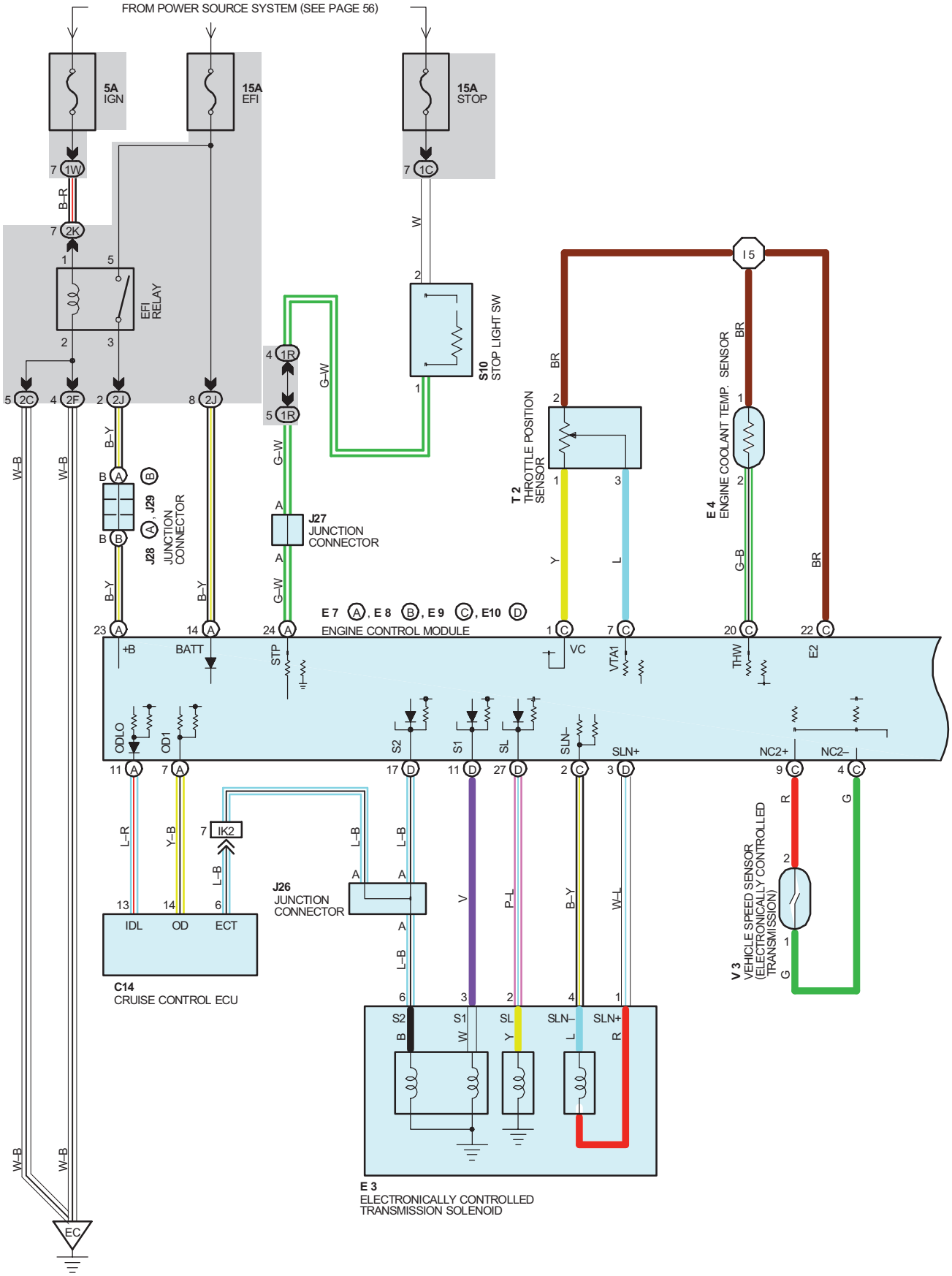
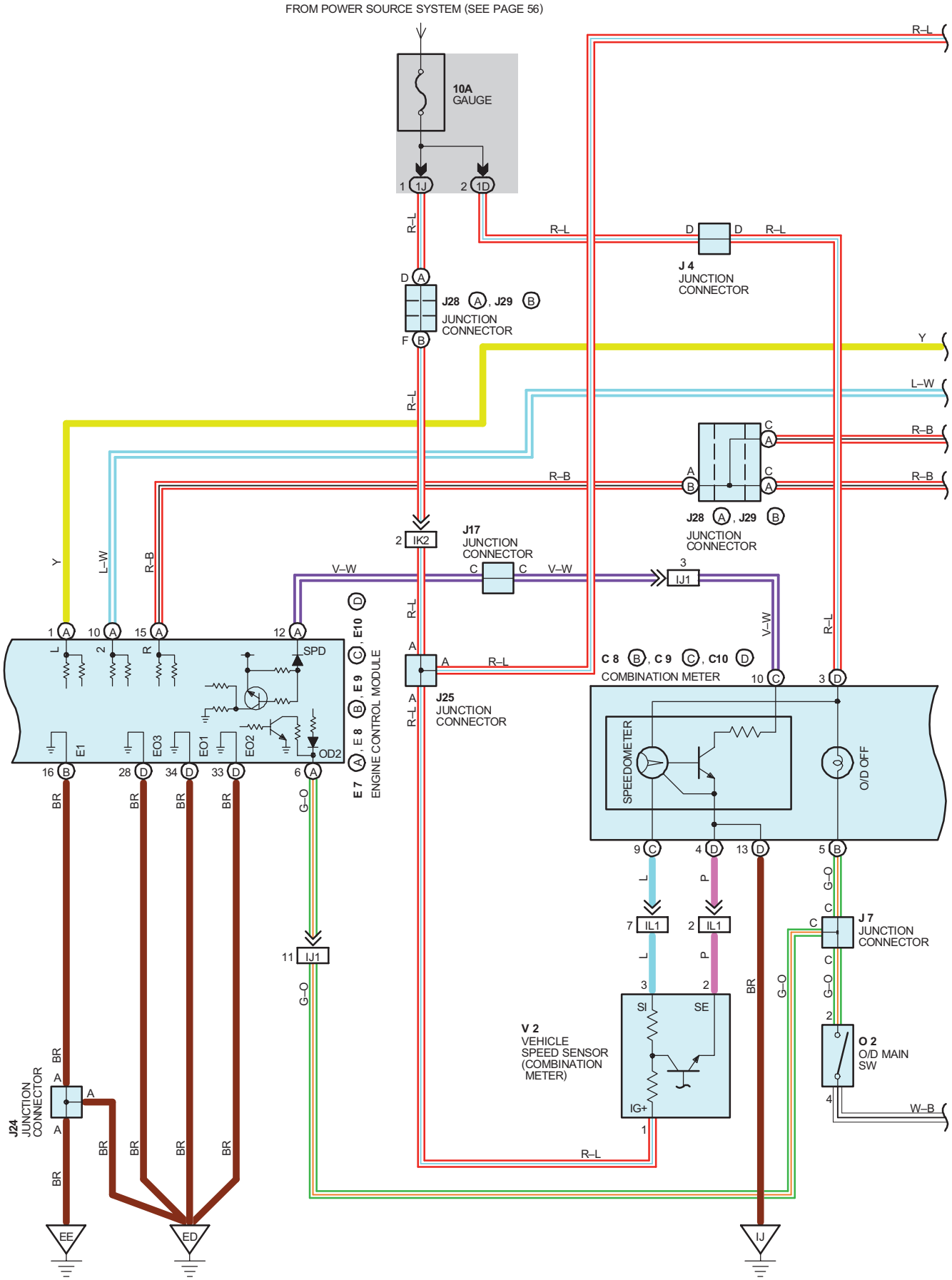
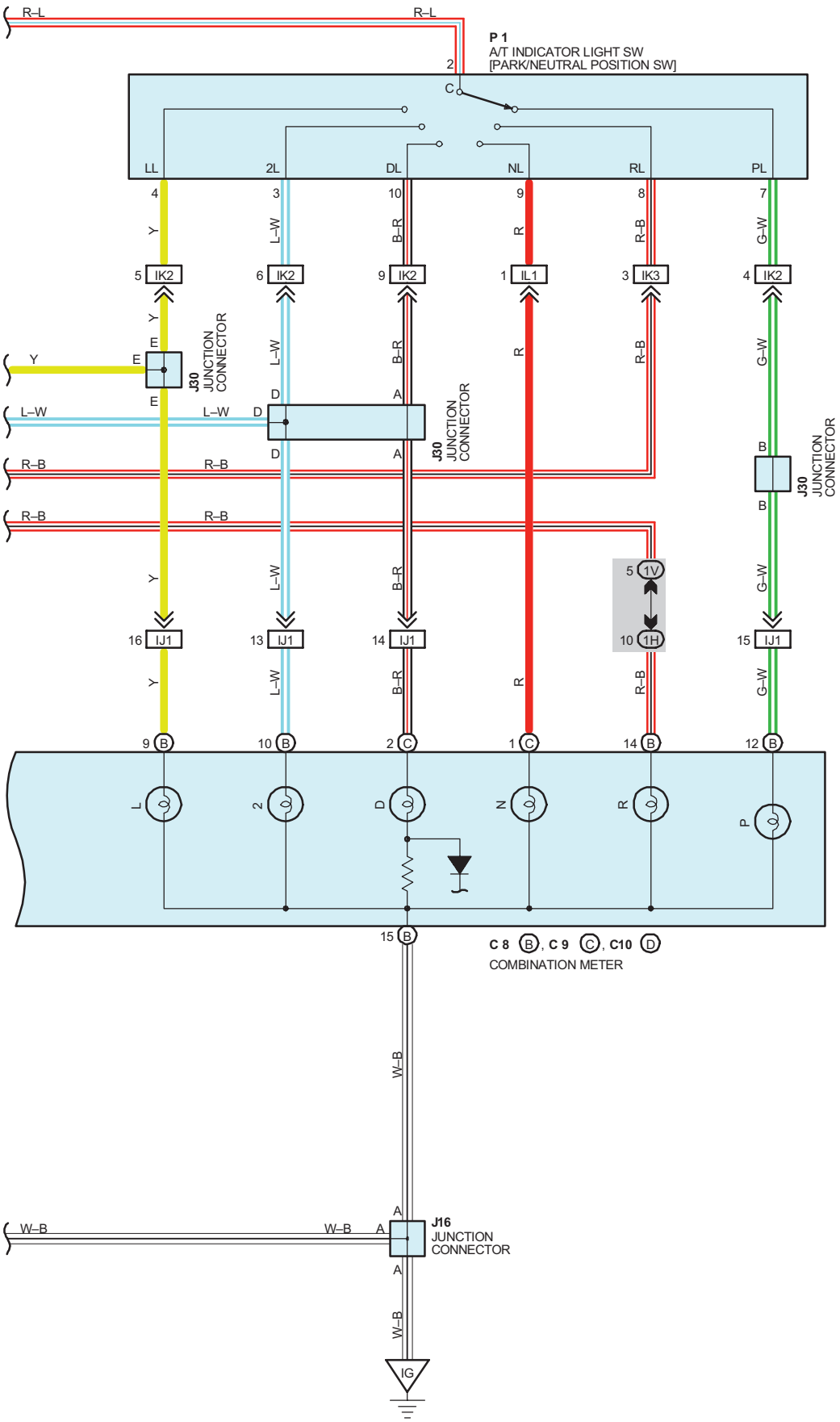
ELECTRONICALLY CONTROLLED TRANSMISSION



AND A/T INDICATOR




R–L
R–L
P 1
A/T INDICATOR LIGHT SW
[PARK/NEUTRAL POSITION SW]
2
C
LL
2L
DL
NL
RL
PL
4
3
10
9
8
7
Y
L–W
B–R
R
R–B
G–W
5 IK2
6 IK2
9 IK2
1 IL1
3 IK3
4 IK2
J30
JUNCTION
CONNECTOR
E
D
A
B
L–W
R–B
16 IJ1
13 IJ1
14 IJ1
5 1V
10 1H
15 IJ1
9 B
10 B
2 C
1 C
14 B
12 B
L
2
D
N
R
P
15 B
C 8 B, C 9 C, C10 D
COMBINATION METER
W–B
J16
JUNCTION
CONNECTOR
IG

AND A/T INDICATOR

SYSTEM OUTLINE

PREVIOUS AUTOMATIC TRANSAXLE HAVE SELECTED EACH GEAR SHIFT USING THE 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 CONTROL OF THE SOLENOID VALVE BASED ON THE INPUT SIGNAL 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 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 NC2+** 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 → **TERMINAL 3** OF THE ELECTRONICALLY CONTROLLED TRANSMISSION SOLENOID → **GROUND**, AND CONTINUITY TO THE NO. 1 SOLENOID CAUSES THE SHIFT.

FOR THE 2ND SPEED, CURRENT FLOWS FROM **TERMINAL S** OF THE ENGINE CONTROL MODULE → **TERMINAL 3** OF THE ELECTRONICALLY CONTROLLED TRANSMISSION SOLENOID → **GROUND**, AND FROM **TERMINAL S2** OF THE ENGINE CONTROL MODULE → **TERMINAL 6** OF THE ELECTRONICALLY CONTROLLED TRANSMISSION SOLENOID → **GROUND**, AND CONTINUITY TO SOLENOID NO. 1 AND NO. 2 CAUSES THE SHIFT.

FOR THE 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 JUDGES FROM EACH SIGNAL THAT LOCK–UP OPERATION CONDITIONS HAVE BEEN MET, CURRENT FLOWS FROM **TERMINAL SL** OF THE ENGINE CONTROL MODULE → **TERMINAL 2** OF THE ELECTRONICALLY CONTROLLED TRANSMISSION SOLENOID → **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

* OVERDRIVE ON

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

* OVERDRIVE OFF

  WHEN THE O/D MAIN SW IS TURNED TO OFF (O/D OFF INDICATOR LIGHT TURNS ON), 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 AND ENGINE CONTROL MODULE OPERATION PREVENTS SHIFT INTO OVERDRIVE.

ELECTRONICALLY CONTROLLED TRANSMISSION

SERVICE HINTS

E 7 Ⓐ, E 8 Ⓑ,E 9 Ⓒ,E10 Ⓓ ENGINE CONTROL MODULE

S1, S2–E1 : **9.0–14.0** VOLTS WITH THE SOLENOID ON
0–1.5 VOLTS WITH SOLENOID OFF
L–E1 : **7.5–14.0** VOLTS WITH THE IGNITION SW ON AND SHIFT LEVER AT **L** POSITION
2–E1 : **7.5–14.0** VOLTS WITH THE IGNITION SW ON AND SHIFT LEVER AT **2** POSITION
R–E1 : **7.5–14.0** VOLTS WITH THE IGNITION SW ON AND SHIFT LEVER AT **R** POSITION
STP–E1 : **9.0–14.0** VOLTS WITH THE IGNITION SW ON AND BRAKE PEDAL DEPRESSED
THW–E2 : **0.2–1.0** VOLTS WITH THE ENGINE COOLANT TEMP. **60•**C (**140•**F) **–120•**C (**248•**F)
VTA1–E2 : **0.3–0.8** VOLTS WITH THE IGNITION SW ON AND THROTTLE VALVE FULLY CLOSED
3.2–4.9 VOLTS WITH THE IGNITION SW ON AND THROTTLE VALVE FULLY OPENED
VC–E2 : **4.5–5.5** VOLTS WITH THE IGNITION SW AT **ON** POSITION
OD1–E1 : **4.5–5.5** VOLTS WITH THE IGNITION SW AT **ON** POSITION
0D2–E1 : **9.0–14.0** VOLTS WITH THE IGNITION SW **ON** AND O/D MAIN SW TURNED OFF
0–3.0 VOLTS WITH THE IGNITION SW ON AND O/D MAIN SW TURNED ON
+B–E1 : **9.0–14.0** VOLTS WITH THE IGNITION SW AT **ON** POSITION

0 2 O/D MAIN SW

2–4 : CLOSED WITH THE O/D MAIN SW OFF, OPEN WITH THE O/D MAIN SW ON

: PARTS LOCATION

CODE		SEE PAGE	CODE		SEE PAGE	CODE		SEE PAGE
C 8	B	28	E10	D	28	J28	A	29
C 9	C	28	J 4		29	J29	B	29
C10	D	28	J 7		29	J30		29
C14		28	J16		29	O 2		29
E 3		26	J17		29	P 1		27
E 4		26	J24		29	S10		29
E 7	A	28	J25		29	T 2		27
E 8	B	28	J26		29	V 2		27
E 9	C	28	J27		29	V 3		27

: JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1C	24	COWL WIRE AND INSTRUMENT PANEL J/B (LOWER FINISH PANEL)
1D	24	INSTRUMENT PANEL WIRE AND INSTRUMENT PANEL J/B (LOWER FINISH PANEL)
1H		
1J	24	COWL WIRE AND INSTRUMENT PANEL J/B (LOWER FINISH PANEL)
1R		
1V		
1W		
2C	20	ENGINE ROOM MAIN WIRE AND ENGINE ROOM J/B (ENGINE COMPARTMENT LEFT)
2F		
2J	20	COWL WIRE AND ENGINE ROOM J/B (ENGINE COMPARTMENT LEFT)
2K		

: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
IJ1	38	INSTRUMENT PANEL WIRE AND COWL WIRE (UNDER THE GLOVE BOX)
IK2	38	ENGINE WIRE AND COWL WIRE (UNDER THE GLOVE BOX)
IK3		
IL1	38	ENGINE WIRE AND INSTRUMENT PANEL WIRE (UNDER THE GLOVE BOX)

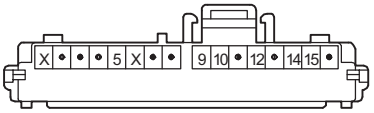
: GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
EC	34	LEFT RADIATOR SIDE SUPPORT
ED	34	SURGE TANK RH
EE	34	REAR SIDE OF SURGE TANK
IG	36	LEFT KICK PANEL
IJ	36	INSTRUMENT PANEL BRACE RH

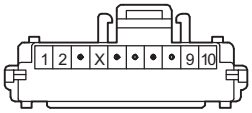
: SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I 5	38	ENGINE WIRE			

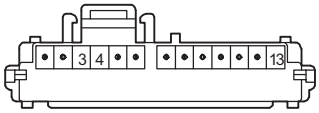
C8 (B)



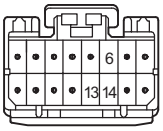
C9 (C) GRAY



C10 (D) BROWN



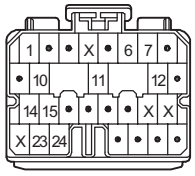
C14



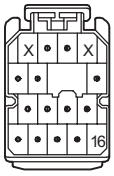
E3 GRAY

E4 DARK GRAY

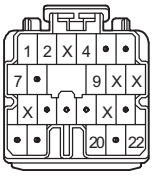
E7 (A)



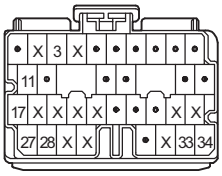
E8 (B)



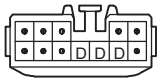
E9 (C)



E10 (D)



J4 BLACK

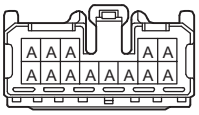


(HINT : SEE PAGE 7)

J7

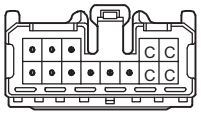
(HINT : SEE PAGE 7)

J16 ORANGE



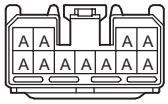
(HINT : SEE PAGE 7)

J17 BLUE



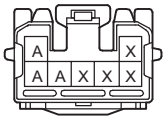
(HINT : SEE PAGE 7)

J24



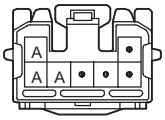
(HINT : SEE PAGE 7)

J25



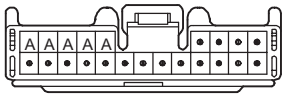
(HINT : SEE PAGE 7)

J26



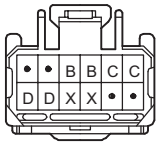
(HINT : SEE PAGE 7)

J27



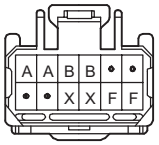
(HINT : SEE PAGE 7)

J28 (A)



(HINT : SEE PAGE 7)

J29 (B)

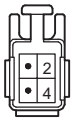


(HINT : SEE PAGE 7)

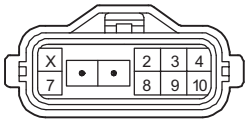
J30

(HINT : SEE PAGE 7)

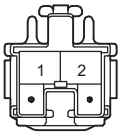
O2 BLUE



P1 GRAY



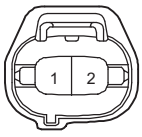
S10 BLUE

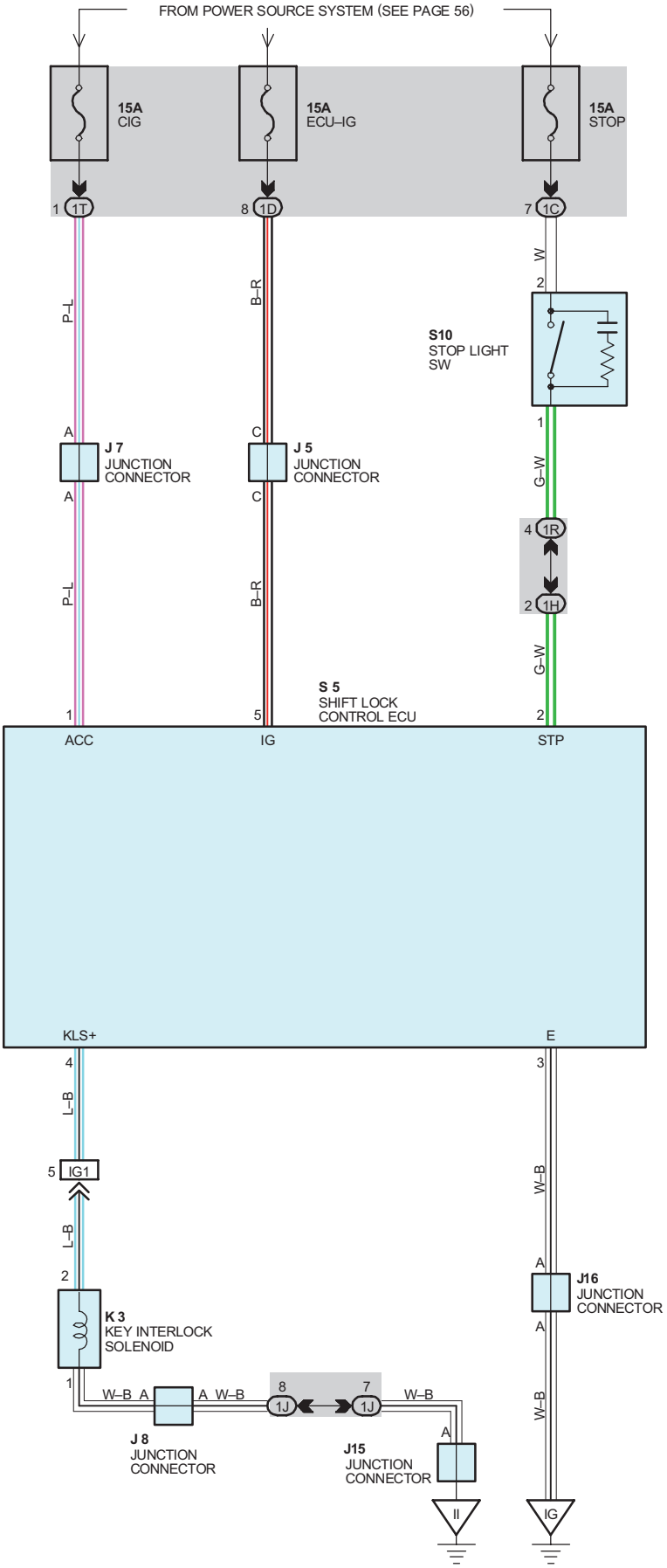


T2 BLACK

V2 BLACK

V3 BLACK




FROM POWER SOURCE SYSTEM (SEE PAGE 56)
15A
CIG
15A
ECU–IG
15A
STOP
1
1T
8
1D
7
1C
P–L
B–R
W
2
S10
STOP LIGHT
SW
A
J 7
JUNCTION
CONNECTOR
A
C
J 5
JUNCTION
CONNECTOR
C
1
G–W
4
1R
2
1H
P–L
B–R
G–W
S 5
SHIFT LOCK
CONTROL ECU
1
5
2
ACC
IG
STP
KLS+
E
4
3
L–B
W–B
5
IG1
L–B
A
J16
JUNCTION
CONNECTOR
2
A
K 3
KEY INTERLOCK
SOLENOID
1
W–B
A
A
W–B
8
1J
7
1J
W–B
W–B
A
J 8
JUNCTION
CONNECTOR
J15
JUNCTION
CONNECTOR
II
IG