## **2004 CHEVROLET AVEO**

Automatic Transmission Only (Requires 250-4371 Adapter for Manual Transmission)

CRUISE CONTROL INSTALLATION INSTRUCTIONS PART NO. 250-1753



## **AUTO ELECTRONICS**

## 1-800-343-1382

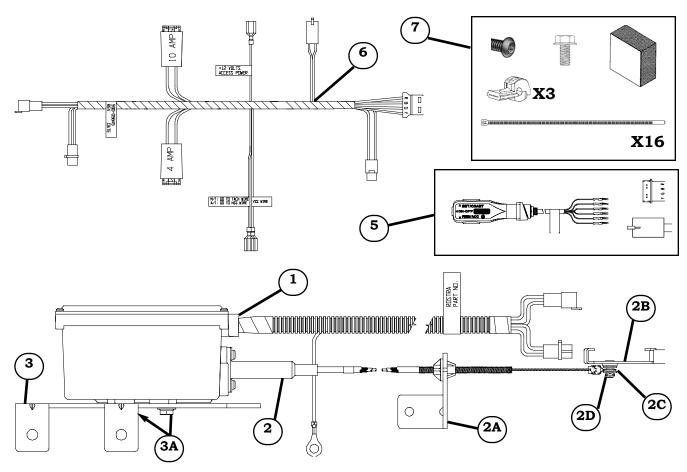
Please call for technical assistance. You will need your invoice number.

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# PARTS IDENTIFICATION

ITEM	QUANTITY	SERVICE NUMBER	DESCRIPTION
1	1	250-2606	Module/Harness Assembly
A	2	**	Cable Screws/Gasket
2	1	250-2607	CABLE ASSEMBLY
Α	1	250-2608	CABLE BRACKET
в	1	250-2609	THROTTLE LEVER BRACKET
с	1	**	Cotter Pin
D	2	**	WASHER-PLAIN #10
3	1	250-2610	Module Bracket
A	1	**	6 MM BOLT
5	1	250-3717	CONTROL SWITCH ASSEMBLY
A	1	***	NUT-HEX 3/8"-24 THIN
в	1	***	CONNECTOR-FEMALE 2 PIN
с	1	***	CONNECTOR-FEMALE 4 PIN
D	2	***	LOCKWASHER-3/8" INTERNAL
E	2	***	Wedge-17.5 degrees
6	1	250-2611	HARNESS ASSEMBLY
7	1	250-2612	HARDWARE PACKAGE: M8-1 BOLT, M6-1 BOLT,
			FEMALE T-TAP (3), TIE STRAPS (10), PUTTY





#### **1. BEFORE STARTING INSTALLATION:**

FAMILIARIZE YOURSELF WITH THE INSTALLATION INSTRUCTIONS AND CRUISE CONTROL COMPONENTS.

### 2. MATING CONNECTORS:

A. When disconnecting connectors, hold connector and press the lock downward while pulling connectors apart. *Figure 1* 

## **CAUTION: DO NOT PULL ON WIRES**

**B.** When connecting mating connectors, push connectors together until locking mechanisms are firmly locked together. *Figure 2* 

#### **3. ANTI-THEFT RADIO:**

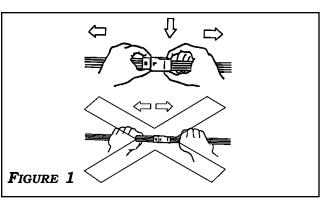
IF VEHICLE IS EQUIPPED WITH AN ANTI-THEFT RADIO, THE RADIO CODE MUST BE WRITTEN DOWN PRIOR TO DISCONNECT ING BATTERY CABLE. THE CODE MUST BE REENTERED WHEN THE NEGATIVE BATTERY CABLE IS REINSTALLED.

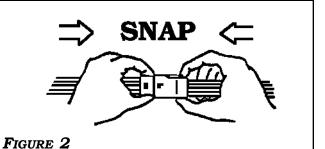
### 4. REMOVAL OF NEGATIVE BATTERY CABLE:

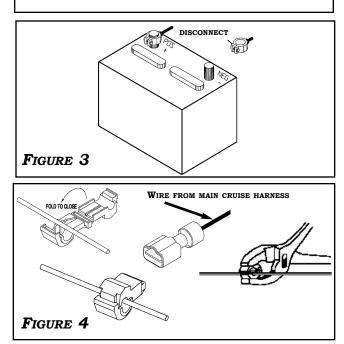
Remove the negative battery cable before installing the Cruise Control components for safety precautions. *Figure* 3

### 5. FEMALE T-TAP CONNECTOR:

WHEN INSTALLING FEMALE **T-TAP CONNECTORS,** ENSURE WIRE IS INSIDE GROOVE OF THE FEMALE **T-TAP CONNECTOR** BEFORE CLOSING ON WIRE WITH PLIERS. *FIGURE 4* 









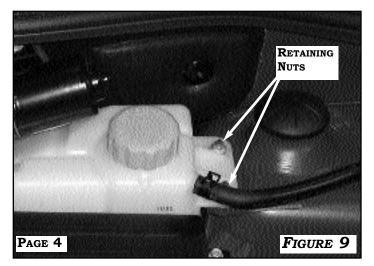
## **STEP 1: VEHICLE PREPARATION** Location: Driver's Side Engine Compartment.

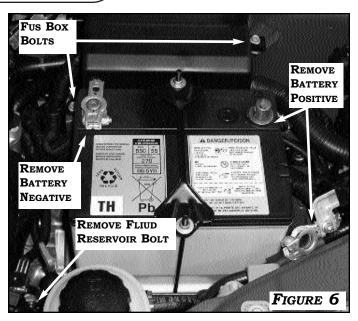
- 1. DISCONNECT NEGATIVE SIDE OF BATTERY (AS ILLUSTRATED IN HINTS). REMOVE THE PLASTIC COVER OVER POSITIVE TERMINAL AND DISCONNECT POSITIVE SIDE OF THE BATTERY. **FIGURE 6**
- 2. Remove (2) two 10mm bolts securing fuse box and (1) one 10mm bolt securing power steering fluid reservioir to battery tray. Figure 6
- LOOSEN (2) TWO 10MM NUTS RETAINING THE BATTERY PLACEMENT BAR AND REMOVE. REMOVE BATTERY. REMOVE (4) 12MM BOLTS FROM BATTERY TRAY AND REMOVE TRAY FROM VEHICLE. FIGURE 7

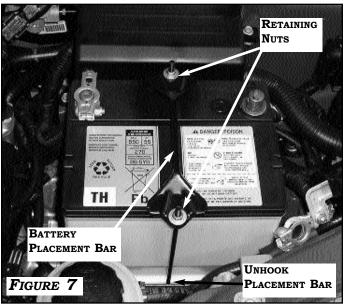
## **STEP 2: WIRE HARNESS ROUTING**

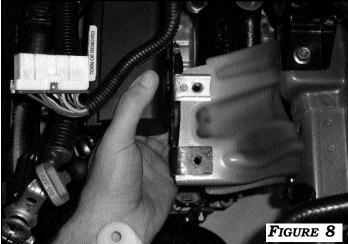
- 1. PLACE CRUISE CONTROL MODULE ASSEMBLY IN THE APPROXIMATE LOCATION FOR MOUNTING *(TWO THREADED HOLES OF BATTERY TRAY)* AND ROUTE CABLE AND HARNESS TOWARD FIREWALL. **FIGURE 8**
- 2. Remove (2) two 10mm Nuts securing the radiator surge tank and pull away from firewall to access firewall grommet located behind it. Figure 9
- **3.** ROUTE CRUISE CONTROL HARNESS TOWARD FIREWALL ACCESS HOLE ALONG FACTORY VEHICLE HARNESS.

FOR ABS EQUIPPED VEHICLE, ROUTE CRUISE CONTROL MODULE HARNESS HARNESS BENEATH BRAKE PRESSURE MODULE ALONG FACTORY WIRING HARNESS. *FIGURE 10* 









# INSTALLATION

## STEP 2: WIRE HARNESS ROUTING CONT. Location: Driver's Side Fenderwell Access.

- ROUTE CRUISE CONTROL HARNESS UNDER BATTERY TRAY ALONG FACTORY HARNESS TOWARD DRIVER SIDE FENDER WELL ACCESS. FIGURE 10. SECURE MODULE HARNESS WITH CABLE TIE TO FACTORY WIRE HARNESS (ONCE INSTALLED).
- 5. MOUNT BLACK CRUISE CONTROL GROUND WIRE TO FACTORY GROUND POINT AS ILLUSTRATED IN FIGURE 10
- 6. REMOVE FENDERWELL PANEL AND ROUTE CRUISE HARNESS ALONG FACTORY HARNESS TO ACCESS THE PASSENGER COMPARTMENT. FIGURES 11A & 11B.
- FROM INSIDE THE PASSENGER COMPARTMENT, SEAL CRUISE MAIN HARNESS AND SLIT IN GROMMET WITH SEALING PUTTY PROVIDED IN KIT.

## STEP 3: MODULE MOUNTING Location: Driver's Side Engine Compartment.

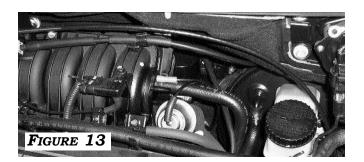
1. ReInstall battery tray while alighning mounting holes on **Cruise Control Module Bracket** with those in battery tray. *Figures 8 & 12* 

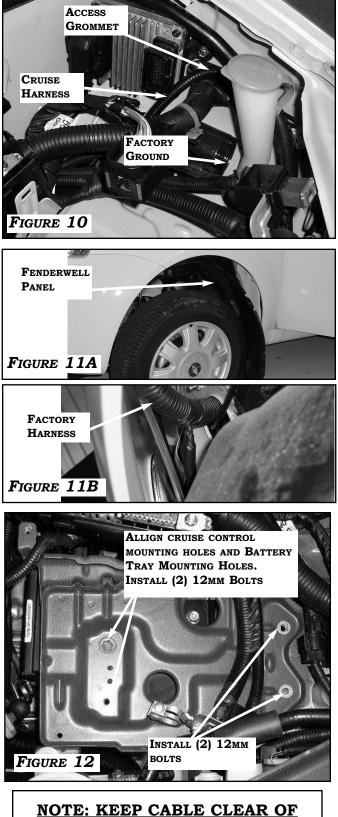
INSTALL (2) TWO 12MM BOLTS SECURING CRUISE CONTROL IN PLACE. FIGURE 12

2. Install remaining (2) two 12mm bolts in battery tray. *Figure 12* 

## STEP 4: CABLE ROUTING Location: Engine Compartment

- 1. ROUTE CABLE ASSEMBLY FROM MODULE ASSEMBLY, BEHING POWER STEERING FLUID RESERVOIR AND TOWARDS VEHICLE'S THROTTLE AREA. *FIGURE 13*
- 2. Also, Secure Cable Assembly with Cable Ties to factory cable. *Figure 13*





SHARP, HOT OR MOVING OBJECTS



## STEP 5: THROTTLE ATTACHMENT Location: Engine Throttle Shaft Area

- MOUNT CRUISE CONTROL CABLE BRACKET IN THE THREADED HOLE ON INTAKE MANIFOLD UTILIZING (1) 10mm BOLT SUPPLIED IN KIT. DO NOT OVERTIGHTEN. FIGURE 14
- 2. PLACE **THROTTLE BRACKET** OVER VEHICLE THROTTLE BODY AND ROTATE CLOCKWISE INTO PLACE ENSURING THAT LEGS BEND AROUND THE BACKSIDE OF THE THROTTLE BODY. **FIGURE 15**
- 3. INSERT #4-40 Socket Head Cap Screw INCLUDED IN KIT INTO THREADED HOLE OF THROTTLE BRACKET AND FULLY SEAT ALONG TOP EDGE OF THROTTLE BODY WITH ¼" HEX WRENCH TO PREVENT BRACKET ROLL-BACK. FIGURE 16
- 4. After assembly is secured, make sure the **Cable** Assembly is not holding the throttle open in any way. There should be **0.06-0.10**" slack between in Cruise Control Cable play.

## **STEP 6A: HARNESS CONNECTIONS**

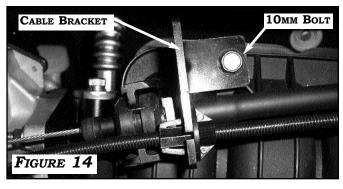
### LOCATION: PASSENGER COMPARTMENT, ACCESS HARDWARE: MATING CONNECTORS

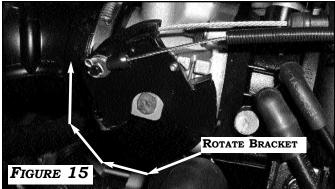
- 1. LOCATE FIREWALL ACCESS GROMMET FROM PASSENGER COMPARTMENT AND PULL CRUISE CONTROL MODULE HARNESS CONNECTORS INSIDE VEHICLE.
- 2. LOCATE NSS (Light Green Wire) and TACH (Dark Blue Wire) circuit terminals that are taped in harness. Figure 17

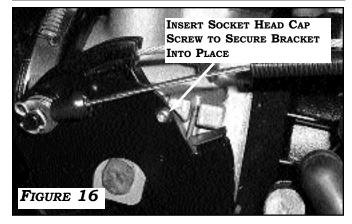
Automatic Transmission: Install *Light Green* NSS Wire in empty cavity of Cruise Harness Connector.

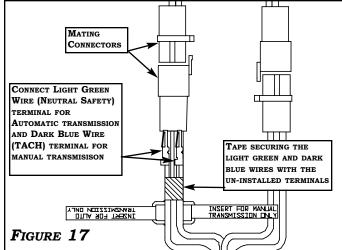
MANUAL TRANSMISSION: INSTALL DARK BLUE TACH WIRE IN EMPTY CAVITY OF CRUISE HARNESS CONNECTOR.

3. CONNECT MATING CRUISE CONTROL CONNECTORS. FIGURE 17











## **STEP 6B: BRAKE SWITCH CONNECTION**

## LOCATION: BRAKE PEDAL ASSEMBLY HARDWARE: MATING CONNECTORS

- 1. DISCONNECT VEHICLE BRAKE SWITCH HARNESS FROM BRAKE SWITCH. **FIGURE 18**
- 2. CONNECT MATING CONNECTORS OF **CRUISE MAIN HARNESS** Assembly to the vehicle brake switch and harness. *Figure 18*
- **3.** ROUTE **HARNESS ASSEMBLIES** SO THAT THEY DO NOT INTERFERE WITH ANY MOVING COMPONENTS.

## **STEP 6C: ECU CONNECTIONS FIGURE 19**

## LOCATION: DRIVER'S SIDE FIREWALL, COCKPIT HARDWARE: : (3) FEMALE T-TAP CONNECTORS (Red)

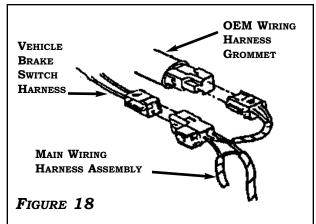
- **1.** Locate the vehicle computer located inside the passenger's compartment, on the Driver's Side, along the firewall just above the control pedals.
- Ignition Power: Locate Ignition Power Wire in White 24 Pin Connector, Position #6, Pink Wire and Install Red T-Tap. Connect The Brown Wire from Cruise Harness to T-Tap previously installed.

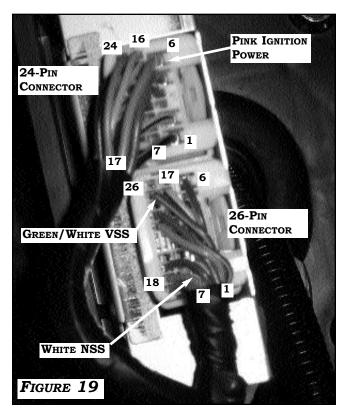
### 3. NSS CONNECTIONS:

FOR AUTOMATIC TRANSMISSION VEHICLES: LOCATE NSS WIRE IN WHITE 26 PIN CONNECTOR, POSITION #7, WHITE WIRE AND INSTALL RED T-TAP. CONNECT THE DARK BLUE WIRE FROM CRUISE HARNESS TO T-TAP PREVIOUSLY INSTALLED.

4. VSS CONNECTION: LOCATE VEHICLE SPEED SIGNAL WIRE IN WHITE 26 PIN CONNECTOR, POSITION #25, GREEN/WHITE WIRE AND INSTALL RED T-TAP. CONNECT THE GRAY WIRE FROM CRUISE HARNESS TO T-TAP PREVIOUSLY INSTALLED.

5. Secure all wires under dash with Cable Ties.







## **STEP 7: CONTROL SWITCH**

LOCATION: LEFT SIDE LOWER STEERING COLUMN COVER

- 1. Remove lower steering column cover. Figure 20
- USING THE LEVER WEDGE AS AN ANGLE TEMPLATE, DRILL
  9.5mm (3/8") HOLE IN LOWER SHROUD AS SHOWN IN FIGURE 20
- Ensure Lever Wedges are assembled as shown in Figure 21. To prevent the cruise control switch from rotating and creating a more positive lock when mounting, position the Lockwashers as shown in Figure 21. Start nut and position lettering for driver's best view. Fully secure nut at 22-25 in lbs. DO NOT OVERTIGHTEN.
- **4.** ROUTE **CONTROL SWITCH WIRE HARNESS** SO THERE IS NO INTERFERENCE WITH ANY MOVING PARTS. OPERATE TILT COLUMN IF EQUIPPED. SECURE STEERING COLUMN SHROUD.
- **5.** Ensure that the switch can be seen during normal driving seating positioning. *Figure 22*

## CONTROL SWITCH CONNECTION TO MOD-ULE ASSEMBLY HARNESS

 INSTALL 4-PIN CONNECTOR ON Red, Brown, Green, AND Yellow WIRES. INSTALL 2-PIN CONNECTOR ON TO Blue AND Black WIRES OF SWITCH HARNESS. FIGURE 23

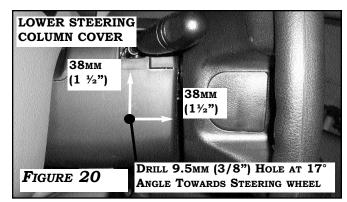
NOTE: THE MATING CONNECTOR TO THIS 4-PIN CONNECTOR WILL HAVE A *Red* WIRE MATING TO THE *BROWN* WIRE, ALL OTHER COLORS SHOULD MATCH.

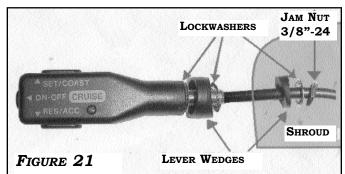
Connect 4-pin and 2-pin connectors to **Module** Assembly Harness. Ensure that all pins lock into <u>connector</u>.

7. SECURE MODULE ASSEMBLY HARNESS WITH CABLE TIES TO PREVENT HARNESS FROM COMING INTO CONTACT WITH HOT, SHARP OR MOVING OBJECTS.

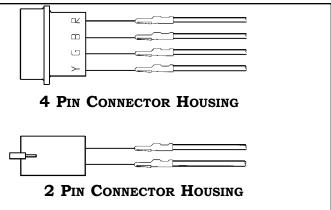
## **STEP 8: REASSEMBLY**

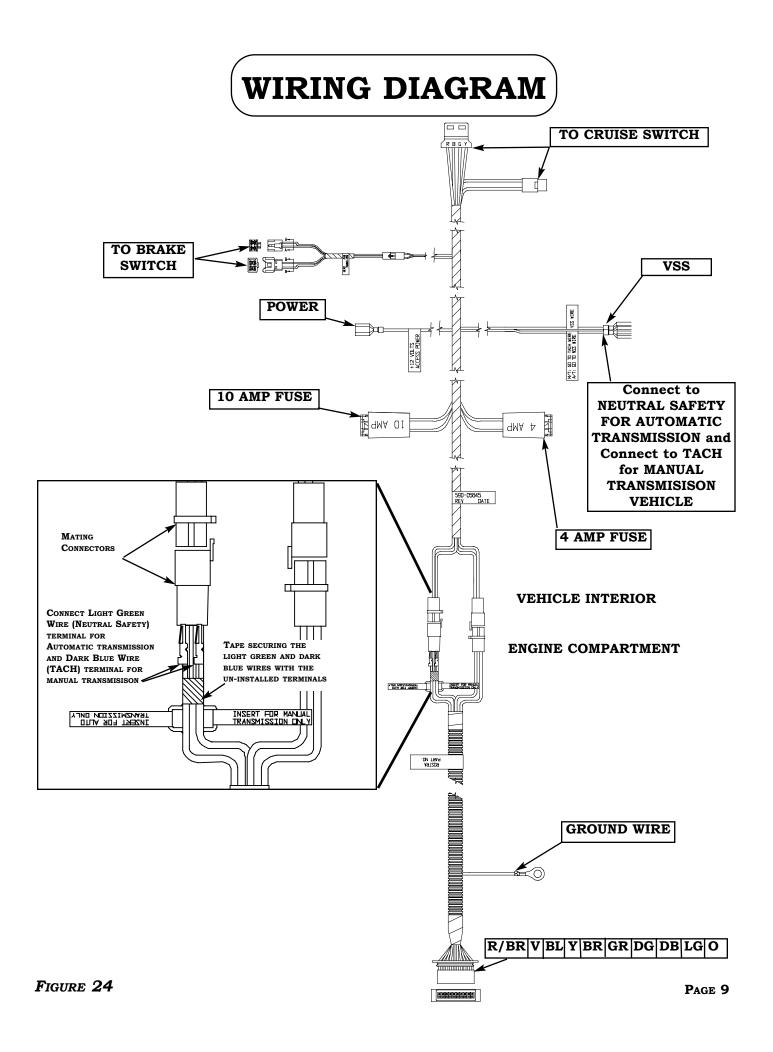
- 1. RECONNECT NEGATIVE BATTERY CABLE AND TORQUE TO 35 IN LBS. FIGURE 3
- **2.** If equipped with anti-theft Radio, reenter the code and pre-recorded stations













## A. ELECTRICAL TESTING:

- 1. TESTING OF THE CRUISE CONTROL SYSTEM IS BEST DONE AT THE (10) WIRES AT THE CRUISE CONTROL MODULE.
- 2. Depending upon the test being conducted, a VOLT <u>OR</u> OHM METER must be used for accurate results. A test light will <u>NOT</u> provide accurate information in some circuits being tested

## WARNING: TEST LIGHTS MAY CAUSE DAMAGE TO THE VEHICLE.

**3.** Using a VOLT/OHM METER, conduct the following tests where the wiring harness enters the Cruise Control Module. *View Figure 25 for wire color and location at rear of cruise control module.* 

R/BR|V|BL|Y|BR|GR|DG|DB| LG|O

FIGURE 25

CONNECTOR AS VIEWED FROM THE HARNESS SIDER/BR=RED/BROWN=CONTROL SWITCH POWERBR=BRV=VIOLET=BRAKE LIGHT GROUNDGR=GRBL=BLACK=MODULE GROUNDDG=DAY=YELLOW=ACCEL/RESUMELG=LICDB=DARK BLUE=NO CONNECTIONO=ORA

BR=BROWN=IGNITION POWER GR=GRAY=VSS SIGNAL CIRCUIT DG=DARK GREEN=SET/COAST LG=LIGHT GREEN=NEUTRAL SAFETY O=ORANGE=NO CONNECTION

TEST	FUNCTION	CONDITION	DESIRED RESULTS	ОК	NG
<b>A-1</b>	"OFF"	IGNITION "OFF"	ZERO VOLTS AT ALL WIRES	A-2	B-1
		CONTROL SWITCH "OFF"			
A-2	SYSTEM POWER	IGNITION "ON"	12vdc on BROWN wire only	A-3	B-2
		CONTROL SWITCH "OFF"			
A-3	<b>CRUISE SWITCH</b>	IGNITION "ON"	12vdc on BROWN wire	A-4	B-3
	POWER	CONTROL SWITCH "ON"	12vdc on RED wire		
A-4	BRAKE CIRCUIT	IGNITION "ON"	12vdc on VIOLET wire	A-5	<b>B-1</b>
		CONTROL SWITCH "ON"			
		PUSH BRAKE PEDAL			
A-5	SET/COAST	IGNITION "ON"	12vdc on DARK GREEN wire	A-6	B-4
		CONTROL SWITCH "ON"			
		PUSH SET BUTTON			
A-6	ACCEL/RESUME	Ignition "ON"	12vdc on YELLOW wire	A-7	B-4
		CONTROL SWITCH "ON"			
		PUSH ACCEL BUTTON			
A-7	VEHICLE SPEED	Ignition "ON"	4.5vdc to Zero volts on GRAY	A-8	B-5
	SENSOR	CONTROL SWITCH "ON"	WIRE, 3-4 TIMES IN 10 FEET		
		<b>ROLL VEHICLE 10 FEET</b>			
A-8	SYSTEM GROUND	IGNITION "ON"	CONTINUITY TO GROUND ON	A-9	B-6
	(OHM METER)	CONTROL SWITCH "ON"	BLACK WIRE		
A-9	<b>NEUTRAL SAFETY</b>	Ignition "ON"	ZERO TO 0.5 VOLTS IN "P" OR "N"	A-10	B-7
	AUTOMATIC ONLY	CONTROL SWITCH "ON"	ON LIGHT GREEN WIRE		
	(VOLT METER)	Move shift lever from "P"			
		OR "N" TO ANY GEAR POSITION			
A-10	<b>CLUTCH SWITCH</b>	IGNITION "ON"	CONTINUITY TO GROUND WITH CLUTCH	C-1	<b>B-8</b>
	MANUAL	CONTROL SWITCH "ON"	Pedal <u>NOT</u> depressed and " <u>NO</u> "		
	(OHM METER)	PUSH ON CLUTCH PEDAL	CONTINUITY TO GROUND WITH CLUTCH		
	•		PEDAL DEPRESSED ON THE VIOLET W	IDE	

## TROUBLESHOOTING

### **B. ELECTRICAL TESTING DIAGNOSTIC:**

B-1....CHECK BRAKE LIGHT FUSE, BULBS, WIRES & CONNECTORS TO BRAKE SWITCH AND CLUTCH SWITCH IF MANUAL

B-2.....CHECK IGNITION SWITCH LINK WIRES, CONNECTOR AND IGNITION FUSE.

B-3.....CHECK IGNITION SWITCH LINK WIRES, CONNECTOR AND IGNITION FUSE, CRUISE SWITCH WIRES AND CONNECTOR.

B-4.....CHECK CRUISE CONTROL SWITCH WIRES AND CONNECTOR.

B-5.....CHECK VEHICLE ECU WIRE AND CONNECTOR, T-TAP AT VSS WIRE.

B-6.....CHECK VEHICLE BATTERY GROUND, MODULE GROUND WIRE CONNECTION.

B-7.....CHECK IGNITION LINK HARNESS, WIRES AND CONNECTOR, VEHICLE NEUTRAL SAFETY SWITCH.

B-8....CHECK WIRES AND CONNECTOR, CLUTCH SWITCH FOR DAMAGE AND/OR ADJUST SWITCH.

### **C. MECHANICAL TESTING PROCEDURES:**

#### C-1 VERIFY CABLE AND/OR LINKAGE:

VISUALLY INSPECT ALL RELATED PARTS OF THE THROTTLE CONNECTION. ENSURE THAT CABLE OPERATES FREELY AND ALL BRACKETS ARE SECURED AND NOT DAMAGED. REPLACE ANY DAMAGED OR WORN PARTS.



# **OPERATING INSTRUCTIONS**

#### SPEED CONTROL OPERATING INSTRUCTIONS

**ON**- TO OPERATE THE CRUISE CONTROL, PUSH THE CRUISE "ON/OFF" BUTTON "ON". (GREEN INDICATOR WILL LIGHT.) WAIT 3 SECONDS BEFORE SETTING SPEED.

**SET SPEED**- TO ENGAGE SYSTEM, DRIVE AT ANY SPEED ABOVE 33 MPH, PRESS "SET/COAST" OR PRESS "RESUME/ACCEL" AND RELEASE, THEN REMOVE YOUR FOOT FROM THE ACCELERATOR PEDAL. AUTOMATIC CON-TROL WILL BE AT THE SPEED OF THE VEHICLE WHEN BUT-TON IS RELEASED PLUS OR MINUS 1- 1/2 MPH. PRESS ACCELERATOR AND SPEED WILL INCREASE, RELEASE ACCEL-ERATOR AND YOU WILL RETURN TO SET SPEED. <u>THE</u> <u>RESUME/ACCEL BUTTON WILL SET THE CRUISE</u> <u>CONTROL WITHOUT PRESSING THE SET BUTTON</u> <u>FIRST.</u>

**COAST**- PRESS AND HOLD THE "SET/COAST" BUTTON AND YOUR SPEED WILL DECREASE. RELEASE BUTTON AND SPEED OF VEHICLE AT TIME BUTTON IS RELEASED WILL BE NEW SET SPEED IF ABOVE 33 MPH.

**ACCEL-** PRESS AND HOLD THE "RESUME/ACCEL" BUTTON AND YOUR SPEED WILL INCREASE. RELEASE BUT-TON AND YOU WILL HAVE A NEW HIGHER SET SPEED.

**TAP-UP**- You can gradually increase your speed by quickly pressing and releasing

THE"RESUME/ACCEL" BUTTON. EACH TIME YOU PRESS AND RELEASE THE BUTTON YOUR SPEED WILL INCREASE BY ONE TO TWO MPH.

**TAP-DOWN-** You can gradually decrease your speed by quickly pressing and releasing the"SET/COAST" button. Each time you press and release the button your speed will decrease by one or two MPH.

**DISENGAGE**- DEPRESS BRAKE PEDAL SLIGHTLY - AUTO-MATIC SPEED CONTROL WILL CEASE BUT SET SPEED WILL STAY IN SYSTEM'S MEMORY. ALSO, YOU CAN DISENGAGE BY PRESSING BUTTON TO OFF POSITION, BUT THIS ERASES THE MEMORY. TO GET THE RESUME FEATURE TO WORK AGAIN, YOU MUST FIRST SET A SPEED. TURNING OFF THE IGNITION ALSO CLEARS THE SYSTEM'S MEMORY. **RESUME**- AFTER DISENGAGING SYSTEM WITH BRAKE OR CLUTCH, RETURN TO SET SPEED BY DRIVING ABOVE 33 MPH. THEN PRESS "RESUME/ACCEL" BUTTON AND RELEASE IT. IF ACCELERATION RATE IS FASTER OR SLOWER THAN YOU LIKE, DRIVE TO WITHIN A FEW MPH OF YOUR SET SPEED, THEN PRESS AND RELEASE THE RESUME/ACCEL BUTTON.

## THINGS YOU SHOULD KNOW ABOUT YOUR CRUISE CONTROL

The performance of the Cruise Control is dependent upon the condition of the engine, its size and even by the type of emission control equipment it has. Driving at higher altitude will have an effect on the vehicle Cruise Control performance.

Under normal conditions and with proper regulator adjustments, speed should be controlled within plus or minus 1- 1/2 MPH. There may be situations; however, which make it seem as if the Cruise Control is not capable of functioning accurately, such as an extra heavy load, a very steep hill, or a severe headwind.

## CAUTION: DO NOT USE CRUISE CONTROL ON A SLIPPERY ROAD NOR IN HEAVY TRAFFIC.

**CAUTION: (MANUAL TRANSMISSION)** WHILE DRIVING WITH CRUISE CONTROL "ON", DO NOT SHIFT TO NEUTRAL WITH-OUT DEPRESSING THE CLUTCH PEDAL, AS THIS MAY CAUSE ENGINE RACING OR OVERREVING. IF THIS HAPPENS, DEPRESS THE CLUTCH PEDAL OR TURN "OFF" THE MAIN CRUISE CONTROL SWITCH IMMEDIATELY.

