Bulletin No.: PI1515

Date: Jul-2015

Service Bulletin

PRELIMINARY INFORMATION

Subject: 2016 Cadillac ATS-V New Model Features

Models: 2016 Cadillac ATS-V Coupe, ATS-V Sedan
Equipped with V6, 3.6L, SIDI, DOHC, VVT, Aluminum, Twin Turbocharged, Gasoline Engine — RPO LF4
Equipped with Hydra-Matic™ 8L90 8-Speed Automatic Transmission — RPO M5U
Equipped with Tremec TR6060 6-Speed Manual Transmission — RPO MG9

Attention: This PI also applies to any of the above models that may be Export vehicles.

Bulletin Purpose

2016 ATS-V Coupe.

2016 ATS-V Sedan.

The purpose of this bulletin is to help the Service and Sales Personnel become familiar with the new model features of the 2016 Cadillac ATS-V Coupe and ATS-V Sedan.

ATS-V Coupe and ATS-V Sedan Overview

The 2016 Cadillac ATS-V available in coupe and sedan, will introduce the first-ever twin-turbocharged engine in a V-Series. These vehicles add impressive track capability to what was already the lightest and most agile-driving car in the luxury compact class. The result is a dual-purpose luxury performer, a car with true track capability right from the factory that is also a sophisticated luxury car on the road.

Rated at 464 horsepower (346 kW) and 445 lb-ft of torque (603 Nm), the engine is the segment's highest-output six-cylinder and enables 0-60 mph performance in 3.9 seconds and a top speed of more than 185 mph (298 km/h). It is backed by a six-speed manual – with Active Rev Match, no-lift shifting and launch control or a paddle-shift eight-speed automatic transmission featuring launch control and Performance Algorithm Shift. A standard electronic limited-slip differential (eLSD) supports optimal traction and enables maximum corner exit acceleration.

A lightweight carbon fiber hood features an air-extracting vent that not only pulls hot air out of the engine compartment, but helps reduce lift at speed by channeling air pulled through the radiator out and over the top of the car rather than allowing trapped air to exit under the car. A front splitter enhances handling by forcing air to push down on the front of the car rather than flow under it, where it can cause lift.

dexos® Engine Oil

dexos® licensed products are easy to identify. Simply look for one of the dexos® icons shown above on the front label and the 11-digit alphanumeric dexos® license number on the back label. As long as an oil package displays one of these two markings, the engine oil is an authentic, licensed dexos® product and is recommended for use in GM vehicles.

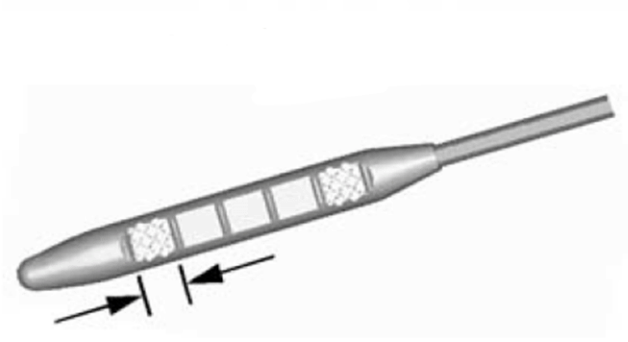
Refer to this General Motors website for information about the different licensed brands that are currently available: **http://www.gmdexos.com**

Recommended Viscosity Grade

Use dexos1™ SAE 5W-30 viscosity grade for the 3.6L twin turbocharged engine — RPO LF4.

In an area of extreme cold, where the temperature falls below −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 temperatures.

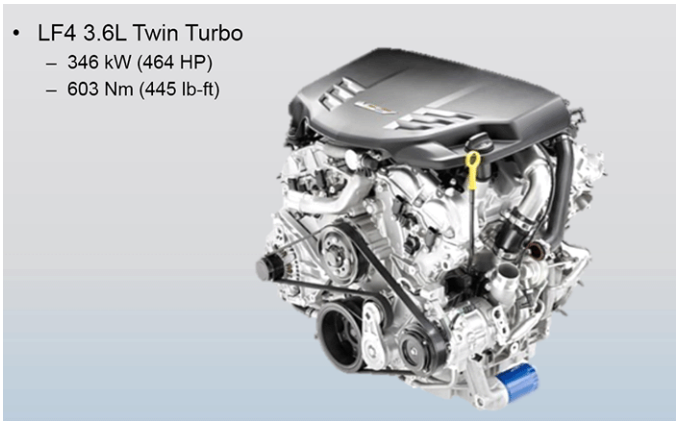
When to Add Engine Oil



3.6L V6 (LF4) Twin Turbo Engine

If the oil is below the cross-hatched area at the tip of the dipstick, add 1 qt (1 L) of the recommended oil and then recheck the level.

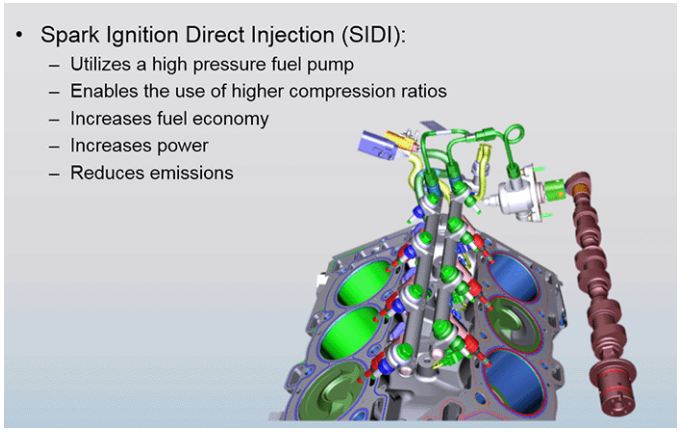
V-Series Twin Turbocharged Engine Features



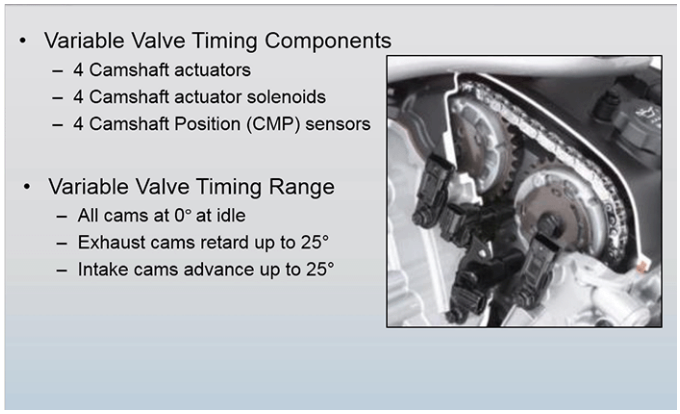
Exclusive features for the ATS-V version of the Twin Turbocharged engine are designed to make power faster and sustain it longer.

Highlights include:

- At 464 horsepower (346 kW) and 445 lb-ft of torque (603 Nm), the engine is the segment's highest-output six-cylinder.

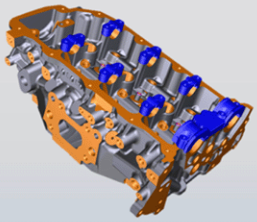


- Spark ignition direct injection (SIDI).



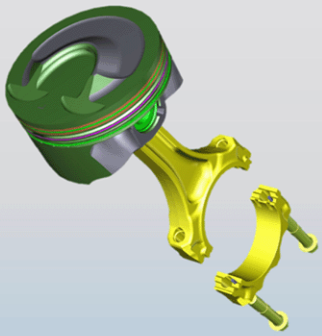
- Variable valve timing (VVT).

- High tumble intake port
  - More efficient burn
- 38.3 mm intake valves
- 30.6 mm exhaust valves with hardened seats
- Sodium-filled exhaust valves
- Integrated exhaust manifold reduces weight by approximately 5.9 kg



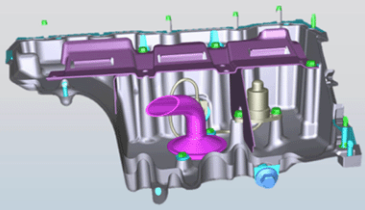
- Cylinder heads with sodium-filled exhaust valves with hardened seats and integrated exhaust manifolds.
- An engine mounted mechanical vacuum pump which ensures sufficient vacuum to control the turbochargers.

- Pistons
  - Low tension compression rings
  - Cast aluminum
  - Polymer coating
- Connecting Rods
  - Titanium alloy
  - Pressed-in piston pin bushing
  - Dowel pins in rod cap to align the rod and cap

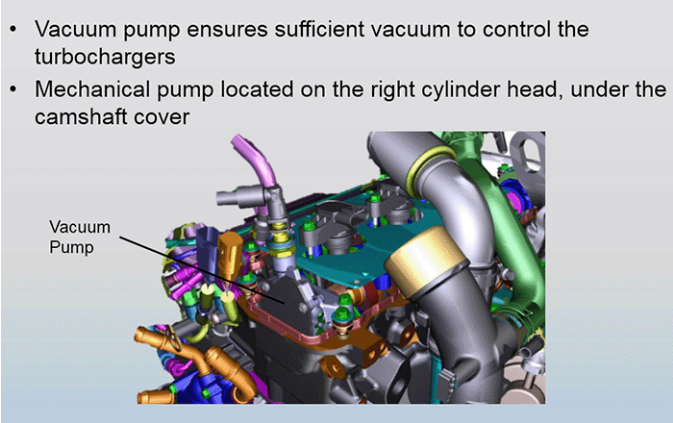


- Lightweight titanium connecting rods that reduce inertia of the rotating assembly, complementing the quick-spooling turbochargers. Cast aluminum pistons with a polymer coating.

- Oil Pan
  - Wet sump design
  - Optimized for track performance
  - Maintains pressure during high G maneuvers



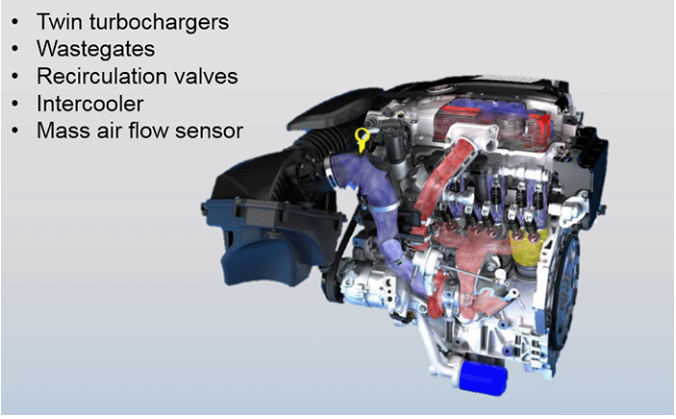
- A high-performance wet sump oil pan lubrication system, designed to maintain optimal oil pressure and ventilation during high-lateral driving maneuvers typically encountered on a track.



- An engine mounted mechanical vacuum pump ensures sufficient vacuum to control the twin turbochargers.

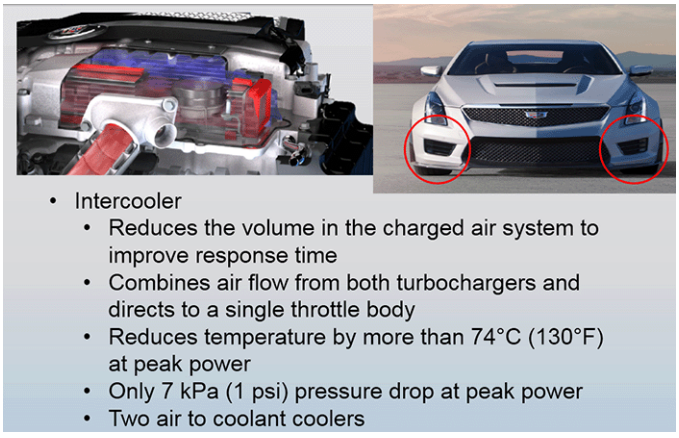
V-Series Twin Turbocharger Features and Air Induction System

Components of the twin turbocharger air induction system are explained as follows:

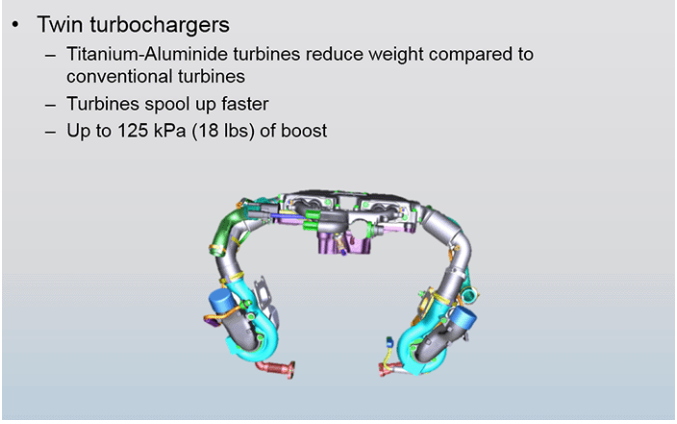


Notice: The 3.6L Twin Turbocharged engine has a FRONT and REAR Mass Airflow Sensor with Intake Air Temperature Sensor.

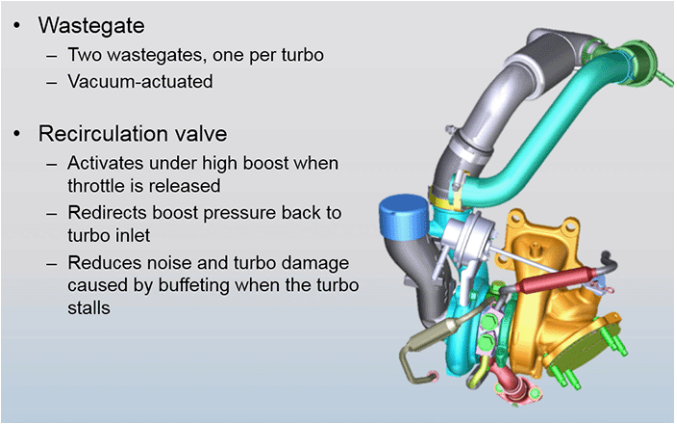
- Some of the air induction system components shown in this view are: one of the turbochargers, one wastegate, one recirculation valve, one mass air flow sensor and the intercooler.



- A unique feature of the charge air cooling intercooler, are two air-to-liquid coolers, with their cooling air intakes (circled) mounted on the vehicle in front of the tires.



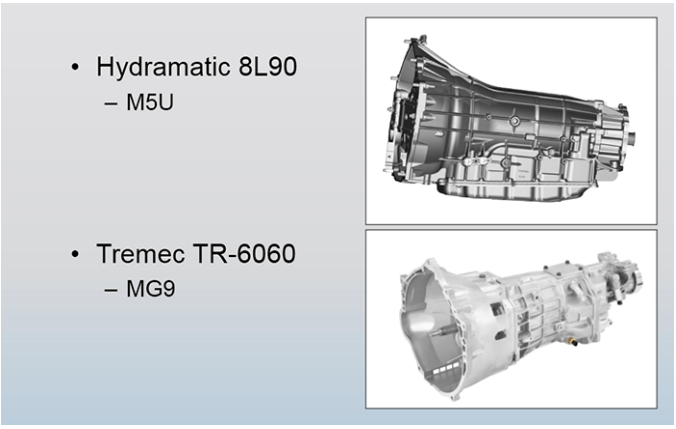
- Twin turbochargers with low-inertia titanium-aluminide turbines and vacuum-actuated wastegates for more responsive torque production. Compressors matched for peak efficiency at peak power levels, for optimal track performance.



- Two vacuum actuated wastegates and two recirculation valves, one of each per turbocharger.

Transmissions

Hydra-Matic™ 8L90 8-Speed Automatic Transmission



- **Operation:** The Hydra-Matic™ 8L90 8-speed automatic transmission uses 5 clutches to direct power flow through the transmission. There are no sprags or roller clutches. Each gear range has 3 clutches applied. During shifts, the TCM commands one clutch off and applies a different clutch. The clutch control solenoids control the application and release of the clutches.
- **Internal Mode Switch:** The transmission manual shift shaft switch assembly detects the angular position of the shift selector shaft. The 5 inputs to the transmission control module (TCM) from the transmission manual shift shaft switch assembly indicate the transmission gear selector lever position. This information is used for engine controls, as well as determining the transmission shift patterns. The state of each input is available for display on the scan tool.
- **Remote Mounted Fluid Pump:** The Hydra-Matic™ 8L90 8-speed automatic transmission has a fluid pump mounted to the valve body and is chain driven. Moving the fluid pump off the input shaft helps keep the length of the transmission similar to the Hydra-Matic™ 6L80 and Hydra-Matic™ 6L90.

Tremec TR6060 6-Speed Manual Transmission

The Tremec TR6060 6-Speed Manual Transmission is a fully synchronized manual transmission with an enhanced synchronizer cone arrangement as follows:

- Triple-cone on 1st and 2nd.
- Double-cone on 3rd, 4th, 5th, 6th, and Reverse.

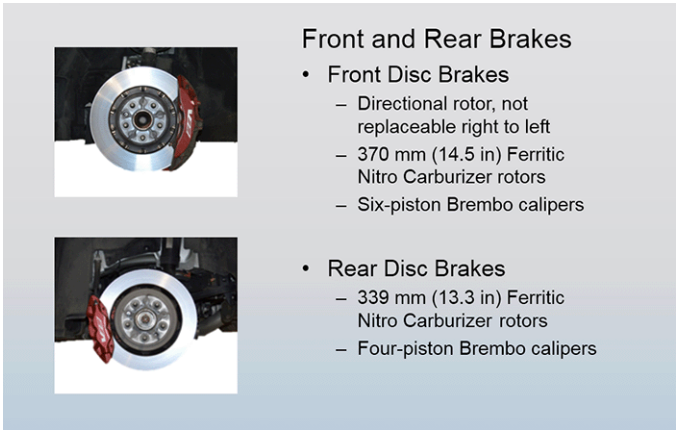
Tapered roller bearings support the main shaft and counter shaft.

- Caged roller bearings under all speed gears.
- Internal fluid pump circulates lubricating fluid to cooler.
- Transmission fluid cooler is part of the radiator.

Active Rev Matching (ARM)

Active Rev Matching matches engine speed to road speed for the next gear and is controlled using the paddles on the steering wheel.

Brembo High Performance Brake System



Notice: The front disc brake rotors are directional rotors and are not replaceable right side to left side.

A Brembo high performance brake system provides durability, consistency and the capability for track-day performance. The system includes vented Ferritic Nitrocarburizing (FNC) process for corrosion resistance on the 14.5-inch-diameter (370 mm) front rotors with staggered six-piston calipers and 13.3-inch-diameter (339 mm) rear rotors with four-piston calipers.

Chassis — Suspension — Magnetic Ride Control — Tires — Wheels

- Third generation magnetic ride control
- 40% faster response time
- Integrated chassis controls
- Three driver-selectable modes:
  - Touring
  - Sport
  - Track

- The ATS-V also features third-generation Magnetic Ride Control and Performance Traction Management. Five driver-selectable settings include the segment's only competition-level settings for stability and traction control. Magnetic Ride Control "reads" the road a thousand times per second, sending data to magneto-rheological fluid-filled dampers that can independently control the damping characteristics of all four dampers. Third-generation improvements enable 40-percent faster damping response. In fact, at 60 mph (97 km/h), the third-generation magnetic ride control system calculates the optimal damping force for every inch of the road.
- A revised multi-link double-pivot MacPherson-strut front suspension with dual lower ball joints delivers a quicker response and increased lateral control, monotube inverted struts, incorporating new ride and handling links, where traditional elastomeric bushings are replaced with zero-compliance cross-axis ball joints, higher-rate springs and a stiffer direct-acting stabilizer bar for a 50 percent greater roll stiffness.
- The independent five-link rear suspension features reduced roll center migration, stronger lateral control and effective anti-squat geometry, complementing the front suspension with greater body motion control. Contributing components include stiffer bushings, new cradle mounts, higher-rate springs and a stiffer stabilizer bar.
- Structural stiffness has been increased by 25 percent for higher cornering loads.
- A key component of the car's dual-purpose performance are the Michelin® Pilot® Super Sport tires developed specifically for the ATS-V. They feature a tri-compound tread that delivers excellent grip in performance driving situations, and also delivers excellent ride quality characteristics and extended tread wear.

- The aluminum wheels which are unique to the V-Series, are constructed of a low-mass forging that helps reduce un-sprung weight for greater agility and a more direct feel to steering inputs. Also, the lightweight forged aluminum wheels and brake calipers are offered in three finishes, allowing owners to personalize the presence of their ATS-V.

High Performance Seats

The interior is equipped with high-performance seats and ergonomics that focus on the driver's interfaces with key features for performance driving.

Performance Data Recorder — CUE Color Touch Screen

The ATS-V features a unique version of the 5.7-inch, three-window instrument panel cluster display, with V-Series graphics and distinctive gauge readouts. It is also equipped with the latest connectivity technologies from Cadillac which include:

- A Performance Data Recorder which is controlled via CUE's color touch screen and its recordings can be reviewed on the CUE screen when the vehicle is **parked.**
- CUE with Bluetooth connectivity with natural voice recognition
- Text-to-voice that converts incoming text messages to speech and reads them over the audio system speakers
- USB, auxiliary and SD memory card ports

OnStar® 4G LTE Connectivity with Built-in Wi-Fi Hotspot

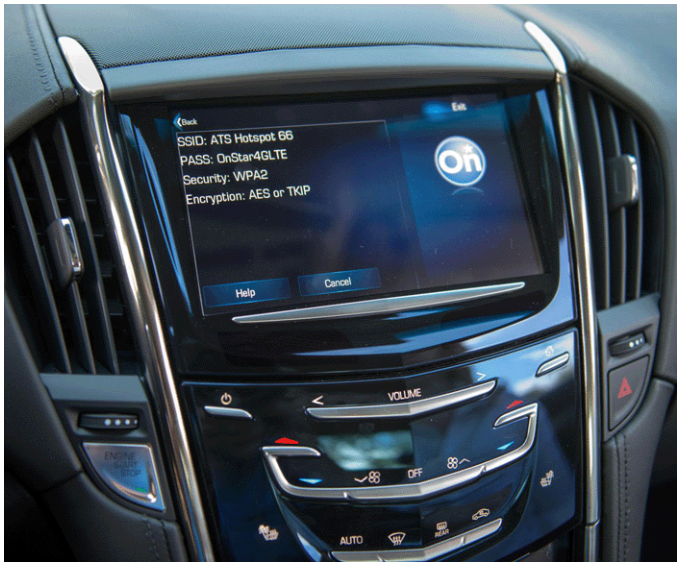
OnStar® 4G LTE with built-in Wi-Fi Hotspot will support up to seven mobile devices such as smartphones, tablets, and laptops, so they can be connected to high speed Internet allowing passengers to access the content they want. OnStar® with 4G LTE offers a strong, reliable signal, and it's built-in, so it's easy to use. Plus, it's connected to your vehicle battery, so you're always fully charged for the adventure ahead.

The most powerful OnStar® connection ever also enables improved access to existing OnStar® safety and security services, including the ability to transmit voice and data simultaneously. That means that OnStar® advisors can run a diagnostic check without ever leaving the call, making customer interactions quicker and more seamless. It's the most comprehensive in-vehicle safety and connectivity system available.

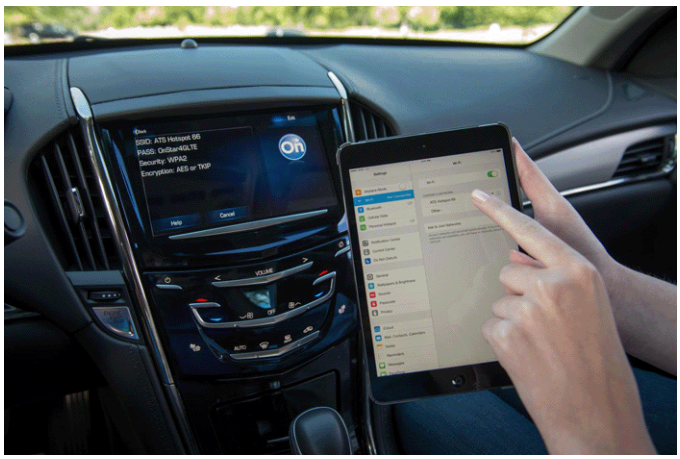
Connecting to a Wireless Network Using OnStar® — Service Set Identifier (SSID) and Password (PASS)

The Service Set Identifier (SSID) also known as a Network Name or Wi-Fi Hotspot is used to uniquely identify any given wireless network. It is the IP address for a wireless network. To connect to a wireless network, perform the following actions:

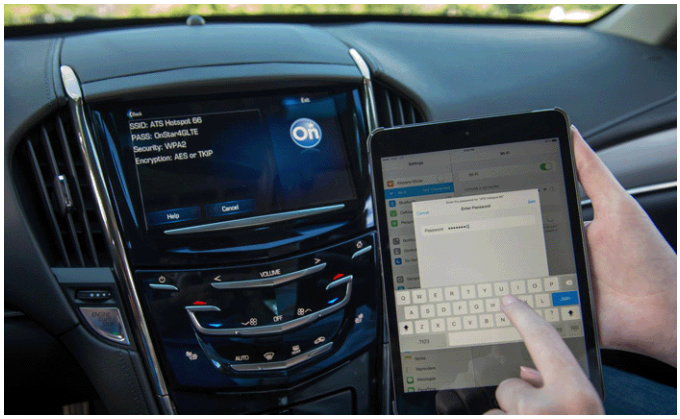
1. To get the OnStar® Wi-Fi Service Set Identifier (SSID) and Password (PASS) also known as the Encryption Key, press the Voice Command button on the CUE Infotainment screen and say or select: **Wi-Fi settings.**



2. OnStar® will display the SSID and PASS information also known as a Profile on the CUE Infotainment screen.



3. The screen of the device to be connected will ask you to select a network. Select the SSID (Hotspot) that is displayed.



4. The screen of the device to be connected will ask you to enter the password. Enter the PASS that is displayed.
5. Perform Step 3 and Step 4 for any other devices to be connected to the wireless network.

Wireless Inductive Smartphone Charging System

The wireless inductive charging system for smartphones is Compatible with Powermat and other in-phone wireless charging technologies, this convenient feature eliminates the need for charging cords. An increasing number of smartphones have wireless charging either embedded or as an option. To charge a compatible device using the wireless inductive charging system, the device is simply placed on the rubberized pad.

The system is capable of charging the batteries of many aftermarket devices, including cell phones, PDAs, pagers, MP3 players, etc.

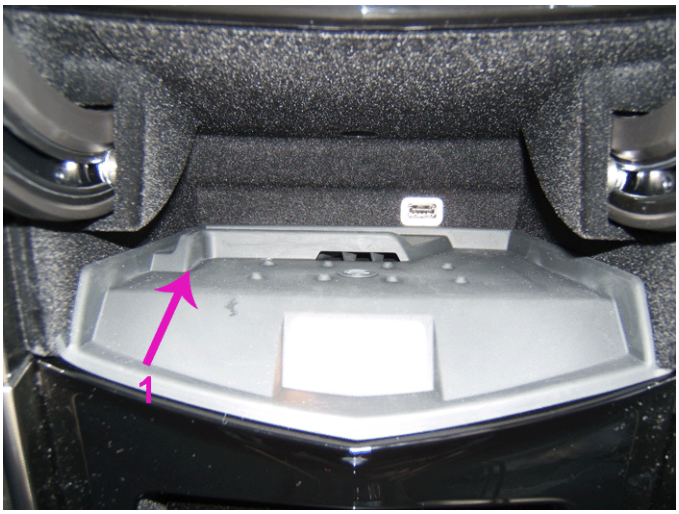
A compatible device is one that is compliant with the Power Matters Alliance (PMA) or Wireless Power Consortium's (WPC) Qi Standard, meaning that it is equipped with a PMA or Qi wireless charge ***"receiver"*** that will work with the charge ***"transmitter"*** installed in the vehicle. A device may use built-in charging circuitry or an adapter (an external plug-in device which contains the charging circuitry).

When the Interruptible Retained Accessory Power (RAP) relay is closed (when the vehicle ignition is in **Run** or **Accessory** position), the system is able to detect the device, establish communications with the device to confirm it is a compatible device, and then deliver charging power to the device via the wireless interface.

If a non-compatible device or metallic foreign object is detected, the system will not transfer power. The charger monitors its internal temperature and will shut down if it the charger temperature exceeds 185°F (85°C).

The BCM will detect that the device battery is charging and send a serial data message to the infotainment touch screen, which will indicate a device is currentl charging. When the battery charging symbol is toggling **ON** and **OFF**, it indicates a thermal limit has been reached and the device will not charge. Charging may also be interrupted while driving over rough conditions. Reposition the mobile device to continue charging.

Wireless Inductive Charging Surface Location — Typical View



The charging surface (1) is located inside the storage bin behind the motorized center stack instrument panel faceplate.

Charging a Device

1. Raise the motorized center instrument panel faceplate.
2. Remove **ALL** objects from the charging surface.

Notice: There is a charging coil located in the center of the charging surface and the mobile device has a charging coil typically near the center of the device. These coils must be aligned in order for charging to proceed.

3. With the device face up, place it on the charging surface. Align the device with the left rear corner.

4. Ensure that the battery charging symbol status has changed and is illuminated on the Cadillac CUE touch screen, indicating the device is charging. If necessary, move it around slightly until the battery charging symbol illuminates.

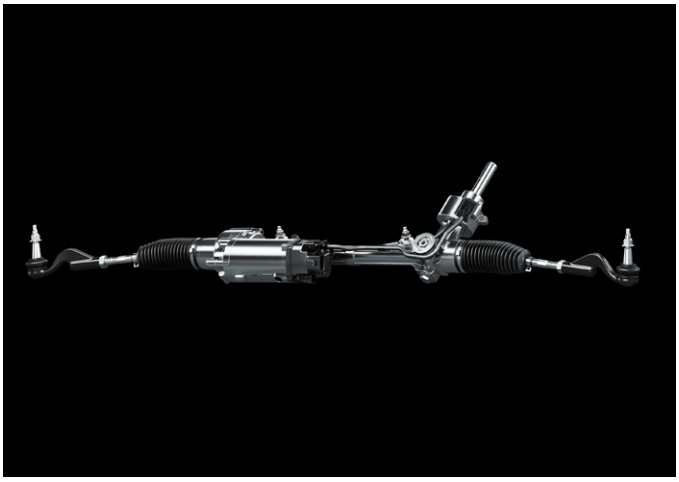
   ⇒ If the battery charging symbol does not illuminate, verify the device is properly positioned on the charging surface. It may be necessary to rotate it 180 degrees to help establish a connection. The use of a protective case may require more precise placement or it may inhibit charging. If necessary, remove the case.

To check for phone or other device compatibility, Go to www.gmtotalconnect.com. or in Canada, Go to www.gmtotalconnect.ca (English) or www.connexiontotalegm.ca (French).

Wireless Inductive Phone Charging System Diagnostics

For mobile device wireless charging system concerns, refer to the: Available Product Training Table in this Bulletin.

ZF Steering Systems Servotronic II



The ZF Steering Systems Servotronic II variable-ratio electric power steering gear, with increased system stiffness offers an improved feeling of precision and greater driver feedback.

The belt-driven electric power steering system includes:

- Integrated electromechanical power steering unit.
- Steering gear.

Available Product Training

The majority of the systems found on the ATS-V Coupe, ATS-V Sedan are taught in GM's core curriculum from a conceptual theory and operation perspective. The North America training structure is system based.

To access **all** of the available training courses visit the following website:

- **In the United States go to > www.centerlearning.com**
- **In Canada go to > GM GlobalConnect and select: Centre of Learning**

The following training courses are new for this vehicle/RPO content or have been updated within the past year.

Training Course Name or System — Course Number and Description

Course Name or System	Course Number and Description
ENGINE: ENGINE-GAS, 6 CYL, 3.6L, GEN 1+, V6, SIDI, DOHC, VVT, ALUM, TWIN TURBO — RPO LF4	#16440.20D Engines New and Updates for RPOs LF4, LGX, LGW, L3A, LV7, LWN, LWC (July 27, 2015) ** #10316.96W 2016 Cadillac ATS-V
TRANSMISSION: TRANSMISSION-AUTO 8 SPD, 8L90 — RPO M5U TRANSMISSION-MAN 6 SPD, TREMEC, 85M, 2.66 1ST, 0.63 6TH — RPO MG9	#17440.15D Transmissions: New and Updates for 8L90 Automatic Transmission — RPO M5U ** #17043.45V GM TR6060 Tremec 6-Speed Transmission Overhaul **
DRIVER'S INTERFACE: CRUISE CONTROL-AUTOMATIC, ADAPTIVE, WITH STOP/GO — RPO KSG CRUISE CONTROL-AUTOMATIC, ELECTRONIC CONTROL-MANUAL SHIFT, AUTOMATIC TRANSMISSION — RPO KB7 PEDALS-SPORTY, ALLOY — RPO JF5	#10316.96W 2016 Cadillac ATS-V * #22048.42W3 GM Safety Systems 3 **

CHASSIS: SUSPENSION SYSTEM-SPECIAL RIDE & HANDLING — RPO FE4 AXLE POSITRACTION-LIMITED SLIP, ELECTRONIC — RPO G96 POWER STEERING-PREMIUM RACK ELEC. (RACK EPS).	#13044.20W GM Chassis Control Systems #14041.18W3 Propshaft and Rear Axle Operation, Diagnosis and Service 3 ** #13041.15W2 GM Steering Systems 2
INFOTAINMENT: RADIO-INFOTAINMENT SYSTEM - UPLEVEL HMI, ENHANCED CONNECTIVITY — RPO IO5 RADIO-INFOTAINMENT SYSTEM - UPLEVEL HMI, ENHANCED CONNECTIVITY, EMBEDDED NAVIGATION — RPO IO6 CHARGER-INDUCTIVE PORTABLE WIRELESS DEVICE — RPO K4C	#19047.13W2 Entertainment Systems 2 ** #19047.13W3-R2 Entertainment Systems 3 ** #19047.23D MOST Network Diagnostics and Infotainment System Programming ** #10316.96W 2016 Cadillac ATS-V *
DRIVER'S INFORMATION: COMMUNICATION EQUIP-MOBILE INTERNET CONNECTIVITY — RPO VV4 (Requires OnStar® GEN 10) RECORDER-VEHICLE PERFORMANCE — RPO UQT	#19040.39W OnStar® Systems 2 #10316.96W 2016 Cadillac ATS-V *
Canadian Training Course	
2016 Cadillac ATS-V New Model Launch	#10316.96W (WBT)

***Canada: An upcoming course will be offered.**

****Canada: Course currently not offered.**

Special Tool

The following tool was released for the MY2016 ATS-V with the 3.6L Twin Turbocharged Engine — RPO LF4:

Special Tool Number	Special Tool Description
DT-51791	Removers, Front Cover Slide Hammer Adapters (Set of 2)