All-New 2017 Buick LaCrosse is Here

The all-new longer, lower and wider 2017 Buick LaCrosse debuts the new face of Buick with the return of the three-color Buick tri-shield insignia set against darkened waterfall grille bars. The 2017 LaCrosse is about 300 pounds (136 kg) lighter than the current LaCrosse and is available in front-wheel drive and all-wheel drive (AWD) models.

Powertrain

The LaCrosse features the all-new 3.6L DOHC V6 engine (RPO LGX) with variable valve timing and direct injection. It generates 305 horsepower and 268 lb.-ft. of torque and is paired with the new Aisin AF50-8 8-speed automatic transaxle (RPO MRC). To increase fuel efficiency, the engine uses Active Fuel Management (AFM), which deactivates two cylinders under certain conditions, and advanced Stop/Start technology that turns off the engine under certain conditions when the vehicle is stopped. It only takes the Stop/Start system approximately 0.3 seconds to start the engine.

The Aisin AF50-8 is a compact, lightweight, electronically controlled 8-speed automatic transaxle that employs a Ravigneaux-type planetary gear set. It also employs a high-precision clutch hydraulic control system for a smooth, highly responsive gear shift feel. The Transmission Control Module (TCM) uses adaptive learning, adjusting the current output to the various pressure control solenoid valves, to maintain the originally calibrated shift timing.

Selecting a gear is done with the shift-by-wire Electronic Precision Shift (EPS) gear selector, which eliminates the mechanical connection to the transaxle. The lever operates like a premium joystick, and the paddle shifters on the steer-

continued on page 3
GDS 2 Core and Diagnostic Package Updates

The Global Diagnostic System (GDS) 2 receives periodic core updates throughout the year. The latest version, 15.0.14700, released on August 29, 2016 contains several software bug fixes as well as major application changes that impact the way GDS 2 looks and functions. These updates are available when logging into TIS2Web and launching GDS 2 from the TIS2Web home page.

In addition to the periodic core update, GDS 2 receives an updated diagnostic package once a month. The current diagnostic package is GM Global v2016.9.1 and includes updated information on individual vehicle platforms. The updated diagnostic package is available in GDS 2 by clicking the “Update” button or selecting “Manage Diagnostic Packages.”

The version numbers can be seen in the lower left corner of GDS 2.

These updates work together so it’s important to have the latest core version as well as the latest diagnostic package installed to ensure that all fixes are in place. Using the new software updates minimize the chance of encountering errors when launching or using GDS 2.

If any issues are encountered with GDS 2, update both the core version and the diagnostic package. If any issues are not resolved after performing the updates, contact the Techline Customer Support Center (TCSC) at 1-800-828-6860 (English) or 1-800-503-3222 (French).

Thanks to Chris Henley

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Considering a New Computer?

Check Dealership IT Guidelines before You Buy; Windows 10 Now Supported

If you’re thinking about buying a new computer for use in the dealership service department, check the GM Dealer Infrastructure Guidelines first. A revised version of the guidelines was recently released and is available at www.gmdesolutions.com. Click the Techline IT Solutions tab and then GM IT Standards. In Canada, the IT guidelines are in the Service Library under Service Department on GlobalConnect.

Before purchasing a desktop PC or laptop PC for use in the dealership, the guidelines should be reviewed to ensure that the computer meets the recommended hardware and software specifications needed to properly run all Techline applications.

Windows 7 Pro or Windows 10 Pro

The guidelines specify that the computer must include business grade hardware that meets or exceeds the minimum specification with Intel Processors and runs the Windows 7 Professional 64 bit or Windows 10 Professional 64 bit operating system.

What’s Supported

Prior to purchasing a business grade computer, review the table on page 2 of the guidelines for what is “supported and not supported” for Techline applications as well as the recommended guidelines for purchasing new desktop PC and laptop PCs on pages 3-4.

Techline does not support consumer branded PCs, built by hand and/or home grade operating systems typically used for multimedia or gaming purposes. Techline also does not support AMD processors. Extensive testing of consumer targeted computers and operating systems show they are not suitable for diagnosing vehicles using Techline software applications. Techline applications are considered business class and are intended to run on a business grade computer.

Any questions about computer specifications in the U.S. and Canada can be directed to the TCSC at 1-800-828-6860 (English) or 1-800-503-3222 (French).

Thanks to Lisa Scott

**The GM EPC does not officially support Windows 10, until October 2016. However, in limited testing, no issues have encountered.**

***Global Warranty Management (GWM) will be compatible with IE 11 estimated third quarter 2016. Use IE 9 in the meantime.***

Supported and Not Supported hardware and software
Lane Keep Assist Steering Intervention

continued from page 1

• The system is turned on using the On/Off button
• Lane marker width and radius meet pre-set criteria (not too wide or narrow and the curve of the road is not too tight)

The camera detects the lane markings on the road. The front view camera module communicates via serial data with the instrument cluster, radio, and memory seat module to request visual indicators and, in rare instances, audible or haptic alerts. The Lane Keep Assist indicator on the instrument cluster is green when a lane marking is detected and other operating conditions have been met, indicating that the system is in the “ready to assist” mode.

TIP: If the system cannot detect lane markings, it may be due to snow, rain, or other driving conditions, or the windshield area in front of the camera or the camera lens may be blocked by fog, dirt, damage to the windshield or other elements. The vehicle should be kept clean for proper operation.

Stage 1 — Lane Keep Assist Intervention

The system has two driver interventions. When it is determined that the vehicle has unintentionally approached a detected lane marking without a turn signal being activated in that direction, and the driver has not actively responded by either steering, accelerating, or braking, the electric power steering system will provide a gentle, momentary correction (torque input to the steering) to help guide the vehicle back on course. Lane Keep Assist does not continuously steer the vehicle. This steering pushback is the first stage of warning/intervention.

TIP: The Lane Keep Assist indicator will turn amber when torque is applied to the steering. There are no chimes or haptic seat warnings at this point of Lane Keep Assist operation.

The steering intervention is based on the forward looking sensor outputs, such as lateral offset of the vehicle, relative yaw angle and time to line crossing. In addition, other vehicle dynamics signals are needed, e.g. velocity, steering angle, yaw rate, for the purpose of a driver suppression of the steering intervention. The electric power steering uses a torque sensor to detect driver inputs and relays that information to the front view camera module.

Stage 2 — Lane Departure Warning

If active driver steering is not detected, the second stage warning/intervention is a Lane Departure Warning (RPO UFL) that may activate as the vehicle is crossing the lane marking, alerting the driver through several beeps or a Safety Alert Seat vibration, if equipped. The seat vibration will take place on the side of the seat where the lane departure occurs. In addition, the amber Lane Keep Assist indicator will flash.

The Safety Alert Seat must be turned on in the vehicle settings in order for haptic seat feedback to occur.

TIP: Most commonly, the driver applies more torque to the steering wheel to overcome the Lane Keep Assist intervention. As a result, Lane Departure Warning alerts are rare because they only occur if the driver does not put significant torque onto the steering wheel and the Lane Keep Assist steering intervention was not enough to prevent a lane departure. This circumstance tends to happen only at the entrance to some curves.

Testing the System

Lane Keep Assist intervention may not occur when expected by some drivers while approaching a lane marking. Lane Keep Assist replaced Lane Departure Warning for 2016 (although Lane Departure Warning remains a key component) and operation is slightly different.

For example, if the driver tries to “test” the Lane Departure Warning alert and overcomes the steering correction so that the vehicle intentionally crosses the lane marker, the Lane Departure Warning system may interpret this as active steering and, in many cases, may not provide an alert. Consequently, alerts will occur less frequently as the Lane Keep Assist system provides steering input than with the previously used Lane Departure Warning system.

TIP: If a customer expresses concern that a Safety Alert Seat vibration or warning chime did not occur, verify that there are not any issues with the vehicle’s operation or DTCs set and then explain the proper operation of the Lane Keep Assist and Lane Departure Warning systems.

External Influences

Proper functionality of the Lane Keep Assist system may be affected by outside factors, including:
• Nearby vehicles ahead (tailgating)
• Sudden lighting changes, such as going through a tunnel
• Banked roads
• Poor lane markings

Should these conditions exist, the driver is advised to turn off the system. This does not indicate a system failure. Also, drivers should not use Lane Keep Assist while towing a trailer or traveling on slippery roads.

Thanks to Charles Green and Ray Kiefer
ing wheel can be used for a more engaging driving experience.

**TIP:** A noise may be heard when transitioning into Park, especially when parking on a hill. The noise may be due to the ABS pump. If the vehicle has not come to a complete stop when the vehicle is placed in Park, the wheel speed sensors will detect speed and the ABS pump will be activated to apply the brakes before the parking pawl is engaged. This sound is a normal operation. Drivers should be reminded to bring the vehicle to a complete stop before shifting into Park.

The available AWD system with Active Twin Clutch on the LaCrosse electronically splits the torque as needed between the rear wheels using twin clutches to provide additional traction, stability and control versus a 50/50 split in a single clutch system. The active torque bias adds stability across all driving conditions while a fuel economy benefit is realized by not pushing torque when it is not needed.

**Suspension**

Two front suspension systems are available on the LaCrosse: the standard McPherson strut front suspension (RPO GNA) and the available HiPer Strut front suspension (RPO GNB). With the HiPer Strut system, ride characteristics are controlled by the Electronic Suspension Control system that individually controls the damping force of each of the four shock absorbers. Changes to the damping forces can be accomplished within milliseconds. The HiPer Strut front suspension offers a number of benefits over traditional systems, including less torque steer, reduced smooth road shake, increased cornering power, and enhanced ride and handling performance. The rear suspension is an independent link type. Rear suspension adjustment is achieved through adjustable toe links and lower control arms.

**Interior Features**

The LaCrosse offers three instrument clusters with different Driver Information Centers (DIC) that offer a wealth of vehicle data.

Instrument cluster RPO UDC has a one-color multifunction DIC display that has several screens that can be scrolled through by turning the trip reset stem.

Instrument cluster RPO UDD has a full-color multifunction DIC display that is tightly integrated with the vehicle’s infotainment system and is highly reconfigurable.

Instrument cluster RPO UHS is a reconfigurable cluster with four different themes available. The cluster has an LCD display with DIC elements located in various zones of the display, depending on configuration.
In order to make the interior cabin quiet and comfortable, the QuietTuning® process has been employed in the LaCrosse to reduce, block and absorb noise and vibration. QuietTuning enhancements include ultradissipative materials and Active Noise Cancellation.

The latest edition of the Buick IntelliLink system is displayed in a new, frameless 8-inch (203 mm) diagonal color touchscreen located at the center of the instrument panel. It was designed with fewer buttons and controls for more intuitive use. Many features can be controlled via voice commands through a button on the steering wheel.

**Safety Features**

The available driver assistance features on the LaCrosse include Forward Collision Alert (FCA), Lane Departure Warning (LDW), Lane Keep Assist (LKA), Side Blind Zone Alert (SBZA), Lane Change Alert (LCA), Front Pedestrian Braking (FPB) and/or Forward Automatic Braking (FAB). All of these features are designed to help drivers avoid a crash or reduce crash damage.

In addition, Adaptive Cruise Control is available. It allows the driver to select the cruise control set speed and following gap so the vehicle automatically maintains a set distance from a detected vehicle in front of the LaCrosse.

Automatic Parking Assist also is available. It searches for and steers the vehicle into parallel and perpendicular parking spots. When using APA, the driver must still shift gears and control the brakes and accelerator.

**Special Tools**

The following new tools were released for the 2017 LaCrosse:

<table>
<thead>
<tr>
<th>Tool Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DT-51329-A</td>
<td>Driveshaft Remover</td>
</tr>
<tr>
<td>DT-51466</td>
<td>Seal Installer, LH Input &amp; IDS Cassette</td>
</tr>
<tr>
<td>DT-51467-A</td>
<td>Seal Installer, PTU</td>
</tr>
<tr>
<td>EN-42385-70</td>
<td>Head Bolt Thread Repair Torque Plate</td>
</tr>
<tr>
<td>EN-44226-5</td>
<td>Crankshaft Protector Button</td>
</tr>
<tr>
<td>EN-46335-A</td>
<td>Valve Spring Compressor (On-vehicle)</td>
</tr>
<tr>
<td>EN-49941</td>
<td>Piston Pin Retainer Remover</td>
</tr>
<tr>
<td>EN-51333</td>
<td>Timing Chain Retainer Set</td>
</tr>
<tr>
<td>EN-51766</td>
<td>Rear Seal Installation Pilot</td>
</tr>
<tr>
<td>DT-51918</td>
<td>Bearing Cup Installer</td>
</tr>
<tr>
<td>DT-51919</td>
<td>Bearing Race Puller</td>
</tr>
<tr>
<td>DT-51920</td>
<td>Installer, 1st/Rev Clutch Piston Spring</td>
</tr>
</tbody>
</table>

For more information about the new 2017 LaCrosse, refer to Bulletin #16-NA-230.

\(\text{Thanks to Sherman Dixon and Aaron Huston}\)

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**Lumbar Back Massage Performance**

The new 2017 LaCrosse offers driver and front passenger seats with a massage feature (RPO AF6, AKE). Some passengers may feel that the lumbar back massage is inoperative or the performance is poor.

The intensity of the lumbar back massage is aligned with the lumbar adjustment of the seat. If the lumbar adjustment of the seat is in a decreased setting, the perception may be that the back massager is not functioning properly.

Advise customers that the intensity of the back massage can be changed by increasing or decreasing the lumbar adjustment prior to activating the massage function. Use the lumbar adjustment control and the massage button located on the side of the seats to make any adjustments.

\(\text{Thanks to Aaron Huston}\)
Cleaning Excessive Carbon from Sticking Valves

2000-2015 GM passenger cars and light-duty trucks equipped with gasoline engines that experience engine misfire, rough idle, extended crank or crank/no start conditions may be the result of major carbon build-up on the intake and/or exhaust valves. One or more misfire DTCs may be stored in the Engine Control Module (ECM). Excessive carbon build-up on the intake and exhaust valves is often due to fuel contamination or incomplete burning of the fuel.

When the engine is cold, the compression on multiple cylinders may be at 0 PSI. The engine also may pop through the intake or exhaust while cranking and the spark plugs may be fuel fouled. Some engines also may have valve damage or cam followers that are out of position.

If these conditions are found, follow the misfire diagnostics in the appropriate Service Information. If valve damage is present or there are cam followers out of place, perform the engine mechanical repairs necessary to correct the condition. Also perform a valve cleaning to free up the sticking valves and to remove carbon from the valves and pistons.

**Valve Cleaning**

The valve cleaning procedure requires adding a bottle of GM Upper Engine and Fuel Injection Cleaner into the engine with RPM off idle enough to prevent the engine from stalling (typically around 2,000 RPM). It’s recommended to induce the cleaner through the throttle body with Kent-Moore Tool # J-45076 or J-35800-A or equivalent.

**TIP:** Extreme care must be taken not to hydro-lock the engine when inducing the cleaner, especially if it is induced without Kent-Moore Tool # J-45076 or J-35800-A or equivalent. If too much cleaner is induced at too low of a RPM, or if the engine stalls by inducing too much cleaner at once, the engine may hydro-lock and bend a connecting rod(s).

1. Pressurized canister from J-45076 (J-35800-A is similar)
2. Throttle Body Cleaning Adapters J-45076-46 and J-45076-55

Tool # J-45076, originally released to Cadillac dealerships but now discontinued, includes the pressurized canister and throttle body cleaning adapters. The J-35800-A is another pressurized canister that can be used. If these tools are not available, use equivalent tools to perform the cleaning procedure.

After allowing the cleaner to soak with the engine off for 2.5 to 3 hours (do not let the cleaner soak for more than 3 hours as remaining deposits may start to harden up again), add a bottle of GM Fuel System Treatment Plus to the fuel tank and fill the vehicle with a Top Tier gasoline. Test drive the vehicle extensively to circulate the GM Fuel System Treatment Plus. Once repairs are complete, change the engine oil and filter.

For more information about Top Tier gasoline, go to www.toptiergas.com or refer to Bulletin #05-06-04-022.

A training video covering valve cleaning was included in the January 2013 Emerging Issues seminar (U.S.) and the March 2013 TAC Talk program (Canada). Refer to #PiP5029G for additional information and part numbers.

(*) Thanks to Tim Lightfoot
Night Vision Working in Daylight or Inoperative

The Night Vision feature on some 2016 CT6 models may be on during daylight hours, or it may be inoperative and a Service Night Vision System message may be displayed on the Driver Information Center.

Daylight Condition

The Night Vision Manufacture Enable Counter (MEC) may be set too high, which causes the needed parameter inputs that send information to the module for operation to be ignored.

Monitor the MEC counter using the Identification Information screen on GDS 2. Cycle the ignition switch to decrement the MEC. Once the MEC is at zero, the Night Vision system will only work when the ambient light status message reports it is dark.

Inoperative Condition

If a DTC is set in the Night Vision module, follow the appropriate Service Information diagnostic procedure.

If there are not any DTCs set, inspect the Night Vision video cable connection at the back of the instrument panel cluster. Remove the cluster and check that the cable connection is securely inserted into the back of the cluster.

Thanks to Blake Streling

Service Know-How

10216.09V Emerging Issues – September 8, 2016

The latest service topics from Brand Quality and Engineering are reviewed, including information on replacement of the Corvette driveline support assembly and how to adjust the shift cables on a 2016-2017 Cruze with a manual transmission.

To view Emerging Issues seminars:

- Log in to www.centerlearning.com
  - Select Resources > Video on Demand > GM STC > Search Videos; or
  - Select Catalog to search for the course number, and then select View > Take or Continue Course

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