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2018

Silverado/Sierra eAssist Supplement

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2 Introduction

Introduction





The names, logos, emblems, slogans, vehicle model names, and vehicle body designs appearing in this supplement including, but not limited to, GM, the GM logo, CHEVROLET, the CHEVROLET Emblem, GMC, the GMC Truck Emblem, SILVERADO, and SIERRA

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For vehicles first sold in Canada, substitute the name "General Motors of Canada Company" for Chevrolet and GMC Motor Division wherever it appears in this manual.

This manual describes features that may or may not be on the vehicle because of optional equipment that was not purchased on the vehicle, model variants, country specifications, features/applications that may not be available in your region, or changes subsequent to the printing of this owner's manual.

Refer to the purchase documentation relating to your specific vehicle to confirm the features.

Keep this manual in the vehicle for quick reference.

Canadian Vehicle Owners

A French language manual can be obtained from your dealer, at www.helminc.com, or from:

Propriétaires Canadiens

On peut obtenir un exemplaire de ce guide en français auprès du concessionnaire ou à l'adresse suivante:

Helm, Incorporated Attention: Customer Service 47911 Halyard Drive Plymouth, MI 48170 USA

Using this Supplement

This supplement contains information specific to the unique components of the vehicle. It does not explain everything you need to know about the vehicle. Read this supplement along with the owner's manual to learn about the vehicle's features and controls.

Index

A good place to look for what you need is the Index in the back of this supplement. It is an alphabetical list of what is in the supplement, and the page number where you will find it.

In Brief

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eAssist Features

eAssist Overview

If the vehicle has eAssist, there are several additional features that contribute to increased efficiency.

Vehicles with eAssist have an automatic engine start/stop feature. This feature saves fuel by shutting the engine off when the vehicle is stopped. When the engine shuts off automatically, all the accessories will continue to operate normally. In very hot or cold conditions, the engine may not shut off. See Starting the Engine \Rightarrow 17.

Under certain driving conditions, eAssist improves fuel economy by extending the operation of V4 mode.

There are two air conditioning settings available. The comfort setting maximizes cabin comfort. The eco setting maximizes efficiency allowing more frequent, and longer engine stops than the comfort setting. See *Dual Automatic Climate Control System* \Rightarrow 12.

This vehicle has a Hill Start Assist (HSA) feature, which may be useful when the vehicle is stopped on a grade. See the Owner Manual.

Vehicles with eAssist include an AUTO STOP indicator on the tachometer. See *Instrument Cluster* \Rightarrow 9.

The eAssist system uses a high voltage battery, which is cooled with air drawn from the vehicle interior.

The cold air intake for the battery is on the sides of the center console. The exhaust for warm air is at the rear of the console. Do not cover the intake. See *Battery* - *North America* \Rightarrow 31.

High Voltage Safety Information

Vehicles with eAssist have a standard 12-volt battery and a high voltage battery. Only a trained service technician with the proper knowledge and tools should inspect, test, or replace the high voltage battery. See your dealer if the high voltage battery needs service.

6 In Brief

In emergency situations, first responders can cut the two clearly labeled cut points in the engine compartment to disable the high voltage battery and airbag systems. Do not cut the high voltage cable.

Automatic Engine Stop/ Start Feature

Vehicles with eAssist have an automatic engine stop/start feature. After the engine is started and has reached operating temperature, the auto stop feature may cause the engine to turn off when the brake pedal is applied and the vehicle comes to a complete stop. When the brake pedal is released, or the accelerator pedal is applied, the engine will restart. The engine will continue to run until the next auto stop.

AUTO STOP on the tachometer signifies that the engine is in auto stop mode. See *Tachometer* \Rightarrow 10 for more information. A chime will sound when the driver door is opened while in auto stop mode.

Remember to shift to P (Park) and turn the ignition to LOCK/OFF before exiting the vehicle.

See Starting the Engine \Rightarrow 17.

Regenerative Braking

Regenerative braking takes some of the energy from the moving vehicle and turns it into electrical energy. This energy is then stored in the vehicle's high voltage battery system, contributing to increased fuel efficiency.

The system works whenever the accelerator pedal is released, and increases the energy captured as more brake pedal is applied.

Regenerative braking is disabled during Tow/Haul Mode.

Battery

This vehicle has a standard 12-volt battery. Refer to the replacement number on the original battery label when a new standard 12-volt battery is needed. Vehicles with eAssist also have a high voltage battery. Only a trained service technician with the proper knowledge and tools should inspect, test, or replace the high voltage battery. See your dealer if the high voltage battery needs service. See Battery - North America \Rightarrow 31.

Service

A Warning

Never try to do your own service on high voltage components. You can be injured and the vehicle can be damaged if you try to do your own service work. Service and repair of these high voltage components should only be performed by a trained service technician with the proper knowledge and tools.

See "Doing Your Own Service Work" under "Vehicle Checks" in the owner's manual.

Seats and Restraints

Airbag System

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Airbag System

What Will You See after an Airbag Inflates?

Vehicles with eAssist have a high voltage battery and a standard 12-volt battery. If an airbag inflates or the vehicle has been in a crash. the vehicle's sensing system may shut down the high voltage system. When this occurs, the high voltage battery is disconnected and the vehicle is not charging the 12-volt battery or the electrical system. The vehicle may start but it shuts down once the 12-volt battery is depleted. When the 12-volt battery is depleted, the vehicle will not start and the on-board jump start feature is disabled. The airbag readiness light and/or the 12-volt battery warning light are displayed. Before the vehicle can be operated again, it must be serviced at your dealer.

Instruments and Controls

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Warning Lights, Gauges, and Indicators

Instrument Cluster



English eAssist Shown, Metric Similar

10 Instruments and Controls

Cluster Menu

The eAssist vehicles have an additional item in the Options menu.

Options

Press \checkmark to select the Options app. Use \triangle or \bigtriangledown to scroll through items in the Options menu.

Jump Start : The Jump Start display is used to perform an on-board jump start for eAssist vehicles. See "Jump Starting — North America (On-board with eAssist Only)" later in this manual.

Tachometer

The tachometer displays the engine speed in revolutions per minute (rpm).

For eAssist vehicles, when the ignition is on, the tachometer indicates the vehicle status. When pointing to AUTO STOP, the engine is off but the vehicle is on and can move. The engine could auto start at any time. When the indicator points to OFF, the vehicle is off.

When the engine is on, the tachometer will indicate the engine's revolutions per minute (rpm). The tachometer may vary by several hundred rpm's, during Auto Stop mode, when the engine is shutting off and restarting.

A slight bump may be felt when the transmission is determining the most fuel efficient operating range.

Caution

If the engine is operated with the rpm's in the warning area at the high end of the tachometer, the vehicle could be damaged, and the damage would not be covered by the vehicle warranty. Do not operate the engine with the rpm's in the warning area.

Information Displays

Power Flows

To view the Power Flow screens in the infotainment display, touch on the Home Page. Then touch POWERFLOW at the bottom of the display.



The Power Flow screens indicate the current operating condition. The screens show energy flow between the engine, generator, and high voltage battery. These components will be highlighted when they are active.

Energy Information



To view the Consumption History screen on the infotainment display, touch a on the Home Page. Then touch INFO at the bottom of the display.

The consumption history graph shows the average fuel economy over the last 50 km or 50 mi.

Touch Reset to clear the history data.

The Present bar provides the average fuel economy for the present 5 km or mi.

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Climate Control Systems

Dual Automatic Climate Control System

With this system the heating, cooling, and ventilation in the vehicle can be controlled.



- 1. Driver Temperature Control
- 2. A/C (Comfort and Eco Air Conditioning)
- 3. Air Delivery Mode Controls
- 4. Fan Control
- 5. Defrost
- 6. Passenger Temperature Control

- 7. SYNC (Synchronized Temperature)
- 8. Rear Window Defogger
- 9. Power Button
- 10. Air Recirculation
- 11. AUTO (Automatic Operation)

Climate Control Influence on eAssist Operation and Fuel Economy (If Equipped)

The climate control system depends on other vehicle systems for heat and power input. Certain climate control settings can lead to higher fuel usage and/or fewer auto stops.

The following climate control settings use more fuel:

- Comfort air conditioning mode.
- Defrost mode.
- Extreme temperature settings, such as 15° C (60° F) or 32° C (90° F).
- High fan speed settings.

To help reduce fuel usage:

- Use the full automatic control as described under "Automatic Operation."
- Select a temperature setting that is higher in hot weather and lower in cold weather.
- Turn off the air conditioning when it is not needed.

• Only use defrost to clear the windows.

Automatic Operation

The system automatically controls the fan speed, air delivery, air conditioning, and recirculation in order to heat or cool the vehicle to the desired temperature.

When AUTO is lit, all four functions operate automatically. Each function can also be manually set and the selected setting is displayed. Functions not manually set will continue to be automatically controlled, even if the AUTO indicator is not lit.

For automatic operation:

- 1. Press AUTO.
- 2. Set the driver and passenger temperature.

To find your comfort setting, start with 22° C (72° F) and allow the system time to stabilize. Then adjust the temperature as needed for best comfort.

To improve fuel efficiency and to cool the vehicle faster, recirculation may be automatically selected in warm weather.

The recirculation light will not come on when automatically controlled.

Press \angle to manually select recirculation; press it again to select outside air.

Do not cover the solar sensor on the top of the instrument panel near the windshield. This sensor regulates air temperature based on sun load. See "Sensors" later in this section.

Manual Operation

(**On/Off)**: Press to turn the climate control system on or off. When off is selected, the system will stop air from flowing into the cabin. If on is selected, any other button press occurs, or a knob is turned, the climate control system will turn on and operate to the current setting.

Gran Control) : Turn clockwise or counterclockwise to increase or decrease the fan speed. Press the knob to turn the fan off.

Press AUTO to return to automatic operation.

Driver and Passenger Temperature Control : The temperature can be adjusted separately for the driver and passenger.

Turn the knob clockwise or counterclockwise to increase or decrease the driver or passenger temperature setting.

SYNC (Synchronized

Temperature) : Press to link the passenger temperature setting to the driver setting. The SYNC indicator light will turn on. When the passenger setting is adjusted, the SYNC indicator light is off.

The driver side or passenger side temperature display shows the temperature setting increasing or decreasing.

Air Delivery Mode Control :

Press $\overrightarrow{*}, \overrightarrow{*}, \overrightarrow{*}$, or $\overrightarrow{*}$ to change the direction of the airflow. An indicator light comes on in the selected mode button.

Changing the mode cancels the automatic operation and the system goes into manual mode. Press AUTO to return to automatic operation.

Vent) : Air is directed to the instrument panel outlets.

iv (**Bi-Level**) : Air is divided between the instrument panel and floor outlets. Some air is directed toward the windshield and side window outlets.

(Floor) : Air is directed to the floor outlets, with some to the windshield, side window outlets, and second row floor outlets.

(Defog) : This mode clears the windows of fog or moisture. Air is directed to the windshield, floor outlets, and side window vents. The system automatically forces outside air into the vehicle and the air conditioning compressor will run, unless the outside temperature is close to freezing.

(Defrost) : Press to clear the windshield of fog or frost more quickly. Air is directed to the windshield and the side window vents. The air conditioning compressor also comes on, unless the outside temperature is below freezing.

For best results, clear all snow and ice from the windshield before defrosting.

For eAssist vehicles that have the auto defog feature, auto stops can occur in defrost mode. In this mode, the auto stops are shorter and less frequent than other air delivery modes to prevent window fogging.

A/C (Comfort Air Conditioning) : Press to turn the air conditioning system on or off. An indicator light will be lit amber to show that the air conditioning is enabled. If the fan is turned off, the air conditioner will not run. The A/C light will stay on even if the outside temperatures are below freezing.

For eAssist vehicles, an auto stop may occur if the climate control system determines the A/C compressor can be shut off and still maintain comfort levels with minimal windshield fogging.

Eco A/C (For eAssist Vehicles) : Press to cycle between the off, eco, and comfort air conditioning modes. The indicator will be lit green in eco, amber in comfort, and turns off when there is no A/C function. If the fan is turned off, the A/C will not run.

The eco A/C setting balances fuel economy and air conditioning comfort. In warm weather conditions, auto stops may occur more frequently and the vehicle interior may be warmer as compared to the comfort air conditioning. This setting allows higher humidity inside the vehicle and window fogging before the engine restarts. Pressing the Determined by button during an auto stop may restart the engine to prevent window fogging. To reach comfort levels quickly during an auto stop, the engine will restart if the air conditioner is off and AUTO or A/C is selected.

If temperature controls are adjusted cooler by more than 1° C (2° F) during an auto stop, the engine will restart to ensure that comfort is reached.

 $\angle \boxdot$ (Recirculation) : Press to turn on recirculation. An indicator light comes on. Air is recirculated to quickly cool the inside of the vehicle. It can also be used to help reduce outside air and odors that enter the vehicle. The air conditioning compressor also comes on when this mode is activated.

Auto Defog : The climate control system may have a sensor to automatically detect high humidity inside the vehicle. When high humidity is detected, the climate control system may adjust to outside air supply and turn on the air conditioner. The fan speed may slightly increase to help prevent fogging. If the climate control system does not detect possible window fogging, it returns to normal operation. For eAssist vehicles, there may be shorter and less frequent auto stops when auto defog is in use.

Rear Window Defogger

The rear window defogger uses a warming grid to remove fog from the rear window.

Rear Window Defogger) : Press to turn the rear window defogger on or off. An indicator light on the button comes on to show that the rear window defogger is on.

The rear window defogger only works when the ignition is in ON/ RUN. The defogger turns off if the ignition is turned to ACC/ ACCESSORY or LOCK/OFF.

The rear window defogger can be set to automatic operation. See "Climate and Air Quality" under "Vehicle Personalization" in the owner manual. When auto rear

defog is selected, the rear window defogger turns on automatically when the interior temperature is cold and the outside temperature is about 4° C (40° F) and below. The auto rear defogger turns off automatically after about 10 minutes, or after five minutes if the outside temperature is not as cold.

For eAssist vehicles, auto rear defog will only run during a remote start and the feature is not available in the Vehicle Personalization menu.

Caution

Using a razor blade or sharp object to clear the inside rear window can damage the rear window defogger. Repairs would not be covered by the vehicle warranty. Do not clear the inside rear window with sharp objects. **Heated Mirror**: If equipped with heated outside rearview mirrors, the mirrors heat to help clear fog or frost from the surface of the mirror when the rear window defog button is pressed.

Sensors



The solar sensor, located in the defrost grille in the middle of the instrument panel, monitors the solar heat. Do not cover the solar sensor or the system will not work properly.

There is also an exterior temperature sensor behind the front grille. This sensor reads the outside air temperature and helps maintain the temperature inside the vehicle. Any cover on the front of the vehicle including a snow plow, could cause a false reading in the displayed temperature.

Some vehicles may have the exterior temperature sensor in the passenger side mirror instead of the front grille area.

The climate control system uses the information from these sensors to maintain comfort settings by adjusting the outlet temperature, fan speed, and the air delivery mode. The system may also supply cooler air to the side of the vehicle facing the sun. The recirculation mode will also be used as needed to maintain cool outlet temperatures.

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Starting and Operating

Starting the Engine

eAssist Automatic Engine Stop/Start

A Warning

Exiting the vehicle without first shifting into P (Park) may cause the vehicle to move. You or others may be injured. Because the vehicle has the automatic engine stop/start feature, the vehicle's engine may seem to be shut off; however, once the brake pedal is released, the engine will start up again.

Shift to P (Park) and turn the ignition to LOCK/OFF, before exiting the vehicle.

Vehicles with eAssist have an automatic Stop/Start feature. After the engine is started and has

reached operating temperature, the auto stop feature may cause the engine to turn off when the brakes are applied and the vehicle comes to a complete stop. The vehicle may remain in auto stop for up to two minutes. When the brake is released or the accelerator pedal is applied, the engine will start. The engine will continue to run until the next auto stop.

AUTO STOP on the tachometer signifies that the engine is in auto stop mode. See *Tachometer* \Leftrightarrow 10. When the vehicle is turned off, the tachometer will move to OFF. If the driver door is opened while in auto stop mode, a chime will sound.

To restart the engine during auto stop, release the brake pedal or press the accelerator pedal. The engine starts immediately. The vehicle continues to run until the next stop.

eAssist automatic engine stop/start is enabled during normal driving conditions and when in 4 \uparrow , and is disabled during 4 \downarrow operation.

An indicator light comes on when four-wheel drive is engaged.

2 (Two-Wheel Drive High) : Use this setting for driving on most streets and highways. The front axle is not engaged. This setting provides the best fuel economy.

4 ↓ (Four-Wheel Drive Low) : This setting also engages the front axle and delivers extra torque. Choose 4 ↓ if driving off-road in deep sand, deep mud, or deep snow, and while climbing or descending steep hills. When engaged, keep vehicle speed below 72 km/h (45 mph).

4 ↑ (Four-Wheel Drive High) : Use this setting when extra traction is needed. The front axle engages and helps when driving on snowy or icy roads, when off-roading, or when plowing snow.

The vehicle can be shifted between 2^{\uparrow} and 4^{\uparrow} while the vehicle is moving. In extremely cold weather, it may be necessary to stop or slow the vehicle to shift into 4^{\uparrow} .

eAssist automatic engine stop/start is unavailable when Tow/Haul Mode is active.

There are several conditions that may prevent an auto stop or cause an auto start.

The Engine Will Remain Running When:

- The engine, transmission, or high voltage battery is not warmed up yet.
- The outside temperature is less than -20 °C (-4 °F).
- The shift lever is in P (Park), N (Neutral), R (Reverse), or M (Manual Mode).

- The high voltage battery pack charge is low.
- The hood is not fully closed.
- The malfunction indicator lamp is on.
- High humidity is detected.
- The Tow/Haul Mode is enabled.

The Engine Will Restart When:

- The brake pedal is released.
- The accelerator pedal is applied.
- Shifting out of D (Drive) to any other gear.
- The air conditioning or defrost system needs the compressor to maintain interior comfort. See Dual Automatic Climate Control System ⇔ 12. The warmer it is outside, the shorter the time before the engine is restarted to provide interior cooling. To maximize fuel economy, use the eco air conditioning mode.

- The engine is required to run for either heater or climate control performance. See Dual Automatic Climate Control System \$ 12.
- The high voltage battery pack charge is low and requires recharging.
- Auto stop time is greater than two minutes.
- The hood is opened.
- The driver door is opened.
- The driver seat belt is unbuckled.

Trailer Towing

Do not tow a trailer during break-in. See "New Vehicle Break-In" in the Owner Manual.

\land Warning

The driver can lose control when pulling a trailer if the correct equipment is not used or the vehicle is not driven properly. For example, if the trailer is too heavy or the trailer brakes are inadequate for the load, the vehicle may not stop as expected. The driver and passengers could be seriously injured. The vehicle may also be damaged; the resulting repairs would not be covered by the vehicle warranty. Pull a trailer only if all the steps in this section have been followed. Ask your dealer for advice and information about towing a trailer with the vehicle.

Caution

Pulling a trailer improperly can damage the vehicle and result in costly repairs not covered by the vehicle warranty. To pull a trailer correctly, follow the advice in this section and see your dealer for important information about towing a trailer with the vehicle.

See "Vehicle Load Limits" in the Owner Manual for more information about the vehicle's maximum load capacity.

To identify the trailering capacity of the vehicle, read the information in "Weight of the Trailer" later in this section.

Trailering is different than just driving the vehicle by itself. Trailering means changes in handling, acceleration, braking, durability, and fuel economy. Successful, safe trailering takes correct equipment, and it has to be used properly.

The following information has many time-tested, important trailering tips and safety rules. Many of these are important for your safety and that of your passengers. Read this section carefully before pulling a trailer.

Weight of the Trailer

How heavy can a trailer safely be?

It depends on how the rig is used. Speed, altitude, road grades, outside temperature, and how much the vehicle is used to pull a trailer are all important. It can depend on any special equipment on the vehicle, and the amount of tongue weight the vehicle can carry. See "Weight of the Trailer Tongue" later in this section for more information.

Trailer weight rating (TWR) for pickup models is calculated assuming the tow vehicle has the driver, a front seat passenger, and all required trailering equipment. Weight of additional optional equipment, passengers, and cargo in the tow vehicle must be subtracted from the trailer weight rating. Ask your dealer for trailering information or advice.

For kingpin weight and trailer tongue weight information, see "Weight of the Trailer Tongue" later in this section.

Use the following chart to determine the maximum the trailer can weigh, based upon the vehicle model and options.

Weights listed apply for conventional trailers and gooseneck/fifth-wheel trailers unless otherwise noted.

1500 Series Pickups – SAE J2807 Compliant			
Vehicle	Axle Ratio	Maximum Trailer Weight	GCWR (a)
1500 Series 2WD Crew Cab Standard B	OX		
5.3LV8 eAssist [®]	3.08	2 903 kg (6,400 lb)	5 534 kg (12,200 lb)
5.3LV8 eAssist [®] - Conventional Trailer	3.42	4 218 kg (9,300 lb)	6 895 kg (15,200 lb)
5.3LV8 eAssist [®] - Gooseneck/ Fifth-Wheel Trailer	3.42	3 856 kg (8,500 lb)	6 895 kg (15,200 lb)
1500 Series 2WD Crew Cab Short Box ((b)		
5.3LV8 eAssist [®]	3.08	2 948 kg (6,500 lb)	5 534 kg (12,200 lb)
5.3LV8 eAssist [®]	3.42	4 264 kg (9,400 lb)	6 895 kg (15,200 lb)
1500 Series 4WD Crew Cab Standard B	OX		
5.3LV8 eAssist [®] - Conventional Trailer	3.42	4 128 kg (9,100 lb)	6 895 kg (15,200 lb)
5.3LV8 eAssist [®] - Gooseneck/ Fifth-Wheel Trailer	3.42	3 674 kg (8,100 lb)	6 895 kg (15,200 lb)
1500 Series 4WD Crew Cab Short Box ((b)		
5.3LV8 eAssist [®]	3.42	4 128 kg (9,100 lb)	6 895 kg (15,200 lb)
(a) The Gross Combination Weight Ratir and trailer including any passengers, ca exceeded.	ng (GCWR) is the to rgo, equipment, and	otal allowable weight of the con d conversions. The GCWR for	npletely loaded vehicle the vehicle should not be

(b) This model is neither designed nor intended to tow fifth-wheel or gooseneck trailers.

Ask your dealer for trailering information or advice.

Weight of the Trailer Tongue

The tongue weight load (1) of any trailer is very important because it is also part of the vehicle weight. The Gross Vehicle Weight (GVW) includes the curb weight of the vehicle, any cargo carried in it, and the people who will be riding in the vehicle as well as trailer tongue weight. Vehicle options, equipment, passengers, and cargo in the vehicle reduce the amount of tongue weight the vehicle can carry, which will also reduce the trailer weight the vehicle can tow.



In general, trailer tongue weight (1) should be 10–15% and fifth-wheel or gooseneck kingpin weight should

be 15–25% of the loaded trailer weight (2). Some specific trailer types, such as boat trailers, fall outside of this range. Refer to the trailer owner's manual for the recommended trailer tongue weight. In all cases, do not exceed the maximum loads for the vehicle series and hitch type.

Vehicle Series	Hitch Type	Maximum Tongue Weight
1500	Weight-Carrying	318 kg (700 lb)
1500	Weight-Distributing	544 kg (1,200 lb)

Do not exceed the maximum allowable tongue weight for the vehicle. Choose the shortest hitch extension that will position the hitch ball closest to the vehicle. This will help reduce the effect of trailer tongue weight on the rear axle.

Trailer rating may be limited by the vehicle's ability to carry tongue weight. Tongue or kingpin weight cannot cause the vehicle to exceed the GVWR (Gross Vehicle Weight Rating) or the RGAWR (Rear Gross Axle Weight Rating). See "Total Weight on the Vehicle's Tires" later in this section.

After loading the trailer, weigh the trailer and then the tongue, separately, to see if the weights are proper. If they are not, adjustments might be made by moving some items around in the trailer.

If a cargo carrier is used in the trailer hitch receiver, choose a carrier that positions the load as close to the vehicle as possible. Make sure the total weight, including the carrier, is no more than half of the maximum allowable tongue weight for the vehicle or 227 kg (500 lb), whichever is less.

Total Weight on Your Vehicle's Tires

Be sure the vehicle's tires are inflated to the inflation pressures found on the Certification/Tire label on the center pillar or see "Vehicle Load Limits" in the Owner Manual. Make sure not to exceed the GVWR limit for the vehicle, or the RGAWR, with the tow vehicle and trailer fully loaded for the trip including the weight of the trailer tongue. If using a weight-distributing hitch, make sure not to exceed the RGAWR before applying the weight distribution spring bars.

Weight of the Trailering Combination

It is important that the combination of the tow vehicle and trailer does not exceed any of its weight ratings — GCWR, GVWR, RGAWR, Trailer Weight Rating, or Tongue Weight. The only way to be sure it is not exceeding any of these ratings is to weigh the tow vehicle and trailer combination, fully loaded for the trip, getting individual weights for each of these items.

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General Information

California Proposition 65 Warning

\land Warning

Most motor vehicles, including this one, as well as many of its service parts and fluids, contain and/or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Engine exhaust, many parts and systems, many fluids, and some component wear by-products contain and/or emit these chemicals. For more information go to www.P65Warnings.ca.gov/ passenger-vehicle.

See Battery - North America ⇔ 31 and Jump Starting - North America (with or without eAssist) ⇔ 36 or Jump Starting - North America (On-Board with eAssist Only) ⇔ 35 and the back cover.

Vehicle Checks

Engine Compartment Overview



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- 1. Engine Air Cleaner/Filter.
- 2. Battery.
- 3. Power Electronics Module.
- 4. High Voltage Cables (Orange Color).
- 5. Battery Positive (+) Terminal (Under Black Cover).
- 6. Remote Negative (-) Location (Out of View).
- 7. Coolant Surge Tank and Pressure Cap.
- 8. Engine Cooling Fans (Out of View).
- 9. Engine Oil Fill Cap.
- 10. Engine Oil Dipstick.
- 11. Brake Fluid Reservoir.
- 12. Windshield Washer Fluid Reservoir.
- 13. Engine Compartment Fuse Block.

Engine Air Cleaner/Filter

See "Engine Air Cleaner/Filter" in the owner's manual.

Cooling System

The cooling system allows the engine to maintain the correct working temperature.



- 1. Coolant Surge Tank Pressure Cap
- 2. Coolant Surge Tank
- 3. Engine Cooling Fans (Out of View)



An underhood electric fan can start up even when the engine is not running and can cause injury. Keep hands, clothing, and tools away from any underhood electric fan.

\land Warning

Do not touch heater or radiator hoses, or other engine parts. They can be very hot and can burn you. Do not run the engine if there is a leak; all coolant could leak out. That could cause an engine fire and can burn you. Fix any leak before driving the vehicle.

Engine Coolant

The cooling system in the vehicle is filled with DEX-COOL engine coolant. This coolant is designed to remain in the vehicle for 5 years or 240 000 km (150,000 mi), whichever occurs first.

The following explains the cooling system and how to check and add coolant when it is low. If there is a problem with engine overheating, see *Engine Overheating* \Rightarrow 29.

What to Use

\land Warning

Plain water, or other liquids such as alcohol, can boil before the proper coolant mixture will. With plain water or the wrong mixture, the engine could get too hot but there would not be an overheat warning. The engine could catch fire and you or others could be burned. Use a 50/50 mixture of clean, drinkable water and DEX-COOL coolant. This mixture:

- Gives freezing protection down to -37 °C (-34 °F), outside temperature.
- Gives boiling protection up to 129 °C (265 °F), engine temperature.
- Protects against rust and corrosion.
- Will not damage aluminum parts.
- Helps keep the proper engine temperature.

Caution

Do not use anything other than a mix of DEX-COOL coolant that meets GM Standard GMW3420 and clean, drinkable water. Anything else can cause damage to the engine cooling system and the vehicle, which would not be covered by the vehicle warranty. Never dispose of engine coolant by putting it in the trash, or by pouring it on the ground, or into sewers, streams, or bodies of water. Have the coolant changed by an authorized service center, familiar with legal requirements regarding used coolant disposal. This will help protect the environment and your health.

Checking Coolant

The coolant surge tank is located in the engine compartment in front of the radiator. See *Engine Compartment Overview* ⇔ 25.

The vehicle must be on a level surface when checking the coolant level.



Check to see if coolant is visible in the coolant surge tank. If the coolant inside the coolant surge tank is boiling, wait until it cools down. The coolant level should be at or above the indicated mark. If it is not, there may be a leak in the cooling system.

If coolant is visible but the coolant level is not at or above the indicated mark, see "How to Add Coolant to the Coolant Surge Tank," following. How to Add Coolant to the Coolant Surge Tank

🗥 Warning

Spilling coolant on hot engine parts can burn you. Coolant contains ethylene glycol and it will burn if the engine parts are hot enough.

A Warning

Plain water, or other liquids such as alcohol, can boil before the proper coolant mixture will. With plain water or the wrong mixture, the engine could get too hot but there would not be an overheat warning. The engine could catch fire and you or others could be burned.

A Warning

Steam and scalding liquids from a hot cooling system are under pressure. Turning the pressure cap, even a little, can cause them to come out at high speed and you could be burned. Never turn the cap when the cooling system, including the pressure cap, is hot. Wait for the cooling system and pressure cap to cool.

Caution

Failure to follow the specific coolant fill procedure could cause the engine to overheat and could cause system damage. If coolant is not visible in the surge tank, contact your dealer.

If no coolant is visible in the surge tank, add coolant.



 Remove the coolant surge tank pressure cap when the cooling system, including the coolant surge tank pressure cap and upper radiator hose, is no longer hot.

Turn the pressure cap slowly counterclockwise about one full turn. If a hiss is heard, wait for that to stop. A hiss means there is still some pressure left.

2. Keep turning the pressure cap slowly, and remove it.



- 3. Fill the coolant surge tank with the proper mixture to the indicated mark.
- With the coolant surge tank pressure cap off, start the engine and let it run until the engine coolant temperature gauge indicates approximately 90 °C (195 °F).

By this time, the coolant level inside the coolant surge tank may be lower. If the level is lower, add more of the proper mixture to the coolant surge tank until the level reaches the indicated mark.

- 5. Replace the pressure cap tightly.
- 6. Verify coolant level after the engine is shut off and the coolant is cold. If necessary, repeat coolant fill procedure Steps 1-6.

Caution

If the pressure cap is not tightly installed, coolant loss and engine damage may occur. Be sure the cap is properly and tightly secured.

Engine Overheating

There is an engine coolant temperature gauge on the instrument cluster. See the owner's manual.

30 Vehicle Care

If Steam Is Coming from the Engine Compartment

▲ Warning

Steam and scalding liquids from a hot cooling system are under pressure. Turning the pressure cap, even a little, can cause them to come out at high speed and you could be burned. Never turn the cap when the cooling system, including the pressure cap, is hot. Wait for the cooling system and pressure cap to cool.

Caution

Do not run the engine if there is a leak in the engine cooling system. This can cause a loss of all coolant and can damage the system and vehicle. Have any leaks fixed right away.

If No Steam Is Coming from the Engine Compartment

A Driver Information Center (DIC) message, along with a low coolant condition, can indicate a serious problem.

If there is an engine overheat warning and the vehicle does not have a low coolant condition, and no steam is heard or seen, the problem may not be too serious. Sometimes the engine can get a little too hot when the vehicle:

- Climbs a long hill on a hot day.
- Stops after high-speed driving.
- Idles for long periods in traffic.
- Tows a trailer. See "Driving on Grades" under "Driving Characteristics and Towing Tips" in the owner's manual.

If the DIC message comes on with no sign of steam, try this for a minute or so:

 In heavy traffic, let the engine idle in N (Neutral) while stopped. If it is safe to do so, pull off the road, shift to P (Park) or N (Neutral), and let the engine idle.

2. Turn on the heater to full hot at the highest fan speed and open the window as necessary.

If the vehicle no longer has the overheat warning, the vehicle can be driven. Just to be safe, drive slower for about 10 minutes. If the warning does not come back on, drive normally and have the cooling system checked for proper fill and function.

If the warning continues, pull over, stop, and park the vehicle right away.

If there is still no sign of steam and the vehicle is equipped with an engine driven cooling fan, push down the accelerator until the engine speed is about twice as fast as normal idle speed for at least five minutes while the vehicle is parked. If the warning is still there, turn off the engine and get everyone out of the vehicle until it cools down. The decision may be made not to lift the hood, but to get service help right away.

Battery - North America

12-Volt Battery

The original equipment battery is maintenance free. Do not remove the cap and do not add fluid.

This vehicle has a standard 12-volt battery. Refer to the replacement number on the original battery label when a new standard 12-volt battery is needed.

A Warning

WARNING: Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. WASH HANDS AFTER HANDLING. For more information go to www.P65Warnings.ca.gov/ passenger-vehicle.

See California Proposition 65 Warning ⇔ 24 and the back cover.

High Voltage Battery

eAssist vehicles also have a high voltage battery. Only a trained service technician with the proper knowledge and tools should inspect, test, or replace the high voltage battery. See your dealer if the high voltage battery needs service. The dealer has information on how to recycle the high voltage battery. There is also information available at http://www.recyclemybattery.com.

The eAssist system high voltage battery is cooled with air drawn from the vehicle interior. The cold air intake for the high voltage battery is on the sides of the center console. The exhaust for warm air is at the rear of the console. Do not cover the intake or exhaust.

Bulb Replacement

Headlamps, Front Turn Signal and Parking Lamps

Base Headlamp Assembly

For replacement of the turn signal lamp bulb on an eAssist vehicle, contact your dealer.

Electrical System

High Voltage Devices and Wiring

\land Warning

Exposure to high voltage can cause shock, burns, and even death. The high voltage components in the vehicle can only be serviced by technicians with special training.

High voltage components are identified by labels. Do not remove, open, take apart, or modify these components. High voltage cable or wiring has orange covering or labels. Do not probe, tamper with, cut, or modify high voltage cable or wiring.

Engine Compartment Fuse Block

If the vehicle has a diesel engine, see the Duramax diesel supplement.

The engine compartment fuse block is in the engine compartment, on the driver side of the vehicle.



Lift the cover to access the fuse block.

Caution

Spilling liquid on any electrical component on the vehicle may damage it. Always keep the covers on any electrical component.

A fuse puller is available in the left instrument panel fuse block.

The vehicle may not be equipped with all of the fuses, relays, and features shown.



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Fuses	Usage
4	Instrument panel BEC 1
5	Passenger motorized seat belt
6	4WD transfer case electronic control
7	Electric park brake
8	Instrument panel BEC 2
9	Driver motorized seat belt
10	Rear window defogger
11	Starter
12	Cooling fan 1
13	Cooling fan 2
14	Left trailer stop/Turn lamps
15	Trailer parking lamps
16	Trailer reverse lamps
17	Right trailer stop/Turn lamps
18	Fuel pump
19	Integrated chassis control module

Fuses	Usage
20	Electronic suspension control module
21	Fuel pump power module
22	Upfitter 1
23	Upfitter 2
24	Front wiper
25	Antilock brake system valve
26	Upfitter 2
27	Upfitter 3
28	Right parking lamps
29	Left parking lamps
30	Upfitter 3
31	Upfitter 4
32	Upfitter 4
33	Reverse lamps
34	Engine control module/ Ignition
35	Air conditioning clutch
36	Heated mirrors

Fuses	Usage								
37	Upfitter 1								
38	Center high-mounted stop lamp								
39	Miscellaneous/Ignition								
40	Transmission/Ignition								
41	Fuel pump 2								
42	Cooling fan clutch								
43	Engine								
44	Fuel injectors A-odd								
45	Fuel injectors B-even								
46	O2 Sensor B								
47	Throttle control								
48	Horn								
49	Fog lamps								
50	O2 Sensor A								
51	Engine control module								
52	Interior heater								
53	Accessory power module/TPM pump								
54	Front washer								

Fuses	Usage
55	Air conditioning/Battery regulated voltage control
56	Air conditioning module/ Battery pack
57	Transmission control module/Engine control module
58	Headlamps
74	Electric running boards (if equipped)
76	Fuel pump prime / MGU motor
77	Cabin pump motor
79	Vacuum pump
Relay	s Usage
59	Fuel pump
60	Upfitter 2

- 61 Upfitter 3
- 62 Upfitter 4
- 63 Trailer parking lamps

Relays	Usage
64	Run/Crank
65	Upfitter 1
66	Fuel pump 2
67	Air conditioning control
68	Starter
69	Rear window defogger
70	Engine control module
71	Vacuum pump/ Cooling fan clutch
72	CKT 95
73	CKT 92
75	Fuel pump prime/ MGU motor
78	Vacuum pump switch

Jump Starting

Jump Starting - North America (On-Board with eAssist Only)

If the vehicle fails to crank, it may be jump started by using the eAssist battery to charge the 12-volt battery. Use the following procedure to activate the on-board jump start using the Driver Information Center (DIC) controls.



DIC Buttons

36 Vehicle Care

Turn the ignition on and proceed as follows:

- Press < then scroll ∧ or ∨ until the Settings menu displays.
- 2. Press ✓ to enter the Settings menu.
- Select Options, then scroll ∧ or ∨ until Jump Start displays.
- Press ✓ to activate the jump start.
- The system will then ask for confirmation. If Yes is selected, the jump start will begin and the display will show "JUMP START ACTIVE WAIT TO START".
- When the jump start is complete, the display will show "JUMP START COMPLETE, ATTEMPT START or JUMP START DISABLED".

If the vehicle is started, the on-board jump start function will be automatically disabled. If the vehicle cranks but does not start, the procedure may be repeated again. If the vehicle start is still unsuccessful, the jump start can be attempted using the following jump starting procedure under "Jump Starting (with or without eAssist)." On-board jump starting may be unavailable due to the 12-volt battery charge level, the eAssist battery charge level, power capability, or an issue with the eAssist system. In these cases, the display will not be available because of the power issue, or the DIC will display "JUMP START DISABLED SEE OWNERS MANUAL".

Jump Starting - North America (with or without eAssist)

For more information about the vehicle battery, see *Battery* - *North America* \Rightarrow 31.

If the vehicle's battery (or batteries) has run down, you may want to use another vehicle and some jumper cables to start your vehicle. Be sure to use the following steps to do it safely.

\land Warning

WARNING: Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. WASH HANDS AFTER HANDLING. For more information go to www.P65Warnings.ca.gov/ passenger-vehicle.

See California Proposition 65 Warning ⇔ 24 and the back cover.

Warning

Batteries can hurt you. They can be dangerous because:

- They contain acid that can burn you.
- They contain gas that can explode or ignite.
- They contain enough electricity to burn you.

If you do not follow these steps exactly, some or all of these things can hurt you.

Caution

Ignoring these steps could result in costly damage to the vehicle that would not be covered by the vehicle warranty. Trying to start the vehicle by pushing or pulling it will not work, and it could damage the vehicle. Check the other vehicle. It must have a 12-volt battery with a negative ground system.

Caution

If the other vehicle does not have a 12-volt system with a negative ground, both vehicles can be damaged. Only use a vehicle that has a 12-volt system with a negative ground for jump starting.

2. If you have a vehicle with two batteries, you should know before you begin that, especially in cold weather, you may not be able to get enough power from a single battery in another vehicle to start your engine. If your vehicle has more than one battery, using the battery that is closer to the starter will reduce electrical resistance. This is located on the passenger side, in the rear of the engine compartment. 3. Get the vehicles close enough so the jumper cables can reach, but be sure the vehicles are not touching each other. If they are, it could cause an unwanted ground connection. You would not be able to start your vehicle, and the bad grounding could damage the electrical systems.

> To avoid the possibility of the vehicles rolling, set the parking brake firmly on both vehicles involved in the jump start procedure. Put the automatic transmission in P (Park) or a manual transmission in Neutral before setting the parking brake. If you have a four-wheel-drive vehicle, be sure the transfer case is in a drive gear, not in N (Neutral).

Caution

If any accessories are left on or plugged in during the jump starting procedure, they could be

(Continued)

Caution (Continued)

damaged. The repairs would not be covered by the vehicle warranty. Whenever possible, turn off or unplug all accessories on either vehicle when jump starting.

- 4. Turn the ignition off on both vehicles. Unplug unnecessary accessories plugged into the accessory power outlets. Turn off the radio and all the lamps that are not needed. This will avoid sparks and help save both batteries. And it could save the radio!
- Open the hood on the other vehicle and locate the positive (+) and negative (-) terminal locations on that vehicle.

The positive (+) terminal is under a red plastic cover at the positive battery post. To uncover the positive (+) terminal, open the red plastic cover. For more information on the location of the remote positive (+) and remote negative (−) terminals, see *Engine Compartment Overview* ⇔ 25.

A Warning

An electric fan can start up even when the engine is not running and can injure you. Keep hands, clothing, and tools away from any underhood electric fan.

\land Warning

Using a match near a battery can cause battery gas to explode. People have been hurt doing this, and some have been blinded. Use a flashlight if you need more light.

Battery fluid contains acid that can burn you. Do not get it on you. If you accidentally get it in

(Continued)

Warning (Continued)

your eyes or on your skin, flush the place with water and get medical help immediately.

A Warning

Fans or other moving engine parts can injure you badly. Keep your hands away from moving parts once the engine is running.

 Check that the jumper cables do not have loose or missing insulation. If they do, you could get a shock. The vehicles could be damaged too.

> Before you connect the cables, here are some basic things you should know. Positive (+) will go to positive (+) or to a remote positive (+) terminal if the vehicle has one. Negative (-) will go to a heavy, unpainted

metal engine part or to a remote negative (-) terminal or location if the vehicle has one.

Do not connect positive (+) to negative (-) or you will get a short that would damage the battery and maybe other parts too. And do not connect the negative (-) cable to the negative (-) terminal on the dead battery because this can cause sparks.



 Connect the red positive (+) cable to the positive (+) terminal of the vehicle with the dead battery.

- Do not let the other end touch metal. Connect it to the positive (+) terminal of the good battery. Use a remote positive (+) terminal if the vehicle has one.
- Connect the black negative (-) cable to the negative (-) terminal of the good battery. Use a remote negative (-) terminal if the vehicle has one.

Do not let the other end touch anything until the next step.



- Connect the other end of the negative (-) cable to the remote negative (-) location behind the resonator on the passenger side, on the vehicle with the dead battery.
- 11. Start the vehicle with the good battery and run the engine for a while.
- Try to start the vehicle that had the dead battery. If it will not start after a few tries, it probably needs service.

Caution

If the jumper cables are connected or removed in the wrong order, electrical shorting may occur and damage the vehicle. The repairs would not be covered by the vehicle warranty. Always connect and remove the jumper cables in the correct order, making sure that the cables do not touch each other or other metal.

40 Vehicle Care

Jumper Cable Removal

Reverse the sequence exactly when removing the jumper cables.

After starting the disabled vehicle and removing the jumper cables, allow it to idle for several minutes.

Appearance Care

Exterior Care

Steering, Suspension, and Chassis Components

Visually inspect steering, suspension, and chassis components for damaged, loose, or missing parts or signs of wear at least once a year.

Inspect power steering for proper attachment, connections, leaks, cracks, chafing, etc.

Visually check constant velocity joint boots and axle seals for leaks.

1500 Series vehicles, at least every other oil change lubricate the outer tie rod ends.

Caution

Lubrication of applicable steering/ suspension points should not be done unless the temperature is -12 °C (10 °F) or higher, or damage could result.

Service and Maintenance

Maintenance Schedule

Maintenance Schedule 42

Maintenance Schedule

Maintenance Schedule Additional Required Services - Normal	12 000 km/7,500 mi	24000 km/15,000 mi	36 000 km/22,500 mi	48 000 km/30,000 mi	60 000 km/37,500 mi	72000 km/45,000 mi	84 000 km/52,500 mi	96 000 km/60,000 mi	108 000 km/67,500 mi	120 000 km/75,000 mi	132 000 km/82,500 mi	144 000 km/90,000 mi	156 000 km/97,500 mi	168 000 km/105,000 mi	180 000 km/112,500 mi	192 000 km/120,000 mi	204 000 km/127,500 mi	216 000 km/135,000 mi	228 000 km/142,500 mi	240 000 km/150,000 mi
Vehicles with eAssist: Visually inspect accessory drive belts. (1)																				\checkmark

Footnotes — Maintenance Schedule Additional Required Services - Normal

(1) Or every 10 years, whichever comes first. Inspect for fraying, excessive cracking, or damage; replace, if needed.

Maintenance Schedule Additional Required Services - Severe	12000 km/7,500 mi	24 000 km/15,000 mi	36 000 km/22,500 mi	48 000 km/30,000 mi	60 000 km/37,500 mi	72 000 km/45,000 mi	84 000 km/52,500 mi	96 000 km/60,000 mi	108 000 km/67,500 mi	120 000 km/75,000 mi	132 000 km/82,500 mi	144 000 km/90,000 mi	156 000 km/97,500 mi	168 000 km/105,000 mi	180 000 km/112,500 mi	192 000 km/120,000 mi	204 000 km/127,500 mi	216 000 km/135,000 mi	228 000 km/142,500 mi	240 000 km/150,000 mi
Vehicles with eAssist: Visually inspect accessory drive belts. (1)													✓							

Footnotes — Maintenance Schedule Additional Required Services - Severe

(1) Or every 10 years, whichever comes first. Inspect for fraying, excessive cracking, or damage; replace, if needed.

Technical Data

Vehicle Data

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Vehicle Data

Capacities and Specifications

Engine Specifications

Engine	VIN Code	Spark Plug Gap
5.3L V8 (L8B)	R	0.95–1.10 mm (0.037–0.043 in)

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