



# OWNER'S MANUAL





Thank you for purchasing our Sierra Low Speed Vehicle and welcome to the family. Be sure to visit [www.sierralsv.com](http://www.sierralsv.com) to register your warranty and claim your complimentary gift box.

Your satisfaction is our top priority and we're confident that the Sierra LSV will exceed your expectations. But first, we ask you to take the time to thoroughly read through the operational functions, performance specs, and necessary maintenance guidelines specified within this manual to ensure your vehicles peak performance.

Thank you once again for choosing Sierra LSV. We're excited to be a part of your adventures and cant wait to see the memories you create with your new vehicle.

Sincerely,

**Scott Blanton** - CEO

Sierra LSV  
Thomasville, GA

*Check us out on instagram @sierralsv and be sure to share your new vehicle with us.*

Serial Number: \_\_\_\_\_

The serial number of each vehicle is printed on a barcode decal mounted either on the front driver side frame or in the battery compartment. REGISTER CART/WARRANTY AT [WWW.SIERRALSV.COM](http://WWW.SIERRALSV.COM).



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# IMPORTANT

- Read Owner’s Manual before operating the vehicle.
- Before servicing vehicle, read complete section(s) and any referenced information that may be relevant to the service or repair to be performed. This Manual is for all Sierra LSV Models.

QUICK SPEC GUIDE	AX1 (2x2)	AX2 (2x2)	AX3 (6 Pass)	AX4 (4 Forward)
MOTOR	5kw AC brushless	5kw AC brushless	5kw AC brushless	5kw AC brushless
BRAKE	4 Wheel Hydraulic Disc (Motor Brake for Park)	4 Wheel Hydraulic Disc (Motor Brake for Park)	4 Wheel Hydraulic Disc (Motor Brake for Park)	4 Wheel Hydraulic Disc (Motor Brake for Park)
BATTERY	Lithium 105Ah	Lithium 105Ah	Parallel Lithium 105Ah	Lithium 105Ah
CHARGE TIME	7 - 8	7 - 8	9 -10	7 - 8
LENGTH	9' - 8"	9' - 8"	12' - 9"	8 - 10"
WIDTH	49.5"	49.5"	49.5"	49.5"
MAX HEIGHT	80.3"	80.3"	80.3"	78.5"
* WEIGHT (No Occupants)	1,036 lbs <i>Lithium 105Ah</i>	1,025 lbs <i>Lithium 105Ah</i>	1,334 lbs <i>2x Lithium 105Ah</i>	1,124 lbs <i>Lithium 105Ah</i>

\*Depends on accessories added. This is standard cart with 4 and 6 passenger setup.

## Complete Spec Table can be found on pages 40-41

**NOTE:** This manual represents the most current information at the time of publication. Sierra LSV is continually working to further improve its vehicles and other products. These improvements may affect servicing procedures.

Any modification and/or significant change in specifications or procedures will be forwarded to all Sierra LSV dealers and will, when applicable, appear in future editions of this manual. All updated manuals will be on [www.sierralsv.com/resources](http://www.sierralsv.com/resources).

Sierra LSV reserves the right to change Specifications and designs at any time without notice and without the obligation of making changes to units previously sold.

Please obey (Danger, Warning, Caution, and Notice) wording in this manual, as well as obey all instructions, safety precautions, and safety decals on the vehicle. Replace missing or damaged safety decals immediately to prevent possible property damage or personal injury, or death. Understand and follow all laws and regulations for operating the vehicle in your area.

# **WARNING**

**ELECTRICAL SHORTS CAN CAUSE A FIRE, ELECTRICAL SHOCK, SERIOUS PERSONAL INJURY, OR DEATH. PREVENT CONTACT BETWEEN POSITIVE VOLTAGE AND THE GROUND CIRCUIT. USE INSULATED TOOLS.**

**TO HELP PREVENT BEING HIT, DO NOT STAND IN FRONT OF OR BEHIND THE VEHICLE.**

**ONLY TWO PERSONS PER BENCH SEAT. ONLY RIDE ON THE BENCH SEAT. DO NOT LET PEOPLE RIDE ON ANY PART OF THE VEHICLE THAT IS NOT EQUIPPED WITH A SEAT AND SEAT BELT. DO NOT LET A PASSENGER HOLD A CHILD IN HIS OR HER LAP WHILE THE VEHICLE MOVES.**





**ONLY TRAINED TECHNICIANS SHOULD SERVICE OR REPAIR THE VEHICLE. ANYONE DOING EVEN SIMPLE REPAIRS OR SERVICE SHOULD HAVE KNOWLEDGE AND EXPERIENCE IN ELECTRICAL AND MECHANICAL REPAIR. THE APPROPRIATE INSTRUCTIONS MUST BE USED WHEN PERFORMING MAINTENANCE, SERVICE, OR ACCESSORY INSTALLATION**

- Always reduce speed when operating in rough terrain or conditions.
- Always use the brakes to control speed on steep slopes/hills.
- Always maintain adequate distance between vehicles around you.
- Always reduce speed in wet/Icy roads or areas.
- Always use caution entering sharp or blind turns.
- Always use extreme caution where pedestrians are present .

# SAFETY DECALS

The following pages contain safety decal and feature identification information. For detailed information on specific vehicle features, read the appropriate section in this manual. There is also a warning notification vehicle on your LCD display at start up.



This Warning is located under the LCD Display

  **WARNING**  

**Failure to follow these instructions can result in severe personal injury or death.**

- Before operating this vehicle, read the operating instructions within the Owner’s Manual.
- Only persons with a valid driver’s license can operate this vehicle, as per state regulations.
- Operate from the Driver’s side only and keep your entire body inside the vehicle when moving.
- Max payload is 800 lbs (363kg) and no more than two (2) persons per seat bench.
- Reduce speed in turns and only drive straight up and down slopes.
- Never operate under the influence of drugs or alcohol.
- Remain seated and hold on while the vehicle is in motion.
- Do NOT leave children unattended in the vehicle.
- Switch cart into TOW mode before towing.
- NOT FOR HIGHWAY USE.

This Rollover Warning is located under the Steering Column

 **ROLLOVER WARNING** 

**This vehicle is tailored for improved off-road performance, offering superior ground clearance compared to its class counterparts. Exercise caution and avoid abrupt maneuvers, such as sharp turns, even on level terrain, as they may result in loss of control, potential rollovers, and pose a risk of severe injury or fatality.**

**Do NOT navigate slopes steeper than 18% grade.**

*Further information can be found in your Owner’s Manual included with this vehicle.*

## PRACTICE SAFETY



Safety signs like you see above may at first seem shocking, but their impact is mild compared with the reality of severe personal injury.

Your safety and satisfaction are of the utmost importance to us. That is why before operating the vehicle, we urge you to review the information in this manual. Understand and become familiar with the DANGER, WARNING, and CAUTION statements and procedures it contains, along with the safety decals that are affected to your vehicle.

Take time to understand the language of safety. It is a language that can save your life.





**IMPORTANT:** When turning the LCD display on by the key-switch this notice will appear. Please read through and acknowledge the details called out in this message before operating the vehicle.

## RENTALS AND/OR FLEETS



If the vehicle is to be rented or is part of a fleet, we strongly recommend that a safety supervisor be appointed. One of the main concerns of this supervisor should be the safe operation of the vehicle and vehicle functions. This should include at a minimum:

- Where the vehicles should be driven.
- Ensuring that proper warnings of driving hazards are displayed and visible.
- Who should and who should not drive vehicles.
- Instructing first time drivers.
- Maintaining vehicles in a safe driving condition.
- How various rules are to be enforced.

The safety supervisor should include all these items and such other items the supervisor feels necessary or appropriate.





# WARNING





**Failure to follow these instructions can result in severe personal injury or death.**

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- Only persons with a valid driver’s license can operate this vehicle, as per state regulations.
- Operate from the Driver’s side only and keep your entire body inside the vehicle when moving.
- Max payload is 800 lbs (363kg) and no more than two (2) persons per seat bench.
- Reduce speed in turns and only drive straight up and down slopes.
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## ROLLOVER WARNING



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**Do NOT navigate slopes steeper than 18% grade.**

*Further information can be found in your Owner’s Manual included with this vehicle.*



## SAFETY DETAILS

### **⚠️ WARNING**

- This owner's manual should be read completely before attempting to drive or service the vehicle. Failure to follow the instructions in this manual could result in property damage, severe personal injury, or death.

*It is important to note that some vital statements throughout this manual and on the decals affixed to the vehicle are preceded by the words DANGER, WARNING, or CAUTION. For your protection, we recommend that you take special notice of these safety precautions. Safety precautions are essential and must be followed.*

*Throughout this manual and on the operation and safety decals affixed to the vehicle, the words "LSV" and "Low Speed Vehicle" are used interchangeably. "Vehicle" is defined in the Notice of this manual and no other representation is stated or implied.*

*If any of the operation or safety decals on the vehicle become damaged, have been removed or cannot be easily read, they should be replaced immediately to avoid possible property damage, personal injury, or death. Contact your distributor/dealer.*

### **⚠️ DANGER**

- A DANGER indicates an immediate hazard that will result in severe personal injury or death.

### **⚠️ WARNING**

- A WARNING indicates an immediate hazard that could result in severe personal injury or death.

### **⚠️ CAUTION**

- A CAUTION with the safety alert symbol indicates a hazard or unsafe practice that could result in minor personal injury.

### **CAUTION**

- A CAUTION without the safety alert symbol indicates a potentially hazardous situation that could result in property damage.

# GENERAL WARNINGS

The following safety statements must be heeded whenever the vehicle is being operated, repaired, or serviced. Vehicle feature identification information is also included. See Safety Decal and Feature identification on page 4. Other specific safety statements appear throughout this manual and on the vehicle.

## **⚠ DANGER**

- Battery – Explosive gases! Do not smoke. Keep sparks away from the vehicle and service area. Ventilate when charging or operating vehicle in an enclosed area.

- The vehicle will not provide protection from lightning, flying objects, or other storm-related hazards. If caught in a storm while driving a SIERRA LSV, exit the vehicle and seek shelter in accordance with applicable safety guidelines for your location.

## **⚠ WARNING**

- Follow the procedures exactly as stated in this manual, and heed all DANGER, WARNING, and CAUTION statements in this manual as well as those on the vehicle and battery charger.

- Children requiring a child safety seat must not ride in vehicle.

- Do not leave children unattended in vehicle.

- Prior to leaving the vehicle unattended or servicing the vehicle, set the park brake, place the (D) Drive, (R) Reverse switch in the (N) Neutral position, turn the key switch to the OFF position, and remove the key.

- Check the wheels when servicing the vehicle.

- Improper use of the vehicle or failure to properly maintain it could result in decreased vehicle performance, severe personal injury, or death.

- Any modification or change to the vehicle that affects the electrical system, stability or handling of the vehicle, or increases maximum vehicle speed beyond factory specifications, could result in severe personal injury or death.

- Check the vehicle for proper location of all vehicle safety and operation decals and make sure they are in place and are easy to read. See Safety Decal and Feature identification on page 4.

- Only trained technicians should service or repair the vehicle or battery. Anyone doing even simple repairs or service should have knowledge and experience in electrical and mechanical repair. The appropriate instructions must be used when performing maintenance, service, or accessory installation.

- Wear safety glasses or approved eye protection when servicing the vehicle or battery.

- Do not wear loose clothing or jewelry such as rings, watches, chains, etc., when servicing the vehicle or battery.

- Use insulated tools when working near battery or electrical connections. Use extreme caution to avoid shorting of components or wiring.

**WARNING CONTINUED ON NEXT PAGE**

## **⚠️ WARNING**

• To avoid unintentionally starting an electric vehicle, place vehicle in tow mode, disconnect the battery, and discharge the controller.

### **DISABLING THE VEHICLE**

1. Make sure RUN/TOW switch is set to TOW (located in Battery Box, see Image A).
2. Turn the key switch OFF and remove the key.
3. Place the (D) Drive, (R) Reverse control in the (N) Neutral position.
4. In addition, chock the wheels if servicing or repairing the vehicle.



Image A

### **DISCONNECTING THE BATTERY**

1. Turn the key switch to the OFF position.
2. Place Tow/Run switch in the TOW position before disconnecting or connecting the battery. Failure to heed this warning could result in a battery explosion or severe personal injury.
3. Turn battery power OFF by pressing button shown (Image B). LED Light will no longer appear.
4. Disconnect the battery, negative (-) cable first (See image C below).
5. After disconnecting the battery, wait 90 seconds for the controller capacitors to discharge.



Image B

### **CONNECTING THE BATTERY**

1. Ensure the Tow/Run switch is in the TOW position.
2. Connect the battery cables, positive (+) cable first.
3. Tighten battery terminals to **110 in-lb** (12.4 N-m).
4. Turn battery power ON by pressing button shown below. LED light will appear as shown



Battery Powered ON/OFF Button

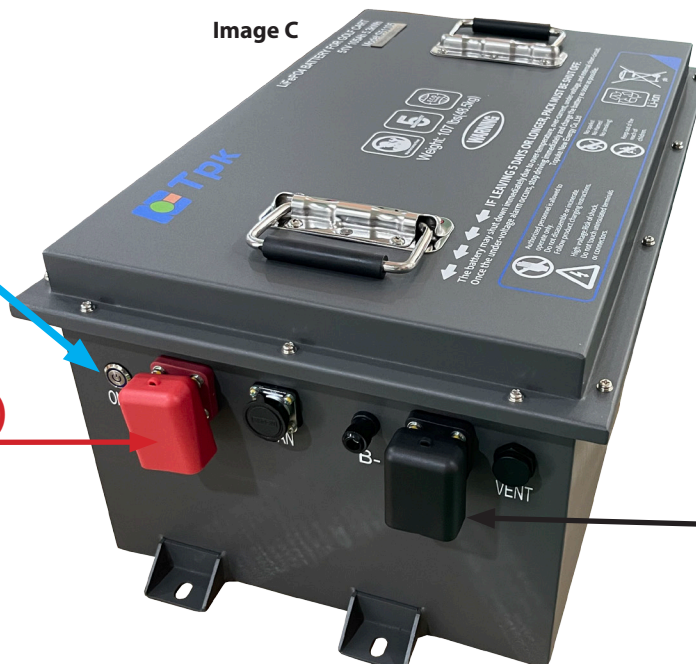


Image C

**Positive (+)**

**Negative (-)**

## LITHIUM BATTERY RECYCLING

- Only take a lithium battery to an approved recycle center. Check online for a location near you.

## INTERNATIONAL SAFETY SYMBOLS ON BATTERIES

Anyone using, repairing, or servicing the vehicle must understand and heed the safety symbols on the vehicle battery or batteries.



## MODEL IDENTIFICATION

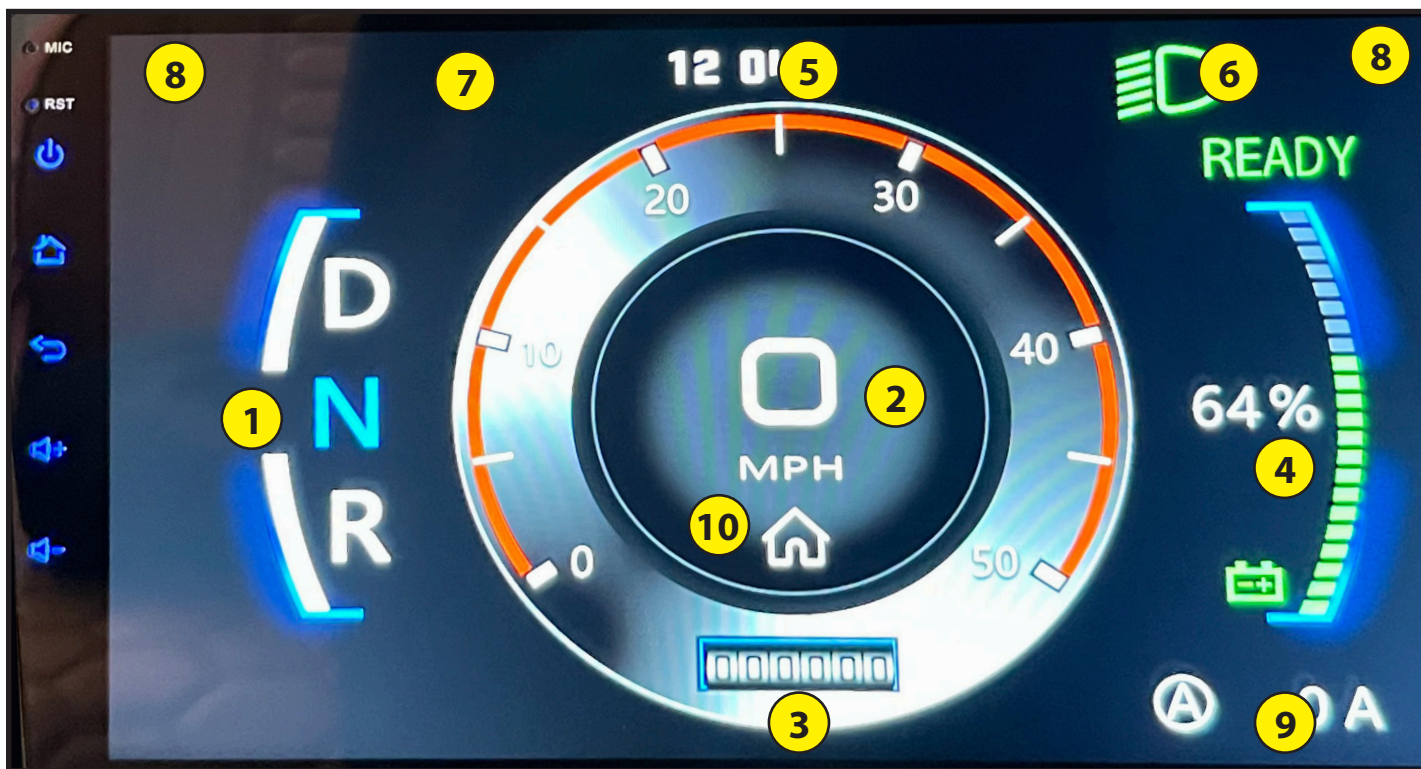
The serial number of each vehicle is printed on a decal mounted either on the driver side front frame or in the battery compartment.



## DASH AND START-UP PROCEDURE

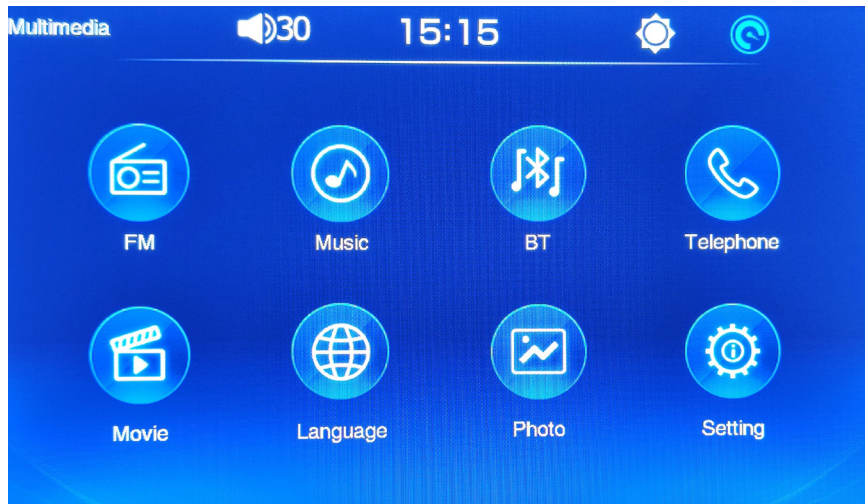


1	KEY	Two Position (Off/On)	Optional	Bluetooth Key Fob
2	DNR	(D) Drive, (N) Neutral, (R) Reverse	Note	Cart must be placed into (N) before key is turned on to operate.
3	HAZARD SWITCH	Press to engage hazard lights	Note	All four turn signals flash
4	USB	Additional Phone Charging	Other	Phone Call Mic and LCD Diagnostic.
5	PHONE CHARGE PAD	2 amp wireless charger	Note	Some phone cases may obstruct charging
6	LCD DISPLAY	Speedometer, Battery gauge	More	See next page for full features

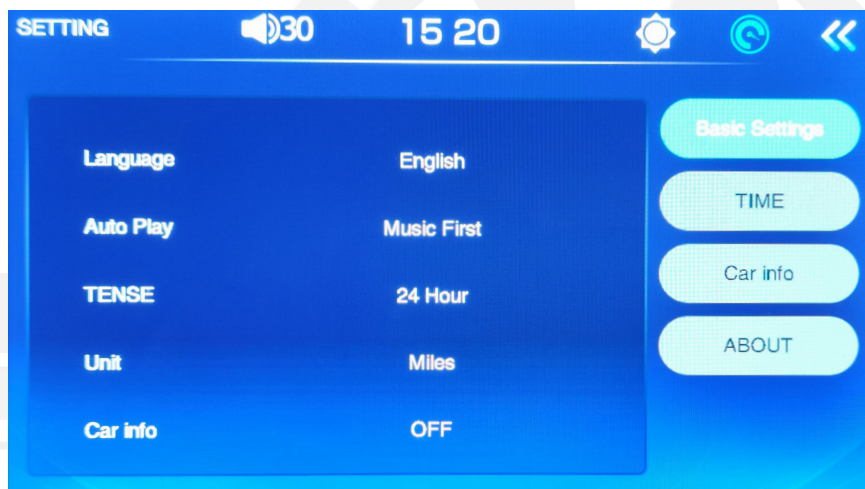


**SPEEDOMETER**

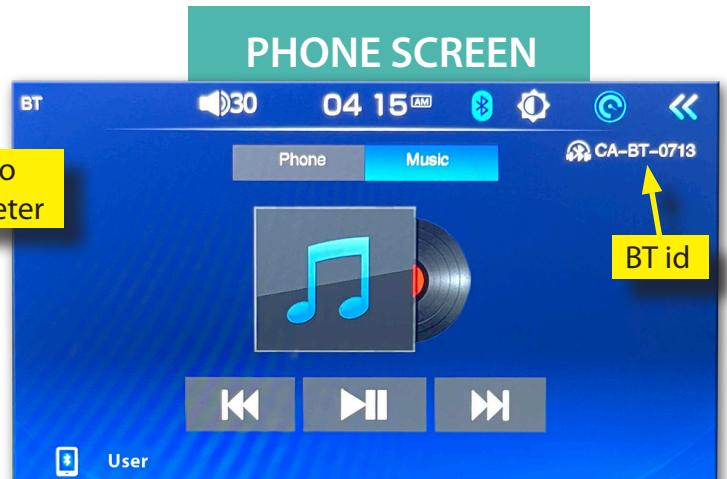
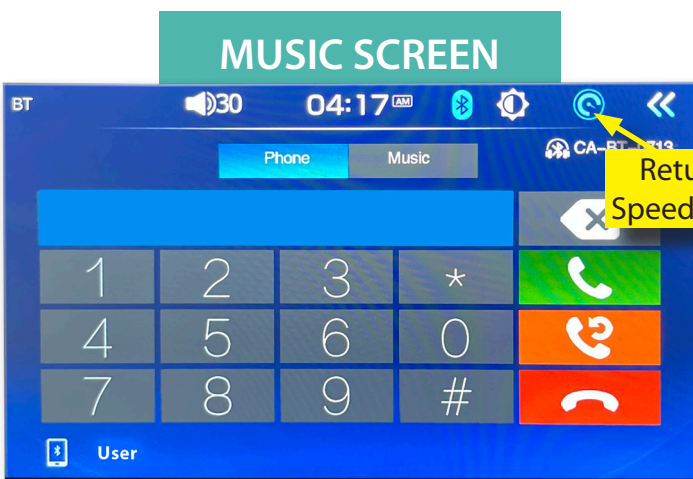
1	Operating Position	(D) Drive (N) Neutral (R) Reverse
2	Speedometer	MPH or KHM
3	Mileage	Miles or KHM
4	Battery Meter	Percent to Empty 100% - 23% Green 100% - 23% Yellow 22% - 13% Red 12% - 0%
5	Time	12 or 24 hr
6	Headlight Icon	Normal Headlights
7	Headlight Icon	High Beams (not shown)
8	Turn Signal Icons	Not Shown
9	Motor amps	
10	Home Icon	To app screen main page



**APPS SCREEN**  
Home Screen



**SETTINGS**



# CONTROLS AND INDICATORS



1	Horn	Press to engage
2	Lights On/Off	Twist forward to turn lights on.
3	Left Turn Signal	Push Lever Down
4	Right Turn Signal	Push Lever Up
5	Hazard switch	Press Button to engage
6	Hi/Lo Beam	Pull towards driver to engage Hi/Lo Beams.



### STARTING THE VEHICLE

No one should drive the vehicle without first being instructed in the proper operation and use of the vehicle's controls. An experienced operator should accompany each first-time driver on a test drive before allowing him/her to operate the vehicle alone.

To ensure safe operation of the vehicle, follow exactly and in order, all of the following procedures. Read and understand all instructions prior to driving the vehicle.

1. Study and understand controls.
2. Make sure everyone is seated and holding onto seat handles or handrails.
3. Read safety and information decals located on the vehicle.
4. Ensure wheels are turned in desired direction and path is clear.
5. The DNR Selector must be in the Neutral position before the key is turned, or the START button is pressed.
6. Turn key to ON position. Once speedometer appears, then select Drive (D) or Reverse (R).
7. During operation, beeping alarm indicates DNR is in REVERSE (R) position.
8. Shift to DRIVE (D) or REVERSE (R) only when stopped
9. Vehicle will start moving when accelerator pedal is pressed.
10. Slowly press accelerator pedal to increase speed.
11. To stop, release accelerator pedal and press brake pedal.

### STOPPING THE VEHICLE

- Vehicle is equipped with Hydraulic 4 Wheel Disc Brakes and an electric motor brake to act as a parking brake.
- Do NOT turn key off before cart has come to a full stop as this will potentially damage the motor brake.
- Driving through water may affect the brakes. After driving through water, check effectiveness of the brakes by gently pressing the brake pedal. If the vehicle does not slow down at the normal rate, continue to press the brake pedal until the brakes dry out and normal performance returns.

### PARKING AND LEAVING THE VEHICLE

1. After coming to a complete stop, hold the brake pedal until the electric park brake sets and prevents the vehicle from rolling.
2. Turn the key switch to the OFF position and place the Drive/Reverse switch in the NEUTRAL position. Remove the key when the vehicle is not in use.
3. When the Tow/Run switch is in the RUN position, (with the Forward/Reverse switch or key switch in any position), the PARK BRAKING function will prevent the vehicle from rolling.
4. Brake lever release pre-attached in case of cart fault/ dead battery. Located at the motor brake, the lever can be pulled forward to release brake. You will still need to place cart in TOW mode as well. Only use lever in situations where there is no battery power.

## KEY SWITCH/ FOB

The key switch is mounted on the dash to the right of the steering column. It has two positions, OFF (vertical) and ON (Right). All keys are unique for each vehicle. Keep your spare in a safe location.

**IMPORTANT:** Key must be OFF and DNR switch must be in Neutral before cart will move in either direction. When the key is turned to the OFF position, the main vehicle systems are disabled. The key can be removed only when the key switch is in the OFF position.

NOTE: A Bluetooth FOB option is available with a push button ON/OFF Switch.



### DRIVE/REVERSE CONTROL

The Drive/Reverse rocker switch is located on the instrument panel to the right of the key switch, below and to the right of the driver's right knee. The D (DRIVE) and R (REVERSE) are clearly marked. Push down the Drive side of the switch to operate the vehicle in the forward direction, or push down the REVERSE side of the switch to operate the vehicle in reverse. When the rocker switch is positioned in the NEUTRAL position, with neither side down, the vehicle will not operate.

*\*When switch is in the (R) Reverse position, a reverse beep will sound until out of position.*

### ACCELERATOR PEDAL

The accelerator pedal is the pedal on the right. The operation of the accelerator pedal differs from that of an automobile. When the key switch is the ON position, and the Drive/Reverse switch is in either the DRIVE or REVERSE position, pressing the accelerator pedal will automatically release the park brake and start the vehicle moving in the direction selected (Drive or Reverse). As the accelerator pedal is pressed, speed will increase until full speed is reached. When the accelerator is released, power will be cut off and the motor will stop running. See examples on following page.

### BRAKE PEDAL

The brake pedal is the large pedal on the left. To slow or stop the vehicle, press the brake pedal with your foot.

Electric vehicles use a special electrical system, which employs motor braking in Sierra LSV's. In those modes, the vehicle operates as follows:

## **⚠️ WARNING**

- **Do not operate vehicle on slopes exceeding 18% grades.**

- **Motor Braking:** This feature helps to control vehicle downhill speed. When traveling downhill, motor braking engages to maintain speeds proportional to the accelerator pedal position. For example, when the accelerator is fully pressed, motor braking holds the vehicle at the programmed top speed. When the accelerator pedal is fully released, motor braking slows the vehicle to a complete stop or allows the vehicle to coast freely, and engage the vehicle regen. Contact your local Sierra LSV dealer/distributor to inquire about this feature.

### ACCELERATOR PEDAL



*Must not be depressed when starting vehicle.*

### BRAKE PEDAL



### **⚠WARNING**

- The park brake will release automatically when the accelerator is pressed. The park brake is mounted to the motor and automatically engages when cart is at rest and/or key is switched to the off position.
- If renting or loaning the vehicle, make sure the driver is familiar with all controls and operating procedures before allowing the vehicle to be driven.
- Do not shift the (D)Drive/(R)Reverse switch while the vehicle is moving or turn the key switch to OFF. To avoid injury to an unsuspecting passenger or damage to the vehicle, always bring the vehicle to a full stop before shifting the Drive/Reverse switch.
- Release the accelerator pedal and then press the brake pedal firmly until the vehicle stops. To avoid unintentionally starting or rolling the vehicle, place the Forward/Reverse switch in the NEUTRAL position, turn the key switch to the OFF position, and remove the key when leaving the vehicle.

## CHARGE INDICATOR NOTICE

Sierra LSV charging system vehicles feature a charge indicator percentage and bar that displays on screen (See page 12). The red bar serves as a Battery low state-of-charge warning.

## Battery Low State-of-Charge Warning

- The battery state of charge bar will show yellow when battery is 22%.
- The battery bar will show red when battery is 12%
- The battery bar will show nothing when battery is 4%
- When the battery bar goes to 0%, there will be a red battery logo blinking



## USB PORT

The 5-volt 1/2.1 amp USB port located on the right side of the dash provides electricity to power and recharge portable devices. The USB port is not designed for the transfer of data.

## HIGH/LOW SPEED SWITCH LOCATION

High/Low switch is located under the front seat AX1/AX2 on the controller cover. On the AX3/AX4 it is under the rear row seat on controller cover.

\* The High setting gives a max speed of 25mph and low speed sets a max speed of 15mph.





### **PRE-OPERATION AND DAILY SAFETY CHECKLIST**

Each Sierra LSV vehicle has been thoroughly inspected and adjusted at the manufacturing facility; however, upon receiving your new vehicle(s), you should become familiar with its controls, indicators, and operation. Carefully inspect each vehicle to ensure that it is in proper working condition before accepting delivery.

Use the following checklist as a guide to inspect the vehicle. This checklist should be used daily to ensure that the vehicle is in proper working condition and in conjunction with the Periodic Service Schedules on page 28, and the Vehicle specs on page 40. Any problems should be corrected by Sierra LSV trained technician

Any vehicle not functioning correctly should be removed from use until it is properly repaired. This will prevent further damage to the vehicle and avoid the possibility of injury due to unsafe conditions.

### **Battery and Charger**

- **Battery:** Check battery posts. Wires should be tight and free of corrosion. Charge battery fully before first use of vehicle. If posts are loose, torque nuts to 110 in. lbs.
- **Charger cord, plug, and receptacle:** Visually inspect for cracks, loose connections, and frayed wiring.
- **Ensure Battery and charger is properly secured and NOT free to move in the compartment.**

### **⚠ WARNING**

- **Be sure all protective plastic has been removed from the vehicle before operating the vehicle. Failure to do so may result in a fire, property damage, personal injury, or death.**

Use the following checklist in conjunction with the Daily Pre-Operation and Safety Checklist as a guide to inspect the vehicle and check daily for proper operation. Any problems should be corrected by an Sierra LSV distributor/dealer or a trained technician.

## ALL VEHICLES

- **Drive/Reverse switch:** Check for proper operation and reverse beeper.
- **Brakes:** Be sure the brakes function properly. When brake pedal is pressed using moderate pressure, the vehicle should come to a smooth, straight stop. If the vehicle swerves or fails to stop, stops abruptly, or makes a grinding or squeaking noise, have the brake system checked and adjusted as required. Continued, moderate brake pedal pressure should be able to lock the wheels, but using lesser pressure should also permit a slow, gradual deceleration.
- **Park brake:** When vehicle is stopped or off, the park brake should lock the wheels and hold the vehicle stationary (on an incline of 18% or less). It should release when the accelerator or is pressed.
- **Reverse buzzer:** The reverse buzzer will sound as a warning when the Drive/Reverse switch is in the REVERSE position.
- **Steering:** The vehicle should be easy to steer and should not have any play in the steering wheel.
- **General:** Listen for any unusual noises such as squeaks or rattles. Check the vehicle's ride and performance. Have a Sierra LSV distributor/dealer or a trained technician investigate anything unusual.
- **Tire Pressure:** Ensure proper tire pressure of 20 psi
- **Charge Port Cord:** Ensure cord is unplugged from vehicle.
- **Accelerator:** With the key switch in the ON position and the Drive/Reverse switch in the DRIVE position, as the accelerator pedal is pressed, the motor should start and the vehicle should accelerate smoothly to full speed. When the pedal is released it should return to the original position and engage motor regen. All Sierra LSV vehicles operate at reduced speed in reverse.

## **⚠️ WARNING**

**Motor Braking:** Accelerate down an incline with the accelerator pedal fully pressed. When the vehicle reaches maximum programmed speed, motor braking should engage and limit the vehicle to its maximum programmed speed. On very steep grades, the vehicle may slightly exceed its maximum programmed speed, requiring the use of the brake pedal. Also, travel downhill with the accelerator pedal partially pressed. Motor braking should limit speed to less than top speed and maintain speeds proportional to the accelerator pedal position. On a level surface, accelerate the vehicle to full speed and then release the accelerator pedal. Motor braking should smoothly slow the vehicle to a complete stop or else allow the vehicle to coast freely, depending on the selected controller setting.

## PERFORMANCE INSPECTION

After you have familiarized yourself with the vehicle controls and have read and understood the driving instructions, take the vehicle for a test drive.

### **⚠️ WARNING**

- Only licensed drivers should be allowed to drive the vehicle.
- If renting or loaning the vehicle, make sure the driver is familiar with all controls and operating procedures before allowing the vehicle to be driven.
- No more than two persons per bench seat should be on the vehicle at one time. Do not allow passenger to ride in the bag well.
- The vehicle is not specially equipped for handicapped persons. Be sure all persons can properly operate the vehicle prior to allowing them to drive the vehicle.
- Be sure all passengers are capable of securing themselves in a vehicle before allowing them to ride in one.
- For night use, the vehicle is equipped with headlights and taillights which must be used in conjunction with local laws.
- Stop the vehicle before shifting the Drive/Reverse switch. Failure to do so may result in injury to an unsuspecting passenger and (or) damage to the vehicle/ motor brake.
- DO NOT switch the key to OFF while the vehicle is still moving.
- To help avoid being struck, do not stand in front of or behind the vehicle.
- Operate the vehicle from the driver seat only.
- To help prevent falls from the vehicle, remain seated in a moving vehicle and hold on to hand holds or handrails at all times. Driver should keep both hands on the steering wheel when the vehicle is in motion.
- To help prevent the possibility of serious injury, keep your entire body inside the vehicle.
- Do not leave children unattended in vehicle.
- To help prevent overturning the vehicle, drive slowly straight up and down slopes. Avoid driving the vehicle parallel on slopes exceeding 18% incline.
- To help avoid possible injury to an inattentive passenger and (or) damage to the vehicle, avoid sudden starts, sudden stops, and abrupt turns.
- To help avoid the possibility of losing control of or overturning the vehicle, reduce speed for adverse driving conditions such as wet grass or rough terrain.
- Do not use the vehicle on public roads. It is not designed or intended for street use and should not be licensed for use on public roads.
- Obey all local rules concerning golf cars.
- The vehicle should be driven in only specified areas by trained drivers.
- Do not drive while under the influence of alcohol, drugs, or medications.
- To prevent overturning the vehicle, drive slowly in turns.
- Use brakes to reduce speed when coasting downhill.
- This vehicle is not intended to be used where risk of falling objects exists. If your vehicle will be used in such an environment, contact your local dealer.
- Do not drive the vehicle under tree limbs, bridges, tunnels, or other objects that are less than 80 inches (203 cm) from the ground.
- Do NOT use a cellphone while operating the vehicle.

## TOWING WITH ANOTHER VEHICLE

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### **⚠️ WARNING**

- Do not tow the vehicle on public streets or highways if possible.
- Turn the key switch to OFF and place the Drive/Reverse switch in the NEUTRAL position, and place cart into TOW mode before towing the vehicle.
- If the vehicle is not operable.
  - 1) Place the Tow/Run switch in the TOW position which will allow the cart to roll freely; otherwise, the vehicle will not roll while being towed.
  - 2) However, if there is no battery power the cart will not move even when in TOW mode. The only way to move the car is to remove the motor brake. Only certified technicians should do this task.
- Extreme caution should be used when towing any vehicle.
- Do not exceed 5 mph (8 km/h) towing speed.
- Do not allow people in the vehicles being towed.
- Avoid sudden starts, sudden stops, and tight turns when towing.
- Avoid stopping on a hill when towing. If you must stop on a hill, avoid sudden starts or rolling backwards and stopping suddenly. Failure to heed this warning could cause the vehicle to overturn, possibly resulting in severe personal injury.
- Do not tow more than one Sierra LSV with another Sierra LSV. If more than one vehicle must be towed, an adequately powered vehicle (tractor or full sized truck) properly fitted, with a tow hitch height of 11 inches (28 cm) should be used. Only heavy-duty tow bars should be used for multi-vehicle towing. Never tow more than five vehicles at one time.
- Stay clear from the area between the tow vehicle and the towed vehicle or trailer.
- Do NOT hook strap to any brake cables, harnesses, or plastic components.
- Only hook tow strap to structural frame components or front suspension.



## TRANSPORTING ON A TRAILER

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### **⚠WARNING**

- For use on public roads, the trailer must meet all federal, state, and local requirements such as taillights, brake lights, etc.
- Turn the key switch to OFF and place the Drive/Reverse switch in the NEUTRAL position, and place cart into TOW mode before towing the vehicle.
- If the vehicle is not operable.
  - 1) Place the Tow/Run switch in the TOW position which will allow the cart to roll freely; otherwise, the vehicle will not roll while being towed.
  - 2) However, if there is no battery power the cart will not move even when in TOW mode. The only way to move the car is to remove the motor brake. Only certified technicians should do this task.
- Do not tow a Sierra LSV vehicle behind a passenger vehicle or truck on a public road unless it is on an approved trailer.
- The vehicle to be towed should be properly secured to the trailer, with the Drive/Reverse or switch in the NEUTRAL position, the key switch the OFF position.
- Do not allow people in the trailer or vehicle being towed.
- Avoid sudden starts, sudden stops, and tight turns when towing.
- Avoid stopping on a hill when towing. If you must stop on a hill, avoid sudden starts or rolling backwards and stopping suddenly. Failure to heed this warning could cause the vehicle to overturn, possibly resulting in severe personal injury.
- When towing on a trailer, normal road speed of the tow vehicle should be reduced.
- Because of the added length of the trailer, use caution when making turns.
- Remove the vehicle windshield and secure the seat bottom before transporting on a trailer.
- Stay clear from the area between the tow vehicle and the towed vehicle or trailer
- If the vehicle must be transported over long distances or on public highways, it should be transported on an approved trailer that has the approved load rating of 1200 lb (544 kg) per vehicle being transported.
- Only secure cart frame or other solid points. Do NOT strap to plastic body or seats.

NOTE: A two-car trailer should be rated at 2 x 1200 lb (544 kg) = 2400 lb (1088 kg).

# STORAGE

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## **⚠ WARNING**

• Turn the key switch to the OFF position, remove the key, and leave the Drive/Reverse switch in the NEUTRAL position during storage. Place Tow/Run switch in the TOW position shown below. This is to prevent unintentionally starting the vehicle or a hazard.

## **⚠ CAUTION**

- Do not attempt to charge frozen batteries.
- Batteries in a low state of charge will freeze at low temperatures.
- To avoid exposing electrical components to moisture and subsequent damages, do not use any type of pressure washing or steam cleaning equipment to wash the vehicle.



## PREPARING THE VEHICLE FOR EXTENDED STORAGE

### Immediately Prior to Storage, Perform the Following Steps.

1. Unload the vehicle so that tires are supporting only the weight of the vehicle.
2. Turn the key switch to the OFF position, remove the key, and leave the Drive/Reverse switch in the NEUTRAL position during storage.
3. Press battery power button to turn battery off.
4. Turn off all accessories, including GPS units, fans, etc.
5. Place the Tow/Run switch in the TOW position.

**NOTE:** All functions of the dash-mounted charge indicator light are disabled when the Tow/Run switch is in the TOW position.

6. Battery should be clean and free of corrosion.
7. Tighten all battery cable connections to 110 in·lb (12.4 N·m).
8. Store vehicle in a cool, dry place. This will minimize battery self-discharge.
9. Adjust tires to recommended tire pressure.
10. Perform semiannual periodic lubrication.
11. Thoroughly clean front body, rear body, seats, battery compartment, and underside of vehicle.
12. Chock the wheels to prevent the vehicle from rolling.
13. Ensure Power Switch on battery is turned OFF



14. If disconnecting the battery for storage, disconnect negative (-) battery cable and secure it in a way that ensures the cable will contact with battery terminal.

## **⚠ CAUTION**

- Refer to battery specifications for discharge rate. Battery may need to be charged if stored for more than four months.

## **LITHIUM ION BATTERY STORAGE**

### **⚠ WARNING**

- It is recommended to fully charge the battery pack before storage.
  - If storing for less than one month, State of Charge should be at least 60% when storing. For a period of up to 6 months, State of Charge must be at least 80% when storing.
- Ensure that the power switch on the battery is off (not pushed in, and not illuminated).
- The battery should never reach temperatures lower than -4°F (-20°C) or higher than 131°F (55°C).
  - At temperatures outside the range of 32°F - 86°F (0°C - 30°C) the battery state of charge will drain more quickly in storage and the state of charge should be monitored. Storage at low state of charge can damage the battery.
- When returning from storage , press the power button on the battery and check the state of charge and temperature in the battery app.
- If the battery temperature is below 32°F/0°C, DO NOT attempt to charge the battery. Charging below freezing temperatures can cause damage to the battery and create risk of fire.



## RETURNING THE STORED VEHICLE TO SERVICE

1. If necessary, connect battery.
2. Fully charge battery. Several charge cycles may be needed in order for the battery to regain full range.
3. Press battery power button to on position, button should light up signalling battery is on.

### **⚠️WARNING**

**Do not attempt to charge frozen batteries or batteries with bulged cases. Discard the battery. Frozen batteries can explode.**

4. Adjust tires to recommended tire pressure. (located on the side wall of tire)
5. Perform the **Pre-Operation and Daily Safety Checklist** (Page 19).

## MAINTENANCE

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To ensure trouble-free vehicle performance, it is very important to follow an established preventive maintenance program. Regular and consistent vehicle maintenance can prevent vehicle downtime and expensive repairs that can result from neglect. Use the Pre-Operation and Daily Safety Checklist beginning on page 19, the Performance Inspection, and the following Periodic Service Schedules and Periodic Lubrication Schedules to keep the vehicle in proper working condition.

Any vehicle not functioning correctly should be removed from use until it is properly repaired. This will prevent further damage to the vehicle and avoid the possibility of injury due to unsafe conditions.

Contact your local Sierra LSV distributor/dealer to perform all repairs and semiannual and annual periodic service.

**• If any problems are found during scheduled inspection or service, do not operate the vehicle until repairs are made. Failure to make necessary repairs could result in fire, property damage, severe personal injury, or death.**

**• Only trained technicians should service or repair the vehicle or battery charger. Anyone doing even simple repairs or service should have knowledge and experience in electrical and mechanical repair. The appropriate instructions must be used when performing maintenance, service, or accessory installation.**

- Do not attempt to service hot motor. Attempting to do so could cause severe burns.
- To avoid unintentionally starting the vehicle, disconnect the battery and discharge the controller.



# PERIODIC SERVICE SCHEDULES

## **⚠️WARNING**

- Service, repairs, and adjustments must be made per instructions in the maintenance and service manual.

**NOTE:** If the vehicle is constantly subjected to heavy use or severe operating conditions, the preventive maintenance procedure should be performed more often than recommended in the periodic service and lubrication schedules.

Both the Periodic Service Schedule and Periodic Lubrication Schedule must be followed to keep vehicle in optimum operating condition.

PERIODIC SERVICE SCHEDULE		
REGULAR INTERVAL	SERVICE	
Daily service by owner	Pre-Operation and Daily Safety Checklist (pg19)	Pre-Operation and Daily Safety Checklist (pg19)
	Performance Inspection (pg20-21)	See Performance Inspection (pg20-21)
	Battery	Charge battery (after each daily use only)
Weekly Service by owner	Battery	Charge
Monthly service by owner or trained technician	Battery	Make sure all connections are tight
	Tires	Check air pressure and adjust if necessary. The PSI is on the side wall.
	General vehicles	Thoroughly wash vehicle including the underside.
Initial (one-time) inspection by owner or trained technician after six weeks of use.	Battery	Perform General Safety Inspection

Table continued on next page.

PERIODIC SERVICE SCHEDULE		
REGULAR INTERVAL	SERVICE	
Semiannual service by trained technician only (every 50 hours of operation)	Brake System	Check brake shoes; replace if necessary
		Lubricate brake system per lubrication schedule
		Check brake cables for damage; replace if necessary
		Check brake cable equalizer adjustment; adjust if necessary
	Electrical wiring and connections	Check for tightness and damage; replace if necessary
	Front wheel alignment and camber	Check and adjust as required.
Annual service by owner or trained technician (every 100 hours of operation)	Battery	Manually check all connection
	Safety Decals	Check safety decals. Replace if damaged or illegible
Annual service by trained technician only (every 100 hours of operation)	Battery	If battery is not performing as expected, see Batteries in the maintenance and service manual
	Pedal group	Make sure Pedals move freely and do not bind
	General Vehicle	Check for loose hardware; tighten if necessary. Refer to the appropriate maintenance and service manual

## **⚠️ WARNING**

**If any problems are found during scheduled inspection or service, do not operate the vehicle until repairs are made. Failure to make necessary repairs could result in fire, property damage, severe personal injury, or death.**

## BATTERY CHARGER

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### **⚠ DANGER**

- The charging area must be ventilated. The total volume of air in the charging area must be changed at least five times per hour. Exhaust fans should be located at the highest point of the roof. Contact a local HVAC engineer.
- Do not charge the vehicle battery with the vehicle covered or enclosed. Any enclosure or cover should be removed or unzipped and pulled back when battery is being charged.

### **⚠ WARNING**

- Only trained technicians should repair or service the charger. Contact your nearest authorized Sierra LSV distributor/dealer.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.
- Do not operate the charger if it has received a sharp blow, was dropped, or otherwise damaged in any way.
- Have worn, cut, or damaged power cords or wires replaced immediately.
- Do not use near fuels, grain dust, solvents, thinners, or other flammables. Chargers can ignite flammable materials and vapors.
- Do not expose to rain or any liquid. Keep the charger dry.
- Do not connect a stationary charger to the receptacle if the charger cord, plug, or the vehicle receptacle is broken, damaged, or does not make a good electrical connection. Fire or personal injury can result. Have a qualified technician replace the parts.
- When the charger is on, the charger DC cord may be disconnected from the vehicle receptacle slowly. Jerking or pulling the DC cord out quickly could cause arcing and burning that could damage the plug and receptacle and could cause batteries to explode.

WARNING CONTINUED ON NEXT PAGE

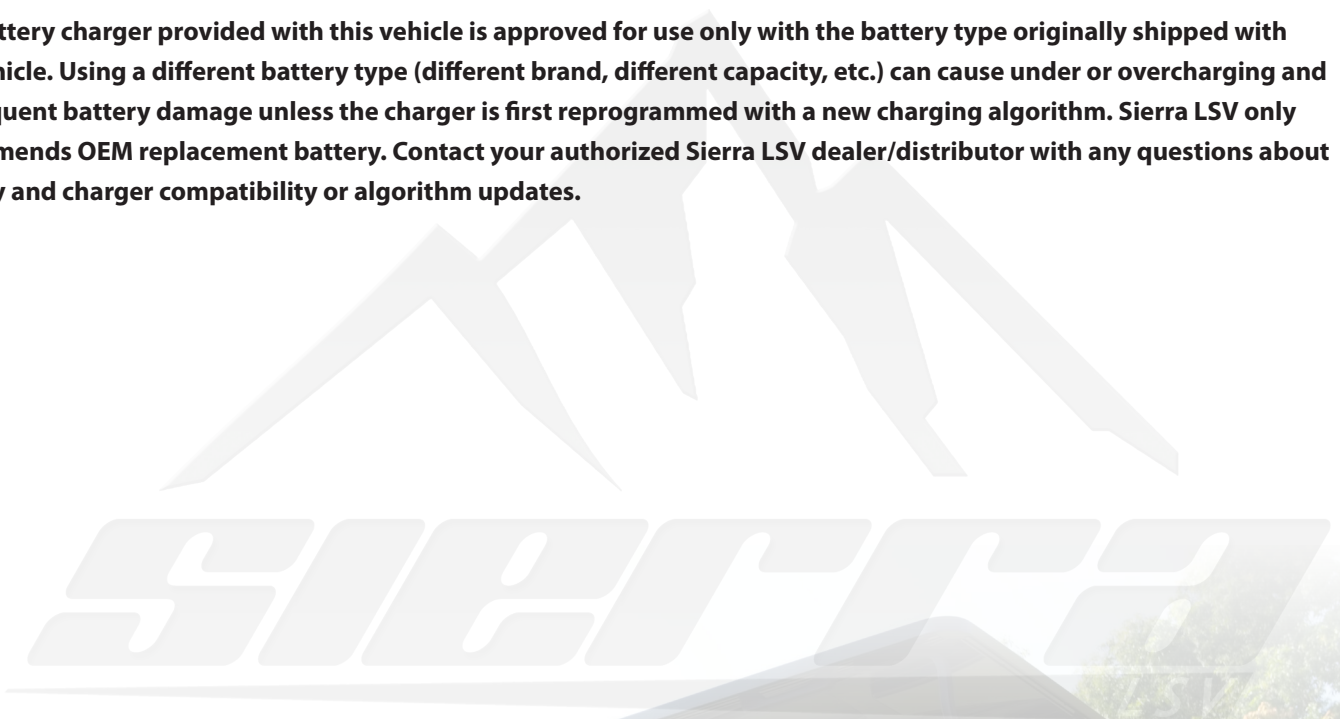


## **⚠ WARNING**

- Do not cover the charger cooling fins. Do not allow clothing, blankets, or other material to cover the charger. The fins dissipate heat and protect the charger from overheating.
- Cooling fins will become hot during charging. Do not touch. Use the handle.

## **⚠ CAUTION**

The battery charger provided with this vehicle is approved for use only with the battery type originally shipped with the vehicle. Using a different battery type (different brand, different capacity, etc.) can cause under or overcharging and subsequent battery damage unless the charger is first reprogrammed with a new charging algorithm. Sierra LSV only recommends OEM replacement battery. Contact your authorized Sierra LSV dealer/distributor with any questions about battery and charger compatibility or algorithm updates.



## CHARGER SAFETY DECALS

Replacement charger safety decals are available. Contact your local authorized Sierra LSV distributor/dealer.

**⚠ WARNING**

**BATTERY EXPLOSION COULD RESULT IN SEVERE PERSONAL INJURY.**

- Place Run/Tow switch in TOW position before performing any of the following:
  - Disconnecting or connecting battery cables
  - Towing this vehicle
  - Extended storage
  - Servicing the vehicle
- Do not store items in battery compartment.
- Keep electronic components dry
- Do not operate vehicle without this plate property installed
- See vehicle service manual before servicing

## DIAGNOSTIC PORT

The charger has a USB port for use by Sierra LSV authorized technicians for data transfer, reconfiguration, and updates. Keep the USB port cover in place when the port is not in use.



### Diagnostic Service Port Cleaning and Care

Depending on environmental conditions, such as coastal locations, open-air storage facilities, possible contamination in the USB port could result, preventing connectivity. If a poor connection is experienced, cleaning the USB port located in the front of the charger with an approved electrical contact cleaner will restore the connection.

**Always re-install the USB port dust cover after cleaning and use.**

After cleaning, preventative maintenance of the USB port should include applying dielectric grease into the port cavity or applying Corrosion Block® Corrosion Preventative to help prevent any reassurance of contamination.

### Charger AC CORD

## **⚠ WARNING**

• Install incoming AC power lines. Surge arrestors will help protect electrical components in the charger and on the vehicle from all but direct or close lightning strikes.

**WARNING CONTINUED ON NEXT PAGE**

## **⚠️ WARNING**

- **Two chargers can share a circuit, which should be a dedicated 15 or 20 ampere separately protected (circuit breaker or fuse) single-phase branch circuit that complies with all applicable electrical codes for the location.**
- **Connect the charger AC supply cord to a properly grounded, three-wire outlet within the voltage and frequency range shown on the charger.**
- **Do not use an adapter to plug the charger with a three-prong plug into a two-prong outlet. Improper connection of the equipment-grounding conductor can result in an electrical shock.**
- **Place all cords so they will not be stepped on, tripped over, or otherwise subjected to damage or stress.**

To reduce the risk of electric shock, the battery charger must be grounded. The charger is equipped with an AC electric cord having an equipment-grounding conductor and a grounding type plug. The AC plug must be connected to an appropriate receptacle that is properly installed and grounded in accordance with the National Electrical Code and all local codes and ordinances.

The use of an extension cord with the charger should be avoided. If one must be used, heed the following WARNING.

## **⚠️ WARNING**

- **An extension cord or electrical outlet must accept a three-prong plug. The extension cord should be a three-wire No. 12 AWG (American Wire Gauge) or no. 14 (British Standard Wire Gauge), and be as short as possible (no more than 12 feet (3.7 m)). The use of an improper extension cord could result in fire or an electrical shock.**

## **PLUG AND RECEPTACLE**

The charger cord, plug, and receptacle are wear items and should be inspected daily. Visually inspect them for cracks, loose connections, and frayed wiring; they must be replaced when worn or damaged. If charger plug or receptacle show signs of corrosion or the plug is difficult to insert or remove, check for worn or bent pins, then clean the receptacle contacts and plug terminals with a good electrical contact cleaner or light coating of WD-40® brand spray lubricant. The plug should then be inserted and removed several times to ensure ease of insertion, ease of removal, and good electrical contact.

## **⚠ WARNING**

- **If pins are bent, the plug must be replaced immediately. The plug is not serviceable. Do not attempt to repair the plug or straighten bent pins. Contact your local authorized Sierra LSV dealer or distributor for repairs.**
- **Disconnect the AC cord prior to lubricating the plug and receptacle.**

*NOTE: If the warning tag has been damaged or removed from the DC cord, have it replaced immediately.*

## **CHARGER MOUNTING**

The charger comes pre-mounted in the cart to ensure ambient temperatures during charging remain below 104 °F (40 °C).

## **CHARGER INTERLOCK**

While the charger DC cord is plugged into the vehicle, the vehicle control circuit is locked out, preventing operation of the vehicle, as well as the possibility of consequent damage to the charger and the vehicle.

## **AC INPUT VOLTAGE DETECTION**

The charger automatically detects the AC input voltage and will operate at full power if the voltage is within the 100 to 240 VAC range. The charger also will function outside of that range down to 85 VAC and up to 270 VAC although charging times will be longer. Outside of the 85 to 270 VAC range, the charger will not operate.

## **LONG-TERM STORAGE**

Sierra LSV chargers are designed to be left connected with AC power to the charger during off-season or long term storage.

## CHARGING BATTERY

Be sure all wire connections at the receptacle are clean and tight.

- **Do not rock or bend the plug. To connect the charger plug to the vehicle receptacle, grasp the plug handle and push the plug straight into the receptacle.**
- **Do not pull on the DC cord. Do not twist, rock or bend the plug. To disconnect the charger plug from the vehicle receptacle, grasp the plug by the handle and pull the plug straight out of the receptacle.**
- **Do not connect a charger to the receptacle if the charger cord, plug, or the vehicle receptacle is broken, damaged in any manner, or does not make a good electrical connection. Fire or personal injury can result. Have it replaced by a qualified service person immediately. Failure to follow these instructions could result in damage to the charger cord, the plug, and (or) the vehicle receptacle.**
- **Do not attempt to charge frozen battery. Discard the battery in accordance with all environmental laws or return to an authorized Sierra LSV dealer. Frozen batteries can explode.**
- **Do not use a charger if any of the following conditions exist:**
  - **The plug is too loose or does not make a good connection.**
  - **The plug and receptacle feel hotter than normal during charge.**
  - **The plug pins or receptacle contacts are bent or corroded.**
  - **The plug, receptacle, or cords are cut, worn, have any exposed wires or are damaged in anyway.**
- **Using the charger with any of the above symptoms could result in a fire, property damage, personal injury, or death.**

### **CAUTION**

- On all vehicles, turn off all accessories before charging battery.
- The battery charger provided with this vehicle is approved for use only with the battery type originally shipped with the vehicle. Using a different battery type (different brand, different capacity, etc.) can cause under or overcharging and subsequent battery damage unless the charger is first reprogrammed with a new charging algorithm. Sierra LSV recommends only OEM replacement batteries. Contact your authorized Sierra LSV dealer/distributor with any questions about battery and charger compatibility or algorithm updates.

**NOTE:** *When temperatures fall below 65 °F (18.3 °C), batteries charged in unheated areas should be placed on charge as soon as possible after use. Batteries are warmest immediately after use, and cold batteries require more time to fully charge.*

*Batteries should be put on charge even if they have been used for only a short period (9 holes of golf or 10 minutes of operation).*

*Because the charger has a storage charge feature that automatically checks and recharges the batteries as necessary, the charger can remain plugged to the vehicle throughout the storage period.*

*Vehicles should be restricted to 40 to 50 amp hours of discharge or 36 holes of golf (or 40 minutes of private use) between charges until the batteries have been properly seasoned (50 to 70 charge cycles). For maximum battery life, Sierra LSV recommends that electric vehicles always be recharged after 40 to 50 amp hours of discharge or each night in order to avoid deeply discharging the batteries. To detect amp-hour discharge, use the CDT diagnostic tool (CC P/N 105209501).*

# BATTERY CHARGING PROCEDURE

1. Connect the output of the charger to the battery end, if the plug, socket, please make sure the connection is in place;
2. Connect the AC input of the charger to the 16 A/120V socket, and when the charger enters the charging process, it is proved that there is no problem with the connection. The charger will charge automatically, stop automatically after filling, and display full power.
3. An extension cord or electrical outlet must accept a three-prong plug. The extension cord should be a three-wire No. 12 AWG (American Wire Gauge) or no. 14 (British Standard Wire Gauge), and be as short as possible (no more than 12 feet (3.7 m)). The use of an improper extension cord could result in fire or an electrical shock.

**NOTE:** The charge cord shows a red LED that signals it has power, this is NOT the battery charge status. It will always show red. The charger itself will flash a code on charge status. See next page for more info.



<b>CHARGE STATUS INDICATOR (On Charger)</b>			
1	Heavy battery output		Red ———
2	Battery power less than 80%		Red —
3	80% to 90% of battery power		Yellow -
4	90% - 100% battery power		Green -
5	Battery Full	Normal charge over	Green Light
		Battery temperature Sensor Malfunction	Light <3 s) Yellow Light >03
<b>Battery Light Status</b>			
1	Battery Not Connected		Red- Green-
2	Temperature Protection		Red- Green- Yellow ---
3	Input circuit fault protection		Red- Green- Yellow- Yellow-
4	Charge Timeout		Red- Green- Yellow- Yellow- Yellow ———
5	Battery Heating		Red- Green- Yellow- Yellow- Yellow- Yellow ———
6	Pre-Charge Time-out		Red- Green- Yellow- Yellow- Yellow- Yellow- Yellow Yellow- One
7	Failure of internal temperature sensor of charger		Red- Green- Yellow- Yellow- Yellow- Yellow-
8	Voltage back-predicate fault		Red- Green- Yellow- Yellow- Yellow- Yellow- Yellow Yellow- Yellow- Yellow
9	Low temperature delay start, when the internal temperature of the charger is lower than-2 CT C higher than-30°C, wait 1~2 minutes and start the J		Red- Green- Yellow- Yellow- Yellow- Yellow- Yellow Yellow- Yellow- Yellow

## CLEANING THE VEHICLE

Sierra LSV vehicles are equipped with hand-washable front and rear bodies. Use only commercially available automotive cleaners with a sponge or soft cloth for normal cleaning. A garden hose at normal residential water pressure is adequate.

The manufacturer does not recommend any type of pressure washing or steam cleaning. Such a process will expose electrical components to moisture. Moisture entering electrical components can result in water damage and subsequent component failure.

Use non-abrasive wax products. Battery acid, fertilizers, tars, asphalt, creosote, paint, or chewing gum should be removed immediately to prevent possible stains. See following CAUTION.

### **⚠ CAUTION**

- Use of leveling or rubbing compounds will permanently dull finish of vehicle.
- Do not apply wax products to the black plastic material of the front and rear under-body, the front bumper, or the textured area of the rear. Wax will cause these surfaces to become discolored.

The seats of the vehicle will last longer with proper cleaning. Use a solution of 10% liquid soap and warm water applied with a soft cloth. For embedded dirt, a soft bristle brush may be used. For heavy soiling, difficult stains or scratches, blemishes, or other body damage, see the appropriate maintenance and service manual.

**NOTE:** Dispose of waste water properly.

## ACCESSORIES

A complete line of parts and accessories is available from Sierra LSV. To find your local authorized Sierra LSV dealer, visit [www.sierralsv.com](http://www.sierralsv.com).

Care should be taken that these accessories are properly installed by trained technicians, and that they are used in the manner for which they were designed. See following WARNING.

### **⚠ WARNING**

- Windshields and weather-proof enclosures will not protect occupants from flying objects (golf balls, etc.).





## SUBSEQUENT OWNER REGISTRATION

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In the event a vehicle is bought as a used vehicle, we strongly urge the new owner to register the vehicle with Sierra LSV. This will enable us to contact you if the need arises. Please send your name, address, and serial number(s) of the vehicle(s) to [info@sierralsv.com](mailto:info@sierralsv.com).

## FOUR-PASSENGER VEHICLE

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The Sierra LSV four-passenger vehicle is designed to provide a smooth and comfortable ride for four passengers, and is offered in electric power configuration. This owner's manual should be read thoroughly prior to operating the vehicle.

The Sierra LSV four-passenger vehicle should be driven and maintained as stated in this owner's manual with the following additions:

### **⚠ WARNING**

- **Vehicle should be driven at slower speeds when four persons are in the vehicle.**
- **Passengers should hold on to hand holds or hand rails at all times. Driver should keep both hands on the steering wheel while vehicle is moving.**
- **Do not leave children unattended on the rear seat while vehicle is moving.**
- **No more than four persons should be on the vehicle at one time.**



## VEHICLE SPECIFICATIONS

SPECIFICATIONS	TWO-PASSENGER	FOUR-PASSENGER	SIX-PASSENGER
<b>POWER SOURCE</b>			
<b>Drive motor:</b> 5kw AC motor, 6.8hp	✓	✓	✓
<b>Transaxle:</b> Double reduction helical gear with 12.3:1 direct drive axle	✓	✓	✓
<b>Electrical System:</b> Battery output-48V DC, through controller inverter to 48V AC	✓	✓	✓
<b>Battery:</b> 105ah Lithium ion battery	✓	✓	
<b>Batteries:</b> Dual 105ah Lithium ion battery			✓
<b>Charger:</b> Enpower Ch 4200 Series Smart Charger 15a, 48V	✓	✓	✓
<b>STEERING/SUSPENSION/BRAKES</b>			
<b>STEERING:</b> Self-adjusting rack and pinion	✓	✓	✓



## VEHICLE SPECIFICATIONS

SPECIFICATIONS	AX1 TWO PASSENGER	AX2 TWO PASSENGER	AX3 (Stretch) SIX PASSENGER	AX4 FOUR PASSENGER
<b>Suspension:</b> Front and rear tapered mono-leaf springs with dual hydraulic shocks.	✓	✓	✓	✓
<b>Brakes:</b> Dual rear wheel self-adjusting brakes with cast iron drums and single brake pedal with automatic-release park brake	✓	✓	✓	✓
<b>Parking Brake:</b> Motor Brake	✓	✓	✓	✓
BODY/CHASIS				
	STEEL	ALUMINUM	ALUMINUM	HYBRID (STEEL & ALUMINUM)
<b>Frame/Chassis:</b> Aluminum, Steel, or Hybrid	✓	✓	✓	✓
<b>Front and rear body:</b> PP materials	✓	✓	✓	✓
<b>Lug-Nut Torque Values:</b> : Front and Rear tires	55 ft · lb (±5.0) (67.8 to 81.3N·m)			

DIMENSIONS/WEIGHT				
<b>Overall Length</b>	9' - 8" w/seat		12' - 9"	8' - 10"
<b>Overall Width</b>	49.5"		49.5"	49.5"
<b>Overall height (with canopy)</b>	80.3" with 23" tires		80.3" with 23" tires	80.3" with 23" tires
<b>Wheelbase</b>	67.5"		103.15"	72.5"
<b>Ground clearance</b>	6.5"		6.5"	6.5"
<b>Weight</b> (standard electric vehicle with canopy, without batteries)	1036 lb (470 kg)		1334 lbs (470 kg) <i>(w/2x Lithium 105ah)</i>	1124 lb (510 kg)
<b>Forward speed</b>	15 to 25 mph (32 to 40 km/h)			
<b>Standard seating capacity</b>	4		6	4
<b>Trans-axle Gear Ratio</b>	12.31:1		12.31:1	
<b>Front and Rear Tire Pressure</b>	18 to 20 psig (124 to 138 kPa)		18 to 20 psig (124 to 138 kPa)	

## LCD ERROR CODES

CODE	Fault Name	Fault Cause	Corrective Action
065	Power on sequence error	<ol style="list-style-type: none"> <li>1. Press the accelerator while turning on the key switch.</li> <li>2. Poor contact of accelerator accessories.</li> <li>3. Accelerator wiring error.</li> <li>4. The accelerator signal and controller do not match.</li> </ol>	<ol style="list-style-type: none"> <li>1. Release the accelerator and restart the key switch.</li> <li>2. Repair the accelerator circuit.</li> </ol>
066	B+ Main circuit fault	<ol style="list-style-type: none"> <li>1. The main contactor inside the controller is faulty.</li> <li>2. Abnormal connection of B+ terminal.</li> <li>3. The B+ fuse is blown.</li> </ol>	<ol style="list-style-type: none"> <li>1. Restart the key switch.</li> <li>2. Replace the controller.</li> <li>3. Replace the B+ fuse.</li> </ol>
067	Output Line Fault	<ol style="list-style-type: none"> <li>1. The motor is short circuited.</li> <li>2. The internal power tube of the controller is damaged.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace the motor.</li> <li>2. Replace the controller.</li> </ol>
068	Controller Overtemperature	<ol style="list-style-type: none"> <li>1. The controller's temperature exceeds the limit, resulting in limited functionality.</li> <li>2. The external environmental temperature is too high.</li> <li>3. Poor heat dissipation of the controller.</li> <li>4. Vehicle overload operation.</li> </ol>	Lower the temperature of the controller to below 85° and restart the key switch.
069	Main contactor failure	<ol style="list-style-type: none"> <li>1. The main contactor inside the controller is faulty.</li> <li>2. Abnormal connection of B+ terminal.</li> <li>3. The B+ fuse is blown.</li> </ol>	<ol style="list-style-type: none"> <li>1. Restart the key switch.</li> <li>2. Replace the controller.</li> <li>3. Replace the B+ fuse.</li> </ol>
06A	Current sensor fault	<ol style="list-style-type: none"> <li>1. Abnormal UVW circuit.</li> <li>2. The current sensor in the controller fails.</li> </ol>	<ol style="list-style-type: none"> <li>1. Repair the UVW circuit.</li> <li>2. Replace the controller.</li> </ol>
06B	Encoder Failed	<ol style="list-style-type: none"> <li>1. The motor is blocked.</li> <li>2. The motor encoder is faulty.</li> </ol>	<ol style="list-style-type: none"> <li>1. Restart the key switch.</li> <li>2. Replace the motor encoder.</li> </ol>
06C	CAN communication timeout	CAN communication line malfunction	Repair the CAN communication circuit and restart the key switch.
06D	Battery undervoltage	<ol style="list-style-type: none"> <li>1. The battery voltage is too low.</li> <li>2. The rated voltage of the battery does not match the controller.</li> <li>3. Battery parameter setting error.</li> <li>4. The internal resistance of the battery is too high.</li> <li>5. Abnormal battery connection.</li> </ol>	<ol style="list-style-type: none"> <li>1. Repair or replace the battery.</li> <li>2. Reset the battery parameters.</li> <li>3. Repair the battery circuit connection.</li> </ol>
06E	Battery overvoltage	<ol style="list-style-type: none"> <li>1. The battery voltage is too high.</li> <li>2. The rated voltage of the battery does not match the controller.</li> <li>3. Battery parameter setting error.</li> <li>4. The internal resistance of the battery is too high.</li> <li>5. Abnormal battery connection.</li> </ol>	<ol style="list-style-type: none"> <li>1. Repair or replace the battery.</li> <li>2. Reset the battery parameters.</li> <li>3. Repair the battery circuit connection.</li> </ol>
06F	Motor over-temperature	<ol style="list-style-type: none"> <li>1. The motor temperature is too high.</li> <li>2. The motor temperature threshold setting is incorrect.</li> <li>3. The motor temperature sensor and controller do not match.</li> </ol>	<ol style="list-style-type: none"> <li>1. Reduce the motor temperature.</li> <li>2. Reset the motor temperature threshold parameters.</li> <li>3. Replace the motor temperature sensor.</li> </ol>
070	EEPROM fault	Internal EEPROM fault in the controller.	<ol style="list-style-type: none"> <li>1. Restart the key switch.</li> <li>2. Replace the controller.</li> </ol>
071	Accelerator malfunction	<ol style="list-style-type: none"> <li>1. Accelerator connection error.</li> <li>2. Poor contact of the accelerator.</li> <li>3. The accelerator does not match the controller.</li> <li>4. The accelerator is damaged.</li> </ol>	<ol style="list-style-type: none"> <li>1. Restart the key switch.</li> <li>2. Repair or replace the accelerator.</li> </ol>
073	Electromagnetic brake failure damaged	<ol style="list-style-type: none"> <li>1. The electromagnetic brake is damaged.</li> <li>2. The electromagnetic brake circuit is short circuited.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace the electromagnetic brake.</li> <li>2. Repair the electromagnetic brake and restart the key switch.</li> </ol>
077	Do not drive while charging	After the controller is powered on, it is detected that the vehicle is charging.	Unplug the charger and restart the key switch.
07B	Current exceeding limit	<ol style="list-style-type: none"> <li>1. Motor UVW short circuit.</li> <li>2. Motor failure.</li> </ol>	Repair the motor and restart the key switch.
082	Powered up when the gear is in D or R	Powered up when the gear is in D or R	Restart the key switch when the gear is in N



## SIERRA LSV LIMITED WARRANTY

Sierra LSV hereby warrants to the Original Purchaser, as those terms are defined herein, and subject to the provisions, limitations and exclusions in this limited warranty, that its new vehicle or new component purchased from Sierra LSV or an Authorized Dealer or Distributor shall be free from defects in material and workmanship under normal use and service for the periods stated below, subject to the provisions, limitations and exclusions in this limited warranty.

This limited warranty covers material, workmanship and repair labor cost as to those items specifically listed below for the periods specified. Such repair labor shall be performed only by Sierra LSV, its Authorized Dealers or Distributors, or a service agency approved by Sierra LSV. For repairs made by qualified technicians other than Sierra LSV’s factory technicians or an Authorized Dealer or Distributor, Sierra LSV will provide only the replacement parts or components.

IF THE WARRANTY REGISTRATION FORM IS NOT COMPLETED AND RETURNED TO Sierra LSV AT THE TIME OF THE ORIGINAL RETAIL SALE, PURCHASER MUST PROVIDE PROOF OF DATE OF PURCHASE WITH ANY WARRANTY CLAIM.

ITEM	SUB-ITEMS	COVERAGE
VEHICLE MAINFRAME	Not Applicable	4 Years Aluminum 3 Years E-Coated Steel
SUSPENSION	Steering system, steering column, shocks, and springs	3 Years
ELECTRIC POWERTRAIN	Electric motor, transaxle, MCOR, rear hubs, and Apps	3 Years
LITHIUM-ION BATTERY	25,000 amp hours as recorded by the controller, or four years, whichever occurs first, for vehicles properly maintained using an authorized deionizer system. Otherwise, 20,000 amp hours or four years, whichever occurs first. Proper charging and maintenance required as stated in this manual. Any defects caused by aftermarket accessory installation or misuse of any kind will void battery warranty.	6 years
MAJOR ELECTRONICS	Solid State Speed controller and battery charger	3 Years
PEDAL GROUP	Pedal group mechanical assembly, brake cluster assemblies, and brake cables	3 Years
SEATS	Seat Bottom, Seat Back, Hip Restraints, and armrests	3 Years
CANOPY SYSTEM	Canopy, Rear Canopy Supports	3 Years
ALL REMAINING COMPONENTS	Switches, Solenoid, Voltage Converter	3 Years
BODY GROUP	Body and Dash Panels	3 Years
WEAR ITEMS	Wear Items such as Tires and Brake Pads	Not Covered, unless manufacturers defect

## EXCLUSIONS

Excluded from any Sierra LSV warranty is damage to a vehicle or component resulting from a cause other than a defect including poor maintenance, neglect, abuse, accident and collision, maintenance adjustments, unreasonable or unintended strain or use, improper installation of accessories (such as connecting 12 Volt accessories directly to 48 Volt Battery Pack), installation of parts or accessories that are not original equipment including non-approved GPS systems, non-approved alteration and acts of God. Also excluded from any Sierra LSV warranty are all fuses, decals (except safety decals), lubricants, routine wear items such as the charger plug and receptacle, mats, pads, brake shoes, brushes, bushings, drive buttons, cosmetic deterioration, and items that deteriorate, fade or fail due to exposure or ordinary wear and tear.

The provisions of this limited warranty shall not apply to failure due to the following conditions:

### 1. Battery

- 1.1. Improper charging of a vehicle due to the use of a battery charger model not approved by Sierra LSV for use with the vehicle.
- 1.2. Abuse such as overcharging, undercharging, loose wiring and fasteners, or rusted or corroded hardware.
- 1.3. Use of energy management systems that do not allow a minimum of 12 hours of charge time to assure proper charging.
- 1.4. Use of any accessories that do not draw power off the complete 48V pack.
- 1.5. Neglect, breakage, freezing, fire, explosion, wreckage, melted terminal posts, the addition of any chemical, or the operation of the battery in an uncharged condition (below half charge 1.200 specific gravity); the installation of the battery in reverse or recharging in reverse, breakage of containers, covers, or terminal post, or battery used in applications for which they were not designed.
- 1.6. A battery damaged by a defective charger in vehicles that do not receive proper charging.
- 1.7. A vehicle not having an operational charger on a circuit that has the parameters specified in the vehicle owner's manual (the number of operational chargers must equal the number of operational vehicles), or use of an unapproved algorithm.

2. Lack of proper maintenance such as preventive maintenance checks, maintaining proper tire pressure and alignment and tightening loose wire connections as outlined in the owner's manual.

3. Damages caused by improper installation of the component.

4. Failed semiconductor parts such diodes and fuses that are vulnerable to electrical overloads (including lightning) beyond the control of Sierra LSV.

5. Damaged charger AC and DC cord set with plug, which is a wear item and subject to user abuse.

Without limiting the generality of the foregoing in any way, and as part of its limited warranty exclusion, Sierra LSV does not warrant that its vehicle or components such as battery, controller or electrical device are suitable for use in any application other than in its products. As in the use of any vehicle, battery, computer, controller or electrical device, a prudent owner will read and study the owner's manual, the operator instructions and the warning labels; and will exercise due care in working on or around vehicles, battery or electrical devices.

Transportation expenses for warranty services are also excluded from this warranty.

### VOIDING OF WARRANTY

THIS AND ANY OTHER WARRANTY SHALL BE VOID IF THE VEHICLE OR COMPONENT IS ABUSED OR USED IN AN UNINTENDED MANNER OR SHOWS INDICATIONS THAT IT HAS BEEN ALTERED IN ANY WAY, INCLUDING, BUT NOT LIMITED TO, MODIFICATION OF THE SPEED GOVERNOR, BRAKING SYSTEM, STEERING, TRANSAXLE, OR OTHER OPERATING SYSTEMS OF THE CAR TO CAUSE IT TO PERFORM OUTSIDE SIERRA LSV SPECIFICATIONS. THE WARRANTY IS LIKEWISE VOID IF THE VEHICLE SHOWS INDICATIONS THAT REASONABLE OR NECESSARY MAINTENANCE AS OUTLINED IN THE OWNER'S MANUAL AND MAINTENANCE AND SERVICE MANUAL WAS NOT PERFORMED AT THE TIME AND IN THE MANNER SPECIFIED IN SUCH MANUALS.

### SOLE REMEDY

Sierra LSV's liability under this limited warranty or in any action whether based upon warranty, contract, negligence, strict product liability or otherwise, shall be the repair or replacement, at Sierra LSV's option, of the vehicle or component thereof that Sierra LSV deems to be defective. Replacement shall mean furnishing, during the applicable limited warranty period, a new vehicle or factory-reconditioned vehicle or component thereof that is identical or reasonably equivalent to the warranted product or component at no cost to the purchaser. Repair shall mean remedying a defect in the vehicle or component thereof at no cost to the purchaser during the applicable limited warranty period. Sierra LSV reserves the right to test and recharge any component returned for adjustment. If Sierra LSV elects to repair the vehicle or component, it may provide factory-reconditioned parts or components. All parts and components replaced under warranty shall become the property of Sierra LSV.

### DISCLAIMER

THIS LIMITED WARRANTY IS EXCLUSIVE. Sierra LSV MAKES NO OTHER WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED. ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED BY Sierra LSV AND EXCLUDED FROM THIS WARRANTY. THE PURCHASER AND Sierra LSV EXPRESSLY AGREE THAT THE SOLE REMEDY OF THE REPLACEMENT OR REPAIR OF THE DEFECTIVE VEHICLE OR COMPONENT THEREOF IS THE SOLE REMEDY OF THE PURCHASER. Sierra LSV MAKES NO OTHER REPRESENTATION OR WARRANTY OF ANY KIND, AND NO REPRESENTATIVE, EMPLOYEE, DISTRIBUTOR OR DEALER OF Sierra LSV HAS THE AUTHORITY TO MAKE OR IMPLY ANY REPRESENTATION, PROMISE OR AGREEMENT, WHICH IN ANY WAY VARIES THE TERMS OF THIS WARRANTY.

In the event that another pre-printed warranty document, certificate or both offered by or through Sierra LSV at the time of sale of this vehicle (each an "Additional Warranty Document") is deemed to conflict with the limitations or exclusions contained herein, the limitations and exclusions contained herein shall continue to apply to both this limited warranty statement and, to the maximum extent permitted by law, to each Additional Warranty Document.

## NO CONSEQUENTIAL DAMAGES

IN NO EVENT SHALL SIERRA LSV BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES INCLUDING, BUT NOT LIMITED TO, LOSS RELATED TO PROPERTY OTHER THAN THE VEHICLE, LOSS OF USE, LOSS OF TIME, INCONVENIENCE, OR ANY OTHER ECONOMIC LOSS.

Some states allow neither limitation on the duration of an implied warranty nor exclusions or limitation of incidental or consequential damages. Therefore, the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

## HOW TO MAKE A WARRANTY CLAIM

To make a warranty claim under this limited warranty, you must present the vehicle or defective component with evidence of proof of purchase date and number of amp hours (if applicable) to an authorized Sierra LSV dealer.

For warranty-related communication, contact your sales.

## WARNING

Any modification or change to the vehicle that affects the electrical system, stability or handling of the vehicle, or increases maximum vehicle speed beyond factory Specifications, could result in severe personal injury or death.







# SIERRA

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