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Top Questions on New Models





Many new GM models have a number of innovative features that enhance the safety and convenience of the vehicle. But some of these features may be unfamiliar to customers and, as a result, they may bring their vehicle into the dealership for service when a system is actually operating as designed. Following are some of the top customer questions regarding new technology, safety and infotainment systems on some 2016-2018 GM models. Ensure customers understand the operation of these features before beginning any diagnosis or repairs.

HANDS-FREE PROGRAMMABLE POWER LIFTGATE

The programmable power liftgate can be set to open to a lower height in order to make it easier to reach the liftgate to close, or to prevent contact with a low ceiling, garage door, or roof-mounted cargo.

Programming the Liftgate Height

The power liftgate knob is usually located on the driver's door or the overhead console. It has three modes:

MAX: Opens the liftgate to the maximum height.

3/4: Opens to a reduced height that can be set from 3/4 open to fully open.

Off: Opens manually only.

- To program the liftgate's opening height:
- 1. Turn the power liftgate knob to the MAX or 3/4 position.
- 2. Open the liftgate and adjust it manually to the desired height.

CONTENTS

Top Questions on New Models 1
Diagnostic Tips for Harsh Shifting Transmission Conditions
Preventing an Inadvertent Remote Start during Service5
Hard Shifting into 1st Gear or Reverse 6
Loss of Communication while Viewing HMI Data List 6

Customer Care and Aftersales

GM

Top Questions on New Models - continued from page 1

3. Save the height setting by pressing and holding the power liftgate close button next to the latch on the liftgate for three seconds. The turn signals will flash and a beep will sound when the setting is saved.



Power liftgate knob

With the liftgate programmed, it will

open to the set height if the power liftgate knob is in the 3/4 mode.

Hands-Free Operation

If the liftgate is equipped with hands-free operation, the liftgate can be opened or closed by using a kicking motion under the rear bumper. The location of the rear bumper sensor varies based on the vehicle. Do not swing your foot side-to-side. The key fob must be within 3 feet (1 meter) of the liftgate.

Some 2018 models also feature a vehicle logo that is projected onto the ground under the rear bumper sensor that indicates where the kicking motion should take place. The logo is projected when the key fob is detected within 6 feet (2 meters) of the liftgate. Based on operating conditions, the logo will be projected for one minute.



Projected logo indicates rear bumper sensor location.

LANE KEEP ASSIST WITH LANE DEPARTURE WARNING

The customer may be expecting a warning chime when the Lane Keep Assist with Lane Departure Warning system is active. However, there is not a warning chime if the system determines the driver is actively steering. The Lane Keep Assist system can be turned on/off using the button on the steering wheel or instrument panel. Make sure the customer has not inadvertently turned the system off.

Lane Keep Assist Function

Lane Keep Assist will provide steering input to gently turn the steering wheel to help center the vehicle in the traffic lane if the vehicle approaches a detected lane marking without using a turn signal in that direction. The Lane Keep As-



Lane Keep Assist button

sist icon is green on the instrument cluster if the system is available to assist and turns amber when the system is providing steering input. As the driver actively steers the vehicle, the steering input and amber indicator may not be noticed.

Lane Departure Warning Function

If the driver does not actively steer the vehicle and crosses the lane marking without using a turn signal in that direction, the Lane Departure Warning will then provide a warning by flashing the amber icon and pulse the Safety Alert Seat or sound a chime/beeps. Audible beeps



Lane Keep Assist provides steering input. A Safety Alert Seat warning will not occur unless the driver does not actively steer and the lane marking is crossed.

or seat pulsing alerts may be selected in the Settings menu.

AUTO ENGINE STOP/START

Many GM models now feature Auto Engine Stop/ Start technology to help conserve fuel and provide better fuel economy. The Auto Engine Stop//Start system shuts



Top Questions on New Models - continued from page 2

down the engine when the vehicle comes to a complete stop, referred to as an Auto Stop. if operating conditions are met. When in Auto Stop mode. the tachometer will read



AUTO STOP and OFF markings on the tachometer

AUTO STOP. The audio system, climate controls and other accessories will continue to operate. By releasing the brake pedal or applying the accelerator pedal, the engine will restart.

When the engine is turned off using the ignition pushbutton, the tachometer will read OFF.

The Auto Engine Stop/Start system can be turned off using a control button on some GM models.

Operating Conditions

The engine may not turn off at a stop or may restart if any of the following conditions apply:

- A minimum vehicle speed is not reached.
- The engine or transmission is not at the required operating temperature.
- The outside temperature is not in the required operating range.
- The shift lever is in any gear other than Drive (D).
- The battery charge is low.
- The climate control system requires the engine to run based on the climate control or defog setting.
- The Auto Stop time is greater than two minutes.

RADIO/INFOTAINMENT SYSTEM

The new touchscreen infotainment systems offer a variety of entertainment, communication and vehicle system options. Simple gestures can be used on many of the



Touchscreen infotainment system

touchscreen systems just as on a tablet, such as tap, drag, swipe and pinch/spread. Touching an application icon or screen button accesses that feature, menu or setting.

Customers can use a Bluetooth or USB connection to link to a compatible smartphone, cell phone, USB flash drive, or portable audio player.

Detailed information and Frequently Asked Questions on how to use a variety of system functions are covered at www.buick.com, www.chevrolet.com, and www.gmc.com. In Canada, visit chevrolet. ca/owner-centre.html or fr.chevrolet.ca/owner-centre.html.

OWNER CENTER



In addition, helpful videos and more information about the operation of many features on new GM models can be found at the following GM owner websites:

<u>my.buick.com</u>
my.chevrolet.com

my.cadillac.com

my.gmc.com

<u>my.gm.ca</u>

Choose your vehicle using the drop-down menus and select Learn About Your Vehicle.

S Thanks to Tyler Greenhill

Diagnostic Tips for Harsh Shifting Transmission Conditions

Harsh shifting conditions and delayed garage shift engagements may be noticed on some 2017 Colorado, Canyon, Express, Savana; 2016-2017 ATS, CT6, CTS, Camaro; 2015-2017 Escalade, Silverado, Sierra, Yukon Denali, and Corvette models equipped with the 8L45 or 8L90 automatic transmission (RPOs M5N, M5T, M5U, M5X). The harsh shift conditions may be caused by one or more clutch fill times not completely learned in the Transmission Control Module (TCM).

DTCs and Updated Calibrations

As a starting point for diagnosing all 8L45/8L90 transmission shift conditions, check for DTCs in all modules and address the causes

for setting the DTCs. Also check for any available ECM/TCM calibration updates.

Refer to the following bulletins for additional information:

- 16-NA-411 2015-2016 models equipped with the 6.2L engine (RPO L86) engine and the 8L90 transmission
- 16-NA-412 2015-2016 models equipped with the 5.3L engine (RPO L83) engine and the 8L90 transmission
- 16-NA-404 2017 models

Test Drive with GDS2



8L90 automatic transmission

A test drive of the vehicle should be completed in order to attempt to duplicate the concern. Use GDS2 to capture a session log of the event and bookmark when the shift concern is identified. Review the GDS2 session log to identify which shift(s) are occurring at each bookmark

Refer to the following bulletins for additional information:

- 14-07-30-001: Information on Transmission Adaptive Functions and Correcting Low Mileage Harsh Shifts, Slips, or Flares – 2015 Corvette
- 16-NA-411, 16-NA-412 and 16-NA-019: Updating ECM/TCM Calibrations 2015 models other than Corvette
- 16-NA-019: Information on Transmission Adaptive Functions and Correcting Low Mileage Harsh Shifts, Slips, or Flares – 2016-2017 models

These bulletins are based on the following criteria:

• 2015 models with 7,500 miles (12,000 km) or less since the vehicle in-service date, TCM calibration update or the Service Fast Learn (SFL) procedure being performed

- 2016 models with 5,000 miles (8,000 km) or less since the vehicle in-service date, TCM calibration update or the SFL procedure being performed
- 2017 models with 2,500 miles (4,000 km) or less since the vehicle in-service date, TCM calibration update or the SFL procedure being performed

Transmission, valve body or TCM replacement requires a Service Fast Learn procedure using a scan tool to be performed in order for the TCM to learn individual clutch apply pressures. If the TCM calibration has been updated, a Service Fast Learn procedure is required on vehicles with any mileage accumulation.

Clutch Drive Learn Procedure

Based on the bookmarks placed in the GDS2 session, complete the Clutch Drive Learn procedure for the suspect clutch. The Clutch Drive Learn procedure should only be performed on smooth, level roads and may take 45 minutes or more.

Completion of the Service Fast Learn procedure will reset all shift adapts and may require the entire transmission Clutch Drive Learn procedure for each clutch to be completed.

After completing the procedure, the vehicle should be allowed to cool down for eight or more hours and then test driven again to ensure the cold shift quality is acceptable.

Refer to the following bulletins for more information:

- 16-NA-361: Transmission Harsh 1-2 Shift Upon First Start Up/ Shift of the Day Under Light Throttle
- 16-NA-213: Diagnostic Tips for Harsh Shifts after Mileage Accumulation without Previous Transmission Repairs and/ or Calibration Updates – Transmissions built between July 1, 2015 and September 14, 2015.

Garage Shifts

Refer to the following bulletins for more information:

- 16-NA-014: Delayed Engagement After Sitting With Engine Off. Torque Converter Fluid Drain Back – 2015-2016 models
- 16-NA-364: Delayed Engagement After Sitting With Engine Off, Clutch Slow to Fill – 2015-2017 models
- S Thanks to Terry Neuendorf

Preventing an Inadvertent Remote Start during Service

With the growing popularity and availability of GM models equipped with remote start 311and the OnStar mobile app, it's a good time for a reminder that there is potential for personal injury to technicians or damage to a vehicle during vehicle service if the remote start function isn't disabled.

2009-2018 GM models may be equipped with remote start or the OnStar mobile app, which enables owners to send a remote start command to the vehicle using a smartphone. In a situation where a technician is working on a repair from underneath the vehicle — where the vehicle would be on a hoist and the hood closed — the vehicle could be inadvertently started using the remote start function or the mobile app remote command.

The inadvertent remote start may occur in a couple of common instances. The vehicle owner may start the vehicle using the OnStar mobile app out of habit, such as during lunchtime or at the end of the day, forgetting that the vehicle is being repaired. Another case could be if dealership personnel accidentally start the wrong



OnStar mobile app with remote commands

vehicle using an incorrect key fob. The common appearance of key fobs could create a situation where the wrong fob is used, leading to an accidental engine start-up.

Always Open the Hood

When performing repairs in the engine compartment or under the vehicle, always fully open the hood, or open the hood to its secondary latch, so that the remote start function will be disabled. Failure to fully open the hood, or open it to its secondary latch, during service could result in personal injury or damage to the vehicle if an inadvertent remote start occurs.

Always pay attention to the Dangers, Warnings and Cautions in the appropriate Service Information when performing repairs. The remote start warning also is included under Hoist Procedures as well as the general



Open the hood to disable the remote start function.

warning statement presented when logging into the Service Information.

↔ Thanks to Matt Bunting



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Hard Shifting into 1st Gear or Reverse

Hard shifting conditions when shifting into 1st gear or Reverse may be found on some 2014-2018 Silverado, Sierra and Corvette models equipped the 4.3L V6 engine, 5.3L V8 engine or 6.2L V8 engine (RPOs LV3, L83, L86, LT4) and 2015-2018 CTS-V, Escalade, Tahoe, Suburban, Yukon; and 2016-2018 Camaro models equipped with the 5.3L V8 or 6.2L V8 engine (RPOs L83, L86, LT4).

On Silverado, Sierra, CTS-V, Escalade, Tahoe, Suburban, Yukon, and Camaro models, when shifting the automatic transmission into Drive or Reverse, a clunk sound may be heard.

On Corvette models only, it may be difficult to shift into 1st gear or Reverse with a manual transmission or there may be a vibration on takeoff or a clunk noise when shifting into Drive or Reverse with an automatic transmission.

Crankshaft End Play

The hard shifting conditions may require replacement of the crankshaft or thrust bearing. Before replacing any components, check for excessive crankshaft end play. Crankshaft end play clearance should be within a specification of 0.0015-0.0086 in. (0.040-0.220 mm).

Crankshaft Wear

If end play is found to be out of specification, remove the engine and check for possible crankshaft thrust bearing or crankshaft wear. The crankshaft and bearings should not show signs of excessive wear. Inspect the thrust bearing for wear on one side and the crankshaft on the mating surface.

If wear is evident — the three vertical channels may be worn off — replace the connecting rods, main bearings, thrust bearing and crankshaft.

TIP: On engines with a dry sump oil system, the oil tank and lines, and the oil cooler (if equipped), should be replaced when repairing the engine.

() Thanks to Richard Renshaw



Good crankshaft and bearings that are not worn.



Engine oil cooler

ma

Loss of Communication while Viewing HMI Data List

While performing service procedures involving the Human Machine Interface (HMI) module, viewing the HMI data parameters using GDS2 may cause a temporary loss of communication with the scan tool. This condition may be found on 2016 ELR; 2016-2017 ATS, CTS, XTS; 2016-2018 Encore, Envision, LaCrosse, Regal, CT6, Escalade, Camaro, Colorado, Corvette, Impala, Malibu, Silverado, Suburban, Tahoe, Canyon, Sierra; 2017-2018 XT5, Acadia; and 2018 Equinox models equipped with RPOs IO5, IO6, RAO, or UY4.

On some vehicles, viewing the HMI data parameters for as little as 5–60 seconds using GDS2 may induce a temporary loss of HMI communication with the scan tool. This condition may occur on a vehicle that has no concerns as well as a vehicle that has an unrelated customer concern. If a loss of HMI communication occurs with no other conditions, do not replace the HMI module.

Power Cycle the HMI Module

Communication can sometimes be reestablished with GDS2 by simply clicking

Auman	Machine	Interface	Control	Module	Scan	Tool	Infor
Table 1	Human Machine I	Interface Control	Modulo Cono 7	and Data Bara	motore		

Table 3: Witeress Access Acta Scan Tool Asta Frankfeld's Table 3: Human Machine Interface Scan Tool Output Controls Human Machine Interface Control Module Scan Tool Data Parameters							
Parameter	Expected Value	Definition					
Operating Conditions: Igni	tion ON						
Battery Voltage	Varies	The scan tool displays volts. This is the voltage a human machine interface control module.					
System Power Mode	Run	The scan tool displays Off, Accessory, Run or Cra the vehicle power mode status as received by the interface control module via high speed GMLAN.					
Date From GPS	Varies	The scan tool displays the current date (Month, E acquired from the GPS satellites.					
Time From GPS	Varies	The scan tool displays the current time acquired satellites in 24 hour format HHMMSS					
Human Machine Interface Control Module Microphone 1	Not Present	The scan tool displays Present or Not Present. that a primary microphone is present and com machine interface control module. The microp the MOST buss to the amplifier (for volume co required) instead of directly wired microphone					
Human Machine Interface Control Module Microphone 2	Not Present	The scan tool displays Present or Not Present. Ca that a secondary microphone is present and com machine interface control module. The microphon the MOST buss to the amplifier (for volume comp required) instead of directly wired microphone to					

HMI data parameters

OK when the "No HMI Communication" screen is displayed. In some other cases, it may be necessary to remove the HMI fuse for a few seconds and then reinstall the fuse to re-establish HMI communication. If there are not any related DTCs set or other concerns with the HMI, the HMI data parameters should be temporarily viewable again (for only one minute or less) after reinstalling the HMI fuse, before the cycle starts again.

If the loss of HMI communication with GDS2 occurs and TIS2Web is used to program the HMI module without first restoring communication with the HMI module by power cycling it (cycling the fuse for a few seconds or cancelling Retained Accessory Power), an E-4491 SPS error code may appear. However, the HMI module should not be damaged and it should be possible to continue with programming by power cycling the HMI module and then immediately entering TIS2Web.

The loss of HMI communication while viewing the HMI data parameters using GDS2 is due to a software issue that causes the HMI to the prematurely leave the diagnostic/service mode and return to normal operation.

Do not replace the HMI module or any other parts if this condition is found. GM Engineering is currently evaluating this condition. In the meantime, power cycling the HMI fuse should restore communication unless another issue exists that requires further diagnosis and repair.

(5) Thanks to Ryan Dorland