

GROUP

FUEL SYSTEM

10
(9000)

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SECTION 10-00 Fuel System—Service

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VEHICLE APPLICATION

Taurus/Sable.

DESCRIPTION

This Section covers diagnosis and cleaning procedures related to fuel injection for both unleaded gasoline and flexible fuel (FF) vehicles. Other emission systems related to the fuel system are covered in the Powertrain Control/Emissions Diagnosis Manual¹.

NOTE: Fuel methanol refers to a blend of fuel with a maximum of 85 percent methanol.

WARNING: DO NOT SWALLOW FUEL METHANOL. LIKE GASOLINE, IT IS HIGHLY TOXIC AND IF SWALLOWED CAN CAUSE DEATH OR PERMANENT INJURY. SWALLOWING METHANOL CAN ALSO CAUSE BLINDNESS. CALL A PHYSICIAN IMMEDIATELY TO TREAT ANYONE WHO HAS SWALLOWED FUEL METHANOL. VOMITING SHOULD BE INDUCED UNDER THE DIRECTION OF A PHYSICIAN OR POISON CONTROL CENTER. BE AWARE THAT THE ONSET OF POTENTIAL ILL HEALTH EFFECTS MAY BE DELAYED.

AVOID INHALING FUEL VAPORS. INHALING TOO MUCH FUEL METHANOL OR GASOLINE VAPOR CAN LEAD TO EYE AND RESPIRATORY TRACT IRRITATION. IN SEVERE CASES, EXCESSIVE OR PROLONGED BREATHING OF FUEL METHANOL OR GASOLINE VAPORS CAN CAUSE SERIOUS ILLNESS AND PERMANENT INJURY SUCH AS BLINDNESS.

AVOID GETTING FUEL METHANOL OR GASOLINE LIQUID IN YOUR EYES. IF YOU GET ANY FUEL METHANOL OR GASOLINE IN YOUR EYES, REMOVE CONTACT LENSES (IF WORN), FLUSH IMMEDIATELY WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES AND SEEK MEDICAL ATTENTION.

¹ Can be purchased as a separate item.

DESCRIPTION (Continued)

ALLOWING FUEL METHANOL OR GASOLINE TO GET IN YOUR EYES WILL CAUSE SEVERE IRRITATION. FAILURE TO SEEK PROPER MEDICAL ATTENTION FOR FUEL METHANOL OR GASOLINE CONTACT WITH THE EYES COULD LEAD TO PERMANENT INJURY SUCH AS BLINDNESS.

IF YOU GET FUEL METHANOL OR GASOLINE ON YOUR SKIN, WASH WITH SOAP AND WATER. REPEATED OR PROLONGED SKIN CONTACT WITH METHANOL OR GASOLINE LIQUID OR VAPOR CAUSES SKIN IRRITATION. MAKE SURE YOU WASH YOUR HANDS BEFORE HANDLING FOOD.

IF YOU ARE TAKING MEDICATION FOR THE TREATMENT OF ALCOHOLISM, SUCH AS ANTABUSE OR OTHER FORMS OF DISULFIRAM, SKIN CONTACT WITH FUEL METHANOL OR BREATHING ITS VAPORS CAN CAUSE THE SAME KIND OF ADVERSE REACTION AS DRINKING ALCOHOL. IN SENSITIVE INDIVIDUALS, SERIOUS PERSONAL INJURY OR SICKNESS COULD RESULT. IF YOU ARE TAKING SUCH MEDICATION, YOU SHOULD TAKE EXTRA CARE TO AVOID SKIN CONTACT WITH FUEL METHANOL AND TO AVOID BREATHING ITS VAPORS. IF YOU DO GET FUEL METHANOL ON YOUR SKIN, WASH IT OFF IMMEDIATELY. CONSULT A PHYSICIAN PROMPTLY IF YOU EXPERIENCE AN ADVERSE REACTION.

WARNING: DO NOT MODIFY THE FUEL SYSTEM CONFIGURATION OR COMPONENTS, OR REPLACE COMPONENTS WITH PARTS NOT ESPECIALLY DESIGNED FOR USE WITH FUEL METHANOL. FORD MOTOR COMPANY HAS SPECIALLY-DESIGNED THE MATERIALS, COMPONENTS AND SYSTEM CONFIGURATION FOR METHANOL-FUELED VEHICLES AND EACH PARTICULAR SYSTEM IS PRECISELY CALIBRATED FOR EFFICIENT OPERATION. THE USE OF DIFFERENT PARTS OR MATERIALS COULD PRODUCE AN UNTESTED CONFIGURATION THAT COULD RESULT IN FIRE, PERSONAL INJURY, OR COULD CAUSE ENGINE DAMAGE.

WARNING: DO NOT OPERATE ENGINE OR SMOKE WHILE REFUELING.

CAUTION: Use only fuel methanol which meets Ford Specification ESE-M4C97-B. Use of other fuel methanol may cause powertrain damage as well as loss of vehicle performance. It will also invalidate any extended service agreement.

WARNING: IT IS IMPORTANT THAT YOUR FLEXIBLE FUEL VEHICLE BE PROPERLY MAINTAINED BY FORD FLEXIBLE FUEL TRAINED PERSONNEL. IF A PROBLEM OCCURS, IT IS IMPORTANT THAT PROPERLY TRAINED PERSONNEL DIAGNOSE THE CAUSE. IF THE PROBLEM RELATES TO THE FUEL SYSTEM, PROPER PART REPLACEMENT IS IMPERATIVE TO KEEP YOUR VEHICLE OPERATING AT NORMAL PERFORMANCE. FLEXIBLE FUEL COMPONENTS AND STANDARD FUEL COMPONENTS ARE NOT INTERCHANGEABLE AND IF YOUR VEHICLE IS NOT SERVICED IN ACCORDANCE WITH FLEXIBLE FUEL VEHICLE PROCEDURES, DAMAGE MAY OCCUR AND YOUR WARRANTY MAY BE INVALIDATED.

DIAGNOSIS

Almost any electric fuel pump (FP) (9350) malfunction that can occur will result in a loss or reduction of fuel flow and /or pressure. Loss of pressure and /or flow will be detected by a reduction of engine performance. These diagnostic procedures will concentrate on determining if the electric fuel pump is operating properly. Other diagnosis procedures will cover the analysis of other malfunctions that can cause loss or reduction of engine performance.

Refer to the Electrical and Vacuum Troubleshooting manual for detailed wiring schematics.

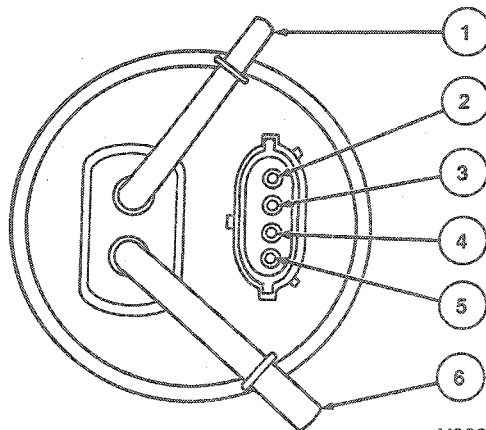
Use the diagnosis charts to determine if the electric fuel pump is operating properly.

CAUTION: At the completion of each pinpoint test step shut off fuel pump by removing ground from jumper to FP lead or by turning ignition switch to the OFF position (unless otherwise specified).

NOTE: Grounding the FP lead of test connector allows pump to run continuously when the ignition switch is in the ON position.

Fuel Pump Terminals

Except FF Vehicles

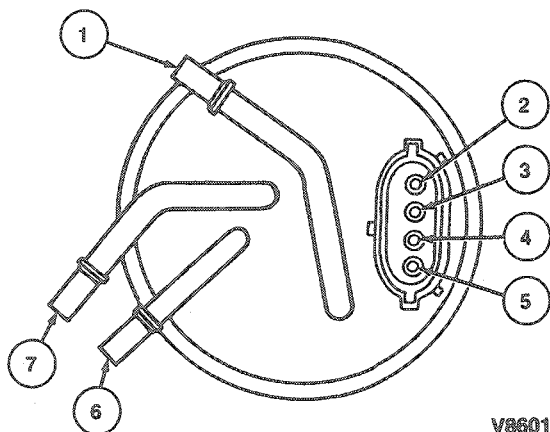


V8602-A

DIAGNOSIS (Continued)

Item	Description
1	Fuel Return
2	Sender Ground
3	Sender Positive
4	Fuel Pump Positive
5	Fuel Pump Negative
6	Fuel Supply

FF Vehicles



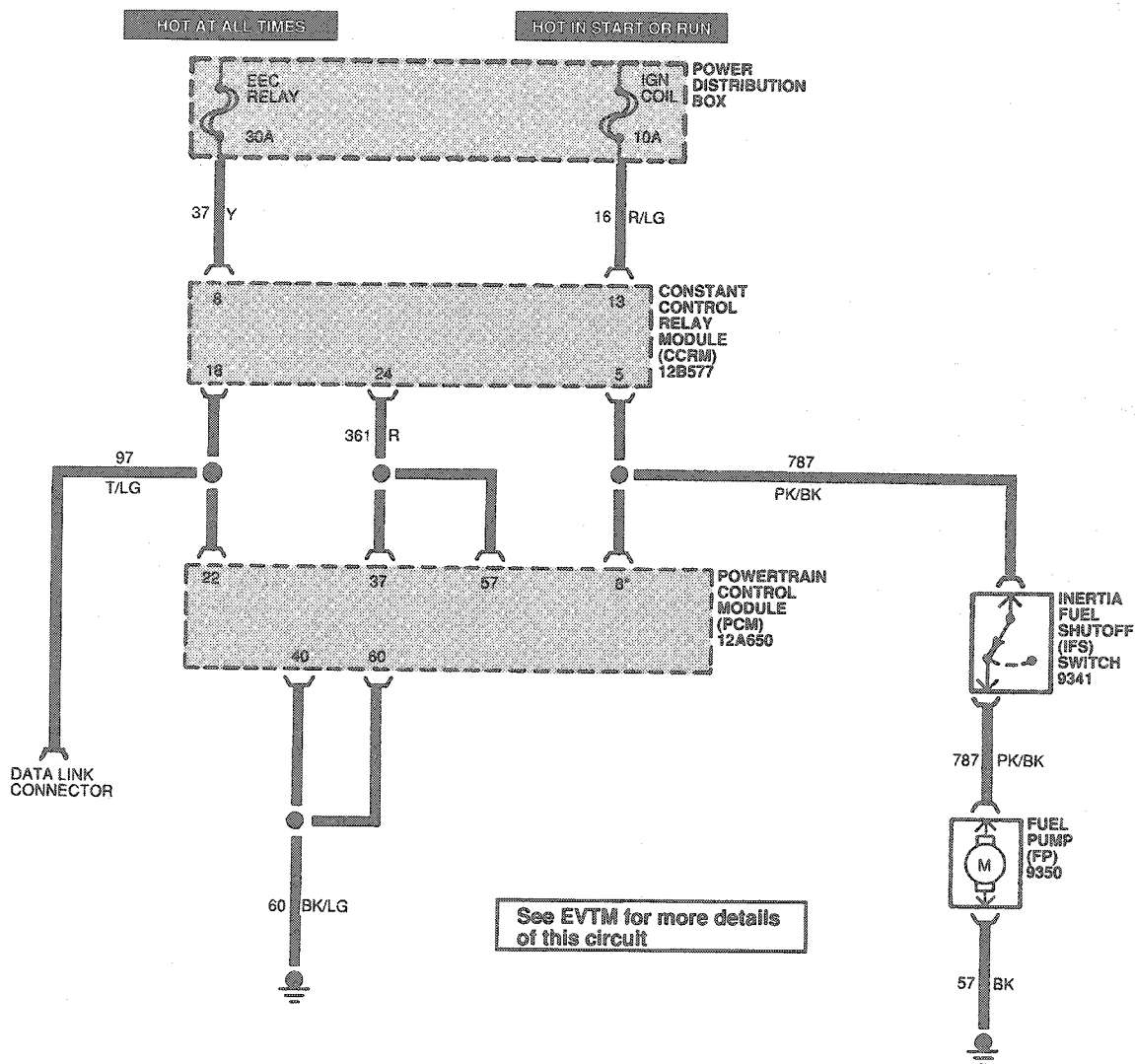
V8601-A

Item	Description
1	Fuel Tank Drain
2	Sender Ground
3	Sender Positive
4	Fuel Pump Positive
5	Fuel Pump Ground
6	Fuel Return
7	Fuel Supply

DIAGNOSIS (Continued)

Wiring Diagram

Except FF Vehicles

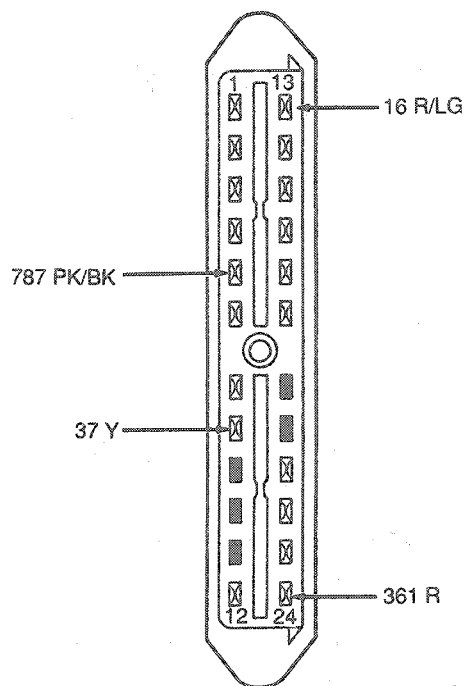
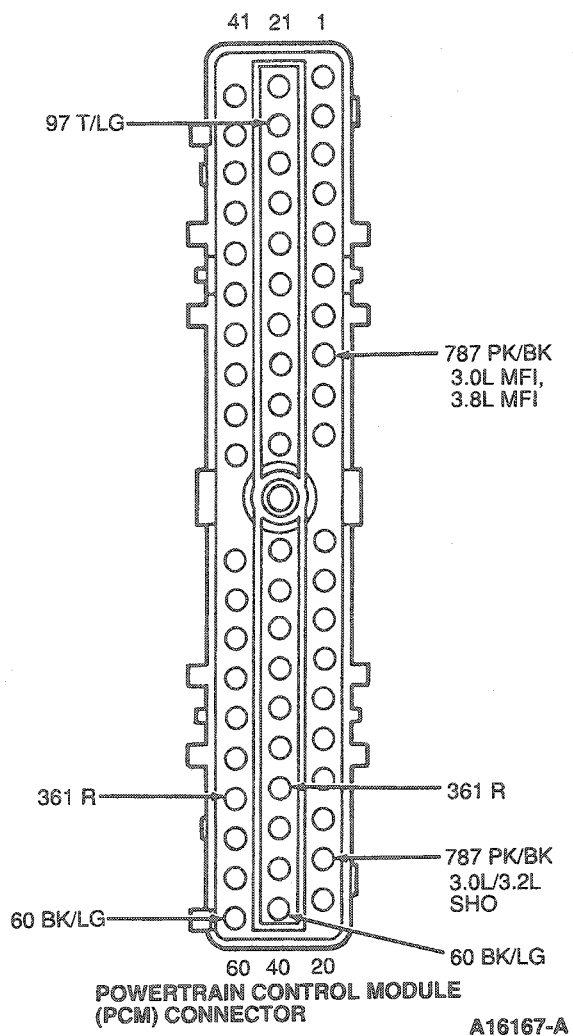


*PIN 19 ON 3.0L/3.2L SHO

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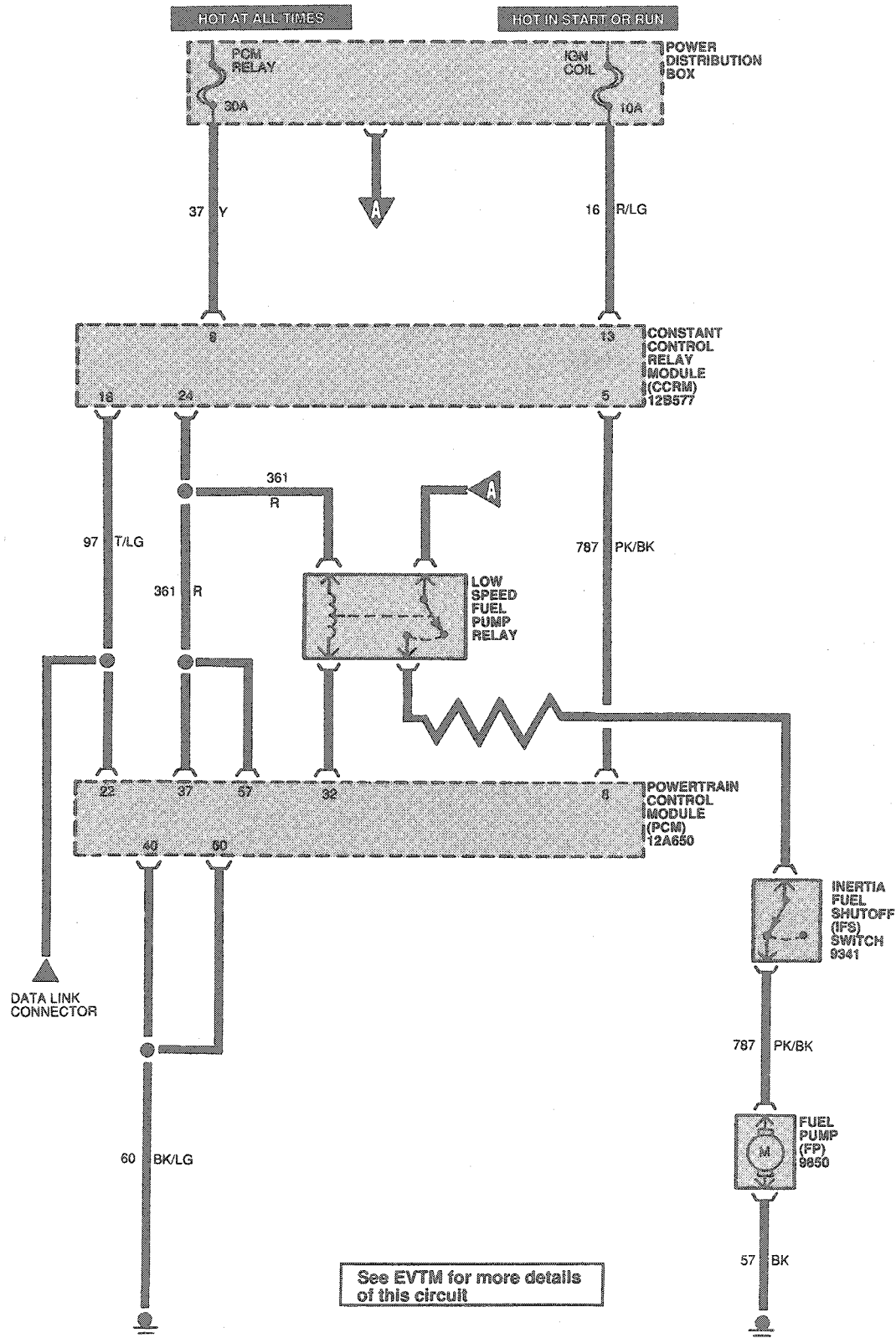
DIAGNOSIS (Continued)

Connector End Views



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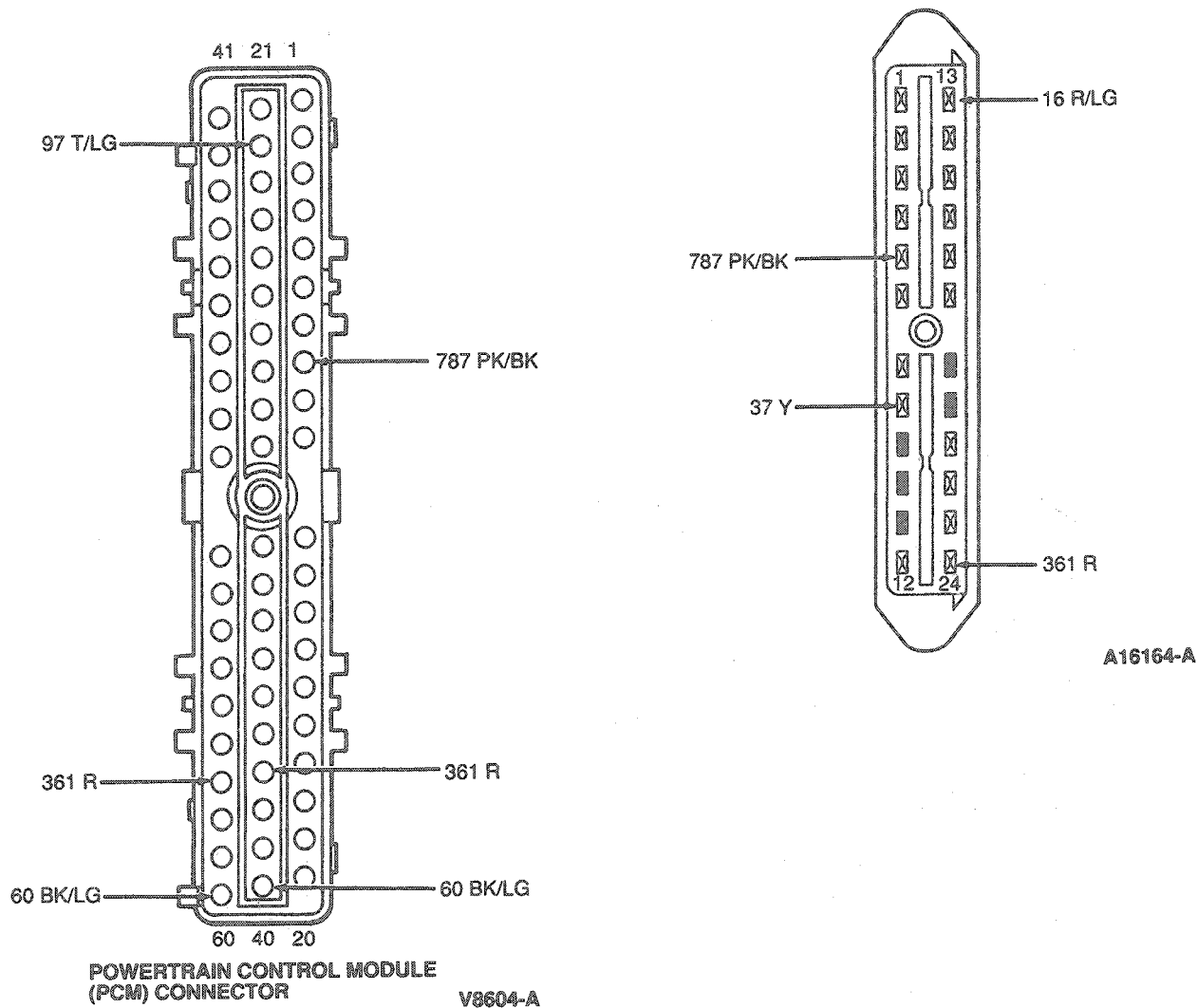
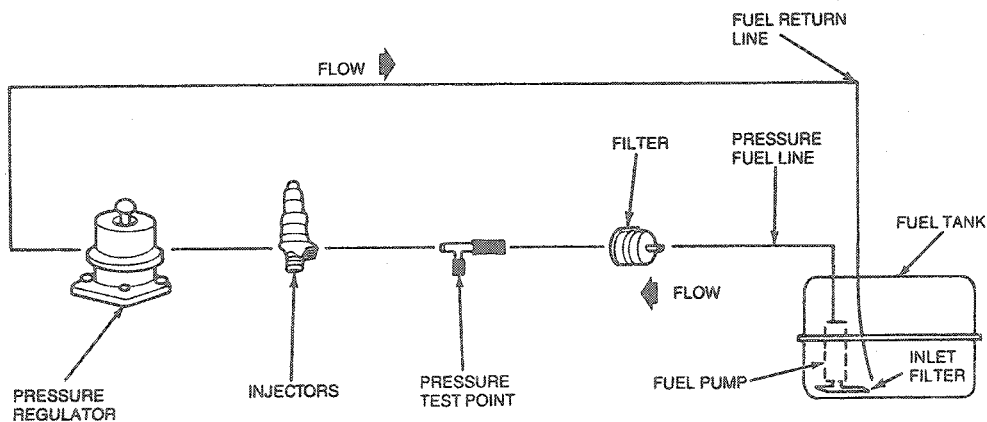
DIAGNOSIS (Continued)

Wiring Diagram
FF Vehicles

V8603-A

DIAGNOSIS (Continued)

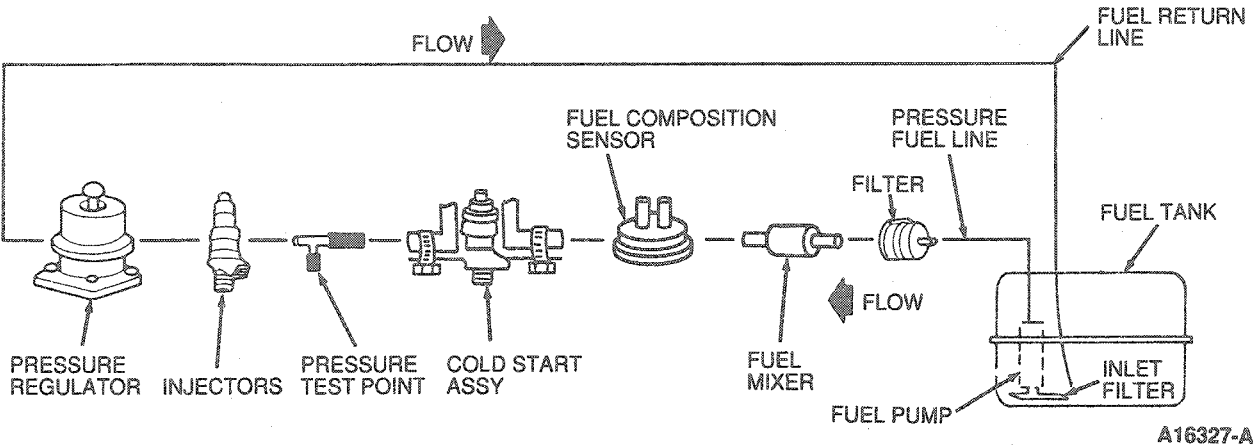
Connector End Views

System Component Schematics
Except FF Vehicles

A8570-B

DIAGNOSIS (Continued)

FF Vehicles



PINPOINT TEST A: FUEL SYSTEM DIAGNOSTICS

TEST STEP		RESULT	ACTION TO TAKE
A1	INSPECT SYSTEM		
<ul style="list-style-type: none">● Run Self-Test to verify no electrical codes.● Check fuel system for adequate fuel supply.● Check inertia fuel shutoff (IFS) switch.● Verify that the battery is fully charged.● Check fuse for open condition.● Visually inspect the fuel delivery system including fuel tank, lines, filter, injectors, pressure regulator, battery, electrical lines, and connectors for leakage, looseness, cracks, pinching, kinking, corrosion, grounding, abrasion, or other damage caused by accident, collision, assembly or usage.● Is the system free of any evidence of leakage, damage, or any evident cause for concern?		Yes No	► GO to A2. ► SERVICE or REPLACE components as necessary. GO to A2.
A2	CHECK FUEL PUMP FUNCTION		
<ul style="list-style-type: none">● Install the fuel pressure tester on the schrader valve on the fuel injection supply manifold.● Locate the data link connector (DLC) in the engine compartment. Ground fuel pump (FP) lead.● Turn the ignition key to the RUN position to operate the fuel pump.● Raise vehicle on hoist and use stethoscope to listen to fuel tank to monitor fuel pump sound. <p>CAUTION: Unless otherwise specified, at the completion of each step, shut off the fuel pump by removing ground from jumper to FP lead or by turning ignition switch to the OFF position. Grounding the FP lead allows the fuel pump to run continuously when the ignition switch is in the RUN position.</p> <ul style="list-style-type: none">● Is fuel pump running?		Yes No	► GO to A3. ► GO to A6.
<p>DATA LINK CONNECTOR</p> <p>FP LEAD</p> <p>V7577-B</p>			

DIAGNOSIS (Continued)

PINPOINT TEST A: FUEL SYSTEM DIAGNOSTICS (Continued)

TEST STEP		RESULT	ACTION TO TAKE
A3	CHECK FUEL INJECTION SUPPLY MANIFOLD STATIC PRESSURE		
	<ul style="list-style-type: none"> ● Run fuel pump as in A2. ● Verify that the observed fuel pressure is within 255-297 kPa (37-43 psi). ● Observe the time it takes to reach the specified fuel pressure limits. ● Is the fuel pressure with 255-297 kPa (37-43 psi) within 3 seconds of turning key to RUN? <p>NOTE: If fuel has been evacuated from the lines which occurs when a line is disconnected or schrader valve is depressed for an extended time (no fuel in lines), it may take up to 12 seconds to obtain system pressure.</p>	Yes No	GO to A4. If pressure is high, GO to A11. Otherwise, GO to A12.
A4	CHECK FUEL INJECTION SUPPLY MANIFOLD STATIC LEAKDOWN		
	<ul style="list-style-type: none"> ● Run fuel pump as in A2 for 10 seconds and note pressure. ● Turn off fuel pump and monitor pressure for 1 minute. (Remove ground or turn ignition switch to the OFF position.) ● Does the fuel rail pressure remain within 34 kPa (5 psi) of shut off pressure for one-minute? 	Yes No	GO to A5. GO to A13.
A5	TEST VEHICLE UNDER LOAD		
	<ul style="list-style-type: none"> ● Remove and block vacuum hose to pressure regulator. ● Run vehicle at idle and then increase engine speed to 2000 rpm or more in short bursts. ● Does fuel injection supply pressure remain 210-310 kPa (30-45 psi) with engine running? <p>NOTE: Running vehicle under load with vacuum hose removed from fuel pressure regulator (road test) may give better results.</p> <p>NOTE: The Taurus FF vehicle has a voltage control system for the fuel pump. When starting and when the engine speed is greater than 3300 rpm, the fuel pump electrical supply will be at system voltage. At other times, voltage to the fuel pump will be reduced. If this system fails to operate properly, a diagnostic test code will be produced. Refer to Powertrain Control/Emissions Diagnosis² manual for electrical system diagnostics for these codes.</p>	Yes No	Fuel system is OK. DISCONNECT all test connections. CONNECT vacuum hose to pressure regulator. GO to A14 to check injectors. CONNECT vacuum hose to pressure regulator, GO to A6.
A6	CHECK FUEL PUMP VOLTAGE SUPPLY		
	<ul style="list-style-type: none"> ● Check for voltage to fuel pump through the wiring harness by connecting pump power to ground wire leads through a voltmeter. Test point should be in the body wiring harness as close to the fuel pump as is possible. ● Attempt to run pump as in A2. ● Check battery voltage with voltmeter. ● Is voltage greater than 10.5 volts and within 0.5 volt of battery voltage? <p>NOTE: The Taurus FF vehicle has a voltage control system for the fuel pump. When operating the fuel as in Step A2, the fuel pump is powered by system voltage.</p>	Yes No	GO to A7. RUN Self-Test to check electrical system diagnostics. SERVICE as needed, then GO to A3 to verify.

2 Can be purchased as a separate item.

DIAGNOSIS (Continued)

PINPOINT TEST A: FUEL SYSTEM DIAGNOSTICS (Continued)

TEST STEP		RESULT	ACTION TO TAKE
A7	CHECK ELECTRICAL RESISTANCE OF FUEL PUMP		
<ul style="list-style-type: none"> Check for continuity through fuel pump by connecting ohmmeter to pump power and ground wire leads as close to fuel pump as possible. Is there continuity through the fuel pump? 		Yes	<ul style="list-style-type: none"> If fuel pump runs, GO to A8. If fuel pump does not run, GO to A10.
		No	<ul style="list-style-type: none"> REPLACE fuel pump and RECHECK as in A2. If fuel pump runs, GO to A3. If fuel pump does not run, RECHECK fuel pump connectors for oversize connectors or other source of non-continuous electrical circuit. SERVICE as required, GO to A3.
A8	CHECK FUEL PUMP STATIC PRESSURE (IN-LINE FUEL FILTER CHECK)		
<ul style="list-style-type: none"> Install a second fuel pressure tester on schrader valve equivalent installed between fuel pump and the in-line fuel filter, as close to fuel pump as possible. Operate fuel pump as in A3 and compare pressure observed at the fuel injection supply manifold with the pressure observed at the fuel pump. Is pressure at fuel pump within 68 kPa (10 psi) of fuel injection supply manifold pressure? <p>NOTE: When fuel pump is not in operation, the fuel delivery system is at the same pressure, regardless of location of pressure tap. Therefore, both gauges should read the same pressure when pump is not in operation. Any difference in pressure readings when fuel pump is not in operation is due to pressure gauge error.</p>		Yes	<ul style="list-style-type: none"> GO to A10.
		No	<ul style="list-style-type: none"> REPLACE in-line fuel filter and GO to A3. If pressure is OK, GO to A4. If pressure is not OK, RECHECK fuel lines for kinks or other restrictions. SERVICE and RECHECK as in Step A3.
A9	TEST FUEL PUMP CHECK VALVE		
<ul style="list-style-type: none"> Install fuel pressure tester on schrader valve equivalent installed between fuel pump and in-line fuel filter, as close to fuel pump as possible. Operate fuel pump momentarily as in A2 and bring pressure to about system pressure. Observe fuel pressure for one minute. Does pressure remain within 34 kPa (5 psi) of starting pressure over one minute period? 		Yes	<ul style="list-style-type: none"> GO to A5.
		No	<ul style="list-style-type: none"> REPLACE fuel pump assembly. RECHECK pressure as in Step A3.
A10	CHECK STATIC FUEL PUMP CURRENT DRAW		
<ul style="list-style-type: none"> Install an ammeter in series with the fuel pump electrical circuit. Operate fuel pump as in A2. Is current draw within 2-9 amps? 		Yes	<ul style="list-style-type: none"> Static test of fuel pump is OK. GO to A14 to check injectors. Dynamic testing may be required to detect root cause.
		No	<ul style="list-style-type: none"> REPLACE fuel pump assembly. If current is high, contamination may be a concern. INSPECT fuel tank for debris and CLEAN tank as needed. GO to A2.
A11	CHECK FUEL PRESSURE REGULATOR		
<ul style="list-style-type: none"> Disconnect return line at fuel pressure regulator. Connect outlet of regulator to appropriate receptacle to catch return fuel. Run fuel pump as in Step A2. Is fuel pressure within 255-297 kPa (37-43 psi)? 		Yes	<ul style="list-style-type: none"> GO to A18.
		No	<ul style="list-style-type: none"> REPLACE fuel pressure regulator. RECHECK pressure as in Step A3.

DIAGNOSIS (Continued)

PINPOINT TEST A: FUEL SYSTEM DIAGNOSTICS (Continued)

TEST STEP		RESULT	ACTION TO TAKE
A12	CHECK FUEL PRESSURE REGULATOR		
	<ul style="list-style-type: none"> Disconnect return line at fuel pressure regulator. Connect outlet of regulator to appropriate receptacle to catch return fuel. Run fuel pump as in Step A2. Is fuel being returned from regulator with low pressure in system? 	<p>Yes</p> <p>No</p>	<p>REPLACE regulator. RECHECK pressure as in Step A3.</p> <p>GO to A4.</p>
A13	CHECK FUEL PRESSURE REGULATOR FOR LEAKS		
	<ul style="list-style-type: none"> Disconnect return line at fuel pressure regulator. Connect outlet of regulator to appropriate receptacle to catch return fuel. Run fuel pump as in A2. Turn off fuel pump by removing ground or turning ignition to OFF position. Observe fuel return flow from regulator and system when pump is off. Remove vacuum hose from fuel pressure regulator and check for presence of fuel in regulator fitting (diaphragm leak). Is there return flow when pump is turned off and system pressure is dropping or is there fuel in regulator fitting? 	<p>Yes</p> <p>No</p>	<p>REPLACE regulator and RECHECK pressure and leakage as in Steps A3 and A4. If OK, GO to A5. If not OK, REPEAT Step A3.</p> <p>If leakdown concern exists, GO to A8. Otherwise, GO to A7.</p>
A14	CHECK FUEL INJECTOR FUNCTION		
	<ul style="list-style-type: none"> With the engine warmed and idling (or cranking it if it does not start) and using a mechanics stethoscope or equivalent, listen for regularly spaced operating sounds at each fuel injector. Is operating sound present? 	<p>Yes</p> <p>No</p>	<p>GO to A17.</p> <p>GO to A15.</p>
A15	CHECK FUEL INJECTOR RESISTANCE		
	<ul style="list-style-type: none"> Key off. Disconnect the electrical connector of the injector (one at the time). Measure the resistance of each injector, using the DVOM. Are all resistances between 13.0 and 18.0 ohms? 	<p>Yes</p> <p>No</p>	<p>GO to A16.</p> <p>REPLACE the worn or damaged injectors. RECONNECT injectors.</p>
A16	CHECK FUEL INJECTOR ELECTRICAL CONTINUITY SIGNAL		
	<ul style="list-style-type: none"> Key off. Disconnect the injector lead and insert the continuity checker FA-407 (from the Rotunda Fuel Injector Tester 113-00001) into the injector lead plug. Start the engine. Observe whether the continuity checker blinks (showing a completed circuit for the injector being tested). Repeat the check for each injector. Do all injector circuits show continuity? 	<p>Yes</p> <p>No</p>	<p>GO to A17.</p> <p>CHECK for 12 volts at each injector lead. SERVICE or REPLACE leads as required. REFER to EEC-IV Quick Test.</p>

DIAGNOSIS (Continued)

PINPOINT TEST A: FUEL SYSTEM DIAGNOSTICS (Continued)

TEST STEP		RESULT	ACTION TO TAKE
A17	CHECK FUEL INJECTOR FLOW AND LEAKAGE		
<ul style="list-style-type: none"> ● Observe "Note, Caution and Warning" to avoid fuel spillage and injury. ● Using the Fuel Injector Tester as described in the accompanying instruction test the fuel injectors and verify that the flow rate for injector group is within specification. ● With the tester still installed on the fuel system, note any significant pressure loss due to injector leakage when the tester pump is turned off. ● Check the fuel injectors individually for leakage as required using the Injector Bench Fixture and the Fuel Injector Bench Testing Procedure associated with the Rotunda Tester as required and verify that each injector leakage rate is within specification (1 drop per minute maximum). ● Is flow rate for the injector group and the leakage rate for individual injectors within specification? 		Yes	Fuel injectors are OK. If pressure leakdown concern exists in system, CHECK lines and connections between fuel pump and pressure regulator for leaks. SERVICE as necessary.
		No	
A18	CHECK FUEL RETURN SYSTEM FOR HIGH PRESSURE CAUSES		
<ul style="list-style-type: none"> ● Observe the "Note, Caution and Warning" to avoid fuel spillage and injury. ● Check the fuel return system for restriction due to blockage, kinking, or pinching. ● Remove the fuel return line at the fuel pressure regulator. ● Apply 21-34 kPa (3-5 psi) regulated, filtered, shop air to the fuel return line. ● Do you hear air entering the tank? 		Yes	GO to A19.
		No	GO to A19.
A19	CHECK FUEL RETURN SYSTEM PRESSURE		
<ul style="list-style-type: none"> ● Key off. ● Reconnect fuel return line at the fuel pressure regulator. ● Install a second fuel pressure tester on schrader valve equivalent installed in the return line at the fuel tank. ● Operate fuel pump as in Step A3 and compare pressure observed at fuel injection supply manifold with the pressure observed at the fuel tank. ● Is pressure at the fuel tank within 34 kPa (5 psi) of fuel injection supply manifold pressure? 		Yes	VERIFY that fuel injection supply manifold pressure is higher than specification limits. REPLACE pressure regulator and RECHECK as in Step A3.
		No	SERVICE the return fuel line to remove excessive restriction. REPEAT Step A3 to verify.

TESTING

Refer to the Powertrain Control/Emissions Diagnosis Manual³ for testing procedures.

Air Cleaner

Refer to Section 00-03 for the recommended engine air cleaner (9600) assembly maintenance mileage interval. **Cleaning the engine air cleaner or crankcase ventilation filter elements is not recommended.** They should be replaced at the specified mileage intervals. Clean the engine air cleaner body and the cover with a solvent or compressed air. Wipe the engine air cleaner body and cover dry if a solvent is used. Inspect the engine air cleaner body and cover for distortion or damage at the gasket mating surfaces. Replace engine air cleaner 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.

CLEANING AND INSPECTION

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.

³ Can be purchased as a separate item.

CLEANING AND INSPECTION (Continued)**Idle Air Control (IAC) Valve**

CAUTION: The idle air control (IAC) valve is a sludge tolerant design and should not be cleaned as damage may occur.

ADJUSTMENTS

Refer to the Powertrain Control/Emissions Diagnosis Manual⁴ for adjustments.

SPECIFICATIONS

Refer to the Engine/Emissions Facts Book and Calibration number.

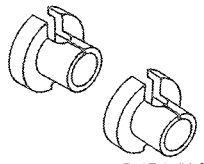
FUEL PRESSURE SPECIFICATIONS

Description	Specification
Engine Running	30-45 psi 210-310 kPa
Key ON Engine OFF	37-43 psi 255-297 kPa

FUEL PUMP CURRENT SPECIFICATION

Description	Specification
Key ON, Engine OFF	2-9 Amps

SPECIAL SERVICE TOOLS

Tool Number/ Description	Illustration
T90T-9550-B Fuel Line Disconnect Tool 5/16" T90T-9550-C Fuel Line Disconnect Tool 3/8"	 T90T-9550-S

ROTUNDA EQUIPMENT

Model	Description
007-00001	Digital Volt-Ohmmeter
014-00748	Fuel Pressure Testing Kit
113-00001	Fuel Injector Tester

PARTS CROSS-REFERENCE

Base Part #	Part Name	Old Part Name
9600	Engine Air Cleaner	

⁴ Can be purchased as a separate item.

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

SUBJECT	PAGE	SUBJECT	PAGE
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VEHICLE APPLICATION

Taurus / Sable.

DESCRIPTION AND OPERATION

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IF YOU GET FUEL METHANOL OR GASOLINE ON YOUR SKIN, WASH WITH SOAP AND WATER. REPEATED OR PROLONGED SKIN CONTACT WITH METHANOL OR GASOLINE LIQUID OR VAPOR CAUSES SKIN IRRITATION. MAKE SURE YOU WASH YOUR HANDS BEFORE HANDLING FOOD.

DESCRIPTION AND OPERATION (Continued)

IF YOU ARE TAKING MEDICATION FOR THE TREATMENT OF ALCOHOLISM, SUCH AS ANTABUSE OR OTHER FORMS OF DISULFIRAM, SKIN CONTACT WITH FUEL METHANOL OR BREATHING ITS VAPORS CAN CAUSE THE SAME KIND OF ADVERSE REACTION AS DRINKING ALCOHOL. IN SENSITIVE INDIVIDUALS, SERIOUS PERSONAL INJURY OR SICKNESS COULD RESULT. IF YOU ARE TAKING SUCH MEDICATION, YOU SHOULD TAKE EXTRA CARE TO AVOID SKIN CONTACT WITH FUEL METHANOL AND TO AVOID BREATHING ITS VAPORS. IF YOU DO GET FUEL METHANOL ON YOUR SKIN, WASH IT OFF IMMEDIATELY. CONSULT A PHYSICIAN PROMPTLY IF YOU EXPERIENCE AN ADVERSE REACTION.

WARNING: DO NOT MODIFY THE FUEL SYSTEM CONFIGURATION OR COMPONENTS, OR REPLACE COMPONENTS WITH PARTS NOT ESPECIALLY DESIGNED FOR USE WITH FUEL METHANOL. FORD MOTOR COMPANY HAS SPECIALLY-DESIGNED THE MATERIALS, COMPONENTS AND SYSTEM CONFIGURATION FOR METHANOL-FUELED VEHICLES AND EACH PARTICULAR SYSTEM IS PRECISELY CALIBRATED FOR EFFICIENT OPERATION. THE USE OF DIFFERENT PARTS OR MATERIALS COULD PRODUCE AN UNTESTED CONFIGURATION THAT COULD RESULT IN FIRE, PERSONAL INJURY, OR COULD CAUSE ENGINE DAMAGE.

WARNING: DO NOT OPERATE ENGINE OR SMOKE WHILE REFUELING.

CAUTION: Use only fuel methanol which meets Ford Specification ESE-M4C97-B. Use of other fuel methanol may cause powertrain damage as well as loss of vehicle performance. It will also invalidate any extended service agreement.

WARNING: IT IS IMPORTANT THAT YOUR FLEXIBLE FUEL VEHICLE BE PROPERLY MAINTAINED BY FORD FLEXIBLE FUEL TRAINED PERSONNEL. IF A PROBLEM OCCURS, IT IS IMPORTANT THAT PROPERLY TRAINED PERSONNEL DIAGNOSE THE CAUSE. IF THE PROBLEM RELATES TO THE FUEL SYSTEM, PROPER PART REPLACEMENT IS IMPERATIVE TO KEEP YOUR VEHICLE OPERATING AT NORMAL PERFORMANCE. FLEXIBLE FUEL COMPONENTS AND STANDARD FUEL COMPONENTS ARE NOT INTERCHANGEABLE AND IF YOUR VEHICLE IS NOT SERVICED IN ACCORDANCE WITH FLEXIBLE FUEL VEHICLE PROCEDURES, DAMAGE MAY OCCUR AND YOUR WARRANTY MAY BE INVALIDATED.

Fuel Injected Engines

The fuel systems which are used with fuel injected engines have electric fuel pumps to provide high-pressure fuel to the injectors. The high-pressure pump is part of the fuel tank sending unit and pump (9H307) and is located in the fuel tank (9002).

The fuel lines leading from the fuel tank to the engine are under pressure during vehicle operation. When fuel injected engines are turned off, the fuel in the fuel lines remains pressurized for long periods of time to provide quick start-ups. Special procedures for servicing these pressurized fuel systems are outlined.

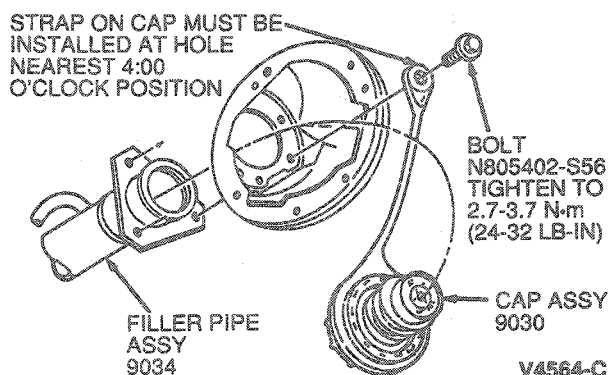
Fuel Lines

All vehicles (except Police and flexible fuel (FF) vehicles), use nylon lines with push connect fittings or spring lock couplings. Police and the flexible fuel vehicles use a combination of nylon / stainless steel fuel lines with steel push connect fittings and spring lock couplings. The steel push connect and spring lock couplings used on the flexible fuel vehicles have special O-rings for methanol fuel compatibility.

In the base and Police vehicles, nylon push connect fittings are used to make the fuel line connections to the fuel pump in the fuel tank and to the fuel filter (9155). Spring lock couplings connect the fuel lines to the engine. The flexible fuel vehicles use steel push connect fittings to make the fuel line connections to the fuel pump and the fuel drain tube in the fuel tank, fuel filter and the fuel mixer / sensor assembly. Special spring lock couplings with methanol compatible O-rings connect the fuel lines to the engine. Unique nylon vapor connectors are used to connect the vapor management system in the FF vehicles. These fittings must be serviced using the procedures outlined.

Fuel Tanks and Fillers

All vehicles, (except FF vehicles), are equipped with a restricted fuel filler opening that allows only a non-leaded fuel nozzle to be inserted.



The restrictor consists of a narrow opening in the fuel tank filler pipe (9034), covered by a spring steel trap door. The smaller non-leaded fuel nozzle will fit through the narrow opening and push the trap door aside, allowing normal filling. Leaded fuel nozzles will not fit through the narrow opening. The trap door being closed causes a fuel backup and automatic nozzle shutoff.

DESCRIPTION AND OPERATION (Continued)

The restricted fuel tank filler pipe is manufactured as an assembly, and must be serviced by removal and replacement with a new fuel tank filler pipe assembly. Fuel tank filler pipes are not to be modified in any way.

Fill limiting is accomplished through fuel tank filler pipe configuration. The fill limiting system is designed to permit an approximate 10 to 12 percent fuel tank volume air space when the fuel tank is filled to capacity. This air space provides for thermal expansion of fuel as well as being an aid to the in-tank vapor vent system.

FF Vehicle Fuel Filler Pipe

The fuel tank filler pipe has a special methanol resistant coating to protect against corrosion. A special screen is installed in the fuel tank filler pipe to prevent syphoning of fuel from the fuel tank through the fuel tank filler pipe. A vent hose is connected between the top of the fuel tank filler pipe and the fuel vapor valve (9B593) on the fuel tank.

Fuel Cap

WARNING: FUEL TANK MAY BE PRESSURIZED. REMOVE FUEL TANK FILLER CAP SLOWLY. IF FUEL TANK FILLER CAP IS VENTING FUEL OR A HISSING SOUND IS HEARD, WAIT UNTIL THE CONDITION STOPS BEFORE REMOVING THE FUEL TANK FILLER CAP. IF THESE PRECAUTIONS ARE NOT FOLLOWED, FUEL MAY SPRAY AND CAUSE PERSONAL INJURY.

The fuel tank filler cap (9030) is a threaded screw-on design with a pre-vent feature that allows the fuel tank to vent for the first three-quarter turn before unthreading. All fuel tank filler caps are attached to the vehicle with a tether using the fuel tank filler pipe-to-housing screw at the three to four o'clock position. The fuel tank filler cap assembly provides pressure and vacuum relief functions and should be replaced with the proper pressure / vacuum relief fuel tank filler cap to prevent possible system malfunction. The fuel tank filler cap is fitted with a torque-limiting ratchet to prevent difficulty in removal. When installing, turn clockwise until the ratchet mechanism gives off three or more distinct "clicks".

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.

Fuel Filter

Fuel is filtered at three locations on all applications.

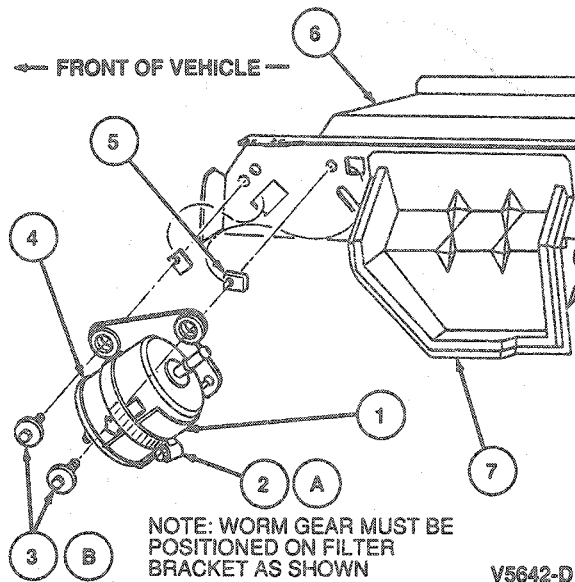
Fuel Pump Inlet Filter

A nylon filter element is mounted on the electric fuel pump inlet inside the fuel tank and is used to protect the fuel pump (FP) (9350) from fuel tank contaminants.

Fuel Filter, In-Line

The purpose of the in-line fuel filter is to provide filtration to protect the small metering orifices of the injector nozzles. The fuel filter is located downstream of the electric fuel pump and is mounted on the underbody. The fuel filter is a one-piece construction which cannot be cleaned. If it becomes clogged it must be replaced.

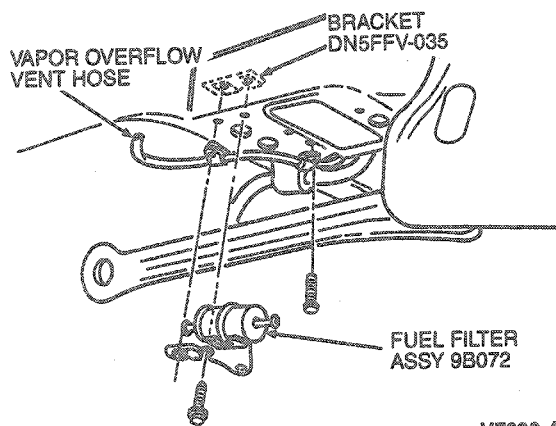
The FF vehicle fuel filter is fuel methanol compatible. Use of a gasoline fuel filter will result in failure of the filter. The filter is located at the rear of the fuel tank.



Item	Part Number	Description
1	9B072	Filter and Bracket Assy
2A	—	Worm Gear Mounting Clamp
3B	N606679-S56	Screw (2 Req'd)
4	9155	Filter
5	N623332-S36	U-Nut (2 Req'd)
6	—	Underside Of Right Rear Frame Rail
7	—	Right Rear Tension Strut Support Bracket
A		Tighten to 1.7-2.8 N·m (15-25 Lb·In)
B		Tighten to 8-12 N·m (71-106 Lb·In)

DESCRIPTION AND OPERATION (Continued)

FF Vehicles

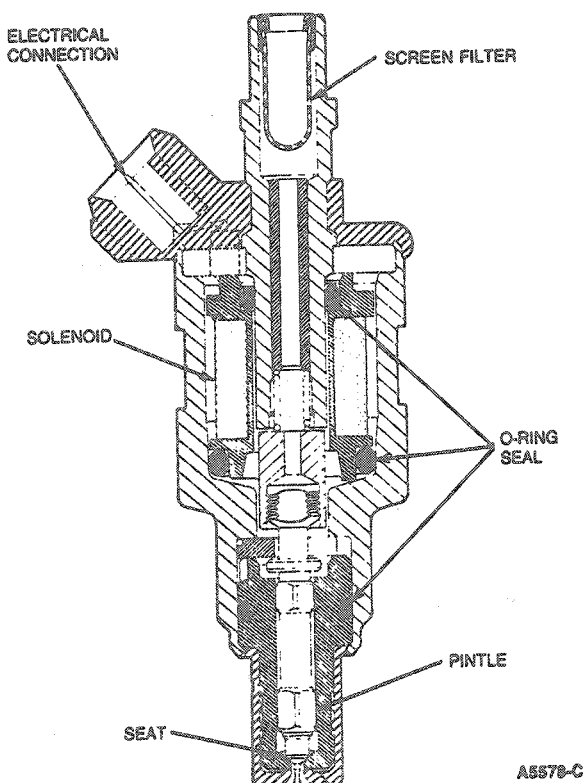


NOTE: When replacing fuel filters, use the fuel filter specified for the engine being serviced.

Injector Filter Screen

An injector filter is located at the top of each injector and is not serviceable. If injector screen becomes clogged, the complete injector assembly must be replaced. Refer to Section 03-04A (3.0L / 3.0L FF), 03-04B (3.0L / 3.2L SHO), and 03-04C (3.8L) for fuel injector information.

Fuel Injector



Fuel Pump (FP)

NOTE: The FF vehicle fuel pump operates the same as unleaded gasoline fuel pumps, but is made of methanol compatible materials.

The fuel system has a fuel pump relay controlled by the powertrain control module (PCM) (12A650), which provides power to the fuel pump under various operating conditions. When the ignition switch is in the OFF position, the contacts of the powertrain control module (PCM) power and fuel pump relays are open. The fuel pump and powertrain control module (PCM) relays are contained in the constant control relay module (CCRM) (12B577) which is serviced as a separate unit.

When the ignition switch is first turned to the ON position, the powertrain control module (PCM) power relay is energized, closing its contacts. Power is provided to both the fuel pump relay and a timing device in the powertrain control module (PCM). The fuel pump runs through the contacts of the fuel pump relay and the inertia switch. If the ignition switch is not turned to the START position, the timing device in the powertrain control module (PCM) will open the ground Circuit 57 after approximately one second. Opening the ground circuit de-energizes the fuel pump relay (opening its contacts), which in turn de-energizes the fuel pump. This circuitry provides for pre-pressurization of the fuel system.

When the ignition switch is turned to the START position, the powertrain control module (PCM) operates the fuel pump relay to provide fuel for starting the engine while cranking.

After the engine starts, the ignition switch is returned to the ON position, and power to the fuel pump is again supplied through the fuel pump relay. The powertrain control module (PCM) senses engine speed and shuts off the fuel pump by opening the ground circuit to the fuel pump relay when the engine stops, or is below 120 rpm.

The fuel system uses a fuel tank sending unit and pump assembly. The fuel tank has an internal reservoir in which the fuel tank sending unit and pump rests. This design increases satisfactory pump operation during extreme vehicle maneuvers and steep vehicle attitudes with low tank fill levels.

The fuel pump is mounted on the fuel sender assembly inside the fuel tank. This assembly includes a check valve which is inside the fuel pump outlet. The function of this valve is to maintain pressure in the system after the vehicle is shut down.

DESCRIPTION AND OPERATION (Continued)

The pressure retention helps prevent hot starting concerns. The pump for the 3.0L MFI, 3.8L MFI and 3.2L SHO is capable of supplying 60 liters (15.8 gal) of fuel per hour at 269 kPa (39 psi). The pump for the 3.0L SHO is capable of supplying 110 L (29 gal) of fuel per hour at 269 kPa (39 psi). The pump for the 3.0L FF vehicle is capable of supplying 145 L (38 gal) of fuel per hour at 269 kPa (39 psi). The fuel pump has an internal pressure relief valve to provide overpressure protection in the event the fuel flow becomes restricted (damaged lines, clogged, filter, etc.). Overpressure is restricted to 850 kPa (123 psi) and reduced fuel flow will result. The system pressure is controlled by a pressure regulator mounted on the engine.

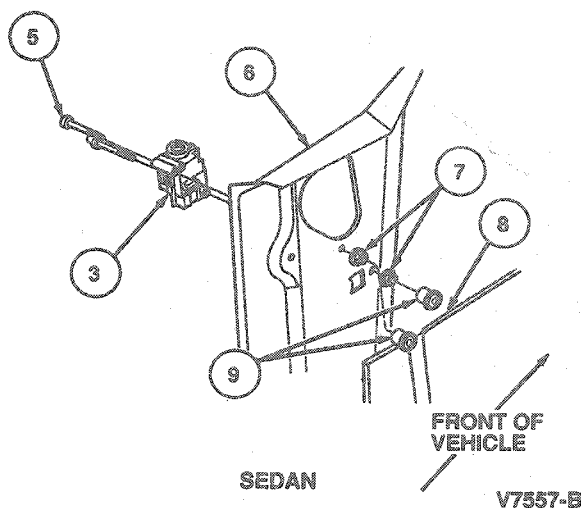
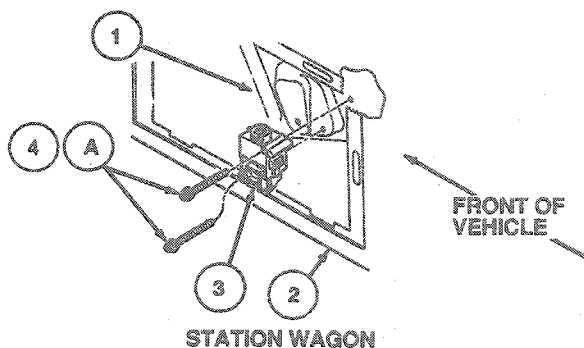
The fuel pump is protected at its inlet by a nylon pick-up screen. It filters dirt and contaminants which could plug or damage the internal pump components, while at the same time allowing passage of small quantities of water which may accumulate within the fuel tank reservoir.

Inertia Fuel Shutoff Switch (IFS)

In the event of a collision, the electrical contacts in the inertia fuel shutoff switch (9341) open and the fuel pump automatically shuts off. The fuel pump will shut off even if the engine does not stop running. However, the engine will stop a few seconds after the fuel pump stops. It is not possible to restart the engine until the inertia fuel shutoff switch is manually reset. The inertia fuel shutoff switch is located in the luggage compartment on the door hinge support above the LH inner wheel house on the sedan and on the RH rear lower corner pillar reinforcement behind an access door, on the station wagon. Both locations are clearly marked on the vehicles.

CAUTION: Do not reset the inertia fuel shutoff switch until the fuel system has been inspected for leaks.

To reset the inertia fuel shutoff switch, depress the button on switch.



Item	Part Number	Description
1	—	RH Rear Inner Quarter Panel
2	—	Interior Trim Panel
3	9341	Inertia Fuel Shutoff Switch
4A	55911-S36	Screw (2 Req'd)
5	11N523	Retainer
6	—	LH Rear Inner Quarter Panel
7A	N621900-S2	Nut and Washer Assy (2 Req'd)
8	—	Luggage Compartment Liner
9	390694-S	Cap Plugs (2 Req'd)
A		Tighten to 1.5-2.2 N·m (14-19 Lb-in)

REMOVAL AND INSTALLATION

Most component parts of the standard fuel system are retained by a simple nut, bolt or screw for removal and installation. Refer to individual system illustrations for specific part references.

REMOVAL AND INSTALLATION (Continued)

Fuel System Pressure Relief

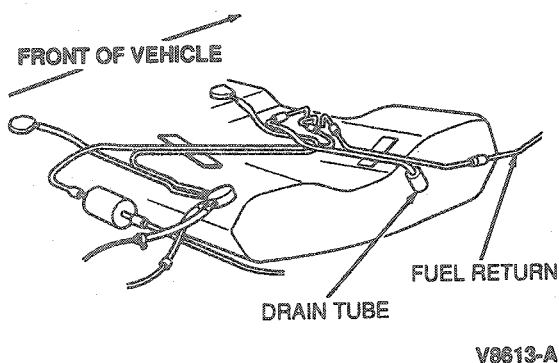
WARNING: FUEL SUPPLY LINES WILL REMAIN PRESSURIZED FOR LONG PERIODS OF TIME AFTER ENGINE SHUT DOWN. THIS PRESSURE MUST BE RELIEVED BEFORE SERVICING OF THE FUEL SYSTEM IS BEGUN. A VALVE IS PROVIDED ON THE FUEL CHARGING ASSEMBLY FOR THIS PURPOSE. REMOVE THE AIR CLEANER. ATTACH EFI AND CFI FUEL PRESSURE GAUGE T80L-9974-B OR EQUIVALENT TO THE FUEL DIAGNOSTIC VALVE ON THE FUEL CHARGING ASSEMBLY. PRESSURE IN THE FUEL SYSTEM MAY NOW BE RELEASED.

Fuel Tank Draining Procedure — Flexible Fuel Vehicles

NOTE: The flexible fuel vehicle fuel tank cannot be drained through the fuel tank filler pipe. A special screen is installed in the fuel tank filler pipe to prevent siphoning of fuel through the fuel tank filler pipe. The fuel tank on this vehicle is equipped with a drain tube connected to the fuel tank sending unit and pump on the RH side of the vehicle which has a quick disconnect for this purpose. It is not necessary to lower the fuel tank to drain the system.

Drain the system as follows:

1. Depressurize fuel system as outlined under Fuel System Pressure Relief.
2. Remove foam cover and protective rubber cover from drain tube.



3. Connect drain tube quick disconnect fitting to Rotunda Fuel Storage Tanker and Adapter Hose 034-00020. Drain fuel from fuel tank.

Fuel Tank

Unleaded Gasoline Vehicles

Tools Required:

- Fuel Tank Sender Switch T74P-9275-A
- Rotunda Fuel Storage Tanker 034-00002
- Rotunda Adapter Hose 034-00012

Removal

1. Depressurize fuel system as outlined under Fuel System Pressure Relief.
2. Fuel should be drained from fuel tank as completely as possible prior to fuel tank removal. On unleaded gasoline vehicles, this is accomplished by siphoning or pumping fuel out the fuel tank filler pipe using Rotunda Fuel Storage Tanker 034-00002 and Adapter Hose 034-00012 or equivalent.

Vehicles with fuel injected engines have reservoirs inside fuel tank to maintain fuel near fuel pickup during vehicle cornering maneuvers and under low fuel operating conditions. These reservoirs could block siphon tubes or hoses from reaching bottom of fuel tank. This situation can be overcome with a few repeated attempts using different hose orientations.

3. Loosen fuel tank filler pipe and vent hose clamps at fuel tank and remove hoses from fuel tank.
4. Place a safety support under fuel tank and remove bolts from rear of fuel tank support straps (9092). The fuel tank support straps are hinged at the front and will swing out of the way.
5. Partially remove fuel tank and disconnect fuel lines and electrical connector from fuel tank sending unit and pump, if required. Refer to Push Connect Fitting Removal.
6. Remove fuel tank from vehicle.

Installation

NOTE: If fuel tank sending unit and pump has been removed, the O-ring seal on unleaded gasoline vehicles or gasket on Flexible Fuel vehicles must be replaced.

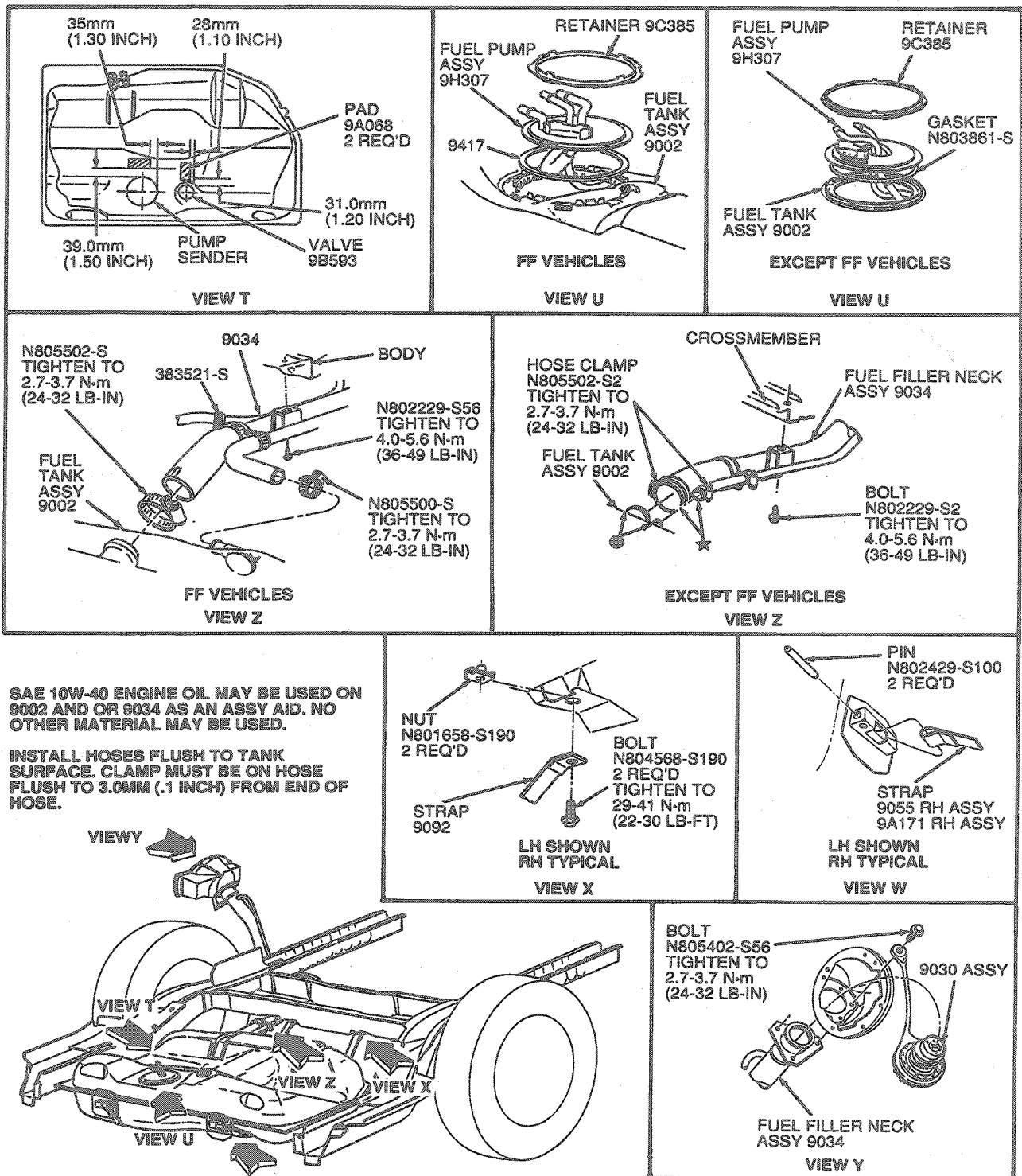
1. Before proceeding, check following items:
 - a. Leak check sender unit. If necessary, use Fuel Tank Sender Wrench T74P-9275-A or equivalent.
 - b. Ensure fuel vapor valve is installed completely on fuel tank top.
 - c. Make all required fuel line, fuel return line, vapor vent and electrical connections which will be inaccessible after fuel tank is installed. Route lines through clip on fuel tank.
2. Place fuel tank in its proper position in vehicle.
3. Bring fuel tank support straps around fuel tank and start retaining bolt. Align fuel tank as far forward in vehicle as possible while securing retaining bolts.

CAUTION: If equipped with heat shield, make sure that it is installed with fuel tank support straps and positioned correctly on the fuel tank.

4. Check hoses and wiring mounted on fuel tank top, to ensure they are correctly routed and will not be pinched between fuel tank and body.
5. Tighten fuel tank support strap retaining bolts to 29-41 N·m (22-30 lb-ft).

REMOVAL AND INSTALLATION (Continued)

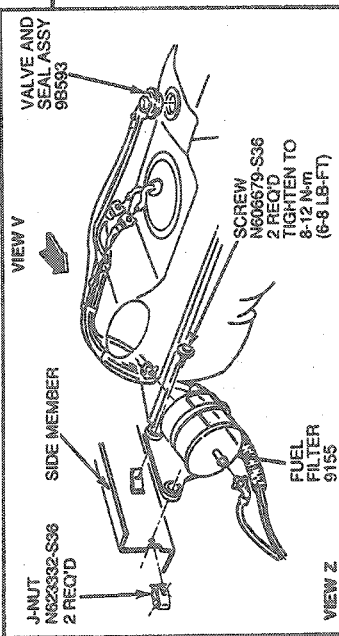
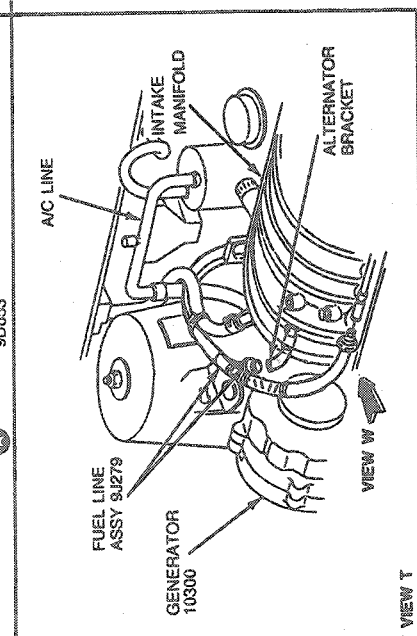
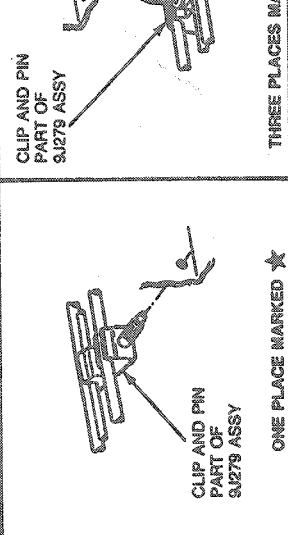
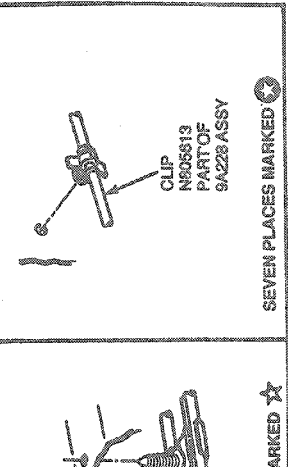
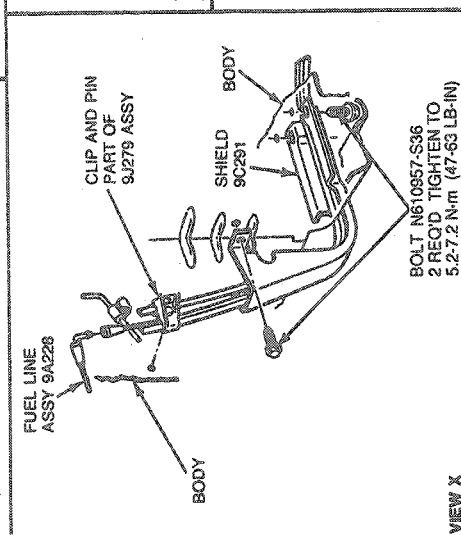
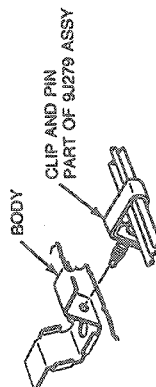
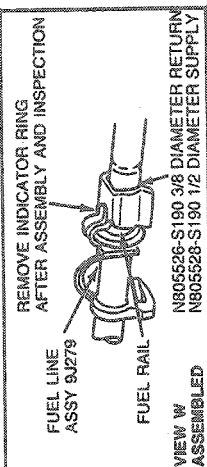
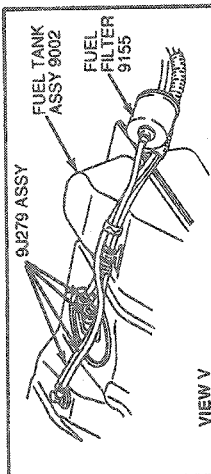
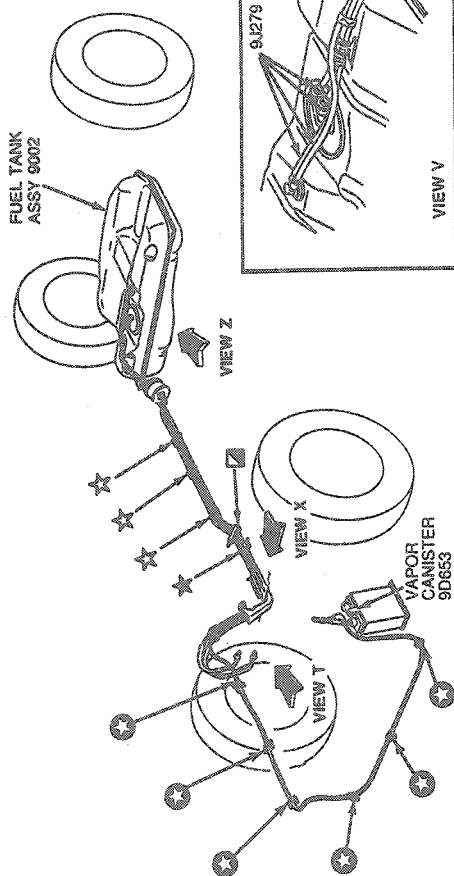
6. Install fuel filler hoses which connect fuel tank to fuel tank filler pipe. Install hose clamps and tighten to 2.7-3.7 N·m (24-32 lb-in).
7. Replace fuel drained from fuel tank.
8. Start engine and check all connections for leaks.



REMOVAL AND INSTALLATION (Continued)

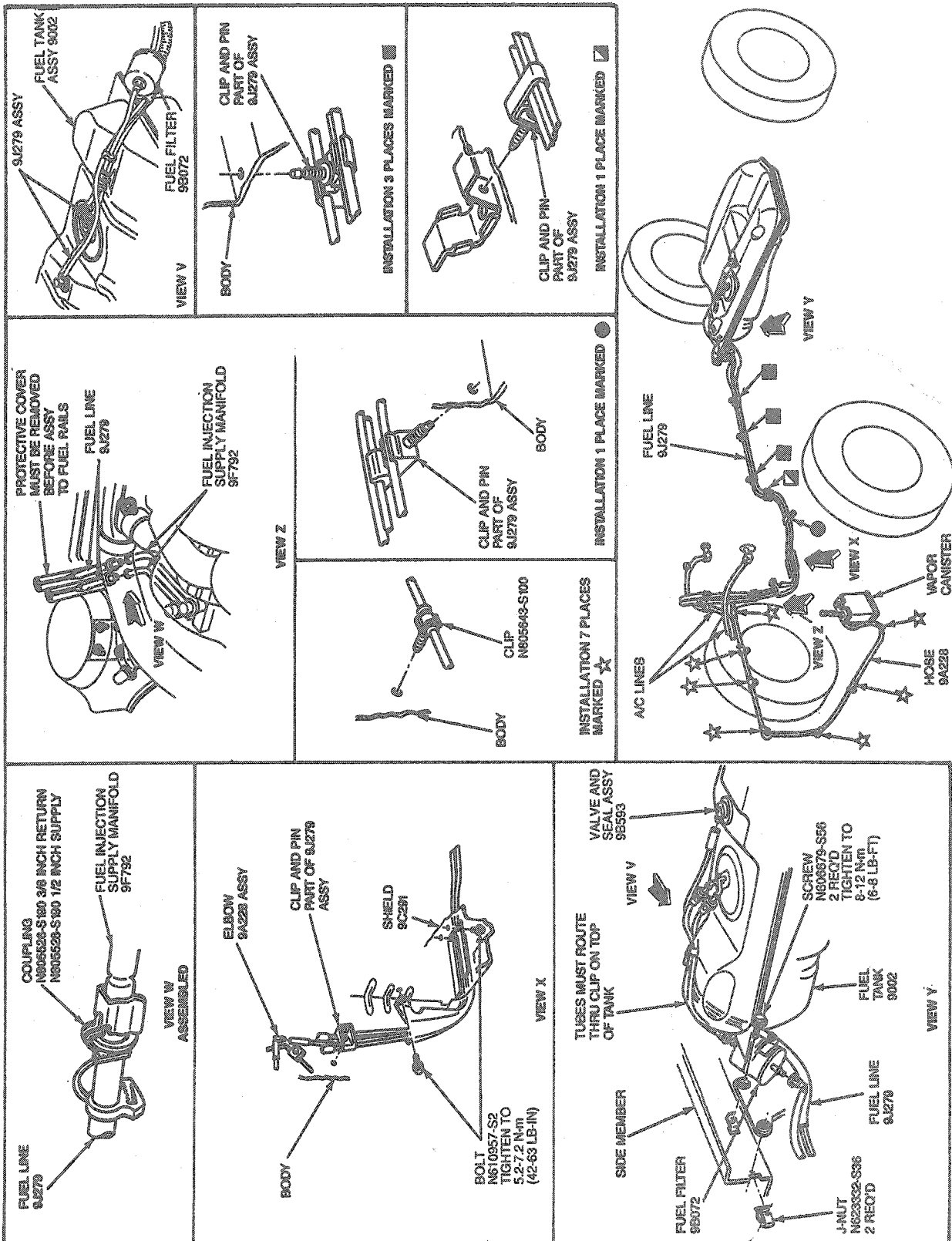
3.0L Engine

- ★ INSTALL HOSE ON TUBE 15mm (.62 INCH)
- ALIGN PUSH CONNECTOR WITH METAL TUBE END AND INSTALL UNTIL A CLICK IS HEARD AND/OR FELT AND BEAD IS INSIDE OUTER LIP OF PUSH CONNECTOR. PULL BACK ON THE PUSH CONNECTOR APPROX. 44.5 N (10 LBS) FORCE
- ★ SAE-10W-40 ENGINE OIL OR ESC-M99B144-A LUBRICANT MUST BE USED ON 98593 (SEPARATOR) AND/OR 98076 (SEAL) AS AN ASSEMBLY AID. NO OTHER MATERIAL MAY BE USED.
- ★ ESE-M99B144-A A LUBRICANT MAY BE USED AS AN ASSEMBLY AID FOR ASSEMBLY OF HOSES ON TUBES. NO OTHER MATERIAL MAY BE USED.



REMOVAL AND INSTALLATION (Continued)

3.0L/3.2L SHO Engine

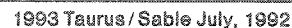


V7347-C

3.8L Engine (Except Police)

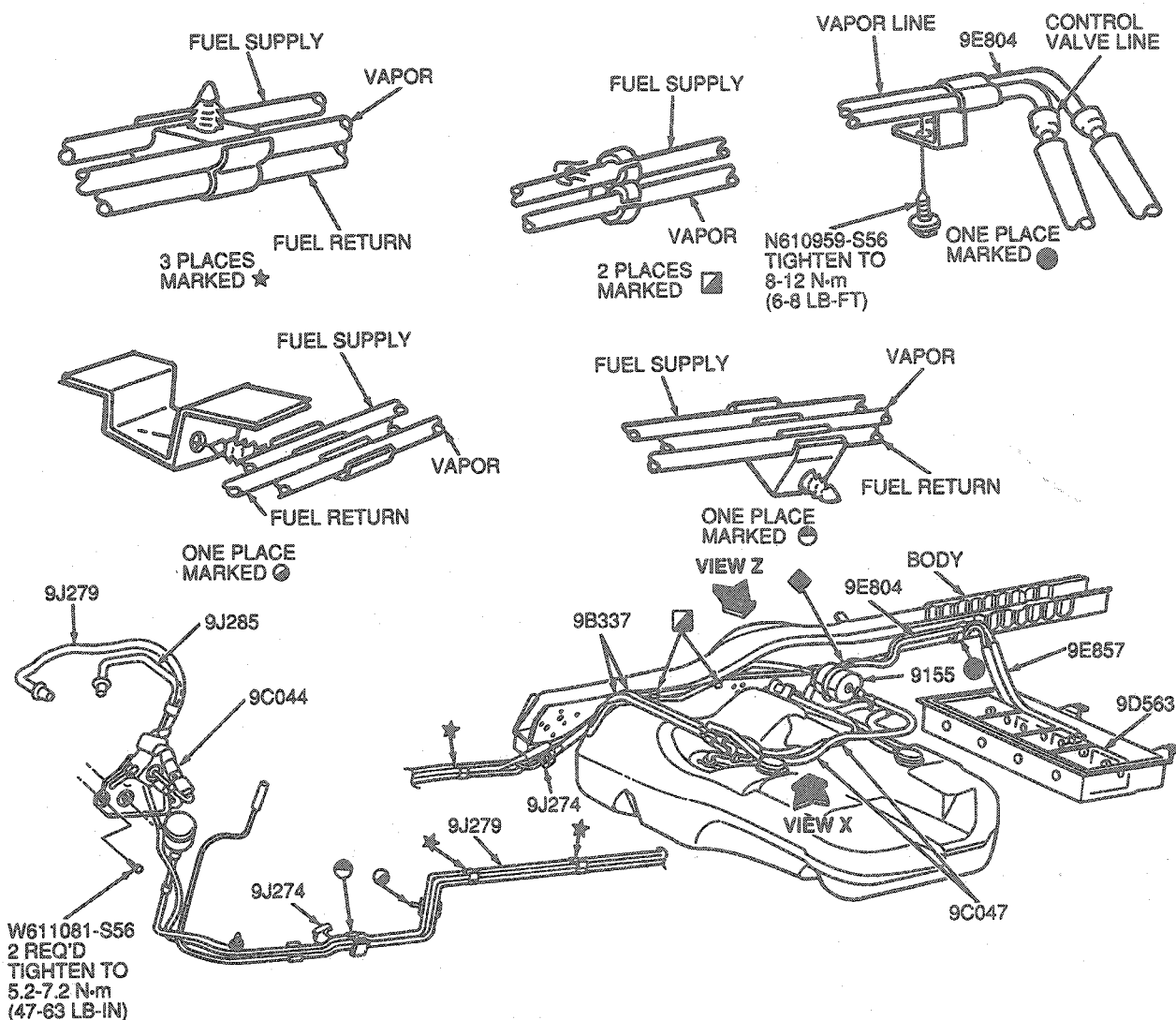


3.8L Police

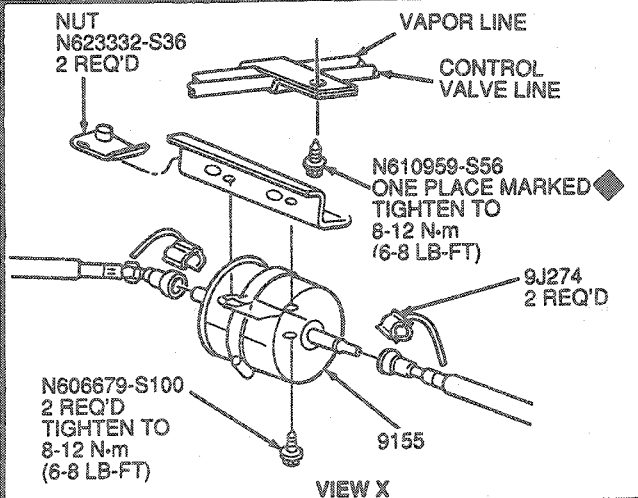
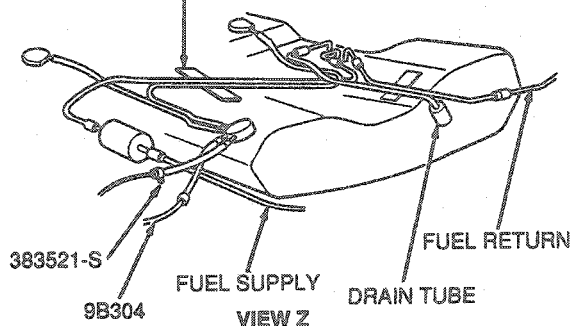


REMOVAL AND INSTALLATION (Continued)

3.0L Flexible Fuel Vehicle



ESB-M3658-A
2 PLACES
INSTALL AS SHOWN AFTER
FUEL LINE (9B337) INSTALLATION



V8618-A

REMOVAL AND INSTALLATION (Continued)**Filler Pipe****Removal**

1. Open filler door to remove three screws retaining fuel tank filler pipe to pocket. Mark filler cap tether location.
2. Raise vehicle. Refer to Section 00-02.
3. Loosen filler and vent hose on fuel tank filler pipe.
4. Remove bolt retaining fuel tank filler pipe assembly to underbody.
5. Remove fuel tank filler pipe.

Installation

1. Position fuel tank filler pipe in body location.
2. Connect hoses with clamps to fuel tank filler pipe.
3. Install underbody fuel tank filler pipe assembly bolt. Tighten to 4-6 N·m (36-53 lb-in).
4. Lower vehicle.
5. Install fuel tank filler cap to tether location and install three retaining screws.

3. Pull fuel tank support strap down until pin is fully seated on bottom of bracket.

Fuel Tank Straps**Removal**

Fuel tank support straps may be removed, and / or replaced without removing the tank, if each fuel tank support strap is removed and installed one at a time and a support is provided under the fuel tank.

The hinged end of the fuel tank support strap attachment holds the fuel tank support strap in place after the fuel tank is removed. This hinged end uses a pin-type attachment through a loop in the end of the fuel tank support strap.

1. To remove fuel tank support strap, push fuel tank support strap up into bracket until pin lines up with large hole. There is a guide and stop inside bracket to assist in aligning fuel tank support strap for removal and installation of pin.

NOTE: A magnetized screwdriver is helpful to draw pin out of large opening in bracket if pin does not line up properly.

2. Push pin out of large hole in side of bracket by inserting a small drift pin or punch into small hole in opposite side of bracket.

Installation

1. Push fuel tank support strap into bracket opening.

CAUTION: The pin must rest flat against bottom of bracket. If it does not, fuel tank could be damaged. Do not install fuel tank. Attempt to position pin so that it will seat properly. If unsuccessful, remove pin and fuel tank support strap. Check for, and remove any obstruction that may be inside bracket. Check to ensure pin is correct length.

2. Insert pin into loop in fuel tank support strap.

Fuel Lines—Nylon

WARNING: FUEL SUPPLY LINES ON ALL VEHICLES EQUIPPED WITH EFI ENGINES WILL REMAIN PRESSURIZED FOR LONG PERIODS OF TIME AFTER ENGINE SHUTDOWN. THE PRESSURE MUST BE RELIEVED BEFORE SERVICING THE FUEL SYSTEM. REFER TO FUEL SYSTEM PRESSURE RELIEF.

Nylon lines replace the conventional steel tubing (except on Taurus Police and FF vehicles which use combination nylon / stainless steel fuel lines). The individual tubes are clipped and taped together by the manufacturer and are supplied as an assembly. The nylon fuel tube assembly is secured to the body rails with clips and push pins. The clips are located along the tube assembly by upsets on the fuel tube. In addition to locating the clips, these upsets prevent the tubes from sliding through the clips after they have been installed on the vehicle. The fuel supply and return lines are connected to the fuel tank sending unit and pump and fuel filter using push-connects. Connections to the engine are made with spring lock couplings. Refer to Push Connect and Spring Lock Coupling Removal and Installation.

CAUTION: Ford approved nylon fuel tubing is made from material which has been tested and proven to be acceptable for use with commercially available fuels. It is also resistant to most environmental conditions. Avoid using alternate tubing materials. Use of non-approved tubing could pose a hazard in service.

CAUTION: Nylon fuel tube must not be serviced using hose and hose clamps. Push connect fittings cannot be serviced except to replace the retaining clips. Should the plastic tubes, push connect fittings or steel tube ends become damaged and leak, approved service parts must be used to service the fuel lines.

CAUTION: The nylon fuel lines can be damaged by torches, welding sparks, grinding and other operations which involve heat and high temperatures. If any service operation will be used which involves heat and high temperatures, locate all fuel system components, especially the nylon fuel lines to be certain they will not be damaged. It is recommended that the nylon fuel tubes be removed from the vehicle if a torch or high heat producing equipment is to be used for service in the following areas:

1. Exhaust or suspension components in proximity to fuel tubes
2. Floorpan under vehicle and inside the passenger compartment (RH side)
3. Rocker panel (RH side)
4. Underbody frames, rails and crossmembers (RH side)

REMOVAL AND INSTALLATION (Continued)

5. Dash panel, under vehicle or inside the passenger compartment (lower RH side)
6. Front or rear wheel house/fender apron (RH side)

Removal

1. Depressurize fuel system as outlined under Fuel System Pressure Relief.
2. Drain fuel from fuel tank as outlined under Fuel Tank, Removal. On Flexible Fuel vehicles drain fuel tank as outlined under Fuel Tank Draining Procedure — Flexible Fuel Vehicles.
3. Lower fuel tank and disconnect push connect fittings from fuel tank sending unit and pump.
4. Disconnect push connect fittings from fuel filter at RH side of fuel tank.
5. On all vehicles except Flexible Fuel vehicles, remove three screws retaining fuel tube shield (9C291) to lower dash crossmember and remove fuel tube shield.
6. Disconnect vapor tube from fuel line assembly at in-line connection in engine compartment along RH side member between shock tower and dash panel.
7. On vehicles with 3.0L MFI engines, cut strap which retains fuel lines and vacuum hose in engine compartment.
8. Disconnect spring lock couplings from engine.
9. Cut push pins off between each retaining clip and body.

Installation

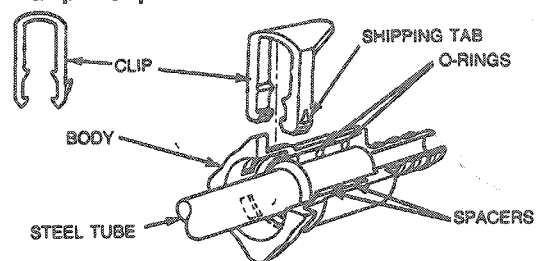
NOTE: New fuel lines come equipped with push pins. If a fuel line is being reused, new push pins must be installed on existing line. Any damaged clips must be replaced.

1. Install fuel line assembly by pushing five or six pins into existing holes in underbody.
NOTE: On all vehicles except flexible fuel vehicles, lines must be routed between fuel tube shield and lower dash.
2. Install fuel tube shield to lower dash crossmember and install three retaining screws.
3. Raise fuel tank up to underbody and connect fuel lines to fuel tank sending unit and pump and fuel vapor valve. Route lines through clip on top of tank. Connect electrical connector to fuel pump.
4. Install fuel tank to underbody.
5. Connect fuel lines to fuel filter.
6. Connect vapor tube to fuel tube assembly in engine compartment.
7. Connect fuel line spring lock coupling to engine fuel injection supply manifold (9F792).

Push Connect Fittings

CAUTION: The steel push connect and spring lock couplings used on the Flexible Fuel vehicles have special O-rings for methanol fuel compatibility. Refer to Steel Push Connect 5/16 inch or 3/8 inch fittings Removal and Disconnect procedure. Use Disconnect Tools T90T-9550-B or T90T-9550-C.

Push connect fittings are designed with a retaining clip. The fittings used with 9.5 and 7.9mm (3/8 and 5/16 inch) diameter tubing use a hairpin clip. Clips should be replaced whenever a connector is removed.

Hairpin Clip**Removal**

NOTE: Drain fuel tank if necessary, as outlined under Fuel Tank, Removal. On Flexible Fuel vehicles, drain fuel tank as outlined under Fuel Tank Draining Procedure — Flexible Fuel Vehicles.

1. Inspect internal portion of fitting for dirt accumulation. If more than a light coating of dust is present, clean fitting before disassembly.
2. Some adhesion between seals in fitting and tubing occurs with time. To separate, twist fitting on tube, then push and pull fitting until it moves freely on tube.

CAUTION: Do not use any tools.

3. Remove hairpin clip from fitting by first bending shipping tab and breaking. Next (using hands only), spread two clip legs about 3.2mm (1/8 inch) each to disengage body and push legs into fitting. Complete removal is accomplished by lightly pulling from triangular end of clip and working it clear of tube and fitting.

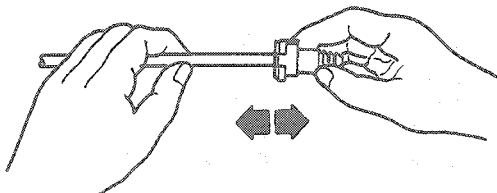
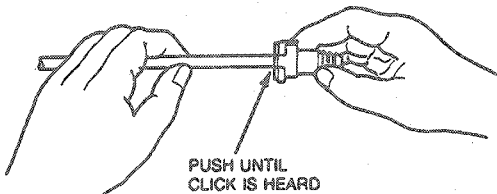
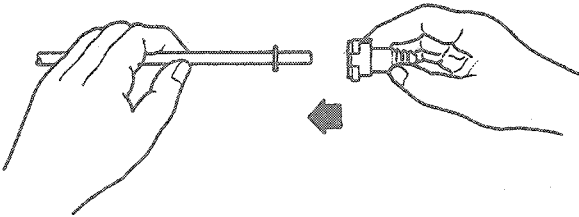
NOTE: On 90 degree elbow connectors, excessive side loading could break connector body.

4. Grasp fitting and hose assembly and pull in an axial direction to remove fitting from steel tube.
5. After disassembly, inspect and clean the tube end sealing surface. Tube end should be free of scratches and corrosion as they result in path for fuel leakage. Inspect the inside of the fitting for any internal parts such as O-rings and spacers that may have been dislodged from the fitting. Replace any damaged connector.

REMOVAL AND INSTALLATION (Continued)

Installation

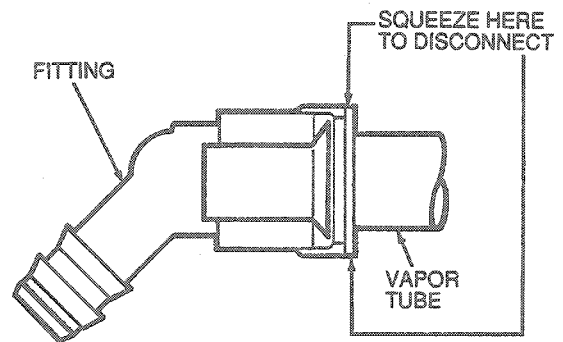
1. Install new connector if damage was found. Install new clip, insert clip into any two adjacent openings with triangular portion pointing away from fitting opening. Install clip to fully engage body (legs of hairpin clip locked on outside of body). Piloting with an index finger is necessary.
2. Before installing fitting on tube, wipe tube end with a clean cloth. Inspect inside of fitting to ensure it is free of dirt and / or obstructions. Apply a light coat of engine oil to the tube end for ease of assembly.
3. To install fitting onto tube, align fitting and tube axially and push fitting onto tube end. When fitting is engaged, a definite click will be heard. Pull on fitting to ensure it is fully engaged.



V4141-A

Fuel Vapor Tube Push Connect Removal

No removal tool is required for the nylon fuel vapor connectors used on the Flexible Fuel vehicles. These connectors can be disconnected by squeezing the connector and pulling it off the tube end.



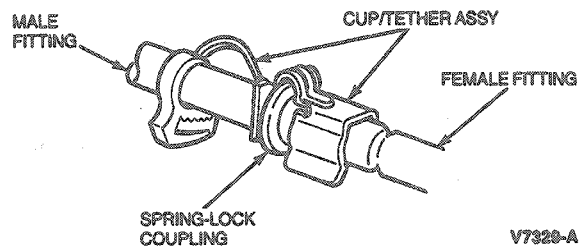
V8614-A

Spring Lock Coupling

Tools Required:

- Fuel Line Disconnect Tool 3/8 Inch (Yellow) D87L-9280-A
- Fuel Line Disconnect Tool 1/2 Inch (Green) D87L-9280-A

The spring lock coupling is a fuel line coupling held together by a garter spring inside a circular cage. When the coupling is connected together, the flared end of the female fitting slips behind the garter spring inside the cage of the male fitting. The garter spring and cage then prevent the flared end of the female fitting from pulling out of the cage. As a redundant locking feature, a horseshoe shaped retaining clip is incorporated to improve the retaining reliability of the spring lock coupling.



V7329-A

Removal

1. Release fuel system pressure as outlined under Fuel System Pressure Relief.
2. Remove retaining clip from spring lock coupling by hand only. Do not use any sharp tool or screwdriver as it may damage the spring lock coupling.
3. Twist fitting to free it from any adhesion at the O-ring seals.
4. Fit Fuel Line Disconnect Tool D87L-9280-A (3/8 inch) (Yellow) or D87L-9280-B (1/2 inch) (Green) or equivalents to coupling.
5. Close tool and push into open side of cage to expand garter spring and release female fitting.
6. After garter spring is expanded, pull fittings apart.

REMOVAL AND INSTALLATION (Continued)

7. Remove tool from disconnected coupling.

Installation

1. Ensure that garter spring is in cage of male fitting. If garter spring is missing, install a new spring by pushing it into cage opening. If garter spring is damaged, remove it from cage with a small wire hook (do not use a screwdriver) and install a new spring.

2. Clean all dirt or foreign material from both pieces of coupling.

WARNING: USE ONLY THE SPECIFIED O-RINGS AS THEY ARE MADE OF A SPECIAL MATERIAL. THE USE OF ANY O-RING OTHER THAN THE SPECIFIED O-RING MAY ALLOW THE CONNECTION TO LEAK INTERMITTENTLY DURING VEHICLE OPERATION.

3. Replace missing or damaged O-rings. Use only O-rings listed in Spring Lock Coupling illustration. Lubricate male fitting and O-rings and inside of female fitting with clean engine oil.

4. Fit female fitting to male fitting and push until garter spring snaps over flared end of female fitting.

5. Ensure coupling engagement by pulling on fitting and visually checking to ensure garter spring is over flared end of female fitting.

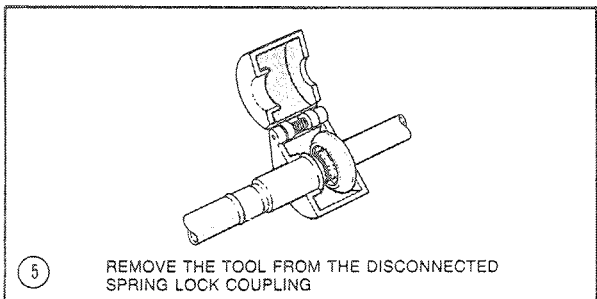
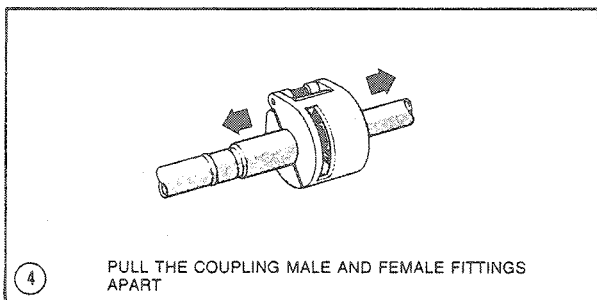
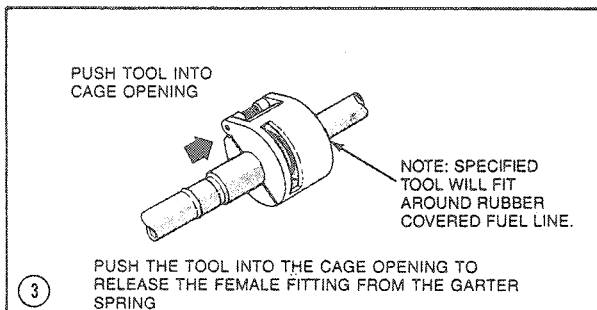
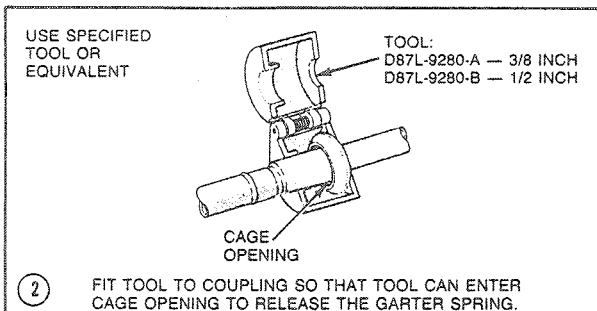
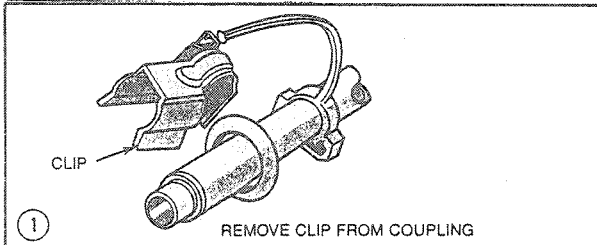
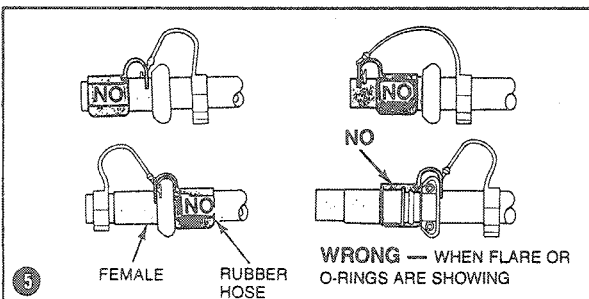
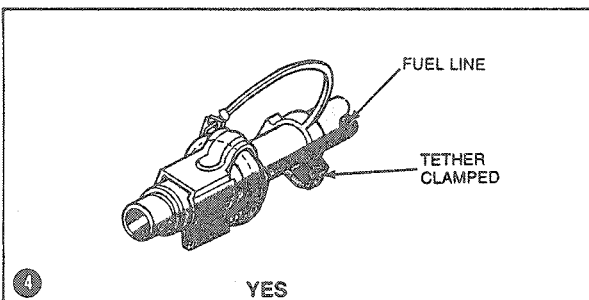
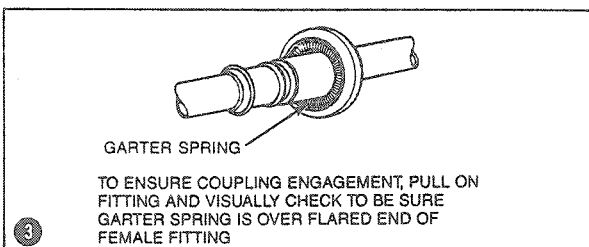
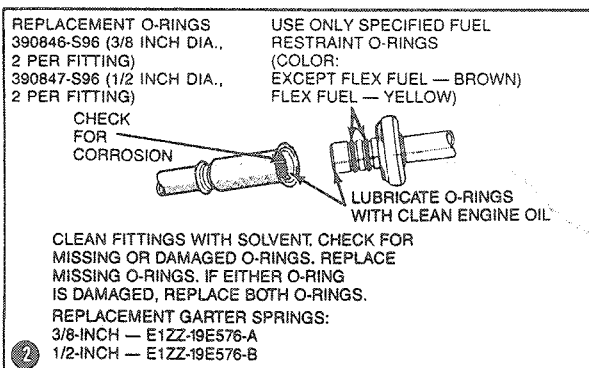
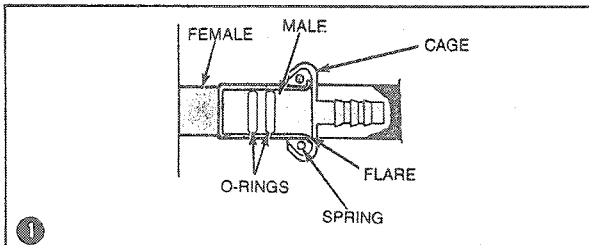
NOTE: All vehicles require the large black clip to be installed on the supply side fuel line and the small gray clip to be installed on the return side fuel line.

6. Position retaining clip over metal portion of spring lock coupling. Firmly push retaining clip onto spring lock coupling. Ensure that horseshoe portion of clip is over the coupling. Do not install retaining clip over rubber fuel line.

REMOVAL AND INSTALLATION (Continued)

TO DISCONNECT COUPLING

CAUTION — RELIEVE FUEL PRESSURE BEFORE DISCONNECTING COUPLING

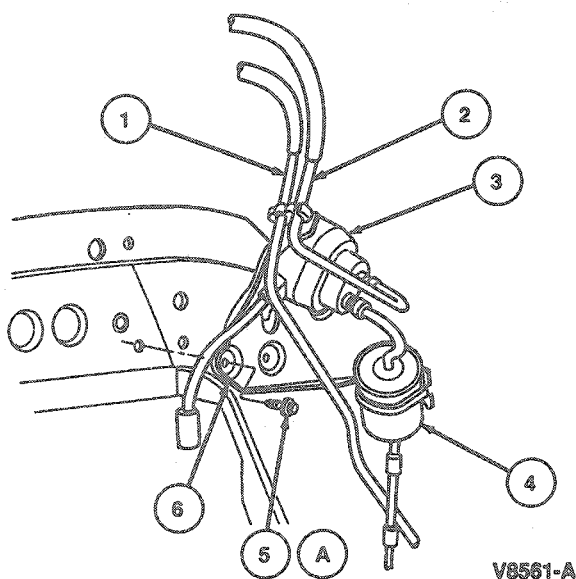
**TO CONNECT COUPLING**

V8616-A

REMOVAL AND INSTALLATION (Continued)

Flexible Fuel Mixer / Sensor Assembly**Removal and Installation**

1. Depressurize fuel system as outlined under Fuel System Pressure Relief.
2. Remove upper and lower supply line quick disconnect secondary retaining clips from fittings. Disconnect fuel lines from flexible fuel (FF) sensor (9C044).
3. Remove flexible fuel (FF) sensor (9C044) bracket retaining screws and remove.
4. To install, reverse Removal procedures. Tighten fuel and vapor return tube (9J279) retaining screws to 5.2-7.2 N-m (47-63 lb-in). Start engine and check for fuel leaks.



Item	Part Number	Description
1	9J279	Fuel and Vapor Return Tube
2	9J285	Fuel Supply Line
3	9C044	Flexible Fuel Sensor
4	9S301	Fuel Mixer Assy
5A	W611081-S56	Screw (2 Req'd)
6	9D319	Fuel Sensor Bracket
A		Tighten to 8-11.5 N-m (6-8 Lb-Ft)

Fuel Filter**Tools Required:**

- EFI and CFI Fuel Pressure Gauge T80L-9974-B

Removal

WARNING: BECAUSE OF THE COMBUSTION CHARACTERISTICS OF GASOLINE, ALWAYS USE EXTREME CARE WHEN REMOVING AND INSTALLING ANY FUEL SYSTEM COMPONENT.

1. Depressurize fuel system as outlined in Fuel System Pressure Relief.
2. Remove push connect fittings at both ends of the fuel filter as outlined.
3. Install retainer clips in each connect fitting.
NOTE: The flow arrow direction should be positioned forward and downward to ensure proper flow of fuel through replacement fuel filter.
4. Remove fuel filter from bracket by loosening worm gear mounting clamp enough to allow fuel filter to pass through.

Installation

1. Install fuel filter in bracket, ensuring proper direction of flow as noted earlier. Locate the fuel filter against tab at lower end of bracket.
2. Install push connect fittings at both ends of fuel filter as outlined.
3. Tighten worm gear mounting clamp to 1.7-2.8 N-m (15-25 lb-in).
4. Start engine and inspect for leaks.

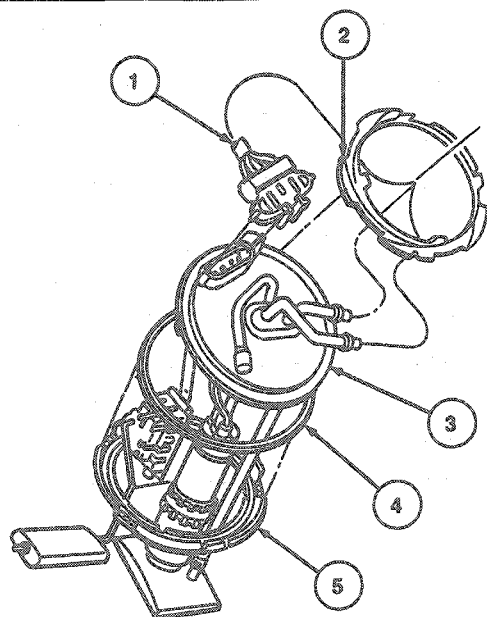
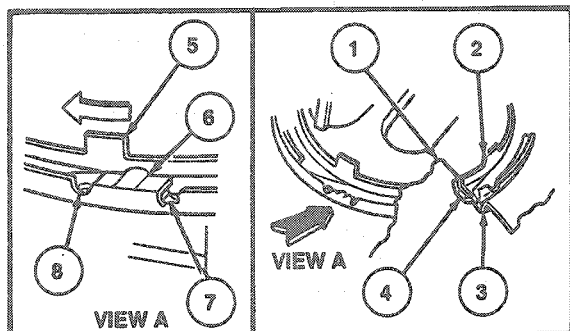
Fuel Pump and Sender Assembly**Unleaded Gasoline Vehicles****Tools Required:**

- Fuel Tank Sender Wrench D84P-9275-A
- Rotunda Fuel Storage Tanker 034-00002
- Rotunda Adapter Hose 034-00012

Removal

1. Place vehicle on hoist, do not raise.
2. Depressurize fuel system as outlined in Fuel System Pressure Relief.
3. Drain fuel from fuel tank through fuel tank filler pipe using Rotunda Fuel Storage Tanker 034-00002 and Adapter Hose 034-00012 or equivalent.
4. Raise vehicle on hoist.
5. Disconnect and remove fuel tank filler pipe.
6. Support fuel tank and remove fuel tank support straps. Lower fuel tank partially and remove fuel lines, electrical connectors and vent lines from tank. Remove fuel tank to bench.
7. Remove any dirt that has accumulated around fuel pump retaining flange so that it will not enter fuel tank during removal and installation.
8. Turn fuel pump locking retainer ring (9C385) counterclockwise using Fuel Tank Sender Wrench D84P-9275-A or an equivalent and remove fuel pump locking retainer ring.
9. Remove fuel tank sending unit and pump.
10. Remove seal gasket and discard.

REMOVAL AND INSTALLATION (Continued)



V8612-A

Item	Part Number	Description
1	9H307	Fuel Tank Sending Unit and Pump
2	9C385	Fuel Pump Locking Retainer Ring
3	—	Retainer Ring
4	N803861-S	O-Ring
5	—	Locating Tabs
6	—	Tab
7	—	Stop
8	—	Detent

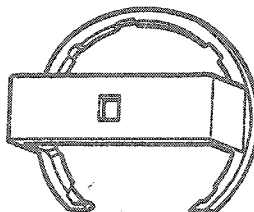
Installation

1. Clean the fuel tank sending unit and pump mounting flange, fuel tank mounting surface and seal ring groove.
2. Apply a light coating of Premium Long-Life Grease XG-1-C (ESA-M1C75-B) or equivalent on a new seal ring to hold it in place during assembly and install it in fuel ring groove.

3. Install fuel tank sending unit and pump carefully to ensure that filter is not damaged. Ensure that locating keys are in keyways and seal ring remains in place.
4. Hold assembly in place and install fuel pump locking retainer ring finger-tight. Ensure that all locking tabs are under fuel tank lock ring tabs.
5. Secure unit with fuel pump locking retainer ring by rotating fuel pump locking retainer ring clockwise using Fuel Tank Sender Wrench D84P-9275-A or an equivalent until fuel pump locking retainer ring stops against stops.
6. Remove fuel tank from bench to vehicle and support fuel tank while connecting fuel lines, vent line, and electrical connectors to appropriate places.
7. Install fuel tank in vehicle and secure with fuel tank support straps.
8. Lower vehicle.
9. Install fuel tank filler pipe and retaining screws.
10. Install a minimum of 38l (10 gal) of fuel and check for leaks.
11. Turn ignition switch to ON position for three seconds repeatedly (5 to 10 times) until pressure gauge shows at least 270 kPa (30 psi). Check for leaks at fittings.
12. Remove pressure gauge, start engine, and recheck for leaks.

Flexible Fuel (FF) Vehicles

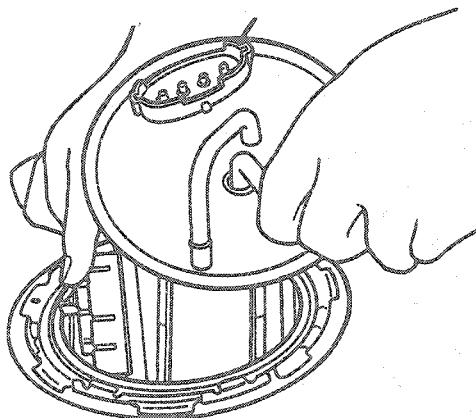
1. Depressurize fuel system as outlined under Fuel System Pressure Relief.
2. Drain fuel tank as outlined under Fuel Tank Draining Procedure—Flexible Fuel Vehicles.
3. Raise vehicle on a hoist. Refer to Section 00-02.
4. Disconnect and remove fuel tank filler pipe.
5. Support fuel tank and remove fuel tank support straps. Lower fuel tank partially and disconnect fuel lines, electrical connectors and fuel vapor and vent lines from fuel tank. Remove fuel tank to bench.
6. Remove any dirt that has accumulated around fuel tank sending unit and pump so that dirt does not enter fuel tank during fuel tank sending unit and pump removal.
7. Remove fuel pump locking retainer ring using Fuel Tank Sender Wrench D90P-9275-A or equivalent.



V8619-A

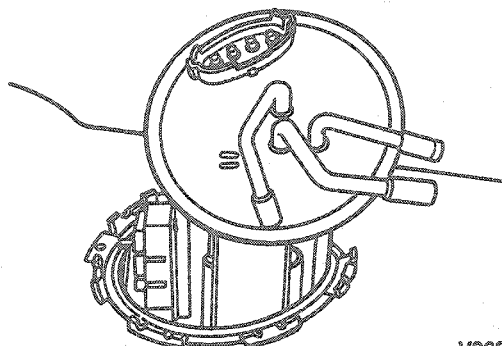
REMOVAL AND INSTALLATION (Continued)

8. Lift fuel tank sending unit and pump locating tabs from fuel tank location slots.
9. Lift fuel tank sending unit and pump upward rotating left, while aligning float wiper arm retainer and return line into fuel tank location slots.



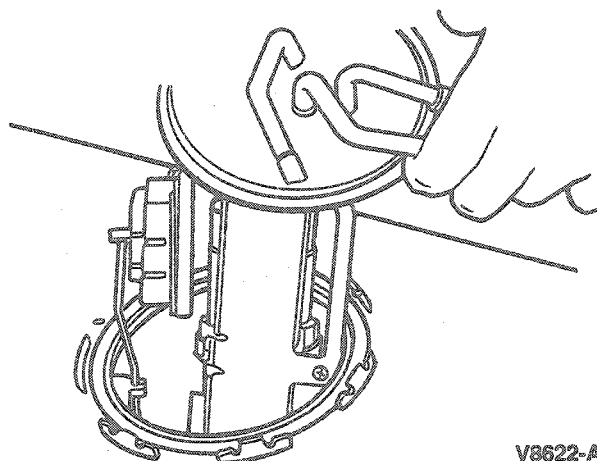
V8620-A

10. Apply slight pressure to remove fuel tank sending unit and pump.



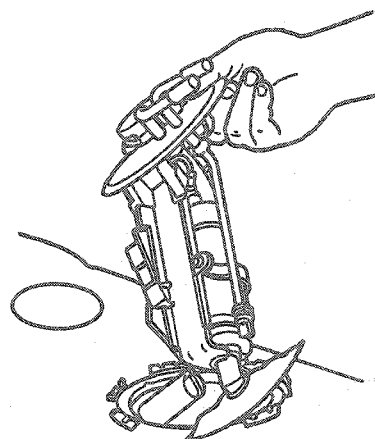
V8621-A

11. Lift float wiper arm through LH fuel tank slot and pass pump motor retaining bracket through the RH fuel tank slot.



V8622-A

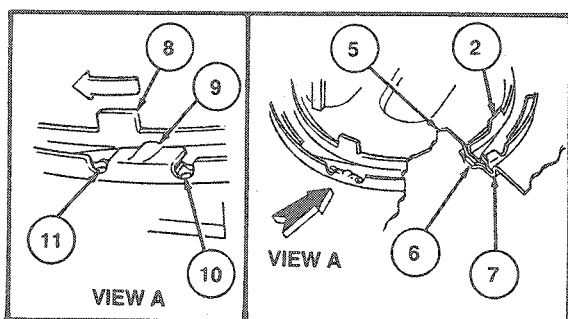
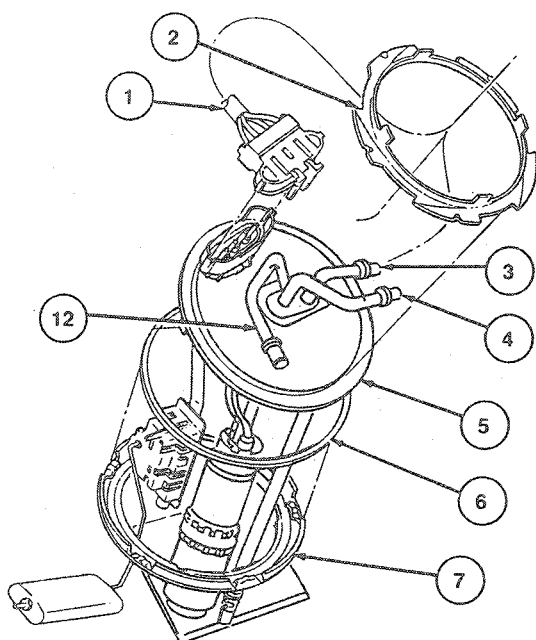
12. Remove fuel tank sending unit and pump keeping return line in fuel tank slot. Lift fuel pump inlet filter then sender arm float through fuel tank opening.



V8623-A

13. Remove fuel methanol compatible fuel pump mounting gasket (9417).
14. To install, position new fuel methanol compatible fuel tank sending unit and pump gasket and reverse Remove procedure.

REMOVAL AND INSTALLATION (Continued)



V8629-A

Item	Part Number	Description
1	—	Electrical Connector
2	9C385	Fuel Pump Locking Retainer Ring
3	—	Fuel Return
4	—	Fuel Supply
5	9H307	Fuel Tank Sending Unit and Pump
6	9417	Fuel Pump Mounting Gasket
7	—	Retainer Ring
8	—	Locating Tabs
9	—	Tab
10	—	Stop
11	—	Detent
12	—	Fuel Tank Drain Tube

15. To install fuel tank, reverse Removal procedure. Start engine and check for leaks.

MAJOR SERVICE OPERATIONS

Fuel Tanks

An electric fuel pump is located in the fuel tank. The pump is attached to the fuel tank, or as part of the sender unit. The fuel tank must be removed to service the fuel pump. Care should be taken during installation due to the hose and wire routing on the tank. Route all fuel lines and electrical harnesses properly. Check the fuel line connections for leaks.

Fuel tanks do not require special service procedures and may be steam-cleaned and / or serviced using standard procedures. After steaming, allow to thoroughly air dry. The vapor separator assembly should be replaced. Replace fuel tank strap bolts.

CAUTION: Remove the fuel pump prior to steaming the fuel tank. Care should be exercised not to deform the plastic reservoir inside the tank with excessively hot steam or direct contact with plastic surface.

WARNING: FUEL SUPPLY LINES ON VEHICLES EQUIPPED WITH FUEL INJECTED ENGINES WILL REMAIN PRESSURIZED FOR LONG PERIODS OF TIME AFTER ENGINE SHUTDOWN. THE PRESSURE MUST BE RELIEVED BEFORE SERVICING THE FUEL SYSTEM. REFER TO FUEL SYSTEM PRESSURE RELIEF.

Fuel Lines

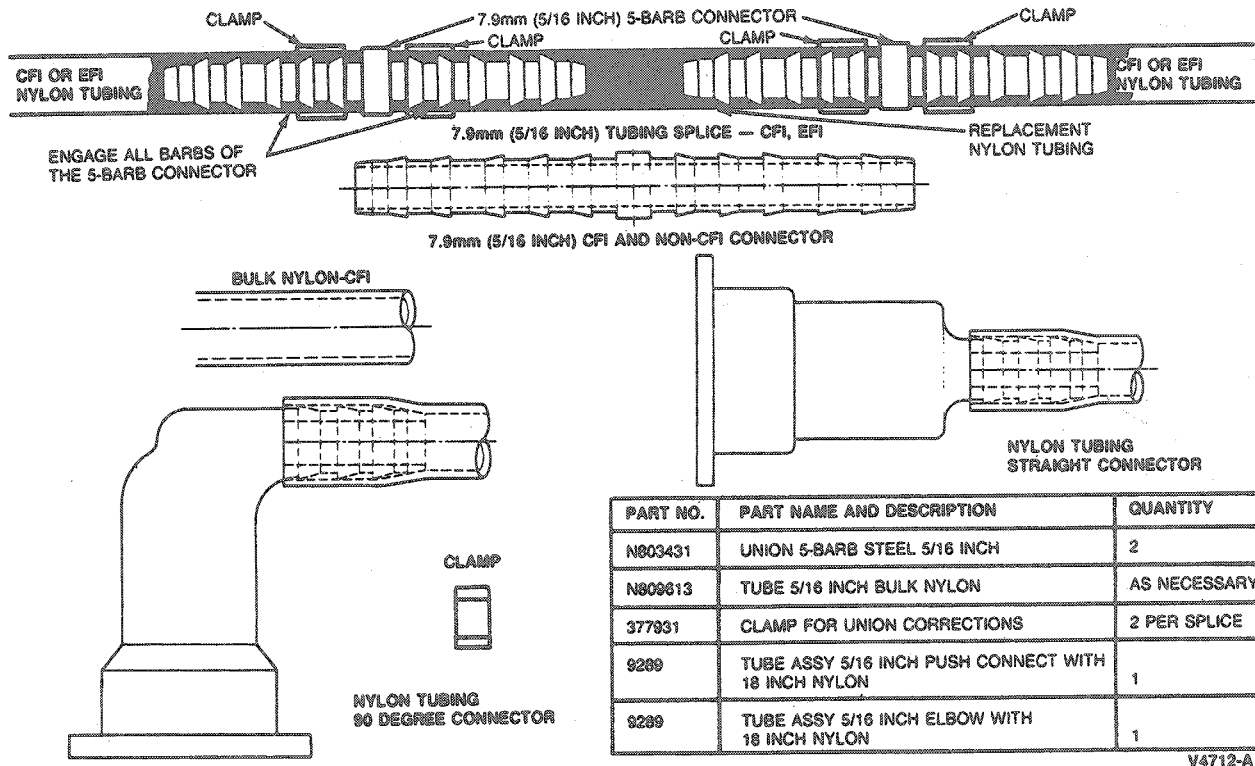
Vehicles equipped with nylon fuel tubes and push connect fittings have two types of service repairs that can be performed on the fuel lines replacing nylon tubing (splicing nylon to nylon) and replacing push connector or spring lock fittings.

Splicing Nylon to Nylon

1. Relieve fuel system pressure as outlined in Fuel System Pressure Relief. Read cautionary note prior to relieving pressurized fuel system. If necessary, drain fuel tank as outlined under Fuel Tank, Removal or Fuel Tank Draining Procedure—Flexible Fuel Vehicles.
2. Cut out damaged section of tubing and retain as a guide.
3. Cut a section of service tubing (type 11 or 12 nylon 7.9mm (5 / 16 inch) diameter) to same length as damaged section of tubing.
NOTE: To make hand insertion of barbed connectors into nylon easier, tube end must be soaked in a cup of boiling water for one minute immediately before pushing barbs into nylon.
4. Select proper 7.9mm (5 / 16 inch) barbed connectors for completing splice. Two connectors are required for each splice.
5. Install barbed connectors into each end of replacement tubing using boiling water as outlined.
6. Install clips onto any tubes which might be difficult to access once final splices are completed.
7. Install four keystone clamps loosely onto original nylon tubing before beginning next step.

MAJOR SERVICE OPERATIONS (Continued)

8. Complete splice of replacement nylon to original nylon tubing at both ends.
9. Tighten clamps in locations shown in illustration under Step 11 of this procedure.
10. Install any remaining clips which were removed for this service and check that tubes are secure in original clips.
11. Fill fuel tank, start engine and check for leaks.



Replacing Nylon Push Connectors

Refer to illustration under Splicing Nylon-to-Nylon, Step 11.

NOTE: Damaged push connectors must be discarded and replaced with new push connectors. If only retaining clip is damaged, replace clip.

1. Relieve fuel system pressure as outlined in Fuel System Pressure Relief. Read cautionary note prior to relieving pressurized fuel system. If necessary, drain fuel tank as outlined under Fuel Tank, Removal or Fuel Tank Draining Procedure—Flexible Fuel Vehicles.
2. Disconnect damaged push connector. Be sure to break the tab before removing retaining clip.
3. Select proper size replacement push connector and nylon tube assembly.
4. Cut out a section of original nylon tube to same length as nylon tube attached to new push connector.

NOTE: To make hand insertion of barbed connectors into nylon easier, tube end must be soaked in a cup of boiling water for one minute immediately before pushing barbs into nylon.

5. Install proper barbed connector into replacement nylon assembly.
6. Install two keystone clamps onto original nylon tubing before beginning next Step.
7. Complete splice by connecting barbed connector to original nylon.
8. Tighten clamps in locations shown in illustration under Step 11 of Splicing Nylon-to-Nylon.
9. Connect new connector assembly to steel tube end.
10. Check that underbody clips are properly securing fuel tubes.
11. Fill tank, start engine and check for fuel leaks.

SPECIFICATIONS

APPROXIMATE FUEL TANK CAPACITY

Model Usage	Liters	Imp.	U.S.
Standard	60.6	13.3	16.0
Extended Range	70.4	15.5	18.6

SPECIFICATIONS (Continued)

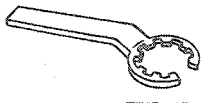
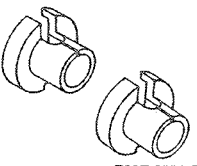
PUSH CONNECT RETAINERS—PART NUMBERS

Part Number	Component
N802241 (Black)	Hair Pin Clip ¹ —3/8 Inch Connector
N802239 (White)	Hair Pin Clip ¹ —5/16 Inch Connector
N802710-S190	Duck Bill Clip ¹ —1/4 Inch
N802441-S	Duck Bill Clip ¹ —1/2 Inch

TORQUE SPECIFICATIONS

Description	N-m	Lb-In
Filler Neck-to-Body Screws	2.7-3.7	24-32
Fuel Filler Clamp	1.7-2.8	15-25
Fuel Filter Bracket Screw	8-12	71-106
Inertia Fuel Shutoff Switch Nuts	1.5-2.2	14-19
Fuel Tank Strap Bolts	29-41	22-30 (Lb-Ft)
Fuel Filler Pipe Hose Clamps	2.7-3.7	24-32
Fuel Filler Neck Bolt	4-6	36-53
Flexible Fuel Mixer/Sensor Assy	5.2-7.2	47-63

SPECIAL SERVICE TOOLS

Tool Number/ Description	Illustration
T74P-9275-A Fuel Tank Sender Wrench	 T74P-9275-A
T90T-9550-S Fuel Line Disconnect	 T90T-9550-S

Tool Number	Description
D87L-9280-A	Disconnect Tool 3/8 Inch (Yellow)
D87L-9280-B	Disconnect Tool 1/2 Inch (Green)
D90P-9275-A	Fuel Tank Sender Wrench

ROTUNDA EQUIPMENT

Model	Description
034-00002	Fuel Storage Tanker
034-00012	Adapter Hose
034-00020	Fuel Storage Tanker and Adapter Hose

PARTS CROSS-REFERENCE

Base Part #	Part Name	Old Part Name
9002	Fuel Tank	
9030	Fuel Tank Filler Cap	
9034	Fuel Tank Filler Pipe	
9092	Fuel Tank Support Strap	
9155	Fuel Filter	
9341	Inertia Fuel Shutoff Switch	Fuel Pump Inertia Switch
9417	Fuel Pump Mounting Gasket	
9B593	Fuel Vapor Valve	
9C291	Fuel Tube Shield	
9C385	Fuel Pump Locking Retainer Ring	
9F792	Fuel Injection Supply Manifold	
9H307	Fuel Tank Sending Unit and Pump	
9J279	Fuel and Vapor Return Tube	

1 Replacement Required After Connector Removal

SECTION 10-02 Accelerator Pedal and Linkage

SUBJECT	PAGE	SUBJECT	PAGE
DIAGNOSIS		REMOVAL AND INSTALLATION (Cont'd.)	
Linkage	10-02-1	Accelerator Pedal and Shaft Assembly	10-02-2
PARTS CROSS-REFERENCE	10-02-7	Throttle Cable	10-02-2
REMOVAL AND INSTALLATION		SPECIFICATIONS	10-02-7
Accelerator Cable Bracket	10-02-2	VEHICLE APPLICATION	10-02-1

VEHICLE APPLICATION

Taurus/Sable.

DIAGNOSIS

Linkage

Based on the condition, the following Steps are to be used for diagnosis following disconnection of the throttle cable (9A758) from the throttle body lever. (If the vehicle is equipped with speed control, disconnect the speed control cable from the throttle cable.)

1. Accelerator pedal is hard to push down, or has a rough/raspy or sticky feel.
 - Make sure that disconnected end of throttle cable or its accelerator retracting spring (9737) does not come into contact with any surrounding parts.
 - Operate pedal by foot.
 - If throttle cable operation is smooth, throttle cable is not damaged. Refer to Powertrain Control/Emissions Diagnosis Manual¹ for other checks.

- If condition recurs (making sure disconnected end of throttle cable has not come into contact with anything), check foot pedal assembly for free operation. If pedal operation is free, replace throttle cable.

NOTE: Throttle cable should not be lubricated and is not serviceable.

2. High engine idle speed.

- If cable ball socket extends beyond throttle lever ball stud (closed throttle plate direction), throttle cable is not damaged. Refer to Powertrain Control/Emissions Diagnosis Manual¹ for other checks.
- If ball socket does not extend beyond stud, check foot pedal assembly for free operation. If pedal operation is free, replace throttle cable.

DIAGNOSTIC PROCEDURE — ACCELERATOR PEDAL TO THROTTLE CABLE

CONDITION	ACTION
● Accelerator Pedal is Hard to Push Down or Has a Rough/Raspy or Sticky Feel	<ul style="list-style-type: none"> ● Be sure that the disconnected end of the throttle cable or its accelerator retracting spring does not come into contact with any of the surrounding parts. ● Operate the pedal by foot. ● If the condition recurs (being sure disconnected end of throttle cable has not come into contact with anything), check the accelerator pedal and shaft for free operation. If the accelerator pedal and shaft operation is free, replace the throttle cable.
● High Engine Idle Speed	<ul style="list-style-type: none"> ● If the socket does not extend beyond the stud, check the accelerator pedal and shaft for free operation. If the accelerator pedal and shaft operation is free, replace the throttle cable.

NOTE: Throttle cable should not be lubricated, and it is not serviceable.

TV3036E

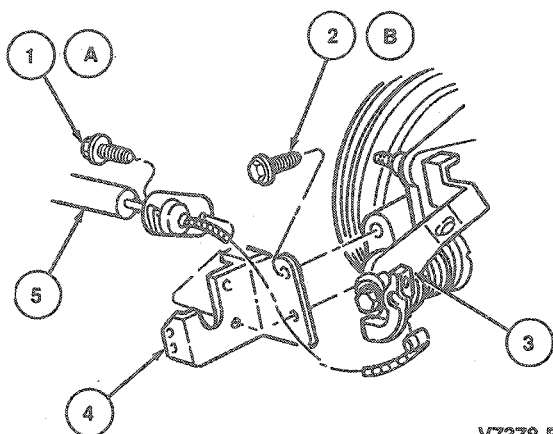
¹ Can be purchased as a separate item.

REMOVAL AND INSTALLATION

Throttle Cable

Removal and Installation

1. Remove intake air duct assembly. Refer to Section 03-12.
2. Using a suitable tool, remove throttle cable snap-in nylon bushing from pedal arm.
3. Remove throttle cable housing from dash panel by removing two screws retaining throttle cable to dash panel and pushing outward from inside passenger compartment.
4. On 3.0L SFI engine, remove accelerator control splash shield (9E766).
5. Remove speed control cable from throttle cable, if so equipped. Refer to Section 10-03.
On 3.0L and 3.2L SHO, unwind cable core wire from pulley and slide cable end fitting out of slot in pulley.
6. Disconnect throttle cable at throttle body throttle lever by inserting a screwdriver between throttle cable and throttle lever and giving a twist.



V7378-B

Item	Part Number	Description
1A	W611624-S36	Screw
2B	N605530-S36 (3.0L SFI) N605905-S2 (All Except 3.0L SFI)	Bolt
3	—	Pulley
4	9723	Accelerator Cable Bracket
5	9A758	Throttle Cable
A		Tighten to 5.2-7.2 N·m (47-63 Lb-in)

(Continued)

Item	Part Number	Description
B		Tighten to 15-20 N·m (11-14 Lb-Ft)

7. Remove accelerator cable bracket (9723) retaining screw. Remove throttle cable from bracket slot.
8. To install, reverse Removal procedure.

Accelerator Cable Bracket

Removal and Installation

1. Remove air duct assembly and accelerator cable bracket (3.0L SFI engines). Refer to Section 03-12.
2. Disconnect throttle cable at throttle body throttle lever by inserting a screwdriver between throttle cable and throttle lever and giving a twist. On 3.0L and 3.2L SHO, unwind cable core wire from pulley and slide end fitting out of slot on pulley.
3. Remove throttle cable housing to bracket retaining screw.
4. Remove speed control cable from accelerator cable bracket, if so equipped. Refer to Section 10-03.
5. Remove bolts securing accelerator cable bracket to engine.
6. To install, reverse Removal procedure and tighten accelerator cable bracket bolts to 14-20 N·m (10-15 Lb-Ft).

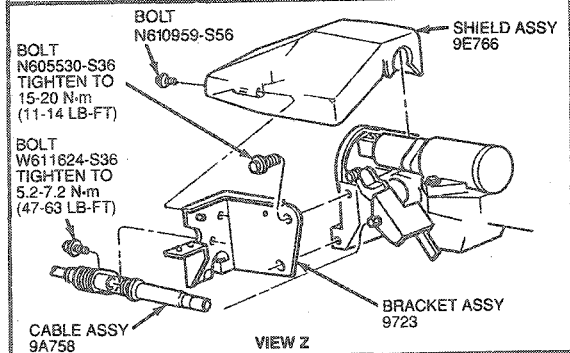
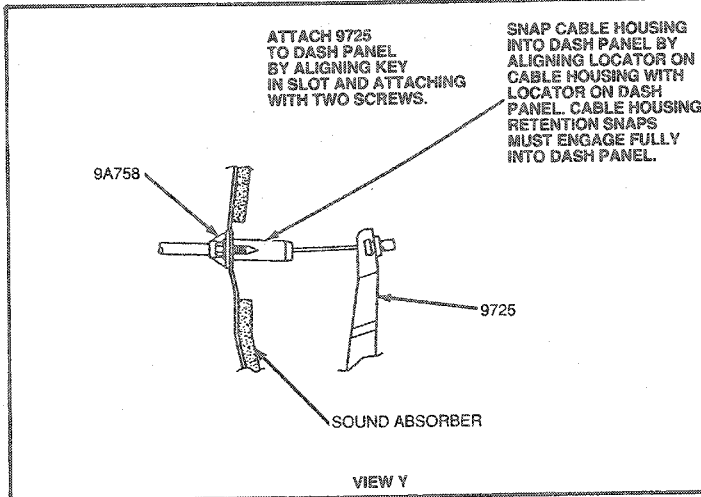
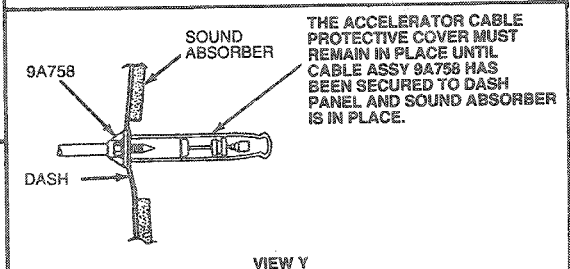
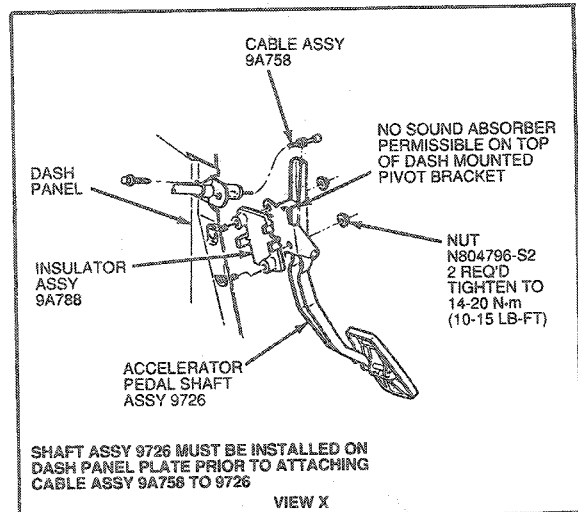
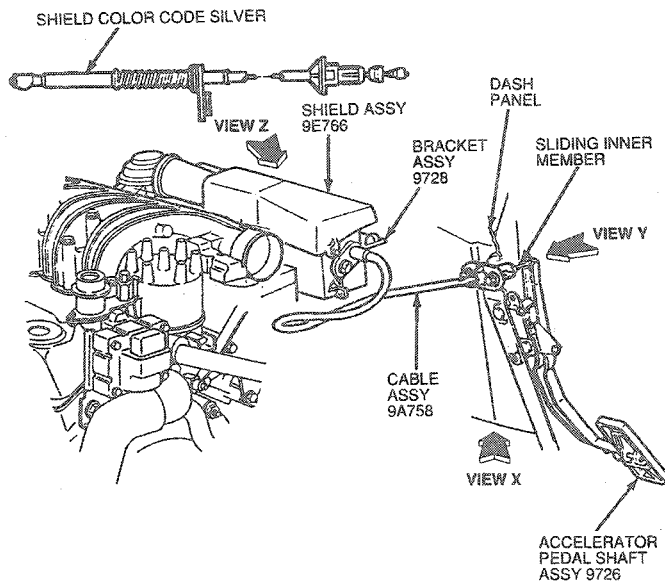
Accelerator Pedal and Shaft Assembly

Removal and Installation

1. Using a suitable tool, push the throttle cable nylon bushing, from back side of arm, out of the accelerator pedal arm.
2. Remove the accelerator pedal and shaft (9725) retaining nuts.
3. To install, reverse Removal procedure. Tighten accelerator pedal and shaft nuts to 14-20 N·m (10-15 lb-ft) and check pedal for smooth operation.

REMOVAL AND INSTALLATION (Continued)

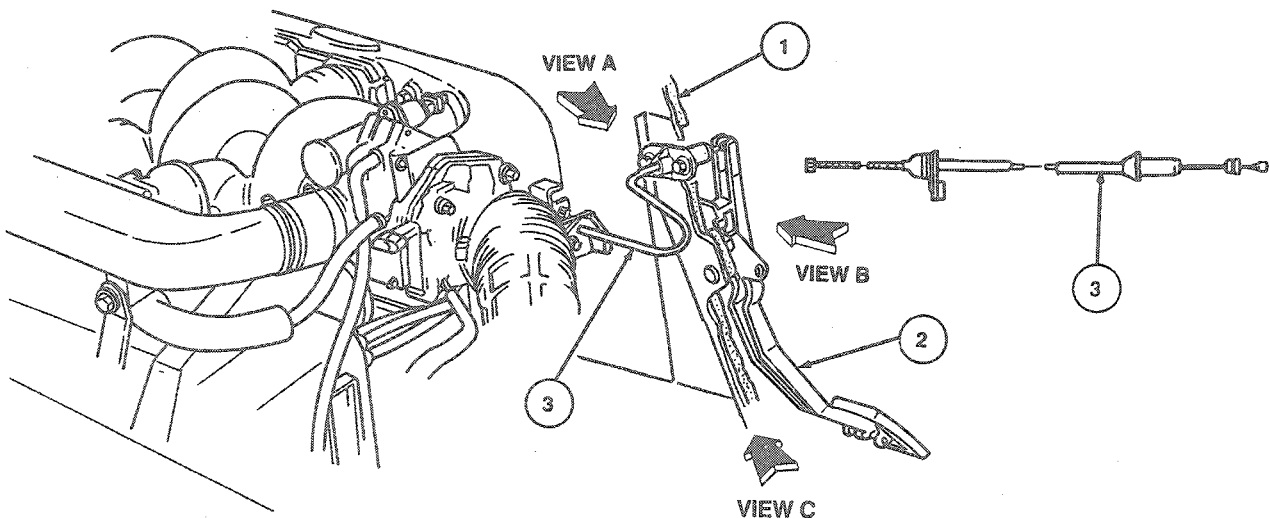
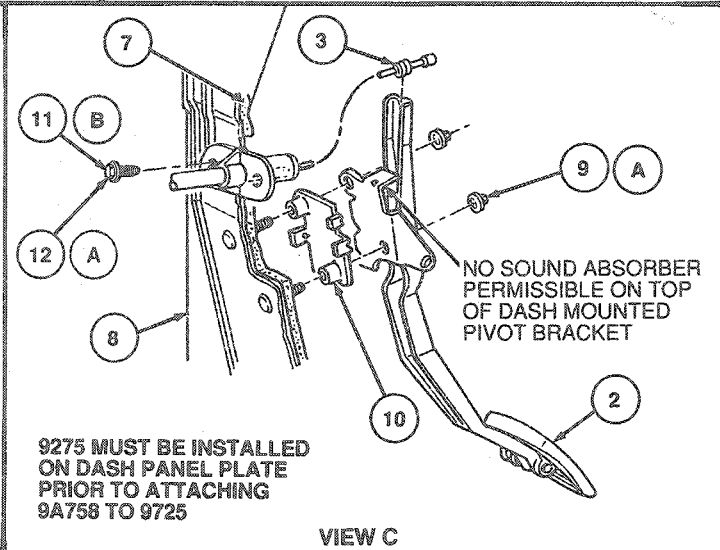
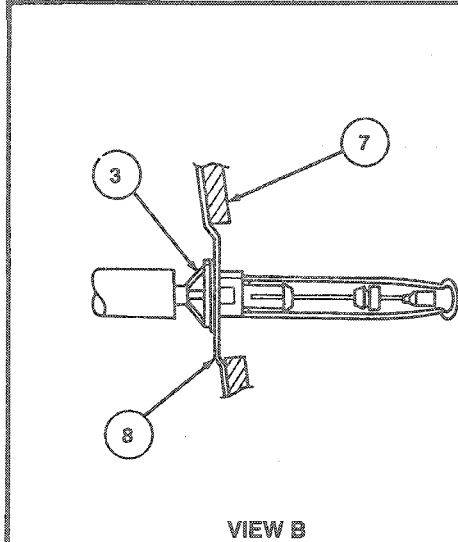
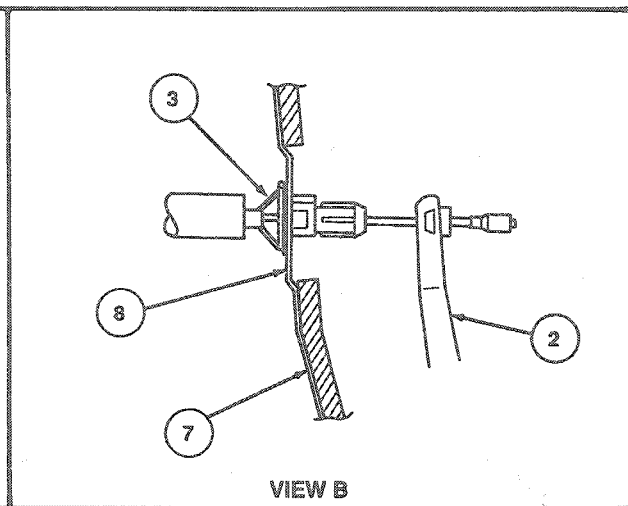
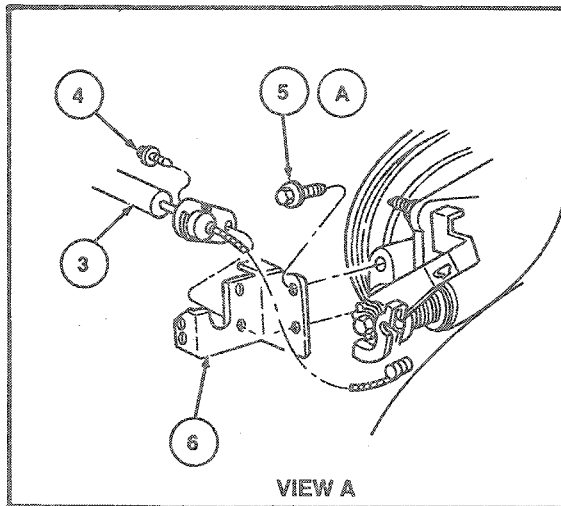
3.0L Engine, AXODE



V4556-G

REMOVAL AND INSTALLATION (Continued)

3.0L SHO Engine, MTX III



V7393-D

REMOVAL AND INSTALLATION (Continued)

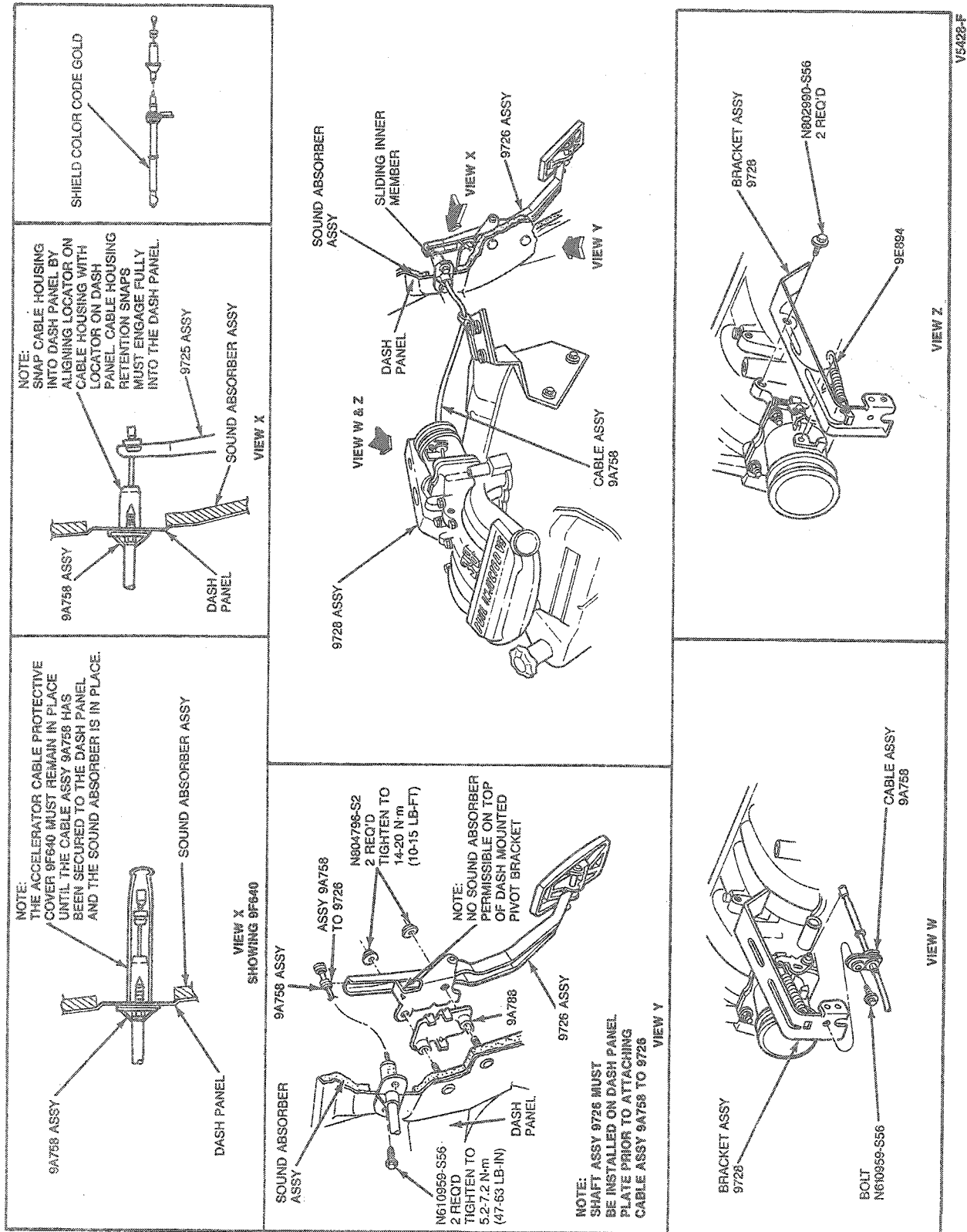
Item	Part Number	Description
1	01670	Sound Absorber Assy
2	9725	Accelerator Pedal and Shaft Assy
3	9A758	Throttle Cable Assy
4	W611624-S36	Bolt
5A	N605905-S2(3.0L SHO)	Bolt (2 Req'd)
6	9728	Accelerator Shaft Bracket Assy

(Continued)

Item	Part Number	Description
7	5401670-AA	Sound Absorber Assy
8	—	Dash
9A	N804796-S56	(2 Req'd)
10	9A788	Throttle Cable Assy
11B	W610959-S56	Bolt (2 Req'd)
12A	N605530-S36 (3.2L SHO)	Bolt (2 Req'd)
A		Tighten to 14-20 N·m (10-15 Lb-Ft)
B		Tighten to 1.6-2.2 N·m (15-19 Lb-In)

REMOVAL AND INSTALLATION (Continued)

3.8L Engine, AXODE



SPECIFICATIONS

TORQUE SPECIFICATIONS

Description	N-m	Lb-Ft
Accelerator Cable Bracket Bolts	14-20	10-15
Accelerator Pedal and Shaft Attachment Nuts	14-20	10-15
Throttle Cable-to-Dash Panel Screws	1.6-2.2	15-19 (Lb-In)
Accelerator Pedal and Shaft-to-Accelerator Cable Bracket Screw	5.2-7.2	47-63 (Lb-In)

PARTS CROSS-REFERENCE

Base Part #	Part Name	Old Part Name
9723	Accelerator Cable Bracket	
9725	Accelerator Pedal and Shaft	

(Continued)

Base Part #	Part Name	Old Part Name
9737	Accelerator Retracting Spring	
9A758	Throttle Cable	
9E766	Accelerator Control Splash Shield	