GROUP

FUEL SYSTEM 10

(9000)

SECTION 10-00 Fuel System—Service

VEHICLE APPLICATION

Capri.

DESCRIPTION

The naturally aspirated and turbocharged vehicles use a multi-point electronic fuel injection system. Additional electronic components that control idle speed and engine warmup are incorporated into the fuel injection system.

A closed-type positive crankcase ventilation system and an exhaust emission system is used to keep engine emissions within government specifications.

To maintain the required exhaust emission levels, the fuel injection system must be kept in good operating condition and adjusted to specification, whenever serviced. Refer to the applicable Sections in this Group and to Powertrain Control / Emissions Diagnosis Manual[1].

Additional engine performance checks are required to keep the exhaust emissions at the specified minimum pollutant level. Refer to Powertrain Control / Emissions Diagnosis Manual[1] for these performance checks and Section 00-03 for recommended service intervals.

This Section covers Cleaning and Inspection procedures.

For fuel system component removal, disassembly, assembly, installation and major service operations, refer to Section 10-01.

Always refer to the Master Parts List for parts usage and interchangeability before replacing a throttle body or a component part of a throttle body.

DIAGNOSIS AND TESTING

For diagnosis and testing procedures, refer to Section 9B in the Powertrain Control / Emissions Diagnosis Manual[1].

1 Can be purchased as a separate item.

CLEANING AND INSPECTION

Fuel Injection, Electronic

WARNING: DO NOT SMOKE OR CARRY LIGHTED TOBACCO OR OPEN FLAME OF ANY TYPE WHEN WORKING ON OR NEAR ANY FUEL RELATED COMPONENT. HIGHLY FLAMMABLE MIXTURES ARE ALWAYS PRESENT AND MAY BE IGNITED, RESULTING IN POSSIBLE PERSONAL INJURY.

Refer to Powertrain Control / Emissions Diagnosis Manual[2].

Air Cleaner

Cleaning the air cleaner element is not recommended. It should be replaced at the specified mileage intervals. Clean the air cleaner body and the cover with a solvent or compressed air. Wipe the air cleaner body and cover dry if a solvent is used. Inspect the air cleaner body and cover for distortion or damage at the gasket mating surfaces. Replace cover or body if they are damaged beyond service. Hold filter in front of a light and carefully inspect it for any splits or cracks. If filter is split or cracked, replace it. Refer to Section 03-12.

2 Can be purchased as a separate item.

SECTION 10-01 Fuel Tank, Filter and Electric Fuel Pump

VEHICLE APPLICATION

Capri.

DESCRIPTION

WARNING: DO NOT SMOKE, CARRY LIGHTED TOBACCO OR AN OPEN FLAME OF ANY TYPE WHEN WORKING ON OR NEAR ANY FUEL RELATED COMPONENT. HIGHLY FLAMMABLE MIXTURES ARE ALWAYS PRESENT AND MAY BE IGNITED, RESULTING IN POSSIBLE PERSONAL INJURY.

WARNING: FUEL SPRAY WHEN REMOVING THE CAP MAY CAUSE INJURY. REMOVE CAP SLOWLY.

The fuel tank is mounted under the rear of the vehicle. It contains supply and return lines, a fuel pump and fuel gauge sending unit.

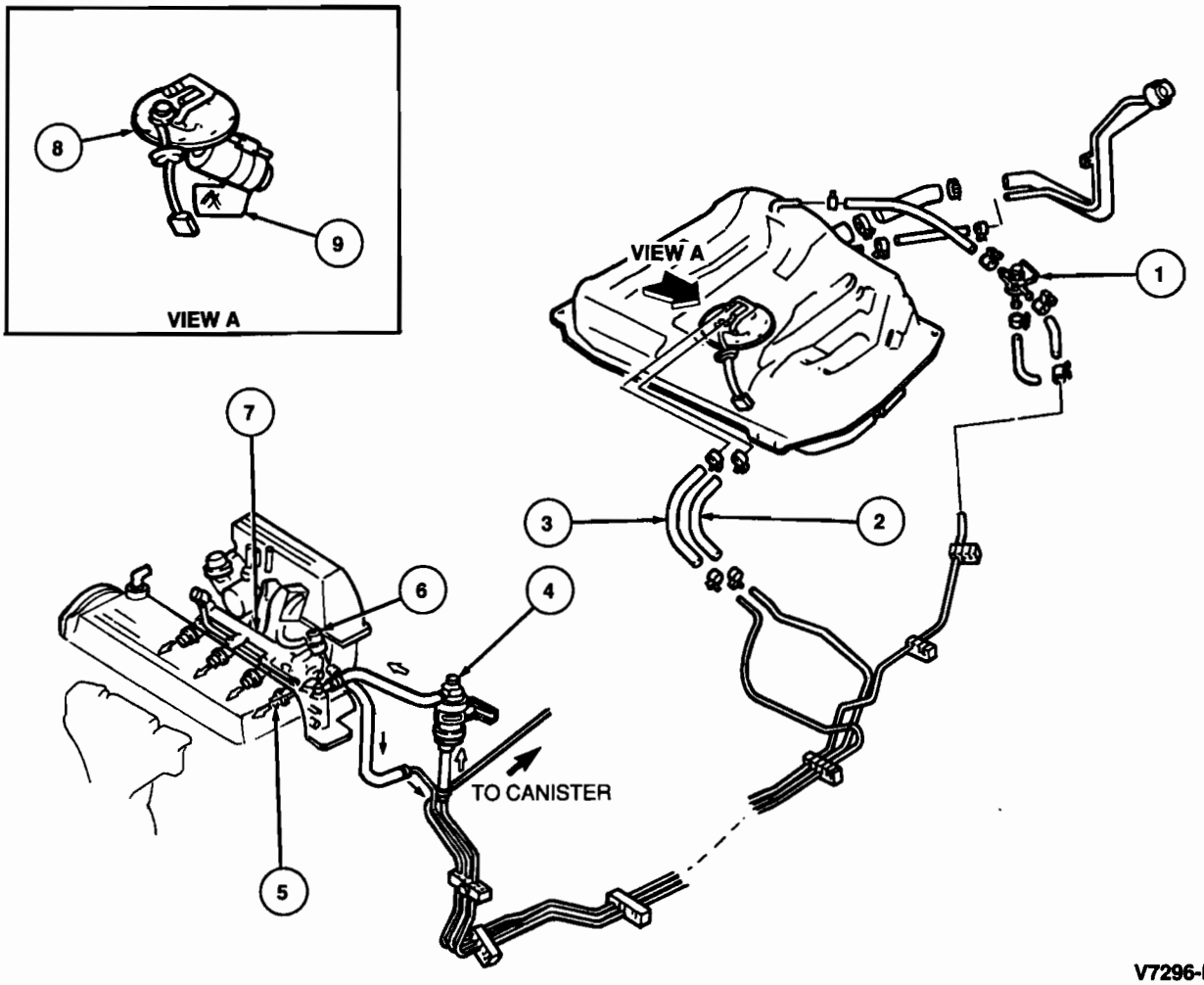
Fuel is drawn from the tank by a fuel tank mounted electric fuel pump and delivered under pressure through the fuel supply line and fuel filter to the fuel rail and on to the fuel injectors.

Excess fuel is returned to the fuel tank through the return line. A vapor line is routed from the fuel tank to the vapor canister. Refer to Section 03-13. All lines run parallel to each other underneath the vehicle on the left side.

Fuel pressure is controlled by a pressure regulator mounted at the return side of the fuel rail.

The fuel system is protected by two fuel filters. A replaceable cartridge is located in the engine compartment in-line between the fuel tank and the inlet side of the fuel rail. A serviceable filter screen is located inside the fuel tank at the inlet of the fuel pump.

DESCRIPTION (Continued)



Item	Part Number	Description
1	9B593	Rollover/Vent Valve
2	—	Return Line
3	—	Supply Line
4	—	Fuel Filter
5	9F593	Injector Assy
6	9C968	Pressure Regulator

(Continued)

Item	Part Number	Description
7	9308 (Turbocharged Vehicles) 9A318 (Naturally Aspirated Vehicles)	Fuel Rail
8	9350	Sending Unit/Fuel Pump
9	—	Filter Screen

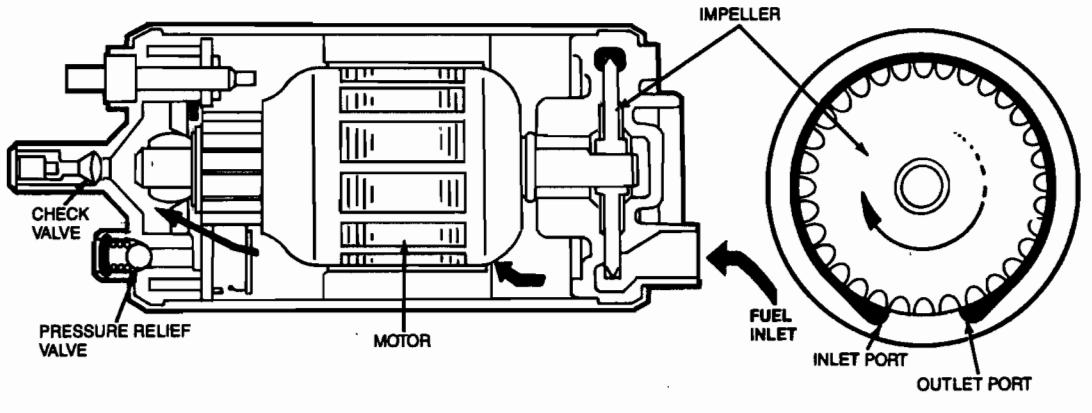
Fuel Pump

All vehicles with electronic fuel injection are equipped with an electric fuel pump. The fuel pump system consists of an electric fuel pump, a pressure regulator, a fuel pump relay, fuel pump switch and a fuel pump shut-off switch (inertia switch).

The fuel pump is mounted on the fuel sending unit assembly inside the fuel tank. The pump assembly includes a check valve located at the fuel pump outlet. The function of this valve is to maintain pressure in the system after the ignition is turned to the OFF position. The pressure retention helps prevent hot starting problems. A pressure relief valve is provided to regulate the maximum fuel pump outlet pressure.

DESCRIPTION (Continued)

The fuel pump is protected at its inlet by a filter screen. This screen filters dirt and contaminants which could plug or damage the internal pump components.

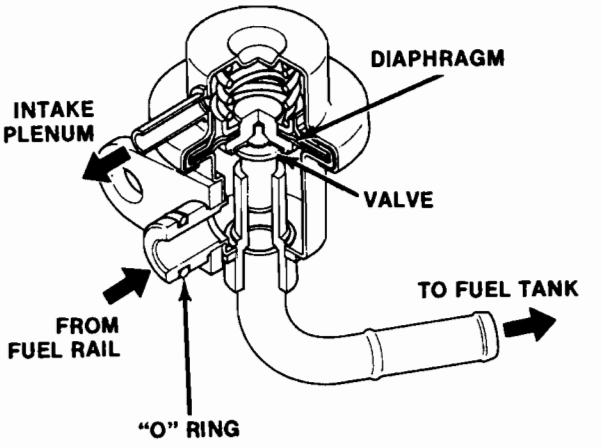


Pressure Regulator

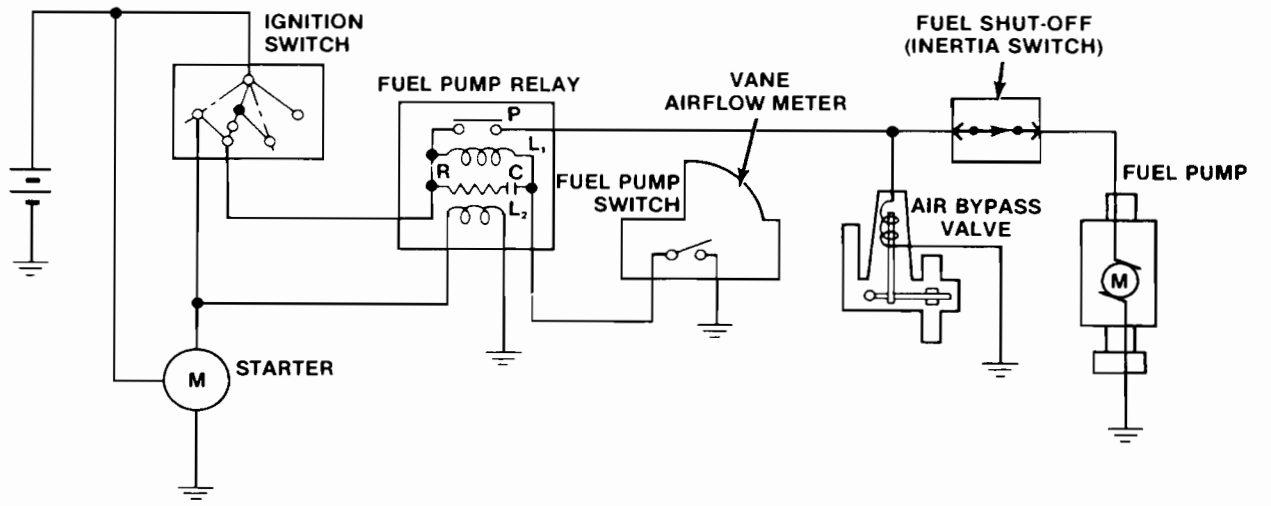
The pressure regulator is mounted to the return line end of the fuel rail. It is controlled by manifold vacuum and will always maintain fuel pressure between 240-279 kPa (34.8-40.5 psi) above intake manifold pressure. When intake manifold vacuum is low (fuel demand high) spring pressure inside the regulator causes the valve to partially close which will increase fuel pressure in the fuel rail. When intake manifold vacuum is high (fuel demand low) vacuum acting on the diaphragm compresses the spring, opening the valve further. Return fuel flow increases resulting in lower fuel pressure in the fuel rail.

NOTE: Pressure in the fuel lines increases as engine vacuum drops.

A pressure regulator control valve (PRCV) is used to aid in hot starting. During hot starting, the PRCV cuts off manifold vacuum to the fuel pressure regulator. This permits an increase in fuel pressure resulting in more fuel for starting. After the engine is started, vacuum is returned to the pressure regulator and fuel pressure is lowered to regular operating pressure.



DESCRIPTION (Continued)



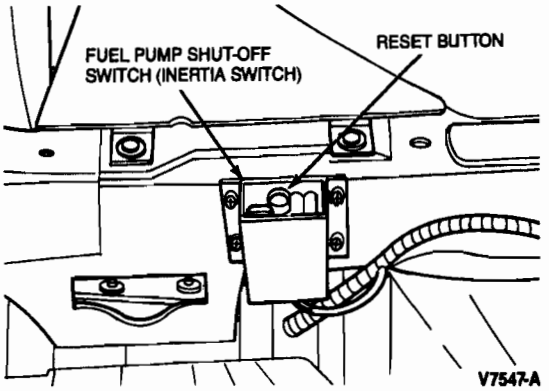
Control Circuit

The fuel pump switch and fuel pump relay work together to control fuel pump operation. The fuel pump switch is located inside the vane airflow meter and is not serviceable. The fuel pump relay is mounted under the center of the instrument panel between the panel and the floor. The fuel pump only operates when the engine is cranking or running. It does not operate when the engine is not running, even with the ignition switch turned to the ON position. When cranking, power from the ignition switch causes the fuel pump relay to close the feed circuit to the fuel pump. The fuel pump switch will also close the fuel pump relay whenever airflow is detected by the vane airflow meter.

A resistor and a capacitor are built into the fuel pump relay in addition to the coils. These permit discharge current to flow through the coil in the event that the fuel pump switch is momentarily opened due to the sudden loss of airflow during rapid deceleration. This will provide uninterrupted fuel pump operation.

A fuel pump shut-off switch (inertia switch) is connected in series with the fuel pump switch circuit and will stop fuel pump operation in the event of a major collision or vehicle rollover. The switch is mounted to the LH side of the spare tire well. The reset button must be pushed to reset the switch once it has been triggered.

V7298-A



DIAGNOSIS AND TESTING

For diagnosis and testing procedures, refer to Section 9B: Fuel Delivery / Turbo Charger Systems, in the Powertrain Control / Emissions Diagnosis Manual[1].

1 Can be purchased as a separate item.

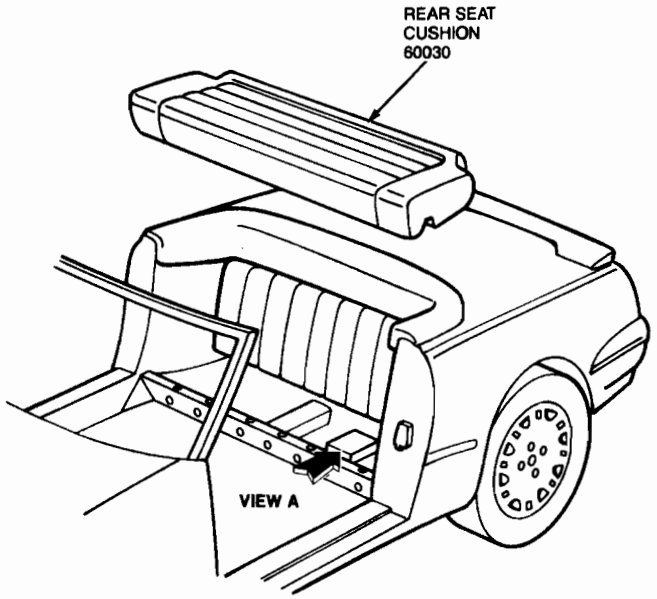
REMOVAL AND INSTALLATION

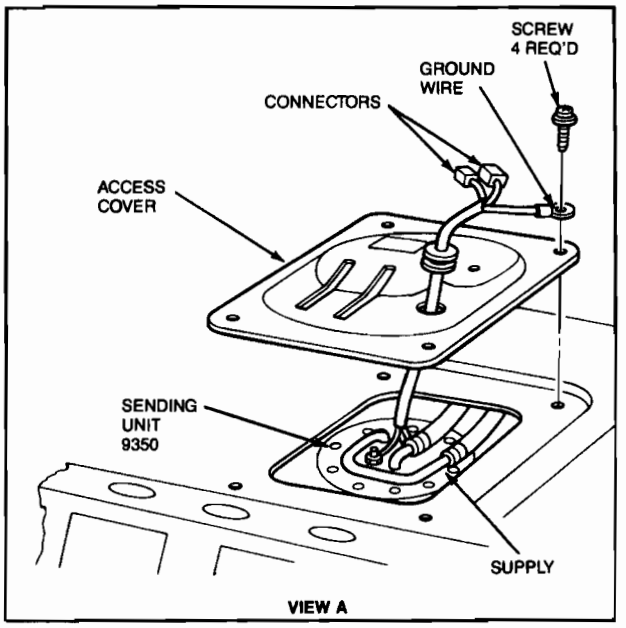
Fuel System Pressure Relief

Removal and Installation

NOTE: Fuel pressure must be relieved prior to servicing any fuel system component.

1. Remove the back seat cushion. Refer to Section 01-10.
2. Disconnect the fuel pump connector.
3. Run engine until it stalls. The fuel pressure is now relieved.





K14778-A

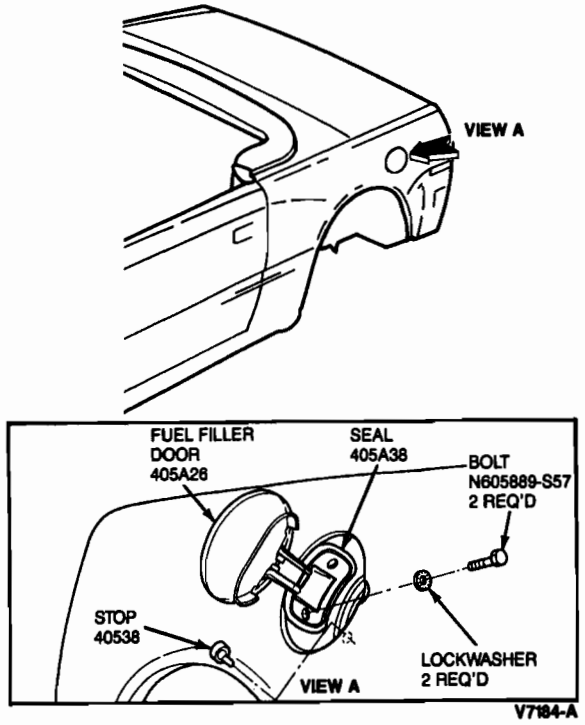
Fuel Filler Door

Removal and Installation

1. Remove two bolts, lockwashers and fuel filler door.
2. Remove seal.
3. Remove stop if required.

REMOVAL AND INSTALLATION (Continued)

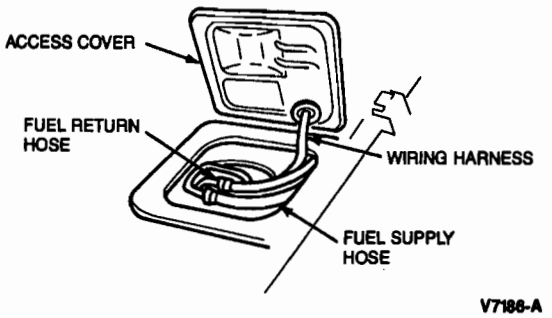
4. To install, reverse Removal procedure.



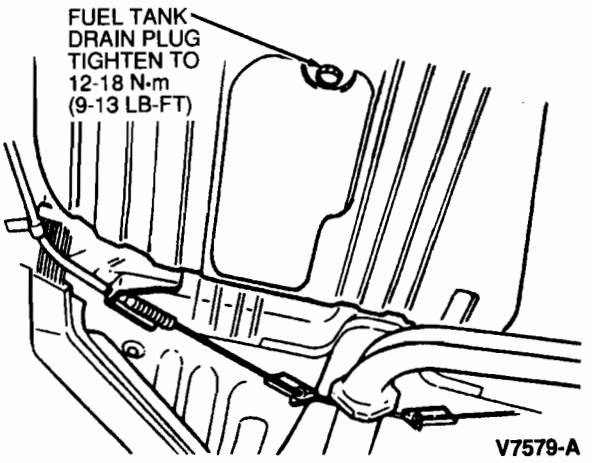
Fuel Tank

Removal and Installation

1. Relieve fuel pressure as outlined.
2. Disconnect negative battery cable.
3. Remove rear seat cushion. Refer to Section 01-10.
4. Disconnect fuel pump connectors.
5. Remove four screws, ground wires and fuel pump access cover. Pull fuel pump wiring harness through access cover.
6. Loosen and pull back hose clamps. Remove and plug supply and return hoses.



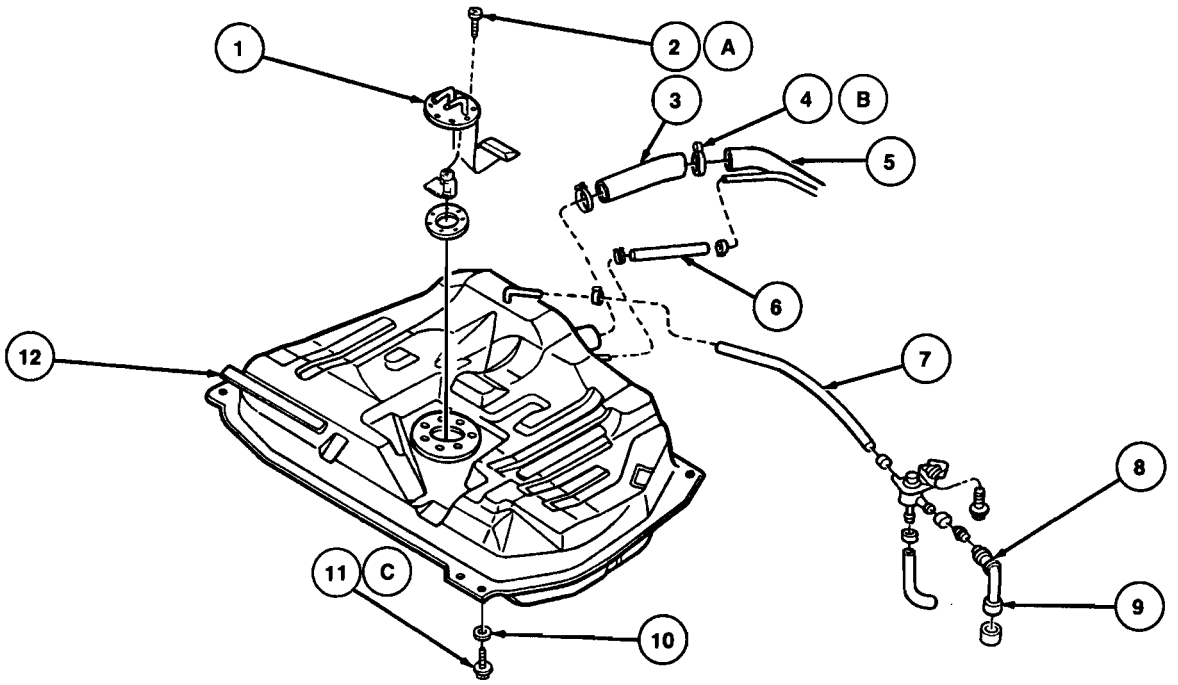
7. Raise the vehicle and support with safety stands. Refer to Section 00-02.
8. Remove the fuel tank drain plug and carefully drain remaining fuel into an approved safety container.



9. Remove two hose clamps and hoses at filler neck as outlined.
10. Support fuel tank and remove four retaining bolts.
11. Lower fuel tank enough to gain access to vapor line.
12. Remove clamp and vapor line. Remove fuel tank.
13. Remove fuel sending unit and fuel pump if required as outlined.
14. To install, reverse Removal procedure.

    NOTE: Use new clamps on all hoses.

REMOVAL AND INSTALLATION (Continued)



V7187-B

Item	Part Number	Description
1	9350	Sending Unit / Fuel Pump
2A	9983-30408	Screw
3	90C17	Filler Neck Hose
4B	—	Clamp
5	9034	Filler Neck
6	9324	Filler Neck Hose
7	—	Vapor Line
8	—	Two-Way Valve

(Continued)

Item	Part Number	Description
9	—	Restrictor
10	9956-41000	Washer
11C	9181	Bolt
12	9002	Fuel Tank
A		Tighten to 0.6-1.0 N·m (5.3-8.8 Lb-In)
B		Tighten to 2.7-3.0 N·m (23.8-26.5 Lb-In)
C		Tighten to 16-23 N·m (12-16 Lb-Ft)

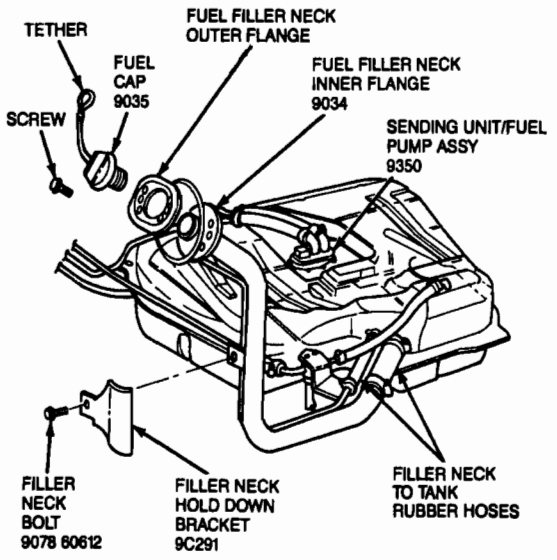
Fuel Filler Neck

Removal and Installation

1. Remove filler cap, tether, and two filler neck retaining screws inside filler door.
2. Raise the vehicle and support it with safety stands. Refer to Section 00-02.
3. Remove the fuel tank drain plug and carefully drain remaining fuel into an approved safety container.
4. Remove two hose clamps and hoses at filler neck as outlined.
5. Remove retaining screw from inside wheel well. Remove fuel filler neck, gaskets and bracket.

REMOVAL AND INSTALLATION (Continued)

6. To install, reverse Removal procedure.



Fuel Filler Hose Clamp

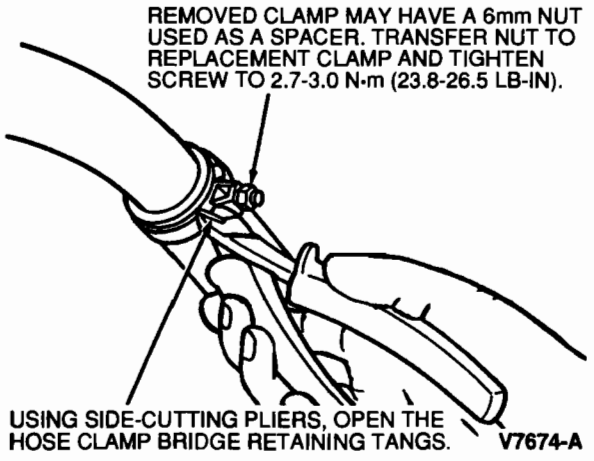
Removal

CAUTION: Removal of hose clamps must be done carefully to avoid damage to the fuel tank filler pipe and fuel tank weld joint.

NOTE: The fuel filler pipe retaining hardware must be removed allowing sufficient fuel filler pipe movement to enable the filler neck hose clamp to be replaced.

NOTE: Replacement of the fuel tank and hose clamp requires removal of the fuel tank as outlined.

1. Using a pair of side-cutting pliers, open hose clamp bridge retaining tangs.

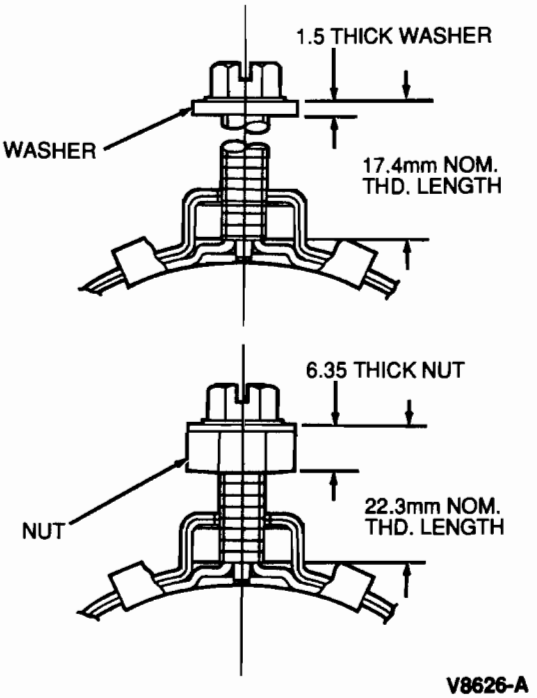


2. Loosen hose clamp tension screw.

3. Carefully relieve hose clamp tension and remove hose clamp from fuel filler hose.

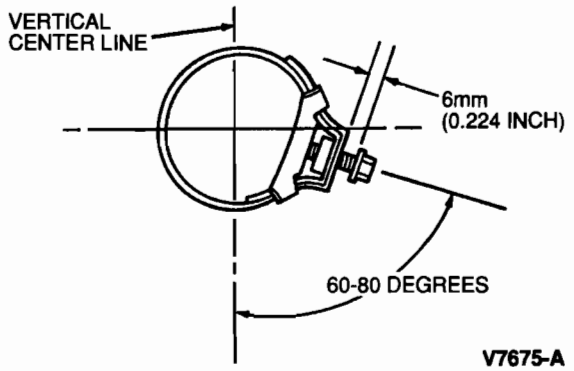
Installation

NOTE: If the removed hose clamp has a 6mm (0.224 inch) nut between the clamp bridge and the screw head as a spacer, transfer nut to replacement clamp screw. If a replacement clamp has no nut or washer, set up clamp spacer as follows.



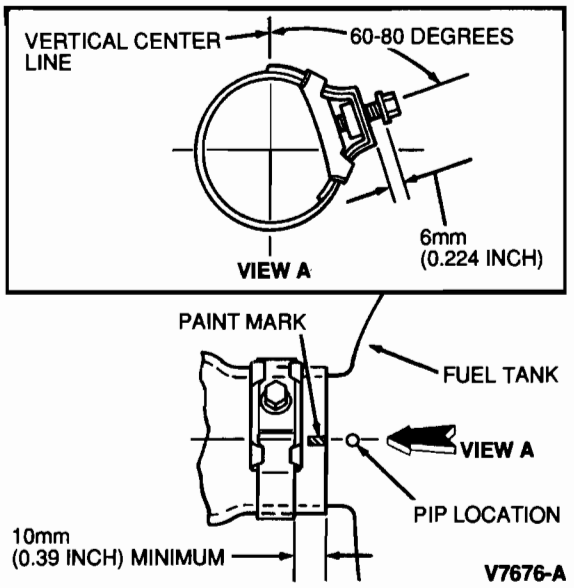
1. Position hose clamps square to hose / pipe surface and at positions shown.
2. Tighten hose clamp screw until gap between upper surface of clamp bridge and underside of screw head is 6.0mm (0.224 inch) tighten screw to 2.7-3.0 N·m (23.8-26.5 lb-in).

Filler Neck Hose Clamp



REMOVAL AND INSTALLATION (Continued)

Fuel Tank Hose Clamp



In-Tank Filter

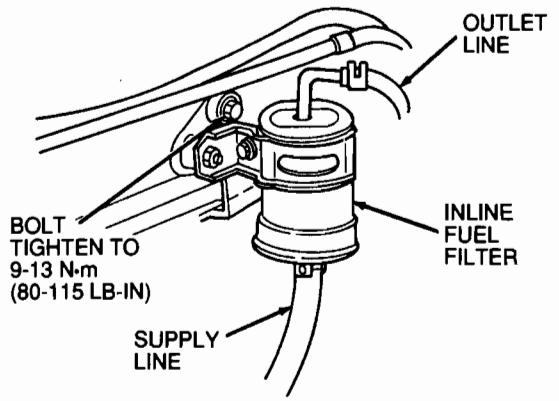
Removal and Installation

1. Relieve fuel system pressure as outlined.
2. Remove rear seat cushion. Refer to Section 01-10.
3. Remove the fuel tank sending unit / pump as outlined.
4. Remove fuel filter from fuel pump assembly.
5. To install, reverse Removal procedure.

In-Line Filter

Removal and Installation

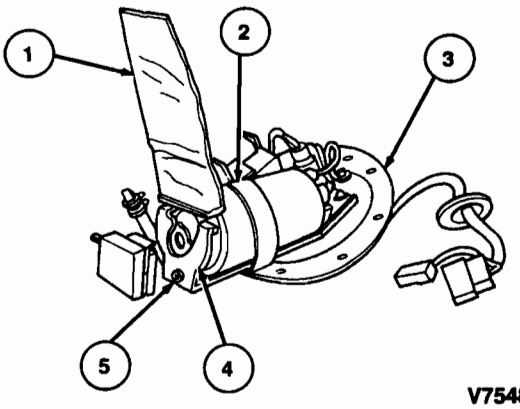
1. Relieve fuel system pressure as outlined.
2. Remove clamp and supply line from bottom of filter. Plug supply line.
3. Remove clamp and outlet line from top of filter. Remove fuel filter from bracket.
4. To install, reverse Removal procedure.



Fuel Pump

Removal and Installation

1. Relieve the fuel pressure as follows:
   a. Remove rear seat cushion. Refer to Section 01-10.
   b. Run engine while disconnecting fuel pump electrical connector.
   c. Allow engine to stall. Fuel pressure is now relieved.
2. Remove fuel tank sending unit as outlined.
3. Remove two fuel pump wires from sending unit.
4. Remove retaining clamp screw and remove clamp.
5. Remove rubber retaining band.
6. Remove fuel pump from sending unit.
7. To install, reverse Removal procedure.
8. Tighten fuel tank sending unit retaining screws to 1.0-1.6 N·m (8.8-14 lb-in).



REMOVAL AND INSTALLATION (Continued)

Item	Part Number	Description
1	—	Fuel Tank Filter
2	—	Rubber Retaining Band
3	9350	Fuel Sending Unit Assy
4	—	Retaining Clamp
5	—	Retaining Clamp Screw

Pressure Regulator

Removal and Installation

1. Relieve the fuel pressure as follows:
   a. Remove rear seat cushion. Refer to Section 01-10.
   b. Run engine while disconnecting fuel pump electrical connector.
   c. Allow engine to stall. Fuel pressure is now relieved.
2. Disconnect vacuum hose from pressure regulator.
3. Disconnect the fuel return hose.
4. Remove the retaining bolts and remove the pressure regulator.
5. Remove the O-ring from the pressure regulator.
6. To install, reverse Removal procedure.

Fuel Pump Relay

Removal and Installation

1. Disconnect negative battery cable.
2. Pull back on the front edges of the center carpet panel, disengaging the push pin retainers.
3. Remove the retaining screw and carpet panel.
4. Disconnect relay connector.
5. Remove relay connector.
6. To install, reverse Removal procedure.

SPECIFICATIONS

TORQUE SPECIFICATIONS

Description	N·m	Lb-In
Hose Clamps	2.7-3.0	23.8-26.5
Sending Unit / Fuel Pump Screws	1.0-1.6	8.8-14
Fuel Tank Retaining Bolts	16-23	12-16 (Lb-Ft)
Fuel Tank Drain Plug	12-18	9-13 (Lb-Ft)
Fuel Filter Retaining Bolt	9-13	80-115

SECTION 10-02 Accelerator Pedal and Linkage

VEHICLE APPLICATION

Capri.

DESCRIPTION

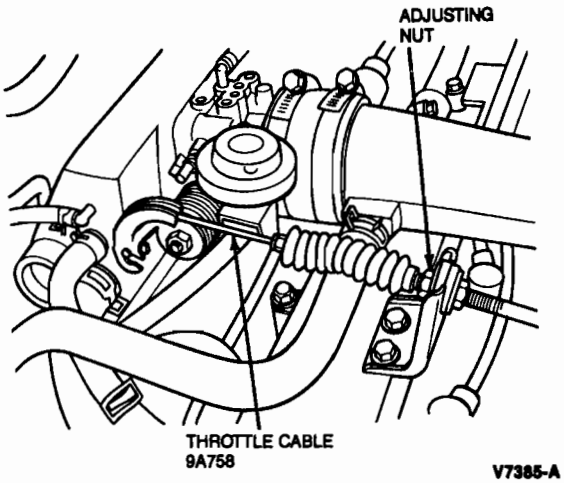
The throttle is controlled by an accelerator cable and a pedal assembly. The pedal should travel smoothly from an idle to wide-open throttle position. Hesitation on return and / or prevention of return to idle position must not occur throughout the total travel of the pedal assembly. Surrounding components such as wiring, hoses, sound insulator and floor covering, must not contact the sliding inner member of the cable or the pedal assembly. The throttle assembly is adjustable for free play and distance of travel.

REMOVAL AND INSTALLATION

Throttle Cable

Removal

1. Remove the cable end from the throttle body.
2. Remove the adjusting nut at the cable housing brace located near the throttle body.
3. Remove cable routing bracket retaining bolt.
4. Squeeze the lock tabs and remove the cable end from the pedal assembly.
5. Squeeze the lock tabs securing the cable housing to the dash panel and remove the cable assembly.



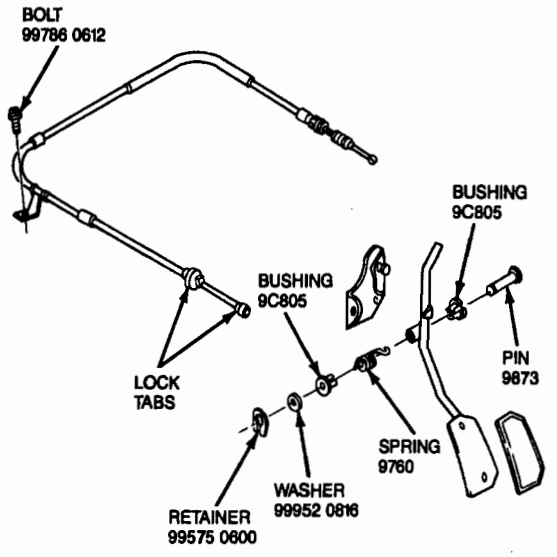
Installation

NOTE: Prior to installation, inspect lock tabs which secure cable housing to dash panel. If lock tabs are damaged, replace cable.

1. Position the cable housing into hole in dash panel and snap it into place.
2. Install cable end onto accelerator pedal and snap it into place.
3. Install cable routing bracket and retaining bolt.

REMOVAL AND INSTALLATION (Continued)

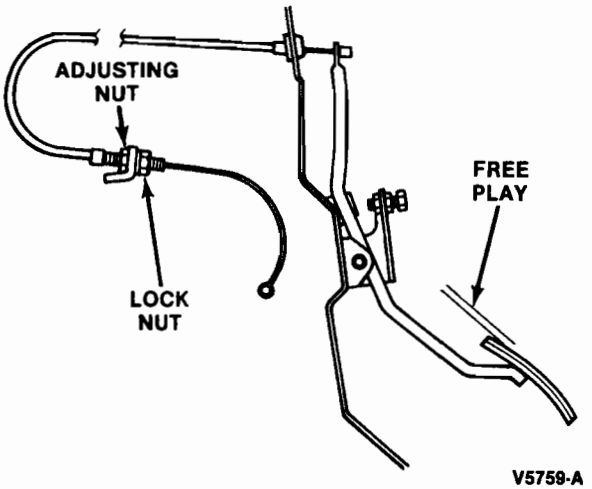
4. Install cable into cable housing brace near throttle body and install locknut finger-tight.
5. Install cable end onto throttle linkage.
6. Adjust pedal free play and wide-open throttle position as outlined.



ADJUSTMENTS

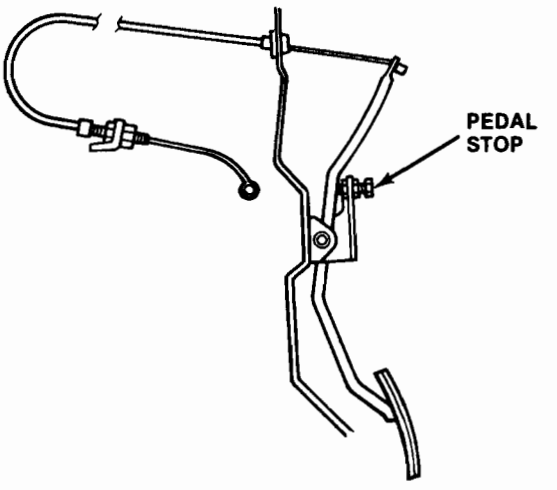
Free Play

1. Adjust the idle to specification. Refer to Powertrain Control / Emissions Diagnosis Manual.[1]
2. Measure the free play at the accelerator pedal.
3. Free play should be 1-3mm (0.04-0.12 inch). If necessary, loosen the locknut and adjust at cable housing brace, located near the throttle body.
4. Tighten locknut after proper free play is achieved.
5. Adjust the wide-open throttle position as outlined.



Wide-Open Throttle Position

1. Adjust accelerator pedal free play as outlined.
2. Depress the accelerator all the way to the floor.
3. Make sure that the throttle plate in the throttle body is in the wide-open position.
4. If necessary, loosen the locknut and adjust at the pedal stop on the pedal bracket.
5. Tighten locknut after adjustment is completed.



1 Can be purchased as a separate item.

SECTION 10-03 Speed Control System

VEHICLE APPLICATION

Capri.

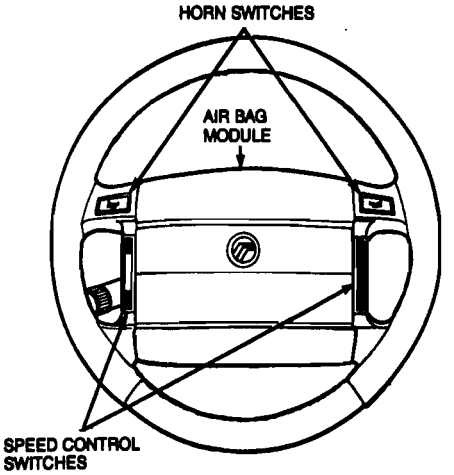
DESCRIPTION AND OPERATION

The speed control system consists of:

- Operator controls
- Electronic throttle actuator
- Electronic control unit
- Clutch and brake switches
- Electronic speed sensor

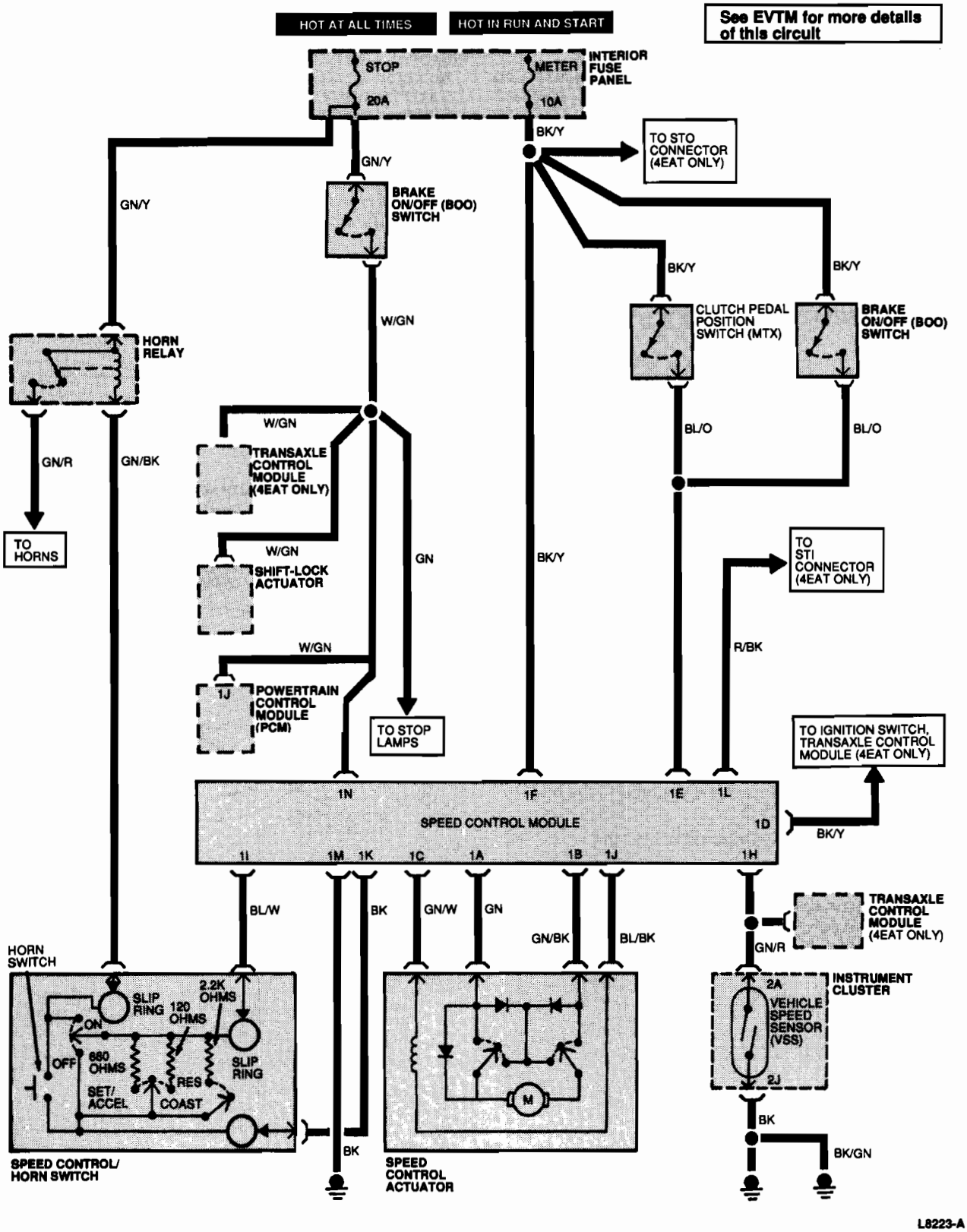
The location of the system components are as follows:

- Operator controls are mounted in the steering wheel.
- Electronic actuator is mounted in the engine compartment and is connected to the throttle by a cable.
- Clutch and brake switches are mounted to the pedal assembly.
- Electronic control unit is located behind the instrument panel.
- Electronic speed sensor is located on the speedometer cable at the upper and lower cable connection in the engine compartment.

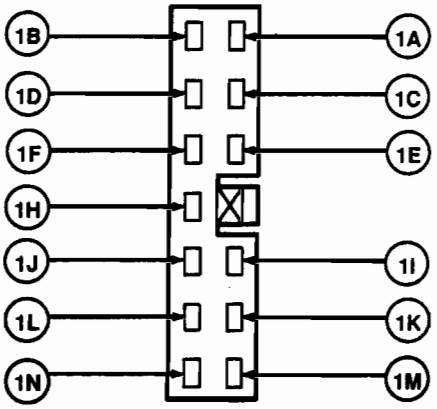


DIAGNOSIS AND TESTING

Electrical Schematic — Speed Control System

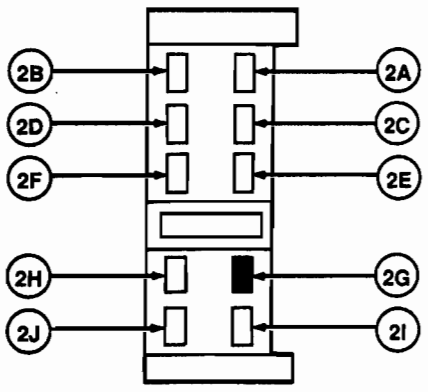


DIAGNOSIS AND TESTING (Continued)



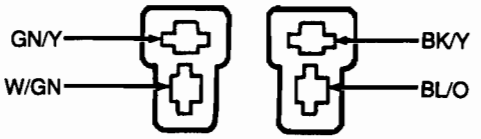
SPEED CONTROL MODULE **L8224-A**

Pin Number	Wire Color	Circuit Function
1A	GN	Speed Control Actuator
1B	GN/BK	Speed Control Actuator
1C	GN/W	Speed Control Actuator
1D	BK/Y	START Signal
1E	BL/O	Brake On/Off Switch (Auto Only), Clutch Pedal Position Switch (MTX)
1F	BK/Y	Vehicle Power
1H	GN/R	Vehicle Speed Sensor
1I	BL/W	Speed Control/Horn Switch
1J	BL/BK	Speed Control Actuator
1K	BK	Ground
1L	R/BK	STI Connector (Auto Only)
1M	BK	Ground
1N	W/GN	Brake On/Off Switch



INSTRUMENT CLUSTER **L8225-A**

Pin Number	Wire Color	Circuit Function
2A	GN/R	Vehicle Speed Sensor
2B	Y/BK	Air Bag Diagnostic Module Indicator
2C	BK	Ground
2D	BK/Y	Safety Belt Warning Indicator Lamp Power
2E	BK	Ground
2F	GN/O	Safety Belt Warning Indicator Lamp Ground
2G	—	Not Used
2H	BK/Y	Gauge Feed
2I	Y/BL	Ignition Coil (Tach Pulse)
2J	BK/GN	Ground



BRAKE ON/OFF SWITCHES **L8226-A**

System Inspection—Speed Control System

1. Visually inspect the components of the speed control system.

VISUAL INSPECTION CHART

Mechanical	Electrical
• Brake On/Off (BOO) Switch Adjustment	• Blown Fuses: • 10 amp METER • 20 amp STOP
• Actuator Mounting	• Damage to wiring harness
• Cable Freedom and Adjustment	• Loose or corroded connections
• Throttle Linkage Freedom • Clutch Pedal Position Switch Adjustment (MTX Only)	

2. Depress the accelerator pedal. Check the actuator cable, accelerator cable and 4EAT throttle valve cable for freedom and proper adjustment.
3. Check the wiring harness for obvious signs of shorts, opens, bad connections or damage.
4. Make sure the speedometer, stoplamps and clutch pedal function properly.
5. If fault is not visually evident, verify condition and refer to the following condition chart.

DIAGNOSIS AND TESTING (Continued)

CONDITION CHART—SPEED CONTROL SYSTEM

CONDITION	POSSIBLE SOURCE	ACTION
• Speed Control System Does Not Operate	• Fuse. • Speed control/horn switch. • Speed control module. • Speed control actuator. • Vehicle speed sensor (VSS). • Circuit.	• Go to **A1.** • Go to **A16.** • Go to **A24.** • Go to **A23.** • Go to **A21.** • Go to **A4.**
• Speed Control System Will Not Set Speed	• Speed control/horn switch. • Vehicle speed sensor (VSS). • Speed control module. • Circuit.	• Go to **A16.** • Go to **A21.** • Go to **A24.** • Go to **A4.**
• Speed Control System Works Intermittently	• Speed control actuator. • Speed control module. • Vehicle speed sensor (VSS). • Circuit.	• Go to **A23.** • Go to **A24.** • Go to **A21.** • Go to **A4.**
• Speed/Horn Switch Position Do Not Operate	• Speed control/horn switch. • Speed control module. • Speed control actuator. • Circuit.	• Go to **A16.** • Go to **A24.** • Go to **A23.** • Go to **A4.**
• Set Speed Fluctuates	• Speed control actuator. • Vehicle speed sensor (VSS). • Speed control module. • Circuit.	• Go to **A23.** • Go to **A21.** • Go to **A24.** • Go to **A4.**
• Speed Control System Does Not Shut Off With Brakes Depressed	• Brake on/off (BOO) switch. • Speed control module. • Speed control actuator. • Circuit.	• Go to **A10.** • Go to **A24.** • Go to **A23.** • Go to **A4.**
• Speed Control System Does Not Shut Off With Clutch Depressed	• Clutch pedal position switch. • Speed control module. • Speed control actuator. • Circuit.	• Go to **A7.** • Go to **A24.** • Go to **A23.** • Go to **A4.**

PINPOINT TEST A—SPEED CONTROL SYSTEM

TEST STEP		RESULT ▶	ACTION TO TAKE
A1	CHECK FUSES		
	• Key OFF. • Locate interior fuse panel. • Check 20 amp STOP fuse and 10 amp METER fuse. • **Are fuses OK?**	Yes ▶ No ▶	GO to **A4.** GO to **A2.**
A2	CHECK SYSTEM		
	• Replace blown fuses. • Key ON. • **Did fuse(s) fail again?**	Yes ▶ No ▶	GO to **A3.** GO to **A4.**
A3	CHECK FOR SHORT TO GROUND		
	• Key OFF. • Locate and disconnect interior fuse panel connectors. • Measure resistance between the GN/Y wire at the interior fuse panel connector and ground. • Measure resistance between the BK/Y wire at the interior fuse panel connector and ground. • **Are resistances less than 5 ohms?**	Yes ▶ No ▶	SERVICE wire(s) in question. GO to **A4.**
A4	CHECK POWER SUPPLY TO SPEED CONTROL MODULE		
	• Locate and disconnect speed control module. • Key ON. • Measure voltage on the BK/Y wire at the speed control module connector. • **Is voltage greater than 10 volts?**	Yes ▶ No ▶	GO to **A5.** SERVICE BK/Y wire.

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST A—SPEED CONTROL SYSTEM (Continued)

TEST STEP		RESULT ▶	ACTION TO TAKE
A5	CHECK POWER SUPPLY TO BRAKE ON/OFF (BOO) AND CLUTCH PEDAL POSITION SWITCHES		
	• Locate clutch pedal position and brake on/off (BOO) switches. • Measure voltage on the BK/Y wire at each connector. • **Are voltages greater than 10 volts?**	Yes ▶ No ▶	GO to **A6**. SERVICE BK/Y wire(s) in question.
A6	CHECK BRAKE ON/OFF (BOO) SWITCH		
	• Key OFF. • Depress brake pedal. • Measure voltage on the BL/O wire at brake on/off (BOO) switch connector. • **Is voltage greater than 10 volts?**	Yes ▶ No ▶	GO to **A7**. REPLACE brake on/off (BOO) switch.
A7	CHECK CLUTCH PEDAL POSITION SWITCH		
	• Release brake pedal. • Depress clutch pedal position switch. • Measure voltage on the BL/O wire at the clutch pedal position switch connector. • **Is voltage greater than 10 volts?**	Yes ▶ No ▶	GO to **A8**. REPLACE clutch pedal position switch.
A8	CHECK WIRES FROM SWITCHES TO SPEED CONTROL MODULE		
	• Locate speed control module. • Measure resistance of the BL/O wire between the brake on/off (BOO) and clutch pedal position switches and the speed control module. • **Is resistance less than 5 ohms?**	Yes ▶ No ▶	GO to **A9**. SERVICE BL/O wire.
A9	CHECK POWER SUPPLY TO BRAKE ON/OFF (BOO) SWITCH		
	• Locate brake on/off (BOO) switch. • Measure voltage on the GN/Y wire at the brake on/off (BOO) switch connector. • **Is voltage greater than 10 volts?**	Yes ▶ No ▶	GO to **A10**. SERVICE GN/Y wire.
A10	CHECK BRAKE ON/OFF (BOO) SWITCH		
	• Depress brake pedal. • Measure voltage on the W/GN wire at brake on/off (BOO) switch connector. • **Is voltage greater than 10 volts?**	Yes ▶ No ▶	GO to **A11**. REPLACE brake on/off (BOO) switch.
A11	CHECK WIRE TO SPEED CONTROL MODULE		
	• Key OFF. • Locate speed control module. • Measure resistance of the W/GN wire between the brake on/off (BOO) switch and the speed control module. • **Is resistance less than 5 ohms?**	Yes ▶ No ▶	GO to **A12**. SERVICE W/GN wire.
A12	CHECK POWER SUPPLY TO HORN RELAY		
	• Locate horn relay. • Measure voltage on the GN/Y wire at the horn relay. • **Is voltage greater than 10 volts?**	Yes ▶ No ▶	GO to **A13**. SERVICE GN/Y wire.
A13	CHECK CONTINUITY THROUGH HORN RELAY		
	• Measure voltage on the GN/BK wire at the horn relay connector. • **Is voltage greater than 10 volts?**	Yes ▶ No ▶	GO to **A14**. REPLACE horn relay.
A14	CHECK WIRE BETWEEN HORN RELAY AND SPEED CONTROL/HORN SWITCH		
	• Locate and disconnect speed control/horn switch connector. • Measure voltage on the GN/BK wire at the speed control/horn switch connector. • **Is voltage greater than 10 volts?**	Yes ▶ No ▶	GO to **A15**. SERVICE GN/BK wire.

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST A — SPEED CONTROL SYSTEM (Continued)

TEST STEP		RESULT ▶	ACTION TO TAKE
A15	CHECK SPEED CONTROL / HORN SWITCH GROUND		
	• Key OFF. • Measure resistance between the BK wire at the speed control / horn switch and ground. • **Is resistance less than 5 ohms?**	Yes ▶ No ▶	GO to **A16**. SERVICE BK wire.
A16	CHECK SPEED CONTROL / HORN SWITCH		
	• Disconnect speed control / horn switch. • Connect positive lead of the ohmmeter to the BL / W wire terminal of the speed control / horn switch and the negative lead to the BK wire terminal at the speed control / horn switch. • Measure resistances between the BL / W wire terminal and the BK wire terminal while holding the speed control / horn switch in the following positions:	Yes ▶ No ▶	GO to **A17**. REPLACE speed control / horn switch.
	Switch Position / **Resistance** OFF — Less than 5 ohms ON — Greater than 10,000 ohms SET / ACCEL — Approximately 680 ohms RESUME — Approximately 2,200 ohms COAST — Approximately 120 ohms		
	• **Are resistances correct?**		
A17	CHECK WIRE BETWEEN SPEED CONTROL / HORN SWITCH AND SPEED CONTROL MODULE		
	• Key OFF. • Locate speed control module. • Measure resistance of the BL / W wire between the speed control / horn switch and the speed control module. • **Is resistance less than 5 ohms?**	Yes ▶ No ▶	GO to **A18**. SERVICE BL / W wire.
A18	CHECK SPEED CONTROL MODULE GROUND		
	• Measure resistance between the BK wires at the speed control module and ground. • **Are resistances less than 5 ohms?**	Yes ▶ No ▶	GO to **A19**. SERVICE BK wire(s).
A19	CHECK WIRE BETWEEN SPEED CONTROL MODULE AND VEHICLE SPEED SENSOR (VSS)		
	• Locate vehicle speed sensor (VSS) (instrument cluster connector). • Measure resistance of the GN / R wire between the speed control module and the vehicle speed sensor (VSS) (instrument cluster connector). • **Is resistance less than 5 ohms?**	Yes ▶ No ▶	GO to **A20**. SERVICE GN / R wire.
A20	CHECK VEHICLE SPEED SENSOR (VSS) GROUND		
	• Measure resistance between the BK wire at the vehicle speed sensor (VSS) (instrument cluster connector) and ground. • **Is resistance less than 5 ohms?**	Yes ▶ No ▶	GO to **A21**. SERVICE BK wire.
A21	CHECK VEHICLE SPEED SENSOR (VSS)		
	• Disconnect speedometer cable at the transaxle. • Disconnect speed control module. • Check for continuity between the BK and GN / R wires at the vehicle speed sensor (VSS) (instrument cluster connector. • **Does continuity exist four times per one speedometer cable rotation?**	Yes ▶ No ▶	GO to **A22**. REPLACE vehicle speed sensor (VSS).

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST A—SPEED CONTROL SYSTEM (Continued)

TEST STEP		RESULT ▶	ACTION TO TAKE
A22	CHECK WIRES TO SPEED CONTROL ACTUATOR		
	• Locate speed control actuator connector. • Measure resistance of the GN/W, GN, BL/BK and GN/BK wires between the speed control module and the speed control actuator. • **Are resistances less than 5 ohms?**	Yes ▶ No ▶	GO to **A23**. SERVICE wires in question.
A23	CHECK SPEED CONTROL ACTUATOR		
	• Disconnect speed control actuator connector. • Apply 12 volts and ground to the following terminals at the speed control actuator. • Check to see if the speed control actuator responds as indicated. • **Are the control cable operations verified?**	Yes ▶ No ▶	GO to **A24**. REPLACE speed control actuator.

GN/W	GN	GN/BK	BL/BK	Control Cable Operation (Actuator Response)
GND	GND	+12 volts	+12 volts	Pull cable
GND	N/C	N/C	+12 volts	Lock cable
+12 volts	+12 volts	GND	GND	Extend cable
N/C	N/C	N/C	N/C	Release cable

+12 volts—Apply 12 volts

GND—Apply Ground

N/C—No connection

NOTE: Ground and voltage must be applied to all four terminals at once as indicated for the actuator to respond correctly.

TEST STEP		RESULT ▶	ACTION TO TAKE
A24	CHECK SPEED CONTROL MODULE		
	• Start engine. • Drive safely at approximately 40 mph. • Operate speed control system. • **Does system operate correctly?** NOTE: Set speed control switch ON. The speed control module takes several seconds performing diagnostics before accepting a "set" command.	Yes ▶ No ▶	RETURN to condition chart. REPLACE speed control module.

REMOVAL AND INSTALLATION

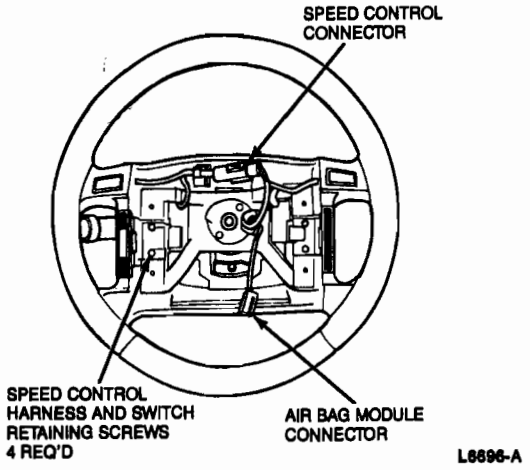
Control Switches

Removal

1. Disconnect negative battery terminal and air bag back-up power supply. Refer to Section 01-20B.
2. Remove air bag module.
3. Disconnect speed control harness connector.
4. Using a small flat blade screwdriver, pry out horn switches and disconnect horn wires.
5. Remove speed control switches retaining screws.

REMOVAL AND INSTALLATION (Continued)

6. Remove speed control switches and harness assembly.



Installation

1. Position switches and harness assembly in steering wheel.
2. Route horn switch wires to horn switches.
3. Connect horn switches and install.
4. Install speed control switches and wiring retainers.
5. Connect speed control electrical connector. Install retaining screws.
6. Install air bag module. Refer to Section 01-20B.
7. Connect backup power supply and negative battery terminal.

Stoplamp Switch

Removal and Installation

Refer to Section 17-01 for removal and installation procedures.

Clutch Pedal Position (CPP) Switch

Removal and Installation

Refer to Section 08-02 for removal and installation procedure.

Park/Neutral Position (PNP) Switch

Removal and Installation

Refer to Section 07-01 for removal and installation procedures.

Control Module

NOTE: The control module is mounted under the front of the floor console. The ash receptacle can be removed to gain access to the module for testing.

Removal

1. Disconnect negative battery cable.
2. Remove front console side covers and front console. Refer to Section 01-12.
3. Remove screws retaining control unit.
4. Disconnect electrical connector and remove control unit.

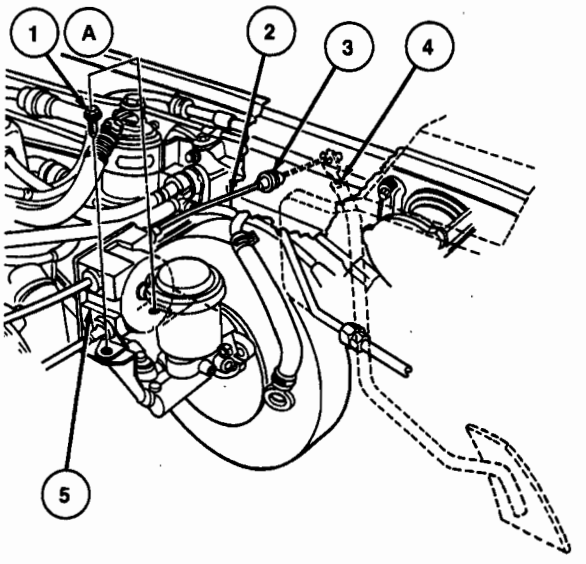
Installation

1. Connect electrical connector and place control unit in position.
2. Install screws retaining control unit.
3. Install front console and side covers.
4. Connect negative battery cable.

Cable/Actuator Assembly

Removal

1. Remove two bolts from cable actuator.
2. Release cable from accelerator pedal and pull cable into engine compartment.



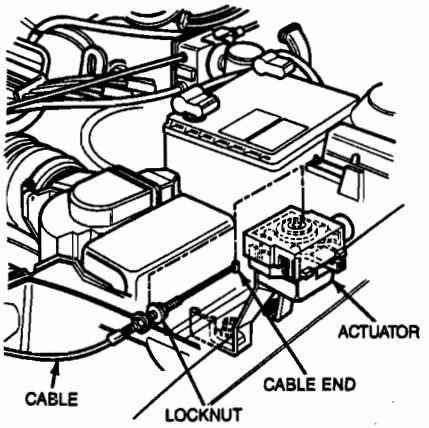
Item	Part Number	Description
1A	—	Bolt (2 Req'd)
2	—	Cable (part of 9A826)
3	—	Grommet (part of 9A826)
4	—	Accelerator Pedal
5	9A826	Cable/Actuator Assy

(Continued)

REMOVAL AND INSTALLATION (Continued)

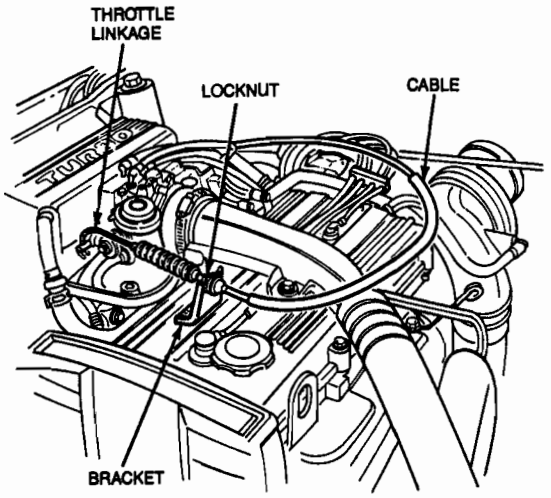
Item	Part Number	Description
A		Tighten to 10-15 N·m (8-11 Lb-Ft)

3. Loosen locknut and remove cable from actuator.



L6736-A

4. Loosen locknut and remove cable from bracket and throttle linkage.
5. Remove cable / actuator assembly.



L6737-A

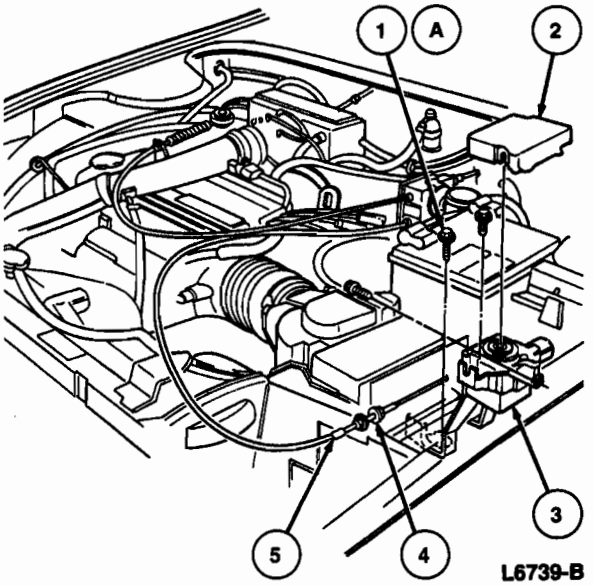
Installation

1. Install cable into throttle linkage.
2. Install cable into bracket on valve cover. Tighten locknut.
3. Install cable into actuator. Do not tighten locknut at this time. Install boot.
4. Route cable through dash and install grommet. Connect cable to accelerator pedal.
5. Secure cable / actuator assembly with two bolts. Tighten to 10-15 N·m (8-11 lb-ft).
6. Adjust cable at actuator as outlined.

Actuator

Removal

1. Remove actuator cover and disconnect wiring.
2. Loosen locknut and remove cable from actuator.
3. Remove three bolts and actuator.



L6739-B

Item	Description
1A	Bolt
2	Cover
3	Actuator
4	Locknut
5	Cable
A	Tighten to 9-13 N·m (7-10 Lb-Ft)

Installation

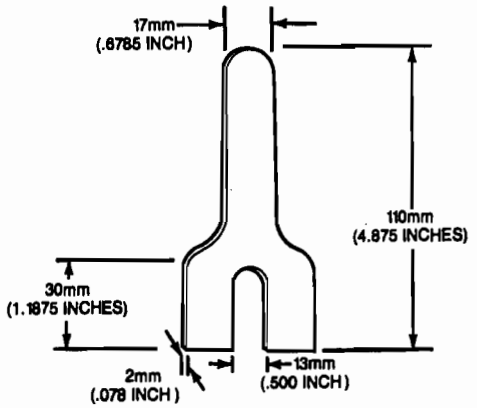
1. Install actuator with three bolts. Tighten bolts to 9-13 N·m (7-10 lb-ft).
2. Connect cable to actuator.
3. Adjust cable as outlined.
4. Install cover and connect wiring.
5. Check speed control for proper operation.

ADJUSTMENTS

Actuator Cable

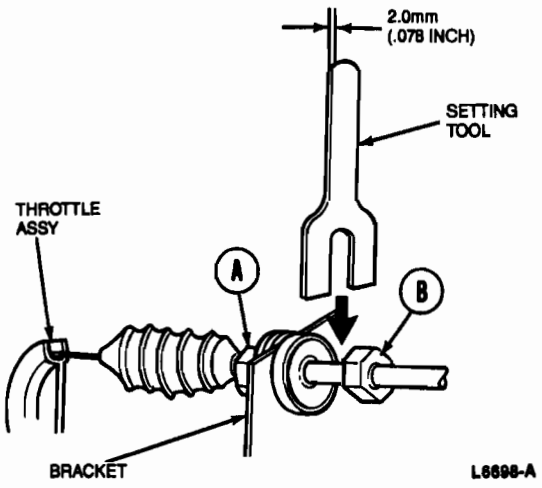
Cable at Throttle Body

NOTE: A setting tool must be fabricated as shown to properly adjust speed control cables.



SPEED CONTROL CABLE SETTING TOOL

1. Disconnect cable from cruise control actuator.
2. Slightly loosen cable retaining nuts at bracket on cylinder head cover.
3. Insert setting tool between nut "B" and bracket, as shown.

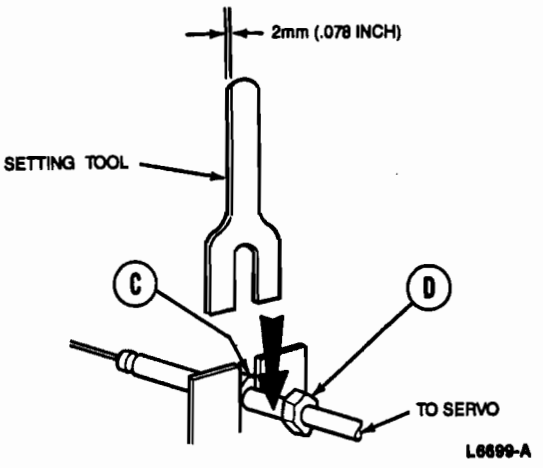


4. Tighten both nuts to eliminate all cable slack.
5. Loosen nut "A" only enough to remove tool. Do not adjust nut "B".
6. Tighten nut "A" without moving nut "B".

Cable at Actuator

NOTE: To be performed after throttle body end adjustment.

1. Slightly loosen cable retaining nuts at bracket.
2. Insert setting tool between bracket and nut "D" as shown.



3. Tighten both nuts to eliminate all slack at throttle body end of cable.
4. Loosen nut "C" only enough to remove setting tool. Do not adjust nut "D".
5. Tighten nut "C" without moving nut "D".

Clutch Pedal Height

Measure the distance from the center of the clutch pedal to lower dash panel (front area of footwell). Pedal height must be 214.5-219.5mm (8.44-8.64 inches). Adjust if necessary as follows:

1. Loosen locknut and turn clutch switch until desired pedal height is obtained.
2. Tighten locknut when clutch pedal height is achieved.

Brake Pedal Height

The stoplamp switch is mounted at the top of the brake pedal. Refer to Section 17-01 for adjustment procedures.

SPECIFICATIONS

TORQUE SPECIFICATIONS

Description	N·m	Lb-Ft
Cable / Actuator Retaining Bolt	10-15	8-11
Actuator Retaining Bolt	9-13	7-10