



E2 & E4  
Revenge



E2 & E4  
LE PLUS



E2 Coupe  
E4 Saloon



# E-MERGE Operator's Manual

*The Columbia Vehicle Group Inc.*

A Nordic Group Company

[www.tomberlin.net](http://www.tomberlin.net)



**COLUMBIA**



**TOMBERLIN**

## **⚠ WARNING**

THE UNIT SHIPPED AS A PTV AND DURING FINAL ASSEMBLY WE WILL DETERMINE THE FINAL CONFIGURATION BASED UPON WHAT THE CUSTOMER ORDERED.

## **⚠ WARNING**

**WHEN OPERATING VEHICLE ON PUBLIC ROADS: THIS VEHICLE OFFERS MUCH LESS CRASH PROTECTION THAN A REGULAR CAR, VAN, OR TRUCK. THIS MEANS A HIGHER RISK OF INJURY OR DEATH IN COLLISIONS, EVEN AT LOW SPEEDS. THE HIGHER THE SPEED OF THE TRAFFIC AROUND YOU, THE HIGHER THE RISK OF INJURY.**

To reduce these risks:

- Obey all traffic regulations.
- Avoid roads with regular traffic, even if the speed limit is low.
- Whenever possible, stay on roads and lanes limited to low speed vehicles.
- Wear your safety belts at all times.
- Avoid operating vehicle at night. because your vehicle may be hard for others to see.
- To reduce the chance of the vehicle tipping over, reduce speed when turning and maneuvering through curves and hills.
- Never drink and drive. Not only is drinking and driving unsafe but doing so may violate state and local laws.

## **⚠ WARNING**

**THIS PRODUCT CONTAINS OR EMITS CHEMICALS OR SUBSTANCES THAT HAVE BEEN DETERMINED BY THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.**

- This vehicle is not designed to be used in conjunction with child safety seat.
- Do not use or install child safety seat in any seat or position in the vehicle.
- Always obey and follow laws and regulations regarding the transportation of children.
- Children that require the use of a child safety seat in a regular type automobile should not be transported in this vehicle.



## **INTRODUCTION**

Thank you for the purchase of your Tomberlin E-Merge. Your satisfaction with your new vehicle is important to all of us at Tomberlin.

Please take the time to review this Operator's Manual and abide by all safety and operation warnings before allowing anyone to operate your new E-Merge. Familiarizing yourself with the Operator's Manual and warnings will help avoid possible personal injury and property loss.

We hope that you will consider this manual as an indispensable part of the vehicle.

The information contained in this document is subject to change without notice.

Tomberlin reserves the right to make design changes to vehicles without obligation to make these changes on units previously sold.

## **IMPORTANT OPERATING NOTES:**

- ALWAYS OPERATE YOUR E-MERGE IN COMPLIANCE WITH YOUR STATE AND LOCAL VEHICLE REGULATIONS INCLUDING REGISTRATION, TITLING, INSURANCE, SEAT BELT USAGE, AND OPERATOR'S LICENSING.
- SWITCH VEHICLE TO OFF POSITION, REMOVE KEY AND SET PARKING BRAKE PRIOR TO EXITING DRIVER'S SEAT.
- OBEY ALL TRAFFIC LAWS.
- ALWAYS FASTEN YOUR SEAT BELTS!
- TO EXTEND THE LIFE OF YOUR BATTERIES:
  - KEEP BATTERIES FULLY CHARGED WHENEVER POSSIBLE.
  - AVOID DEEP DISCHARGING OF BATTERIES WHENEVER POSSIBLE.
  - CHECK BATTERY ELECTROLYTE LEVELS OFTEN, ADD DISTILLED WATER AS NECESSARY.
  - FOLLOW ALL BATTERY MANUFACTURE SAFETY, CARE AND MAINTENANCE GUIDENCE.

## Contents

INTRODUCTION.....	3
IMPORTANT OPERATING NOTES: .....	3
PRECAUTIONS .....	5
SAFETY REGULATIONS.....	6
GENERAL WARNINGS.....	7
E-MERGE Controls.....	9
CONTROLS .....	11
Key Switch.....	11
High/Low Speed Switch .....	11
Direction Selector .....	12
Headlight Switch .....	12
Emergency Switch .....	12
Light Switch of Inside Rearview Mirror.....	12
Glove Box Door Lock.....	12
Brake Pedal.....	13
Accelerator Pedal .....	13
Battery Discharge Meter.....	13
Multifunction Stalk: Turn Signals/Horn/High Beam/Low Beam.....	14
Turn Signal.....	14
Horn .....	14
Headlights .....	14
Windshield wiper .....	14
Speedometer/Odometer .....	15
Fuse box .....	15
Seat Belts.....	15
PRE-OPERATING INSPECTION.....	16
OPERATION INSPECTION.....	16
General Operation.....	17
DRIVING INSTRUCTIONS .....	18
Starting the Vehicle.....	18
TOWING .....	19
STORAGE .....	20

Returning Car to Service ..... 20

MAINTENANCE..... 21

SCHEDULED INSPECTON PROCEDURES ..... 22

SCHEDULED OILING/LUBRICATION PROCEDURES ..... 23

CHECKING HYDRAULIC BRAKE FLUIDS ..... 24

BATTERY PACK CARE AND MAINTENANCE ..... 25

    Battery Care..... 25

    Battery Charging ..... 26

    Charger..... 26

    Operating Instructions ..... 27

    Maintenance Instructions..... 27

    Troubleshooting Instructions..... 28

    Charging the E-Merge ..... 29

CLEANING AND APPEARANCE..... 30

VEHICLE SPECIFICATION..... 31

WARRANTY..... 32

**PRECAUTIONS**

The E-Merge is designed and manufactured as a PTV or an LSV. It is important that every Operator become familiar with safe operation of the vehicle as described in this Operating Manual and with all applicable State, Local, and Community regulations governing the use of an +LSV, Golf Car or PTV.



Safety warning signs may appear shocking at first glance. Safety Warnings are there to remind you to avoid serious accidents and personal injury.

## **SAFETY REGULATIONS**

It is required to read the Owner's manual completely before operating the vehicle or attempting repair work. Any violations of instructions in the manual may lead to property loss, serious injury, or even death.

Pay special attention to important statements with the words such as "Danger", "Warning", "Caution", "Attention" etc...

If any of the operation/warning decals are damaged, defaced, destroyed, or illegible it is Important that they be replaced with new decals. Please contact the manufacturer or your distributor to obtain new decals.

### **⚠ DANGER**

DANGER indicates an immediate hazard that if ignored, will result in severe personal injury or death.

### **⚠ WARNING**

WARNING indicates an immediate hazard that if ignored, could result in severe personal injury or death.

### **⚠ CAUTION**

CAUTION indicates a hazard or unsafe practice that if ignored, could result in minor personal injury or product or property damage.

## GENERAL WARNINGS

Any reference to Battery Care or maintenance is intended as general safety guidelines. Always consult and follow the recommendations of your battery manufacturer if contrary to those expressed herein. Never exceed your skill level by performing services you are not trained to accomplish. When in doubt, Stop and call a professional.

### **DANGER**

- The E-Merge contains batteries which can emit quantities of explosive gases. Keep the vehicle in a well-ventilated area and away from sparks and open flames.
- Ventilate when charging or operating the vehicle in enclosed areas.
- Do not perform service or maintenance on batteries while vehicle is charging.
- The E-Merge does not offer protection from lightning, flying debris, or other storm hazards. Upon indication of severe weather conditions, seek appropriate shelter immediately.

### **WARNING**

- Inspect battery terminals, cables and batteries before each use.
- Always wear a full-face shield, rubber gloves and rubber apron when working with or near batteries.
- Turn the ignition switch to the off position, remove the key, unplug the charger and place the run/tow switch to the tow position before inspecting or performing any type of service on the vehicle.
- Connections should be tight and free of corrosion.
- Utilize insulated tools only when working with electrical connections.
- The tightness of the battery terminal nut should be between 95-105-inch pounds of torque. Do not over tighten. Loose and/or over tightened connections can cause battery failure, explosion and or fire.
- Do Not Overfill the Batteries and keep batteries clean and free of moisture.
- If any high heat condition or burning smell is noticed immediately park the vehicle in a safe location, place the ignition in the off position, move yourself and passengers away quickly to a safe distance from the vehicle and contact your dealer for assistance and repair. If fire or smoke is detected contact your local fire department immediately. Do not store your vehicle inside if any of these conditions exist.
- Only use recommended batteries of the correct size.

**⚠ WARNING**

- Only authorized mechanics should perform maintenance or repair on the E-Merge. It is required to abide by all regulations and safety decals on the vehicle while performing any type of maintenance or repairs.
- To carry out repair work: turn the run/tow switch to the middle position (see Figure 1). Turn the vehicle off, remove the key and check tires.



Figure 1: Run/Tow switch in middle position

- Use only insulated tools to handle the battery pack and electrical components. Remove all jewelry and loose items before performing maintenance procedures.
- Improper application or maintenance will lead to deterioration of vehicle performance and reduce the overall life of the vehicle.
- Do not attempt to alter the vehicle in any manner which would affect stability, control, or top speed. Such alterations may lead to serious injury or death, violate State and Local laws, and will void the manufacturer's warranty.



# E-MERGE Controls

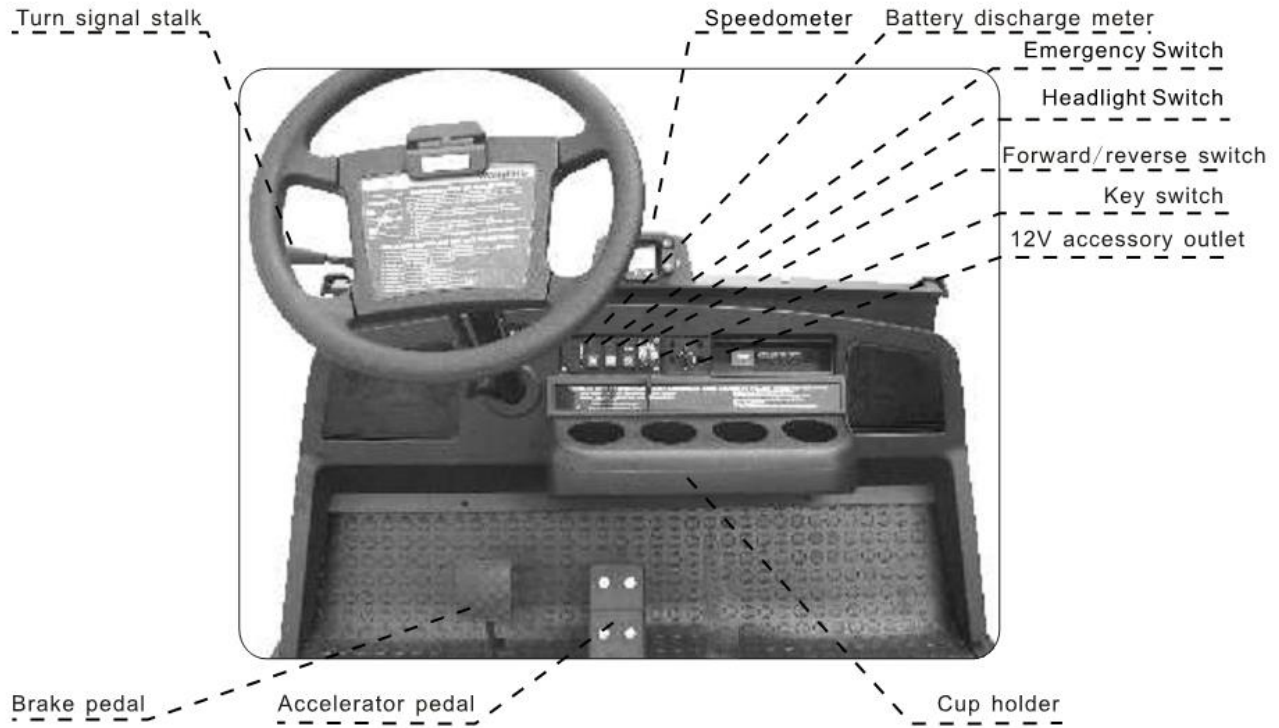


Figure 2-1 (Revenge)

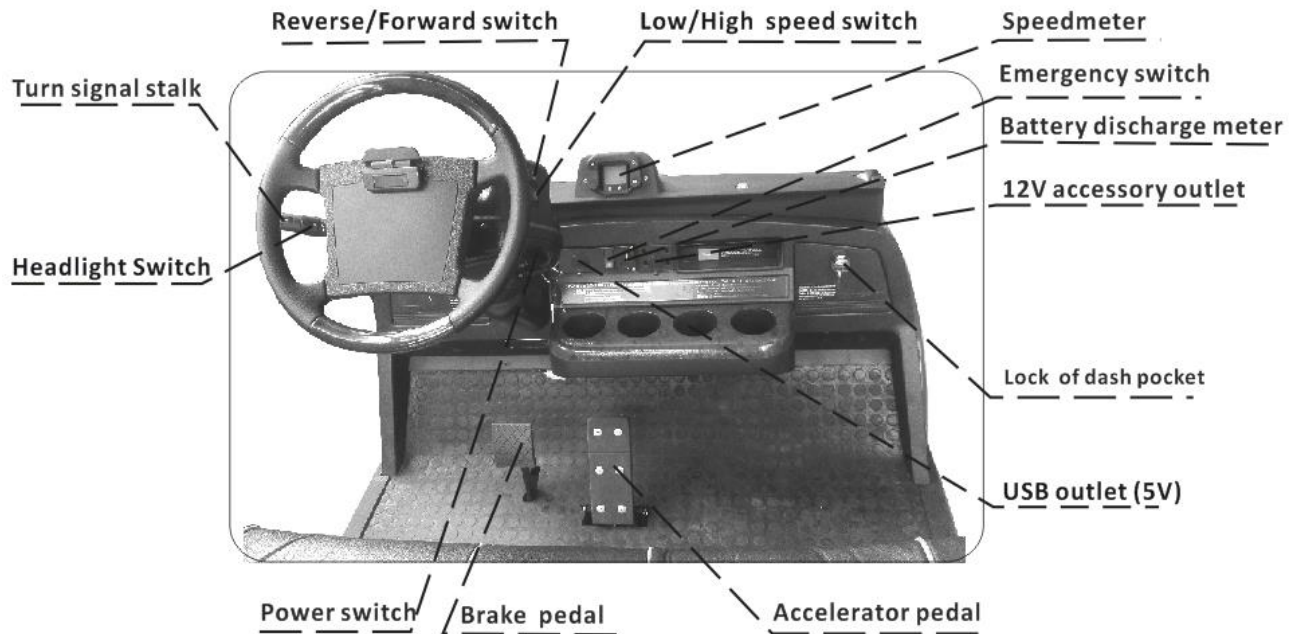


Figure 2-2 (LE PLUS and SS Coupe/Saloon)

Charger



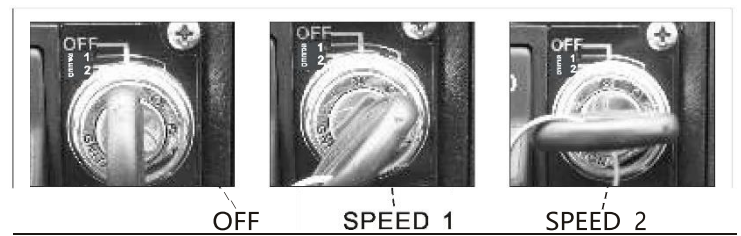
Figure 3

## CONTROLS

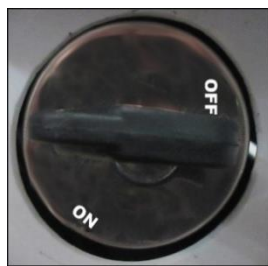
1. It is imperative that all operators of the E-Merge be familiar with the controls prior to operation.
2. To avoid unintentional acceleration and vehicle damage, do not turn the direction selector switch (forward/reverse) until the vehicle has come to a complete stop.

### Key Switch

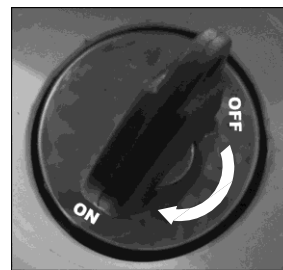
For REVENGE model: The key switch is located on the right side of dash panel and has three positions: OFF/SPEED 1/SPEED 2. The key can only be removed in the off position.



For other models: The key switch is located on the right-side cover of steering stem and has two positions: OFF/ON. The key can only be removed in the OFF position.



Off



On

### High/Low Speed Switch

The High/Low speed switch is located on the right-side cover of steering stem.

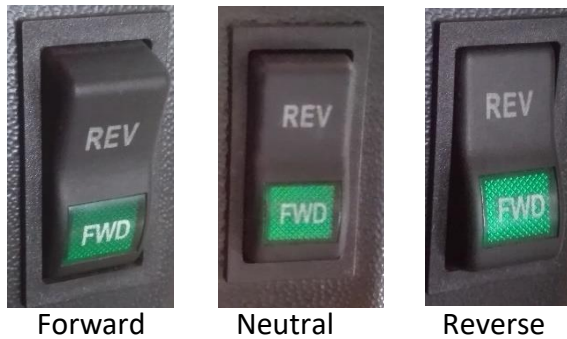
Turtle = Slow Speed

Rabbit = High Speed



## Direction Selector

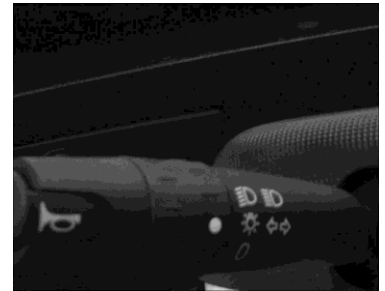
The direction selector is located on the dashboard or right side of the steering stem. It has three selections: FWD (forward), REV (Reverse), and Neutral (halfway between FWD and REV).



Note: While switch on the REV position, it will activate the rear camera system (if equipped).

## Headlight Switch

The Headlight Switch is located on the left side of steering stem.



## Emergency Switch

The Emergency Switch is located on the fourth position from right side of the dashboard.



## Light Switch of Inside Rearview Mirror

The switch is located above the mirror



## Glove Box Door Lock

Is located on the Dash Pocket Door. insert the key into the key hole, turn the key to right, then press the key in, and then clasp under the key with middle finger, and pull to outside. (Please see figure 15)



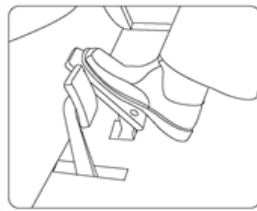
## Brake Pedal

The brake pedal is the larger foot pedal located to the left of the accelerator pedal. The brake pedal engages all four of the E-Merge wheels for shorter stopping distances. To slow the vehicle down, the operator should depress the brake pedals.

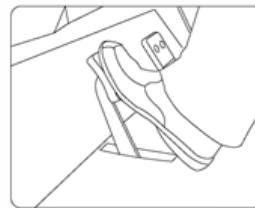
## Accelerator Pedal

The accelerator pedal is the smaller pedal to the right of the brake pedal. When depressed:

- The accelerator pedal will engage the drive motor in the direction the FWD/REV switch is set.
- The vehicle will accelerate up to its top speed of just under 25 mph at which time power will be reduced to the motor.
- If the vehicle speed begins to exceed 25 mph, automatic motor braking will occur.
- When the reverse position is selected, vehicle top speed is reduced.
- Smooth, slow acceleration will substantially increase the vehicle range.



Accelerator pedal



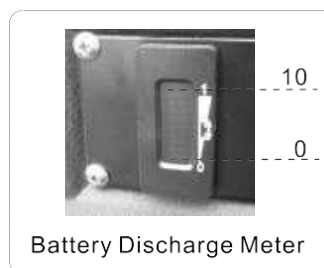
Brake pedal

## Battery Discharge Meter

The E-Merge is equipped with a Battery Discharge Meter. It functions similarly to a fuel gage in an automobile. The Battery Discharge Meter is an indicator of the remaining power in a battery pack.

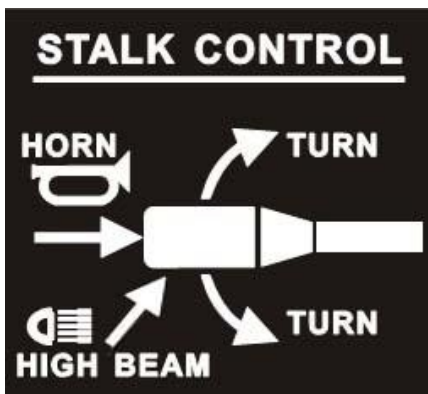
The Battery Discharge Meter has 10 indicator lights:

- When the light bar is at the top of indicator, the battery pack contains a full charge.
- When the battery discharge is down by 70%, the two remaining lights will flicker as a warning.
- When the vehicle is at 80% discharge, reduced performance will occur indicating the immediate need to recharge the batteries. Continued operation beyond this discharge state will result in reduced battery life and possible damage to the batteries.

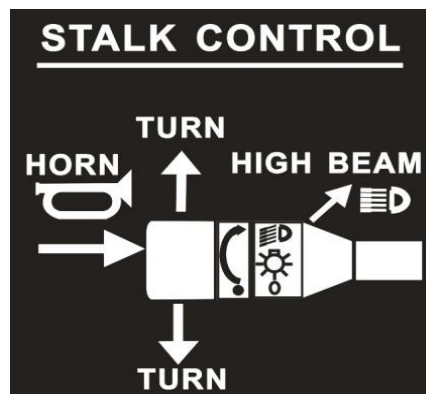


## Multifunction Stalk: Turn Signals/Horn/High Beam/Low Beam

The Multi-Function Stalk is a multi-feature control. It is located on the left side of the steering wheel and functions like an automobile for turn signaling but also includes the high beam and horn control.



Revenge



LE PLUS, SS Coupe/Saloon

### Turn Signal

Pushing down on the stalk indicates a left turn, pushing up a right turn.

Note: For Revenge model, the turn signal stalk will not automatically return to the off position after a turn, the operator should manually move the stalk to the center position upon completing each turn.

### Horn

To activate the horn, the operator should press the end of the stalk.

### Headlights

Turn on the headlamp switch on dashboard (Revenge) or on steering column (LE, SS Coupe/Saloon) to activate the headlamps. See page 9 for the location of the headlight switch.

- Revenge: pulling the multi-function stalk up will initiate the low beam, while pushing the multi-function stalk down will initiate the high beam; at the same time, the blue indicator on speedometer will light to show that the headlamp is on.
- LE PLUS, SS Coupe/Saloon: pulling the multi-function stalk up will initiate the high beam.

### Windshield wiper

(If equipped) the windshield wiper switch is on the wiper motor which located at the left corner of windshield frame. When the power switch is "ON" position, pull out the wiper switch then the wiper motor starts to work, push it forward then it stops.



## Speedometer/Odometer

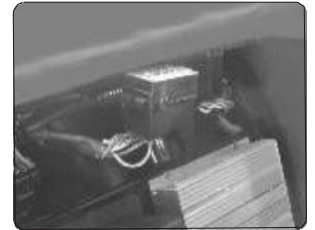
The speedometer is located on top of the vehicle dash and will read vehicle speeds from 0 to 25 mph. The gauge will also record the total distance traveled. Within the speedometer is a trip odometer which can be set by depressing the set buttons. This feature is especially useful in measuring the distance between each charge cycle.

The reading of the speedometer can be programmed to read out in either miles or kilometers. To change the display simply press and hold the small button on the left side.



## Fuse box

For your convenience, all the fuses have been consolidated in a central location under the seat. All fused in the fuse box are marked with their names and their functions.



## Seat Belts

The two passenger E-merge(E2) has one bench seat and is equipped with two safety belts, one for the driver and one for the passenger. The 4-Passenger E-Merge(E4) has a second, forward facing bench seat with two additional passenger seat belts. The safety belts should be used always while operating the vehicle.

The E-Merge is not equipped for child safety seats or infant carrying seats. Children under 12 years of age should not be transported in the E-Merge. Children under 12 years of age should be transported in a full-size car with appropriate child restraints. Pregnant, disabled, or injured persons should consult their doctor for specific recommendations before operating the E-Merge.

To properly secure the seatbelts, pull the metal tab out away from the retractor and insert into one of the two buckles located near the center of the seat. A click will be heard when the tab is securely latched. Position the lap belt as low as possible on the hips not the waist. Properly adjust and ensure a snug fit by pulling the shoulder portion upward. The retractor will lock the belt during sudden stops. It may also lock if the person leans forward too quickly. Slow, easy motions will allow for free travel. To release the safety belt, press the buckle release button and allow the belt to retract. If the belt does not retract, check for kinks or twist.

## **WARNING**

- Always operate the vehicle with seat belts properly fastened.
- Make sure the seat belts are latched securely and are free from twists or kinks.
- Position the shoulder belt across the top of the shoulder. Do not
- Place the shoulder belt under an arm.
- Loose fitting safety belts significantly reduces protection. Keep belts snug and positioned low on the hips.
- Do not exceed the recommend number of occupants for the vehicle;
  - Maximum occupants on the single bench E-Merge: Two (E2)
  - Maximum occupants on the two bench E-Merge: Four (E4)

## CAUTION

- Inspect the safety belt webbing and hardware periodically. Check for cuts, frays or loose parts. Replace components if excessive wear or damage is noticed.
- Keep safety belts clean and dry. To clean, use mild soap and warm water. Do not use bleach, dye or abrasive cleaners as this will weaken the belt webbing material.
- Do not insert any foreign objects into the retractor mechanism.
- Periodically check for smooth operation and replace if the mechanism is not operating properly.

## PRE-OPERATING INSPECTION

Each vehicle has been thoroughly inspected by both the manufacturer and dealer. Before the initial operation, it is important that the user inspect the vehicle using the following guidelines:

- General all parts are securely fastened to the vehicle, no parts are missing, and all screws or nuts are properly tightened.
- Review all warning decals and placement on the vehicle.
- Safety Belts visually inspect and test for safe operation.
- Tires check for proper inflation as identified on the vehicle certification label.
- Batteries check electrolyte level in all cells of each battery. If any cell is low, add distilled water as described in the Battery Care section of this manual.
- All wires should be free of corrosion.
- Batteries should be fully charged before first use of vehicle.
- Brakes - check hydraulic fluid level. If it is low, immediately call a qualified mechanic for service.
- Charger cord, plug, and receptacle inspect for cracks, loose connections, or frays.

## OPERATION INSPECTION

The following items should be checked daily prior to vehicle

- **Forward/Reverse Switch** - ensure proper operation
- **Brakes** - make sure the brake pedal is operating smoothly. It should not go more than half way to the floor when depressed. The vehicle should come to a smooth stop when operating. If excessive or low pedal pressure, pulling to one side, or unusual noise is noticed while braking, have the vehicle serviced immediately.
- **Reverse Buzzer** - the reverse buzzer should sound when the key is in the on position and the direction is set to reverse.
- **Steering** - steering should be smooth and consistent with no excessive 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 certified Tomberlin Dealer or authorized technician investigate anything unusual.



## General Operation

- **Zero Speed Detect:** with the run/tow switch in the run position, the E-Merge's motor will inhibit the vehicle from rolling until the accelerator is depressed. When pushed, motor braking should only allow the vehicle to travel 1 to 3 mph. When such motion is detected, a buzzer will sound.
- **Motor Braking:** the top speed of the E-merge is limited even while going down an incline. The motor will engage to limit the top speed of the vehicle. The motor acts as a generator, transferring some of the excess energy into recharging the batteries.
- **Pedal-Up Braking:** the E-Merge will also apply some slight motor braking while stopping. A slight extra force may be felt while coming to a complete stop. This indicates a transfer of some of the excess energy back into the batteries.

## **WARNING**

### **DRIVING INSTRUCTIONS**

- All drivers must have a valid driver's license.
- Always wear seat belts.
- No more than two occupants at one time on a 2-Passenger (one single bench seat) E-Merge and four occupants on 4-Passenger (two forward facing bench seats) E-Merge.
- Do not carry children on your lap or between the seats.
- Do not allow anyone to hang onto any part of the vehicle while operating.
- Obey all traffic regulations.
- Ensure all persons have read the operator's manual and can properly operate the vehicle.
- Ensure the passengers can properly operate the safety belts before allowing them to ride.
- Avoid operating at night because the vehicle may be difficult to see by others. If the vehicle must be operated at night, make sure you use headlamps and tail lamps.
- Bring the vehicle to a complete stop prior to shifting between FWD/REV. Failure to do so may injure an unsuspecting passenger and/or damage the vehicle.
- Operate the vehicle from the driver's seat only.
- To help prevent the risk of serious injury, driver and passenger should keep all body parts inside the vehicle always.
- Avoid sudden and sharp turns.
- To reduce the chance of the vehicle tipping over, reduce speed while making sharp turns.
- Never drink and drive. Not only is drinking and driving un-safe, but it may also violate state and local laws.

### **Starting the Vehicle**

1. Study and understand the controls.
2. Remove the battery charger cable if connected.
3. Make sure everyone is seated with seat belts properly fastened.
4. Adjust rear view mirrors.
5. Read the safety decals on the steering wheel and dash areas.
6. Place the key in the on position and turn the wheels in the desired" direction of motion.
7. Select direction of motion with the FWD/REV switch.
8. Slowly apply the accelerator.
9. Use the brake to stop and limit vehicle speed.

## **WARNING**

Avoid driving through water as doing so may damage the drive motor and also reduce braking performance. If driving through water cannot be avoided, check the brake operation by gently applying pressure to ensure normal operation occurs.

## **CAUTION**

When stationary on a hill, use the footbrake or parking brake to hold position. Do not use the accelerator pedal. Holding the accelerator pedal will reduce the life of the batteries and motor

## **TOWING**

### **WARNING**

- Do not tow behind an automobile or truck on any public roads. To tow the vehicle on public roads, use a trailer with a minimum load rating of 1,500 lbs.
- To tow the vehicle, turn the ignition switch to the off position and place the FWD/REV switch in neutral.
- Place the Run/Tow switch located under the seat to the Tow position.
- Do not exceed 5 mph (8 kph).
- Use extreme caution while turning.
- Do not allow persons in the vehicle while being towed.
- Avoid stopping on a hill when towing. Do not allow to roll backwards as this may cause the vehicle to overturn.
- Do not tow the vehicle behind any type of automobile on public roads unless it is on an approved trailer with a minimum load rating of 3,000 lbs.

## STORAGE

### **DANGER**

- Do not attempt to charge frozen batteries or batteries with bulged cases. Discard the battery. Frozen batteries can explode.
- Batteries in a low state of charge are more likely to freeze. Charge batteries fully before storing the vehicle.
  1. Turn the key off, place FWD/REV switch in Neutral, and chock the wheels to prevent rolling. Do not apply the parking brake.
  2. Fully Charge the batteries. If possible, keep the battery charger hooked up the vehicle so that the batteries will not discharge. A computer on the charger will automatically monitor and charge the batteries. If a reliable AC power supply, is not available, disconnect the charger from the vehicle and disconnect the batteries.
  3. Dirty battery tops can conduct small amounts of electricity and hasten the discharging of the batteries. Clean battery tops and terminals with a solution of water and baking soda. (1 gallon of water for 1 cup of baking soda). Do not allow this solution to enter the batteries.
  4. Inspect and clean battery wires. Damaged or frayed wires should be replaced.
  5. Store the vehicle in a cool, dry location.
  6. Adjust the tire pressure to the recommended levels.
  7. Lubricate front suspension and all other periodic lubrication points.
  8. Use floor Jacks or hire cradles to Remove weight off of the tires.

### **Returning Car to Service**

1. Check battery electrolyte levels, add distilled water if necessary.
2. Fully charge the batteries.
3. Adjust the tire pressure to the recommended levels.
4. Perform Pre-Operation Inspections before each use.

## MAINTENANCE

### **WARNING**

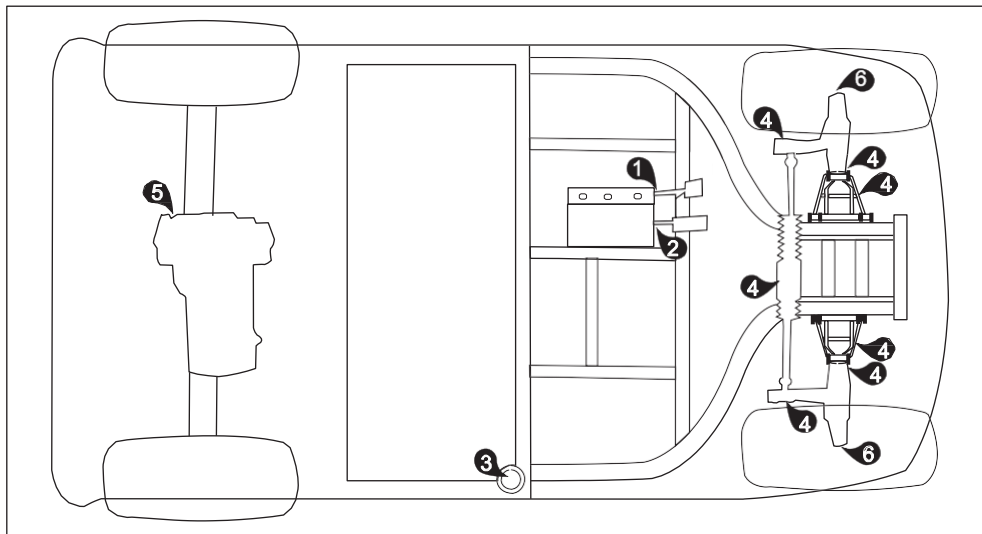
1. Only a qualified technician should repair or inspect the vehicle. It is important to abide by all procedures described in this manual and all safety signs such as "Danger", "Warning", or "Caution."
2. If a problem is found during routine maintenance or inspection, do not operate the vehicle until the problem has been repaired.
3. Wear proper safety apparel while repairing the vehicle. Proper safety apparel includes but is not limited to: safety goggles or approved eye protection, insulated gloves, and a face mask.
4. Remove all jewelry and loose apparel items.
5. Use insulated tools while working on any electrical components.
6. Set the key switch to Off and the FWD/REV switch to Neutral. Use chocks to secure the tires.
7. Components such as the motor, controller, and resistor may become hot during operation. To avoid burns, allow these components time to cool before performing service on the vehicle.

# SCHEDULED INSPECTON PROCEDURES

Scheduled inspection procedures for electric vehicle		
	Inspection	
Routine maintenance by owner	Accelerator pedal	Check if it is capable of normal operation (adjust it to be normal)
	Accelerator microswitch	Check if it is capable of normal operation (please refer to "Maintenance and adjustment" in page 14).
	Battery pack	Charge the battery pack
	Service brake system	Check if it is normal, if not, please contact your dealer for service.
	Charger and socket	Check if it is tough and normal, free of damage
	Reverse	Check if it is capable of normal operation
	Key switch and drive select	Check if it is capable of normal operation
	Tires	Check if abrasion or deterioration takes place
	Warning signs on electric golf car	Ensure that all signs are put on at good place
Weekly inspection by owner	Battery pack	Clean the ports and remove the dust thoroughly, and check electrolyte level.(Do not overfill)
	Wires and ports	Check if they are secure, and check if they are damaged
	Entire car	Check if the parts are loosened, and fasten them if yes.
		Check maximum speed of a vehicle $\leq$ 19.9mph
Check all items included in above-mentioned routine checks		
Monthly inspection items by owner or qualified mechanist	Battery pack	Clean the top of battery pack with soda water
	Service brake system	Check if it is capable of normal operation, check if the braking pedal movement is nimble, and adjust them when necessary
		Check if the brake wire is damaged, and replace it if necessary
	Tires	Check if any abrasion or damage takes place
		Check the air pressure, and moderately adjust the tire pressure to 30-35 PSI when necessary
	Accelerator microswitch	Check if there is any flaw or damage, and ensure that the switch is fixed to the framework
Check all of the above routine/weekly inspection items		
Quarterly inspection items by owner or qualified mechanist	Accelerator pedal	Check if it is capable of normal operation, and adjust it when necessary.
	Driving system	Carry out lubrication as per schematic diagram for lubrication of electric car
	Entire car	Carry out lubrication as per schematic diagram for lubrication of electric car
	Brake oil cup	Check the hydraulic fluid and fill the hydraulic fluid to the highest position
	Check all routine/weekly/monthly inspection items	
Semi-annual inspection items to be carried out by qualified mechanist only (per 100 rounds or 50 workhours)	Battery pack	Check the exact weight, electrolyte level height and charging voltage
	Service brake system	Check if it is capable of normal operation, check if the service brake system is capable of nimble movement, and clean and adjust it when necessary
		Check the brake shoes, and replace them when necessary
	Wires	Check if there is any rapture, breakage or short circuit
	Direction selector	Check its contact and wire connection, and ensure secure connection
	Front wheel alignment	Check and adjust it when necessary
	Entire car	Carry out lubrication as per schematic diagram for lubrication of electric car
Check all of the above routine/weekly/monthly/quarterly inspection items		
Annual inspection items to be carried out by qualified mechanist only (per 200rounds or 100 workhours)	Battery pack	Carry out discharge test
	Motor	Check the motor brush, and replace it when necessary
	Front-wheel bearing	Check if it moves smoothly, and adjust or lubricate it with chassis lubricating oil when necessary
	Driving axle	Check the driving axle and fill oil to oil seal position
	Entire car	Carry out lubrication as per schematic diagram for lubrication of electric car
	Check all of the above routine/weekly/monthly/quarterly/semi-annual inspection items	

# SCHEDULED OILING/LUBRICATION PROCEDURES

Scheduled oiling/lubrication procedures for electric vehicle			
Scheduled interval	Inspection	Position	Recommended lubricating oil
Quarterly inspection items by owner or qualified mechanist	Brake pedal mainshaft	1	General-purpose lithium base grease
	Shaft, accelerator pedal	2	General-purpose lithium base grease
	Reservoir	3	Brake fluid (DOT3000 )
	Front suspension	4	General-purpose lithium base grease
Annual inspection items to be carried out by a Tomberlin qualified technician.	Check the driving axle and fill 37oz Gear lube	5	GL-5 Gear lube
	Check the front-wheel bearing	6	General-purpose lithium base grease



## CHECKING HYDRAULIC BRAKE FLUIDS

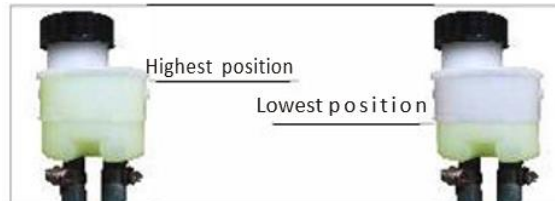
### DANGER

Never operate your E-Merge if the brake pedal does not feel firm or extends more than half way to the floor.

Immediately stop operation if your vehicle pulls severely to one side while braking. Do not continue operation.

### Your E-MERGE is equipped with 4+ Wheel Brakes

The main pedal braking is done on all four wheels with a hydraulic brake system which includes front wheel disc brakes and rear wheel drum brakes. This system requires periodic inspection for brake pad wear, drum/rotor wear and hydraulic fluid loss. Consult your Tomberlin Dealer or qualified Technician if excess wear or if fluid loss is noted. Do not attempt to move the vehicle.



The second braking system is an electronic motor brake that will activate when the E-Merge comes to a complete stop, the key is turned off or the batteries are below 24 volts.

Additional braking utilizes the E-Merges electric motor. It will limit your top speed to while going downhill by transferring some of the excess energy back into the batteries. It will also engage to slow the vehicle if it starts to roll-away once stopped.



## BATTERY PACK CARE AND MAINTENANCE

### DANGER

1. While charging, batteries emit hydrogen which is an explosive gas. Keep the vehicle in well ventilated areas while charging.
2. Do not smoke or expose sparks or open flames near the vehicle.
3. The electrolyte in the batteries is highly acidic and poisonous. Avoid contact with skin, eyes, and clothing. Severe burning and scarring may result.
4. Remedial measures in case of contact with battery acid:
  - External: Flush with water for 15 minutes. Call physician immediately.
  - Internal: Drink large quantities of milk or water followed with milk of magnesia or vegetable oil. Call physician immediately.
  - Eyes: Flush with water for 15 minutes. Call physician immediately.

### WARNING

- Wear safety glasses while working on the vehicle or charger. Wear a full-face shield and rubber gloves while working on or near the batteries.
- Use insulated tools while working on any electrical components.

### CAUTION

Turn the vehicle and all accessories off while charging. The batteries in this vehicle are specifically designed deep cycle batteries. Automotive batteries should never be used in this vehicle. The same type and size lead-acid batteries should be used if replacements are necessary. Alternative batteries such as sealed batteries and glass mat batteries will require a different charging system and should not be used. Always consult your dealer or battery manufacturer for proper care and maintenance.

It is important to properly condition new batteries. New batteries will take numerous charges to reach their full potential. During this period, it is important not to exceed a 50% discharge level. Batteries should be fully charged before first use of vehicle, before removal from storage, and before use each day.

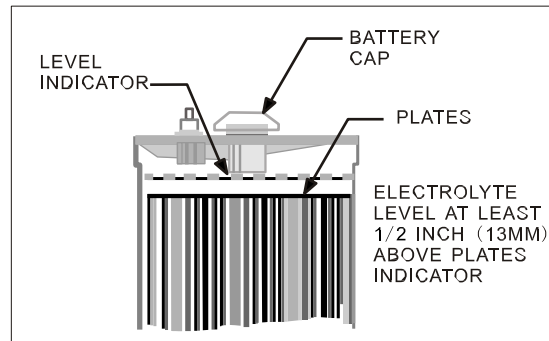
Charge batteries whenever possible; avoid deep discharging of batteries as it will shorten their life.

#### **Battery Care**

1. Keep batteries clean. Ensure the battery cell tops are secure. Wash the battery tops and terminals of batteries with a solution of 1-gallon water and 1 cup baking soda. Do not allow solution to enter the batteries. Rinse off residual solution.
2. The electrolyte level in the batteries should be checked weekly by removing the battery caps and visually inspecting the level as shown below.

## **⚠ WARNING**

Batteries contain high current. Do not overfill or allow water to stand on top of the batteries. Doing so could result in personal injury and or property damage.



Use distilled water. Do not use tap or well water.

Add water only after charging unless the electrolyte level is below the top of the battery plates. Add water to cover plates then check electrolyte levels again once charged.

**Note**, a battery watering gun or bottle is available at many auto parts dealers.

Inspect the wires and terminal connections for corrosion, fraying, or damage. Replace wires if necessary. Ensure battery wire terminal connector nuts are tightened to 100 in-lbs.

## **⚠ CAUTION**

- If the battery wires or terminals are damaged or corroded, they should be replaced or cleaned. Failure to do so may cause them to overheat during operation.
- Torque battery hold down straps to 40 in-lbs. to insure the batteries are held in place securely.
- After each use, the E-merge should be placed on charge. The batteries should never be left discharged longer than necessary.

### **Battery Charging**

## **⚠ DANGER**

- Batteries emit hydrogen which is an explosive gas. While charging, keep vehicle in well ventilated areas.
- Do not cover the vehicle while charging as an accumulation of hydrogen gas could result in an explosion.

### **Charger**

The charger is controlled through an internal computer. This vehicle is equipped with a charger interlock feature. This feature prevents vehicle from operating when the charger is connected to an AC power source

## **⚠ WARNING**

- Do not attempt to service the charger. If the charger requires service, take it to an authorized Tomberlin Dealer or approved technician.
- Do not overload the AC circuit. The voltage of the circuit between 100-240 volt the current should be 18 Amp.
- The AC side of the charger uses a three-prong plug. While charging, use a three-prong wall receptacle with a proper ground. Do not attempt to alter the charger plug in any way.
- Do not use an adapter plug to go from three prongs to a two-prong outlet. This will result in an ungrounded condition and increase the risk of electrical shock and/or fire.
- If an extension cord is used, it must also be a three-prong extension cord with 12 AWG wires, no longer than 30-feet (10m).
- Inspect and replace the charger if it has been dropped or damaged in any way. Inspect the cords and connectors for cracks and fraying. If cracks or frays are detected, replace immediately.
- Do not use the charger near volatile liquids such as gasoline, paints, thinners and other flammables. The charger can ignite flammable materials and vapors.
- Do not expose the charger to rain or liquids. Keep the charger dry.
- Do not place anything near charger cooling vents. Severe electrical shock may occur.
- Do not cover or block the cooling slots on the charger as it could potentially overheat.

### **Operating Instructions**

- Always connect the charger to a GROUNDED outlet. When using an extension cord, avoid excessive voltage drops by using a grounded, 3-wire, 12-AWG cord no longer than 30 feet (10m).
- Never connect a charger to the same outlet as any other device. Recommended circuits are 30 amps.
- Charging: the LED light is amber.
- Charge Complete: the LED light is green.






### **Maintenance Instructions**

- For flooded lead-acid batteries, regularly check water levels of each battery cell after charging and add distilled water as required to level specified by battery manufacturer. Follow the maintenance and safety instructions recommended by the battery manufacturer.
- Make sure charger connections to battery terminals are tight and clean.
- Do not expose charge to oil, dirt, mud or direct heavy water spray when cleaning vehicle.



## Troubleshooting Instructions

If a fault occurs, count the number of red flashes between pauses and refer to the table below:

Red Flashes	Cause	Solution
	Battery high voltage	Check battery size and condition and reset charger (interrupt AC power for 15 seconds)
	Battery low voltage	Check battery size and condition and reset charger (interrupt AC power for 15 seconds)
	Charge timeout caused by battery pack not reaching required voltage. Charger output was reduced to high temperature	Check connections: Operate charger at a lower ambient temperature
	Check battery: battery could not be trickle charged up to minimum voltage.	Check for shorted or damaged cells.
	Over-temperature: charger shut down due to high internal temperature.	Ensure sufficient cooling air flow and reset charger (interrupt AC power for 15 seconds)
	Charger internal fault	Reset charger (interrupt AC power for 15 seconds). Return to qualified service depot if fault persists.

If the charger is left connected to AC power supply, a refresh charge will occur after 10 days if the battery voltage has dropped below a pre-programmed level. If a refresh charge tries to start, but the AC power is disconnected, the charger will wait 8 days for AC to be resorted. At this point, the charger will go into sleep mode and a DC disconnect will be required to reset the charger.

The charger can be connected to any three prongs 110-240-volt home outlet with available minimum 15 amps of current. To avoid the risk of electrical shorting, the battery charger must be grounded through a properly installed three prong outlets. Do not use a two-prong adapter.

Locate all cords and wires in locations that will not be driven over, covered or present a tripping hazard.

## Charging the E-Merge

### DANGER

- Do not use charger if:
  - The plug is loose or does not make good contact.
  - The plug or wires get hot.
  - The connector pins are bent or corroded.
  - The plug, receptacle, or connector is damaged in any way.
- Using charger with any of the above issues could result in a fire or personal injury.
- Always utilize a charger cord sized for heavy power loads, consult an electrician in the event of any doubt.

### WARNING

- Inspect cords and connections for cracks or fraying. Replace if any problems are found. Make sure all connectors are clean and dry.
- Use the yellow charger plug to connect to the vehicle receptacle. Do not pull on the charger wires.
- With the charger properly plugged into the AC outlet. The charger will read the battery condition and activate within two of ten seconds. The charger indicative light will display one by one and then return to charging state.

**Note:** The charger is built into the vehicle. Due to the heat caused when charging, the seat should be raised when charging in hot weather conditions.



The charger will automatically apply sufficient power to bring the E-Merge's batteries to full charge. It will also automatically shut itself off when they are fully charged. If left connected, the charger will occasionally check the batteries' condition and apply enough power to maintain a full charge.

It is recommended to plug the charger in even after short trips (10 minutes). This will assist in getting the maximum life from your E-Merge batteries.

Visit [www.lesterelectrical.com](http://www.lesterelectrical.com), manufacturer of the charger for more details and maintenance tips

## **CLEANING AND APPEARANCE**

It is recommended to use automobile car wash soaps and mild household cleaners. Use a garden hose with a sponge or towel. Do not use a pressure washer as the overspray may damage some of the electrical components. Use non-abrasive automotive type wax products. Battery acid, bugs, asphalt, and tar should be washed away with mild non-reactive solvents to prevent possible staining.

**Questions:** Should you have any questions regarding the care, maintenance, repair or operation of your E-Merge, contact your local Tomberlin Dealer.

## VEHICLE SPECIFICATION

Specifications		2-Passenger	4-Passenger
Dimensions Length*width*height(mm)	No load	2500*1200*1860	3280*1200*1870
	Full load	2500*1200*1840	3280*1200*1850
Dimensions Length*width*height(in)	No load	98.5*47.28*73.28	129.23*47.28*73.68
	Full load	98.5*47.28*72.50	129.23*47.28*72.89
Wheel base(mm)		1630	2450
Wheel base(in)		64.2	96.5
Wheel tread(mm)	Front wheel/rear	980/1060	980/1060
Wheel tread(in)	Front wheel/rear	38.61/41.76	38.61/41.76
Weight without batteries and load(Kg)		360	480
Weight without batteries and load(lb.)		793.8	1058.4
Weight of load(Kg)	Weight of passenger(kg)	2*90=180	4*80=320
	Weight of batteries (kg)	240	240
Weight of load(lb.)	Weight of passenger(lb.)	2*198.45=396.9	4*198.45=793.8
	Weight of batteries (lb.)	529.2	529.2
Overall weight(kg)		780	1040
Overall weight(lb.)		1719.9	2293.3
Weight on the axles for no	Front axle/rear	222/378	270/450
Weight on the axles for no	Front axle/rear	490/833	595.35/992.25
Weight on the axles for full	Front axle/rear	287/493	400/640
Weight on the axles for full	Front axle/rear	633/1087	882/1411.2
AC motor/( Kw/R.min)		5.0/5000	5.0/5000
AC motor/( Hp/R.min)		6.803/5000	6.803/5000
Controller(A/V)		450/48 or 275/48	450/48 or 275/48
Batteries	Batteries	6V*8 or 8V*6	6V*8 or 8V*6
	Capacity(AH@20Hrs)	1800	1800
Maximum speed(km/h)		≤32	≤32
Maximum speed(mile/h)		≤19.9	≤19.9
Approximate drive distance(km)		55-70	55-70
Approximate drive distance(mile)		34-44	34-44
Minimum turning radius(m)		≤3	≤5
Minimum turning radius(ft)		≤9.84	≤16.41
Minimum ground clearance(mm)		≥80	≥80
Minimum ground clearance(in)		≥3.15	≥3.15
Angle of approach for no load (°)		≥35	≥35
Front wheel alignment (no load)	Camber angle	1	1
	Steering axis inclination	12	12
	Caster angle	5	5
	Toe in(mm)	3-5	5-8
	Toe in(in)	0.12-0.20	0.2-0.32
The maximum noise (db.)		≤70	≤70

## WARRANTY

### **Tomberlin™ and ParCar™ Limited Electric Vehicle Warranty Consumer and Approved Commercial Applications**

Tomberlin and ParCar may be used interchangeably in this document and is hereby referred to as Tomberlin. Tomberlin is part of the Columbia Vehicle Group, Inc., which provides a consumer-oriented warranty plan that is supported by leading community-based dealers and authorized service centers. Your satisfaction is our primary goal. As such, this warranty is written in a simplified manner to enhance clarity and understanding of what is and is not covered by Tomberlin.

The key to a positive ownership experience includes the recognition of the role the owner has in assuring correct maintenance and care are properly followed. In fact, incorrect care, improper care, or neglect of maintenance can void this warranty. The terms and conditions of this limited warranty are listed below.

**Issued By:** Columbia Vehicle Group, Inc. Note that some components are covered under different limited warranties provided by their manufacturer, such as (but not limited to) batteries, tires, and so forth. Please visit your dealer for additional information.

**Issued To:** The original individual purchaser, as reflected on the consumer warranty registration.

**Coverage:** Authorized Tomberlin parts plus limited labor for defective components whose failure is solely attributable to a manufacturing defect or workmanship. Failure must occur and be properly reported by an authorized Tomberlin dealer during the warranty period while the vehicle is under normal use. The approved warranty repairs must be provided by a Tomberlin authorized dealer or service center. In the absence of a full-service dealer, Tomberlin' limit of liability is restricted to a "parts only" warranty as detailed within this limited warranty, and only on a pre-approval basis.

**Warranty Period:** This Limited Warranty, as it pertains to specific covered components, will range from 6 to 60 months as detailed below, subject to the restrictions mentioned throughout this document. First and foremost, this is a 100% consumer use limited warranty. Any commercial use will void the consumer limited warranty. Tomberlin offers commercial limited warranty coverage. See page 8 for more information.

**Product Covered:** All Tomberlin and ParCar electric vehicle models sold new by an authorized Tomberlin dealer in compliance with the sales procedures in place at the time of sale. Other models have restricted limited warranty coverage explained below.

**Warranty Registration at the Time of Sale:** Warranty coverage begins at time of the documented purchase. In addition, the transaction must be evidenced by a customer-signed Pre-Delivery Inspection form and subsequent Dealer Warranty Registration being received by Tomberlin within ten days of purchase. If the vehicle warranty registration form (submitted by the dealer) is not received within ten days of the retail transaction, this warranty will be considered void. Customers should make certain they maintain a readable copy for their own records of the following:

- Warranty Registration form
- Proof of payment
- Customer signed (dealer completed) Pre-Delivery Inspection form
- Owner's Manual

**Transfer of Warranty (2017 Models or Newer):** Remaining Consumer warranty coverage (which began at the time of the first owner's documented purchase) may be transferred to a new owner. This fee-based warranty transfer requires a Full-Servicing Authorized Dealer to (1) perform a Pre-Delivery Inspection (PDI) of the cart; (2) complete and submit the PDI and Warranty Transfer Document to Tomberlin; and (3) receive approval from Tomberlin. Consult with your Dealer for the applicable warranty transfer fee. The warranty for commercial applications is not transferable.



**Consumers Responsibility** is to assure they understand the vehicle, its speed settings, braking, restraint, and ride character. Customers should complete a test drive and receive training before taking final delivery. Dealer training should include safety and operational training, tire maintenance and care, how to charge, use of the charge cord, long term storage, local regulations, and so forth. Plus, you should be instructed to immediately report any malfunction to your dealer.

Tomberlin vehicles may look like a traditional golf car. However, they are engineered to perform more like an automobile. For example, Tomberlin models offer two maximum speed settings; have automotive-type 3-point seat belts; automotive-type pedals (i.e. accelerator and brake); and some have an automotive-type steering column. In addition, they have a firmer coil-over-shock suspension—like an on-road sports car—which provides superior handling and stability. Your dealer is prepared to explain, demonstrate, and answer questions you may have.

**Full-Servicing Authorized Dealer:** Only Authorized Tomberlin Sales and Servicing Dealers are authorized to receive warranted parts and labor to service the vehicle. Note: Generally, Tomberlin owners enjoy a better service experience utilizing a Full-Servicing Authorized Dealer.

**Authorized Service Centers:** Authorized Service Centers are in areas where we do not have a Full-Servicing Authorized Dealer. Tomberlin, upon pre-approval, may provide free parts to the Authorized Service Center (without labor reimbursement) for covered parts as detailed herein under the following guidelines. A Tomberlin Service Center must complete a Parts Only Service Center form and ship any part desired to be replaced due to a manufacturing defect to the address as specified with the Service Center procedures. Other procedures must be in compliance—such as maintenance, proof of registration, and so forth. All parts seeking to be replaced must be submitted while under an active warranty period as specified herein. All other terms and conditions apply.

**Servicing Business:** In lieu of a Full-Servicing Authorized Dealer or Authorized Service Center, Tomberlin, upon pre-approval, may provide free parts (without labor reimbursement) for covered parts as detailed herein under the following guidelines. A servicing business must receive pre-approval and ship any part desired to be replaced due to a manufacturing defect to the address as specified with the servicing business procedures. Other procedures must be in compliance—such as maintenance, proof of registration, and so forth. All parts seeking to be replaced must be submitted while under an active warranty period as specified herein. All other terms and conditions apply.

**Tomberlin Parts:** Any part determined solely by Tomberlin to be defective due to faulty workmanship may be repaired or replaced at the sole option of Tomberlin with new, remanufactured, and/or certified replacement parts and will also be warranted for the remaining balance of the vehicles warranty period as it relates to that particular component.

**Maintenance Cost:** All routine maintenance and care is at the expense of the owner and should be conducted only by authorized Tomberlin Dealers. See routine maintenance and care instructions in the Owner's Manual. You may also visit [www.tomberlin.net](http://www.tomberlin.net) for additional current information on maintenance, proper care, and safe driving habits.

**Owners Responsibility:** The limited warranty period is dependent upon adherence to proper care and maintenance. As such, it is the responsibility of the owner to operate and properly maintain their Tomberlin product by following the guidelines, instructions, and recommended maintenance programs and schedules in the Owner's Manual—including those detailed in this document. Unfortunately, we have experienced many examples of improper care and maintenance—some of which can result in component damage, fire, accidents, injury, and death. Examples include:

- Modifying or raising the center of gravity
- Installing the wrong size or brand of batteries
- Manipulating controllers for more speed or torque
- Installing the incorrect size tires, wheels, or lift kits
- Installing aftermarket light kits, trailer hitches, cargo beds, and other accessories
- Installing stereos and electronics that are spliced into the wrong wires
- Improper long-term storage or long periods of no use
- Using inappropriate extension cords to charge the vehicle

The following warranty information is for all **two-wheel drive on-road Tomberlin E-Merge models 2015 and newer**, and all **two-wheel drive on-road ParCar models 2016 and newer**. For all other models and model years refer to the vehicles applicable owner’s manual issued at time of purchase.

<p><b>CONSUMER WARRANTY PERIOD &amp; MODELS:</b> The following warranty periods are subject to exclusions detailed in this document.</p>	<p>Properly maintained components covered under this Limited Warranty for the period in the corresponding left column include:</p>
<p><b>Five Years</b></p>	<p>Steering wheel, steering column, front and rear body deformation (excludes paint, cracks, spills, and contact damage), upper structure welds, *A-arms, *front spindles, rear swing arms, brake caliper deformation, stainless steel hardware, frame, steel upper frame brace component welds, hip restraint, wheels. Note: Non-OEM wheels will void this coverage.</p>
<p><b>Three Years</b></p>	<p>Properly maintained battery cables (no corrosion), shocks and coil springs breakage, front wheel hub, steering gear rack and parking brake cable breakage, grease Zerk fittings</p>
<p><b>Two Years</b></p>	<p>Motor, controller, switch housing, seat hinges, master cylinder, DC to DC converter, steel brake line and front brake disc, rear drum, transaxle assembly, accelerator pedal, brake pedal assembly, headlight assembly (not the bulb), bushings, primary wire harness breakage (not due to water), switches including turn signal stalk.</p>
<p><b>One Year</b> Standard consumer coverage period unless components are otherwise listed above or below.</p>	<p>Tie-rods, power steering, on-board Smart Charger, and all other items and components not mentioned above or specifically excluded as noted below. Excluded items include front and rear bumpers, dash, windshields, and any damage due to impact from foreign objects, vandalism, or accidents to include shipping damage which is covered by the carrier subject to certain certification requirements</p>
<p><b>Six Months</b></p>	<p>Seat coverings, body finishes, and Tomberlin accessories properly installed by a Tomberlin authorized dealer. Canopies, floor mats, manual brake handle, electrical connections, components, sensors, solenoid, trim, decals, and switch connections.</p>
<p><b>90 Days</b></p>	<p>Elite Enclosures</p>
<p><b>Batteries &amp; Tires</b></p>	<p>Batteries shipped with the vehicle to the dealer by Tomberlin, limited coverage as detailed below. If batteries are not shipped to the dealer by Tomberlin, no Warranty other than coverage provided by the battery manufacturer if any. Tire warranties provided by the tire manufacturer if any.</p>

*\* In some cases, there may be surface rust on various metal parts like the frame and/or other steel components, which will not affect the functionality of the component.*

The following warranty information is for all **two-wheel drive Tomberlin Escape models**.

<p><b>CONSUMER WARRANTY PERIOD &amp; MODELS:</b> The following warranty periods are subject to exclusions detailed in this document.</p>	<p>Properly maintained components covered under this Limited Warranty for the period in the corresponding left column include:</p>
<p><b>Two Years</b></p>	<p>Steering wheel, steering column, front and rear body deformation (excludes paint, cracks, spills, and contact damage), upper structure welds, *A-arms, *front spindles, rear swing arms, brake caliper deformation, stainless steel hardware, frame, steel upper frame brace component welds, hip restraint, wheels. Note: Non-OEM wheels will void this coverage.</p> <p>Properly maintained battery cables (no corrosion), shocks and coil springs breakage, front wheel hub, steering gear rack and parking brake cable breakage, grease Zerk fittings.</p> <p>Switch housing, seat hinges, master cylinder, steel brake line and front brake disc, rear drum, transaxle assembly, accelerator pedal, brake pedal assembly, headlight assembly (not the bulb), bushings, primary wire harness breakage (not due to water), switches.</p>
<p><b>One Year</b> Standard consumer coverage period unless components are otherwise listed above or below.</p>	<p>Motor, controller, DC to DC converter, tie-rods, on-board Smart Charger, and all other items and components not mentioned above or specifically excluded as noted below. Excluded items include front and rear bumpers, dash, and body damage due to impact from foreign objects, vandalism, or accidents. Exclusion includes shipping damage which is covered by the carrier subject to certain notification requirements.</p>
<p><b>Six Months</b></p>	<p>Seat coverings, body finishes, and Tomberlin accessories properly installed by a Tomberlin authorized dealer. Floor mats, manual brake, electrical connections, components, sensors, solenoid, trim, <del>doors, and switch connections.</del></p>
<p><b>Batteries &amp; Tires</b></p>	<p>Batteries shipped with the vehicle to the dealer by Tomberlin, limited coverage as detailed below. If batteries are not shipped to the dealer by Tomberlin, no Warranty other than coverage provided by the battery manufacturer if any. Tire warranties provided by the tire manufacturer if any.</p>

*\* In some cases, there may be surface rust on various metal parts like the frame and/or other steel components, which will not affect the functionality of the component.*

**Exclusions:** This warranty does not cover components damaged by abuse, alteration, neglect, accidental damage, misuse, or malfunction resulting from a collision, accident, impact, commercial applications or use outside of the intended use of the vehicle. Any promises, statements, or service agreements with a particular Tomberlin dealer or service center are between you and the dealer. Dealer promises, statements, written or otherwise are not the responsibility of Columbia Vehicle Group, Inc. to execute, fulfill or perform. Secondary damages of any kind or nature are not covered. Examples of what is not covered are damages caused by overfilling the batteries that may result in rust, corrosion and/or floor damage. Vehicle damage caused by improper care, heat conditions due to improper torque, care or storage or using light duty charge cords. Do It Yourself efforts are excluded from coverage without prior written approval by Tomberlin. Verbal statements and/or agreements between the consumer, dealer, or 3<sup>rd</sup> party are considered null and void as it relates to this warranty; which is governed solely by the written limited warranty defined in this document. Any modifications to this warranty must be signed off by a corporate officer of Columbia Vehicle Group, Inc.

Wear items are excluded. This exclusion includes tires, brake pads, brake shoes, motor brushes, wiper blades, paint finish, bulbs/fuses, and so forth.

Additionally, warranty will be denied and does not include the failure of any part or accessory due to abuse, misuse, acts of nature, acts of God, improper installation or maintenance, a low fluid level, and use of a fluid other than specified by Tomberlin. The installation of any part that is not provided (or authorized) by Tomberlin will void this warranty—including use of the vehicle in competition or racing events.

Other exclusions include the following:

- Any failure associated with modifying the vehicle or installing accessories unauthorized by Tomberlin
- Any incidental expenses or inconvenience you may suffer due to the loss of use of your vehicle
- Any vehicle that has been declared a total loss or sold for salvage adjustments/repairs
- Routine maintenance items or service procedures recommended by Tomberlin
- Electrical components damaged by loose connections, power surges or poor care
- Driving through water deep enough to cause electrical system damage
- Corrosion of battery terminals or damages relates to spikes in electrical power
- Altering the vehicle's performance or use beyond its original intended use and performance envelope
- Fading, blemishes, scratches, or surface deterioration due to exposure and normal wear and tear

**Battery Care and Maintenance:** As a reminder and in addition to other guidelines, owners are advised to perform the following minimum amount of care and maintenance to maintain an active and valid warranty. While vehicles are being stored, the battery system must be maintained. The minimum maintenance requirements are as follows:

- Fully Charge at least every 30 days
- Check water level weekly and after fully charging
- Use only distilled water if required
- If plates are exposed to air, add water to bring level to the top of the plates before charging
- DO NOT charge battery when plates are exposed to air
- Inspect battery connections when charging
- Ensure that the key switch is set to the OFF position when the vehicle is not in use to avoid rapid discharge of the batteries
- Always keep batteries fully charged
- Always charge batteries with the charger provided with the vehicle
- The charger provided is specifically matched to the battery pack in the vehicle
- Avoid charging batteries when ambient temperature is above 120 F
- Never discharge batteries when battery charge levels are below 20% of their capacity
- Visit your battery manufacturer's web-site for additional care and guidelines required

*Tomberlin believes  
the customer is  
best served by  
having a fresh  
battery pack  
installed at the  
time of purchase  
by the dealer.*

**Battery Warranty**

<p>Battery warranty is provided if Tomberlin-approved batteries are included at time of vehicle shipment to the dealer, and if properly maintained by dealer prior to sale.</p> <p>Consult with you dealer if batteries were not included with the vehicle when shipped to the dealer.</p> <p>Warranty period begins upon the date of documented purchase.</p> <p>Battery warranty is subject to restrictions and the proper battery care and maintenance guidelines in the owner’s manual of the Battery Manufacturer. Battery replacement and verification of defect must comply with the battery manufacturer procedures in place.</p> <p><b># Months Since Documented Purchase</b></p>	<p><b>Tomberlin</b> will credit dealer up to the following percent for a battery found defective due to manufacturing defect upon verification by Tomberlin.</p> <p>Tomberlin dealers will apply the corresponding percentage in the chart below based upon the elapsed time since the date of documented purchase.</p> <p>Customer will be responsible for paying to dealer the remaining percentage due.</p>	<p><b>Customer</b> will be responsible for paying the following percentage of dealer charge to replace the covered battery.</p> <p>The amount will be credited toward the approved battery replacements as approved by Tomberlin that are in use at the time of the battery credit. The credit is only valid at authorized Tomberlin dealers or Service Centers.</p>
	<b>Tomberlin Dealer</b>	<b>Customer</b>
20-28Months	25%	75%
14-19 Months	50%	50%
9-13 months	75%	25%
1-8 months	100%	0%

**OEM installed Battery Exclusions:** Batteries that fail due to customer abuse or improper care such as lack of maintenance, under-charging, or over-charging to include improper electrolyte levels due in part to overwatering or under watering. Batteries that fail due to fire, wreckage, explosion, or freezing. Batteries that have been allowed to discharge while in storage or improperly installed such as loose or corroded hardware.

**Battery Replacement:** In the event a manufactured defect is determined, the battery manufacturer must approve. Only the defective battery in a set will be replaced subject to the terms herein.

**Replacement Parts:** Parts replaced under this warranty become the property of Tomberlin and Tomberlin will make the final decision whether to repair or replace any existing part or assembly. Factory remanufactured, or certified replacement parts may be utilized for some warranty repairs.

**Pick Up, Rental, and Delivery:** This limited warranty does not cover any pickup and delivery reimbursement.

**Remedy:** The only remedy (sole remedy) under this limited warranty is Tomberlin will repair or replace any parts determined to be defective at the sole discretion of Tomberlin. Tomberlin makes no other warranty of any kind, expressed or implied.

**Merchantability:** Any expressed or implied warranty of merchantability and fitness for a particular use, or purpose that in anyway exceed the limits of time or obligations as stated in this limited warranty are hereby disclaimed.

**Tire Care:** Tomberlin vehicles have a firm sports-car-like ride that tracks well with an emphasis on lateral stability. We engineer a “feel-the-road” sensation via rack and pinion steering; and provides a tighter road-hugging ride compared to a traditional golf car. Proper tire care is critical to aid in enhancing a safe and improved ride. Proper storage habits, properly inflated tires, and keeping the vehicle correctly aligned will offer a much longer tire life as well as improved ride.

**Flat Spots:** Flat spotting or wheel bounce can occur in virtually any tire. However, golf car tires and wheels are more susceptible (due to size and width)—especially in warm climate areas and when parked for several days. Visit the Tirerack website links below to learn more about proper tire care, storage tips, and ways to reduce flat spotting which can produce a bouncy ride. Go to the following sites (or similar sites) for more information.

<http://www.tirerack.com> and <http://www.tirerack.com/tires/tiretech/techpage.jsp?techid=42>

**Tire Cradles:** Tomberlin recommends removing the weight of the vehicle from the tires when in storage (or not used) for more than a week. Tire cradles may offer a simpler method to aid in the reduction of tires getting out of round. Visit <http://www.griotsgarage.com> and type in “flat spot eliminator” in the search window; or go to [www.tirecradles.com](http://www.tirecradles.com) or similar sites to learn more. *Tomberlin provides these tips as an aid to our consumer’s own research and knowledge. Tomberlin has no affiliation with any of these companies and makes no recommendation, warranty, results, or value associated with their offerings.*

**Design:** Tomberlin does not assume any responsibility to modify components or vehicles existing in the market due to new or ongoing designs, modification, or technology previously unknown to Tomberlin. Tomberlin reserves the right to make design changes to product without notice.

**State Law:** Some states do not allow implied warranty limitations and may not be applicable to certain owners.

**Safety:** Make yourself fully aware of how to operate and care for your vehicle. Always wear your seat belt, know your vehicle, remove your keys, and engage your brake before exiting. Staying alert and using common sense saves lives and aids in assuring a safe driving and ownership experience. In addition, make certain those who you permit to drive your vehicle are of lawful age, have read the owner’s manual, and have a clear understanding of its’ operation.

Tomberlin and ParCar Golf Cars configured as a PTV (Personal Transportation Vehicle) operate up to 19 mph.

Tomberlin and ParCar Golf Cars configured as a LSV (Low Speed Vehicle) operate up to 23-25 MPH.

Tomberlin Escape operates up to 15 MPH.

## Commercial Applications

**Rentals, Commercial, Industrial or Institutional Use:** E-Merge and ParCar Vehicles used for approved Rent, and/or in Industrial, Commercial, and Fleet type applications are warranted for a six-month period with the Vanish Utility series having a three-month limited warranty period. Other applicable terms as to care, maintenance, and procedures as detailed herein will apply.

**Additional Limitations:** In no case shall Tomberlin or ParCar be liable for indirect, incidental, punitive, or consequential damages, including but not limited to death, personal injury or property damage arising from or related to any alleged failure in a vehicle or battery charger, or any damage or loss to the purchaser or any third party for lost time, inconvenience, or any economic loss, whether or not company was apprised of the foreseeability of such damages or losses. The right of purchaser to recover damages within the limitations set forth in this section is purchaser's exclusive alternative remedy if the limited remedy of repair or replacement of the vehicle fails of its essential purpose. The parties agree that this alternative remedy will be enforceable even if the limited remedy of repair or replacement fails of its essential purpose. any legal claim or action arising that alleges breach of warranty must be brought within three (3) months from the date the warranty claim arises. This limited warranty gives you specific legal rights and you may have other rights which vary from state to state. Some states do not allow the exclusion of incidental damages or limitations on how long an implied warranty may last, so the above exclusions and limitations may not apply to you. The warranty for commercial applications is not transferable.

**Other Company Rights:** Tomberlin reserves all rights to improve, modify or change the design or operation of any Tomberlin vehicle or component without being responsible to modify previously manufactured vehicles. This Limited Warranty cannot be changed without written approval of Company CEO and no other person, employee, agent, dealer, distributor has any authority to bind the company beyond the terms herein.

All parts that are warranted shall be stored for up to three months then shipped to Tomberlin with proper documents, failure codes, VIN, original owner—including various explanations of what took place. All parts are invoiced when shipped and due in accordance with procedures and policies on file, typically 15 to 30 days, and warranty credits will be applied as approved and in compliance with Tomberlin procedures.

This document more fully explains the coverage's, time line of coverage periods and term to include the restrictions associated with all Tomberlin Limited Warranties. In the event of conflicting written statements or lack of clarity, the shorter coverage period and/or more restrictive language shall apply but in no case, shall go beyond those explained herein.

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