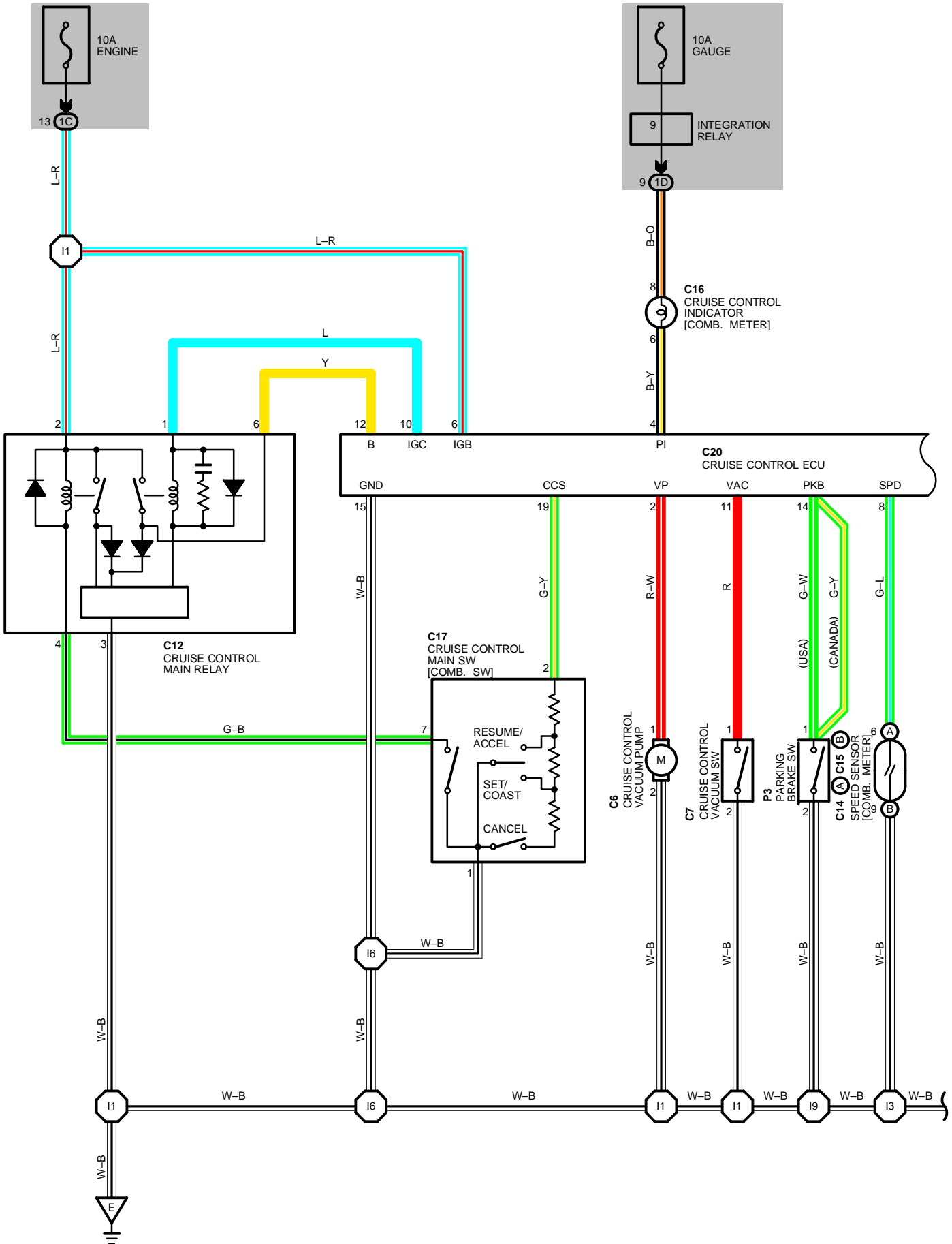
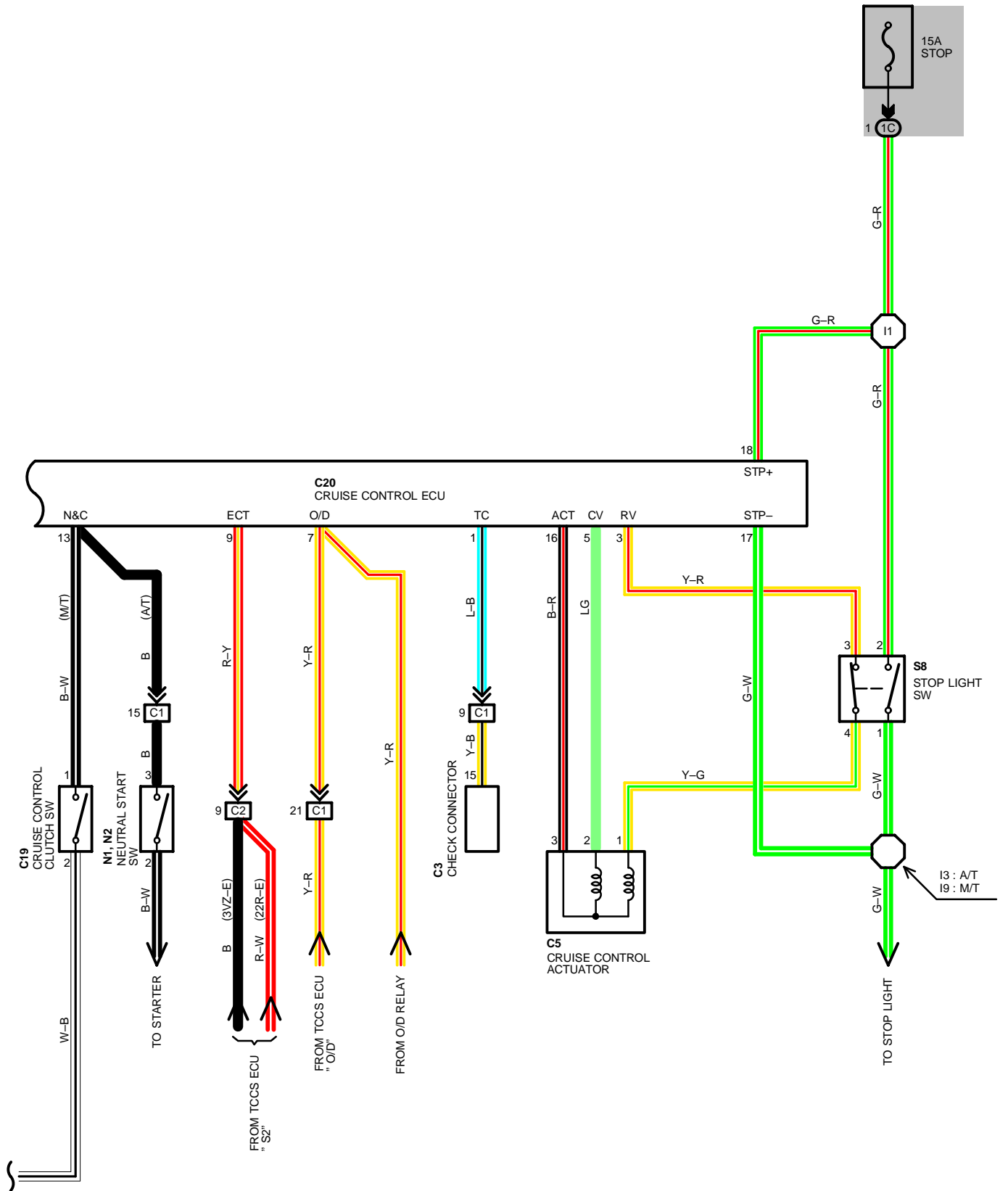


CRUISE CONTROL





CRUISE CONTROL

SYSTEM OUTLINE

WHEN THE IGNITION SW IS TURNED TO ON, THE CURRENT FLOWING THROUGH THE ENGINE FUSE FLOWS SIMULTANEOUSLY TO TERMINAL 6 OF THE ECU AND TO TERMINAL 2 OF THE CRUISE CONTROL MAIN RELAY. IF AT THIS TIME THE MAIN SW IS TURNED TO ON, THE CURRENT APPLIED TO TERMINAL 2 FLOWS FROM TERMINAL 6 OF THE MAIN RELAY → TERMINAL 12 OF THE ECU, MAINTAINING THE CRUISE CONTROL SYSTEM IN CONSTANT READINESS FOR OPERATION.

SIMULTANEOUSLY, THE CURRENT FLOWING THROUGH THE GAUGE FUSE FLOWS TO TERMINAL 8 OF THE INDICATOR LIGHT → TERMINAL 6 → TERMINAL 4 OF THE ECU → GROUND, CAUSING THE INDICATOR LIGHT TO LIGHT UP.

1. CRUISE CONTROL DRIVING

WHEN THE MAIN SW IS TURNED TO ON AND THE SET SW IS PUSHED IN WITH THE VEHICLE SPEED WITHIN THE SET LIMIT (APPROX. 40KM/H, 25MPH TO 200KM/H, 124MPH), A SIGNAL IS INPUT TO TERMINAL 19 OF THE ECU AND THE VEHICLE SPEED AT THAT TIME IS RECORDED IN THE ECU MEMORY AS THE SET SPEED. THE ECU ECU THE RECORDED SET SPEED WITH THE ACTUAL VEHICLE SPEED INPUT INTO TERMINAL 8 FROM THE SPEED SENSOR, AND CONTROLS THE CRUISE CONTROL ACTUATOR IN ORDER TO MAINTAIN THE SET VEHICLE SPEED.

WHEN THE ACTUAL VEHICLE SPEED IS LOWER THAN THE SET SPEED, ECU OPERATION LENGTHENS THE PERIOD OF CURRENT FLOW FROM TERMINAL 5 OF THE ECU → TERMINAL 2 OF THE ACTUATOR → THE CONTROL VALVE → TERMINAL 3 → TERMINAL 16 OF THE ECU, THE CABLE IS PULLED IN THE DIRECTION FOR OPENING THROTTLE VALVE AND THE VEHICLE SPEED INCREASES.

WHEN THE ACTUAL VEHICLE SPEED IS HIGHER THAN THE SET SPEED, A SHORTER PERIOD OF CURRENT FLOW TO THE CONTROL VALVE RETURNS THE CABLE IN THE DIRECTION FOR CLOSING THE THROTTLE VALVE AND THE VEHICLE SPEED DECREASES.

(ACTUATOR OPERATION)

WHEN THE CRUISE CONTROL SYSTEM OPERATES (THE SET SIGNAL IS INPUT), CURRENT FLOWS FROM THE ECU TO THE RELEASE VALVE, CLOSING THE ATMOSPHERIC INTAKE PORT.

WHEN THERE IS CONTINUITY TO THE CONTROL VALVE, VACUUM IS INTRODUCED INSIDE THE ACTUATOR, AND WHEN THERE IS NO CONTINUITY, VACUUM INTAKE STOPS AND ATMOSPHERE IS INTRODUCED. IN OTHER WORDS, THE ACTUATOR (THROTTLE VALVE) IS CONTROLLED BY CHANGING THE RATIO OF CONTINUITY AND NON-CONTINUITY TO THE CONTROL VALVE WITHIN A SPECIFIED PERIOD OF TIME.

(ROLE OF THE VACUUM SW AND VACUUM PUMP.)

WHEN THE VACUUM SW TURNS ON DURING CRUISE CONTROL OPERATION, ITS SIGNAL IS INPUT TO TERMINAL 11 OF THE ECU SO THAT THE ECU APPLIES CURRENT TO OPERATE THE VACUUM PUMP (TERMINAL 2 OF THE ECU → TERMINAL 1 OF THE PUMP → TERMINAL 2 → GROUND) AND SUPPLEMENT THE ENGINE VACUUM WHICH BY ITSELF IS INADEQUATE FOR CONTROL.

2. CANCEL MECHANISM

IF ANY OF THE FOLLOWING OPERATIONS IS PERFORMED DURING CRUISE CONTROL, THEN CONTINUITY TO THE CONTROL VALVE AND THE RELEASE VALVE IS CUT OFF AND CRUISE CONTROL IS RELEASED:

- * DEPRESSING THE CLUTCH PEDAL (CLUTCH SW ON), SIGNAL INPUT TO TERMINAL 13 OF THE ECU.
- * PLACING THE NEUTRAL START SW IN "N" RANGE (NEUTRAL START SW ON), SIGNAL INPUT TO TERMINAL 13 OF THE ECU.
- * DEPRESSING THE BRAKE PEDAL (STOP LIGHT SW ON), SIGNAL INPUT TO TERMINAL 17 OF THE ECU.
- * PULLING THE PARKING BRAKE LEVER (PARKING BRAKE SW ON), SIGNAL INPUT TO TERMINAL 14 OF THE ECU.
- * PUSHING THE CRUISE CONTROL CANCEL SW, SIGNAL INPUT TO TERMINAL 19 OF THE ECU.

3. COAST CONTROL

WHICH THE COAST SW IS ON DURING CRUISE CONTROL, CURRENT FLOWS TO THE CONTROL VALVE AND RELEASE VALVE IS STOPPED AND THE VEHICLE DECELERATES UNTIL THE SW IS RELEASED. THE VEHICLE SPEED WHEN THE SW IS RELEASED IS THEN RECORDED IN MEMORY.

4. RESUME CONTROL

BY TURNING THE RESUME SW TO ON AFTER CANCELLATION OF THE CRUISE CONTROL SYSTEMS, THE VEHICLE SPEED WILL RETURN TO THE SPEED SET BEFORE CANCELLATION. PROVIDED THAT THE VEHICLE SPEED IS WITHIN THE SET LIMITS.

5. ACCEL CONTROL

WHEN THE ACCEL SW IS TURNED TO ON DURING CRUISE CONTROL DRIVING, CURRENT CONTINUES TO FLOW TO THE CONTROL VALVE AND THE VEHICLE ACCELERATES. THE VEHICLE SPEED WHEN THE SW IS TURNED OFF IS RECORDED IN MEMORY.

SERVICE HINTS

C20 CRUISE CONTROL ECU

(DISCONNECT THE ECU CONNECTOR)

15-GROUND: ALWAYS CONTINUITY

12-GROUND: APPROX. 12 VOLTS WITH IGNITION SW AND MAIN SW ON

8-GROUND: 1 PULSE EACH 40 CM (DRIVE VEHICLE SLOWLY)

18-GROUND: ALWAYS 12 VOLTS

17-GROUND: APPROX. 12 VOLTS WITH BRAKE PEDAL DEPRESSED (ONE OF THE CANCEL SW)

13-GROUND: CONTINUITY WITH CLUTCH PEDAL DEPRESSED (M/T) OR SHIFT LEVER IN N OR P RANGE (A/T)
(ONE OF THE CANCEL SW)

14-GROUND: CONTINUITY WITH PARKING BRAKE LEVER PULL UP (ONE OF THE CANCEL SW) OR BRAKE LEVEL
WARNING SW ON

5-16 : APPROX. 30 Ω (ACTUATOR CONTROL VALVE)

3-16 : APPROX. 68 Ω (ACTUATOR RELEASE VALVE)

19-GROUND: APPROX. 68 Ω WITH RESUME/ACCEL SW ON

APPROX. 198 Ω WITH SET/COAST SW ON

APPROX. 418 Ω WITH CANCEL SW ON

○ : PARTS LOCATION

CODE	SEE PAGE	CODE	SEE PAGE	CODE	SEE PAGE
C3	22 (3VZ-E), 23 (22R-E)	C14	A 24	C20	24
C5	22 (3VZ-E), 23 (22R-E)	C15	B 24	N1	22 (3VZ-E)
C6	22 (3VZ-E), 23 (22R-E)	C16	24	N2	23 (22R-E)
C7	22 (3VZ-E), 23 (22R-E)	C17	24	P3	24
C12	24	C19	24	S8	24

○ : JUNCTION BLOCK AND WIRE HARNESS CONNECTOR

CODE	SEE PAGE	JUNCTION BLOCK AND WIRE HARNESS (CONNECTOR LOCATION)
1C	18	COWL WIRE AND J/B NO.1 (LEFT KICK PANEL)
1D		

□ : CONNECTOR JOINING WIRE HARNESS AND WIRE HARNESS

CODE	SEE PAGE	JOINING WIRE HARNESS AND WIRE HARNESS (CONNECTOR LOCATION)
C1	30	ENGINE WIRE AND COWL WIRE (RIGHT KICK PANEL)
C2		

▽ : GROUND POINTS

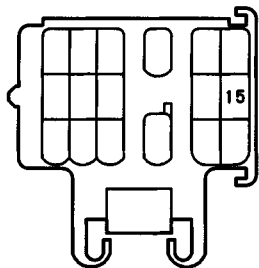
CODE	SEE PAGE	GROUND POINTS LOCATION
E	30	LEFT KICK PANEL

○ : SPLICE POINTS

CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS	CODE	SEE PAGE	WIRE HARNESS WITH SPLICE POINTS
I1	30	COWL WIRE	I6	32	COWL WIRE
I3	32		I9		

CRUISE CONTROL

C3 DARK GRAY



C5 GRAY



C6 GRAY



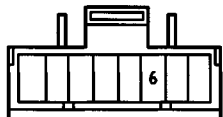
C7 BLACK



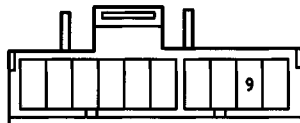
C12



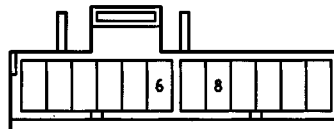
C14 (A)



C15 (B) GRAY



C16



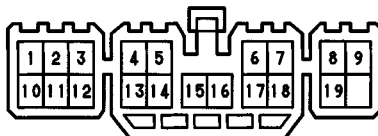
C17 BLACK



C19



C20 GRAY



(W/ ECT) N1 GRAY



(COLUMN SHIFT) N2 GRAY



P3



S8 BLACK

