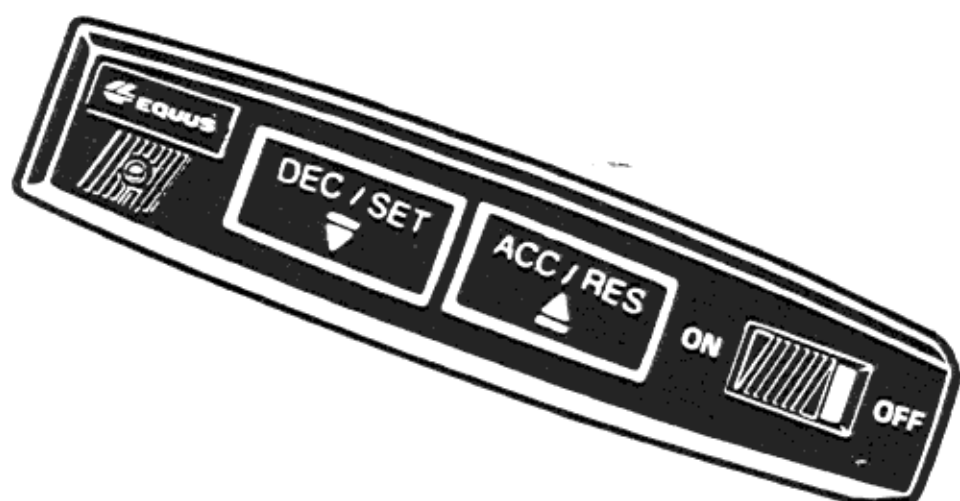




CRUISE CONTROL MODEL 9000-B



For gasoline engine automobile with 12 Volt negative ground system use only, not for Diesel engine or any non-automobile (i.e. boat, motorcycle.) use

- INSTALLATION PROCEDURES
- OPERATION PROCEDURES

REVISION A

IMPORTANT SAFETY NOTICE

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

1. Proper service, repair and/or replacement of ignition plug wires and/or ignition coil at intervals stated in vehicle maintenance manuals (rule of thumb is at approximately every 40,000 miles). As this cruise control offers speed sensing utilizing the negative side of ignition coil, the upkeep of the ignition system is necessary for proper information to the cruise control electronics. **NEVER USE THIS CRUISE CONTROL WITH SOLID CORE OR COPPER CORE SPARK PLUG WIRES.** Silicone or resistance wires are a must.
2. The use of this cruise control is designed to allow consumer to set and automatically maintain any vehicle speed above 35 mph (56 km.h). It is still necessary for the driver of vehicle to have total control of operation of vehicle during use of this or any cruise control.
3. The use of this cruise control is designed for operation on straight, open uncongested highways or freeways. This cruise control is not recommended for use:
 - in heavy traffic
 - on winding roads where a constant speed cannot be safely maintained.
 - on roads consisting of loose gravel, rain, dirt, sand, snow, ice or high winds.
 - On over-steep roads (up or downs).
4. This cruise control **WILL NOT** apply the vehicle brakes on down hill grades, driver **MUST** monitor speed and if condition warrants apply braking to avoid over speeding. As this will then disengage the cruise control the "resume" button will then need to be pressed to re-engage the cruise control and return to previous speed setting.
5. While operating cruise control, **NEVER** move selector lever to "N" neutral position: this will cause engine over-rev and possible damage. Dis-engage cruise control first.

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KNOW THE SYSTEM

It helps to understand a little about this cruise control system. There are two optional methods of speed sensing available, **ONLY ONE CAN BE USED FOR INPUT AT ANY GIVEN TIME.**

OPTION:

A. **NEGATIVE SIDE OF IGNITION COIL/TACH SIGNAL SENSING**

This option is designed to monitor the pulses produced by the negative side of your vehicles ignition coil. By attaching to this terminal or wire the cruise control will receive this signal at the microprocessor and maintain a steady engine rpm. This option also allows for built in over-rev protection in the event your vehicle has a manual transmission (stick shift) and you depress the clutch pedal after engagement of cruise control. A rapid raise in engine rpm is detected and the cruise control is disengaged immediately as a safety feature.

B. **MAGNETIC SPEED SENSING**

This method of attaching a magnet to a vehicle drive shaft and using a magnetic speed sensor to count the revolutions of the shaft ppm (PULSES PER MILE) is the most universal. On some vehicles, the installation of the components may be more time consuming than others, but this method always provides accurate road speed information to the 9000-B computer. This method is recommended if installing on RV's, or towing or carrying heavy loads.

-WARNING-

If OPTION B,(MAGNETIC SPEED SENSING) is being used on a vehicle with a manual transmission (Stick shift) installation of EQUUS optional clutch switch P/N 9008 is required to avoid engine damage (OVER-REV) caused by depressing the clutch pedal while the cruise control is engaged. Remember, a clutch switch is **NOT** required when using OPTION A (NEGATIVE SIDE OF IGNITION COIL/TACH SIGNAL SENSING).

-WARNING-

D.I.S. - Distributor less Ignition

(Means your vehicle does not have a conventional distributor) Many of the manufacturer's are changing to this ignition system. With this type system, generally the spark plugs fire one or more times per cycle, making consistent monitoring impossible. If your vehicle has this type ignition system, you **MUST** use OPTION B - **MAGNETIC SPEED SENSING** only.

Automatic with; OVERDRIVE, 4 SPEED AUTOMATIC or LOCKUP TORQUE CONVERTER

If your vehicle is equipped with any of these automatic transmissions, the shifting of the lock-up torque converter caused by varying road grades will make it impossible to maintain a constant engine speed (RPM). In **all** these cases, you **MUST** use OPTION B - **MAGNETIC SPEED SENSING** only.

I. INTRODUCTION

This Cruise Control has been engineered to minimize installation time as well as wiring and mechanical attachments. Using the "self-diagnostics" built into the microprocessor also offers multiple safety features including one which will not allow the cruise control to engage unless all wiring is properly installed. Therefore, **FOLLOW THE INSTRUCTIONS CAREFULLY!** This Cruise Control will work on most:

- Cars, vans, light trucks, and recreational vehicles.
- Gasoline engine vehicles,
- Carbureted or fuel injected vehicle engines.
- Vehicle 12 volt electrical systems with negative ground only.
- Automatic or manual (stick shift) transmissions.
- Not recommended on non passenger vehicles, motorcycles or stationary engines.

When installing, carefully follow all the instructions and take special note of the **WARNINGS**, **CAUTIONS**, and **NOTES** in the manual. Never disassemble or alter the servo or command module. These units are factory assembled and disassembly will void your warranty.

II. FEATURES AND FUNCTIONS

A. FUNCTIONS:

- | | | |
|-------------------------|---|---|
| 1. Set | - | Set and maintains desired speed above approximately 35 mph or 1400-1600 rpm's. |
| 2. Acc | - | Increases set speed to a new higher set speed and will set upon release of the ACC/RES key. |
| 3. Tap-up | - | Increases set speed by approximately 1/2 mph per tap of the ACC/RES key. |
| 4. Tap-down | - | Decreases set speed by approximately 1/2 mph per tap of the DEC/SET key. |
| 5. Dec | - | Decrease set speed to a new lower set speed and will set upon release of the DEC/SET key. |
| 6. Res | - | After applying vehicle brake and after Command Module L.E.D. is flashing, a momentary press of the ACC/RES key will re-engage Cruise Control and will return you to the previous set speed. |
| 7. On/Off Switch | - | Turns Cruise power on or off. Also erases resume memory once turned off. |

B. FEATURES:

1. Engagement Indicator: (red L.E.D. on Command Module)

A. COMMAND MODULE LED flashes (brightly) - With the engine speed above 1400-1600 RPM's (when using option A, negative side of ignition coil) or with vehicle road speed above approximately 35 mph (minimum speed with magnetic speed sensing, option B). The LED flashes brightly to indicate that the speed information is being received by the Cruise Control microprocessor and the cruise control is ready to be set (engaged).

-NOTE-

Cruise Control will not set unless red L.E.D. is flashing first.

B. COMMAND MODULE LED on solid (constantly) - When the DEC/SET button is pressed (above 1400-1600 RPM's, using option A, or approximately 35 mph, option B), the COMMAND MODULE LED will illuminate bright and constant, indicating that the cruise is engaged and operating.

2. Illuminated COMMAND MODULE ACC/RES and DEC/SET keys -
The keys are backlit for easy night use.

III. SERVO INSTALLATION

See Figure 1 (**HARDWARE KIT 1**)

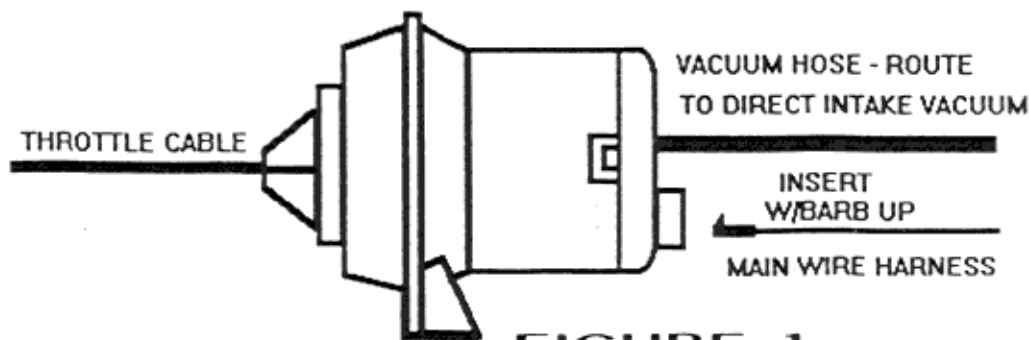
The Servo (P/N 72) should be mounted on a vehicle firewall, wheel well or any other place within reach of the carburetor or fuel injection throttle. **DO NOT MOUNT SERVO DIRECTLY ON ENGINE ITSELF.** Decide the best location for your servo prior to actual mounting. Be very careful **NOT** to choose a location that places the Servo within 18" of:

- Alternator
or 12" from:
- Ignition Coil
- All Spark Plug Wires
- Distributor
- Igniter/Ignition Module
- Other High Energy Items

All of these items create interference (NOISE) and will interfere with the signal for the cruise. All the hardware you may need is provided in SERVO MOUNTING KIT 1. It's recommended not to secure servo until all final D.I.P. switch settings and wire harness routing procedures are completed.

CRUISE CONTROL SERVO

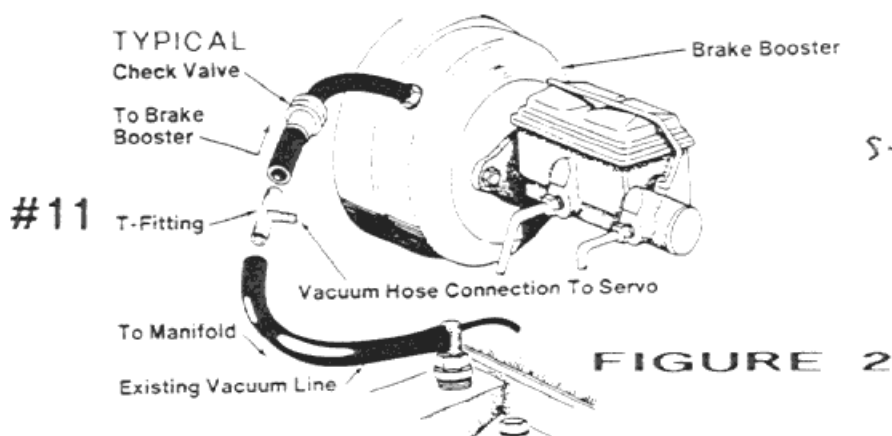
WITH ELECTRONICS MODULE ENCLOSED



IV. VACUUM HOSE CONNECTION

See Figure 1,2

Using provided rubber hose (P/N 8), connect one end to the port on the back of the servo (P/N 72), and the other end to a direct, non-ported manifold vacuum source. Vacuum hose may be cut to length if desired.



-WARNING-

If your vehicle has a TURBO engine, we advise the additional purchase of a optional vacuum canister (P/N 560 999) or equivalent to be installed inline with the servo vacuum hose (P/N 8), so when the TURBO is activated, and vacuum which now turns to pressure, your cruise control will continue to operate properly.

-NOTE-

A direct connection to the vehicle intake manifold is recommended if possible. If not, the vacuum brake booster line is an alternate source, See Figure 2. Do not connect to vacuum hose serving EGR or PCV valve or other vacuum operated components.

-NOTE-

DO NOT PLACE (P/N 11) "T" FITTING BETWEEN CHECK VALVE AND BRAKE BOOSTER. See Figure 2

V. THROTTLE LINKAGE ATTACHMENT

See Figure 3-7 (HARDWARE KIT 2)

STEP:

1. The end of the servo throttle cable housing **must** be securely anchored. Allow no flexing or movement of cable housing at that point. (See Figure 5,6,7).
2. Locate vehicle's carburetor or fuel injection throttle linkage. Determine which supplied hardware from THROTTLE LINKAGE KIT 2, will best allow installation on your particular vehicle. (See Figure 3,4,5).
3. The bead chain supplied at the end of the Servo cable may be cut to proper length, if desired, for the particular application **but** no shorter than 1/2" (2 beads).

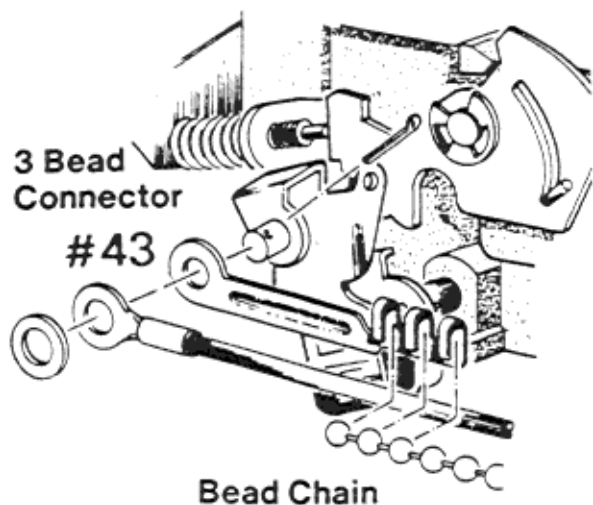


FIGURE 3

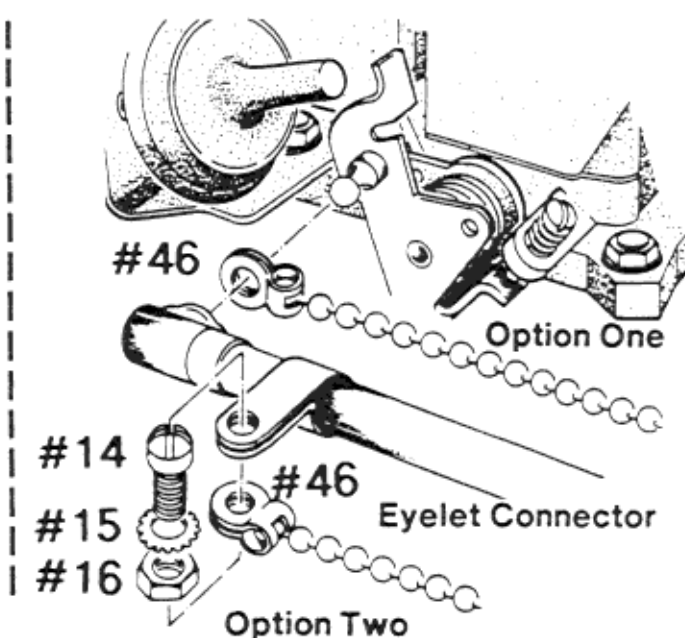


FIGURE 4

WIRE LOOP ATTACHMENT

With some vehicles, it may be necessary to remove the air cleaner so the throttle pulley is accessible. Rotate the pulley, with the engine OFF, to the full wide open throttle position and partially slide the existing throttle wire barrel from the pulley. Holding the wire loop (P/N 47A or 48) provided in hardware kit 2, slide this loop over the end of the vehicles throttle cable end barrel, and reinsert. Attach bead chain from servo cable to end of wire loop (P/N 47A or 48) and remove all slack. Then secure servo throttle cable using in most cases the provided parallel clamp (P/N 20). (See Figure 5).

-NOTE-

Must leave at least 2 beads of the bead chain if using wire loop (P/N 47 or 48A)

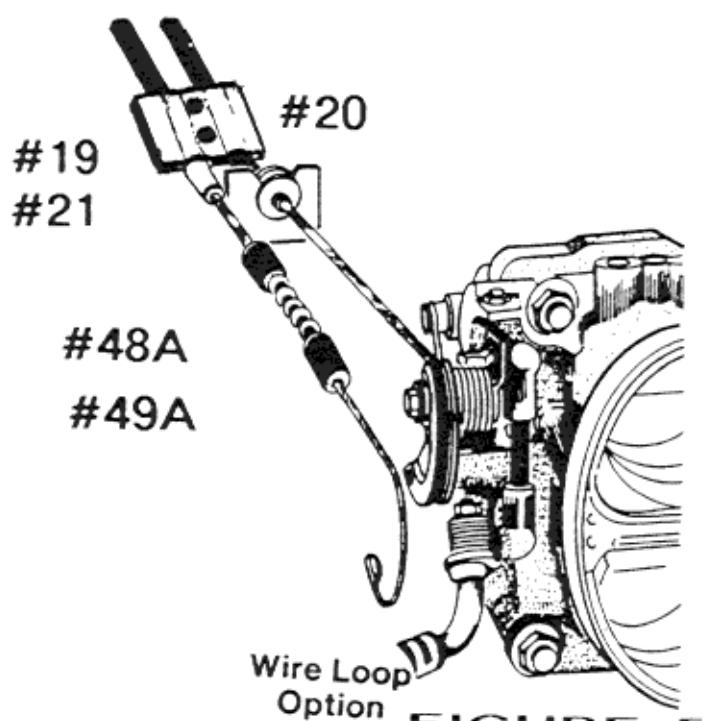
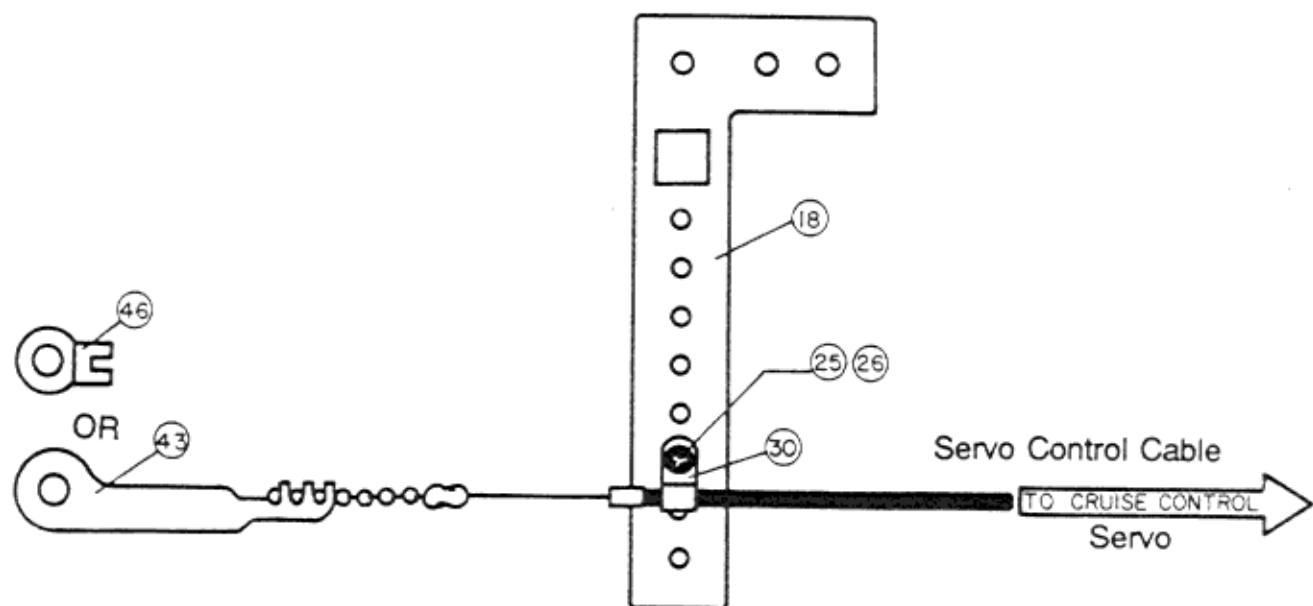
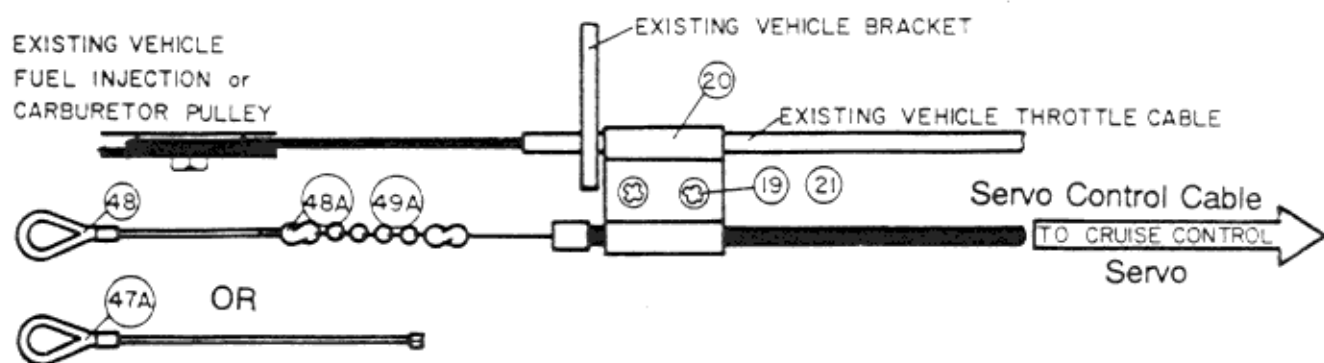


FIGURE 5

TYPICAL THROTTLE CABLE ANCHORING EXAMPLES



VI. SPEED SENSING INSTALLATION

See Figure 8,9,10

OPTION:

A. NEGATIVE SIDE OF IGNITION COIL

SPECIAL NOTE

THIS OPTION IS NOT COMPATIBLE WITH VEHICLES EQUIPPED WITH D.I.S. IGNITION, MULTI-COIL IGNITION, OR AUTOMATIC TRANSMISSION WITH OVERDRIVE or LOCKUP TORQUE CONVERTER. YOU MUST USE OPTION B, MAGNETIC SPEED SENSING IN THESE CASES. IF YOU HAVE ANY OF THESE LIMITATIONS **AND** A MANUAL TRANSMISSION, YOU WILL NEED TO PURCHASE A OPTIONAL EQUUS CLUTCH SWITCH P/N 9008 OR EQUIVALENT TO AVOID OVERREV PROBLEMS WITH YOUR ENGINE WHEN YOU DEPRESS THE CLUTCH PEDAL.

-WARNING-

The paired blue and black wire from the main wire harness, if shorted to ground, may cause vehicle ignition system failure. Route these wires carefully and never touch wire while engine is operating. Never fold or coil or cut excess wire, as this may cause interference and affect operation of cruise. Route wire, at least 18" away from ALTERNATOR and at least 12" away from IGNITION COIL, SPARK PLUG WIRES, DISTRIBUTOR and any high voltage source or vehicle wiring harnesses.

STEP:

- 8-D-22
grey
8W-30-12
8W-30-2
1. To locate the negative side of coil wire that will provide the cruise control a tach signal consult a shop manual for your vehicle or your local Dealer or Mechanic.
 2. Route the **BLUE** wire from the main wire harness (P/N 73) to ignition coil and attach using snap connector (P/N 53) to the - **NEGATIVE** side of the ignition coil wire or directly to the negative post or spade. The **BLACK** wire is not going to be used and leave disconnected. There is no need to ground it.
 3. Set DIP switch on back of Servo (P/N 72) to specific vehicle application setting. See Section X FINAL ADJUSTMENTS. See Figure 15

OPTION:

B. MAGNETIC SPEED SENSING See Figure 8 or 9 (HARDWARE KIT 3)

TYPICAL FRONT WHEEL DRIVE INSTALLATION

One magnet is required for **front wheel drive** vehicle applications. Position magnet, (P/N 4) on the inner constant velocity joint housing of either the right or left drive axle. Choose a location where the magnet, (P/N 4) will not strike the transmission housing or other nearby parts during rotation of the constant velocity joint housing. See Figure 8

STEP:

1. Choose a nearby bolt on the engine or transaxle housing for mounting the magnetic speed sensor bracket (P/N 3). The bracket (P/N 3) may be drilled, bent, twisted, shortened or notched so that the magnetic speed sensor will have a 1/4"-3/8" air gap between the magnet (P/N 4) and aimed directly at the center of the magnetic speed sensor (P/N 2). During operation, the center of magnet (P/N 4) must pass under the center point of magnetic speed sensor.
2. Secure magnet (P/N 4) in position on constant velocity joint housing using two provided

nylon tie straps (P/N 5). Cut off excess strap flush.

3. Route and plug lead wires from main wire harness blue and black paired onto spade connectors from magnetic speed sensor (P/N 2). (NOTE - NO WIRE POLARITY, MAY BE PLUGGED ONTO EITHER LEAD WIRE)
4. Set DIP switch in back of servo (P/N 72) to specific vehicle application setting. Refer to Section IX FINAL ADJUSTMENTS. See Figure 15

-WARNING-

If vehicle is to be raised always use jackstands. DO NOT rely ONLY on floor jack. **DO NOT RISK YOUR LIFE !**

NOTE

Magnetic speed sensor #2 is for use on vehicles with:

1. Automatic transmission with **overdrive**.
2. Automatic transmission with **lockup torque converter**.
3. Diesel engine.
4. Distributorless ignition systems (D.I.S.).
5. Multi-coil **IGNITION**

TYPICAL
Transaxle Housing

③ Bracket
1/4" Clearance

④ Magnet (1 Required)

⑤ Straps

Drive Axle

TIE WRAP ⑤

1/4"

②

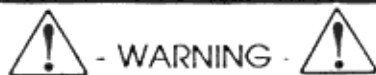
MAGNETIC PICKUP SPEED SENSOR

TRI HUB AXLE

TYPICAL

CROSS SECTION VIEW

FIGURE 8



- WARNING -



Route lead wire from pick-up sensor, at least 12" away from spark plug wires, coil, alternator, and **DO NOT** loop, coil, or fold wires this will cause interference. **DO NOT CUT LEAD WIRE!**

TYPICAL REAR WHEEL DRIVE INSTALLATION SEE FIGURE 9

Raise the vehicle IF NECESSARY so you can work behind the transmission. Set parking brake and block the wheels. - ALWAYS USE JACK STANDS FOR SAFETY.

STEP:

1. Mount sensor bracket (P/N 3) in position, usually to vehicle floor pan, BUT NEVER TO EXHAUST PIPE OR SHIELD.
2. Bend the bracket (P/N 3) as necessary to make the magnetic speed sensor point to the middle of the drive shaft, at the 3 o'clock or 9 o'clock position side of drive shaft, mount bracket (P/N 3) and magnetic speed sensor (P/N 2) not to exceed 12" behind transmission. See Figure 9 or 10
3. Place magnet (P/N 4) on drive shaft. Align magnet with center of magnetic speed sensor (P/N 2) and secure with two nylon tie straps (P/N 50). Cut excess strap flush. Pay special attention to maintain 1/4" - 3/8" clearance between magnetic speed sensor (P/N 2) and face of magnet (P/N 4).
4. Route blue and black wires from cruise servo to magnetic speed sensor (P/N 2) and secure with tie straps (P/N 50) to avoid damage by other moving parts or road debris. Avoid all hot, sharp, or moving parts, NEVER RUN BLUE AND BLACK MAIN WIRE HARNESS LEAD WIRES ACROSS OR PARALLEL TO ANY EXISTING VEHICLE WIRING.

-WARNING-

If your vehicle is equipped with a manual transmission and OPTION B is being used, you **MUST** install optional clutch switch (P/N 9008) or equivalent to protect your engine from overrevving and possible engine damage.

5. Plug blue and black paired lead wires onto spade connectors on the magnetic speed sensor (P/N 2) (POLARITY OF LEAD WIRES IS NOT A FACTOR, EITHER WIRE IS OK).

WARNING

Never fold or coil excess blue or black paired lead wire upon itself, as this will create a magnetic pickup that will cause interference and create operational malfunction of the cruise control. Route excess lead wire under vehicle along chassis towards trunk or tail gate and secure with tie straps (P/N 50) provided.

6. Set DIP switch in back of servo to specific vehicle application setting. SEE SECTION IX

FINAL ADJUSTMENTS, See Figure 15.

-WARNING-

If vehicle is to be raised always use jackstands. DO NOT rely ONLY on floor jack. **DO NOT RISK YOUR LIFE !**

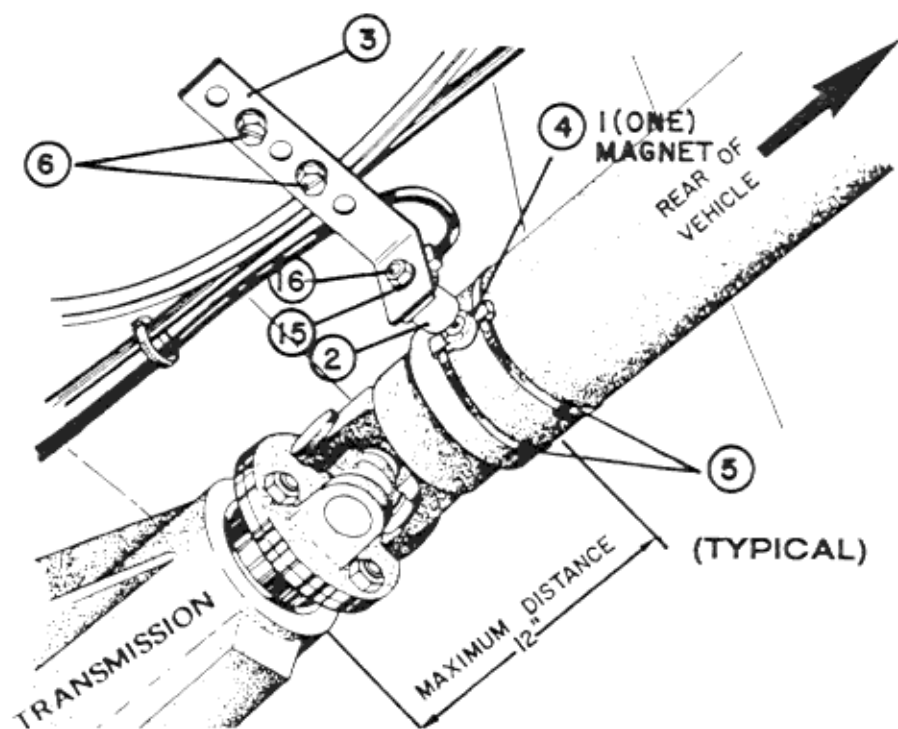


FIGURE 9

TOP FACES SENSOR

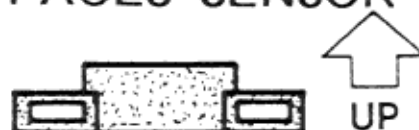
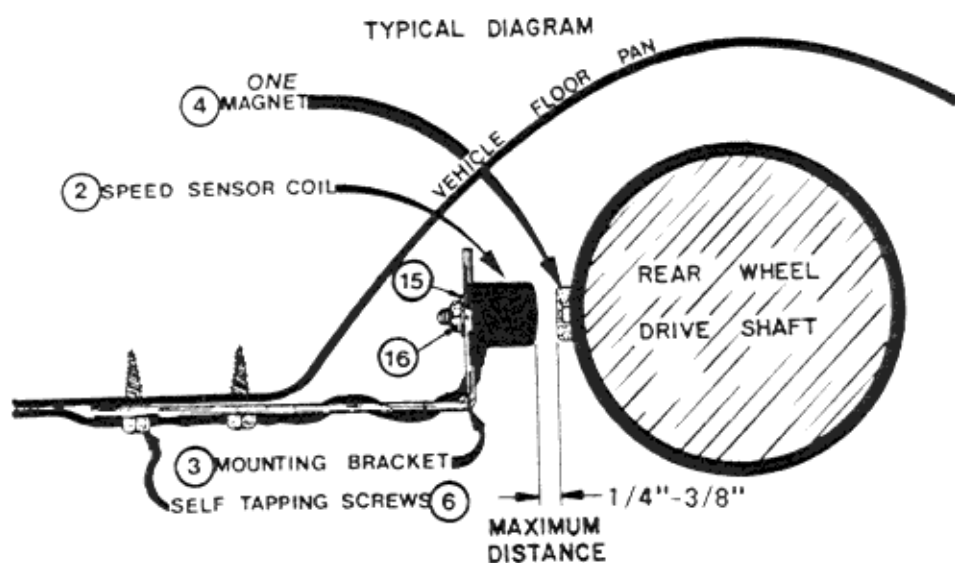


FIGURE 10



VII. WIRING

See Figure 11

MAIN HARNESS COLOR CODES

- 84-51-3
5-32
1. BROWN - **Brake Switch Lead Wire** Connect to HOT wire side of brake switch (constant 12V). See Figure 12 PK/03
 2. PURPLE - **Brake Switch Lead Wire** Connect to COLD wire side of brake switch (normally 0V and less than 5 ohms).
(the side that becomes hot, only when brake pedal is depressed.) See Figure 12 W/TAN
 3. BLACK - **Ground wire w/ring terminal**

Connect to a bare metal (SCRAPE ANY PAINT AWAY FIRST) chassis ground. Highly recommend grounding to same body panel as currently being used by vehicles' own battery - negative side. This will help to provide a perfect ground.

4. RED - **Power Lead wire**

Connect to a wire or fuse block location that becomes "hot" **only when the ignition switch is turned on**. Use the supplied snap connector (P/N 53), or female spade connector (not included) to connect.

Possible locations:

- Additional accessory unused spade connections at fuse box → Left of fuse 7
- Cigarette lighter (switched with key models only)
- Heater blower connector fuse at fuse block 8W-10-4
- Radio power connector fuse at fuse block 8W-10-8

- CAUTION -

DO NOT CONNECT TO POWER SOURCE OF:

- * ELECTRONIC ENGINE CONTROL MODULE (ECM)
- * FUEL INJECTOR POWER LEADS
- * C.B. or HAM RADIO
- * IGNITION POSITIVE SIDE OF COIL
- * SCANNER
- * RADAR DETECTOR

-WARNING-

WHEN INSERTING THE MAIN WIRE HARNESS CONNECTOR INTO THE REAR CAVITY OF THE SERVO, IT IS A **MUST** THAT YOU OBSERVE THE BARB ON THE CONNECTOR AND IT IS INSERTED FACING **UP**. See Figure 11

-SPECIAL NOTE-

THERE IS NO POLARITY OF THE WIRES BEING CONNECTED TO THE MAGNETIC SPEED SENSOR AND THEY MAY BE CONNECTED TO EITHER WIRE LEAD.

5. BLACK - With Female Spade connector - Connects to magnetic speed sensor (P/N 2) if using Option B only. NOTE - NOT CONNECTED IS USING OPTION A
6. BLUE - With Female Spade connector - Connects to magnetic speed sensor (P/N 2) if using either Option A or B.

COMMAND MODULE POWER CONNECTOR 2 PIN

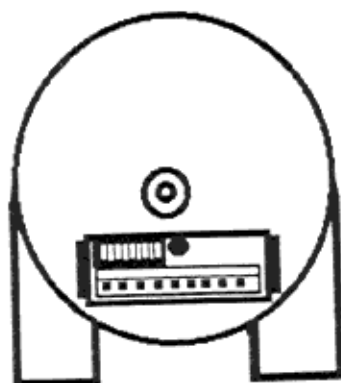
7. ORANGE - See Figure 13
BLACK - See figure 13

A. MAIN WIRING HARNESS (P/N 73)

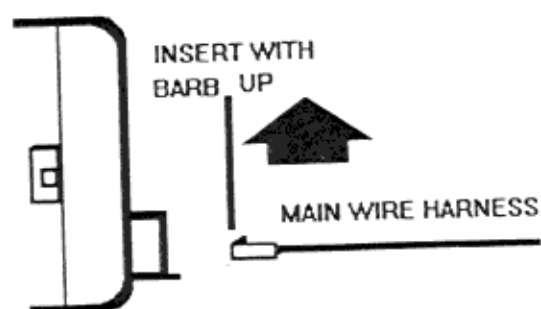
STEP:

1. Plug the 9 pin connector into the rear of cruise control Servo (P/N 72). Take special care not to insert this connector upside down!!!! The barb on top of the connector **MUST** be inserted in the UP position. See Figure 11
2. Route harness along vehicles' engine compartment towards the firewall. Take special care not to route harness within 12" of:
 - A. Alternator
 - B. Spark plug wires
 - C. Ignition coil
 - D. Distributor
 - E. Other High Energy components
 - F. Hot or sharp components
3. Locate an existing rubber grommet on the vehicles firewall large enough to allow the passing of the wire harness through the grommet into the passenger compartment. Gently push: harness through grommet opening into passenger compartment. Include both Brown and Purple wires.
4. Using the molex 4 pin connector (provided), plug loose wire ends: into this molex connector as per the label on the side of this connector. See figure 13
 - A. Red
 - B. Green
 - C. Yellow

BACK VIEW OF SERVO



SIDE VIEW OF SERVO



#73 MAIN WIRE HARNESS

FIGURE 11

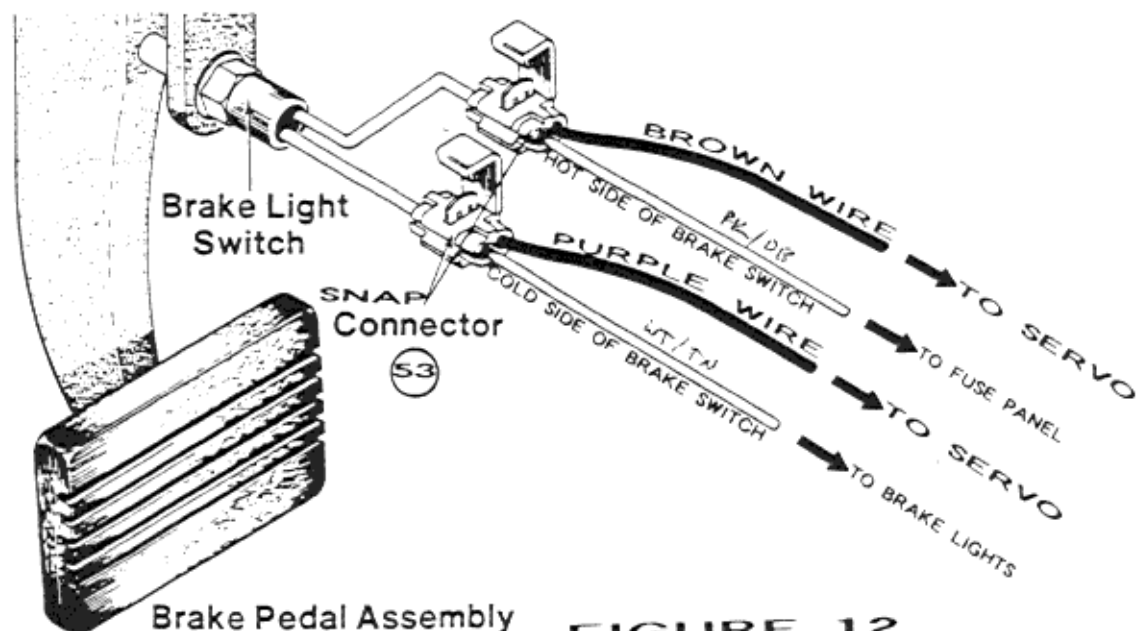
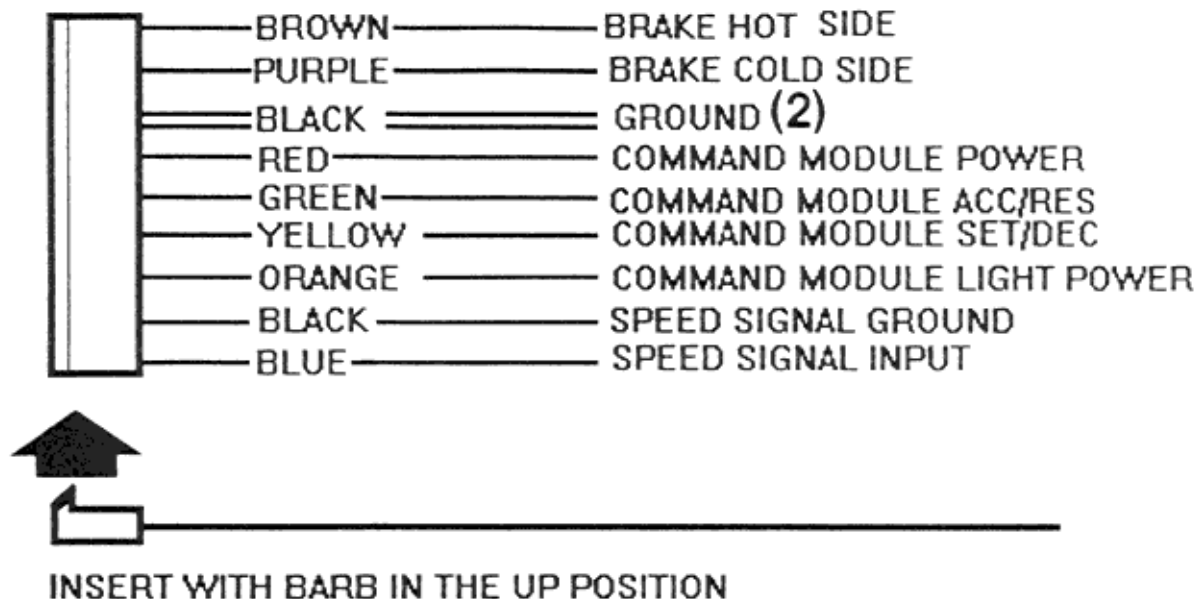
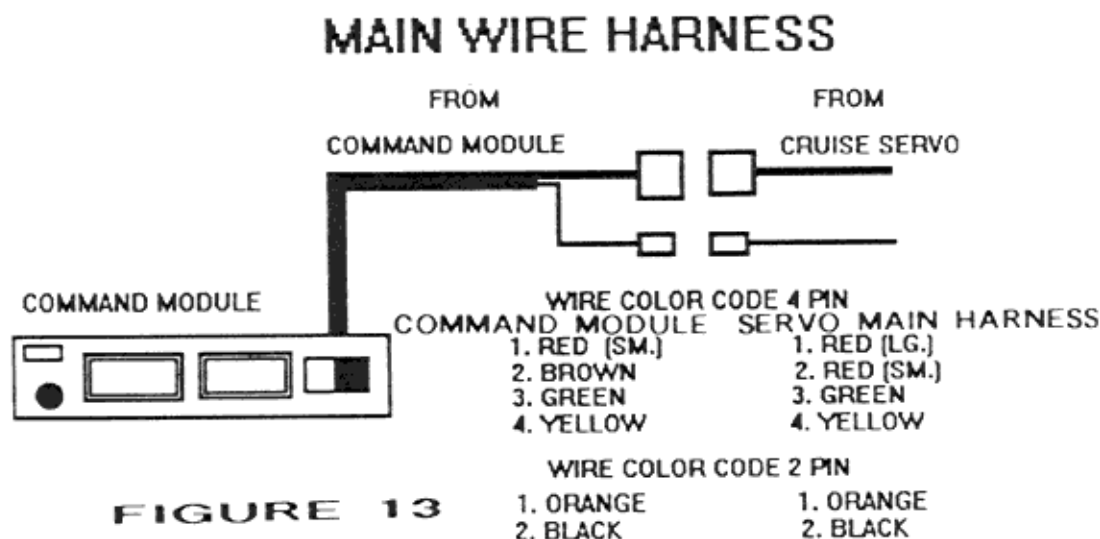


FIGURE 12

B. COMMAND MODULE P/N 55 WIRE HARNESS See Figure 13 (HARDWARE KIT 4)

STEP:

1. Route Command Module wire harness to the harness (P/N 73) from the servo once it has been routed through the firewall and plug both 4 pin and 2 pin connectors together.
2. Locate a suitable location for Command Module (P/N 55) and attach.
3. Use provided (P/N 50) tie straps and secure harness under dashboard.



VIII. SELF-DIAGNOSTICS USING COMMAND MODULE

See Figure 14

1. **Power Connection:** COMMAND MODULE LED will illuminate when either button is pressed with the vehicle ignition key turned on and COMMAND MODULE ON/OFF switch is in the ON POSITION. This will verify a good power and chassis ground.
2. **Brake Wire Connections:** (BROWN AND PURPLE WIRES) Cruise will not engage if not properly connected.
3. **Speed Input :** With the engine running above 1400-1600 rpm's (using negative side of ignition coil Option A), or moving at approximately 35 mph (using magnetic Option B). The COMMAND MODULE LED will flash (pulse) to indicate that the magnetic speed sensor (whichever method is used) is sending the speed signal to the cruise control microprocessor. **No flashing means no signal and cruise control will not set.**

COMMAND MODULE

KEYS ARE ILLUMINATED FOR NIGHT USE

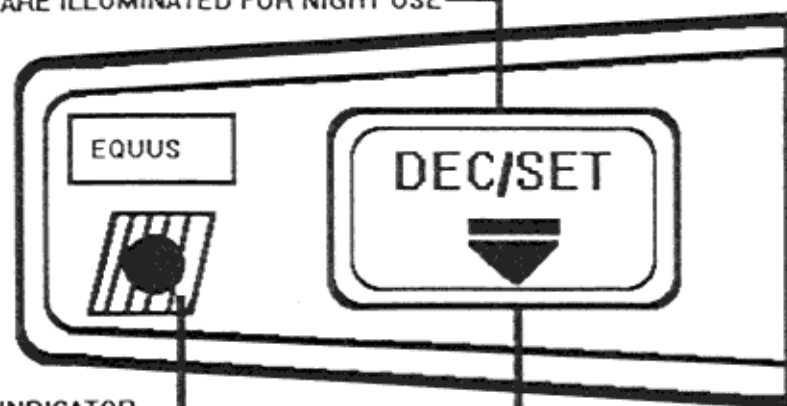


FIGURE 14

L.E.D. INDICATOR

A. PULSES WHEN READY TO BE ENGAGED

B. TURNS SOLID RED WHEN MODULE DEC/SET KEY IS PRESSED

IX. FINAL ADJUSTMENTS (See figure 15)

DIP SWITCH SETTINGS

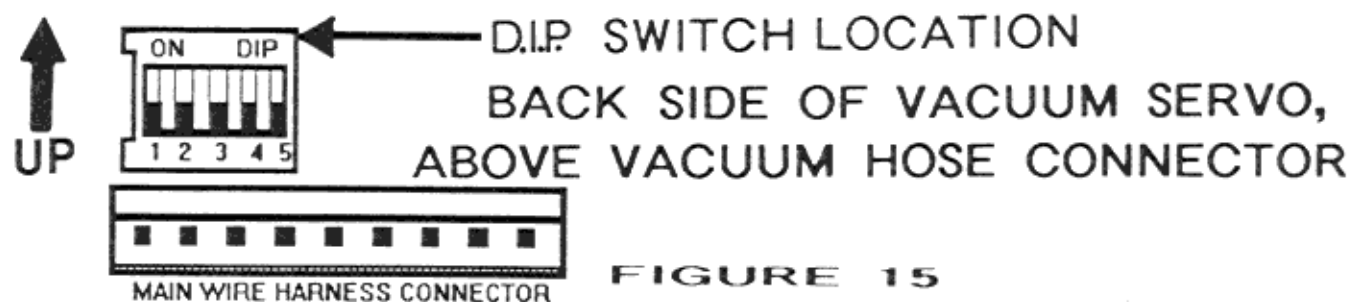


FIGURE 15

NEGATIVE SIDE OF IGNITION COIL (OPTION A)

VEHICLE ENGINE SIZE	DIP SWITCH POSITION				
	1	2	3	4	5
1 Cylinder	Off	Off	Off	Off	Off
2 Cylinder	Off	Off	Off	On	On
3 Cylinder	Off	Off	On	Off	On
4 Cylinder	Off	Off	On	On	On
5 Cylinder	Off	On	Off	Off	On
6 Cylinder	Off	On	Off	On	On
7 Cylinder	Off	On	On	Off	On
8 Cylinder	Off	On	On	On	On

MAGNETIC SPEED SENSOR (OPTION B)

		DIP SWITCH POSITION				
		1	2	3	4	5
See Note						
1000ppm	2	On	Off	Off	Off	Off
2000ppm	1,2	On	Off	Off	On	Off
3000ppm	1	On	Off	On	Off	Off
4000ppm	1	On	Off	On	On	Off
5000ppm	1	On	On	Off	Off	Off
6000ppm	1	On	On	Off	On	Off
7000ppm	1	On	On	On	Off	Off
8000ppm	1	On	On	On	On	Off

-NOTE-

1. FOR REAR WHEEL DRIVE VEHICLES

Set DIP switch to **4000ppm first**, as this is the most common setting, test drive vehicle, observe minimum flashing of L.E.D., If flashing at approximately 35 mph, setting is correct. If not, reset dip switch for 3000ppm or lower and road test again.

2. FOR FRONT WHEEL DRIVE VEHICLES

Set dip switch to **1000ppm first**. This setting is the most common. Test drive vehicle and observe the command module L.E.D. It should start flashing at approximately 35 M.P.H. If not reset D.I.P. switch to 2000ppm or higher and road test again.

3. NEGATIVE SIDE OF IGNITION COIL

First set DIP switch to correct vehicle cylinder number. Road test. If command module L.E.D. Does not flash at approximately 35 MPH or 1400-1600 RPM reset DIP switch to next lower cylinder setting and road test again.

- After all connections and D.I.P. switch adjustments to servo are completed, install (P/N 71) (wire harness cover sleeve) over harness wires and at the same time slide (P/N 70) (servo harness cover) over wire harness opening and snap into place.
- Mount (P/N 72) servo permanently to vehicle using (P/N 6) mounting screws. **(NEVER MOUNT SERVO ON VEHICLE ENGINE).**

X. TROUBLESHOOTING GUIDE

SYMPTOM/S

SOLUTION

1. COMMAND MODULE

L.E.D. does not flash when vehicle is up to speed.

- Recheck servo D.I.P. switch setting, reset to lower or higher setting.
- Recheck paired blue wire or black wire connection, must be attached correctly.
- Recheck power wire and chassis ground wire connections.
- Recheck main harness 4 pin connector as well as the 2 pin connector, must have proper seated connections.

2. COMMAND MODULE

L.E.D. fails to come on steady once minimum speed is reached and the set key is depressed. Just continues to flash.

Recheck the cruise control main wire harness purple wire (to cold side of brake switch) and brown wire (to hot side of brake switch wires).

3. COMMAND MODULE

Keys do not illuminate when the **On/Off** switch is turned to the **On** position, with the vehicle ignition key turned to the **On** position.

Check the cruise control main wire harness red wire at the 4 pin connector and the black wire with ring terminal to chassis ground. May have blown the in-line fuse in red wire or poor chassis ground on the black wire.

4. COMMAND MODULE

L.E.D. flashes as it should at minimum speed but only a second or two then drops out. L.E.D. flashing will return for another second or two then drop out again. Keeps doing this over and over again. Cruise will engage but drop out.

- Recheck mounting location of cruise control servo as well as the routing of the main harness paired blue and black wires. **Must** be at least 12" away from:
 - Ignition coil
 - Alternator
 - All spark plug wires
 - Solid core spark plug wires
 - Igniter/Ignition Module
 - Distributor
 - Other high energy items
- Paired blue and black wires must never be coiled or foiled upon itself or tied to any high energy wiring.
- In rare cases, the vehicle's own ignition operation is creating far too much noise (interference) for safe operation of the cruise control. Check the engine's own ground strap for corrosion or weak connection to chassis. Connection of the cruise control's black ground wire to the same location as the vehicle's battery negative side **may** help solve this problem.

NOTE:

Some vehicles have very poor or insufficient engine to chassis ground, and no effort short of an additional ground from the engine to the body (chassis) will prevent this interference problem. In these cases a call to Equus Technical Service for further instruction is advisable.

5. COMMAND MODULE

L.E.D. flashes but is far above or below specifications set for Option A or Option B minimum speed engagement.

Reset the D.I.P. switch at back of cruise control to a lower setting (if too high) or higher setting (if too low), and road test again. Continue to reset the D.I.P. switch until you achieve minimum flashing at:

- 1400 - 1600 RPM's (if using Option A)
- 33 - 37 MPH (if using Option B)

6. COMMAND MODULE

L.E.D. when set key is pressed will go from flashing to solid red, but cruise control will not hold.

- Check vacuum source or vacuum hose (P/N 8). May not be connected correctly.
- Throttle attachment point or clamp (P/N 20) is loose or slipping.

7. VEHICLE WILL LOOSE OR INCREASE SPEED AFTER INITIAL SET OF CRUISE CONTROL

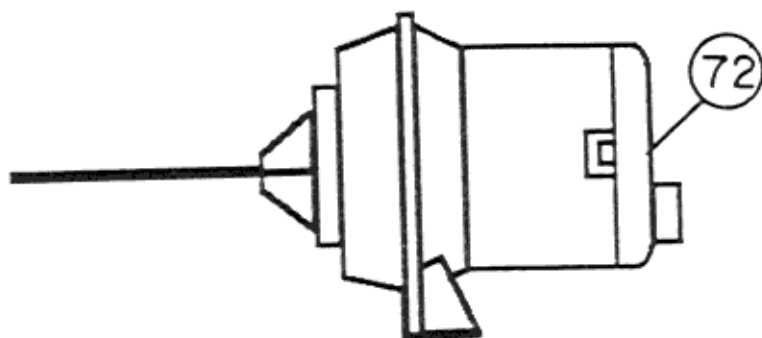
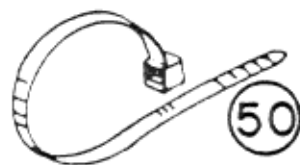
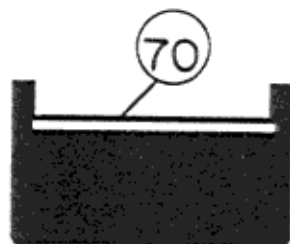
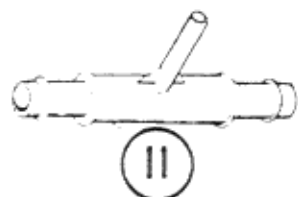
Excessive loss (10 - 15 MPH) on uphill grades is dependent on vehicle's weight or available vacuum during this situation. (P/N 9003) Vacuum canister may help to stabilize vacuum. The cruise control monitors engine speed (RPM's) and excessive increase (7-12 MPH), depends on vehicle's weight, the vehicle may tend to float. Remember the cruise control will never apply vehicle braking on hills.

SERVO MOUNTING KIT

1

QTY.

- 1 #11 VACUUM "T" UNIVERSAL
- 2 #6 MOUNTING SCREW HEX HD.
- 1 #70 SERVO HARNESS COVER
- 1 #71 WIRE HARNESS COVER SLEEVE
- 5 #50 WIRE TIES
- 3 #53 SNAP CONNECTOR
- 1 #8 VACUUM HOSE
- IN MAIN BOX
- 1 #72 CRUISE CONTROL SERVO

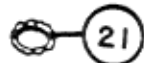
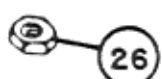
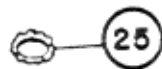
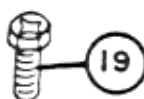
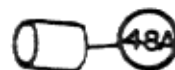
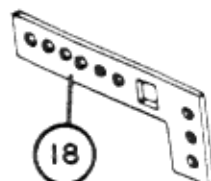
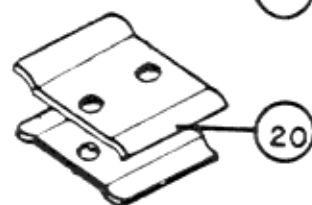
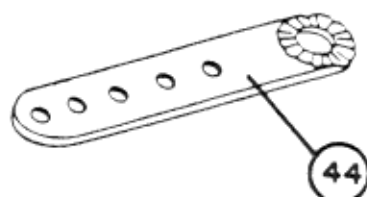
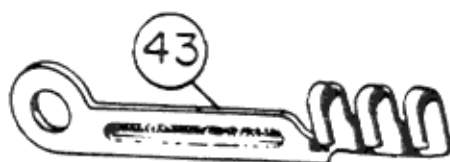


THROTTLE LINKAGE KIT

2

QTY.

- 1 #43 3 BEAD CONNECTOR
- 1 #44 THROTTLE LEVER ADAPTER
- 2 #20 PARALLEL CABLE CLAMP 2 pcs.
- 1 #18 THROTTLE CABLE MOUNTING BRACKET
- 1 #46 EYELET CONNECTOR
- 1 #30 CABLE "P" CLAMP (3/16")
- 1 #48A BEAD CHAIN CONNECTOR COVER
- 1 #32 SHOULDER SCREW
- 1 #25 LOCKWASHER 4MM
- 1 #26 HEX NUT 4MM
- 1 #49A BEAD CHAIN CONNECTOR
- 1 #48 WIRE LOOP 3"
- 1 #47A WIRE LOOP 5"
- 2 #19 SCREW 5MM X 12MM
- 2 #21 LOCKWASHER 5MM

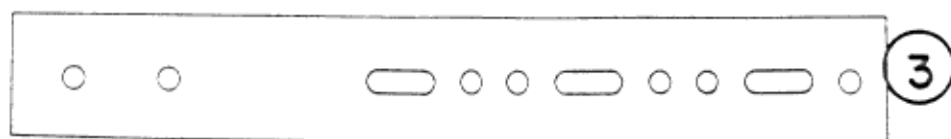
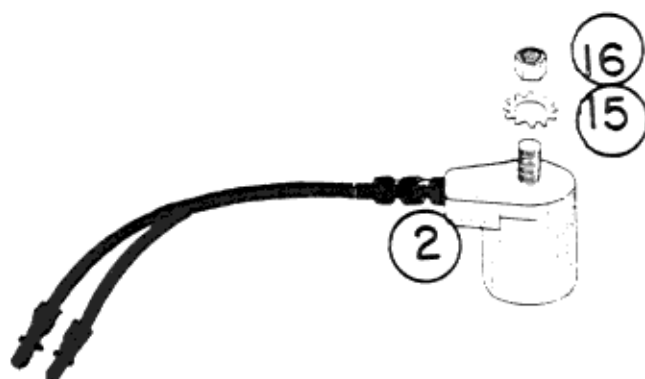
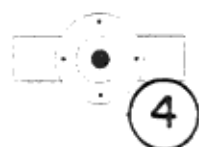


SPEED SENSING KIT

3

QTY.

- 1 #3 MOUNTING BRACKET
- 2 #5 TIE STRAP
- 1 #4 MAGNET
- 2 #6 SCREW 10MM X 19MM
- 1 #2 MAGNET SPEED SENSOR
- 1 #15 LOCKWASHER 6MM
- 1 #16 HEX NUT 6MM
- 1 #73 WIRE HARNESS

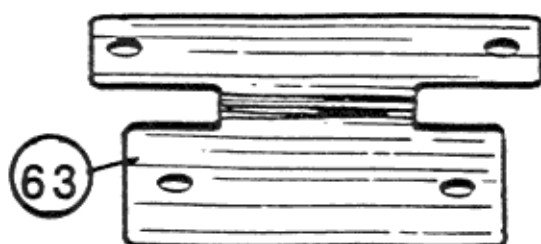
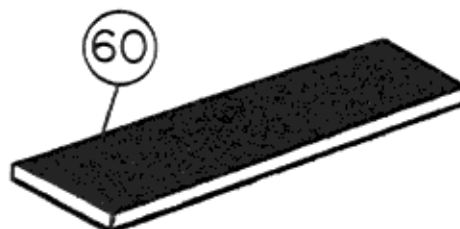
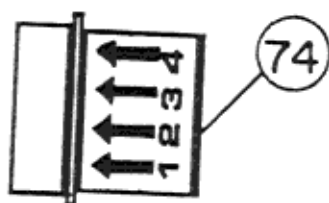
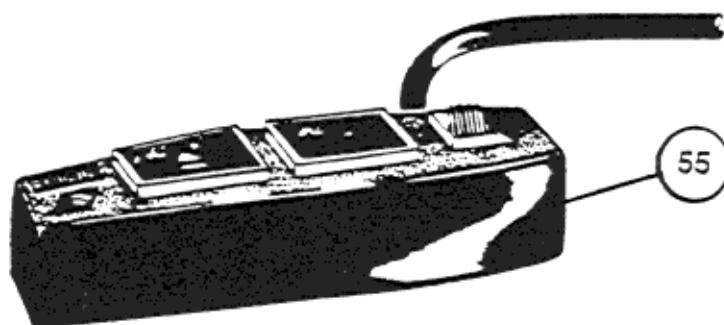


COMMAND MODULE KIT

4

QTY.

- 1 #55 COMMAND MODULE
- 1 #74 WIRE HARNESS CONNECTOR (4 WIRE) COMMAND MODULE
- INSTALLED AFTER ROUTING OF COMMAND MODULE WIRE HARNESS
- 1 #60 DOUBLE SIDED TAPE
- 1 #63 MOUNTING BRACKET
- 2 #57 SCREW 3MM X 6MM (SHORT)
- FOR MOUNTING COMMAND MODULE
- 2 #58 SCREW 3.5MM X 12MM (LONG)
- FOR MOUNTING BRACKET TO DASH



XII. MASTER PARTS LIST

ITEM	PART DESCRIPTION	QTY	ITEM	PART DESCRIPTION	QTY
2	Magnetic Speed Sensor	1	57	Self Tapping Screw (3mm x 6mm)	2
3	Mounting Bracket	1	58	Self Tapping Screw (3.5mm x 12mm)	2
4	Magnet	1	60	Double Sided Adhesive Tape	1
5	Nylon Tie Strap	2	63	Mounting Bracket for Command Module	1
6	Sheet Metal Screw (10mm x 19mm)	4	70	Servo Wire Harness Cover Plate	1
8	Vacuum Hose 48" (Rubber)	1	71	Wire Harness Protective Foam	1
11	Vacuum T-Connector (Large)	1	72	Servo - Model 9000-B	1
15	Lock Washer (6mm) Star	1	73	Wire Harness - Model 9000-B	1
16	Hex Nut (6mm)	1	74	Wire Harness 4 Pin Connector -	1
18	Throttle Cable Mounting Bracket	1			
19	Machine Screw (5mm x 12mm)	2			
20	Parallel Cable Clamp	2 pc			
21	Lock Washer (5mm) Star	2			
25	Lock Washer (4mm) Star	1			
26	Hex Nut (4mm)	1			
30	Cable "P" Clamp (3/16")	1			
32	Shoulder Screw (4mm x 7mm)	1			
43	3 Bead Connector	1			
44	Throttle Lever Adapter	1			
46	Eyelet Connector	1			
47A	Wire Loop 5"	1			
48	Wire Loop 3"	1			
48A	Bead Chain Cover Sleeve	1			
49A	Bead Chain Connector	1			
50	Nylon Tie Strap	5			
53	Snap Connector	3			
55-B	Command Module Model - B	1			

TECHNICAL ASSISTANCE

If you have any questions about a particular application, installation or troubleshooting, you can call Technical Service, Monday - Friday, 8:30 a.m. - 4:00 p.m. **pacific standard time** in the United States, and Canada; (800) 544-4124 **closed all national holidays, and weekends.**

EQUUS PRODUCTS INC. ONE YEAR LIMITED WARRANTY

EQUUS PRODUCTS, INC., warrants to the original purchaser that this CRUISE CONTROL is free of defects in materials and workmanship under normal use and maintenance for a period of one (1) year from the date of original purchase, whether or not actual use begins on that date. User, however, is responsible for removal, packaging, and transportation of product to the service center. **LABOR IS NOT COVERED.**

If the CRUISE CONTROL fails within the one (1) year period, it will be repaired or replaced during normal working hours, at EQUUS' option, at no charge, when returned prepaid to the Service Center with Proof of Purchase. The sales receipt may be used for this purpose. All replacement parts, whether new or re-manufactured, assume as their warranty period only the remaining time of this warranty.

This warranty does not apply to damage caused by improper installation, accident, misuse, abuse, improper voltage, service, fire, flood, lightning, vehicle accident or other acts of God, or if the product was altered or repaired by anyone other than EQUUS SERVICE. EQUUS does not warrant the installation of the cruise control (labor) and therefore will not be responsible for installation or re-installation charges.

EQUUS Products, Inc., under no circumstances shall be liable for any consequential damages for breach of any written warranty of this unit.

This warranty gives you specific legal rights, and you may also have rights which vary from state to state.

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For service, send via U.P.S.(if possible) to:

EQUUS PRODUCTS INC.
17291 Mt. Herrmann St.
Fountain Valley, Ca. 92708
Attn: Service

Allow 14-21 days service time

REVISION A
1992 E.P.I.
D/M 11-92