

# **ELECTRONIC CRUISE CONTROL INSTALLATION MANUAL**

**Installation**

**Operation**

**Trouble Shooting**

# INTRODUCTION

This Cruise Control Kit is a microprocessor based Cruise Control. It is designed for ease of installation and can be used with most cars, light trucks and vans. Carefully follow the installation procedures in this manual for best results.

Your vehicle must have a VSS (Vehicle Speed Sensor) wire or available signal generator for installation of this Cruise Control. Please consult Application Guide.

Low displacement engines with limited vacuum will get better performance if a vacuum reservoir is installed. Vacuum reservoirs, pumps, regulators and other accessories are available from your dealer, automotive service center, or most automotive parts outlets.

All through the instructions there are WARNINGS, CAUTIONS, AND NOTES which are meant to make it easier for you to put the Cruise Control on your car and safer to use it. We have gathered these tips from people across the country who have told us about their problems and how they worked around them.

Even with all these reports from the field, we cannot cover every condition which you might encounter, there are just too many different car makes and models. We do our best to tell you how to handle most vehicles, but we must Depend On Your Good Judgement for Dealing with the rest.

Therefore, we believe you can understand why we strongly urge you to think carefully about what could happen to you, your passengers, and your car if you use any tools, parts, fastening methods, routing or procedures which are not described in this manual.

There is no drain on the battery if the control switch is left on. The Cruise Control needs no regular service.

## WARNING

Failure to follow the instruction manual could not only cause the Cruise Control to work improperly, but could cause the Cruise Control not to function correctly, possibly causing damage to your vehicle and/or injury or death to both you and your passengers.

## WARNING

If you question the applications of the Cruise Control, please consult the applicable application guide. Only install on approved applications.



**2519 Dana Drive, Laurinburg, North Carolina 28352**

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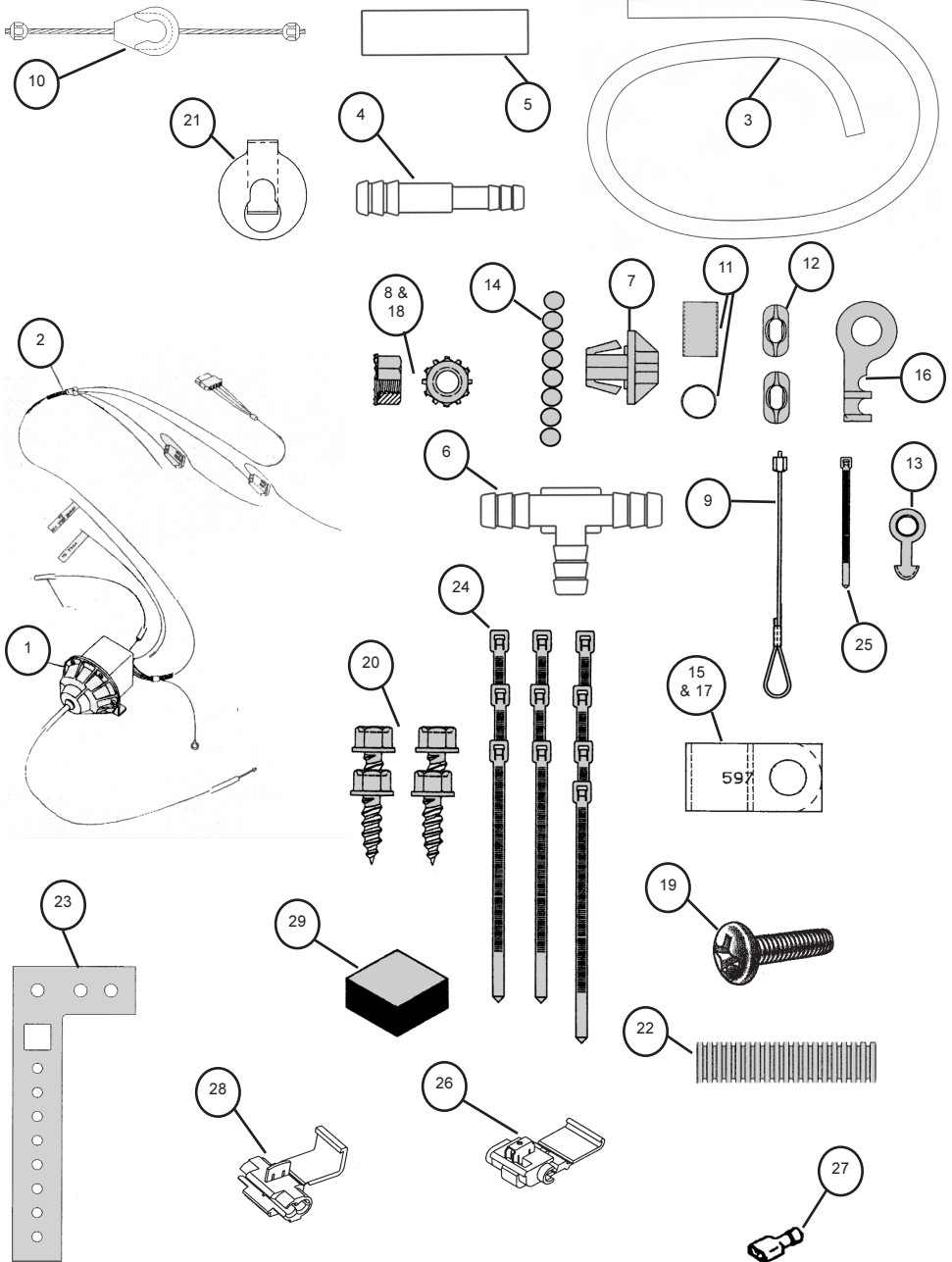
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# PARTS LIST

Item	Part #	Description	Qty.
1	250-3211	Cruise Control Module	1
2	250-3424	Harness Ass'y-Main Wiring	1
3	250-3016	Tube-Vacuum 5/32" x 48"	1
4	*	Reducer-Tube 1/4" x 3/16"	1
5	*	Tube Vacuum-7/32" x 1-3/8"	1
6	*	Tee-Vacuum-VariouS Sizes	3
7	*	Adaptor-Throttle-Threaded Snap In	1
8	*	Nut & Lockwasher Ass'y 1/4"-20	3
9	*	Adaptor-Throttle-Wire-Loop	1
10	*	Adaptor Throttle Clip with Cable	1
11	*	Cover-Bead Chain Connector	3
12	*	Connector-Bead Chain (Doubled Ended)	3
13	*	Coupling-Chain (Eyelet Type)	1
14	*	Bead Chain	1
15	*	Clamp-Tube-VariouS	3
16	*	Adaptor-Throttle-Two Bead Connector	1
17	*	Threaded Tube Clamp	1
18	*	Nut & Lockwasher Ass'y #10-32	3
19	*	Screw #10-32 Round head	3
20	*	Screw-Hex Head 1/4" x 3/4"	4
21	*	Throttle Retaining Clip-GM	1
22	250-3425	Convuluted Split Tubing 3/8	1
23	250-3086	Bracket-Cable mounting	1
24	*	Tie Strap-Nylon 7 1/2"	10
25	*	Tie Strap-Nylon 4"	1
26	*	Conn.Self Strip 18-22 AWG	2
27	*	Terminal 1/4" Female	1
28	*	Conn. Self Strip 14-18 AWG	2
29	*	Putty Sealing	1

\*Order Small Parts Package 250-2213 and receive parts indicated.

# PARTS DIAGRAM



# TOOLS NEEDED

Most of these tools may be needed to install the Cruise Control.

A set of wrenches	Drill bits-3/16" & 1/4"	Half-round or rat-tail file
Screwdrivers - 1 med & 1 sm. blade, 1 sm. cross-recess, 1-#15 torx.	1" hole saw	Knife
Pliers-plain & side cutter	Hammer	12-Volt test light
	Center punch	Hack saw
	Electric drill	7/16" Box End Wrench
	Bench Vise	

## NOTES TO THE INSTALLER

- Cruise Control Module (No. 1) should be mounted at least 10" away from ignition coil.
- The Harness Assembly-Main Wiring (No. 2) must be able to reach from the Cruise Control Module (No. 1) to the area under the dash where the Control Switch Assembly connection will be made.
- The Cruise Control Module cable must be able to reach the throttle attachment point. The Cruise Control Module cable should not be bent severely.

**WARNING: Failure to follow the instruction manual could not only cause the Cruise Control to work improperly, but could cause the throttle to hang up, possibly causing damage to your vehicle and injury to you and your passengers.**

## INSTALLATION PROCEDURES

### A. SET CRUISE CONTROL MODULE SWITCHES

When using this Cruise Control (**Figure 1**) on any vehicle with 2000, 4000, or 8000 pulses per mile road speed input, the 10 switches will be set one of eighteen ways depending on engine, transmission and number of pulses per mile.

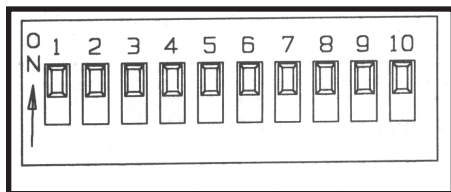
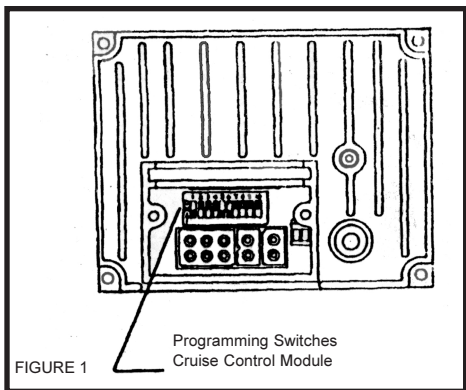
**NOTE 1:** If using an "OPEN CIRCUIT" control switch with the Cruise Control, **SWITCH NUMBER 7** will have to be **OFF**

**NOTE 2: SWITCH NUMBER 10** no longer needs to be turned ON for G.M. distributorless ignition. Switch 10 has no function at present.

**NOTE: Both the Gray (VSS) and Blue (TACH) wires must be connected. (If gray wire is not used, an alternative road speed signal generator source must be used.)**

**NOTE:**  
**IF ANY OF THE 10 SWITCHES NEED TO BE CHANGED AFTER INSTALLATION OF THE CRUISE CONTROL, CONTROL SWITCH AND THE VEHICLE IGNITION SWITCH MUST BE IN THE OFF POSITION. THIS IS TO ALLOW THE MICRO-PROCESSOR TO RESET.**

CYLINDERS/TRANSMISSION TYPE			SWITCH NUMBERS									
			1	2	3	4	5	6	7	8	9	10
<b>2000 PULSES PER MILE VSS</b>												
3/4	CYL AUTO	2000	ON	ON	OFF	OFF	ON	OFF	ON	OFF	ON	OFF
3/4	CYL MANUAL	2000	ON	ON	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
6	CYL AUTO	2000	ON	ON	OFF	OFF	OFF	ON	ON	OFF	ON	OFF
6	CYL MANUAL	2000	ON	ON	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
8	CYL AUTO	2000	ON	ON	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF
8	CYL MANUAL	2000	ON	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
<b>4000 PULSES PER MILE VSS</b>												
3/4	CYL AUTO	4000	ON	ON	ON	OFF	ON	OFF	ON	OFF	ON	OFF
3/4	CYL MANUAL	4000	ON	ON	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
6	CYL AUTO	4000	ON	ON	ON	OFF	OFF	ON	ON	OFF	ON	OFF
6	CYL MANUAL	4000	ON	ON	ON	OFF	OFF	ON	ON	OFF	OFF	OFF
8	CYL AUTO	4000	ON	ON	ON	OFF	OFF	OFF	ON	OFF	ON	OFF
8	CYL MANUAL	4000	ON	ON	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
<b>8000 PULSES PER MILE VSS</b>												
3/4	CYL AUTO	8000	ON	ON	ON	ON	ON	OFF	ON	OFF	ON	OFF
3/4	CYL MANUAL	8000	ON	ON	ON	ON	ON	OFF	ON	OFF	OFF	OFF
6	CYL AUTO	8000	ON	ON	ON	ON	OFF	ON	ON	OFF	ON	OFF
6	CYL MANUAL	8000	ON	ON	ON	ON	OFF	ON	ON	OFF	OFF	OFF
8	CYL AUTO	8000	ON	ON	ON	ON	OFF	OFF	ON	OFF	ON	OFF
8	CYL MANUAL	8000	ON	ON	ON	ON	OFF	OFF	ON	OFF	OFF	OFF



**NOTE:**  
**IF YOU ARE INSTALLING THIS CRUISE ON A VEHICLE THAT DOES NOT HAVE A VSS WIRE OR NO AVAILABLE SIGNAL GENERATOR PACKAGE, THIS CRUISE CONTROL IS NOT RECOMMENDED. CONSULT THE APPLICATION GUIDE.**

# INSTALLATION PROCEDURES

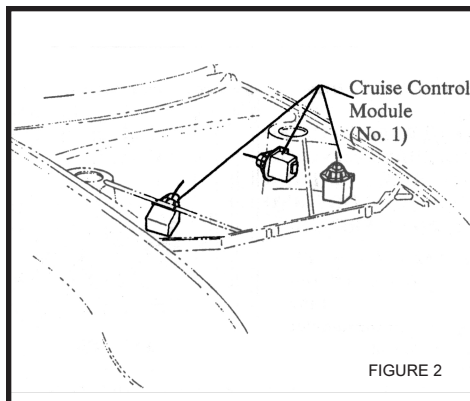
## B. CRUISE CONTROL MODULE MOUNTING LOCATION

### NOTE

**DO NOT MOUNT THE SERVO ASSEMBLY IN THE FOLLOWING AREAS:**

- \* Under the fender.
- \* Under the vehicle.
- \* Directly to the engine or bulkhead.
- \* With the cable pointed down.
- \* Near sharp, hot or moving objects.
- \* Near ignition coil [No closer than 255mm (10")].
- \* In the passenger compartment (Noise).
- \* Where it will interfere with service checks.

1. Select a possible location to mount your **CRUISE CONTROL MODULE**, set the **CRUISE CONTROL MODULE** unmounted in that area. The reason for leaving the **CRUISE CONTROL MODULE** unmounted is to make sure the **HARNES ASSEMBLY-MAIN WIRING** will reach the **CRUISE CONTROL MODULE** and the **CRUISE CONTROL MODULE** cable will reach the throttle attaching point.
2. Once you have confirmed that the **HARNES ASSEMBLY** and the **CRUISE CONTROL MODULE** will reach their respective locations, mount the **CRUISE CONTROL MODULE** in the spot you have selected with Screws provided in the kit. (Figure 2)



**CAUTION:** Failure to follow the instruction manual could not only cause the Cruise Control to work improperly, but could cause the throttle to hang up, possibly causing damage to your vehicle and injury to you and your passengers.

**NOTE:** After Cruise Control Module cable has been attached, manually move the throttle to assure the Cruise Control Module cable does not hang up on any part of the vehicle.



# INSTALLATION PROCEDURES

## C. CRUISE CONTROL MODULE CABLE THROTTLE ATTACHMENT AND ADJUSTMENT

### 1. MEASURING THROTTLE CABLE TRAVEL

**THIS IS A VERY IMPORTANT STEP. FAILURE TO DETERMINE THROTTLE CABLE TRAVEL COULD CAUSE DAMAGE TO YOUR VEHICLE AND/OR CRUISE CONTROL.**

**MEASURE ONLY WITH THE ENGINE OFF.** The CRUISE CABLE moves **41mm (1-5/8")**.

To measure throttle travel, measure the distance from Position "A" (*Idle*) to Position "B" (*Wide Open Throttle*).

- Make a mark on the throttle cable when the throttle is in the idle position. **Figure 3**
  - Depress accelerator pedal and make a mark on the throttle cable when the throttle is in the wide open position. **Figure 4**
- Figure 4**
- Measure the Distance "C" between the two marks. **Figure 5** If the distance is greater than **41mm (1-5/8")**, go to **Page 10**; If it is less, go to **Step d**.
  - If the throttle travel is less than **41mm (1-5/8")**, you must use **BEAD CHAIN** to provide slack.

**NOTE:** Slack is the distance the **CABLE ASSEMBLY** moves before the throttle starts to move.

Each bead of the chain added will give you 1/8" (3 mm), you will need one (1) bead.

**NOTE:** To add beads you must use the **BEAD CHAIN, BEAD CHAIN CONNECTOR** and the **BEAD CHAIN COVER**. Do not count the bead used with the **BEAD CHAIN CONNECTOR**.

After determining your throttle travel, continue to the next section.

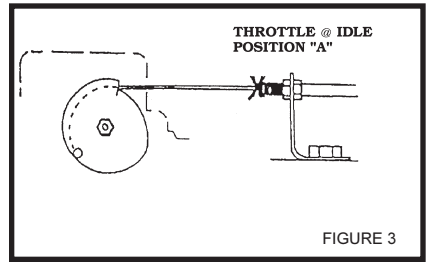


FIGURE 3

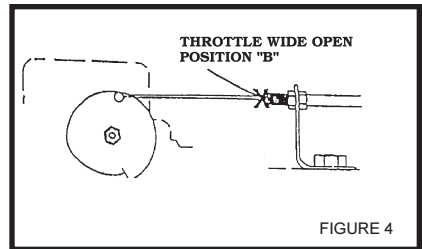


FIGURE 4

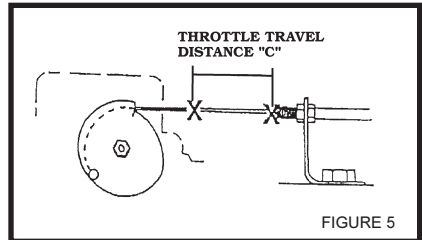


FIGURE 5

**CAUTION:** When using the Connector Bead Chain to connect the Bead Chain to the Cruise Control Module cable you must always use the Cover-Bead Chain Connector. The Cover-Bead Chain Connector must also be used when using the Coupling Chain. Failure to use the Cover-Bead Chain Connector could possibly cause the Bead Chain or the Cruise Control Module cable to hang in the Connector bead Chain causing the throttle to be held in partially open position. This condition could occur when the Cruise Control is not being used.

### 3. Attaching Cruise Control Module Cable to Throttle

This section will cover the proper ways to use the hardware available. After each section, there will be sample illustrations showing how the connector is used in an actual installation. It must be noted however, that you should have an understanding of how each attachment method works so that a proper installation is achieved.

There are 6 basic ways of making the attachment to the throttle:

- a. **ADAPTOR-THROTTLE-TWO BEAD CONNECTOR**
- b. **CONNECTOR-BEAD CHAIN AND CLAMP-TUBE**
- c. **PEDAL ATTACHMENT**
- d. **THROTTLE CLIP WITH CABLE**
- e. **ADAPTOR-THROTTLE-WIRE LOOP**
- f. **ADAPTOR-THROTTLE-WIRE W/BARREL**

#### a. ADAPTOR-THROTTLE-TWO BEAD CONNECTOR

When the distance between the pin and the Cruise Control Module cable mounting is close, the attaching point for connecting the throttle cable to the throttle lever, the **ADAPTOR-THROTTLE-TWO BEAD CONNECTOR** can be used. Most GM & Chrysler applications can use this method. Attach Bead Chain to the **ADAPTOR-THROTTLE-TWO BEAD CONNECTOR** and secure beads by folding the 2 metal tabs. Remove clip or pin which retains throttle cable (and washer if provided) and install **TWO BEAD CONNECTOR** on the same side of throttle cable as the Cruise Control cable will be attached. (This is necessary so that Cruise Control cable and throttle cable will not cross) The **ADAPTOR-THROTTLE-TWO BEAD CONNECTOR** may need to be bent so that it clears the throttle cable. (See Figure 7) Also, **TIE STRAP-NYLON 4"** can be used to hold the **ADAPTOR-THROTTLE-TWO BEAD CONNECTOR** to the sleeve of the throttle cable.

When the distance between the pin and the Cruise Control Module cable mounting is close, the **ADAPTOR-THROTTLE-TWO BEAD CONNECTOR** can be shortened by using a double fold in connector. (See Figure 8)

When **ADAPTOR-THROTTLE-TWO BEAD CONNECTOR** is properly used, the following parts will be used:

(See Figure 9)

- ADAPTOR-THROTTLE-TWO BEAD CONNECTOR**
- BEAD CHAIN** at least 3 exposed beads for lost motion
- CONNECTOR BEAD CHAIN**
- COVER-BEAD CHAIN CONNECTOR**

For some applications, it may be necessary to enlarge the hole in the **ADAPTOR-THROTTLE-TWO BEAD CONNECTOR** so that it will fit over the pin on throttle lever.

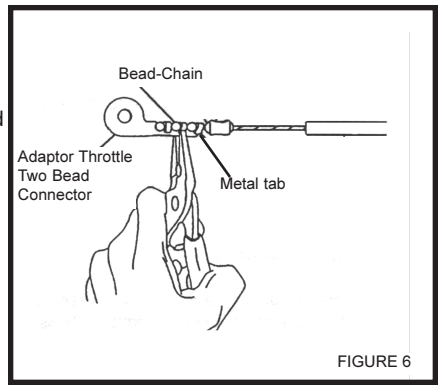


FIGURE 6

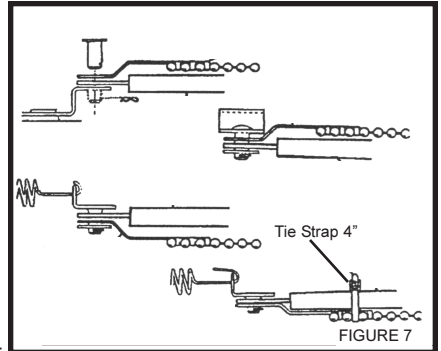


FIGURE 7

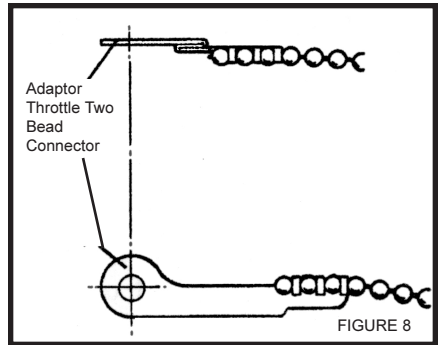


FIGURE 8

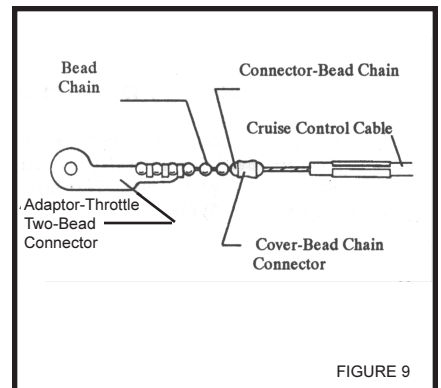


FIGURE 9

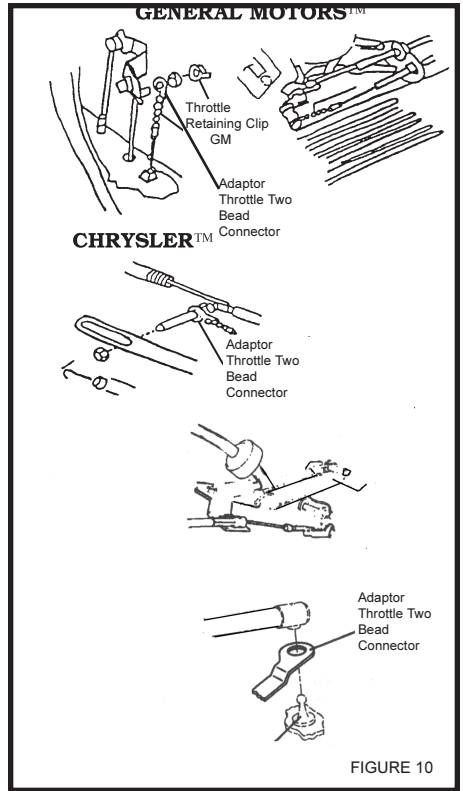
### b. COUPLING-CHAIN AND CLAMP TUBE

When you have a throttle cable, and the **ADAPTOR-THROTTLE-TWO BEAD CONNECTOR** cannot be used, use the **COUPLING-CHAIN** and a **CLAMP-TUBE** **Figure 11**. Select a **CLAMP-TUBE** that fits the throttle cable. Make sure the tabs of the **CLAMP-TUBE** point away from the carburetor or air throttle, this will prevent the throttle from hanging. Put **SCREW #10-32 ROUND HEAD** through the holes in the **CLAMP-TUBE**. Attach **BEAD CHAIN** to the **CONNECTOR-BEAD CHAIN**.

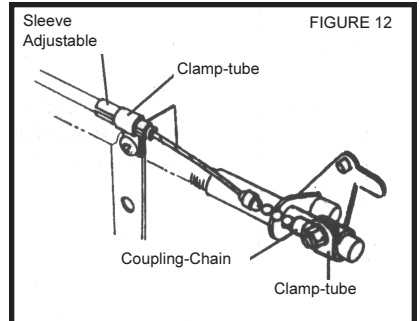
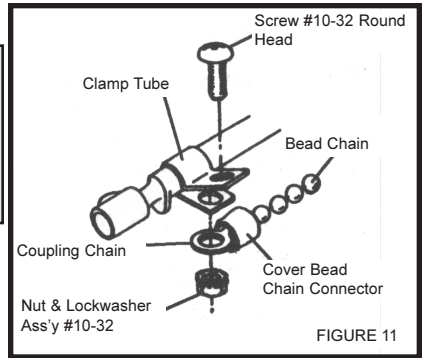
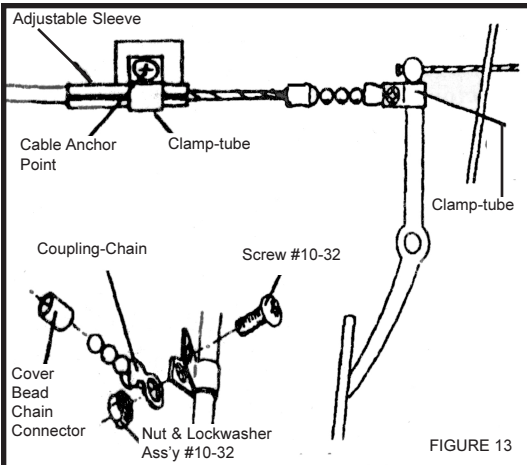
**NOTE:** Use the **COVER-BEAD CHAIN CONNECTOR** No. 11. Slide the **COUPLING-CHAIN** over the **SCREW #10-32 ROUND HEAD** and tighten with **NUT & LOCKWASHER Ass'y #10-32**. See **Figure 11**

### c. PEDAL ATTACHMENT

When the accelerator pedal is used as an attachment point. The **COUPLING-CHAIN** and **CLAMP-TUBE** can be used. See **Figure 13**.



**CAUTION:** Failure to follow the instruction manual could not only cause the Cruise Control to work improperly, but could cause the throttle to hang up, possibly causing damage to your vehicle and injury to you and your passengers.



**d. GM, FORD, AND CHRYSLER THROTTLE USING THROTTLE CLIP WITH CABLE**

1. Some GM, Ford, and Chrysler vehicles have an attachment stud on the throttle pulley.
2. Slide a Bead Chain Connector Cover over the cruise cable, then attach the Bead Chain Connector to the cable. Attach the Throttle Clip with Cable to the Bead Chain Connector and slide the Connector Cover over the Bead Chain Connector. (**Figure 14**)
3. Slide the Throttle Clip over the throttle pulley attachment stud. Push Throttle Clip onto the stud until it snaps firmly onto the stud.

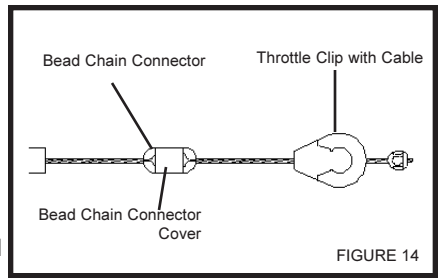


FIGURE 14

**e. ADAPTOR-THROTTLE-WIRE LOOP (No. 9)**

On some vehicles it may be necessary to remove the air cleaner so the throttle pulley segment is showing. Then set the pulley segment in an "open" throttle position, and remove the throttle cable from the pulley. Hold the loop end of the **ADAPTOR-THROTTLE-WIRE LOOP** between the holes in each side of the pulley. Slide the barrel at the end of the throttle cable through the slotted hole, then through the **ADAPTOR-THROTTLE-WIRE LOOP** and into the second hole. See **Figure 15**.

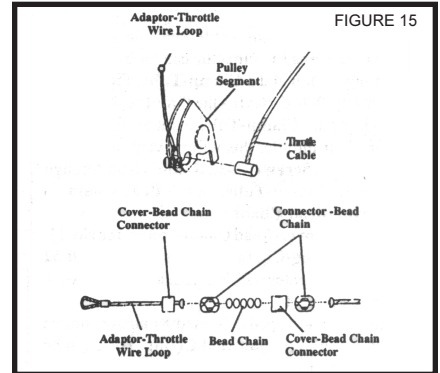


FIGURE 15

Connect the **ADAPTOR-THROTTLE-WIRE LOOP** to the **BEAD CHAIN** using the **CONNECTOR-BEAD CHAIN**. Cut the desired amount of **BEAD CHAIN** and connect to the Cruise Control Module cable. Always use the **COVER-BEAD CHAIN CONNECTOR** as shown in **Figure 15**.

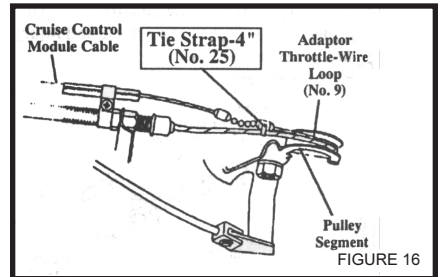


FIGURE 16

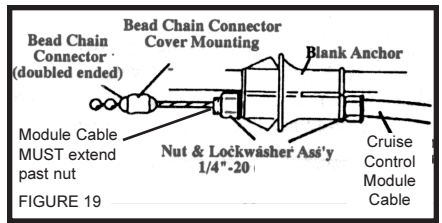
To secure the Adaptor-Throttle-Wire Loop to the throttle cable. Punch a small hole in the **COVER-BEAD CHAIN CONNECTOR** and slide the **TIE-STRAP-NYLON 4"** through the hole and secure to the existing throttle cable as shown in **Figure 16**.

**WARNING**

**If the Adaptor Throttle Wire Loop (No.15) is not secured to the existing throttle cable, it could come out of the pulley segment possibly causing the throttle to be held in a partially open position.**

**f. ADAPTOR-THROTTLE-WIRE WITH BARREL (NO.10)**

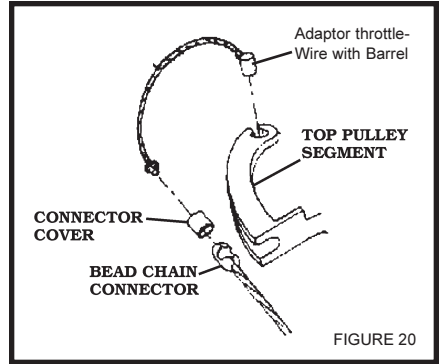
Remove air cleaner to expose the dual pulley segments. Find the blank anchor that is located above the throttle anchor. This anchor is hollow except at one end. Use a 1/4" bit and drill as shown in **Figure 17**.



Place the **NUT & LOCKWASHER ASS'Y 1/4" - 20** on the Cruise Control Module cable. Using a 7/16" box end wrench turn clockwise as shown in **Figure 18**.

Continue to turn clockwise until the formed threads are between 1-3/8" as shown in **Figure 18**.

Insert the Cruise Control Module cable through the blank anchor and thread the other **NUT & LOCKWASHER ASS'Y 1/4"-20** in place and attach the **CONNECTOR-BEAD CHAIN** to the Cruise Control Module cable as shown in **Figure 19**.

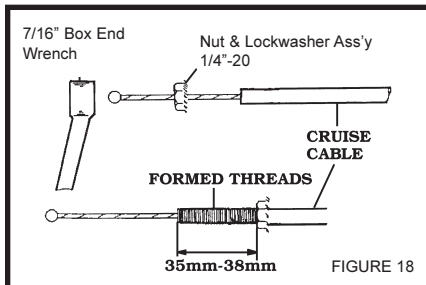
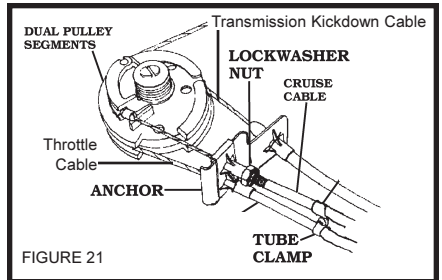
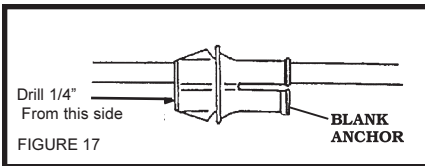


Attach the **ADAPTOR-THROTTLE-WIRE W/BARREL** to the top pulley segment. Slide the **COVER-BEAD CHAIN CONNECTOR** onto the **ADAPTOR-THROTTLE-WIRE W/BARREL** to the **CONNECTOR-BEAD CHAIN** as shown in **Figure 20**. Make sure to slide **COVER-BEAD CHAIN CONNECTOR** over **CONNECTOR-BEAD CHAIN**.

**If Pulley DOES NOT MOVE When Accelerating With Pedal, No Chain is Needed.**

**If Pulley DOES MOVE With Accelerator Bead Chain Must Be Used.**

Install the **CLAMP-TUBE** 6 to 7 inches from the anchor as shown in **Figure 21**.



#### 4. Anchoring The Cruise Control Module Cable

These are three (3) types of connectors used to anchor the Cruise Control Module cable.

- a. **CLAMP-TUBE**
- b. **ADAPTOR-THROTTLE-THREADED SNAP-IN**
- c. **NUT & LOCKWASHER ASS'Y 1/4"-20**

**CAUTION:** When using **Clamp-Tube** on **Cruise Control Cable**, **Sleeve-Adjustable** **MUST** be used to prevent slippage or binding of cable.

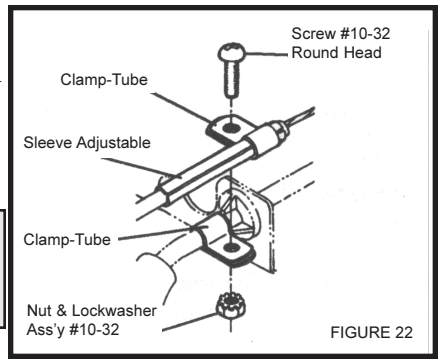


FIGURE 22

#### a. **CLAMP-TUBE**

Two **CLAMP-TUBES** may be used to anchor the Cruise Control Module cable to the existing throttle cable as shown in **Figure 22**.

**NOTE:** When anchoring to the existing throttle cable keep as close to the throttle cable bracket as possible to minimize flexing which can cause a pulsating accelerator pedal.

One **1/4" CLAMP-TUBE** may be used to anchor the Cruise Control Module cable to the existing throttle cable bracket. See **Figure 23**. In some cases there is an existing hole, in other cases you can drill a 3/16" hole in the bracket.

One **1/4" CLAMP-TUBE** may also be used to anchor the Cruise Control Module cable using the **BRACKET-CABLE MOUNTING** as shown in **Figure 24**.

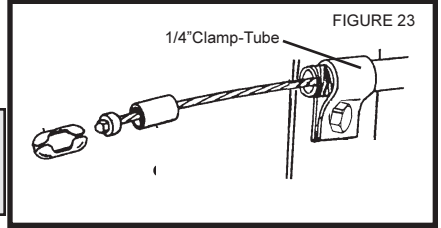


FIGURE 23

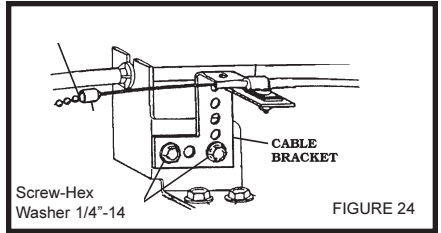


FIGURE 24

#### b. **ADAPTOR-THROTTLE-THREADED SNAP-IN**

Before using the **ADAPTOR-THROTTLE-THREADED SNAP-IN** remove the **SLEEVE-ADJUSTABLE** from the Cruise Control Module Cable.

To use the **ADAPTOR-THROTTLE-THREADED SNAP-IN**, it will be necessary to form threads on the end of the Cruise Control Module cable. This is easily accomplished by placing the **NUT & LOCKWASHER ASS'Y 1/4"-20** on the end of the Cruise Control Module cable with your fingers, then place a 7/16" box end wrench and turn clockwise, see **Figure 26**, until the desired amount of threads have been formed. See **Figure 25**.

After the threads have been formed, screw the Threaded Snap-In-Adaptor on to the Cruise Control Module cable as shown in **Figure 26**.

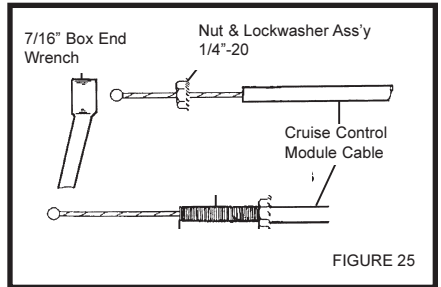


FIGURE 25

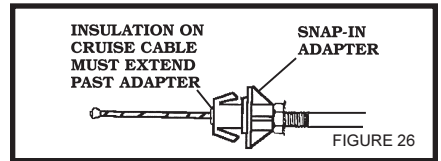


FIGURE 26

**NOTE:** CONTROL CABLE MUST EXTEND PAST THE END OF THE ADAPTOR THROTTLE THREADED SNAP-IN ON ALL APPLICATIONS.

The **THREADED SNAP-IN-ADAPTOR** snaps into an existing square hole as shown in **Figure 30** (common on GM vehicles) or snaps into the **BRACKET-CABLE MOUNTING** as shown in **Figure 27**.

**c. NUT AND LOCKWASHER ASS'Y (No.32) AND/OR BLANK ANCHOR**

To use **NUT AND LOCKWASHER ASS'Y 1/4"-20**, it will be necessary to form threads on the end of the Cruise Control Module cable. This is easily accomplished, see **Figure 25**.

The cable anchor can be in two forms see **Figure 29 or 30**. Use a 1/4" drill bit or an existing 1/4" hole as shown in **Figure 31 or 32**. Insert the Cruise Control Module cable through the 1/4" hole and thread the other **NUT & LOCKWASHER ASS'Y 1/4"-20** and attach the **BEAD CHAIN CONNECTOR** and **BEAD CHAIN CONNECTOR COVER MOUNTING** to the Cruise Control Module cable as shown in **Figure 31**.

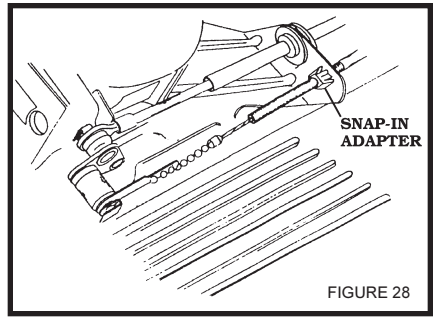


FIGURE 28

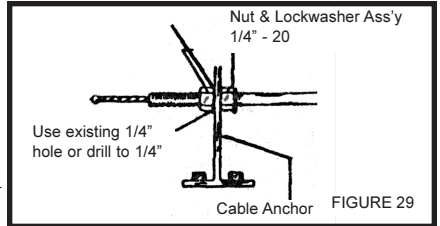


FIGURE 29

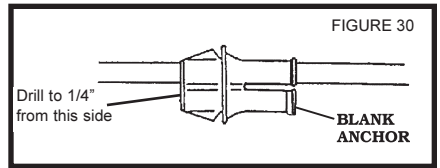


FIGURE 30

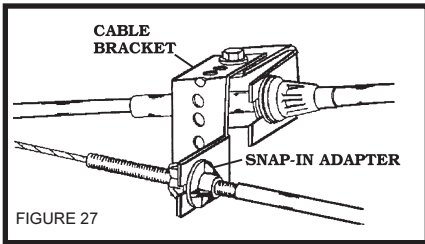


FIGURE 27

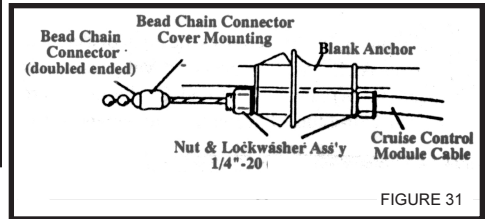


FIGURE 31

**D. Vacuum Line Installation**

**WARNING**

**DO NOT cut the power brake vacuum supply line. An improper connection to this line could impair the function of the vehicle's brakes.**

**Suggested Vacuum Source Locations**

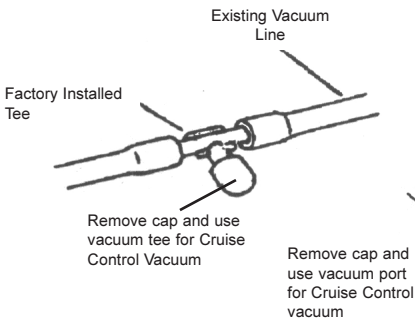
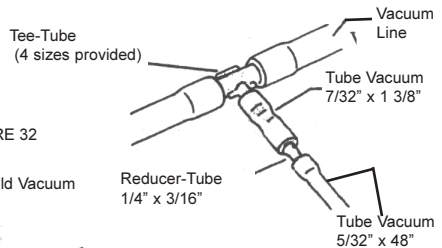


FIGURE 32



**VACUUM RESERVOIR:** Usually mounted on inner fenderwell or engine bulkhead. Maintains vacuum of other vehicle accessories. **Figure 33**

After locating a vacuum source and making a connection, route **TUBE-VACUUM-5/32" x 48"** from this source and attach to the vacuum port on Servo. **DO NOT** forget to remove the Protective cap, prior to installing **TUBE-VACUUM-5/32" x 48"**.

**VACUUM CHECK**

Run the engine at idle. Unplug the **TUBE-VACUUM** from the **CRUISE CONTROL SERVO** and place your finger over the end of the tube. You should feel a strong suction. If not you should find another location for a stronger vacuum source.

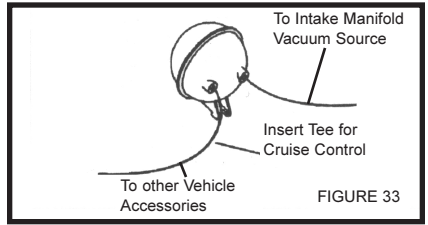


FIGURE 33

**E. TACHOMETER SIGNAL WIRE CONNECTIONS**

This Cruise Control system requires the input of a tachometer signal on ALL gasoline powered vehicles so that engine speed(RPM) can be monitored. On diesel powered vehicles, use a **250-4206** kit instead of tachometer signal.

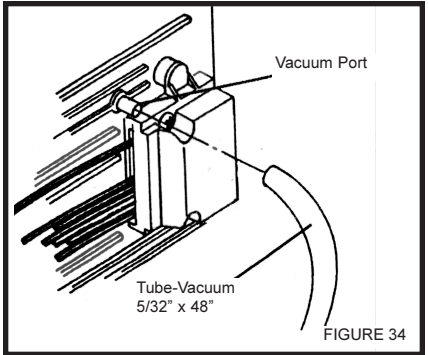


FIGURE 34

**NOTE: Use blue tach wire when using grey VSS for engine protection and clutch disengagement.**

1. See Vehicle Technical Information Guide.
2. Locate the tachometer signal on the vehicle.

**POSSIBLE LOCATIONS**

- A. The negative (-) side of the ignition coil.  
**See Figure 35.**
  - B. A terminal on the distributor marked "Tach" (most GM high energy ignition systems)  
**See Figure 36.**
  - C. On distributorless ignition systems, there is a tach signal wire located at the ignition control module. Consult a shop manual if necessary. **See Figure 38.**
3. Route the wire from the **CRUISE CONTROL ELECTRONIC REGULATOR** to the tach signal. Keep wire away from hot, moving, or sharp objects.
  4. Cut excess wire from tach wire harness and attach to the signal in one of the following ways.
    - A. For terminal on GM distributor **Figure 37**, crimp the Terminal-1/4" Female on the end of tach wire and plug into distributor.
    - B. If you cannot use procedure A, use a Connector- Self Stripping and attach to a wire coming from a tach signal.

**See Figure 35.**

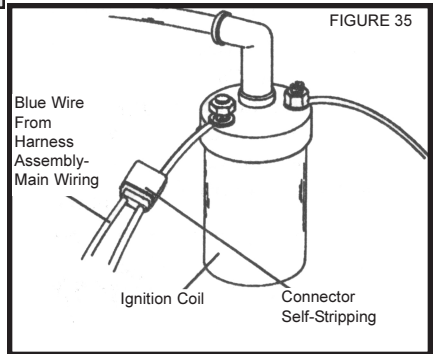


FIGURE 35

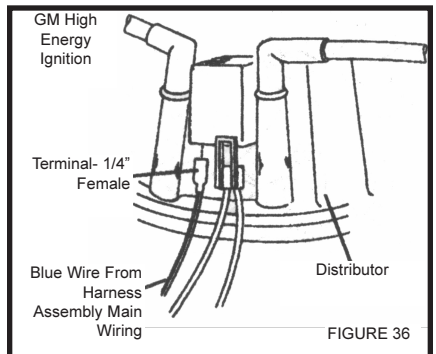
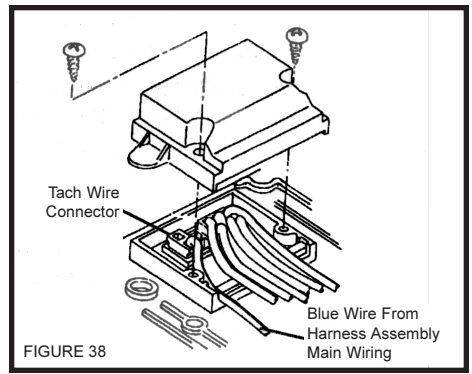
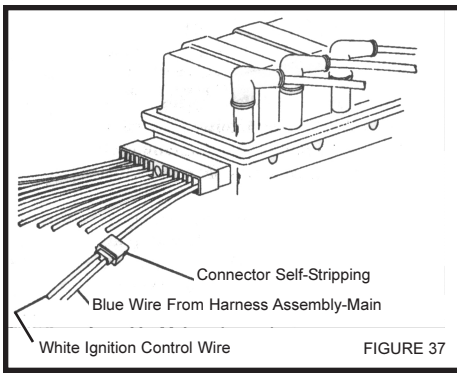


FIGURE 36

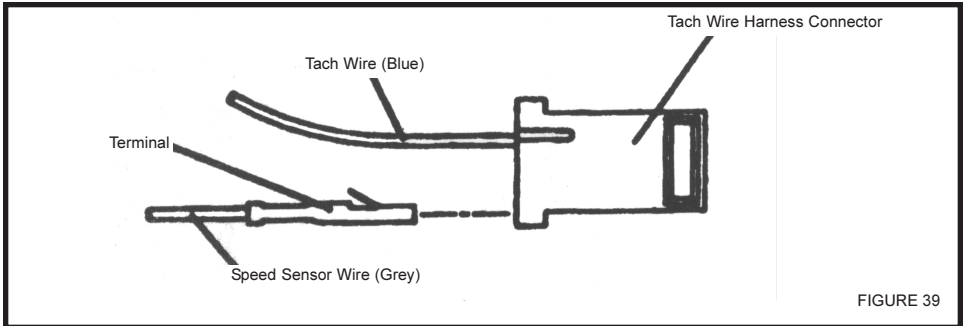




## F. VSS SIGNAL WIRE CONNECTION

Once you have found the proper Vehicle Speed Sensor Wire, (see Vehicle Technical Information Guide) it will be necessary to attach the Speed Sensor Wire from the **HARNES ASSEMBLY-MAIN WIRING (No.2)** to this wire.

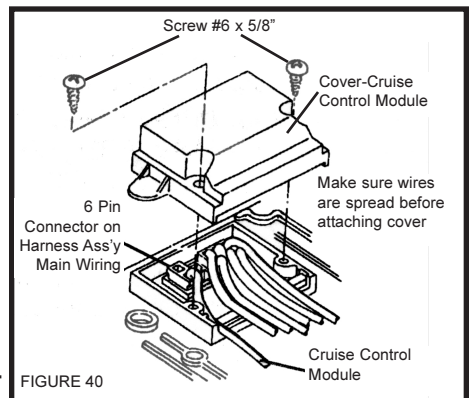
1. Route the unterminated end of the Speed Sensor Wire from the Harness Assembly-Main Wiring to the Vehicle Speed Sensor Wire. Use care when routing the wire to ensure that it will not come in contact with any hot, sharp, or moving objects.
2. Connect the unterminated end of the Speed Sensor Wire to the Vehicle Speed Sensor Wire with a connector-Self Stripping (No. 28)
3. Insert the terminated end of the Speed Sensor Wire into the vacant side of the Tach Wire Harness Connector. A click will be heard when the terminal is fully inserted. **See Figure 39.**



## G. HARNES ASSEMBLY-MAIN WIRING

### CONNECTIONS (ENGINE COMPARTMENT)

1. Plug the **HARNES ASSEMBLY-MAIN WIRING** into the Cruise Control Module (No.1). Be sure the connector fits securely in place. Fit the **COVER-CRUISE CONTROL MODULE** over the wires and reinstall the two screws provided to hold the **COVER-CRUISE CONTROL MODULE** in place. **Figure 40.**
2. Attach the ground wire (Black) to a vehicle ground point which is a clean unpainted metal surface.



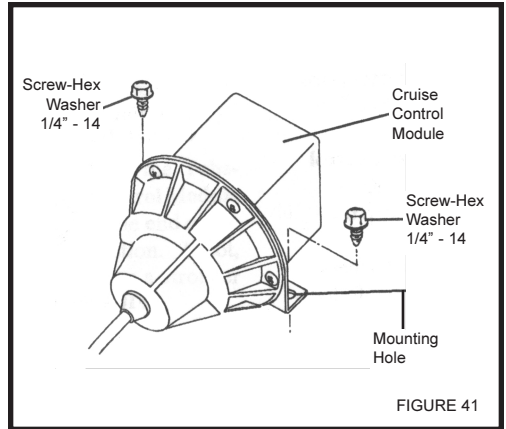
**DO NOT USE THE ENGINE AS A GROUNDING POINT FOR THE BLACK WIRE.**

## H. CRUISE CONTROL MODULE MOUNTING

### PROCEDURE

NOW THAT HARNESS ASSEMBLY-MAIN WIRING IS ATTACHED TO THE CRUISE CONTROL MODULE, MOUNT THE MODULE IN THE LOCATION YOU SELECTED IN SECTION IV Item B.

Hold the **CRUISE CONTROL MODULE** in the location you selected. Secure with two **SCREW-HEX WASHER-1/4"-14** through the holes provided. See **Figure 41**. Be sure that the **CRUISE CONTROL MODULE** is securely in place before you start to work inside the vehicle.



## J. CONTROL SWITCH INSTALLATION

If your control switch is the type which clamps on the turn signal lever, or which requires cutting the turn signal lever or is mounted on the instrument panel, follow instructions packaged with it. If you have a switch which replaces the complete original equipment turn signal lever, remove the existing lever and install the Cruise Control switch and lever assembly as instructed in the vehicle shop service manual.

### WARNING

Failure to follow the instruction manual could cause the Cruise Control to work improperly possibly causing damage to your vehicle and injury and/or death to you and your passengers.

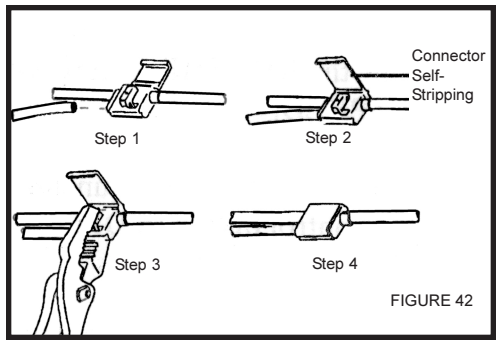
### CAUTION:

If a two way radio is in the vehicle or is later installed, the Cruise Control regulator should be located as far from the radio transceiver as practical (at least 3") and the Cruise Control wiring should be routed as far from the radio wires and coaxial cable as practical. The radio should be wired directly to battery ground connection and the standing wave ratio of the antenna should be as low as possible.

## K. THE WIRING HARNESS

### (PASSENGER COMPARTMENT)

1. To find a place to get electrical power, you will need to “ground” one lead of your volt ohm meter. Find electrical ground by turning on the ignition switch and touching one lead to a hot fused terminal at fuse panel; touch other lead to unpainted metal part of vehicle. The metal you touch to make continuity, is ground. Turn ignition switch off.

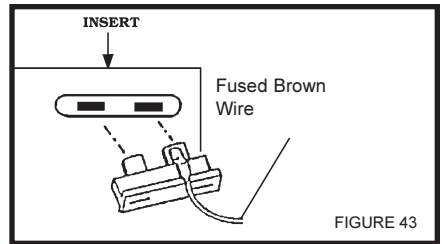


**NOTE: Some fuse panels are behind shields which must be removed first. On other vehicles the screw that mounts the panel must be removed to get to the fuses.**

2. Locate the fuse panel, the **BROWN FUSED WIRE** of the **HARNESS ASSEMBLY-MAIN WIRING** must be attached to a fuse that is energized (battery voltage) when the ignition switch is on and is de-energized (zero volts) when ignition switch is turned OFF or to the START (CRANK) position.
3. Attach terminated **BROWN WIRE** to fuse panel as shown in **Figure 43**.

**DO NOT use the following power supplies:**

- \*Turn Signal
- \*Hazard Lights
- \*Windshield Wipers
- \*Blower Fan
- \*Hot side of Brake Switch (same wire as red wire)



4. Locate the vehicle brake switch - the switch which makes your brake lights go on when you apply your brakes. One of the two wires to this switch is “hot” all of the time, other wire is energized only when you apply the brakes. It is called the “cold side” of the brake switch.
5. Touch one lead to ground (located in step A), touch other lead to one of the brake light switch terminals. If test shows voltage (12 volts) that is the hot side of switch. Check color of wire connected to that terminal. **Red fused wire** of Cruise Control harness will be spliced to that wire.
6. Touch test lead to other brake light switch terminal. Test should show no voltage until brake pedal is pressed. **Violet wire** of harness will be spliced to this wire on “cold” side of the switch.
7. Use blue plastic splicing connector to splice **Red fused harness wire** to “hot” side of brake switch and **Violet wire** to “cold” side of switch.
8. Connect Flat 4-wire connector that plugs into the Control Switch.
9. The **Grey wire** is to be attached to the VSS (Vehicle Speed Sensor) wire (See other Form for locations or consult shop manual.)
10. The **Blue wire** is to be attached to the Tach (Tachometer) wire (See other Form for locations or consult shop manual.)

# OPERATING PROCEDURES

If your Cruise Control was installed correctly, it should perform as indicated in this section. The **Control Switch** is used to operate the system.

**ON/OFF:** The first time you use the Cruise Control you should be on straight, paved road away from heavy traffic. Slide the **ON/OFF** switch of the **Control Switch** to the **ON** position. Nothing will happen, this simply prepares the system for use.

Remember, each time you turn **OFF** the ignition switch, or slide the **Control Switch** to **OFF**, you de-energize the system. To re-energize it, the ignition switch must be **ON** and the slide switch must be in the **ON** position. You can leave the **Control Switch ON** all the time without damaging the system

**SET SPEED:** After turning the system **ON**, wait at least three seconds before trying to set your speed. To operate the system, drive your car at a steady speed above 35 mph.

Press the **SET/COAST** button, and release it. Slowly remove your foot from the accelerator. your speed is now in the Cruise Control Module's memory. Your driving speed should remain with 2-1/2 mph of your set speed.

If you want to increase your speed, press the accelerator pedal. When you release the pedal, you will return to your **SET SPEED**.

**ACCEL:** You may also increase speed using the **RESUME/ACCEL** feature. Your vehicle will accelerate as you hold the slide switch to the **RESUME/ACCEL** position. When you release the switch, you will have a new higher **SET SPEED**.

You can also increase your speed gradually, by quickly sliding and releasing the **RESUME/ACCEL** switch. Each time you slide and release the button, your speed will increase by one or two mph.

**COAST:** To reduce your **SET SPEED**, press and hold the **SET/COAST** button. This erase the old set speed, and allows your vehicle to coast. Just before reaching the speed you want, release the button. This will be your new **SET SPEED**, providing you are above 35 mph.

**RESUME:** When you use the brake to slow down or stop, the cruise control will remember your set speed. To return to the set speed, and you are above 30 mph, drive to a speed within 15 mph of your preset speed. Slide the **RESUME/ACCEL** switch, then release it. Your vehicle will automatically accelerate to the **SET SPEED** and hold there.

When using the **RESUME** feature with standard transmission, you must be in the correct gear for your **SET SPEED**.

After braking, the **RESUME** function will **NOT** work if you:

- Move the control button to **OFF**
- Turn **OFF** the ignition

If this happens, you need to **SET SPEED** again.

**DISENGAGE:** You may disengage from your set speed in two or three ways depending on the type of transmission (manual or automatic) you have in your car.

- Gently depress the brake pedal to activate the brake lights.
- Turn the cruise control switch to the **OFF** position
- For manual transmissions depress the clutch. this will cause the engine to rev before disengaging.

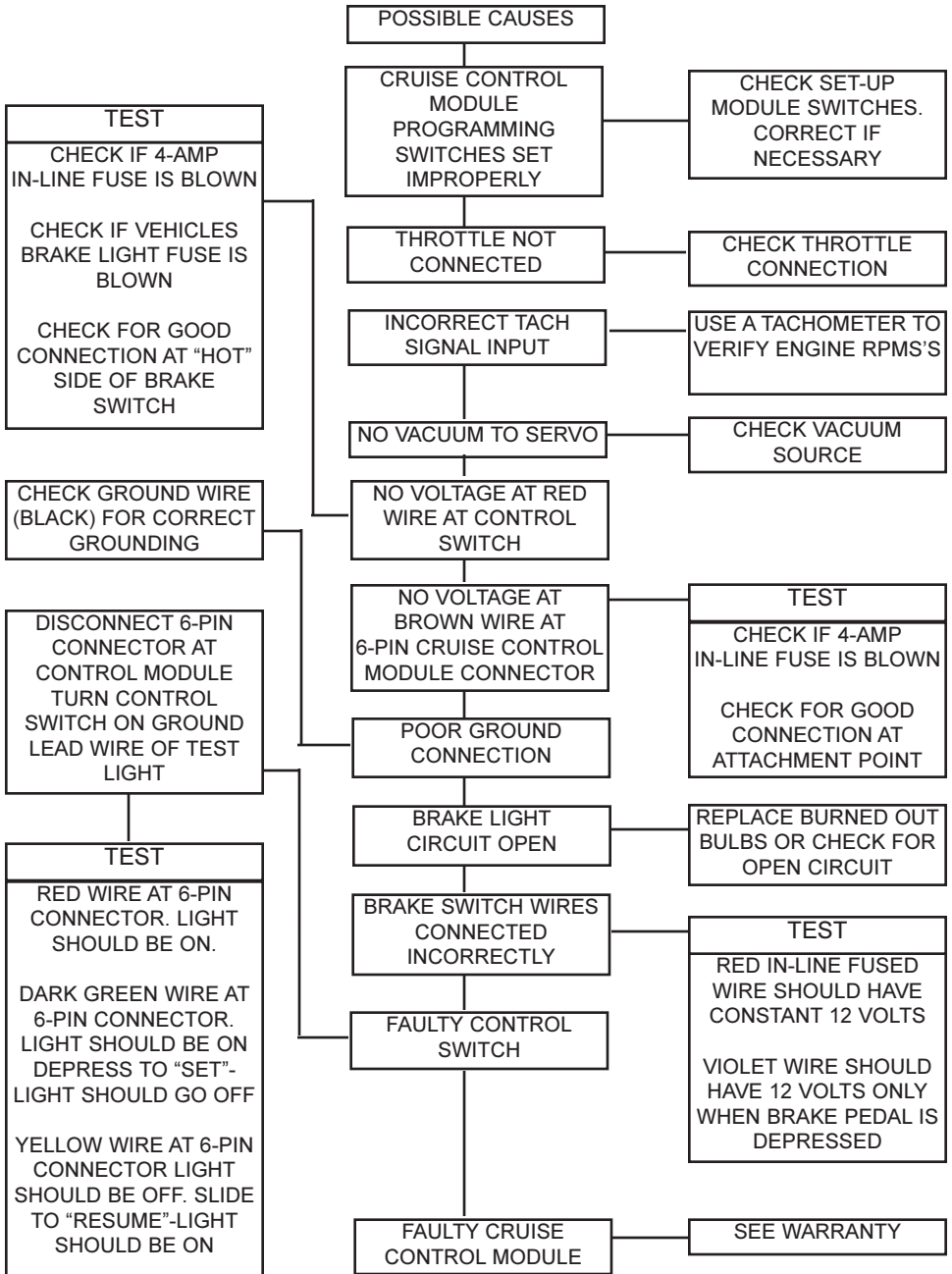
## A. ROAD TESTING

Be sure to road test your Cruise Control after installation.

**TEST DRIVE:** Follow the operating instructions to test drive your new Cruise Control. Try all functions on your Cruise Control to be sure it's operating correctly.

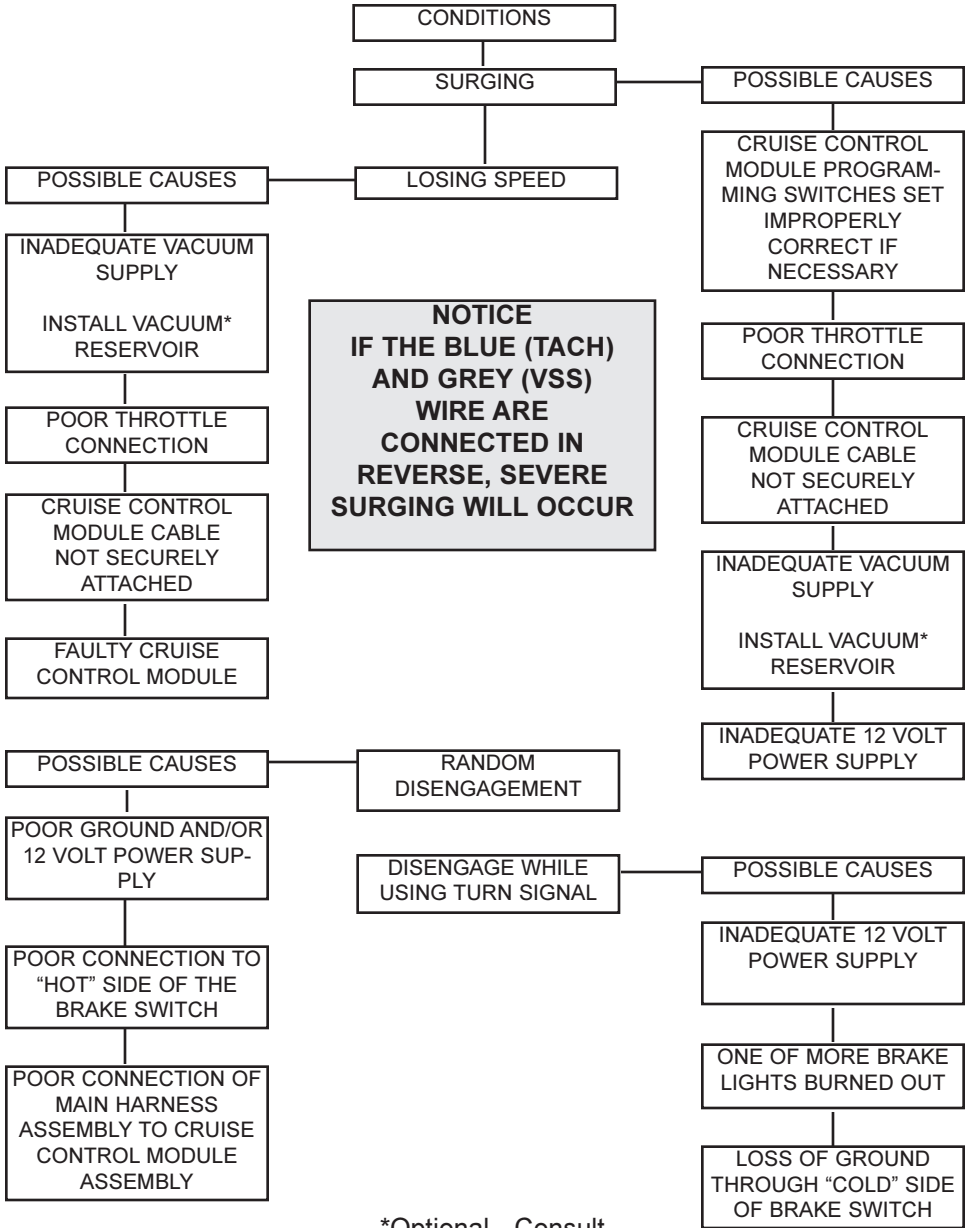
# TROUBLE SHOOTING GUIDELINES

## Condition Not Working at Installation



# TROUBLE SHOOTING GUIDELINES (cont)

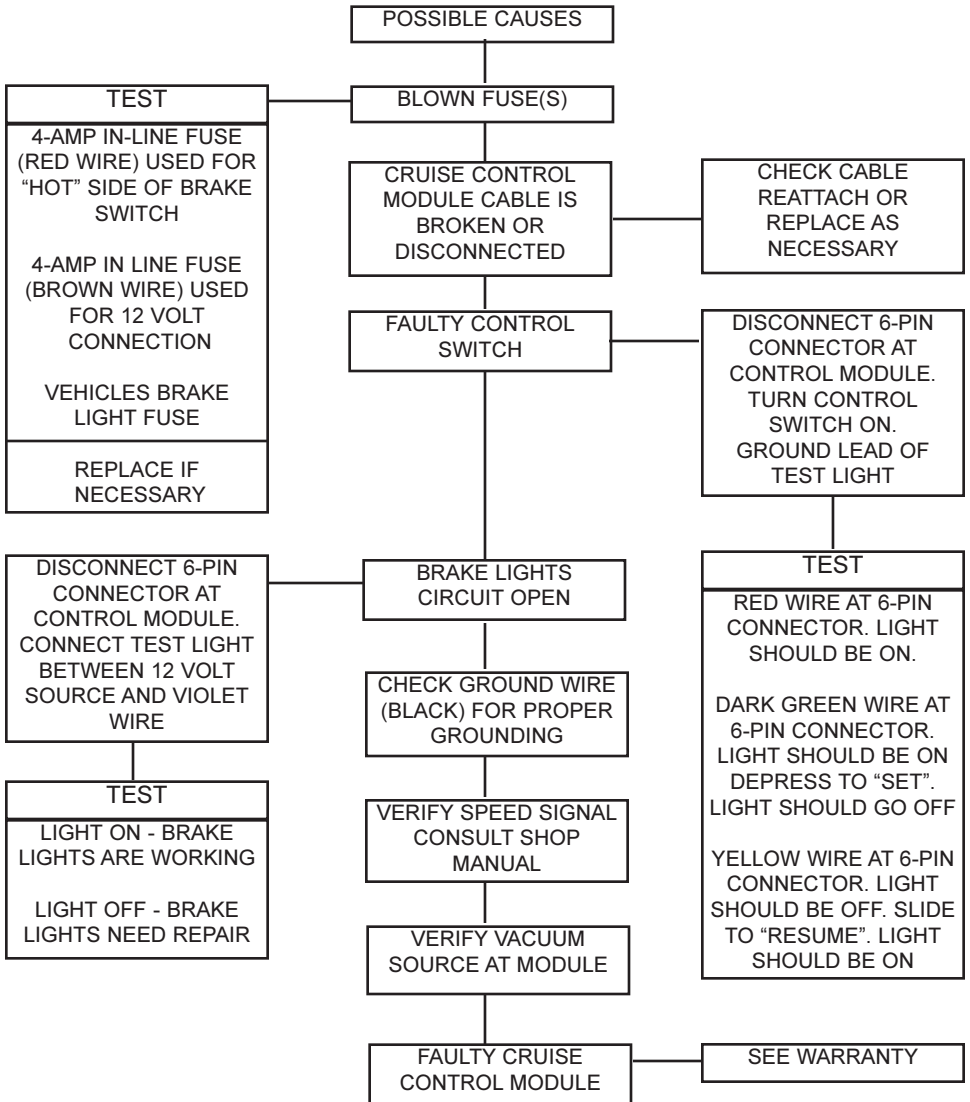
## Condition Erratic Operation



\*Optional - Consult the Auto Center

# TROUBLE SHOOTING GUIDELINES (cont)

## Condition Quit Working After Installation



# ELECTRICAL TEST

## WITH CLOSED CIRCUIT CONTROL SWITCH

This system can be checked with a test light at the 6 pin connector of the main wiring harness.

Test made at this point will check:

1. Brake Light fuse
2. Connection at "hot side" of brake switch
3. In-line 4 amp fuse in red wire
4. Connections at flat four pin connection
5. Control switch function
6. Connection at "cold side" of brake light switch
7. Brake light switch
8. Brake light bulbs
9. Turn signal switch
10. Ground connection of black wire
11. Connection and power source of brown wire
12. In-line fuse in brown wire

You do not need to unplug the 6 pin connector from the cruise control module for these tests; simply back probe the connections.

To make the test:

1. Ground the test light lead and verify that the test light works by probing a known power source.
2. Follow the test charts below for these tests when using a **closed circuit** controls switch.

CLOSED CIRCUIT CONTROL SWITCH					
		WIRE COLORS			
IGNITION SWITCH POSITIONS	CONTROL SWITCH POSITIONS	RED	DARK GREEN	YELLOW	BROWN
OFF	OFF	OFF	OFF	OFF	OFF
OFF	ON	ON	ON	OFF	OFF
OFF	ON & press & HOLD SET/COAST	ON	OFF	ON	OFF
ON	ON	ON	ON	OFF	ON
START	ON	ON	ON	OFF	OFF



# ELECTRICAL TEST

## WITH OPEN CIRCUIT CONTROL SWITCH

Test at 6 Pin Connection with OPEN CIRCUIT Control Switch

OPEN CIRCUIT CONTROL SWITCH					
		WIRE COLORS			
IGNITION SWITCH POSITIONS	CONTROL SWITCH POSITIONS	RED	DARK GREEN	YELLOW	BROWN
OFF	OFF	OFF	OFF	OFF	OFF
OFF	ON	ON	OFF	OFF	OFF
OFF	ON & press & HOLD SET/COAST	ON	ON	OFF	OFF
OFF	ON & slide & hold RESUME/ACCEL	ON	OFF	ON	OFF
ON	ON	ON	OFF	OFF	ON
START	ON	ON	OFF	OFF	OFF

**Test for Black and Violet wire grounding circuits is same as with closed circuit control switch.**

PROBLEM	PROBABLE CAUSES
No power on red wire (power) <b>NOTE: If any problems are found on red wire, correct before proceeding to others</b>	Brake Light Fuse Connection at hot side of brake switch In-Line 4 amp Fuse Connection at Flat Four Pin Connection Control Switch
Incorrect operation of Dark Green wire (SET/COAST)	Connection at Flat 4 pin connector Control Switch
Incorrect operation of Yellow wire (RESUME/ACCEL)	Connection of Flat 4 pin connector Control Switch
Incorrect operation of Brown wire (accessory power-radio fuse)	Wrong Power Source In-Line 9 amp Fuse

At this point the black and the violet wire of the 6 pin connector are to be tested. (Unplug 6 pin connector for these tests)

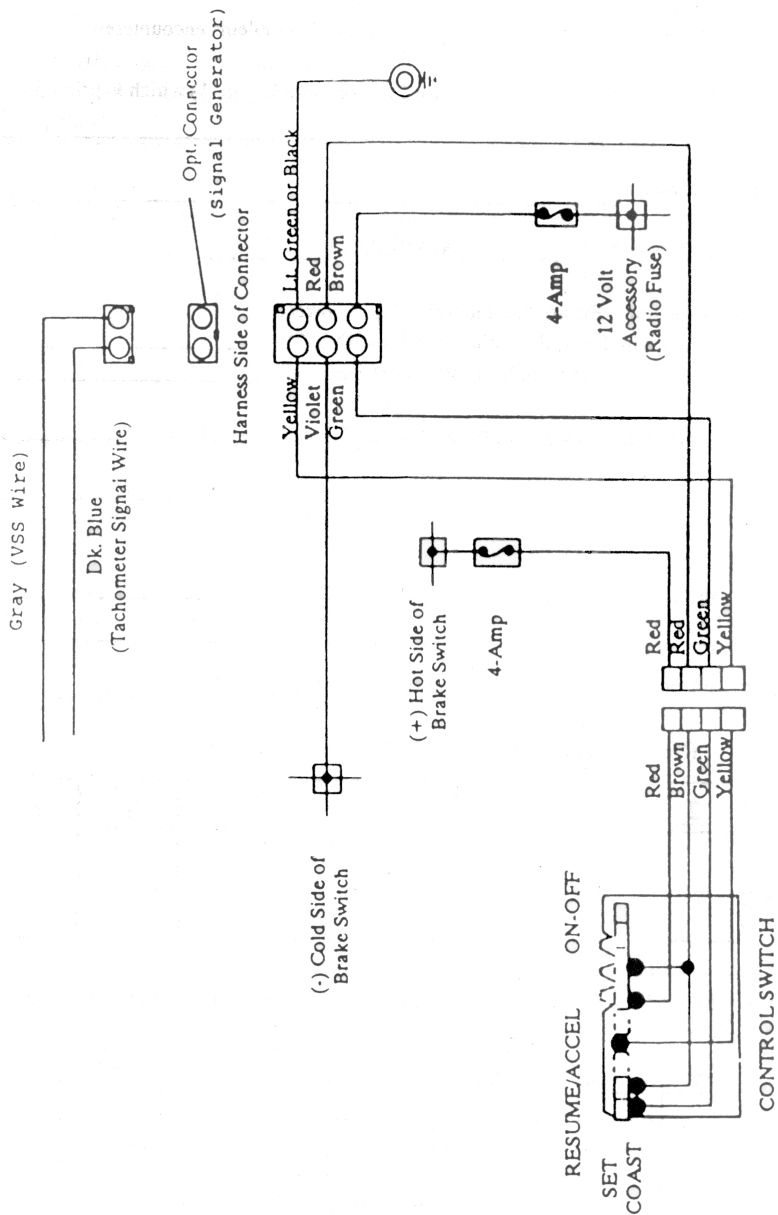
Attach the test light lead to a power source and verify test light operation by touching the "Probe End" to ground; the test light should burn.

1. **PROBE THE BLACK WIRE:** If the black wire is properly grounded the test light will burn.
2. **PROBE THE VIOLET WIRE:** If the violet wire is attached to the cold side of the brake light switch and has continuity to ground through the brake light bulbs the test light will burn. Pressing the brake pedal will make the test light go out when the brake lights come on.
3. A. With the test light still probing the violet wire, turn on the ignition switch and turn on the left turn signal light. If the test light goes out, check the right side brake lamp bulb and its grounding.  
B. Now, turn on the right side turn signal. If the test light goes out, check the left side brake lamp bulb and its grounding.

**NOTE: If, during these tests of the violet wire, the test light oscillates with turn signal operation, you may need to install a separate brake disengagement switch due to poor brake light grounding on the vehicle or poor contact of the switching mechanism in the turn signal switch.**

**(Part #250-4206 suggested)**

# WIRING DIAGRAM



# TECHNICAL SERVICE

In the event that you need technical assistance with trouble shooting, please have the following information when calling the Technical Service Department 910-277-1828.

This information is important for a proper and speedy diagnosis of the problems encountered.

1. The model number and manufacture code of the Cruise Control Module (No.1) which is printed on the case is required. \_\_\_\_\_
2. Vehicle make, model and year. \_\_\_\_\_
3. Transmission type: AUTOMATIC \_\_\_\_\_ MANUAL \_\_\_\_\_
4. Brake Switch wiring connections. Ensure that the following is correct!  
 "HOT SIDE" connected to red wire from Main Wiring Harness (No.2)  
 \_\_\_\_\_  
 "COLD SIDE" connected to violet wire from Main Wiring Harness (No.2)  
 \_\_\_\_\_
5. Power Supply wiring connection. Brown wire from Main Wiring Harness (No.2)  
 \_\_\_\_\_
6. Vacuum Source: \_\_\_\_\_
7. Speed Signal Source:  
 VSS (Vehicle Speed Signal)? \_\_\_\_\_  
 Signal Generator? \_\_\_\_\_
8. Tachometer wiring connection. Blue wire from Main Wiring Harness (No.2)  
 \_\_\_\_\_
9. Cruise Control Module (No.1) programming switch setting:

ON	1	2	3	4	5	6	7	8	9	10

10. Item numbers of parts used for throttle connection and cable anchor. Refer to the Parts List and Parts Diagram on Pages 4-5 of this manual.

ITEM	YES	NO	ITEM	YES	NO
7			16		
8			17		
9			18		
10			19		
11			20		
12			21		
13			22		
14			23		