



CRUISE CONTROL

SYSTEM OUTLINE

CURRENT IS APPLIED AT ALL TIMES THROUGH **STOP** FUSE TO **TERMINAL 2** OF THE STOP LIGHT SW AND ALSO THROUGH THE **DOM**E 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)1** OF THE CRUISE CONTROL INDICATOR LIGHT, AND THE CURRENT FLOWS THROUGH **ECU-IG** FUSE TO **TERMINAL 14** OF THE CRUISE CONTROL ECU.

WHEN THE IGNITION SW IS ON AND THE CRUISE CONTROL SW IS TURNED ON, A SIGNAL IS INPUT FROM **TERMINAL 4** OF THE CRUISE CONTROL SW TO **TERMINAL 18** OF THE CRUISE CONTROL ECU. AS A RESULT, THE CRUISE CONTROL ECU FUNCTIONS AND THE CURRENT FLOWS FROM **TERMINAL 14** OF THE CRUISE CONTROL ECU TO **TERMINAL 13** → **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 (A)1** 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 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 SET SW IS RELEASED IS MEMORIZED IN THE CRUISE CONTROL ECU AS SET SPEED.

2. SET SPEED CONTROL

DURING CRUISE CONTROL DRIVING, THE CRUISE CONTROL ECU COMPARES THE SET SPEED MEMORIZED IN THE CRUISE CONTROL ECU WITH THE ACTUAL VEHICLE SPEED INPUT INTO **TERMINAL 20** OF THE CRUISE CONTROL ECU FROM THE VEHICLE 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** OF THE CRUISE CONTROL ECU TO **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 ACTUATOR DRIVING SPEED IS HIGHER THAN THE SET SPEED, THE CURRENT TO THE CRUISE CONTROL ACTUATOR FLOWS FROM **TERMINAL 11** OF THE CRUISE CONTROL ECU TO **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 DRIVE SPEED. THE VEHICLE SPEED WHEN THE COAST SW IS TURNED OFF IS MEMORIZED AND THE VEHICLE CONTINUES AT THE NEW SET SPEED.

4. ACCEL CONTROL

DURING THE 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 CANCELLATION.

6. CANCEL MECHANISM

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

- * DEPRESSING THE BRAKE PEDAL (STOP LIGHT SW ON). "SIGNAL INPUT TO **TERMINAL 2** OF THE CRUISE CONTROL ECU" (M/T).
- * DEPRESSING THE BRAKE PEDAL (STOP LIGHT SW ON). "SIGNAL INPUT TO **TERMINAL 16** OF THE CRUISE CONTROL ECU".
- * PUSH THE CANCEL SW (CANCEL SW ON). "SIGNAL INPUT TO **TERMINAL 18** OF THE CRUISE CONTROL ECU"
- * PLACING THE SHIFT LEVER IN EXCEPT "D" POSITION (D POSITION SW OFF). "SIGNAL INPUT TO **TERMINAL 2** OF THE CRUISE CONTROL ECU" (A/T).

7. AUTO CANCEL FUNCTION

A) IF ANY OF THE FOLLOWING OPERATING CONDITIONS OCCURS DURING CRUISE CONTROL OPERATION, THE SET SPEED IS ERASED, CURRENT FLOW TO THE 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.

- * WHEN CURRENT CONTINUED TO FLOW TO THE MOTOR INSIDE THE ACTUATOR IN THE THROTTLE VALVE "OPEN" DIRECTION.
- * THE MOTOR DOES NOT OPERATE DESPITE THE MOTOR DRIVE SIGNAL BEING OUTPUT.

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

WHEN THIS OCCURS, THE CANCEL STATE IS CLEARED AS THE MAIN SW WILL TURN ON AGAIN.

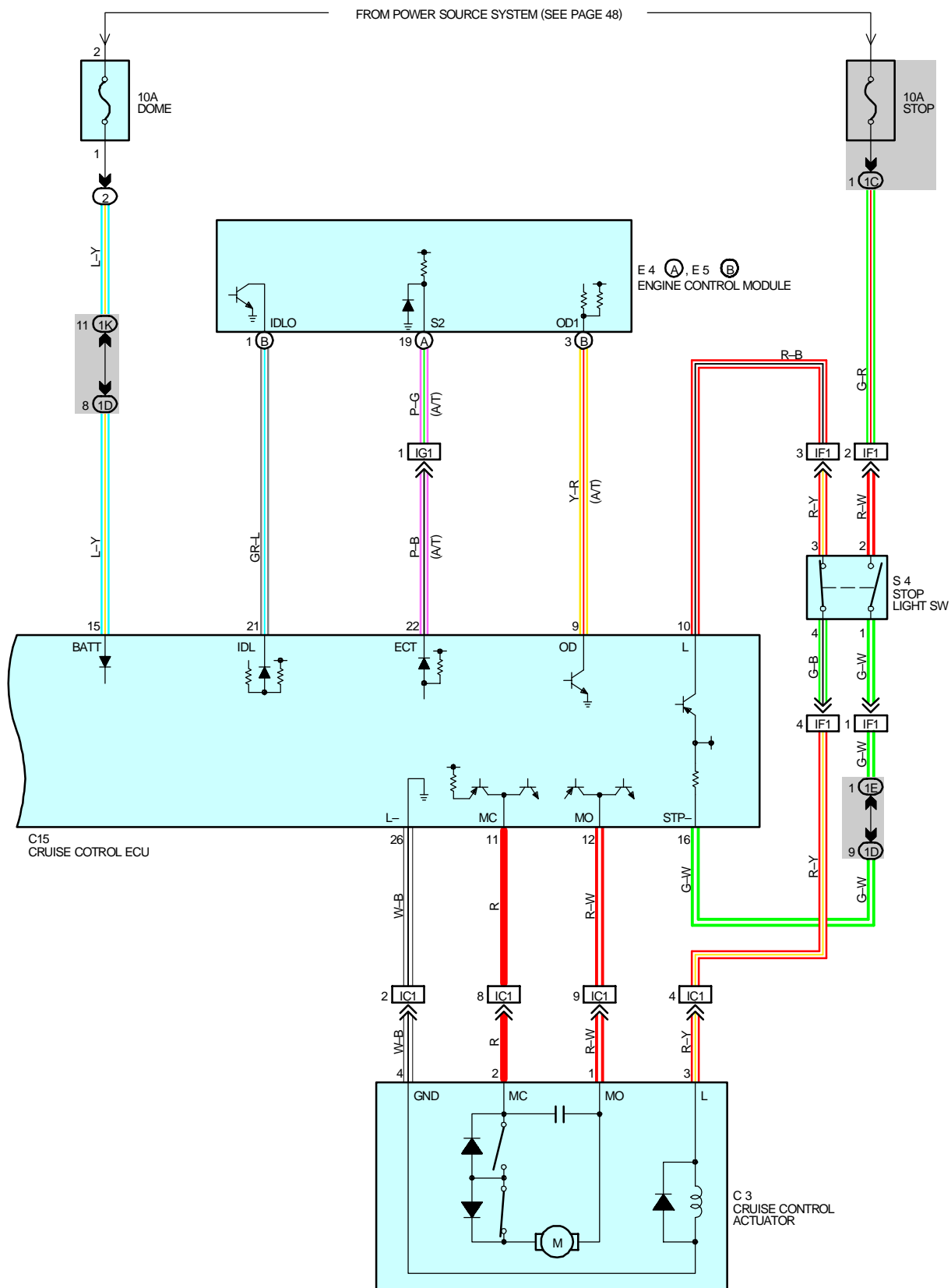
- * OVER CURRENT TO TRANSISTOR DRIVING THE MOTOR AND/OR THE MAGNETIC CLUTCH.
 - * OPEN CIRCUIT IN THE MAGNETIC CLUTCH.
 - * MOMENTARY INTERRUPTION OF VEHICLE SPEED SIGNAL.
 - * SHORT CIRCUIT IN THE CRUISE CONTROL SW.
 - * WHEN THE VEHICLE SPEED FALLS MORE THAN 16 KM/H (10 MPH) BELOW THE SET SPEED, E.G. ON AN UPWARD SLOPE.
- C) IF ANY OF THE FOLLOWING CONDITIONS OCCURS DURING CRUISE CONTROL OPERATION, THE SET SPEED IS ERASED AND THE CRUISE CONTROL IS RELEASED. (THE POWER TO THE 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 POWER TO THE CRUISE CONTROL SYSTEM IS MOMENTARY CUT OFF.
- D) IF THIS OF THE FOLLOWING CONDITION OCCURS DURING CRUISE CONTROL OPERATION. THE CRUISE CONTROL IS RELEASED.

- * OPEN THE CIRCUIT FROM **TERMINAL 3** TO **4** OF THE STOP LIGHT SW (STOP LIGHT SW ON).

8. AUTOMATIC TRANSAXLE 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 THE ACTUATOR'S POTENTIOMETER THAT THE UPWARD SLOPE HAS FINISHED, THE 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.), THE LOCK-UP RELEASE OF THE TRANSAXLE WHEN THE IDLING POINT OF THE THROTTLE POSITION IS "ON" IS FORBIDDEN.







CRUISE CONTROL

SERVICE HINTS

C 3 CRUISE CONTROL ACTUATOR

3-4 : APPROX. 38 Ω

C13 CRUISE CONTROL SW [COMB. SW]

5-3 : CONTINUITY WITH THE MAIN SW ON

4-3 : APPROX. 418 Ω WITH THE CANCEL SW ON

APPROX. 198 Ω WITH THE SET/COAST SW ON

APPROX. 68 Ω WITH THE RESUME/ACCEL SW ON

C15 CRUISE CONTROL ECU

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

15-GROUND : ALWAYS APPROX. 12 VOLTS

20-GROUND : 4 PULSES WITH 1 ROTATION OF THE ROTOR SHAFT

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

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

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

13-GROUND: ALWAYS CONTINUITY



: PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
C 3	24	C14	26	J 3	27
C 8	A 26	C15	26	J 4	27
C 9	B 26	D 1	24	J 5	27
C10	C 26	E 4	A 26	P 1	25
C13	26	E 5	B 26	S 4	27



: 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)
1C	20	INSTRUMENT PANEL WIRE AND DRIVER SIDE J/B (LEFT KICK PANEL)
1D		
1E		
1K	20	ENGINE ROOM MAIN WIRE AND DRIVER SIDE J/B (LEFT KICK PANEL)



: CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EA1	30	ENGINE WIRE AND ENGINE ROOM MAIN WIRE (INSIDE OF THE ENGINE ROOM R/B)
IC1	32	INSTRUMENT PANEL WIRE AND ENGINE ROOM MAIN WIRE (LEFT KICK PANEL)
IF1	34	INSTRUMENT PANEL WIRE AND SWITCH WIRE (NEAR THE STEERING COLUMN)
IG1	34	ENGINE WIRE AND INSTRUMENT PANEL WIRE (NEAR THE BLOWER UNIT)
IG2		



: GROUND POINTS

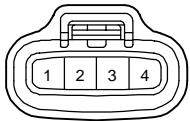
CODE	SEE PAGE	GROUND POINTS LOCATION
ID	32	LEFT KICK PANEL
IE	32	INSTRUMENT PANEL BRACE LH



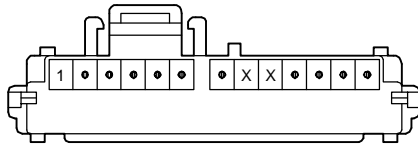
: SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I 7	34	INSTRUMENT PANEL WIRE			

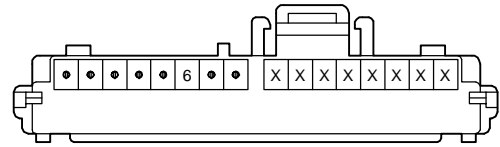
C 3 BLACK



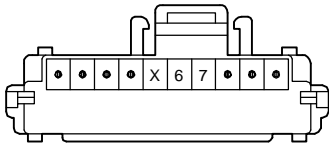
C 8 (A) BROWN



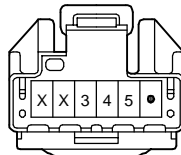
C 9 (B)



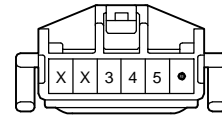
C10 (C) GRAY



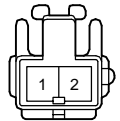
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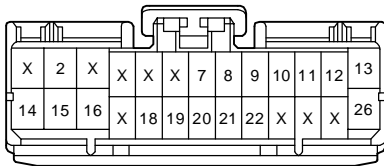
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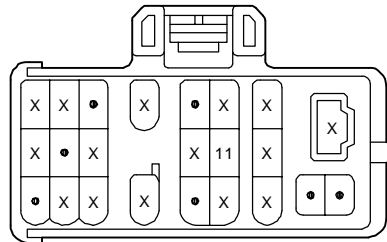
C14



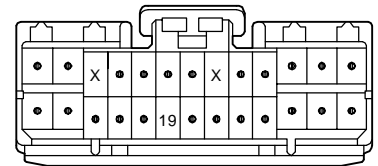
C15 GREEN



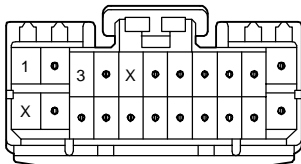
D 1 BLACK



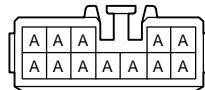
(A/T) E 4 (A)



E 5 (B)

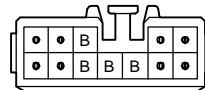


J 3 BLUE



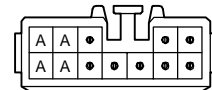
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J 4 GRAY



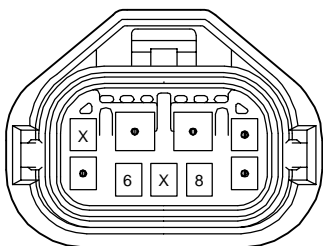
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J 5 GRAY



(HINT : SEE PAGE 7)

P 1 GRAY



S 4

