



Service Bulletin

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INFORMATION

Subject: Pre-Delivery and Service Guide

Models: 2005 Chevrolet Corvette

This is a special bulletin to introduce the 2005 Chevrolet Corvette. The purpose of this bulletin is to make you familiar with the vehicle's features and describe the action your Service Department will need to take to ensure that your dealership is able to fully service this vehicle.

ABOUT THE VEHICLE

The 2005 Corvette marks the sixth design/engineering of the Corvette legacy. "C6," as it is nicknamed, aims at delivering more power, passion and precision to America's performance icon, enabling it to compete at the highest level with the world's absolute best sports cars.

Powertrain

Engine

The sixth-generation Corvette is powered by the LS2 V8, one of a family of engines known as Gen4, which represents the fourth generation of the small-block V8. The LS2 displaces 6.0 liters, vs. the 5.7 liters of its Gen3 predecessor. The LS2 delivers not only stunning horsepower for a small-block pushrod V8 engine, but in a true measure of real-world efficiency, it also delivers the best combination of horsepower and fuel economy in the high sport segment (estimated 18 mpg (12.6 L/100 km) city, 28 (8.1 L/100 km) highway).

LS2 Specifications	
Configuration	Overhead Valve (OHV) V8
Displacement — liters/cubic inches	6.0/364
Valve per Cylinder	2
Fuel System	Sequential Electronic Fuel Injection (SEFI)
Throttle Control	Electronic Throttle Control (ETC)
Bore x Stroke	101.60 mm x 92.0 mm
Compression Ratio	10.9:1
Horsepower @ rpm	400 @ 6,000
Torque (foot pounds) @ rpm	400 @ 4,400

Transmission

The Tremec T56 six-speed manual transmission is standard equipment and is a refined version of the previous Tremec manual unit. There are two sets of gear ratios available, base and Z51. The shifter is designed for shorter throws for a more precise shift feel, and the clutch has been revised for lighter, smoother effort.

The 4-speed 4L65 automatic transmission has an electronic controller that has been calibrated for Performance Algorithm Shifting, a feature that automatically selects the optimal gear for the specific driving condition, especially for performance driving and hard cornering. Under these driving conditions, the transmission also shifts at higher RPM to provide greater responsiveness and flexibility.

Chassis/Suspension

Wheel and Tires

- 18 x 8.5 inch front and 19 x 10 inch rear aluminum wheels
- P245/40ZR18 (front tires) and P285/35ZR19 (rear tires)
- Goodyear Eagle F1 tires. Optional Z51 package uses Goodyear F1 Supercar tires.

All 2005 Corvettes are equipped with run flat tires. If a low tire pressure or no tire pressure message is displayed, the car can be safely driven for up to 100 mi (160 km) of speeds not to exceed 55 MPH (88 KPH) if the tire is just low, it can be re-inflated. The tires are repairable if the source of the leak is in the tread area. The tires are covered against road hazard and complete details may be found in the warranty guide. The tires on cars equipped with the Z51 option have a different tread pattern and rubber compound than the base tire. The Z51 tires are not recommended for snow. Because of the performance tread design and compound, the mileage on these tires is less than the base tire.

Brakes

Base vehicles are equipped with 12.8 inch front rotors and 12.0 inch rear rotors. The optional Z51 package uses 13.4 inch cross drilled front rotors and 13 inch cross drilled rear rotors.

Front End Alignment

The front end alignment specifications have changed for the 2005 Corvette. Refer to SI Document ID #1540906 for complete specifications.

Body

Keys

The ignition does not require a key. The emergency key can be used to gain access to the rear compartment area, which allows access to the driver door. The key is inserted in the rear panel above the license plate to gain emergency access. A replacement key can be cut using the standard GM key blank.

Remote Keyless Entry and Ignition

As mentioned above, the 2005 Corvette does not require a key to gain entry or to start the ignition. It does require that the remote key FOB be in close proximity to certain proximity antennas located within the car. Listed below is some key information about the remote keyless entry and ignition feature.

- The rear hatch or deck lid can be opened by using the button on the key FOB, by using the button on the driver's side knee bolster or in passive mode by pressing the hidden deck lid release button located above the rear license plate in the rear fascia. Check the Owner's Manual for exact location. This button will only operate when the key FOB is within three feet of the switch. The FOB sends a signal to activate the rear switch and allow the decklid to be opened from the outside switch. THIS SIGNAL DOES NOT UNLOCK THE DOORS. It will not send the signal if the FOB is

located in the vehicle. It is possible for an operator to place their jacket or handbag in the hatch or trunk area with the key FOB inside and close the decklid. If the doors were previously locked, they would remain locked and the key FOB would be effectively locked in the vehicle. The only way to unlock the doors or enter the vehicle is with the other FOB or through the emergency key tumbler located above the rear license plate.

- There are three proximity antennas located in the interior. These antennas triangulate the location of the FOB and allow entry into the car. When the passive lock and unlock options are selected through personalization, the antenna will recognize the FOB when it reaches approximately three feet of either door. When the FOB is recognized, the memory setting for that FOB is activated and the driver's door is unlocked. If the driver wants to have the passenger door unlocked at the same time, it must be set in the personalization set-up. If this is not selected, only the driver's door will unlock passively. Once the antennas recognize an FOB has entered the interior of the car, the starter button will be energized allowing the vehicle to be started.
- If more than one FOB is detected in the car at the same time, the FOB that enters through the driver's door will be selected and that memory will be energized. If the driver has both FOBs at the same time, the memory for one FOB will be selected.
- As the battery on the FOB is running low, a message will be displayed on the DIC advising customers to change the key FOB battery. This message will provide approximately 30 days prior to complete battery discharge. If the battery is low and the "No FOB detected" message is displayed on the DIC, the FOB should be placed in the pocket to the left side of the glove box opening for close coupling of the FOB and the antenna. This slot is only visible with the glove box door is open.
- Electromagnetic interference can create a disturbance and confuse the module. The EMI can be generated from devices such as cell phones, cell phone chargers plugged into the accessory outlet on the center console, PDA devices, remote garage and gate openers. The FOB should not be carried in the same pocket or handbag as these devices. Other EMI signals can also confuse the module such as the transponders used by Mobile Speed Pass and automatic tollbooths. If this occurs with the vehicle shut off, the car can usually be restarted by inserting the FOB into the emergency slot on the left side of the glove box opening. If this occurs while driving, the car will not shut off. The car can be continued to be operated and the message will clear when the signal is no longer overriding the FOB.
- The FOB can be removed from the car while the engine is operating and the engine will continue to operate and the car is drivable. However, if the ignition is switched off and the FOB is not present in the car, the ignition will not restart. This could occur when having the car parked by a valet.

Power Seat Lumbar

This vehicle uses a single bladder for the lumbar and operates differently from previous Corvettes. The pumps to inflate the lumbar only operate during the inflate stage. The exhaust is vented to atmosphere and may take several minutes to fully deflate.

Navigation Radio

When the vehicle is equipped with the NAV radio, the CD player will only play single CDs. The six-disc changer is not available with NAV radio. MP3 disc will not play in the single disc player that comes with the NAV system. The DVD player for the NAV radio will not play video DVDs. It is only designed to play the DVD NAV disc and audio DVDs. A trunk-mounted CD changer is being developed as a Genuine Corvette Accessory targeted for late in the model year.

Radio Antennas

The FM and AM antennas are of a wire type and they are located in the rear fascia behind the tail lamps. There is no longer a mast antenna available for convertibles. The XM antenna is mounted on the halo of the coupes and on the deck lid of the convertibles. The XM antenna for all coupes is the standard black color. The XM antenna for convertibles is body colored. Do not paint the black coupe antenna, as it will effect XM reception.

Shift to Reverse Message Displayed on DIC

2005 Corvettes equipped with manual transmissions must be shifted into reverse before the vehicle will properly shut down. If the transmission is left in any gear except reverse, the engine will shut off but the vehicle's electronics will remain powered. If the driver's door is locked, it can not be opened without the transmission being shifted into reverse, unless the door is unlocked manually. If the door is manually unlocked and opened, the horn will provide three short beeps to remind the driver to place the shifter in reverse and shut off the ignition. A message will also be displayed on the DIC advising the driver to shift into reverse. If the driver ignores this message and ignores the horn chirps and walks away from the vehicle, the electronics will continue to be powered until the battery is drained. Battery run down protection will not be active because the car is not fully shut off. Drivers must remember to alert parking attendants and others that may park the vehicle and may not be familiar with these requirements.

Front License Plate Brackets

Front license plate brackets are required in many states. The bracket and instructions are only shipped with the cars when required based on shipping location of the original dealership. The brackets are held in place with a double-stick-tape that is very aggressive. Once in place, the bracket will be difficult to remove. A service bulletin is being prepared on the proper procedure to remove a bracket, if desired.

Unique Vehicle Characteristics

The purpose of this section is to familiarize you with some of the unique characteristics of the vehicle. The following functions may operate differently than what the customers are used to and are considered normal.

Fuel Quality

Fuel quality can significantly affect the vehicle's performance and can cause fuel system concerns. Premium unleaded gasoline with a posted octane of 91 or higher is recommended for best performance. Middle grade or regular grade unleaded gasoline rated at 87 octane or higher may be used, but the vehicle's acceleration may be slightly reduced. The LS2 engine is equipped with a knock sensor that constantly monitors and adjusts the engine. If a knock is sensed, spark is immediately retarded until the knock is no longer present. The engine management system then begins to increase spark timing back to achieve the best performance. Occasional spark knock may occur as the engine makes adjustments. This is a normal condition. Prolonged spark knock should be addressed.

Oil Consumption

Driving style, and conditions effect oil consumption. Engine oil is used during the normal engine operation. Corporate Service Bulletin #01-06-01-011A provides guidelines for normal driving condition. Performance and or aggressive driving conditions will effect oil consumption. As engine parts seat and "wear in", oil consumption may change. No repairs should be completed until a vehicle reaches 5,000 mi (8,000 km) and an oil consumption test has been performed.

Manual Transmission

Manual transmission vehicles must be shifted to reverse to turn off the ignition completely. If the vehicle is shut off in any gear except reverse, the ignition will remain on and a message will be displayed on the DIC advising the driver to place the transmission in reverse and press the off side of the ignition switch. If the driver attempts to leave the vehicle when the vehicle has not been placed in reverse, the warning chime will sound for three chimes. This is to alert the driver to place the transmission in reverse. If the vehicle is shut off without the transmission being placed in reverse, power will continue to be drawn from the battery and it could cause the vehicle not to start.

Manual Transmission Gear Growl Noise

When starting off slowly, customers may notice a slight gear rattle or growl coming from the transmission. This is a result of clearance between the gears, shifters and shift rails. This is a normal condition and does not require repairs.

Headlamp Cloudiness

The headlamps feature a clear polycarbonate lenses. Customers may note that when the lamps are on, light fog or cloudiness may be visible on the lenses. This is a normal condition caused by out gassing. The headlamps are also vented, thus some condensation/moisture may be seen when humidity is high or there is a change in temperature. The moisture should burn off after one hour of headlamps being turned on. All components for the headlamps are serviced separately and complete assemblies should never be required for warranty repairs.

Driving Lamps

Driving lamps are located close to the ground and they are susceptible to road debris, sand and gravel. All of these can cause conditions from pitting to cracked and broken lens. Any replacement of the fog lamp lens should be reviewed.

Interior Lighting

The passenger sun visor has a small orange lamp that illuminates the console area only when the headlamps are illuminated.

Back Glass

The back glass has compound curves (bends in two directions, horizontally and vertically) to improve the vehicle's aero dynamics and to blend well with the body. The curves in the glass cause the vision to be slightly distorted. This is a normal condition and cannot be corrected.

Fluids and Lubricants

Many of the fluids and lubricants specified for the Corvette may differ from those used in other GM products. Please ensure that only correct fluids and lubricants are used. Damage may result from use of incorrect materials. The following chart summarizes some of the most critical. Please refer to Service Information (SI) and Owner's manual for a complete list.

Important: The oil capacity has changed due to the new oil pan design. Please advise technicians responsible for maintenance.

Location	Fluid/Lubricant	Quantity
Fuel	Use premium unleaded fuel with a posted octane rating of 91 or higher for best performance. Middle grade or regular unleaded gasoline rated at 87 octane or higher may be used, but acceleration may be slightly reduced.	Tank capacity: 68L (18.0 gal)
Engine Oil with Filter	Oil meeting GM standard GM4718M. Factory-Filled with MOBIL 1 SAE 5W-30 motor oil.	5.2L (5.5 qt)
Engine Coolant	DEX-COOL [®] (GM6277M) 50% concentration	11.9L (12.6 qt)
Auto Trans Oil	DEXRON [®] III (GMN10055)	10.8L (11.4 qt)
Manual Trans Oil	DEXRON [®] III (GMN10055)	3.8L (4.1 qt)
Rear Axle	SAE 75W-90 API, GL5, synthetic axle lubricant (GM P/N 12378261 (in Canada, 89021678)) and limited slip additive (GM P/N 1052358 (in Canada, 992694))	1.7L (1.8 qt)
Brakes	Delco Supreme 11 [®] Brake Fluid GM P/N 12377967 (in Canada, 89021320) or equivalent DOT-3 brake fluid	—
Power Steering	GM power steering fluid (US P/N 89021184, Canada P/N 89021186)	—
Hydraulic Clutch System	Hydraulic clutch fluid (US P/N 88958860, Canada P/N 88901244)	—

Service Support

Instrument Cluster

The cluster is not repairable and must be replaced as an assembly. Should a new cluster be required, a replacement cluster must be ordered from GMSPO. The mileage will be set appropriately by SPECMO. In Canada, replacement clusters must be ordered from the ACDelco I&D Centre.

Audio System

The audio system is handled on an exchange basis through SPECMO (in Canada, the ACDelco Radio Centre). Radios must be programmed to match the BCM when replaced.

Electronic Service Information

All required service information is currently online on GM SI. A dealership can also find the most current Owner's Manual online at website <http://service.gm.com> and under Service Information link.

Quality Pre-Delivery Inspection (PDI)

Delivery Condition

Vehicles are delivered in the following condition:

- A plastic film known as "TransSeal" is applied to external horizontal painted surfaces to provide protection from ultra violet light, fallout and chemical attack from bird droppings, etc. This protection should be left on all vehicles during storage. It has been tested and approved for up to six months. If the dealership has difficulties in removing the protective material, the manufacturer provides a toll free number for assistance 1-800-307-7218 in the United States or 972-286-7890, in Canada. It is also important to follow the directions for removal found in Corporate Service Bulletin #03-08-51-001. Foam blocks are installed on both doors. They are designed to protect the vehicle while in storage or on display. The foam blocks should not be removed until the vehicle is delivered to the owner.
- A package containing the Owner's Manual portfolio, (Getting to Know your Corvette Guide, an information CD and an owner's DVD video (US only)) are included in the rear hatch area of every car. If the car is equipped with the Navigation system, the Navigation DVD, Owner's Manual Supplement, instructional CD and a quick reference guide are shipped in the hatch area as well. It is important that the individual that receives the car from the carrier inspects for any missing pieces when the car is dropped off by the carrier.
- Tire pressures can greatly affect the handling of the vehicle. Incorrect tire pressures are a main cause of owner concerns for vehicles that pull to the left or right and or rough ride. The tire pressures should be set to 30 psi (210 kPa) using a tire pressure gauge prior to the car being delivered to the customer. The new PDI process requires a test drive to insure the car does not have leads, pulls or vibrations when the car is delivered. The tire pressure and the road test odometer reading are to be recorded on the new PDI form.
- Battery life can be affected by the length of time a vehicle has been sitting without being started as well as short starts and stops. Part of GM's new pre-delivery process requires the dealership to check the state of the battery charge, record the reading on the PDI form and charge the battery if the voltage is below 12.6 volts. This must be performed before the car is delivered to the customer to insure the customer has a fully charged battery.

- Shock Stuffers (Canada & Export Only): Stuffers are fitted to the front and rear shocks to prevent excessive suspension travel during shipping. These must be removed before the vehicle is driven. A yellow ribbon is attached to each stuffer to help identify them.

PDI Instructions

See General Motors Quality as a Value Pre-Delivery Inspection Procedure for passenger cars and light-duty trucks for complete PDI instructions. Special attention should be paid to the following areas prior to delivery to the customer:

- Remove paint film protection and insure the door edge foam blocks remain in place.
- Check contents of "loose items" pack and fit components to vehicle.
 - Wheel trim
 - Floor mats and retainers
 - Spare keys
 - License plate bracket, if equipped
 - Getting to Know Your Corvette booklet and CD (US only)
 - Navigation DVD, if equipped
- Remove all interior protection.
- Verify the On-Star is activated and operating properly, if equipped.
- Place the Customer Information CD in the audio CD player (US only). Place the DVD-ROM in the Navigation system DVD slot and select the proper region of the country, if equipped.
- Remind customers that if their vehicle is equipped with XM radio, the trial service will end in 90 days.
- Set clock time in radio.
- Set the customer's preferences and driver's name for DIC.
- Communicate to the driver the importance of shifting into reverse prior to shutting off the ignition on manual equipped transmissions.
- Reset all MPH (KPH), MPG (L/100 km) and trip odometers settings to zero.
- Set tire pressures to specified pressure (Refer to tire placard at rear of driver's door).

