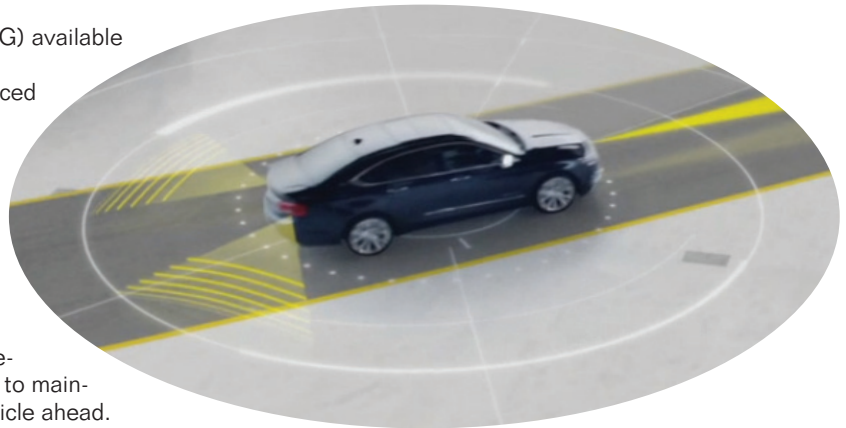


Adaptive Cruise Control Technology Sets (and Maintains) the Pace

The Adaptive Cruise Control (ACC) System (RPO K59, KSG) available on 2014-2016 Impala, LaCrosse, Regal, ELR and 2015-2016 Tahoe, Suburban and Yukon models is an enhanced cruise control system with the ability to sense and react to forward traffic. The system allows a driver to maintain a driver-selected set speed when no traffic is ahead as well as set and maintain a following time-based gap to the preceding nearest vehicle in the Adaptive Cruise Control vehicle's path. The ACC system (RPO KSG) available on 2015-2016 Escalade models functions in a similar manner but has different hardware and display messages.



While in the following mode, the Adaptive Cruise Control vehicle's distance sensor module controls the following speed to maintain the driver-selected following gap to the proceeding vehicle ahead. The system will automatically adjust the speed of the Adaptive Cruise Control vehicle when approaching a slower moving vehicle and will apply limited automatic braking or throttle control without driver input when necessary to maintain the following gap setting.

The preceding vehicle's speed and acceleration and the Adaptive Cruise Control vehicle's speed and acceleration along with the distance between the two vehicles are factors used by the Adaptive Cruise Control module to determine the appropriate following speed. Once the path ahead of the vehicle becomes clear, the Adaptive Cruise Control system will speed up the vehicle to the driver-selected set speed.

The ACC system (RPO K59) on 2015 and later Tahoe, Suburban and Yukon models, as well as 2014 and later Regal models equipped with a manual transmission, will operate down to a speed of 10 MPH (16 km/h).

continued on page 2

Techline News

MDI/MDI 2 Manager Software Installation

GM recently began rolling out new MDI Manager software. This software includes updates for the upcoming MDI 2 hardware. It's compatible with the current MDI and the new MDI 2, to be released soon, and operates in a similar manner to the existing version.

Here are some items to keep in mind when installing the new software.

- A user will be prompted to install the MDI/MDI 2 Manager software when clicking the SPS or GDS2 icon in TIS2Web. It is recommended to update all MDIs and Service computers at the same time to avoid incompatibility issues.
- Open/unencrypted wireless network configurations are no longer supported in the latest software version (update 8.3.103.26). A form of encryption must be used on all wireless access points when configuring and using the MDI or MDI 2.
- By plugging in the USB cable to the PC, the MDI Manager should recognize the MDI over USB by default. The MDI must be connected over USB in order to update the firmware on the MDI.

For assistance, contact the Techline Customer Support Center (TCSC) at 1-800-828-6860 (English) or 1-800-503-3222 (French).

📧 Thanks to Chris Henley

CONTENTS

Adaptive Cruise Control Technology	1
MDI/MDI 2 Manager Software Installation	1
Adaptive Cruise Control Radar Module Blocked	3
Latest AFIT Tool Adapters Released	4
Air Cleaner Outlet Duct Cover Removal	4
Adaptive Cruise Control DTCs in History	5
Security Code Required during Programming	5
Service Engine Soon Lamp and Reduced Power	5
Bulletin Review	6
Emerging Issues	7



Customer Care and Aftersales

Adaptive Cruise Control Technology

continued from page 1

As these vehicles slow down in response to a slower moving vehicle ahead, a chime sounds when the system disengages and the driver is expected to assume control of the vehicle.

2014 and later Impala, LaCrosse, Regal and ELR vehicles equipped with an automatic transmission have the full-speed range ACC system (RPO KSG). Vehicles equipped with this system are capable of coming to a full stop as long as the vehicle ahead has been detected while still moving.

For either of these two systems, the vehicle speed must be above 15MPH (25km/h) and below 118MPH (190km/h) for Adaptive Cruise Control to be engaged by the driver.

Sensor Module

The Adaptive Cruise Control distance sensor module contains both the radar sensor and the controller. The radar scans the road environment to detect targets within its specified field of view. The controller then makes throttle and/or brake commands to the Engine Control Module (ECM) and Electronic Brake Control Module (EBCM) for proper cruise speed adjustment.

The radar processes the road environment to gather data concerning any vehicle ahead of the Adaptive Cruise Control vehicle. When an object is detected, the controller calculates the object range, range rate, acceleration and azimuth angle parameters.

The Adaptive Cruise Control vehicle's distance sensor module performs Adaptive Cruise Control state processing automatically — speed control (the Cruise state) or gap control (the Follow state). The normal operating state is Cruise, whereby the vehicle speed is controlled (either brakes or throttle) in order to match the driver-selected set speed. When a preceding forward target is identified by the radar, the system will automatically transition into the Follow state and command the appropriate speed in order to maintain the driver-selected following gap behind the target vehicle.

TIP: After programming the distance sensor module and while performing the learn procedure, the Service ACC message on the Driver Information Center (DIC) will display and the Vehicle Ahead indicator on the instrument cluster will flash to indicate that the radar is in the alignment mode and collecting data. The Service ACC message will extinguish and the Vehicle Ahead indicator will stop flashing when the radar module has completed the alignment process. The radar system should become functional once the learn procedure is complete and the diagnostic session is concluded.

Cruise Control Switch Functions

The cruise control function switches are used by the BCM to communicate all Adaptive Cruise Control commands to the Adaptive Cruise Control distance sensor module.



Cruise control switches, including the gap switch

The Adaptive Cruise Control switches are momentary-type switches that are hard-wired to the BCM. Based on voltage variations, the BCM is able to communicate driver commands to the Adaptive Cruise Control module. The initial press of the gap switch recalls the current setting and activates the display. Subsequent presses of the gap switch will change the gap setting (near, medium or far). The DIC displays the driver-selected following gap. This gap setting also applies to the Forward Collision Alert system and will impact how early or late the collision alert system will warn the driver.



The gap settings are for the Adaptive Cruise Control and Forward Collision Alert systems.

The gap switch allows the driver to determine how closely a target vehicle is followed while Adaptive Cruise Control is engaged. The gap switch has three following gap selections that range from 1 to 2 seconds. The distance maintained for a selected gap will vary based on vehicle speed. The faster the vehicle speed, the further back the vehicle follows.

Following Distance Indicator

The following distance is expressed in time as opposed to actual distance. If no vehicle is detected, dashes are displayed.



The following distance is expressed in time. If no vehicle is detected, dashes are displayed.

Vehicle Ahead Indicator

The Vehicle Ahead indicator is displayed on the instrument cluster when the radar identifies an in-path vehicle, and also serves as feedback that the radar is functioning properly. The Vehicle Ahead indicator may sometimes display for stationary road objects.

continued on page 3

Adaptive Cruise Control Technology

continued from page 2

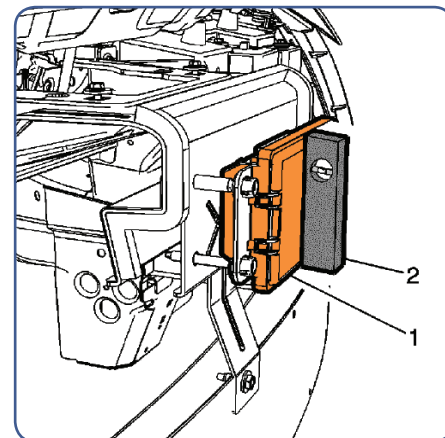
Mechanical Alignment

When the radar is out of alignment, DTCC1002 (Distance Sensing Cruise Control Module Performance) is set by the Adaptive Cruise Control distance sensor module. A persistent blockage warning can also be an indicator of misaligned radar. When DTCC1002 is set, the radar must be mechanically aligned using the special alignment tool. Refer to Forward Range Radar Module Alignment in the appropriate Service Information.

An out of alignment condition may result from tampering or damage to the Adaptive Cruise Control distance sensor module from a major or minor impact to the front of the vehicle. A damaged or misaligned radar module is not always obvious. Sometimes, damage can occur to the module or its alignment without any evidence of impact to the front of the vehicle.

When checking for a misaligned radar module, look for a bent mounting bracket or a module that is no longer properly attached at its attaching points on the mounting bracket. Misaligned radar can result in DTCC1002 being set, a recurring blockage warning message on the DIC, a reaction to target vehicles or objects in adjacent lanes or no reaction to target vehicles or objects in the vehicle's path.

When aligning the Adaptive Cruise Control distance sensor module, the vertical position of module should be 90 degrees relative to the ground. Use a water bubble level to align the distance sensor module vertically. The bubble level should have an accuracy of ± 0.5 degrees (9 mm/m). Turn the alignment screw until the bubble level has a value of 90 degrees.



Vehicle distance sensor module (1) and water bubble level (2)

TIP: Before performing a radar alignment, always check the three ball sockets in order to insure that the module is properly attached to the ball studs on the mounting bracket.

☺ Thanks to Katul Patel and Brian Shenstone

Adaptive Cruise Control Radar Module Blockage Message

The 2014-2016 Impala (VIN 1), LaCrosse, Regal, ELR and 2015-2016 Tahoe, Suburban, and Yukon models equipped with Adaptive Cruise Control (RPO K59, KSG) may display a blockage message on the Driver Information Center (DIC) due to a blocked radar sensor. The Adaptive Cruise Control system is disabled if the radar is blocked.

Radar blockage detection is a normal part of Adaptive Cruise Control operation. If the radar is blocked, a "Front Radar Blocked Clean Front of Vehicle" message will display on the DIC. A blockage warning message may be displayed if.

- Weather conditions such as rain or heavy snow prevent the radar from being able to properly discriminate targets. This DIC message will clear shortly after the weather conditions improve.
- Rain, snow, ice, mud or debris collect on the front or the back of the fascia in the area of the radar or on the face of the radar module itself. This DIC message will clear shortly after the affected surfaces are cleaned.
- The radar module is no longer properly aligned. If a blockage warning is observed and the radar field of view is not blocked due to weather conditions or water, snow or mud on any of the surfaces, the module should be inspected to determine if it is properly mounted and aligned.

For each of these cases, the "Front Radar Blocked Clean Front of Vehicle" message on the DIC will clear following an ignition cycle where the vehicle is allowed to completely shut down. Once the ignition is turned back on, the radar module will rerun its blockage detection algorithm and, if the blockage condition still exists, will re-initiate the "Front Radar Blocked Clean Front of Vehicle" DIC message. While the blockage algorithm is running, a "Radar Temporarily Unavailable" message may be displayed. If the blockage message reappears after an ignition cycle, confirm all possible causes have been addressed.

Since radar blockage is a part of normal radar operation, the radar module should not be replaced when the blockage DIC message is displayed. Be sure to check the identified possible causes.

Cleaning the Vehicle

First, turn off the ignition before cleaning the fascia or module surfaces. When cleaning the front of the vehicle to eliminate a blockage, it may be necessary to clean both the outside surface of the front fascia, the inside surface of the fascia and the cruise control vehicle distance sensor module face.



Keep the front fascia clean for proper radar operation.

Service ACC Message

If the cruise control vehicle distance sensor module detects a malfunction in the Adaptive Cruise Control (ACC) system, the SERVICE ACC message will display on the DIC. This message is displayed when a diagnostic condition is present, unlike the blocked radar message.

☺ Thanks to Brian Shenstone and Katul Patel

Latest AFIT Tool Adapters Released

Several new control modules on 2016 GM models use new sensor technology. The SAE J2716 SENT (Single Edge Nibble Transmission) protocol allows for high resolution data transmission from a sensor to a control module, such as readings for temperature, pressure, throttle position and mass airflow. This new technology requires new adapters for the CH-47976-500A Active Fuel Injector Tester (AFIT).

The CH-47976-507 AFIT SENT Fuel Sensor Adapter is an adapter with molded-in internal active circuits and a digital-to-analog signal conversion processor that allows the AFIT SIDI adapter cables to function and test the injectors and the fuel system on vehicles with the SENT system.

Follow the instructions included with the CH-47976-507 SENT Adapter to permanently attach the adapter to the AFIT Drive and Measurement Unit (DMU). Once the adapter is attached, the DMU is compatible with both SENT and non-SENT fuel pressure transducers so it can stay connected permanently to the DMU. The various AFIT SIDI adapter cables then connect directly to the SENT Adapter.

TIP: To help in determining which adapter to use, the AFIT will display the correct adapter during the testing process. The latest software must be used in order to display all correct adapter and cable selections.

CH-47976-513 Adapter

An adapter compatible with the SENT technology and E92 engine control module used on the fuel system of the 2016 ATS, CTS and XTS equipped with the turbo-charged 3.6L V6 was not available at the start of production, but has now been shipped to dealerships.

These models require an added adapter to allow the previously essential CH-47976-502A Cable to be used. Use the CH-47976-513 Cable Adapter, the CH-47976-502A Cable, and the CH-47976-507 SENT Adapter for diagnostics with the AFIT.

CH-47976-512 Adapter

The fuel system on 2016 Malibu, Encore, ATS, CTS and other upcoming 2016 models with the E80 engine control module and the Stop/Start system use a SENT fuel rail pressure sensor. GM Stop/Start systems have a secondary circuit that must be energized to crank the engine and build fuel pressure in the fuel rail for AFIT SIDI tests. Due to the digital-to-analog signal conversion requirement of the SENT transducer, a software update and the CH-47976-512 Adapter is needed to convert the fuel pressure digital signal coming from the transducer into an analog signal that the AFIT can interpret and use for fuel system performance analysis and test results.

The CH-47976-512 Adapter with internal active circuits enables the previously essential CH-47976-503 Cable to be used on vehicles incorporating SENT fuel pressure transducers and Stop/Start systems. Connect the CH-47976-512 Adapter to the CH-47976-503 Cable, which connects to a DMU modified with the CH-47976-507 SENT Adapter. This allows vehicles with SENT systems on both standard and Stop/Start vehicles to be tested.

Software Updates

The software version update to activate the SENT Adapters is available for download through the Service Workbench selection of "Essential Tools – Software Updates" on GM GlobalConnect (U.S. only).

For software updates and additional information go to <http://gmdesolutions.com/downloads/>.

In Canada, the software is available through the Dealer Equipment Services (DES) Canada website. A link to this site is located in GlobalConnect under Service Department Quick Links; look for "Essential Tools – Software Updates."

📧 Thanks to Chuck Berecz

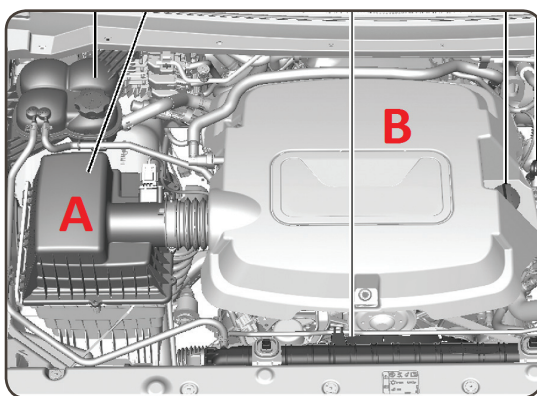
Proper Air Cleaner Outlet Duct Cover Removal

When removing the air cleaner outlet duct cover, also referred to as the engine cover, on the 2015-2016 Colorado and Canyon equipped with the 3.6L V6 engine (RPO LFX), all fasteners must be fully

removed in order to avoid damaging the cover. The cover does not use any fasteners that snap into place.

To properly remove the cover from the air cleaner assembly follow the instructions outlined in the appropriate Service Information.

Keep these tips in mind while performing any service that requires removal of the cover:

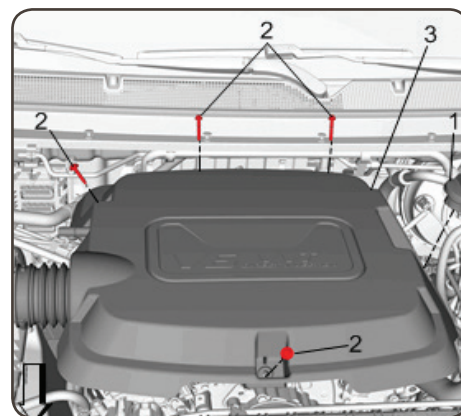


A. Air cleaner assembly B. Air cleaner outlet duct cover

- Disconnect the PCV tube and unclip the PCV tube from the air cleaner outlet duct cover. The tube has a plastic collar quick connect fitting.

- Remove the oil fill cap from the air cleaner outlet duct cover.

- There are four bolts that secure the cover. One bolt is located at the front of the cover and three at the rear of the cover. Make sure all bolts are completely removed before trying to remove the cover. The rear bolt closest to the air cleaner outlet duct is often overlooked. The cover cannot be removed unless all bolts have been removed first.



1. Oil fill cap 2. Air cleaner outlet duct bolts 3. Air cleaner outlet duct cover

📧 Thanks to Charles Hensley

Adaptive Cruise Control DTCs in History

The 2014-2016 Impala (VIN 1), LaCrosse, Regal, ELR and 2015-2016 Tahoe, Suburban, and Yukon models equipped with Adaptive Cruise Control (RPO K59, KSG) may have a DTC set in history due to a communication issue during vehicle start-up.

DTCs P1553 (Distance Sensing Cruise Control Signal Message Counter Incorrect) and/or P15F6 (Front Object Detection Control Module Torque Request Signal Message Counter Incorrect) may be set when the Adaptive Cruise Control subsystem components power up after some ignition cycles. These two DTCs will quickly transition to history. This is a known issue that has no impact to the operation of the Adaptive Cruise Control system. The Adaptive Cruise Control module should not be replaced based on these two codes being observed in history status.

☎ Thanks to Brian Shenstone and Katul Patel

Security Code Required during Programming

When programming certain modules on 2015 Encore, Sonic, Spark and Trax models, a security code may be requested at the Techline PC.

The security code is listed in GM GlobalConnect along with the Key code, which is labeled as the IMMO code. The Key Code application is restricted to authorized users.

In the U.S., the Key code is located in the GlobalConnect App Center under the Parts and Business Office departments.

In Canada, use the D2D link located in the GlobalConnect App Centre under the Parts department. If the required IMMO code is not found, contact the Dealer Systems Support helpdesk.

In the dealership, contact your Dealer Partner Security Coordinator to identify authorized users at your facility.

☎ Thanks to Matthew Zajechowski

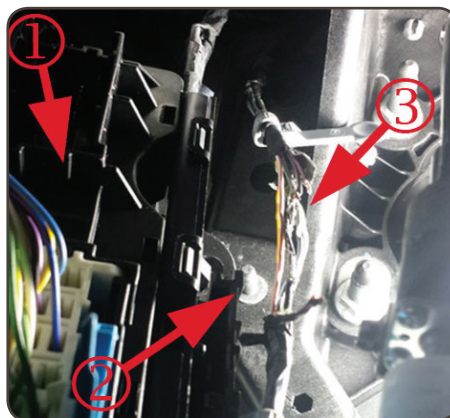
Service Engine Soon Lamp and Reduced Power

Some 2016 Escalade models, Silverado 1500, Suburban, Tahoe, Sierra 1500 and Yukon models equipped with the 4.3L engine (RPO LV3), 5.3L engine (RPO L83) or 6.2L engine (RPO L86) may have an illuminated Service Engine Soon (Check Engine) lamp or a reduced power message displayed on the Driver Information Center. Several Accelerator Pedal Position (APP) DTCs may set (including P0106, P0107, P0697, P2122, P2123, P2127, P2128 or P2138).

The ECM scan tool parameter also may show a 5-Volt Reference 3. This parameter displays the voltage sensed on the 5-volt reference circuit at the ECM.

Follow the appropriate Service Information for the DTCs that have set. Also inspect the wiring harness near the left instrument panel junction block. The wiring harness may have been pinched at the mounting stud. Repair any damaged circuits as necessary

☎ Thanks to Richard Renshaw



1. Left IP junction block
2. Mounting stud where harness may be pinched
3. Damaged harness (harness tape removed)

GM TechLink is published for all GM retail technicians and service consultants to provide timely information to help increase knowledge about GM products and improve the performance of the service department.

Publisher:

John Meade
GM Customer Care and Aftersales

Editor:

Lisa G. Scott
GM Customer Care and Aftersales

Technical Editor:

Mark Spencer
✉ mspencer@gpstrategies.com

Production Manager:

Marie Meredith

Graphic Design:

5by5 Design LLC
✉ dkelly@5by5dzn.com

Fax number:

☎ 1-248-729-4704

Write to:

✉ TechLink
PO Box 500
Troy, MI 48007-0500

GM TechLink on the Web:

🌐 GM GlobalConnect

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 information 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.

Inclusion in this publication is not necessarily an endorsement of the individual or the company.

Copyright© 2015 General Motors
All rights reserved.

Bulletin Category	Bulletin Number	Subject	Models
Body Hardware and Trim	15-NA-024	Rattle Noise from Door Trim After Recent Repair	2014-2016 Cadillac ELR
Body Hardware and Trim General Information	15-NA-022	Front Side Door Armrest Cover Trim Squeak Noise	2014-2016 Chevrolet Silverado 1500, GMC Sierra 1500; 2015-2016 Chevrolet Silverado 2500, 3500, GMC Sierra 2500, 3500
Body Repair Diagnostic Overview, Starting Point, and Programming General Information	15-NA-042	Information Regarding the Modifying or Removing of Underbody Brace for Exhaust Modifications	2014-2016 Chevrolet SS
Body Repair General Information	15-NA-034	Information on Low-Gloss Matte Paint Finish	2016 Cadillac ATS-V Coupe, ATS-V Sedan, CTS-V
Body Repair	15-NA-027	Fuel Door Will Not Pop Open	2015-2016 Chevrolet Equinox
Body Repair	15-NA-021	Rear Fascia Retainment Concern Below Tail Lamp	2015 Chevrolet SS
Body Systems Driver Information and Entertainment General Information	15-NA-043	Rear Turn Signal Inoperative and/or Turn Indicator Failure Message Displayed in DIC	2015 Cadillac SRX
Body Systems	15-NA-041	Rear Turn Signal Socket Does Not Correctly Connect to Body Harness	2015-2016 Cadillac SRX
Body Systems General Information	15-NA-025	Information on Servicing Black Button Passive Entry Passive Start (PEPS) Button Door Handles	2016 Chevrolet Volt
Body Systems	15-NA-020	Information on Exposed Lower Edge of Windshield Susceptible to Chipping, Cracking or Breaking	2016 Chevrolet Volt
Brakes	15-NA-031	Rear Brake Moan Type Noise Heard When Applying Brakes	2016 Cadillac ELR
Diagnostic Overview, Starting Point, and Programming Transmission/Transaxle	15-NA-038	Harsh 3-4 Upshift	2014 Chevrolet Impala (VIN 1)
Diagnostic Overview, Starting Point, and Programming General Information	15-NA-036	Droning or Booming Noise While Driving at Low Speeds with Convertible Top Down	2015 Chevrolet Corvette
Driveline/Axle	15-NA-048	Clunk Noise Under Vehicle When Accelerating	2008-2014 Cadillac CTS
Driveline/Axle	15-NA-047	Wobble Felt During Light Acceleration	2012-2016 Buick Verano
Driver Information and Entertainment	15-NA-039	Reprogram Base Radio	2014 Cadillac ATS
Driver Information and Entertainment Power and Signal Distribution	15-NA-028	Front Console USB Harness Power Supply Update	2015 Buick Enclave, Chevrolet Traverse, GMC Acadia
Engine Engine/Propulsion	15-NA-019	Fuel Odor During Fuel Filling or During Idle	2013-2015 Cadillac Escalade, Chevrolet Suburban, Chevrolet Tahoe, GMC Yukon; 2013 Chevrolet Avalanche, Chevrolet Silverado LD, GMC Sierra LD; 2014-2015 Chevrolet Silverado 1500, GMC Sierra 1500
Engine/Propulsion	15-NA-040	Rattle or Flutter Noise When Switching Between V4 and V8 Operating Modes	2016 Cadillac CTS-V, Chevrolet Camaro
Engine/Propulsion	15-NA-035	No Start and/or Start Stall	2014-2015 Chevrolet Cruze

Bulletin Category	Bulletin Number	Subject	Models
Engine/Propulsion Power and Signal Distribution	15-NA-037	Low Mass Battery (RPO JIM) Not Shipped with Vehicle	2016 Cadillac ATS-V
Engine/Propulsion	15-NA-033	Normal Characteristic - Slight Bump, Jerk or Rough Engine Startup During an AutoStart Event	2016 Cadillac ATS, CTS
Engine/Propulsion Power and Signal Distribution	15-NA-023	No Crank/No Start Due to Dead Battery, MIL Illuminated	2015 Buick Encore, Chevrolet Trax
General Information Transmission/Transaxle	15-NA-003	Difficult to Shift into Park and/or Difficult to Depress Shifter Button	2011-2015 Chevrolet Cruze
General Information	15-NA-030	Information on the Use of Non GM Approved Battery Chargers and Booster Packs	2008-2015 GM Models
General Information	15-NA-026	Recommendations for Towing/Transport of Vehicle	2016 Chevrolet Camaro
Safety and Security Steering	15-NA-046	Driver Steering Wheel Airbag Not Flush With Steering Wheel and/or Difficulty Depressing Airbag to Engage Horn	2015 Cadillac ATS, Cadillac CTS, Cadillac ELR, Cadillac Escalade, Cadillac SRX, Cadillac XTS
Seats	15-NA-044	Driver and/or Passenger Power Seat Height Stuck in the Full-up Position, Intermittent Inoperative Seat Adjustment or Not Lowering	2013-2016 Buick LaCrosse, Buick Regal, Buick Verano, Cadillac SRX, Cadillac XTS, Chevrolet Equinox, Chevrolet Impala Limited, GMC Terrain; 2013-2015 Chevrolet Camaro, Chevrolet Cruze, Chevrolet Malibu; 2016 Cruze Limited, Chevrolet Malibu; 2014-2016 Impala (VIN 1)
Transmission/Transaxle	15-NA-045	Rattle Noise Heard From Engine Bell Housing	2015-2016 Chevrolet Corvette
Transmission/Transaxle	15-NA-029	Information on 1st Design / 2nd Design Transmission Shift Cables	2004 Chevrolet Malibu

Service Know-How

10215.11D Emerging Issues – November 12, 2015

To view Emerging Issues seminars:

- Log in to www.centerlearning.com
 - Select Resources > Service Know-How/TECHAssist > Emerging Issues > Searchable Streaming Video; or
 - Select Catalog to search for the course number, and then select View > Take or Continue Course