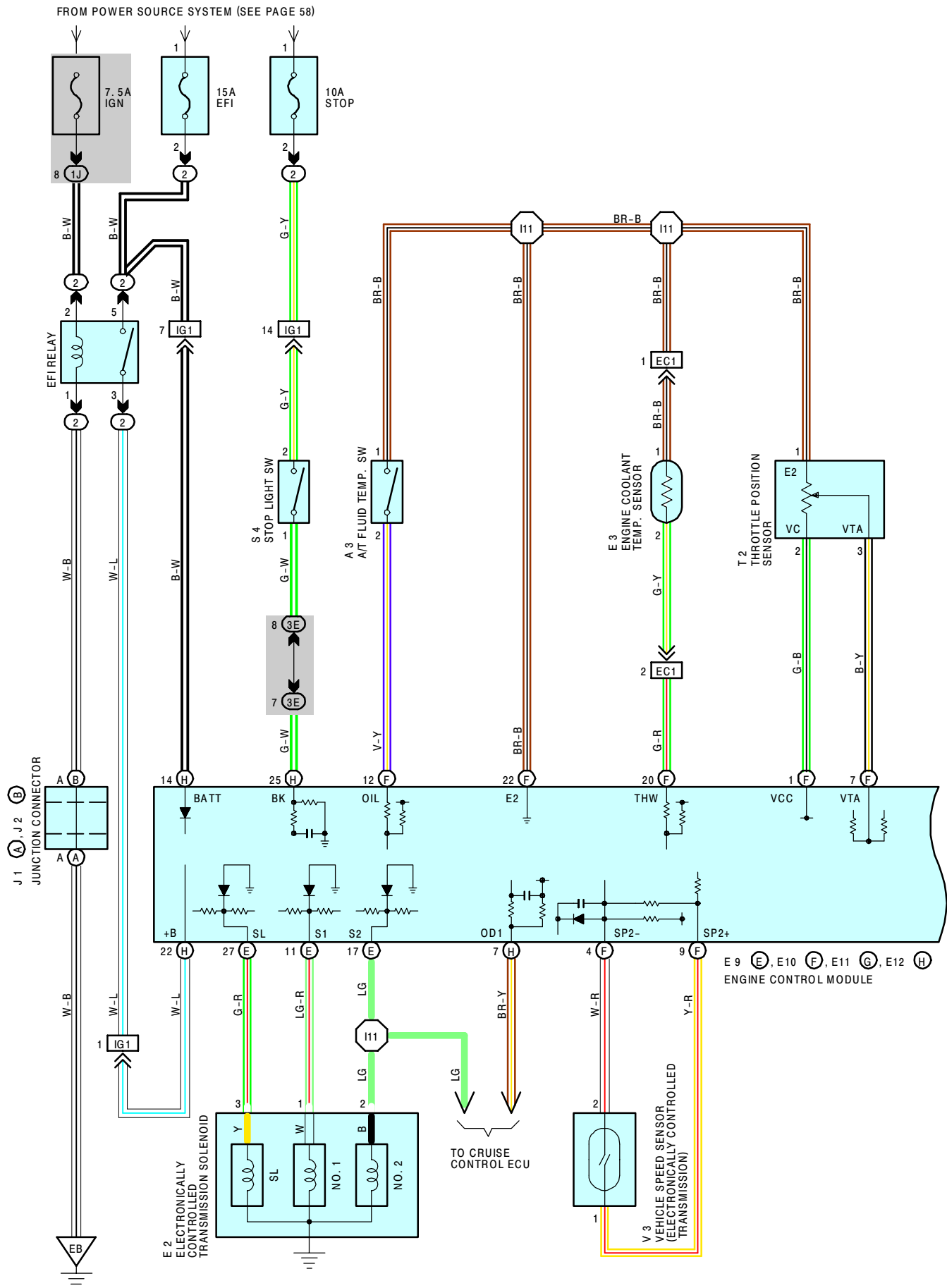




SYSTEM OUTLINE

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 PRESSURE 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 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 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 → **TERMINAL 1** OF THE ELECTRONICALLY CONTROLLED TRANSMISSION SOLENOID → **GROUND**, AND CONTINUITY TO THE NO.1 SOLENOID CAUSES THE SHIFT.

FOR 2ND SPEED, CURRENT FLOWS FROM **TERMINAL S1** OF THE ENGINE CONTROL MODULE → **TERMINAL 1** OF THE ELECTRONICALLY CONTROLLED TRANSMISSION SOLENOID → **GROUND**, AND FROM **TERMINAL S2** OF THE ENGINE CONTROL MODULE → **TERMINAL 2** OF THE ELECTRONICALLY CONTROLLED TRANSMISSION SOLENOID → **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 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 3** 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 BK** 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 OD2** 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 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 AND ENGINE CONTROL MODULE OPERATION PREVENTS SHIFT INTO OVERDRIVE.

5. A/T OIL TEMP. WARNING

WHEN THE A/T FLUID TEMP. SW 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 → **TERMINAL OIL-W** OF THE ENGINE CONTROL MODULE → **GROUND**, SO THAT THE 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.

SERVICE HINTS

E 2 ELECTRONICALLY CONTROLLED TRANSMISSION SOLENOID

1, 2, 3-GROUND : APPROX. 13 Ω

P 1 PARK/NEUTRAL POSITION SW

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

S 3 O/D MAIN SW

5-10 : OPEN WITH O/D MAIN SW AT ON POSITION

CLOSED WITH O/D MAIN SW AT OFF POSITION

S 4 STOP LIGHT SW

1-2 : CLOSED WITH BRAKE PEDAL DEPRESSED

E 9 (E), E10 (F), E 11 (G), E12 (H) ENGINE CONTROL MODULE

S1, S2, SL : 9-14 VOLTS

BK -E1 : 7.5-14 VOLTS WITH BRAKE PEDAL DEPRESSED

: 0-1.5 VOLTS WITH BRAKE PEDAL RELEASED

THW -E2 : 0.2-1.0 VOLTS WITH COOLANT TEMP. 80°C (176°F)

OIL -E2 : 4-5 VOLTS WITH FLUID TEMP. 20°C (68°F)

VTA -E2 : APPROX. 4 VOLTS WITH THROTTLE VALVE FULLY CLOSED

: APPROX. 0.6 VOLTS WITH THROTTLE VALVE FULLY OPEN

VCC -E2 : 4.5-5.5 VOLTS

ODI -E1 : 4.5-5.5 VOLTS

OD2 -E1 : 9-14 VOLTS O/D MAIN SW TURNED ON

: 0 VOLTS O/D MAIN SW TURNED OFF

SP1 -E1 : PULSE GENERATION WITH VEHICLE MOVING

2 -E1 : 10-14 VOLTS WITH SHAFT LEVER AT 2 POSITION

: 0-2 VOLTS WITH SHIFT LEVER AT EXCEPT 2 POSITION

L -E1 : 10-14 VOLTS WITH SHIFT LEVER AT L POSITION

: 0-2 VOLTS WITH SHIFT LEVER AT EXCEPT L POSITION

OIL-W-E1 : 0.1-4.9 VOLTS

+B -E1 : 9-14 VOLTS

BATT -E1 : 9-14 VOLTS

○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
A 3	28	E 9	E 31	J 6	31
C10	A 30	E10	F 31	J 9	31
C11	B 30	E11	G 31	P 1	27 (5VZ-FE)
C12	C 30	E12	H 31	S 3	31
D 5	26 (5VZ-FE)	J 1	A 27 (5VZ-FE)	S 4	31
E 2	26 (5VZ-FE)	J 2	B 27 (5VZ-FE)	T 2	27 (5VZ-FE)
E 3	26 (5VZ-FE)	J 4	31	V 3	27 (5VZ-FE)
E 4	31	J 5	31		

○ : RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
2	20 (USA) 21 (CANADA)	ENGINE ROOM R/B (ENGINE COMPARTMENT LEFT)

○ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1F	22	COWL WIRE AND DRIVER SIDE J/B (LOWER FINISH PANEL)
1J	22	ENGINE ROOM MAIN WIRE AND DRIVER SIDE J/B (LOWER FINISH PANEL)
3C	24	COWL WIRE AND CENTER J/B (NEAR THE STEERING COLUMN TUBE)
3D		
3E		

 : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EC1	36 (5VZ-FE)	ENGINE WIRE AND WATER TEMP. SENSOR WIRE (FRONT SIDE OF CYLINDER HEAD COVER RIGHT)
IG1	40	ENGINE ROOM MAIN WIRE AND COWL WIRE (LEFT KICK PANEL)
II3	40	ENGINE WIRE AND COWL WIRE (ON THE GLOVE BOX)

 : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
EB	36 (5VZ-FE)	FRONT LEFT FENDER
ID	40	LEFT KICK PANEL
IE	40	COWL SIDE PANEL LH
IF	40	COWL SIDE PANEL RH

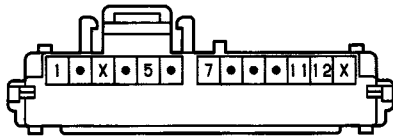
 : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I10	40	COWL WIRE	I11	40	ENGINE WIRE

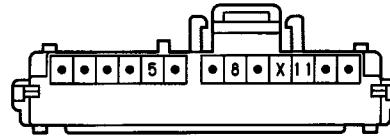
A 3 GRAY



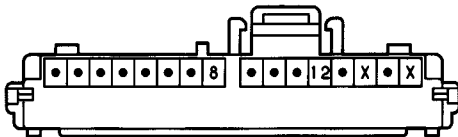
C10 A BROWN



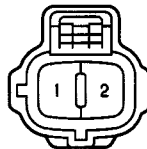
C11 B BLUE



C12 C



D 5 GRAY



E 2 BLACK



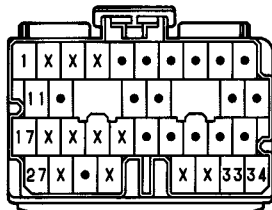
E 3 DARK GRAY



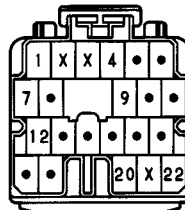
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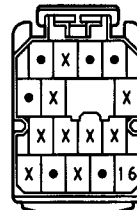
E 9 E



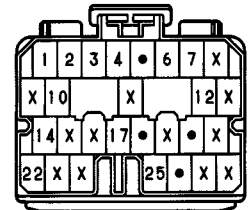
E10 F



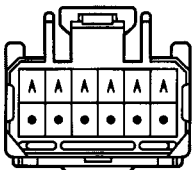
E11 G



E12 H

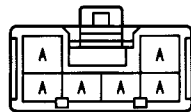


J 1 A, J 2 B GRAY



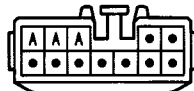
(HINT:SEE PAGE 7)

J 4, J 9



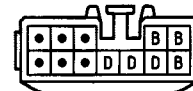
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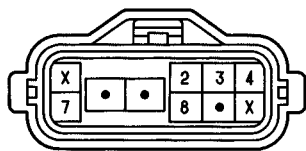
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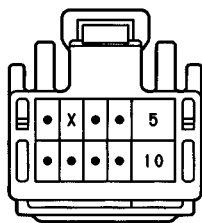


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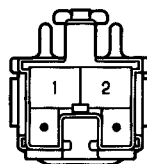
P 1 GRAY



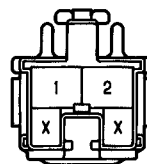
S 3



(W/ CRUISE S 4
CONTROL)



(W/O CRUISE S 4 BLACK
CONTROL)



T 2 BLACK



V 3 BLACK

