ALSO IN THIS ISSUE

> No-charge TIS2Web subscription available
> GM transmission diagnostic and programming tools availability expanded
> GM reman transfer cases are a reliable solution
> Connect & Cruise line-up grows
> New eCatalog is gateway to GM powertrain product information
> TechConnect insert

2014 Corvette Stingray
Unparalleled Design, Technology and Performance

More Inside: 2014 Corvette Stingray Service Procedures
GM OE Parts Update
The latest word on product development and technologies.

GM Promotions Update
See how you can save on parts and take advantage of the latest promotion offers.

The Technical Side
Discover new ways to approach service and repairs.

Business of Repairs
New ideas that can benefit how your shop operates and profits.

GM ServiceInsights Online
More Genuine GM Parts resources and links.
Download this issue and past issues of GM ServiceInsights magazine at...
www.gmserviceinsights.com
No-Charge TIS2Web Subscription

With purchase of a GM 6-speed automatic transmission.

Get your No-Charge 2 Day TIS2Web Service Programming subscription by:

1. Purchase a Genuine GM Parts 6-speed automatic transmission from your GM Dealer.
2. Call GM PCC at 1-866-453-4123.
   Be ready to provide:
   a) Transmission part # and Serial #
   b) Vehicle VIN#
3. Get a PROMO code to be used for your TIS2Web Service subscription.

*Limited Time Offer:
Transmission must be purchased between 10/1/13 – 6/30/14. Promotion is not available to subscribers in Massachusetts.

Did you know?
All GM 6-speed automatic transmissions require the TEHCM (Transmission Electro-Hydraulic Control Module) to be flashed using a J2534 device or scan tool and TIS2Web.

Subscription options at acdelcotechconnect.com
1. Click “TIS2Web” logo for a list of options.
2. Towards the bottom, click “Subscribe to TIS now”.
3. On the right, click “Service and Programming Information”.
4. Select a subscription package that meets your needs.

Genuine GM Parts... why settle for less?
GM Transmission Diagnostic and Programming Tools
Availability Expanded

GM OE Parts Update

GM Control Module Initiative Stands To Put More ISCs Into the 6-Speed Transmission Business

A key component that makes GM 6-speed transmissions stand-out performers has also been a barrier to Independent Service Centers (ISCs) handling associated repair and replacement work.

No longer.

Now, ISCs have ready access to the diagnostic and programming tools they need to “flash” the Transmission Electro-Hydraulic Control Module (TEHCM) that is central to a transmission’s adaptability, efficiency and overall performance.

All it takes to bring TEHCM programming in-house is a standard J2534 scan tool, a laptop computer and a subscription to the next-generation Technical Information System, TIS2Web Service Programming.

Subscription prices vary, but for a limited time, ISCs purchasing a new replacement GM 6-speed automatic transmission assembly can access the programming tools at no charge.*

In a bid to encourage more ISCs to evaluate the merits of doing more GM 6-speed work, GM will give ISCs purchasing an assembly between Oct. 1, 2013 and June 30, 2014 a no-cost, two-day TIS2Web subscription. ISCs secure a promotional code for the no-charge subscription by calling GM at 866-453-4123 and providing their business name, contact information, transmission assembly part and serial number and the VIN. The code is then used when accessing the subscription via www.acdelcotechconnect.com, following the TIS2Web subscription links.

*Promotion is not available to subscribers in Massachusetts.

Even if a new transmission assembly is not needed, all replacement TEHCMs purchased over-the-counter, whether GM OE versions or non-OE, must be flashed as part of any repair or replacement procedure. With the availability of a range of diagnostic subscription options from GM, as well as full availability of GM TEHCM’s, ISCs can venture into this potentially profitable new repair area that has largely been off limits.

“There’s never been a better time to get into the GM 6-speed transmission servicing business,” says Jessica Earl, product specialist, Transmissions and Transfer Cases, GM Customer Care & Aftersales (GM CCA). “With expanded availability of the TEHCM and ready access to essential diagnostics and programming tools, ISCs won’t be forced to leave money on the table with transmission work.”

Built to GM specifications, the OE module incorporates the very latest GM OE hardware, including filter plate, solenoid and upgraded lead frame. Design, construction and materials are especially critical because the GM TEHCM is unique. It’s the only such module housed entirely within the transmission, surrounded by transmission fluid.

Sold as a complete unit along with associated parts, and readily programmable using the latest calibration software, the OE module is
constructed to deliver smooth shifts, superior fuel economy and extended operating life.

By contrast, non-OE replacements may lack calibration updates essential to optimum operation. They can lead directly to shifting problems and hamper fuel economy, while posing significant durability and operational concerns.

“Trying to save money on a part like this can lead to some real problems,” Earl says. “Many of the older ones that are out there and installed as replacements are simply not up to rigorous GM standards.”

Some 6.8-million GM vehicles dating to the 2007 model year, and equipped with TEHCMs, are on the road today. By 2017, another 6.4 million will be in service. Thirteen-million such vehicles, progressively losing warranty protection, present a ready-made market for ISCs that can perform transmission work.

“It will behoove ISCs to become more knowledgeable about and comfortable with the process of replacing these modules or installing full replacement transmissions,” Earl says. “The market potential for them is huge and we’re proud to be able to provide them with the tools they need to support their customers.”

Regardless of how an ISC chooses to address a GM 6-speed transmission — a replacement module or a replacement transmission — GM now offers the complete solution. Working with OE parts that carry the strong GM warranty — 1-year, unlimited mileage on a module and 3-years, 100,000-miles on a transmission — and IT tools that ensure proper installation and top-notch performance, ISCs now have the tools to expand the frontiers of their business.

“As these 6-speed vehicles exit their factory warranty coverage period it will be an important time for ISCs to build the knowledge and capabilities they need to support their customers,” Earl says. “GM wants to support ISCs equally in this regard, and help us ensure that we’re able to provide the nationwide service coverage GM customers expect.”
A Smooth Response to Rough-Road Blues

Restore Four-Wheel Functionality With GM OE Reman Transfer Cases

When four-wheel drive is needed in a vehicle, there’s often no room for compromise. Either it works or it doesn’t. Vehicle owners usually need faithful reliability, no questions asked.

That’s why you should always look to the most reliable solution when an overworked, out-of-shape transfer case fails to answer the bell for the customer.

For a growing number of Independent Service Centers (ISCs) a GM OE remanufactured transfer case represents the very best option.

GM OE remanufactured transfer cases are vastly superior to other aftermarket alternatives. Updated with new components like snap rings, bearings, seals, chains and synchronizer rings, they fully restore the functionality and performance that GM four-wheel drive vehicles are designed to deliver coming off the assembly line.

Remanufactured units are available for GM model years dating to 1995. Since they’re designed specifically for a GM application, they’re essentially “plug-and-play,” reducing the time required to install a new transfer case.

Validated by GM engineers, GM OE remanufactured transfer cases carry a fully transferable, 3-year/100,000-mile, parts and labor warranty. Competitively priced and technologically superior to competing products, they come with encoder motors and are built to the same exacting standards as the original equipment.
All-New 2014 Chevrolet Silverado 1500 and GMC Sierra 1500 Have Arrived

The all-new 2014 Chevrolet Silverado 1500 and GMC Sierra 1500 arrive first as a crew cab, followed soon by a regular cab and a double cab, which replaces the extended cab of previous years. Early buyers can choose from either a 4.3L V6 engine or a 5.3L V8 engine. A new 6.2L V8 engine will follow later in the year.

For the first time, 1500 crew cabs will be available with a longer 6’6” cargo box, in addition to the previous 5’8” cargo box, enabling customers to carry more cargo while still being able to park in many garages.

New EcoTec3 Engines

Three all-new EcoTec3 engines will be offered. The EcoTec3 engines feature three state-of-the-art technologies — direct injection, V4 Active Fuel Management (cylinder deactivation) and continuously variable valve timing — to make the most of power, torque and efficiency across a broad range of operating conditions.

Full-Size Truck Brake Pipe Kit

ACDelco recently released new hydraulic brake pipe kits for 1999-2007 Chevrolet Silverados and GMC Sierras and 1999-2006 Cadillac Escalade, Chevrolet Tahoe, Chevrolet Suburban, Chevrolet Avalanche and GMC Yukon models. These kits can be used any time the replacement of the entire brake pipe assembly is required.

All kits are pre-formed and pre-flared to aid installation. The brake pipe kits have a nylon coating that provides better corrosion protection; and they are a lower-cost alternative to pipe replacement.

The kits are not intended for the repair of a single damaged brake pipe. They are intended for the replacement of the entire brake pipe assembly due to corrosion or wear.

Service bulletin 13D-079 GMT800 details the procedures for installing these kits. It includes a part number listing for each application.
passes through the flexible fuel sensor before continuing on to the fuel rail.

The flexible fuel sensor measures two different fuel related parameters, and sends an electrical signal to the Engine Control Module (ECM) to indicate ethanol percentage and fuel temperature. Since the flexible fuel sensor measures the actual percentage of ethanol in the fuel, it is no longer necessary to wait for an empty fuel tank in order to refill with E85.

**Active Fuel Management**

Cylinder deactivation, also known as Active Fuel Management, is now standard on all three engines. The system uses oil pressure, controlled by the Powertrain Control Module, to deactivate the lifters on selected cylinders, closing the valves for those cylinders. It deactivates four of the cylinders on the V8 engines and two cylinders on the V6 under light load conditions — operating the engines as a V4 — and seamlessly reactivates the cylinders when the driver demands greater power. The transition takes less than 20 milliseconds and is imperceptible.

**Advanced Oiling System**

The oiling system on the engines incorporates a new variable displacement two-stage vane-type oil pump that enables more efficient oil delivery, based on operating conditions. Its dual-pressure control enables operation at a very efficient oil pressure at lower RPM, and then delivers higher pressure at higher engine speeds.

An oil control solenoid valve, controlled by the ECM, mounted to the oil pump provides two-stage functionality. The oil pump is mounted on the front of the engine block and driven directly by the crankshaft sprocket.

An oil passage at camshaft bearing location permits oil flow into the center of the camshaft. Oil enters the camshaft, exiting at the front and into the camshaft position (CMP) actuator solenoid valve. The CMP valve spool position is controlled by the ECM and CMP magnet. When commanded by the ECM, the CMP magnet repositions the CMP actuator solenoid valve spool directing pressurized oil into the CMP actuator to control valve timing.

**Flexible Fuel Sensor**

The flexible fuel sensor measures the ethanol-gasoline ratio of the fuel being used in a flexible fuel (E85 capable) engine. Flexible fuel vehicles can be operated with a blend of ethanol and gasoline, up to 85 percent ethanol.

The flexible fuel sensor uses quick-connect style fuel connections, an incoming fuel connection, and an outgoing fuel connection. All fuel...
Oil pressure gauge needle oscillation will occur due to the two-stage oil pump self-test. The ECM will perform a functionality test of the two-stage oil pump after a cold soak, when the engine is first started and the vehicle is driven.

This functionality test will occur three times in a short time span and can be observed on the oil pressure gauge as a brief increase (spike) in the oil pressure gauge needle. Additionally, at 3,500 RPM or greater, the two-stage oil pump switches over to high stage and the oil pressure gauge needle will move to the high position.

**New Fluids**

Engine oils meeting the requirements of the vehicle will have the dexos 1 certification mark on the container.

SAE 5W-30 is the required viscosity grade for the 4.3L engine and SAE 0W-20 is the required viscosity grade for the 5.3L and 6.2L engines.

New synthetic axle gear oil is used on the 2014 Silverado and Sierra. The new synthetic axle gear oil is a 75W85 viscosity. In the United States, use GM P/N 19300457. In Canada, use GM P/N 19300458.

A new brake fluid also is used for 2014 that has enhanced corrosion inhibitors and significant improvements in lubricity that are engineered to eliminate master cylinder squeak/noise.

In the U.S., use brake fluid with GM P/N 19299818. In Canada, use GM P/N 19299819.

**Enhanced Ride and Handling**

The 2014 trucks feature a revised front and rear suspension and wider wheels that provide a more comfortable ride and more confident handling. Electric power steering improves steering feel and reduces fuel consumption. New four-wheel-disc brakes with Duralife™ rotors improve brake feel and potentially double rotor life.

The Silverado 1500 and Sierra 1500 will be available with segment-exclusive safety features such as Forward Collision Alert, Lane Departure Warning with an Active Safety Seat, and Front and Rear Park Assist. StabiliTrak with Trailer Sway Control and Hill Start Assist are standard on all models.

**Electric Power Steering System**

The belt-driven electric power steering system features an integrated electromechanical power steering unit, containing the power steering control module, its sensors, the power steering motor, a belt drive and a ball nut mechanism.

The power steering control module has a software feature referred to as Smooth Road Shake Compensation that reduces steering wheel vibration caused by an imbalance from the front tire/wheel assemblies. The vibration transmitted to the steering wheel is referred to as Smooth Road Shake and is a phenomenon that occurs only at highway speeds and on smooth roads.

In addition to smooth road shake, road crown is compensated for by the steering wheel angle sensor signal, which calculates the intended driving direction. The Electronic Brake Control Module (EBCM) receives serial data message inputs from the steering wheel angle sensor.

The steering wheel angle sensor does not require centering often. However, if the steering wheel angle sensor is not correctly centered it may create a lead/pull condition. If this condition is encountered, always perform the Steering Angle Sensor Centering procedure before performing a wheel alignment.

**Stronger, Quieter Cab**

The new truck cab is functional, yet refined.

The new truck cab is stronger, with nearly two-thirds of the structure made from high-strength steel.

New shear-style body mounts tune out both up-and-down and side-to-side movement for a quieter, more comfortable ride. Double cab and crew cab models have a set of hydraulic rear body mounts to further isolate the cabs.

Rear doors on crew cabs are larger, for easier entry and exit, and rear doors on double cab models are now hinged at the front for easier access, especially in tight spots.

– Thanks to Peter Joslyn and Sherman Dixon

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**Full-Size Truck Brake Pipe Kit – continued from page 1**

When removing the old brake pipes, be sure to clean all dirt, rust or other contaminants from the areas adjacent to each brake pipe tube nut so that no contaminants enter any hydraulic fittings or openings of the brake pipes.

Also carefully remove the existing brake pipes from the routing clips to avoid damaging the clips. The new brake pipes will be installed into the existing clips.

Before installation, be sure to identify the correct port locations on the master cylinder, Brake Pressure Modulator Valve, and brake pressure proportioning valve, where equipped, to ensure proper operation.

Once the new brake pipes are installed, inspect the routing of the new pipes to ensure that the pipes do not contact any part of the frame, body or any chassis components.

– Thanks to Vincent House
Grade Braking on GM full-size trucks has evolved over the past several years to have broader application and increased authority. Available on 2007-2014 Cadillac Escalade; Chevrolet Avalanche, Silverado, Suburban, Tahoe, Express; and GMC Sierra, Yukon and Savana models, Grade Braking assists in maintaining vehicle speed when driving on a downhill grade by automatically implementing a shift schedule that uses the engine and transmission to slow the vehicle. This feature is internal to the vehicle’s software/calibration and requires no driver action to activate.

Refer to Bulletin #08-07-30-030A and #PIT5202 for additional information on various operating features — including Grade Braking — of automatic transmissions 6L80 (RPO MYC) and 6L90 (RPO MYD) used on these full-size trucks, SUVs, and vans.

The operation of Grade Braking varies on many models. Here are the Grade Braking differences, explained by model year.

### 2007-2012 Model Years – Powertrain Grade Braking

Powertrain Grade Braking has been available since 2009 on GM light-duty models and 2007 on GM heavy-duty models. The Tow/Haul Mode has to be selected.

2009-2012 Model Years – Cruise Grade Braking

For the 2009-2011 model years, Cruise Grade Braking on GM full-size trucks is effective only in Tow/Haul Mode when cruise control is engaged.

For the 2012-2013 model years, Cruise Grade Braking is effective in both Tow/Haul Mode and Normal Mode when cruise control is engaged. Cruise Grade Braking is not available in Range Selection Mode.

Cruise Grade Braking provides automatic transmission downshifting to assist in speed control when vehicle speed has increased from the set point by a certain amount. Multiple downshifts may be commanded depending on the amount of deviation of vehicle speed to the set speed. As the vehicle speed slows and approaches the original set speed, transmission upshifts will be commanded to return to a normal operating condition.

At some speeds and on some downhill grades, the transmission may not be able to command a gear low enough to slow the vehicle to the set point without overspeeding the engine. In this case, the transmission will command all available downshifts, but if further engine braking is desired, the driver must press the brake pedal to slow the vehicle enough so additional downshift(s) can be commanded.

Pressing the brake pedal has the normal effect of cancelling cruise control operation and, in this case, a transition to Normal – Powertrain Braking is completed.

### 2013 Model Year – Powertrain Grade Braking

For the 2013 model year, GM full-size trucks continue to have Powertrain Grade Braking when in Tow/Haul Mode as in earlier model years, but now, cruise control does not have to be activated.

The significant change is that these vehicles also now have Powertrain Grade Braking while in Normal mode (Normal mode = Tow/Haul mode OFF).

Normal mode Powertrain Grade Braking assists when driving on a downhill grade to help maintain desired vehicle speed by using the engine and transmission to slow the vehicle.

Normal mode Powertrain Grade Braking defaults to ON after each ignition key cycle. It is not available in Range Selection Mode.

To disable or enable all grade braking within the current ignition key cycle, press and hold the Tow/Haul button for three seconds.

This feature requires the driver to apply steady brake pedal pressure to maintain desired speed while driving on a downhill grade. The vehicle’s modules calculate brake temperature and enable Normal mode Powertrain Grade Braking if necessary.

The transmission downshifts and engine RPM increases. At this point, if the brake pedal is released, the transmission will hold the current gear. If additional engine/transmission braking is needed to help maintain desired speed, reapply steady brake pedal pressure and additional downshifts may occur.

Normal mode Powertrain Grade Braking will have a less aggressive transmission downshift schedule than Tow/Haul mode Powertrain Grade Braking.

Grade Braking can be exited by pressing the accelerator pedal.

2014 Model Year – Powertrain Grade Braking

Powertrain Grade Braking for the 2014 model year vehicles operates much the same as in 2013 vehicles.

The 2014 vehicles continue to have Powertrain Grade Braking while in Normal mode.

To disable or enable all grade braking within the current ignition key cycle, press and hold the Tow/Haul button for five seconds. This is a longer button press than previous model years.

GRADE BRAKING ACTIVE displays on the Driver Information Center when the grade braking has been activated while driving on downhill grades. This message will not display if Cruise Control Grade Braking goes active.

– Thanks to Mike Johnston
Solving Programming System Errors

If an error is received during a programming event to update a control module’s flash calibration files with newer calibration information, there are several items to check first before resorting to replacing the control module. There may be different occurrences that caused the programming error, and most errors can be resolved by following some basic troubleshooting steps.

Following are several specific GM Service Programming System (SPS) programming errors and how to resolve the issue.

**Error E4399/E4403 – Severe Error**

These general programming errors are typically the result of a loss of communication between the programming device and the control module. The loss of communication can be caused by a drop in battery voltage, delay in communication with the module, or a vehicle issue such as disruption on the BUS (wiring, connector issue, aftermarket components, etc.).

Make sure a minimum of 12.5 volts is maintained during programming. Attempt to re-establish communication with the control module using GDS 2 or a Tech 2 scan tool. If communication can be established, reattempt programming using “Replace and Program ECU” as the programming method. If communication cannot be re-established, deplete retained power by disconnecting the negative battery terminal for a minimum of five minutes. Re-establish and maintain battery power, attempt to communicate with the control module using the Multiple Diagnostic Interface (MDI) tool or Tech 2. Reattempt programming using “Replace and Program ECU.”

Some pre-2007 GM vehicles may require using the Tech 2 and the “Legacy Tech 2” programming option in SPS in order to use a slower programming communication speed.

**Error E4404/E4494 – No Communication with Diagnostic Tool**

This is a loss of communication between the programming device (MDI or Tech 2) and the service center PC. It is not a module or vehicle problem.

Confirm the connection from the PC. If the programming device is connected by USB, select a different USB port on the PC. If using a wireless network for the MDI connection, confirm the wireless connection or switch to a USB connection. Disable the MDI wireless connection in the MDI wireless manager when using a USB connection.

If programming with a Tech 2, perform a Tech 2 self-test, found in SPS under Settings > Diagnostics > Test Connections. Be sure to use a known good Techline PC serial port connector and RS232 cable.

Confirm and maintain proper battery voltage before attempting programming.

**Error E4413/E4414 – Calibrations marked with an ( * )**

An asterisk ( * ) indicates that the SPS application is not recognizing the calibrations being read from the control module, which can be caused by a non-GM calibration programmed into the control module or an incomplete SPS data record.

It may be necessary to restart the SPS application and select “Replace and Reprogram” as the programming method. This procedure will overwrite the unidentified software and calibrations.

**Error E4398 – No Calibration Data**

This error is the result of a missing or incomplete data record. It is not related to the control module being programmed or a vehicle issue. Contact the ACDelco Helpdesk.

**Error E4491/E4423 – Programming Failed**

These programming errors can occur from different areas. If encountered on a service module, confirm the correct part number is being used and confirm programming is possible by attempting to program the original module.

Any time a programming event is interrupted or unsuccessful, do not turn off the ignition. Check the programming tool connections and that the TIS software is up to date, and then attempt to reprogram the control module.

If a programming error cannot be resolved, do not replace the control module before contacting the ACDelco Helpdesk. For assistance, be sure to have the original and service module part numbers and error detail available.

Access to the GM Service Programming System, GM vehicle calibrations, Tech 2 scan tool diagnostic software updates and GDS 2 software updates are available online through a TIS2Web (Techline Information System) subscription. Go to www.acdelcotecconnect.com and click the GM Service Information link on the left side of the home page for more information.

For assistance with software and programming, contact the ACDelco Helpdesk at 1-888-212-8959.

– Thanks to Bob Stewart
ACDelco NATEF Training Program

The National Automotive Technicians Education Foundation (NATEF) was founded in 1983 as an independent, non-profit organization with the mission of improving the quality of automotive technician training programs nationwide at secondary and post-secondary public and proprietary schools. To accomplish this mission, NATEF examines the structure, resources, and quality of training programs and evaluates them against standards established by the industry. These standards reflect the skills that students must master to be successful in the industry. NATEF also works with students to increase career awareness opportunities in the automotive repair industry.

General Motors and ACDelco are strong supporters of future automotive technicians via NATEF certified secondary and post-secondary schools. ACDelco has been working with the NATEF organization to provide a limited number of web-based training courses to capture the attention of younger high school technician prospects.

ACDelco is now expanding their role with the NATEF. ACDelco has developed the ACDelco NATEF Training Program that will be piloted in September and evolve to become a national training program in early 2014.

There are two training paths available to NATEF instructors and their students. Instructors will be given access to over 100 ACDelco web-based training courses and students will be given access to 23 technical and business web-based training courses.

For more information about NATEF, visit www.NATEF.org.
– Thanks to Jill Brown

New Videos on the ACDelco YouTube Channel

ACDelco’s YouTube channel includes a number of helpful product information and service videos. These videos can be viewed at youtube.com/user/acdelcoofficialpage.

Some of the latest videos cover a variety of product installation and diagnostic information, including:

- Power Steering Pump Replacement
- Power Steering System Quality Improvements
- Serpentine Belt Replacement and Diagnostics
- Power Steering System Overview
- How to Determine Belt Tensioner Failure
- ABS Replacement
- Intake Manifold Cleaning and Replacement
- Shocks and Struts Replacement
- Worn Tensioner Pulley Replacement
- ACDelco PF48E Oil Filter Replacement
- GM OE Car Ignition Parts
- Installation of Remanufactured Truck Parts
- ACDelco Professional Conventional Spark Plugs
- Rapidfire Performance Spark Plugs
- ACDelco Fuel Pumps
- Inspection Camera and Spark Plug Cylinder Inspection
- Timing Belt Replacement
- ACDelco History and Overview
- GM OE Control Modules
- ACDelco Spark Plug Wire Sets
- ACDelco Ignition Modules
- GM OE Professional Ignition Coils
- Ignition Coil-on-Plugs

– Thanks to Rick Balabon

We Support Voluntary Certification
National Institute for AUTOMOTIVE SERVICE EXCELLENCE
www.ase.com

To register for ASE tests, go online to www.myASE.com or call the ASE testing partner, Prometric, at 1-977-346-9327.
Conversion to Non-Active Fuel Management Engine

2007-2008 Chevrolet Impala

The Active Fuel Management (AFM) lifter for the 3.9L engine (RPO LZ8 or LZG) is no longer being manufactured. If the camshaft and/or lifters need to be replaced, a conversion kit is available that deactivates the AFM feature. This is an option for customers instead of incurring the cost of a replacement engine.

Deactivation of AFM will reduce the vehicle’s fuel economy (the actual impact depends on vehicle speed, load, road conditions, driver behavior and other factors). The engine may also run quieter after conversion.

The conversion kit contains camshaft lifters, a block-off plate for the oil flow to the Lifter Oil Manifold Assembly (LOMA), and necessary seals and gaskets.

The non-AFM lifters and lifter guide are installed into the same lifter bores. The LOMA oil block-off plate is installed between the LOMA gasket assembly and the LOMA unit.

An altered/modified vehicle label also is included with the conversion kit. Install the label on the right passenger-side top of the strut tower.

After installing the engine, disable and tape the 12V supply wire to the LOMA unit. Also reprogram the ECM with the calibration for converting from AFM to non-AFM operation. With the new calibration, the AFM data will read “0,” any circuit tests will read “FAULT,” and the cylinder mode monitoring will stay in “6 cylinder mode” at all times.

Corrosion Due to Coolant Intrusion

While performing repairs or diagnosis as outlined in the appropriate Service Information, care should be taken to avoid engine coolant entering any disconnected wiring harness connections. Coolant can be very corrosive and cause future connection issues.

If a wiring harness may be potentially exposed to coolant, it may be helpful to place a plastic bag or other enclosure over the harness connectors and secure it with a cable tie strap (zip tie) until the harness is ready to be reconnected. This will help reduce the possibility of coolant entering the harness or connectors.

If coolant does enter the electrical connectors, clean the connectors completely with electrical contact cleaner and low pressure compressed air. Apply a light coating of dielectric grease before reconnecting the wiring harness.

Low Oil Pressure Light On at Idle


The low oil pressure light may illuminate or flash on and off at idle on some models equipped with engine RPOs LUJ, LUV, LUW, LWE, LXV and 2H0. This may be caused by oil pressure being bled off due to debris in the oil drain check valve or a smashed oil filter.

During an oil change, it’s possible for the tabs on the oil filter to break off and fall into the filter housing. The debris may become lodged under the oil filter housing drain check valve, causing it to remain open when the new filter is installed. In which case, oil will drain back into the oil pan and reduce the pressure allowed to the engine.

TechTips

The following technical tips provide repair information about specific conditions on a variety of vehicles. If you have a tough or unusual service repair, the Diagnostic Hotline can help. Call 1-800-825-5886, prompt #2, from 8 a.m. to 8 p.m. ET Monday–Friday, to speak with a technical expert with the latest OEM information.

Make sure oil filter tab does not break during installation.

If the oil filter is installed improperly, the filter may be smashed and not be able to close the oil filter drain check valve.

Use a manual pressure gauge to check oil pressure. If pressure is low, remove the oil filter and confirm proper operation of the oil filter drain check valve. If the valve does not seal or is held open, repair as necessary and recheck oil pressure.

Product Information

For free technical assistance and product information regarding specific ACDelco products, contact these toll-free information hotlines staffed by ASE-certified technicians:

- Brakes – 1-888-701-6169 (prompt #1)
- Chassis – 1-888-701-6169 (prompt #2)
- Clutches – 1-888-725-8625
- Lift Supports – 1-800-790-5438
- Shocks – 1-877-466-7752
- Starters and Alternators – 1-800-228-9672
- Wiper Blades – 1-800-810-7096
Go to www.acdelcotechconnect.com and click the Training tab to log in to the ACDelco Learning Management System (LMS).

**New Courses**

**S-BK05-03.01ILT – Electronic Brake and Chassis Controls: Is the vehicle really smarter than the driver?**

This course focuses on the different strategies and components used to control chassis and brake systems. After exploring the operation of various systems and their components, Original Equipment Manufacturer (OEM) supported diagnostic techniques will be examined covering systems such as antilock brakes, tire pressure monitoring, and electronic power steering.

**S-DS11-13.01ILT – Vehicle Network Communications: When modules talk, who is really listening?**

In this course, the operation of various serial data protocols, and the physical data bus layout used by a number of manufacturers, is reviewed. It covers the operation of various data buses and the associated components. Diagnostic techniques highlight typical serial data bus concerns such as no communication with one, several, or all modules on a vehicle.

**S-EL06-16.01ILT – Hybrid Vehicle Service and Safety: Batteries Included**

A review of safety equipment and procedures will prepare technicians for on-vehicle exercises in this course. Technicians will identify and locate all GM full-size truck Two-mode Hybrid components on a vehicle and perform high voltage system disabling and enabling procedures.

**S-EP08-07.01ILT – Air Induction and Fuel Injection Operation and Diagnosis**

The different operational and diagnostic procedures on various vehicle manufacturers’ air induction and fuel systems are reviewed in this course. Emphasis is placed on hands-on exercises and case studies to develop various service strategies, reducing time spent under the hood.

**Current Instructor-Led Training Courses**

The following ILT courses are currently being scheduled:

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Name</th>
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<tbody>
<tr>
<td>S-AC07-02.01ILT</td>
<td>Automotive Air Conditioning Advanced Refrigerant System Diagnostics</td>
</tr>
<tr>
<td>S-AC07-03.01ILT</td>
<td>HVAC Control System Operation and Diagnostics</td>
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<tr>
<td>S-AC07-07.01ILT</td>
<td>Chrysler HVAC</td>
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<tr>
<td>S-BK05-01.01ILT</td>
<td>Braking Systems</td>
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**Current Virtual Classroom Training Courses**

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Thanks to Greg St. Aubin
GM Promotions Update

THREE NEW LS-ENGINE PACKAGES
Join Chevrolet Performance Connect & Cruise Lineup

Three iconic LS-Series engines are now part of the Chevrolet Performance Connect & Cruise Crate Powertrain System lineup of mated engine and transmission packages.

Customers can now purchase optimal engine / transmission / control module / torque converter / wiring harness packages for the LS7 engine as well as both the 480- and 525-hp versions of the LS376 engine. Each of the packages includes the 4L70E automatic transmission, and the LS7 package offers a choice of two torque converters.

The end consumer purchasing all components on a single order through a dealer or retailer and filing a standard rebate form and invoice/repair order receives a VISA® Prepaid Card. It’s worth $500 for the two LS376 packages, and $750 for the LS7.

“This is the final piece we needed to round out the LS crate engine offerings in Connect & Cruise,” says David MacWebb, Chevrolet Performance product specialist. “Just as with the other packages, our engineers have come up with the approved, certified and tested combinations for these additional LS engines that take the guesswork out of the equation.”

Like the eight other Connect & Cruise combinations for LSA, LS3 and LC9 engines, the new packages are rebate eligible if purchased by Dec. 31, 2013. Submissions must be postmarked by Feb. 28, 2014.

“The rebate provides some cost savings and is a strong incentive, but the primary value of Connect & Cruise is that they’re plug-and-play systems designed by GM engineers,” MacWebb says.

With an LS7 package, the consumer can choose between an OE torque converter or a performance torque converter. “The choice depends on the preferred stall speed,” MacWebb says.

Chevrolet Performance continues to look at opportunities to fill out the Connect & Cruise lineup. “We are evaluating LSX-Series engines and some manual transmission systems to eventually include,” MacWebb says.

“What has always been the driving force for expansion of Connect & Cruise is the popularity of complete packages like this,” he says. “We’ll continue to look at anything that may add value and provide more options along the horsepower spectrum.”

For more information on Connect & Cruise Crate Powertrain Systems, see your GM dealer or go to www.chevroletperformance.com.

LS7 (6.2L) Connect & Cruise System CPSLS34L65E
2014 Corvette Stingray Balances Technology, Design and Performance

The 2014 Corvette Stingray is the most powerful standard model ever, with an estimated 450 horsepower (335 kW) and 450 lb.-ft. of torque (610 Nm). It is also the most capable standard model ever, able to accelerate from 0-60 in less than four seconds and achieve more than 1g in cornering grip. It is expected to be the most fuel-efficient Corvette, exceeding the EPA-estimated 26 mpg of the current model.

An innovative use of materials includes a standard carbon fiber hood and roof panel, as well as underbody panels created with carbon-nano composite technology, an advanced blend of traditional composite material and carbon fiber, which allows lighter underbody panels without a loss of strength or stiffness. Fenders, doors, rear quarter panels and the rear hatch panel are made with lighter-density Sheet Molded Compound than the previous generation. Combined, these materials save approximately 37 pounds (17 kg) versus the previous body structure.
The lightweight elements of the Stingray contribute to the ideal 50/50 weight balance. Combined with its estimated 450 horsepower (335 kW), the new Corvette delivers a better power-to-weight ratio than the Porsche 911 Carrera or Audi R8.

Those 450 horses are generated by an all-new LT1 6.2L Small Block V-8 engine, which produces an estimated 450 lb.-ft. of torque (610 Nm).

More importantly, it generates 50 lb.-ft. more low-end torque than the previous 6.2L engine, matching the 7.0L LS7 engine from the 2013 Corvette Z06 from 1,000 to 4,000 rpm.

Compared to the previous generation, which used continuous hydroformed main frame rails with a constant 2mm wall thickness, the new Corvette’s frame features main rails composed of five customized aluminum segments, including aluminum extrusions at each end, a center main rail section and hollow-cast nodes at the suspension interface points. Each segment is tuned – varying in thickness from 2mm to 11mm – tailoring the gauge, shape and strength properties to optimize the requirements for each frame section with minimal weight.

The frame is assembled using a unique laser welding process in which a computer-controlled beam of high energy joins the components with exceptional precision and tolerances of about 0.001-inch.

Supporting the frame’s greater strength and lower weight are complementing chassis elements, including hollow-cast aluminum front and rear cradles that are approximately 25-percent lighter and 20-percent stiffer than the solid cradles used on the previous structure.
Installation Procedure

1. Shift the transmission control into Manual Mode (M).
   **Note:** Be sure to position the transmission control as LOW as possible, the shift control cable rod end guide tubes are EXTREMELY INFLEXIBLE and capable of only a SLIGHT bend.

2. Lower the transmission control into position.
   **BE SURE the transmission control remains in Manual Mode (M).**

3. Align the transmission control cable end (2) to the transmission control arm stud.
   **Note:** Use care to not suddenly jerk either the shift control cable or the transmission control during assembly, the shift control cable rod end guide tubes are EXTREMELY INFLEXIBLE and capable of only a SLIGHT bend.

4. Position a large pry bar along the side of the driveline support assembly and use as an aid to secure the shift control cable end to the transmission control arm stud.

5. Seat the transmission control to the driveline tunnel.
   **Caution:** Refer to Fastener Caution.

6. Install the transmission control retaining nuts and tighten to 10 Y (89 lb in).

7. Verify that the transmission control and the shift control cable are operating smoothly:

8. If any binding is felt during this check, remove the transmission control and inspect the transmission control and the shift control cable for damage (at either end of the cable).

9. Install the park/lock cable to the transmission control pivot arm stud.

10. Connect the transmission control electrical connector.

11. Install the console. Refer to Front Floor Lower Console Replacement.

12. Unblock the wheels.

13. Release the parking brake.

14. Test drive the vehicle.

Even though the 2014 Corvette Stingray is a new vehicle, service and repair information resources are a click away at [www.gmtechinfo.com](http://www.gmtechinfo.com) – Electronic Service Information. Technicians and shop owners can log on to the site to gain access to subscription services for service procedures and repair manuals. A complete Service Manual is accessible 24/7 through a subscription to the site. Free collision repair procedures will soon be available for the vehicles by going to [www.genuinegmparts.com](http://www.genuinegmparts.com).

**Automatic Transmission – 6L80 MYC Transmission Control Replacement – Repair Instructions – On Vehicle**

**Removal Procedure**

1. Block the wheels to keep the vehicle from moving.

2. Apply the parking brake.

3. Remove the floor console. Refer to Front Floor Lower Console Replacement.

4. Disconnect the transmission control electrical connector.

5. Remove the four transmission control retaining nuts (1).
   **Note:** This will lengthen the shift control cable and provide slightly more movement.

6. Shift the transmission control into Manual Mode (M).
   **Note:** DO NOT lift the transmission control any more than shown, the shift control cable rod end guide tubes are EXTREMELY INFLEXIBLE and capable of only a SLIGHT bend.

7. Slowly lift the transmission control (1) JUST ENOUGH to access the shift control cable end.
   **BE SURE the transmission control remains in Manual Mode (M).**
   **Note:** Use care to not suddenly jerk either the shift control cable or the transmission control during disassembly, the shift control cable rod end guide tubes are EXTREMELY INFLEXIBLE and capable of only a SLIGHT bend.

8. Using a large flat-bladed screwdriver, CAREFULLY release the shift control cable end (2) from the transmission control arm stud.

9. Ensure that the shift control cable is completely disconnected from the transmission control arm stud.

10. Remove the transmission control.
In today’s aftermarket, delivering accurate information fast is critical not just to save time but to reduce order errors so a job can be completed faster with confidence.

Nowhere is this truer than when looking for a replacement engine, transmission assembly or transfer case. These are repairs that no one wants to even think about doing a second time. To help ease concerns, Independent Service Centers (ISCs) first look to the OEs for help.

To support these ISCs, GM is pleased to announce an updated online powertrain assembly eCatalog. This eCatalog will change the experience of searching for GM engines, transmissions, transfer cases and related parts.

Accessible from www.genuinegmparts.com, the eCatalog is an ISCs gateway to powertrain and related products application as well as product, warranty and installation information.

“In designing any catalog the aim is to strive for the element of speed and confidence. How quickly you can both look up information and be confident that you’ve selected the right part,” says Stephen Sigg, E-Commerce business manager for GM Customer Care and Aftersales (GM CCA), who guided the development project. “That’s what we’ve accomplished in this effort, providing a tool that’s delivers the type of content, functionality and access ISCs demand today.”

Designed for easy navigation, this new eCatalog allows ISCs to search multiple ways for engines, transmissions or transfer cases, either by vehicle year-make-model, engine family size or product type. Information gathered in a successful search can be put into a “list” and exported and emailed out to dealers to request a quote.

“An online catalog like this is the price of entry into today’s digital world,” says Sigg. “We’re a premium brand and we will be presented as such online. This is the right step forward in a web environment that’s constantly changing,” he said.
We’re your one stop for all the GM OE Engine, Transmissions and Powertrain Components you need.

Give us a call for all of your Genuine GM Parts needs – all at one convenient location.