All-New 2020 Cadillac XT6 Joins Luxury SUV Market

The all-new 2020 XT6 is Cadillac’s newest entry in the three-row luxury SUV market. Available as Premium Luxury and Sport models, the XT6 offers a luxurious cabin, refined ride and a comprehensive collection of safety technologies packaged with front-wheel drive or all-wheel drive.

CONTINUED ON PAGE 2
POWERTRAIN

The only engine available on the XT6 is the second generation 3.6L V6 engine (RPO LGX) with variable valve timing (VVT), direct injection (DI), Active Fuel Management (AFM) and a Stop/Start System (RPO KL9).

The AFM system consists of the camshafts, valves, switching roller finger followers (SRFF), dual feed hydraulic lash adjusters and the oil control valve (OCV). Depending on engine RPM, the ECM sends a signal to the OCV commanding it either on or off. With the AFM system on, the OCV directs oil to the dual feed hydraulic lash adjuster, unlatching the switching roller finger followers, creating zero lift and not allowing the valves to open on cylinders two and five. With the AFM system off, the OCV is not active and oil is not directed to the dual feed hydraulic lash adjuster. The switching roller finger followers operate as a normal rocker arm and all valves open.

The 3.6L engine uses dexos1 approved – GEN 2 full synthetic SAE 5W-30 viscosity grade engine oil.

The Hydra-Matic® 9T65 9-speed transmission (RPO M3W) in the 2020 XT6 is a transverse-mounted, electronically-controlled transmission. It consists primarily of a 4-element torque converter, a compound planetary gear set, friction and mechanical clutch assemblies, and a hydraulic pressurization and control system with an on-axis design (all the gears are in line with the engine crankshaft).

ALL-WHEEL DRIVE

The Sport model features an All-Wheel Drive (AWD) system with Active Twin-Clutch that preemptively and 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.

Control of the 9-speed transmission is through the Electronic Precision Shift selector (or Electronic Transmission Range Selector, ETRS). Electronic Precision Shift uses a console-mounted lever to shift gears electronically. The selected gear position illuminates in red on the shift lever, while all others will be displayed in white. Press the P button to shift into Park. Press the shift lock button on the side of the shift lever to shift out of Park or to shift into Reverse.
Active Twin-Clutch provides:

- Enhanced traction, stability and performance during vehicle acceleration and cornering during dry normal conditions.
- Optimal handling and improved traction in wet/snowy/icy conditions.
- Improved vehicle response when road traction is not uniform, such as when the right side of the vehicle is on ice and the left side is on dry pavement.
- Active Twin-Clutch with active torque bias has increased capability to add stability across all driving conditions.
- A fuel economy benefit is realized by not pushing torque when it is not needed.

The available Driver Mode Control offers the following modes: Tour, Sport, All-Wheel Drive (AWD), Snow/Ice (Front-Wheel Drive vehicles only), and Off-Road (AWD vehicles only). A mode selection can be made by pressing the Drive Mode button on the center console. When pressed, the mode menu will display in the instrument cluster and activate the next available mode.

The electronic suspension control system individually controls the damping force of each of the four shock absorbers, reacting within milliseconds to changes in the damping forces. Suspension characteristics can be changed at any time by activating the Sport mode or Tour mode. The system continuously monitors vehicle speed, wheel-to-body position, lift/dive, and steering position of the vehicle in order to adjust the damping level of each shock absorber.

The vehicle is equipped with a Bosch ABS 9.0 brake system. The electronic brake control module (EBCM) and the brake pressure modulator valve are serviced separately. The system provides ABS, brake assist, electronic brake distribution, electronic stability control, Hill Start Assist, traction control, and Automatic Vehicle Hold.

SAFETY FEATURES

The XT6 offers an extensive number of Safety and Driver Assistance technologies.

Standard features include:
- HD Rear Vision Camera with Remote Wash
- Forward Collision Alert
- Following Distance Indicator
- Automatic Emergency Braking
- Front Pedestrian Braking
- Front and Rear Park Assist
- Lane Change Alert with Side Blind Zone Alert
- Rear Cross Traffic Alert
- Lane Keep Assist with Lane Departure Warning
- Safety Alert Seat
- Speed Limiter

Additional available features include:
- Rear Camera Mirror with Remote Wash
- Enhanced Automatic Emergency Braking
- Adaptive Cruise Control–Advanced
- Automatic Parking Assist with Braking
- Rear Pedestrian Alert
- HD Surround Vision
- Surround Vision Recorder
- Head-Up Display
- Reverse Automatic Braking
- Night Vision
- Hitch Guidance (with Hitch View)

Many of the features can be customized using the Vehicle settings menu on the infotainment system.
COMFORT AND CONVENIENCE

On both six- and seven-passenger models, the passenger-side second-row seat can be manually folded and slid forward using only one hand using the seat lever on top of the seatback for easy access to the third row seating. There are power releases for folding the second- and third-row seatbacks in the rear cargo area as well as the behind the second-row door opening area. Each row of seating also features two USB ports.

Access to the cargo area is made easier with the hands-free power liftgate, which can be programmed to open fully or to a reduced height. The power liftgate control switch is on the driver’s door.

Hands-free access is activated by kicking your foot forward under the left side of the rear bumper. The kicking motion must come within six inches (14 cm) of the rear bumper to activate. The Remote Keyless Entry (RKE) transmitter also must be within three feet (0.91 m) of the liftgate. To indicate the sensor location, the vehicle logo is projected on the ground under the left side of the rear bumper for one minute when the RKE transmitter is detected within six feet (2 m) of the liftgate, depending on operating conditions.

INFOTAINMENT SYSTEM

The XT6 features two infotainment systems (RPOs IOS, IOT) that include the next generation of the Cadillac User Experience along with a new multi-function rotary controller located on the center console. The center console controls include shortcut buttons for Home, Audio, Phone, and Navigation (if equipped) menus, an audio volume/tuning control, seek buttons, and a large dial that enables movement between apps and menus. Rotate the control or move the control to quickly go to the next item or group on the screen.

The infotainment system also includes Near Field Communication (NFC) device pairing. NFC is a set of communication protocols that enable two electronic devices, such as a smartphone, to establish communication by bringing them within 1.57 inches (4 cm) or less of each other. To pair a compatible smartphone using the NFC system, simply hold the phone up to the NFC icon near the Home button below the infotainment screen.

The XT6 is also Cadillac’s first use of the Bose® Performance Series sound system with 14 custom-tuned speakers, delivering powerful audio throughout the cabin.

ACTION CENTER

A Technical Assistance Center (TAC) Action Center (U.S.) has been established for product feedback on the 2020 XT6 to help ensure a successful introduction. Report any vehicle issues that warrant prompt and immediate attention, not just concerns requiring technical assistance.

The gathering of information is critical for quick resolution to any product concerns, including, but not limited to: fit and finish, performance, operation, and customer expectations. The Action Center is connected directly to TAC, Engineering, and the Spring Hill Assembly Plant in order to address any product concerns.

To report a concern, create a TAC Case using the Dealer Case Management (DCM) system. The concern will be answered by an XT6 specialist.

For additional information on the new 2020 XT6, refer to Bulletin #19-NA-118.
Brake Pulsation or Uneven Front Brake Pad Wear

Some 2014-2018 Silverado 1500, Sierra 1500; 2015-2019 Escalade, Tahoe, Suburban, Yukon; and 2019 Silverado LD and Sierra Limited models may have a brake pulsation or a grinding sound coming from the brakes. During an inspection, uneven front brake pad wear may be found.

Typically, vehicles with these conditions have low mileage, approximately 10,000 miles (16,000 km), and the inner pad on either the front-left side or front-right side has extremely biased wear.

Uneven brake pad wear consists of the following:

- Inboard to outboard brake pad wear difference of 3 mm (0.118 in.) or greater for 'normal' highway driving with no heavy loads, without trailer towing, and without frequent elevation changes
- Inboard to outboard brake pad wear difference of 6 mm (0.236 in.) or greater for heavy city driving, frequent elevation changes, frequent trailer towing, and heavy loads
- Left-to-right inboard to inboard or left-to-right outboard to outboard brake pad wear difference of 3 mm (0.118 in.) or greater for either driving condition

For example, uneven pad wear may involve a completely worn inner pad while the outer pad still has plenty of pad life on one side of the axle while the brake pads on the opposite side may both have plenty of pad material left.

**Tip:** The disc brake pads should only be replaced if the friction surface is worn to within 2.0 mm (0.079 in.) of the mounting plates.

BRAKE SYSTEM INSPECTION TIPS

- Do not use any air tools to remove or install the brake caliper bolts. Use hand tools only.
- Install an open-end wrench to hold the caliper guide pin in-line with the brake caliper while removing or installing the brake caliper bolt. Don’t allow the open-end wrench to come in contact with the brake caliper.
- When compressing the caliper pistons, use large C-clamps over the top of the caliper housing and against the back of the outboard pad. Slowly tighten the C-clamps until the pistons are pushed completely into the caliper bores. Using this method will help determine if there is anything binding.

1. Inspect and measure the brake pads thickness. Determine the type of driving the owner does and compare the measurements to the information for normal or heavy driving (3mm or 6mm).

If the pads are within specification, perform a normal brake repair. If the pads are out of specification, perform diagnostics according to the appropriate Service Information to determine the cause of the concern (caliper piston binding, binding pads or guide pins in bracket, brake hose restriction, etc.)

2. If the cause for the uneven pad wear is not found, replace the front brake pads with the part number listed in Bulletin #19-NA-116. If the brake rotors require service due to excessive heat checking/blueing, it is recommended to replace the rotors rather than attempting to refinish them. Refer to the parts catalog for the correct Ferritic Nitro-Carburizing (FNC) rotors.

3. After repairs and pad burnishing have been completed, test drive the vehicle for 20–30 miles (32–48 km) on an open road at cruising speeds of 55+ mph (88.5+ km/h) where very little braking is actually performed.

4. Immediately after returning from the test drive, lift the vehicle on a hoist and spin both front wheels by hand. If a wheel is hard to spin, it may be an indication of a brake drag.

5. With the condition present, perform diagnostics to determine the cause of the drag (caliper piston binding, binding pads or pins in the bracket, brake hose restriction, etc.). Repair if necessary and re-evaluate the vehicle.

For additional information, refer to Bulletin #19-NA-116.

Thanks to Bob Hartman and Hassan Abdallah
Powertrain Sections Being Consolidated, Reducing Links in the Service Information

When reviewing Engine Mechanical repair procedures in the Service Information, technicians will find instructions divided into Repair Instructions – On Vehicle and Repair Instructions – Off Vehicle. As a result, it’s necessary to jump to other links in some procedures in order to review all related repair information. Of course, this takes additional time and may lead some technicians to miss critical information.

Beginning with the 2020 model year, various Engine Mechanical repair procedures will be combined so that replacement instructions will include all information necessary to complete a repair, reducing the need to link between procedures and creating a better user experience.

CURRENT ORGANIZATION

Currently, the Engine Mechanical On Vehicle and Off Vehicle repair instructions in the Service Information include different procedures with unique information based on each repair and how it’s performed.

The Off Vehicle procedures are written based on the engine assembly. These procedures are not vehicle specific. In addition, they often contain procedures that are duplicated in other Service Information sections, such as Engine Controls.

The On Vehicle procedures are vehicle specific, but they link to Off Vehicle procedures for component details and specifications.

NEW STRATEGY

Since technicians are more likely to conduct repairs on a vehicle as opposed to repairing an engine on a stand, the new Service Information organizational strategy being implemented focuses on procedures that are completed on the vehicle.

New repair procedures will be complete with all related instructions and specifications necessary for the repair. They will also include the repair procedures that can only be done off-vehicle.

In addition, for components or assemblies that can be broken down and rebuilt, new Overhaul instructions will be created in the Service Information that will combine and replace the current Disassemble and Assemble procedures.

CONTINUED ON PAGE 7
An example of the new strategy can be found in the Crankshaft Rear Oil Seal Housing Replacement instructions for the Cadillac CT6. With the new format, the installation procedure features all technical instructions in one document, including installing the crankshaft rear oil seal housing to the engine block using the EN-51766 installation tool, along with all torque specifications.

In the old format, users had to select a link to view the separate instructions for installing the crankshaft rear oil seal housing that is part of the repair procedure.

**MOVING FORWARD**

Coming soon, users will notice that the Engine Mechanical subsections have changed from Repair Instructions – On Vehicle and Repair Instructions – Off Vehicle to simply Repair Instructions. There will not be separate On Vehicle or Off Vehicle designations. However, for a period of time while new content is being developed, the On Vehicle and Off Vehicle sections will coexist with the new Repair Instructions sections.

The new Repair Instructions sections will include complete information when making engine mechanical repairs.

Look for these changes in a variety of Engine Mechanical sections for the 2020 model year. Additional sections will continue to be updated throughout the 2021 model year.

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**Disconnected Charge Air Cooler Outlet Air Tube**

The charge air cooler outlet air tube may be disconnected on some 2019 Equinox, Terrain, and Malibu models equipped with the 1.5L 4-cylinder engine (RPO LYX). As a result, the vehicle may exhibit reduced engine power. DTCs P0172 (Fuel Trim System Rich), P0299 (Engine Underboost), P0101 (Mass Air Flow Sensor Performance), P0506 (Idle Speed Low) and/or P1101 (Intake Air Flow System Performance) may be set.

**Current Delivery**

Select the Service Information Type Qualifier:

- Specifications
- Schematic and Routing Diagrams
- Component Location
- Diagnostic Information and Procedures
- Repair Instructions - On Vehicle
- Repair Instructions - Off Vehicle
- Description and Operation
- Special Tools and Equipment

**Future Delivery**

Select the Service Information Type Qualifier:

- Specifications
- Component Location
- Schematic and Routing Diagrams
- Diagnostic Information and Procedures
- Repair Instructions
- Description and Operation
- Special Tools and Equipment

**Current and future Repair Instructions subsections**

The charge air cooler outlet tube at the throttle body may be disconnected on some 2019 Equinox, Terrain, and Malibu models equipped with the 1.5L 4-cylinder engine (RPO LYX). As a result, the vehicle may exhibit reduced engine power. DTCs P0172 (Fuel Trim System Rich), P0299 (Engine Underboost), P0101 (Mass Air Flow Sensor Performance), P0506 (Idle Speed Low) and/or P1101 (Intake Air Flow System Performance) may be set.

**TIP:** The throttle body and mass airflow (MAF) sensor associated with the listed DTCs should only be replaced if they are damaged or found to be the cause of the code.

**RETAINER KIT**

If the charge air cooler outlet tube has become disconnected and no damaged parts are found, and a SPAC case is already pending for a replacement tube assembly, confirm the SPAC status through Parts Workbench in GlobalConnect. If the part has shipped, do not order a retainer kit from the Warranty Parts Center (WPC).

If the charge air cooler outlet tube has become disconnected and a SPAC case has not been started, contact the WPC using the request form available in #PIP5651A to order a charge air cooler outlet tube retainer kit. The retainer kit includes a spring, two retainers, and installation instructions.

Thanks to Rick Peterson and Kevin Jakobiak

Thanks to Rob Smith
The GM Service Information on the 6.6L diesel engine (RPO LML) and 1.4L and 1.5L gasoline engines (RPO LE2, LFV) was recently updated with several new service procedures and labor times based on revised service repair studies. Since the Service Information is updated regularly, it's important to always review the service procedures for a repair in order to confirm the latest procedures are being followed.

As part of an initiative to develop innovative approaches to repairs, GM continuously reviews service procedures to ensure each step provides a safe, effective and efficient repair. The focus of the most recent updates was to reduce the need to remove the engine for procedures that could be completed on vehicle. The new procedures avoid pulling the engine to complete a repair and, in many cases, eliminate the need to evacuate, recover and recharge the air conditioning system. The changes also result in a reduction of the number of mandatory replace bolts and gaskets required to complete the repair.

Some of the major repair operations that were changed based on the revised procedures include:

- **2015-2016 6.6L Diesel Engine (RPO LML)**
  - Cylinder Head Replacement Right/Left
  - Head Gasket Replacement Right/Left/Both
  - Turbocharger Replacement
  - Fuel Injection Pump Replacement
  - Other procedures related to the removal of the above

- **2016-2019 Cruze 1.4L Engine (RPO LE2) and Malibu 1.5L Engine (RPO LFV)**
  - Piston, Connecting Rod, and Bearing Replacement
  - Piston and Ring Replacement
  - Cylinder Head Replacement
  - Cylinder Head Gasket Replacement

Check the appropriate Service Information for these updated service procedures.

Thanks to Rich Orbain and Steve Bruder
Vehicle speed may be limited on some 2016-2018 CT6 PLUG-IN models (RPO HP9) equipped with the 2.0L 4-cylinder engine (RPO LTG) and automatic-hybrid electric transmission (RPO MRD). DTC P0747 (Transmission Clutch 3 Stuck On) also may be set in the Hybrid Powertrain Control Module (HPCM).

The limited speed condition may be the result of the 1-3 clutch return spring ring moving out of its groove, causing the variable 1-4 and 1-3 clutch piston return spring plate to contact the variable clutch plate assembly.

The transmission does not require replacement for this condition. A snap ring retainer is available that will stop the 1-3 clutch return spring ring from rotating, which will keep it securely in its designed groove. The C3 clutch assembly must be disassembled and the clutch pack and spring ring must be replaced along with adding the new snap ring retainer.

During assembly of the C3 clutch assembly, position the 1-3 clutch return spring ring as shown to aid in retainer installation.

Refer to Bulletin #19-NA-128 for additional information and part numbers.

Thanks to Lane Rezek
Diagnosing DTC P3075

If DTC P3075 (Engine Coolant Pump Low Current Performance) is set on a 2019 XT4 equipped with the 2.0L 4-cylinder engine (RPO LSY) or a 2019 Silverado 1500 or Sierra 1500 equipped with the 2.7L 4-cylinder engine (RPO L3B), there may be low coolant in the cooling system or air trapped in the system. Do not replace the Engine Coolant Pump for these conditions.

**DIAGNOSTIC TIPS**

To check for any leaks that are present in the cooling system, pressure test the system. Any leaks in the cooling system should be repaired following the appropriate Service Information.

Once any coolant leaks have been repaired, be sure to follow the Cooling System Draining and Filling procedure in the appropriate Service Information to properly fill and bleed the cooling system.

Once the engine is started after the coolant service fill procedure, it’s possible that DTC P3075 may reset until all the air is properly purged from the cooling system. At this point, clear any DTCs and, with the engine at operating temperature, road test the vehicle to completely purge any remaining air from the cooling system.

Once the road test is complete, clear any DTCs and operate the vehicle under the conditions for running DTC P3075 according to the Service Information.

**TIP:** DTCs P3075 and P3076 (Engine Coolant Pump High Current Performance) can detect coolant flow-based failures.

The intrusive diagnostic test for the DTC will run once per ignition cycle if all running conditions are met. The test will run with the coolant pump at roughly 4,000 rpm for 15 seconds and with the pump motor AC current within the expected range. The coolant pump AC current feedback will be lower if the cooling system is leaking or low on coolant.

Use GDS 2 to confirm that DTC P3075 has ran and passed in the current drive cycle to ensure the diagnostic test has been executed and no fault is detected before releasing the vehicle.

If the vehicle returns with DTC P3075 set, replace the Engine Coolant Pump. Parts will be required to be returned to the Warranty Parts Center.

Refer to #PIP5650A for additional information.

▶ Thanks to Robert Halas