

# AC Electro-Motor Cruise System

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Service Manual



## **IMPORTANT SAFETY NOTICE**

To reduce the chance of personal injury and/or property damage, the following instructions must be carefully observed:

Proper service and repair are important to the safety of the service technician and the safe, reliable operation of all motor vehicles. If part replacement is necessary, the part must be replaced with one of the same part number or with an equivalent part. Do not use a replacement part of lesser quality.

The service procedures recommended and described in this service manual are effective methods of performing service and repair. Some of these procedures require the use of tools specially designed for the purpose.

Accordingly, anyone who intends to use a replacement part, service procedure or tool, which is not recommended by the vehicle manufacturer, must first determine that neither his safety or safe operation of the vehicle will be jeopardized by the replacement part, service procedure or tool selected.

It is important to note that this manual contains various "cautions" and "notices" that must be carefully observed in order to reduce the risk of personal injury during service or repair, or the possibility that improper service or repair may damage the vehicle or render it unsafe. It is also important to understand that these "cautions" and "notices" are not exhaustive, because it is impossible to warn of all the possible hazardous consequences that might result from failure to follow these instructions.

CHEVROLET



Central Office

130

May 27, 1987

TO: ALL CHEVROLET DEALERS  
SUBJECT: AC ELECTRO-MOTOR CRUISE SYSTEM SERVICE MANUAL

Enclosed is a Service Manual for the new AC Electro-Motor Cruise System that is utilized on 1988 Chevrolet C-K Trucks. This service manual is intended to be a quick, easy to use reference for servicing the Electro-Motor Cruise System.

Chevrolet is offering a training program concerning this new cruise control system, plus other electrical components used on the 1988 C-K Truck through General Motors Training Centers and remote training locations. The course number is 10488.01, "1988 C-K Truck Electrical/Electronics Program", and is one (1) day in length. We encourage attendance by your electrical technicians.

We recommend that the enclosed service manual be reviewed by your service manager and electrical technicians.

A handwritten signature in cursive script that reads "R. W. Starr".

R. W. Starr  
General Sales & Service Manager





## Foreword

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AC Electro-Motor Cruise System Service Manual

**AC** Spark Plug Division of General Motors Corporation has prepared this service manual to help answer questions about the operation and service of the AC Electro-Motor Cruise System (EMCS).

The AC Electro-Motor Cruise System is an extension of the electronic cruise control systems that AC Spark Plug Division has designed and manufactured since the 1977 vehicle model year. The EMCS has been engineered to function as an all-electric system.

Like Custom Cruise III, the Electro-Motor Cruise System places at the driver's fingertips the cruise control functions of CRUISE, COAST, RESUME, TAP-UP, TAP-DOWN, and ACCELERATE. Each function is controlled by either the slider switch or the push button on the turn signal lever. The EMCS makes use of an electric motor and connecting strap to vary the throttle angle. As a result, the motor-actuated throttle linkage affords a mode of operation that is completely vacuum independent and consistently gives smoother throttle control under changing driving conditions.

Electro-Motor Cruise System also offers serviceability benefits:

- (A) EMCS has less than half the system parts of the Custom Cruise III system
- (B) Major cruise components are reduced from four (4) to two (2)
- (C) No vacuum harnesses with difficult-to-locate leaks are needed
- (D) Built-in diagnostics provide a check of the cruise system operation

This service manual is intended to be a quick, easy-to-use reference for servicing the Electro-Motor Cruise System. It has been organized into seven major sections...

1. General Description of Electro-Motor Cruise System
2. How to Use the Electro-Motor Cruise System
3. Components in the Electro-Motor Cruise System (GMT-400)
4. Electro-Motor Cruise System Block Diagram and System Layout (GMT-400)
5. GMT-400 Cruise Diagnosis and Troubleshooting
6. Connector Disassembly and Repair
7. Cruise Control Cable Installation and Adjustment Procedures

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## General Description of Electro-Motor Cruise System

AC Electro-Motor Cruise System Service Manual

The Electro-Motor Cruise Control is a speed control system which maintains a desired vehicle speed under normal driving conditions. The Electro-Motor Cruise Control System has the capability to CRUISE, COAST, RESUME SPEED, ACCELERATE, TAP-UP, and TAP-DOWN.

The main parts of the cruise control system are the mode control switches, cruise control module, electrical release switches, electrical harness, and cruise control cable.

The cruise control system uses a cruise control module to obtain the desired vehicle cruise operation (see Figure 1-1). Two important components in the module help to do this. One is an electronic controller and the second is an electric motor. The controller monitors vehicle speed and operates the electric motor. The

motor in response to the controller moves a connecting strap and throttle linkage to maintain the desired cruise speed. The cruise control module contains a low speed limit which will prevent system engagement below a minimum speed, about 25 MPH. The operation of the cruise module is controlled by mode control switches located on the turn signal lever.

Electrical release switches are provided to disengage the cruise system. Two (2) release switches are mounted on the brake pedal bracket, and one (1) switch is attached to the clutch pedal bracket (on vehicles with manual transmission). When the brake pedal (or clutch pedal) is depressed, the cruise system is electrically disengaged and the throttle is returned to the idle position.

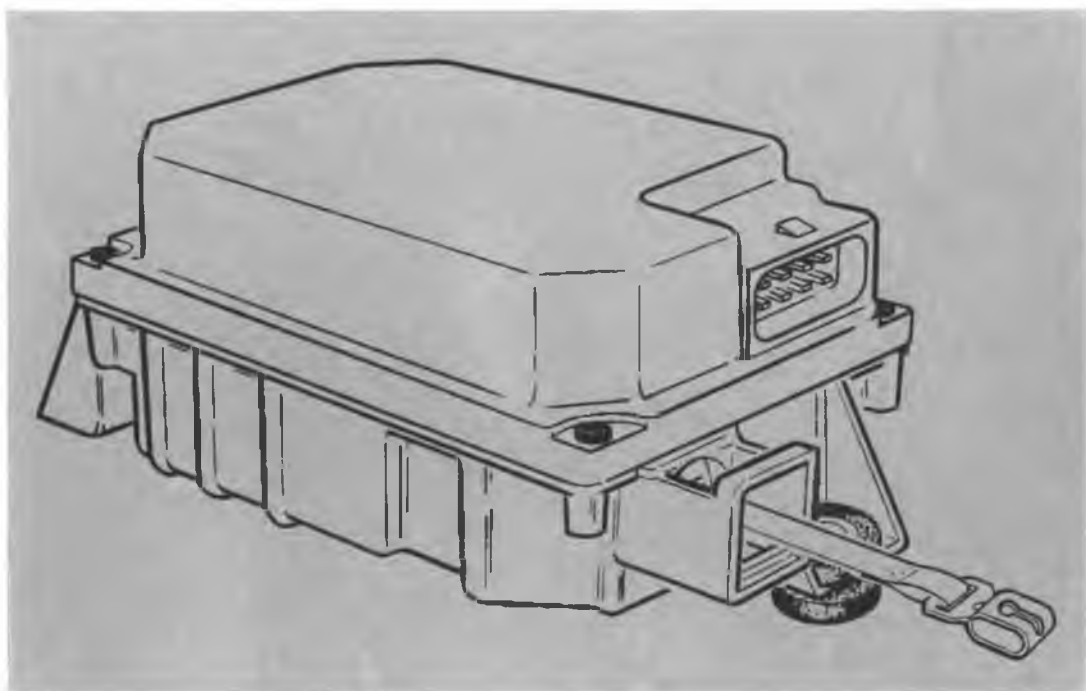


Figure 1-1 Cruise Control Module

# How to Use the Electro-Motor Cruise System

AC Electro-Motor Cruise System Service Manual

## Operation of Mode Control Switches

The various operating modes of the Electro-Motor Cruise System (EMCS) are controlled by mode control switches located on the turn signal lever (see Figure 2-1). Following is a description of how the different functions are initiated by either the push button or the slider switch.

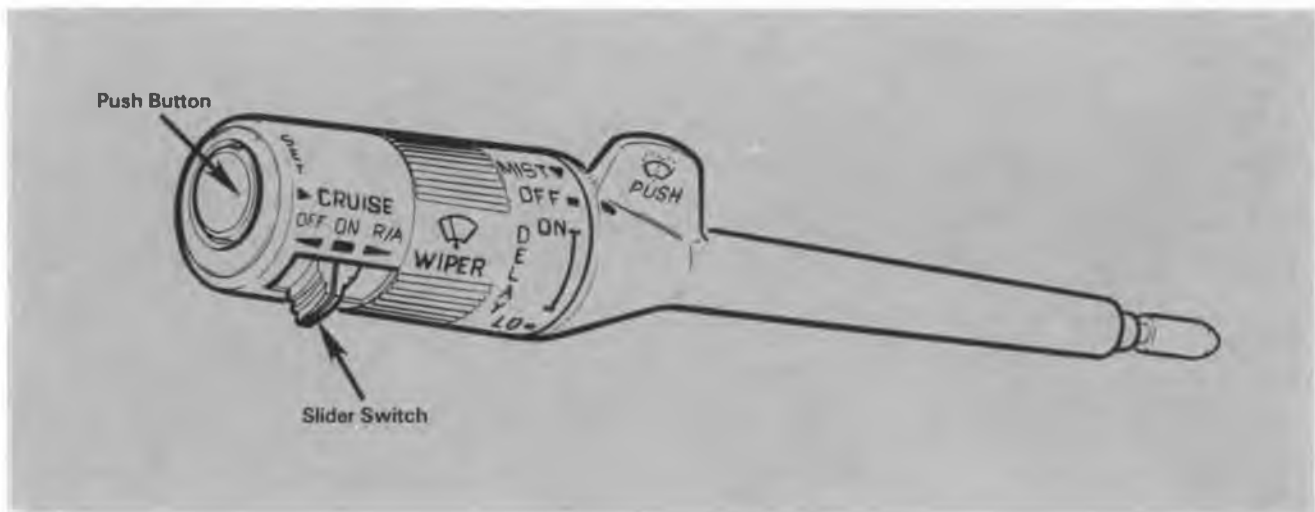


Figure 2-1 Mode Control Switches on Turn Signal Lever

**— NOTE —**

The cruise mode functions of SET, COAST, RESUME/ACCEL (R/A), ACCELERATION (ACCEL), TAP-UP, and TAP-DOWN are inoperative when vehicle speed is less than 25 MPH. This is a low speed inhibit feature.



## Modes and Procedures

### On

Movement of slider switch to the "ON" position allows engagement of the cruise system.

### Off

Movement of slider switch to the "OFF" position releases throttle, clears cruise memory speed, and puts the vehicle in a non-cruise mode.

### Set

The cruise system is engaged by depressing the "SET" push button and then releasing it (slider switch must be in the "ON" position). The cruise speed will be the vehicle speed at the time the push button is released. This speed is stored in the cruise module's memory. The cruise system may be disengaged by moving the slider switch to the "OFF" position or by depressing the brake pedal (or clutch pedal on manual transmission vehicles). A momentary slider switch movement from the "ON" position to "R/A" will also operate as a "SET" mode function if the previous cruise speed has been cleared from the module's memory. Memory is cleared by moving the slider switch to "OFF" or by turning the ignition switch to "OFF". (The accelerator pedal may be depressed at any time to override the cruise system. Release of the accelerator will return the vehicle to the "SET" cruise speed.)

### Coast

To decrease cruise speed, the "SET" push button switch is held in the *depressed position*. In the depressed position, the vehicle cruise system is disengaged, and the throttle is returned to the idle position. When the vehicle has slowed or "COASTED" to the desired speed, releasing the switch will re-engage the system, and "SET" the new cruise speed.

### Resume

If the cruise control system is disengaged by depressing the brake or clutch pedal, the vehicle can be returned to the last speed stored in memory by momentarily holding the slider switch in the "R/A" position — for less than *1.0 second*. The vehicle will automatically accelerate at a controlled rate. (Holding the slider in the "R/A" position for more than — *1.0 second* — causes the cruise system to go into the acceleration (ACCEL) mode. The vehicle operator may interpret this as a faulty RESUME function.)

### Acceleration (ACCEL)

If the slider is moved to the "R/A" position and *held*, the vehicle will accelerate at a controlled rate until the slider is released. When the slider is released, the vehicle will continue to cruise at that speed. The acceleration function can be operated in either the cruise or non-cruise mode.

### Tap-Down

While in cruise, momentarily depressing the "SET" push button — less than *3/8 seconds* — decreases vehicle speed by one (1) MPH.

### Tap-Up

While in cruise, momentarily moving the slider switch — less than *3/4 seconds* — to the "R/A" position increases vehicle speed by one (1) MPH.

### Cancel

Depressing both the "SET" push button and the "R/A" slider switch at the same time releases the throttle and puts the vehicle in a non-cruise mode. The cruise module's memory speed is not changed.

## Components in the System (GMT-400)

AC Electro-Motor Cruise System Service Manual

### Component Functions

- *Mode Control Switches*

The various operating modes of the Electro-Motor Cruise System are controlled by means of mode switches located on the turn signal lever (see Figure 2-1).

- *Internal Transmission Speed Sensor (ITSS)*

The transmission speed sensor (see Figure 3-1) generates vehicle speed information in the form of a high frequency sine wave. The voltage output ranges from one-fourth (1/4) volt AC peak (.2 volts AC RMS) at 2 MPH to 100 volts (70 volts AC RMS) AC peak at maximum speed. This signal is sent to the vehicle's instrument cluster which contains the vehicle speed circuitry.

- *Integrated Vehicle Speed Circuitry*

The vehicle speed information from the Internal Transmission Speed Sensor is transmitted to the vehicle speed circuitry. The speed circuitry electronics have been built into the instrument cluster.

The speed circuitry consists of solid-state electronic components that condition and process the speed signal. The signal is converted to a square wave of 1.112 Hertz/MPH which is needed by the cruise control module. The output frequency is proportional to vehicle speed.

- *Electric Brake Release Switches*

The combination CRUISE/STOP LIGHT/CONVERTER CLUTCH switch is used in series with a separately mounted plunger type cruise release switch (see Figures 3-2A, 3-2B). When the brake pedal is depressed, each switch disengages the cruise control system. The cruise function remains disengaged after the brake pedal is released.

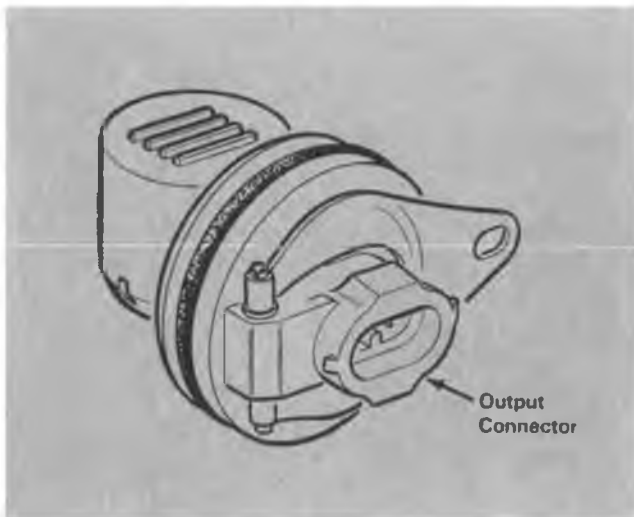


Figure 3-1 Internal Transmission Speed Sensor

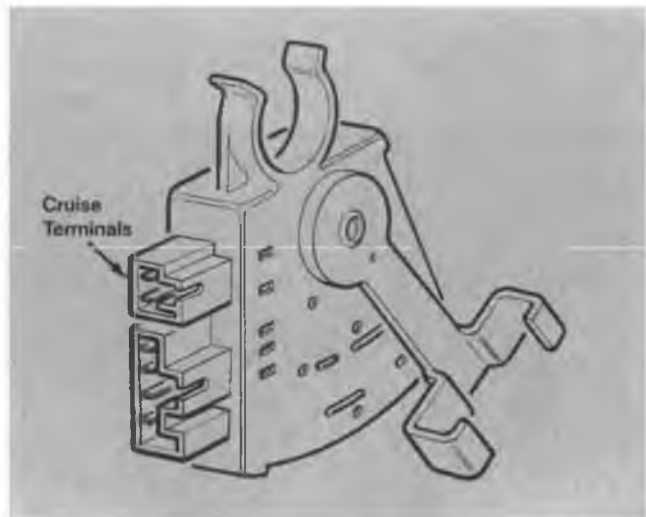


Figure 3-2A Combination Cruise/Stop Light/Converter Clutch Switch

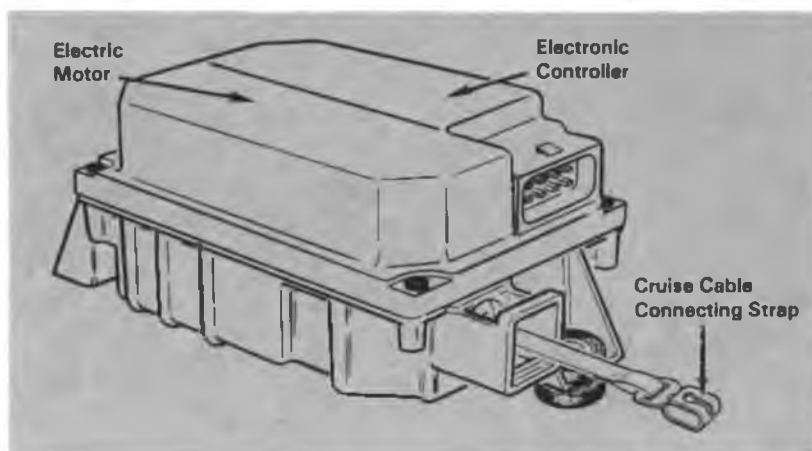


Figure 3-4 Cruise Control Module

- *Electric Clutch Release Switch*

On vehicles with manual transmission, a plunger type clutch switch (see Figure 3-2B) is used in series with the two (2) brake switches. When the clutch pedal is depressed, the clutch switch disengages the cruise system. The cruise system remains disengaged after the pedal is released.

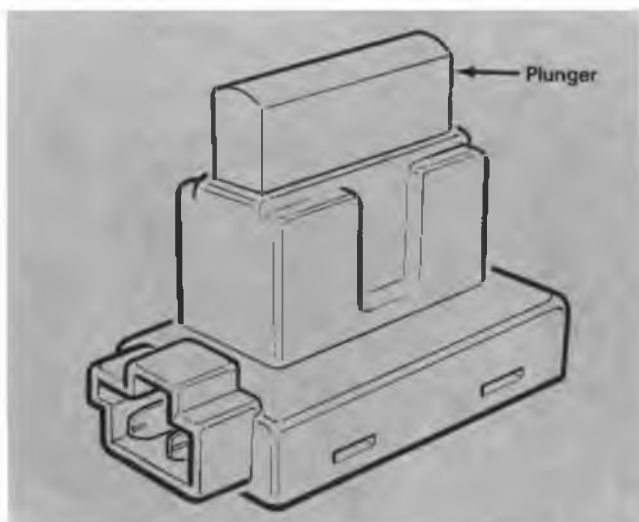


Figure 3-2B Plunger Type Cruise Release Switch

- *Cruise Control Module*

The cruise control module (see Figure 3-4) is mounted on the engine compartment bulkhead, near the Master Cylinder. The module replaces both the Electronic Control Module and the vacuum-actuated Servo unit utilized in the AC Custom Cruise III cruise system. The cruise control module which includes an electronic controller and an electric motor varies the throttle with each different cruise mode command.

**— CAUTION —**

The cruise control module is not dealer serviceable.  
DO NOT ATTEMPT TO REPAIR.

# Electro-Motor Cruise Block Diagram and System Layout (GMT-400)

AC Electro-Motor Cruise System Service Manual

## Component Relationship

Figure 4-1 is a block diagram showing the component and operational relationships in the AC Electro-Motor Cruise System.

The cruise control module, using an electric motor and an electronic controller (see Figure 3-4), operates the connecting strap and throttle linkage. The module receives input signals from the turn signal mode switches, brake and clutch release switches, and vehicle speed circuitry. The Internal Transmission Speed Sensor (ITSS) generates a high frequency sine wave which is converted to a square wave by the vehicle speed circuitry.

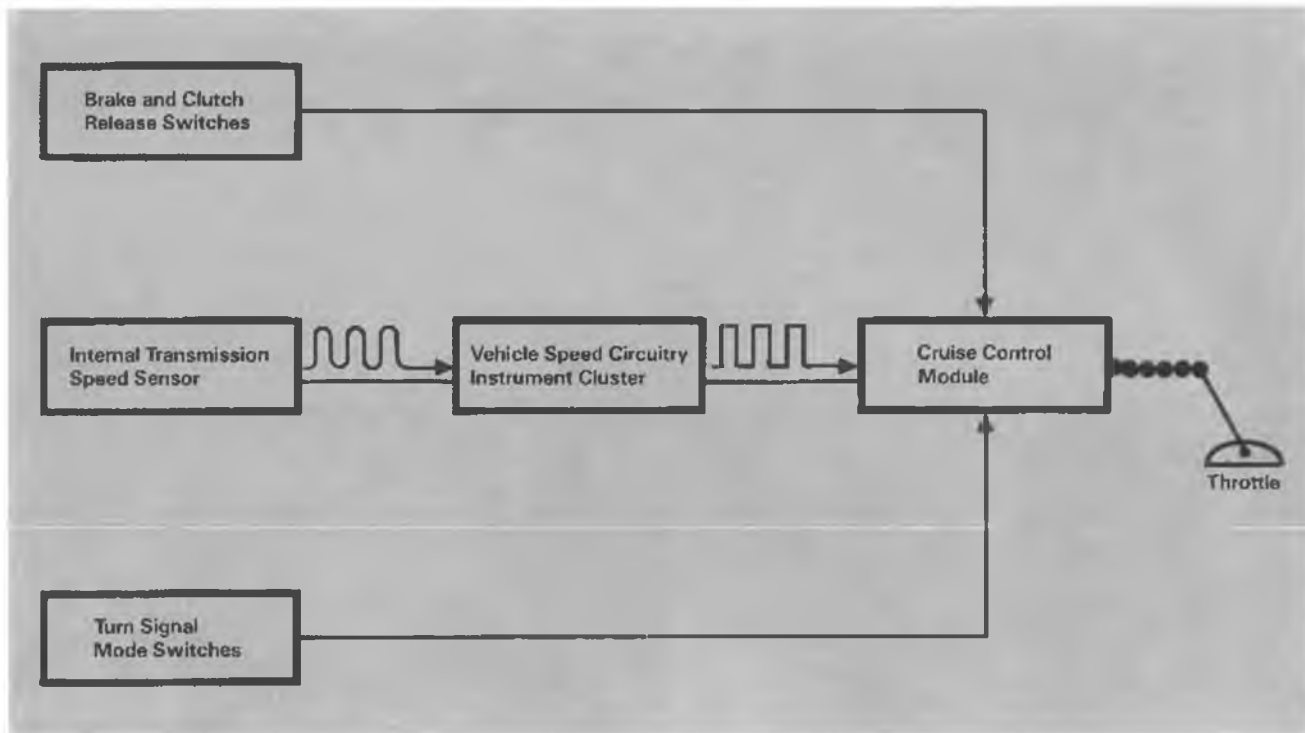


Figure 4-1 Block Diagram, Electro-Motor Cruise System

### Engine Compartment Cruise Configurations

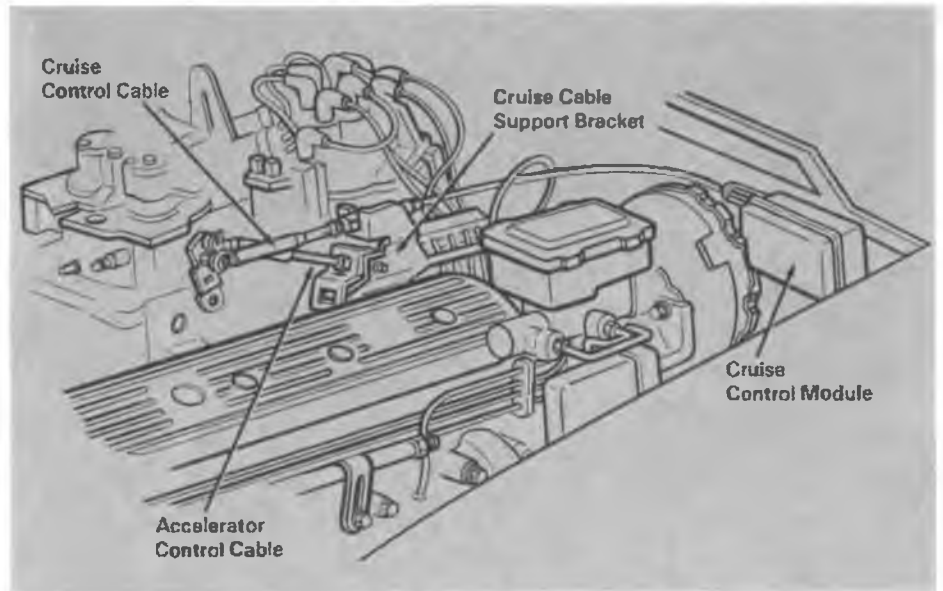


Figure 4-2 Installation on LB4 (4.3L), LO3 (5.0L), LO5 (5.7L)

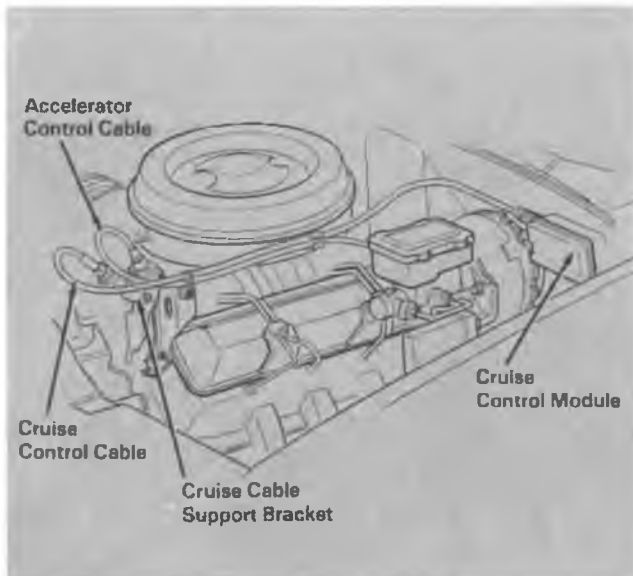


Figure 4-3 Installation on LH6 & LL4 (6.2L, Diesel)

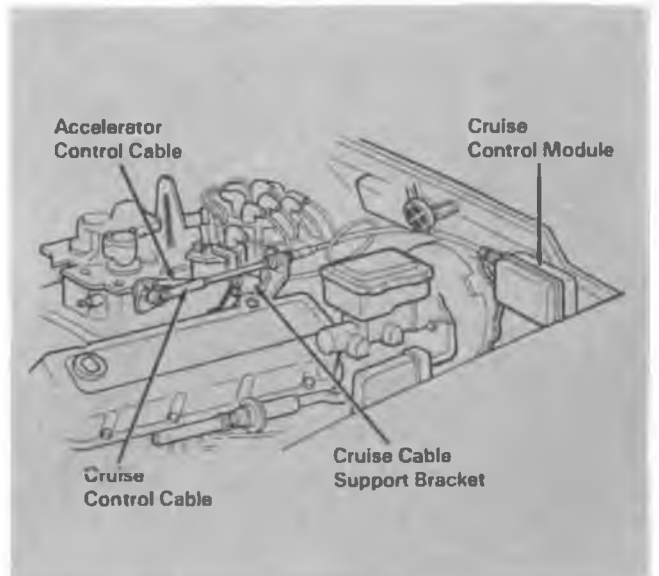


Figure 4-4 Installation on L19 (7.4L)

# Electro-Motor Cruise Block Diagram and System Layout (GMT-400)

AC Electro-Motor Cruise System Service Manual

## Component Location Views

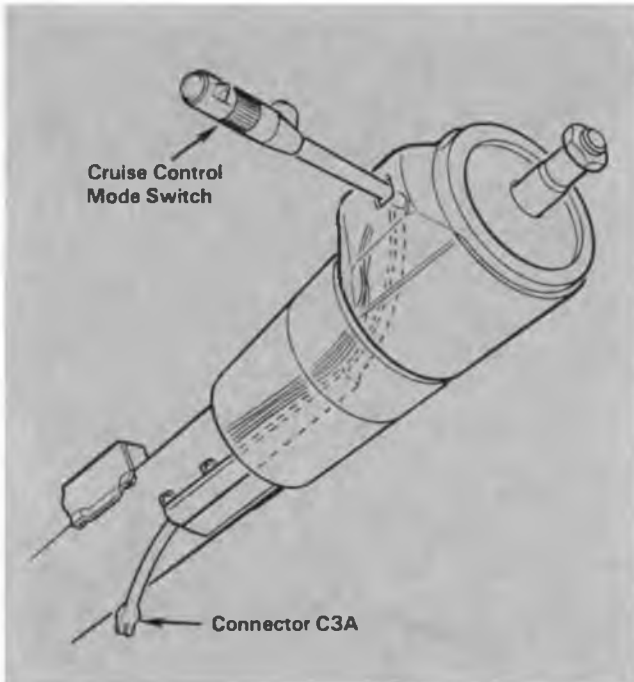


Figure 4-5 Cruise Mode Switch Location: Steering Column

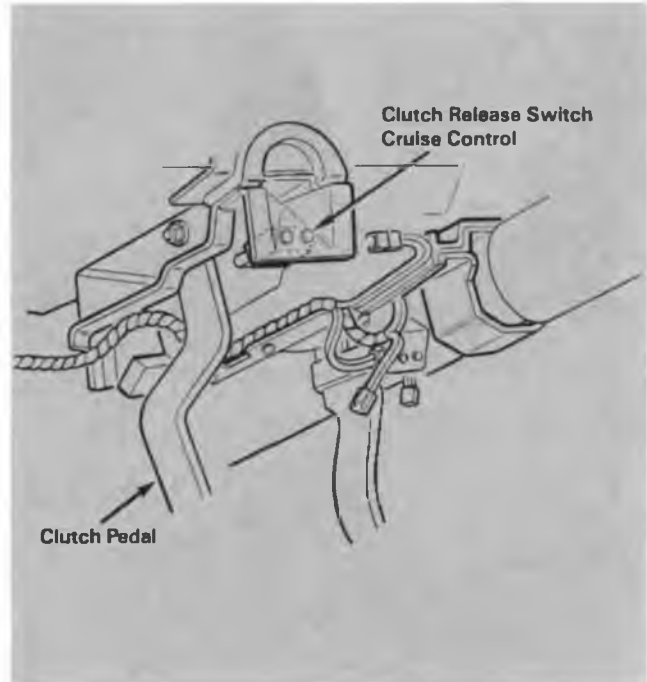


Figure 4-6 Clutch Release Switch Location: Behind Instrument Panel

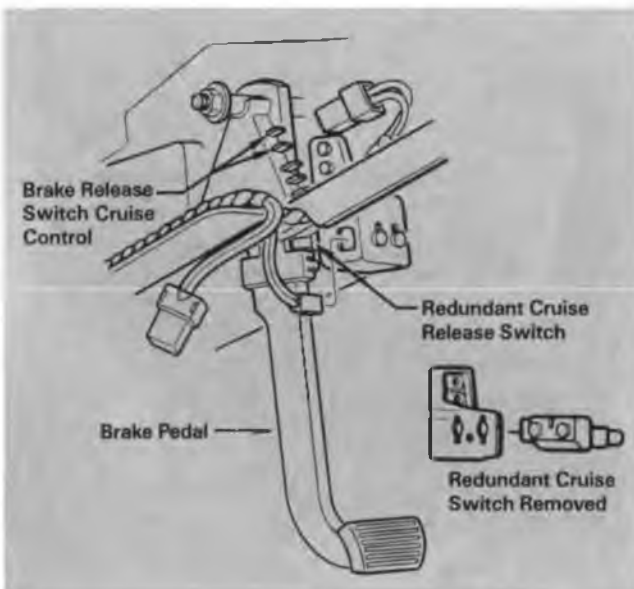


Figure 4-7 Brake Release/Redundant Release Switch Location: Behind Instrument Panel

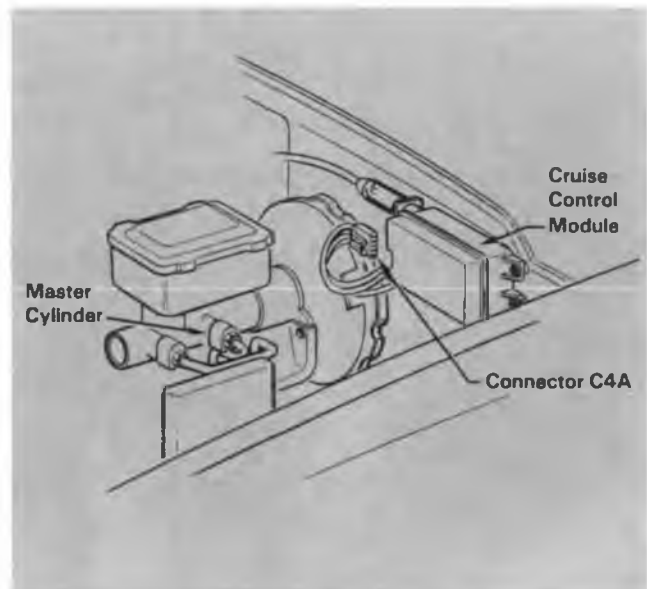


Figure 4-8 Cruise Module Location: Engine Compartment Bulkhead

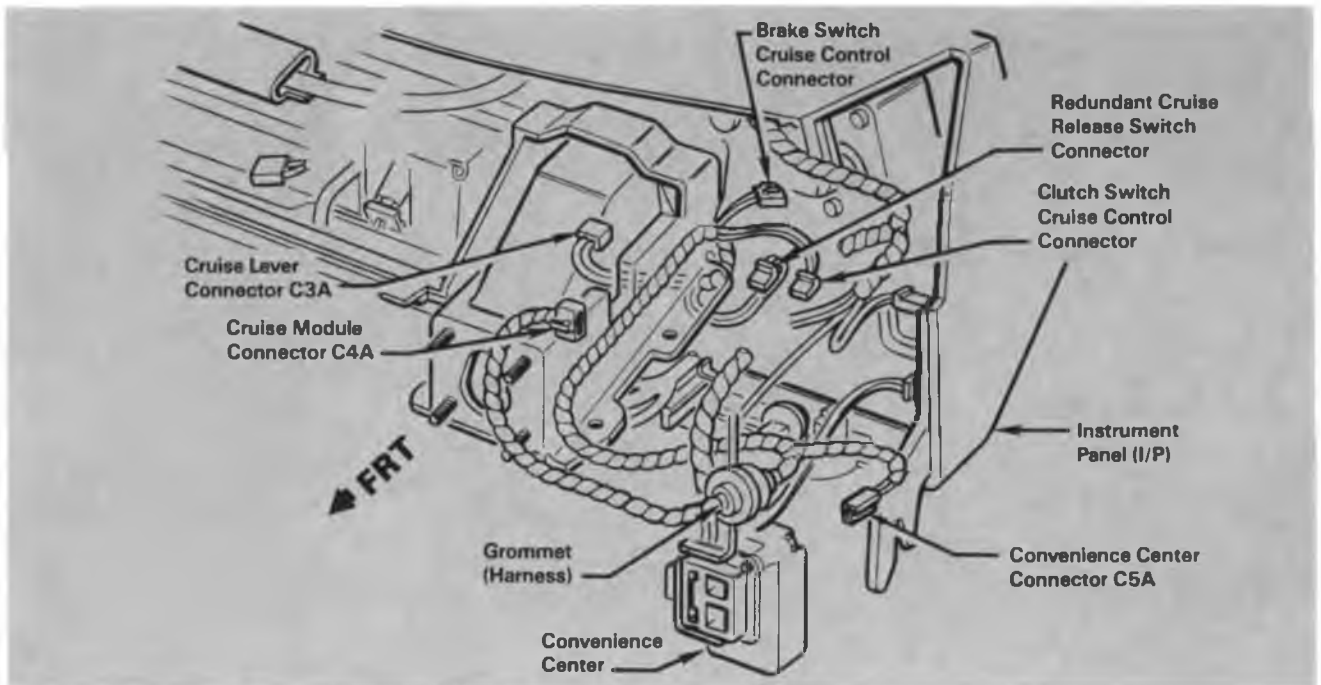


Figure 4-9 Wiring Harness Location: Behind Instrument Panel on Left

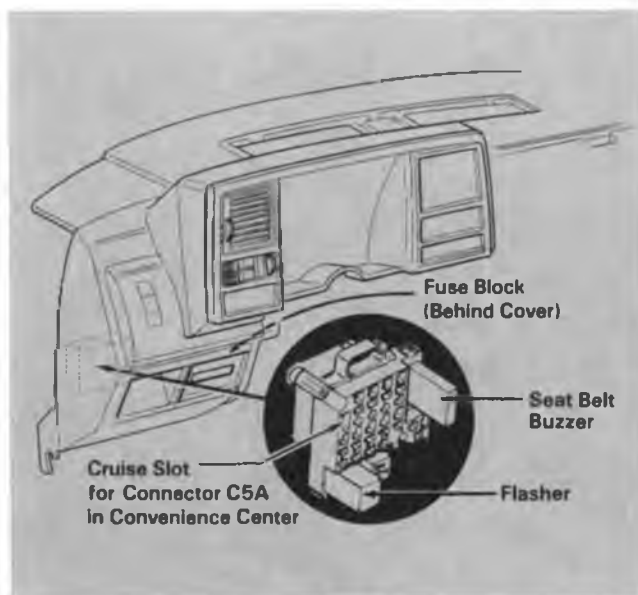


Figure 4-10 Convenience Center Location: Behind Instrument Panel

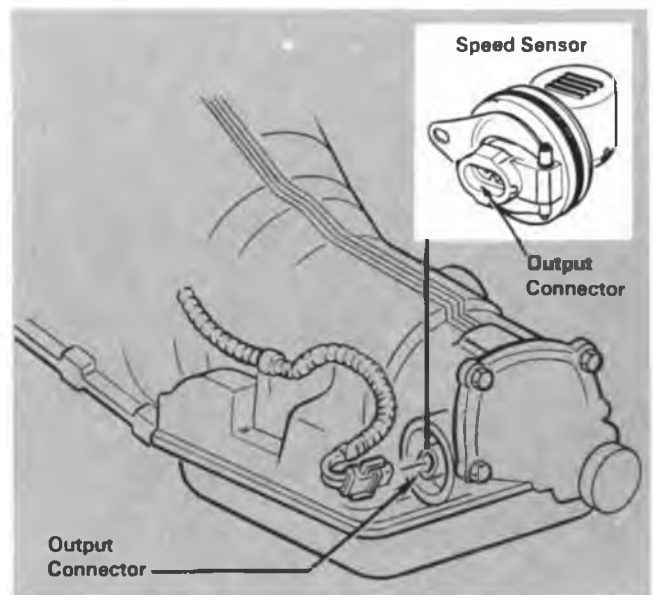


Figure 4-11 2-Wheel Drive Speed Sensor Location: Transmission *Note: 4 Wheel Drive Sensor on Transfer Case*

# GMT-400 Cruise Diagnosis and Troubleshooting

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AC Electro-Motor Cruise System Service Manual

## Preliminary Diagnosis and Inspection

When a vehicle is brought in with a cruise performance complaint, it is important to carry out a preliminary diagnosis. This diagnosis should be used to determine whether the cruise complaint is the result of an actual cruise system defect — or the result of a problem with some other vehicle system or component.

Also, some cruise complaints may be a misunderstanding by the driver about how the cruise system functions. In that case, the operation of the cruise system should be explained in a manner that the customer understands. A practical demonstration is very useful, especially with a similar vehicle which has the same cruise control system.

If it is decided the cruise system is at fault, perform a visual inspection of all components in the cruise system. Cruise performance can be mechanical, electrical, or combination of the two. Things to check are...

- Dirty, corroded, or loose ground terminals
- Damaged or mispositioned brake and/or clutch switches
- Binding or sticking linkage at the throttle body
- Damaged components
- Bare, broken, or disconnected wires
- Adjustment of cruise control module linkage (see "Cable Adjustment Check," page 26)

If preliminary inspection reveals no solution and the system is malfunctioning, follow the system diagnostic chart to isolate the problem (see page 16).

### — GOOD ADVICE —

Verify the problem before you attempt any repairs. Sometimes normal operating characteristics may be misunderstood as a problem.





# GMT-400 Cruise Diagnosis and Troubleshooting

AC Electro-Motor Cruise System Service Manual

## Cruise System Functional Check

The procedure below is used to check the operating modes of the cruise control system. This procedure should always be used after repair work has been completed on the cruise system. Steps 1-7 and 10 are used with automatic and manual transmission vehicles, while steps 8 and 9 are for manual transmission only.

### ROAD TEST PROCEDURE

1. Slide the turn signal lever cruise switch to the "ON" position.
2. **Check the Low Speed Inhibit:** Drive vehicle at 20 MPH. Depress "SET" push button and release. Cruise control must not engage.
3. **Check Set Speed:** Drive vehicle at steady speed of 55 MPH. Depress "SET" push button completely and release. Cruise control should engage at approximately 55 MPH.
4. **Check Brake Release:** Depress brake pedal. The cruise control must release throttle, allowing the vehicle speed to drop. The system must not re-engage when the brake is released.
5. **Check Resume Feature:** With the vehicle speed at approximately 45 MPH, slide the cruise switch momentarily (less than 1 second) to the "R/A" position. The vehicle should accelerate to approximately 55 MPH.
6. **Check Coast Feature:** Depress the "SET" push button and hold. Allow the vehicle speed to drop to 50 MPH and release push button. Cruise control should hold vehicle speed at approximately 50 MPH.
7. **Check Accelerate Feature:** Slide the cruise switch to the "R/A" position and hold. The vehicle speed should begin to increase. Allow the speed to increase to 55 MPH and release switch. The cruise control should hold the vehicle at approximately 55 MPH.  
(ITEMS 8 AND 9 ARE FOR MANUAL TRANSMISSION ONLY)
8. **Check Clutch Release:** Depress clutch. The cruise control must release throttle, allowing the vehicle speed to drop. The system must not re-engage when the clutch is released.
9. Slide the cruise switch to the "R/A" position momentarily to resume to 55 MPH.
10. **Check Off Switch:** Turn the cruise control switch to the "OFF" position. This must disengage the cruise control system.

Figure 5-1 Chart: Road Test of Cruise System

## System Diagnosis

The troubleshooting chart on page 16 provides an organized approach for locating a problem in the cruise system. Understanding the chart and using it correctly will reduce diagnosis time and prevent unnecessary replacement of parts.

### HOW TO USE CHART

Disconnect the cruise control module connector (see Figure 6-1, page 20, "Task One") and perform the troubleshooting steps at the connector. A high impedance digital voltmeter is used to make the checks.

- If the results of the test step are not correct, go to "THINGS TO CHECK" box for that test step.
- If the results of a test step are correct, go to next step.

## Circuit Operation

With the IGNITION SWITCH in "RUN" (see circuit schematic, page 18), battery voltage is applied through the GAGES FUSE to terminal "F" of the cruise control module. When the slider switch is moved to the "ON" position, battery voltage is applied to terminal "A" of the cruise control module connector. If the brake and/or clutch pedal is not depressed, battery voltage is present at module terminal "D". When the slider switch is moved to the "R/A" position, battery voltage is applied to terminal "C" of the module. With the "SET" push button depressed, battery voltage is present at cruise module terminal "B". Cruise module connector terminal "K" is the speed signal terminal. In operation, voltage will oscillate between a high of 4 to 5 volts and a low of near ground. Cruise module terminals "G", "H", and "J" are not used. Ground is at module terminal "E".

(See GMT-400 Cruise Diagnostic Chart for reference to Figures 5-2 & 5-3, pages 16 & 17.)

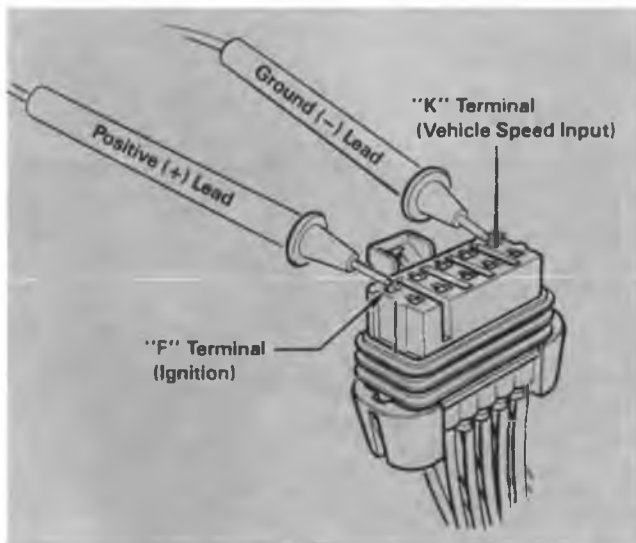


Figure 5-2 Voltmeter Hookup

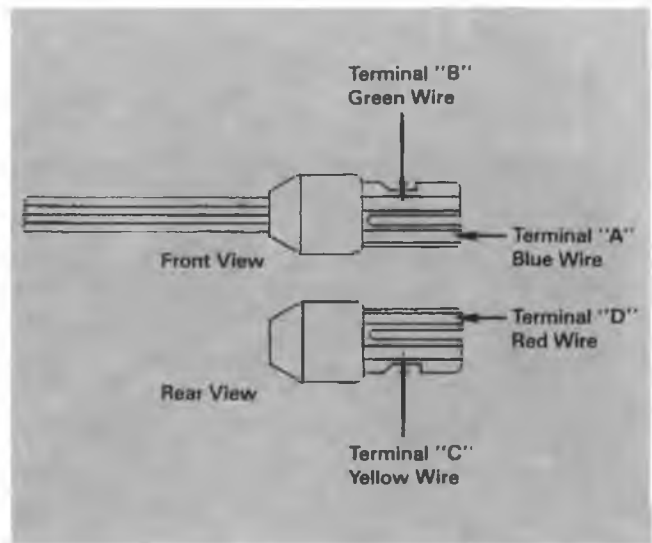


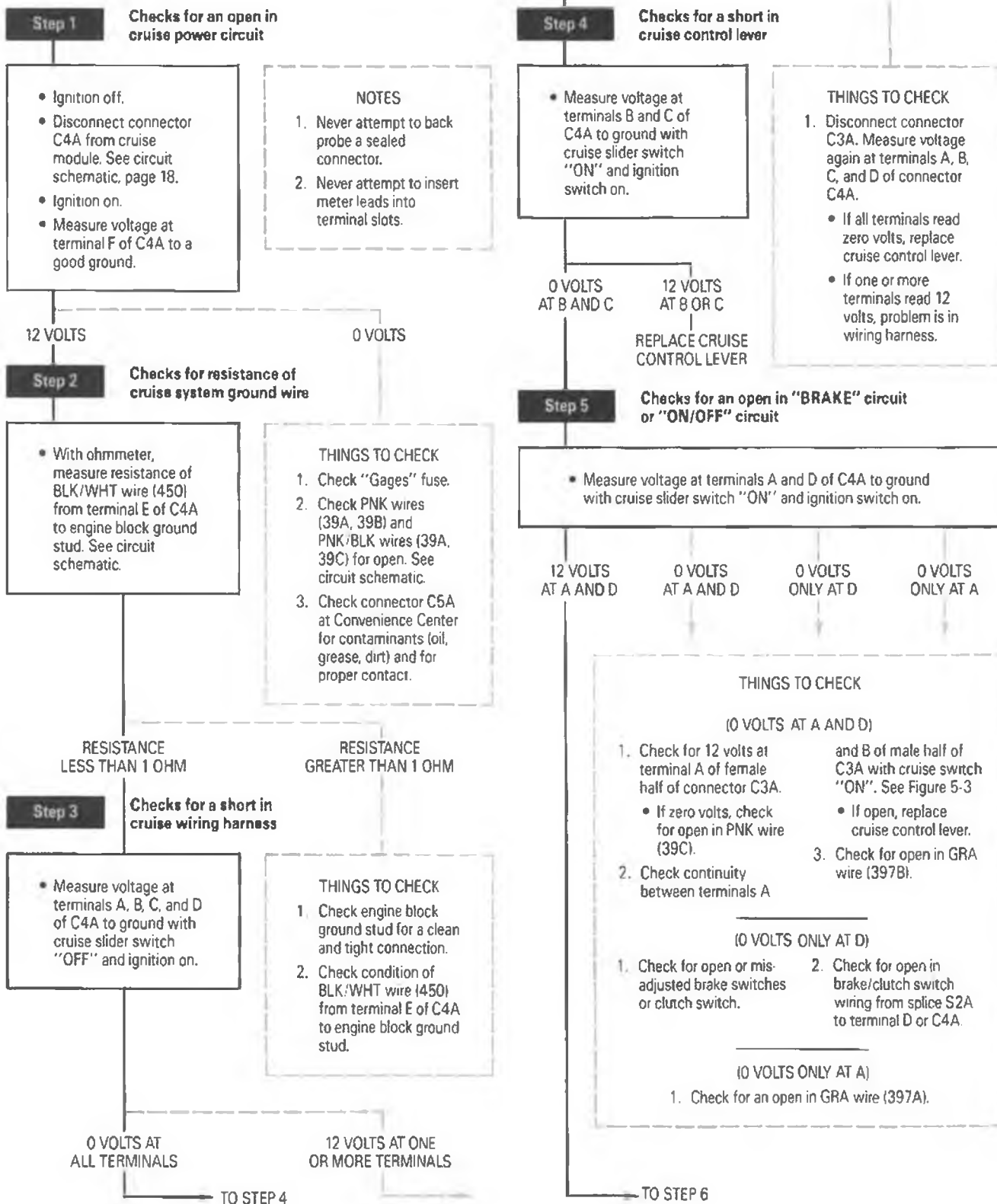
Figure 5-3 Cruise Mode Switch Connector (C3A)

# GMT-400 Cruise Diagnostic Chart

(CRUISE SYSTEM TROUBLESHOOTING WITH A HIGH IMPEDANCE DIGITAL VOLTMETER)

## TROUBLESHOOTING HINTS

1. Cruise fuse (labeled "Gages" in fuse block) is OK if seat belt buzzer is working.
2. "Speedo" fuse is OK if speedometer or odometer is operating.
3. Check Convenience Center connector C5A and Cruise Module connector C4A for proper connection (see Figures 4-8, 4-9).
4. Check that cruise module linkage is connected and moving freely.
5. Check cruise cable adjustment (see page 26).



**Step 6** Checks for an open in "SET/COAST" circuit

- Ignition on.
- Move cruise slider switch to "ON".
- Push cruise "SET" push button in and hold.
- Measure voltage at terminal B of C4A to ground.

12 VOLTS → **Step 7** Checks for an open in "RESUME/ACCEL (R/A)" circuit

0 VOLTS → **Step 8** Checks for an open or short in vehicle speed circuit

- Hold cruise slider switch in "R/A" position.
- Measure voltage at terminal C of C4A to ground.

**THINGS TO CHECK**

- Disconnect connector C3A and check continuity between terminals B and D of male half with "SET" push button depressed. See Figure 5-3.
  - If open, replace cruise control lever.
- Check for open in DK BLU wire (84).

12 VOLTS → **Step 8** Checks for an open or short in vehicle speed circuit

0 VOLTS → **Step 8** Checks for an open or short in vehicle speed circuit

- Put voltmeter on DC voltage scale.
- Connect voltmeter across pins F and K of connector C4A. See Figure 5-2
- Ignition on, raise vehicle, put transmission in neutral.
- Spin drive wheels by hand.

**THINGS TO CHECK**

- Disconnect C3A and check continuity between terminals A and C of male half with cruise switch in "R/A" position.
  - If open, replace cruise control lever
- Check for open in DK GRN wire (83)

VOLTAGE VARYING BETWEEN 0 AND 12 VOLTS → RECONNECT CRUISE MODULE CONNECTOR C4A → TO STEP 9

0 VOLTS → **STEP 8 - THINGS TO CHECK**

12 VOLTS → **STEP 8 - THINGS TO CHECK**

**STEP 8 - THINGS TO CHECK**

0 VOLTS	12 VOLTS
1. Check "Speedo" fuse.	1. Check for short to ground on BRN/WHT wires (437, 437A).
2. Check for open on BRN/WHT wires (437, 437A).	

If wires are OK see electrical section of Division Service Manual for additional speed sensor diagnostics.

**Step 9** Checks for operation of cruise control module

- Start engine.
- Move cruise slider switch to "OFF".
- Move cruise switch to "ON" and then wait at least 3 seconds before doing next step.
- Fully depress and hold brake pedal.
- Push cruise "SET" push button in and hold
- Hold cruise slider switch in "R/A" position.
- After 10 seconds, release brake pedal while still holding "R/A" and "SET" switches and listen for momentary engine RPM increase.

ENGINE RPM INCREASE  
↓  
CRUISE MODULE IS OK

**THINGS TO CHECK**

- Problem is intermittent.
  - Check connectors and wire terminals for contaminants (oil, grease, dirt) and for proper contact.
  - Also check ground terminals for contaminants and proper contact (see ground check below)

NO ENGINE RPM INCREASE

**THINGS TO CHECK**

- Check that cruise module linkage is connected and operating freely.
- Check linkage adjustment. See pages 26-27
- Check terminals in connectors C3A, C4A, C5A for contaminants (oil, grease, dirt) and for proper contact. (see ground check below)
  - If OK replace cruise control module.

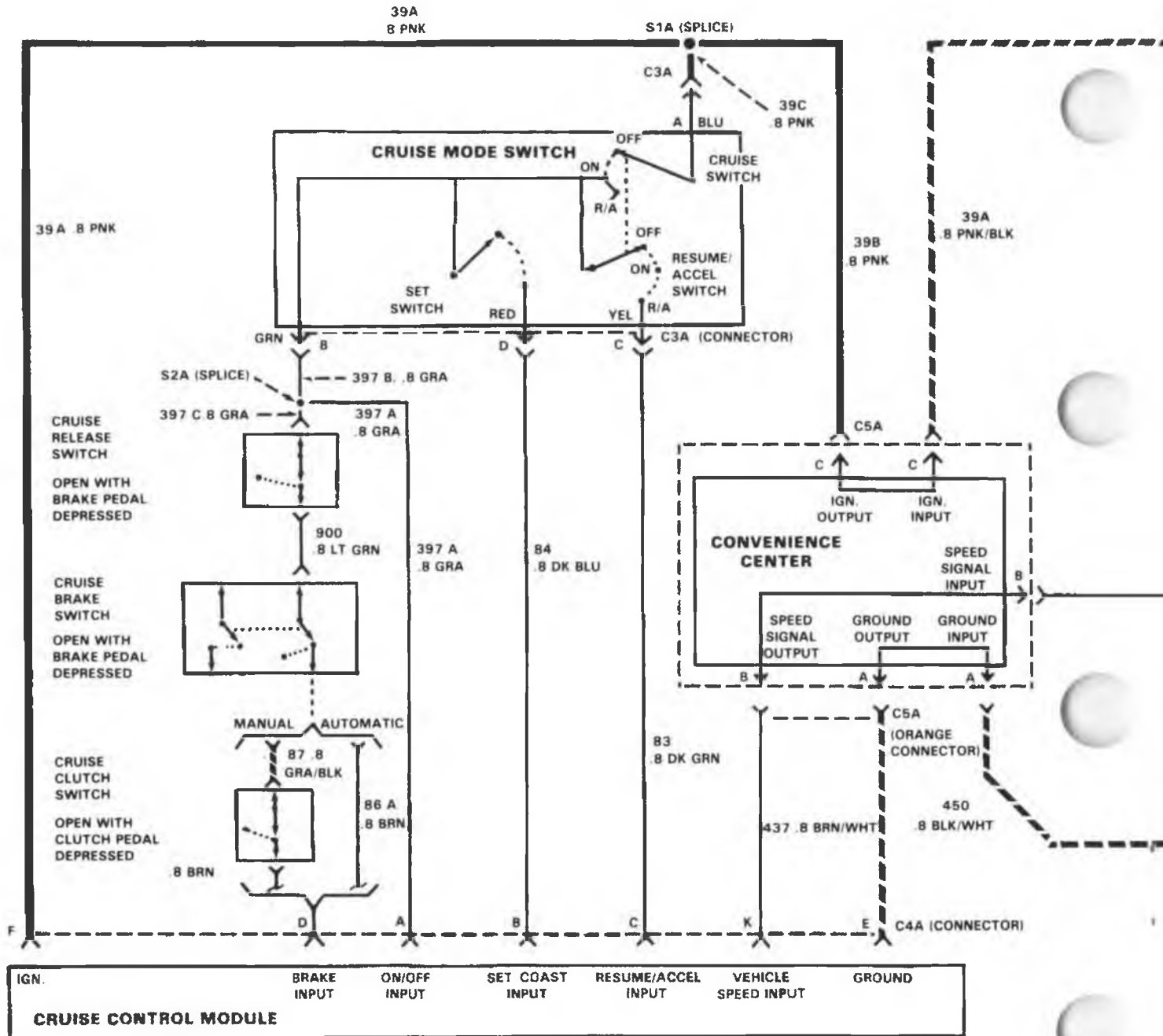
**"GOOD GROUND" CHECK**

- Turn ignition on, move cruise slider switch to "ON" position. Perform voltage check between suspected bad cruise ground and engine block. Any voltage means ground is bad.
- If step "A" fails to locate problem, run a second ground wire from engine block to pin E of cruise module. If second wire corrects problem, then recheck ground path (450) for problem. (Remove second wire after troubleshooting is completed.)

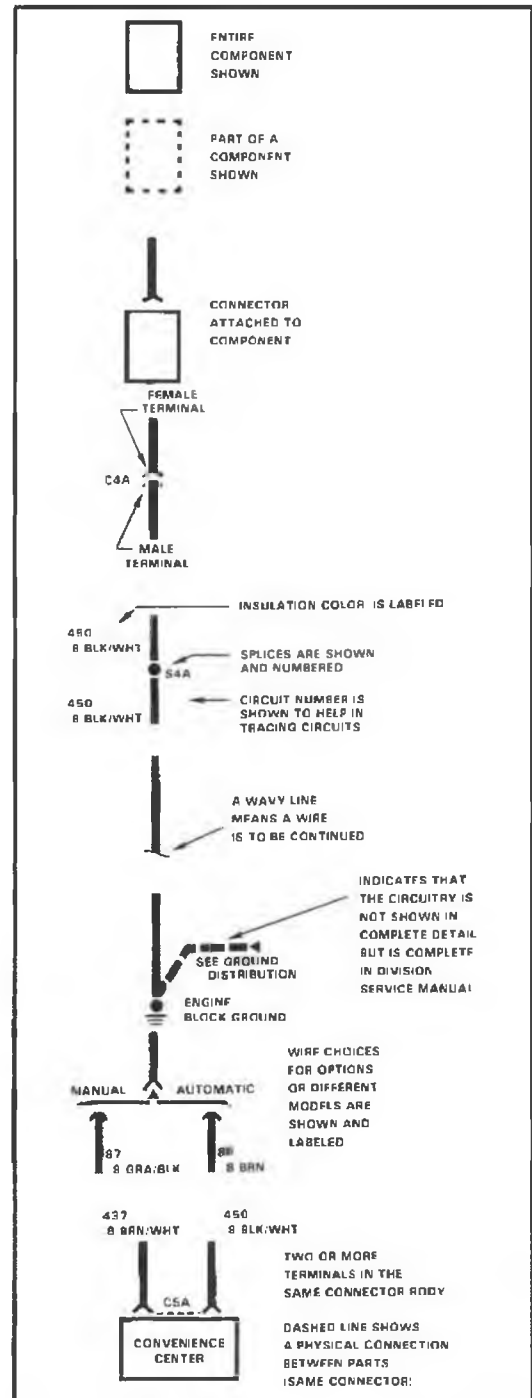
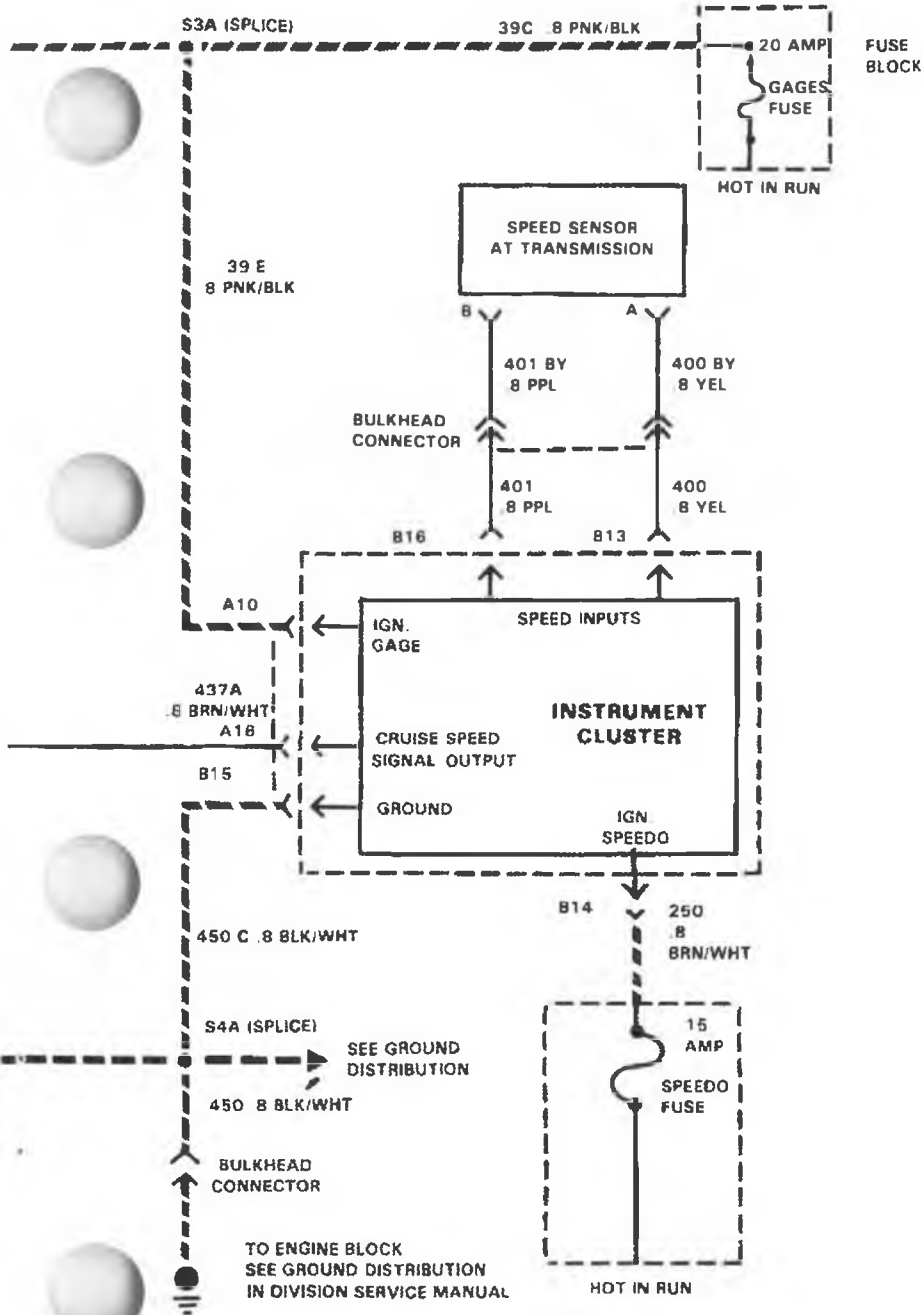
# GMT-400 Cruise Diagnosis and Troubleshooting

AC Electro-Motor Cruise System Service Manual

## Electro-Motor Cruise System Circuit Schematic



Schematic Symbol Explanation



## Connector Disassembly and Repair

AC Electro-Motor Cruise System Service Manual

### Cruise Control Module Metri-Pack Connector

Metri-Pack — or weatherproof — connectors provide environmental protection for the electrical circuits. This protection consists of a moisture-proof rubber seal between the two connector halves and rubber cable seals attached to each terminal. The terminals and the cable seals are secured by a plastic terminal retainer. (Note: NEVER ATTEMPT TO BACK PROBE SEALED CONNECTORS.)

If a Metri-Pack connector requires repair, do not replace the Metri-Pack parts with other types of connectors and terminals. Also, do not omit either the large seal or the cable seals when making a repair.

Instruction in the disassembly, repair, and assembly of the Metri-Pack connector follows. Only perform those tasks necessary to make the repair.

### *TASK ONE: Removal of connector from Cruise Control Module*

To remove the connector, use your finger to pull up and outward on the connector's locking tab. Not much pull is required for removal (see Figure 6-1).

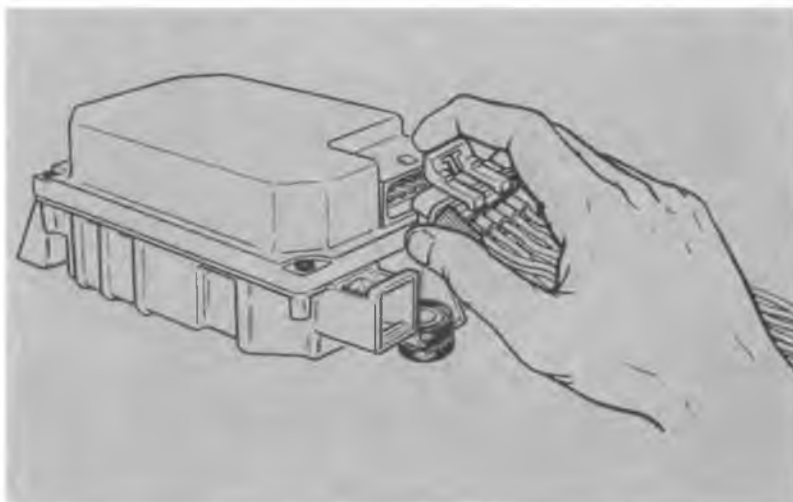


Figure 6-1 Cruise Module Connector Removal

### — NOTE —

To lessen repair work time, use terminal pick tool (Kent-Moore, P/N J-35689-A), (Burroughs, P/N BT-8446), or equivalent.



**TASK TWO: Remove the terminal retainer**

To remove the terminal retainer, position a wide pick or small screwdriver at a 45° angle between the connector body and terminal retainer and then exert enough force to slip terminal retainer over the locking nib. Do this with both locking nibs (see Figure 6-2).

**TASK THREE: Remove the lead**

Depress the terminal locking tang using a Metri-Pack Terminal pick tool:

- Step 1** Push the metal pick into the narrow portion of the terminal cavity from the front until it stops. The pick should be placed between the locking tang of the terminal and the plastic of the connector body (see Figure 6-3).
- Step 2** Pull the pick out.
- Step 3** Gently pull the lead out of the back of the connector body. (NEVER USE FORCE TO PULL TERMINAL OUT OF CONNECTOR.)

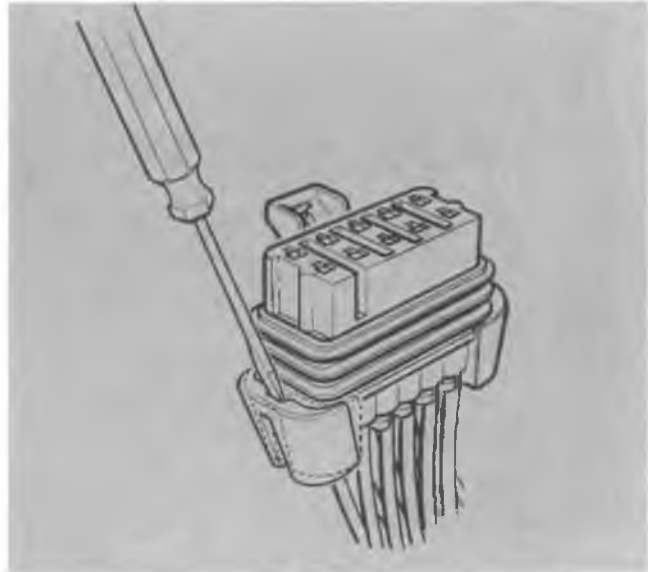


Figure 6-2 Connector (C4A) Retainer Removal

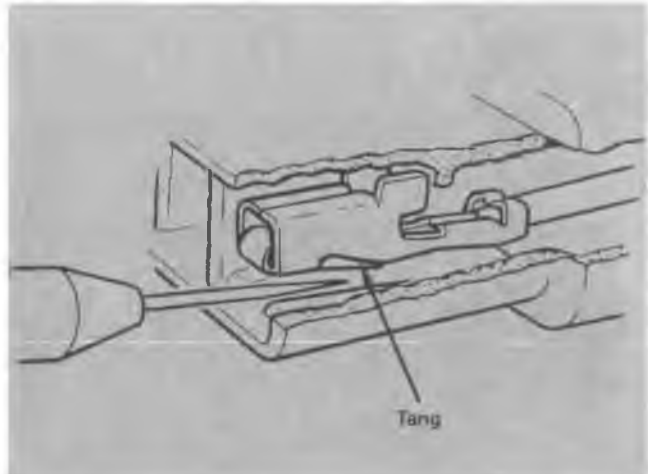


Figure 6-3 Connector (C4A) Terminal Removal

## Connector Disassembly and Repair

AC Electro-Motor Cruise System Service Manual

### TASK FOUR: Re-form the locking tang

If the lead and terminal are in good condition, re-form the locking tang:

- Step 1 Hold the lead firmly to prevent the splice between the terminal and the wire from flexing.
- Step 2 Use the pick tool to bend the locking tang back into its original shape (see Figure 6-4). Also, check to see that the remainder of the terminal is still in its original shape.

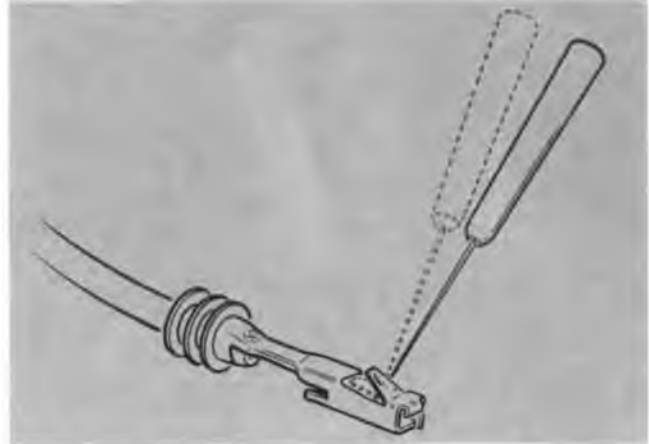


Figure 6-4 Re-forming Locking Tang

### TASK FIVE: Make the repair

When making a repair, use the correct types of terminals, wires, and seals.

- Step 1 Cut the wire immediately behind the cable seal.
- Step 2 Slip the new cable seal onto the wire and push it back out of the way.
- Step 3 Strip 5.0 mm (.2 inches) of insulation from the wire.
- Step 4 Crimp the new terminal over the wire (core crimp) as shown in Figure 6-5.
- Step 5 Solder with rosin core solder.
- Step 6 Move the cable seal to edge of the insulation.
- Step 7 Crimp the grips at the end of the terminal around the cable seal and insulated wire as shown in Figure 6-5. Apply slight pressure for this crimp. (For splicing wires, follow the directions given in the Division Service Manual.)

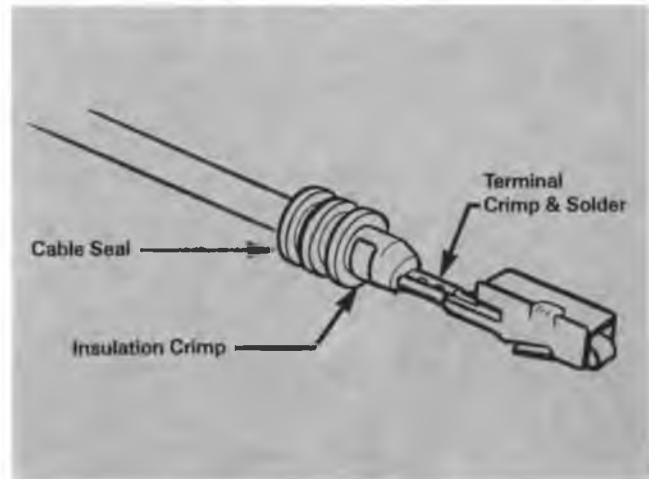


Figure 6-5 Connector (C4A) Terminal



# Cruise Control Cable Installation and Adjustment Procedures

AC Electro-Motor Cruise System Service Manual

## Cable Installation

- Step 1 Attach cable bead to cruise module strap end fitting and remove retainer (Figure 7-1).
- Step 2
- A. Pull cruise cable engine end fitting until cable is snug (Figure 7-2).
  - B. Turn cruise cable strap end fitting to straighten strap. Strap should be flat and vertical. (Note: Strap *must not* be twisted, as shown in Figure 7-2.)
- Step 3 Slide cable conduit over strap and install tangs in cruise motor housing (Figure 7-3).

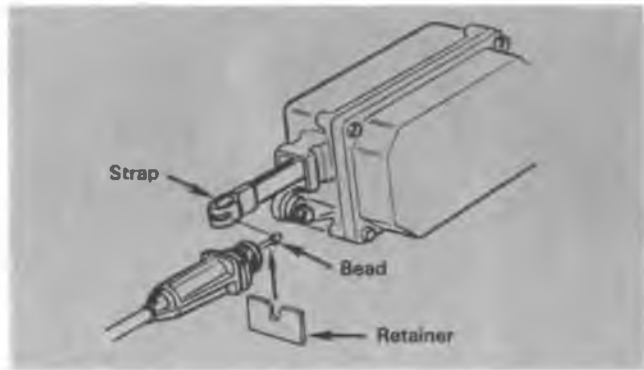


Figure 7-1 Cable Installation

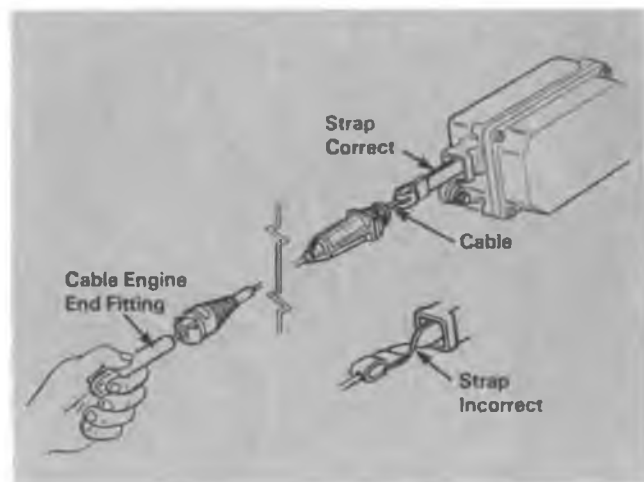


Figure 7-2 Cable Installation

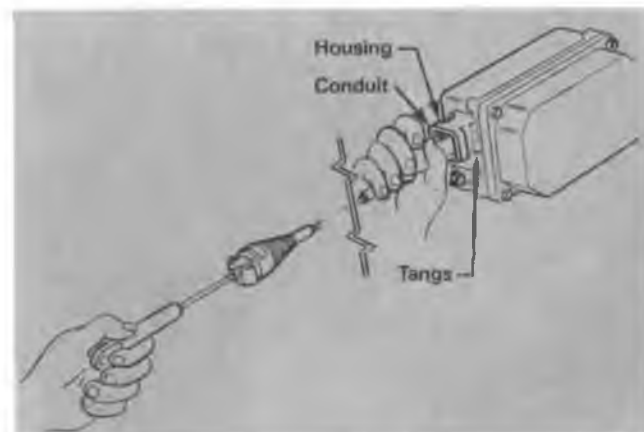


Figure 7-3 Cable Installation

Step 4 Install cable conduit in engine bracket (Figure 7-4).

Step 5  
 A. Unlock cable conduit (Figure 7-5A).  
 B. Attach cable engine end fitting to lever stud and install retainer clip (Figures 7-5B, 7-7).

Step 6 Lock cable conduit by pushing down firmly on lock until it locks in place (Figure 7-6).

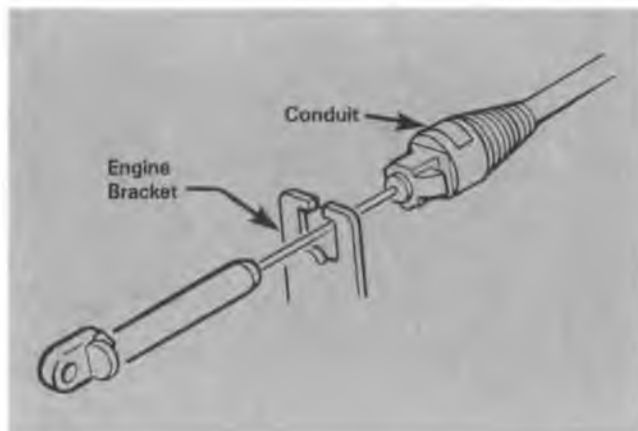


Figure 7-4 Cable Installation

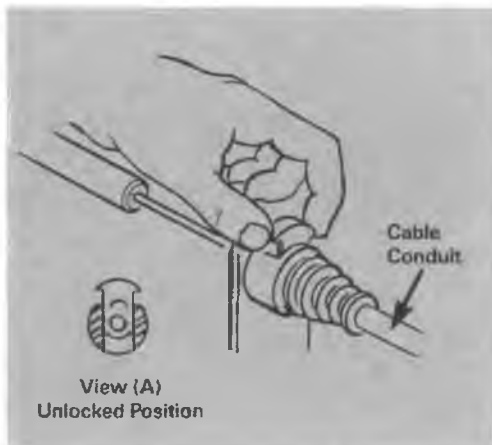


Figure 7-5A Cable Installation

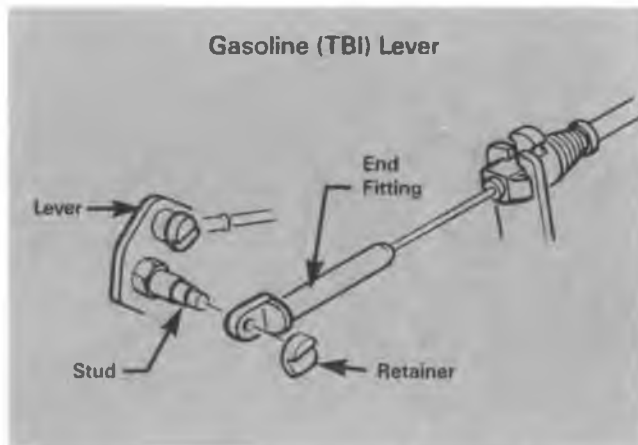


Figure 7-5B Cable Installation

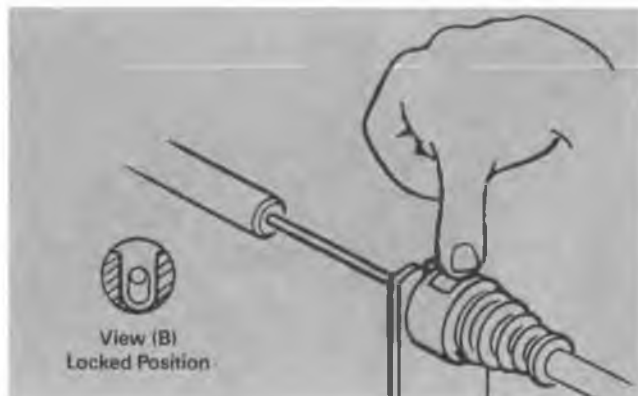


Figure 7-6 Cable Installation

# Cruise Control Cable Installation and Adjustment Procedures

AC Electro-Motor Cruise System Service Manual

## Cable Adjustment Check

- Step 1 Disconnect cruise cable engine end from lever stud (Figures 7-5B, 7-7).
- Step 2 Pull lightly on cable end.
- Step 3 If cable end does not extend forward, adjustment is OK.  
  
If cable end does extend forward, perform steps in "Cable Adjustment."

## Cable Adjustment

- Step 1 Reconnect cable to lever stud (Figures 7-5B, 7-7).
- Step 2 Unlock cable conduit engine fitting (Figure 7-5A).
- Step 3 For gasoline (TBI) engines, turn ignition off. Move cable conduit (see Cable Conduit, Figure 7-4) until throttle plate begins to open. Then move conduit in opposite direction enough to return throttle plate to closed position.  
  
For diesel engines, turn ignition off. Move cable conduit until injector pump lever moves from idle stop screw. Then move conduit in opposite direction enough to return lever to idle stop screw (Figure 7-7).
- Step 4 While holding cable conduit, push down firmly on cable conduit lock until it locks in place (Figure 7-6).

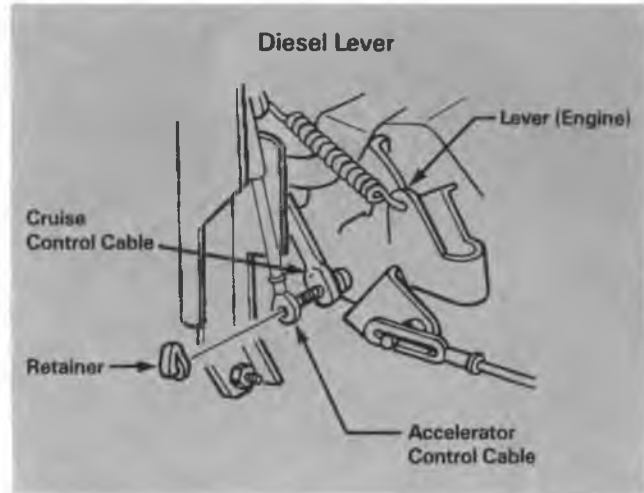


Figure 7-7 Cable Adjustment

— NOTE —

DO NOT RELEASE HAND GRIP FROM CABLE CONDUIT UNTIL STEP 4 IS FINISHED.

**Cruise Control Mode Switch (Turn Signal Lever)**

**Installation**

- Step 1 Rotate to "LO" position.
- Step 2 Put turn signal switch in right turn position.
- Step 3 For tilt column installation, column is to be in full up position.
- Step 4 Insert music wire tool into opening and route through column as shown. Attach terminal to tool and pull wire through column until slack is removed (Figure 7-8).
- Step 5 Slide cruise control wire protector over wire from lever. Then slide protector over nib on main wire protector until lower end is even with lower end of main protector (Figure 7-9).

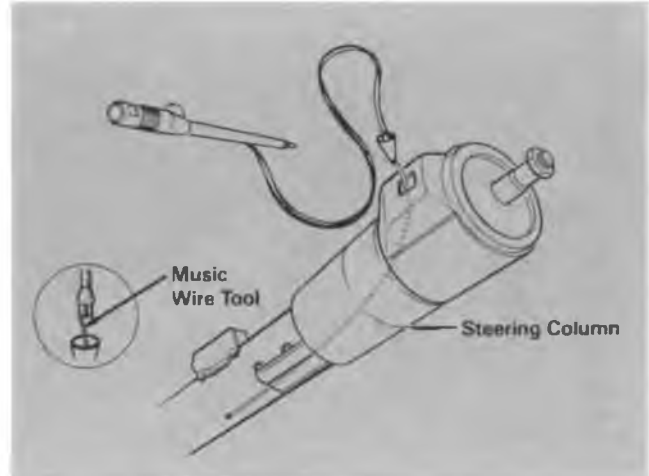


Figure 7-8 Cable Adjustment

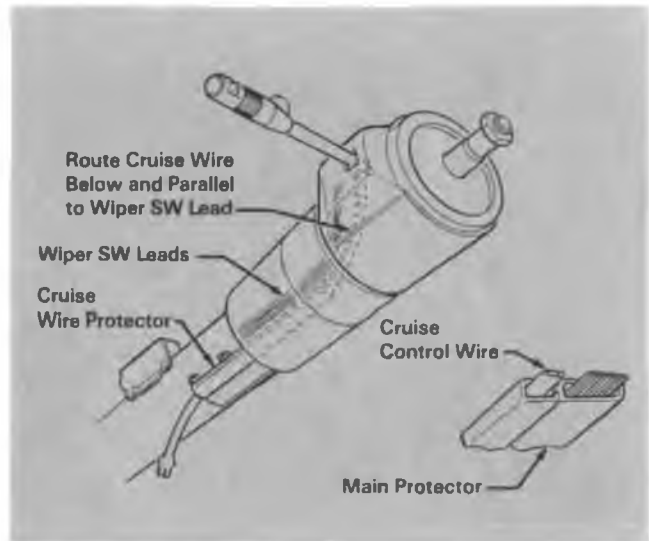
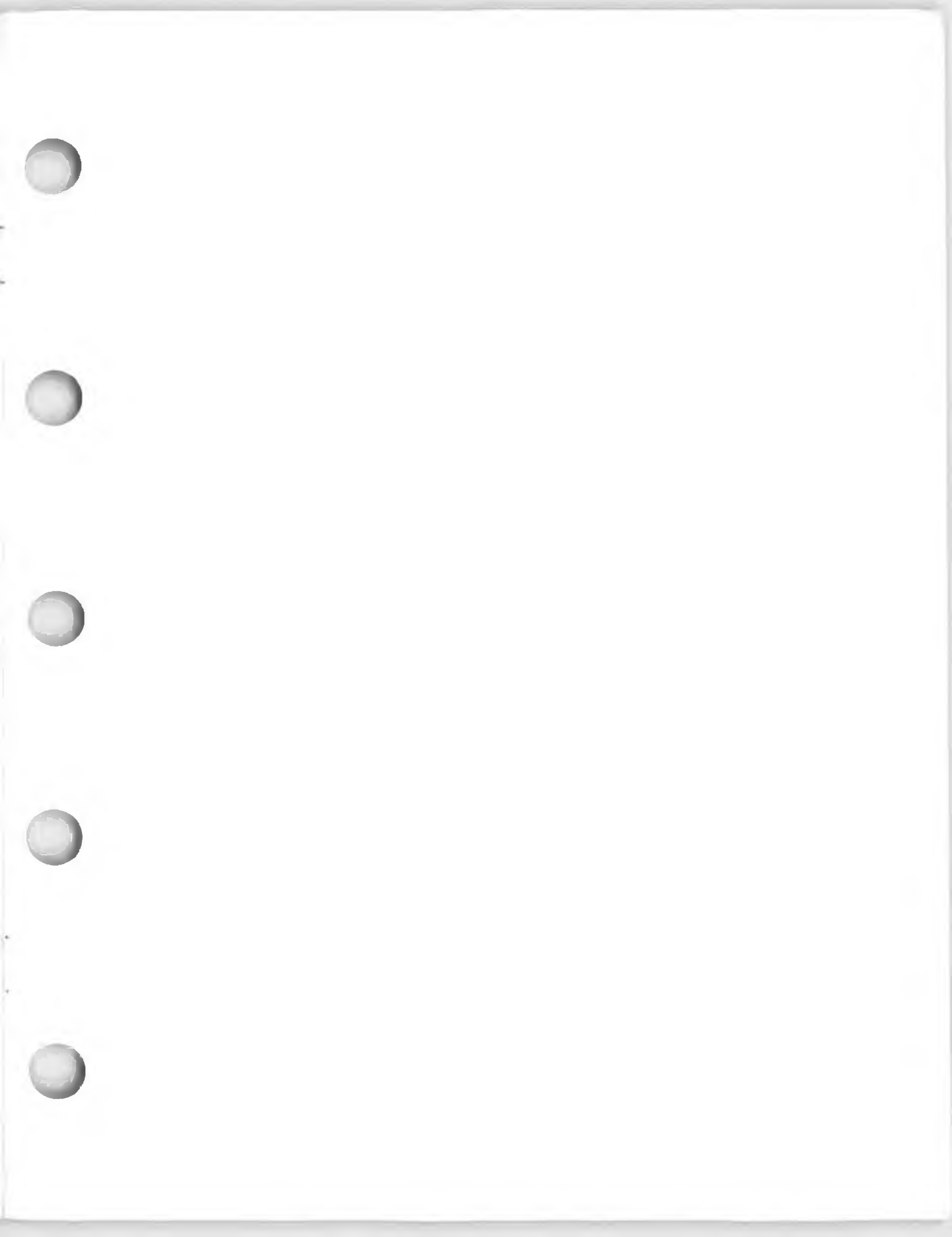


Figure 7-9 Cable Adjustment









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