

**FORD:** 1987-1988 EXP  
1987-1990 TAURUS, TEMPO  
1987-1991 CROWN VICTORIA, ESCORT, MUSTANG, THUNDERBIRD  
1990 PROBE  
1987-1990 BRONCO II  
1987-1991 AEROSTAR, BRONCO, ECONOLINE, F SUPER DUTY,  
F-150-350 SERIES, F-47, F-53, RANGER  
1991 EXPLORER

**LINCOLN:** 1987-1991 CONTINENTAL, MARK VII, TOWN CAR

**MERCURY:** 1987-1991 COUGAR, GRAND MARQUIS  
1988-1989 TRACER  
1991 TRACER

### **ISSUE**

The Motorcraft fuel injector cleaning system consists of:

- The original all-car fuel injector cleaning kit (CM1000),
- The new Ford-application fuel injector kit (CM1002) and
- Motorcraft Pressurized fuel injector cleaner (CM1001).

The Motorcraft Fuel injector cleaning method was introduced in TSB 91-19-3 as an alternate to the Rotunda Fuel Injector Tester / Cleaner, and is reimbursable as specified in the Service Labor Time Standards Manual. The Motorcraft injector cleaning system is available from the regular Parts Distribution System or from local Motorcraft Distributors.

### **ACTION**

No action is required.

### **NOTE**

**THIS TSB ARTICLE SUMMARIZES THE QUESTIONS ASKED MOST FREQUENTLY BY CALLERS TO THE MOTORCRAFT "800" LINE ABOUT THE MOTORCRAFT FUEL INJECTOR CLEANING METHOD. ALSO, A TOLL-FREE NUMBER IS AVAILABLE FOR ORDERING CLEANING KIT PARTS, OBTAINING INFORMATION AND MAKING SUGGESTIONS.**

Q. Why do we sometimes experience insufficient pressure to completely empty a cleaning can?

A. If the can is pierced properly, you will seldom experience problems with inadequate pressure. However, to further reduce those instances of insufficient pressure to complete the cleaning process, Motorcraft recently made available a re-pressurizing device (S-79), which is included with all CM1000 and CM1002 kits, and is also available separately. The device allows service personnel to repressurize the can using compressed air whenever there is too little pressure to complete the cleaning procedure.

Although there have been some cases of actual low can pressure, by far, the largest number of low pressure complaints have been due to improper can piercing. **For best results, in addition to being hung upside-down, during the cleaning process, the can must also be upside-down while being pierced.**

Q. Why is it imperative that the can be pierced upside-down?

A. Motorcraft fuel injector cleaner and the pressurizing gas are packaged together in an aerosol can. The piercing device contains a seal, which is intended to seal against the threaded cup of the can before it is pierced. When using a new piercing device with a new seal, the can needn't be upside-down. However, after a few cans have been pierced, the piercing device seal becomes compressed, and piercing can take place before the seal makes full contact with the can.

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The gas is always at the top of the can. Thus, if the can is pierced right-side up, the gas can rapidly escape before the seal makes full contact, resulting in insufficient pressure to do the cleaning job.

If the can is upside-down when pierced, the liquid cleaner is in contact with the component being pierced, and the worst that can happen before the seal makes contact is the loss of a few drops of cleaner.

Service personnel sometimes question the need to pierce the CM1001 cans upside-down, particularly if they have had experience with another injector cleaner packaged in what is referred to as a "barrier pack" can. In this case, the cleaner is in an inner aluminum tube which is surrounded by the pressurizing agent. In a barrier pack can, the pressurizing agent cannot escape unless a small rubber plug at the bottom of the can is removed.

Q. Why isn't CM1001 packaged in a barrier pack can?

A There are several reasons. First, Motorcraft wants to provide an environmentally safe package, so it was decided to use compressed air or nitrogen to provide the pressure. It was not possible to use either of these gasses in the barrier pack cans since the cans cannot contain the required pressure for compressed air or nitrogen. Barrier cans generally use liquid propellant mixtures, and pressure is limited to 65-70 psig.

Also, with the barrier pack, upon completion of the cleaning procedure, a small amount of product remains in the collapsed inner tube, and the outer shell still contains the liquid propellant, which requires proper disposal. When the CM1001 can is empty, neither product nor pressurizing gas remains in the can.

Finally, the barrier pack can is considerably more expensive, and Motorcraft wanted to offer the most cost-effective cleaner possible.

Q. How can dealers obtain replacement and supplemental parts?

A. At the present time, all supplemental and replacement parts sales are handled directly by Shrader Canada Limited. Also, a toll-free number is available for ordering cleaning kit parts (1-800-662-6891). The Motorcraft fuel injector cleaner parts list/price sheet is shown in Figure 1.

The most frequently ordered parts are the S-20 Ford 5/16-32 multipoint adapter, the S-35 can suspension bracket and S-70 can piercing device, followed (in approximate order) by the S-67 and S-62 seals, the S-72 diaphragm, disassembly tools S-17, S-18, S-41, and S-42, the S-44 plug, the S-45 and S-51 adapters, the S-48 female loop, the S-38 regulator and the S-69 supply assembly.

Additional questions concerning the purchase of supplemental parts should be directed to Shrader Canada Limited, at 1-800-662-6891.

### **LIMITED TIME OFFER**

A new installation video is available, and is included as part of CM-1002, Ford Application Kit. While supplies last, a free copy of the video will be provided to requesting dealerships who call 1-800-662-6891.

PART NUMBER	PART NAME
CM-1000	Motorcraft Fuel Injection Cleaning kit
CM-1001	Motorcraft Pressurized Fuel Injector Cleaner
CM-1002	Motorcraft New Ford-Application Fuel Injector Kit

**OTHER APPLICABLE ARTICLES:** 91-19-3  
**WARRANTY STATUS:** INFORMATION ONLY  
**OASIS CODES:** 404000, 490000

**SHRADER CANADA LIMITED - MOTORCRAFT FUEL INJECTOR CLEANING PARTS**

Part No.	Description	CM-1000 All Vehicles Kit Contents	CM-1002 Ford Only Kit Contents	Dealer Price
S-1	Hose Loop, Valve			\$17.75
S-2	Hose Loop, 1/4" x 5/16"	X		14.00
S-4	Clamp, Hose	X		.80
S-5	Adapter, 5/16"	X		4.50
S-6	Plug, 5/16" Hose	X		4.00
S-7	Plug, Ford Return Hose			4.50
S-8	Plug, Ford Return Line - Inverted Flare	X	X	1.25
S-9	Plug, GM Return Line - O-Ring Seal	X		1.90
S-10	Plug, GM Return Line - Inverted Flare	X		.80
S-11	Plug, 12mm Return Line	X		1.50
S-12	Plug, 14mm Return Line, Swivel Nut	X		3.75
S-13	Adapter, Chrysler/AMC Supply	X		6.95
S-14	Adapter, 8mm Cold Start	X		12.50
S-15	Adapter, 10mm Cold Start	X		12.75
S-16	Adapter, GM TBI Banjo Bolt	X		15.75
S-17	Disconnect Tool, Ford 3/8" Return Line	X	X	8.75
S-18	Disconnect Tool, Ford 1/2" Supply Line	X	X	8.75
S-20	Adapter, Ford 5/16"-32 Multi-point Supply	X	X	8.50
S-21	Adapter, GM TBI - Inverted Flare	X		13.75
S-22	Adapter, GM TBI - O-Ring Seal	X		12.00
S-23	Adapter, 12mm Banjo	X		13.50
S-26	Adapter, 14mm Swivel Nut	X		10.75
S-27	Adapter, 12mm Swivel Nut			10.50
S-28	Seal Kit Assembly	X		23.00
S-35	Can Suspension Bracket	X	X	2.50
S-36	Hose, Supply			19.50
S-38	Regulator, Pressure			52.50
S-40	Adapter, GM Multi-point 7/16"-20, Right Angle			9.50
S-41	Disconnect Tool, GM 5/16" Return Line	X		5.00
S-42	Disconnect Tool, GM 3/8" Supply Line	X		5.00
S-43	Adapter, Ford 1/4" CFI Housing	X	X	9.00
S-44	Plug, Ford 3/8" Metal Quick Connect Return	X	X	10.25
S-45	Adapter, Ford 1/2" Metal Quick Connect Supply	X	X	7.50
S-46	Plug, Ford Plastic Quick Connect Return	X	X	19.75
S-47	Adapter, Ford Plastic Quick Connect Supply	X	X	14.75
S-48	Loop, Ford 3/8" x 1/2" Metal Quick Connect-Female			15.25

**TO ORDER:**

**PHONE: 1-800-662-6891 or FAX: 1-313-291-0077**

**PLEASE NOTE:**

- All taxes extra
- Prices are F.O.B. Shrader Canada Limited U.S. Office in Taylor, Michigan
- Prices subject to change without notice
- Billings will be made by Shrader Canada Limited

Part No.	Description	CM-1000 All Vehicles Kit Contents	CM-1002 Ford Only Kit Contents	Dealer Price
S-49	Loop, Ford 1/4" x 5/16" Plastic Quick Connect - Male			\$19.25
S-50	Cap, Dust Cover, 5/16" - 32, Ford			.25
S-51	Adapter, Ford 3/8" Metal Quick Connect Supply Line	X	X	7.50
S-52	Adapter, 12mm Banjo Bolt	X		15.75
S-53	Cap Nut, 12mm	X		2.25
S-54	Bolt, European 12mm Dbl Banjo			4.25
S-55	Adapter, 5/16" BMW L-Jetronic			23.50
S-56	Adapter, Asian 12mm Mitsubishi			16.50
S-57	Adapter, Asian 16mm Mitsubishi			16.50
S-58	Cap, Dust Cover 7/16" -20			1.65
S-61	Seal, E.F.I. Supply Return Quick Connect Plug - Asian 12mm			.25
S-62	Seal, Ford 5/16" -32 Multi-point Adapter			.25
S-63	Seal, Metal Quick Connect Supply - Asian 16mm			.25
S-64	Washer, Bronze, 12mm Banjo Bolt Adapter			.45
S-65	Washer, Bronze, 8mm Cold Start Adapter			.45
S-66	Washer, Bronze, 10mm Cold Start Adapter			.45
S-67	Seal, Can Piercing Device			.50
	Seal, GM 7/16" Multi-point Adap. Seal, Supply Hose			.50
S-69	Assembly, Can Access, Regulator, Supply	X	X	109.50
S-70	Piercing Device			17.50
S-71	Shutoff Valve			11.00
S-72	Diaphragm, Monier Regulator			6.75
S-72a	Diaphragm, Norgren Regulator			6.75
S-72b	Diaphragm, Shrader Regulator			6.75
S-73b	Manual, Syst. Cleaning, Pictorial	X	X	20.50
S-74	Kit Box	X		33.50
S-75	Pressure Gauge			19.50
S-77	Hose Clamp Pliers	X		8.50
S-78	Adapter, Probe/Mazda Supply Fitting			22.00
S-79	Container Repressurizing Device	X	X	15.25
S-84	90° 3/16" -32 Multi-point Supply Adapter			7.75
F191**	Manual, System Cleaning			10.00

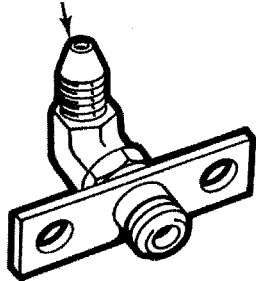
**\*\* Need an extra manual? While supplies last, the original Motorcraft F191 Instruction Manual provided with the original CM-1000 kit is being offered at the reduced Dealer price of only \$10.00.**

*Effective 4/1/94*

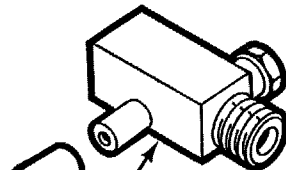
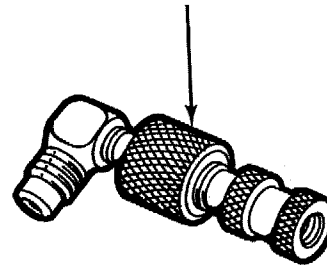
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Figure 1 - Article 94-8-9

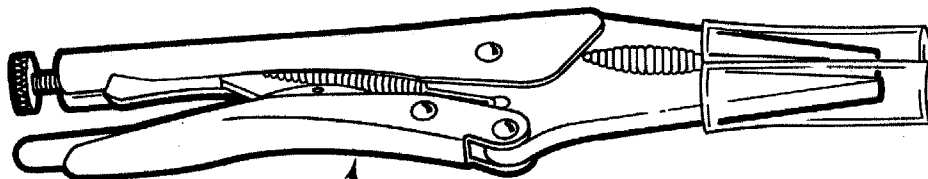
S-78  
PROBE/MAZDA  
ADAPTER



S-84  
RIGHT ANGLE FORD  
MULTI-POINT ADAPTER



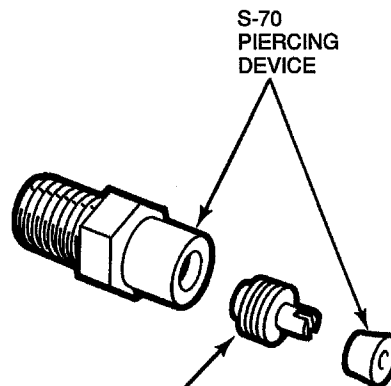
S-79  
REPRESSURIZING  
DEVICE



S-77  
LOCKING  
PLIERS



ALLEN  
WRENCH



S-70  
PIERCING  
DEVICE

S-70B  
REPLACEMENT  
CUTTER

#### NEW FEATURES

As a result of suggestions from technicians in the field, a variety of new kit parts and features are now available in the CM-1000 (all vehicles) or the CM-1002 "Ford-Only" kit:

- A patented repressurizing device (Part #S-79. This device ensures that all the cleaner is used and that the empty container can be disposed of without special handling.
- An improved, longer lasting pressure regulator
- A replacement depressor for the S-36 supply hose (Part #S-36d)
- A depressor for the Multi-point adaptor (Part #S-20d)
- A new piercing device made entirely of steel (Part #S-70)
- A right angle Ford Multi-point (Schrader valve) adaptor (Part #S-84). This adaptor makes it easier to connect to the Schrader valve on vehicles that are hard to access.

The following improvements are only available in the CM-1000 (all vehicles) kit (or by special order):

- New locking pliers for clamping hoses (Part #S-77)
- Fuel-resistant foam drawer liners
- A parts and adaptor location chart

TB-3671-A

Figure 2 - Article 94-8-9