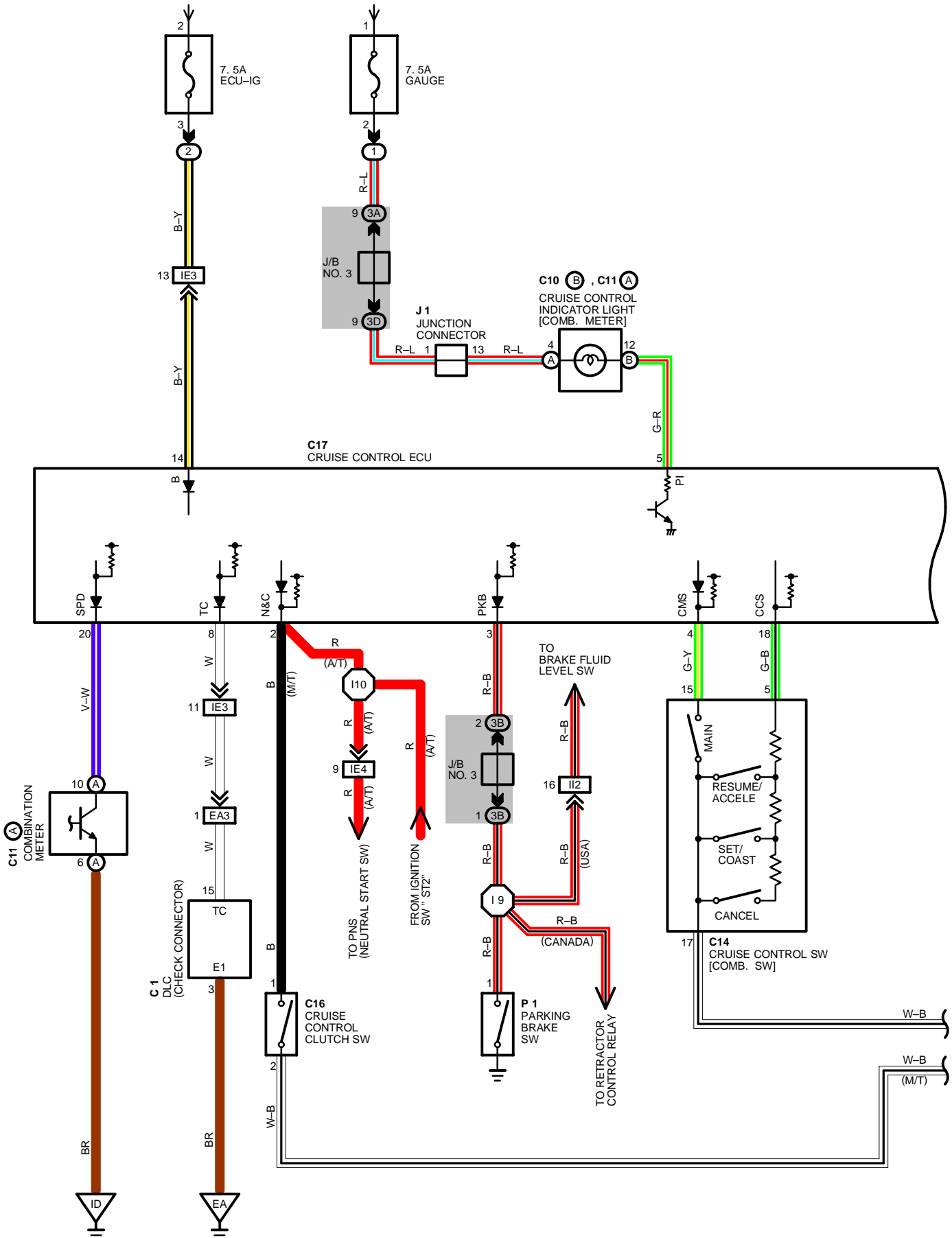
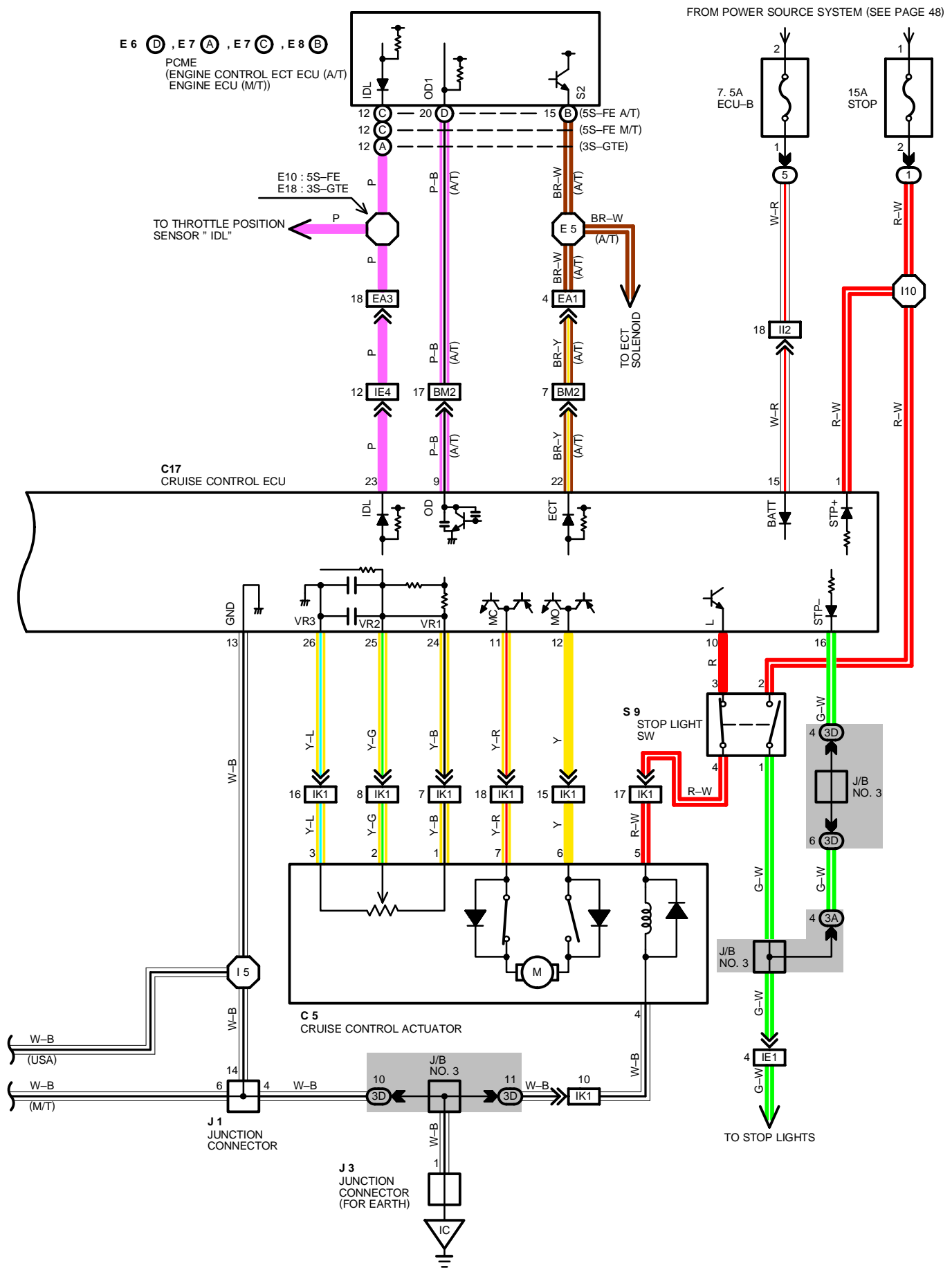


# CRUISE CONTROL

FROM POWER SOURCE SYSTEM (SEE PAGE 48)





# CRUISE CONTROL

## SYSTEM OUTLINE

CURRENT IS APPLIED AT ALL TIMES THROUGH **STOP** FUSE TO **TERMINAL 1** OF THE CRUISE CONTROL ECU AND **TERMINAL 2** OF STOP LIGHT SWITCH.

WITH THE IGNITION SWITCH TURNED ON, THE CURRENT FLOWS THROUGH THE **GAUGE** FUSE TO **TERMINAL (A)4** OF THE CRUISE CONTROL INDICATOR LIGHT. THE CURRENT THROUGH **ECU-IG** FUSE FLOWS TO **TERMINAL 14** OF THE CRUISE CONTROL ECU.

WHEN THE IGNITION SWITCH IS ON AND THE CRUISE CONTROL MAIN SWITCH IS TURNED ON, A SIGNAL IS INPUT FROM **TERMINAL 15** OF CRUISE CONTROL MAIN SWITCH TO **TERMINAL 4** OF THE CRUISE CONTROL ECU. AS A RESULT, THE CRUISE CONTROL ECU FUNCTIONS AND THE CURRENT TO **TERMINAL 14** OF THE CRUISE CONTROL ECU FLOWS 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 FROM **TERMINAL (A)4** OF THE CRUISE CONTROL INDICATOR LIGHT → **TERMINAL (B)11** → **TERMINAL 5** OF THE CRUISE CONTROL ECU → **TERMINAL 13** → **GROUND**, CAUSING THE CRUISE CONTROL INDICATOR LIGHT TO LIGHT UP, INDICATING THAT CRUISE CONTROL IS READY FOR OPERATION.

### 1. SET OPERATION

WHEN THE CRUISE CONTROL MAIN SWITCH IS TURNED ON AND THE SET SWITCH 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 4** OF THE CRUISE CONTROL ECU AND THE VEHICLE SPEED AT THE TIME THE SET SWITCH IS RELEASED 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 INPUT INTO **TERMINAL 20** OF THE CRUISE CONTROL ECU FROM THE COMBINATION METER, 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 6** OF THE CRUISE CONTROL ACTUATOR → **TERMINAL 7** → **TERMINAL 11** OF 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 ECU → **TERMINAL 7** OF CRUISE CONTROL ACTUATOR → **TERMINAL 6** → **TERMINAL 12** OF 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 CRUISE CONTROL DRIVING, WHILE THE COAST SWITCH 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 SWITCH 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 SWITCH 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), AFTER CANCELING THE SPEED BY THE CANCEL SWITCH, PUSHING THE RESUME SWITCH WILL CAUSE THE VEHICLE TO RESUME THE SPEED SET BEFORE CANCELLATION.

### 6. MANUAL CANCEL MECHANISM

IF ANY THE FOLLOWING OPERATIONS OCCURS 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.

- \* DEPRESSING THE CLUTCH PEDAL (CRUISE CONTROL CLUTCH SWITCH ON). "THE SIGNAL IS INPUT TO **TERMINAL 2** OF THE ECU" (M/T) SHIFT LEVER AT "N" RANGE (NEUTRAL START SWITCH ON). "SIGNAL INPUT TO **TERMINAL 2** OF THE ECU" (A/T)
- \* DEPRESSING THE BRAKE PEDAL (STOP LIGHT SWITCH ON). "SIGNAL INPUT TO **TERMINAL 1** OF ECU"
- \* PULLED UP THE PARKING BRAKE LEVER (PARKING BRAKE SWITCH ON). "SIGNAL INPUT TO **TERMINAL 3** OF THE ECU"
- \* PUSH THE CANCEL SWITCH (CANCEL SWITCH ON). "SIGNAL INPUT TO **TERMINAL 18**."

## 7. AUTO CANCEL FUNCTION

A) IF ANY OF THE FOLLOWING OPERATE 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 SWITCH TURNS OFF).

WHEN THIS OCCURS, THE IGNITION SWITCH MUST BE TURNED OFF ONCE BEFORE THE MAIN SWITCH WILL TURN ON.

- \* OVER CURRENT TO TRANSISTOR DRIVING MOTOR AND/OR MAGNETIC CLUTCH.
- \* WHEN THE CURRENT CONTINUES TO FLOW TO THE MOTOR IN SIDE THE ACTUATOR, IN THE THROTTLE VALVE "OPEN" DIRECTION
- \* OPEN CIRCUIT IN MAGNETIC CLUTCH.
- \* MOMENTARY INTERRUPTION OF VEHICLE SPEED SIGNAL.
- \* THE RESUME SWITCH IS ALREADY ON WHEN THE MAIN SWITCH IS TURNED ON.
- \* SHORT CIRCUIT IN CRUISE CONTROL SWITCH.
- \* MOTOR DOES NOT OPERATE DESPITE THE MOTOR DRIVE SIGNAL BEING OUTPUT.

B) IF ANY OF THE FOLLOWING CONDITIONS OCCURS 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 SWITCH IS "ON" AGAIN.)

- \* WHEN THE VEHICLE SPEED FAILS BELOW THE MINIMUM LIMIT, APPROX. **40KM/H (25MPH)**
- \* WHEN THE VEHICLE SPEED FALLS MORE THAN **16KM/H (10MPH)** BELOW THE SET SPEED, E.G. ON AN UPWARD SLOPE.
- \* WHEN POWER TO THE CRUISE CONTROL SYSTEM IS MOMENTARILY CUT OFF.

C) IF ANY OF THE FOLLOWING CONDITIONS OCCURS DURING CRUISE CONTROL OPERATION, THE CRUISE CONTROL IS RELEASED.

- \* OPEN CIRCUIT FOR **TERMINAL 16** OF CRUISE CONTROL ECU.

## SERVICE HINTS

### C 5 CRUISE CONTROL ACTUATOR

- 1-3 : APPROX. **2 K $\Omega$**
- 5-4 : APPROX. **38.5  $\Omega$**

### C14 CRUISE CONTROL SW [COMB. SW]

- 15-19 : CONTINUITY WITH MAIN SW ON
- 5-19 : APPROX. **418  $\Omega$**  WITH CANCEL SW ON  
APPROX. **68  $\Omega$**  WITH RESUME/ACCEL SW ON  
APPROX. **198  $\Omega$**  WITH SET/COAST SW ON

### C17 CRUISE CONTROL ECU

- 14-GROUND: APPROX. **12 VOLTS** WITH IGNITION SW AT **ON** POSITION
- 1-GROUND : ALWAYS APPROX. **12 VOLTS**
- 3-GROUND : CONTINUITY WITH PARKING BRAKE LEVER PULLED UP (ONE OF THE CANCEL SW) OR BRAKE FLUID LEVEL SW ON
- 20-GROUND: PULSE EACH **40 CM** (DRIVER VEHICLE SLOWLY)
- 18-GROUND: APPROX. **418  $\Omega$**  WITH CANCEL SW ON IN CONTROL SW  
APPROX. **68  $\Omega$**  WITH RES/ACC SW ON IN CONTROL SW  
APPROX. **198  $\Omega$**  WITH SET/COAST SW ON IN CONTROL SW
- 13-GROUND: ALWAYS CONTINUITY
- 2-GROUND : CONTINUITY WITH CLUTCH PEDAL DEPRESSED (M/T)  
CONTINUITY WITH SHIFT LEVER AT "P" OR "N" RANGE (A/T)
- 4-GROUND : CONTINUITY WITH CRUISE CONTROL MAIN SW ON

# CRUISE CONTROL

## ○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
C 1	24 (5S-FE), 25 (3S-GTE)	C17	26	J 3	26
C 5	24 (5S-FE), 25 (3S-GTE)	E 6	D 24 (5S-FE)	P 1	26
C10	B 26	E 7	A 25 (3S-GTE)	S 1	24
C11	A 26		C 24 (5S-FE)	S 9	26
C14	26	E 8	B 24 (5S-FE)		
C16	26 (3S-GTE M/T)	J 1	26		

## ○ : RELAY BLOCKS

CODE	SEE PAGE	RELAY BLOCKS (RELAY BLOCK LOCATION)
1	20	R/B NO. 1 (LEFT KICK PANEL)
2	21	R/B NO. 2 (ENGINE COMPARTMENT LEFT)
5	21	R/B NO. 5 (FRONT LUGGAGE COMPARTMENT RIGHT)

## ○ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
3A	22	COWL WIRE AND J/B NO. 3 (BEHIND COMBINATION METER)
3B		
3D		

## □ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
EA1	28 (5S-FE)	ENGINE ROOM MAIN WIRE AND ENGINE WIRE (REAR LUGGAGE COMPARTMENT LEFT)
EA3	28 (5S-FE)	ENGINE WIRE AND ENGINE ROOM MAIN WIRE (R/B NO. 2 INNER)
	30 (3S-GTE)	
IE1	32	ENGINE ROOM MAIN WIRE AND COWL WIRE (LEFT KICK PANEL)
IE3		
IE4		
II2	34	LUGGAGE ROOM WIRE AND COWL WIRE (RIGHT KICK PANEL)
IK1	34	FLOOR WIRE AND COWL WIRE (RIGHT KICK PANEL)
BM2	36	COWL WIRE AND ENGINE ROOM MAIN WIRE (ROOM PARTITION BOARD LEFT)

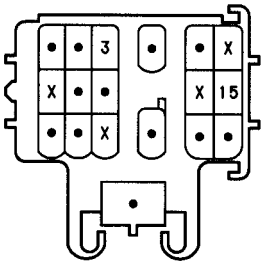
## ▽ : GROUND POINTS

CODE	SEE PAGE	GROUND POINTS LOCATION
EA	28 (5S-FE)	INTAKE MANIFOLD
	30 (3S-GTE)	
IC	32	INSTRUMENT PANEL BRACE LH
ID	32	RIGHT KICK PANEL

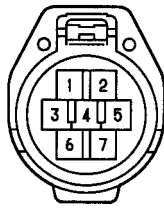
## ○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
E 5	28 (5S-FE)	ENGINE WIRE	I 5	34	COWL WIRE
E10	30 (3S-GTE)		I 9		
E18	28 (5S-FE)		I10		

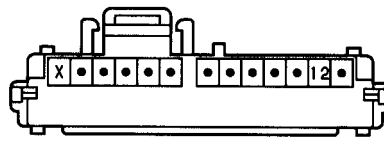
C 1 DARK GRAY



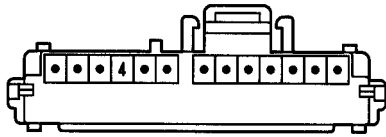
C 5 GRAY



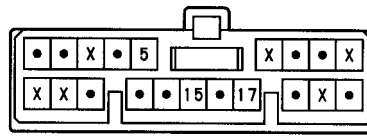
C10 B BROWN



C11 A BLUE



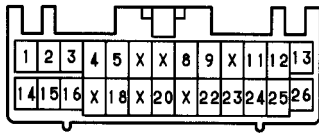
C14 BLACK



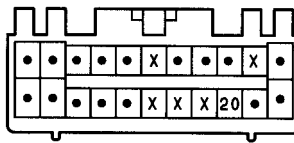
C16



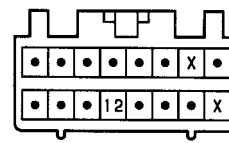
C17 GRAY



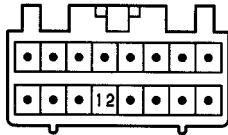
E 6 D DARK GRAY



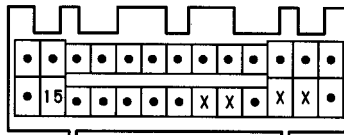
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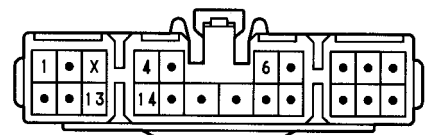
E 7 C DARK GRAY



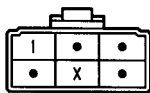
E 8 B DARK GRAY



J 1



J 3



P 1 BLACK



S 1 GRAY



S 9 BLUE

