CRUISE CONTROL

General Description and Operation

The Integrated Vehicle Speed Control (IVSC) system consists of operator controls, servo (throttle actuator), brake light switch, speed sensor (not required for vehicles equipped with an electronic cluster), horn relay, vacuum dump valve, vacuum reservoir (called an aspirator on some models), check valve(s), wiring and hoses for vacuum. The vacuum reservoir or aspirator provides an additional vacuum signal when the engine is under heavy load to improve speed control performance. In the IVSC system, speed control amplifier assembly function has been integrated into the EEC-IV Electronic Control Assembly (ECA). The servo assembly is mounted in the engine compartment and is connected to the throttle linkage with an actuator cable. The servo is connected to the vacuum reservoir (aspirator) and to manifold vacuum through the check valve. The speed control sensor is located on the transmission or transaxle.

For the system to be activated, the engine must be running and the vehicle must be greater than approximately 25-35 mph (40-56 km/h), depending upon vehicle application. Under these conditions, the system is activated and is ready to accept a set speed signal by pressing the ON switch in the steering wheel. Then, the operator must depress and release the SET ACCEL switch. This will result in the current speed being maintained until a new speed is set by the operator, the brake pedal is depressed, the clutch pedal is depressed or the OFF switch is depressed.

To decrease the set speed, the vehicle speed may by reduced by applying the brake or clutch pedal and then resetting the speed using the foregoing method or by depressing the COAST switch. When the vehicle has slowed to the desired speed, the COAST switch is released and the new speed is set automatically. If the vehicle speed is reduced below approximately 25-35 mph (40-60 km/h), depending upon vehicle application, the operator must manually increase the speed and reset the system.

To increase the set speed, the vehicle set speed may be manually increased at any time by depressing the accelerator until the higher speed is reached and stabilized, then depressing and releasing the SET ACCEL button. Speed may also be increased by depressing the SET ACCEL switch button, at speeds over approximately 25-35 mph (40-56 km/h), depending upon vehicle application, and holding it in that position. The vehicle will then automatically increase speed. When the desired rate of speed is attained and the button is released, that new set speed will be maintained.

The speed control system may be deactivated by depressing the brake or clutch pedal. To resume the set speed prior to deactivation, the RESUME switch is depressed and prior set speed may be re-established. The RESUME switch is hinged on the side closest to the SET ACCEL switch. Therefore, it should be depressed on the side farthest from the SET ACCEL switch. The resume feature will not function if the system is deactivated with the OFF switch, or if the vehicle speed has been reduced to below approximately 25-35 mph (40-56 km/h)

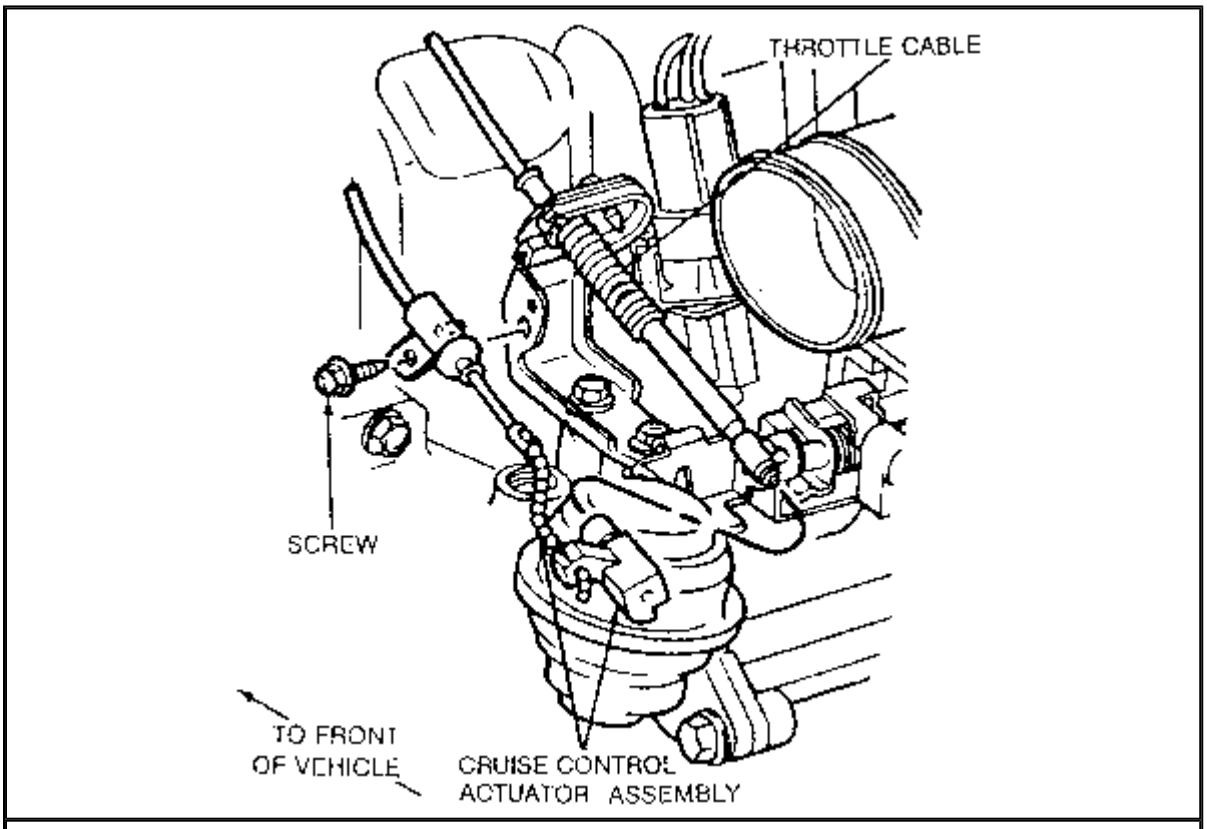
depending upon vehicle application. In addition, when the ignition switch is turned **OFF**, the speed control memory is erased and the resume feature will not function.

Actuator Cable

REMOVAL & INSTALLATION

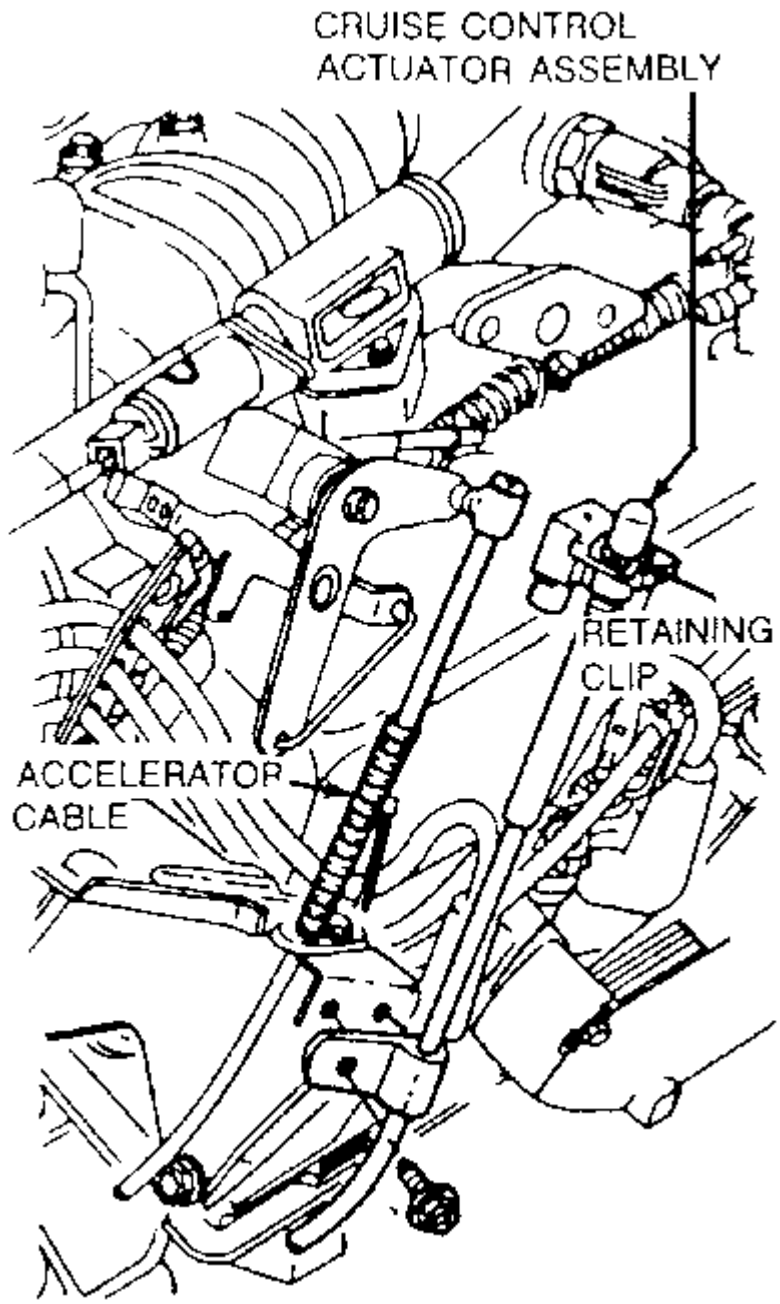
Except .2L SHO

1. **Disconnect the negative battery cable.**
2. **Remove the servo assembly. For details, please refer to the procedure located later in this section.**
3. **Attach the new actuator cable assembly to the servo.**



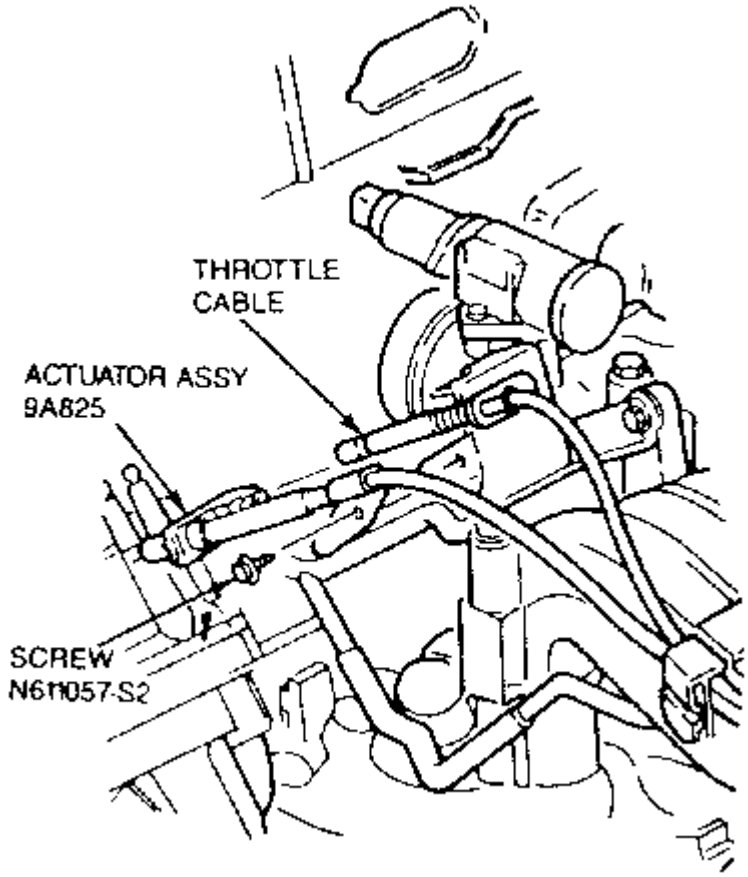
Cruise control actuator cable assembly-2.5L engine

Click to enlarge



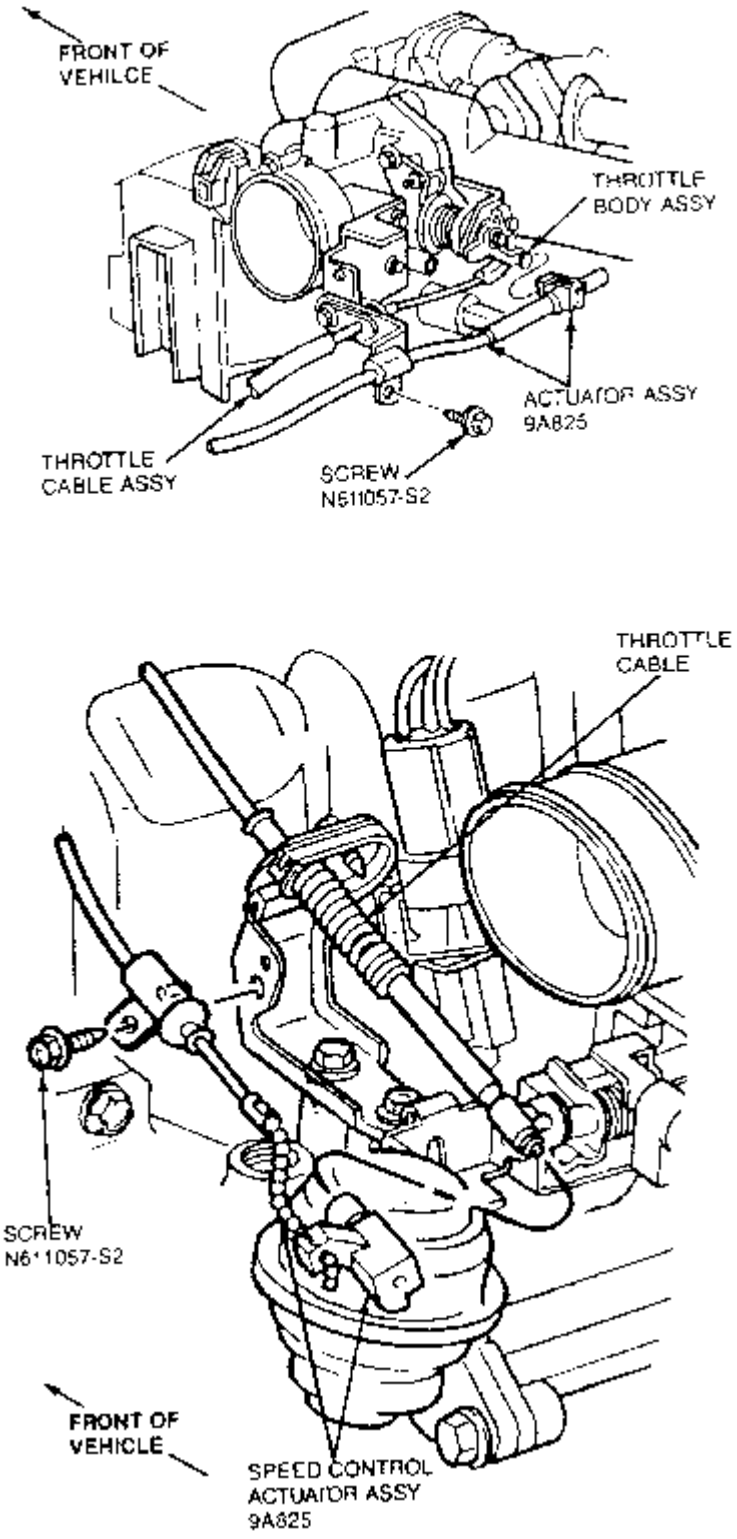
Cruise control actuator cable assembly-3.0L engine except SHO

Click to enlarge



Cruise control actuator cable assembly-3.8L engine

Click to enlarge



Cruise control actuator cable assembly-3.0L SHO engine

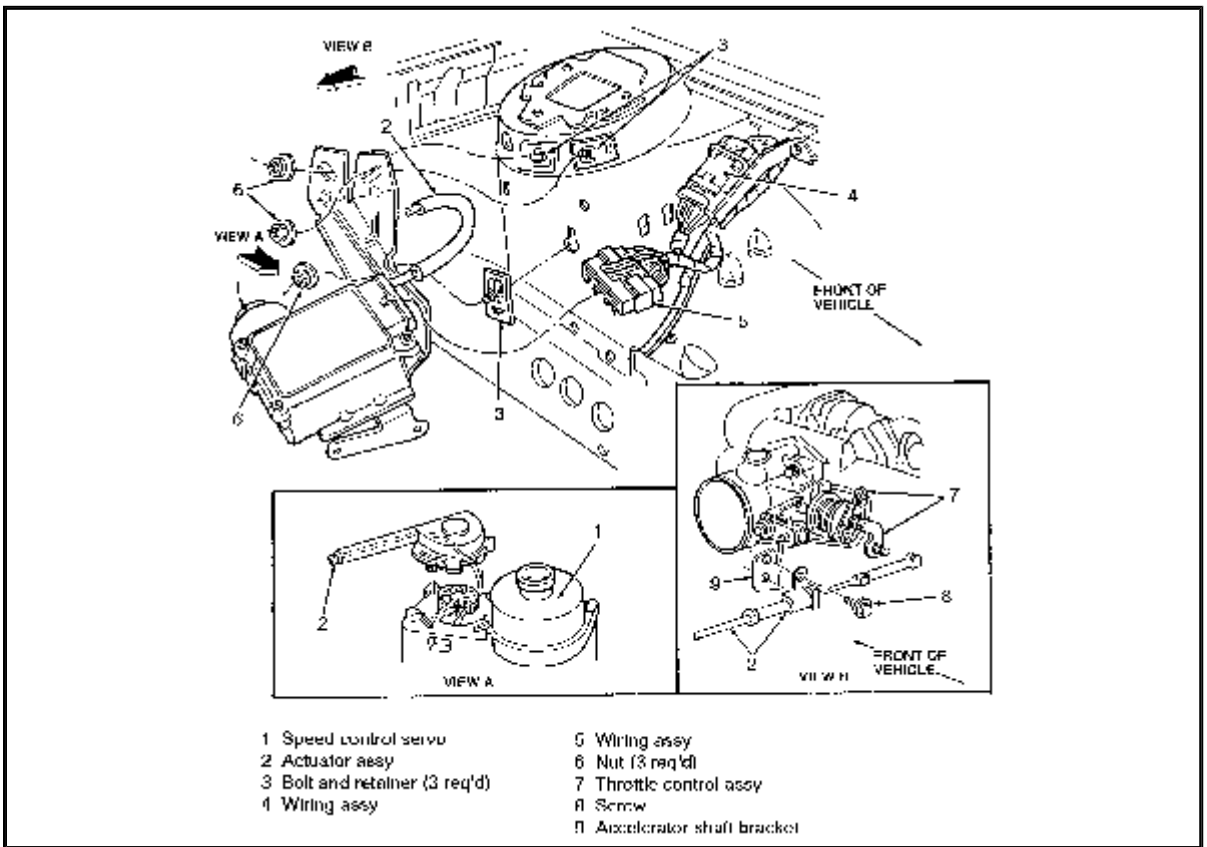
Click to enlarge

To install:

4. **Install the complete actuator cable/servo assembly. For details, please refer to the servo procedure located later in this section.**
5. **Connect the negative battery cable.**

3.2L SHO Vehicles

1. **Disconnect the negative battery cable.**

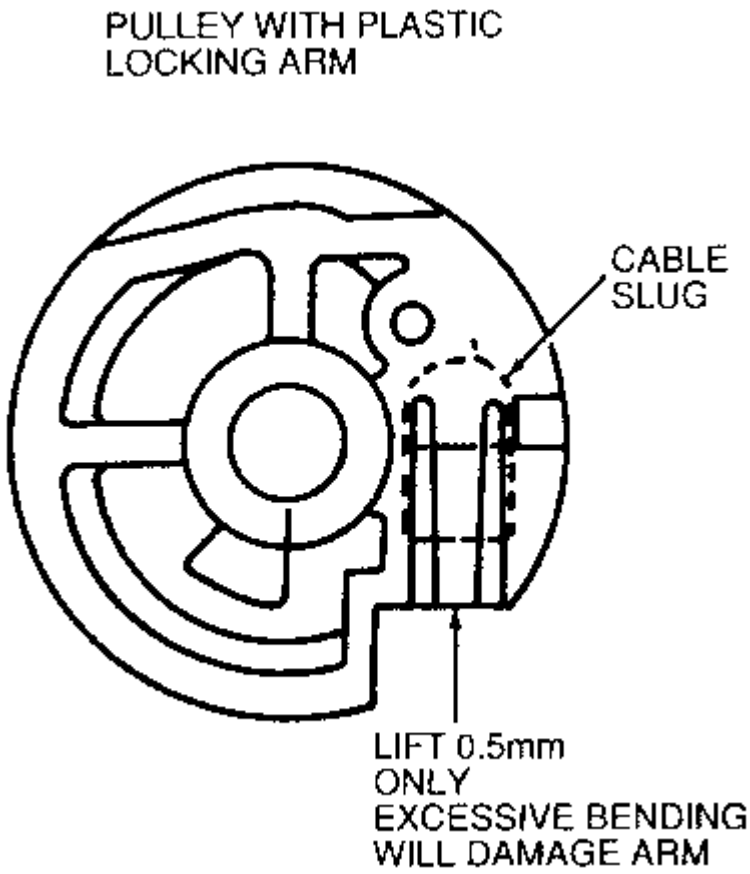


Actuator assembly and related components-3.2L SHO

Click to enlarge

2. **Remove the screw attaching the actuator assembly cable to the accelerator shaft bracket.**
3. **Remove the actuator assembly cable from the throttle control.**
4. **Remove the actuator cable cap from the speed control servo by depressing the cap locking arm and rotating the cap counterclockwise.**
5. **Remove the cable slug from the servo pulley. Gently pry-up the arm slightly with a suitable small prytool, and at the same time push the cable slug out of the pulley slot.**

Excessive bending of the arm will cause it to break. DO NOT USE servos with damaged or missing locking arms.

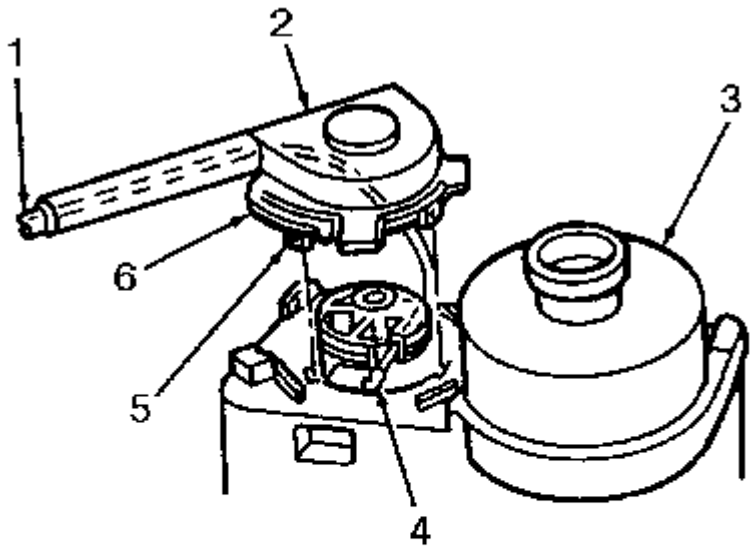


When removing the slug from the servo pulley, gently pry the arm up SLIGHTLY using a suitable tool, while pushing the cable slug out of the pulley slot-3.2L SHO

Click to enlarge

To install:

6. **Make sure that the rubber seal is fully seated on the actuator cap.**
7. **Lock the cable ball slug into the servo pulley slot.**
8. **Pull on the throttle attachment end of the cable to draw the cable cap onto the servo pulley.**
9. **Align the cable cap tabs with slots in the servo housing. Insert the cap into the speed control servo and rotate it clockwise until the locking arm engages.**



1 Actuator assy
2 Actuator cable cap
3 Speed control servo
4 Cable ball slug
5 Cap locking tabs
6 Locking arm

Align the cable cap tabs with the slots in the servo housing, then insert the cap into the speed control servo and rotate it until the locking arm engages-3.2L SHO

Click to enlarge

10. **Snap the actuator assembly cable onto the throttle control, then install the screw at the accelerator shaft. Tighten to 27-35 inch lbs. (3-4 Nm).**
11. **Check the cable adjustment.**
12. **Make sure that the cable is routed properly, then position the retaining clips.**

Incorrect wrapping of the cable core wire around the servo pulley may result in a high idle condition. Make sure that the throttle lever is at idle position after cable installation and adjustment.

13. **Connect the negative battery cable.**

ADJUSTMENT

Except 3.2L SHO

1. **Remove speed control cable retaining clip.**
2. **Push speed control cable through adjuster until a slight tension is felt.**
3. **Insert the cable retaining clip and snap into place.**

3.2L SHO

1. **Remove the retaining clip from the actuator cable adjuster at the throttle.**
2. **Make sure the throttle is in a fully closed position.**
3. **Pull on the actuator cable to take up the slack. Loosen at least one notch so there is about 0.118 in. (3mm) of slack in the cable.**

The cable must not be pulled tight, otherwise the cruise control may not operate properly.

4. **Insert the cable retaining clip, then snap it into place.**
5. **Check to make sure that the throttle linkage operates freely and smoothly.**

Control Switches

REMOVAL & INSTALLATION

1986-89 Vehicles

1. **Disconnect the negative battery cable.**
2. **Remove the steering wheel horn pad cover by removing the two retaining screws from the back of the steering wheel.**
3. **Disengage the electrical wiring connector from the slip ring terminal.**
4. **Remove the speed control switch assembly from the horn pad cover by removing the two attaching screws from each switch.**

Control switch removal-1986-89 vehicles

Click to enlarge

To install:

5. **Install the control switches into the horn pad cover. Attach each switch with the two retaining screws.**
6. **Attach the control switch connector to the terminal on the slip ring.**
7. **Install the steering wheel horn pad cover. Snap latching hook in at the 12 o'clock position, then attach with the two retaining screws.**
8. **Connect the negative battery cable.**

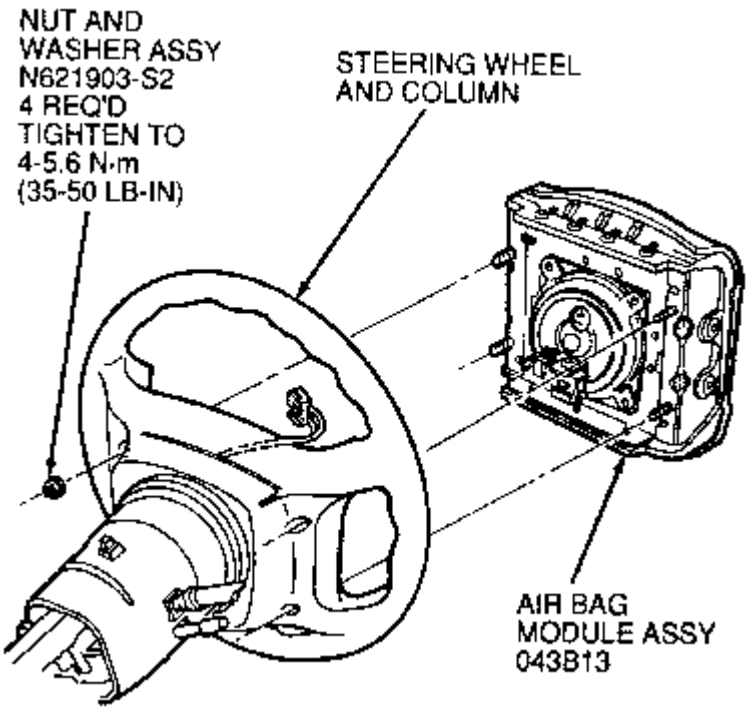
1990-93 Vehicles

CAUTION

Some vehicles are equipped with an inflatable restraint or air bag system. The air bag system must be disabled before performing service on or around the air bag, instrument panel components, or

wiring. Failure to follow safety and disabling procedures could result in possible air bag deployment, personal injury or unnecessary air bag system repairs.

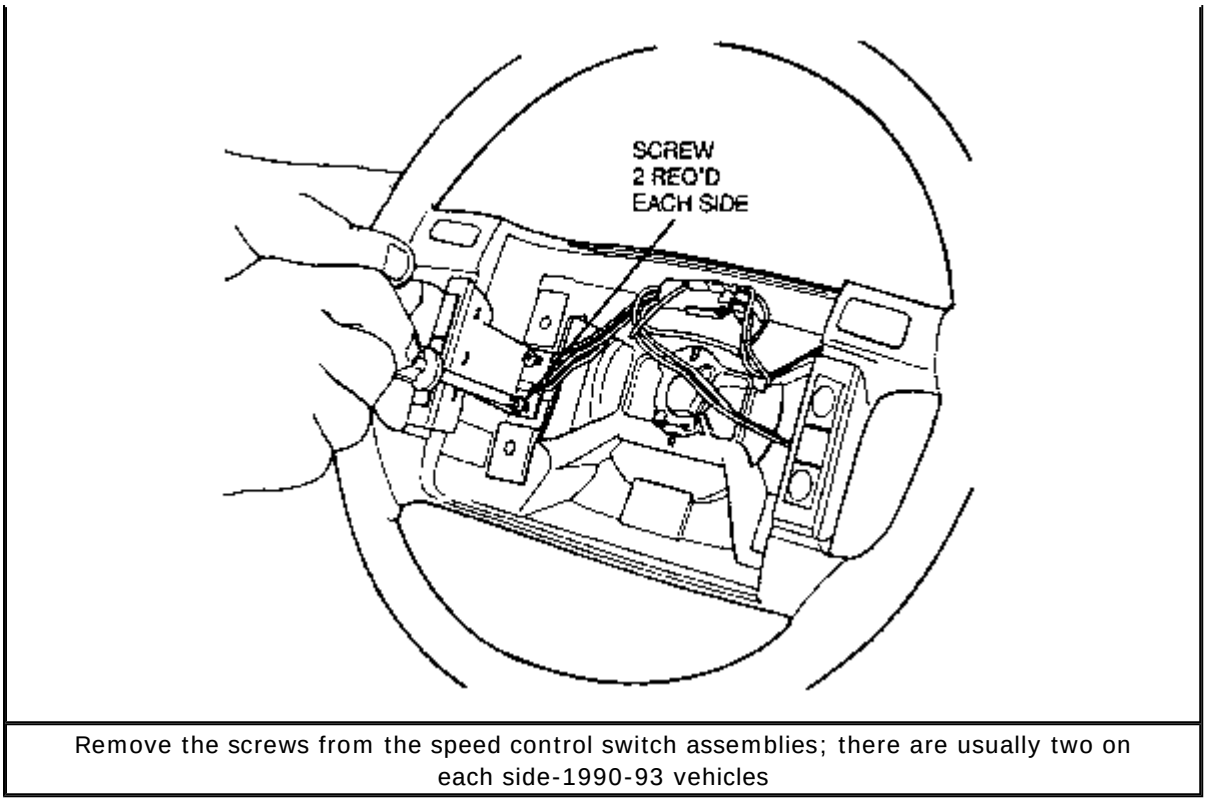
1. **Disconnect the negative battery cable and air bag back up power supply.**
2. **Remove the four nut and washer assemblies retaining the air bag module to the steering wheel.**
3. **Disengage the air bag electrical connector from the clockspring contact connector.**
4. **Remove the air bag module from the steering wheel. Place the module on the work bench with the trim cover facing upward.**



Remove the air bag module assembly from the steering wheel, then place it on a work bench with the trim cover facing UPWARD-1990-93 vehicles

Click to enlarge

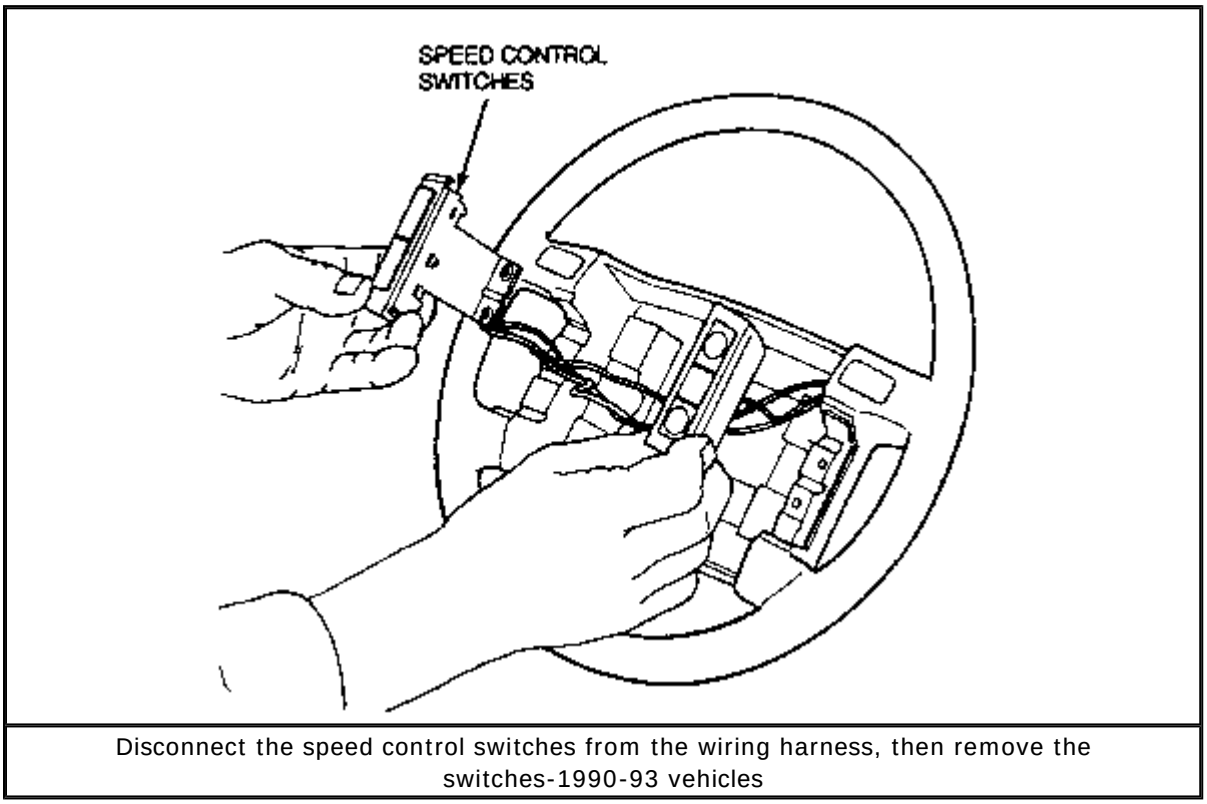
5. **Remove the horn buttons from the steering wheel by using a suitable small prytool.**
6. **Disengage the horn wiring electrical connector(s).**
7. **Remove the screws from the speed control switch assemblies.**



Remove the screws from the speed control switch assemblies; there are usually two on each side-1990-93 vehicles

Click to enlarge

8. **Disconnect the speed control switches from the wiring harness, then remove the switches.**



Disconnect the speed control switches from the wiring harness, then remove the switches-1990-93 vehicles

Click to enlarge

To install:

9. **Position the switches onto the steering wheel, then install the retaining screws.**
10. **Connect the wiring harness to the horn buttons, then install the horn buttons.**
11. **Connect the speed control switches. Make sure the wires are positioned so that no interference is encountered when installing the air bag module.**
12. **Position the air bag module on the steering wheel so that the clockspring contact connector can be fastened to the air bag module.**
13. **Install the air bag module on the steering wheel, then install the four nut and washer assemblies behind the steering wheel. Tighten to 4-6 inch lbs. (36-53 Nm).**
14. **Connect the air bag back up power supply, then connect the negative battery cable.**

1994-95 Vehicles

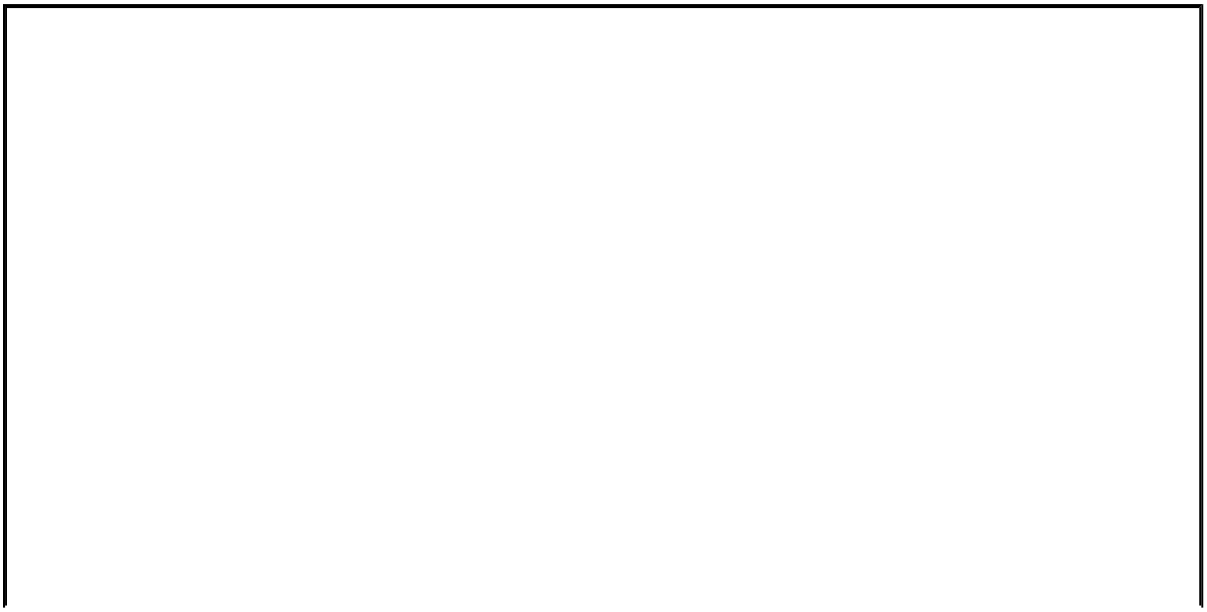
CAUTION

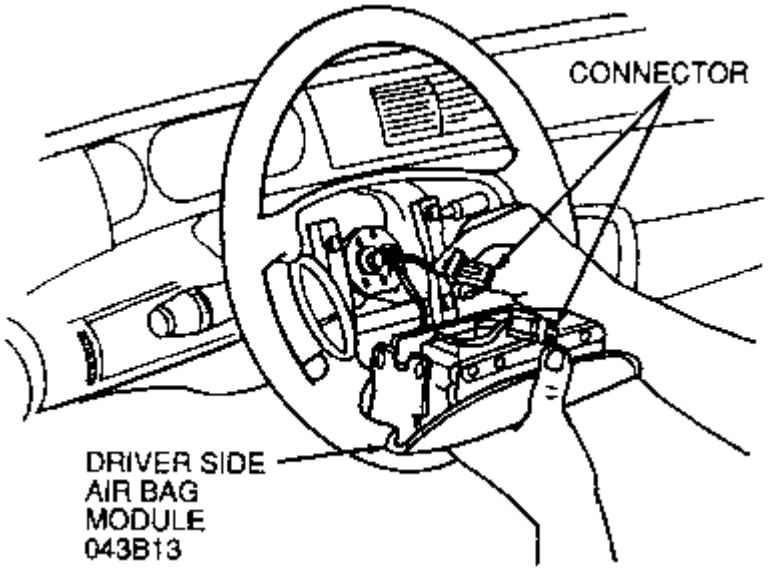
Some vehicles are equipped with an inflatable restraint or air bag system. The air bag system must be disabled before performing service on or around the air bag or instrument panel components or wiring. Failure to follow safety and disabling procedures could result in possible air bag deployment, personal injury or unnecessary air bag system repairs.

1. **Disconnect the negative battery cable.**

Before any air bag component is serviced, the positive battery cable MUST be disconnected for one minute to de-engergize the backup power supply.

2. **Disconnect the positive battery cable, then wait one minute for the backup power supply to deplete its stored energy.**
3. **Remove the two back cover plugs. Remove the two screw and washer assemblies securing the driver side air bag module to the steering wheel .**
4. **Disengage the air bag electrical connector from the air bag sliding contact connector.**

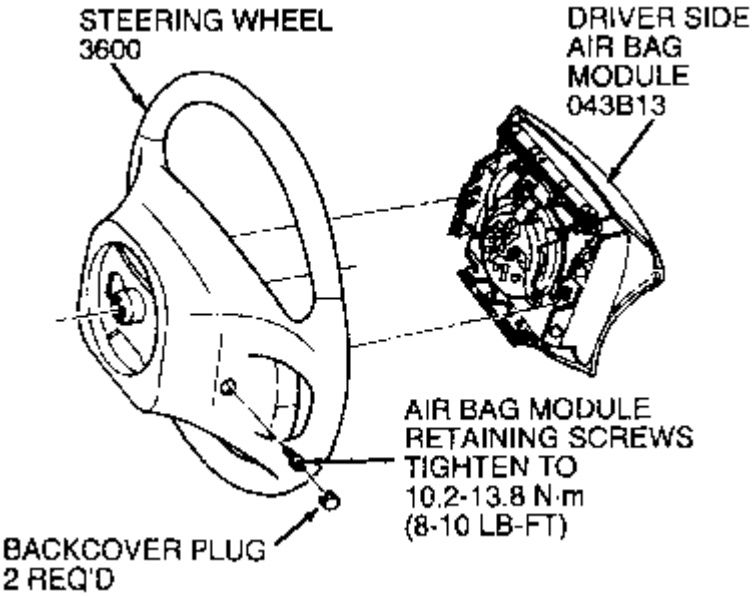




Disengage the air bag module electrical connector-1994-95 vehicles

Click to enlarge

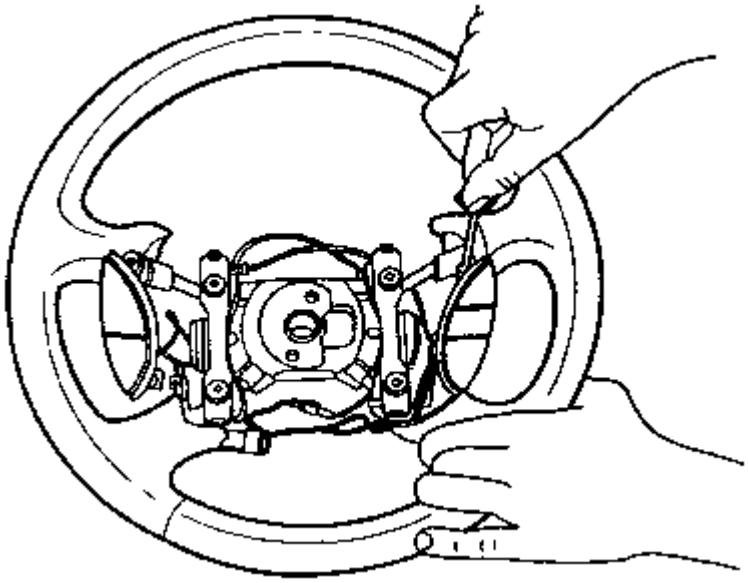
5. **Remove the driver side air bag module from the steering wheel, then place it on a bench with the trim cover facing up.**



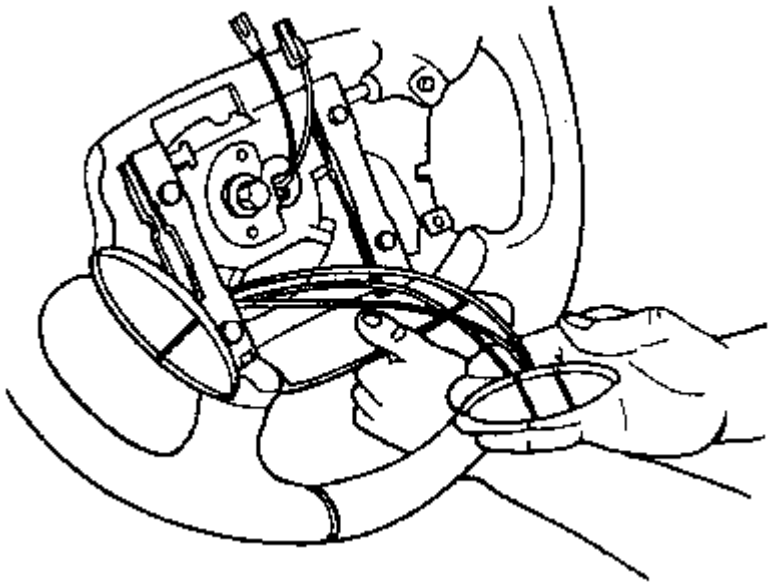
Remove the air bag module from the steering wheel, then place it on a work bench with the trim cover facing UPWARD-1994-95 vehicles

Click to enlarge

6. **Disconnect the speed control wire harness, then disconnect the horn switch wire.**
7. **Remove the four retaining screws from the speed control actuator switch.**
8. **Carefully pry away the right-hand side of the steering wheel back cover to provide enough clearance to remove the right-hand speed control switch wiring from the steering wheel. Repeat on the left-hand side, then remove the speed control actuator switch.**



Carefully pry the right side of the steering wheel back cover for clearance to remove the right hand speed control switch wiring, then ...



... repeat on the left hand side and remove the speed control actuator switch

To install:

9. **Carefully pry away the right-hand side of the steering wheel back cover to allow enough clearance to insert the right-hand aide of the speed control switch wiring into the steering wheel, then repeat the process on the left side.**
10. **Position the speed control actuator switch onto the steering wheel, then install the four retaining screws.**

Make sure that the wires are positioned so that no interference is encountered when installing the air bag module.

11. **Engage all of the harness connectors and route the wiring in the steering wheel cavity, then install the wire organizer.**
12. **Position the driver side air bag module on the steering wheel, then connect the air**

bag sliding contact.

13. Install the driver side air bag module on the steering wheel, then install the two screw and washer assemblies. Tighten to 8-10 ft. lbs. (10.2-13.8 Nm).
14. Install the two back cover plugs.

Because battery voltage to the PCM was interrupted, performance may be affected until the PCM re-learns its driving strategy.

15. Connect the positive, then the negative battery cables.
16. Check the operation of the speed control actuator switch, then make sure the air bag is operating properly by checking the air bag lamp in the dash panel.

TESTING

1. Check to see that main fuse and stop lamp fuse are good. If so, detach 6-way connector at amplifier assembly.
2. Connect a voltmeter between light blue/black wire and ground. Depress ON button and check for battery voltage.
3. Connect an ohmmeter between light blue/black wire and ground.
4. Rotate steering wheel through its full range and make the following checks:
    1. Depress OFF button and check for a reading of 0-1 ohms.
    2. Depress SET/ACCEL button and check for a reading pf 714-646 ohms.
    3. Depress COAST button and check for a reading of 126-114 ohms.
    4. Depress RESUME button and check for a reading of 2090-2310 ohms.
5. If the resistance values are not as indicated, but the ohmmeter fluctuates, remove the steering wheel and clean the brushes and slip ring surface. Apply slip ring grease E1AZ-19590-A or equivalent, equally on the ring, approximately 0.02 in. (0.5mm) thick.
6. If the resistance values are greater than those specified above, check the switch assemblies and ground circuit.
7. Reconnect the 6-way connector at amplifier.

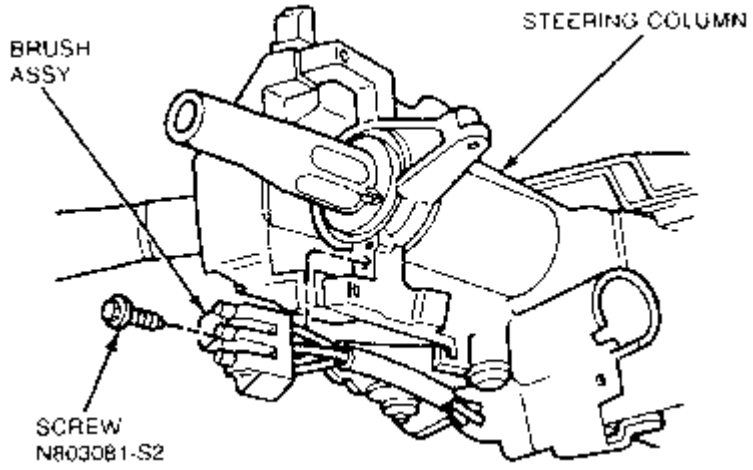
Ground Brush/Clockspring Assembly/Air Bag Sliding Contact

REMOVAL & INSTALLATION

1986-89 Vehicles

1. Disconnect the negative battery cable.
2. Remove the steering wheel hub horn pad cover by removing the two screws from the back of the steering wheel.
3. Remove and discard the steering wheel attaching bolt.
4. Remove the steering wheel from the upper shaft by grasping the rim of the steering wheel and pulling it off. Do not use a steering wheel puller.

5. **Remove the tilt lever, if so equipped.**
6. **Remove the ignition lock cylinder and steering column lower trim shroud.**
7. **Separate the speed control brush wire harness at the connector and remove the wire harness retainers from the steering column.**
8. **Remove the screw securing the brush assembly to the upper steering column.**



Common brush assembly mounting-1986-89 vehicles

Click to enlarge

To install:

9. **Position the brush assembly housing on the upper steering column and secure with the screw.**
10. **Install the wire harness into the steering column with the attached retainers. Connect the harness to the main wiring harness.**
11. **Attach the lower trim shroud to the upper shroud with the three retaining screws.**
12. **Install the ignition lock cylinder and tilt lever, if equipped.**
13. **Position the steering wheel on the end of the steering wheel shaft. Align the index mark on the wheel with the index mark on the shaft.**
14. **Install a new steering wheel bolt. Tighten to 23-33 ft. lbs. (31-45 Nm).**
15. **Install the steering wheel horn pad.**

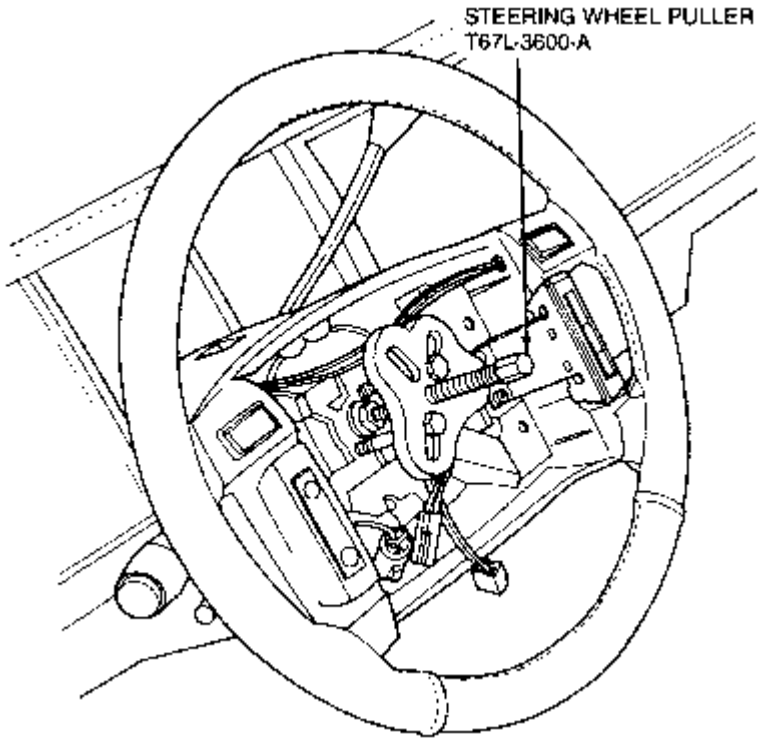
1990-95 Vehicles

1. **Set the steering wheel in the straight ahead position.**
2. **Disconnect the negative battery cable.**
3. **Remove the four nut and washer assemblies retaining the air bag module to the steering wheel.**
4. **Disengage the air bag electrical connector from the clockspring contact connector.**
5. **Remove the air bag module from the steering wheel.**

CAUTION

Place the air bag module on the bench with the trim cover facing upward to prevent personal injury in the event of accidental deployment of the air bag.

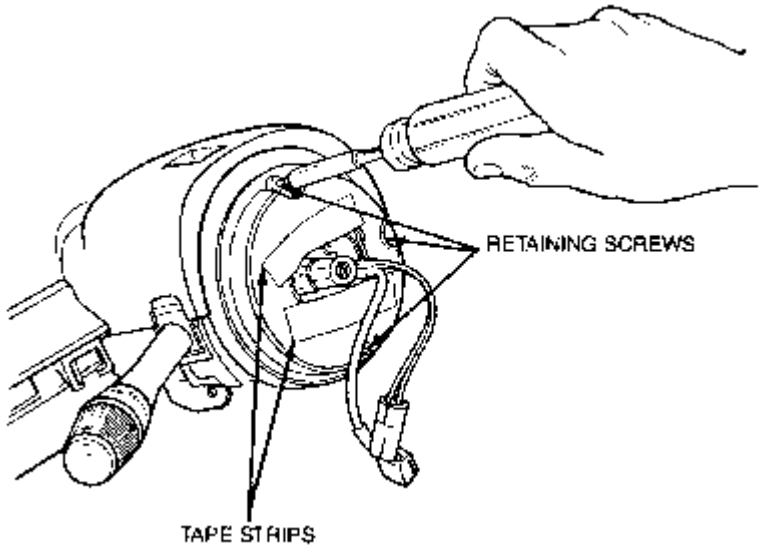
6. **Disconnect the speed control switches and horn switches from the contact assembly.**
7. **Remove the steering wheel retaining bolt.**
8. **Using Steering Wheel Puller T67L-3600-A or equivalent suitable puller, remove the steering wheel.**



Using a suitable steering wheel puller, remove the steering wheel

Click to enlarge

9. **If equipped, remove the tilt lever.**
10. **Remove the lower trim panel and lower steering column shroud.**
11. **Disconnect the contact assembly wiring harness.**
12. **Apply two pieces of tape across the contact assembly stator and rotor to prevent accidental rotation.**
13. **Remove the three contact assembly retaining screws, then lift the contact assembly off the steering column shaft.**

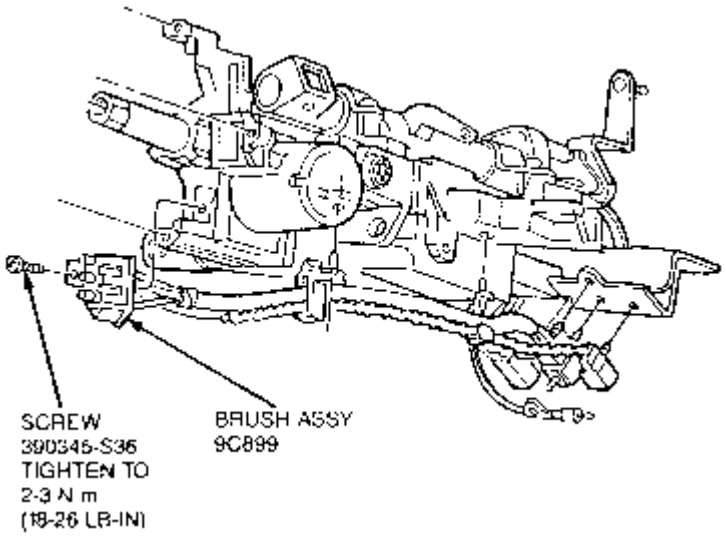


Apply two pieces of tape across the contact assembly stator and rotor to prevent accidental rotation, then remove the three contact assembly retaining screws

Click to enlarge

14. **Disengage the speed control brush wiring harness at the connector, then remove the wiring harness retainers from the steering column.**

15. **Remove the screw retaining the brush assembly to the upper steering column. Remove the brush and harness assembly.**



After unfastening the retaining screw, remove the brush and harness assembly

Click to enlarge

To install:

16. **Position the brush assembly wire on the upper steering column and install the retaining screw. Tighten to 18-26 inch lbs. (2-3 Nm).**

17. **Install the wiring harness retainer into the steering column and connect the harness to the main wiring.**

18. Align the contact assembly to the column shaft and mounting bosses and slide the contact assembly onto the shaft.
19. Install the three screws that retain the contact assembly, then tighten to 18-26 inch lbs. (2-3 Nm). Remove the tape from the contact assembly.
20. Route the contact assembly harness down the column and connect to the main wiring harness.

If installing a new contact assembly, remove the lock mechanism.

21. Install the steering column shroud.
22. Install the lower trim panel.
23. If equipped, install the tilt lever.

Route the contact assembly wiring through the steering wheel as the wheel is being positioned.

24. Position the steering wheel on the steering shaft and install a new steering wheel retaining bolt. Tighten to 23-33 ft. lbs. (31-45 Nm).
25. Connect the speed control and horn switches to the contact assembly.
26. Position the air bag module on the steering wheel so that the clockspring contact connector can be connected to the air bag module.
27. Install the air bag module on the steering wheel and install the four nut and washer assemblies.
28. Connect negative battery cable.

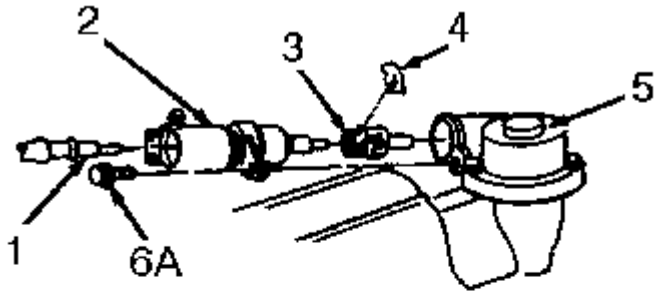
Vehicle Speed Sensor (VSS)

REMOVAL & INSTALLATION

1. Disconnect the negative battery cable.
2. Raise and safely support the vehicle. Remove the mounting clip.
3. On 1992-95 vehicles equipped with an automatic transaxle, remove the Y-pipe and HEGO sensors from the exhaust system. Remove the speed sensor exhaust heat shield.
4. Loosen the retaining nut/bolt holding the sensor in the transaxle. Remove the driven gear with the sensor from the transaxle.
5. Disconnect the electrical connector from the speed sensor.
6. Disconnect the speedometer cable by pulling it out of the speed sensor.

Do not attempt to remove the spring retainer clip with the speedometer cable in the sensor.

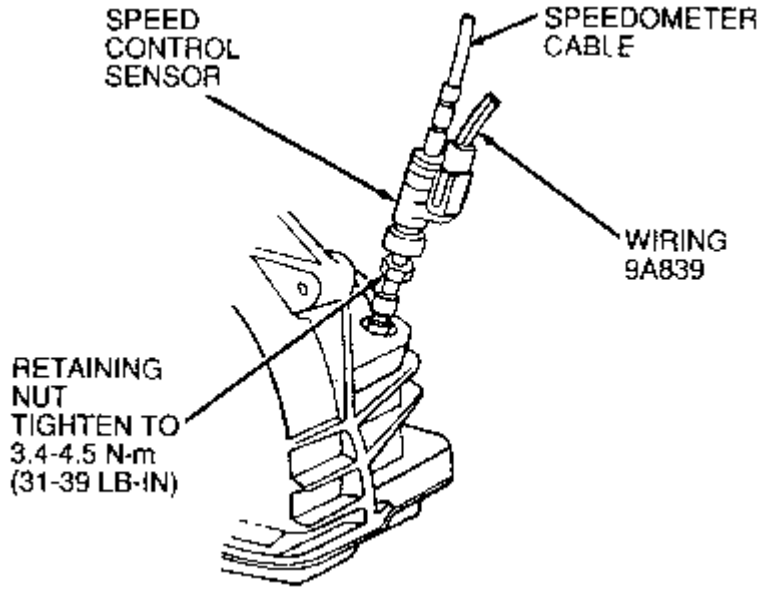
7. For 1992-95 vehicles equipped with and automatic transaxle, remove the driven gear retainer and driven gear from the speed sensor.



1 Speed control cable and vehicle speed sensor
2 Vehicle speed sensor
3 Speedometer driven gear
4 Speedometer driven gear retainer
5 Speedometer cover
6 Bolt
A Tighten to 3.4-4.5 Nm (31-39 lb.in.)

Vehicle speed sensor assembly-vehicles equipped with automatic transaxles

Click to enlarge



Vehicle speed sensor assembly-vehicles equipped with manual transaxles

Click to enlarge

To install:

8. **Position the driven gear to the speed sensor. Install the gear retainer.**
9. **Engage the electrical connector.**
10. **Make sure the internal O-ring is properly seated in the sensor housing. Snap the**

speedometer cable into the sensor housing.

11. Insert the sensor assembly into the transaxle housing. Tighten the retaining nut/bolt to 30-40 inch lbs. (3.4-4.5 Nm). Install the retaining clip.
12. On 1992-95 vehicles equipped with an automatic transaxle, install the Y-pipe and HEGO sensors to the exhaust system. Install the speed sensor exhaust heat shield.
13. Carefully lower the vehicle.
14. Connect the negative battery cable, then check to make sure the speedometer and odometer are operating properly.

TESTING

Without Electronic Instrument Cluster

1. Disconnect connector at speed sensor and connect an ohmmeter between wire connector terminals and speed sensor end. Reading should be 200-300 ohms.

A reading of 0 ohms indicates a shorted coil and the speed sensor should be replaced. A maximum reading indicates an open coil and speed sensor should be replaced.

2. If the ohmmeter reading is between 200-300 ohms, and speedometer operates properly within needle waver, speed sensor is probably functioning properly.
3. If available, a known good quality speed sensor can also be substituted in place of existing sensor to check for proper operation.

With Electronic Instrument Cluster

Because AC and DC voltage measurements are required in the diagnosis of the speed control system on vehicles equipped with an electronic instrument cluster, a special diagnostic tool, Fluke 8022A or equivalent, should be used. Do not perform speed sensor testing on vehicles equipped with an electronic speedometer.

1. Raise and safely support the vehicle drive wheels.
2. Bring vehicle speed to approximately 30 mph (48 km/h).
3. Connect an AC voltmeter to dark green/white wire and ground.
4. Back probe the amplifier connector. Voltmeter should read about 6-24 volts. If not, check speed sensor and related wiring. Repair and/or replace as necessary.
5. Lower the vehicle.

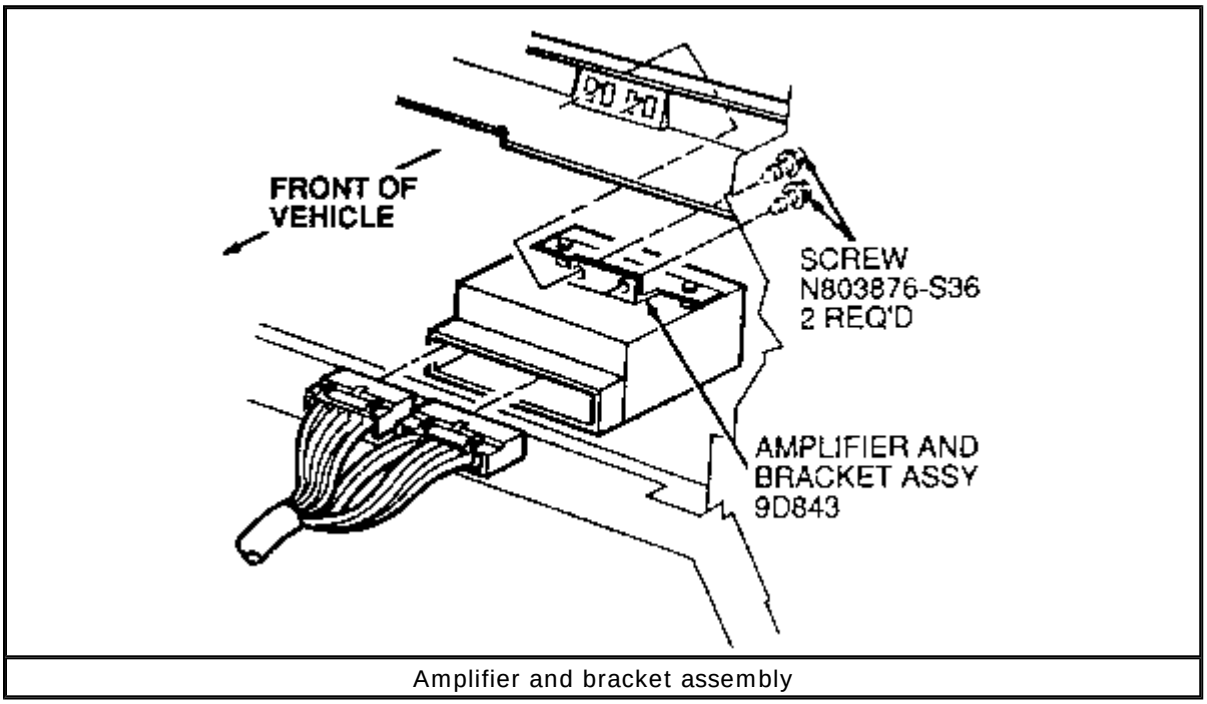
Amplifier

REMOVAL & INSTALLATION

On Integrated Vehicle Speed Control (IVSC) equipped vehicles, the amplifier assembly has been incorporated into the EEC-IV system Electronic Control Assembly (ECA).

Non-IVSC Vehicles

1. Disconnect the negative battery cable.
2. Disengage the two electrical connectors at the amplifier.
3. Remove the two screws retaining the amplifier and bracket assembly.
4. Remove the amplifier and bracket assembly from the instrument panel.
5. Remove the two bolts and nuts retaining the amplifier assembly to the mounting bracket.



Amplifier and bracket assembly

Click to enlarge

To install:

6. Place the amplifier assembly into position, then install the two bolts and nuts which secure the amplifier assembly to the mounting bracket.
7. Install the amplifier and bracket assembly to the instrument panel using the two retaining screws, then tighten to 45-61 inch lbs. (5-7 Nm).
8. Engage the two amplifier electrical connectors.
9. Connect the negative battery cable.

TESTING

Do not use a test lamp to perform the amplifier tests as excessive current draw will damage electronic components inside the amplifier. Use a voltmeter of 5000 ohm/volt rating or higher.

ON Circuit

1. With the ignition in the RUN position, connect a voltmeter between the white/pink wire and black wire (ground) in the 6-way connector at the amplifier. Voltmeter should read battery voltage.
2. Connect the voltmeter between light blue/black wire and black wire (ground) in the 6-way connector at the amplifier. Voltmeter should read battery voltage only when

ON switch in steering wheel is depressed and held. If voltage is not present, perform control switch test.

3. Release ON button, voltmeter should read about 7.8 volts, this indicates that ON circuit is engaged. If voltmeter reads 0.0, check for a bad ground at amplifier.
4. If there is no ground at amplifier, check system ground connections and wiring. Also check the fuse.
5. If available, substitute a known good amplifier and check for proper circuit operation.

Brake Circuit

1. Connect an ohmmeter between the red/light green wire on the 6-way connector and ground. Resistance should be less than 5 ohms.
2. If resistance is greater than indicated, check for improper wiring, burned out stop lamp lights or clutch malfunction, if equipped.

OFF Circuit

1. With ignition in RUN, connect voltmeter between light blue/black wire of 6-way amplifier connector and ground. Depress OFF switch on steering wheel. Voltage on light blue/black wire should drop to 0 which indicates that ON circuit is not energized.
2. If voltage does not drop to 0, perform the control switch test. If control switch checks out good, install a good amplifier and recheck OFF circuit.

SET/ACCEL Circuit

1. With ignition in RUN, connect voltmeter between light blue/black of 6-way amplifier connector and black wire (ground). Depress and hold SET/ACCEL button on steering wheel. Voltmeter should read about 4.5 volts.
2. Rotate steering wheel back and forth and watch voltmeter for fluctuations.
3. If voltage varies more than 0.5 volts, perform control switch test.

COAST Circuit

1. With ignition in RUN, connect voltmeter between light blue/black of 6-way amplifier connector and ground. Depress and hold COAST button on steering wheel. Voltmeter should read about 1.5 volts.
2. If circuit checks out good, perform servo assembly test. If servo test checks out good, install a new amplifier and repeat tests. Do not substitute amplifier until after performing servo assembly test.

RESUME Circuit

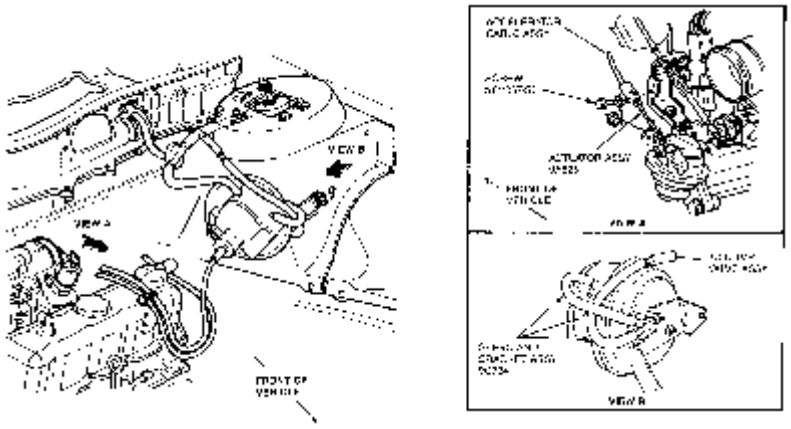
1. With ignition in RUN, connect voltmeter between light blue/black of 6-way amplifier connector and ground. Depress and hold RESUME button on steering wheel. Voltmeter should read about 6.5 volts.
2. If circuit checks out good, perform servo assembly test. If servo test checks out good, install a new amplifier and repeat tests. Do not substitute amplifier until after performing servo assembly test.

Servo

REMOVAL & INSTALLATION

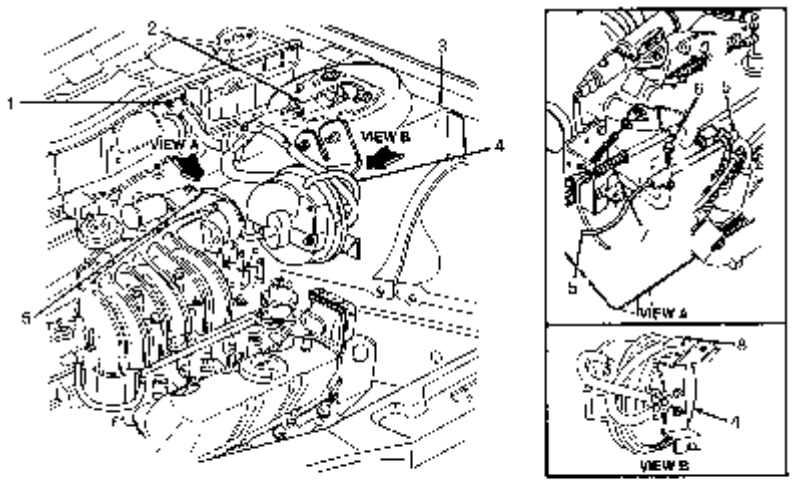
Except 3.2L SHO

1. **Disconnect the negative battery cable.**
2. **Remove the screw, then disconnect the speed control actuator cable from the accelerator cable bracket.**
3. **Disconnect the speed control actuator cable with the adjuster from the accelerator cable.**
4. **Remove the two vacuum hoses and electrical connector from the servo assembly.**
5. **Remove the two nuts attaching the servo to its mounting bracket.**
6. **Carefully remove the servo and cable assembly.**
7. **Remove the two nuts securing the cable cover to the servo.**
8. **Pull off the cover, then remove the cable assembly.**



Servo assembly and related components-2.5L engine

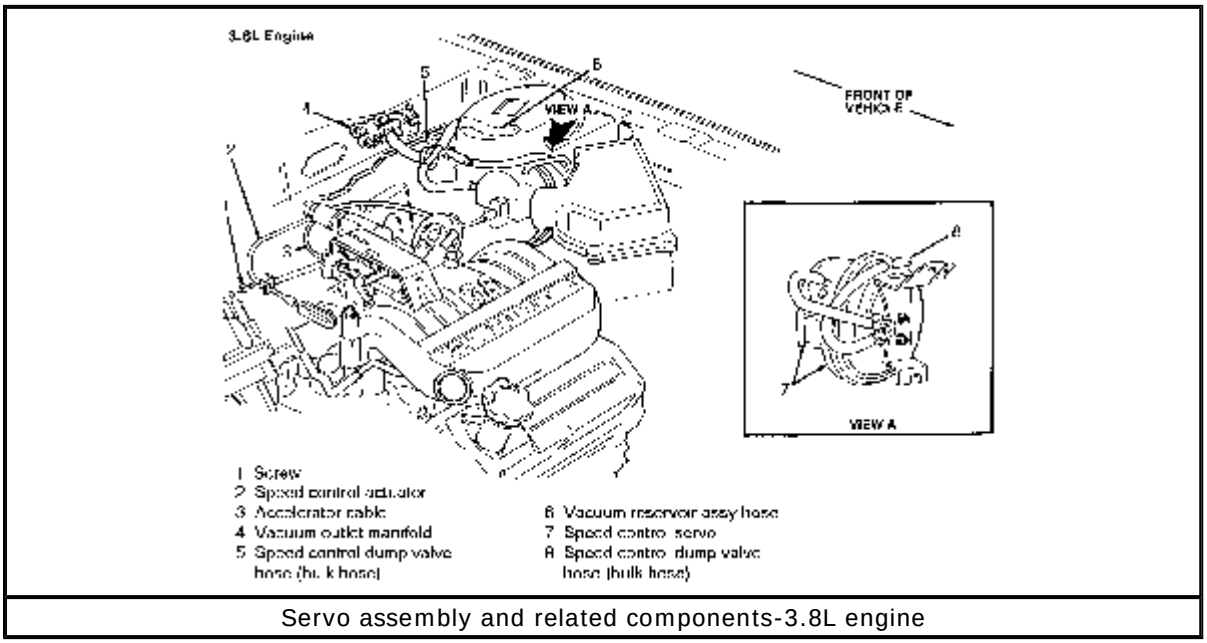
Click to enlarge



1 Vacuum distribution block
2 Check valve to speed control vacuum reservoir hose (bulk hose)
3 Driver's side shock tower (part of unibody)
4 Speed control servo
5 Speed control actuator
6 Screw
7 Accelerator cable
8 Speed control dump valve hose (bulk hose)

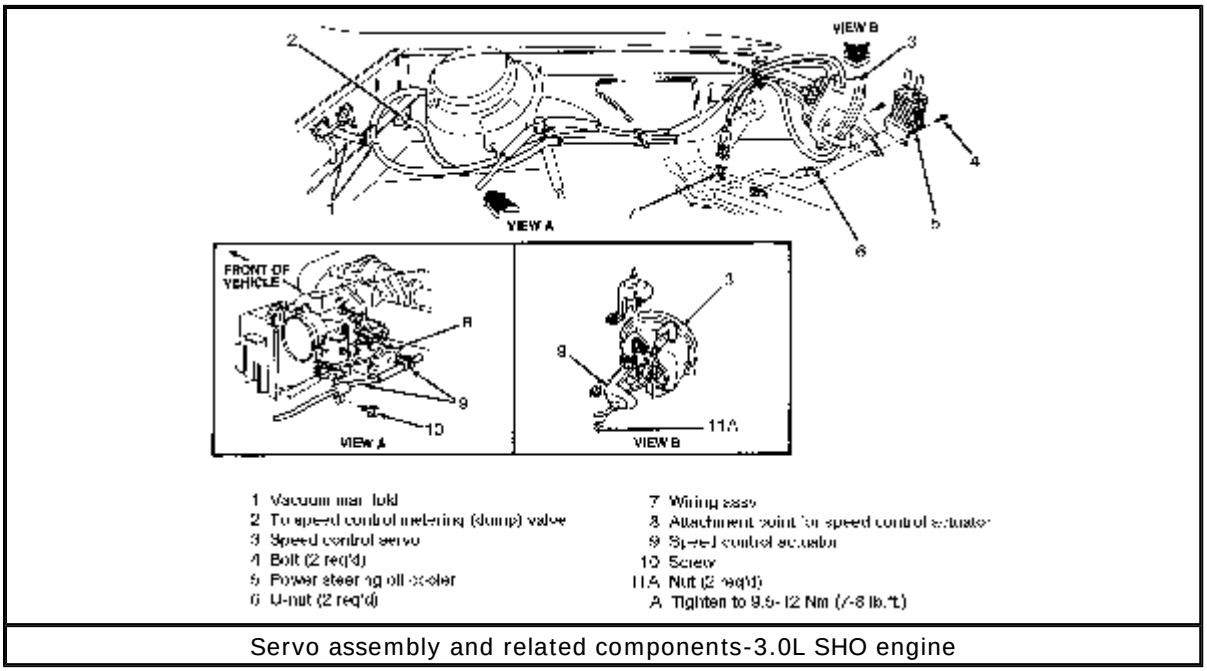
Servo assembly and related components-3.0L engine except SHO

Click to enlarge



Servo assembly and related components-3.8L engine

Click to enlarge



Servo assembly and related components-3.0L SHO engine

Click to enlarge

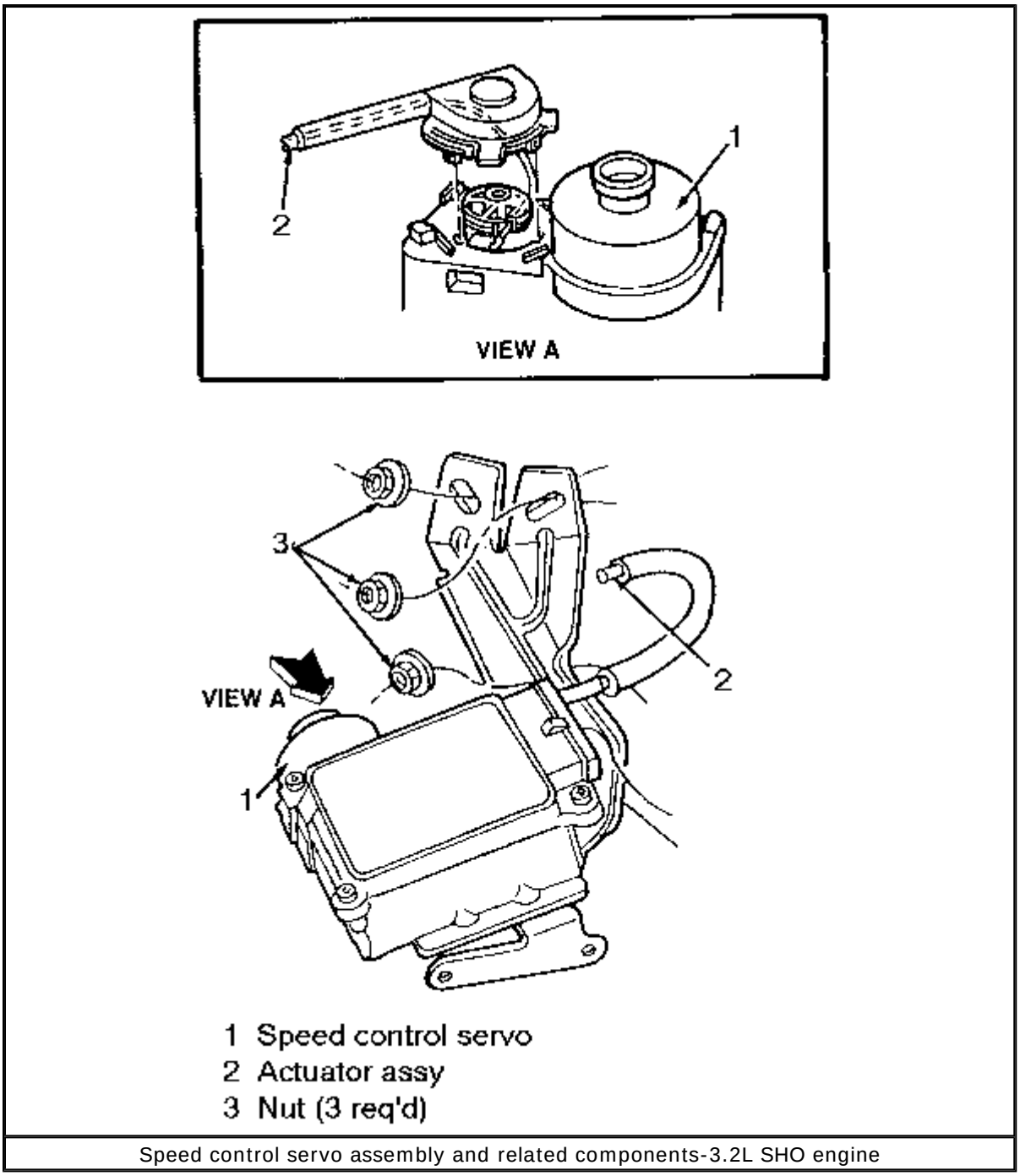
To install:

9. **Attach the cable to the servo.**
10. **Attach the cable cover to the servo with the two retaining nuts. For vehicles through 1993, tighten the nuts to 45-61 inch lbs. (5-7 Nm). For 1994-95 vehicles, tighten the nuts to 62-80 inch lbs. (7-9 Nm).**
11. **Attach the servo to the mounting bracket. For vehicles through 1993, tighten the retaining nuts to 45-61 inch lbs. (5-7 Nm). For 1994-95 vehicles, tighten the retaining nuts to 62-80 inch lbs. (7-9 Nm).**
12. **Feed the actuator cable under the air cleaner air duct.**

13. **Snap the actuator cable with the adjuster onto the accelerator cable bracket and install the screw.**
14. **Connect the actuator cable to the accelerator cable bracket and install the fastener.**
15. **Install the two vacuum hoses and electrical connector at the servo.**
16. **Connect negative battery cable.**

3.2L SHO

1. **Disconnect the negative battery cable.**



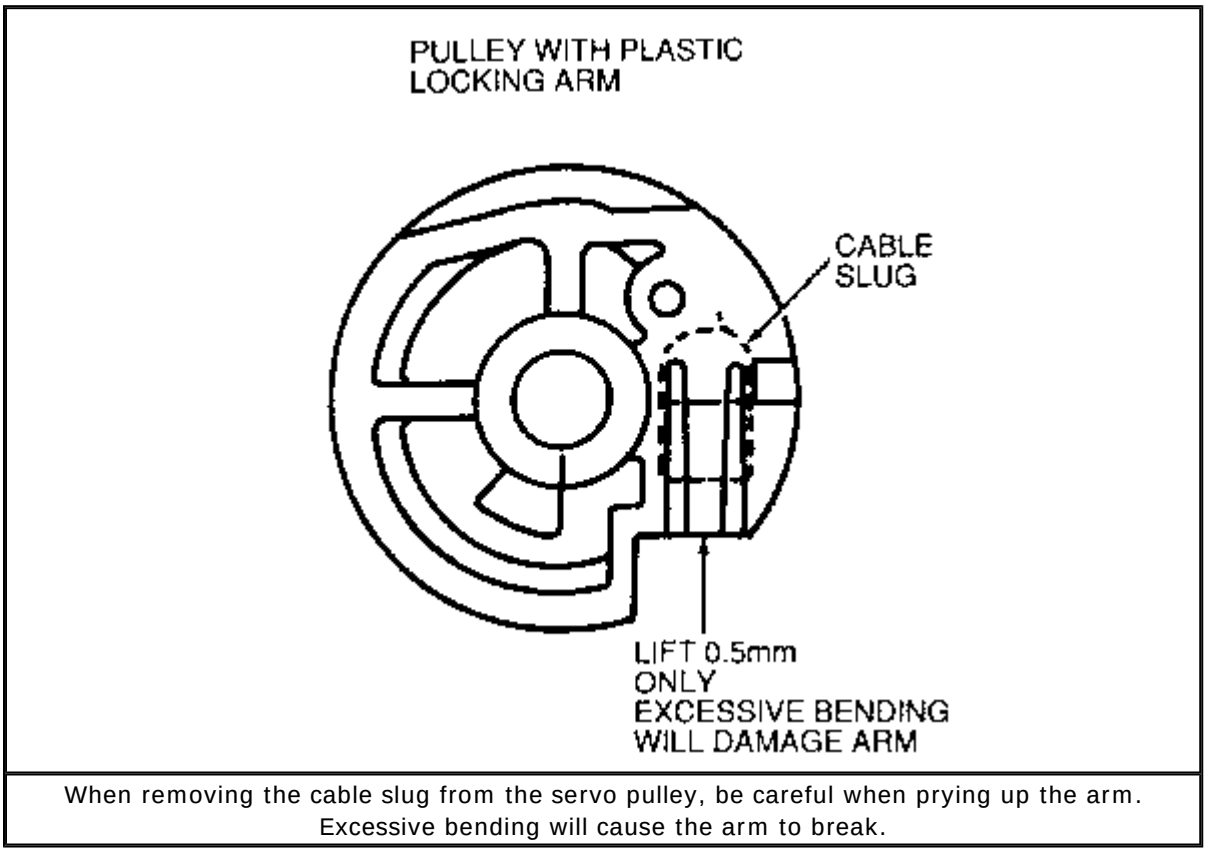
Speed control servo assembly and related components-3.2L SHO engine

Click to enlarge

2. **Remove the retaining clip from the actuator cable adjuster fitting.**

3. **Push the actuator tube out of the adjuster fitting attached to the throttle cable.**
4. **Disengage the harness connector at the speed control servo.**
5. **Remove the three nuts attaching the assembly to the vehicle.**
6. **Remove the actuator cable cap from the speed control servo by depressing the cap locking arm and rotating the cap counterclockwise.**
7. **Remove the cable slug from the servo pulley. Gently pry-up the arm slightly with a suitable small prybar and at the same time, push the cable slug out of the pulley slot.**

Excessive bending of the arm will cause it to break. DO NOT USE servos with damaged or missing locking arms.



When removing the cable slug from the servo pulley, be careful when prying up the arm. Excessive bending will cause the arm to break.

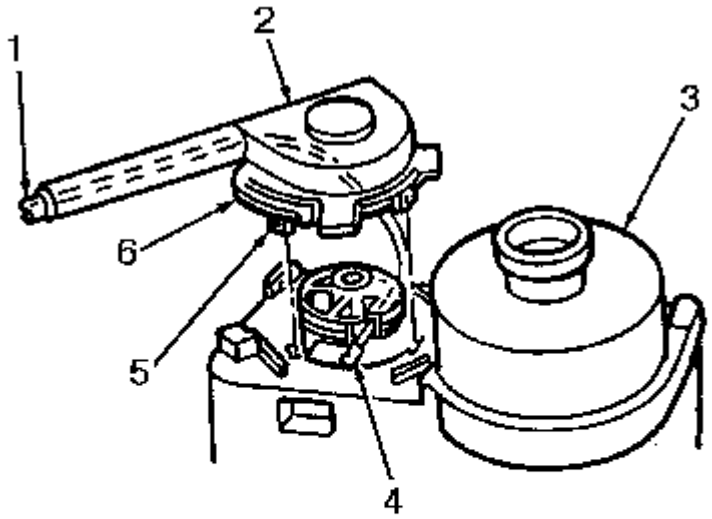
Click to enlarge

8. **Remove the bracket from the speed control servo. Retain the bracket and three screws for reinstallation on the speed control servo.**

To install:

9. **Attach the bracket to the speed control servo with the three screws. Tighten the screw to 6-8 ft. lbs. (8-11 Nm).**
10. **Make sure that the rubber seal is fully seated on the actuator cap.**
11. **Lock the cable ball slug into the servo pulley slot.**
12. **Pull on the throttle attachment end of the cable to draw the cable cap onto the servo pulley.**
13. **Align the cable cap tabs with slots in the servo housing. Insert the cap into the speed control servo and rotate it clockwise until the locking arm engages the**

locking tab on the speed control servo.



1 Actuator assy
2 Actuator cable cap
3 Speed control servo
4 Cable ball slug
5 Cap locking tabs
6 Locking arm

Align the cable cap tabs with the slots in the servo housing, then insert the cap into the speed control servo and rotate it clockwise until the locking arm engages the locking tab on the servo

Click to enlarge

14. **Position the actuator cable and servo assembly in the vehicle. Tighten the mounting nuts to 45-61 inch lbs. (5-7 Nm).**
15. **Attach the harness connector to the speed control servo.**
16. **Adjust the actuator clip as outlined earlier in this section, then install the retaining clip.**

Incorrect wrapping of the cable core wire around the servo pulley may result in a high idle condition. Make sure that the throttle lever is at idle position after cable installation and adjustment.

17. **Connect the negative battery cable.**

TESTING

1. **Disconnect 8-way amplifier connector. At connector, connect an ohmmeter between orange/yellow wire and grey/black wire. Resistance should be 40-125 ohms.**
2. **Connect an ohmmeter between orange/yellow wire and white/pink wire. Resistance should be 60-190 ohms.**
3. **Connect an ohmmeter between pink/light blue wire and brown/light green wire. Resistance should be 40,000-60,000 ohms.**

4. **Connect an ohmmeter between yellow/red wire and brown/light green wire. Resistance should be 20,000-30,000 ohms.**
5. **If proper reading is not obtained, check wiring and servo assembly separately for damage. Repair and/or replace as required.**
6. **Start engine and, with servo disconnected from amplifier, connect orange/yellow wire of servo to battery positive terminal. Connect white/pink wire of servo to ground.**
7. **Momentarily touch grey/black wire of servo to ground. Servo throttle actuator arm should pull in and engine speed should servo throttle actuator arm should hold in that position or slowly release.**
8. **When white/pink is removed from ground servo throttle actuator arm should release.**
9. **Replace servo assembly if it does not perform as indicated.**
10. **If orange/yellow wire is shorted to either white/pink wire or grey/black wire it may be necessary to replace amplifier assembly.**

Brake Light Switch and Circuit

TESTING

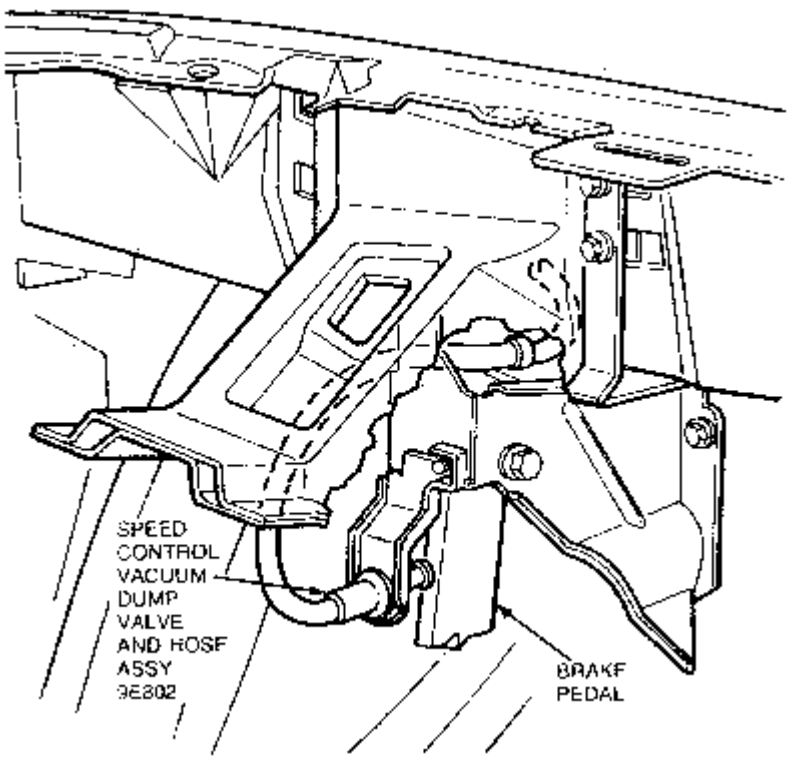
This test is performed when brake pedal application will not disconnect the speed control system.

1. **Check the brake light operation with maximum brake pedal effort of about 6 lbs. If more than about 6 lbs. is required, check brake actuation of brake light switch. Repair and/or replace as necessary.**
2. **If brake lights do not work, check fuse, bulbs and switch. Repair and/or replace as necessary.**
3. **If brake lights are working properly check for battery voltage at white/pink or pink/orange wire at 6-way electrical connector.**
4. **Depress brake pedal until tail lamps light. Check voltage on dark green/white wire at 6-way electrical connector.**
5. **Difference between the two voltage readings should not exceed 1.5 volts. If reading is higher, resistance in brake light circuit must be found and repaired.**
6. **There should be no voltage present on dark green/white wire with brake lights off.**
7. **Perform vacuum dump valve test.**

Vacuum Dump Valve

REMOVAL & INSTALLATION

1. **Disconnect the negative battery cable.**
2. **Remove the vacuum hose from the dump valve.**
3. **Remove the dump valve from the bracket.**



Vacuum dump valve location

Click to enlarge

To install:

4. **Install the valve to the bracket.**
5. **Connect the vacuum hose.**
6. **Adjust vacuum dump valve. For details, please refer to the adjustment procedure located later in this section.**
7. **Connect the negative battery cable.**

ADJUSTMENT

Adjust the vacuum dump valve so that it is closed (no vacuum leak) when the brake pedal is up (brakes released) and open when the pedal is depressed.

TESTING

The vacuum dump valve releases vacuum in the servo assembly whenever the brake pedal is depressed and thus acts as a redundant safety feature. The vacuum dump valve should be checked whenever brake application does not disconnect the speed control system.

1. **Disconnect vacuum hose with the white stripe from the dump valve. Connect a vacuum pump to hose and apply vacuum.**
2. **If a vacuum cannot be obtained, hose or dump valve is leaking. Replace or repair defective components as required.**
3. **Step on the brake pedal, vacuum should be released. If not, adjust or replace dump valve.**

4. The dump valve black housing must clear white plastic pad on brake pedal by 0.05-0.10 in. (1.3-2.5mm) with the brake pedal pulled to rearmost position.

Clutch Switch

REMOVAL & INSTALLATION

Except 1995 3.0L SHO

1. Disconnect the negative battery cable.
2. Remove the bracket mounting screw.
3. Disengage the electrical connector.
4. Remove the switch assembly, then remove the switch from the bracket.

To install:

5. Install the switch on the bracket.
6. Engage the switch electrical connector.
7. Install the bracket mounting screw.
8. Adjust the clutch switch.
9. Connect negative battery cable.

1995 3.0L SHO

1. Disconnect the negative battery cable.
2. Disengage the harness connector from the clutch pedal position switch.
3. Remove the clutch switch retaining screw and clip, then remove the switch.

To install:

4. Install the clutch switch on the clutch pushrod, then secure with the retaining screw and clip.

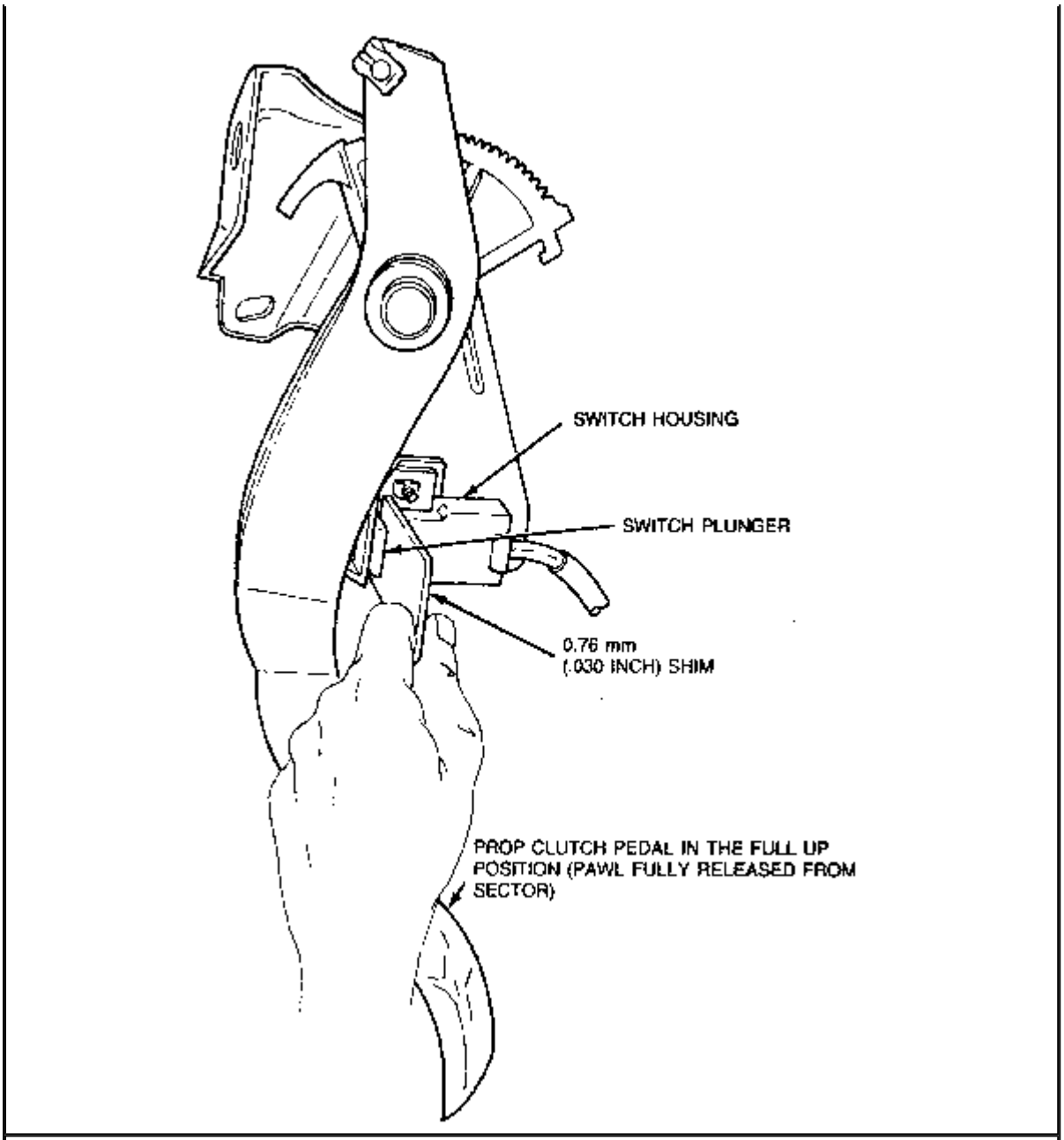
An audible "click'' will be heard when the clutch switch is mountedproperly on the clutch pushrod.

5. Engage the clutch switch harness connector.
6. Connect the negative battery cable.

ADJUSTMENT

Except 1995 3.0L SHO

1. Prop the clutch pedal in a full-up position (pawl fully released from the sector).
2. Loosen the switch retaining screw.



Adjusting the clutch switch-except 1995 3.0L SHO vehicles

Click to enlarge

3. **Slide the switch forward toward the clutch pedal until the switch plunger cap is 0.030 in. (0.76mm) from contacting the switch housing. Tighten the retaining screw.**
4. **Remove the prop from the clutch pedal, then test drive the vehicle to ensure that the clutch switch cancellation of cruise control operates properly.**

1995 3.0L SHO

The clutch pedal position switch is self-adjusting. To adjust, press the clutch pedal to the floor to reset the clutch switch.

TESTING

Manual Transaxle

The speed control system is designed to disengage when the clutch pedal is depressed. This is accomplished with a clutch switch. The speed control system disengage function is operated by opening the circuit between the speed control module and the brake lamps. This prevents engine over speed when the clutch is depressed and the speed control system is engaged.

The disengagement switch is a plunger switch that operates when the clutch pedal is depressed and the pedal moves away from the switch plunger. The switch is adjustable and attaches to a mounting bracket on the clutch module assembly.

Do NOT use a test light to perform the clutch switch test, as the lightcannot properly indicate the condition of the switch. Do not use a strongmagnet near the clutch switch, as it can be affected by magnetic fields.

1. **Disconnect clutch pigtail connector from speed control harness connector. Connect an ohmmeter to the two switch connector terminals.**
2. **With the clutch pedal in full up position, resistance should be less than 5 ohms.**
3. **With the clutch pedal depressed, the circuit should be open.**
4. **If switch does not perform as indicated, it must be replaced.**

Automatic Transaxle

Vehicles equipped with automatic transmission use a shorting plug instead of a clutch switch. Make sure the plug is installed and has good contact.