



98-7, *Publication Date: APRIL 13, 1998*

<ul style="list-style-type: none"><li>• <b>Fuel System - Fuel Pump "Whining/Buzzing" Noise Comes Through Entertainment Or Two-Way Radio Speaker</b></li><li>• <b>Radio - Entertainment Or Two-Way Communication - "Whining/Buzzing" Noise In Speakers Caused By Fuel Pump</b></li><li>• <b>Noise - "Whining/Buzzing" - Comes Through Speakers Of Entertainment Or Two-Way Radio</b></li></ul>	<b>Article No. 98-7-3</b>
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**FORD:**

1990-93 TEMPO  
1990-97 PROBE, THUNDERBIRD  
1990-98 ESCORT, TAURUS  
1990-99 CROWN VICTORIA, MUSTANG  
1997-98 CONTOUR

**LINCOLN-MERCURY:**

1990-92 MARK VII  
1990-93 TOPAZ  
1990-96 CONTINENTAL  
1990-97 COUGAR  
1990-98 SABLE, TOWN CAR  
1990-99 GRAND MARQUIS  
1991-98 TRACER  
1997-98 MYSTIQUE  
1997-99 MARK VIII

**LIGHT TRUCK:**

1990 BRONCO II  
1990-96 BRONCO  
1990-97 AEROSTAR, F SUPER DUTY, F-250 HD, F-350  
1990-98 ECONOLINE  
1990-99 F-150, F-250 LD, RANGER  
1991-98 EXPLORER  
1993-98 VILLAGER  
1997-98 EXPEDITION, MOUNTAINEER, WINDSTAR  
1998 NAVIGATOR

**ISSUE:**

A "whining/buzzing" noise in the speakers of the entertainment radio or two-way radio on vehicles with an in-tank electric fuel pump may be caused by electrical noise from the fuel pump.

**ACTION:**

Install an electronic noise Radio Frequency Interference (RFI) filter (F1PZ-18B925-A) on the fuel pump inside the fuel tank. Refer to the following Test Procedure to confirm that the concern exists, then refer to the Service Procedure for repair details.

**NOTE:**

SOME LIGHT TRUCKS REQUIRE ONE (1) RFI FILTER FOR EACH IN-TANK ELECTRIC FUEL PUMP ON MULTI-TANK VEHICLES.

**TEST PROCEDURE**

Fuel pump radio noise is relatively constant and changes only slightly with vehicle speed. If the frequency of the noise varies or the noise comes and goes with the vehicle speed, then it is not the fuel pump and this fix will not be effective. The following procedure will help determine if the fuel pump is the cause of the radio noise:

1. Turn on the radio before the key is turned on (assuming the radio will operate without the ignition key - you may need to put the ignition key in the Accessory position).
2. Turn the ignition key to the Run position (do not start the engine).
3. The fuel pump should run for about 1 second with the key in the Run position with the engine not running. Listen for noise in the radio. If noise is present while the pump is running and stops when the pump stops, then the noise is being generated by the pump and this procedure should help.

### **SERVICE PROCEDURE**

1. Remove the fuel pump sender assembly from the fuel tank. Refer to the appropriate Service Manual, Section 24-35 for cars/light trucks and Section 10-01 for compact trucks, for removal procedure.
2. On vehicles without a fuel delivery module, remove the negative and positive connectors from the fuel pump, Figure 1.

# FUEL PUMP AND SENDER ASSEMBLY

CUT AND SPLICE  
(BLACK WIRE - GROUND)

FLANGE

CUT AND SPLICE  
(BLACK WIRE - GROUND)

CUT AND SPLICE  
(RED WIRE - POSITIVE)

CUT AND SPLICE  
(RED WIRE - POSITIVE)

RFI FILTER

REMOVE AND DISCARD  
EXCESS WIRE AND  
CONNECTORS

ATTACH THESE CONNECTORS  
TO THE FUEL PUMP

**NOTE: USE BUNDLING STRAP (95873-S) TO SECURE  
THE RFI FILTER TO THE FUEL PUMP AND  
SENDER ASSEMBLY.**

**NOTE: USE HEAT SHRINK TUBING OVER ALL SPLICED  
CONNECTIONS.**

TB-2388-C

Figure 1 - Article 98-7-3

- a. Cut the wires to the fuel pump 76mm (3") from the flange of the fuel pump and discard the wires.
- b. Connect the RFI filter connectors to the spade terminal on the fuel pump.
- c. Cut and solder both the red and black wires of the RFI filter to the red and black wires of the flange. Use Heat Shrink Tubing (F5AZ-14A099-AA) over the solder connections.

**NOTE:**

HEAT SHRINK TUBING MUST BE USED OVER ALL SOLDERED CONNECTIONS MADE PRIOR TO THIS TSB. USE SUFFICIENT TUBING (ABOUT 50mm (2")) OF THE SPECIFIED TYPE TO ENTIRELY COVER EACH SOLDERED CONNECTION AND SHRINK APPROPRIATELY TO PREVENT EXPOSURE OF THE CONNECTIONS.

**NOTE:**

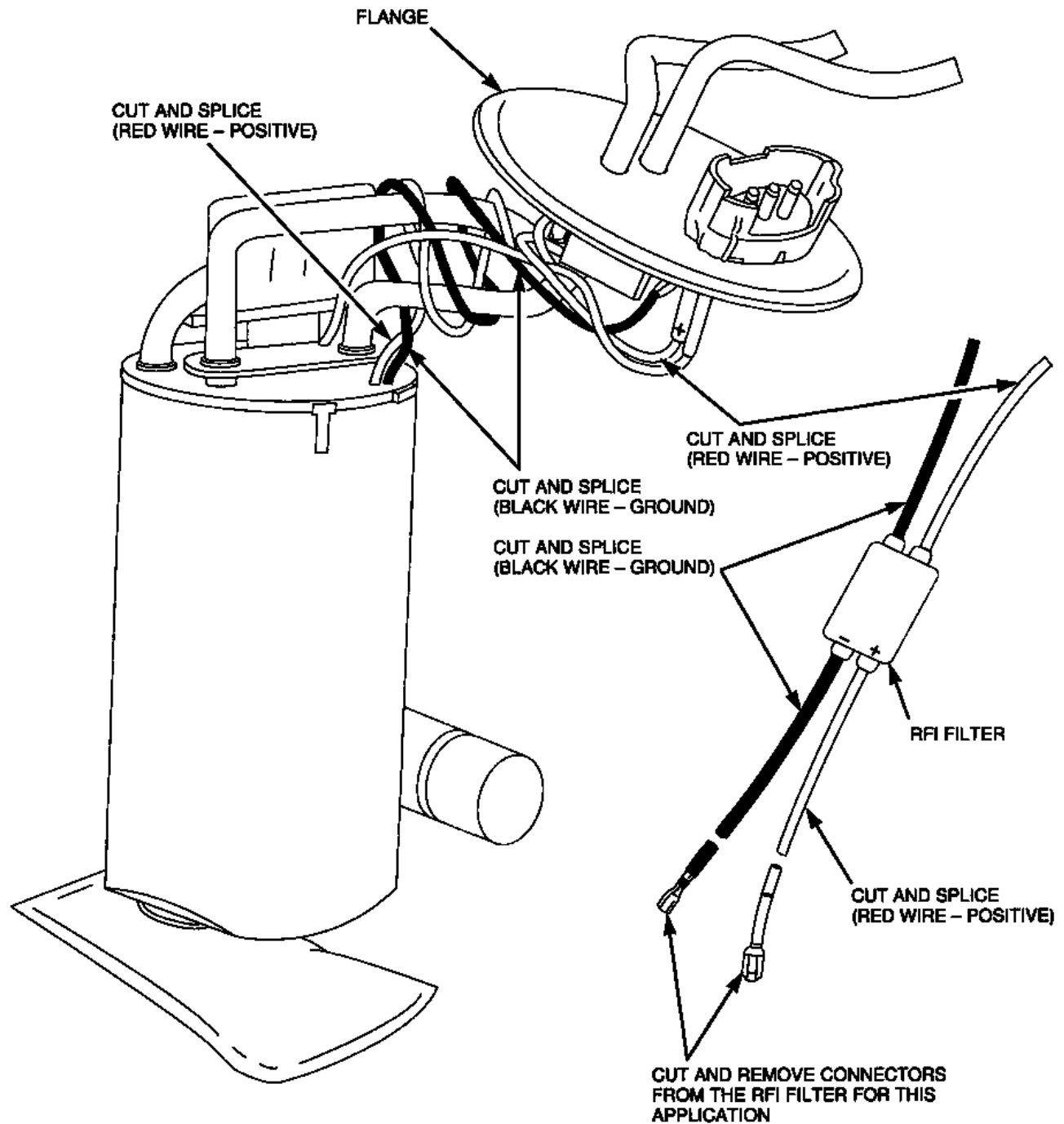
FOR SOME VEHICLES WITH EXTREMELY LONG FUEL PUMP GROUND WIRE CIRCUITS, IT MAY BE NECESSARY TO SHORTEN THE GROUND WIRE TO A POINT CLOSE TO THE FUEL TANK. IF THE GROUND IS MOVED, BE SURE IT IS SECURE AND PROTECTED FROM CORROSION SINCE IT IS THE OPERATING GROUND FOR THE PUMP. CHECK SERVICE LITERATURE (EVTM, ETC.) FOR GROUND LOCATIONS.

**WARNING:**

**ALL SOLDERING AND HEAT SHRINKING MUST BE COMPLETED AWAY FROM THE FUEL TANK AREA. USE A SOLDERING IRON ONLY FOR SOLDERING AND HEAT GUN ONLY FOR APPLYING SHRINK TUBING.**

3. On light trucks and compact trucks with a fuel delivery module, cut the fuel pump wires to the fuel delivery module 50mm (2") from the flange and discard the wires, Figure 2.

**FUEL PUMP AND SENDER ASSEMBLY  
WITH FUEL DELIVERY MODULE**



**NOTE: USE BUNDLING STRAP (95873-S) TO SECURE THE RFI FILTER TO THE FUEL PUMP AND SENDER ASSEMBLY.**

**NOTE: USE HEAT SHRINK TUBING OVER ALL SPLICED CONNECTIONS.**

**Figure 2 - Article 98-7-3**

- a. Cut the connectors from the RFI filter and solder wires to the fuel delivery module (red to red and black to black). Use heat shrink tubing over solder connections.
- b. Solder wires from the RFI filter to the flange wires (red to red and black to black). Use heat shrink tubing over soldered connections.

**NOTE:**

HEAT SHRINK TUBING MUST BE USED OVER ALL SOLDERED CONNECTIONS MADE PRIOR TO THIS TSB. USE SUFFICIENT TUBING (ABOUT 50mm (2")) OF THE SPECIFIED TYPE TO ENTIRELY COVER EACH SOLDERED CONNECTION AND SHRINK APPROPRIATELY TO PREVENT EXPOSURE OF THE CONNECTIONS.

**NOTE:**

FOR SOME VEHICLES WITH EXTREMELY LONG FUEL PUMP GROUND WIRE CIRCUITS, IT MAY BE NECESSARY TO SHORTEN THE GROUND WIRE TO A POINT CLOSE TO THE FUEL TANK. IF THE GROUND IS MOVED, BE SURE IT IS SECURE AND PROTECTED FROM CORROSION SINCE IT IS THE OPERATING GROUND FOR THE PUMP. CHECK SERVICE LITERATURE (EVTM, ETC.) FOR GROUND LOCATIONS.

**WARNING:**

**ALL SOLDERING AND HEAT SHRINKING MUST BE COMPLETED AWAY FROM THE FUEL TANK AREA. USE A SOLDERING IRON ONLY FOR SOLDERING AND HEAT GUN ONLY FOR APPLYING SHRINK TUBING.**

4. Secure the RFI filter to the fuel pump and sender assembly with a Bundling Strap (95873-S) to prevent rattling in the tank, Figures 1 and 2.
5. Reinstall the fuel pump sender assembly into the fuel tank.

**CAUTION:**

**INSTALL NEW GASKETS WHEN REINSTALLING SENDER TO PREVENT LEAKS. REFER TO THE PARTS CATALOG FOR PROPER APPLICATIONS.**

6. Check the appropriate Electrical and Vacuum Troubleshooting Manual (EVTM) (or other service literature) for the location of the fuel pump ground. If ground is more than 0.9m (3') from the tank, cut wire and ground fuel pump end within 0.9m (3') of the tank to prevent ground wire from acting as an antenna. Be sure ground is secure and protected from corrosion since it is the operating ground for the fuel pump.
7. Install the fuel tank in the vehicle as outlined in the appropriate Service Manual.

PART NUMBER	PART NAME
F1PZ-18B925-A	Radio Frequency Interference (RFI) Filter
95873-S	Bundling Strap
F5AZ-14A099-AA	Heat Shrink Tubing

**OTHER APPLICABLE ARTICLES:**

➔ **90-18-3**

**91-17-5**

**SUPERSEDES:** 96-3-7

**WARRANTY STATUS:** Eligible Under The Provisions Of Bumper To Bumper Warranty Coverage For All 1992-98 Models And 1991 Lincolns, Basic Warranty Coverage For All Other Models

**LABOR ALLOWANCE**

OPERATION	DESCRIPTION	TIME
980703AA	Diagnose And Install RFI Filter (1990 -95 Thunderbird Super Coupe)	2.1 Hrs.
980703AB	Diagnose And Install RFI Filter (1991 -93 Thunderbird/Cougar 5.0L HO)	2.1 Hrs.
980703AC	Diagnose And Install RFI Filter (1994 -97 Thunderbird/Cougar 4.6L MFI)	2.1 Hrs.
980703AD	Diagnose And Install RFI Filter (1990 -97 Thunderbird/Cougar 3.8L)	1.9 Hrs.
980703BA	Diagnose And Install RFI Filter (1990 -95 Taurus/Sable)	1.4 Hrs.
980703BB	Diagnose And Install RFI Filter (1996 -98 Taurus/Sable)	1.4 Hrs.
980703CA	Diagnose And Install RFI Filter (1992 -97 Crown Victoria/Grand Marquis/Town Car)	1.2 Hrs.
980703CB	Diagnose And Install RFI Filter (1990 -91 Crown Victoria/Grand Marquis/Town Car)	1.6 Hrs.
980703CC	Diagnose And Install RFI Filter (1998 Town Car)	1.9 Hrs.
980703CD	Diagnose And Install RFI Filter (1998 -99 Crown Victoria/Grand Marquis)	2.2 Hrs.
980703DA	Diagnose And Install RFI Filter (1990 -99 Mustang)	1.7 Hrs.
980703EA	Diagnose And Install RFI Filter (1990 -93 Tempo/Topaz)	1.6 Hrs.
980703FA	Diagnose And Install RFI Filter (1990 -92 Mark VII)	1.5 Hrs.
980703FB	Diagnose And Install RFI Filter (1997 -98 Mark VIII LSC)	2.0 Hrs.
980703FC	Diagnose And Install RFI Filter (1997 -99 Mark VIII Base)	2.5 Hrs.
980703GA	Diagnose And Install RFI Filter (1990 -94 Continental)	1.5 Hrs.
980703GB	Diagnose And Install RFI Filter (1995 -96 Continental)	1.5 Hrs.
980703HA	Diagnose And Install RFI Filter (1990 Escort)	1.6 Hrs.
980703HB	Diagnose And Install RFI Filter (1991 -96 Escort/Tracer)	0.8 Hr.
980703HC	Diagnose And Install RFI Filter (1997 -98 Escort/Tracer)	1.6 Hrs.
980703JA	Diagnose And Install RFI Filter (1997 -98 Contour/Mystique)	0.8 Hr.
980703KA	Diagnose And Install RFI Filter (1990	0.8 Hr.

	-92 Probe)	
980703KB	Diagnose And Install RFI Filter (1993 -97 Probe)	1.8 Hrs.
980703LB	Diagnose And Install RFI Filter (1990 -91 Econoline - With Dual Tanks (Rear))	1.5 Hrs.
980703LC	Diagnose And Install RFI Filter (1992 -98 Econoline)	1.6 Hrs.
980703LF	Diagnose And Install RFI Filter (1990 -91 Econoline - With Dual Tanks (Front))	1.6 Hrs.
980703LT	Diagnose And Install RFI Filter (1990 -91 Econoline - With Dual Tanks (Both))	2.6 Hrs.
980703L	Diagnose And Install RFI Filter (1990 -91 Econoline - Single Tank)	1.6 Hrs.
980703MA	Diagnose And Install RFI Filter (1990 -96 Bronco)	2.0 Hrs.
980703NA	Diagnose And Install RFI Filter (1991 -94 Explorer)	1.8 Hrs.
980703NB	Diagnose And Install RFI Filter (1995 -98 Explorer)	1.5 Hrs.
980703NC	Diagnose And Install RFI Filter (1997 -98 Mountaineer)	1.5 Hrs.
980703PA	Diagnose And Install RFI Filter (1997 -98 Windstar)	1.4 Hrs.
980703RA	Diagnose And Install RFI Filter (1993 -98 Villager)	1.9 Hrs.
980703SA	Diagnose And Install RFI Filter (1997 -98 Expedition)	1.7 Hrs.
980703SB	Diagnose And Install RFI Filter (1998 Navigator)	1.7 Hrs.
980703TA	Diagnose And Install RFI Filter (1990 -97 Ranger Standard Cab)	1.3 Hrs.
980703TB	Diagnose And Install RFI Filter (1990 -97 Ranger Super Cab)	1.8 Hrs.
980703TC	Diagnose And Install RFI Filter (1998 -99 Ranger 4X2)	1.6 Hrs.
980703TD	Diagnose And Install RFI Filter (1998 -99 Ranger 4X4)	1.8 Hrs.
980703VA	Diagnose And Install RFI Filter (1990 -97 Aerostar)	1.5 Hrs.
980703WA	Diagnose And Install RFI Filter (1990 Bronco II)	1.9 Hrs.
980703XB	Diagnose And Install RFI Filter (1990 -96 F-150/250/350/Super Duty (Rear) And 1997 F-350/Super Duty (Rear))	1.4 Hrs.
980703XF	Diagnose And Install RFI Filter (1990 -96 F-150/250/350/Super Duty (Front) And 1997 F-350/Super Duty (Front))	1.3 Hrs.
980703XT	Diagnose And Install RFI Filter (1990 -96 F-150/250/350/Super Duty (Both) And 1997 F-350/Super Duty (Both))	2.1 Hrs.
980703X	Diagnose And Install RFI Filter (1997 -99 F-150/250)	1.6 Hrs.

## DEALER CODING

BASIC PART NO.	CONDITION CODE
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18B925	49
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**OASIS CODES:** 205000, 207000, 404000, 702000, 702300

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