ALL NEW 2021 Escalade

Showcases Innovative Technology

Completely redesigned with advanced technology and iconic style, the all-new 2021 Escalade is now arriving at Cadillac dealerships. With innovative features like a curved Organic Light Emitting Diode (OLED) instrument display, an AKG automotive audio system and the latest Super Cruise driver assistance system, the 2021 Escalade adds a new dimension to the full-size luxury SUV market.

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In addition to its extensive technology, the Escalade delivers improved driving dynamics and significantly greater passenger and cargo capabilities.

**SLEEK STYLING**

The 2021 Escalade maintains Cadillac’s signature vertical lighting element, but the new interpretation adds a sleek, horizontal headlamp. The tall, vertical, rear light signature continues but adds deep three-dimensional layers and finishes with detailed etching. Twenty-two-inch wheels are standard and strengthen Escalade’s bold appearance.

A Sport trim, offered for the first time, is set with a black mesh grille and black trim across the exterior. Luxury and Premium Luxury models showcase a bright Galvano finish, while Platinum models top the range with unique interior and exterior details.

The Escalade continues to be available in short- and long-wheelbase versions. The Escalade has a 211.9-inch wheelbase and up to 94.2 cubic feet of cargo space while the Escalade ESV has a 226.9-inch wheelbase and up to 129.9 cubic feet of cargo space. Both models are available with the all-new 3.0L Duramax turbo-diesel or the updated 6.2L V8 engine with Dynamic Fuel Management.

The 2021 Escalade is designed and engineered with GM’s Vehicle Intelligence Platform (VIP). The advanced data communication platform enables additional system capacity and responsiveness, increased over-the-air vehicle software update capability, and enhanced cybersecurity.

**GAS AND DIESEL ENGINE CHOICES**

The Escalade is available with the new 3.0L Duramax Diesel inline 6-cylinder engine (RPO LM2) or the gas powered Gen 5 6.2L V8 engine (RPO L87). Both engines feature a stop/start system for enhanced efficiency.

The 3.0L turbocharged diesel engine is part of the Cylinder Set Strategy (CSS) family of engines, which offer reduced friction, weight, and exhaust emissions while also delivering fuel economy that surpasses the engines they replace. The turbocharger system includes an electronically operated wastegate valve and provides good low-end torque as well as high-end performance. The diesel engine produces 277 horsepower and 460 lb.-ft. of torque.

The 3.0L diesel engine incorporates solenoid-type fuel injectors that are controlled by the Engine Control Module (ECM). The solenoid-type fuel injectors require a special tool for removing the injectors from their bore. However, in extreme cases, use a slide hammer with an M6 x 1.0 thread installed in place of the fuel return banjo bolt. In such cases, ensure all force is directed straight upwards from the fuel injector.

The solenoid injectors also require a new injector bore and sleeve-cleaning kit for the engine injector bores. The cleaning kit removes carbon deposits from the fuel injector sleeve bore, which is very helpful during a fuel injector replacement.

The high pressure fuel pump is a mechanical pump attached on the driver’s side of the engine block and is driven by the timing chain. The high pressure pump on vehicle service is similar to other small diesel engines. Access to the pump-driven sprocket can be obtained by removing the fuel pump access cover. Use the special tools to retain engine timing while removing the high pressure fuel pump.

When replacing just the pump, the timing is retained by the tools. If the high pressure fuel injection pump-driven sprocket is removed from the engine, then the timing adjustment must be performed.
The Gen 5 gasoline V8 engine generates 420 horsepower and 460 lb.-ft. of torque. The Dynamic Fuel Management system is an Active Fuel Management™ technology that can deactivate any combination of cylinder valves of the engine, combining millisecond accurate torque control with cylinder deactivation to optimize fuel consumption.

The Dynamic Fuel Management solenoid requires a tool to remove the valve lifter oil solenoid valves. The magnetic tool helps gain leverage to remove the valve lifter oil solenoids from the block. Once installed on top of the solenoid, place a hand over the remover and solenoid with a finger under the solenoid. Twist while pulling up on the tool and the solenoid.

The stop/start system on both gas and diesel engines automatically shuts down the engine in appropriate conditions, such as when stopped at a traffic light. To support the increased number of engine starts, a high performance electric starter motor with a stronger pinion engagement mechanism to reduce noise levels replaces the conventional starter motor.

Along with the upgraded starter motor, advanced battery technology is required to ensure the vehicle’s battery can handle the frequent charge and discharge cycles common with stop/start operation. There is a battery sensor module connected to the battery, which continually monitors the battery charge and health state. The ECM uses this information from the battery sensor module to determine if the battery charge and health are sufficient for a stop/start condition. The stop/start system can be disabled using the Auto Stop button on the center console. The system turns on each time the vehicle is started.

10-SPEED AUTOMATIC TRANSMISSION

Both engines are mounted to the Hydra-Matic 10L80 10-speed automatic transmission (RPO MQC). The heavy-duty transmission features a case with an integral bell housing and the unique off-axis variable vane-type pump drive design allows for very low mounting.

The four planetary gear sets provide ten forward gear ratios and Reverse. Changing gear ratios is fully automatic and is accomplished through the Transmission Control Module (TCM). The TCM receives and monitors various electronic sensor inputs and uses this information to shift the transmission using output controls. The TCM is mounted at the left front of the vehicle, behind the underhood fuse block.

The transmission is controlled with the Electronic Transmission Range Selector (ETRS) system, which replaces the traditional column-mounted shifter. The ETRS system is a shift-by-wire system with no physical link between the selector controls and the transmission.

The Escalade is offered in rear-wheel drive or all-wheel drive models. Single-speed and 2-speed transfer cases are available on all-wheel drive models: the 3015 1-speed automatic active transfer case (RPO NPO) and the 3025 2-speed automatic active transfer case (RPO NQH). Shift controls are located on the left side of the instrument panel.

DRIVING DYNAMICS

The driving dynamics of the new Escalade are enhanced with a new independent rear suspension as well as available Magnetic
Ride Control, Air Ride Adaptive Suspension and Electronic Limited Slip Differential (eLSD). The independent rear suspension allows each rear wheel to handle road conditions separately to enhance ride quality, steering responsiveness and overall driver control. In addition, the available Magnetic Ride Control uses sensors to continually “read” the road and alter the damping rate of the shocks almost instantly to reduce vertical body motion, body roll and vibrations.

The available Air Ride Adaptive Suspension delivers automatic load-leveling and ride-height adjustments continuously at all four wheels. In highway driving, the system automatically lowers the ride height to improve aerodynamics; and a driver-selectable setting lowers the suspension 2 inches (51 mm) to aid passenger entry and exit when the vehicle is parked. The vehicle will not lower when exiting if the level switch is in Off-Road mode or the Tow/Haul mode is enabled. The body also can be raised for additional ground clearance when driving off-road.

To deliver additional traction and power engagement to the rear wheels, the available electronic limited-slip differential (RPO G96) uses infinitely variable clutch engagement to provide torque to the wheel with the most traction, including when cornering and in wet weather conditions. The locking torque causes a multiplication of wheel torque, which can be used to improve traction and/or vehicle dynamics. The differential lock motor actuates a multidisc friction clutch via a reduction gear set. The differential lock motor is used to close and open the clutch.

SAFETY SYSTEMS

The safety systems offered on the 2021 Escalade include various technologies that use radar, camera, and ultrasonic driving assistance. The systems are a comprehensive feature set designed to help a driver avoid collisions or reduce crash damage while driving, backing up, and parking.

Some of the standard or available safety technologies include:
- Forward Collision Alert
- Lane Keep Assist with Lane Departure Warning
- Automatic Emergency Braking
- Front and Rear Park Assist
- Pedestrian Impact Detection
- Lane Change Alert with Side Blind Zone Alert
- Rear Cross Traffic Alert
- Safety Alert Seat

TRAILERING PACKAGE

The Trailering Integration Package offers up to nine camera views to support easier trailer hitching and trailer monitoring. The package also includes an Integrated Trailer Brake Controller and a trailering app that offers trailer profiles, tire pressure and temperature monitoring, and an Extended Side Blind Zone Alert.

OLED DISPLAY

Inside the Escalade is the industry-first curved OLED display, which offers more than 38 inches of total diagonal display area with twice the pixel density of a 4K television. The technology delivers bold imagery, perfect blacks and the largest color range of any automotive display in production today.

The system includes three screens: a 7.2-inch-diagonal touch control panel on the left side of the instrument panel, a 14.2-inch-diagonal instrument cluster display behind the steering wheel, and a 16.9-inch-diagonal Infotainment screen to the driver’s right. The OLED is paper-thin, and its curvature positions the displays for optimal visibility. The vivid color and visual quality of OLED tech-
AKG AUDIO TECHNOLOGY

Known worldwide for microphones and headphones used by leading musicians in recording studios and live venues, AKG has brought its audio technology to the auto industry for the first time in the 2021 Escalade.

The Escalade features a standard AKG Studio system with 19 speakers and a large enclosed subwoofer, powered by a 14-channel amplifier. The available AKG Studio Reference system has 36 speakers powered by three amplifiers that deliver 28 channels, offering a professional studio listening experience.

REAR SEAT MEDIA

The new Rear-Seat Media system features a pair of 12.6-inch-diagonal independent touch displays with navigation as well as streaming capability to play games, music and videos through HDMI and USB inputs. The screens can also mirror Android smartphones. In addition, rear passengers can send navigation destination suggestions to the front navigation screen.

The infrared headsets included with the system use AAA batteries (provided) and are automatically connected to the Rear Seat Media screens. The headsets receive audio signals from the infrared transmitter located at the top of the passenger’s side (right) seatback screen. To turn on the infrared headsets, press the Power button located on the right side of the headset ear pad. The infrared headsets turn off automatically after about four minutes if the infrared signal from the system is lost, such as when the Rear Seat Media system turns off or the signal is out of range. Turn off the headsets when not in use to preserve battery life.

Rear Seat Media also supports connections for up to nine headsets via Bluetooth per screen. If customers would like to use their own Bluetooth headsets, they can be paired to the system through the Rear Seat Media screens.

SOFT-CLOSE DOORS

The available soft-close door feature uses an electric motor to pull each door closed to its primary position after it has been closed over its secondary latch position, eliminating hard door slams.

PDI SPECIAL INSTRUCTIONS

During the Pre-Delivery Inspection, check the following special items:

• To use the 110V AC power outlet, at each new ignition cycle, push the 110V AC power button to enable.
• Ensure the hands-free liftgate is set to “Open and Close” under Settings on the infotainment screen.
• Enable the function of the running boards to deploy under Settings on the infotainment screen. Open any door and confirm the running board on that side of the vehicle deploys.
• Ensure that the navigation SD card that is located beneath the USB hub in the armrest console is inserted correctly and is functional.

For more information on the all-new 2021 Escalade, refer to Bulletin #20-NA-211.

▶ Thanks to Hassan Abdallah and Matt Bunting
When 2018-2021 GM models equipped with an Infotainment 3 System (RPO IOR, IOS, IOT, IOU, IOV) come into the dealership with various system concerns – the radio display freezing, Bluetooth not connecting automatically, or certain features not accessible – and programming updates are determined to be needed, is the right repair to update the radio software or the radio calibration? Or both?

There may be some misunderstandings about the differences between software and calibrations, which are not the same thing and are not interchangeable terms. Calibrations instruct the radio what to do while the software tells the radio how to do things.

For example, when a radio plays the welcome animation at start-up, a calibration instructs the radio which brand name and logo to display. It’s the software that tells the radio how to display those graphics, including how fast or slow to play the animation, the image size, and how long the image is displayed.

**CALIBRATION UPDATES**

Calibrations for the radio are updated infrequently. In the Service Programming System (SPS), the radio calibrations are updated by selecting Radio – Programming.

If the radio is being replaced, the new module will require calibration programming using SPS, followed by USB programming for the software. Be sure to always check the appropriate Service Information and Bulletins for details on related programming as well as the correct programming order for each specific repair.

**SOFTWARE UPDATES**

Software updates occur much more frequently in order to address fixes and continuous improvement enhancements, such as issues with Bluetooth, device projection (Android Auto/Apple CarPlay), Sirius XM, screen displays, and instrument cluster/Driver Information Center (DIC)/Head-Up Display (HUD) concerns. Each software update includes all enhancements from previous software version releases.

The software releases are usually announced with a Service Bulletin once the programming is available. The software release also may be pushed to vehicles remotely through an Over-the-
Air (OTA) update. If the remote vehicle update cannot be completed, the radio must be updated through SPS via USB. Keep in mind that not all software releases are distributed as OTA updates.

In Techline Connect, the radio software is updated by selecting USB File Transfer. Use a USB 2.0 flash drive with a minimum capacity of 16 GB when updating the software.

**BEFORE BEGINNING AN UPDATE**

Before proceeding with a USB File Transfer to update the software, check for any Infotainment System OTA updates on the infotainment system. Go to Settings > System tab > Updates on the infotainment screen to verify if an update package has been remotely downloaded to the vehicle.

If an update is shown on the Updates screen, the software update must be performed using the download that is present on the vehicle.

If there is not an update available, the build number must be verified before a software update is performed using the USB File Transfer.

Look for additional articles on radio programming coming soon in future editions of TechLink.

Thanks to Jeremy Richardson, Jeremy Krall and Zach Gillett

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**Damaged Fuel Pressure Sensor Connector**

A number of fuel-related DTCs may be set on some 2017-2018 Silverado, Sierra; 2019-2021 Silverado 2500HD/3500HD, Sierra 2500HD/3500HD, and Silverado 4500HD/5500HD/6500HD models equipped with the 6.6L Duramax diesel engine (RPO L5P, L5D). DTCs set in the Engine Control Module (ECM) may include P0087, P0089, P0191, P026C, P026D, P1089, P163A, P163B, P2293, P228A, P228B, P228C, and/or P228D. The Check Engine MIL also may be illuminated.

These conditions may be caused by corrosion or damage at the fuel pressure sensor electrical connector. Inspect the connector for any damage. It may be necessary to use the terminal test kit with dielectric grease on it to drag each terminal a few times.

If a terminal is suspect, remove the terminal and inspect for any corrosion, damage or signs of the dielectric grease starting to turn black.

If any of these conditions are found, replace the electrical connector.

Refer to Bulletin #20-NA-197 for additional information and part numbers.

Dielectric grease starting to turn black.

Thanks to Larry Yaw
2021 Escalade Features First-Ever Curved OLED Display

*It’s been called a game changer in automotive interior design and technology. The industry’s first-ever curved Organic Light Emitting Diode (OLED) instrument display in the 2021 Escalade revolutionizes the way information is presented to the driver.*

**BUILT WITH CURVES**

The curved OLED display offers more than 38 inches (965 mm) of total diagonal display area, with twice the pixel density of a 4K television for perfect blacks and the largest color range of any automotive display in production today. The OLED is paper-thin, and its curvature positions the three displays for optimal visibility.

The 38-inch (965 mm) diagonal display screen is made up of the P16 Instrument Panel Cluster Control Module as the primary display, which is a 14.2-inch (360 mm) diagonal OLED display and has the module attached to the back. The secondary portion of the 38-inch (965 mm) diagonal display screen is the A22 Radio Controls, which consists of a 7.2-inch (182 mm) diagonal OLED Touchscreen display on the left and a 16.9-inch (429 mm) diagonal OLED infotainment screen on the right.

System features include:

- **7.2-inch (182 mm) diagonal touch control panel** (left side display) – allows the user to view trip information, select a cluster display layout and control the available Head-Up Display and Night Vision system.
- **14.2-inch (360 mm) diagonal instrument cluster display** (behind the steering wheel) – features the speedometer and two reconfigurable zones for vehicle information as well as radio and phone information. Other available displays include a navigation map, Augmented Reality display and Night Vision.
- **16.9-inch (429 mm) diagonal infotainment screen** (right side display) – the digital command center for the vehicle with controls for navigation, music and many vehicle settings.

Since the Instrument Panel Cluster Control Module is an OLED display, Driver Information Center elements are located in various zones of the display, depending on how the instrument panel is configured. Some of the warning lamps (MIL) will be located adjacent to the cluster under the infotainment screen, including ABS, Brake, Seatbelt, and Service Engine Soon (Check Engine) lights, which are discrete indicators controlled by the Instrument Panel Cluster Control Module. Several other warning lamps, including Traction Control, High Beam Indicator, and Trailer Mode, are located at the bottom of the central instrument cluster display.

**RECONFIGURABLE CLUSTER DISPLAY**

When the Gauge view is selected, the content on the left and right sides of the speedometer in the central cluster display can be changed. Vehicle information is shown in the left zone while the right zone displays an active navigation route, audio selection or phone call information as well as any vehicle alerts. A digital speedometer, speed sign and speed warning color can be shown by going to the Settings app on the infotainment screen.

**NAVIGATION VIEWS**

The available Augmented Reality-enabled (AR Camera) view uses live street views with directional overlays and more for enhanced driving directions and route guidance information. The live street
view in front of the vehicle is projected on the cluster display with turn indicators and other directional information overlaid on the scene.

The traditional navigation map also can be shown in the central display or on the infotainment screen. When searching for a destination on the infotainment screen, a 360-degree street view may be available, powered by Google Street View mapping service.

Navigation features include direction-based audio prompts, which can be selected under Navigation Voice Control in the Settings menu. For example, with the voice control setting enabled, a “turn left” audio prompt comes through the left speakers to further emphasize the navigation instruction – with the volume increasing as the turn approaches.

**NIGHT VISION**

Available Night Vision uses infrared technology to enhance forward visibility by projecting an image of the area in front of the vehicle along with any detected objects – pedestrians and large animals – on the center cluster display.

**INFOTAINMENT SCREEN**

The infotainment screen features unique, customizable layouts that can be controlled using the touch screen or rotary controller on the center console. Use the same gestures on the touch screen as you would on a smartphone or tablet, such as tap, scroll up/down, swipe left/right, drag and drop, and pinch and spread.

**TIP:** To quickly access commonly used apps, customize the app tray on the left side of the screen. To add favorite apps, press and hold, and then drag and drop, an icon from the infotainment screen to the app tray.

When using the rotary controller, the home page icons change to a circular carousel-style layout. Tilt or rotate, and then press, the controller to navigate through the menus.

Use the smaller volume knob to adjust the volume, mute the speakers and turn the system on/off. The shortcut buttons on the center console provide direct access to a variety of commonly used features.

**VEHICLE INFORMATION**

The Vehicle Information app on the infotainment screen displays the status of a number of vehicle systems, such as tire pressure, battery voltage, coolant temperature, oil pressure and others. The content also can be shown in the cluster display by selecting the Show in Cluster option.

For more information on the all-new 2021 Escalade, refer to Bulletin #20-NA-211.

Thanks to Hassan Abdallah and Matt Bunting
The Mark of Excellence program (U.S.) recognizes the achievements, professionalism, and commitment of many members of the GM dealership community. For 2021, service technicians enrolled in the program can earn both recognition and a number of awards when they meet program qualifiers and other criteria.

The enrollment period for the 2021 Mark of Excellence program is December 7 – December 18.

The 2021 Mark of Excellence program runs from January 5, 2021 through January 3, 2022.

Once enrollment is completed, all dealership personnel with a valid GlobalConnect email address who are enrolled in the 2021 program will receive an email message notifying them of their program status and other enrollment details. Enrolled individuals can update their email address through their GlobalConnect profile.

**EARNPOWER POINTS**

The Mark of Excellence program provides technicians with the opportunity to win a combination of earnPOWER points, toolbox service medallions, and other awards based on their product knowledge, technical training, customer satisfaction, and tenure with their dealership as well as with GM. In addition, technicians compete for Top 20 Zone and Top 50 National recognition awards.

The Product Knowledge Tests also offer technicians the chance to earn additional earnPOWER points. Technicians who complete the quarterly Product Knowledge Tests with a score of 80% or better will receive an entry into a quarterly drawing for 250 earnPOWER points. 25% of the qualified technicians per zone will be randomly selected to win. Along with the earnPOWER points, technicians who successfully complete all four Product Knowledge Tests will earn an additional Mark of Excellence award.

For more information about the 2021 Mark of Excellence program, select the Mark of Excellence app on the GM GlobalConnect App Center or contact Program Headquarters at 1-800-368-1638.

▶ Thanks to Diana Sancya
Some 2021 Tahoe, Suburban, Yukon and Escalade models may have a Service Theft Deterrent message on the instrument cluster and several DTCs set, including: B113C (Security Indicator Control), B13AC (Lane Departure Warning Indicator Control), B1AC3 (Ignition Mode Switch LED Control), B195D (Left Rear Door Lock Indicator Control), B195E (Right Rear Door Lock Indicator Control), U3018 (Control Module Supply Circuit 1-2 Not Plausible), and/or U3501 (Control Module Supply Circuit 1 Low Voltage). In addition, fuse F49DR in the right instrument panel fuse block will be open.

If these conditions are found, remove the 12-volt accessory power outlet (APO) X80H, which has an LED illuminated ring around its perimeter, and inspect the grounding tab for the illuminated ring.

The LED illuminated ring is part of the 12-volt APO receptacle retainer and there are two contact tabs (#2 and #3) for the illuminated ring.

The two contact tabs for the LED illuminated ring mate to the 12-volt APO receptacle. Tab #2 is for power to illuminated ring circuit 6817 and tab #3 is the ground, which should only contact the metal body and the slide contact for tab #2, as shown below. Tab #3 should only contact the metal body of the 12-volt APO receptacle.

With the 12-volt APO X80H removed, inspect the grounding tab. If the tab is shorting out between the metal body and slide contact, replace the 12-volt APO receptacle retainer.

Refer to #PIT5800 for additional information.

► Thanks to Jim Will
Techline Connect Software Update

The latest update to the Techline Connect software that was recently released includes changes designed to enhance the efficiency and productivity of the application.

A few of the changes in the update include:

- An enhanced SVG graphics tool in the Service Information, which offers faster load times for graphics as well as improvements to the tool features. In addition, the print functionality now includes the ability to print with or without red line information in the graphics. The separate print preview function was removed and print preview is incorporated into the print function.

- The keyword search in the Service Information features a new partial search function. The dropdown menu for searches includes “All,” “Any,” and the new “Begins With.” Using “Begins With” allows users to input only a partial word or number. For example, instead of typing “Navigation,” only “Nav” can be input or instead of typing an entire DTC number, only a partial number is needed.

- The no activity timeout for Techline Connect has been extended to four hours.

- The Techline Connect installer has been enhanced to allow for easier updates when updating from older versions. The latest version of the Techline Connect installer is available for download from TIS2Web or the GlobalConnect app center.

APPLICATION UPDATES

The Update Manager that is part of Techline Connect performs all updates needed to keep the applications up to date when logging in to Techline Connect, including GDS 2 and MDI updates along with large calibration files (if configured in the Profile Preferences). To ensure all updates are downloaded properly, make sure your dealership’s IT department correctly configures all of the Techline PC’s security settings.

TIP: If the PC’s security settings do not allow updates to occur or be seen by the user, Techline Connect will continue the log in process. As a result, the app may not be up to date at all times. If a core update for Techline Connect is not made, it will affect all of the component apps.

Updates for Techline Connect are typically released on weekends. If an app works on Friday, but does not on Monday, it may be due to the PC security settings not allowing the update.

Check the Messages box at the top of the Techline Connect dashboard to see if an update has been released and should have been downloaded. A message will be sent out when all updates are released. If the download did not occur, it may be necessary to contact your dealership’s IT department or the Techline Customer Support Center.

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

Thanks to Lisa Scott