

Tomco Techtips

TM

ISSUE 5

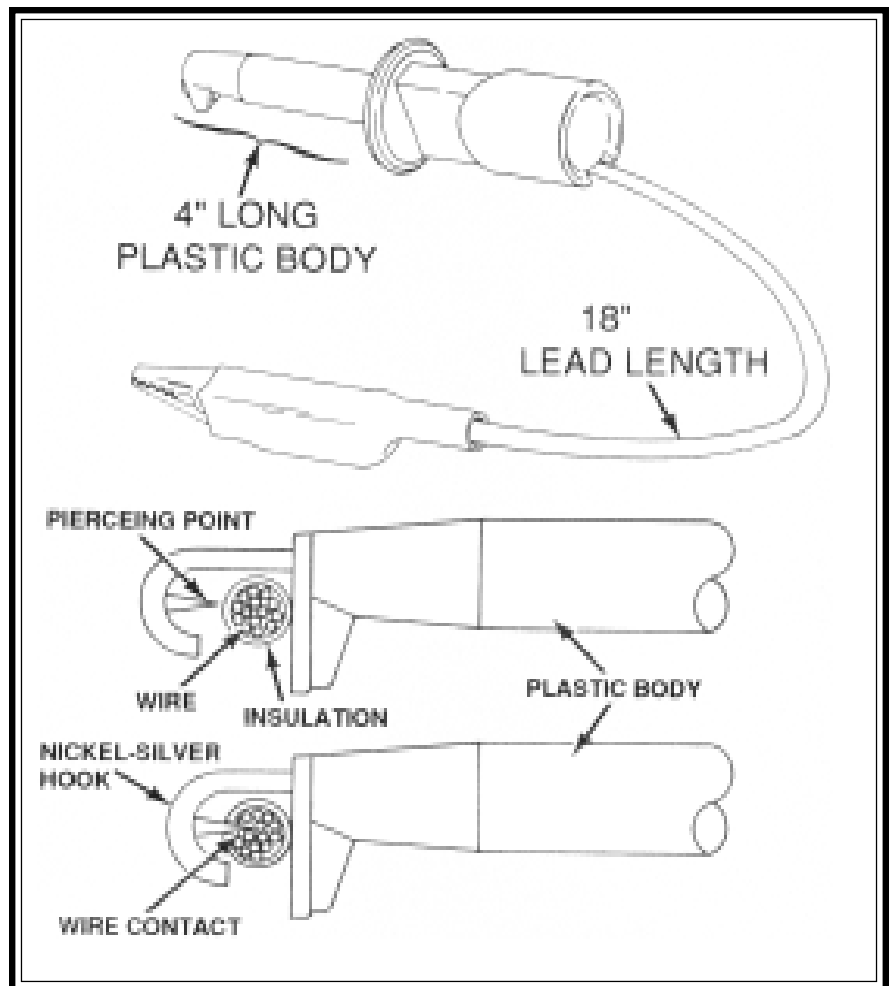
TOMCO'S QUICK PROBE TEST CONNECTOR PART NO. 13715

Tomco's new **QUICK PROBE TEST CONNECTOR** makes it possible to make electrical tests quickly and accurately on all vehicles. The probe's hook supports the wire, while a sharp needle point (probe) pierces the insulation for electrical contact. It has an insulated plastic body, an 18" long wire lead and an insulated alligator clip. It's an ideal accessory to use with inexpensive multi meters.

The **QUICK PROBE TEST CONNECTOR** makes possible pinpoint checks on Ford, Chrysler and Import computer systems that do not have the GM type ALDL data link connector for diagnostic scanners.

The sharp needle point probe makes only a very small hole in the insulation - that is usually self-healing. If concerned about corrosion, this tiny hole can be resealed with automotive sealer for a weather-tight seal.

The **QUICK PROBE TEST CONNECTOR** is packaged on a skinpack display card. Order Tomco part no 13715.



NEW VIDEO TAPE #11

"HOW TO" TEST SENSORS AND CONTROLS

Tomco's Video #11 is a 41 minute program that explains the function and testing of the sensors and controls used on PORT and TBI fuel injection and computer controlled carburetor systems. Where possible, inexpensive volt ohm meters are used for both on and off the car checks. This video explains how and why each device operates and a simplified method of testing each sensor/actuator.

Order TOMCO Tape # 11 for VHS format. Send \$39.95 plus \$2.50 shipping and handling for each tape.

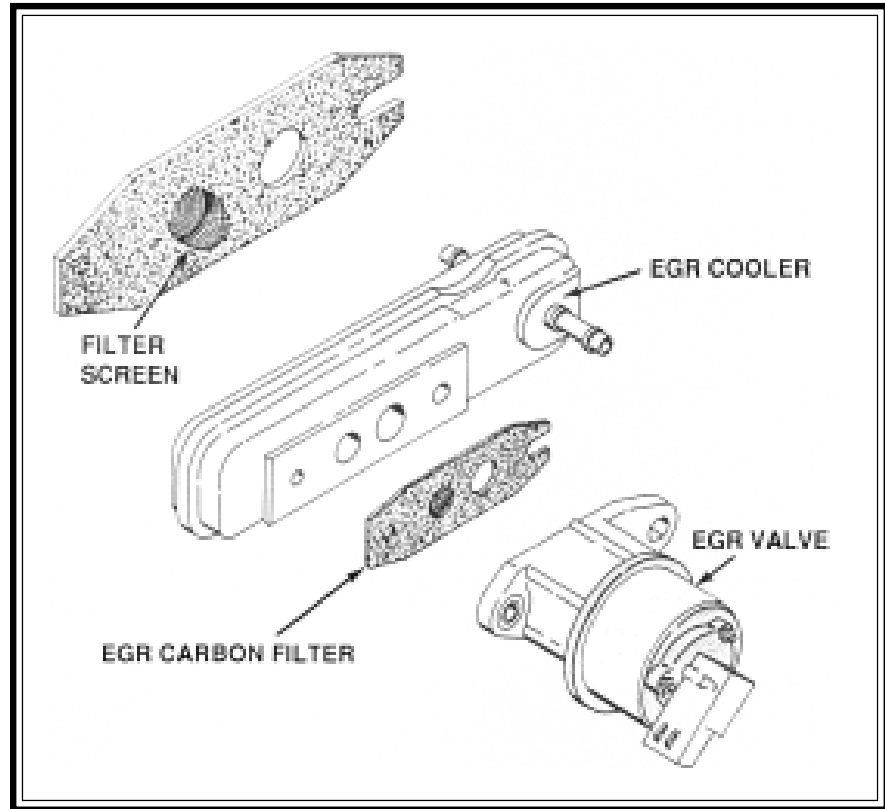
EGR CARBON FILTER TOMCO PART NO. 2-1121

Tomco has designed a replacement EGR gasket that contains a fine mesh, heat resistant screen to help prevent rough idle and stalling in Ford vehicles using sonic-type EGR valves. These valves have the EGR position sensor mounted on top of the valve and operate the EGR's diaphragm.

Stop and go driving conditions cause carbon accumulation in the exhaust passages leading to the EGR valve. When these particles break loose, they can be lodged between the EGR valve pintle and its seat. The result is rough idle and stalling.

THE EGR CARBON FILTER and gasket takes the place of the original equipment type gasket. The heat resistant filter screen catches these particles before they can cause trouble.

An **EGR CARBON FILTER** is the best way to correct this condition. A new (expensive) EGR valve may very well foul again in a short time. Clean the EGR valve pintle and seat when installing the **EGR CARBON FILTER**. Order Part No. 2-1121



FUEL INJECTION MANUAL T1-89

**TOMCO'S NEW T1-89
ELECTRONIC FUEL
INJECTION MANUAL**

It always seems easier to diagnose and fix a mechanical problem if one understands how the device or engine system operates. Tomco's Electronic Fuel Injection Manual is designed to promote a better understanding of these computer controlled fuel systems. Over 800 pages cover the diagnosis and testing of domestic and import cars, light trucks and vans through the very latest models. Each fuel injection system is covered by a theory of operation section, a troubleshooting guide, pressure, voltage and resistance specifications and complete fuel system wiring diagrams. This manual has been used as a text in fuel injection clinics held across the country.



HOW TO CHECK A BAD CARBURETOR FLOAT

There is no need to replace a perfectly good float, before you either guessed if you had a bad float or took the chance that it was the right weight. Tomco, Inc. now has a float weight scale so you can check "not guess" the floats weight to see if it is good or bad. Built to exacting Bureau of Standards accuracy, the scale is calibrated in 0 to 4 ounces and 0 to 80 grams. Float Weight Specifications and Identification Charts, M-298 (Domestic) & M-423 (Import), are all that is needed to quickly check suspected fuel soaked plastic floats for overweightness.

- O EASY TO USE FLOAT WEIGHT SCALE**
- O HEAVY "SOGGY" FLOATS WASTE GAS**
- O CORRECT WEIGHT SHOWN FOR EACH FLOAT - BY TYPE ON CHART**
- O REPLACE FLOATS HEAVIER THAN SPECIFIED**



QUICK TESTS FOR OXYGEN SENSORS AND COMPUTERS

Here's a quick test that can be made on any computer controlled car to prove the O2 sensor, coolant sensor and the ECM (computer) are working.

This test determines if the computer and the fuel system are capable of responding to the varying voltage as supplied by the O2 sensor. The test will work on any carbureted, throttle body injection system (TBI) or port fuel injection (PFI) engine.

The engine should be fully warmed up before making this test.

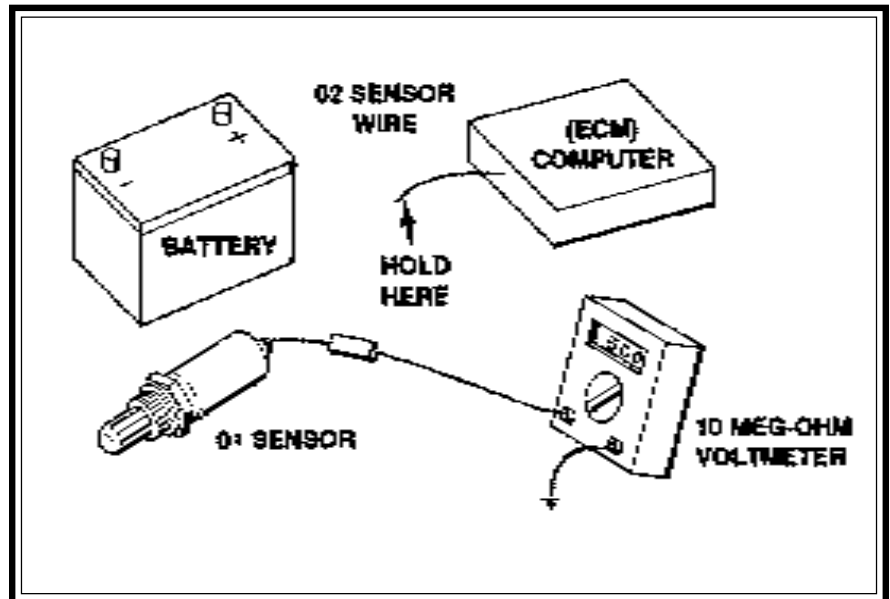
Disconnect the O2 sensor lead from the wire going to the computer. Connect a high impedance, digital-type voltmeter with a 2 volt scale to the sensor. Be sure a high impedance 10 MEG OHM voltmeter is used.

Hookup the meter between the O2 sensor's output wire and ground on the engine. Do this with the engine turned off to avoid computer damage. **TOMCO'S QUICK TEST PROBE, PART NO. 13715**, may be used to simplify this hookup.

Hookup a jumper wire, if needed, on the sensor wire going to the computer so that you can grasp the wire connection.

Disconnect the vacuum hose at the computer on carbureted Chrysler products and apply 14" of vacuum during this test.

With the engine at 1800 to 2000



RPM and fully warmed up, hold on to the positive battery post with one hand and the O2 sensor wire going to the computer with the other hand.

The O2 sensor voltage should drop and you should be able to note a change in engine operation.

This drives the system **LEAN**.

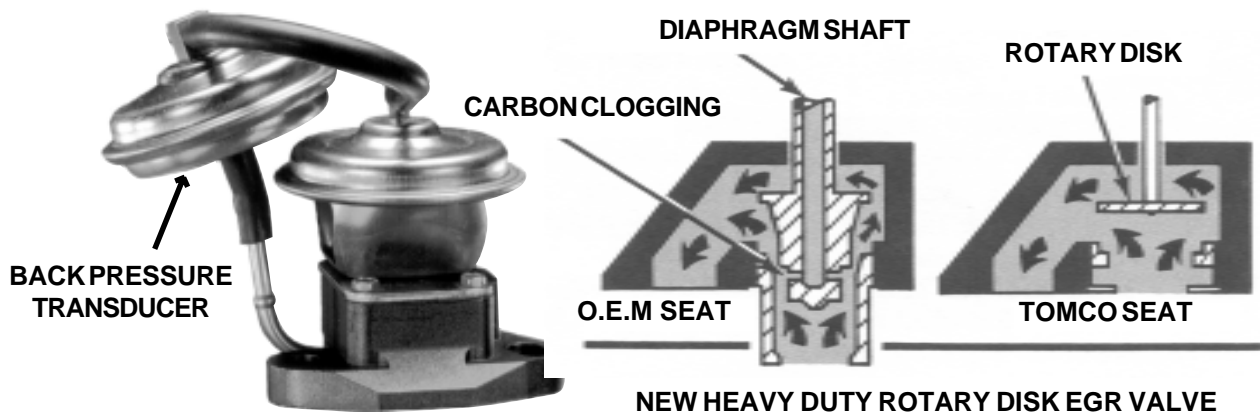
Now, touch the negative battery post and determine if the voltage at the O2 sensor increases and engine operation is affected. This drives the system **RICH**.

A coated or contaminated sensor will be sluggish in its response.

If the engine does not respond to this test it may not be at full operating temperature, the engine coolant temperature (ECT sensor) or its wiring may be defective, or there is a problem with the computer or its connections.

Some 1986 and later Chrysler products must have an input signal from the vehicle speed sensor before the computer will go into closed loop, making it necessary to jack up the drive wheels and putting the transmission in drive during this test.

EXHAUST GAS RECIRCULATION (EGR) VALVES



EGR valves are no longer just an engine accessory to meet emission standards. They play a vital part in eliminating detonation, ping or spark knock. Late model O.E. design valves have used a back pressure feature to control the valve's function. Clogging of the small back pressure passage in the diaphragm shaft by carbon deposits is a common problem with these type valves. Leakage at the valve's seat has resulted in rough idle or stalling complaints. Tomco's new heavy duty valves use a remotely located back pressure transducer and a self-cleaning rotating disk valve seat to solve these problems.

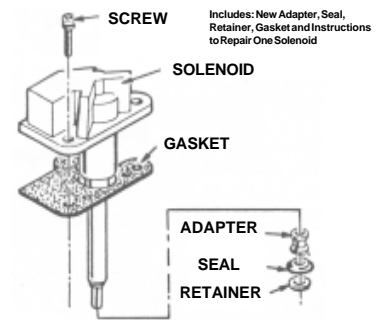
TWO NEW SERVICE HELPS FOR GM CARBURETORS

E2SE Solenoid Seal Kit #6-296

The Rochester E2SE varajet carburetor uses a computer controlled fuel mixture solenoid that functions in the carburetor's low, intermediate and high speed circuits.

A small donut shaped seal at the bottom of this mixture control solenoid can fail, allowing unneeded fuel into the high speed system. This results in performance and mileage complaints.

Tomco has combined this seal with parts necessary for its installation in repair kit #6-296.



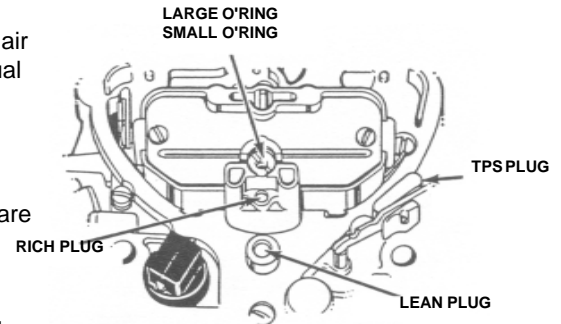
E2ME & E4ME Plug & O'Ring Kit #6-308

Another service fix kit contains the plugs that seal the ports in the carburetor air horn for the lean and rich mixture adjustments on the quadrajets (E4ME) and dual jet (E2ME) carburetors. Combined in this kit is also the large and small o'rings that seal the idle air bleed screw.

Often, all that is needed to correct a performance complaint is the fine tuning adjustment of the lean and rich mixture stops and the idle air bleed using the dwell meter procedure. Also, the large and small air bleed screw o'rings often are found damaged, resulting in an air leak.

The old plugs may be removed without removing the carburetor from the engine by carefully drilling through their centers and using self-tapping screws and diagonal pliers as pulling tools. Use care to cover the carburetor bowl vents, bores and idle air bleeds in the bowl cover while drilling.

Last year, Tomco released a tool set #13725 to aid in making these adjustments. The o'rings and plugs are combined in service kit #6-308.



Includes: Idle AirBleed O'Rings, Lean and Rich Mixture Adjustment ScrewPlugs, Throttle Position Use With Tool Set No. 13725.

SUPER TIP

Late model engines require high temperatures for proper driveability and emission control. Substitution of a lower temperature thermostat may affect these factors and shorten engine life.

Denny Sneathen
Oakland, CA

SUPER TIP

Misapplications-- Fuel Injectors that are calibrated to operate a factory equipped vehicle cannot supply proper air/fuel ratios when the engine or vehicle is grossly modified. The addition of headers, a different camshaft or intake manifold, alteration of gear ratio, tire diameter, etc. will all effect the requirements of the engine and the Fuel Injectors.

Randy Lenger
Denver, CO

SUPER TIP

The check balls, springs, clips, or tiny screws that fall on the floor and get lost when rebuilding a carburetor, causes needless aggravation. Disassembling the carburetor over a do-it-yourself type drain pan will catch all those tiny parts. Reinstall the clips and fasteners on the links as the linkages are removed so you're not hunting for them later. Put the carb on a 2 X 4 that spans the drain pan for disassembly. Unfamiliar with a certain carb, make notes on a piece of paper about the position of parts, linkages and vacuum hose locations. These are simple precautions that prevent needless comebacks that result from lost balls and springs.

Rich Huelsmann
Charleston, SC

INTERESTED IN MORE??

Tomco conducts Technical Seminars throughout the country using the best instructors in the nation. The seminars are 100% TECHNICAL-----NOT SALES-----PRESENTATIONS!! We cover diagnosis of late model fuel injection and emission related problems including Import and Domestic. Contact your Tomco jobber or our call Tomco's technical service dept.

The FORD publication promised earlier will be in a separate issue due to the length of the program. So keep your eyes open and look for that issue dedicated to Ford.

TECHNICAL INFORMATION FOR THE PROFESSIONAL

TOMCOTECH TIPS --- A QUARTERLY PUBLICATION