TECHlink

GM

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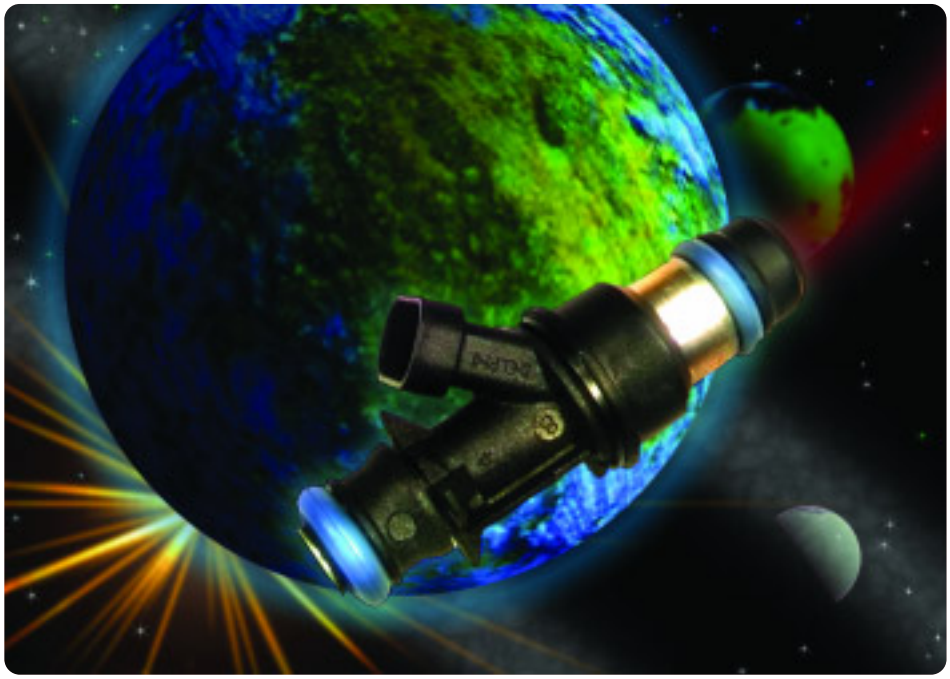
A Monthly Publication for GM Dealership Service Professionals

Injector Terminal Fretting -- The Invisible Menace



The Mystery

Over 1000 Multec 2 injectors are returned through the warranty system every year. Every returned injector is put through a series of functional tests to identify electrical faults, injector leaks and incorrect injector flows.

Once a cause for failure is identified, the information is used to take corrective action: improved manufacturing procedures, design or materials enhancements, or improved service procedures.

About 60% of returned injectors pass all of the functional tests. Some operate with no apparent failures when put on test vehicles in an effort to reproduce the complaint. These injectors are called No Trouble Found (NTF) injectors.

Over half of the vehicles which had NTF injectors replaced never returned to the dealer for a similar complaint. The mystery is: how did the replacement of what appears to be a good injector solve a driveability problem?

The Investigation

An in-depth review of repair orders and warranty claims found that DTCs P0300 and P0200 were the common link with injector replacements. These clues triggered an investigation into the integrity of the Multec 2 electrical connector. Technicians who carefully document DTCs and diagnostic test results provide valuable information for these types of investigations.

The Invisible Menace Found

Because the female injector connector

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Techline News

Breaking News About Service Bulletins

In the past, your dealership has received an allotment of printed service bulletins on a regular basis, in the Dealer World Delivery box. In addition, many dealerships also subscribe to receive additional copies to distribute to technicians. At the same time, service bulletins have also been viewable on the Service Information (SI) website.

TIP: If you still do not have ID and password to access SI, contact your Area Service Manager or call the Techline Customer Support Center at 800.828.6860.

By the end of June, 2003, there will be a change in the way printed bulletins are distributed. Printed bulletins will no longer be sent automatically to your dealership. You can continue receiving printed bulletins, at the price of 10¢ per copy. Your service manager has received a Dealer World subscription form on which to place your order. The subscription will continue on a regular basis until you choose to change it.

Whether your dealership chooses to subscribe to receive printed bulletins or not, here's how to find bulletins on SI.

- Go to the website at http://service.gm.com.
- Click on **Service Information**.
- Put in your ID and password.
- Click on **Number Search** if you know the number of the bulletin.

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Contents

- Click on **Latest News** if you want to read a list of the most recent bulletins issued (past 8 weeks). These are organized by Bulletins, Campaigns and Preliminary Information. Within categories, the information is organized by typical SI topics, such as Engine, Steering, HVAC and so on.
- Click on the **Y+P+K** button if you want to see bulletins that pertain to a specific year, platform and key word.

Some printed material will continue to come, whether you subscribe to printed bulletins or not.

(1) Warranty Administration bulletins and Advanced Service Information bulletins will continue to be distributed in printed form for the foreseeable future.

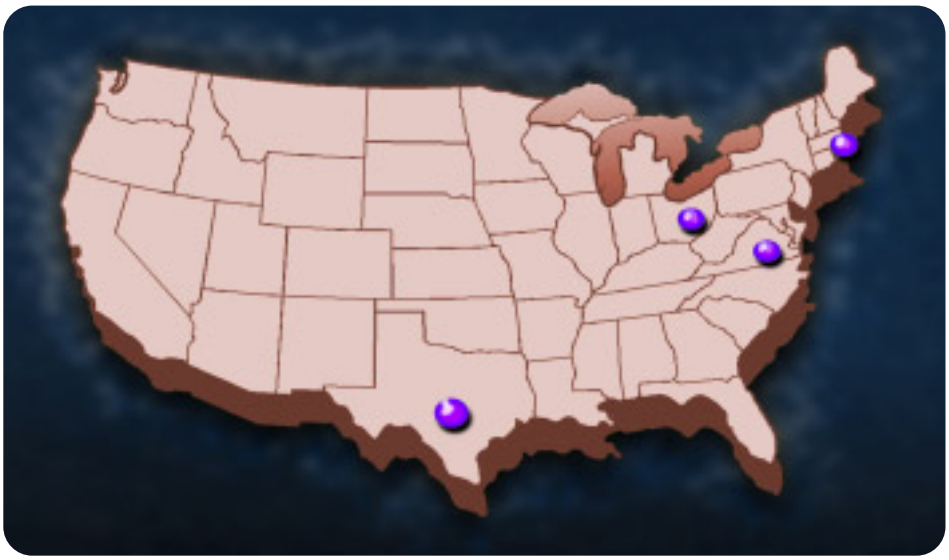
(2) Your dealership will receive a printed summary of bulletins issued, every two weeks. This parallels the information on the Latest News page of the website.

(3) And finally, your dealership will receive a blue-bannered printed bulletin called the Field Product Reminder, every two weeks. This will contain a list of "Fix It Right The First Time" items for cars and trucks. This list is also being repeated on the rear cover of TechLink each month.

TIP: You may want to remind owners that they can subscribe to receive service bulletins as well. Every owner's manual contains the necessary ordering information.

- Thanks to Alan Srodawa and Frank Flees

Additional Training Sites Coming



In the coming months, you will be able to get more hands-on training than ever before. In an effort to help service technicians "fix it right the first time" and to achieve their training requirements, GM Service Technical College (STC) is opening an additional four satellite locations to supplement the current 23 training locations nationwide.

Each satellite training site selection was based on population and dealer density, and input from GM field personnel. New satellite locations include:

- North Central -- **Stark State College of Technology, Canton, OH**
- North East -- **Mass Bay Community College, Ashland, MA (Boston)**
- South Central -- **St. Philip's College, San Antonio, TX**
- South East -- **J. Sargeant Reynolds Community College, Richmond, VA**

GM STC will be providing training dates and schedules in the coming weeks, as information becomes available.

For questions, visit the GM Training Website (GM TW) at www.gmcommontraining.com and select "Contact Us."

- Thanks to Lisa Kennedy

GM *TechLink* is a monthly magazine for all GM retail technicians and service consultants providing timely information to help increase knowledge about GM products and improve the performance of the service department.

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General Motors service tips are intended for use by professional technicians, not a "do-it-yourselfer." They are written to inform those technicians of conditions that may occur on some vehicles, or to provide information that could assist in the proper service of a vehicle. Properly trained technicians have the equipment, tools, safety instructions and know-how to do a job properly and safely. If a condition is described, do not assume that the bulletin applies to your vehicle or that your vehicle will have that condition. See a General Motors dealer servicing your brand of General Motors vehicle for information on whether your vehicle may benefit from the information.

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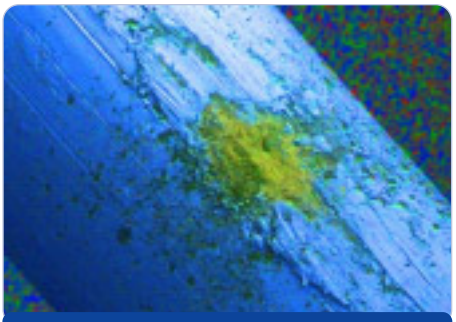


Microscopic view of fretting corrosion

is rarely replaced, the study focused on the injectors' electrical terminal pins. To gain access to the terminal pins, the surrounding plastic had to be cut away. The terminal pins were examined with a high power microscope to see if there were any indications of connection problems.

A thin layer of oxide was found to be forming on the injector male pin terminal at the point where it contacts the female harness connection. Invisible to the naked eye, "fretting corrosion" was found on a majority of the NTF injector terminals.

"Fretting" describes a tiny rubbing motion that occurs between two surfaces (usually on the order of 10-100 microns). "Fretting corrosion" refers to a build up of insulating, oxidized debris that forms on electrical connections due to a fretting action at the contact points. Injector vibration, engine vibration, and electrical harness movement are contributors to the fretting motion.

Refer to the accompanying illustrations.

Step one shows the tin oxide layer with clean tin-on-tin contact, resulting in a stable connection.

Step two and three show further progression of fretting corrosion (formation of oxide layer)

Step four shows the contact point after numerous fretting cycles, resulting in an unstable electrical connection.

The amount of oxide build-up determines how drastic the effect will be on the injector circuit. Worst case is a total loss of continuity in the connection resulting in P0200 (Injector Circuit Fault) and P0300 (Misfire) codes being set. If the oxides create a high resistance circuit, insufficient current will be available to properly open the injector, resulting in unstable fuel delivery and ultimately a P0300 DTC. High resistance in the circuit will not necessarily set a DTC P0200.

Keep in mind that a connection with fretting corrosion is unstable. Because movement causes fretting, any vibration may create a condition where the connection varies from an open circuit, to a high resistance connection, to a good connection.

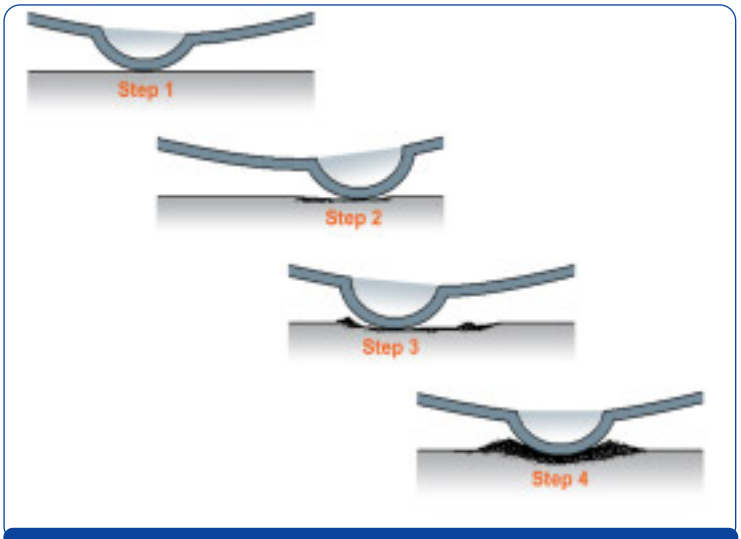
What To Do?

Disconnecting and reconnecting the injector connector will temporarily scrape the oxides off, creating a good connection. This explains why replacing a suspected faulty injector with a new injector appears to repair the condition. But, if the conditions still exist for fretting to occur, it will eventually come back.

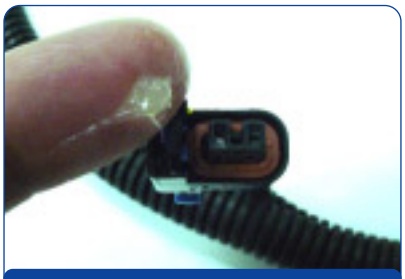
Using lubricant part number 12377900 to coat the terminals is the best preventative measure to take. This provides a lubricant for the terminals as well as providing an oxygen barrier to guard against oxide formation.

To apply the lubricant gather a small amount (about the size of a BB) on the end of your finger. Press it into the end of the disconnected female connector, making sure to cover both cavities. Reconnecting the harness connection onto the injector will wipe the lubricant onto the male terminal pins.

- Thanks to Randy Pearl and Dave Sant



Step 1 Stable connection • Step 2 Progression of fretting corrosion
Step 3 Formation of oxide layer • Step 4 Unstable connection



Applying lubricant

Properly applied lubricant

A/C Sealant Detector

TIP: Before connecting a suspect system to your equipment, first test the refrigerant for the presence of stop-leak.

The GE-47548 Sealant Detector consists of a high-side coupler with a built-in flow restriction cartridge, a hose, and a flowmeter.

There are two high-side couplers, one for R12 and one for R134a. Each one has provision for the installation of a disposable flow restriction cartridge. Before use, apply water to the cartridge, using the dispenser provided.

The tool is connected to the A/C system's high side. A small amount of refrigerant is allowed to flow through the tool, causing the ball in the flowmeter to rise. After two minutes, if the ball remains high, there is no sealant in the A/C system. If the ball drops within this time, it indicates that sealant in the refrigerant has cured in the passageway in the cartridge, causing flow to drop or stop.

A plugged cartrige must be replaced before the tool is used again.

The GE-47548 Sealant Detector is available through Kent-Moore

- Thanks to Dave Roland, Derek Trimble and Gary Halpern

A/C Refrigerant System Sealer and Leak Detection Guidelines

Refer to bulletin 03-01-38-001 for details. Here are the highlights.

Various A/C system sealers, stop-leak, and seal conditioners are available to consumers and to the A/C repair industry. Because they are easily obtained, there's a likelihood that you will encounter a vehicle with an A/C system contaminated by one of these products.

TIP: See the article on page 3 for information on the GE-47548 Sealant Detector now available.

Products Not Endorsed

GM Service Operations does not endorse or approve use of such products in any GM vehicle. These products may damage A/C systems and service equipment.

IMPORTANT: A/C systems contaminated with sealers, stop-leak, or seal conditioners are not covered by GM New Vehicle Warranty or Replacement Part Warranty.

A typical stop-leak sealant is carried through the A/C system in the refrigerant oil. If a leak occurs, some of the sealant passes out of the refrigerant system into the atmosphere. It cures in the presence of moisture, which is supposed to "seal" the leak. If there is moisture in the vehicle's A/C system, or in the plumbing of your A/C service equipment, the stop-leak can cure there, causing circulation problems.

In addition to stop-leak products, there is another family of products which is not recommended or endorsed. These are the seal conditioners, which cause system o-rings and other rubber components to swell to stop leaks.

These seal swellers cannot be detected using the GE-47548 Sealant Detector or any other known tool at this time. Seal swellers can cause similar problems once added to A/C systems. The seal swellers also pose a potential threat to recover/scavenger units, because they contain rubber o-rings and other parts.

The Approved Approach

Various federal, state/provincial and local regulations prohibit recharging an A/C system with known leaks. In support of these regulations, GM Service Operations recommends using recommended leak detection devices to locate leaks, and then using recommended procedures to repair or replace leaking components.

Flushing

Using GM-approved (refrigerant-based) system flushing on a contaminated system can introduce these contaminants into the A/C service equipment, which may cause equipment damage.

It may be necessary to replace all components affected by the additives to correct a contaminated system.

- Thanks to Dave Roland

Door Hinge Repair

Owners of 1999-2003 Chevrolet Silverado and GMC Sierra may comment that a door sags or is hard to open or close.

A door hinge pin and bushing kit is available from:
Ken-Co Industries LTD
Burlington, Ontario, Canada
phone 1.800.263.4283
fax 1.905.335.1829
email info@ken-co.com
attention Ken Spragg
website www.ken-co.com

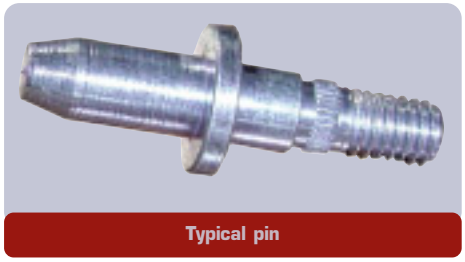
Each door requires 2 kits. The minimum order is 6 kits.

A kit includes 2 brass bushings, 2 zinc coated hinge pins, 2 nyloc locknuts, 1 washer, and instructions.

Using the kit permits repairing and realigning the door without having to cut off the hinge, and no painting is required.

- Thanks to Steve Love

Bushing



Typical pin

Parts assembled

Battery Green Eye Eliminated

In the next few months, you will begin seeing new vehicles equipped with Delphi batteries that no longer have the "green eye" (built-in hydrometer).

This is a rolling change which will eventually include all GM cars and trucks. Service replacement batteries will be "eyeless" as well, as current stock is depleted and replaced.

TIP: The green eye was never installed in the AGM battery, used in Corvettes and the 2004 Pontiac Grand Prix, because these batteries do not contain free liquid to operate the hydrometer.

State of Charge

You are of course familiar with the intended use for the green eye -- indicating the battery's state of charge. This information is useful in determining whether a battery is charged, needs to be charged, or lacks sufficient electrolyte to permit charging.

The green eye information is largely redundant now that the Midtronics J-42000-U conductance tester is in widespread use. This tester can analyze a battery with a low state of charge, so long as it has sufficient voltage to operate the tester.

There is another diagnostic test you can perform to determine the battery's state of charge, the Open Circuit Voltage (OCV) test.

Open Circuit Voltage Test

OCV may be used to estimate the state of charge. This method is generally accurate +/- 10%. Temperature also affects OCV, so that must be taken into account.

The voltmeter you use must be properly calibrated, capable of reading to the nearest 0.01 volt, and accurate within +/- 0.005 volt.

The battery must be free of all current flow (that's why it's called open circuit) -- it's best to disconnect it entirely.

A battery becomes unstable for a period of time after it is charged or discharged. So, it's important to know what has happened to battery before performing the OCV test.

If the battery has not been charged or discharged within 12 hours -- the OCV is fairly stable and the test can be performed using the OCV vs % Charge table.

If the battery has been charged, discharged or used in a vehicle within 12 hours -- the OCV may not be stable enough for a reliable reading. If the battery has been

continued on page 7

Terminal Repair Kit Update

This information will help you understand the J-38125-C Terminal Repair Kit and use it more effectively.

Some definitions:

An electrical terminal is the formed metal attached to the end of a wire to provide electrical connection with another wire or with a component.

Groups of terminals are organized into molded plastic blocks called connectors.

Groups of wires, with their terminals and connectors, are gathered into wiring harnesses.

Differences Between Production and Service Terminals

Service terminals are not necessarily the same as production terminals. A single service terminal may replace several production terminal numbers.

Service terminals are chosen so the crimp wings fit the crimp tools in the J-38125-C. You should use the crimp matrix in the Terminal Repair Kit Instruction Book for best results.

Service terminals may have more tin or gold content then the production terminal.

Service terminals may have a higher contact force than the production terminal. In the assembly plant, where actions are repetitive, connector assembly effort is an issue that does not come up in service.

Where Do Service Terminals Come From?

Service terminals are NOT available from GMSPO. A parts bulletin IB03-044 has been issued to this effect.

All service terminals should be ordered from SPX (Kent-Moore) at 1.800.345.2233.

All components and tools of the J-38125-C Terminal Repair Kit should be ordered from SPX (Kent-Moore) at 1.800.345.2233.

It will be important to keep the complete J-38125-C Terminal Repair Kit in proper order and stocked with terminals and tools, as more wiring suppliers make their appearance in GM vehicles.

What's the Distinction Between Wiring Harness Suppliers and Connection System Suppliers?

Wiring harness suppliers build harnesses according to engineering specifications. This means that a wiring harness supplier will use their own connection system, plus those from other suppliers, so most harnesses contain an assortment of connection systems.

This is a list of connection system suppliers used by GM. Some of these companies are also wiring harness suppliers.

- **AFL/EPC**
- **Bosch**
- **Cinch**
- **Delphi**
- **FCI**
- **JAE**
- **JST**
- **Kostel**
- **Molex**
- **Sumitomo**
- **Tyco/AMP**
- **Yazaki**

There is an effort in engineering to limit the proliferation of connection system suppliers.

How Are All These Terminals Organized in the J-38125-C Terminal Repair Kit?

There are five Wiring Suppliers for GM Power and Signal Distribution (PASD) systems:

- **AFL**
- **Delphi**
- **Lear**
- **Sumitomo**
- **Yazaki.**

These five supply the wiring used in North American-engineered platforms.

TIP: Some platforms are not engineered in North America. These include the International Joint Venture Vehicle Platforms (IJVP): Vibe, Tracker, Isuzu-supplied MD trucks, and vehicles with pre-wired Honda engines. Service terminals for these are not included in the J-38125-C Terminal Repair Kit.

The J-38125-C Terminal Repair Kit was originally a Delphi terminal repair kit only. Now we have Delphi trays, Lear trays, Sumitomo trays and Yazaki trays, with AFL to be added.

Trays are named for the five wiring harness manufacturers. If a harness manufacturer also makes terminals, their terminals are in their trays. Terminals from other terminal manufacturers may also be included in the harness makers' trays.

AFL/EPC is the wiring supplier for the '04 Corvette, and two other future programs. An AFL tray will be added to the Terminal Repair Kit in the near future and any AFL terminals used for the first time in the '04 Corvette will be in that tray.

Delphi is the wiring supplier for every truck platform except the M/L Van. Delphi is also the wiring supplier for most car platforms. Delphi has the most history with GM and has the most trays in the Terminal Repair Kit. Delphi trays may also contain service terminals from:

- **Delphi**
- **Bosch**
- **FCI**
- **JAE**
- **JST**
- **Molex**

Lear is the wiring supplier for the M/L Van, and the Saturn Vue and Ion. Lear makes no terminals or connection systems. Instead, they use terminals from other suppliers. Lear trays contain service terminals from:

- **Bosch**
- **Molex**
- **Tyco/AMP**

TIP: Tyco/AMP terminals are used by all wiring harness suppliers, so a Tyco/AMP terminal may be in any tray.

S**umitomo** is the wiring supplier for a future truck program. Sumitomo makes terminals and connection systems. The Sumitomo tray will be filled in the near future.

Yazaki is the wiring supplier for the Cadillac CTS, the '04 Cadillac SRX and a future Cadillac program. Yazaki also makes terminals and connection systems. There are 5 trays of Yazaki service terminals. The Cadillac CTS was first to use these terminals. Yazaki trays contain service terminals from:

- **Yazaki**
- **Kostel**
- **Molex**
- **Tyco/AMP**

How Do You Know Whose Terminal You're Looking At?

You can get your clue from the connector from which it was removed. Look on the connector for these identifying

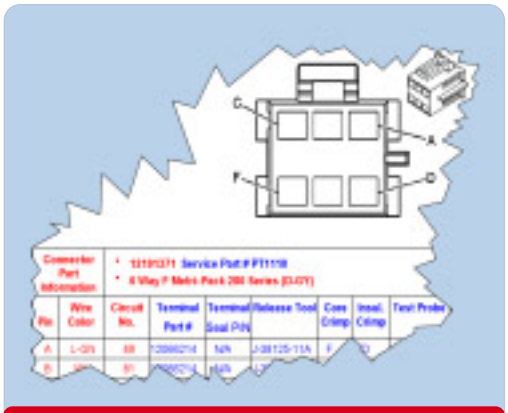
Terminal continued from page 5

symbols. Many are small or difficult to find.

Connector Symbols

Vendor	Symbol
AFL/EPC	EPC
Bosch	
Delphi	PAD
FCI	
JAE	JAE in small letters
JST	JST in small letters
Kostel	
Molex	MXD
Sumitomo	
Tyco/AMP	AMP plus part number
Yazaki	

All suppliers use their own connection systems when they can, but most will have a high Delphi connector content, because GM still uses a high number of Delphi components.



Typical Connector End View

What's Coming?

A Federal Agency called USCAR sets test and footprint standards for all US vehicle manufacturers. The effort to comply with USCAR will be seen in all GM vehicles. This will ultimately result in connection systems that will have the same look and feel, regardless of the supplier. There is even an effort to have a GM-common terminal in several popular sizes, which will greatly reduce the increasing number of service terminals we now see in the J-38125-C Terminal Repair Kit.

Information included in SI is also being revised. A pilot for a new connector end view is planed for the '04 Cadillac XLR service information. This connector end view will give you the service terminal number that is in the J-38125-C Terminal Repair Kit.

TIP: Because service terminals are not stocked in GMSPO, service terminals have supplier part numbers. The new connector end view will for the first time give you the real connector or pigtail part number, which is stocked in GMSPO. This connector end view may take some time to make its appearance in all the service information but every effort is being made to do so.

Oil Life System Reset Procedures – Trucks

Many GM cars and trucks are equipped with an oil life system which determines when an oil change is required. After the oil has been changed, it's necessary to reset the system.

Procedures for resetting 2001 through 2004 trucks are published here. Passenger cars were published last month.

The information for this article is the same as you will find in the applicable owner or service manual.

To find this information in SI:

Select the vehicle

Select category General Information

Select category Maintenance and Lubrication

Select category Maintenance and then GM Oil Life System-Resetting.

You may be able to use the Search function using the words Oil Life System Resetting.

2001 - 04 Aztek
2002 - 04 Rendezvous

If the vehicle does not have the optional Driver Information Center (DIC) do the following:

1. With the ignition key in ON but the engine off, fully push and release the accelerator pedal slowly three times within five seconds.
2. Turn the key to OFF.
3. If the CHANGE ENGINE OIL message comes back on, the engine oil life monitor has not reset. Repeat the procedure.

If the vehicle has the optional DIC, do the following:

1. Turn the ignition to ON with the engine off.
2. Press the MODE button until the DIC reads OIL LIFE LEFT/HOLD SET TO RESET.
3. Press and hold the SET button until 100% is displayed.

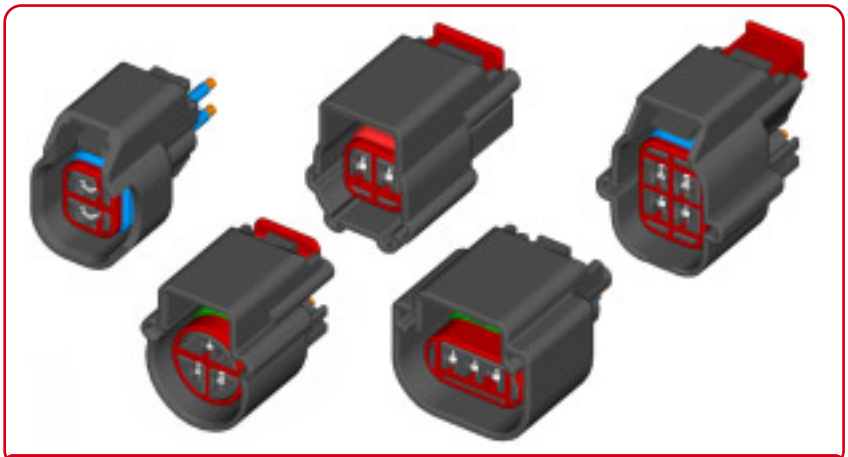
You will hear three chimes and the CHANGE ENGINE OIL message will go off. If the CHANGE ENGINE OIL message comes back on, the monitor has not reset. Repeat the procedure.

2001 - 04 Montana
2001 - 04 Silhouette
2001 - 04 Venture

1. With the ignition key in RUN but the engine off, repeatedly push the trip/reset button until OIL is displayed on the Driver Information Center.
2. Once OIL is displayed, push and hold the trip/reset button for five seconds. The number will disappear and be replaced by 100 (indicating 100% oil life remaining).
3. Turn the key to OFF.
4. If the change engine oil message comes back on, the engine oil life monitor has not reset. Repeat the procedure.

2002 - 04 Bravada
2002 - 04 TrailBlazer
2002 - 04 Envoy
2004 Ranier w/o DIC

1. Turn the ignition key to RUN with the engine off.
2. Fully press and release the accelerator pedal three



Typical USCAR Connectors

A Word About Pigtails

A pigtail consists of a connector with terminals and short lengths of wire already installed. They are available for numerous electrical devices (up to 8 cavities), and are intended to be spliced in place of a damaged connector.

Pigtails are sold through the AC Delco side of GMSPO.

A GM Dealer parts department can find a pigtail by application (2003 Cavalier generator, for instance) but not by description (4-way female Metri-Pack 150 series).

AC Delco Catalog 16A-200 has a complete list and pictures of pigtails. Call 1.800.ACDELCO (1.800.461.8606 in Canada) to find your local AC Delco Parts distributor, who can assist you in obtaining a catalog. There is also an AC Delco web site www.acdelco.com with online catalog that will help, not only for pigtails but also for other items.

- Thanks to John Roberts

times within five seconds.
3. If the CHANGE ENG OIL light flashes for five seconds, the system is reset. If the light does not flash, repeat the procedure.

2004 Ranier with DIC

1. Press the fuel information button until ENGINE OIL LIFE appears in the display.
2. To reset the monitor, press and hold the select button while ENGINE OIL LIFE is displayed.

2004 Canyon
2004 Colorado

1. Display ENGINE OIL LIFE on the DIC.
2. Press and hold the select button. The oil life will change to 100%.
3. Turn the key to OFF.

If the CHANGE/OIL message comes back on when you start the vehicle, the engine oil life system has not reset. Repeat the procedure.

2004 SSR with DIC

1. Press the fuel information button until ENGINE OIL LIFE appears in the display.
2. To reset the Oil Life System, press and hold the select button while ENGINE OIL LIFE is displayed.

2001 - 04 Sierra
2002 - 04 Sierra Denali
2001 - 04 Silverado
2001 - 04 Yukon and Yukon XL
2001 - 04 Tahoe and Suburban
2001 - 04 Escalade
2002 - 04 Escalade EXT
2002 - 04 Avalanche
2001 - 04 Yukon Denali
2003 - 04 Hummer H2

2003 - 04 Express
2003 - 04 Savana

1. Turn the ignition to RUN but with the engine off.
2. Fully push and release the accelerator pedal slowly three times within five seconds.
3. If the Change Oil Soon light flashes, the system is resetting.
4. Turn the key to OFF.
5. Start the vehicle.
6. The oil life will change to 100%.
7. If the Change Oil Soon light comes back on, the system has not reset. Repeat the procedure.

2001 - 04 B7 Chassis Medium Duty

1. Turn the ignition to START but with the engine off.
2. Fully press and release the accelerator pedal three times within 10 seconds.
3. If the CHANGE OIL light flashes for five seconds, the system is reset.
4. If the light does not display for five seconds, you will need to reset the system again.

2003 - 04 560 C-Series

1. Turn the ignition to RUN but with the engine off.
2. Fully press and release the accelerator pedal three times within 10 seconds.
3. If the CHANGE OIL light flashes for five seconds, the system is reset.
4. If the light does not display for five seconds, you will need to reset the system again.

- Thanks to Jerry Garfield

Continued from page 4

OCV	% Charge at 0°C (32°F)	% Charge at 25°C (75°F)
12.75	100%	100%
12.70	100	90
12.60	90	75
12.45	75	65
12.20	65	45
12.00	40	20

charged, you must first remove any surface charge using a carbon pile. Discharge the battery at 300 amperes for 15 seconds. Disconnect the pile, allow 15 seconds for recovery, then read the OCV.

If the battery has only been discharged, just wait at least 15 seconds for the voltage to stabilize after disconnecting the load before testing.

A battery with a 65% or greater state of charge is generally considered charged enough to be returned to normal service.

TIP: If the battery will be used in slow traffic, short trips, or very hot or cold weather, it should be at least 90% full charge before returning to service.

If Charging is Required

The new "eyeless" batteries now include the battery's amp-hour (AH) rating on the label. This information can be useful in setting up your battery charger. The AH rating was not previously available for GM OE batteries.

TIP: Most battery replacement guides in the US will still be based on the OE battery's CCA and RC (Reserve Capacity) ratings. Don't confuse the RC and AH ratings when selecting a replacement battery model – they are different tests.

- Thanks to Rick Overman and Charley Gipe

TAC*Tips*

HVAC Afterblow Enable Procedure

TIP: This is season-related information for many GM vehicles.

Operation of the blower motor after the engine has been turned off dries the evaporator core, which reduces the amount of microbial growth, a source of undesirable odors.

1998-2003 Cadillac Seville and 2000 Cadillac Deville

TIP: The afterblow mode can be enabled using the scan tool.

1. Connect the Scan Tool.
2. With the engine OFF, turn the ignition ON.
3. Select Instrument Panel Module.
4. Select Special Functions.
5. Select Miscellaneous Test.
6. Select IPM recalibration.
7. Select YES to enable afterblow.

2001-03 Cadillac Deville

TIP: The afterblow mode can be enabled using the scan tool.

1. Connect the Scan Tool.
2. With the engine OFF, turn the ignition ON.
3. Select Instrument Panel Module.
4. Select Special Functions.
5. Select Set Options.
6. Select Afterblow.
7. Select Yes to enable the afterblow.

This information can be found in SI documents 667536 and 784027.

Additional Vehicle Information

Information on enabling the afterblow mode on the following vehicles will also be available in SI.

2003 – 2004 Cadillac CTS
2004 Cadillac SRX
2004 Chevrolet Impala
2004 Chevrolet Monte Carlo
2000 – 2004 Buick LeSabre
2000 –- 2004 Buick Park Avenue
2000 – 2004 Pontiac Bonneville
2004 Pontiac Grand Prix
2001 – 2003 Oldsmobile Aurora

Some other vehicles have relay kits available through GMSPO as a dealer installed feature.

- Thanks to GM Technical Assistance

Squeak Going Over Bumps

Owners of some 2003 S-10 and Sonoma Crew Cab models may comment that a high pitch squeak can be heard outside and underneath the rear of vehicle when driving over bumps. The park brake cable may contact the mounting bracket. To correct the condition, secure the park brake cable away from the mounting bracket.

- Thanks to GM Technical Assistance

Car Issues -- Fix It Right the First Time

Where to Find Bulletins
The bulletin list usually found on this page is no longer being published. To find a listing of the bulletins released within the past eight weeks, consult the Latest News under Service Information on the http://service.gm.com website.

Model Year(s)	Vehicle Line(s) -- Condition	Do This	Don't Do This	Reference Information / Bulletin
1998-2004	J, N, W, H cars and Trailblazer, Envoy, Blazer, Jimmy, Bravada – Sunroof concerns	Refer to diagnosis procedures and replace only discrepant parts	Replace entire sunroof module	Bulletin being published – refer to parts catalogue information
2003	CTS -- Service Stability System. DTC C1286	Reprogram EBCM	Replace steering wheel position sensor	02-05-25-004
2000-2003	Cavalier, Sunfire, Grand Am, Alero, Malibu – Fuel gage accuracy and pump concerns	Replace sensor card for fuel gauge accuracy issue	Replace the fuel sender / pump assembly	01-06-04-008D
1999-2003	Grand Am, Alero – Door glass clip breakage	Replace sash clip only	Replace entire door glass assembly for broken clips	901-08-64-018
1997-2003	Grand Am, Alero, Malibu – Brake pulsation	Turn rotor and use brake align procedure	Replace rotors for pulsation	00-05-23-002 01-05-23-001 Know How 15040.01B
1997-2003	Venture, Montana, Silhouette – Windshield water leaks	Use correct diagnosis procedures described in service bulletin	Assume that leak came from the windshield sealing	01-08-57-006
1997-2003	Century, Regal – HVAC "Auto" light function	Normal in full heat or cold setting	Replace HVAC control head for "Auto" light	99-01-39-007B
2001-2002	Corvette - Fuel gauge goes to empty intermittently	Install revised software	Replace fuel senders or I/P cluster	2002 MY 02-06-04-010, 2001 MY Software released bulletin not updated
2003	All cars with 4T65E and 4T80E – Code P0742	Replace TCC PWM Solenoid	Replace transmission or valve body assembly	02-07-30-039B
2003	DeVille with 4T80E Transmission - Code P0503 or Speedo Inop	Reposition coolant hose clamp and repair chafed wire	Replace vehicle speed sensors	03-06-04-013

Truck Issues -- Fix It Right the First Time

Model Year(s)	Vehicle Line(s) -- Condition	Do This	Don't Do This	Reference Information / Bulletin
2003	C/K Fullsize Pickups & Utilities -- Mirror Loose	Cycle Mirror	Replace DL3 power folding mirror	03-08-64-010 & Parts Restriction
1999-2002	C/K Fullsize Pickups & Utilities -- Throttle Body	Clean throttle body, adjust blade and insert plugs	Replace throttle body for idle instability or increased accelerator pedal effort	02-06-04-054B & Parts Restriction
2003	C/K HD Silverado, Sierra, G Savana, Express >8600GVW -- ABS Lamp On	Re-flash for code C0550	Replace ABS module	TIS 2000: 3.0 & 4.0 Service VME
2002-2003	Envoy, Envoy XL, Bravada, with G67m -- Low in Rear	Replace check valve service kit	Replace air suspension compressor	02-03-99-001
2002-2003	TrailBlazer, TrailBlazer EXT Envoy, Envoy XL, Bravada -- OS RVM Erratic Return	Replace mirror actuator & reprogram module	Replace OSRVM	02-08-64-008 02-08-64-021
1999-2003	C/K Fullsize Utilities -- Sunroof	Install clip or mechanism kits	Replace sunroof	02-08-67-009
1999/2003	C/K Fullsize Pickups & Utilities -- Noise on Steering	Lube I-Shaft	Replace I-Shaft	00-02-35-003B
1999-2003	TrailBlazer, Envoy, Bravada, without G67 -- Moan Boom	Replace rear coil springs	Rear axle vibration boom noise that can result in vehicle repurchase	02-03-09-002A
2002-2003	TrailBlazer, TrailBlazer EXT -- Loose or Wavy Fascia	Repair fascia	Replace front fascia	02-08-62-001 02-08-62-004
2002-2003	TrailBlazer, TrailBlazer EXT, Envoy, Envoy XL, Bravada -- Tail Light	Replace tail lamp circuit board	Replace rear tail lamp assembly, for brake light	Service VME to use service part, listed in GMSPO catalog

Know-How Broadcasts for July

Emerging Issues	July 17, 2003	9:00 AM, 12:30 PM, 3:30 PM Eastern Time
10270.19D – 2004 Chevy/GMC Truck New Model Features	July 31, 2003	9:00 AM, 12:30 PM, 3:30 PM Eastern Time