTRAL START SW) IN "N" POSITION (PARK/NEUTRAL POSITION SW (NEUTRAL START SW) ON), SIGNAL INPUT TO **TERMINAL 13** OF THE ECU.
- * DEPRESSING THE BRAKES PEDAL (STOP LIGHT SW ON) SIGNAL INPUT TO **TERMINAL 17** OF THE ECU.
- * PULLING THE PARKING BRAKE LEVER (PARKING BRAKE SW ON), SIGNAL INPUT TO **TERMINAL 14** OF THE ECU.
- * PUSHING THE CRUISE CONTROL CANCEL SW, SIGNAL INPUT TO **TERMINAL 19** OF THE ECU.

3. COAST CONTROL

WHILE THE COAST SW IS ON DURING CRUISE CONTROL, CURRENT FLOWS TO THE CONTROL VALVE AND RELEASE VALVE IS STOPPED AND THE VEHICLE DECELERATES UNTIL THE SW IS RELEASED. THE VEHICLE SPEED WHEN THE SW IS RELEASED IS THEN RECORDED IN MEMORY.

4. RESUME CONTROL

BY TURNING THE RESUME SW TO ON AFTER CANCELLATION OF THE CRUISE CONTROL SYSTEMS, THE VEHICLE SPEED WILL RETURN TO THE SPEED SET BEFORE CANCELLATION. PROVIDED THAT THE VEHICLE SPEED IS WITHIN THE SET LIMITS.

5. ACCEL CONTROL

WHEN THE ACCEL SW IS TURNED TO ON DURING CRUISE CONTROL DRIVING, CURRENT CONTINUED TO FLOW TO THE CONTROL VALVE AND THE VEHICLE ACCELERATES. THE VEHICLE SPEED WHEN THE SW IS TURNED OFF IS RECORDED IN MEMORY.

SERVICE HINTS

C19 CRUISE CONTROL ECU

(DISCONNECT THE ECU CONNECTOR)

15-GROUND : ALWAYS CONTINUOUS

12-GROUND : APPROX. 12 VOLTS WITH IGNITION SW AND MAIN SW ON

8-GROUND : 4 PULSE WITH 1 ROTATION OF ROTOR SHAFT

18-GROUND : ALWAYS APPROX. 12 VOLTS

17-GROUND : APPROX. 12 VOLTS WITH BRAKE PEDAL DEPRESSED (ONE OF THE CANCEL SW)

13-GROUND : CONTINUOUS WITH CLUTCH PEDAL DEPRESSED (M/T) OR SHIFT LEVER IN **N** OR **P** POSITION (A/T) (ONE OF THE CANCEL SW)

14-GROUND : CONTINUOUS WITH PARKING BRAKE LEVER PULL UP (ONE OF THE CANCEL SW) OR BRAKE LEVEL WARNING SW ON

5-16 : APPROX. 30 Ω (ACTUATOR CONTROL VALVE)

3-16 : APPROX. 68 Ω (ACTUATOR RELEASE VALVE)

19-GROUND : APPROX. 68 Ω WITH RESUME/ACCEL SW ON

APPROX. 198 Ω WITH SET/COAST SW ON

APPROX. 418 Ω WITH CANCEL SW ON

○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
C 2	26 (22R-E)	C15	28	I16	28
C 3	26 (22R-E)	C18	28	P 1	27 (22R-E)
C 4	26 (22R-E)	C19	28	P 2	28
C12	A 28	C20	28	S 7	28
C14	B 28	D 1	26 (22R-E)		

○ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1C	20	COWL WIRE AND J/B NO.1 (LEFT KICK PANEL)

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
IH1	34	ENGINE WIRE AND COWL WIRE (RIGHT KICK PANEL)
IH2		

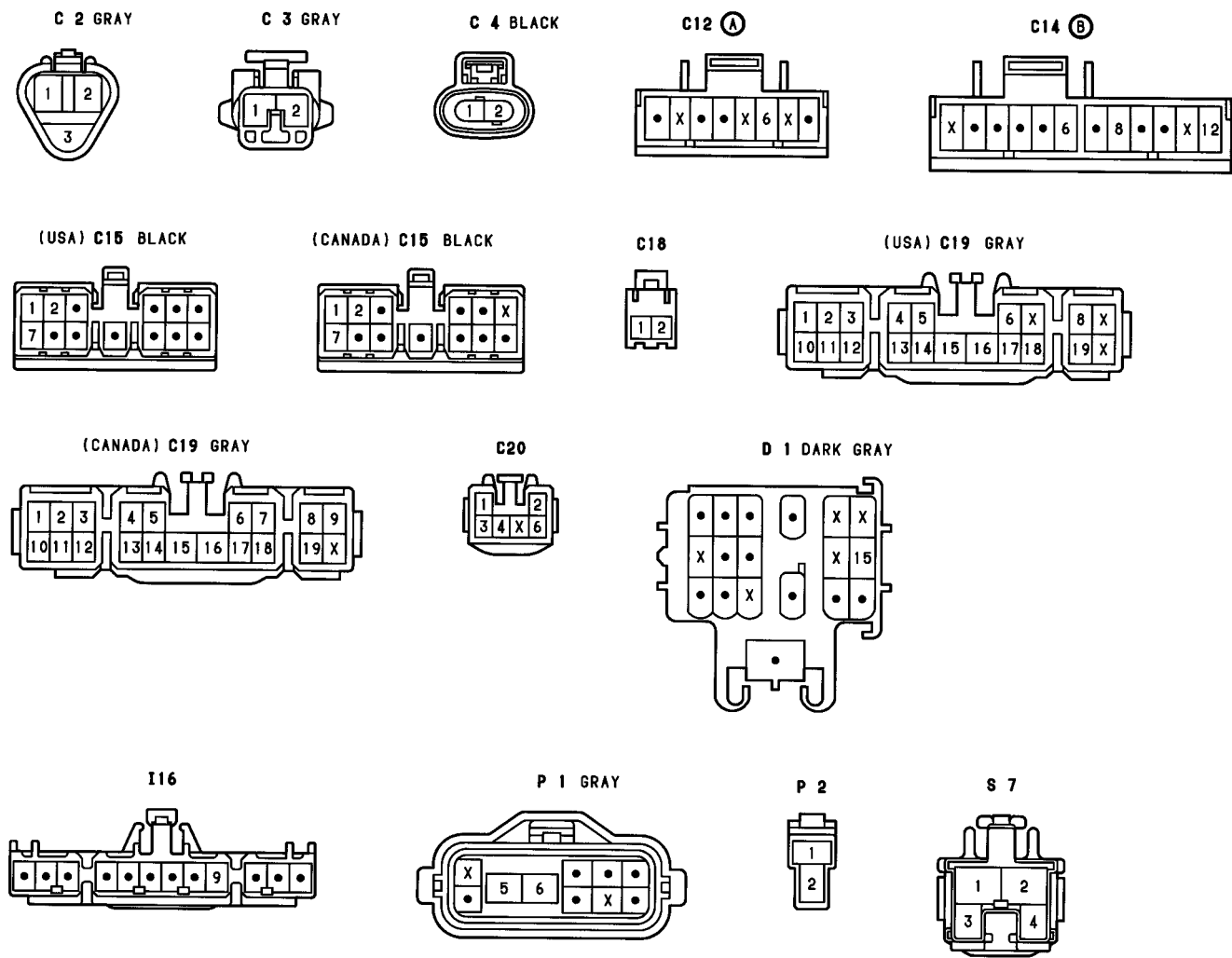
▽ : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
IE	34	LEFT KICK PANEL

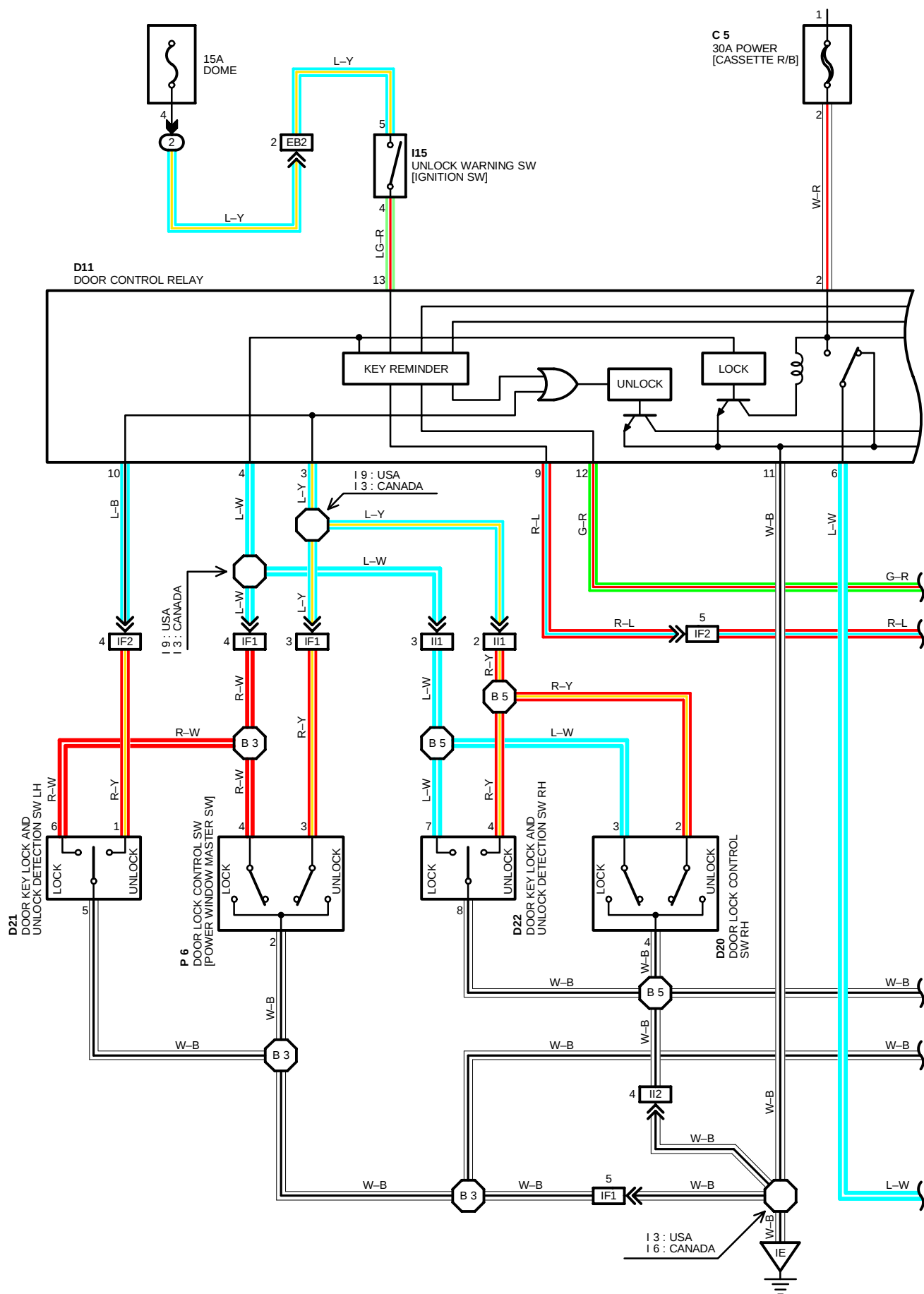
○ : SPLICE POINTS

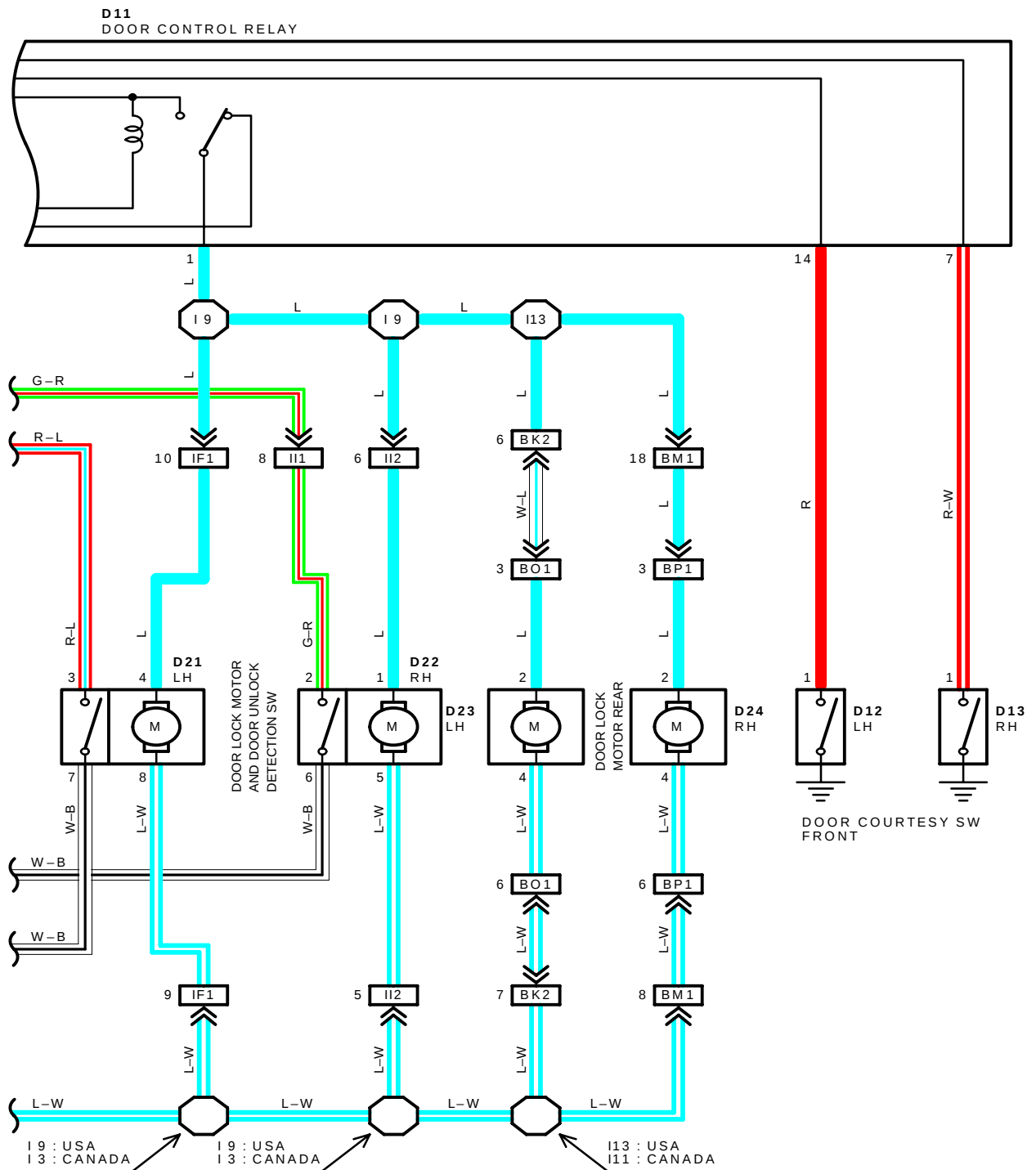
CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I 1	34	COWL WIRE	I 9	34	COWL WIRE
I 3			I16		
I 6					

CRUISE CONTROL (VACUUM TYPE)



DOOR LOCK CONTROL





DOOR LOCK CONTROL

SYSTEM OUTLINE

CURRENT ALWAYS FLOWS TO **TERMINAL 2** OF THE DOOR CONTROL RELAY THROUGH **POWER FUSE**.

1. MANUAL LOCK OPERATION

TO PUSH DOOR LOCK CONTROL SW OR KEY SW TO **LOCK** POSITION, A LOCK SIGNAL IS INPUT TO **TERMINAL 4** OF THE DOOR CONTROL RELAY AND CAUSES THE RELAY TO FUNCTION. CURRENT FLOWS FROM **TERMINAL 2** OF THE RELAY → **TERMINAL 6** → **TERMINAL 8** (FRONT DOOR LH), **5** (FRONT DOOR RH), **4** (REAR DOOR LH, RH) OF THE DOOR LOCK MOTOR → **TERMINAL 4** (FRONT DOOR LH), **1** (FRONT DOOR RH), **2** (REAR DOOR LH, RH) → **TERMINAL 1** OF THE RELAY → **TERMINAL 11** TO **GROUND** AND DOOR LOCK MOTOR CAUSES THE DOOR TO LOCK.

2. MANUAL UNLOCK OPERATION

TO PUSH DOOR LOCK CONTROL SW OR KEY SW TO **UNLOCK** POSITION, AN UNLOCK SIGNAL IS INPUT TO **TERMINAL 3** OF THE DOOR CONTROL RELAY AND CAUSES THE RELAY TO FUNCTION. CURRENT FLOWS FROM **TERMINAL 2** OF THE RELAY → **TERMINAL 1** → **TERMINAL 4** (FRONT DOOR LH), **1** (FRONT DOOR RH), **2** (REAR DOOR LH, RH) OF THE DOOR LOCK MOTOR → **TERMINAL 8** (FRONT DOOR LH), **5** (FRONT DOOR RH), **4** (REAR DOOR LH, RH) → **TERMINAL 6** OF THE RELAY → **TERMINAL 11** → TO **GROUND** AND DOOR LOCK MOTOR CAUSES DOOR TO UNLOCK.

3. IGNITION KEY REMINDER OPERATION

* OPERATING DOOR LOCK KNOB (IN DOOR LOCK MOTORS OPERATION)

WITH IGNITION KEY IN CYLINDER (UNLOCK WARNING SW ON), WHEN THE DOOR IS OPENED AND LOCKED USING DOOR LOCK KNOB (DOOR LOCK MOTOR), THE DOOR IS LOCKED ONCE BUT EACH DOOR IS UNLOCKED SOON BY THE FUNCTION OF RELAY. AS A RESULT, THE CURRENT FLOWS FROM **TERMINAL 9** OR **12** OF THE RELAY → **TERMINAL 1** → **TERMINAL 4** (FRONT DOOR LH), **1** (FRONT DOOR RH), **2** (REAR DOOR LH, RH) OF THE DOOR LOCK MOTOR → **TERMINAL 8** (FRONT DOOR LH), **5** (FRONT DOOR RH), **4** (REAR DOOR LH, RH) → **TERMINAL 6** OF THE RELAY → **TERMINAL 11** → TO **GROUND** AND CAUSES ALL THE DOORS TO UNLOCK.

* OPERATING DOOR LOCK CONTROL SW OR DOOR LOCK KEY SW

WITH IGNITION KEY IN CYLINDER (UNLOCK WARNING SW ON), WHEN THE DOOR IS OPENED AND LOCKED USING DOOR LOCK CONTROL SW OR KEY SW. THE DOOR IS LOCKED ONCE BUT EACH DOOR IS UNLOCK BY THE FUNCTION OF SW CONTAINED IN MOTOR, WHICH THE SIGNAL IS INPUT TO **TERMINAL 9** OR **12** OF THE RELAY. ACCORDING TO THIS INPUT SIGNAL, THE CURRENT IN RELAY FLOWS FROM **TERMINAL 2** OF THE RELAY → **TERMINAL 1** → **TERMINAL 4** (FRONT DOOR LH), **1** (FRONT DOOR RH), **2** (REAR DOOR LH, RH) OF THE DOOR LOCK MOTOR → **TERMINAL 8** (FRONT DOOR LH), **5** (FRONT DOOR RH), **4** (REAR DOOR LH, RH) → **TERMINAL 6** → OF THE RELAY → **TERMINAL 11** → TO **GROUND** AND CAUSES ALL THE DOOR TO UNLOCK.

SERVICE HINTS

D11 DOOR CONTROL RELAY

11-GROUND : ALWAYS CONTINUOUS

14-GROUND : CONTINUOUS WITH FRONT LH DOOR OPEN

2-GROUND : ALWAYS APPROX. 12 VOLTS

1-GROUND : APPROX. 12 VOLTS 0.2 SECONDS WITH FOLLOWING OPERATION

* DOOR LOCK CONTROL SW UNLOCKED.

* DOOR LOCK CONTROL SW LOCKED WITH IGNITION KEY IN CYLINDER AND DRIVER'S DOOR OPEN (IGNITION KEY REMINDER FUNCTION)

* DOOR LOCK KNOB LOCKED WITH IGNITION KEY IN CYLINDER AND DRIVER'S DOOR OPEN (IGNITION KEY REMINDER FUNCTION)

* UNLOCKING THE DRIVER'S, PASSENGER'S DOOR CYLINDER WITH KEY

6-GROUND : APPROX. 12 VOLTS 0.2 SECONDS WITH FOLLOWING OPERATION

* DOOR LOCK CONTROL SW LOCKED

* LOCKING THE DRIVER'S PASSENGER'S DOOR CYLINDER WITH KEY

4-GROUND : CONTINUOUS WITH DOOR LOCK CONTROL SW LOCKED OR DRIVER'S, PASSENGER'S DOOR LOCK CYLINDER LOCKED WITH KEY

7-GROUND : CONTINUOUS WITH FRONT RH DOOR OPEN

9-GROUND : CONTINUOUS WITH FRONT LH DOOR LOCK KNOB UNLOCKED

12-GROUND : CONTINUOUS WITH FRONT RH DOOR LOCK KNOB UNLOCKED

13-GROUND : APPROX. 12 VOLTS WITH IGNITION KEY IN CYLINDER

3-GROUND : CONTINUOUS WITH DOOR LOCK CONTROL SW UNLOCKED OR DRIVER'S, PASSENGER'S DOOR LOCK CYLINDER UNLOCKED WITH KEY

D12, D13 DOOR COURTESY SW

1-GROUND : CLOSED WITH DOOR OPEN

D21, D22 DOOR KEY LOCK AND UNLOCK DETECTION SW

1-5 : CLOSED WITH DOOR LOCK CYLINDER UNLOCKED WITH KEY

5-6 : CLOSED WITH DOOR LOCK CYLINDER LOCKED WITH KEY

D21, D22 DOOR LOCK MOTOR

3-7 : CLOSED WITH **UNLOCK** POSITION (DRIVER'S)

2-6 : CLOSED WITH **UNLOCK** POSITION (PASSENGER'S)

I15 UNLOCK WARNING SW [IGNITION SW]

1-2 : CLOSED WITH IGNITION KEY IN CYLINDER

○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
D 5	28	D20	29	D24	29
D11	28	D21	29	I15	28
D12	28	D22	29	P 6	29
D13	28	D23	29		

○ : RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	22	R/B NO. 2 (ENGINE COMPARTMENT RIGHT)

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

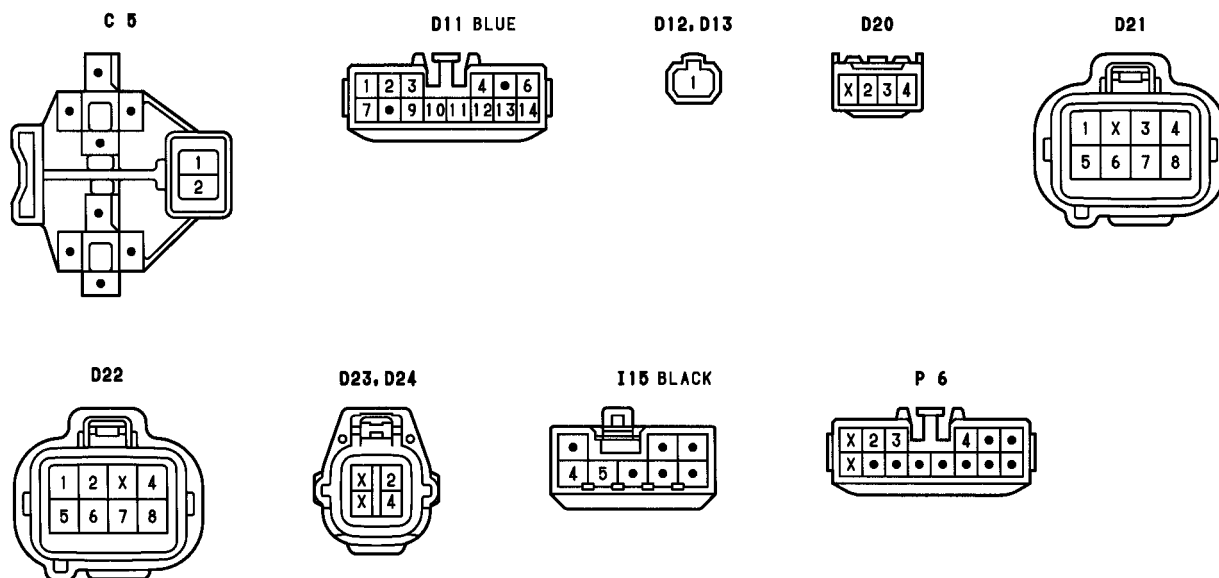
CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EB2	30 (3VZ-E) 32 (22R-E)	COWL WIRE AND ENGINE ROOM MAIN WIRE (R/B NO. 2)
IF1	34	FRONT DOOR LH WIRE AND COWL WIRE (LEFT KICK PANEL)
IF2	34	FRONT DOOR RH WIRE AND COWL WIRE (RIGHT KICK PANEL)
II1	34	FRONT DOOR LH WIRE AND COWL WIRE (LEFT KICK PANEL)
II2	34	FRONT DOOR RH WIRE AND COWL WIRE (RIGHT KICK PANEL)
BK2	36	COWL WIRE AND FLOOR NO. 3 LH WIRE (LEFT SIDE OF FRONT LH SEAT)
BM1	36	FLOOR NO. 3 RH WIRE AND COWL WIRE (RIGHT SIDE OF FRONT RH SEAT)
BO1	36	REAR DOOR LH WIRE AND FLOOR NO. 3 LH WIRE (LEFT CENTER PILLAR)
BP1	36	REAR DOOR RH WIRE AND FLOOR NO. 3 RH WIRE (RIGHT CENTER PILLAR)

▽ : GROUND POINTS

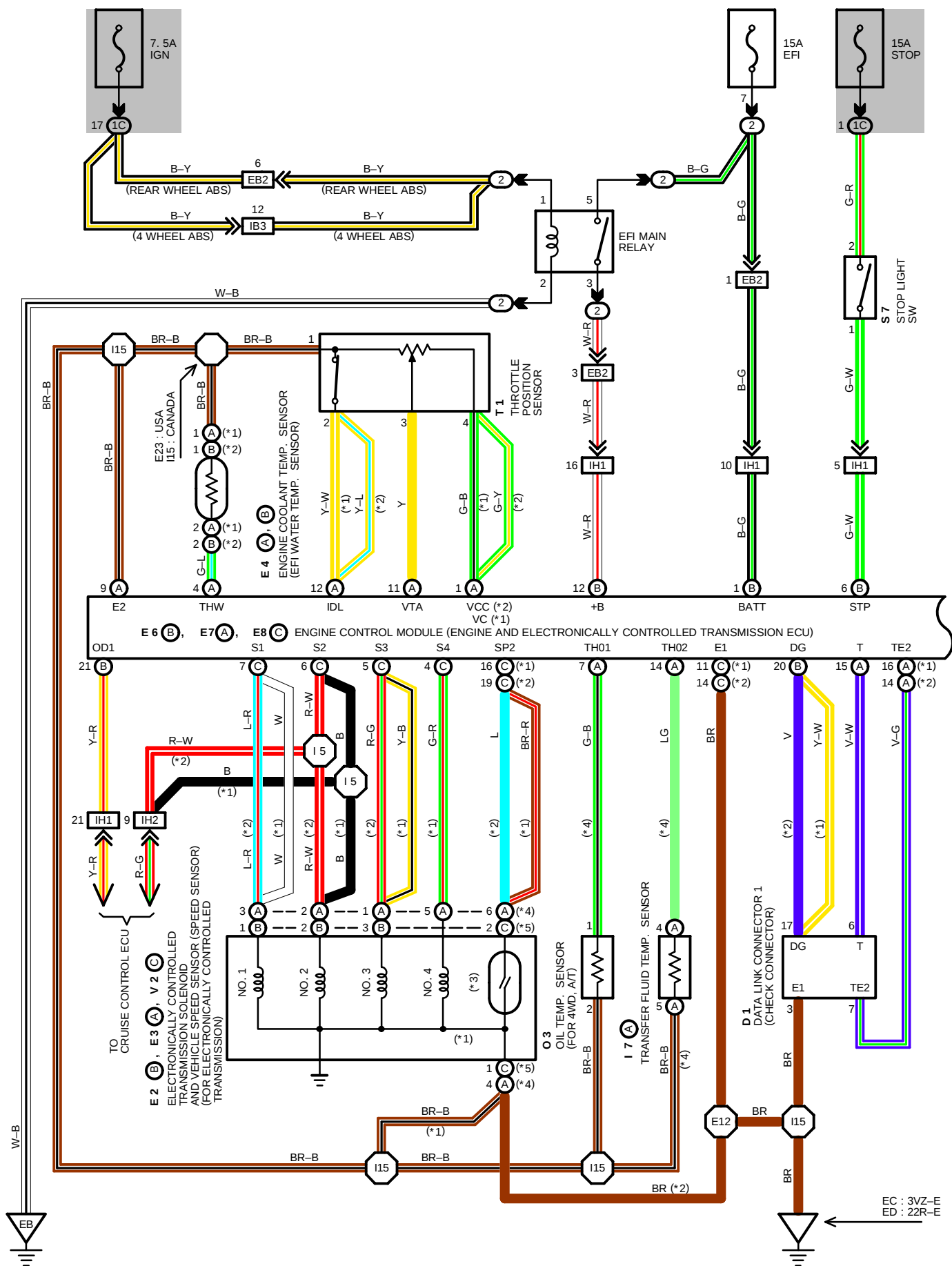
CODE	SEE PAGE	GROUND POINTS LOCATION
IE	34	LEFT KICK PANEL

○ : 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 6			B 3	36	FRONT DOOR LH WIRE
I 9			B 5	36	FRONT DOOR RH WIRE
I11					



ELECTRONICALLY CONTROLLED TRANSMISSION





ELECTRONICALLY CONTROLLED TRANSMISSION

SYSTEM OUTLINE

PREVIOUS AUTOMATIC TRANSMISSIONS HAVE SELECTED EACH GEAR SHIFT USING MECHANICALLY CONTROLLED THROTTLE HYDRAULIC PRESSURE, GOVERNOR HYDRAULIC PRESSURE AND LOCK-UP HYDRAULIC PRESSURE, THE ELECTRONICALLY CONTROLLED TRANSMISSION, HOWEVER, ELECTRICALLY CONTROLS THE LINE PRESSURE AND LOCK-UP PRESSURE ETC, THROUGH THE SOLENOID VALVE, ENGINE CONTROL MODULE (ENGINE AND ELECTRONICALLY CONTROLLED TRANSMISSION ECU) CONTROL OF THE SOLENOID VALVE BASED ON THE INPUT SIGNALS FROM EACH SENSOR MAKES SMOOTH DRIVING POSSIBLE BY SHIFT SELECTION FOR EACH GEAR WHICH IS MOST APPROPRIATE TO THE DRIVING CONDITIONS AT THAT TIME.

1. GEAR SHIFT OPERATION

DURING DRIVING, THE ENGINE CONTROL MODULE (ECU) SELECTS THE SHIFT FOR EACH GEAR WHICH IS MOST APPROPRIATE TO THE DRIVING CONDITIONS, BASED ON INPUT SIGNALS FROM THE ENGINE COOLANT TEMP. SENSOR (EFI WATER TEMP. SENSOR) TO **TERMINAL THW** OF THE ENGINE CONTROL MODULE (ECU), AND ALSO THE INPUT SIGNALS TO **TERMINAL SP2** OF THE ENGINE CONTROL MODULE (ECU) FROM THE VEHICLE SPEED SENSOR (SPEED SENSOR) DEVOTED TO THE ELECTRONICALLY CONTROLLED TRANSMISSION. CURRENT IS THEN OUTPUT TO THE ELECTRONICALLY CONTROLLED TRANSMISSION SOLENOIDS. WHEN SHIFTING TO 1ST SPEED, CURRENT FLOWS FROM **TERMINAL S1** OF THE ENGINE CONTROL MODULE (ECU) → **TERMINAL (A) 3** (3VZ-E 4WD) OR **TERMINAL (B) 1** (3VZ-E 2WD, 22R-E) OF THE ELECTRONICALLY CONTROLLED TRANSMISSION SOLENOIDS → **TERMINAL (C) 1** (3VZ-2 2WD, 22R-E) → **GROUND**, AND CONTINUITY TO THE NO. 1 SOLENOID CAUSES THE SHIFT.

FOR 2ND SPEED, CURRENT FLOWS FROM **TERMINAL S1** OF THE ENGINE CONTROL MODULE (ECU) → **TERMINAL (A) 3** (3VZ-E 4WD) OR **TERMINAL (B) 1** (3VZ-E 2WD, 22R-E) OF THE ELECTRONICALLY CONTROLLED TRANSMISSION SOLENOIDS → **TERMINAL (C) 1** (3VZ-E 2WD, 22R-E) → **GROUND**, AND FROM **TERMINAL S2** OF THE ENGINE CONTROL MODULE (ECU) → **TERMINAL (A) 2** (3VZ-E 4WD) OR **TERMINAL (B) 2** (3VZ-E 2WD, 22R-E) OF THE ELECTRONICALLY CONTROLLED TRANSMISSION SOLENOIDS → **TERMINAL (C) 1** (3VZ-E 2WD, 22R-E) → **GROUND**, AND CONTINUITY TO SOLENOIDS NO. 1 AND NO. 2 CAUSES THE SHIFT.

FOR 3RD SPEED, THERE IS NO CONTINUITY TO NO. 1 SOLENOID, ONLY TO NO. 2 CAUSING THE SHIFT. SHIFTING INTO 4TH SPEED (OVERDRIVE) TAKES PLACE WHEN THERE IS NO CONTINUITY TO EITHER NO. 1 OR NO. 2 SOLENOID.

2. LOCK-UP OPERATION

WHEN THE ENGINE CONTROL MODULE (ECU) JUDGES FROM EACH SIGNAL THAT LOCK-UP OPERATION CONDITIONS HAVE BEEN MET, CURRENT FLOWS FROM **TERMINAL S3** OF THE ENGINE CONTROL MODULE (ECU) → **TERMINAL (A) 1** (3VZ-E 4WD) OR **TERMINAL (B) 3** (3VZ-E 2WD, 22R-E) OF THE LOCK-UP SOLENOID → **TERMINAL (C) 1** (3VZ-E 2WD, 22R-E) → **GROUND**, CAUSING CONTINUITY TO THE LOCK-UP SOLENOID AND CAUSING LOCK-UP OPERATION.

3. TRANSFER SHIFT OPERATION (H4-L4)

WHEN THE TRANSFER SHIFT LEVER IS MOVED TO **H4** POSITION, THE CURRENT FROM THE **GAUGE** FUSE FLOWS TO THE 4WD INDICATOR LIGHT → **TERMINAL 2** OF ADD INDICATOR SW → **TERMINAL 1** → **TERMINAL (A) 2** (3VZ-E 4WD) OR **TERMINAL (B) 2** (22R-E 4WD) OF THE INDICATOR SW → **TERMINAL (A) 3** (3VZ-E 4WD) OR **TERMINAL (B) 1** (22R-E 4WD) → **GROUND** SO THAT THE INDICATOR LIGHT LIGHTS UP AND SHIFT TO H4 OCCURS.

IF THE LEVER IS NEXT MOVED TO **L4** POSITION, THE INDICATOR LIGHT OPERATES THE SAME AS WITH H4, CAUSING THE LIGHT TO CAME ON. AT THE SAME TIME, A SIGNAL IS INPUT TO **TERMINAL L4** OF THE ENGINE CONTROL MODULE (ECU). ACCORDINGLY, WHEN THE ENGINE CONTROL MODULE (ECU) DECIDES THAT DRIVING IN L4 IS POSSIBLE, CURRENT FLOWS FROM **TERMINAL S4** OF THE ENGINE CONTROL MODULE (ECU) → **TERMINAL (A) 5** (3VZ-E 4WD) OF THE ELECTRONICALLY CONTROLLED TRANSMISSION SOLENOID → **GROUND** AND SHIFT TO L4 OCCURS.

4. STOP LIGHT SW CIRCUIT

IF THE BRAKE PEDAL IS DEPRESSED (STOP LIGHT SW ON) WHEN DRIVING IN LOCK-UP CONDITION. A SIGNAL IS INPUT TO **TERMINAL STP** OF THE ENGINE CONTROL MODULE (ECU), THE ENGINE CONTROL MODULE (ECU) OPERATES AND CONTINUITY TO THE LOCK-UP SOLENOID IS CUT.

5. OVERDRIVE CIRCUIT

* O/D MAIN SW ON

WHEN THE O/D MAIN SW IS TURNED ON, A SIGNAL IS INPUT TO **TERMINAL OD2** OF THE ENGINE CONTROL MODULE (ECU) AND ENGINE CONTROL MODULE (ECU) OPERATION CAUSES GEAR SHIFT WHEN THE CONDITIONS FOR OVERDRIVE ARE MET.

* O/D MAIN SW OFF

WHEN THE OVERDRIVE SW IS TURNED TO OFF, THE CURRENT FLOWING THROUGH THE O/D OFF INDICATOR LIGHT FLOWS THROUGH THE O/D MAIN SW TO **GROUND**, CAUSING THE INDICATOR LIGHT TO LIGHT UP. AT THE SAME TIME, A SIGNAL IS INPUT TO **TERMINAL OD2** OF THE ENGINE CONTROL MODULE (ECU) AND ENGINE CONTROL MODULE (ECU) OPERATION PREVENTS SHIFT INTO OVERDRIVE.

6. ELECTRONICALLY CONTROLLED TRANSMISSION PATTERN SELECT SW CIRCUIT

IF THE ELECTRONICALLY CONTROLLED TRANSMISSION PATTERN SELECT SW IS CHANGED FROM NORMAL TO POWER, THE CURRENT FLOWING THROUGH THE POWER INDICATOR FLOWS TO **GROUND**. CURRENT FLOWS TO **TERMINAL PWR** OF THE ENGINE CONTROL MODULE (ECU), THE ENGINE CONTROL MODULE (ECU) OPERATES, AND SHIFT UP AND SHIFT DOWN OCCUR AT HIGHER VEHICLE SPEEDS THAN WHEN THE SW IS IN **NORMAL** POSITION.

7. A/T. OIL TEMP. WARNING

* TRANSMISSION SIDE

WHEN THE OIL TEMP. SENSOR AFFIXED TO THE TRANSMISSION CASE DETECTS THAT THE FLUID TEMP. IS **150°C (302°F)** OR MORE, THE ENGINE CONTROL MODULE (ECU) OPERATES AND THE CURRENT FLOWING THROUGH THE **GAUGE** FUSE FLOWS TO THE A/T. OIL TEMP. WARNING LIGHT → **TERMINAL OIL** OF THE ENGINE CONTROL MODULE (ECU) → **GROUND** SO THAT THE WARNING LIGHT LIGHTS UP, INFORMING THAT THE FLUID TEMP. IS HIGH. WHEN THE FLUID TEMP. DROPS TO **120°C (248°F)** OR LESS, THE ENGINE CONTROL MODULE (ENGINE AND ELECTRONICALLY CONTROLLED TRANSMISSION ECU) STOPS OPERATING AND THE WARNING LIGHT GOES OUT.

* TRANSMISSION SIDE (22R-E)

WHEN THE OIL TEMP. SENSOR AFFIXED TO THE TRANSMISSION CASE DETECTS THAT THE FLUID TEMP. IS **150°C (302°F)** OR MORE, THE TCCS ECU OPERATES AND THE CURRENT FLOWING THROUGH THE **GAUGE** FUSE FLOWS TO THE A/T. OIL TEMP. WARNING LIGHT → **TERMINAL 1** OF THE OIL TEMP. SW → **GROUND** SO THAT THE WARNING LIGHT LIGHTS UP, INFORMING THAT THE FLUID TEMP. IS HIGH. WHEN THE FLUID TEMP. DROPS TO **120°C (248°F)** OR LESS, THE ENGINE CONTROL MODULE (ENGINE AND ELECTRONICALLY CONTROLLED TRANSMISSION ECU) STOPS OPERATING AND THE WARNING LIGHT GOES OUT.

* TRANSFER SIDE (FOR 3VZ-E)

WHEN THE TRANSFER FLUID TEMP. SENSOR AFFIXED TO THE TRANSFER CHAIN CASE DETECTS THAT THE FLUID TEMP. IS **125°C (257°F)** OR HIGHER, THE ENGINE CONTROL MODULE (ECU) OPERATES AND THE CURRENT FLOWING THROUGH THE **GAUGE** FUSE FLOWS TO THE A/T. OIL TEMP. WARNING LIGHT → **TERMINAL OIL** OF THE ENGINE CONTROL MODULE (ECU) → **GROUND** SO THAT THE WARNING LIGHT LIGHTS UP, INFORMING THAT THE FLUID TEMP. IS HIGH. WHEN THE FLUID TEMP. DROPS TO **115°C (239°F)** OR LESS, THE ENGINE CONTROL MODULE (ECU) STOPS OPERATING AND THE WARNING LIGHT GOES OUT.

SERVICE HINTS

E 6(B), E 7(A), E 8(C) ENGINE CONTROL MODULE (ENGINE AND ELECTRONICALLY CONTROLLED TRANSMISSION ECU)

S1	-E1:	9.0-14.0 VOLTS
S4	-E1:	0 VOLTS WITH TRANSFER GEAR AT H2 OR H4 POSITION 9.0-14.0 VOLTS WITH TRANSFER SHIFT AT L4 POSITION
PWR	-E1:	7.5-14.0 VOLTS WITH PATTERN SELECT SW AT PWR POSITION BELOW 1.5 VOLTS WITH PATTERN SELECT SW AT NORM POSITION
STP	-E1:	7.5-14.0 VOLTS WITH BRAKE PEDAL DEPRESSED BELOW 1.5 VOLTS WITH BRAKE PEDAL RELEASED
THW	-E2:	0.2-1.0 VOLTS WITH COOLANT TEMP. 80°C (176°F)
THO1	-E2, THO2	-E2: 4-5 VOLTS WITH FLUID TEMP. 20°C (68°F)
IDL	-E2:	BELOW 1.5 VOLTS WITH THROTTLE VALVE FULLY CLOSED 9.0-14.0 VOLTS WITH THROTTLE VALVE OPEN
VTA	-E2:	0.3-0.8 VOLTS WITH THROTTLE VALVE FULLY CLOSED 3.2-4.9 VOLTS WITH THROTTLE VALVE FULLY OPEN
VCC	-E2:	4.5-5.5 VOLTS WITH IGNITION SW ON
OD1	-E1:	4.5-5.5 VOLTS WITH IGNITION SW ON
OD2	-E1:	9.0-14.0 VOLTS O/D MAIN SWITCH TURNED ON BELOW 3.0 VOLTS O/D MAIN SWITCH TURNED OFF
N	-E1:	7.5-14.0 VOLTS WITH SHIFT LEVER AT N POSITION BELOW 1.5 VOLTS WITH SHIFT LEVER AT EXCEPT N POSITION
2	-E1:	7.5-14.0 VOLTS WITH SHIFT LEVER AT 2 POSITION BELOW 1.5 VOLTS WITH SHIFT LEVER AT EXCEPT 2 POSITION
L	-E1:	7.5-14.0 VOLTS WITH SHIFT LEVER AT L POSITION BELOW 1.5 VOLTS WITH SHIFT LEVER AT EXCEPT L POSITION
L4	-E1:	7.5-14.0 VOLTS WITH TRANSFER SHIFT AT H2 OR H4 POSITION BELOW 1.5 VOLTS WITH TRANSFER SHIFT AT L4 POSITION
OIL	-E1:	9.0-14.0 VOLTS
+B	-E1:	9.0-14.0 VOLTS
BATT	-E1:	9.0-14.0 VOLTS

ELECTRONICALLY CONTROLLED TRANSMISSION

SERVICE HINTS

E 3 ELECTRONICALLY CONTROLLED TRANSMISSION SOLENOID

1,2,3,5-GROUND: APPROX. **11–15 Ω** (3VZ–E)

1,2,3-GROUND : APPROX. **11–15 Ω** (22R–E)

E 5 ELECTRONICALLY CONTROLLED TRANSMISSION PATTERN SELECT SW

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

P 1 PARK/NEUTRAL POSITION SW (NEUTRAL START SW)

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

O 4 O/D MAIN SW

3-1: OPEN WITH O/D MAIN SW AT **ON** POSITION

CLOSED WITH O/D MAIN SW AT **OFF** POSITION

S 7 STOP LIGHT SW

1-2: CLOSED WITH BRAKE PEDAL DEPRESSED

○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
A 5	24 (3VZ–E)	E 4	A 24 (3VZ–E)	O 3	25 (3VZ–E)
	26 (22R–E)		B 26 (22R–E)	O 4	28
C11	D 28	E 5 28		P 1	25 (3VZ–E)
C12	A 28	E 6	B 28		27 (22R–E)
C13	C 28	E 7	A 28	S 7	28
C14	B 28	E 8	C 28	T 1	25 (3VZ–E)
D 1	24 (3VZ–E)	I 4	B 27 (22R–E)		27 (22R–E)
	26 (22R–E)	I 5	C 27 (22R–E)	V 2	25 (3VZ–E)
E 2	24 (3VZ–E)	I 7	A 25 (3VZ–E)		27 (22R–E)
	26 (22R–E)	I16	28		
E 3	A 24 (3VZ–E)	O 2	27 (22R–E)		

○ : RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	22	R/B NO. 2 (ENGINE COMPARTMENT RIGHT)

○ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1C	20	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EB2	30 (3VZ–E)	COWL WIRE AND ENGINE ROOM MAIN WIRE (R/B NO. 2)
	32 (22R–E)	
IB3	34	ENGINE ROOM MAIN WIRE AND COWL WIRE (LEFT KICK PANEL)
IH1	34	ENGINE WIRE AND COWL WIRE (RIGHT KICK PANEL)
IH2		

▽ : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
EB	30 (3VZ–E)	LEFT FENDER
	32 (22R–E)	
EC	30 (3VZ–E)	RH CYLINDER HEAD COVER REAR
ED	32 (22R–E)	INTAKE MANIFOLD
IE	34	LEFT KICK PANEL

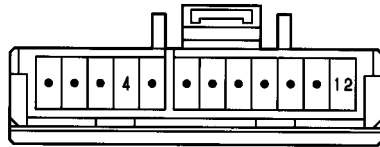
○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
E 4	30 (3VZ-E)	ENGINE WIRE	I 8	34	COWL WIRE
E12	32 (22R-E)		I 9		
E15			I11		
E23			I12		
I 4	34		I15	34	ENGINE WIRE
I 5	34	COWL WIRE			

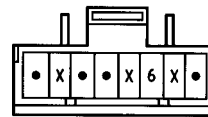
A 5 DARK GRAY



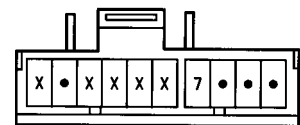
C11 ④ BLUE



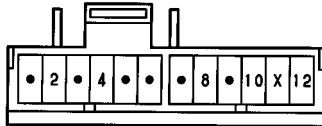
C12 ①



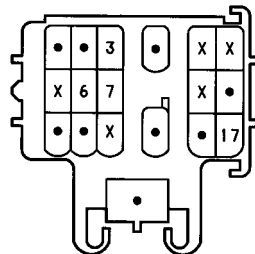
C13 ③ GRAY



C14 ⑤



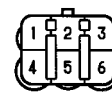
D 1 DARK GRAY



E 2 ② BLACK



E 3 ①



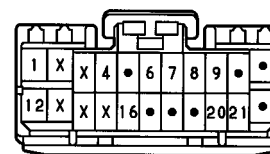
(3VZ-E) E 4 ① DARK GRAY (22R-E) E 4 ② GREEN



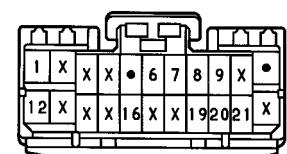
E 5 BLACK



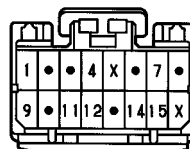
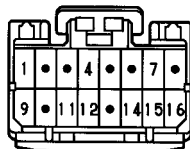
(3VZ-E) E 6 ② DARK GRAY



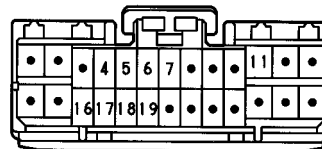
(22R-E) E 6 ③ DARK GRAY



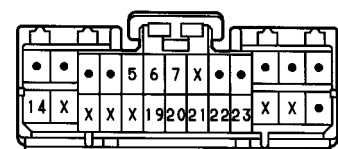
(3VZ-E) E 7 ① DARK GRAY (22R-E) E 7 ① DARK GRAY



(3VZ-E) E 8 ③ DARK GRAY



(22R-E) E 8 ③ DARK GRAY



I 4 ② GRAY



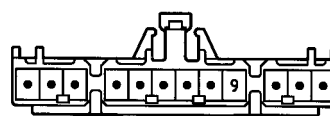
I 5 ③ BLUE



I 7 ① BLUE



I16



O 2 DARK GRAY



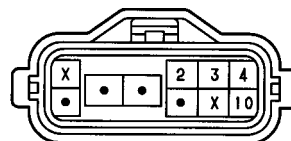
O 3 BLACK



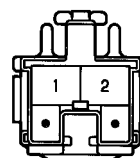
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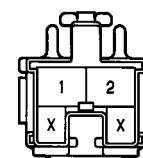
P 1 GRAY



(W/ CRUISE S 7 ①)



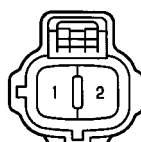
(W/O CRUISE S 7 ②) BLACK



T 1 BLACK



V 2 ③ BLACK



ENGINE CONTROL (22R-E)

SYSTEM OUTLINE

THE ENGINE CONTROL SYSTEM UTILIZES A MICROCOMPUTER AND MAINTAINS OVERALL CONTROL OF THE ENGINE, TRANSMISSION, ETC. AN OUTLINE OF ENGINE CONTROL IS GIVEN HERE.

1. INPUT SIGNAL

(1) ENGINE COOLANT TEMP. (WATER TEMP.) SIGNAL SYSTEM

THE ENGINE COOLANT TEMP. SENSOR (EFI WATER TEMP. SENSOR) DETECTS THE ENGINE COOLANT TEMP. AND HAS A BUILT-IN THERMISTOR WITH A RESISTANCE WHICH VARIES ACCORDING TO THE ENGINE COOLANT TEMP. (WATER TEMP.) THUS THE ENGINE COOLANT TEMP. (WATER TEMP.) IS INPUT IN THE FORM OF A CONTROL SIGNAL TO **TERMINAL THW** OF THE ENGINE CONTROL MODULE (ECU).

(2) INTAKE AIR TEMP. SIGNAL SYSTEM

THE INTAKE AIR TEMP. SENSOR IS INSTALLED INSIDE THE VOLUME AIR FLOW (AIR FLOW METER) AND DETECTS THE INTAKE AIR TEMP., WHICH IS INPUT AS A CONTROL SIGNAL TO **TERMINAL THA** OF THE ENGINE CONTROL MODULE (ECU).

(3) OXYGEN SENSOR SIGNAL SYSTEM

THE OXYGEN DENSITY IN THE EXHAUST EMISSIONS IS DETECTED AND INPUT AS A CONTROL SIGNAL TO **TERMINALS OX1** AND **OX2** OF THE ENGINE CONTROL MODULE (ECU). TO MAINTAIN STABLE DETECTION PERFORMANCE BY THE OXYGEN SENSOR, A HEATER IS USED FOR WARMING THE SENSOR. THE HEATER IS ALSO CONTROLLED BY THE ENGINE CONTROL MODULE (ECU) (HT1, HT2).

(4) RPM SIGNAL SYSTEM

THE CRANKSHAFT POSITION AND ENGINE SPEED ARE DETECTED BY THE PICK-UP COIL INSTALLED INSIDE THE DISTRIBUTOR, AND ARE INPUT AS CONTROL SIGNALS TO **TERMINAL NE** OF THE ENGINE CONTROL MODULE (ECU).

(5) THROTTLE SIGNAL SYSTEM

THE THROTTLE POSITION SENSOR DETECTS THE THROTTLE VALVE OPENING ANGLE, WHICH IS INPUT AS A CONTROL SIGNAL TO **TERMINAL VTA** OF THE ENGINE CONTROL MODULE (ECU), OR WHEN THE VALVE IS FULLY CLOSED, TO **TERMINAL IDL**.

(6) VEHICLE SPEED SIGNAL SYSTEM

THE VEHICLE SPEED SENSOR (SPEED SENSOR), INSTALLED INSIDE THE COMBINATION METER, DETECTS THE VEHICLE SPEED AND INPUT A CONTROL SIGNAL TO **TERMINAL SPD**, OF THE ENGINE CONTROL MODULE (ECU).

(7) PARK/NEUTRAL POSITION SW (NEUTRAL START SW) SIGNAL SYSTEM (FOR 2WD)

THE PARK/NEUTRAL POSITION SW (NEUTRAL START SW) DETECTS WHETHER THE SHIFT POSITION IS IN NEUTRAL OR NOT, AND INPUTS A CONTROL SIGNAL TO **TERMINAL NSW** OF THE ENGINE CONTROL MODULE (ECU).

(8) BATTERY SIGNAL SYSTEM

VOLTAGE IS CONSTANTLY APPLIED TO **TERMINAL BATT** OF THE ENGINE CONTROL MODULE (ECU). WHEN THE IGNITION SW IS TURNED TO ON, VOLTAGE FOR ENGINE CONTROL MODULE (ECU) OPERATION IS APPLIED VIA THE EFI MAIN RELAY TO **TERMINAL +B** OF THE ENGINE CONTROL MODULE (ECU).

(9) INTAKE AIR VOLUME SIGNAL SYSTEM

INTAKE AIR VOLUME IS DETECTED BY THE POTENTIOMETER INSTALLED INSIDE THE VOLUME AIR FLOW (AIR FLOW METER) AND IS INPUT AS A CONTROL SIGNAL TO **TERMINAL VS** OF THE ENGINE CONTROL MODULE (ECU). INSIDE THE VOLUME AIR FLOW (AIR FLOW METER) THERE IS ALSO A SW FOR FUEL PUMP OPERATION, AND WHEN THE MEASURING PLATE OPENS (AIR INTAKE OCCURS), THIS SW TURNS ON AND CURRENT FLOWS TO THE FUEL PUMP TO OPERATE IT.

(10) STOP LIGHT SW SIGNAL SYSTEM

THE STOP LIGHT SW IS USED TO DETECT WHETHER OR NOT THE VEHICLE IS BRAKING AND THE INFORMATION IS INPUT AS A CONTROL SIGNAL TO **TERMINAL STP** OF THE ENGINE CONTROL MODULE (ECU).

(11) STA SIGNAL SYSTEM

TO CONFIRM THAT THE ENGINE IS CRANKING, THE VOLTAGE APPLIED TO THE STARTER MOTOR DURING CRANKING IS DETECTED AND IS INPUT AS A CONTROL SIGNAL TO **TERMINAL STA** OF THE ENGINE CONTROL MODULE (ECU).

(12) ENGINE KNOCK SIGNAL SYSTEM

ENGINE KNOCKING IS DETECTED BY THE KNOCK SENSOR AND INPUT AS A CONTROL SIGNAL TO **TERMINAL KNK** OF THE ENGINE CONTROL MODULE (ECU).

(13) 4WD SIGNAL SYSTEM

WHETHER OR NOT THE VEHICLE IS OPERATING IN 4WD MODE IS DETERMINED, AND A CONTROL SIGNAL IS INPUT TO **TERMINAL 4WD** OF THE ENGINE CONTROL MODULE (ECU).

2. CONTROL SYSTEM

* MFI (MULTIPOINT FUEL INJECTION) SYSTEM

THE MFI (EFI) SYSTEM MONITORS THE ENGINE CONDITIONS THROUGH THE SIGNALS EACH SENSOR (INPUT SIGNALS (1) TO (11), (13)) INPUTS TO THE ENGINE CONTROL MODULE (ECU). BASED ON THIS DATA AND THE PROGRAM MEMORIZED IN THE ENGINE CONTROL MODULE (ECU), THE MOST APPROPRIATE FUEL INJECTION TIMING IS DECIDED AND CURRENT IS OUTPUT TO **TERMINALS #10 AND #20** OF THE ENGINE CONTROL MODULE (ECU). CAUSING THE INJECTORS TO OPERATE IT (TO INJECT FUEL). IT IS THIS SYSTEM WHICH, THROUGH THE WORK OF THE ENGINE CONTROL MODULE (ECU), FINELY CONTROLS FUEL INJECTION IN RESPONSE TO DRIVING CONDITIONS.

* ESA (ELECTRONIC SPARK ADVANCE) SYSTEM

THE ESA SYSTEM MONITORS THE ENGINE CONDITIONS USING THE SIGNALS (INPUT SIGNALS (1, 3 TO 8, 10, 13)) INPUT TO THE ENGINE CONTROL MODULE (ECU) FROM EACH SENSOR. BASED ON THIS DATA AND THE PROGRAM MEMORIZED IN THE ENGINE CONTROL MODULE (ECU), THE MOST APPROPRIATE IGNITION TIMING IS DECIDED AND CURRENT IS OUTPUT TO **TERMINAL 1GT** OF THE ENGINE CONTROL MODULE (ECU). THIS OUTPUT CONTROLS THE IGNITER TO PRODUCE THE MOST APPROPRIATE IGNITION TIMING FOR THE DRIVING CONDITIONS.

* FUEL PRESSURE-UP SYSTEM

THE FUEL PRESSURE UP SYSTEM CAUSES THE VSV (FOR FUEL PRESSURE UP) TO COME ON FOR HIGH TEMP. STARTS AND FOR ABOUT **120 SECONDS** AFTER STARTING IN ORDER TO INCREASE THE FUEL PRESSURE, IMPROVE STARTABILITY AT HIGH TEMPERATURES AND PROVIDE STABLE IDLING. THE ENGINE CONTROL MODULE (ECU) EVALUATES THE INPUT SIGNALS FROM EACH SENSOR INPUT SIGNALS ((1, 2, 4 AND 12)), OUTPUTS CURRENT TO **TERMINAL FPU** AND CONTROLS THE VSV.

* OXYGEN SENSOR HEATER CONTROL SYSTEM

THE OXYGEN SENSOR HEATER CONTROL SYSTEM TURNS THE HEATER TO ON WHEN THE INTAKE AIR VOLUME IS LOW (TEMP. OF EXHAUST EMISSIONS LOW), AND WARMS UP THE HEATED OXYGEN SENSOR (OXYGEN SENSOR) TO IMPROVE DETECTION PERFORMANCE OF THE SENSOR. THE ENGINE CONTROL MODULE (ECU) EVALUATES THE SIGNALS FROM EACH SENSOR (INPUT SIGNALS (1, 6, 9, 10, 12)), CURRENT IS OUTPUT TO **TERMINALS HT1 AND HT2** AND CONTROLS THE HEATER.

* PAIR CONTROL SYSTEM

THE PAIR CONTROL SYSTEM TURNS ON THE VSV (FOR PAIR) WHEN THE ENGINE IS COLD AND DURING DECELERATION, PREVENTING OVERHEATING OF THE TWC (THREE-WAY CATALYTIC CONVERTER) AND REDUCING HC AND CO EMISSIONS. THE ENGINE CONTROL MODULE (ECU) EVALUATES THE SIGNALS FROM EACH SENSOR (INPUT SIGNALS (1, 4, 5, 10)), THEN SENDS OUTPUT TO **TERMINAL AS** AND CONTROLS THE VSV.

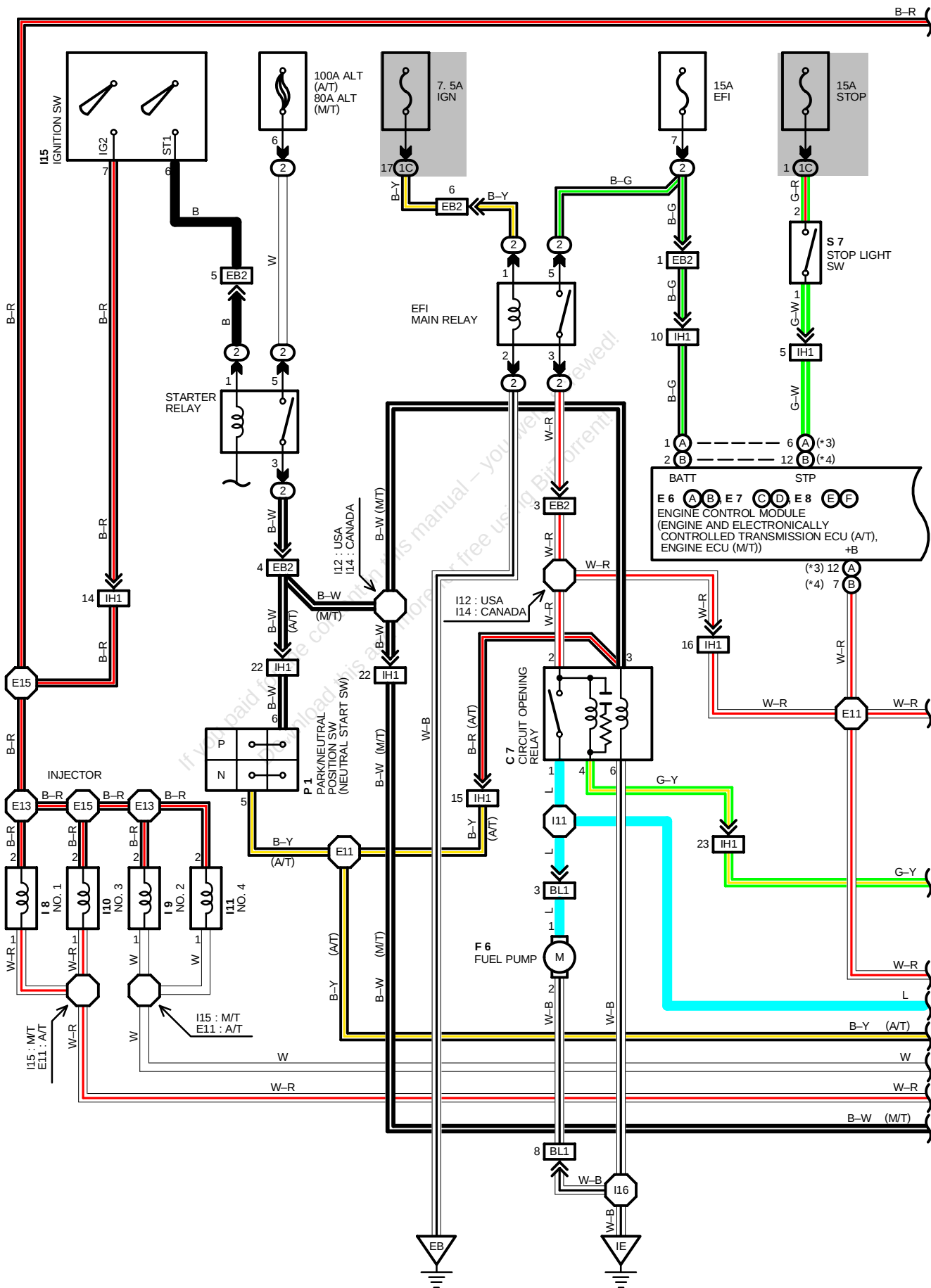
3. DIAGNOSIS SYSTEM

WITH THE DIAGNOSIS SYSTEM, WHEN THERE IS A MALFUNCTION IN THE ENGINE CONTROL MODULE (ECU) SIGNAL SYSTEM, THE MALFUNCTIONING SYSTEM IS RECORDED IN THE MEMORY. THE MALFUNCTIONING SYSTEM CAN THEN BE FOUND BY READING THE DISPLAY (CODE) OF THE MALFUNCTION INDICATOR LAMP (CHECK ENGINE WARNING LIGHT).

4. FAIL-SAFE SYSTEM

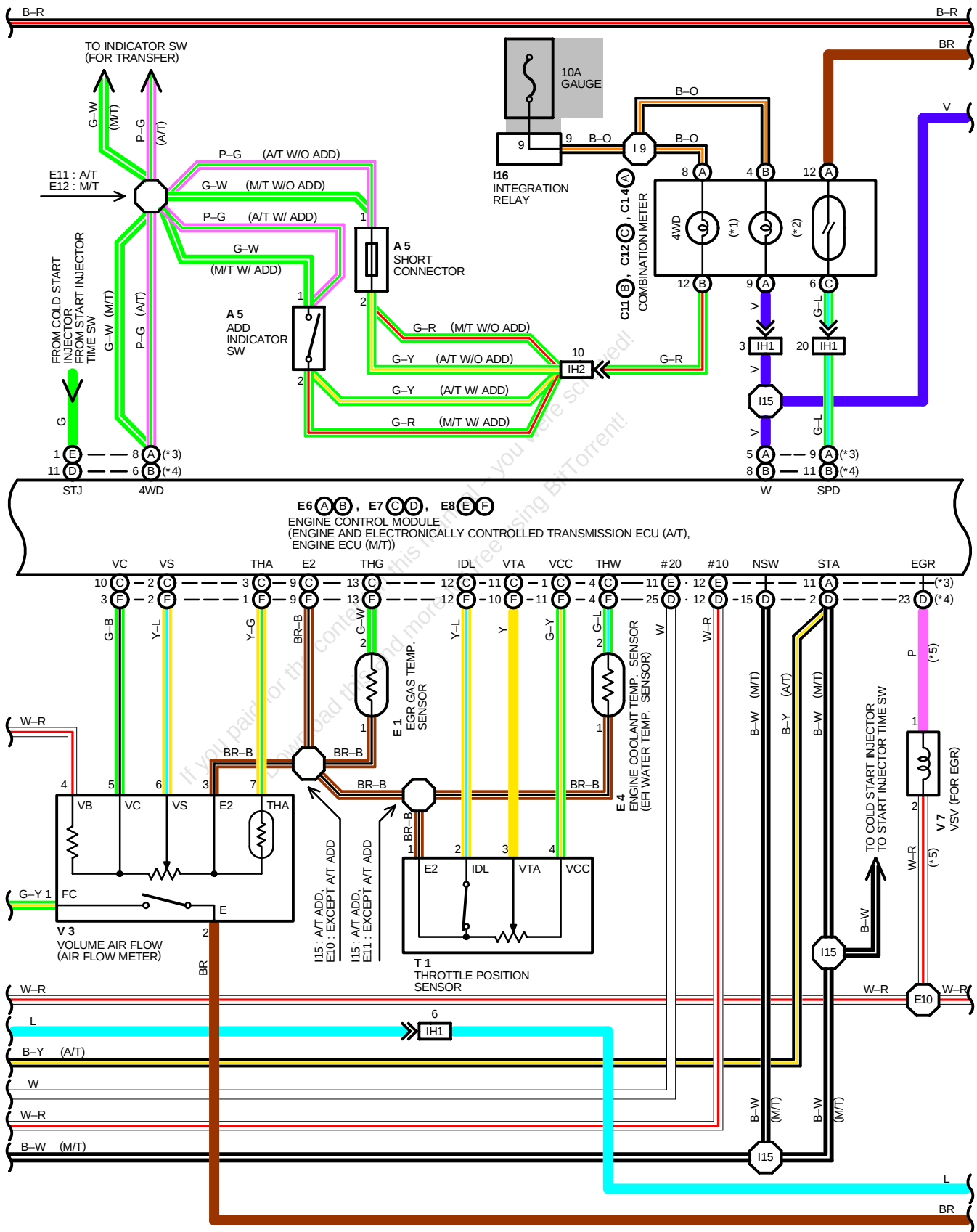
WHEN A MALFUNCTION OCCURS IN ANY SYSTEM, IF THERE IS A POSSIBILITY OF ENGINE TROUBLE BEING CAUSED BY CONTINUED CONTROL BASED ON THE SIGNALS FROM THAT SYSTEM, THE FAIL-SAFE SYSTEM EITHER CONTROLS THE SYSTEM BY USING DATA (STANDARD VALUES) RECORDED IN THE ENGINE CONTROL MODULE (ECU) MEMORY OR ELSE STOPS THE ENGINE.

ENGINE CONTROL (22R-E)



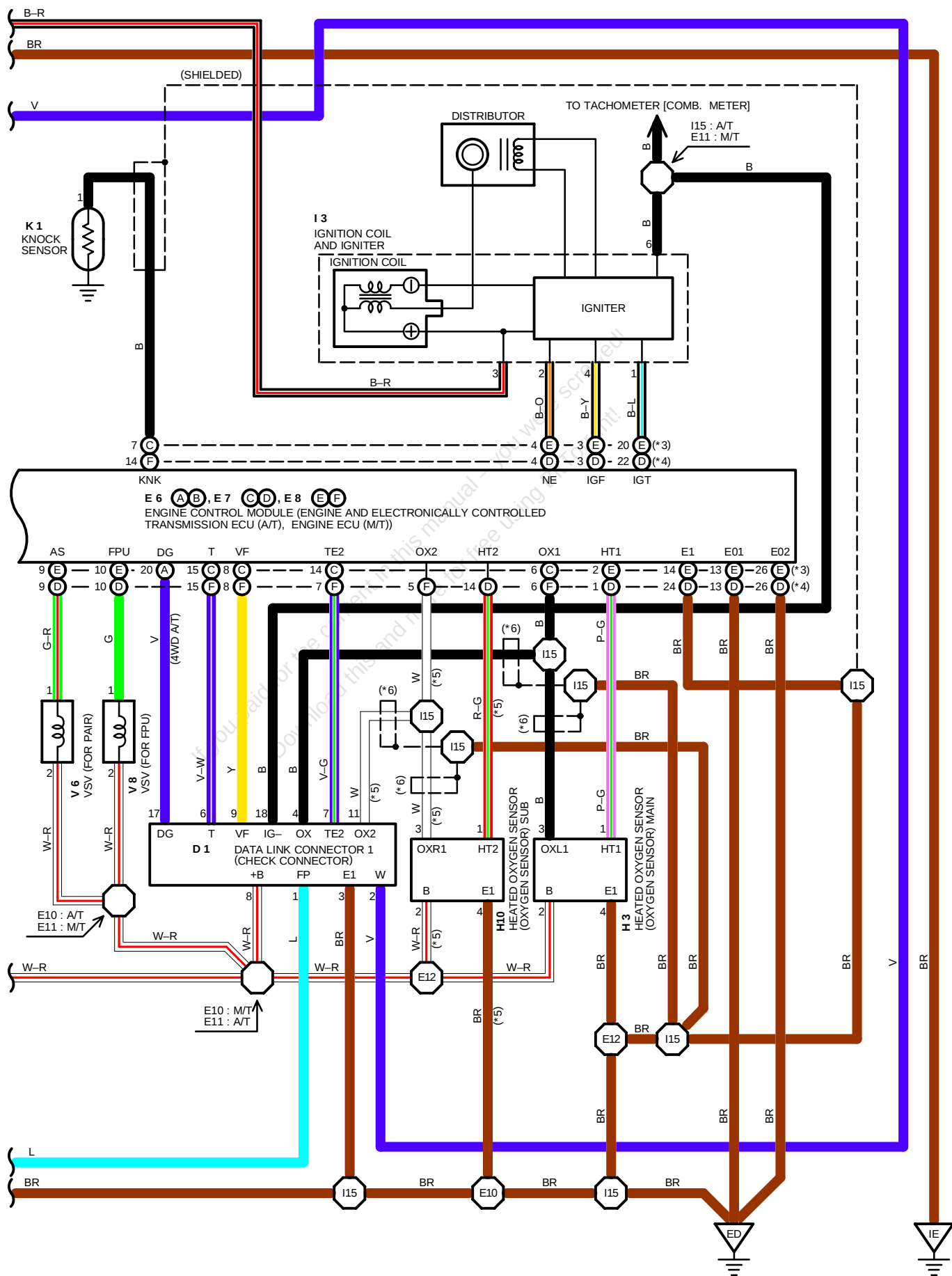
*1 : MALFUNCTION INDICATOR LAMP (CHECK ENGINE)
 *2 : VEHICLE SPEED SENSOR (SPEED SENSOR)

*3 : A/T
 *4 : M/T
 *5 : CALIFORNIA



ENGINE CONTROL (22R-E)

*3 : A/T *5 : CALIFORNIA
*4 : M/T *6 : SHIELDED



SERVICE HINTS

V 3 VOLUME AIR FLOW (AIR FLOW METER)

- 1-2: OPEN WITH MEASURING PLATE CLOSED
CLOSED WITH MEASURING PLATE OPEN
- 4-3: **200-400 Ω**
- 5-3: **100-300 Ω**
- 6-3: **20-400 Ω** (MEASURING PLATE FULLY CLOSED)
20-1000 Ω (MEASURING PLATE FULLY OPEN)
- 3-7: **10-20 K Ω** (-20° C, -4° F)
4-7 K Ω (0° C, 32° F)
2-3 K Ω (20° C, 68° F)
0.9-1.3 K Ω (40° C, 104° F)
0.4-0.7 K Ω (60° C, 140° F)

C 7 CIRCUIT OPENING RELAY

- 1-2: CLOSED WITH STARTER RUNNING OR MEASURING PLATE (AIR FLOW METER) OPEN

E 4 ENGINE COOLANT TEMP. SENSOR (EFI WATER TEMP. SENSOR)

- 1-2: **10-20 K Ω** (-20° C, -4° F)
4-7 K Ω (0° C, 32° F)
2-3 K Ω (20° C, 68° F)
0.9-1.3 K Ω (40° C, 104° F)
0.4-0.7 K Ω (60° C, 140° F)
0.2-0.4 K Ω (80° C, 176° F)

I 8, I 9, I 10, I 11 INJECTOR

- 1-2: APPROX. **13.8 Ω**

P 1 PARK/NEUTRAL POSITION SW (NEUTRAL START SW)

- 6-5: CLOSED WITH A/T SHIFT LEVER IN P OR N POSITION

T 1 THROTTLE POSITION SENSOR

- 3-1: **0.47-6.1 K Ω** WITH CLEARANCE BETWEEN LEVER AND STOP SCREW **0 MM (0 IN.)**
- 2-1: **2.3 K Ω** OR LESS WITH CLEARANCE BETWEEN LEVER AND STOP SCREW **0.57 MM (0.0224 IN.)**
INFINITY WITH CLEARANCE BETWEEN LEVER AND STOP SCREW **0.85 MM (0.0335 IN.)**
- 3-1: **3.1-12.1 K Ω** WITH THROTTLE VALVE FULLY OPEN
- 4-1: **3.9-9.0 K Ω**

ENGINE CONTROL MODULE (ENGINE AND ELECTRONICALLY CONTROLLED TRANSMISSION ECU (A/T), ENGINE ECU (M/T))

VOLTAGE AT ENGINE CONTROL MODULE (ECU) CONNECTORS

- +B -E1: 9.0-14.0 VOLTS** (IGNITION SW ON)
- BATT -E1: 9.0-14.0 VOLTS** (ALWAYS)
- IDL -E2: 9.0-14.0 VOLTS** (IGNITION SW ON AND THROTTLE VALVE OPEN)
- VTA -E2: 0.3-0.8 VOLTS** (IGNITION SW ON AND THROTTLE VALVE FULLY CLOSED)
3.2-4.9 VOLTS (IGNITION SW ON AND THROTTLE VALVE FULLY OPEN)
- IGT -E1: PULSE GENERATION** (ENGINE IDLING)
- STA -E1: 6.0 VOLTS OR MORE** (ENGINE CRANKING)
- #10-E01, #20-E01: 9.0-14.0 VOLTS** (IGNITION SW ON)
- W -E1: 9.0-14.0 VOLTS** (NO TROUBLE AND ENGINE RUNNING)
- VS -E2: 4.0-5.5 VOLTS** (IGNITION SW ON AND MEASURING PLATE FULLY CLOSED)
- THA -E2: 0.5-3.4 VOLTS** (IGNITION SW ON AND INTAKE AIR TEMP. 0° C (32° F) -80° C (176° F)
- THW -E2: 0.2-1.0 VOLTS** (IGNITION SW ON AND COOLANT TEMP. 60° C (140° F) -120° C (248° F)
- VC -E2: 4.5-5.5 VOLTS** (IGNITION SW ON)
- STP -E2: 7.5-14.0 VOLTS** (STOP LIGHT SW ON)
- STJ -E1: 9.0-4.0 VOLTS** (ENGINE STARTING)

RESISTANCE AT ENGINE CONTROL MODULE (ECU) WIRING CONNECTOR

(DISCONNECT WIRING CONNECTOR)

- IDL -E2: INFINITY** (THROTTLE VALVE OPEN) **0-100 Ω** (THROTTLE VALVE FULLY CLOSED)
- VTA -E2: 3.3-10 K Ω** (THROTTLE VALVE FULLY OPEN) **0.2-0.8 K Ω** (THROTTLE VALVE FULLY CLOSED)
- THA -E2: 2-3 K Ω** (INTAKE AIR TEMP. 20° C, 68° F)
- THW -E2: 0.2-0.4 K Ω** (COOLANT TEMP. 80° C, 178° F)
- +B -E2: 0.2-0.4 K Ω**
- VS -E2: 0.02-0.1 K Ω** (MEASURING PLATE FULLY CLOSED) **0.02-1.0 K Ω** (MEASURING PLATE FULLY OPEN)
- NE -E1: 140-180 Ω**

ENGINE CONTROL (22R-E)

○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
A 5	26	E 7	D 28	I15	28
C 7	28	E 8	E 28	I16	28
C11	B 28		F 28	K 1	27
C12	C 28	F 6	29	P 1	27
C14	A 28	H 3	26	S 7	28
D 1	26	H10	26	T 1	27
E 1	26	I 3	27	V 3	27
E 4	26	I 8	27	V 6	27
E 6	A 28	I 9	27	V 7	27
	B 28	I10	27	V 8	27
E 7	C 28	I11	27		

○ : RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	22	R/B NO. 2 (ENGINE COMPARTMENT RIGHT)

○ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1C	20	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EB2	32 (22R-E)	COWL WIRE AND ENGINE ROOM MAIN WIRE (R/B NO. 2)
IH1		
IH2	34	ENGINE WIRE AND COWL WIRE (RIGHT KICK PANEL)
BL1	36	FRAME NO. 2 WIRE AND COWL WIRE (UNDER THE FRONT LH SEAT)

▽ : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
EB	32 (22R-E)	LEFT FENDER
ED	32 (22R-E)	INTAKE MANIFOLD
IE	34	LEFT KICK PANEL

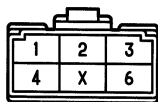
○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
E10			I11		
E11			I12	34	COWL WIRE
E12	32 (22R-E)	ENGINE WIRE	I14		
E13			I15	34	ENGINE WIRE
E15			I16	34	COWL WIRE
I 9	34	COWL WIRE			

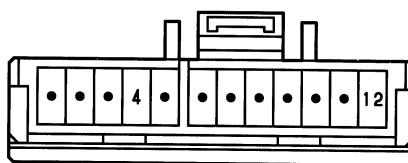
A 5 DARK GRAY



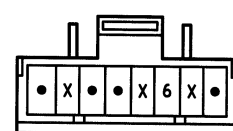
C 7 DARK GRAY



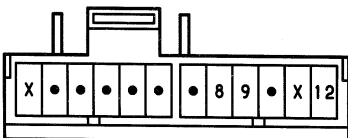
C11 ⑥ BLUE



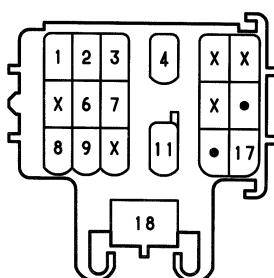
C12 ③



C14 ①



D 1 DARK GRAY



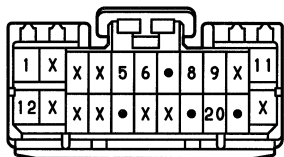
E 1 DARK GRAY



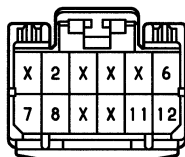
E 4 GREEN



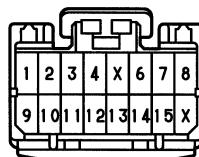
(A/T) E 6 **A** DARK GRAY



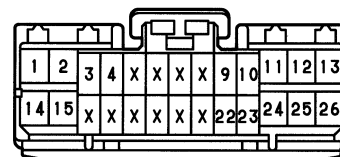
(M/T) E 6 **B** DARK GRAY



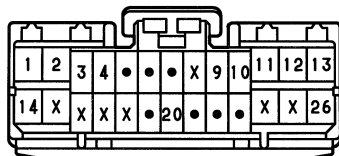
(A/T) E 7 **C** DARK GRAY



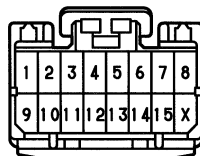
(M/T) E 7 **D** DARK GRAY



(A/T) E 8 **E** DARK GRAY



(M/T) E 8 **F** DARK GRAY



F 6 DARK GRAY



H 3 DARK GRAY



H10 DARK GRAY



I 3 DARK GRAY



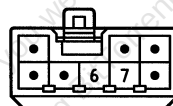
I 8 GRAY



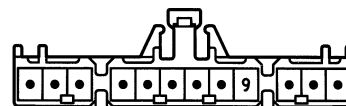
I 9, I10, I11 BLUE



I15 BLACK



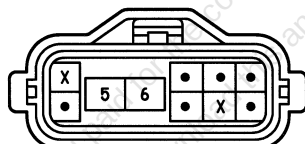
I16



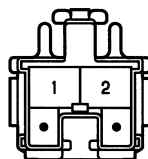
K 1 DARK GRAY



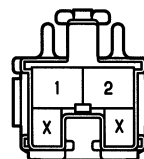
P 1 GRAY



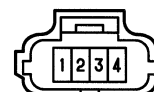
(W/ CRUISE S 7 CONTROL)



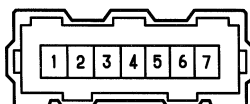
(W/O CRUISE S 7 BLACK CONTROL)



T 1 BLACK



V 3 BLACK



V 6 BROWN



V 7 BROWN



V 8 BLUE



ENGINE CONTROL (3VZ-E)

SYSTEM OUTLINE

THE ENGINE CONTROL SYSTEM UTILIZES A MICROCOMPUTER AND MAINTAINS OVERALL CONTROL OF THE ENGINE, TRANSMISSION, ETC. AN OUTLINE OF ENGINE CONTROL IS GIVEN HERE.

1. INPUT SIGNAL

(1) ENGINE COOLANT TEMP. (WATER TEMP.) SIGNAL SYSTEM

THE ENGINE COOLANT TEMP. SENSOR (EFI WATER TEMP. SENSOR) DETECTS THE ENGINE COOLANT TEMP. AND HAS A BUILT-IN THERMISTOR WITH A RESISTANCE WHICH VARIES ACCORDING TO THE ENGINE COOLANT TEMP. (WATER TEMP.) THUS THE ENGINE COOLANT TEMP. (WATER TEMP.) IS INPUT IN THE FORM OF A CONTROL SIGNAL TO **TERMINAL THW** OF THE ENGINE CONTROL MODULE (ECU).

(2) INTAKE AIR TEMP. SIGNAL SYSTEM

THE INTAKE AIR TEMP. SENSOR IS INSTALLED INSIDE THE VOLUME AIR FLOW (AIR FLOW METER) AND DETECTS THE INTAKE AIR TEMP., WHICH IS INPUT AS A CONTROL SIGNAL TO **TERMINAL THA** OF THE ENGINE CONTROL MODULE (ECU).

(3) OXYGEN SENSOR SIGNAL SYSTEM

THE OXYGEN DENSITY IN THE EXHAUST EMISSIONS IS DETECTED AND INPUT AS A CONTROL SIGNAL TO **TERMINALS OX1** AND **OX2** OF THE ENGINE CONTROL MODULE (ECU). TO MAINTAIN STABLE DETECTION PERFORMANCE BY THE OXYGEN SENSOR, A HEATER IS USED FOR WARMING THE SENSOR. THE HEATER IS ALSO CONTROLLED BY THE ENGINE CONTROL MODULE (ECU) (HT1, HT2).

(4) RPM SIGNAL SYSTEM

CRANKSHAFT POSITION AND ENGINE RPM ARE DETECTED BY THE PICK-UP COIL INSTALLED INSIDE THE DISTRIBUTOR. CRANKSHAFT POSITION IS INPUT AS A CONTROL SIGNAL TO **TERMINALS G1** AND **G2** OF THE ENGINE CONTROL MODULE (ECU), AND RPM IS INPUT TO **TERMINAL NE**.

(5) THROTTLE SIGNAL SYSTEM

THE THROTTLE POSITION SENSOR DETECTS THE THROTTLE VALVE OPENING ANGLE, WHICH IS INPUT AS A CONTROL SIGNAL TO **TERMINAL VTA** OF THE ENGINE CONTROL MODULE (ECU), OR WHEN THE VALVE IS FULLY CLOSED, TO **TERMINAL IDL**.

(6) VEHICLE SPEED SIGNAL SYSTEM

THE VEHICLE SPEED SENSOR (SPEED SENSOR), INSTALLED INSIDE THE COMBINATION METER, DETECTS THE VEHICLE SPEED AND INPUTS A CONTROL SIGNAL TO **TERMINAL SPD** OF THE ENGINE CONTROL MODULE (ECU).

(7) A/C SW SIGNAL SYSTEM

THE OPERATING VOLTAGE OF THE A/C MAGNETIC CLUTCH IS DETECTED AND INPUT IN THE FORM OF A CONTROL SIGNAL TO **TERMINAL A/C** OF THE ENGINE CONTROL MODULE (ECU).

(8) BATTERY SIGNAL SYSTEM

VOLTAGE IS CONSTANTLY APPLIED TO **TERMINAL BATT** OF THE ENGINE CONTROL MODULE (ECU). WHEN THE IGNITION SW IS TURNED TO ON, VOLTAGE FOR ENGINE CONTROL MODULE (ECU) OPERATION IS APPLIED VIA THE EFI MAIN RELAY TO **TERMINAL +B** OF THE ENGINE CONTROL MODULE (ECU).

(9) INTAKE AIR VOLUME SIGNAL SYSTEM

INTAKE AIR VOLUME IS DETECTED BY THE POTENTIOMETER INSTALLED INSIDE THE VOLUME AIR FLOW (AIR FLOW METER) AND IS INPUT AS A CONTROL SIGNAL TO **TERMINAL VS** OF THE ENGINE CONTROL MODULE (ECU). INSIDE THE VOLUME AIR FLOW (AIR FLOW METER) THERE IS ALSO A SW FOR FUEL PUMP OPERATION, AND WHEN THE MEASURING PLATE OPENS (AIR INTAKE OCCURS), THIS SW TURNS ON AND CURRENT FLOWS TO THE FUEL PUMP TO OPERATE IT.

(10) STOP LIGHT SW SIGNAL SYSTEM

THE STOP LIGHT SW IS USED TO DETECT WHETHER OR NOT THE VEHICLE IS BRAKING AND THE INFORMATION IS INPUT AS A CONTROL SIGNAL TO **TERMINAL STP** OF THE ENGINE CONTROL MODULE (ECU).

(11) STA SIGNAL SYSTEM

TO CONFIRM THAT THE ENGINE IS CRANKING, THE VOLTAGE APPLIED TO THE STARTER MOTOR DURING CRANKING IS DETECTED AND IS INPUT AS A CONTROL SIGNAL TO **TERMINAL STA** OF THE ENGINE CONTROL MODULE (ECU).

(12) ENGINE KNOCK SIGNAL SYSTEM

ENGINE KNOCKING IS DETECTED BY THE KNOCK SENSOR AND INPUT AS A CONTROL SIGNAL TO **TERMINAL KNK** OF THE ENGINE CONTROL MODULE (ECU).

(13) 4WD SIGNAL SYSTEM

WHETHER OR NOT THE VEHICLE IS OPERATING IN 4WD MODE IS DETERMINED, AND A CONTROL IS INPUT TO **TERMINAL 4WD** OF THE ENGINE CONTROL MODULE (ECU).

2. CONTROL SYSTEM

* MFI (MULTIPOINT FUEL INJECTION) (EFI) SYSTEM

THE MFI (EFI) SYSTEM MONITORS THE ENGINE CONDITIONS THROUGH THE SIGNALS EACH SENSOR (INPUT SIGNALS (1) TO (11), (13)) INPUTS TO THE ENGINE CONTROL MODULE (ECU). BASED ON THIS DATA AND THE PROGRAM MEMORIZED IN THE ENGINE CONTROL MODULE (ECU), THE MOST APPROPRIATE FUEL INJECTION TIMING IS DECIDED AND CURRENT IS OUTPUT TO **TERMINAL #10** AND **#20** OF THE ENGINE CONTROL MODULE (ECU). CAUSING THE INJECTORS TO OPERATE (TO INJECT FUEL). IT IS THIS SYSTEM WHICH, THROUGH THE WORK OF THE ENGINE CONTROL MODULE (ECU), FINELY CONTROLS FUEL INJECTION IN RESPONSE TO DRIVING CONDITIONS.

* ESA (ELECTRONIC SPARK ADVANCE) SYSTEM

THE ESA SYSTEM MONITORS THE ENGINE CONDITIONS USING THE SIGNALS (INPUT SIGNALS (1, 4, 5 TO 7, 9, 11, 12)) INPUT TO THE ENGINE CONTROL MODULE (ECU) FROM EACH SENSOR. BASED ON THIS DATA AND THE PROGRAM MEMORIZED IN THE ENGINE CONTROL MODULE (ECU), THE MOST APPROPRIATE IGNITION TIMING IS DECIDED AND CURRENT IS OUTPUT TO **TERMINAL 1GT** OF THE ENGINE CONTROL MODULE (ECU). THIS OUTPUT CONTROLS THE IGNITER TO PRODUCE THE MOST APPROPRIATE IGNITION TIMING FOR THE DRIVING CONDITIONS.

* FUEL PRESSURE-UP SYSTEM

THE FUEL PRESSURE UP SYSTEM CAUSES THE VSV (FOR FUEL PRESSURE UP, A/C IDLE-UP) TO COME ON FOR HIGH TEMP. STARTS AND FOR ABOUT **180** SECONDS AFTER STARTING IN ORDER TO INCREASE THE FUEL PRESSURE, IMPROVE STARTABILITY AT HIGH TEMPERATURES AND PROVIDE STABLE IDLING. THE ENGINE CONTROL MODULE (ECU) EVALUATES THE INPUT SIGNALS FROM EACH SENSOR (1-1, 1-2, 2, 4 AND 11)), OUTPUT CURRENT TO **TERMINAL FPU** AND CONTROLS THE VSV. (HOWEVER, WHEN THE ENGINE COOLANT TEMP. (WATER TEMP.) IS **95° C, 203° F** MORE AND THE INTAKE AIR TEMP. IS **55° C, 131° F** FOR MORE, THE VSV (FOR FPU) INCREASES THE FUEL PRESSURE FOR **90** SECOND.)

* OXYGEN SENSOR HEATER CONTROL SYSTEM

THE OXYGEN SENSOR HEATER CONTROL SYSTEM TURNS THE HEATER TO ON WHEN THE INTAKE AIR VOLUME IS LOW (TEMP. OF EXHAUST EMISSIONS LOW), AND WARMS UP THE HEATED OXYGEN SENSOR (OXYGEN SENSOR) TO IMPROVE DETECTION PERFORMANCE OF THE SENSOR. THE ENGINE CONTROL MODULE (ECU) EVALUATES THE SIGNALS FROM EACH SENSOR (INPUT SIGNALS (1, 4, 8, 9, 11)), CURRENT IS OUTPUT TO **TERMINALS HT1** AND **HT2** AND CONTROLS THE HEATER.

* PAIR CONTROL SYSTEM

THE PAIR CONTROL SYSTEM TURNS ON THE VSV (FOR PAIR) WHEN THE ENGINE IS COLD AND DURING DECELERATION, PREVENTING OVERHEATING OF THE TWC (THREE-WAY CATALYTIC CONVERTER) AND REDUCING HC AND CO EMISSIONS. THE ENGINE CONTROL MODULE (ECU) EVALUATES THE SIGNALS FROM EACH SENSOR (INPUT SIGNALS (1, 4, 5, 6, 7, 9, 11)), THEN SENDS OUTPUT TO **TERMINAL AS** AND CONTROLS THE VSV.

* EGR CUT CONTROL SYSTEM

THE EGR CUT CONTROL SYSTEM CONTROLS THE VSV (FOR EGR) BY EVALUATING THE SIGNALS FROM EACH SENSOR INPUT TO THE ENGINE CONTROL MODULE (ECU) (INPUT SIGNALS (1, 9)) AND BY SENDING OUTPUT TO **TERMINAL EGR** OF THE ENGINE CONTROL MODULE (ECU).

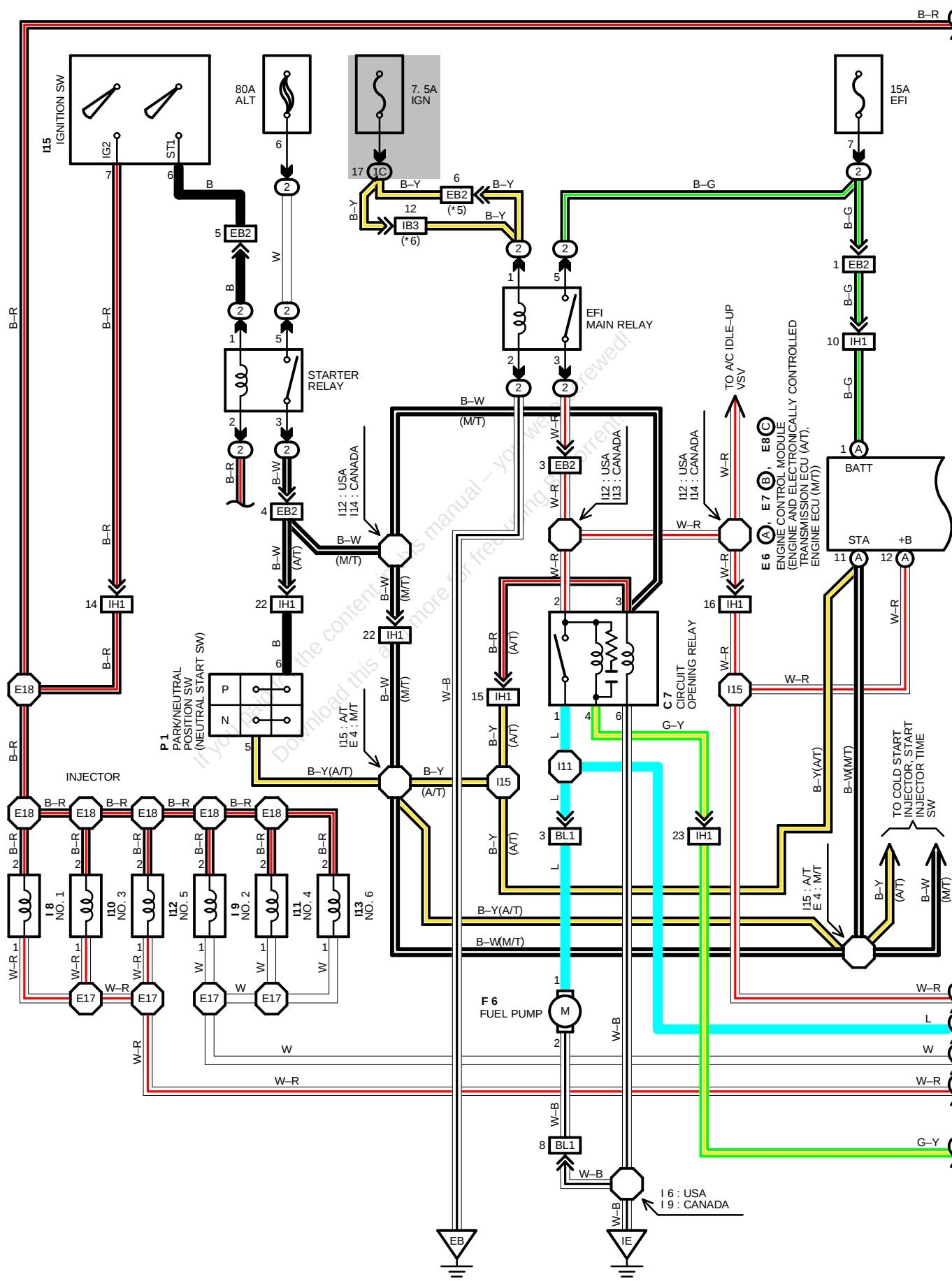
3. DIAGNOSIS SYSTEM

WITH THE DIAGNOSIS SYSTEM, WHEN THERE IS A MALFUNCTION IN THE ENGINE CONTROL MODULE (ECU) SIGNAL SYSTEM, THE MALFUNCTIONING SYSTEM IS RECORDED IN THE MEMORY. THE MALFUNCTIONING SYSTEM CAN THEN BE FOUND BY READING THE DISPLAY (CODE) OF THE MALFUNCTION INDICATOR LAMP (CHECK ENGINE WARNING LIGHT).

4. FAI-SAFE SYSTEM

WHEN A MALFUNCTION OCCURS IN ANY SYSTEM, IF THERE IS A POSSIBILITY OF ENGINE TROUBLE BEING CAUSED BY CONTINUED CONTROL BASED ON THE SIGNALS FROM THAT SYSTEM, THE FAIL-SAFE SYSTEM EITHER CONTROLS THE SYSTEM BY USING DATA (STANDARD VALUES) RECORDED IN THE ENGINE CONTROL MODULE (ECU) MEMORY OR ELSE STOPS THE ENGINE.

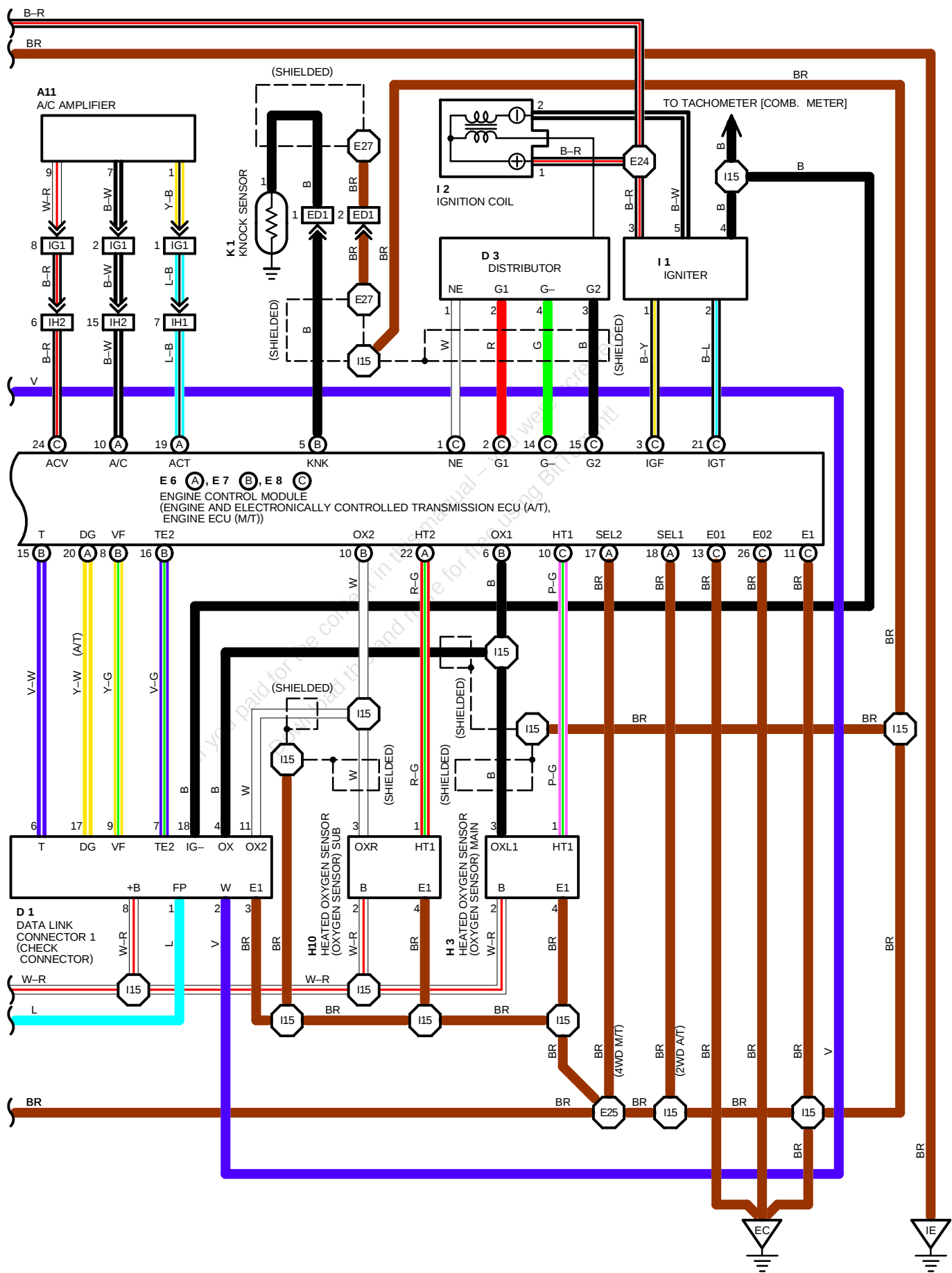
ENGINE CONTROL (3VZ-E)



*5 : REAR WHEEL ABS
*6 : 4 WHEEL ABS



ENGINE CONTROL (3VZ-E)



SERVICE HINTS

EFI MAIN RELAY

(2) 5- (2) 3: CLOSED WITH IGNITION SW AT **ON** OR **ST** POSITION

V 3 VOLUME AIR FLOW (AIR FLOW METER)

1-2: CLOSED WITH STARTER RUNNING OR MEASURING PLATE OPEN

4-5: **200-400 Ω**

5-6: **200-600 Ω** (MEASURING PLATE FULLY CLOSED)

20-1200 Ω (MEASURING PLATE FULLY OPEN)

5-7: **10-20 K Ω** (**-20° C, -4° F**)

4-7 K Ω (**0° C, 32° F**)

2-3 K Ω (**20° C, 68° F**)

0.9-1.3 K Ω (**40° C, 104° F**)

0.4-0.7 K Ω (**60° C, 140° F**)

C 7 CIRCUIT OPENING RELAY

1-2: CLOSED WITH STARTER RUNNING OR MEASURING PLATE (AIR FLOW METER) OPEN

I 8, I 9, I 10, I 11, I 12, I 13 INJECTOR

1-2: APPROX. **13.8 Ω**

P 1 PARK/NEUTRAL POSITION SW (NEUTRAL START SW) (A/T)

6-5: CLOSED WITH A/T SHIFT LEVER IN **P** OR **N** POSITION

T 1 THROTTLE POSITION SENSOR

3-1: **0.47-6.1 K Ω** WITH CLEARANCE BETWEEN LEVER AND STOP SCREW **0 MM (0 IN.)**

2-1: **2.3 K Ω** OR LESS WITH CLEARANCE BETWEEN LEVER AND STOP SCREW **0.50 MM (0.0197 IN.)**

INFINITY WITH CLEARANCE BETWEEN LEVER AND STOP SCREW **0.77 MM (0.0303 IN.)**

3-1: **3.1-12.1 K Ω** WITH THROTTLE VALVE FULLY OPEN

4-1: **3.9-9.0 K Ω**

E 4 ENGINE COOLANT TEMP. SENSOR (EFI WATER TEMP. SENSOR)

1-2: **10-20 K Ω** (**-20° C, -4° F**)

4-7 K Ω (**0° C, 32° F**)

2-3 K Ω (**20° C, 68° F**)

0.9-1.3 K Ω (**40° C, 104° F**)

0.4-0.7 K Ω (**60° C, 140° F**)

0.2-0.4 K Ω (**80° C, 176° F**)

E 6(A), E 7(B), E 8(C) ENGINE CONTROL MODULE (ENGINE AND ELECTRONICALLY CONTROLLED TRANSMISSION ECU (A/T), ENGINE ECU (M/T))

VOLTAGE AT ENGINE CONTROL MODULE (ECU) CONNECTORS

+B -E1: 9.0-14.0 VOLTS (IGNITION SW ON)

BATT -E1: 9.0-14.0 VOLTS (ALWAYS)

VC -E2: 4.5-5.5 VOLTS (IGNITION SW ON)

IDL -E2: 9.0-14.0 VOLTS (IGNITION SW ON AND THROTTLE VALVE OPEN)

VTA -E2: 0.3-0.8 VOLTS (IGNITION SW ON AND THROTTLE VALVE FULLY CLOSED)

3.2-4.9 VOLTS (IGNITION SW ON AND THROTTLE VALVE FULLY OPEN)

IGT -E1: PULSE GENERATION (ENGINE IDLING)

STA -E1: 6.0 VOLT OR MORE (ENGINE CRANKING)

#10, #20 -E1: 9.0-14.0 VOLTS (IGNITION SW ON)

W -E1: 9.0-14.0 VOLTS (NO TROUBLE AND ENGINE RUNNING)

VS -E2: 4.0-5.5 VOLTS (IGNITION SW ON AND MEASURING PLATE FULLY CLOSED)

THA -E2: 0.5-3.4 VOLTS (IGNITION SW ON AND INTAKE AIR TEMP. **0° C (32° F) -80° C (176° F)**)

THW -E2: 0.2-1.0 VOLTS (IGNITION SW ON AND COOLANT TEMP. **60° C (140° F) -120° C (248° F)**)

STP -E1: 7.5-14.0 VOLTS (STOP LIGHT SW ON)

RESISTANCE AT ENGINE CONTROL MODULE (ECU) WIRING CONNECTOR

(DISCONNECT WIRING CONNECTOR)

IDL -E2: INFINITY (THROTTLE VALVE OPEN)

0-100 Ω (THROTTLE VALVE FULLY CLOSED)

VTA -E2: 3.3-10 K Ω (THROTTLE VALVE FULLY OPEN)

0.2-0.8 K Ω (THROTTLE VALVE FULLY CLOSED)

THA -E2: 2-3 K Ω (INTAKE AIR TEMP. **20° C, 68° F**)

THW -E2: 0.2-0.4 K Ω (COOLANT TEMP. **80° C, 178° F**)

VS -E2: 0.02-0.1 K Ω (MEASURING PLATE FULLY CLOSED)

0.02-1.0 K Ω (MEASURING PLATE FULLY OPEN)

NE -E1: 140-180 K Ω

+B -E2: 0.2-0.4 K Ω

STJ -E1: INFINITY

ENGINE CONTROL (3VZ-E)

: PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
A 5	24 (3VZ-E)	E 8	C 28	I15	28
A11	28	F 6	29	I16	28
C 7	28	H 3	24 (3VZ-E)	K 1	25 (3VZ-E)
C11	B 28	H10	24 (3VZ-E)	P 1	25 (3VZ-E)
C12	A 28	I 1	25 (3VZ-E)	S 7	28
C14	C 28	I 2	25 (3VZ-E)	T 1	25 (3VZ-E)
D 1	24 (3VZ-E)	I 8	25 (3VZ-E)	V 3	25 (3VZ-E)
D 3	24 (3VZ-E)	I 9	25 (3VZ-E)	V 6	25 (3VZ-E)
E 1	24 (3VZ-E)	I 10	25 (3VZ-E)	V 7	25 (3VZ-E)
E 4	24 (3VZ-E)	I 11	25 (3VZ-E)	V 8	25 (3VZ-E)
E 6	A 28	I 12	25 (3VZ-E)		
E 7	B 28	I 13	25 (3VZ-E)		

: RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	22	R/B NO. 2 (ENGINE COMPARTMENT RIGHT)

: JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1C	20	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)

: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

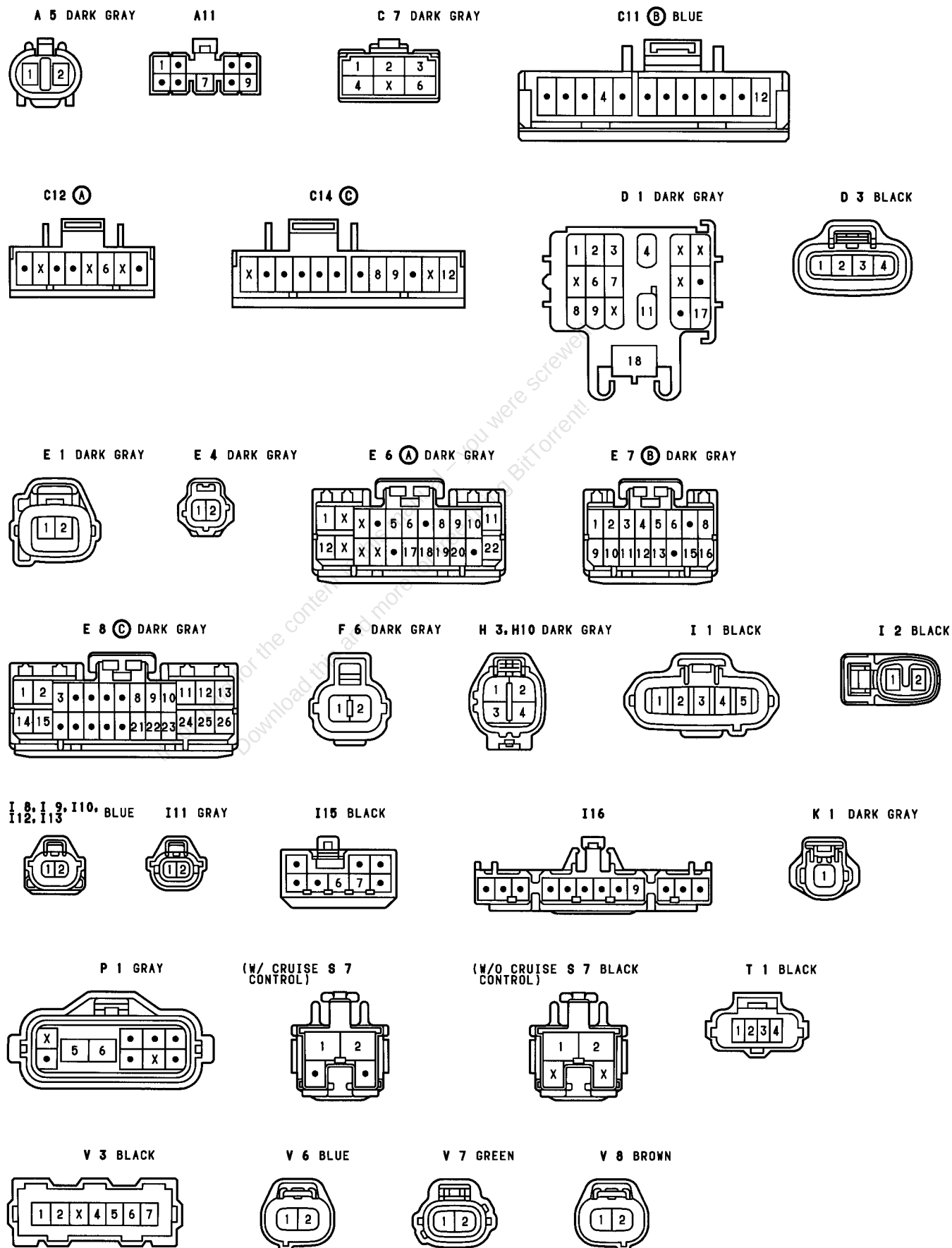
CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EB2	30 (3VZ-E)	COWL WIRE AND ENGINE ROOM MAIN WIRE (R/B NO. 2)
ED1	30 (3VZ-E)	SENSOR WIRE AND ENGINE WIRE (ON THE HEAD COVER)
IB3	34	ENGINE ROOM MAIN WIRE AND COWL WIRE (LEFT KICK PANEL)
IG1	34	COWL WIRE AND A/C WIRE (BEHIND GLOVE BOX)
IH1	34	ENGINE WIRE AND COWL WIRE (RIGHT KICK PANEL)
IH2	34	ENGINE WIRE AND COWL WIRE (RIGHT KICK PANEL)
BL1	36	FRAME NO. 2 WIRE AND COWL WIRE (UNDER THE FRONT LH SEAT)

: GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
EB	30 (3VZ-E)	LEFT FENDER
EC	30 (3VZ-E)	RH CYLINDER HEAD COVER REAR
IE	34	LEFT KICK PANEL

: SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
E 4			I 6	34	COWL WIRE
E17			I 9		
E18			I11		
E23	30 (3VZ-E)	ENGINE WIRE	I12	34	COWL WIRE
E24			I13		
E25			I14		
E27			I15	34	ENGINE WIRE

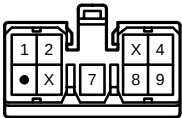


FRONT WIPER AND WASHER

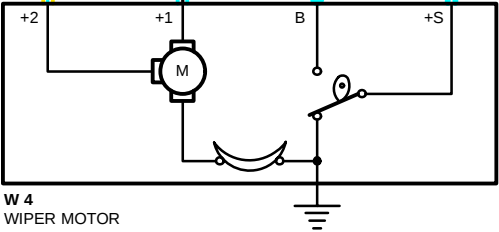
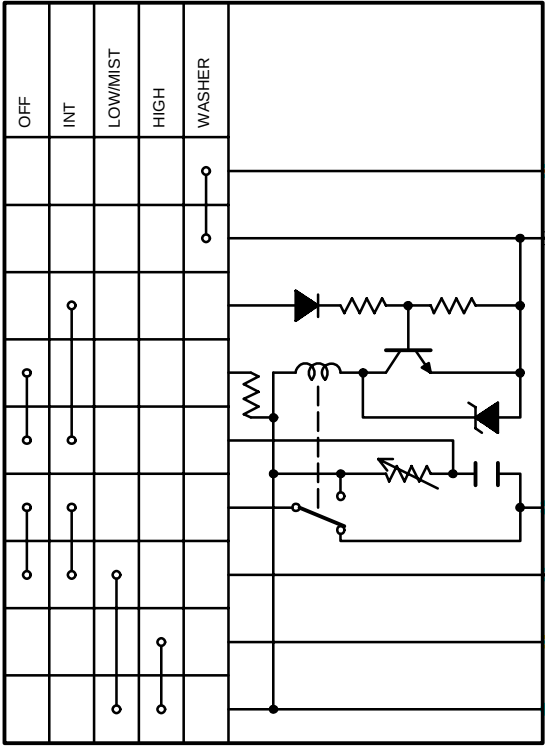
C16 BLACK

W 1 BLACK

W 4 BLACK



C16
WIPER AND WASHER SW
[COMB. SW]



W 4
WIPER MOTOR

SYSTEM OUTLINE

WITH THE IGNITION SW TURNED ON, THE CURRENT FLOWS TO **TERMINAL 4** OF THE WIPER AND WASHER SW, **TERMINAL 2** OF THE WASHER MOTOR AND **TERMINAL 4** OF THE WIPER MOTOR THROUGH THE **WIPER FUSE**.

1. LOW SPEED POSITION

WITH WIPER SW TURNED TO **LOW** POSITION, THE CURRENT FLOWS FROM **TERMINAL 4** OF THE WIPER AND WASHER SW → **TERMINAL 8** → **TERMINAL 2** OF THE WIPER MOTOR → WIPER MOTOR → TO **GROUND** AND CAUSES TO THE WIPER MOTOR TO RUN AT LOW SPEED.

2. HIGH SPEED POSITION

WITH WIPER SW TURNED TO **HIGH** POSITION, THE CURRENT FLOWS FROM **TERMINAL 4** OF THE WIPER AND WASHER SW → **TERMINAL 9** → **TERMINAL 1** OF THE WIPER MOTOR → WIPER MOTOR → TO **GROUND** AND CAUSES TO THE WIPER MOTOR TO RUN AT HIGH SPEED.

3. INT POSITION (W/ INT SW)

WITH WIPER SW TURNED TO **INT** POSITION, THE RELAY OPERATES AND THE CURRENT WHICH IS CONNECTED BY RELAY FUNCTION FLOWS FROM **TERMINAL 4** OF THE WIPER AND WASHER SW → **TERMINAL 1** → TO **GROUND**. THIS FLOW OF CURRENT OPERATES THE INTERMITTENT CIRCUIT AND THE CURRENT FLOWS FROM **TERMINAL 4** OF THE WIPER AND WASHER SW → **TERMINAL 8** → **TERMINAL 2** OF THE WIPER MOTOR → TO **GROUND** AND THE WIPER FUNCTIONS.

THE INTERMITTENT OPERATION IS CONTROLLED BY A CONDENSER'S CHARGED AND DISCHARGED FUNCTION INSTALLED IN RELAY AND THE INTERMITTENT TIME IS CONTROLLED BY A TIME CONTROL SW TO CHANGE THE CHARGING TIME OF THE CONDENSER.

4. MIST POSITION (W/ MIST SW)

WITH WIPER SW TURNED TO **MIST** POSITION, THE CURRENT FLOWS FROM **TERMINAL 4** OF THE WIPER AND WASHER SW → **TERMINAL 8** → **TERMINAL 2** OF THE WIPER MOTOR → WIPER MOTOR → TO **GROUND** AND CAUSES THE WIPER MOTOR TO RUN AT LOW SPEED.

SERVICE HINTS

C16 WIPER AND WASHER SW [COMB. SW]

- 1-GROUND : ALWAYS CONTINUOUS
- 4-GROUND : APPROX. 12 VOLTS WITH IGNITION SW AT **ON** POSITION
- 8-GROUND : APPROX. 12 VOLTS WITH WIPER AND WASHER SW AT **LOW** OR **MIST** POSITION
APPROX. 12 VOLTS EVERY 3 TO 12 SECONDS INTERMITTENTLY WITH WIPER SW AT **INT** POSITION
- 7-GROUND : APPROX. 12 VOLTS WITH IGNITION SW ON UNLESS WIPER MOTOR AT **STOP** POSITION
- 9-GROUND : APPROX. 12 VOLTS WITH WIPER AND WASHER SW AT **HIGH** POSITION
- 2-1 : CONTINUOUS WITH WASHER SW ON

W 4 WIPER MOTOR

- 3-4 : CLOSED UNLESS WIPER MOTOR AT **STOP** POSITION

○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
C16	28	W 1	27 (22R-E)	W 4	27 (22R-E)
W 1	25 (3VZ-E)	W 4	25 (3VZ-E)		

○ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1C	20	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EB1	30 (3VZ-E)	COWL WIRE AND ENGINE ROOM MAIN WIRE (R/B NO. 2)
	32 (22R-E)	

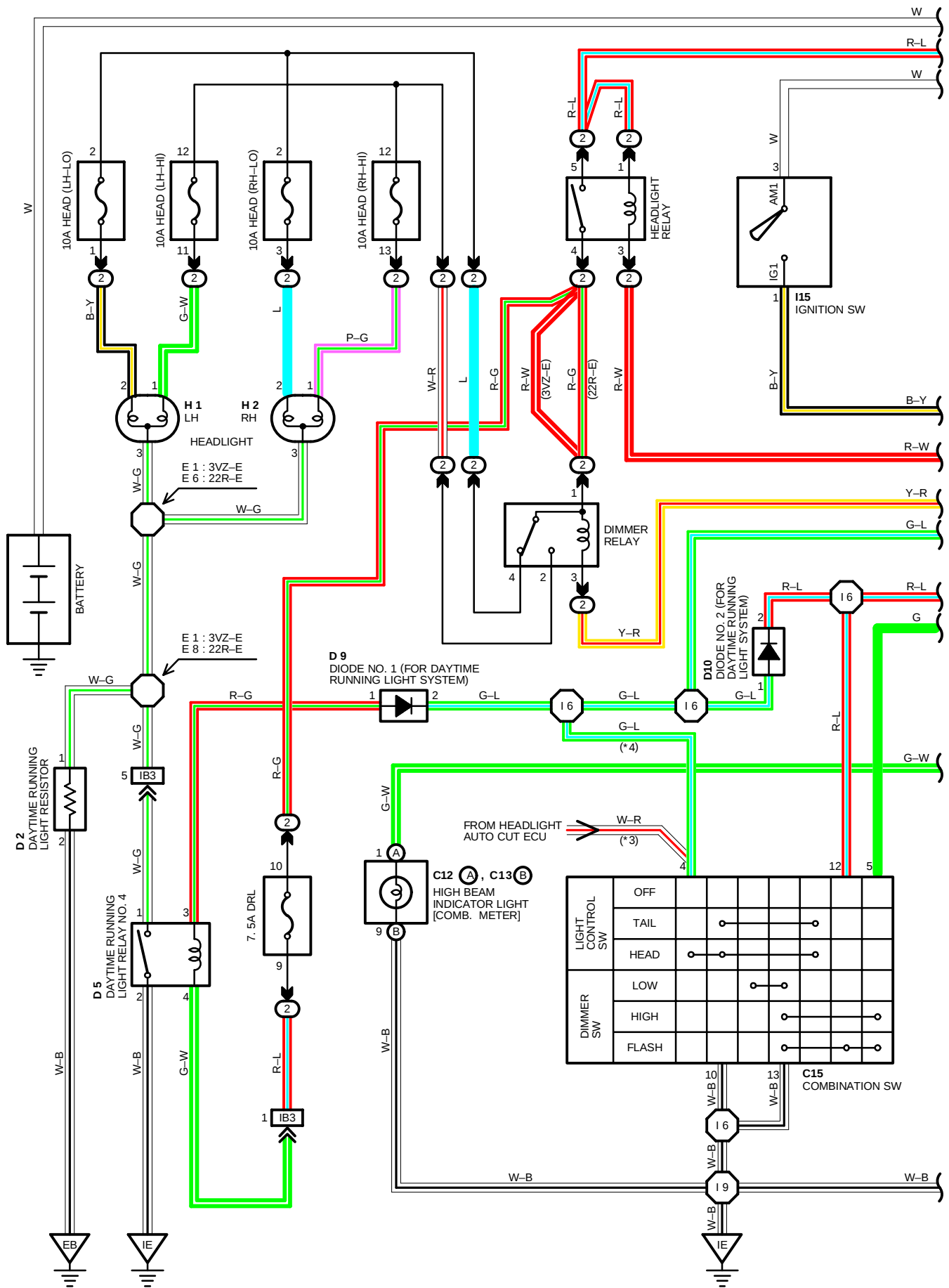
▽ : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
IE	34	LEFT KICK PANEL

○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I12	34	COWL WIRE			

HEADLIGHT (FOR CANADA)



HEADLIGHT (FOR CANADA)

SYSTEM OUTLINE

1. DAYTIME RUNNING LIGHT OPERATION

WHEN THE ENGINE IS STARTED, VOLTAGE GENERATED AT **TERMINAL L** OF THE GENERATOR (ALTERNATOR) IS APPLIED TO **TERMINAL 11** OF THE DAYTIME RUNNING LIGHT RELAY (MAIN).

IF THE PARKING BRAKE LEVER IS PULLED UP (PARKING BRAKE SW ON) AT THIS TIME, THE RELAY IS NOT ACTIVATED SO THE DAYTIME RUNNING LIGHT SYSTEM DOES NOT OPERATE. IF THE PARKING BRAKE LEVER IS THEN RELEASED (PARKING BRAKE SW OFF), A SIGNAL IS INPUT TO **TERMINAL 8** OF THE RELAY (MAIN).

THIS ACTIVATES THE RELAY, SO CURRENT FLOWS FROM BATTERY TO THE HEADLIGHT RELAY (POINT SIDE) → **TERMINAL 1** OF THE DIMMER RELAY → **TERMINAL 4** → **HEAD (LH-LO), (RH-LO)** FUSE → **TERMINAL 2** OF HEADLIGHTS → **TERMINAL 3** → **TERMINAL 1** OF DAYTIME RUNNING LIGHT RESISTOR → **TERMINAL 2** → **GROUND**, CAUSING THE HEADLIGHTS TO LIGHT UP AT 80%~85% OF THEIR NORMAL BRIGHTNESS.

ONCE THE DAYTIME RUNNING LIGHT SYSTEM OPERATES AND HEADLIGHT LIGHT UP, HEADLIGHTS REMAIN ON EVEN IF THE PARKING BRAKE LEVER IS PULLED UP (PARKING BRAKE SW ON).

IF THE ENGINE STALLS AND THE IGNITION SW REMAINS ON, HEADLIGHT REMAIN LIT UP EVEN THOUGH CURRENT IS NO LONGER OUTPUT FROM **TERMINAL L** OF THE GENERATOR (ALTERNATOR). IF THE IGNITION SW IS THEN TURNED OFF, THE HEAD GO OFF.

IF THE ENGINE IS STARTED WITH THE PARKING BRAKE LEVER RELEASED (PARKING BRAKE SW OFF), THE DAYTIME RUNNING LIGHT SYSTEM OPERATES AND HEADLIGHT LIGHT UP WHEN THE ENGINE STARTS.

2. HEADLIGHT OPERATION

DURING DAYTIME RUNNING LIGHT OPERATION, THE HEADLIGHTS ARE ON CONSTANTLY AT 80%~85% NORMAL INTENSITY.

WHEN THE LIGHT CONTROL SW [COMB. SW] IS SWITCHED TO **HEAD** POSITION, CURRENT FLOWS FROM THE **DRL** FUSE → **TERMINAL 4** OF DAYTIME RUNNING LIGHT RELAY NO. 4 → **TERMINAL 3** → **TERMINAL 1** OF DIODE NO. 1 → **TERMINAL 2** → **TERMINAL 4** OF LIGHT CONTROL SW [COMB. SW] → **TERMINAL 10** → **GROUND**, ACTIVATING DAYTIME RUNNING LIGHT RELAY NO. 4. CURRENT THEN FLOWS FROM THE **HEAD (LH-LO), (RH-LO)** FUSE TO **TERMINAL 2** OF THE HEADLIGHTS → **TERMINAL 3** → **TERMINAL 1** OF DAYTIME RUNNING LIGHT RELAY NO. 4 → **TERMINAL 2** → **GROUND**, CAUSING THE HEADLIGHTS TO LIGHT UP AT NORMAL INTENSITY.

WHEN THE DIMMER SW [COMB. SW] IS SWITCHED TO THE **HIGH** POSITION, THE SIGNAL FROM THE DIMMER SW [COMB. SW] IS INPUT TO THE DAYTIME RUNNING LIGHT RELAY (MAIN). THIS ACTIVATES THE RELAY AND CURRENT FLOWS FROM **TERMINAL 1** OF THE DIMMER RELAY → **TERMINAL 3** → **TERMINAL 17** OF THE DAYTIME RUNNING LIGHT RELAY (MAIN), ACTIVATING THE DIMMER RELAY.

THIS CAUSES CURRENT TO FLOW FROM **TERMINAL 1** OF THE DIMMER RELAY → **TERMINAL 2** → **HEAD (LH-HI), (RH-HI)** FUSE → **TERMINAL 1** OF HEADLIGHTS → **TERMINAL 3** → **TERMINAL 1** OF DAYTIME RUNNING LIGHT RELAY NO. 4 → **TERMINAL 2** → **GROUND**, CAUSING THE HEADLIGHTS TO LIGHT UP AT HIGH BEAM.

WHEN THE DIMMER SW [COMB. SW] IS SWITCHED TO **FLASH** POSITION, THE DAYTIME RUNNING LIGHT RELAY (MAIN) IS ACTIVATED AND CURRENT FLOWS FROM **TERMINAL 1** OF THE DIMMER RELAY TO **TERMINAL 2**. CURRENT FROM THE **DRL** FUSE FLOWS FROM **TERMINAL 4** OF DAYTIME RUNNING LIGHT RELAY NO. 4 → **TERMINAL 3** → **TERMINAL 1** OF DIODE NO. 1 → **TERMINAL 2** → **TERMINAL 1** OF DIODE NO. 2 → **TERMINAL 2** → **TERMINAL 12** OF DIMMER SW [COMB. SW] → **TERMINAL 13** → **GROUND**, AND ALSO FLOWS FROM THE **HEAD (LH-HI), (RH-HI)** FUSE → **TERMINAL 1** OF HEADLIGHTS → **TERMINAL 3** → **TERMINAL 1** OF DAYTIME RUNNING LIGHT RELAY NO. 4 → **TERMINAL 2** → **GROUND**, CAUSING THE HIGH BEAM TO OPERATE.

WHEN THE HEADLIGHTS OPERATE (EXCEPT FOR FLASHING MODE), THE TAILLIGHTS ALSO OPERATE AS DESCRIBED IN PARTS 2.

SERVICE HINTS

HEADLIGHT RELAY

(2) 4- (2) 5 : CLOSED WITH LIGHT CONTROL SW AT **HEAD** POSITION OR DIMMER SW AT **FLASH** POSITION
: CLOSED WITH ENGINE RUNNING AND PARKING BRAKE LEVER RELEASED (PARKING BRAKE SW OFF)

DIMMER RELAY

CHANGED FROM HEAD(LO) TO HEAD(HI) WITH DIMMER SW AT **FLASH** POSITION OR WITH HEADLIGHT RELAY ON AND DIMMER SW AT **HIGH** POSITION

○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
B 2	24 (3VZ-E)	D 2	26 (22R-E)	H 1	26 (22R-E)
	26 (22R-E)	D 4	28	H 2	24 (3VZ-E)
C12 A	28	D 5	28		26 (22R-E)
C13 B	28	D 9	28	I15	28
C15	28	D10	28	I16	28
D 2	24 (3VZ-E)	H 1	24 (3VZ-E)	P 2	28

○ : RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	22	R/B NO. 2 (ENGINE COMPARTMENT RIGHT)

○ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1A	20	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)
1C	20	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
IB3	34	ENGINE ROOM MAIN WIRE AND COWL WIRE (LEFT KICK PANEL)

▽ : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
EB	30 (3VZ-E)	LEFT FENDER
	32 (22R-E)	
IE	34	LEFT KICK PANEL

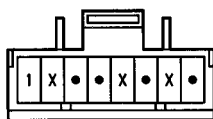
○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
E 1	30 (3VZ-E)	ENGINE ROOM MAIN WIRE	I 6	34	COWL WIRE
E 6	32 (22R-E)		I 7		
E 8	32 (22R-E)		I 9		

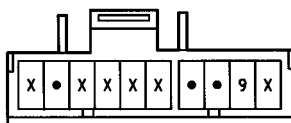
B 2 GRAY



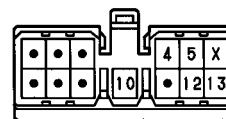
C12 (A)



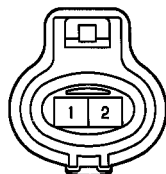
C13 (B) GRAY



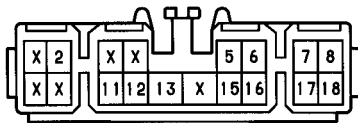
C15 BLACK



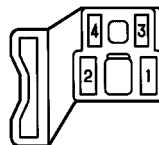
D 2 GRAY



D 4 GRAY



D 5



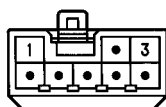
D 9, D10 BLACK



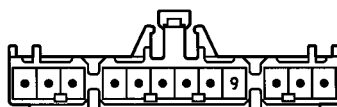
H 1, H 2 GRAY



I15 BLACK



I16

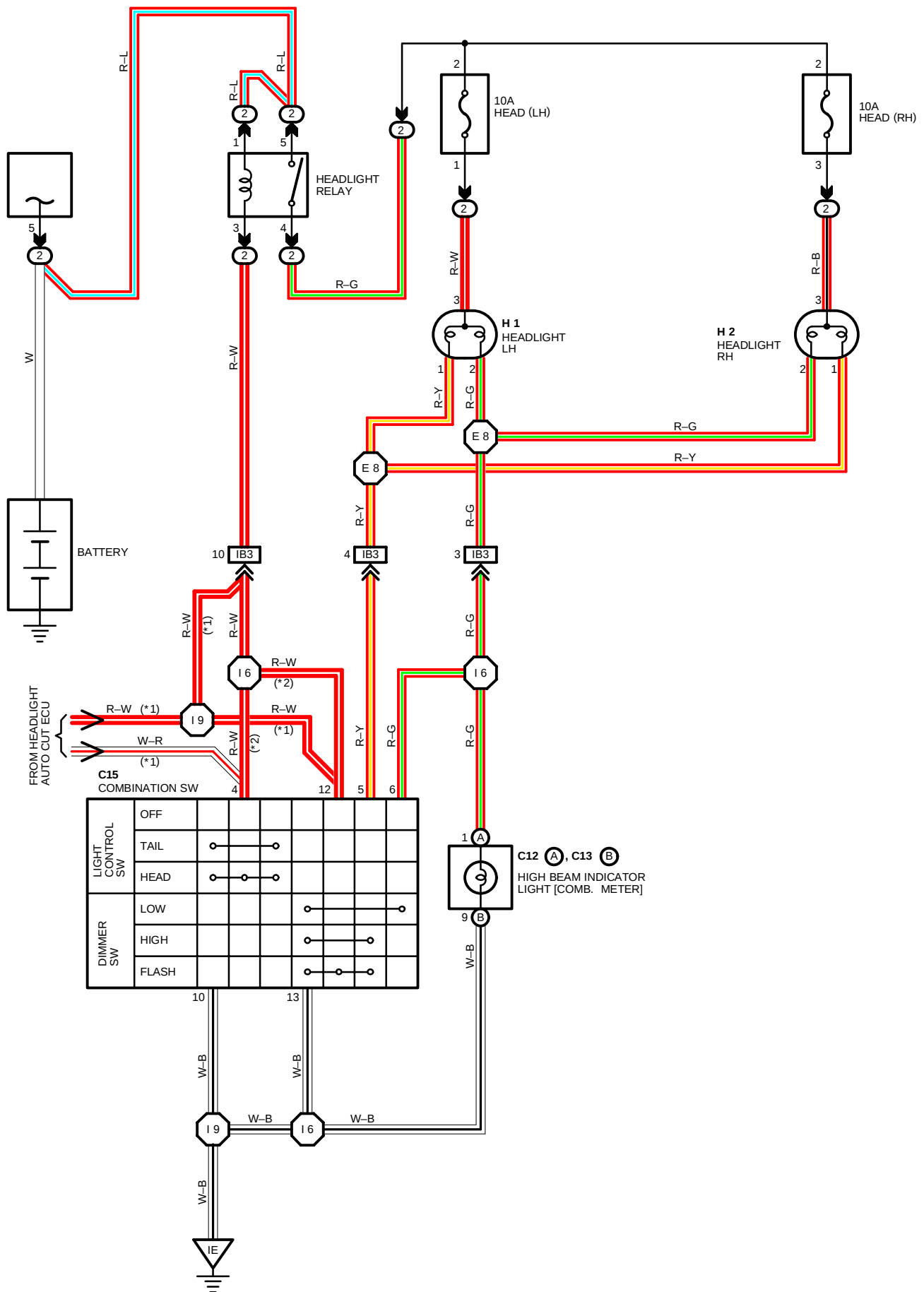


P 2



HEADLIGHT (FOR USA)

*1 : W/ HEADLIGHT AUTO CUT ECU
*2 : W/O HEADLIGHT AUTO CUT ECU



SERVICE HINTS

HEAD RELAY

(2) 5– (2) 4: CLOSED WITH LIGHT CONTROL SW AT **HEAD** POSITION OR DIMMER SW AT **FLASH** POSITION

○ : PARTS LOCATION

CODE		SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
C12	A	28	H 1	24 (3VZ–E)	H 2	26 (22R–E)
C13	B	28		26 (22R–E)		
C15		28	H 2	24 (3VZ–E)		

□ : RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	22	R/B NO. 2 (ENGINE COMPARTMENT RIGHT)

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

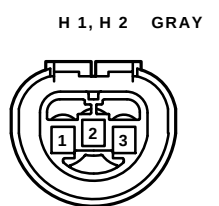
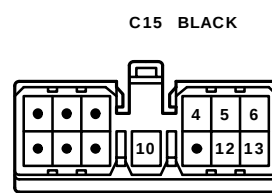
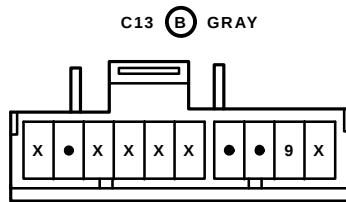
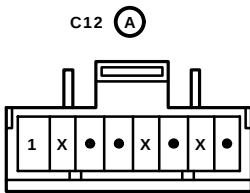
CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
IB3	34	ENGINE ROOM MAIN WIRE AND COWL WIRE (LEFT KICK PANEL)

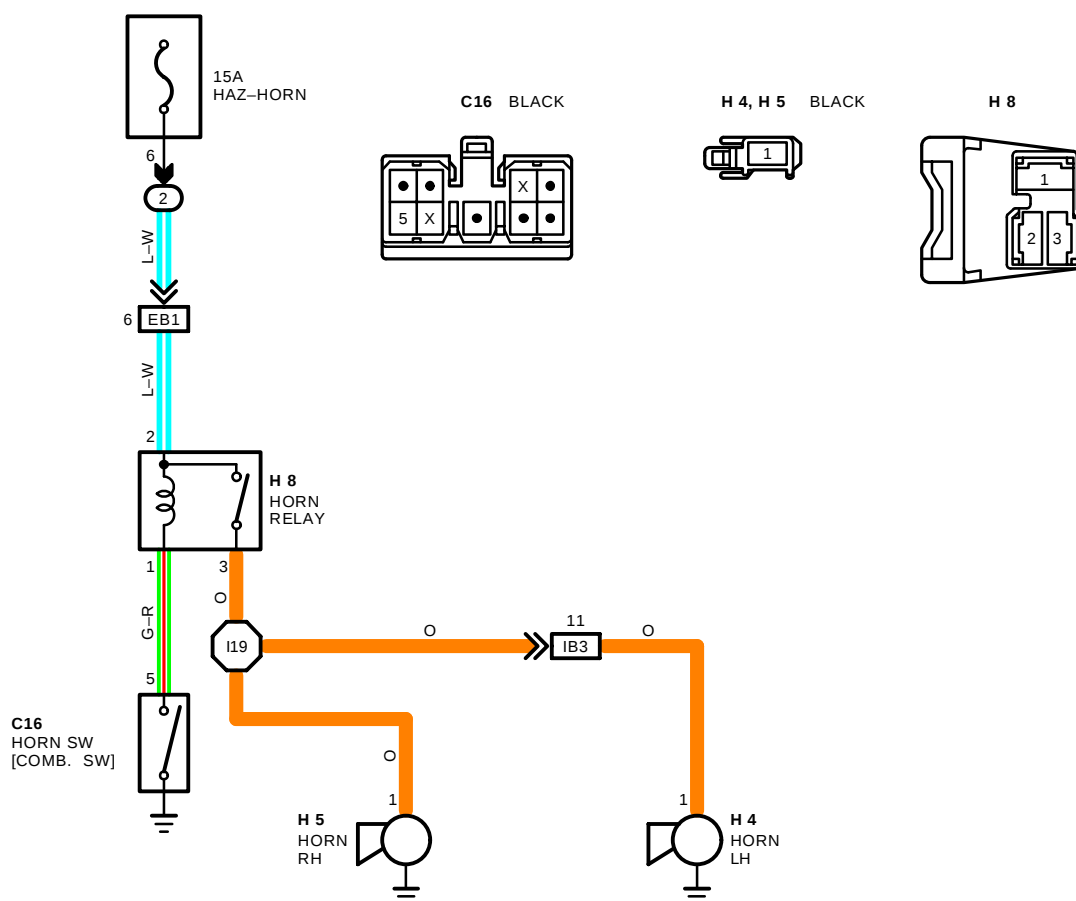
▽ : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
IE	34	LEFT KICK PANEL

○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
E 8	30 (3VZ–E)	ENGINE ROOM MAIN WIRE	I 6	34	COWL WIRE
	32 (22R–E)		I 9		





SERVICE HINTS

H 8 HORN RELAY

2-3 : CLOSED WITH HORN SW ON

○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
C16	28	H 4	26 (22R-E)	H 5	26 (22R-E)
H 4	24 (3VZ-E)	H 5	24 (3VZ-E)	H 8	28

□ : RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	22	R/B NO. 2 (ENGINE COMPARTMENT RIGHT)

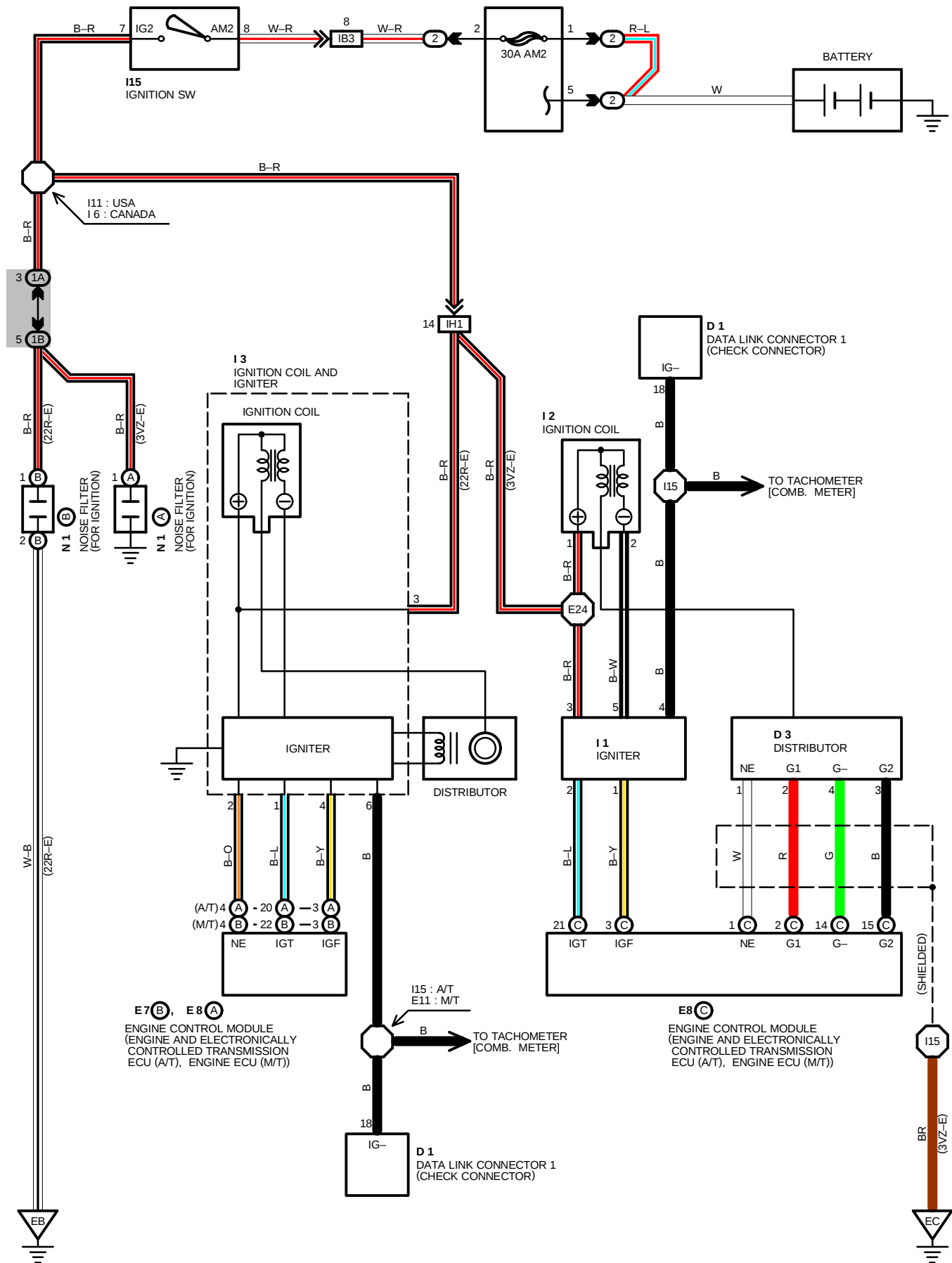
□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EB1	30 (3VZ-E) 32 (22R-E)	COWL WIRE AND ENGINE ROOM MAIN WIRE (R/B NO. 2)
IB3	34	ENGINE ROOM MAIN WIRE AND COWL WIRE (LEFT KICK PANEL)

○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I19	34	COWL WIRE			

IGNITION



SERVICE HINTS

I15 IGNITION SW

8-7: CLOSED WITH IGNITION KEY AT **ON** OR **ST** POSITION

○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
D 1	24 (3VZ-E)	E 8	A 28	I 3	27 (22R-E)
	26 (22R-E)	E 8	C 28	I15	28
D 3	24 (3VZ-E)	I 1	25 (3VZ-E)	N 1	A 25 (3VZ-E)
E 7	B 28	I 2	25 (3VZ-E)		B 27 (22R-E)

○ : RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	22	R/B NO. 2 (ENGINE COMPARTMENT RIGHT)

○ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1A	20	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)
1B	20	ENGINE ROOM MAIN WIRE AND J/B NO. 1 (LEFT KICK PANEL)

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
IB3	34	ENGINE ROOM MAIN WIRE AND COWL WIRE (LEFT KICK PANEL)
IH1	34	ENGINE WIRE AND COWL WIRE (RIGHT KICK PANEL)

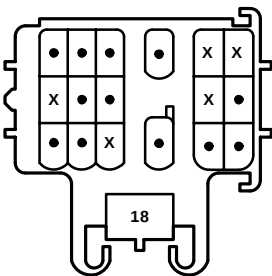
▽ : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
EB	32 (22R-E)	LEFT FENDER
EC	30 (3VZ-E)	RH CYLINDER HEAD COVER REAR

○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
E11	32 (22R-E)	ENGINE WIRE	I11	34	COWL WIRE
E24	30 (3VZ-E)		I15	34	ENGINE WIRE
I 6	34	COWL WIRE			

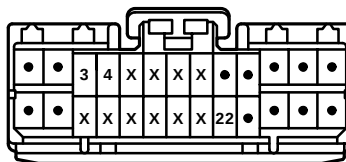
D 1 DARK GRAY



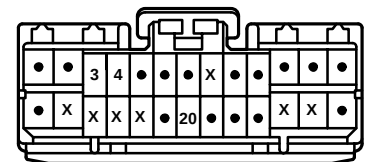
D 3 BLACK



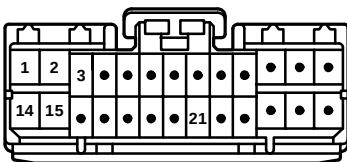
(22R-E) E 7 (B) DARK GRAY



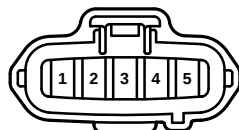
(22R-E) E 8 (A) DARK GRAY



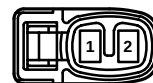
(3VZ-E) E 8 (C) DARK GRAY



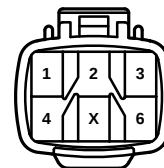
I 1 BLACK



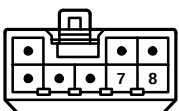
I 2 BLACK



I 3 DARK GRAY



I15 BLACK



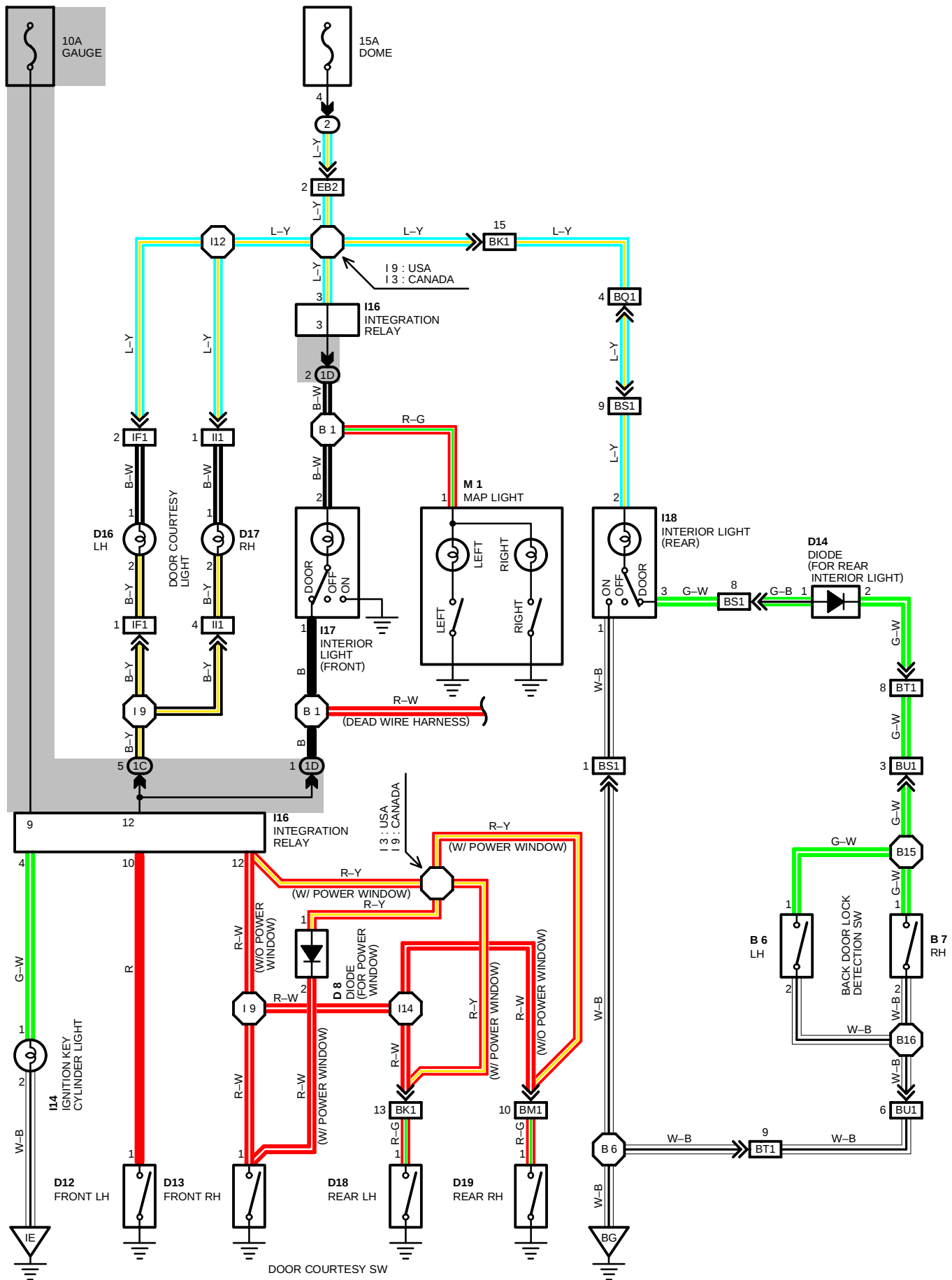
(3VZ-E) N 1 (A) GRAY



(22R-E) N 1 (B) GRAY



INTERIOR LIGHT



SERVICE HINTS

D12, D13, D18, D19 DOOR COURTESY SW

1-GROUND: CLOSED WITH DOOR OPEN

: PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
B 6	29	D14	29	I14	28
B 7	29	D16	29	I16	28
D 8	28	D17	29	I17	29
D12	28	D18	29	I18	29
D13	28	D19	29	M 1	29

: RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	22	R/B NO. 2 (ENGINE COMPARTMENT RIGHT)

: JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1C	20	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)
1D	20	ROOF WIRE AND J/B NO. 1 (LEFT KICK PANEL)

: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EB2	30 (3VZ-E) 32 (22R-E)	COWL WIRE AND ENGINE ROOM MAIN WIRE (R/B NO. 2)
IF1	34	FRONT DOOR LH WIRE AND COWL WIRE (LEFT KICK PANEL)
I11	34	FRONT DOOR RH WIRE AND COWL WIRE (RIGHT KICK PANEL)
BK1	36	FLOOR NO. 3 LH WIRE AND COWL WIRE (LEFT SIDE OF FRONT LH SEAT)
BM1	36	FLOOR NO. 3 RH WIRE AND COWL WIRE (RIGHT SIDE OF FRONT RH SEAT)
BQ1	36	FLOOR NO. 3 LH WIRE AND FLOOR NO. 2 WIRE (LEFT SIDE OF REAR LH SEAT)
BS1	36	LUGGAGE ROOM WIRE AND FLOOR NO. 2 WIRE (UNDER LEFT REAR PILLAR)
BT1	36	BACK DOOR NO. 1 WIRE AND FLOOR NO. 2 WIRE (BESIDE LEFT REAR COMB. LIGHT)
BU1	36	BACK DOOR NO. 1 WIRE AND BACK DOOR NO. 2 WIRE (BACK DOOR LEFT)

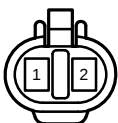
: GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
IE	34	LEFT KICK PANEL
BG	36	UNDER LEFT REAR PILLAR

: SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I 3	34	COWL WIRE	B 1	36	ROOF WIRE
I 9			B 6	36	FLOOR NO. 2 WIRE
I12			B15	36	BACK DOOR NO. 2 WIRE
I14			B16		

B 6



B 7



D 8 BLACK



D12, D13



D14 BLACK



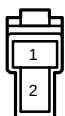
D16, D17 BLUE



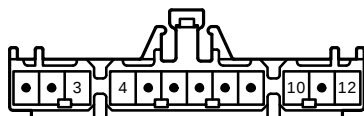
D18, D19



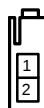
I14 BLUE



I16



I17



I18



M 1



SYSTEM OUTLINE

WITH THE IGNITION SW TURNED ON, THE CURRENT FLOWS TO **TERMINAL 1** OF THE HEADLIGHT AUTO CUT ECU THROUGH **GAUGE FUSE**.

VOLTAGE IS APPLIED AT ALL TIMES TO **TERMINAL 8** OF THE HEADLIGHT AUTO CUT ECU THROUGH THE TAILLIGHT RELAY COIL, AND TO **TERMINAL 7** THROUGH THE HEADLIGHT RELAY COIL.

1. NORMAL LIGHTING OPERATION

< TURN TAILLIGHT ON >

WITH LIGHT CONTROL SW TURNED TO **TAIL** POSITION, A SIGNAL IS INPUT INTO **TERMINAL 2** OF THE HEADLIGHT AUTO CUT ECU. DUE TO THIS SIGNAL, THE CURRENT FLOWING TO **TERMINAL 8** OF THE ECU FLOWS TO **TERMINAL 2** → **TERMINAL 11** OF THE LIGHT CONTROL SW → **TERMINAL 10** → TO **GROUND** AND TAILLIGHT RELAY CAUSES TAILLIGHT TO TURN ON.

< TURN HEADLIGHT ON >

WITH LIGHT CONTROL SW TURNED TO **HEAD** POSITION, A SIGNAL IS INPUT INTO **TERMINALS 2 AND 3** OF THE HEADLIGHT AUTO CUT ECU. DUE TO THIS SIGNAL, THE CURRENT FLOWING TO **TERMINAL 7** OF THE ECU FLOWS TO **TERMINAL 3** → **TERMINAL 4** OF THE LIGHT CONTROL SW → **TERMINAL 10** → TO **GROUND** IN THE HEADLIGHT CIRCUIT, AND CAUSES TAILLIGHT AND HEADLIGHT RELAY TO TURN THE LIGHT ON. THE TAILLIGHT CIRCUIT IS SAME AS ABOVE.

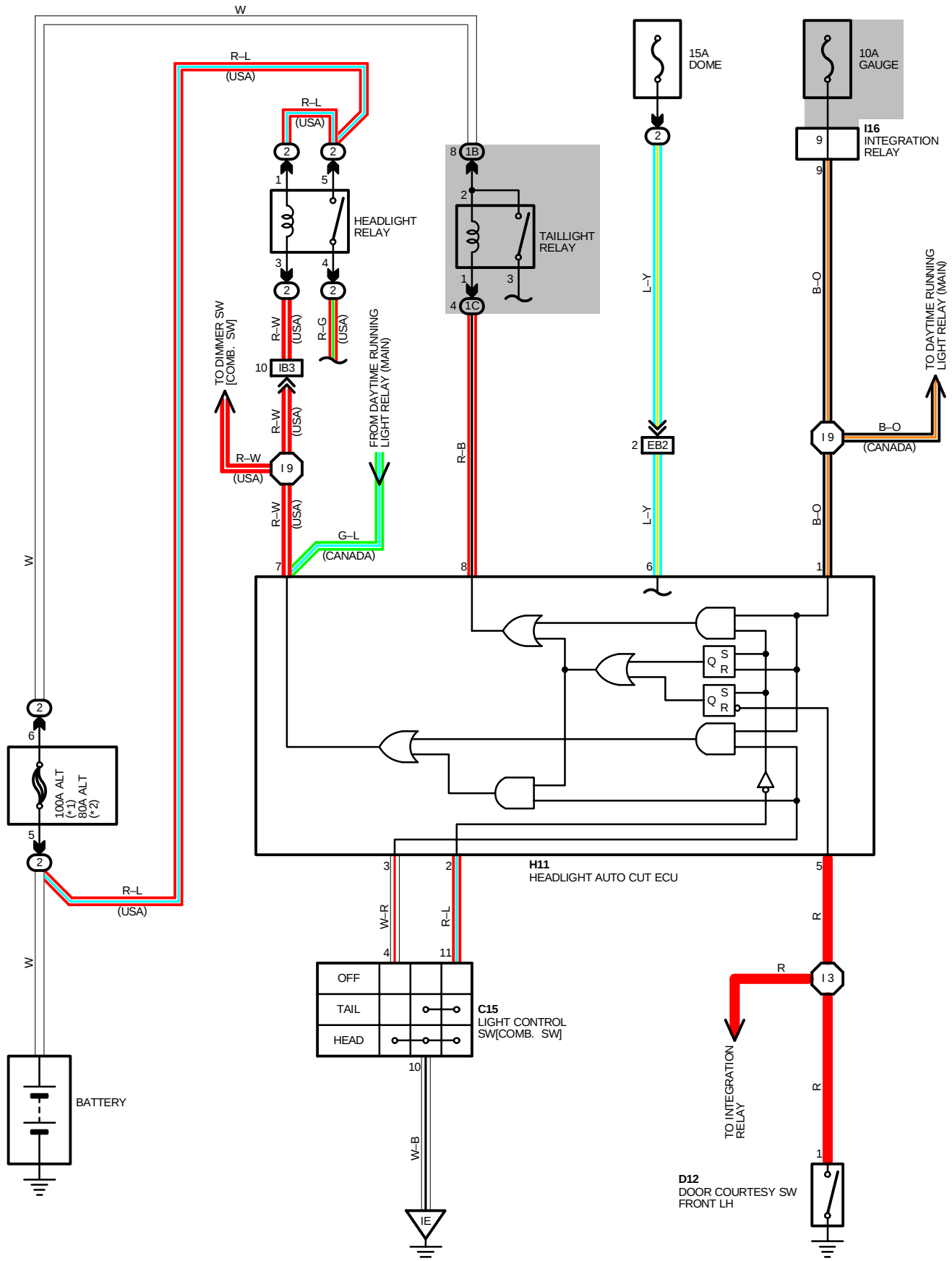
2. LIGHT AUTO TURN OFF OPERATION

WITH LIGHT ON AND IGNITION SW TURNED OFF (INPUT SIGNAL GOES TO **TERMINAL 1** OF THE ECU), WHEN THE DRIVER'S DOOR IS OPENED (INPUT SIGNAL GOES TO **TERMINAL 5** OF THE ECU), THE ECU OPERATES AND THE CURRENT IS CUT OFF WHICH FLOWS FROM **TERMINAL 8** OF THE ECU TO **TERMINAL 2** IN TAILLIGHT CIRCUIT AND FROM **TERMINAL 7** TO **TERMINAL 3** IN HEADLIGHT CIRCUIT.

AS A RESULT, ALL LIGHTS ARE TURNED OFF AUTOMATICALLY.

LIGHT AUTO TURN OFF

*1 : 22R-E A/T
*2 : 3VZ-E, 22R-E M/T



SERVICE HINTS

HEADLIGHT RELAY

- 5-4: CLOSED WITH LIGHT CONTROL SW AT **HEAD** POSITION OR DIMMER SW AT **FLASH** POSITION (FOR USA)
 : CLOSED WITH ENGINE RUNNING AND PARKING BRAKE LEVER RELEASED (FOR CANADA)

TAILLIGHT RELAY

- 2-3: CLOSED WITH LIGHT CONTROL SW AT **TAIL** OR **HEAD** POSITION (FOR USA)

D12 DOOR COURTESY SW FRONT LH

- 1-GROUND : CLOSED WITH LH DOOR OPEN

H11 HEADLIGHT AUTO CUT ECU

- 1-GROUND : APPROX. **12** VOLTS WITH THE IGNITION SW AT **ON** POSITION
 5-GROUND : CONTINUOUS WITH LH DOOR OPEN
 6-GROUND : ALWAYS APPROX. **12** VOLTS
 8-GROUND : ALWAYS APPROX. **12** VOLTS
 7-GROUND : ALWAYS APPROX. **12** VOLTS
 3-GROUND : CONTINUOUS WITH LIGHT CONTROL SW AT **HEAD** POSITION
 2-GROUND : CONTINUOUS WITH LIGHT CONTROL SW AT **TAIL** OR **HEAD** POSITION

○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
C15	28	H11	28		
D12	28	I16	28		

○ : RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	22	R/B NO. 2 (ENGINE COMPARTMENT RIGHT)

○ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1B	20	ENGINE ROOM MAIN WIRE AND J/B NO. 1 (LEFT KICK PANEL)
1C	20	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EB2	30 (3VZ-E) 32 (22R-E)	COWL WIRE AND ENGINE ROOM MAIN WIRE (R/B NO. 2)
IB3	34	ENGINE ROOM MAIN WIRE AND COWL WIRE (LEFT KICK PANEL)

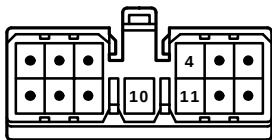
▽ : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
IE	34	LEFT KICK PANEL

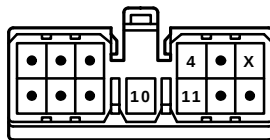
○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I3	34	COWL WIRE	I9	34	COWL WIRE

(USA) C15 BLACK



(CANADA) C15 BLACK



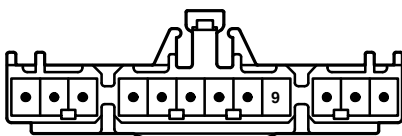
D12



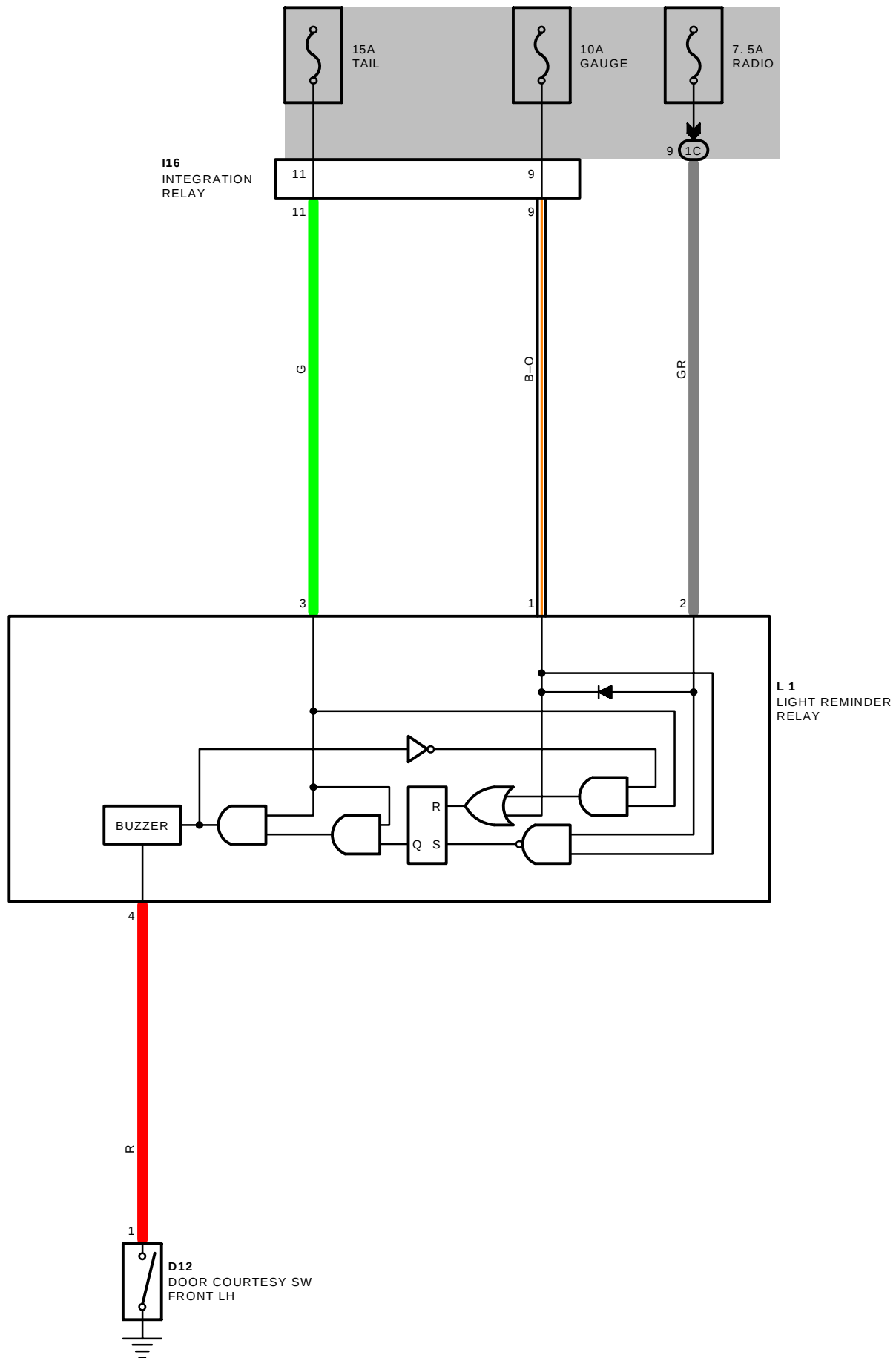
H11



I16



LIGHT REMINDER BUZZER



SYSTEM OUTLINE

WITH THE IGNITION SW IN **ACC** POSITION, CURRENT FLOWS TO **TERMINAL 2**. WHEN THE IGNITION SW IS TURNED TO **ON** POSITION, CURRENT FLOWS TO **TERMINAL 1**. WHEN THE LIGHT CONTROL SW IS TURNED TO **TAIL** OR **HEAD** POSITION, CURRENT IS APPLIED TO **TERMINAL 3**.

LIGHT REMINDER SYSTEM

WHEN THE LIGHT CONTROL SW IS IN **TAIL** OR **HEAD** POSITION, THE IGNITION SW IS TURNED TO OFF FROM ON POSITION, AND THE DRIVER'S DOOR IS OPENED (DOOR COURTESY SW ON), THE CURRENT FLOW TO **TERMINAL 1** AND **2** OF THE LIGHT REMAINDER RELAY STOPS. AS A RESULT, THE RELAY IS ACTIVATED AND CURRENT FLOWS FROM **TERMINAL 3** OF THE RELAY → **TERMINAL 4** → **TERMINAL 1** OF DOOR COURTESY SW → TO **GROUND**, SOUNDING THE LIGHT REMINDER BUZZER.

SERVICE HINTS

L 1 LIGHT REMINDER RELAY

- 1-GROUND: APPROX. **12** VOLTS WITH IGNITION SW AT **ON** POSITION
- 2-GROUND: APPROX. **12** VOLTS WITH IGNITION SW AT **ACC** OR **ON** POSITION
- 3-GROUND: APPROX. **12** VOLTS WITH LIGHT CONTROL SW AT **TAIL** OR **HEAD** POSITION
- 4-GROUND: CONTINUOUS WITH FRONT LH DOOR OPEN

○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
D12	28	I16	28	L 1	28

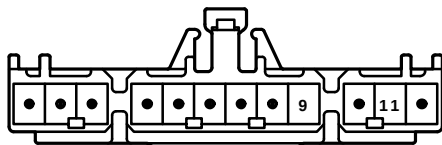
○ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1C	20	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)

D 12

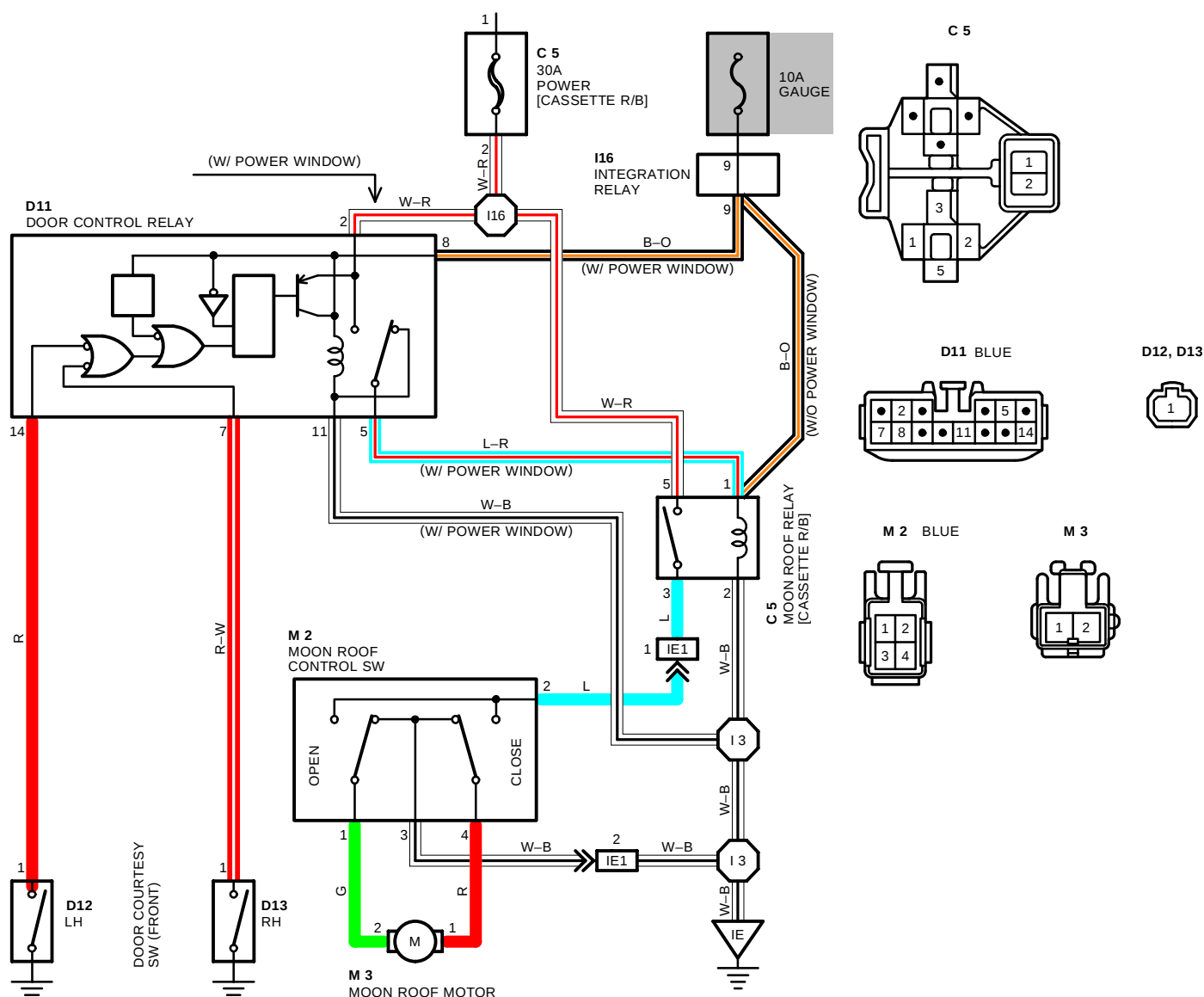


I16



L 1 ORANGE





SERVICE HINTS

C 5 MOON ROOF RELAY [CASSETTE R/B]

5-3: CLOSED WITH IGNITION SW AT **ON** POSITION

○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
C 5	28	D12	28	M 2	29
D11	28	D13	28	M 3	29

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
IE1	34	COWL WIRE AND ROOF WIRE (INSTRUMENT PANEL LEFT)

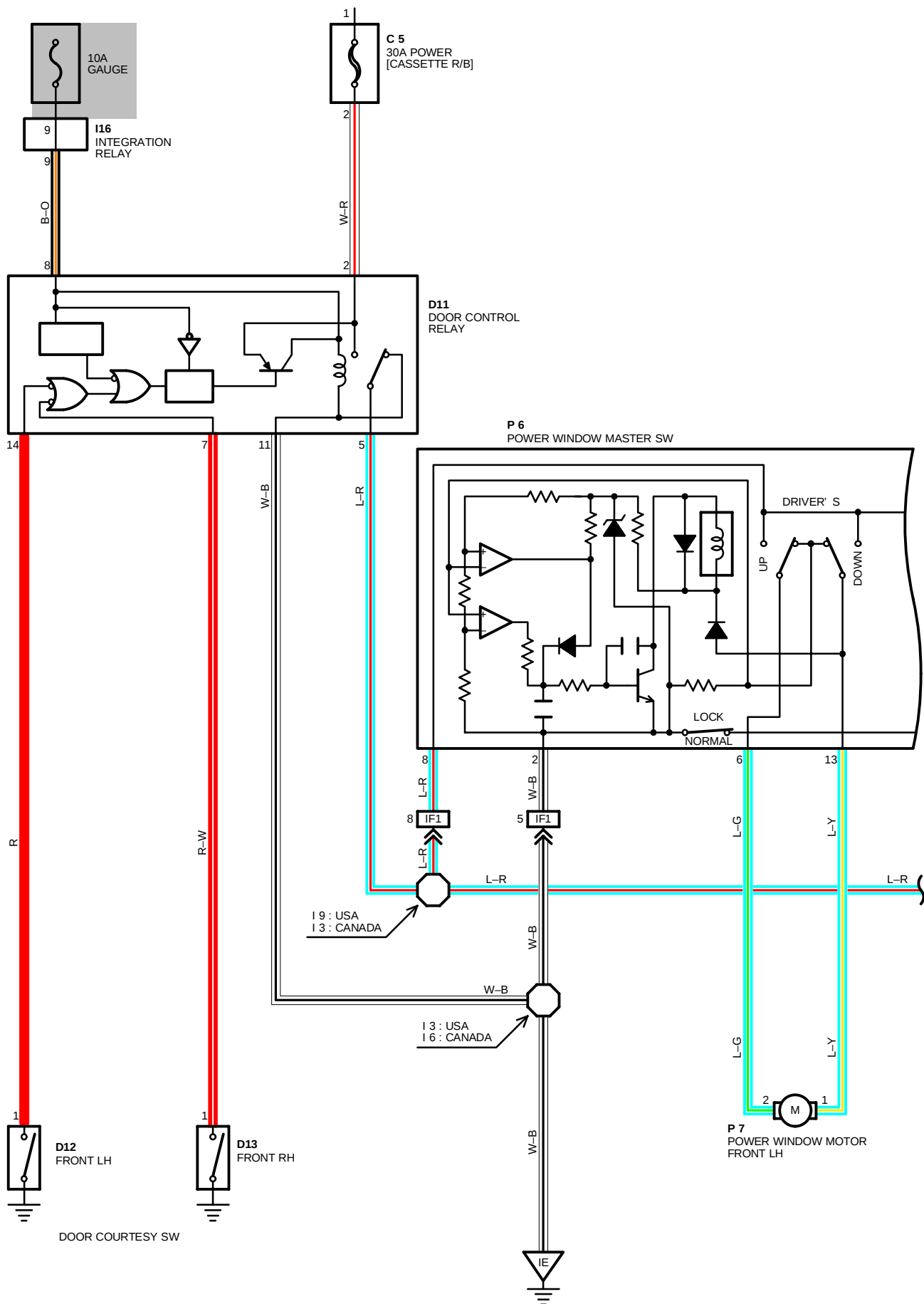
▽ : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
IE	34	LEFT KICK PANEL

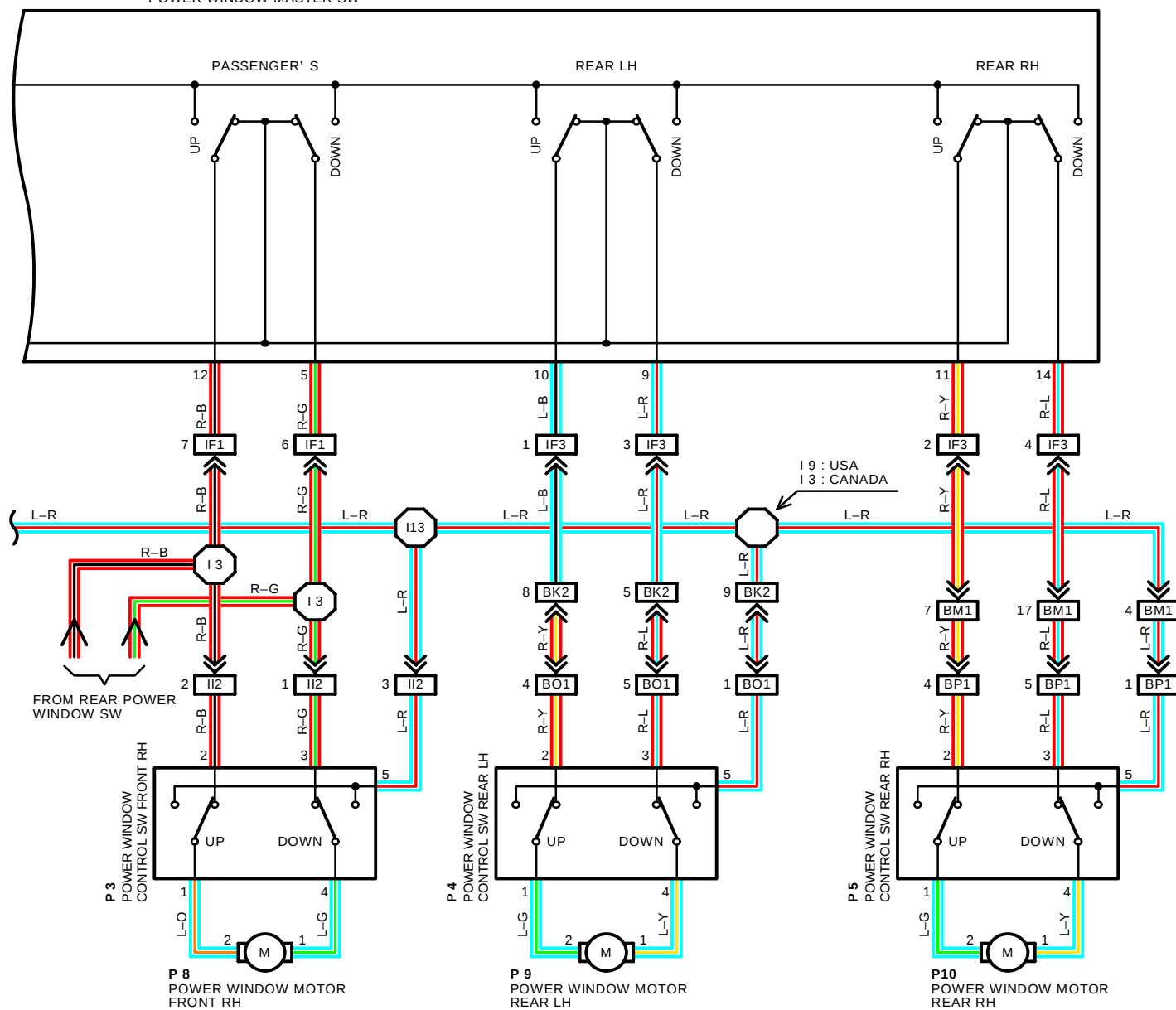
○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I3	34	COWL WIRE	I16	34	COWL WIRE

POWER WINDOW (FRONT)



P 6
POWER WINDOW MASTER SW



POWER WINDOW (FRONT)

SYSTEM OUTLINE

WITH THE IGNITION SW TURNED ON, CURRENT FLOWS THROUGH THE **GAUGE** FUSE TO **TERMINAL 8** OF THE DOOR CONTROL RELAY → **TERMINAL 11** → TO **GROUND**. THIS ACTIVATES THE RELAY AND THE CURRENT FLOWING TO **TERMINAL 2** OF THE RELAY FROM **POWER** FUSE FLOWS TO **TERMINAL 5** OF THE RELAY → **TERMINAL 8** OF THE POWER WINDOW MASTER SW AND **TERMINAL 5** (FRONT RH, REAR LH, REAR RH) OF THE POWER WINDOW CONTROL SW.

1. MANUAL UP OPERATION (DRIVER'S WINDOW)

WITH THE IGNITION SW TURNED ON AND WITH THE POWER WINDOW MASTER SW (MANUAL SW) IN **UP** POSITION, THE CURRENT FLOWING TO **TERMINAL 8** OF THE POWER WINDOW MASTER SW FLOWS TO **TERMINAL 6** OF THE MASTER SW → **TERMINAL 2** OF THE POWER WINDOW MOTOR → **TERMINAL 1** → **TERMINAL 13** OF THE MASTER SW → **TERMINAL 2** → TO **GROUND**, CAUSING THE POWER WINDOW MOTOR TO ROTATE IN THE UP DIRECTION. THE WINDOW ASCENDS ONLY WHILE THE SW IS BEING PUSHED. IN DOWN OPERATION, THE FLOW OF CURRENT FROM **TERMINAL 8** OF THE POWER WINDOW MASTER SW TO **TERMINAL 13** OF THE MASTER SW CAUSES THE FLOW OF CURRENT FROM **TERMINAL 1** OF THE MOTOR → **TERMINAL 2** → **TERMINAL 6** OF THE MASTER SW → **TERMINAL 2** → TO **GROUND**, FLOWING IN THE OPPOSITE DIRECTION TO MANUAL UP OPERATION AND CAUSING THE MOTOR TO ROTATE IN REVERSE, LOWERING THE WINDOW.

2. AUTO DOWN OPERATION

WITH THE IGNITION SW ON AND WITH THE AUTO SW OF THE POWER WINDOW MASTER SW IN **DOWN** POSITION, CURRENT FLOWING TO **TERMINAL 8** OF THE MASTER SW FLOWS TO **TERMINAL 13** OF THE POWER WINDOW MASTER SW → **TERMINAL 1** OF THE POWER WINDOW MOTOR → **TERMINAL 2** → **TERMINAL 6** OF THE MASTER SW → **TERMINAL 2** → TO **GROUND**, CAUSING THE MOTOR TO ROTATE TOWARDS THE DOWN SIDE. THEN THE SOLENOID IN THE MASTER SW IS ACTIVATED AND IT LOCKS THE AUTO SW BEING PUSHED, CAUSING THE MOTOR TO CONTINUE TO ROTATE IN AUTO DOWN OPERATION. WHEN THE WINDOW HAS COMPLETELY DESCENDED, THE CURRENT FLOW BETWEEN **TERMINAL 6** OF THE MASTER SW AND **TERMINAL 2** INCREASES. AS A RESULT, THE SOLENOID STOPS OPERATING, THE AUTO SW TURNS OFF AND FLOW FROM **TERMINAL 8** OF THE MASTER SW TO **TERMINAL 13** IS CUT OFF, STOPPING THE MOTOR SO THAT AUTO STOP OCCURS.

3. STOPPING OF AUTO DOWN AT DRIVER'S WINDOW

WHEN THE MANUAL SW (DRIVER'S) IS PULLED TO THE UP SIDE DURING AUTO DOWN OPERATION, A GROUND CIRCUIT OPENS IN THE MASTER SW AND CURRENT DOES NOT FLOW FROM **TERMINAL 6** OF THE MASTER SW → TO **TERMINAL 2**, SO THE MOTOR STOPS, CAUSING AUTO DOWN OPERATION TO STOP. IF THE MANUAL SW IS PULLED CONTINUOUSLY, THE MOTOR ROTATES IN THE UP DIRECTION IN MANUAL UP OPERATION.

4. MANUAL OPERATION BY POWER WINDOW CONTROL SW (FRONT RH)

WITH POWER WINDOW CONTROL SW (FRONT RH) PULLED TO THE UP SIDE, CURRENT FLOWING FROM **TERMINAL 5** OF THE POWER WINDOW CONTROL SW FLOWS TO **TERMINAL 1** OF THE POWER WINDOW CONTROL SW → **TERMINAL 2** OF THE POWER WINDOW MOTOR → **TERMINAL 1** → **TERMINAL 4** OF THE POWER WINDOW CONTROL SW → **TERMINAL 3** → **TERMINAL 5** OF THE MASTER SW → **TERMINAL 2** → TO **GROUND** AND CAUSES THE POWER WINDOW MOTOR (FRONT RH) TO ROTATE IN THE OPERATING ONLY WHILE THE POWER WINDOW CONTROL SW IS PULLED TO THE UP SIDE. WHEN THE WINDOW DESCENDS, THE CURRENT FLOWING TO THE MOTOR FLOWS IN THE OPPOSITE DIRECTION. FROM **TERMINAL 1** TO **TERMINAL 2**, AND THE MOTOR ROTATES IN REVERSE. WHEN THE WINDOW LOCK SW IS PUSHED TO THE LOCK SIDE, THE GROUND CIRCUIT TO THE PASSENGER'S WINDOW BECOMES OPEN AS A RESULT. EVEN IF OPEN/CLOSE OPERATION OF THE PASSENGER'S WINDOW IS TRIED, THE CURRENT FROM **TERMINAL 2** OF THE POWER WINDOW MASTER SW IS NOT GROUNDED AND THE MOTOR DOES NOT ROTATE, SO THE PASSENGER'S WINDOW CAN NOT BE OPERATED AND WINDOW LOCK OCCURS.

5. KEY OFF POWER WINDOW OPERATION

WITH THE IGNITION SW TURNED FROM ON TO OFF, THE RELAY OPERATES AND CURRENT FLOWS FROM **TERMINAL 2** → **TERMINAL 11** → TO **GROUND** FOR ABOUT **60** SECONDS. THE SAME AS NORMAL OPERATION, THE CURRENT FLOWS FROM **TERMINAL 2** OF THE DOOR CONTROL RELAY → **TERMINAL 5** → **TERMINAL 8** OF THE POWER WINDOW MASTER SW AND **TERMINAL 5** OF THE DOOR CONTROL RELAY → TO **TERMINAL 5** (FRONT RH, REAR LH, REAR RH) OF THE POWER WINDOW CONTROL SW. AS A RESULT, FOR ABOUT **60** SECONDS AFTER THE IGNITION SW IS TURNED OFF, IT IS POSSIBLE TO RAISE AND LOWER THE POWER WINDOW BY THE FUNCTIONING OF THIS RELAY. ALSO, BY OPENING THE DOOR (DOOR COURTESY SW ON) WITHIN ABOUT **60** SECONDS AFTER TURNING THE IGNITION SW TO OFF, A SIGNAL IS INPUT TO **TERMINAL 14** OR **7** OF DOOR CONTROL RELAY. AS A RESULT, THE RELAY TURNS OFF AND UP AND DOWN MOVEMENT OF THE WINDOW STOPS.

FURTHERMORE, REAR LH, RH WINDOW OPERATE THE SAME AS THE ABOVE CIRCUIT.

SERVICE HINTS

D11 DOOR CONTROL RELAY

- 2-GROUND : ALWAYS APPROX. **12** VOLTS
- 11-GROUND : ALWAYS CONTINUOUS
- 8-GROUND : APPROX. **12** VOLTS WITH IGNITION SW AT **ON** POSITION
- 14-GROUND : CONTINUITY WITH FRONT LH DOOR OPENED
- 5-GROUND : APPROX. **12** VOLTS WITH IGNITION SW ON AND STAYS AT **12** VOLTS FOR **60** SECONDS AFTER THE IGNITION SW IS TURNED OFF, BUT IF A DOOR IS OPENED IN THIS **60** SECONDS PERIOD, VOLTAGE WILL DROP TO **0** VOLTS
- 7-GROUND : CONTINUOUS WITH FRONT RH DOOR OPENED

D12, D13 DOOR COURTESY SW

- 1-GROUND : CONTINUOUS WITH DOOR OPENED

P 3 POWER WINDOW CONTROL SW FRONT RH

- 5-GROUND : APPROX. **12** VOLTS WITH IGNITION SW ON AND STAYS AT **12** VOLTS FOR **60** SECONDS AFTER THE IGNITION SW IS TURNED OFF, BUT IF A DOOR IS OPENED IN THIS **60** SECONDS PERIOD, VOLTAGE WILL DROP TO **0** VOLTS

P 4, P 5 POWER WINDOW CONTROL SW REAR LH, RH

- 5-GROUND : APPROX. **12** VOLTS WITH IGNITION SW ON AND STAYS AT **12** VOLTS FOR **60** SECONDS AFTER THE IGNITION SW IS TURNED OFF, BUT IF A DOOR IS OPENED IN THIS **60** SECONDS PERIOD, VOLTAGE WILL DROP TO **0** VOLTS

P 6 POWER WINDOW MASTER SW

- 2-GROUND : ALWAYS CONTINUOUS
- 8-GROUND : APPROX. **12** VOLTS WITH IGNITION SW ON AND STAYS AT **12** VOLTS FOR **60** SECONDS AFTER THE IGNITION SW IS TURNED OFF, BUT IF A DOOR IS OPENED IN THIS **60** SECONDS PERIOD, VOLTAGE WILL DROP TO **0** VOLTS
- 6-GROUND : APPROX. **12** VOLTS WITH IGNITION SW AT **ON** POSITION AND MASTER SW AT **UP** POSITION
- 13-GROUND : APPROX. **12** VOLTS WITH IGNITION SW AT **ON** POSITION AND MASTER SW AT **DOWN** OR **AUTO DOWN** POSITION



: PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
C 5	28	P 3	29	P 7	29
D11	28	P 4	29	P 8	29
D12	28	P 5	29	P 9	29
D13	28	P 6	29	P 10	29



: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
IF1	34	FRONT DOOR LH WIRE AND COWL WIRE (LEFT KICK PANEL)
IF3		
II2	34	FRONT DOOR RH WIRE AND COWL WIRE (RIGHT KICK PANEL)
BK2	36	COWL WIRE AND FLOOR NO. 3 LH WIRE (LEFT SIDE OF FRONT LH SEAT)
BM1	36	FLOOR NO. 3 RH WIRE AND COWL WIRE (RIGHT SIDE OF FRONT RH SEAT)
BO1	36	REAR DOOR LH WIRE AND FLOOR NO. 3 LH WIRE (LEFT CENTER PILLAR)
BP1	36	REAR DOOR RH WIRE AND FLOOR NO. 3 RH WIRE (RIGHT CENTER PILLAR)



: GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
IE	34	LEFT KICK PANEL

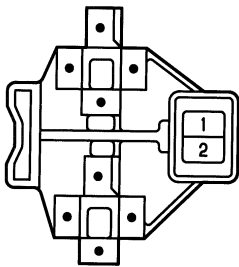


: SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I 3	34	COWL WIRE	I 9	34	COWL WIRE
I 6			I13		

POWER WINDOW (FRONT)

C 5



D11 BLUE



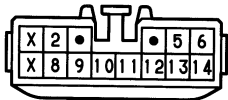
D12, D13



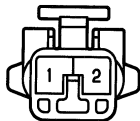
P 3, P 4, P 5



P 6

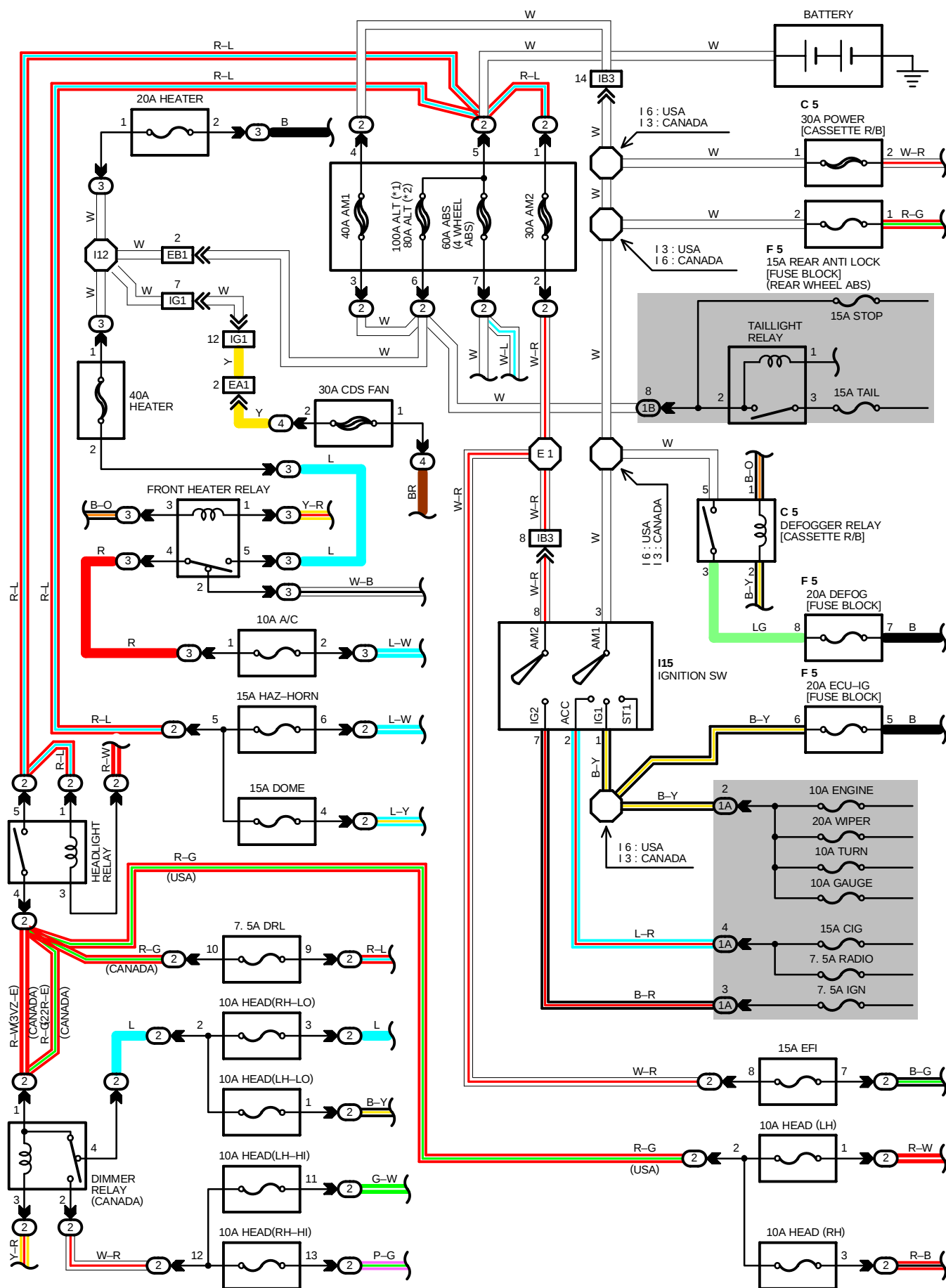


P 7, P 8, P 9, P10



POWER SOURCE

*1 : 22R-E A/T
*2 : 3VZ-E, 22R-E M/T



SERVICE HINTS

FRONT HEATER RELAY

(3) 4– (3) 5: CLOSED WITH IGNITION SW ON AND BLOWER SW ON

HEADLIGHT RELAY

(2) 4– (2) 5: CLOSED WITH LIGHT CONTROL SW AT **HEAD** POSITION OR DIMMER SW AT **FLASH** POSITION

I15 IGNITION SW

3–2: CLOSED WITH IGNITION KEY AT **ACC** OR **ON** POSITION

3–1: CLOSED WITH IGNITION KEY AT **ON** OR **ST** POSITION

8–7: CLOSED WITH IGNITION KEY AT **ON** OR **ST** POSITION

TAILLIGHT RELAY

2–3: CLOSED WITH LIGHT CONTROL SW AT **TAIL** OR **HEAD** POSITION

DIMMER RELAY (CANADA)

CHANGED FROM HEAD (LO) TO HEAD (HI) WITH DIMMER SW AT **FLASH** POSITION OR WITH HEADLIGHT RELAY ON AND DIMMER SW AT **HIGH** POSITION

○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
C 5	28	F 5	28	I15	28

○ : RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	22	R/B NO. 2 (ENGINE COMPARTMENT RIGHT)
3	23	R/B NO. 3 (RIGHT KICK PANEL)
4	23	R/B NO. 4 (BESIDE R/B NO. 2)

○ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1A	20	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)
1B	20	ENGINE ROOM MAIN WIRE AND J/B NO. 1 (LEFT KICK PANEL)

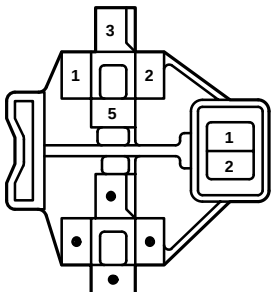
□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EA1	30 (3VZ–E) 32 (22R–E)	COWL WIRE AND A/C SUB WIRE (NEAR THE BATTERY)
EB1	30 (3VZ–E) 32 (22R–E)	COWL WIRE AND ENGINE ROOM MAIN WIRE (R/B NO. 2)
IB3	34	ENGINE ROOM MAIN WIRE AND COWL WIRE (LEFT KICK PANEL)
IG1	34	COWL WIRE AND A/C WIRE (BEHIND GLOVE BOX)

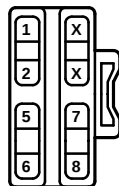
○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
E 1	30 (3VZ–E) 32 (22R–E)	ENGINE ROOM MAIN WIRE	I 6 I12	34	COWL WIRE
I 3	34	COWL WIRE			

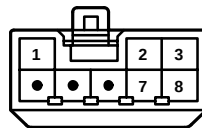
C 5



F 5



I15 BLACK





SERVICE HINTS

R 4(A) RADIO AND PLAYER OR STEREO POWER AMPLIFIER

(A)3-GROUND: APPROX. 12 VOLTS WITH IGNITION SW AT ON OR ACC POSITION

(A)4-GROUND: ALWAYS APPROX. 12 VOLTS

(A)7-GROUND: ALWAYS CONTINUOUS

○ : PARTS LOCATION

CODE		SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
R 4	A	28	S 6	28	S 10	29
R 5	B	28	S 8	29	S 11	29
S 5		28	S 9	29		

○ : RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	22	R/B NO. 2 (ENGINE COMPARTMENT RIGHT)

○ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1C	20	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EB2	30 (3VZ-E) 32 (22R-E)	COWL WIRE AND ENGINE ROOM MAIN WIRE (R/B NO. 2)
BK1	36	FLOOR NO. 3 LH WIRE AND COWL WIRE (LEFT SIDE OF FRONT LH SEAT)
BK2	36	COWL WIRE AND FLOOR NO. 3 LH WIRE (LEFT SIDE OF FRONT LH SEAT)
BM1	36	FLOOR NO. 3 RH WIRE AND COWL WIRE (RIGHT SIDE OF FRONT RH SEAT)
BQ1	36	FLOOR NO. 3 LH WIRE AND FLOOR NO. 2 WIRE (LEFT SIDE OF REAR LH SEAT)
BQ2	36	FLOOR NO. 3 RH WIRE AND FLOOR WIRE (RIGHT SIDE OF REAR RH SEAT)
BR1	36	FLOOR NO. 3 RH WIRE AND FLOOR WIRE (RIGHT SIDE OF REAR RH SEAT)
BS1	36	LUGGAGE ROOM WIRE AND FLOOR NO. 2 WIRE (UNDER LEFT REAR PILLAR)
BW1	36	SPEAKER REAR SUB WIRE AND LUGGAGE ROOM WIRE (INSIDE OF REAR HEADER TRIM)

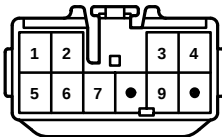
▽ : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
IE	34	LEFT KICK PANEL

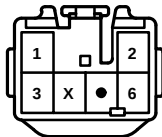
○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I 3			I 12	34	COWL WIRE
I 8	34	COWL WIRE	B 6	36	FLOOR NO. 2 WIRE
I 9					

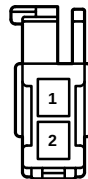
R 4 (A) BLUE



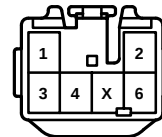
R 5 (B) BLUE



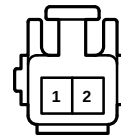
S 5, S 6



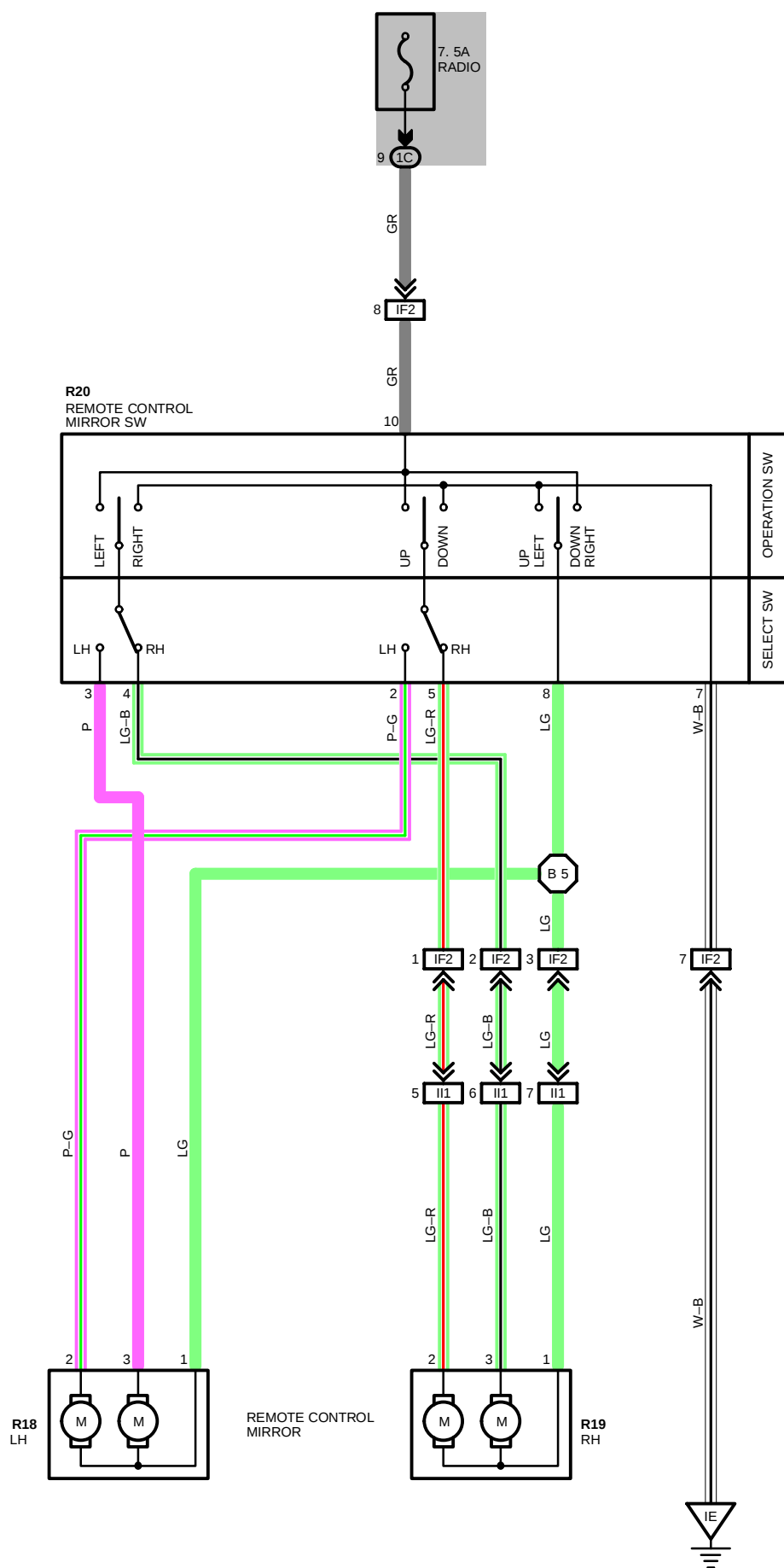
S 8, S 9



S 10, S 11



100



SERVICE HINTS

R20 REMOTE CONTROL MIRROR SW

- 7-GROUND : ALWAYS CONTINUOUS
- 10-GROUND : APPROX. 12 VOLTS WITH IGNITION SW AT **ACC** OR **ON** POSITION
- 8-7 : CONTINUOUS WITH OPERATION SW AT **UP** OR **LEFT** POSITION
- 10-8 : CONTINUOUS WITH OPERATION SW AT **DOWN** OR **RIGHT** POSITION

○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
R 18	29	R 19	29	R20	29

○ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1C	20	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
IF2	34	FRONT DOOR LH WIRE AND COWL WIRE (LEFT KICK PANEL)
II1	34	FRONT DOOR RH WIRE AND COWL WIRE (RIGHT KICK PANEL)

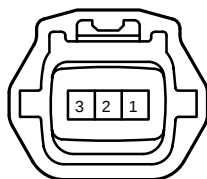
▽ : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
IE	34	LEFT KICK PANEL

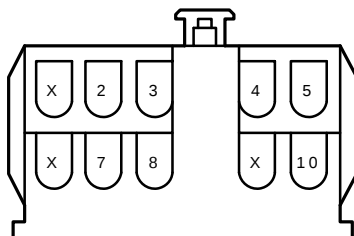
○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
B 5	36	FRONT DOOR RH WIRE			

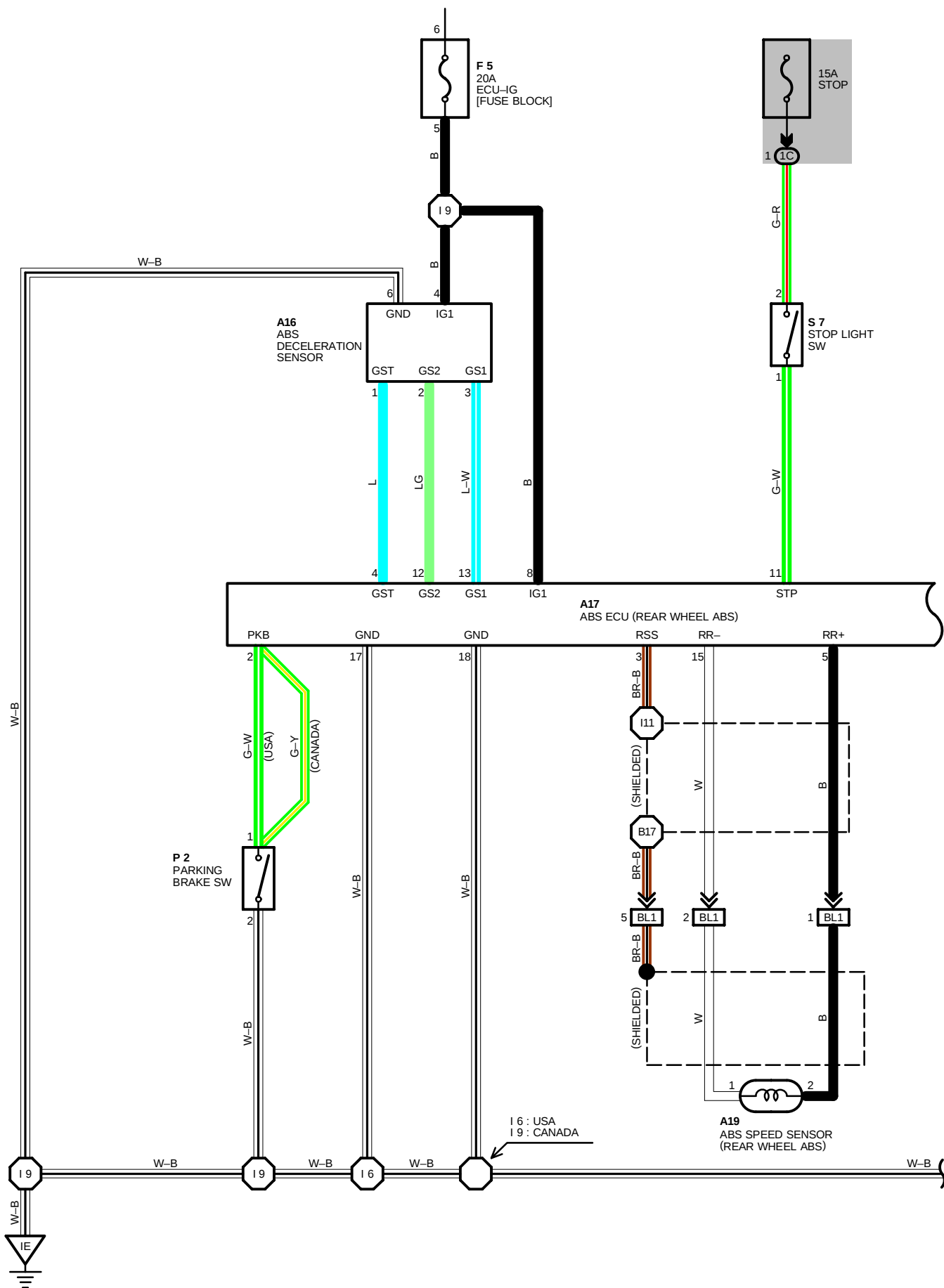
R 18, R 19

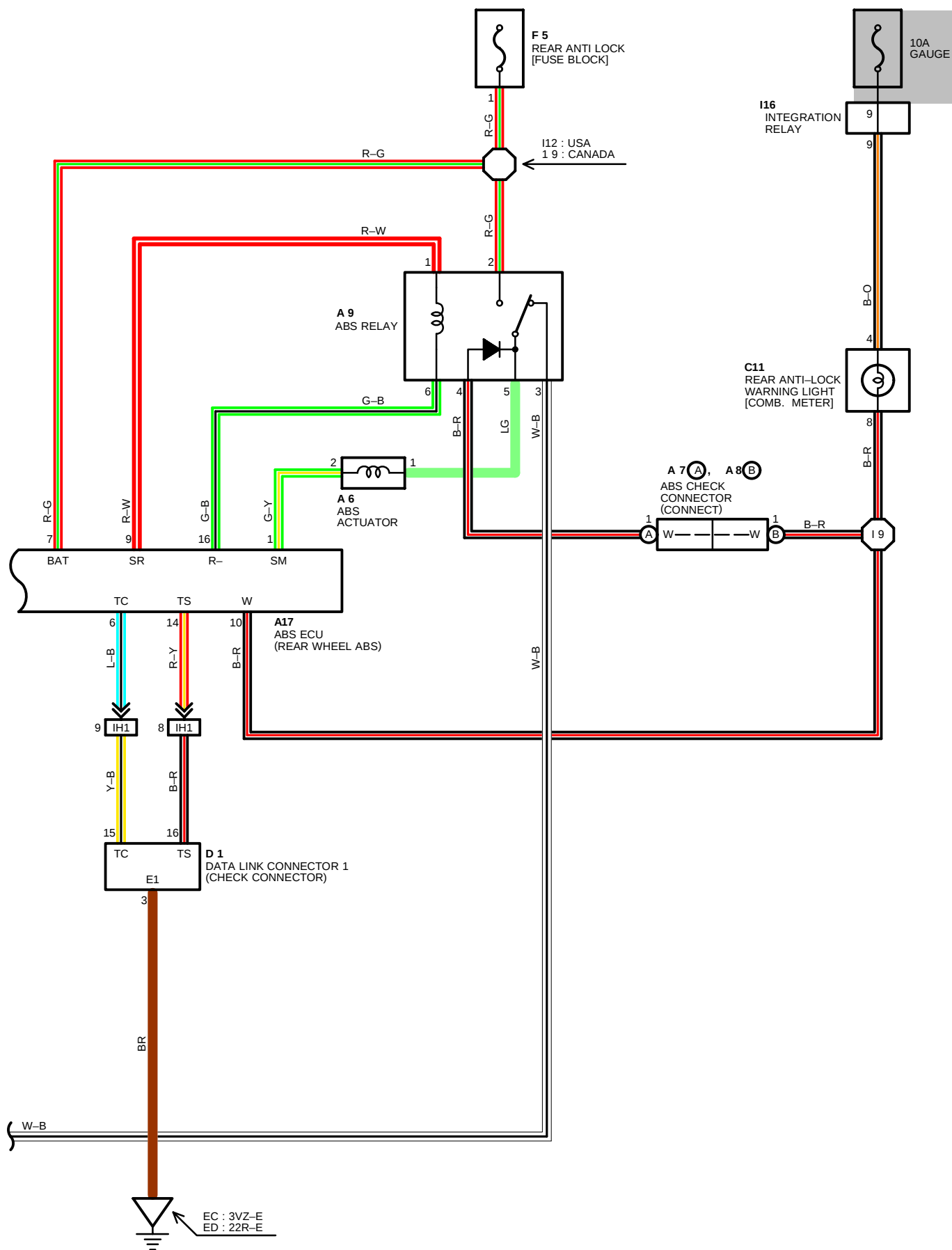


R 20



REAR WHEEL ANTI-LOCK BRAKE





REAR WHEEL ANTI-LOCK BRAKE

SYSTEM OUTLINE

THIS BRAKE SYSTEM HELPS TO MAINTAIN VEHICLE STABILITY DURING SUDDEN BRAKING BY CONTROLLING THE BRAKE FLUID PRESSURE OF EACH REAR WHEEL AND PREVENTING WHEEL LOCK-UP.

1. INPUT SIGNALS

- (1) SPEED SENSOR SIGNAL
THE SPEED OF THE REAR WHEELS IS DETECTED AND INPUT AS A SIGNAL TO **TERMINAL RR+** OF THE ABS ECU.
- (2) ANTI-LOCK DECELERATION SENSOR SIGNAL
VEHICLE DECELERATION IS DETECTED AND THE SIGNAL IS INPUT TO ABS ECU.
- (3) STOP LIGHT SW SIGNAL
WHEN THE BRAKE PEDAL IS OPERATED, A SIGNAL IS INPUT TO **TERMINAL STP** OF ABS ECU.

2. SYSTEM OPERATION

DURING SUDDEN BRAKING, THE ANTI-LOCK ECU (WHICH HAS RECEIVED SIGNALS FROM EACH SENSOR) OPERATES TO CONTROL THE CURRENT ACTING ON THE SOLENOID INSIDE THE ACTUATOR AND REDUCE THE FLUID PRESSURE ACTING ON REAR CYLINDER.

IF THE ECU NEXT JUDGES THAT THE FLUID PRESSURE ACTING ON THE WHEEL IS NOT SUFFICIENT, CURRENT FLOW TO THE SOLENOID IS CONTROLLED AND FLUID PRESSURE IS INCREASED.

IN THE CASE OF THE FLUID PRESSURE HOLDING MODE ALSO, THE COMPUTER OPERATES IN THE SAME WAY AS BEFORE TO MAINTAIN THE FLUID PRESSURE.

BY REPEATED PRESSURE DECREASE, PRESSURE INCREASE AND PRESSURE HOLDING, STABLE BRAKING OF THE VEHICLE IS MAINTAINED.

SERVICE HINTS

A17 ABS ECU

- 11-GROUND : APPROX. **12** VOLTS WITH BRAKE PEDAL DEPRESSED
- 8-GROUND : APPROX. **12** VOLTS WITH IGNITION SW AT **ON** POSITION
- 17, 18-GROUND : ALWAYS CONTINUOUS
- 2-GROUND : CONTINUOUS WITH PARKING BRAKE LEVER PULL UP AND BRAKE FLUID FLOAT UP

: PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
A 6	24 (3VZ-E)	A 9	24 (3VZ-E)	D 1	24 (3VZ-E)
	26 (22R-E)		26 (22R-E)		26 (22R-E)
A 7	A	A16	28	F 5	28
		A17	28	I16	28
A 8	B	A19	29	P 2	28
		C11	28	S 7	28

: JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1C	20	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)

: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
IH1	34	ENGINE WIRE AND COWL WIRE (RIGHT KICK PANEL)
BL1	36	FRAME NO. 2 WIRE AND COWL WIRE (UNDER THE FRONT LH SEAT)

: GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
EC	30 (3VZ-E)	RH CYLINDER HEAD COVER REAR
ED	32 (22R-E)	INTAKE MANIFOLD
IE	34	LEFT KICK PANEL

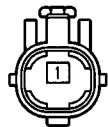
: SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I 6	34	COWL WIRE	I12	34	COWL WIRE
I 9			B17	36	
I11					

A 6 GRAY



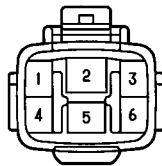
A 7 A GRAY



A 8 B GRAY



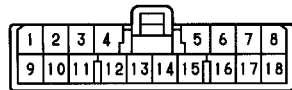
A 9 GRAY



A16 GRAY



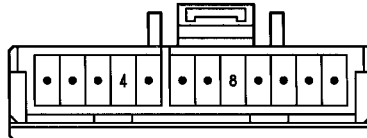
A17



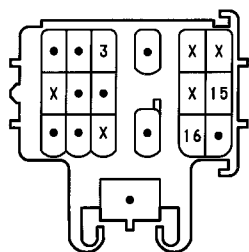
A19 GRAY



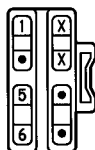
C11 BLUE



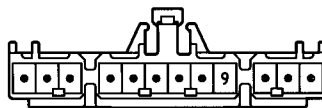
D 1 DARK GRAY



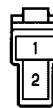
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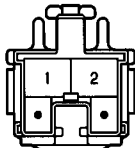
I16



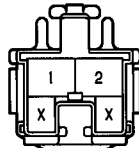
P 2



(W/ CRUISE S 7
CONTROL)

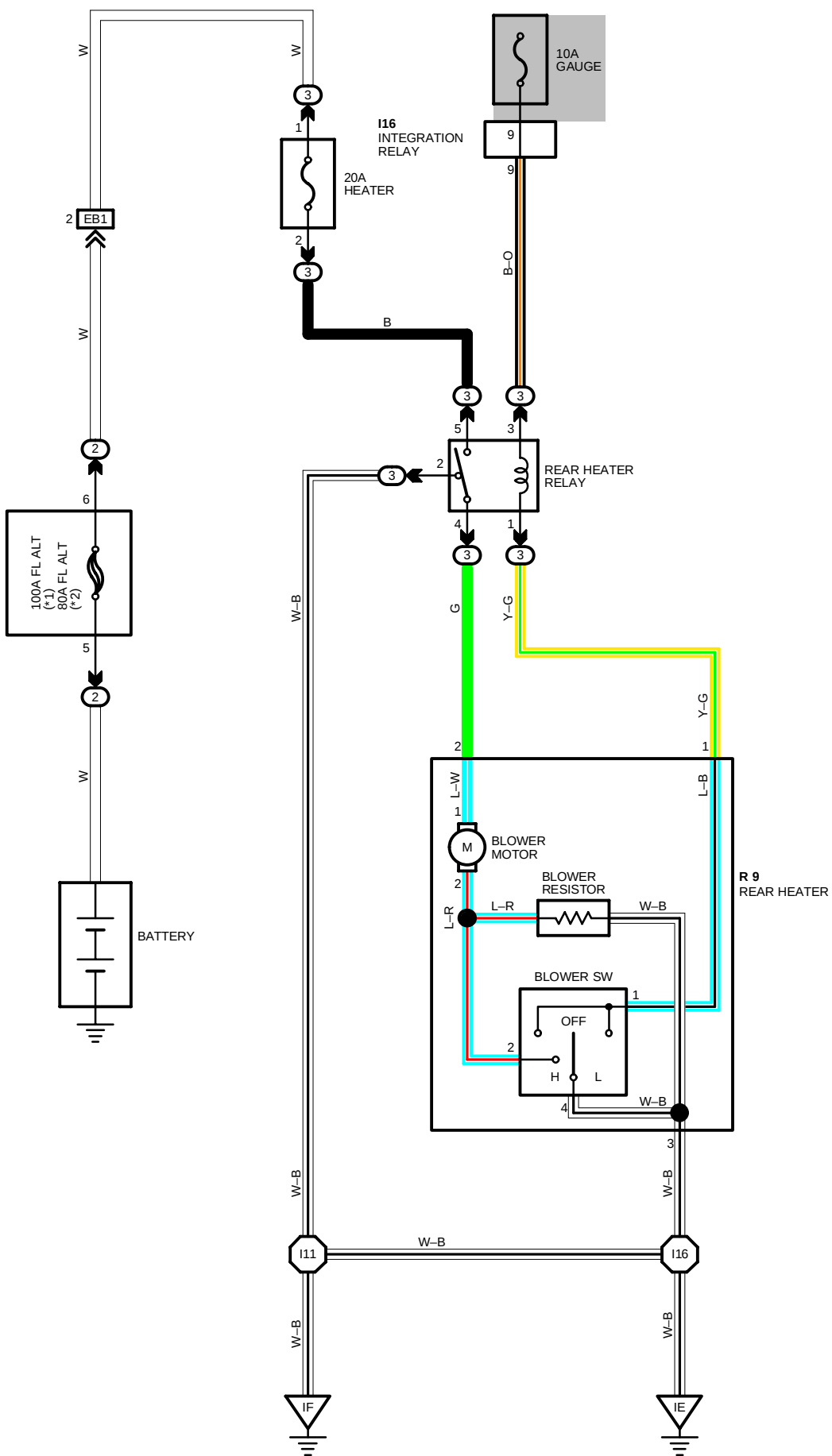


(W/O CRUISE S 7 BLACK
CONTROL)



REAR HEATER

* 1: 22R-E A/T
* 2: 3VZ-E, 22R-E M/T



SERVICE HINTS

REAR HEATER RELAY

(3)5- (3)4 : CLOSED WITH IGNITION SW AT **ON** POSITION AND REAR HEATER BLOWER SW AT **HIGH** OR **LOW** POSITION

○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
I16	28	R 9	29		

○ : RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	22	R/B NO. 2 (ENGINE COMPARTMENT RIGHT)
3	23	R/B NO. 3 (RIGHT KICK PANEL)

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

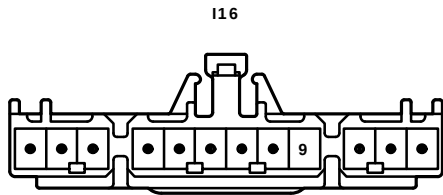
CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EB1	30 (3VZ-E)	COWL WIRE AND ENGINE ROOM MAIN WIRE (R/B NO. 2)
	32 (22R-E)	

▽ : GROUND POINTS

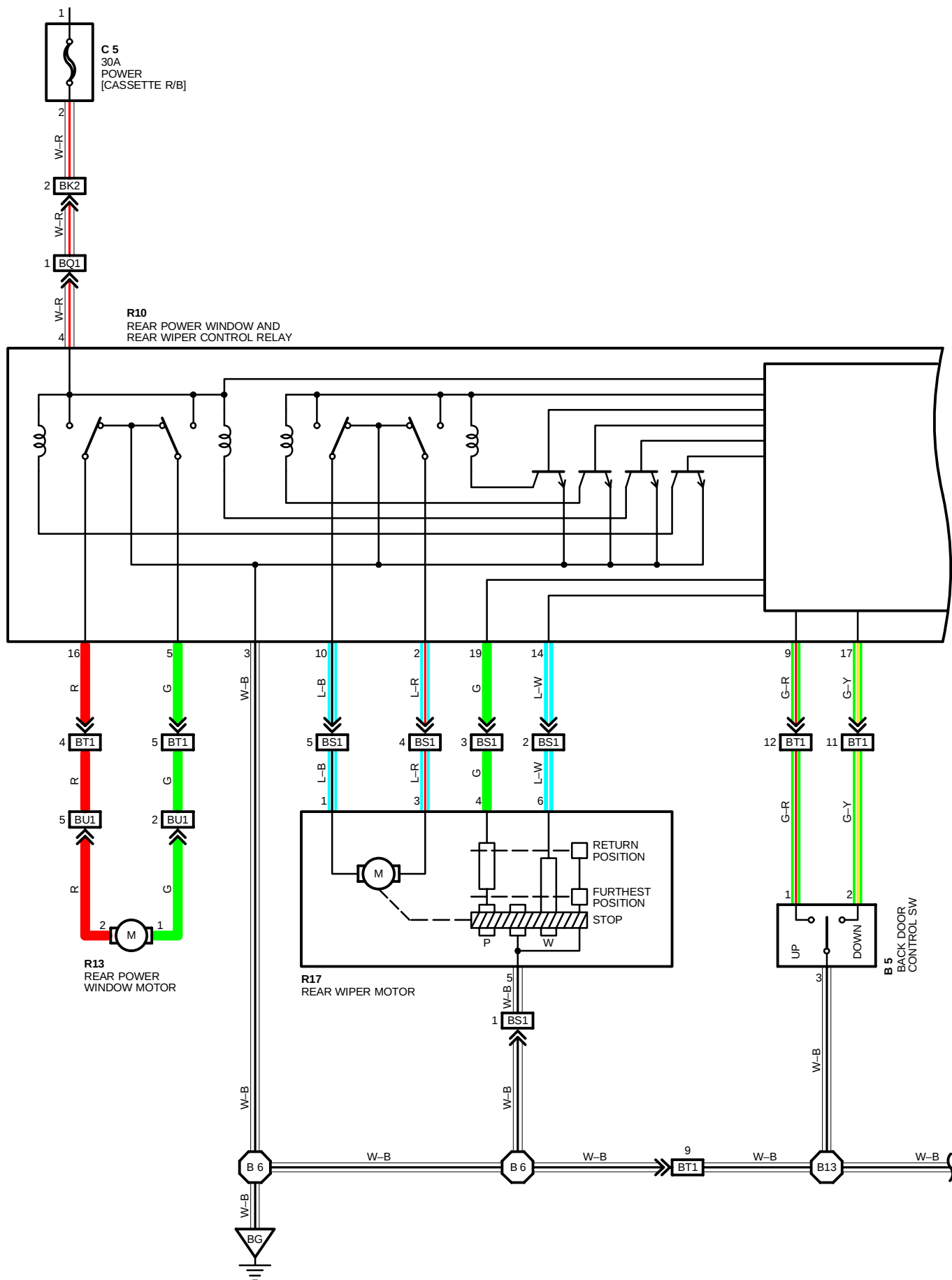
CODE	SEE PAGE	GROUND POINTS LOCATION
IE	34	LEFT KICK PANEL
IF	34	RIGHT KICK PANEL

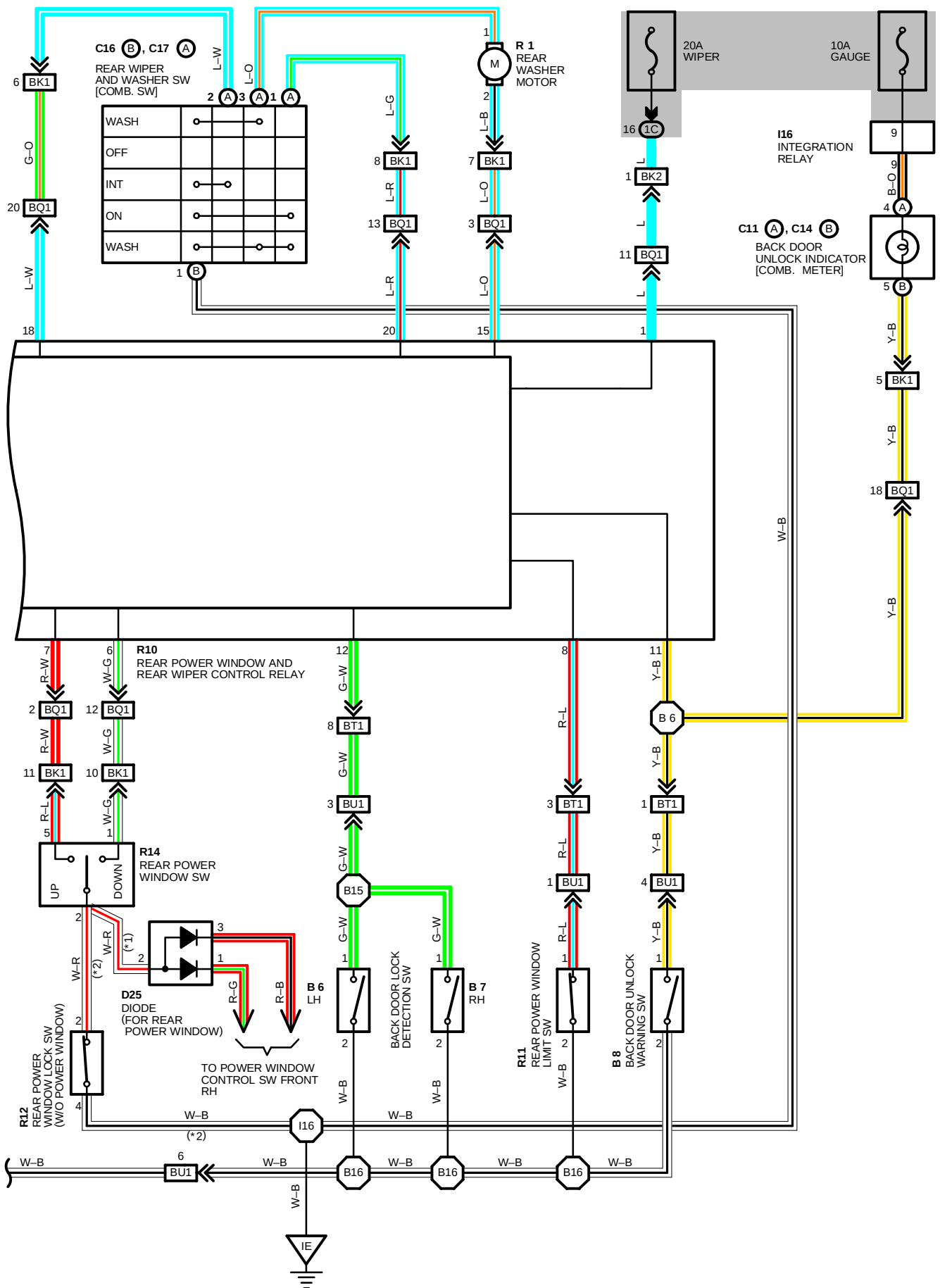
○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I11	34	COWL WIRE	I16	34	COWL WIRE



REAR WIPER, WASHER AND POWER WINDOW (REAR)





REAR WIPER, WASHER AND POWER WINDOW (REAR)

SYSTEM OUTLINE

CURRENT ALWAYS FLOWS THROUGH **POWER FUSE** TO **TERMINAL 4** OF REAR POWER WINDOW AND REAR WIPER CONTROL RELAY. WITH THE IGNITION SW TURNED ON. THE CURRENT FLOWS THROUGH THE **GAUGE FUSE** TO **TERMINAL (A) 4** OF BACK DOOR UNLOCK INDICATOR [COMB. METER] AND THROUGH THE **WIPER FUSE** TO **TERMINAL 1** OF REAR POWER WINDOW AND REAR WIPER CONTROL RELAY.

1. BACK DOOR WARNING

WITH THE IGNITION SW TURNED ON AND THE BACK DOOR WINDOW COMPLETELY OPEN, WHEN THE BACK DOOR IS OPENED, THE BACK DOOR LOCK DETECTION SW IS TURNED ON, CAUSING THE CURRENT TO **TERMINAL (A) 4** OF BACK DOOR UNLOCK INDICATOR [COMB. METER] TO FLOW FROM **TERMINAL (B) 5** → **TERMINAL 11** OF REAR POWER WINDOW AND REAR WIPER CONTROL RELAY → **TERMINAL 12** → BACK DOOR LOCK DETECTION SW TO **GROUND**, TURNING THE BACK DOOR UNLOCK INDICATOR ON.

IF THE DRIVER TO CLOSE THE REAR POWER WINDOW AT THIS TIME, THE DRIVER IS INFORMED THAT THE DOOR IS NOT COMPLETELY CLOSED BY THE BUZZER INSTALLED IN THE POWER WINDOW RELAY, AND THE POWER WINDOW DOES NOT ASCEND. ALSO, WHEN THE IGNITION SW IS TURNED ON AND THE BACK DOOR IS UNLOCKED, THE BACK DOOR WARNING SW CLOSSES THE GROUND CIRCUIT AND TURNS THE BACK DOOR WARNING LIGHT ON.

2. REAR POWER WINDOW MANUAL OPERATION (REAR POWER WINDOW SW)

WHEN THE REAR POWER WINDOW SW IS PUSHED TO THE UP SIDE (WITH THE IGNITION SW ON AND THE BACK DOOR CLOSED), AN "ON" SIGNAL IS INPUT FROM **TERMINAL 5** OF THE WINDOW SW TO **TERMINAL 7** OF REAR POWER WINDOW AND REAR WIPER CONTROL RELAY. THUS, THE RELAY IS ACTIVATED AND THE CURRENT TO **TERMINAL 4** OF RELAY FLOWS **TERMINAL 3** OF RELAY TO **GROUND** SO THAT THE CURRENT TO REAR POWER WINDOW MOTOR FLOWS FROM **TERMINAL 4** OF POWER WINDOW AND REAR WIPER CONTROL RELAY → **TERMINAL 5** → **TERMINAL 1** OF REAR POWER WINDOW MOTOR → **TERMINAL 2** → **TERMINAL 16** OF REAR POWER WINDOW AND REAR WIPER CONTROL RELAY → **TERMINAL 3** → TO **GROUND**. THIS CAUSES THE REAR POWER WINDOW MOTOR TO ROTATE TOWARD THE UP SIDE AND THE WINDOW ASCENDS ONLY WHILE THE REAR POWER WINDOW SW IS BEING PUSHED.

TO LOWER THE WINDOW, THE SIGNAL INPUT FROM **TERMINAL 1** OF REAR POWER WINDOW SW TO **TERMINAL 6** OF POWER WINDOW AND REAR WIPER CONTROL RELAY CAUSES CURRENT TO THE REAR POWER WINDOW MOTOR TO FLOW FROM **TERMINAL 4** OF REAR POWER WINDOW AND REAR WIPER CONTROL RELAY → **TERMINAL 16** → **TERMINAL 2** OF REAR POWER WINDOW MOTOR → **TERMINAL 1** → **TERMINAL 5** OF REAR POWER WINDOW AND REAR WIPER CONTROL RELAY → **TERMINAL 3** → TO **GROUND**, SO THE CURRENT FLOWS IN THE REVERS DIRECTION TO MANUAL UP OPERATION AND CAUSES THE MOTOR TO ROTATE IN THE OPPOSITE DIRECTION, THUS LOWERING THE WINDOW.

WHEN THE REAR WINDOW LOCK SW IS PUSHED THE LOCK SIDE, THE GROUND CIRCUIT OF THE REAR POWER WINDOW SW BECOMES OPEN. THUS EVEN IF THE DRIVER OPERATES THE OPEN/CLOSE FUNCTION OF THE REAR WINDOW, THE REAR WINDOW WILL NOT OPERATE BECAUSE THE REAR POWER WINDOW AND REAR WIPER CONTROL RELAY DOES NOT RECEIVE THE ON SIGNAL AND THE REAR POWER WINDOW AND REAR WIPER CONTROL RELAY DOES NOT OPERATE.

3. REAR POWER WINDOW MANUAL OPERATION (BACK DOOR CONTROL SW)

WHEN THE BACK DOOR CONTROL SW IS PUSHED TO THE UP SIDE A SIGNAL IS INPUT TO **TERMINAL 9** OF THE REAR POWER WINDOW AND REAR WIPER CONTROL RELAY FROM **TERMINAL 1** OF THE SW. THIS ACTIVATES THE RELAY REGARDLESS OF WHETHER THE IGNITION SW IS ON OR OFF, AND THE CURRENT FLOWS FROM **TERMINAL 4** OF REAR POWER WINDOW AND REAR WIPER CONTROL RELAY TO **TERMINAL 3**. SO THE CURRENT TO THE REAR POWER WINDOW MOTOR FLOWS TO **TERMINAL 4** OF REAR POWER WINDOW AND REAR WIPER CONTROL RELAY → **TERMINAL 5** → **TERMINAL 1** OF REAR POWER WINDOW MOTOR → **TERMINAL 2** → **TERMINAL 16** OF REAR POWER WINDOW CONTROL RELAY → **TERMINAL 3** → TO **GROUND** AND CAUSES THE REAR POWER MOTOR TO ROTATE IN THE UP DIRECTION SO THE WINDOW ASCENDS ONLY WHILE THE BACK DOOR CONTROL SW IS BEING PUSHED TO LOWER THE WINDOW. THE ON SIGNAL OF THE CONTROL SW (ROTATE TO DOWN SIDE) IS INPUT TO **TERMINAL 17**, CAUSING THE CURRENT TO THE MOTOR TO FLOW TO **TERMINAL 4** OF REAR POWER WINDOW AND REAR WIPER CONTROL RELAY → **TERMINAL 16** → **TERMINAL 2** OF REAR POWER WINDOW MOTOR → **TERMINAL 1** → **TERMINAL 5** OF REAR POWER WINDOW AND REAR WIPER CONTROL RELAY → **TERMINAL 3** → TO **GROUND**. THIS FLOW IS THE REVERSE OF MANUAL UP, SO THE MOTOR ROTATES IN THE REVERSE DIRECTION AND THE WINDOW IS LOWERED.

4. REAR WIPER OPERATION

CURRENT ALWAYS FLOWS THROUGH **POWER FUSE** TO **TERMINAL 4** OF REAR POWER WINDOW AND REAR WIPER CONTROL RELAY. WITH THE IGNITION SW TURNED ON AND THE BACK DOOR WINDOW COMPLETELY CLOSED (REAR POWER WINDOW LIMIT SW ON), WHEN THE REAR WIPER AND WASHER SW [COMB. SW] IS TURNED ON, THE CURRENT TO **TERMINAL 4** OF THE REAR POWER WINDOW AND REAR WIPER CONTROL RELAY FLOWS FROM **TERMINAL 20** OF RELAY → **TERMINAL (A)1** OF REAR WIPER AND WASHER SW [COMB. SW] → **TERMINAL (B)1** → TO **GROUND**. THUS THE RELAY ACTIVATES AND THE CURRENT FLOWS FROM **TERMINAL 4** OF RELAY → **TERMINAL 2** → **TERMINAL 3** OF REAR WIPER MOTOR → **TERMINAL 1** → **TERMINAL 10** OF RELAY → **TERMINAL 3** → TO **GROUND** AND OPERATES THE WIPER TO THE UPPER LIMIT OF THE WIPING AREA. WHEN THE UPPER LIMIT OF THE WIPING AREA IS REACHED, THE POINT (CAM PLATE "P" POINT) ON THE WIPER MOTOR IS TURNED ON (IN THE CASE, "W" POINT OF CAM PLATE IS OFF), AND THE SIGNAL TO REVERSE THE MOTOR IS INPUT TO **TERMINAL 19** OF RELAY. THE RELAY STOPS THE WIPER MOTOR FOR ABOUT **0.1SECONDS** AND THE CURRENT FLOWS FROM **TERMINAL 10** OF RELAY → **TERMINAL 1** OF MOTOR → **TERMINAL 3** → **TERMINAL 2** OF RELAY → **TERMINAL 3** → TO **GROUND**. AS A RESULT, THE WIPER MOTOR REVERSES AND STOPS THE WIPER BEFORE THE RETRACTION POSITION. AT THAT TIME, THE POINT (CAM PLATE "W" POINT) ON THE WIPER MOTOR IS TURNED ON (IN THIS CASE, "P" POINT OF CAM PLATE IS OFF), AND THE SIGNAL TO ROTATE THE MOTOR IS INPUT TO **TERMINAL 2** OF RELAY → **TERMINAL 3** OF WIPER MOTOR → **TERMINAL 1** → **TERMINAL 10** OF RELAY → **TERMINAL 3** → TO **GROUND** AND THE WIPER SW OFF, THE SIGNAL TO **TERMINAL 14** OF RELAY FROM "W" POINT OF CAM PLATE IS CANCELLED AND THE WIPING FUNCTION IS CONTINUED WHEN "P" POINT IS TURNED ON. THE WIPER CONTINUES BEYOND THE WIPER AREA TO THE RETRACTION POSITION. AT THAT TIME, "P" AND "W" POINTS ARE TURNED ON, THE RELAY STOPS OPERATING, AND THE CURRENT TO THE WIPER IS CUT OFF TO CAM PLATE WIPER OPERATION.

5. WASHER OPERATION

WITH THE IGNITION SW TURNED ON AND REAR POWER WINDOW CLOSED COMPLETELY (REAR POWER WINDOW LIMIT SW ON), WHEN THE WIPER AND WASHER SW [COMB. SW] IS TURNED STRONGLY (WASHER SW ON), CURRENT FLOWS FROM **TERMINAL 4** OF RELAY → **TERMINAL 15** → **TERMINAL 2** OF REAR WASHER MOTOR → **TERMINAL 1** → **TERMINAL (A)3** OF REAR WIPER AND WASHER SW [COMB. SW] → **TERMINAL (B)1** → TO **GROUND** AND CAUSES THE WASHER LIQUID TO SPRAY ONLY WHILE THE WASHER SW IS TURNED. WHEN THE WIPER SW IS OFF, AND THE WIPER SW IS THEN TURNED IN THE OFF DIRECTION, WASHER LIQUID WILL ALSO SPRAY.

SERVICE HINTS

B 5 BACK DOOR CONTROL SW

- 2-3 : CONTINUOUS WITH BACK DOOR CONTROL SW AT DOWN SIDE
- 1-3 : CONTINUOUS WITH BACK DOOR CONTROL SW AT UP SIDE

B 6, B 7 BACK DOOR LOCK DETECTION SW

- 1-2 : CONTINUOUS WITH BACK DOOR OPEN

C16(B), C17(A) REAR WIPER AND WASHER SW [COMB. SW]

- (A)3-(B)1 : CONTINUOUS WITH REAR WIPER AND WASHER SW AT **WASHER** POSITION
- (A)1-(B)1 : CONTINUOUS WITH REAR WIPER AND WASHER SW AT **ON** POSITION

R10 REAR POWER WINDOW AND REAR WIPER CONTROL RELAY

- 1-GROUND : APPROX. **12** VOLTS WITH IGNITION SW AT **ON** POSITION
- 4-GROUND : ALWAYS APPROX. **12** VOLTS
- 3-GROUND : ALWAYS CONTINUOUS
- 5-GROUND : APPROX. **12** VOLTS WITH REAR POWER WINDOW AT **UP** OPERATION
- 16-GROUND : APPROX. **12** VOLTS WITH REAR POWER WINDOW AT **DOWN** OPERATION
- 7-GROUND : CONTINUOUS WITH IGNITION SW ON AND POWER WINDOW SW AT **UP** POSITION
- 6-GROUND : CONTINUOUS WITH IGNITION SW ON AND POWER WINDOW SW AT **DOWN** POSITION
- 9-GROUND : CONTINUOUS WITH BACK DOOR CONTROL SW AT **UP** POSITION
- 17-GROUND : CONTINUOUS WITH BACK DOOR CONTROL SW AT **DOWN** POSITION

R12 REAR POWER WINDOW LOCK SW

- 2-4: OPEN WITH REAR POWER WINDOW LOCK SW AT **LOCK** POSITION

R11 REAR POWER WINDOW LIMIT SW

- 1-2: CLOSED WITH BACK WINDOW FULLY CLOSED

R17 REAR WIPER MOTOR

- 4, 6-5 : CONTINUOUS WITH REAR WIPER RETRACTED
- 4-5 : CONTINUOUS WITH REAR WIPER AT **RETURN** POSITION

REAR WIPER, WASHER AND POWER WINDOW (REAR)

: PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
B 5	29	C16	B 28	R11	29
B 6	29	C17	A 28	R12	29
B 7	29	D25	28	R13	29
B 8	29	I16	28	R14	29
C 5	28	R 1	25 (3VZ-E)	R17	29
C11	A 28		27 (22R-E)		
C14	B 28	R10	29		

: JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1C	20	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)

: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

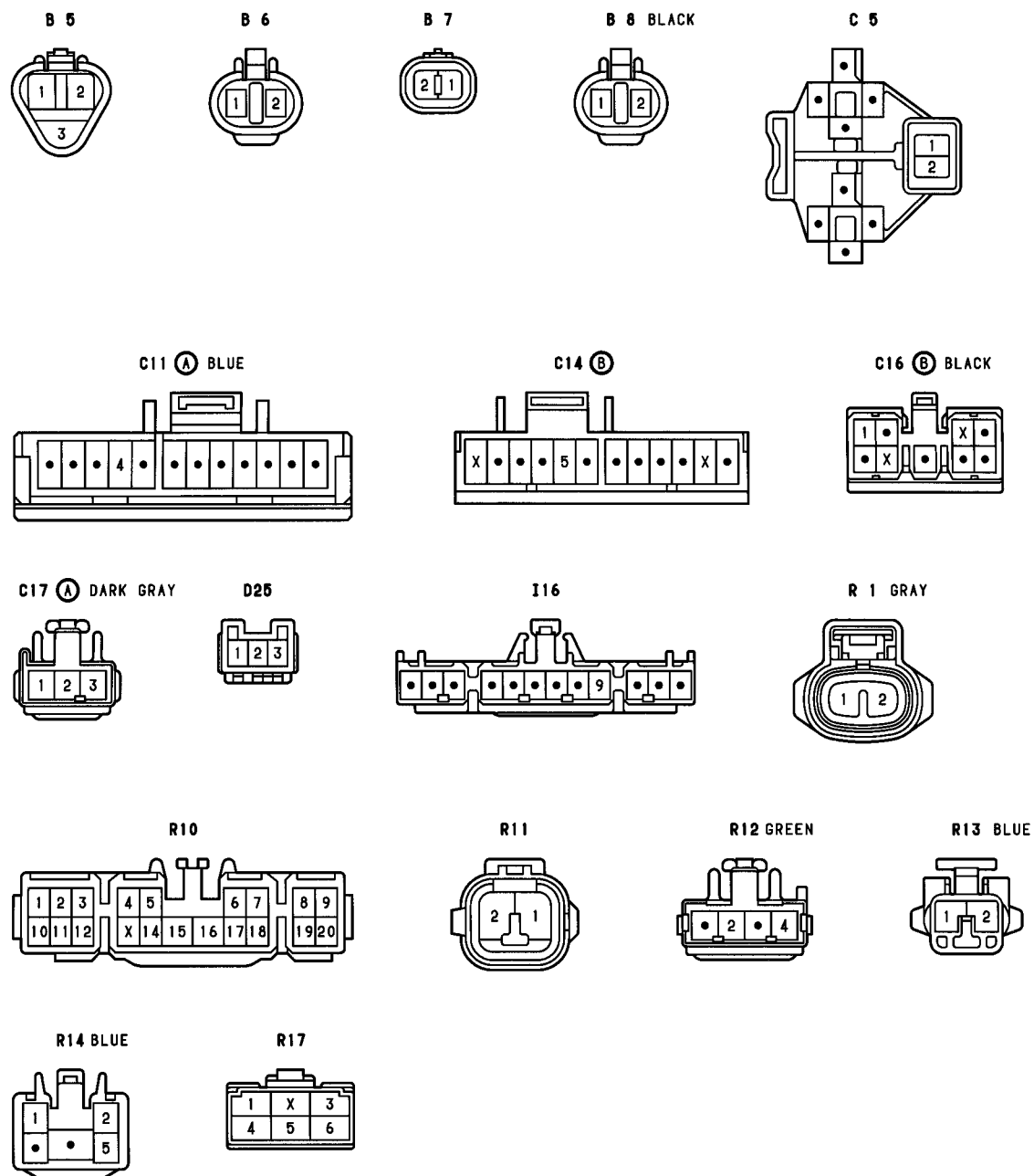
CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
BK1	36	FLOOR NO. 3 LH WIRE AND COWL WIRE (LEFT SIDE OF FRONT LH SEAT)
BK2	36	COWL WIRE AND FLOOR NO. 3 LH WIRE (LEFT SIDE OF FRONT LH SEAT)
BQ1	36	FLOOR NO. 3 LH WIRE AND FLOOR NO. 2 WIRE (LEFT SIDE OF REAR LH SEAT)
BS1	36	LUGGAGE ROOM WIRE AND FLOOR NO. 2 WIRE (UNDER LEFT REAR PILLAR)
BT1	36	BACK DOOR NO. 1 WIRE AND FLOOR NO. 2 WIRE (BESIDE LEFT REAR COMB. LIGHT)
BU1	36	BACK DOOR NO. 1 WIRE AND BACK DOOR NO. 2 WIRE (BACK DOOR LEFT)

: GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
IE	34	LEFT KICK PANEL
BG	36	UNDER LEFT REAR PILLAR

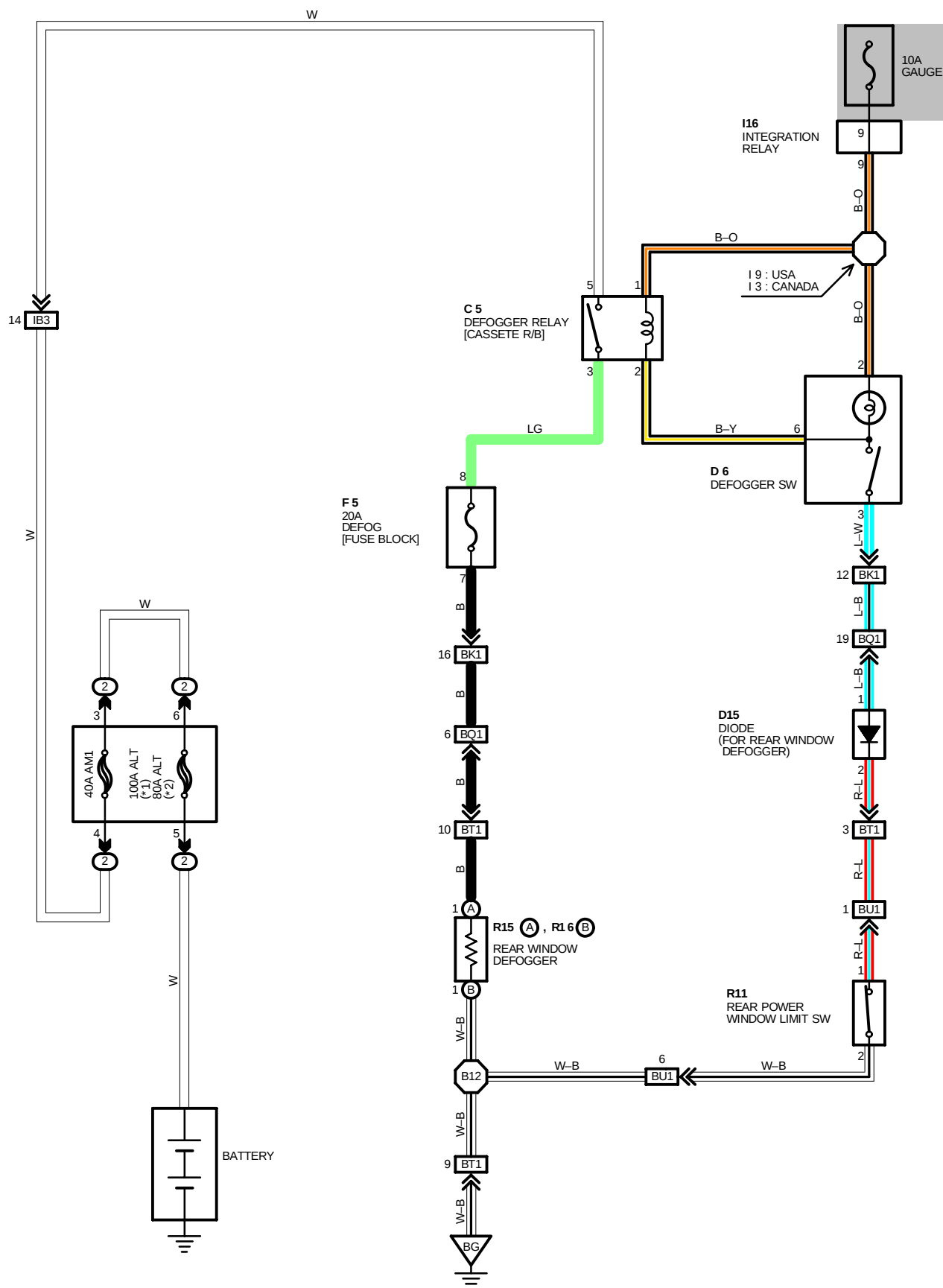
: SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I16	34	COWL WIRE	B15	36	BACK DOOR NO. 2 WIRE
B 6	36	FLOOR NO. 2 WIRE	B16		
B13	36	BACK DOOR NO. 1 WIRE			



REAR WINDOW DEFOGGER

*1 : 22R-E A/T
*2 : 3VZ-E, 22R-E M/T



SERVICE HINTS

C 5 DEFOGGER RELAY [CASSETTE R/B]

- 5-3 : CLOSED WITH IGNITION SW AT **ON** OR **ST** POSITION, REAR WINDOW FULLY CLOSED (LIMIT SW ON) AND DEFOGGER SW ON
- 5-GROUND : ALWAYS APPROX. **12** VOLTS

○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
C 5	28	F 5	28	R15	A 29
D 6	28	I16	28	R16	B 29
D15	29	R11	29		

○ : RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	22	R/B NO. 2 (ENGINE COMPARTMENT RIGHT)

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
IB3	34	ENGINE ROOM MAIN WIRE AND COWL WIRE (LEFT KICK PANEL)
BK1	36	FLOOR NO. 3 LH WIRE AND COWL WIRE (LEFT SIDE OF FRONT LH SEAT)
BQ1	36	FLOOR NO. 3 LH WIRE AND FLOOR NO. 2 WIRE (LEFT SIDE OF REAR LH SEAT)
BT1	36	BACK DOOR NO. 1 WIRE AND FLOOR NO. 2 WIRE (BESIDE LEFT REAR COMB. LIGHT)
BU1	36	BACK DOOR NO. 1 WIRE AND BACK DOOR NO. 2 WIRE (BACK DOOR LEFT)

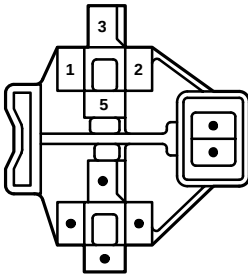
▽ : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
BG	36	UNDER LEFT REAR PILLAR

○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I 3	34	COWL WIRE	B12	36	BACK DOOR NO. 1 WIRE
I 9					

C 5



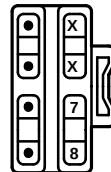
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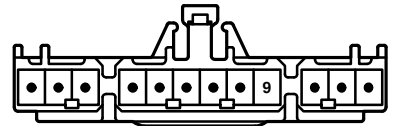
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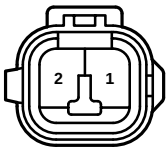
F 5



I16



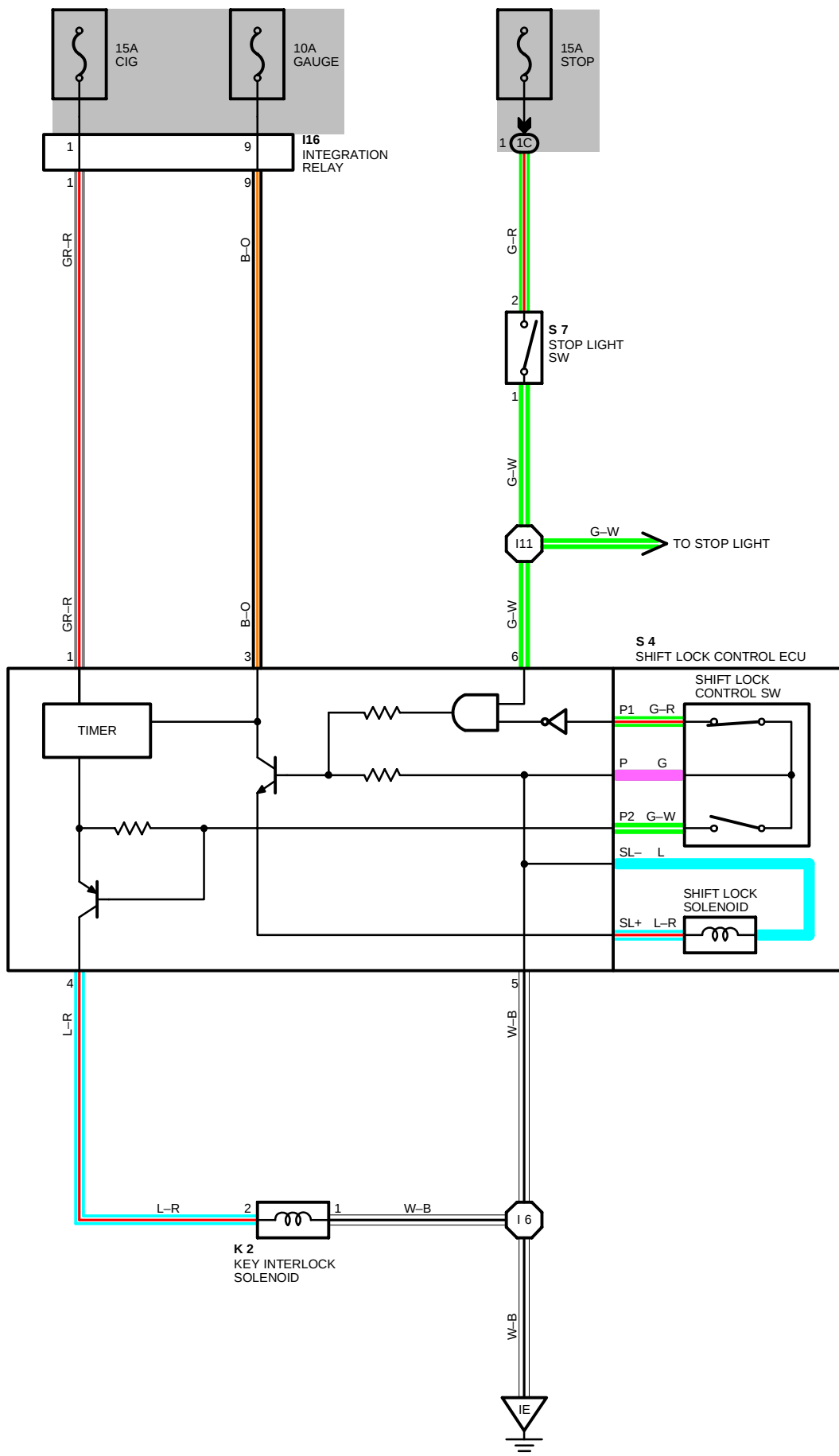
R11



R15 (A), R16 (B)



SHIFT LOCK



SYSTEM OUTLINE

WHEN THE IGNITION SW IS TURNED TO ACC POSITION THE CURRENT FROM THE **CIG** FUSE FLOWS TO **TERMINAL 1** OF THE SHIFT LOCK CONTROL ECU, IN THE ON POSITION, THE CURRENT FROM THE **GAUGE** FUSE FLOWS TO **TERMINAL 3** OF THE ECU.

1. SHIFT LOCK MECHANISM

WITH THE IGNITION SW ON, WHEN A SIGNAL THAT THE BRAKE PEDAL IS DEPRESSED (STOP LIGHT SW ON) AND A SIGNAL THAT THE SHIFT LEVER IS PUT IN "P" POSITION (CONTINUITY BETWEEN P1 AND P OF THE SHIFT LOCK CONTROL SW) IS INPUT TO THE ECU. THE ECU OPERATES AND CURRENT FLOWS FROM **TERMINAL 3** OF THE ECU → **TERMINAL SL+** OF THE SHIFT LOCK SOLENOID → SOLENOID → **TERMINAL SL-** → **TERMINAL 5** OF THE ECU → **GROUND**. THIS CAUSES THE SHIFT LOCK SOLENOID TO TURN ON (PLATE STOPPER DISENGAGES) AND THE SHIFT LEVER CAN SHIFT INTO OTHER RANGE THAN THE "P" POSITION.

2. KEY INTER LOCK MECHANISM

WITH THE IGNITION SW IN **ON** OR **ACC** POSITION, WHEN THE SHIFT LEVER IS PUT IN "P" POSITION (NO CONTINUITY BETWEEN P2 AND P OF SHIFT LOCK CONTROL SW), THE CURRENT FLOWING FROM **TERMINAL 4** OF THE ECU → KEY INTERLOCK SOLENOID IS CUT OFF. THIS CAUSES THE KEY INTERLOCK SOLENOID TO TURN OFF (LOCK LEVER DISENGAGES FROM **LOCK** POSITION) AND THE IGNITION KEY CAN BE TURNED FROM **ACC** TO **LOCK** POSITION. IF THE IGNITION SW IS LEFT IN **ACC** OR **ON** POSITION WITH THE SHIFT LEVER IN OTHER THAN "P" POSITION, THEN AFTER APPROX. ONE HOUR THE ECU OPERATES TO RELEASE THE LOCK.

SERVICE HINTS

S4 SHIFT LOCK CONTROL ECU

- 1-GROUND : APPROX. **12** VOLTS WITH IGNITION SW AT **ACC** OR **ON** POSITION
- 3-GROUND : APPROX. **12** VOLTS WITH IGNITION SW AT **ON** POSITION
- 4-GROUND : **0** VOLTS WITH IGNITION SW AT **ACC** POSITION AND SHIFT LEVER POSITION IN **P** POSITION
6-12 VOLTS WITH SHIFT LEVER POSITION IN EXCEPT **P** POSITION
- 5-GROUND : ALWAYS CONTINUOUS
- 6-GROUND : APPROX. **12** VOLTS WITH BRAKE PEDAL DEPRESSED

○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
I16	28	S 4	28		
K 2	28	S 7	28		

○ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

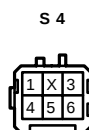
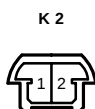
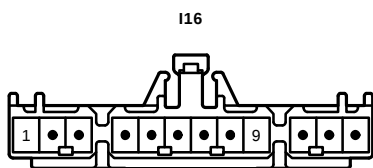
CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
IC	20	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)

▽ : GROUND POINTS

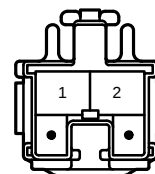
CODE	SEE PAGE	GROUND POINTS LOCATION
IE	34	LEFT KICK PANEL

○ : SPLICE POINTS

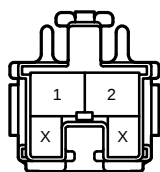
CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I 6	34	COWL WIRE	I11	34	COWL WIRE

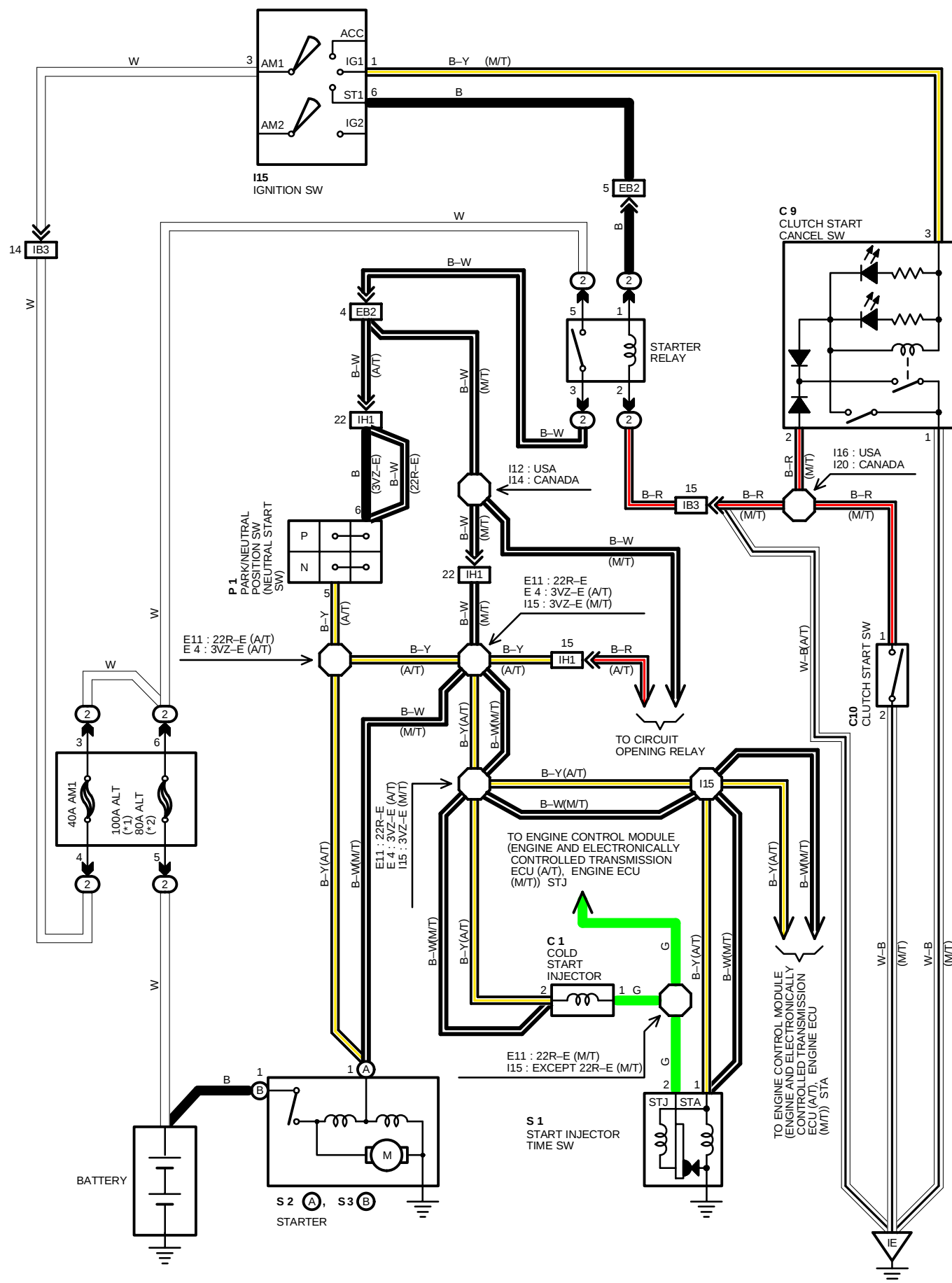


(W/ CRUISE CONTROL) **S 7**



(W/O CRUISE CONTROL) **S 7** BLACK





SERVICE HINTS

S 2(A) STARTER

POINTS CLOSED WITH PARK/NEUTRAL POSITION SW (NEUTRAL START SW) ON AND IGNITION SW AT **ST** POSITION (A/T)
POINTS CLOSED WITH CLUTCH START SW OR CANCEL SW ON AND IGNITION SW AT **ST** POSITION (M/T)

C 1 COLD START INJECTOR

2-1: APPROX. 12 VOLTS WHILE START INJECTOR TIME SW IS CLOSED AND STARTER CRANKING

C 9 CLUTCH START CANCEL SW (M/T)

1-2: CLOSED WITH IGNITION SW ON AND CANCEL SW ON

C10 CLUTCH START SW (M/T)

1-2: CLOSED WITH CLUTCH PEDAL FULLY DEPRESSED

I15 IGNITION SW

3-1: CLOSED WITH IGNITION SW AT **ON** OR **ST** POSITION

3-6: CLOSED WITH IGNITION SW AT **ST** POSITION

P1 PARK/NEUTRAL POSITION SW (NEUTRAL START SW) (A/T)

6-5: CLOSED WITH A/T SHIFT LEVER IN **P** OR **N** POSITION

STARTER RELAY

(2) 5-(2) 3: CLOSED WITH CLUTCH START SW OR CANCEL SW ON AND IGNITION SW AT **ST** POSITION (M/T)

(2) 5-(2) 3: CLOSED WITH A/T SHIFT LEVER IN **P** OR **N** POSITION AND IGNITION SW AT **ST** POSITION (A/T)

○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
C 1	24 (3VZ-E)	P 1	25 (3VZ-E)	S 2	A
	26 (22R-E)		27 (22R-E)	S 3	B
C 9	28	S 1	25 (3VZ-E)		
C10	28		27 (22R-E)		
I15	28	S 2	A		

○ : RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	22	R/B NO. 2 (ENGINE COMPARTMENT RIGHT)

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EB2	30 (3VZ-E)	COWL WIRE AND ENGINE ROOM MAIN WIRE (R/B NO. 2)
	32 (22R-E)	
IB3	34	ENGINE ROOM MAIN WIRE AND COWL WIRE (LEFT KICK PANEL)
IH1	34	ENGINE WIRE AND COWL WIRE (RIGHT KICK PANEL)

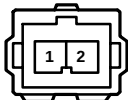
▽ : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
IE	34	LEFT KICK PANEL

○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
E 4	30 (3VZ-E)	ENGINE WIRE	I15	34	ENGINE WIRE
E11	32 (22R-E)		I16	34	COWL WIRE
I12	34	COWL WIRE	I20		
I14	34				

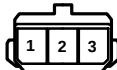
(3VZ-E) C 1 BLACK



(22R-E) C 1 BLACK



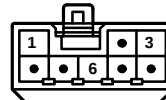
C 9



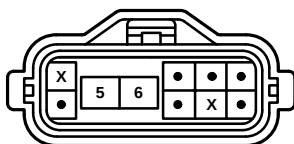
C10



I15 BLACK



P 1 GRAY



S 1 BLACK



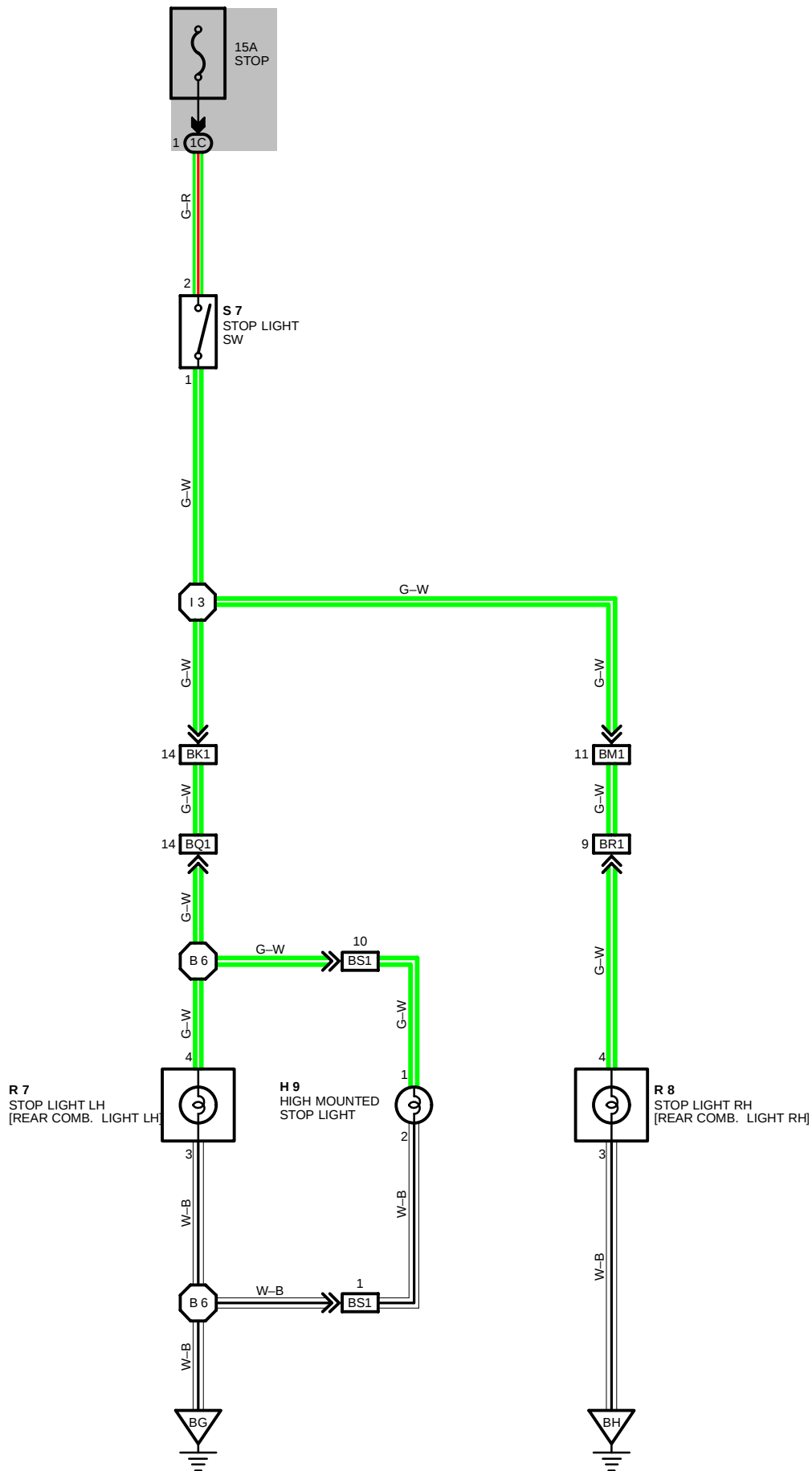
S 2 (A) BLACK



S 3 (B)



STOP LIGHT



SERVICE HINTS

S 7 STOP LIGHT SW

1-2 : CLOSED WITH BRAKE PEDAL DEPRESSED

: PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
H 9	29	R 8	29		
R 7	29	S 7	28		

: JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1C	20	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)

: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
BK1	36	FLOOR NO. 3 LH WIRE AND COWL WIRE (LEFT SIDE OF FRONT LH SEAT)
BM1	36	FLOOR NO. 3 RH WIRE AND COWL WIRE (RIGHT SIDE OF FRONT RH SEAT)
BQ1	36	FLOOR NO. 3 LH WIRE AND FLOOR NO. 2 WIRE (LEFT SIDE OF REAR LH SEAT)
BR1	36	FLOOR NO. 3 RH WIRE AND FLOOR WIRE (RIGHT SIDE OF REAR RH SEAT)
BS1	36	LUGGAGE ROOM WIRE AND FLOOR NO. 2 WIRE (UNDER LEFT REAR PILLAR)

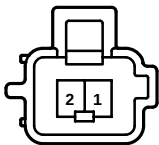
: GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
BG	36	UNDER LEFT REAR PILLAR
BH	36	UNDER RIGHT REAR PILLAR

: SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I 3	34	COWL WIRE	B 6	36	FLOOR NO. 2 WIRE

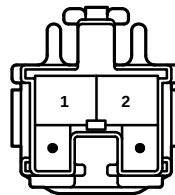
H 9



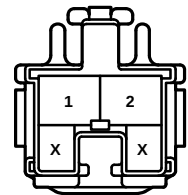
R 7, R 8



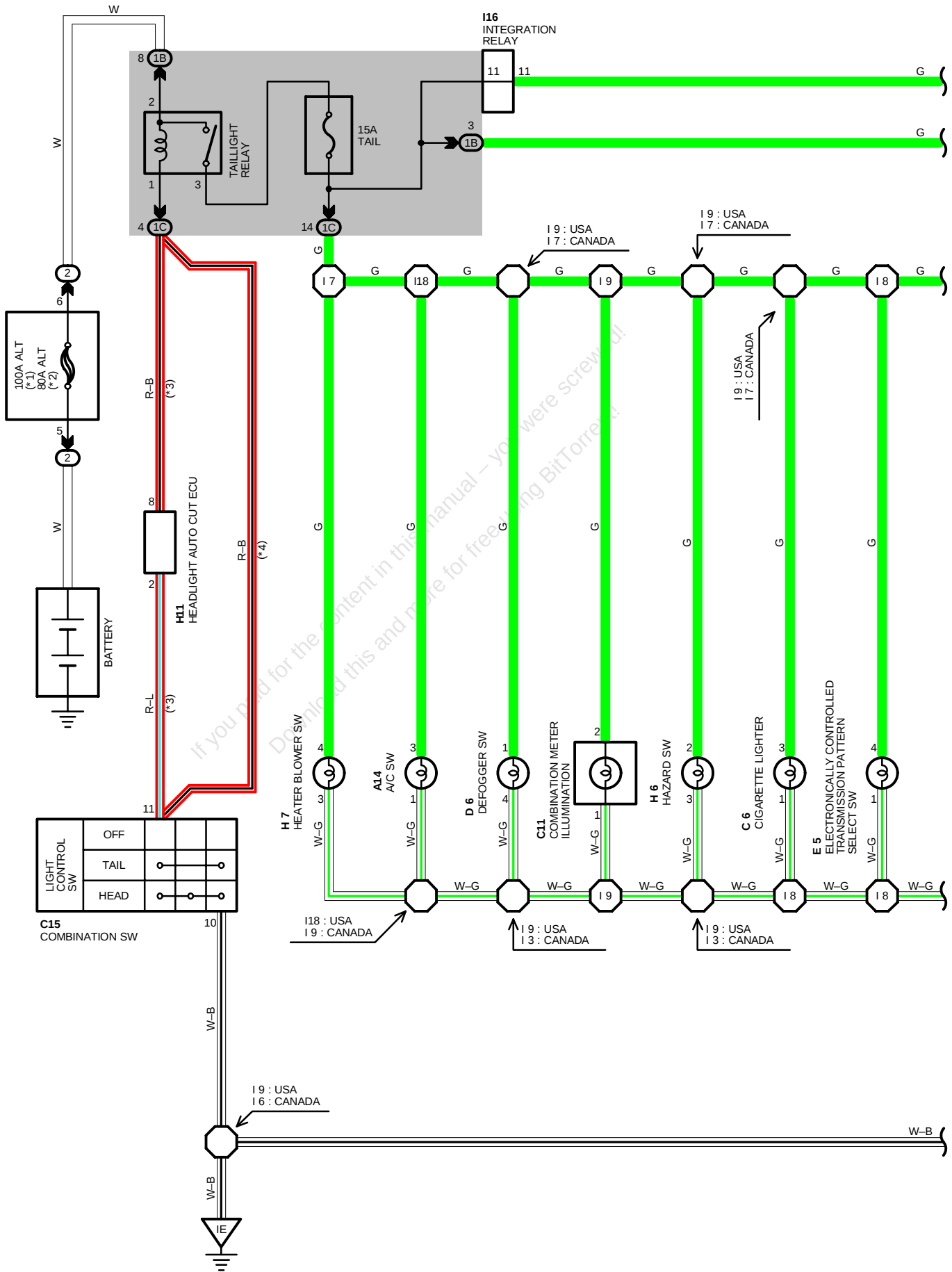
(W/ CRUISE CONTROL) S 7



(W/O CRUISE CONTROL) S 7 BLACK

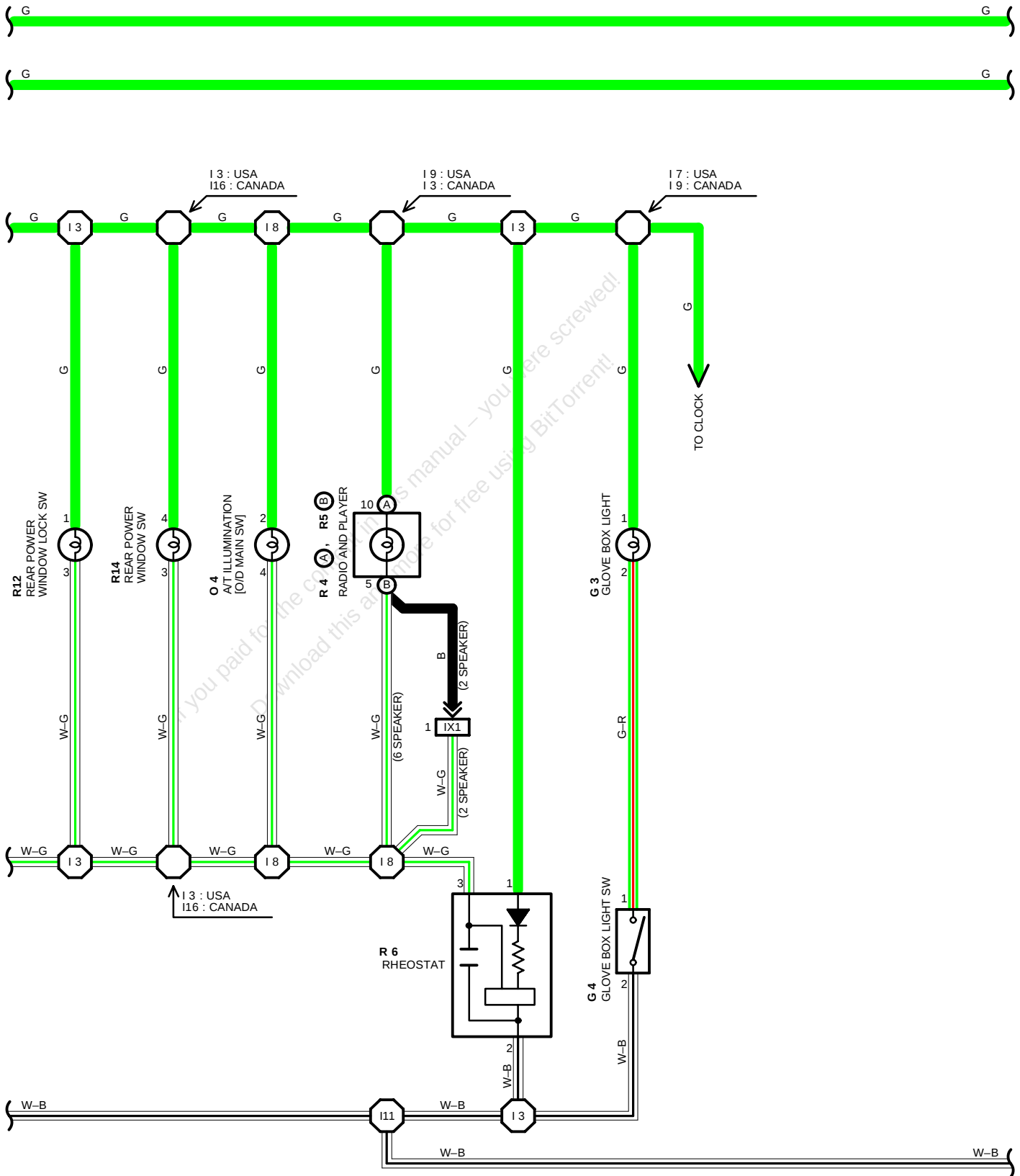


TAILLIGHT AND ILLUMINATION

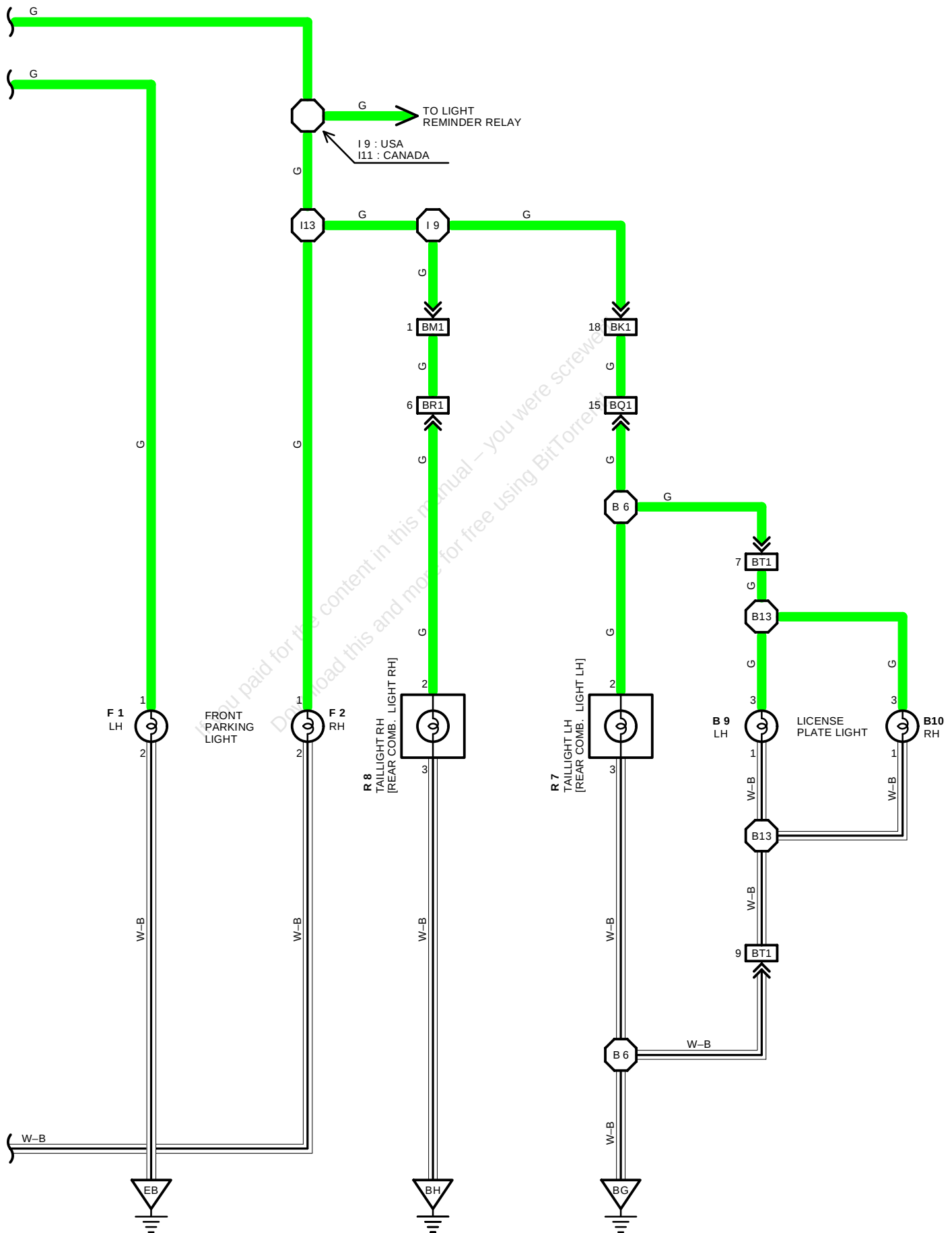


*1 : 22R-E A/T
 *2 : 3VZ-E, 22R-E M/T

*3 : W/ HEADLIGHT AUTO CUT ECU
 *4 : W/O HEADLIGHT AUTO CUT ECU



TAILLIGHT AND ILLUMINATION



SERVICE HINTS

C15 LIGHT CONTROL SW [COMB. SW]

10-11: CLOSED WITH LIGHT CONTROL SW AT **TAIL** OR **HEAD** POSITION

TAILLIGHT RELAY

2-3: CLOSED WITH LIGHT CONTROL SW AT **TAIL** OR **HEAD** POSITION

: CLOSED WITH ENGINE RUNNING AND PARKING BRAKE LEVER RELEASED (CANADA)

: PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
A14	28	F 1	26 (22R-E)	O 4	28
B 9	29	F 2	24 (3VZ-E)	R 3	C 28
B10	29		26 (22R-E)	R 4	A 28
C 6	28	G 3	28	R 5	B 28
C11	28	G 4	28	R 6	28
C15	28	H 6	28	R 7	29
D 6	28	H 7	28	R 8	29
E 5	28	H11	28	R12	29
F 1	24 (3VZ-E)	I16	28	R14	29

: RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	22	R/B NO. 2 (ENGINE COMPARTMENT RIGHT)

: JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1B	20	ENGINE ROOM MAIN WIRE AND J/B NO. 1 (LEFT KICK PANEL)
1C	20	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)

: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
IX1	34	COWL WIRE AND RADIO SUB WIRE (INSTRUMENT PANEL BRACE)
BK1	36	FLOOR NO. 3 LH WIRE AND COWL WIRE (LEFT SIDE OF FRONT LH SEAT)
BM1	36	FLOOR NO. 3 RH WIRE AND COWL WIRE (RIGHT SIDE OF FRONT RH SEAT)
BQ1	36	FLOOR NO. 3 LH WIRE AND FLOOR NO. 2 WIRE (LEFT SIDE OF REAR LH SEAT)
BR1	36	FLOOR NO. 3 RH WIRE AND FLOOR WIRE (RIGHT SIDE OF REAR RH SEAT)
BT1	36	BACK DOOR NO. 1 WIRE AND FLOOR NO. 2 WIRE (BESIDE LEFT REAR COMB. LIGHT)

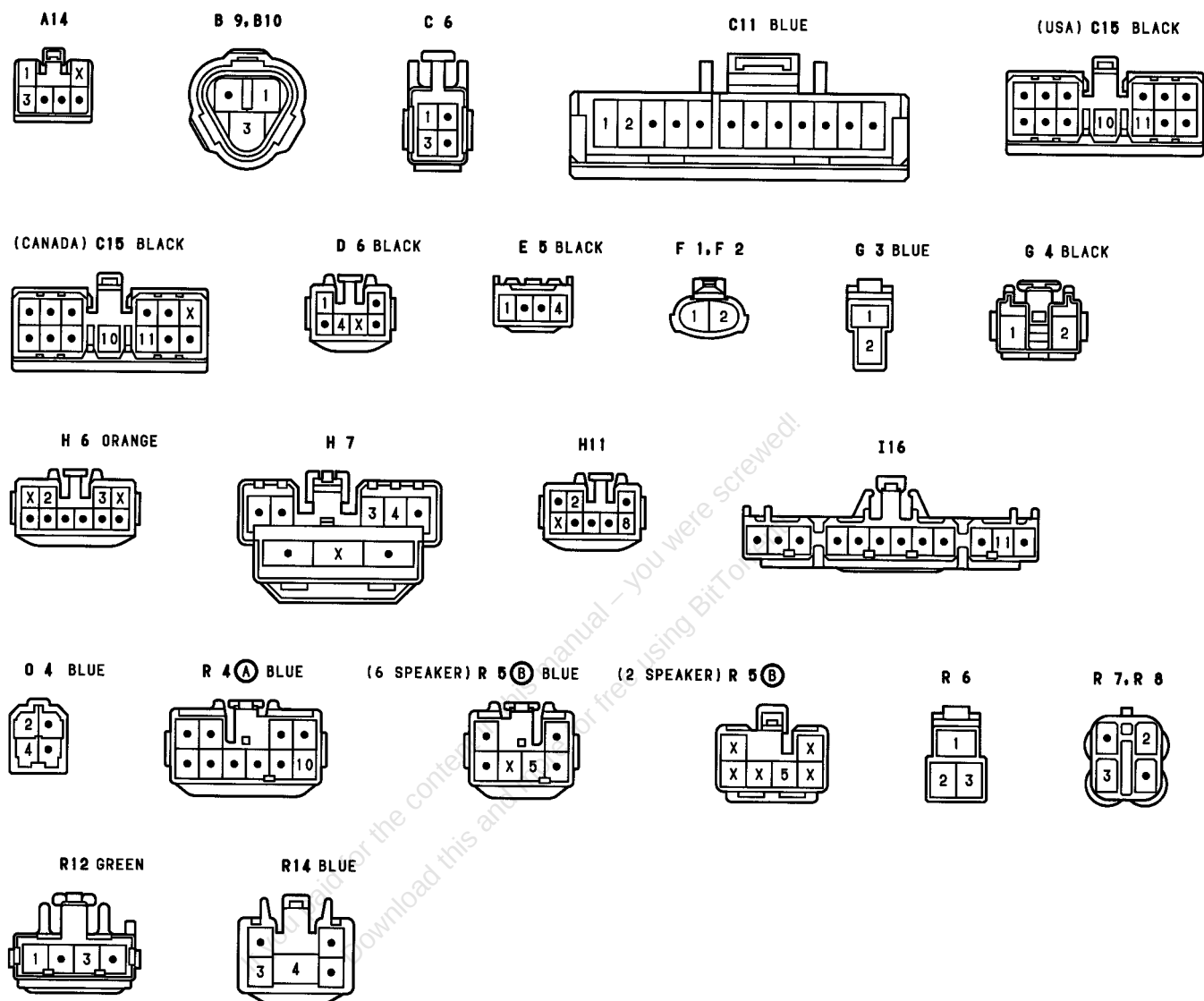
: GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
EB	30 (3VZ-E)	LEFT FENDER
	32 (22R-E)	
IE	34	LEFT KICK PANEL
IF	34	RIGHT KICK PANEL
BG	36	UNDER LEFT REAR PILLAR
BH	36	UNDER RIGHT REAR PILLAR

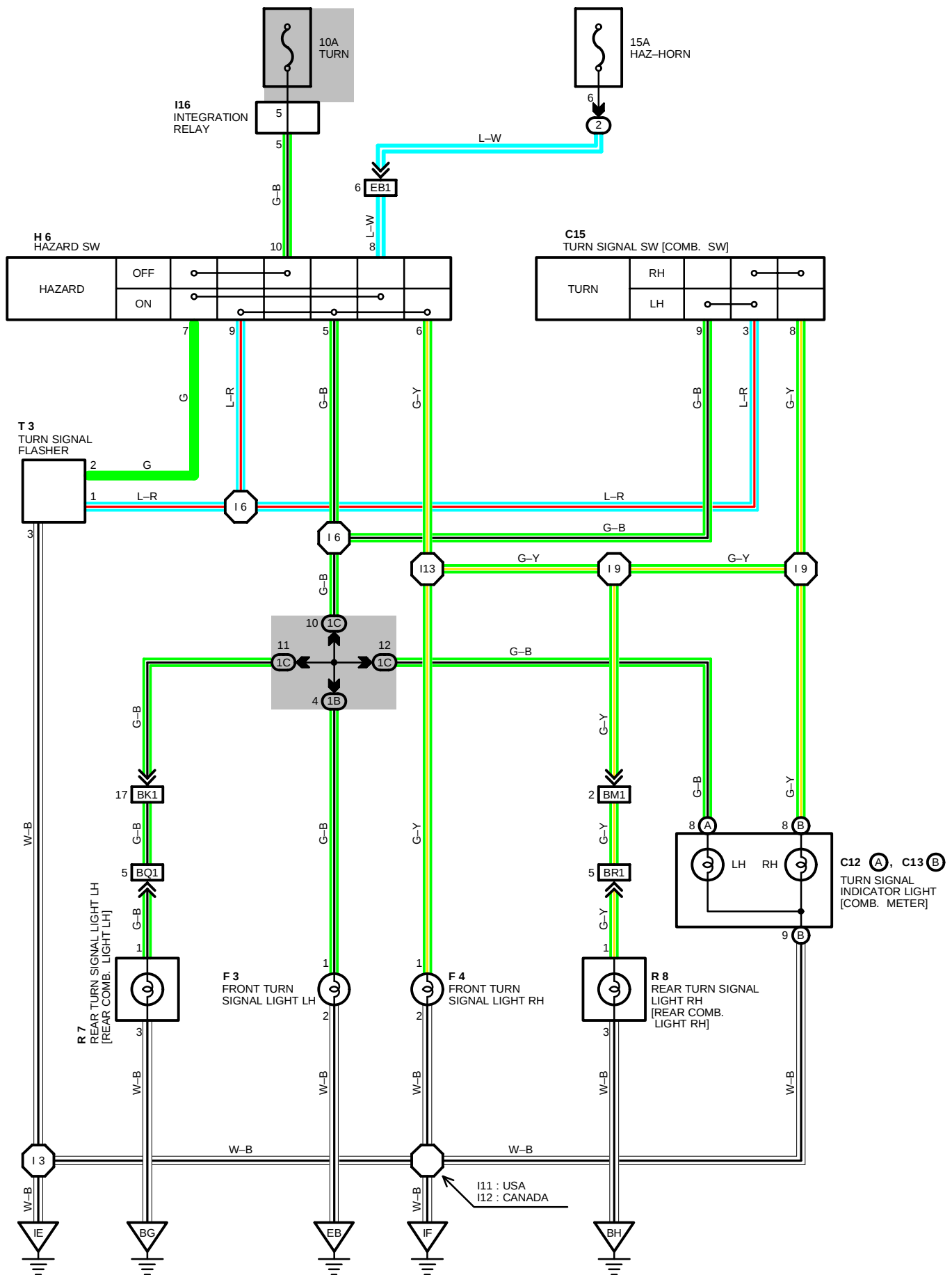
: SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I3	34	COWL WIRE	I13	34	COWL WIRE
I6			I16		
I7			I18	34	ENGINE WIRE
I8			B 6	36	FLOOR NO. 2 WIRE
I9			B13	36	BACK DOOR NO. 1 WIRE
I11					

TAILLIGHT AND ILLUMINATION



TURN SIGNAL AND HAZARD WARNING LIGHT



SERVICE HINTS

T 3 TURN SIGNAL FLASHER

- 2-GROUND: APPROX. 12 VOLTS WITH IGNITION SW ON OR HAZARD SW ON
 1-GROUND: CHANGES FROM 12 TO 0 VOLTS WITH IGNITION SW ON AND TURN SIGNAL SW LEFT OR RIGHT, OR WITH HAZARD SW ON

○ : PARTS LOCATION

CODE		SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
C12	A	28	F 3	26 (22R-E)	I16	28
C13	B	28	F 4	24 (3VZ-E)	R 7	29
C15		28		26 (22R-E)	R 8	29
F 3		24 (3VZ-E)	H 6	28	T 3	28

○ : RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	22	R/B NO. 2 (ENGINE COMPARTMENT RIGHT)

○ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1B	20	ENGINE ROOM MAIN WIRE AND J/B NO. 1 (LEFT KICK PANEL)
1C	20	COWL WIRE AND J/B NO. 1 (LEFT KICK PANEL)

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EB1	30 (3VZ-E) 32 (22R-E)	COWL WIRE AND ENGINE ROOM MAIN WIRE (R/B NO. 2)
BK1	36	FLOOR NO. 3 LH WIRE AND COWL WIRE (LEFT SIDE OF FRONT LH SEAT)
BM1	36	FLOOR NO. 3 RH WIRE AND COWL WIRE (RIGHT SIDE OF FRONT RH SEAT)
BQ1	36	FLOOR NO. 3 LH WIRE AND FLOOR NO. 2 WIRE (LEFT SIDE OF REAR LH SEAT)
BR1	36	FLOOR NO. 3 RH WIRE AND FLOOR WIRE (RIGHT SIDE OF REAR RH SEAT)

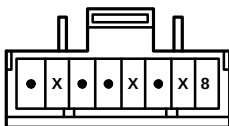
▽ : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
EB	30 (3VZ-E) 32 (22R-E)	LEFT FENDER
IE	34	LEFT KICK PANEL
IF	34	RIGHT KICK PANEL
BG	36	UNDER LEFT REAR PILLAR
BH	36	UNDER RIGHT REAR PILLAR

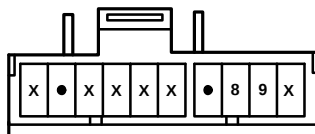
○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I 3	34	COWL WIRE	I11	34	COWL WIRE
I 6			I12		
I 9			I13		

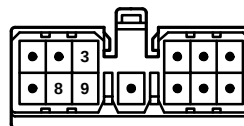
C12 (A)



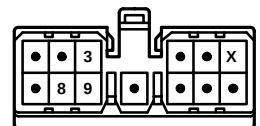
C13 (B) GRAY



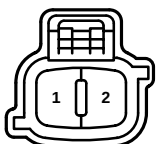
(USA) C15 BLACK



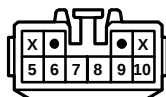
(CANADA) C15 BLACK



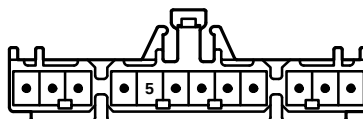
F 3, F 4



H 6 ORANGE



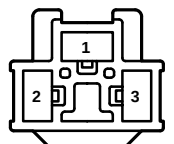
I16



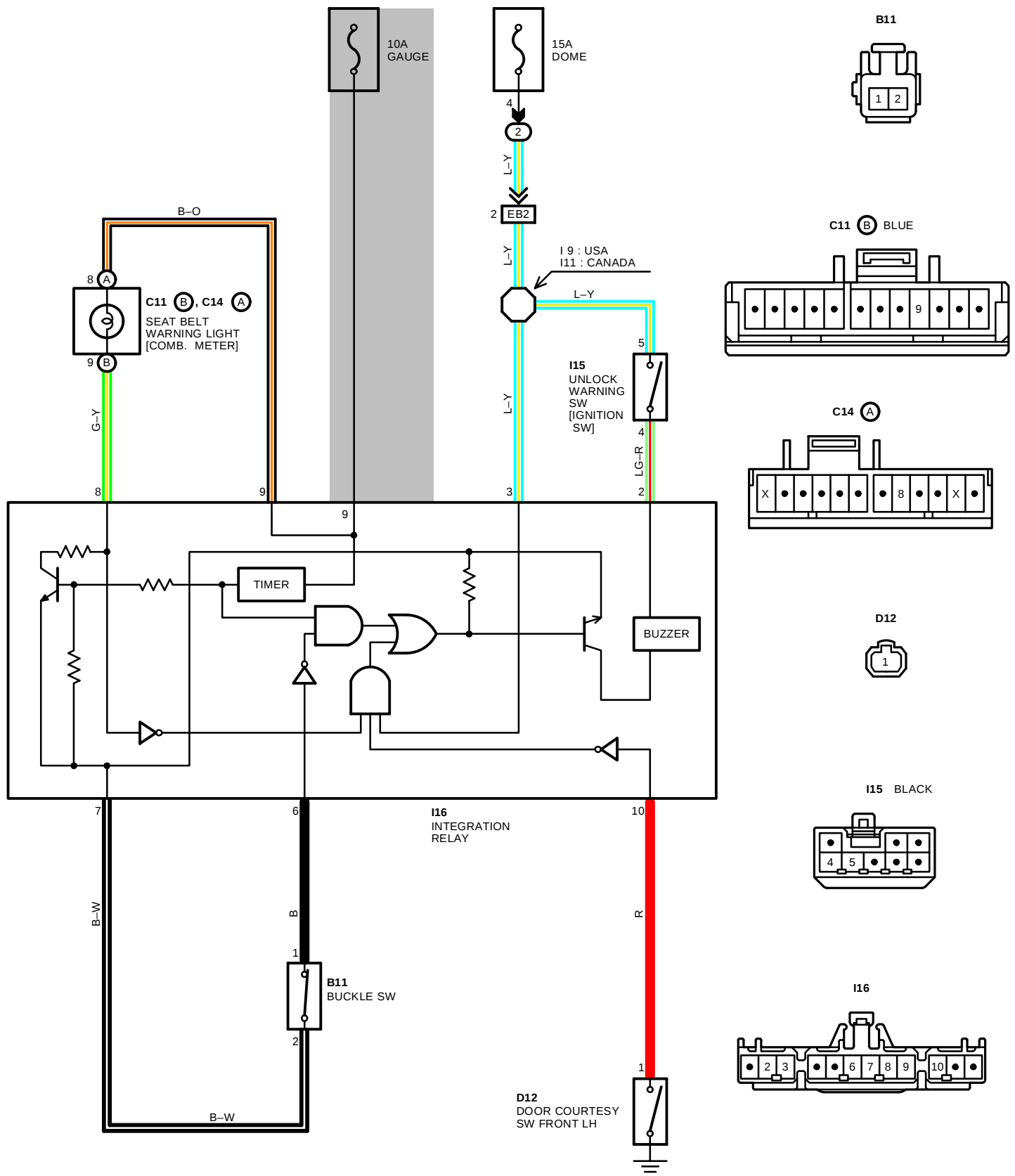
R 7, R 8



T 3



UNLOCK AND SEAT BELT WARNING



SYSTEM OUTLINE

CURRENT ALWAYS FLOWS TO **TERMINAL 3** OF THE INTEGRATION RELAY AND **TERMINAL 5** OF THE UNLOCK WARNING SW THROUGH THE **DOME FUSE**.

1. SEAT BELT WARNING SYSTEM

WHEN THE IGNITION SW IS TURNED ON, CURRENT FLOWS FROM THE **GAUGE FUSE** TO **TERMINAL 9** OF THE INTEGRATION RELAY. AT THE SAME TIME, CURRENT FLOWS TO **TERMINAL 8** OF THE RELAY FROM THE **GAUGE FUSE** THROUGH THE SEAT BELT WARNING LIGHT. THIS CURRENT ACTIVATES THE INTEGRATION RELAY AND, FOR APPROX. **4-8 SECONDS**, CURRENT FLOWING THROUGH THE WARNING LIGHT FLOWS FROM **TERMINAL 8** OF RELAY → **TERMINAL 7** → **GROUND**, CAUSING THE WARNING LIGHT TO LIGHT UP. AT THE SAME TIME AS THE WARNING LIGHT LIGHTS UP, A BUCKLE SW ON SIGNAL IS INPUT TO **TERMINAL 6** OF RELAY, THE CURRENT FLOWING TO **TERMINAL 2** OF THE RELAY FLOWS FROM **TERMINAL 7** → **GROUND** AND THE SEAT BELT WARNING BUZZER SOUNDS FOR APPROX. **4-8 SECONDS**. HOWEVER, IF THE SEAT BELT IS PUT ON DURING THIS PERIOD (WHILE THE BUZZER IS SOUNDING), SIGNAL INPUT TO **TERMINAL 6** OF RELAY STOPS AND THE CURRENT FLOW FROM **TERMINAL 2** OF THE RELAY → **TERMINAL 7** → **GROUND** IS CUT, CAUSING THE BUZZER TO STOP.

2. UNLOCK WARNING SYSTEM

WITH THE IGNITION KEY INSERTED IN THE KEY CYLINDER (UNLOCK SW ON), THE IGNITION SW STILL OFF AND FRONT LH DOOR OPEN (DOOR COURTESY SW ON), WHEN A SIGNAL IS INPUT TO **TERMINAL 10** OF THE RELAY, THE INTEGRATION RELAY OPERATES, CURRENT FLOW FROM **TERMINAL 2** OF THE RELAY → **TERMINAL 7** → **GROUND** AND THE UNLOCK WARNING BUZZER SOUNDS.

SERVICE HINTS

B11 BUCKLE SW

1-2 : OPEN WITH DRIVER'S SEAT BELT IN USE

D12 DOOR COURTESY SW

1-GROUND : CLOSED WITH FRONT LH DOOR OPEN

I15 UNLOCK WARNING SW [IGNITION SW]

5-4 : CLOSED WITH IGNITION KEY IN CYLINDER

I16 INTEGRATION RELAY

7-GROUND : ALWAYS CONTINUOUS

10-GROUND : CONTINUOUS WITH FRONT LH DOOR OPEN

2-GROUND : APPROX. **12 VOLTS** WITH IGNITION KEY IN CYLINDER

6-GROUND : CONTINUOUS UNLESS DRIVER'S SEAT BELT IN USE

8-GROUND : **0 VOLTS** FOR **4-8 SECONDS** WITH IGNITION SW ON AND **12 VOLTS 4-8 SECONDS** AFTER IGNITION SW ON

9-GROUND : APPROX. **12 VOLTS** WITH IGNITION SW ON

3-GROUND : ALWAYS APPROX. **12 VOLTS**



: PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
B11	29	C14	A	I15	28
C11	B	D12	28	I16	28



: RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	22	R/B NO. 2 (ENGINE COMPARTMENT RIGHT)



: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

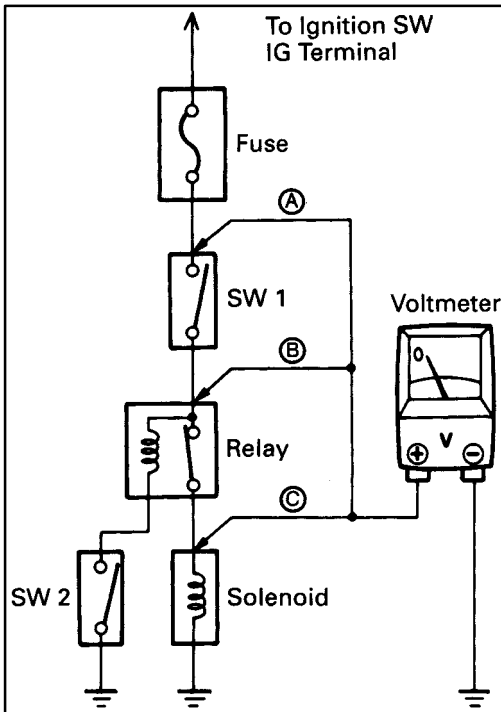
CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EB2	30 (3VZ-E)	COWL WIRE AND ENGINE ROOM MAIN WIRE (R/B NO. 2)
	32 (22R-E)	



: SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I9	34	COWL WIRE	I11	34	COWL WIRE

TROUBLESHOOTING

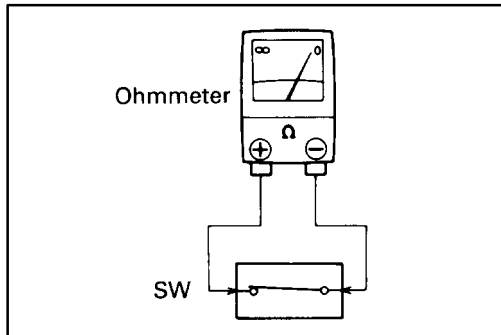


VOLTAGE CHECK

- Establish conditions in which voltage is present at the check point.

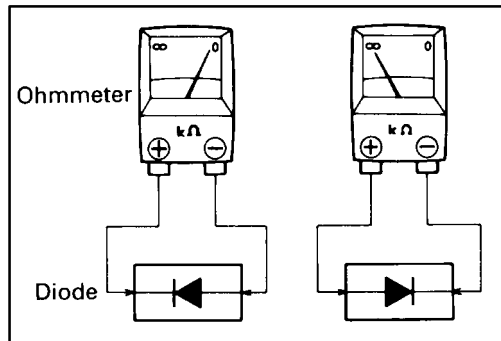
Example:

- Ignition SW on
 - Ignition SW and SW 1 on
 - Ignition SW, SW 1 and Relay on (SW 2 off)
- Using a voltmeter, connect the negative lead to a good ground point or negative battery terminal, and the positive lead to the connector or component terminal. This check can be done with a test a light instead of a voltmeter.



CONTINUITY AND RESISTANCE CHECK

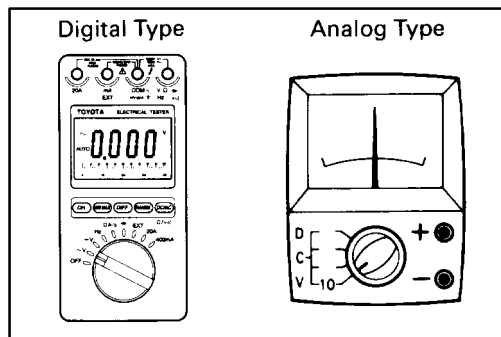
- Disconnect the battery terminal or wire so there is no voltage between the check points.
- Contact the two leads of an ohmmeter to each of the check points.



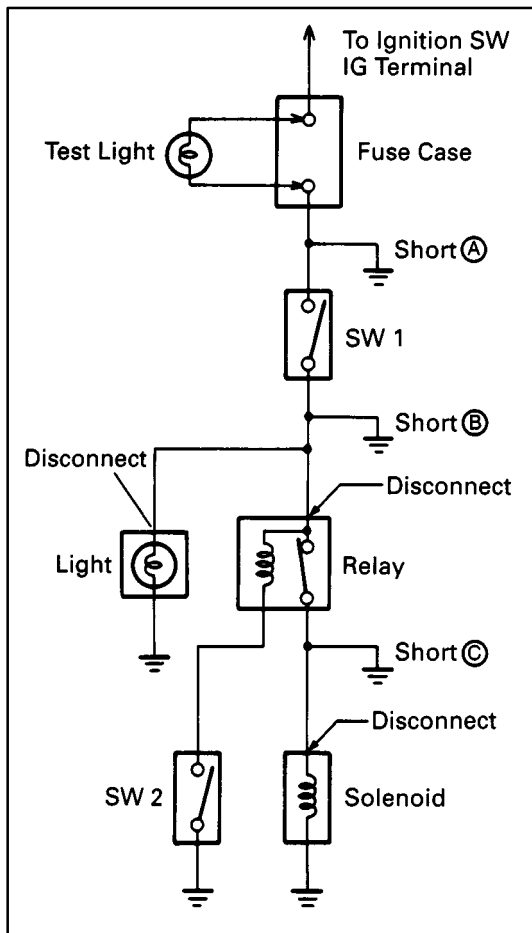
If the circuit has diodes, reverse the two leads and check again.

When contacting the negative lead to the diode positive side and the positive lead to the negative side, there should be continuity.

When contacting the two leads in reverse, there should be no continuity.



- Use the volt/ohmmeter with high impedance (10 k Ω /V minimum) for troubleshooting of the electrical circuit.



FINDING A SHORT CIRCUIT

- Remove the blown fuse and disconnect all loads of the fuse.
- Connect a test light in place of the fuse.
- Establish conditions in which the test light comes on.

Example:

- Ⓐ – Ignition SW on
- Ⓑ – Ignition SW and SW 1 on
- Ⓒ – Ignition SW, SW 1 and Relay on (Connect the Relay) and SW 2 off (or Disconnect SW 2)
- Disconnect and reconnect the connectors while watching the test light.
The short lies between the connector where the test light stays lit and the connector where the light goes out.
- Find the exact location of the short by lightly shaking the problem wire along the body.

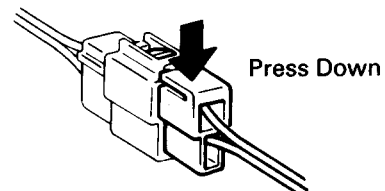
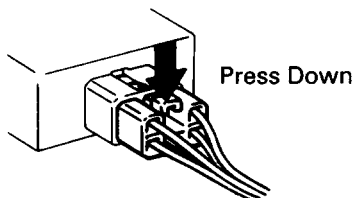
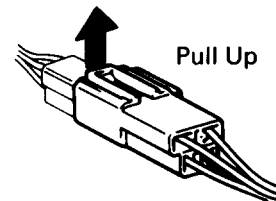
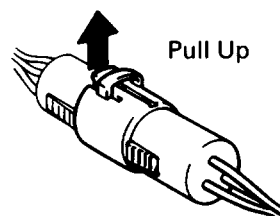
CAUTION:

Do not open the cover or the case of the ECU unless absolutely necessary. (If the IC terminals are touched, the IC may be destroyed by static electricity.)

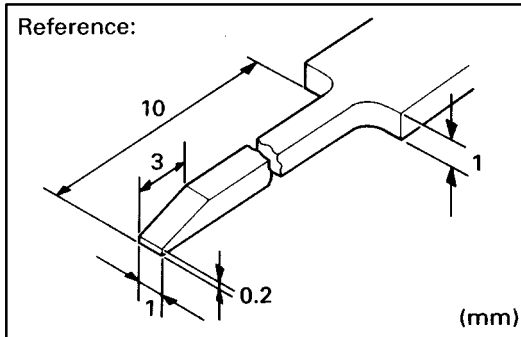
DISCONNECTION OF MALE AND FEMALE CONNECTORS

To pull apart the connectors, pull on the connector itself, not the wire harness.

HINT: Check to see what kind of connector you are disconnecting before pulling apart.



Reference:



HOW TO REPLACE TERMINAL

(with terminal retainer or secondary locking device)

1. PREPARE THE SPECIAL TOOL

HINT: To remove the terminal from the connector, please construct and use the special tool or like object shown on the left.

2. DISCONNECT CONNECTOR

3. DISENGAGE THE SECONDARY LOCKING DEVICE OR TERMINAL RETAINER.

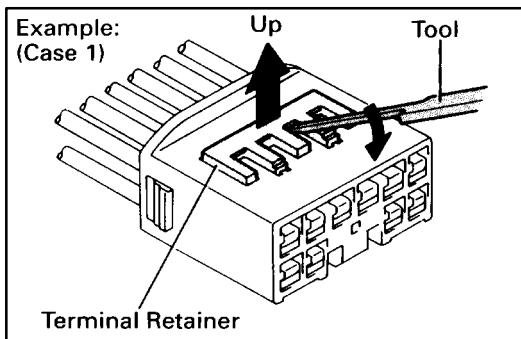
(a) Locking device must be disengaged before the terminal locking clip can be released and the terminal removed from the connector.

(b) Use a special tool or the terminal pick to unlock the secondary locking device or terminal retainer.

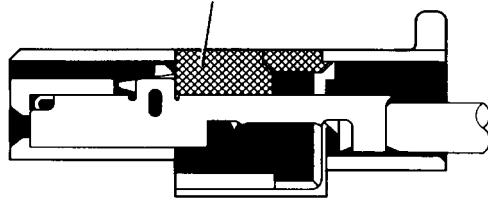
NOTICE:

Do not remove the terminal retainer from connector body.

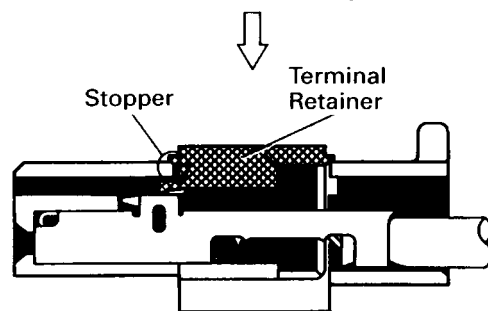
Example:
(Case 1)



Terminal Retainer

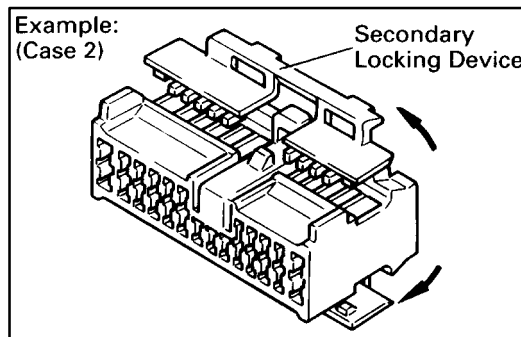


[Retainer at Full Lock Position]



[Retainer at Temporary Lock Position]

Example:
(Case 2)



Ⓐ For Non-Waterproof Type Connector

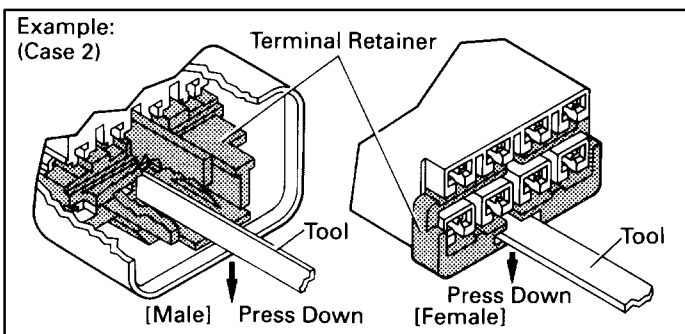
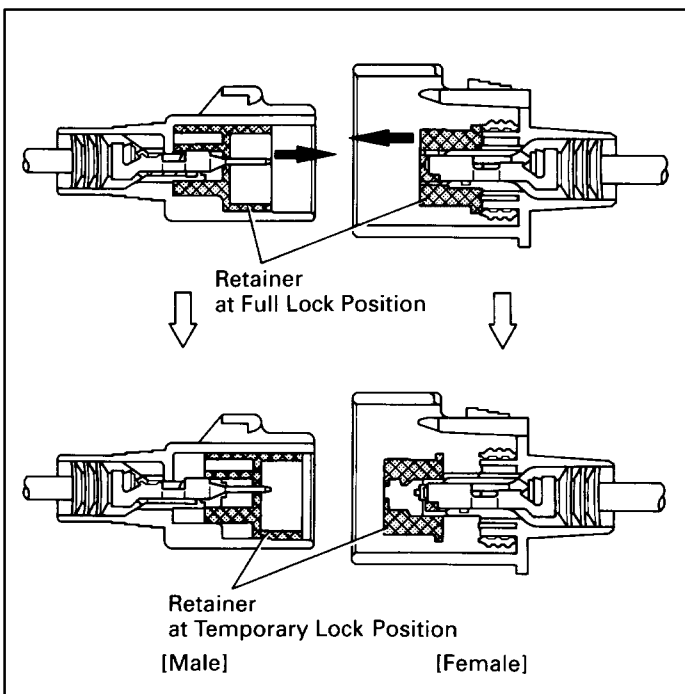
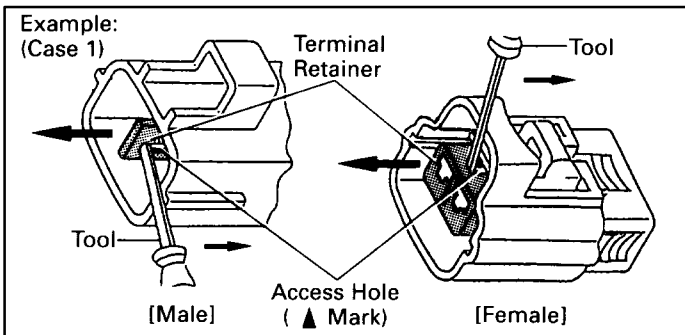
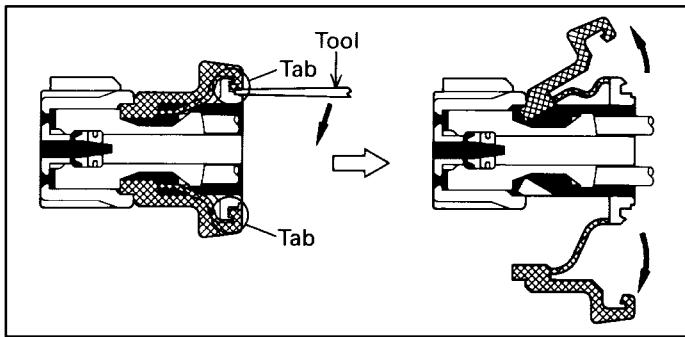
HINT: The needle insertion position varies according to the connector's shape (number of terminals etc.), so check the position before inserting it.

"Case 1"

Raise the terminal retainer up to the temporary lock position.

"Case 2"

Open the secondary locking device.



② For Waterproof Type Connector

HINT: Terminal retainer color is different according to connector body.

Example:

Terminal Retainer: Connector Body

Black or White : Gray

Black or White : Dark Gray

Gray or White : Black

“Case 1”

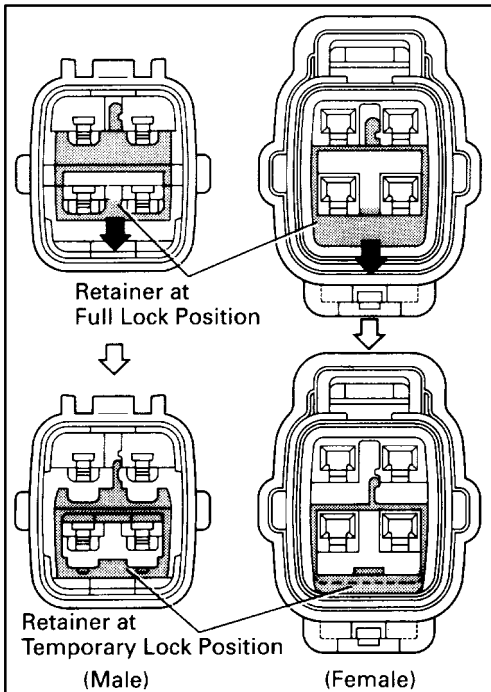
Type where terminal retainer is pulled up to the temporary lock position (Pull Type). Insert the special tool into the terminal retainer access hole (▲ Mark) and pull the terminal retainer up to the temporary lock position.

HINT: The needle insertion position varies according to the connector's shape (Number of terminals etc.), so check the position before inserting it.

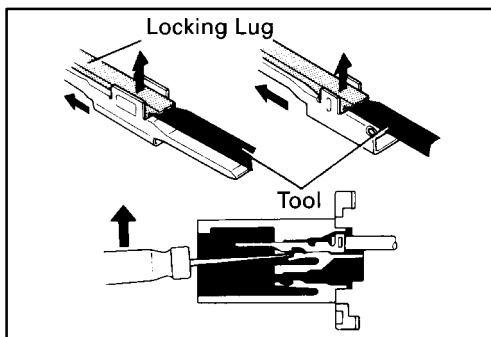
“Case 2”

Type which cannot be pulled as far as Power Lock insert the tool straight into the access hole of terminal retainer as shown.

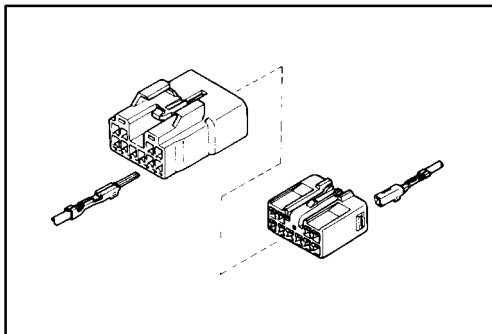
TROUBLESHOOTING



Push the terminal retainer down to the temporary lock position.



(c) Release the locking lug from terminal and pull the terminal out from rear.

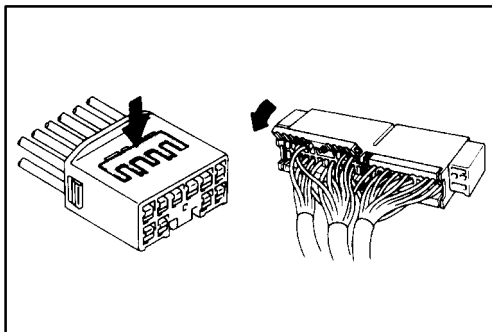


4. INSTALL TERMINAL TO CONNECTOR

(a) Insert the terminal.

HINT:

1. Make sure the terminal is positioned correctly.
2. Insert the terminal until the locking lug locks firmly.
3. Insert the terminal with terminal retainer in the temporary lock position.



(b) Push the secondary locking device or terminal retainer in to the full lock position.

5. CONNECT CONNECTOR