



Service Bulletin

Bulletin No.: 19-NA-118

Date: June, 2019

INFORMATION

Subject: 2020 Cadillac XT6 New Model Features

Brand:	Model:	Model Year:		VIN:		Engine:	Transmission:
		From:	To:	From:	To:		
Cadillac	XT6	2020		—		Gasoline, 2.0L, 4 Cylinder, L4, Turbocharged, SIDI, DOHC, VVT, Aluminum, VAR 3 — RPO LSY (Export Only)	Hydra-Matic® 9T60, 9-Speed, Automatic, ETRS, GEN 1 — RPO M3G (Export Only)
						Gasoline, 3.6L, V6, DI, DOHC, VVT, Aluminum, GEN 2 — RPO LGX	Hydra-Matic® 9T65, 9-Speed, Automatic, ETRS, GEN 1 — RPO M3W

Involved Countries and Regions	United States, Canada, Mexico, Germany, Israel, Korea, Russia, Saudi Arabia, United Arab Emirates and United Kingdom
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Overview



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2020 Cadillac XT6 Premium Luxury

Bulletin Purpose

The purpose of this bulletin is to introduce the 2020 Cadillac XT6, three row, luxury SUV. This bulletin will help the Service Department Personnel become familiar with the vehicle's engine, transmission, brake system, AWD with Active Twin-Clutch, Electronic Precision Shift and some of the other vehicle systems.

Overview

The all-new XT6 centers on a luxurious, adaptable and connected cabin, with responsive handling and a comprehensive array of standard and available safety technologies. The XT6 has been designed to offer a refined, comfortable place to connect and enjoy the ride. Providing comfort and convenience with premium sound and technology features, the XT6 is Cadillac's first use of the Bose® Performance Series sound system with 14 custom-tuned speakers, delivering powerful audio throughout the cabin. On both six and seven passenger models, the former has two second-row captain's chairs, the latter has a 60/40 split-folding three-across bench seat, the passenger-side second-row seat can be manually folded and slid forward using only one hand for access to the third row. Standard equipment includes power releases for folding the second and third row seatbacks, with controls in the rear cargo area and

second row door opening area. Also a hands-free power opening liftgate and two USB ports for each row of seating.

Premium Luxury and Sport models offer customized looks with unique exterior and interior distinction. Premium Luxury models provide an elevated level of refinement, while Sport models offer a performance-oriented feel. All North American models are powered by a 3.6L V-6 engine and nine-speed automatic transmission. Selectable drive modes allow the XT6 to adapt to driver preferences and changing road conditions. The modes are uniquely calibrated to support the characteristics of the Premium Luxury or Sport models.

FWD is standard on the Premium Luxury with available AWD. AWD with Active Twin-Clutch is standard on the XT6 Sport. In Canada, FWD is not available on the Premium Luxury. All vehicles sold in Canada are AWD.

XT6 is equipped with a standard automatic heated steering wheel and an available in-vehicle air ionizer, automatic heated/ventilated front seats and heated second-row rear outboard seats.

Exterior Dimensions

- **Ground Clearance:** 6.65-inches (16.89 cm).
- **Height:** 68.9-inches (175 cm) (w/o luggage rack).
- **Height:** 70.2-inches (178.30 cm) (incl. luggage rack).

- **Length:** 198.8-inches (504.95 cm).
- **Turning Circle:** 39.1-feet (11.91 m) (20-inch wheels)
- **Turning Circle:** 39-feet (11.88 m) (21-inch wheels)
- **Wheelbase:** 112.7-inches (286.25 cm).
- **Width:** 77.3-inches (196.3 cm).

Premium Luxury Trim

- Authentic exotic wood interior accents or carbon fiber accents depending on color.
- Uniquely styled exterior with Galvano finished appointments.
- Luxury styled exclusive 20-inch, 6-Split-Spoke Polished and Android finish wheels.
- Model specific interior color combinations.
- Available Platinum Package.

Sport Trim

- Interior sport elements with carbon fiber accents.
- Uniquely styled exterior with High Gloss black appointments.
- Sport 20-inch, 12-Spoke Pearl Nickel finish wheels with available 21-inch Diamond Cut with Android Finish wheels.
- Sport Control twin-clutch AWD system.
- Available Platinum Package.

Brakes (RPO LGX Equipped Vehicles)

ABS Description and Operation

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 following vehicle performance enhancement systems are provided:

- ABS
- Brake Assist
- Electronic Brake Distribution
- Electronic Stability Control
- Hill Start Assist
- Traction Control System
- Automatic Vehicle Hold

Brake System Components

The following components are involved in the operation of the above systems:

- **Electronic Brake Control Module:** The EBCM controls the system functions and detects failures. It supplies voltage to the solenoid valves and pump motor.
- **Brake Pressure Modulator Valve:** The brake pressure modulator valve contains the hydraulic valves and pump motor that are controlled electrically by the EBCM. The brake pressure modulator uses a four circuit configuration with a diagonal split. The brake pressure modulator directs fluid from the reservoir of the master

cylinder to the left front and right rear wheels and fluid from the other reservoir to the right front and left rear wheels.

- **Body Control Module:** The BCM monitors the brake pedal position sensor signal when the brake pedal is applied and sends a high speed serial data message to the EBCM indicating the brake pedal position.
- **Brake Pressure Sensor:** The brake pressure sensor is used to sense the action of the driver application of the brake pedal. The sensor provides a voltage signal that will increase as the brake pedal is applied. The EBCM monitors the brake pressure sensor which is integral to the brake pressure modulator.
- **Instrument Cluster:** The instrument cluster displays the vehicle speed based on the information from the ECM. The ECM sends the vehicle speed information via high speed serial data to the BCM. The BCM then sends the vehicle speed information via low speed serial data to the instrument cluster to display the vehicle speed.
- **Multi-Axis Acceleration Sensor:** The yaw rate, lateral acceleration and longitudinal acceleration sensors are combined into one multi-axis acceleration sensor, internal to the inflatable restraint sensing and diagnostic module.
- **Multifunction Switch:** The traction control switch is a multifunction momentary switch. The BCM monitors the signal circuit from the traction control switch and sends a high speed serial data message to the EBCM indicating the switch position. The traction control and stability control are manually disabled or enabled by pressing the traction control switch.
- **Steering Angle Sensor:** The EBCM receives serial data message inputs from the steering angle sensor. The steering angle sensor is integrated in the power steering control module. The steering angle sensor signal is used to calculate the desired yaw rate.
- **Transmission Control Module:** The EBCM receives high speed serial data message inputs from the TCM indicating the gear position of the transmission for hill start assist functions.
- **Wheel Speed Sensors:** The vehicle is equipped with unique directional wheel speed sensors that can detect wheel direction as well as zero wheel speed. The WSS are Active sensors that receive a 12 V power supply from the EBCM and provides an output signal to the module. As the wheel spins, the WSS sends the EBCM a DC square wave signal. The EBCM uses the frequency of the square wave signal to calculate the wheel speed.

Automatic Vehicle Hold

AVH will activate when the vehicle is stopped to prevent it from moving. After the brake pedal has been released and before the accelerator pedal has been pressed, AVH uses braking pressure to hold the vehicle stationary.

Brake Assist

The EBCM receives inputs from the brake pressure sensor. When the EBCM senses an emergency braking situation, it will actively increase the brake pressure to a specific maximum.

Electronic Brake Distribution

Electronic brake distribution is a control system that enhances the hydraulic proportioning function of the mechanical proportioning valve in the base brake system. The electronic brake distribution control system is part of the operation software in the electronic brake control module. The electronic brake distribution uses active control with existing ABS in order to regulate the vehicle's rear brake pressure.

Electronic Stability Control

Yaw rate is the rate of rotation around the vehicle's vertical axis. The electronic stability control is activated when the EBCM determines that the desired yaw rate does not match the actual yaw rate as measured by the yaw rate sensor.

Hill Start Assist

When stopped on a hill, the hill start assist feature prevents the vehicle from rolling before driving off, whether facing uphill or downhill by holding the brake pressure during the transition between when the driver releases the brake pedal and starts to accelerate.

Power-Up-Self Test

A power-up-self test is performed by the EBCM to verify correct operation of system components. The EBCM is able to detect many malfunctions whenever the ignition is ON. Certain failures cannot be detected unless active diagnostic tests are performed on the components when they are commanded ON by the EBCM.

Pressure Decrease

The EBCM decreases the pressure to individual wheels during a deceleration when wheel slip occurs. The inlet valve is closed and the outlet valve is opened. The excess fluid is stored in the accumulator until the return pump can return the fluid to the master cylinder.

Pressure Hold

The EBCM closes the inlet valve and keeps the outlet valve closed in order to isolate the system when wheel slip occurs. This holds the pressure steady on the brake so that the hydraulic pressure does not increase or decrease.

Pressure Increase

The EBCM increases the pressure to individual wheels during a deceleration in order to reduce the speed of the wheel. The inlet valve is opened and the outlet valve is closed. The increased pressure is delivered from the master cylinder.

Traction Control

The traction control system, is typically a secondary function of the electronic stability control. It utilizes the same wheel-speed sensors employed by ABS to measure differences in rotational speed in order to determine if the wheels that are receiving power have

lost traction. When drive wheel slip is noted while the brake is not applied, the EBCM will enter traction control mode.

Electronic Parking Brake Description

Vehicles with the electric parking brake have a switch in the center console or on the dash, which takes the place of the manual parking brake system including the foot pedal and release handle. In case of insufficient electrical power, the electric parking brake cannot be applied or released. The parking brake function is integrated into the Electronic Brake Control Module/ Brake System Control Module. The module contains the logic for applying and releasing the parking brake when commanded by the Park Brake Switch.

Engine 2.0L 4 Cylinder Turbocharged — RPO LSY (Export Only)

Overview



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Typical View of the Gasoline, 2.0L, 4 Cylinder, L4, Turbocharged, SIDI, DOHC, VVT, Aluminum, VAR 3 — RPO LSY

The turbocharged 2.0L, 4-cylinder engine utilizes a twin-scroll turbocharger to help reduce turbo lag, with Active Fuel Management (AFM) technology helping to improve fuel economy.

Engine Components and Specifications

- **Bore/Stroke:** 3.27 in (83 mm) / 3.634 in (92.3 mm).
- **Camshaft:**

Two camshafts are used, one for all intake valves, the other for all exhaust valves. The camshafts are assembled with steel lobes. The camshafts consist of several segments that are displaceable. As a result, two cylinders can be deactivated. The movement of the segments of the camshaft is controlled by the camshaft position actuators in the camshaft carrier.

- **Camshaft Carrier:** The two camshafts are in the camshaft carrier. The camshaft carrier has mounting locations for the ignition system and the camshaft position actuators for cylinder deactivation.
- **Camshaft Drive:** A roller chain is used for camshaft drive. There is a tensioner and active guide used on the slack side of the chain to control chain motion and noise. The chain drive promotes long valve train life and low maintenance.
- **Camshaft Position Actuator:** The camshaft position actuator solenoid valve – Intake and camshaft position actuator solenoid valve – exhaust system enables the ECM to change camshaft timing while the engine is running. The camshaft position actuator assembly varies camshaft position in response to directional changes in oil pressure. The camshaft position actuator solenoid valve – Intake and camshaft position actuator solenoid valve – exhaust controls the oil pressure that is applied to advance or retard the camshaft. Modifying camshaft timing under changing engine demand provides a balance between power output, fuel economy and reduced emissions.
- **Camshaft Position Sensors:** The intake and exhaust camshaft position sensors are each triggered by a notched reluctor wheel built onto the camshaft sprockets. The four signal pulses occur every camshaft revolution. Each notch is a different size which is used to identify the compression stroke of each cylinder and to enable the correct timing of the fuel injection pulse.
- **Compression Ratio:** 10.0:1
- **Connecting Rod:** The connecting rods are powdered metal. The connecting rods are fractured at the connecting rod journal and then machined for the proper clearance.
- **Cooling System:** One valve that contains two coolant control valves, called the engine coolant flow control valve and the block control valve that eliminate the need for the conventional cooling system thermostat.
- **Crankshaft:** The crankshaft is forged micro alloy steel. It is supported in 5 main journals with main bearings which have oil clearance for lubricating. The thrust bearing is located in the 4th position which controls proper crankshaft axial end play. The crankshaft is comprised of 4 counterweights that have been scalloped for mass reduction and precision engine balance. A harmonic balancer is used to control torsional vibration.
- **Crankshaft Position Sensor:** The crankshaft position sensor is an external, magnetically biased, digital output integrated circuit sensing device. The sensor provides a pulse for each magnetic pole of the encoder wheel on the crankshaft. The sensor produces an ON/OFF DC voltage of varying frequency, with 58 output pulses per crankshaft revolution. The frequency of the sensor output depends on the velocity of the crankshaft.
- **Cylinder Block:** The cylinder block is constructed of aluminum alloy by high-pressure die casting with 4 cast-in-place iron cylinder liners arranged in-line. The block has 5 crankshaft bearings with the thrust bearing located on the second bearing from the rear of the engine. The cylinder block incorporates a bedplate design that forms an upper and lower crankcase. This type of design promotes cylinder block rigidity and reduced noise and vibration.
- **Cylinder Deactivation:** Active Fuel Management (AFM) temporarily deactivates two cylinders under light load conditions and seamlessly reactivates them when the driver demands full power.
- **Cylinder Head:** This cylinder head is dual over head camshaft (DOHC) design. The cylinder head is made of cast aluminum alloy for better strength, hardness and less weight. The combustion chamber of the cylinder head is designed for increasing the squish and swirl efficiency and this maximizes combustion efficiency. The injectors are each seated into their individual bores in the cylinder head with two combustion seals to provide sealing. The exhaust manifold is integrated into the cylinder head.
- **Engine Control Module:** The ECM controls all ignition system functions and constantly adjusts the spark timing. The ECM monitors information from various sensor inputs.
- **Engine Block Lower Structural Extension:** Within the engine block structural extension is the oil pump and the balance shafts. The balance shafts are driven by the balance chain. The chain is tensioned by a hydraulic tensioner that is supplied pressure by the engine oil pump. This design promotes the maximum effectiveness of the balance shaft system and reduces noise and vibration. The oil pump assembly is driven by the balancer shaft assembly. The oil pump has variable flow capability using a circular vane arrangement and the actuation of an oil control valve assembly commanded by the ECM. The variable flow capability of the pump optimizes oil flow to the engine components as needed. During high acceleration the oil pump operates in a steady high pressure state. During steady low load speeds the oil pump will operate in a steady low pressure state.
Lower Oil Pan: The lower oil pan is made of synthetic material and is attached to the engine block lower structural extension.
- **Exhaust Manifold:** The exhaust manifold is integrated into the cylinder head.
- **High Pressure Fuel Pump:** The high pressure fuel pump mounts to the rear of the cylinder head and is driven by the intake camshaft. Motion is transmitted to the pump from a quad-lobe on the rear of the intake camshaft through a hydraulic roller lifter.
- **Horsepower:** 237 hp (177 kW) @ 5000 rpm. (GM estimate).
Torque: 258 lb-ft (350 Nm) @ 1500–4000 rpm. (GM estimate).

- **Idle Speed:** 650 rpm.
- **Intake Manifold:** The intake manifold is made of a polymer composite.
- **Ignition Coil Module:** The ignition coil module integrates the 4 coils and the ignition control module within a single sealed component.
- **Knock Sensor:** The knock sensor system is used by the ECM to control the ignition timing for the best performance while protecting the engine from potentially damaging levels of detonation, known as spark knock.
- **Pistons:** The pistons are cast aluminum. The pistons use 2 compression rings and 1 oil control ring assembly. The piston is a low friction, lightweight design with a recessed top and barrel shaped graphite coated skirt. The piston pins are a chromium steel full-floating design. The piston and pin must be serviced as an assembly.
- **Spark Ignited Direct Injection:** The spark ignited direct injection (SIDI), fuel injection system is a high pressure, returnless on-demand design. The fuel injectors are mounted in the cylinder head beneath the intake ports and spray fuel directly into the combustion chamber. DI requires high fuel pressure due to the location of the injector in the combustion chamber. Fuel pressure must be higher than compression pressure requiring a high pressure fuel pump. The fuel injectors also require more electrical power due to the high fuel pressure. The ECM supplies a high voltage supply circuit and a high voltage control circuit for each fuel injector. The injector high voltage supply circuit and the high voltage control circuit are both controlled by the ECM. The ECM energizes each fuel injector by grounding the control circuit. The ECM controls each fuel injector with 65 V. This is controlled by a boost capacitor in the ECM. During the 65 V boost phase, the capacitor is discharged through an injector, allowing for initial injector opening. The injector is then held open with 12 V. The fuel injector assembly is an inside opening electrical magnetic injector. The injector has six precision machined holes that generate a cone shaped oval spray pattern. The fuel injector has a slim extended tip in order to allow a sufficient cooling jacket in the cylinder head.
- **Turbocharger:** The turbocharger is a compressor that is used to increase the power output of an engine by forcing more air and proportionately more fuel into the combustion chambers.
- **Valves:** 2 intake and 2 exhaust valves per cylinder.
- **Valve Lash Adjusters:** The valve train uses a roller finger follower actuated by a hydraulic lash adjuster. The roller finger follower reduces friction and noise.
- **Variable Valve Timing:** Variable Valve Timing (VVT) works with AFM to enhance fuel economy and maximize engine performance.

Sliding Cam Valve Lift System — 2.0L

Overview

The Sliding Cam Valve Lift System (SCS) enables the ECM to change the camshaft lift profile of the intake and exhaust camshafts while the engine is running. The SCS has 4 intake camshaft profile actuators and 2 exhaust camshaft profile actuators that vary the Camshaft Lift Profile Sleeve position axially on the camshaft in response to electrical commands from the ECM. Each camshaft has 2 profile sleeves with different height cam lobes and each camshaft has a detent ball and spring under each sleeve that helps hold the profile sleeve into position. The SCS profile actuator solenoids push out an actuator guide pin into the shifting groove machined into the Camshaft Lift Profile Sleeve. When the guide pin engages the sleeve, it causes it to shift axially on the camshaft causing unique sized cam lobes to be placed over the intake and exhaust valves and modify valve lift and duration.

The SCS intake and exhaust camshaft profile actuator solenoids are controlled by the ECM and move freely on the camshaft. The crankshaft position sensor and the camshaft position sensors are used to monitor the camshaft positions and provide input for the SCS system. 2 Intake and 2 Exhaust Profile sleeve position sensors are used to monitor the camshaft Lift Profile sleeve positions axially on the camshaft.

Operation

The sliding cam system profile actuators have the ability to individually push out each of the actuator's 2 shifting pins. The SCS actuators are single direction actuators (OUT only) and require a physical response to push back or retract the pins back into the actuator. Each of the actuators have 2 shifting pins with 2 completely independent shifting coils. Based on a PWM signal the shifting pins push out and engage the "shifting" groove of the sliding cam profile sleeve to the position requested. The first pin will be pushed out causing the camshaft profile sleeve to shift from High Lift (Power Profile) to Low Lift (Economizer Profile). The shifting groove is now aligned under the second pin and the position sensor confirms that the sleeve is in the requested position. The actuator profile position sensors operate the same as cam sensors and provide a high signal when there is metal below them and a low signal when there is air below them. Each position, High Lift, Low Lift and AFM have a unique square wave profile allowing the position sensors to identify which mode it is in. When requested the second actuator pin will be pushed out to cause the profile sleeve to shift from Low Lift to AFM mode. When the ECM requests moving back to a higher cam profile mode then the actuator on the neighboring cylinder is used to move the sliding cam profile sleeve in the opposite direction because the shift groove is pointing in the opposite direction. For the intake camshaft there are 2 profile sleeves covering 2 cylinders each (1&2 - 3&4). On the exhaust camshaft there are 2 profile sleeves however they are smaller and only on cylinders 2 & 3.

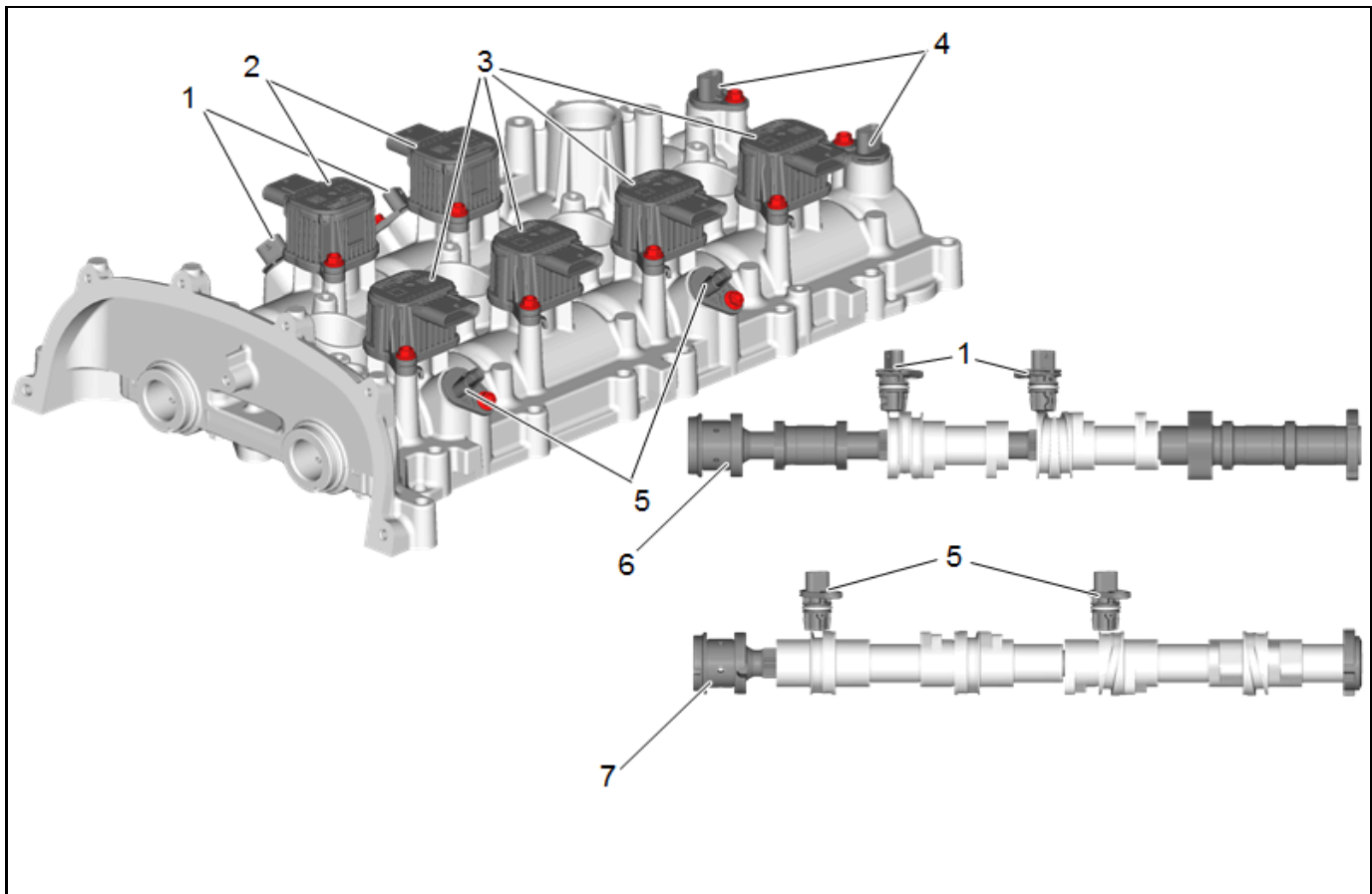
SCS Profiles

The SCS has 3 unique sized cam lobes on each camshaft profile slider:

- **Economizer Profile:** Low Lift — Reduced capacity, as little as 0.118-inches (3 mm) lift changes the duration of the valve opening and closes the valve early. Under medium load conditions where the driver does not need the full capabilities of the engine power, like highway driving, the SCS system slides into Low Lift to start saving fuel. All 4 cylinders are still active with all intake valves now opening to a lower lift height.
- **Power Profile:** High Lift — Full capacity, conventional lift and duration. When the driver needs the full capability of the engine then all 4 cylinders are active and all valves open to their maximum lift.

- **Ultimate Fuel Economy:** AFM — Cylinder deactivation is used for increased fuel economy. For light load conditions, such as highway cruising, when the driver does not need the full capability of the engine the SCS system slides into AFM mode and cylinders 2 & 3 are deactivated. The system first turns OFF the fuel injectors of cylinder 2 & 3, then the exhaust valves and last the intake valves. This effectively traps a cylinder's worth of air with no fuel in the cylinder. This trapped air becomes an air spring helping the piston return in what would be the expansion stroke. Cylinders 1 & 4 are still active with their intake valves now opening to a lower lift height. The intake cam profile for the firing cylinders is the same Low Lift used on the Economizer Profile. The engine still produces the same power from the 2 cylinders but is now operating at half of the Economizer Profile.

Sliding Cam System Components



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- | | |
|---|--|
| 1. B339 Exhaust Camshaft Profile Sleeve Position Sensor (Qty 2) | 5. B338 Intake Camshaft Profile Sleeve Position Sensor (Qty 2) |
| 2. M130 Exhaust Camshaft Profile Actuators (Qty 2) | 6. Exhaust Camshaft (Qty 1) |
| 3. M129 Intake Camshaft Profile Actuators (Qty 4) | 7. Intake Camshaft (Qty 1) |
| 4. B23 Exhaust & Intake Camshaft Position Sensors (Qty 2) | |

Sliding Cam System Operation Video

For a video of the SCS operation, refer to *Camshaft Actuator System Description* in SI.

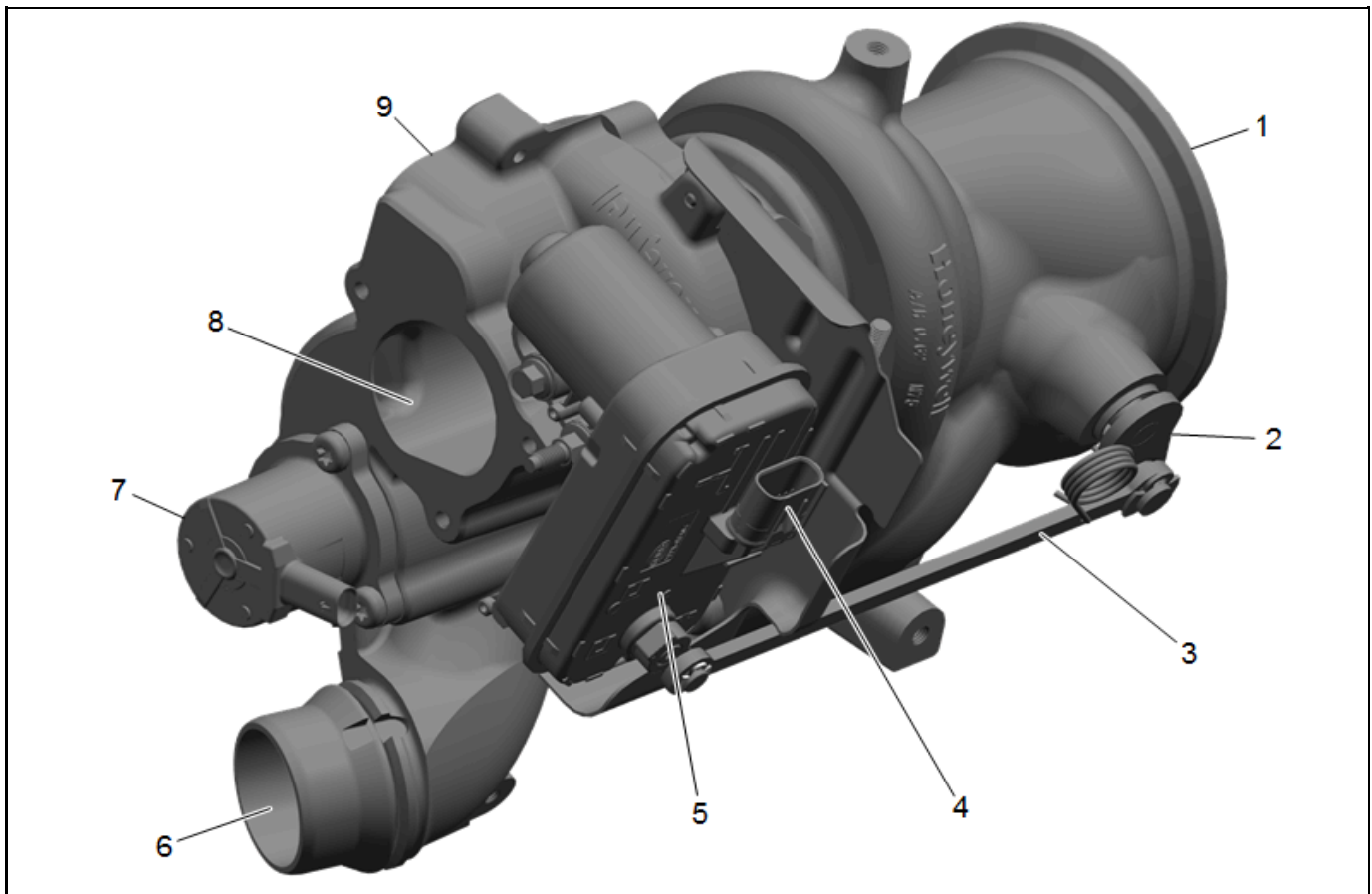
Engine — Air Filter Life System

Overview

If equipped, this feature provides the engine air filter's remaining life and best timing for a change. The timing to change an engine air filter depends on driving and environmental conditions. The Engine Air Filter Monitor is a software feature that uses sensors to read the pressure drop across the engine air filter. The higher the pressure drop indicates that more debris has accumulated in the filter. A computer-based algorithm takes that pressure drop and the age of the air filter and calculates a precise reading on the air filter's life. This information can be accessed in the Driver Information Center (DIC). The Engine Air Filter Monitor can also detect if the air filter is clogged due to a more sudden change in driving conditions, such as snow or slush, or if the air filter is missing altogether.

Engine — Turbocharger — RPO LSY

Turbocharger Assembly



1. Turbocharger Turbine Exhaust Outlet
2. Turbocharger Wastegate Valve and Lever

3. Turbocharger Wastegate Valve Actuator Rod

4. M128 Turbocharger Wastegate Actuator Harness Connector
5. M128 Turbocharger Wastegate Actuator
6. Turbocharger Compressor Air Outlet
7. Q40 Turbocharger Bypass Solenoid Valve
8. Turbocharger Compressor Air Inlet
9. Positive Crankcase Ventilation (PCV) Foul Air Inlet

Overview

A turbocharger (TC) is a compressor that is used to increase the power output of an engine by forcing more air and proportionately more fuel into the combustion chambers. The dual-scroll TC is mounted either to the exhaust manifold or directly to the head. The turbine is driven by the energy generated by the flow of the exhaust gases. The turbine is connected by a shaft to the compressor which is mounted in the induction system of the engine. The centrifugal compressor blades compress the intake air above atmospheric pressure, thereby increasing the density of the air entering the engine.

Turbocharger Bypass Solenoid Valve

The TC incorporates a wastegate that is controlled by the ECM, by means of a electronic motor driven actuator, to control boost pressure. The Turbocharger Bypass Solenoid Valve (also known as a compressor recirculation valve), controlled by the ECM, is used to prevent compressor surging and damage by opening during abrupt closed throttle conditions. The valve opens during closed throttle deceleration conditions, allowing the air to recirculate to the turbocharger compressor inlet. During a wide open throttle command, the valve closes to optimize turbo response.

Turbocharger Lubrication

The turbocharger is connected to the engine oiling system by a supply and drain pipe. The oil is required for the bearing system to properly function and also serves to carry some heat from the TC. There is a cooling system circuit in the turbocharger that further reduces operating temperatures, and passively dissipates bearing housing heat away from the TC, to prevent oil coking in the bearings on engine shut down.

Turbcharger Charge Air Cooler

The TC air intake system is supported by an air-to-air charge air cooler (CAC) system, which uses fresh air drawn through a heat exchanger to reduce the temperature of the hot compressed air exiting the turbo compressor, prior to delivery to the engine combustion system. Inlet air temperature can be reduced by up to 180°F (100°C), which enhances performance due to the higher density of oxygen in the cooled air, promoting optimal combustion. The CAC is connected to the turbocharger and to the throttle body by flexible ductwork that requires the use of special high torque fastening clamps. In order to prevent any type of air leak when servicing the ductwork, the tightening specifications, cleanliness and proper positioning of the clamps is critical, and must be strictly adhered to.

Engine 3.6L V6 — RPO LGX

Overview



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Typical View of the Gasoline, 3.6L, V6, DI, DOHC, VVT, Aluminum, Gen 2 — RPO LGX

The 3.6L V6 — RPO LGX is a variable valve timing (VVT) engine with direct injection (DI) and Stop/Start System — RPO KL9. The DI system places the high pressure fuel injectors in the cylinder heads. This engine incorporates 2 intake and 2 exhaust valves per cylinder, and uses a dual overhead cam (DOHC) design with individual intake and exhaust camshafts. A camshaft position actuator is mounted on each camshaft. The cylinders are arranged in 2 banks of 3 with a 60 degree included angle. The right bank of cylinders are numbered 1-3-5 and the left bank of cylinders are numbered 2-4-6, when viewed from the flywheel end of the engine.

Engine Specifications

- **Bore x Stroke:** 3.74 inches (95 mm) x 3.37 inches (85.6 mm)
- **Compression Ratio:** 11.5:1
- **Displacement:** 3.6 L (219.68 cubic inches)
- **Firing Order:** 1-2-3-4-5-6.
- **Fuel:** Regular unleaded.
- **Horsepower:** 310 horsepower (231 kW) @ 6,700 rpm
- **Maximum Engine Speed:** 7,200 rpm
- **Torque:** 271 lb ft (367 Nm) @ 5,000 rpm
- **Valves:** 2 intake and 2 exhaust valves per cylinder

Engine Component Description

- Active Fuel Management:** The AFM system consists of the camshafts, valves, the switching roller finger followers (SRFF), also known as the valve switching rocker arm, the dual feed hydraulic lash adjusters and the oil control valve (OCV) which is also known as the valve rocker arm oil control valve. 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. AFM is active at this time. With the AFM system OFF, the OCV is not active and no oil is directed to the dual feed hydraulic lash adjuster. The switching roller finger followers operate as a normal rocker arm and all valves open 0.45 inch (11.5 mm) of lift at 90° BTDC. AFM is inactive at this time.
- Camshaft Drive System:** The camshaft drive system consists of two timing drive chains driven by the crankshaft which drives the respective cylinder head's intake and exhaust camshaft position actuators. Cushioned actuator chain sprockets have been added contributing to quieter engine operation.

The timing drive chains use moveable timing drive chain guides and a hydraulic-actuated tensioner. The tensioner minimizes timing drive chain noise and provides accurate valve action by keeping slack out of the timing drive chains and continuously adjusting for timing drive chain wear. The tensioner incorporates a plunger that adjusts out with wear allowing only a minimal amount of backlash. All tensioners are sealed to the head or block using a rubber coated steel gasket. The gasket traps an adequate oil reserve to ensure quiet start-up.
- Camshaft Position Actuator System:** The engine incorporates a camshaft position actuator for each intake and exhaust camshaft. Camshaft phasing changes valve timing as engine operating conditions vary. Dual camshaft phasing allows the further optimization of performance, fuel economy and emissions without compromising overall engine response and driveability. Variable valve timing also contributes to a reduction in exhaust emissions. It optimizes exhaust and inlet valve overlap and eliminates the need for an exhaust gas recirculation (EGR) system.
- Connecting Rods and Pistons:** The connecting rods are sinter-forged with a high copper content and have press-in-place piston pin bushings. The connecting rods and rod cap are aligned by dowel pins retained in the cap. The cast aluminum pistons incorporate a polymer-coated skirt to reduce friction. The pistons are unique to the LGX both for compression ratio and combustion efficiency. The piston uses two low tension compression rings and one multi-piece oil control ring.

- Cooling System:** The engine has a targeted cooling system which sends coolant simultaneously to each water jacket in the heads and block. This new, parallel-flow design maximizes heat extraction in the area of the upper deck, intake and exhaust valve bridges in the heads and integrated exhaust manifold with a minimal amount of coolant. The result is more even and consistent cooling, which enhances performance, and faster engine warm up, which improves cold-start efficiency and reduces emissions.
- Crankcase:** The cylinder block is constructed of aluminum alloy by precision sand-casting with cast in place iron cylinder liners. Each nodular main bearing cap incorporates 6 bolts bolting the cap into the engine block. Along with 2 outer and 2 inner bolts, 2 side bolts are used in the deep skirt block. To prevent aeration, oil return from the valve train and cylinder heads is channeled away from the rotating and reciprocating components through oil drain back passages incorporated into the cylinder heads and engine block. Pressure-actuated piston oil cooling jets are mounted between opposing cylinders. Twin knock sensors are located in the valley of the block between the cylinder heads. The knock sensors have an acoustic foam noise barrier that surrounds them in the valley.
- Crankshaft:** The crankshaft is a hardened, forged steel design with 4 main bearings. Crankshaft thrust is controlled by the upper portion of the number 3 main bearing. The crankshaft position reluctor wheel is pressed onto the rear of the crankshaft in front of the rear main journal. A micro encapsulated adhesive is used on the reluctor wheel to aid retention. This crankshaft is internally balanced.
- Cylinder Heads:** The cylinder heads are a two piece design consisting of a head and a camshaft carrier which are cast aluminum with powdered metal valve seat inserts and valve guides. The two piece design allows for the AFM system. The cylinder heads also feature integrated exhaust manifolds which are incorporated into the head casting. Two intake valves and two exhaust valves are actuated by roller finger followers pivoting on a stationary hydraulic lash adjuster (SHLA). In the LGX engine, the valves and seats are constructed with specialized materials and coatings, and the exhaust valves are sodium filled for robustness. The cylinder heads also feature a "high-tumble" port design, and are sealed with LGX specific head gaskets. The head gaskets are also specific to the LH and RH sides.
- Oiling System:** The LGX engine contains a dual-pressure control and variable-displacement vane pump that enhances efficiency by optimizing oil pressure as a function of engine speed. The oil pump is located beneath the cylinder block inside the oil pan, contributing to the engines smoother and quieter operation. The oiling system components differ depending on the engine being in a transverse or longitudinal orientation. The LGX has unique oil pans depending on

orientation, with the pans being separated into an upper (traditional aluminum) and lower (stamped steel) pan. This configuration helps with noise and mass concerns. It also affords some serviceability improvements by not needing to remove the entire upper pan for some service procedures and for those that can be performed by removing the lower pan. The LGX oil pans contain oil level switches. The oil level switch is normally open and closes at oil levels above minimum requirements.

- **Right and Left Bank Designation:** The right hand (RH) and left hand (LH) designation through the engine mechanical section are viewed from the rear, flywheel side, of the engine or from inside the vehicle. These banks are also referred to as Bank 1 (RH) and Bank 2 (LH).
- **Vacuum Pump:** The LGX engine utilizes a mechanical vacuum pump to provide a vacuum source for the braking system. The vacuum pump is integrated into the oil pump assembly located in the oil pan. Both vacuum pump and oil pump are part of a common assembly, referred to as a tandem pump. Neither pump is serviceable individually. If either the oil pump or vacuum pump are defective, the entire tandem pump assembly must be replaced.

Engine Oil dexos1® — 2.0L and 3.6L

Specification



5108021

Use full synthetic engine oils that meet the dexos1® specification. Engine oils that have been approved by GM as meeting the dexos1® specification are marked with the dexos1® APPROVED - GEN 2 logo.

Viscosity Grade

- In the 2.0L turbocharged engine use dexos1® APPROVED - GEN 2 full synthetic SAE 0W-20 viscosity grade engine oil. Do not add anything to the oil.

- In the 3.6L engine use dexos1® APPROVED - GEN 2 full synthetic SAE 5W-30 viscosity grade engine oil. In an area of extreme cold, where the ambient temperature is colder than -20°F (-29°C), an SAE 0W-30 oil may be used. An oil of this viscosity grade will provide easier cold starting for the engine at extremely low ambient temperatures. Do not add anything to the oil.

Transmission 9-Speed Automatic

Overview



5131746

Typical view of the Hydra-Matic® 9T65, 9-Speed, Automatic — RPO M3W

The Hydra-Matic® 9T65 is a fully automatic, 9 speed, transverse mounted, electronic-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 of the gears are in line with the engine crankshaft).

The 4 element torque converter contains a pump, a turbine, a pressure plate splined to the turbine, and a stator assembly. The torque converter acts as a fluid coupling to smoothly transmit power from the engine to the transmission. It also hydraulically provides additional torque multiplication when required. The pressure plate, when applied, provides a mechanical direct drive coupling of the engine to the transmission.

The planetary gear sets provide the 9 forward gear ratios and reverse. Changing gear ratios is fully automatic by using a transmission control module (TCM). The TCM receives and monitors various electronic sensor inputs and uses this information to shift the transmission at the optimum time.

The TCM commands shift solenoids and variable bleed pressure control solenoids to control shift timing and feel. The TCM also controls the apply and release of the torque converter clutch which allows the engine to deliver the maximum fuel efficiency without sacrificing

vehicle performance. All the solenoids, are packaged into a self-contained control valve solenoid body assembly.

The hydraulic system primarily consists of a chain driven pump, a control valve body assembly and case. The pump maintains the working pressures needed to stroke the clutch pistons that apply or release the friction components. These friction components, when applied or released, support the automatic shifting qualities of the transmission.

The friction components used in this transmission consist of 7 multiple disc clutches. The multiple disc clutches combine with one away clutch to deliver 10 different gear ratios, 9 forward and one reverse, through the gear sets. The gear sets then transfer torque through the transfer drive gear, transfer driven gear and differential assembly.

Transmission — Electronic Precision Shift

Overview

Electronic Precision Shift is also identified as Electronic Transmission Range Selector (ETRS). Electronic Precision Shift is a technologically advanced feature that allows the driver to use a console-mounted lever to shift gears electronically, replacing the traditional shifter that uses a mechanical connection. The shift pattern is displayed in the top of the shift lever. The selected gear position will illuminate in red on the shift lever, while all others will be displayed in white. If the shift is not immediate, as in very cold ambient temperatures, the indicator on the shift lever may flash until it is fully engaged.

Operation

The shift lever always starts from a center position, represented by an up/down arrow on the shift pattern. After releasing the shift lever, it will return to the center position. The console-mounted shifter has a dedicated **P** (PARK) button at the top of the lever and a Shift Lock Release button on the left side of the lever. The driver must press the Shift Lock Release button to shift gears. Electronic Precision Shift features the straight up-and down shift pattern which mirrors the simple forward and backward movements of a traditional shifter.

If the vehicle is in ACC/ACCESSORY, the transmission can be shifted into **P**. The transmission does not operate when the vehicle is OFF.



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- **Shift into PARK:** Press the brake pedal and come to a complete stop. Press the **P** button.



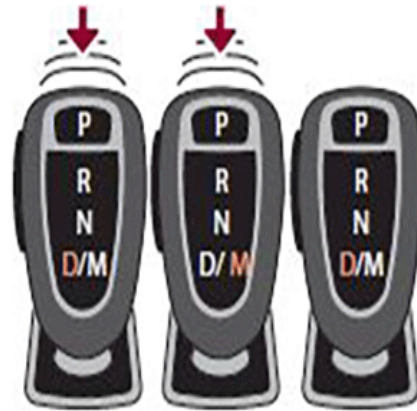
5131580

- **Shift into DRIVE:** Press the brake pedal and press the Shift Lock Release button. Pull the shifter rearward until the display shows **D**.



5131595

- **Shift into REVERSE:** Press the brake pedal and press the Shift Lock Release button. Push the shifter forward past the first bump (detent) until the display shows **R**.

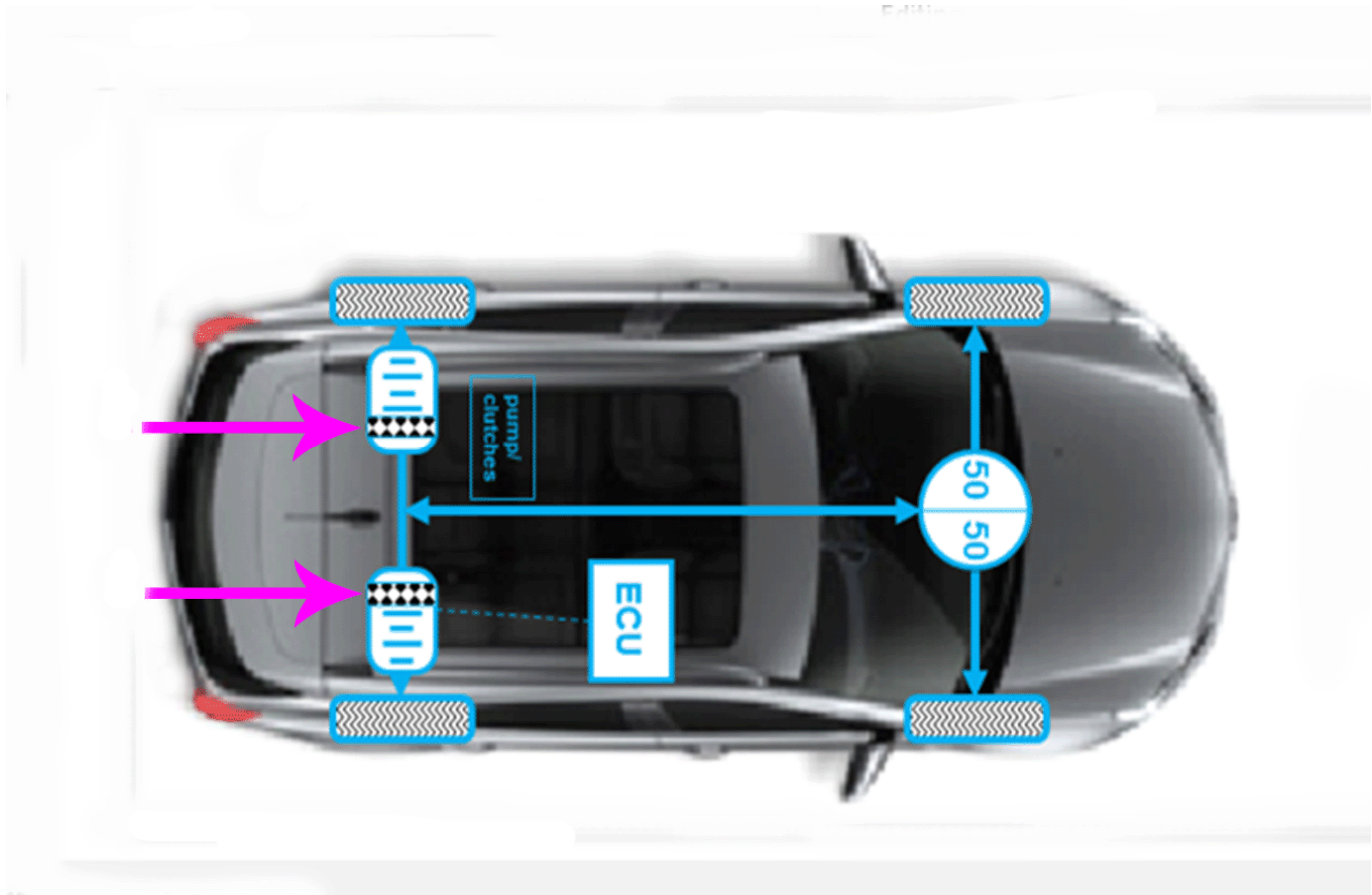


5131626

- **Toggle between DRIVE and MANUAL:** While in DRIVE, pull the shifter rearward to shift to **M**. When in MANUAL, utilize the paddle shifters on the steering wheel. Pull the shifter rearward again to return to **D**.

AWD with Active Twin-Clutch

Overview



5145425

The Sport model features a Sport Control Active Twin-Clutch AWD design that helps enhance the driving experience. The AWD system with Active Twin-Clutch delivers greater handling, stability and driver confidence by preemptively and **electronically** splitting 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.

Active Twin-Clutch provides the following performance benefits:

- 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.

Driver Mode Control

Overview

Depending on the option package and available features, Driver Mode Control can have the following modes: Tour, Sport, All-Wheel Drive (AWD), Snow/Ice (FWD vehicles only), and Off-Road (AWD vehicles only). Press the Drive Mode button on the center console to make a mode selection. When pressed, the mode menu will display in the instrument cluster and activate the next available mode.

Safety and Driver Assistance Technologies

Overview

XT6 offers an extensive array of Safety and Driver Assistance technologies.

Standard

- 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

Available

- 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)

Rear Camera Mirror



5132116

If equipped, the rear camera mirror provides a wider and less obstructed field of view to assist when driving, changing lanes and checking traffic conditions. To operate the rear camera mirror use the following controls:

- **A. On/Off** Pull or push the lever at the bottom of the mirror to turn the video display ON or OFF.
- **B. Selection Control** Press and release the button to select the brightness, tilt or zoom feature.
- **C. + / –** Press and release either button to adjust the selected feature.

Power Outlets 12-Volt Direct Current

The vehicle has two 12 volt outlets that can be used to plug in electrical equipment, such as a cell phone or MP3 player.

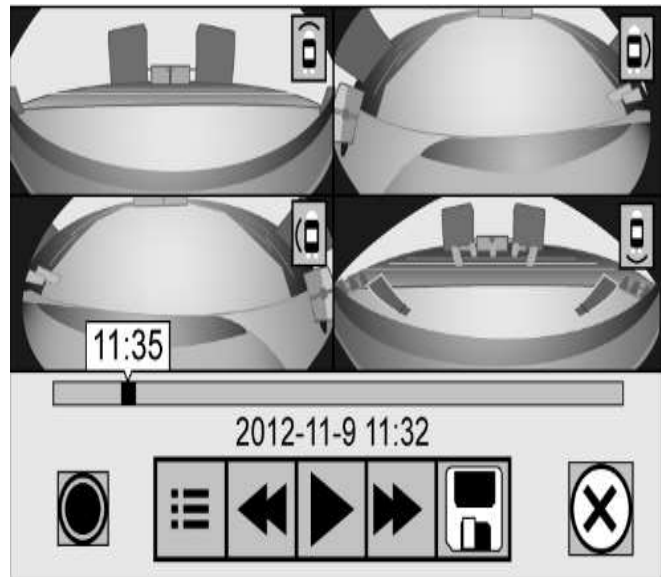
Surround Vision Recorder

SD Card Requirements

If equipped, this system records the 360° camera views to an SD card. Only images are recorded, without sound. An SD card will be needed for this system. The recommended SD card is a 32GB SDHC card with FAT32 file system, Class 10 and over. Do not store other files on the same SD card as the surround vision recorder files. Storing other files on the same card may increase recording start up and playback time or result in a loss of data.

Insert an SD card into the center console opening under the shifter. Disable recording from the playback screen before removing the SD card from the reader. Do not remove the card while recording is enabled. This could corrupt the video file and/or the SD card.

Operation



5341933

- **To Activate:** Touch Video Recorder on the Home Page. Touch the red dot. The red dot will illuminate when the video recorder is ON. It will remain ON until it has been turned OFF. Recording will start after exiting the playback screen. Advise other drivers and occupants of the vehicle that video images are being recorded.
- **To Deactivate:** Touch Video Recorder on the Home Page. Touch the red dot.

Note: Select from the following when the vehicle is in P (Park):

- **Exit:** Touch X to exit this application and return to the previous app.
- **Video List:** Touch to display a list of the most recent and saved videos. Touch the delete button next to the name to delete a saved video.

- **Rewind:** Touch to rewind the video. Touch again up to three times to increase speed. Touch a fourth time to stop rewinding.
- **Play / Pause:** Touch to play or pause a recorded video.
- **Fast Forward:** Touch to fast forward the video. Touch again up to three times to increase speed. Touch a fourth time to stop fast forward.
- **Save:** Touch to save a video. This protects the video from being erased. Once the SD card is full, the oldest files will be overwritten unless they have been saved.
- **Camera Views:** When opening the Video Recorder, the previous file will show all camera views and can be played. Icons in the upper right corner of each view indicate which camera. Touch one of the views to zoom to only that camera view. Touch again to return to all camera views. Press X at any time to exit the video recorder app.
The recorded video is stored in five-minute-long files.
All files can be viewed on the playback app or when the SD card is read by a PC.
Once the SD card is full, the oldest files will be overwritten.
- **To Delete Data:** Remove the SD card from the vehicle and insert it into a PC to manually delete the file.

Supplemental Inflatable Restraint

SIR System Overview

The supplemental inflatable restraint (SIR) system, is comprised of the inflatable restraint sensing and diagnostic module (SDM), impact sensors, air bags, and seat belt pretensioners and supplements the protection offered by the seat belts. The SDM determines the severity of a collision using data collected from impact sensors located at strategic points on the vehicle. When the SDM detects a collision, it processes the information provided by the sensors to provide the safest combination of air bag and pretensioner deployment. The SDM will deploy the air bags and pretensioners if it detects a collision of sufficient force. If the force of the impact is not sufficient to warrant air bag deployment, the SDM may still deploy the seat belt pretensioners. The SDM contains a sensing device that translates vehicle acceleration to an electrical signal. The SDM compares these signals to the threshold values stored in memory. If the signals exceed the stored threshold value, the SDM will determine the severity of the event and may deploy restraints. The SDM continuously monitors the deployment loops and electrical components for malfunctions. Upon detection of a circuit malfunction, the SDM will set a DTC and illuminate the SIR system air bag malfunction indicator. The steering column and knee bolsters are designed to absorb energy and compress during frontal collisions to limit leg movement and decrease the chance of injury to the driver and passenger.

AIRBAGS

The XT6 will contain a number of air bags which may vary, depending on the vehicle and optional equipment:

- Steering wheel
- Instrument panel
- Driver seat
- Passenger seat
- Driver side (B-pillar)
- Passenger side (B-pillar)
- Driver knee
- Left roof rail
- Right roof rail

Impact Sensors

The impact sensors contain a sensing device which monitors vehicle acceleration to detect collisions that are severe enough to warrant air bag deployment. The impact sensors are not part of the deployment loop, but instead provide input to the SDM.

Seat Belt Pretensioners

The seat belt pretensioners consist of a housing, seat belt retractor, seat belt anchor, seat belt webbing, initiator, and a canister of gas generating materials. The initiator is part of the seat belt pretensioner deployment loop. When the vehicle is involved in a collision of sufficient force, the SDM causes current to flow through the seat belt deployment loops to the initiator. Current passing through the initiator ignites the material in the canister producing a rapid generation of gas. The gas produced from this reaction deploys the seat belt pretensioners which removes the slack in the seat belts. Depending on the severity of the collision, the seat belt pretensioners may deploy without the frontal inflator modules deploying, or they will deploy immediately before the frontal inflator modules deploy. Each seat belt pretensioner connector is equipped with a shorting bar, which shorts the seat belt pretensioner circuitry to prevent unwanted deployment of the seat belt pretensioner when the connector is disconnected.

Suspension

Electronic Suspension Control

The electronic suspension control system individually controls the damping force of each of the 4 shock absorbers in order to keep the vehicle body as calm as possible. Changes of the damping forces can be accomplished within milliseconds. Suspension characteristics can be changed at any time by activating the Sport mode or Tour mode. The system provides superior vehicle ride and handling under a variety of passenger and loading conditions. It is fully automatic and uses a computer controller to continuously monitor vehicle speed, wheel to body position, lift/dive, and steering position of the vehicle. The controller then sends signals to each shock absorber to independently adjust the damping level to provide the optimum vehicle ride.

Front Suspension

The front suspension absorbs the impact of the tires travelling over irregular road surfaces and dissipates this energy throughout the suspension system. This process isolates the vehicle occupants from the road surface. The rate at which the suspension dissipates the energy and the amount of energy that is absorbed is how the suspension defines the vehicle's ride characteristics. Ride characteristics are designed into the suspension system and are not adjustable. The suspension system must allow for the vertical movement of the tire and wheel assembly as the vehicle travels over irregular road surfaces while maintaining the tire's horizontal relationship to the road.

This requires that the steering knuckle be suspended between a lower control arm and a strut assembly. The lower control arm attaches from the steering knuckle at the outermost point of the control arm. The attachment is through a ball and socket type joint. The innermost end of the control arm attached at 2 points to the vehicle frame through semi-rigid bushings. The upper portion of the steering knuckle is attached to a strut assembly. The strut assembly then connects to the vehicle body by way of an upper bearing. The steering knuckle is allowed to travel up and down independent of the vehicle body structure and frame.

This up and down motion of the steering knuckle as the vehicle travels over bumps is absorbed predominantly by the coil spring. This spring is retained under tension over the strut assembly. A strut is used in conjunction with this system in order to dampen out the oscillations of the coil spring. The strut is filled with oil and has a moveable shaft that connects to a piston inside the strut. Valves inside the shock absorber offer resistance to oil flow and consequently inhibit rapid movement of the piston and shaft. Each end of the shock absorber is connected in such a fashion to utilize this recoil action of a spring alone. Each end of the strut is designed as the connection point of the suspension system to the vehicle and acts as the coil spring seat. This allows the strut to utilize the dampening action to reduce the recoil of a spring alone. The lower control arm is allowed to pivot at the vehicle frame in a vertical fashion. The ball joint allows the steering knuckle to maintain the perpendicular relationship to the road surface.

The stabilizer bar connects between the left and right lower control arm assemblies through the stabilizer link and stabilizer shaft insulators. This bar controls the amount of independent movement of the suspension when the vehicle turns. Limiting the independent movement defines the vehicles handling characteristics on turns.

Rear Suspension

The rear suspension system on this vehicle is of the independent link type. Rear suspension adjustment is achieved through adjustable toe links and lower control arms. The rear coil springs are retained between the body and the lower control arm. Rubber insulators isolate the coil spring at both top and bottom. The rear suspension consists of 2 shock absorbers attached to the lower control arms and the reinforced body areas.

Towing the Vehicle

Front Attachment Points Used to Pull Vehicle Onto Flatbed Car Carrier

GM recommends a flatbed tow truck to transport a disabled vehicle. Use ramps to help reduce approach angles, if necessary. A towed vehicle should have its drive wheels off the ground. The vehicle is equipped with specific front attachment points to be used to **pull the vehicle onto a flatbed car carrier from a flat road surface**. Do not use these attachment points to pull the vehicle from snow, mud or sand. Contact Roadside Assistance or a professional towing service if the disabled vehicle must be towed.

Power / Manual Liftgate

Power Liftgate Door Switch

The power liftgate switch is on the driver door. The vehicle must be in **P** to use the switch. The selectable modes are:

- **MAX** Opens to maximum height.
- **3/4** Opens to a reduced height that can be set from 3/4 to fully open. Use to prevent the liftgate from opening into overhead obstructions such as a garage door or roof-mounted cargo. The liftgate can be manually opened all the way.
- **OFF** Opens manually only.

Projected Logo

When an RKE transmitter is detected within 6 feet (2 m) of the liftgate, the vehicle logo is projected onto the ground to the left of the center of the rear bumper, indicating the kicking motion location for hands-free operation. The logo is shown for 1 minute, depending on operating conditions. The projected logo may not be visible under brighter daytime conditions.

Hands-Free Operation

To operate the RKE transmitter must be within 3 feet (0.91 m) of the liftgate. To open or close the liftgate hands-free, stand facing the vehicle behind the left rear wheel. To operate, move your foot in a forward kicking motion under the left side of the rear bumper, at the location of the projected logo, then pull it back. Then step back. The kick must come within 6 inches (14 cm) of the rear bumper to activate.

- Do not sweep your foot side to side.
- Do not keep your foot under the bumper; the liftgate will not activate.

Wireless Charging

Overview

If equipped, the vehicle has wireless charging in the storage bin under the armrest. The system operates at 145 kHz and wirelessly charges one Qi compatible smartphone. The power output of the system is capable of charging at a rate up to 3 amp (15 W), as requested by the compatible smartphone. To charge, the vehicle must be ON, in ACC/ACCESSORY, or Retained

Accessory Power (RAP) must be active. The wireless charging feature may not correctly indicate charging when the vehicle is in RAP. The operating temperature range for the charging system is -4°F (-20°C) to 140°F (60°C) and for the smartphone 32°F (0°C) to 95°F (35°C).

Special Tools

No Special Tools were released for the 2020 Cadillac XT6.

Training Courses

Training Courses — Description and Number

Description	Course Name and Number
2020 Cadillac XT6 New Model Features	#10320.96W - 2020 Cadillac XT6 New Model Features (United States and Canada)
Engines	#16440.20D - Engines: New and Updates for RPOs LF4, LGX, LWN (United States) #16440.20D-V - Engines: New and Updates for RPOs LF4, LGX, LGW, L3A, LV7, LE2, LWN, LWC (United States) #16440.23D - Engines: New and Updates for RPOs L3B, LSY, L82, L84, L87 (United States) 16440.23D-V - Engines: New and Updates for RPOs L3B, LSY, L82, L84, L88 (Video) (United States)
Transmission	#17440.17D / #17440.17D-V - Transmissions: 9T60, 9T65 Automatic (United States) #17041.75W - ETRS Operation and Service (United States)

Version Information

Version	1
Modified	Released JUNE 13, 2019

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