Owner's Manual

Four Seat Forward Facing

Improper use and ignoring maintenance can result in serious injury, damage, and decreased performance. It's important to read, understand, and follow the owner's manual and safety warning labels before the first use. Pay particularly close attention to the CAUTIONS, WARNINGS and DANGERS in this manual, which emphasize information related operator, passenger, bystander and property safety.

DANGER!

Hazardous Situation.
Failure to avoid will result in severe injury or death of the occupants, bystanders, or person repairing the vehicle.

WARNING!

Hazardous Situation.
Failure to avoid could result in severe injury or death of the occupants, bystanders, or person repairing the vehicle.

CAUTION!

Hazardous Situation.
Failure to avoid could result in minor to moderate injury and damage to the vehicle or the surroundings.

NOTE

Important information and best practices not related injury or damage.

Every vehicle can be used in a manner and for tasks beyond their original intended purpose making it impossible to anticipate and warn against every possible combination of circumstances and conditions that may be encountered.

Common sense and safe driving practices are the best defense against accidents and injuries.

Warranty Claims, Parts, & Customer Assistance

If you have questions about this vehicle, need to file a warranty claim or order replacement parts, please visit GolfCarts.com or call 423-722-5789, Monday - Friday from 9 am to 5 pm EST to speak with a factory trained customer support representative. When you call, please be prepared to provide the date of purchase, vehicle model, serial number, and manufacture date code

Serial Number Plate Location

Lift the seat to access the battery compartment. The serial number is located on the driver's side frame rail.

2 Batteries & Charger

NOTE

The instructions in this manual are specific to the batteries and charger supplied with this vehicle.

Instructions vary by manufacturer. If batteries are replaced or if a different charger is used, read and follow the instructions and recommendations provided by the manufacturer of those items.

Understanding the Batteries & Charger

Charging Times and Battery Life

Charging times and battery life are difficult to predict because they vary depending upon a number of factors including use, driving conditions, driving habits, ambient temperature, discharge rate, age, maintenance, and condition.

Improving Battery Performance

Batteries must be fully charged before using the vehicle for the first time.
Make sure all cable connections at the battery terminals are clean and tight before connecting the electrical cord to the charger port on the vehicle.
Always complete the charging cycle before disconnecting the electrical cord from the vehicle.
To improve battery life, keep the batteries fully charged and avoid discharging the batteries below 70% whenever possible.
Use your vehicle often and recharge the batteries after each use, whether it was just a few minutes or all day. Batteries perform best when they're discharged and recharged frequently.
New batteries won't reach full capacity until they've been discharged and recharged 20 to 30 times.
Battery range varies with road conditions, terrain, temperature and the operator's habits.
Recharge the batteries at room temperature. Never recharge the batteries in temperatures of 110°F or higher.

Charging Safety

DANGER!

Explosive Gases

Failure to charge batteries in a well ventilated space can cause an explosion.

Batteries generate explosive hydrogen gas fumes during charging cycles that accumulate in enclosed spaces. A 4% concentration of hydrogen gas is explosive and could cause severe injury or death. Always charge batteries in a well ventilated space with sufficient fresh air circulating to exchange the air every 12 minutes.

Never smoke around batteries or expose them to open flames.

To reduce the risk of explosion that could result in severe injury or death, never smoke around batteries or charge batteries in an area with open flames, sparks, gas water heaters or furnaces or electrical equipment that could cause an electrical arc.

DANGER!

Risk of Electrocution

Failure to charge the batteries safely can result in serious injury or death.

- The charger must be connected to a dedicated GFCI protected outlet with an appropriately rated circuit breaker grounded in accordance with the manufacturer's recommendations or applicable electrical code (whichever is higher). A grounded outlet is required to reduce the risk of shock.
- Do not use ground adapters. Do not alter or modify the electrical cord or plug in any way.
- Do not connect a damaged cord or use the on board charger if it has been damaged in any way. Refer all repairs to qualified technicians.
- Do not move or remove the on board charger; do not modify or alter the charger installation.
- Do not touch the uninsulated portion of output connector or the battery terminal.
- Let charging cycles complete before disconnecting the power cord. Arcing and/or burning of the plug receptacle can occur, which can cause the batteries to explode.
- Do not use any charger that was not supplied by the manufacturer .
- Do not open or disassemble the charger.
- The battery charger is not intended for use by children, people with reduced physical, sensory, or mental capabilities, or anyone without experience or knowledge until they have received ample instruction and are supervised by the person responsible for their safety.

CAUTION!

Risk of Fire

An extension cord is not a substitute for permanent wiring.

If the vehicle can't be parked close enough for the charger to be plugged directly into the outlet, contact an electrician. Short circuits, overloading, improper use and care of extension cords cause thousands of fires each year. *If an extension cord must be used temporarily, it must be industrial grade, UL approved, rated for 20 amps with a minimum 10 gauge wire.*

- Make sure the pins on the plug are the same number, shape, and size as the plug on the charger.
- Use the shortest length possible. Voltage and efficiency decrease with every extra foot.
- Connect the extension cord to the vehicle side first, then plug the extension cord into the GFCI outlet. When the charging cycle is complete, always unplug the extension cord from the outlet first, then unplug the cord from the vehicle side.
- Install a heat sensor or smoke detector and keep a properly rated fire extinguisher nearby.
- Inspect the cord and the plug frequently and discard if either are damaged.
- Never connect multiple cords to make a longer one.

2 Batteries & Charger

Understanding Batteries & On Board Charger

Remove the cord for the on board charger from the port under the rear seat and plug it in to any available outlet. When you're finished, unplug the cord from the outlet and feed it back through the port.

Charging the Lithium-Ion Battery Pack

Read and follow the instructions in Battery Users Manual. Refer to the Battery Specifications page for charging times and environmental parameters for the battery in your vehicle.

- Charge the battery after each use and unplug the cord from the outlet when the charging cycle is complete. To improve the long term health of your Lithium-Ion battery pack, do not leave the charger cord plugged into the outlet continuously.
- Park the vehicle on a firm, level surface. Engage the parking brake, turn the ignition switch off and remove the key from the switch.
- Make sure all cable connections at the battery terminals are clean and tight before connecting the charger.
- Gently pull the charger cord through the port under the driver's seat.
- Plug the charger into the dedicated GFCI outlet.
- The charger starts automatically a few seconds after it's plugged in and will automatically stop when the batteries are fully charged. When the battery is charged, unplug the charger cord from the outlet and carefully feed it back through the port under the driver's seat.
- If electrical service is disrupted during a charging cycle, the charger will turn off automatically. In most instances the cycle automatically resumes when service is restored. During power outages, it's normal to hear a clicking sound from the charger.
- *If an extension cord must be used temporarily, always plug the charger cord on the vehicle into the extension cord first, then plug the extension cord into the outlet. When the charging cycle is complete, unplug the extension cord from the outlet first, then unplug the extension cord from the charging cord on the vehicle. Store the extension cord safely out of the vehicle's path.*

NOTE
Vehicle operations are locked out during charging cycles.

Cleaning Batteries

- Use a clean microfiber cloth to wipe dirt and debris. from the surface.
- If battery pack terminals are contaminated or dirty, wipe debris from terminals with a dry cloth.

WARNING!

Risk of Severe Injury and Damage.

Never charge a frozen, bulging or damaged battery.

Contact a qualified technician for service before storing the vehicle.

NOTE

Batteries should be clean, fully charged with the battery charger and other electronic devices disconnected to reduce battery discharge during long term storage.

Long Term Storage

- Store the vehicle in a cool, dry location where it's protected from harsh elements.
- Park on a firm, level surface, press the brake to bring the vehicle to a complete stop, turn the ignition switch off, and remove the key.
- Batteries self discharge over time. Monitor discharge level every 2 to 4 weeks and recharge when necessary.
- Never let the let batteries discharge below 70%.
- Avoid storing the vehicle in extremely hot or cold temperatures. Batteries discharge faster in temperatures above 90°F. If vehicle is stored in temperatures 90°F and higher, check the discharge level every 2 weeks.
- *Keeping batteries fully charged in freezing temperatures is critical.* Fully charged batteries will not freeze unless the temperature falls below -75°F. However, batteries exposed to freezing temperatures can freeze as they self discharge. If the vehicle is stored in temperatures below 32°F, monitor the discharge level every 2 weeks and recharge as needed.
- Charge batteries completely before using the vehicle.

Touchscreen Controls

Navigation Menu

1 - On / Off
2 - Home Screen
3 - Back to previous screen
4 - Audio Volume Up
5 - Audio Volume Down

Vehicle Information Screen

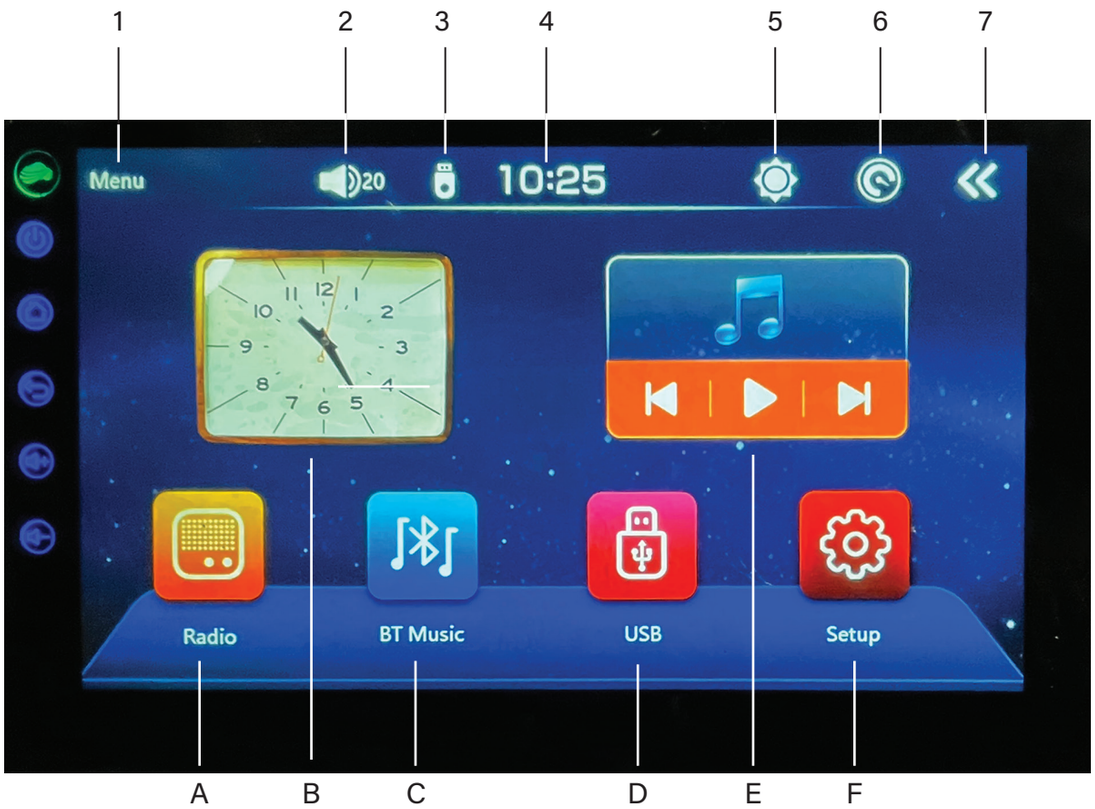
A - Amp/Ohm Setting: Illuminated A (amp); Illuminated O (ohm)
B - Battery Voltage: Available power from all batteries combined, battery health indicator.
C - Speedometer: Current vehicle speed.
D - High/Low Speed Setting: Turtle illuminated when Low Speed is selected; Rabbit is illuminated when High Speed is selected.
E - Travel Direction: The current position of the gear selector is illuminated in white.
F - Trip Odometer: Mileage for one trip.
G - Odometer: Total vehicle mileage.
H - Battery State/Critical State Indicator: Percentage of remaining battery life. Display shows 100% when fully charged, the percentage decreases as batteries are depleted. Illuminated warning indicator is displayed when batteries are critically low.

NOTE
Always charge the batteries before the remaining battery life display falls below 30%.

Touchscreen Controls

Task Bar

1 - Active Screen: Displays which app or page is open on your screen.
2 - Volume Level: Numeric volume indicator simplifies monitoring & adjusting audio output.
4 - Flash Drive: Illuminates when flash drive is in the USB port; tap to play stored music & movies.
4 - Digital Clock: Displays the time of day; tap to adjust clock settings.
5 - Brightness Settings: Tap to adjust screen brightness
6- Vehicle Information Screen: Tap to exit any menu & return to Vehicle Information Screen.
7 - App Landing Page: Tap to return to the beginning of the app on your screen.



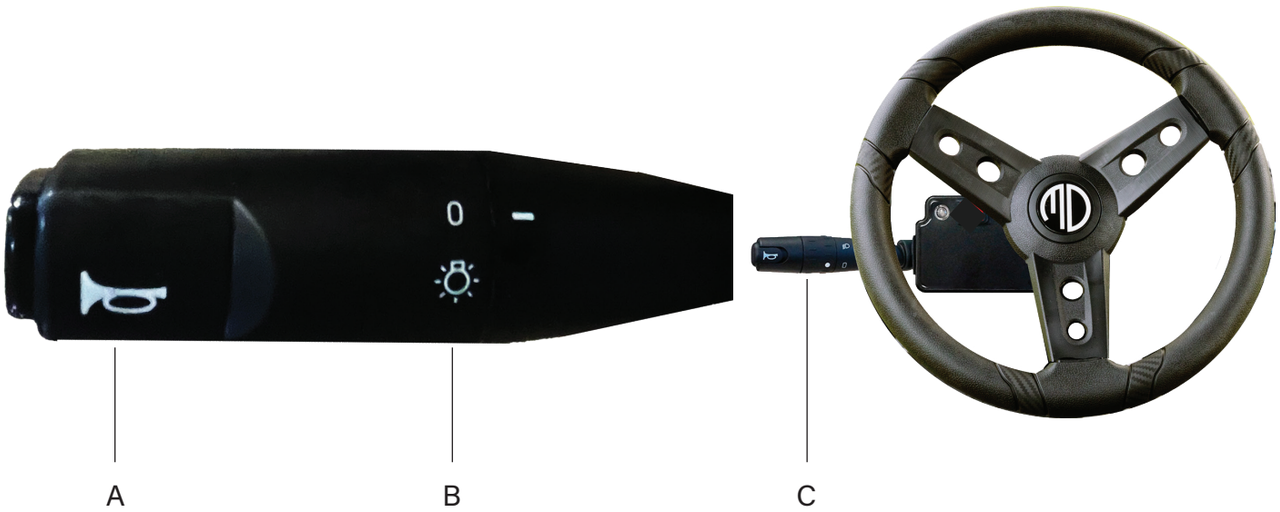
Home Screen

Touch HOME in the navigation menu to open audio controls, set the time, & change settings.
A - Radio: Touch to scan for radio stations, play, & save favorite stations.
B - Analog Clock: Displays the time of day. Tap to adjust and save clock settings.
C - Bluetooth Music: Tap to connect your smart phone for hands free calling & play stored music.
D - USB: Plug your USB drive into the port on the dash and press the icon to play stored music or movies.
E - Media Player: Tap to play the current selection, replay the previous song, or skip to the next one.
F - Setup: Tap to select & save personal preferences.

Steering Column

Multi-Function Turn Signal

The horn, turn indicators, headlights, and taillights are located on the turn signal stalk.



A - Horn: Press the button on the end of the turn signal to sound the horn.
B - Lights: Rotate to turn the headlights and taillights on and off.
C - Turn Indicators: Right turn - up; Left turn - down.
When turn is complete, return to center position.

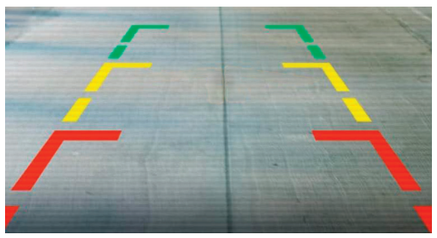
Side Mirrors with LED Turn Signal Lights

LED turn signal lights in the mirrors illuminate when the turn signal is on. Fold in side mirrors when driving on narrow roads or confined areas,

Press the top corner on the back of the mirror and fold in toward the vehicle.

Avoid pressing in the middle or on the mirror surface.

Rear View Camera



The rear view camera mounted in the rear bumper works in tandem with interior and exterior mirrors to maximize coverage. An object that's visible in the mirrors may not be within the range covered by the camera, especially if they're close to the bumper or on the corners.

The rear view camera is displayed on the vehicle control screen when the vehicle is in reverse.

Dashboard Controls

Top Row Switches

1 - Gear Selector 2 - High/Low Speed 3 - Hazard Lights

Bottom Row:

4 - Ignition Switch 5 - USB Port 6 - 12V Port

1 - Gear Selection Switch

Three-position rocker switch to select the travel direction.

- In the center position, the vehicle is in NEUTRAL.
- Press the top of the switch to move FORWARD.
- Press the bottom to move in REVERSE.

Always keep your foot on the brake pedal and move the gear selection switch before turning the ignition switch on.

WARNING!

Risk of Severe Injury & Damage

Never move the gear selection switch while the vehicle is in motion.

To prevent the risk of severe injury, loss of vehicle control, and damage, bring the vehicle to a complete stop before moving the gear selector. If the switch is moved to change direction while the vehicle is in motion, the vehicle will brake rapidly and reduce speed suddenly. An alarm will sound until the vehicle stops.

2 - High/Low Speed Switch

Two position rocker switch to select vehicle speed restrictions depending upon driver ability and driving conditions.

Flip the switch to select the speed setting before turning the ignition on.

High Speed (Rabbit): Faster acceleration, vehicle reaches maximum speed. *Press the rocker switch down to select the High Speed setting.*

Low Speed (Turtle): Softer acceleration, limited vehicle speed for inexperienced drivers, traveling downhill, rough terrain, and inclement weather. *Press the rocker switch up to select the Low Speed setting.*

WARNING!

Risk of Severe Injury & Damage

Never flip the High / Low Speed Setting Switch while the vehicle is in motion.

To prevent the risk of injury, loss of vehicle control, and permanent component damage, bring the vehicle to a complete stop before flipping the switch.

3 - Hazard Light Switch

Press the switch to turn hazard lights on and off

When hazard lights are on, lights at the front and back of the vehicle flash continuously until the switch is pressed to turn them off.

4 - Ignition Switch and Keys

The ignition switch turns the electrical systems on and off.
OFF: All electrical systems are disabled.
Always remove the key when exiting the vehicle.
ON: All electrical applications are enabled.
The key cannot be removed when the ignition switch is ON.

NOTE

Batteries deplete within 1-2 days if ignition switch is left ON when vehicle is not in use.

The key with the protective cover cap fits the ignition switch. It is used to turn the ignition switch on and off only.

The other key is used to lock and unlock all locking storage.

Your vehicle ships with 2 sets of keys. Store spare keys in a safe place. The manufacturer does not have additional keys for your vehicle. If keys are lost, the ignition switch or locks must be replaced.

5 & 6 - USB Charging Port & 12V Charging Port

Charge device batteries when the ignition switch is on. Flip protective cover up and connect cord to the port. Disconnect cord and close cover when charging is complete or you exit the vehicle.

Keep protective covers closed when not in use.

Foot Pedals

Brake Pedal

Press the brake pedal to reduce the vehicle speed and bring it to a stop.

Your vehicle is equipped with an electromagnetic braking system. The parking brake engages automatically when your vehicle comes to a complete stop. It releases automatically when the accelerator is pressed and the vehicle starts moving.

The automatic parking brake does not release if the ignition switch is off or the gear selection switch is in NEUTRAL.

Accelerator

The accelerator controls vehicle movement and speed.

Press the accelerator to start moving, press down on the pedal to increase speed, lift your foot from the pedal to apply less pressure and decrease speed.

If you remove your foot from the accelerator, the vehicle gradually slows down until it comes to a complete stop.

NOTE

Keep feet away from the accelerator when sitting in the vehicle to prevent unintended movement.

Electromagnetic Braking System

Releasing the Brake to Roll or Tow the Vehicle

If you need to manually push your vehicle or have it towed, the automatic parking brake must be temporarily disabled. The BRAKE RELEASE switch is a short term shut off that disengages the magnetic brake so your vehicle rolls freely when you roll or tow it.

WARNING!

Risk of Severe Injury and Damage.

When the switch is in the BRAKE RELEASE position the vehicle does not have any brakes. Do not leave unattended. Never flip the switch to BRAKE RELEASE on sloping terrain.

Flip the switch to RUN or OFF when you finish moving the vehicle. The BRAKE RELEASE position drains the batteries and can permanently damage batteries & magnetic brake.

- Do not leave the switch in the BRAKE RELEASE position longer than necessary.
- Chock the wheels to prevent unintended movement and minimize the risk of injury and damage.
- Never attempt to push your vehicle in conditions with limited visibility or in any conditions that make the vehicle difficult to control.

Flipping the Brake Release Switch

The BRAKE RELEASE switch is located in the component compartment under the front seat.

- Flip the back of the front seat toward the steering wheel and dashboard.
- RUN/OFF/BRAKE RELEASE sticker is on the rear body panel under the seat back on the passenger's side. The switch is on the control unit under the sticker.
- Flip the switch to the BRAKE RELEASE position.
- When your vehicle reaches its destination, flip the switch to the RUN or OFF position.
- Contact the manufacturer if your battery doesn't have adequate voltage to disengage magnetic brake.

Sun Top & Windshield

WARNING!

Risk of Severe Injury.

The sun top and cab frame are not designed or intended to provide protection from roll over or falling objects. Windshield does not provide protection from tree limbs or flying objects.

Sun Top

The sun top and cab frame provides shade and shelter during a rain shower, but it can't keep you dry in heavy rain, protect you from falling objects during a storm, and is not designed for roll over protection.

Split Windshield

The split windshield is manufactured from a rigid, impact resistant polycarbonate blend that's shatter resistant with a high quality polyurethane hinge that folds down easily when the weather is warm. In addition to providing excellent visibility and decreasing glare, it offers some protection from sun exposure, cool temperatures, wind, rain, bugs and other small debris flying that may be flying through the air.

To protect the surface and prevent a cloudy residue that may permanently damage your windshield, avoid using cleaning products that are ammonia based or abrasive. Never use WD-40 or other petroleum based cleaners, scrubbing pads, old towels, or paper towels which can scratch the finish. Clean the surface with warm water and mild dish soap using a clean microfiber cloth, rinse and wipe dry with microfiber cloth to prevent water spots.

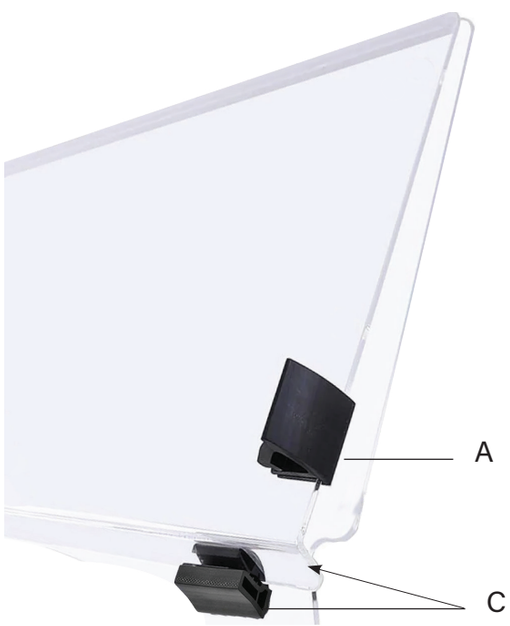
3 Vehicle Overview

Folding the Windshield Down

A - Rubber Windshield Clamps: One on each side at the top of windshield and sun top frame
B - Sun Top Frame: Wide opening in windshield clamp is wrapped around the top of the post on each side
C- Rubber Windshield Mounts: One mounted at the bottom of the windshield on each side.

Step One:

Pry the rubber windshield clamp (A) away from the sun top frame post (C). If clamps are difficult to remove, use a medium heat hair dryer for a few minutes to make the rubber more pliable. BE CAREFUL. The metal frame may be hot.



Step Two:

Fold the top half of the windshield down and slide the curved lip into the rubber windshield mounts (C) on both sides of the bottom of the windshield. Do not remove the rubber windshield mounts (A) on top half.

A - Rubber Windshield Clamps: Do not remove.
C - Rubber Windshield Mounts: When the top is folded down, the curved lip slides into the rubber mounts (C) on both sides of the bottom half.

Front & Rear Folding Armrests

Each seat has a padded armrest that flips up and down.

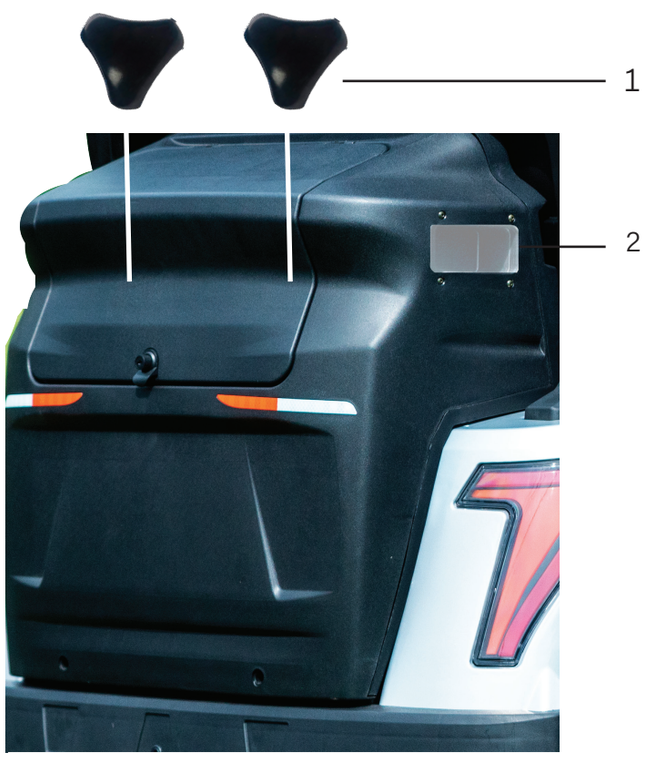
- Lower the armrest after securing your seatbelt. Flip the armrest up when you exit the vehicle.
- Use grab rails for stability when you enter & exit.
- Verify all passengers have armrests down before the vehicle moves.

NOTE

Do not sit or lean on the armrests. Avoid pushing down or pulling on the armrests as you enter and exit the vehicle to prevent damage when the hinge is forced beyond its intended range of motion.

Convertible Rear Storage

Removing the Storage Box



- Open the storage box and empty the contents.
- Locate the twist knobs **(1)** inside the storage box. Rotate counter clockwise approximately 90^{0} to release the lock. Do remove the twist screws.
- Use the hand grips (**2**) on both sides of the storage box to lift up both sides at the same time and tilt out of the cart.
- Put the storage box & keys in a safe place.
- Reverse the process to reinstall. Make sure the bottom of the cart is clean and free of debris that may prevent the storage box from sitting level on the floor.

4 Operating

Vehicle Safety

Keep the vehicle in good condition and operate it responsibly. Improper use and the lack of proper maintenance may result in damage or decreased performance.

Every vehicle can be used in a manner and for tasks beyond their original intended purpose. It's impossible to anticipate and warn against every possible combination of circumstances and conditions that operators and passengers may encounter.

WARNING!

Risk of Serious Injury and Damage

Testing the brakes for proper operation before each trip is critical to your safety.

Never operate the vehicle if the brakes are malfunctioning.

Before Each Ride

Before each trip inspect each item on the pre-ride checklist. If repairs are needed do not use the vehicle until service is complete. The vehicle should be considered potentially hazardous when service is needed.

Pre-Ride Check List	
Before getting in	
Body	Look for loose, damaged, or missing parts
Fluid Leaks	Look underneath and around the vehicle for fluid
Tires	Look for low air pressure, tread wear, and inspect for damage, cracks, & debris
Wheels	Check for loose or missing hardware
Front & Rear Suspension	Check for loose or missing hardware
Before putting the key in the ignition switch	
Brake system	Check pedal travel for resistance when pressed and return when released.
Magnetic Brake	Make sure vehicle doesn't roll when stopped.
Accelerator	Make sure pedal moves down freely and returns to its original position.
Steering	Check for excessive play and unusual noise when steering wheel is turned
Put the key in the ignition switch and turn to the ON position	
Batteries	Check charge level to make sure batteries are fully charged
Control Panel	Check the control panel display for error codes.

Driving Condition Safety

WARNING!

Risk of Serious Injury and Damage

Rough terrain, inclement weather and other factors can affect your ability to control the vehicle. To reduce the risk of severe injury or death resulting from loss of control:

- Do not drive on public roads. Observe rules for the location where the vehicle is operated.
- Always drive carefully and only as fast as considerations permit.
- Consider the terrain, traffic conditions, and environmental factors which effect vehicle control.
- Use extra care and reduce speed when driving in inclement weather, on loose dirt, wet grass, gravel, and other soft surfaces.
- Avoid extremely rough terrain.
- Use caution when driving on uneven surfaces to prevent damage to the vehicle undercarriage.
- Use caution when traveling near or through dry grass and brush. The motor gets very hot.

Steep slopes, sudden stops, and changes in direction can cause the vehicle to tip unexpectedly.

- *NEVER* drive vehicle up, down, or across an incline that exceeds 14° (25% grade).
- Avoid steep slopes. Drive in a straight path when going up and down hills.
- Maintain a safe speed when driving downhill. Press the brake to control speed when traveling down an incline.
- Avoid sudden stops and changing direction at high speeds.
- Slow down before and during turns.
- Be extremely careful when approaching blind curves and sharp turns.
- Avoid driving in hilly areas and across slopes. If driving across an incline is unavoidable, do not drive at an angle and be extremely careful.
- Sudden shifts in weight distribution and cargo with a high center of gravity can cause the vehicle to tip unexpectedly. Move storage as close to the front of the vehicle as possible and distribute weight evenly across the load bed.

Driver & Passenger Safety

WARNING!

Risk of Serious Injury and Damage

Common sense, experience, and safe driving practices are the best defense against accidents and injuries.

To reduce the risk of severe injury or death resulting from improper operation:

- Read and observe all warnings and operating instruction labels on the vehicle. Replace damaged or missing labels.
- Never operate under the influence of drugs or alcohol.
- Operators must read and understand the owner's manual, be at least 59" tall, have a valid operators license, and demonstrate a proficiency in operating the vehicle safety.
- Always be prepared to stop.
- Follow rules established for the location where the vehicle is being operated.
- Maintain a safe distance between other vehicles and pedestrians.
- Look in all directions for oncoming traffic, pedestrians, and other obstructions before pressing the accelerator. Check the area behind the vehicle carefully before operating in REVERSE.

Make sure all passengers understand how to ride safely before they get into the vehicle.

To reduce the risk of severe injury or death of passengers:

- When there is a risk of lightning, all occupants must leave the vehicle.
- Never leave young children unattended on or around the vehicle.
- All occupants must tall enough that their feet are on the floor when seated.
- All occupants must remain seated and keep their entire body inside vehicle while it's in motion.
- Never allow more than one passenger in each seat. Don't let children ride on anyone's lap.
- The vehicle is not designed for child safety seats or children who are required to use them.
- Never let passengers ride on the cargo load bed.

NOTE

Pay particularly close attention operating the vehicle in areas where pedestrians are present.

Electric vehicles make very little noise and pedestrians may not hear or see your vehicle approaching.

Starting the Vehicle & Driving

- Disconnect the charger and store the cord safely out of the vehicle's path.
- Verify all occupants are seated & cargo is secure.
- Press the brake and keep your foot on it until you're ready for the vehicle to start moving.

- Flip the gear selection switch to NEUTRAL.
- Put the key in the ignition switch and turn the key to ON.
- Press the gear selector to the desired direction.
- Look in all directions to be sure the vehicle's path is clear of oncoming traffic, pedestrians, and obstacles before removing your foot from the brake.

NOTE

An alarm sounds when the vehicle is moving in reverse.

- Put both hands on the steering wheel, move your foot to the accelerator and slowly press it toward the floorboard.
- Apply pressure slowly, gradually increasing the vehicle's speed.

Coasting

If accelerator is released when the vehicle is in motion, the motor controls the rate of deceleration. If the accelerator is not pressed, the vehicle will lose speed gradually until it comes to a complete stop. Pressing the brake gives the operator control of the vehicles speed and stopping distance.

Slowing Down & Stopping

- Press the brake to slow the vehicle down or bring it to a complete stop.
- When ready to park the vehicle, bring the vehicle to a complete stop, press the gear selection switch to the F position, turn the ignition switch off and remove the key.

Regenerative & Motor Controlled Braking

WARNING!

Risk of Serious Injury and Damage

To prevent of loss of control and traveling at unsafe speeds that could cause severe injury or death, press the brake to reduce speed quickly and safely.

Regenerative and motor controlled braking prevents coasting downhill at uncontrolled speeds. They do not prevent traveling downhill at unsafe speeds and are no substitute for the operator using the brake to control vehicle speed and stopping distance.

Regenerative Braking

Regenerative breaking prevents the vehicle from picking up speed in excess of its high limit, whether the accelerator is pressed or not.

If the key or gear selector are moved to a different position in an attempt to override the regenerative breaking system, the vehicle brakes rapidly until it slows to a stop on level ground.

Motor Controlled Braking

When the vehicle is in drive, motor controlled braking prevents it from gaining excessive speed when:

- the accelerator is released
- the vehicle gains speed as it's traveling downhill

When the accelerator is released, the vehicle speed decreases gradually until the accelerator is pressed again.

Transporting the Vehicle

WARNING!

Risk of Serious Injury and Damage

Familiarize yourself with changes in the braking distance and handling characteristics in an isolated area before traveling near other vehicles and pedestrians.

To reduce these risks:

- Drive with extreme caution when towing the vehicle.
- Tow only one vehicle at a time.
- Do not exceed 10 mph.
- Never ride on the vehicle being towed.
- Tow only with a tow bar. Never use ropes or chains.
- Never tow the vehicle on highways.
- If the vehicle is equipped with an on/off tow switch, move the switch to the off position before towing.

WARNING!

Risk of Serious Injury and Damage

To reduce the risk of serious damage, severe injury, and death when transporting the vehicle:

- Secure the vehicle frame with ratchet tie downs. Do not strap to seats or body parts.
- Remove personal and loose items that are not part of the original vehicle equipment.
- Never ride on the vehicle being transported.
- Always remove the windshield before transporting.
- Maximum speed with sun top installed is 50mph (80 kph). If the vehicle is transported at highway speeds, the sun top must be removed and the seat bottoms secured.
- When transporting vehicle below highway speeds, make sure hardware is tight and check for cracks in sun top at mounting points. Always remove windshield. Make sure the vehicle and contents are adequately secured.
- The rated capacity of the trailer or truck must exceed the weight of the vehicle and load plus 1000 lbs.

Maintenance & Service

Preventative maintenance at recommended intervals is the best way to optimize vehicle performance and extend its life. Refer to the Periodic Service Schedule on page 33 for recommended service intervals under normal use. Some items need to be serviced more frequently if the vehicle is regularly used at the maximum weight capacity or in areas with extreme temperatures, dust and debris.

A vehicle that needs repairs is potentially hazardous. If any item needs repair, do not use the vehicle until service is complete. After the vehicle is serviced, test drive it in a safe area with no vehicle or pedestrian traffic. Keep detailed and complete records of the vehicle's maintenance history.

DANGER!

Risk of Explosion, Electrocution, Serious Injury and Death

Never attempt maintenance or service without the proper tools and adequate training.

Some components are heavy, highly corrosive, explosive, produce high amperage, reach extreme temperatures or require specialized tools. To prevent serious injury to the person servicing the vehicle and bystanders, always be extremely cautious when performing maintenance and service. When diagnosing, removing or replacing components, always consider your safety and the safety of those around you.

Have your vehicle serviced by a qualified technician if you lack the proper tools and training, or are uncertain about potential hazards to your safety, the safety of others, and risks of damage.

- Always wear safety glasses and protective clothing when performing maintenance or service.
- Remove all jewelry (rings, watches, necklaces, etc.)
- Remove loose clothing and tie back long hair to prevent entrapment in moving parts.
- Use care not to touch hot objects.

WARNING!

Risk of Serious Injury and Damage

Unintended movement of the vehicle during cleaning, maintenance, and service can cause serious injury and damage to property and the vehicle.

Always park the vehicle is on a firm, level surface, engage the parking brake, move the gear selector to the FORWARD position, turn the vehicle off and remove the key from the ignition switch.

Cleaning the Vehicle

CAUTION!

Risk of Damage

Use of excessive water pressure and some chemical cleaning agents can cause damage.

- When pressure washing the vehicle exterior, do not use pressure in excess of 700 psi.
- To reduce the possibility of cosmetic damage, do not use any abrasive or reactive solvents to clean plastic parts.

- Washing with excessive water pressure and some cleaning agents can damage the seals, plastic parts, seat material, surface finishes and electrical system.
- Clean the windshield with clear water and a soft, clean cloth. Commercially available window cleaning products may damage or discolor the windshield. Minor scratches may be removed with a commercial plastic polish.
- Clean the seats, plastic parts, and rubber trim using a solution of mild soap and water with a sponge or soft cloth. Wipe down with a clean, damp cloth.
- Use a commercially available vinyl/rubber cleaner to remove oil, tar, asphalt, etc.
- Wash painted surfaces frequently with mild detergent in lukewarm or cold water and a clean, soft sponge or cloth.
- Flush the under body with clear water every time the vehicle is washed. Some fertilizers and dust control agents contain corrosive materials that can collect on the under body. Thoroughly clean areas where mud, grass cuttings and other debris can collect.
- Occasional use of non-abrasive wax products safe for clear coat automotive finishes will enhance the appearance of painted surfaces.

Wheels & Tires

WARNING!

Risk of Serious Injury and Damage

Over and under inflated tires can lead to poor handling and loss of vehicle control.

- Never exceed the inflation pressure rating on the tire sidewall.
- Use caution when inflating tires. Over inflation could cause the tire to separate from the wheel or cause the tire to explode, either of which could cause severe injury.
- Never install low inflation tires or any tire with an inflation pressure lower than the recommendation in the owner's manual.

Air Pressure

- When tires are cool, remove the valve stem cap and check the air pressure in all four tires.
- Confirm the air pressure on the tire sidewall and add air if necessary. The air pressure should be the same in all four tires.
- Because the tires are small and air volume is low, over inflation can occur within seconds. To reduce the possibility of tire explosion, pressurize the tire with small amounts of air intermittently to seat beads. Never exceed the tire manufacturer's recommendation when seating a bead.
- Replace the valve stem cap after checking the pressure or adding air.

Air Pressure & Tread Wear

Keeping the tires properly inflated prolongs the life of the tires, improves ride quality, vehicle safety, control and performance.

- *When the tires are properly inflated, the tread wears evenly across the entire surface*. There's no discernible difference in tread wear on the sides and in the middle of the tire.
- *When air pressure is too low, the tread wears faster on the sides than the middle.* The outer tread makes too much contact with the ground, causing the sides to wear prematurely. The ride is smooth but the motor works harder making performance sluggish.
- *When air pressure is too high, the tread wears faster in the middle than the sides.* Ground contact on the sides is limited, reducing traction and compromising safety. The ride is rough and bumpy.

When tires are properly inflated, dust and dirt doesn't accumulate on the sidewalls. Tread wears evenly across the entire surface.

NOTE

Tire inflation depends upon the terrain where the vehicle is predominantly used.

- **On grassy areas with hard turf** - inflation pressure should be on the higher end of the allowable range
- **On grassy areas with soft turf** - inflation pressure should be on the lower end of the allowable range to reduce the possibility of tires cutting into the turf.
- **On paved areas or hard surfaces** - inflation pressure should be on the higher end of the allowable range.

Lifting the Vehicle

WARNING!

Risk of Severe Injury and Vehicle Damage

The vehicle is extremely unstable during the lifting process. To reduce the possibility of severe injury or death when lifting the front wheels, rear wheels, or entire vehicle:

- Never get under the vehicle while it is supported by a jack or on jack stands.
- The vehicle weight shifts when the jack is lowered. If the jack is lowered too quickly or the jack stands shift, the entire vehicle will fall.
- Before lifting the vehicle, set the jack stands to the minimum appropriate height for the service being performed. Keep children and pets away.
- Park the vehicle is on a firm, level surface.
- Never lean on, sit in, or add additional weight when the vehicle is on the jack or jack stands.
- Always place chocks in front of and behind both of the wheels on the end not being raised.

Service that must be performed under the vehicle is best left to professionals. Contact a qualified technician for repairs under the vehicle.

NOTE

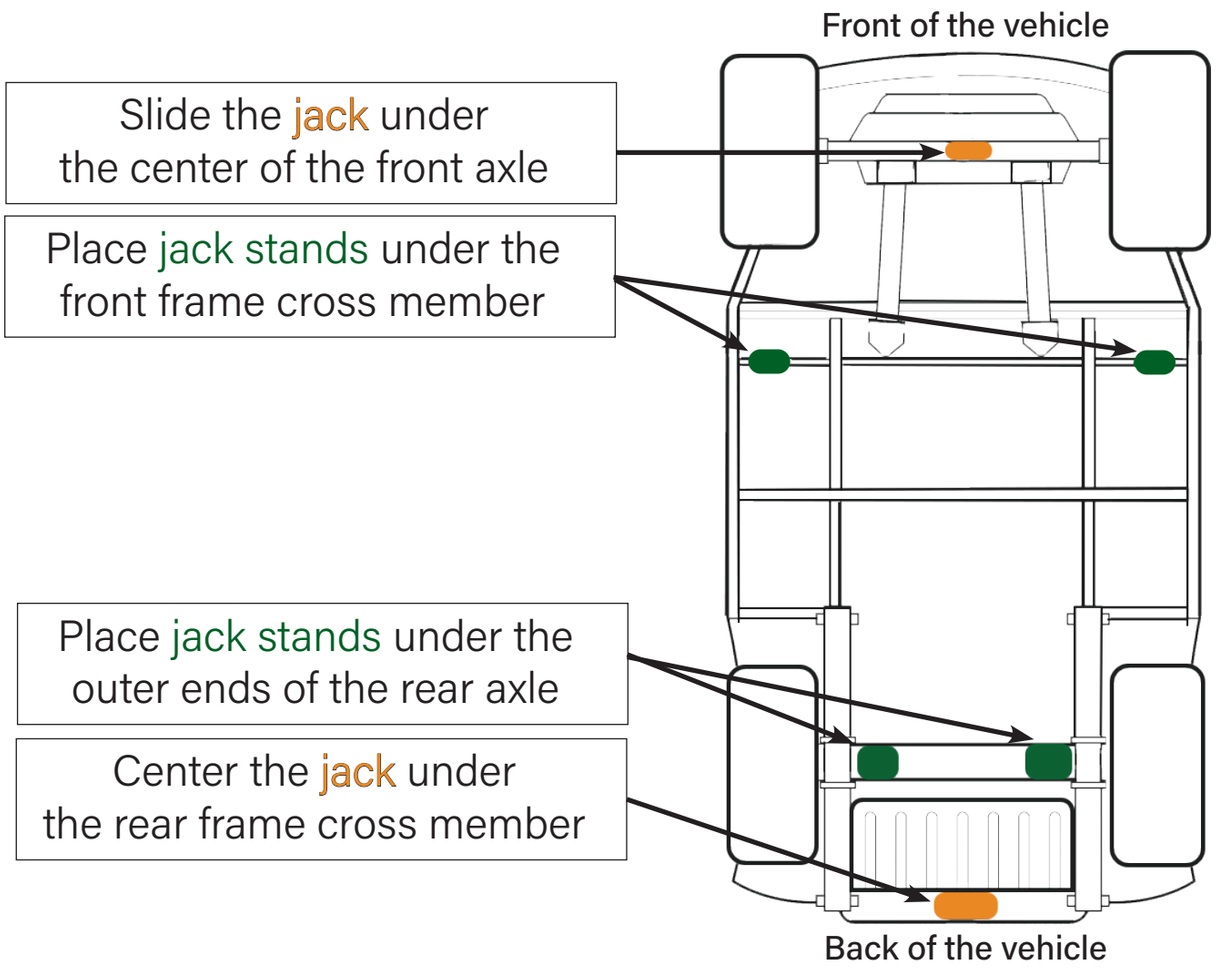
There's really no reason to lift the entire vehicle when changing the tires.

It's safer to work on one tire at a time and move the jack after completing work on each tire.

Required Tools	
1	Floor Jack
4	Jack Stands
4	Wheel Chocks

Place chocks in front of and behind both of the wheels on the end of the vehicle not being lifted.

Underside view for Jack for Jack Stand Placement



Lifting the Entire Vehicle

Refer to the diagram above for jack & jack stand placement

Raise the rear end first.

- Center the jack under the rear frame cross member.
- Raise the vehicle slowly, making sure it remains stable and doesn't move as it's raised. Continue lifting slowly until it's high enough to place the jack stands.
- Reach in to place the jack stands under the outer ends of the rear axle. Back away from the vehicle.
- Lower the jack slowly, making sure the vehicle and jack stands remain stable as it's lowered.

Raise the front end.

- Slide the jack under the center of the front axle.
- Slowly raise the vehicle enough to place jack stands under the rear frame cross member.
- Lower the jack slowly and make sure the vehicle is stable on all four jack stands.

Reverse the lifting sequence to lower the vehicle.

Removing & Remounting the Wheels

There's really no reason to lift the entire vehicle when changing the tires. It's safer to work on one tire at a time and move the jack after each tire. If you choose to lift the entire vehicle, don't raise the jack stands more than a few inches following the procedure to lift the entire vehicle on the preceding page.

WARNING!

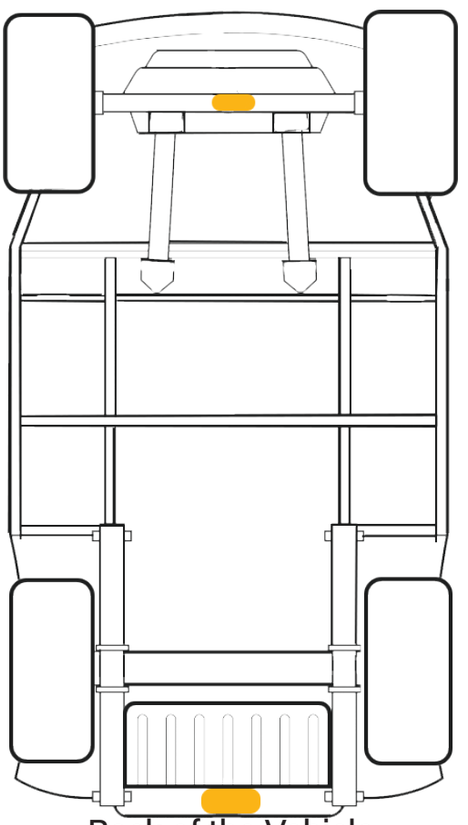
Risk of Severe Injury and Vehicle Damage

To reduce the risk of severe injury caused by a broken socket, always use sockets designed for use with an impact wrench when removing the wheels.

Removing the Wheels

Required Tools	
1	¾" Lug Wrench
1	¾" Impact Socket
1	Impact Wrench
1	Torque Wrench, ft. lbs

Front of the Vehicle



Back of the Vehicle

- Place wheel chocks in the front and back of the tires on the end not being raised.
- While the vehicle is still on the ground, loosen the lug nuts on the tire you are removing. *Never remove any of the lug nuts before the tire is off the ground.*
- Slide the jack under the vehicle making sure it's in the appropriate position.
- To remove a wheel on the front end: Slide the jack under the center of the front axle. *Refer to diagram on the right.*
- To remove a wheel on the rear end: Slide the jack under the center of the rear frame cross member. *Refer to diagram on the right.*
- Slowly lift the vehicle just enough to raise the tire a few inches off the ground.
- Make sure the vehicle is stable on the jack.
- Remove the lug nuts and store them safely out of the way.
- Slide the wheel off the lug studs.
- If the wheel isn't replaced immediately, lower the vehicle just enough to level it while you're away. Never leave the jack under the vehicle for more than a few hours.

5 Maintenance & Service

Mounting the Wheels

- Make sure the vehicle is stable on the jack.
- With the valve stem facing the outside, slide the wheel over the lug studs.
- Replace the lug nuts and hand tighten in a 'cross sequence' pattern (Ref. Fig. 11).
- Slowly lower the jack just enough for the ground to prevent the wheel from spinning when the lug nuts are tightened.
- Tighten the lug nuts following the same cross sequence pattern to 50 - 85 ft. lbs. (70 - 115 Nm) torque in 20 ft. lbs. (30 Nm) increments. To prevent stripping, never tighten the lug nuts to more than 85 ft. lbs. (115 Nm) torque.
- Slide the jack from underneath the vehicle and remove the wheel chocks.

Repairing Punctures

The vehicle is equipped with low pressure tubeless tires mounted on one piece rims. Punctures in the tread can often be repaired with commercially available tire plugs. If the tire is flat, inflate to the maximum recommended pressure, remove the wheel and immerse in water to locate the leak. Mark the puncture with chalk and follow the repair instructions included with the plug you purchased. If the tire must be removed from the rim, contact a qualified tire service center for the repair.

Adjusting the Powertrain

To access the powertrain, lift or remove the seat and remove the rear access panel. Both drive wheels must be raised and the vehicle properly supported on jack stands if the powertrain is adjusted while the vehicle is running. To reduce the possibility of motor damage, never operate vehicle at full throttle for more than 4 - 5 seconds in a no load condition.

Inspecting the Rear Axle

Inspect the area under the vehicle frequently for leaks. If there are no visible leaks from the rear axle, replace the lubricant every five years.

Hardware

Inspect the vehicle periodically for loose fasteners. Use care not to over tighten. There are three classes of standard hardware and two classes of metric hardware used in the vehicle. Grade 5 hardware has three marks on the hexagonal head and grade 8 hardware has 6 marks on the head. Metric hardware is marked on the head with 8.8 or 10.9. Unmarked hardware is Grade 2.

Brake Fluid

WARNING!

Risk of Severe Injury and Vehicle Damage

Change the brake fluid every 3 months. To reduce the possibility of brake system failure and loss of control resulting in severe injury or death:

- Use DOT3 brake fluid from a sealed container only.
- Make sure the brake fluid level is always between the minimum and maximum markers on the fluid reservoir. Overfilling or under filling can cause catastrophic brake system failure.
- Top off fluid levels with the same kind of brake fluid whenever possible. Mixing chemical additives from different manufacturers can have unpredictable results.
- Never use brake fluid from an open bottle, which may have dirt and other impurities that cause brake system failure or damage.
- Use appropriate safety measures to keep brake fluid away from skin and eyes. If contact occurs, flush immediately with fresh water and contact your physician.

Adding Brake Fluid

- Park your vehicle on a flat surface. Allow hot surfaces to cool before proceeding.
- The brake fluid reservoir is under the driver side cup holder. Squeeze the top of the cup holder on both sides, release clips with small flathead screwdriver, lift out cup holder.
- The brake fluid reservoir has raised Min & Max fluid level markers on one side of the brake fluid reservoir.
- If necessary, the remove lid, add brake fluid, replace lid, make sure it's tight & leak free.
- Align the clips and cup holder in the dashboard opening and tap to lock in place.

DOT3 Brake Fluid from sealed container only. Maintain fluid level between Min &Max

Page number for information		Daily Before each use	Monthly - Every 20 hours or 100 miles	Quarterly - Every 80 hours or 400 miles	Every 6 Months - Every 125 hours or 600 miles	Annually - Every 250 hours or 1.200 miles	5 Years - Every 1,250 hours or 6,000 miles
30	Hardware - tight and in tact	✓	✓	✓	✓	✓	
12	Reverse Warning Indicator - works properly	✓	✓	✓	✓	✓	
6-8	Batteries - fully charged	✓	✓	✓	✓	✓	
6-8	Batteries - no corrosion, wires in good condition, harness, hardware, & terminal connections are tight	✓	Clean	Clean	Clean	Clean	
6, 7	Charger - GFCI outlet reset tested, no debris on vent fins, air flow unobstructed, plug is clean, no signs of wear or damage on plugs or cords	✓	✓	✓	✓	✓	
13	Accelerator - Pedal moves freely, returns to original position when released	✓	✓	✓	✓	✓	
13	Brake Pedal - resistance when pressed toward floor board, returns to original position when released, consistent stopping distance	✓	✓	✓	✓	✓	
13, 14	Brakes - parking brake holds on an incline, aggressive braking is responsive		✓	✓	✓	✓	
17	Steering - tight & responsive, no excessive play or unusual sounds when turned	✓	✓	✓	✓	✓	
26	Tires - air pressure is correct, even wear, ample tread, good condition	✓	✓	✓	✓	✓	
24, 30	Front Suspension - no leaks, no excessive play in hubs, bushings not worn, hardware tight & in tact		✓	✓	✓	✓	
23	Front Alignment - tires are evenly worn, adjust if necessary			✓	✓	✓	
24	Rear Suspension - no leaks, bushings not worn, hardware tight & in tact			✓	✓	✓	
30	Wheels - check lugs for proper torque		✓	✓	✓	✓	
31	Wheels - rotate				✓	✓	
30	Rear Axle - drain & replace fluid						✓
31	Brake Fluid - drain & replace			✓	✓	✓	

Fault & Warning Codes

An error code is displayed if a problem with the vehicle is detected.

A Fault Code is a critical error that triggers the Motor Control Unit to shut down all vehicle systems, prohibiting operation of the vehicle until the problem is corrected. If the error code in the first column is red, it is a fault code.

A Warning Code is an abnormality that triggers the Motor Control Unit to restrict power to the affected systems and reduce the vehicle's operating capacity to simplify delivery to your service provider for repair. If the error code in the first column is black, it is a warning code.
Reduced operating capacity is intended for short term use. Limiting capacity my change handling characteristics. Until service is completed, do not operate in inclement weather, on loose dirt, wet grass, gravel, and other soft surfaces or rough terrain. Prolonged operation and delayed service may result in further damage and failures to both new and affected systems.

WARNING!

Risk of Injury & Vehicle Damage.

The Motor Control Unit is a non-serviceable component. Do not open or attempt to open.
Never attempt removal, repair, or service without the manufacturer's prior approval.
Never attempt vehicle repairs or service if you do not have the proper tools and adequate training.

Key Switch Input (KSI) Fault Codes

Red error codes are shut down faults. Black error codes are reduced power warnings.

Error Code (BCD)	Error Name	Error Handling	Possible Reason
1* (0 x 01)	BMS Error	Shutdown Motor & Throttle	
2* (0 x 2)	KSI Voltage High Error	Shutdown Motor & Throttle	
11* (0 x 0B)	Motor Encoder Error	Shutdown Motor & Throttle	
12* (0 x 0C)	Over Current	Shutdown Motor & Throttle	External short U/V/W motor connections Motor parameters do not match MCU failure, current sensor range Abnormal encoder signal
13* (0 x 0D)	ADC Calibration	Shutdown Motor & Throttle	U/V/W short-circuit or short to frame MCU or current sensor failure Wiring harness current sensor failure
14* (0 x 0E)	Pre-charge Fail	Shutdown Motor & Throttle	Wrong wiring High-voltage charging fault Pre-charge relay damaged
15* (0 x 0F)	Under Temperature	Shutdown Motor	MCU operating in extreme environment MCU temperature sensor failure
16* (0 x 10)	Over Temperature	Shutdown Motor & Throttle	MCU operating in extreme environment Vehicle is overloaded or in electronic slope MCU installed improperly MCU temperature sensor failure
17* (0 x 11)	Under Voltage	Shutdown Motor & Throttle	Incorrect battery parameters, MCU voltage settings Excessive battery impedance Battery disconnected during operation Blown fuses or main contactor did not close Serious Overload
18* (0 x 12)	Over Voltage	Shutdown Motor & Throttle	Battery voltage reaches over voltage cut off Battery disconnected during regenerative braking Battery impedance too high

6 Fault & Warning Codes

Red error codes are shut down faults. Black error codes are reduced power warnings.

Error Code (BCD)	Fault Name	Fault Handling	Possible Reason
19* (0 x 13)	DC Link Voltage Sensor Fault	Shutdown Motor & Throttle	DC link voltage sensor sampling fault
21 (0 x 15)	Under Voltage	Restrict Battery Output	MCU performance limited Battery parameter settings incorrect Power consumed by system not related to MCU Excessive battery impedance Battery disconnected during operation Blown or loose fuse; main contactor did not close
22 (0 x 16)	Over Temp Cutback	Reduce Motor Output	MCU performance limited MCU operating in extreme environment Vehicle is overload or in electronic slope MCU installed improperly
23 (0 x 17)	Under Voltage Cutback	Reduce Battery Output	MCU performance limited Battery parameter settings incorrect Power consumed by system not related to MCU Excessive battery impedance Battery disconnected during operation Blown or loose fuse; main contactor did not close
24 (0 x 18)	Over Voltage Cutback	Reduce Battery Input	MCU performance limited Battery parameter settings incorrect Battery disconnected during operation
25* (0 x 19)	BCH Driver Fault	Shutdown Brake Resistance	
26* (0 x 1A)	Motor Stall	Shutdown Motor & Throttle	The motor phase sequence is connected incorrectly Encoder cable is connected incorrectly
27 (0 x 1B)	Motor Over Load Alarm	Restrict Throttle Response	Motor load over set value
28 (0 x 1C)	Motor Over Temp Cutback	Reduce Motor Output	Motor operating in extreme environment Vehicle is overloaded or in electronic slope Motor temperature parameter settings are incorrect Motor temperature sensor failure
29* (0 x 1D)	Motor Temp Sensor Fault	Shutdown Motor	Motor temperature sensor connected incorrectly Motor temperature sensor model is used incorrectly Motor temperature sensor failure MCU temperature sampling circuit failure
31* (0 x 1F)	Coil 1 Driver Open / Short Main Open / Short	Shutdown Motor & Throttle	Drive load open / short circuit Connection point is disconnected, oxidized, or melted Improperly crimped or faulty wiring
32* (0 x 20)	Coil 2 Driver Open / Short EMB Brake Open / Short	Shutdown Motor & Throttle	Drive load open / short circuit Connection point is disconnected, oxidized, or melted Improperly crimped or faulty wiring
33* (0 x 21)	DC Link Current Sensor	Shutdown Motor & Throttle	DC link current sensor fault
34* (0 x 22)	KSI Voltage Fault	Shutdown Motor & Throttle	KSI key switch voltage is lower than the set value
35* (0 x 23)	UVW Temp Diff Fault	Shutdown Motor & Throttle	MOSFET UVW 3-phase temperature difference exceeds set value
36 (0 x 24)	Resolver Encoder Fault	Shutdown Motor & Throttle	Resolver encoder failure Resolver connection failure MCU resolver circuit failure
37* (0 x 25)	Motor Open	Shutdown Motor & Throttle	Motor wiring is open 3-Phase motor current out of balance
38* (0 x 26)	Main Contactor Welded	Shutdown Motor & Throttle	Main contactor tips are welded closed Use alternate channel to charge the controller capacitor
39* (0 x 27)	Main Contactor Didn't Close	Shutdown Motor & Throttle	Main contactor connection points oxidized, melted, or disconnected External load that prevents the capacitor from charging Fuse is blown open

Red error codes are shut down faults. Black error codes are reduced power warnings.

Fault Code (BCD)	Fault Name	Fault Handling	Possible Reason
40 (0 x 28)	Hand Brake Fault	Restrict Throttle Response	Handbrake signal and throttle signal are valid at the same time
41 (0 x 29)	Throttle Paddle High Fault	Restrict Throttle Response	Throttle pedal input wiring is shorted to "+". Throttle pedal potentiometer is faulty, short, and high Throttle pedal type setting is incorrect
42 (0 x 2A)	Throttle Peddle Low Fault	Restrict Throttle Response	Throttle pedal input wiring is open Throttle pedal input wiring is shorted to "-". Throttle pedal potentiometer is faulty, short, and ground Throttle pedal type setting is incorrect
43 (0 x 2B)	Brake Paddle Fault	Restrict Throttle Response	Brake signal and throttle signal are valid at the same time
44* (0 x 2C)	Motor Over Temp Fault	Shutdown Motor & Throttle	Motor temperature exceeds over temperature setting value
45 (0 x 2D)	Throttle Not Match Fault	Restrict Throttle Response	Throttle pedal does not match
46* (0 x 2E)	EEPROM Failure	Shutdown Motor & Throttle	EEPROM storage failure Parameter change failure Changes to specific parameters take effect after key switch is restarted
47 (0 x 2F)	HDP / SRO Fault	Restrict Throttle Response	Incorrect key start, interlock, gear, & throttle pedal input sequence Wiring, switch key, interlock, direction, or throttle pedal input fault Turn key on when the throttle peddle is pressed. Throttle pedal wiring is incorrect or not connected Throttle pedal signal does not match controller KSI interlock and throttle pedal input sequence is wrong Incorrect HDP type selected Throttle pedal potentiometer is out of adjustment Sequence delay too short
49* (0 x 31)	Parameter Change	Shutdown Motor & Throttle	Door signal & throttle signal are valid at the same time
50* (0 x 32)	Low Brake Reservoir	Shutdown Motor & Throttle	Add DOT 3 brake fluid to MAX line on brake fluid reservoir.
51* (0 x 33)	MOS V Temp Sensor Fault	Shutdown Motor & Throttle	
52 (0 x 34)	RC Thermal Protection	Limit MCU Operation	MCU overloaded for longer than allowable time
53* (0 x 35)	Motor Short	Shutdown Motor & Throttle	Inadequate motor insulation MCU is defective
54* (0 x 36)	+12V Supply Low Failure	Shutdown Motor & Throttle	12V power supply is less than 9.5V for 3 seconds
55* (0 x 37)	+12V Supply High Failure	Shutdown Motor & Throttle	12V power supply exceed 16V for 3 seconds
56* (0 x 38)	Board Over Temperature	Shutdown Motor & Throttle	Control board temperature exceeds 100°C
57* (0 x 39)	BCH Temper Sensor Fault	Shutdown Brake Resistance Control	
58* (0 x 3A)	MOS U Temp Sensor Fault	Shutdown Motor & Throttle	
59* (0 x 3B	MOS W Temp Sensor Fault	Shutdown Motor & Throttle	
61 (0 x 3D	Motor Under Load Alarm	Shutdown Throttle Response	Motor load is lower than set value

6 Fault & Warning Codes

Red error codes are shut down faults. Black error codes are reduced power warnings.

Fault Code (BCD)	Fault Name	Fault Handling	Possible Reason
62 (0 x 3E)	Motor Over Speed Alarm	Shutdown Throttle Response	Motor speed exceeds set value
63 (0 x 3F)	CAN Communication Alarm	Shutdown Motor & Throttle	In VCU control mode, if CAN communication fault exceeds 300ms, the control command is received
64* (0 x 2C)	W Current Sensor	Shutdown Motor & Throttle	
65* (0 x 41)	V Current Sensor	Shutdown Motor & Throttle	
66* (0 x 42)	U Current Sensor	Shutdown Motor & Throttle	
67* (0 x 43)	Control Board 5V Fault	Shutdown Motor & Throttle	Internal 5V power supply chip of control board working abnormally
68 (0 x 44)	Gear Fault	Shutdown Throttle Response	D / R gears valid at the same time
69 (0 x 45)	Charging Interlock Fault	Shutdown Throttle Response	Throttle signal when charging
71* (0 x 47)	Motor Fly Fault	Shutdown Motor & Throttle	Phase sequence of motor connected incorrectly Encoder cable connected incorrectly Initial angle of resolver position is wrong
72* (0 x 48)	CAN Communication Fault	Shutdown Motor & Throttle	In VCU control mode, if CAN communication fault exceeds 1s, the control command is received
73 (0 x 49)	Stall Detected	Shutdown EMBrake Response	Motor is blocked Improperly crimped or faulty wiring
74 (0 x 4A)	Under Temperature Cutback	Shutdown Throttle Response	MCU derated at low temperature
75 (0 x 4B)	EMBrake Fail Set	Shutdown EMBrake Response	Electromagnetic brake fault
87* (0 x 57)	Motor ID Fault	Shutdown Throttle Response	Motor parameters set incorrectly
88* (0 x 58)	Motor Type Error	Shutdown Motor & Throttle	Motor speed exceeds set value
89* (0 x 59)	Motor Type Error	Shutdown Motor & Throttle	
91* (0 x5B)	Heatsink Over Temp Fault	Shutdown Motor & Throttle	Temperature of the Heatsink exceeds the overt-temperature setting for water and air cooling.
92* (0 x 5C)	Battery SOC Low	Pump Control Non-Responsive	Battery is low
93 (0 x 5D0	Safety Lock Lost		Safety lock lost
94* (1 x 5E)	Cover Open Fault	Shutdown Motor, Throttle, & Main Contactor	The wiring cover is open Micro switch at wiring cover is disconnected
95 (0 x 5F)	DO High Volt Protection		Braking resistor or fan control output port shorted to high voltage
99* (0 x 63)	Illegal Model Number	Shutdown Motor & Throttle	Product model does not match downloaded parameter or program EE of MCU fails

Always follow state and local regulations including registration, titling, insurance, and licensing requirements.

To prevent the risk of serious injury or death, never modify the vehicle in any way that alters the weight distribution of the vehicle, decrease its stability, increase its speed or extends the stopping distance. MD Carts, Inc. prohibits and disclaims responsibility for all modifications and/or alterations which adversely affect vehicle safety.

MD Carts, Inc. reserves the right to make engineering and design changes without obligation to retrofit previously sold units. The information contained in this manual is subject to change without notice. MD Carts, Inc. is not liable for errors in this manual or for incidental or consequential damages that result from the use of material in this manual.

Always be extremely cautious when servicing your vehicle. Anyone attempting maintenance, service or repair must be sufficiently skilled and experienced to recognize and protect themselves from potential situations that could result in severe personal injury, death, and/or damage to the vehicle. Refer repairs to a qualified service technician if you do not have proper training, tools or are unsure about the potential risk for damage, accidents, severe injuries or death.

MD Carts, Inc.
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GolfCarts.com

Speak to a factory trained technician

423-722-5789

Monday - Friday 9 am to 5 pm EST

File a warranty claim

golfcarts.com/help

Please contact your local retailer directly for assistance with all lead acid battery warranty claims.