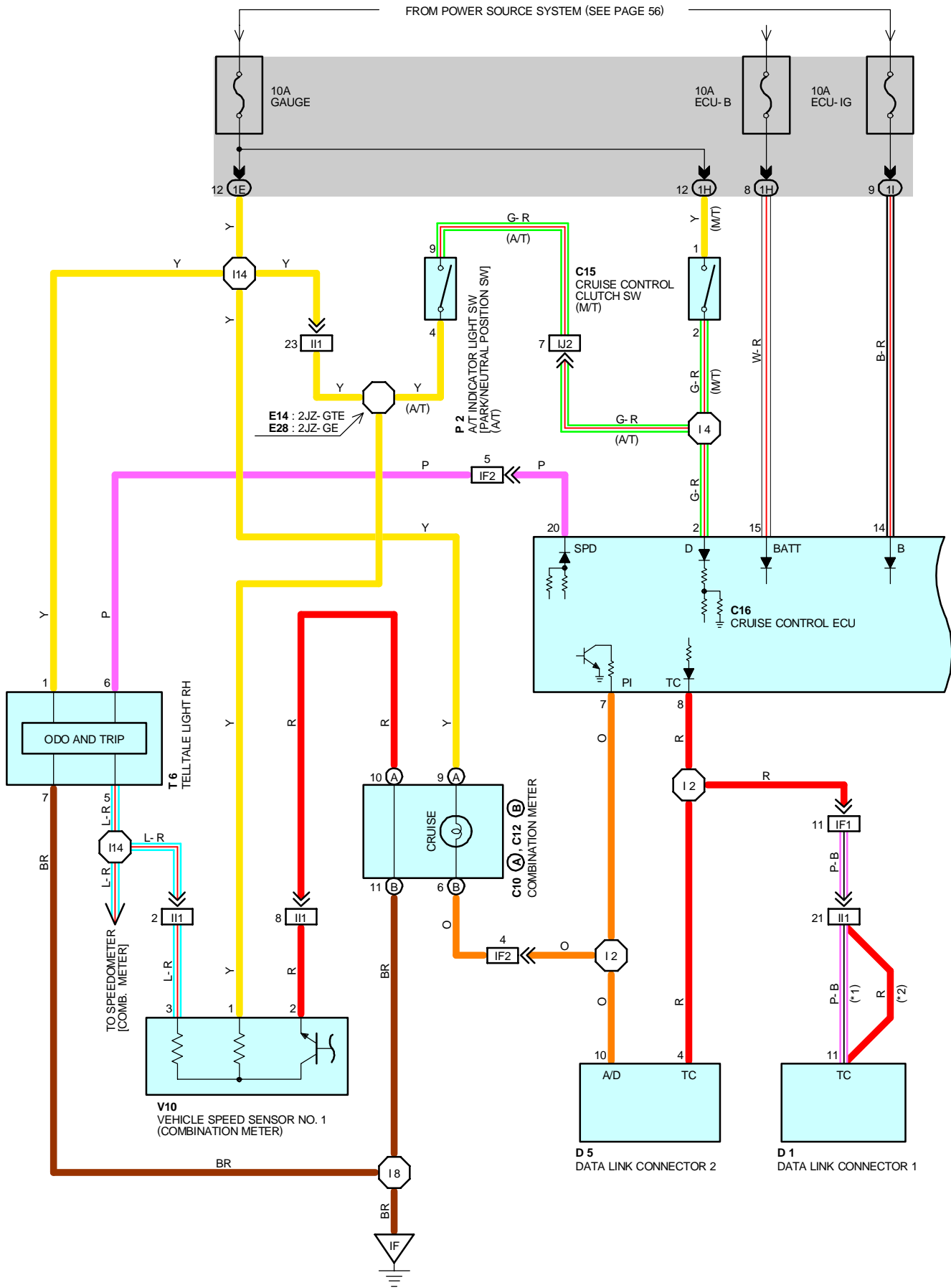
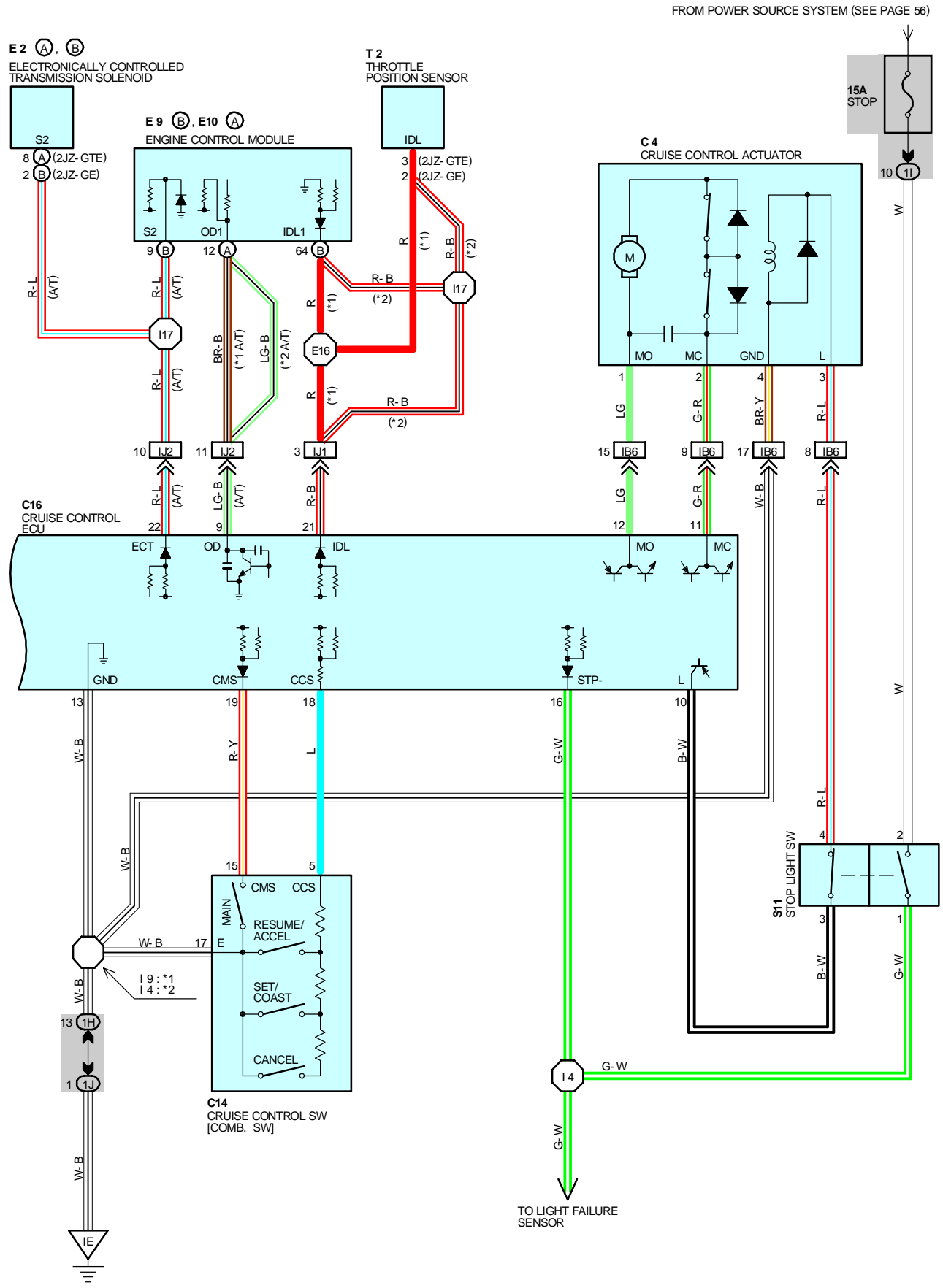




CRUISE CONTROL







CRUISE CONTROL

SYSTEM OUTLINE

CURRENT IS APPLIED AT ALL TIMES THROUGH **STOP FUSE** TO **TERMINAL 1** OF THE CRUISE CONTROL ECU, **TERMINAL 2** OF THE STOP LIGHT SW, AND ALSO THROUGH THE **ECU-B FUSE** TO **TERMINAL 15** OF THE CRUISE CONTROL ECU.

WITH THE IGNITION SW TURNED TO ON, THE CURRENT FLOWS THROUGH GAUGE FUSE TO **TERMINAL (A) 9** OF THE COMBINATION METER AND THE CURRENT THROUGH **ECU-IG FUSE** FLOWS TO **TERMINAL 14** OF THE CRUISE CONTROL ECU.

WHEN THE IGNITION SW IS ON AND THE CRUISE CONTROL MAIN SWITCH IS TURNED ON, A SIGNAL IS INPUT FROM **TERMINAL 15** OF CRUISE CONTROL MAIN SW TO **TERMINAL 19** OF THE CRUISE CONTROL ECU. AS A RESULT, THE CRUISE CONTROL ECU FUNCTIONS AND THE CURRENT FLOWS THROUGH **TERMINAL 14** OF THE CRUISE CONTROL ECU TO **TERMINAL 13** OF THE 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 TO **TERMINAL (A) 9** OF THE CRUISE CONTROL INDICATOR LIGHT → **TERMINAL (B) 6** → **TERMINAL 7** OF THE CRUISE CONTROL ECU → **TERMINAL 13** → **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 MAIN SW IS TURNED ON AND THE SET SW IS PUSHED WITH THE VEHICLE SPEED WITHIN THE SET LIMIT (APPROX. **40 KM/H, 25 MPH** TO **200 KM/H, 124 MPH**), A SIGNAL IS INPUT TO **TERMINAL 18** OF THE CRUISE CONTROL ECU AND THE VEHICLE SPEED AT THE TIME THE SET SW IS RELEASED, WHICH 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 INPUTS INTO **TERMINAL 20** OF THE CRUISE CONTROL ECU FROM THE SPEED SENSOR, 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** → **TERMINAL 1** OF THE CRUISE CONTROL ACTUATOR → **TERMINAL 2** → **TERMINAL 11** OF THE 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 THE ECU → **TERMINAL 2** OF THE CRUISE CONTROL ACTUATOR → **TERMINAL 1** → **TERMINAL 12** OF THE 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 SWITCH IS TURNED OFF 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. **40 KM/H, 25 MPH**) AFTER CANCELING THE SET SPEED BY THE CANCEL SW, PUSHING THE RESUME SW WILL CAUSE THE VEHICLE TO RESUME THE SPEED SET BEFORE THE CANCELLATION.

6. MANUAL CANCEL MECHANISM

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

- * PLACING THE SHIFT LEVER IN EXCEPT "D" POSITION (PARK/NEUTRAL POSITION SW EXCEPT "D" POSITION). "SIGNAL IS NOT INPUT TO **TERMINAL 2** OF THE ECU" (A/T)
- * DEPRESSING THE BRAKE PEDAL (STOP LIGHT SW ON). "SIGNAL IS INPUT TO **TERMINAL 16** OF THE ECU"
- * PUSHING THE CANCEL SWITCH (CANCEL SW ON). "SIGNAL IS INPUT TO **TERMINAL 18** OF THE ECU"
- * DEPRESSING THE CLUTCH PEDAL (CRUISE CONTROL CLUTCH SW OFF). "SIGNAL IS NOT INPUT TO **TERMINAL 2** OF THE ECU"

7. AUTO CANCEL FUNCTION

A) IF ANY OF THE FOLLOWING OPERATING CONDITIONS OCCUR DURING CRUISE CONTROL OPERATION, THE SET SPEED IS ERASED, CURRENT FLOW TO 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 MAGNETIC CLUTCH.
- * WHEN CURRENT CONTINUED TO FLOW TO THE MOTOR INSIDE THE ACTUATOR IN THE THROTTLE VALVE "OPEN" DIRECTION.
- * OPEN CIRCUIT IN MAGNETIC CLUTCH.
- * MOMENTARY INTERRUPTION OF VEHICLE SPEED SIGNAL.
- * 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 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.

8. AUTOMATIC TRANSMISSION CONTROL FUNCTION

- * IN OVERDRIVE. IF THE VEHICLE SPEED BECOMES LOWER THAN THE OVERDRIVE CUT SPEED (SET SPEED MINUS APPROX. **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, VEHICLE SPEED BECOMES HIGHER THAN THE OVERDRIVE RETURN SPEED (SET SPEED MINUS APPROX. **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 **2** SECONDS.
- * DURING CRUISE CONTROL DRIVING, THE CRUISE CONTROL OPERATION SIGNAL IS OUTPUT FROM THE CRUISE CONTROL ECU TO THE ENGINE CONTROL MODULE. UPON RECEIVING THIS SIGNAL, THE ENGINE CONTROL MODULE CHANGES THE SHIFT PATTERN TO NORMAL. TO MAINTAIN SMOOTH CRUISE CONTROL OPERATION (ON A DOWNWARD SLOPE ETC.), LOCK-UP RELEASE OF THE TRANSMISSION WHEN THE IDLING POINT OF THE THROTTLE POSITION IS "ON" IS FORBIDDEN.

SERVICE HINTS

C 4 CRUISE CONTROL ACTUATOR

3-4 : APPROX. **38.5** Ω

C14 CRUISE CONTROL SW [COMB. SW]

15-17 : CONTINUITY WITH THE MAIN SW ON

5-17 : APPROX. **418** Ω WITH THE CANCEL SW ON

APPROX. **68** Ω WITH THE RESUME/ACCEL SW ON

APPROX. **198** Ω WITH THE SET/COAST SW ON

C16 CRUISE CONTROL ECU

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

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

20-GROUND : **4** PULSE WITH **1** ROTATION OF ROTOR SHAFT

18-GROUND : APPROX. **418** Ω WITH THE CANCEL SW ON IN CONTROL SW

APPROX. **198** Ω WITH THE SET/COAST SW ON IN CONTROL SW

APPROX. **68** Ω WITH THE RESUME/ACCEL SW ON IN CONTROL SW

13-GROUND : ALWAYS CONTINUITY



CRUISE CONTROL

○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
C 4	24 (2JZ-GTE)	D 1	26 (2JZ-GE)	S11	29
	26 (2JZ-GE)	D 5	28	T 2	25 (2JZ-GTE)
C10	A 28	E 2	A 24 (2JZ-GTE)		T 6
C12	B 28		B 26 (2JZ-GE)		
C14	28	E 9	B 29	V10	25 (2JZ-GTE)
C15	28	E10	A 29		27 (2JZ-GE)
C16	28	P 2	25 (2JZ-GTE)		
D 1	24 (2JZ-GTE)		17 (2JZ-GE)		

○ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

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

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

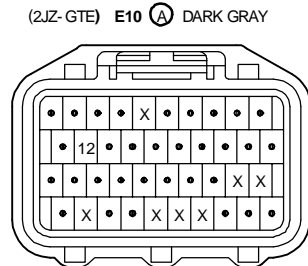
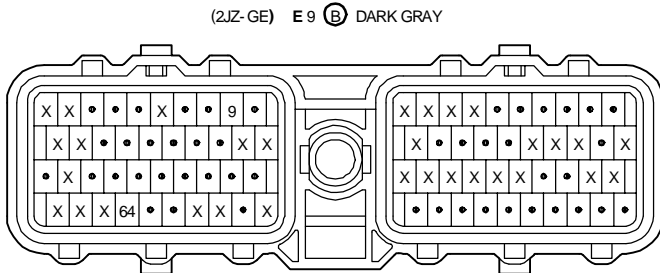
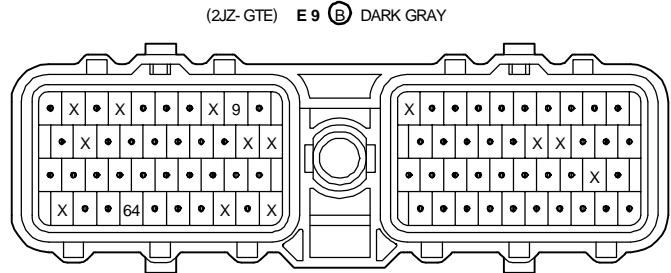
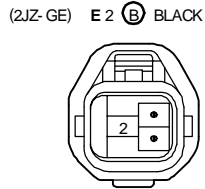
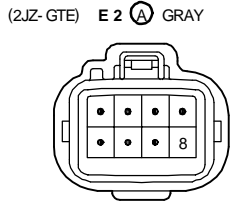
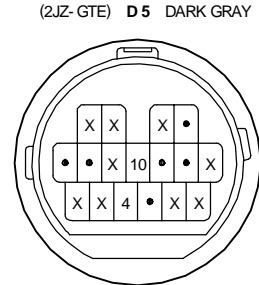
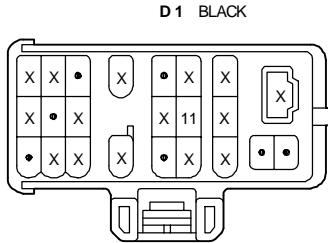
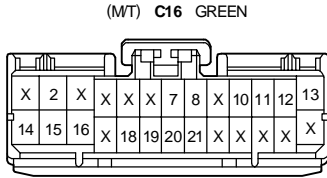
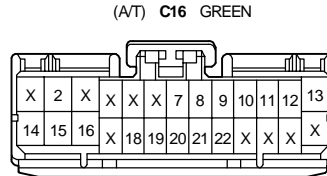
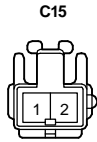
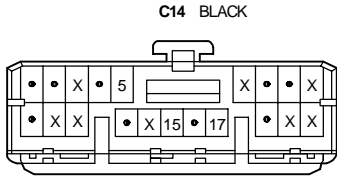
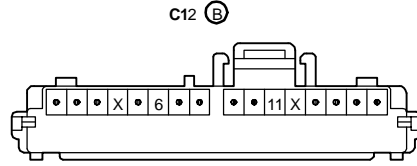
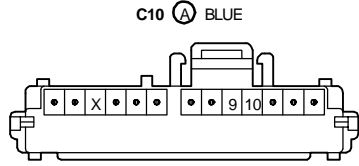
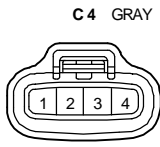
CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
IB6	36	ENGINE ROOM MAIN WIRE AND COWL WIRE (RIGHT KICK PANEL)
IF1	36	INSTRUMENT PANEL WIRE AND COWL WIRE (INSTRUMENT PANEL REINFORCEMENT LH)
IF2		
II1	38	ENGINE WIRE AND INSTRUMENT PANEL WIRE (RIGHT KICK PANEL)
IJ1	38	ENGINE WIRE AND COWL WIRE (RIGHT KICK PANEL)
IJ2		

▽ : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
IE	36	LEFT KICK PANEL
IF		

○ : SPLICE POINTS

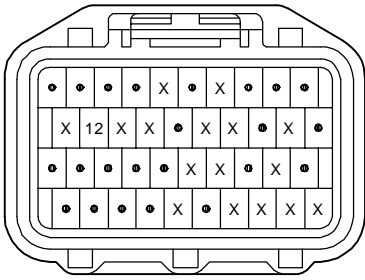
CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
E14	32	ENGINE WIRE	I4	38	COWL WIRE
E16			I8	38	INSTRUMENT PANEL WIRE
E28	34	I14			
I2	38	COWL WIRE	I17	38	ENGINE WIRE



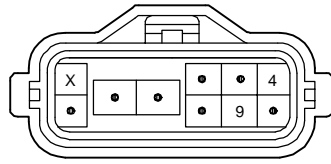


CRUISE CONTROL

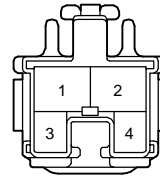
(2JZ-GE) E10 (A) DARK GRAY



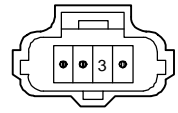
P 2 GRAY



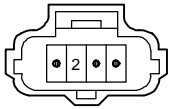
S11 BLUE



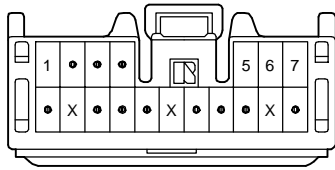
(2JZ-GTE) T 2 BLACK



(2JZ-GE) T 2 BLACK



T 6



V10 BLACK

