A INTRODUCTION

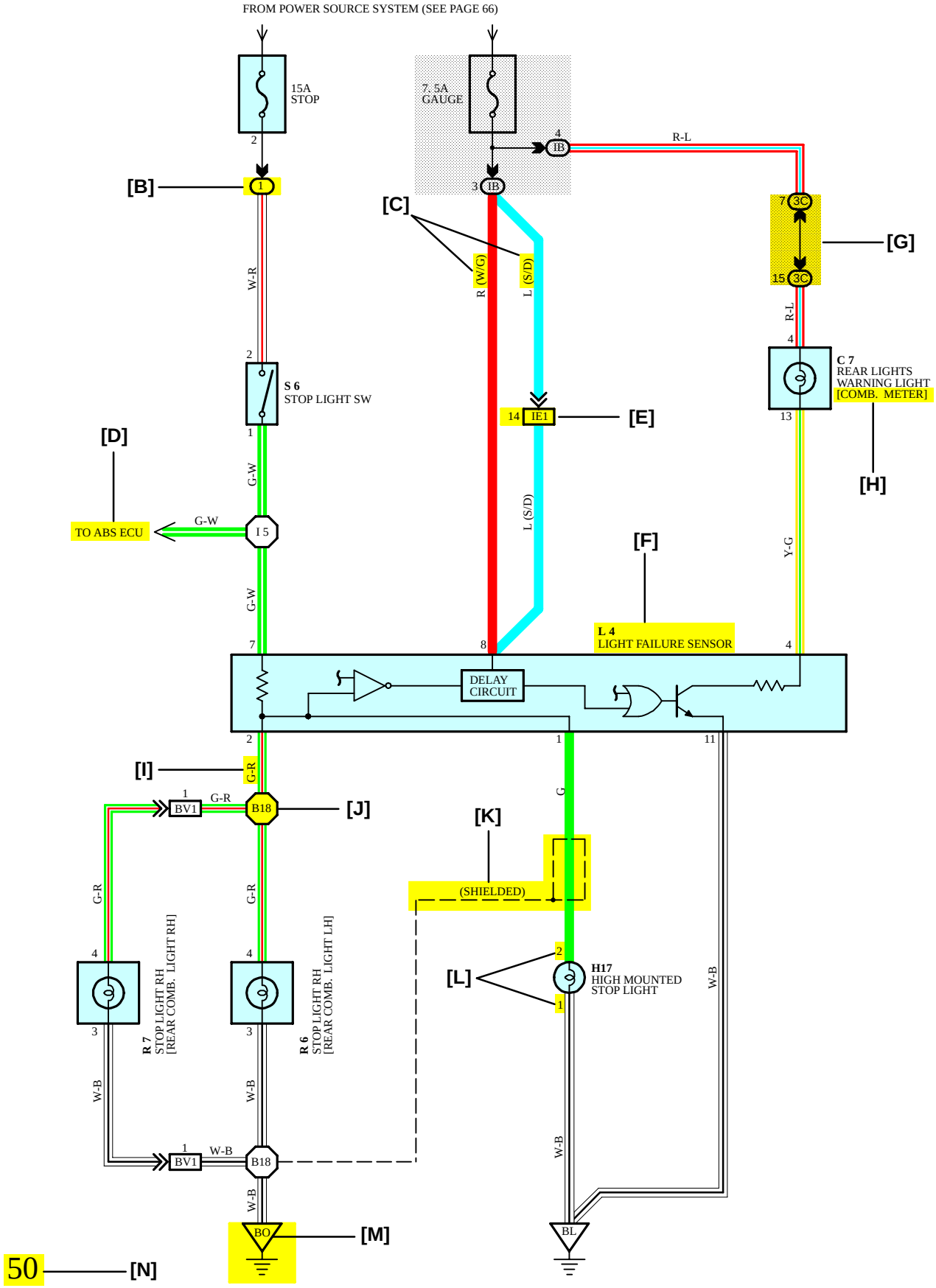
This manual consists of the following 13 sections:

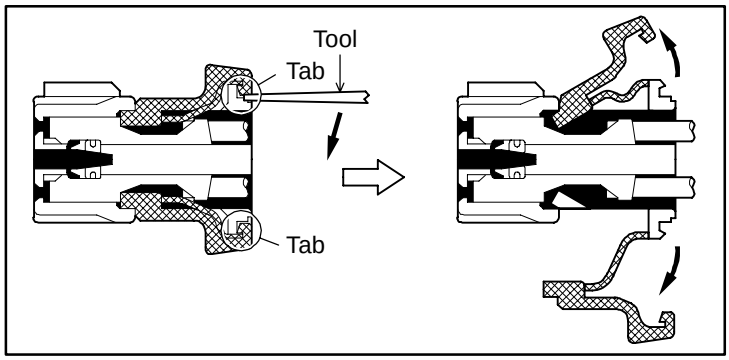
No.	Section	Description
A	INDEX	Index of the contents of this manual.
	INTRODUCTION	Brief explanation of each section.
B	HOW TO USE THIS MANUAL	Instructions on how to use this manual.
C	TROUBLE-SHOOTING	Describes the basic inspection procedures for electrical circuits.
D	ABBREVIATIONS	Defines the abbreviations 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	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.
I	GROUND POINT	Shows ground positions of all parts described in this manual.
J	POWER SOURCE (Current Flow Chart)	Describes power distribution from the power supply to various electrical loads.
K	CONNECTOR LIST	Describes the form of the connectors for the parts appeared in this book. This section is closely related to the system circuit.
L	PART NUMBER OF CONNECTORS	Indicates the part number of the connectors used in this manual.
M	OVERALL ELECTRICAL WIRING DIAGRAM	Provides circuit diagrams showing the circuit connections.

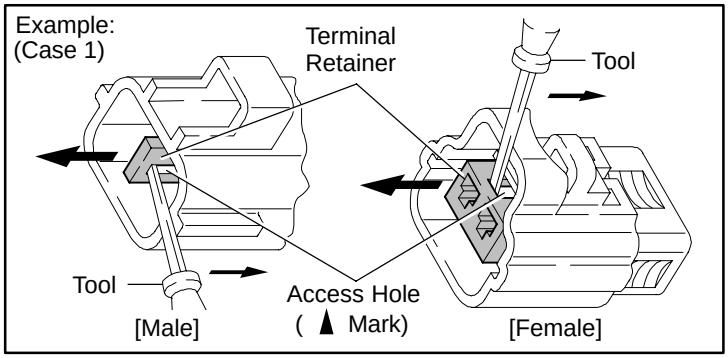
[A]

STOP LIGHT

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





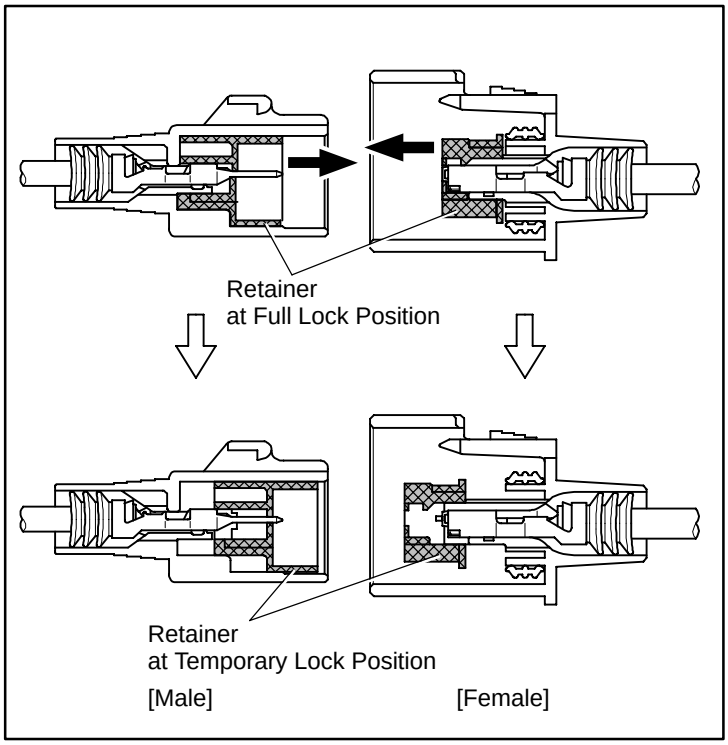


[B] For Waterproof Type Connector

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

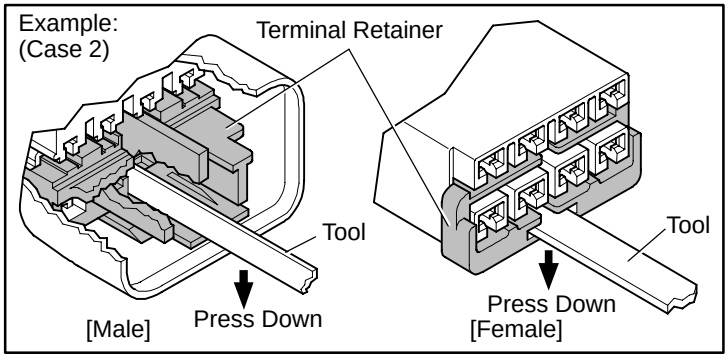


”Case 1”

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.

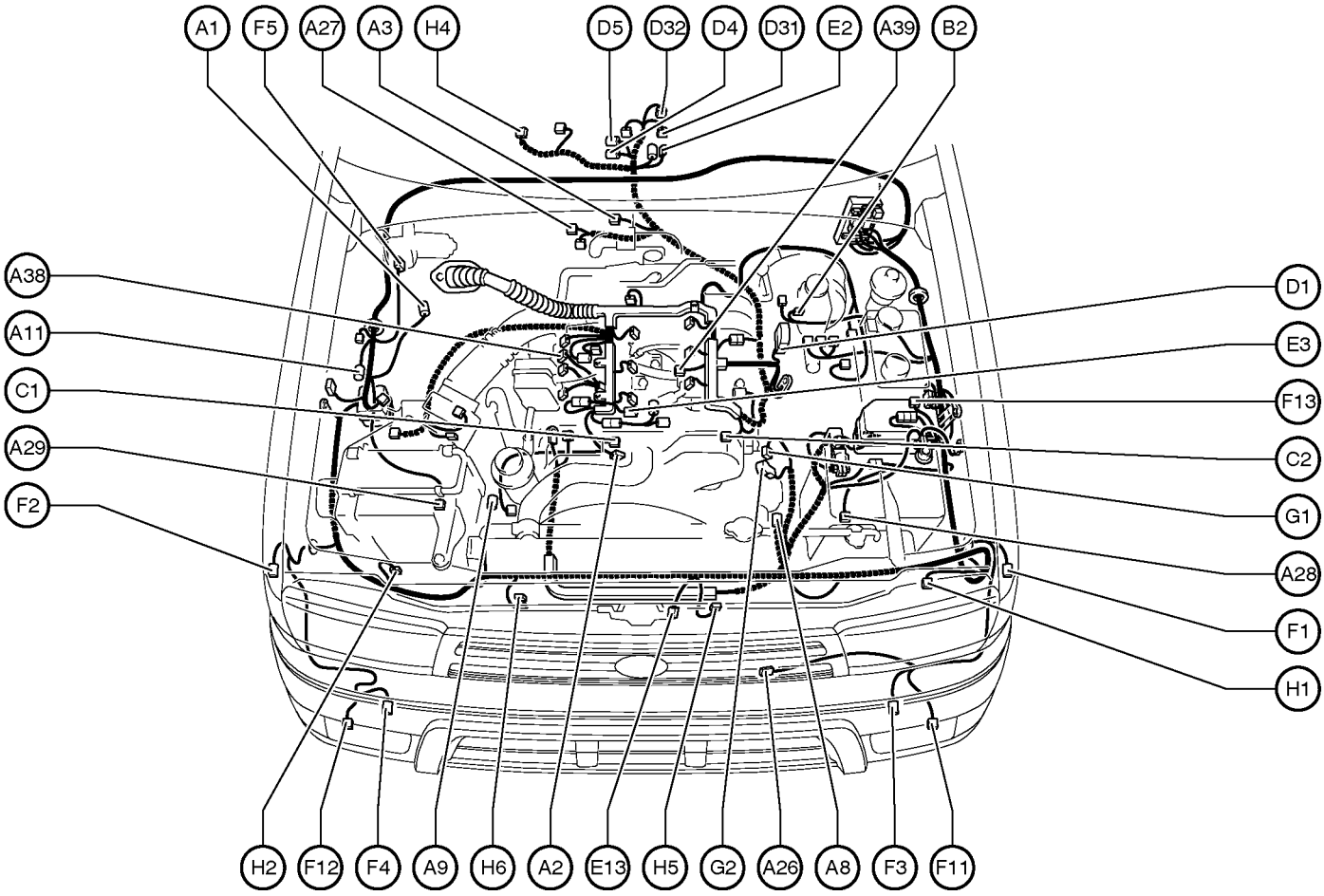
HINT : The needle insertion position varies according to the connector’s shape (Number of terminals etc.), so check the position before inserting it.



”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.

Position of Parts in Engine Compartment



A 1 A/C Dual Pressure SW
A 2 A/C Magnetic Clutch
A 3 A/T Fluid Temp. Sensor
A 8 ABS Speed Sensor Front LH
A 9 ABS Speed Sensor Front RH
A 11 Auto Antenna Motor
A 26 A/C Ambient Temp. Sensor
A 27 Air Fuel Ratio Sensor
A 28 Airbag Sensor Front LH
A 29 Airbag Sensor Front RH
A 38 Accel Position Sensor
A 39 ADD Actuator

B 2 Brake Fluid Level Warning SW

C 1 Camshaft Position Sensor
C 2 Crankshaft Position Sensor

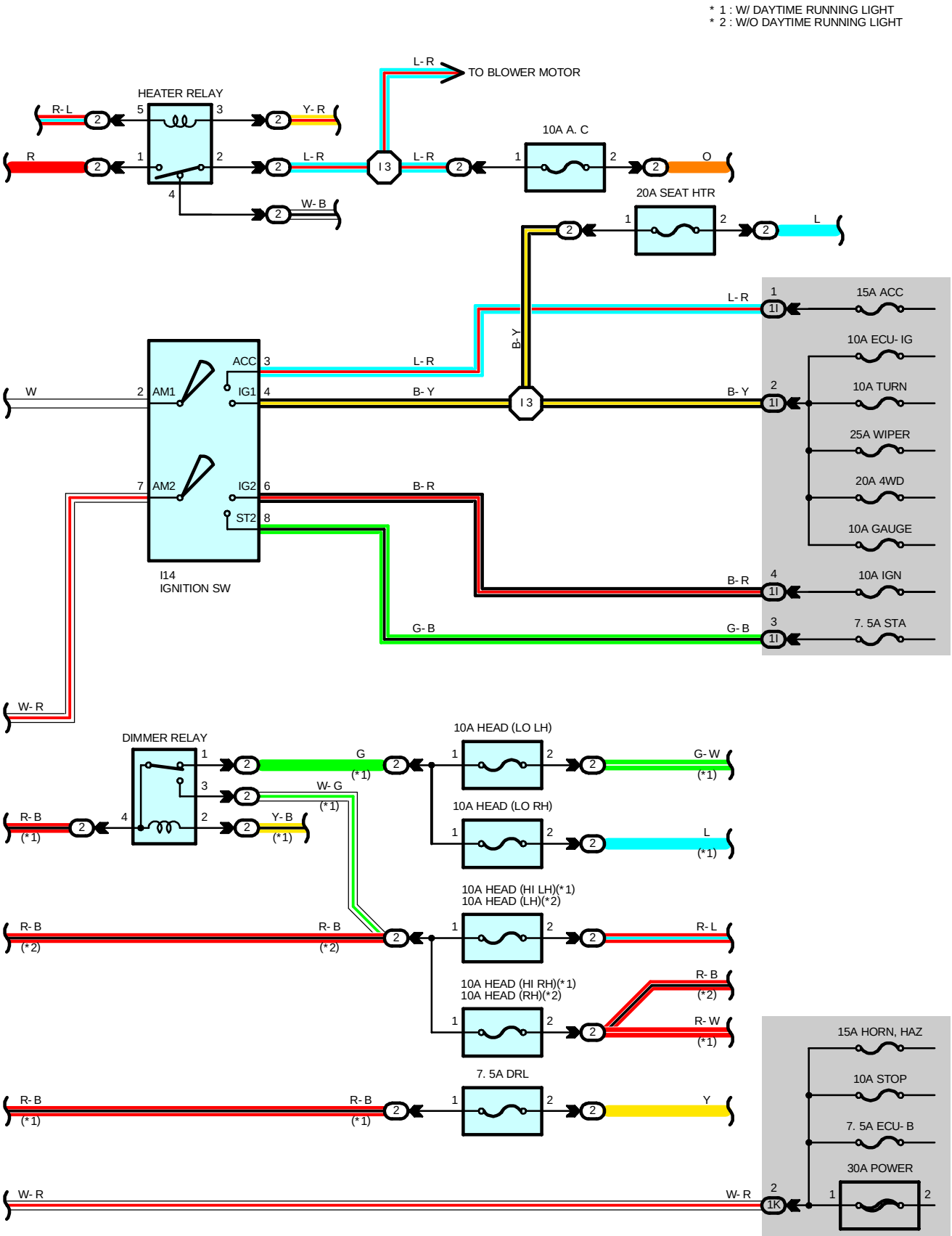
D 1 Data Link Connector 1
D 4 Detection SW (Transfer L4 Position)
D 5 Detection SW (Transfer Neutral Position)
D 31 Detection SW (Transfer 4WD Position)
D 32 Detection SW (Transfer H4L Position)

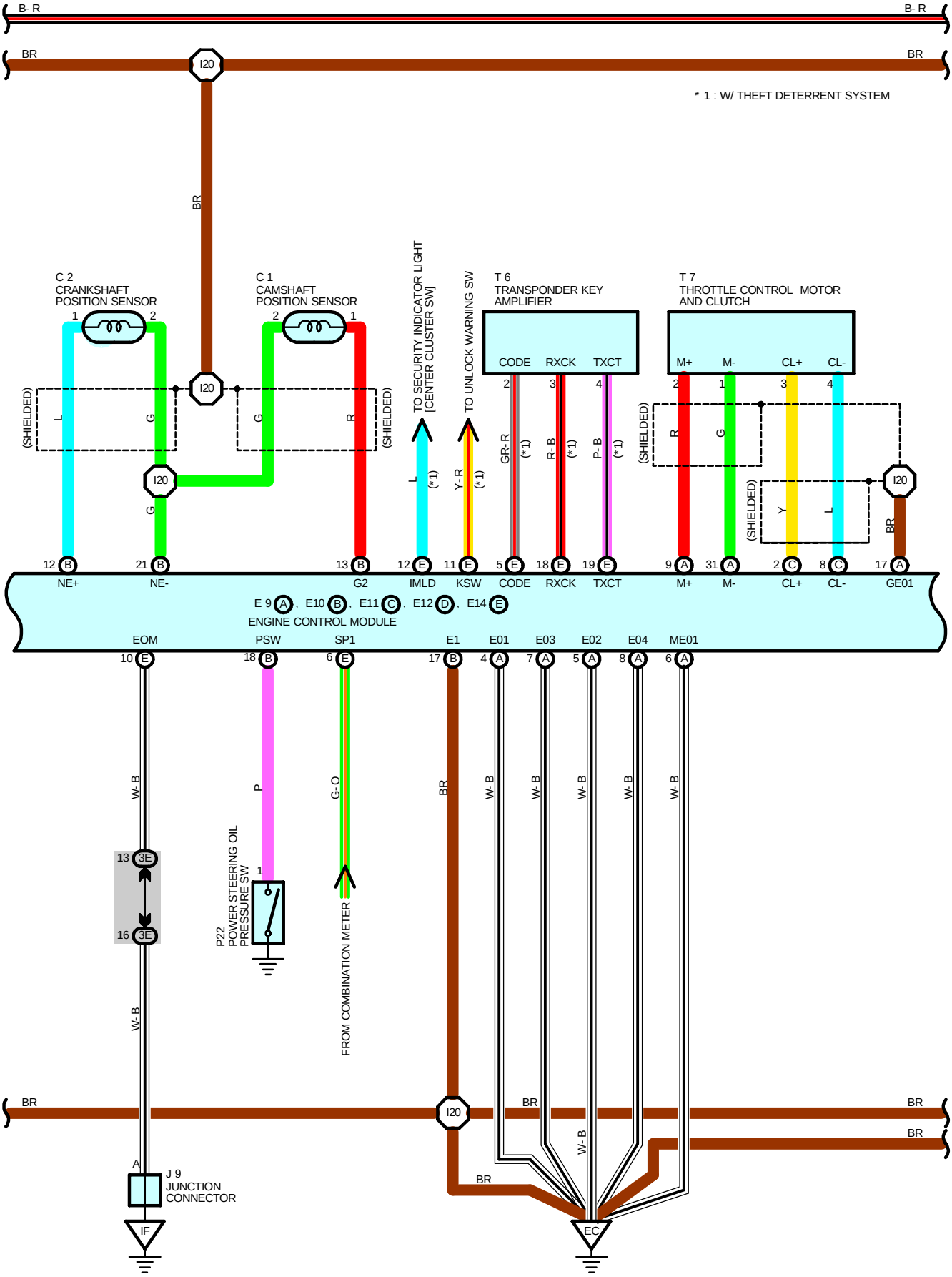
E 2 Electronically Controlled Transmission Solenoid
E 3 Engine Coolant Temp. Sensor
E 13 Engine Hood Courtesy SW

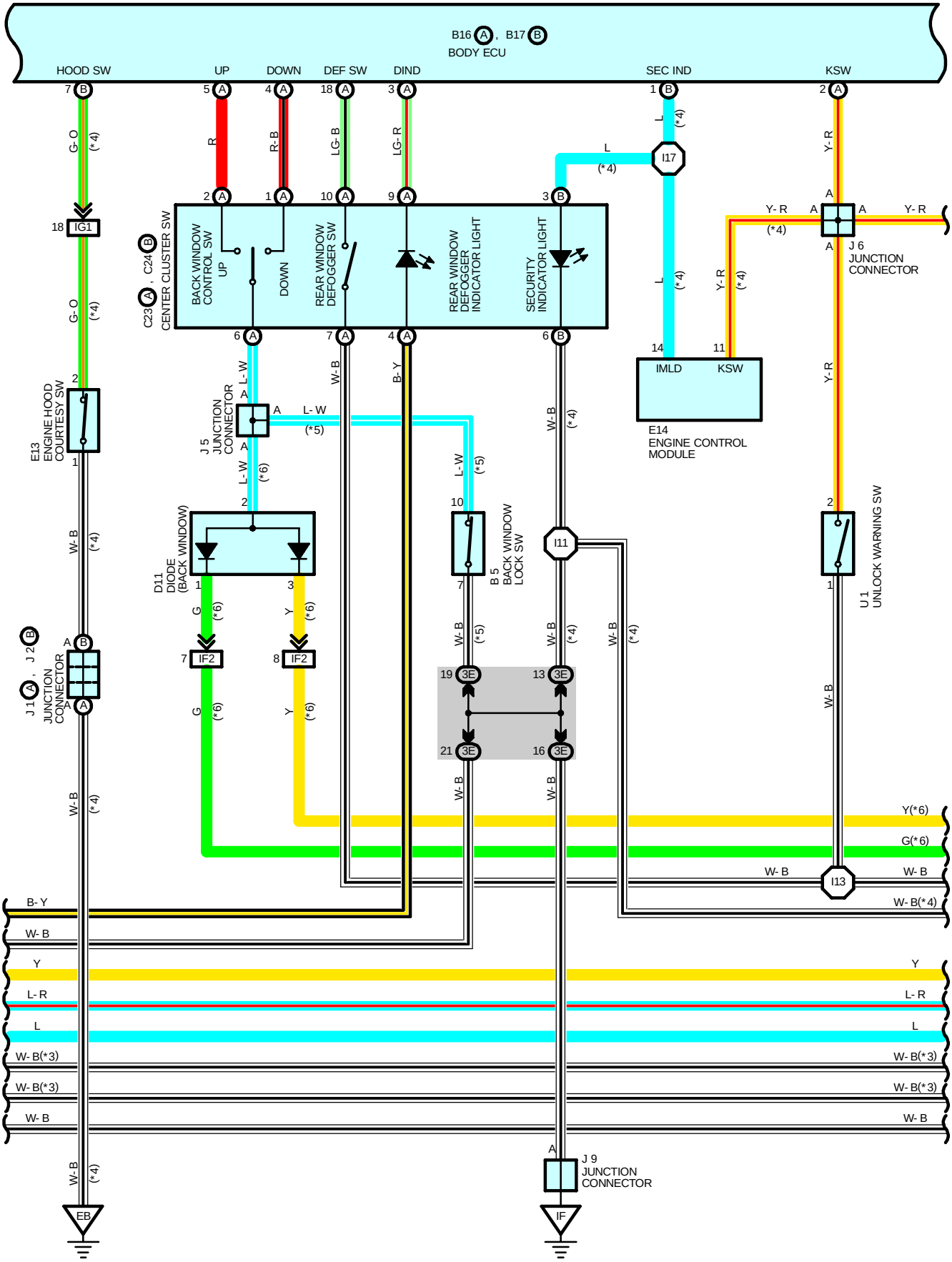
F 1 Front Parking Light LH
F 2 Front Parking Light RH
F 3 Front Turn Signal Light LH
F 4 Front Turn Signal Light RH
F 5 Front Wiper Motor
F 11 Front Fog Light LH
F 12 Front Fog Light RH
F 13 Fuse Box

G 1 Generator
G 2 Generator

H 1 Headlight LH
H 2 Headlight RH
H 4 Heated Oxygen Sensor (Bank 1 Sensor 2)
H 5 Horn LH
H 6 Horn RH


* 1 : W/ DAYTIME RUNNING LIGHT
* 2 : W/O DAYTIME RUNNING LIGHT
L- R
TO BLOWER MOTOR
HEATER RELAY
R- L
Y- R
R
L- R
I 3
10A A. C
O
20A SEAT HTR
W- B
L
15A ACC
10A ECU- IG
10A TURN
25A WIPER
20A 4WD
10A GAUGE
10A IGN
7. 5A STA
B- Y
ACC
IG1
AM1
W
B- R
AM2
IG2
ST2
G- B
I14
IGNITION SW
W- R
DIMMER RELAY
R- B
(*1)
G
W- G
Y- B
10A HEAD (LO LH)
G- W
10A HEAD (LO RH)
10A HEAD (HI LH)(*1)
10A HEAD (LH)(*2)
(*2)
R- L
10A HEAD (HI RH)(*1)
10A HEAD (RH)(*2)
R- W
7. 5A DRL
Y
15A HORN, HAZ
10A STOP
7. 5A ECU- B
30A POWER


B- R
B- R
BR
I20
BR
* 1 : W/ THEFT DETERRENT SYSTEM
C 2
CRANKSHAFT
POSITION SENSOR
C 1
CAMSHAFT
POSITION SENSOR
TO SECURITY INDICATOR LIGHT
[CENTER CLUSTER SW]
TO UNLOCK WARNING SW
T 6
TRANSPONDER KEY
AMPLIFIER
CODE
RXCK
TXCT
T 7
THROTTLE CONTROL MOTOR
AND CLUTCH
M+
M-
CL+
CL-
(SHIELDED)
L
G
R
GR-R
R- B
P- B
Y- R
Y
BR
(*1)
12 B NE+
21 B NE-
13 B G2
12 E IMLD
11 E KSW
5 E CODE
18 E RXCK
19 E TXCT
9 A M+
31 A M-
2 C CL+
8 C CL-
17 A GE01
E 9 A, E10 B, E11 C, E12 D, E14 E
ENGINE CONTROL MODULE
EOM
PSW
SP1
E1
E01
E03
E02
E04
ME01
10 E
18 B
6 E
17 B
4 A
7 A
5 A
8 A
6 A
W- B
P
G- O
BR
13 3E
16 3E
P22
POWER STEERING OIL
PRESSURE SW
FROM COMBINATION METER
A
J 9
JUNCTION
CONNECTOR
IF
EC


B16 A , B17 B
BODY ECU
HOOD SW
UP
DOWN
DEF SW
DIND
SEC IND
KSW
BACK WINDOW CONTROL SW
UP
DOWN
REAR WINDOW DEFOGGER SW
REAR WINDOW DEFOGGER INDICATOR LIGHT
SECURITY INDICATOR LIGHT
C23 A , C24 B
CENTER CLUSTER SW
IG1
E13
ENGINE HOOD COURTESY SW
J 5
JUNCTION CONNECTOR
D11
DIODE (BACK WINDOW)
IF2
B 5
BACK WINDOW LOCK SW
I11
I17
IMLD
KSW
E14
ENGINE CONTROL MODULE
J 6
JUNCTION CONNECTOR
U 1
UNLOCK WARNING SW
I13
J 1 A , J 2 B
JUNCTION CONNECTOR
3E
J 9
JUNCTION CONNECTOR
EB
IF
G- O
R
R- B
LG- B
LG- R
L
Y- R
L- W
W- B
B- Y
G
Y
(*4)
(*5)
(*6)
Y(*6)
G(*6)
W- B(*4)
L- R
W- B(*3)

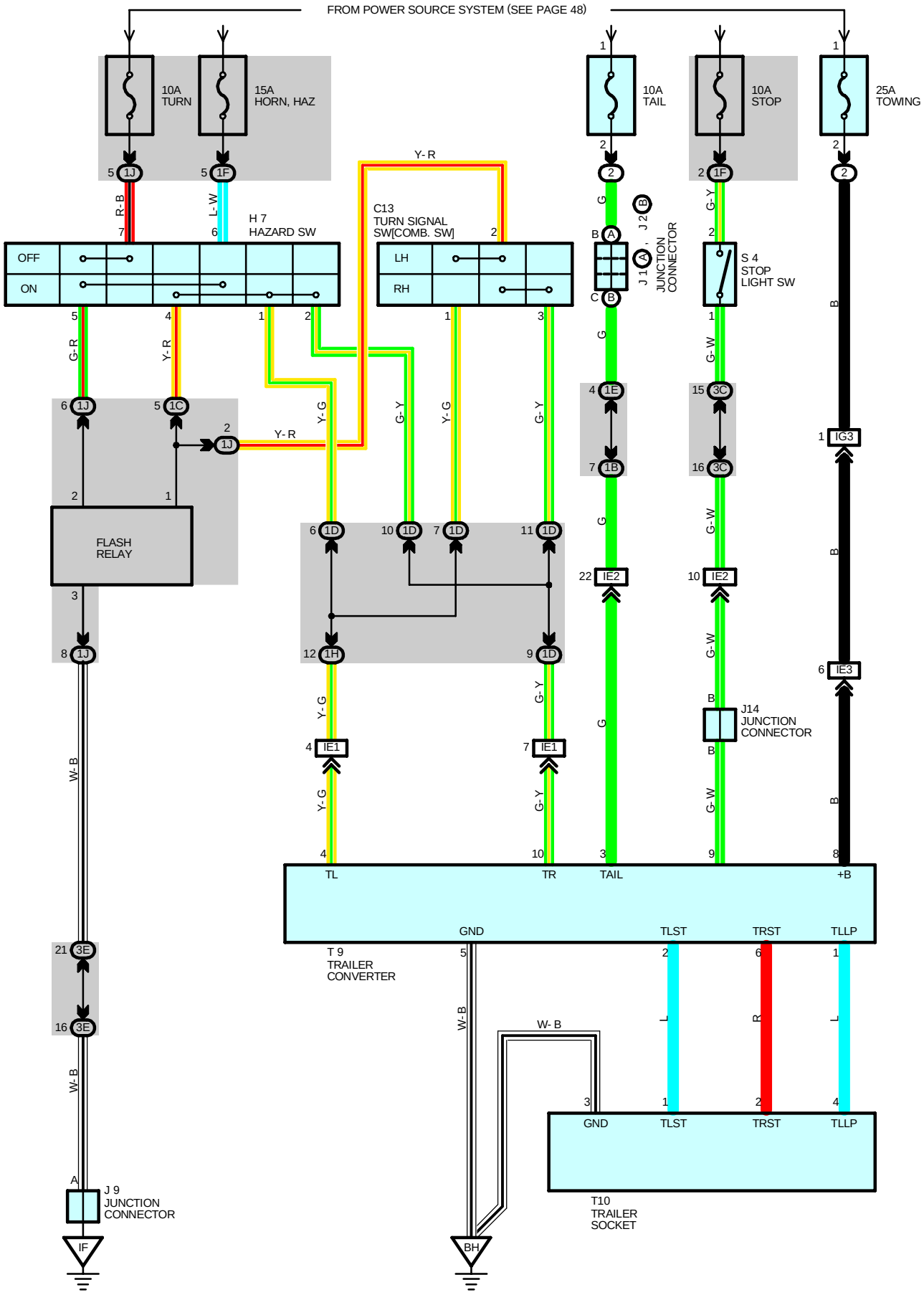
INTERIOR LIGHT

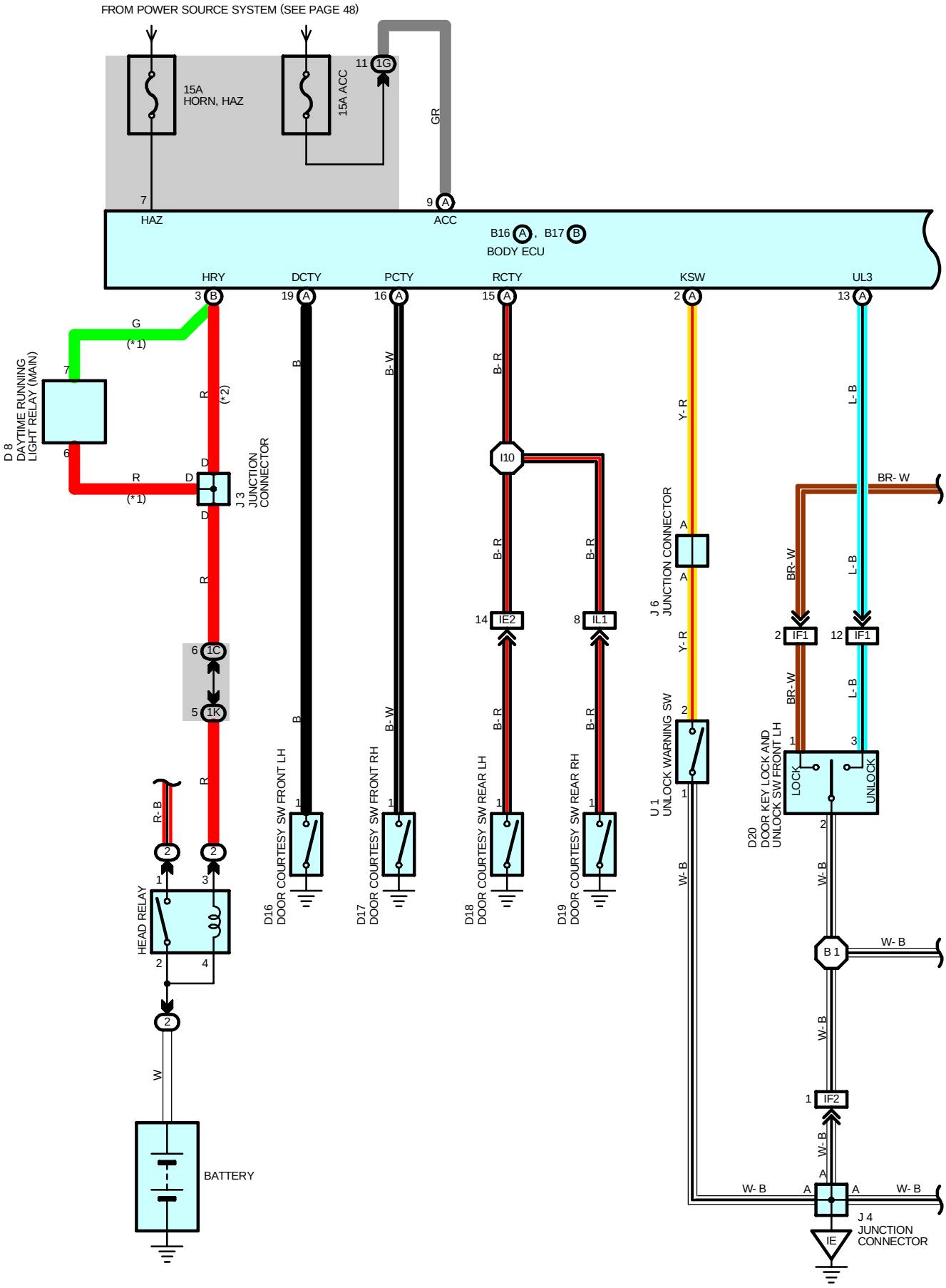
 **: GROUND POINTS**

Code	See Page	Ground Points Location
IE	38	Cowl Side Panel LH
IF	38	Cowl Side Panel RH
BH	42	Left Quarter Panel Inner

 **: SPLICE POINTS**

Code	See Page	Wire Harness with Splice Points	Code	See Page	Wire Harness with Splice Points
I5	40	Cowl Wire	B2	42	Roof Wire
I9					


FROM POWER SOURCE SYSTEM (SEE PAGE 48)
10A TURN
15A HORN, HAZ
10A TAIL
10A STOP
25A TOWING
H 7 HAZARD SW
OFF
ON
C13 TURN SIGNAL SW[COMB. SW]
LH
RH
J 1, J 2 JUNCTION CONNECTOR
S 4 STOP LIGHT SW
FLASH RELAY
J14 JUNCTION CONNECTOR
IG3
IE3
IE2
IE1
TL
TR
TAIL
+B
GND
TLST
TRST
TLLP
T 9 TRAILER CONVERTER
T10 TRAILER SOCKET
J 9 JUNCTION CONNECTOR
IF
BH


FROM POWER SOURCE SYSTEM (SEE PAGE 48)
15A
HORN, HAZ
15A ACC
11 1G
GR
7
HAZ
9 A
ACC
B16 A , B17 B
BODY ECU
HRY
DCTY
PCTY
RCTY
KSW
UL3
3 B
19 A
16 A
15 A
2 A
13 A
G
(*1)
7
D 8
DAYTIME RUNNING
LIGHT RELAY (MAIN)
6
R
(*1)
R
(*2)
D
D
D
J 3
JUNCTION
CONNECTOR
R
6 1C
5 1K
R
R-B
2
1
3
2
HEAD RELAY
2
4
2
W
BATTERY
B
B
D16
DOOR COURTESY SW FRONT LH
1
B-W
B-W
D17
DOOR COURTESY SW FRONT RH
1
B-R
B-R
I10
14 IE2
D18
DOOR COURTESY SW REAR LH
1
B-R
B-R
8 IL1
D19
DOOR COURTESY SW REAR RH
1
Y-R
A
A
J 6
JUNCTION CONNECTOR
Y-R
2
U 1
UNLOCK WARNING SW
1
W-B
L-B
BR-W
L-B
BR-W
2 IF1
12 IF1
L-B
BR-W
1
3
LOCK
UNLOCK
2
D20
DOOR KEY LOCK AND
UNLOCK SW FRONT LH
W-B
B 1
W-B
W-B
1 IF2
W-B
A
W-B
A
A
W-B
J 4
JUNCTION
CONNECTOR
IE

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 governor pressure and lock-up through the solenoid valve. Control of the solenoid valve by the engine control module based on the input signals from each sensor makes smooth driving possible by shift selection for each is most appropriate to the driving conditions at that time.

1. GEAR SHIFT OPERATION

During driving, the engine control module selects the shift for each gear which is most appropriate to the driving conditions, based on input signals from the engine coolant temp. sensor to TERMINAL THW of the engine control module and also the input signals to TERMINAL SP2+ of the engine control module from the vehicle speed sensor devoted to the electronically controlled transmission. Current is then output to the electronically controlled transmission solenoid.

When shifting to 1st speed, current flows from TERMINAL S1 of the engine control module to TERMINAL 4 of the electronically controlled transmission solenoid to GROUND, and continuity to the no. 1 solenoid causes the shift.

For 2nd speed, current flows from TERMINAL S1 of the engine control module to TERMINAL 4 of the electronically controlled transmission solenoid to GROUND, and from TERMINAL S2 of the engine control module to TERMINAL 8 of the electronically controlled transmission solenoid to GROUND. And continuity to solenoid 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 the either no. 1 or no.2 solenoid.

2. LOCK-UP OPERATION

When the engine control module judges from each signal that lock-up operation conditions have been met, current flows from TERMINAL SL of the engine control module to TERMINAL 7 of the electronically controlled transmission solenoid to GROUND, causing continuity to the lock-up solenoid and causing lock-up operation.

3. 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, the engine control module operates and continuity to the lock-up solenoid is cut.

4. OVERDRIVE CIRCUIT

∗ O/D main SW on

When the O/D main SW is turned on, a signal is input to TERMINAL ODMS of the engine control module and engine control module operation causes gear shift when the conditions for overdrive are met.

∗ O/D main SW off

When the O/D main SW is turned off, a signal is input into TERMINAL ODMS of the engine control module, and turns on the O/D off indicator light. This activates the ECU, and the transmission system is controlled not to shift to overdrive.

5. A/T OIL TEMP. WARNING

When the A/T fluid temp. sensor affixed to the transmission case detects that the fluid temp. is 150°C (302°F) or more, the engine control module operates and the current flowing through the GAUGE fuse flows to the A/T oil temp. warning light to TERMINAL OILW of the engine control module to GROUND, so that warning light lights up, informing that the A/T oil temp. is high. When the A/T oil temp. drops to 120°C (248°F) or less, the engine control module stops operating and the warning light goes out.

: PARTS LOCATION

Code		See Page	Code		See Page	Code		See Page
A38		28	E11	C	31	J8	B	31
C14		30	E12	D	31	P1		29
C27	E	30	E14	E	31	S4		31
C28	D	30	F7		31	T2		29
C29	B	30	J1	A	29	T7		29
D1		28	J2	B	29	V18		31
E9	A	31	J4		31			
E10	B	31	J7	A	31			

: RELAY BLOCKS

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

: JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

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

: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
IG1	38	Engine Room Main Wire and Cowl Wire (Left Kick Panel)
II1	40	Engine Wire and Cowl Wire (On the Glove Box)
II4		

: GROUND POINTS

Code	See Page	Ground Points Location
EB	36	Front Left Fender
EC	36	Intake Manifold Left
IE	38	Cowl Side Panel LH

: SPLICE POINTS

Code	See Page	Wire Harness with Splice Points	Code	See Page	Wire Harness with Splice Points
I12	40	Cowl Wire	I20	40	Engine Wire

SERVICE HINTS

R5, R22 REMOTE CONTROL MIRROR SW

10-GROUND : Always continuity
10-6 : Continuity with operation SW at **UP** or **LEFT** position
9-6 : Continuity with operation SW at **DOWN** or **RIGHT** position
9-GROUND : Approx. **12** volts with ignition SW at **ACC** or **ON** position

: PARTS LOCATION

Code	See Page	Code	See Page	Code	See Page
J4	31	R5	31	R21	33
J9	31	R20	33	R22	33

: JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

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

: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

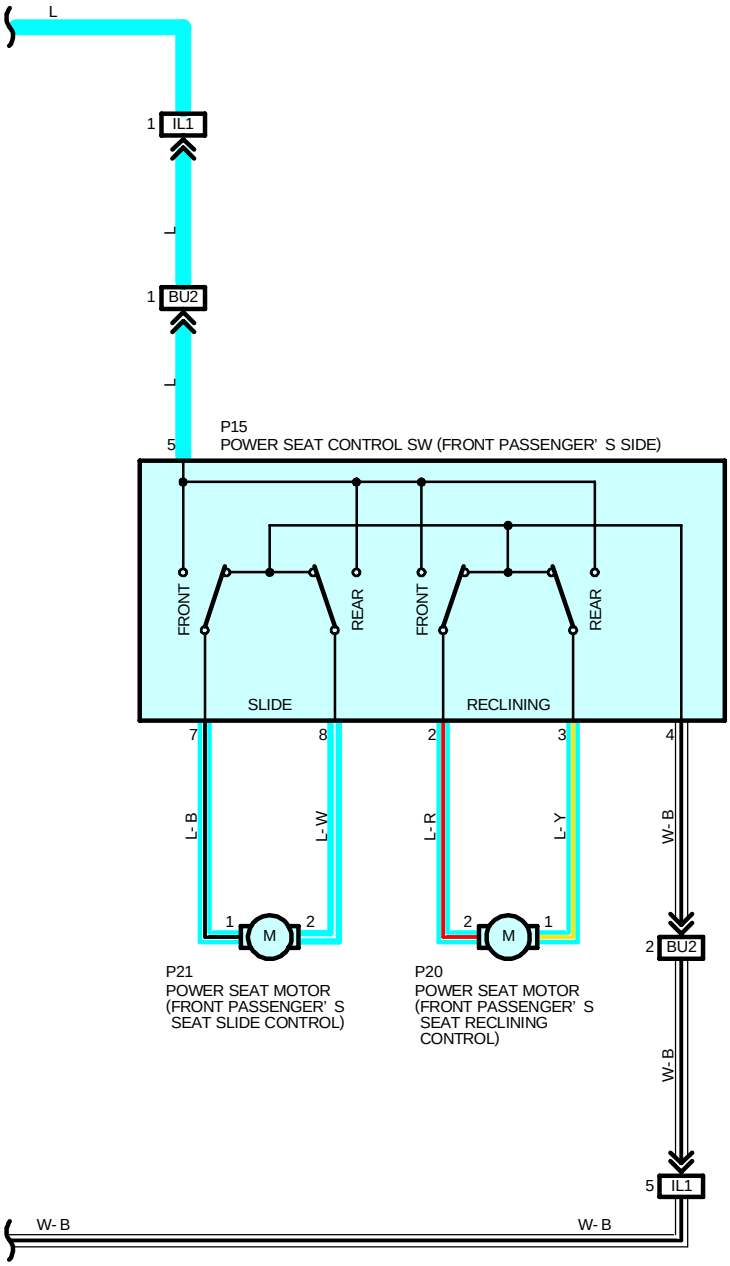
Code	See Page	Joining Wire Harness and Wire Harness (Connector Location)
IF1	38	Front Door LH Wire and Cowl Wire (Left Kick Panel)
IK1	40	Front Door RH Wire and Cowl Wire (Right Kick Panel)

: GROUND POINTS

Code	See Page	Ground Points Location
IE	38	Cowl Side Panel LH
IF	38	Cowl Side Panel RH

: SPLICE POINTS

Code	See Page	Wire Harness with Splice Points	Code	See Page	Wire Harness with Splice Points
B1	42	Front Door LH Wire			


L
1
IL1
L
1
BU2
L
5
P15
POWER SEAT CONTROL SW (FRONT PASSENGER' S SIDE)
FRONT
REAR
FRONT
REAR
SLIDE
RECLINING
7
8
2
3
4
L-B
L-W
L-R
L-Y
W-B
1
M
2
2
M
1
2
BU2
P21
POWER SEAT MOTOR
(FRONT PASSENGER' S
SEAT SLIDE CONTROL)
P20
POWER SEAT MOTOR
(FRONT PASSENGER' S
SEAT RECLINING
CONTROL)
W-B
5
IL1
W-B
W-B

∗1 : w/ Daytime Running Light
∗2 : w/o Daytime Running Light