



Discover Ruff & Tuff

all-performance
Electric Vehicles



Owner's Manual, Safety Guide,
and Warranty Information



Ruff & Tuff Electric Vehicles, Inc.

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Owner's Manual, Safety Guide, and Warranty Information

Electric Vehicles

Ruff & Tuff 2P Cruiser/Hunter

Ruff & Tuff 4P Cruiser/Hunter

Ruff & Tuff Golf

Ruff & Tuff Workman

Ruff & Tuff Electric Vehicles, Inc. reserves the right to make design changes without obligation, to make these changes on units previously sold and the information contained in this manual is subject to change without notice.

Ruff & Tuff Electric Vehicles, Inc. is not liable for errors in this manual or for incidental and consequential damages that result from the use of the material in this manual.

Notes

Thank you for purchasing a Ruff & Tuff electric vehicle. This manual is designed to provide you with a basic understanding of the features and operation of this vehicle.

Included in this manual:

- Important Safety Information
- Basic maintenance and inspection procedures.
- Information about special techniques and skills needed to ride your Ruff & Tuff electric vehicle.
- Warranty Information

For your safety:

- Read this manual carefully and completely before operating your vehicle. Make sure you understand all instructions.
- Take special notice of warning and caution labels on the vehicle.
- Only operate a Ruff & Tuff electric vehicle with proper training or instruction.
- Operators should have a valid motor vehicle license.
- No one under 16 years of age should operate a Ruff & Tuff electric vehicle.

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General Information

This guide is provided to assist the owner or operator of this Ruff & Tuff product in the safe operation and maintenance of the vehicle.

Operating Instructions

- 1) Make sure only responsible drivers operate this vehicle. Operators should have a valid motor vehicle license. No one under 16 years of age should be allowed to operate the vehicle.
- 2) Vehicle must be properly maintained in order to insure safe operating condition.
- 3) The operator of the vehicle should follow all applicable driving rules, regulations, and restrictions.
- 4) Reduce speed when making sharp turns and when traveling:
 - a. In wet areas
 - b. In blind spots
 - c. Along loose terrain
 - d. On uneven roads
 - e. In traffic with other vehicles
 - f. Near pedestrian areas
- 5) When parking vehicle:
 - a. Apply hill brake
 - b. Move Forward/Reverse switch to "Neutral" position
 - c. Turn key to "Off" position

Maintenance

If the owner of this Ruff & Tuff electric vehicle is not skilled, experienced, or capable of performing maintenance to the vehicle, he or she is encouraged to seek assistance to prevent injury to himself/ herself or damage to the vehicle.

In order to keep your Ruff & Tuff electric vehicle in the safest, most reliable condition, periodic maintenance should begin at purchase:

- 1) Ruff & Tuff Electric Vehicles, Inc. recommends that a qualified maintenance/repair dealer perform all maintenance and repairs.
- 2) Vehicle must be disabled before performing maintenance:
 - a. Apply hill brake
 - b. Move Forward/Reverse switch to "Neutral" position
 - c. Turn key to "Off" position
- 3) Replace all safety and warning labels on the vehicle that become damaged or missing.
- 4) Test drive the vehicle after maintenance is performed or repairs are made.
- 5) Use wheel chocks and jack stands when lifting the vehicle.
- 6) Use proper tools when performing maintenance or repairs to the vehicle.
- 7) Replacement parts are available from your local Ruff & Tuff dealer. For best performance and safety, use only factory replacement parts.
- 8) Ruff & Tuff Electric Vehicles, Inc. recommends that you keep records of all maintenance and repairs.

General Information

Battery Storage

Your Ruff & Tuff Electric Vehicle is equipped with AGM Dry Cell Batteries. All batteries will self-discharge over time. The rate of self-discharge varies depending on the ambient temperature and the age and condition of the batteries.

A fully charged battery will not freeze in winter temperatures unless the temperature falls below -75° F (-60° C). For winter storage, the batteries must be clean, fully charged and disconnected from any source of electrical drain. As with all electric vehicles, the batteries should be checked and recharged as required or at a minimum of 30-day intervals.

Charger Operating Instructions

- 1) Always use a grounded outlet. If using an extension cord, be sure and use a grounded 3-wire 12 AWG cord to avoid excessive voltage drops.
- 2) The charger will then turn on and experience a short LED indicator self-test for approximately 2 seconds. If connected to a battery pack, a trickle current will be applied to the charger until a minimum voltage is reached. If charger is waiting to be connected to a battery pack and being used in an off-board application, the charging algorithm number will be displayed for approximately 11 seconds and then display an under-voltage fault (the fault will disappear when plugged into the battery.)
- 3) When a minimum battery voltage has been detected, charger will enter the bulk charging constant-current stage. The length of charge will vary depending on how large and how depleted the battery pack is, the ambient temperature, and the input voltage. If the ambient temperature is too high, charge power will be reduced to maintain a maximum interval temperature. If the input AC voltage is low, charge power will be reduced to avoid high input currents.
- 4) At the time the battery is at approximately 80% state of charge, the bulk stage is then completed and an >80% charge notification is given. In the next phase, known as the absorption or constant-voltage phase, the last 20% of charge will be returned to the battery. If the vehicle requires immediate usage, charging could be terminated at this point. However, it is recommended to wait for 100% charge notification to ensure maximum battery capacity and life.
- 5) A low current “finish-charge” is lastly applied to return and maintain capacity.
- 6) The battery is then completely charged. You may now unplug the charger from AC power. If kept plugged in, the charger will automatically restart another complete charge cycle if the voltage drops below a minimum voltage of 30 days has passed.
- 7) If faults occurred at anytime during the charging process, a fault notification is given by flashing RED with corresponding code. Some errors are serious and may require human intervention to fix the problem and then reset the charge by disconnecting AC power for at least 15 seconds. Others may automatically recover when the fault condition is eliminated. To indicate which error occurred, a fault notification will flash RED a number of times, stop, and then repeat.
 - [1 FLASH] Battery Voltage High: auto-recover
 - [2 FLASH] Battery Voltage Low: auto-recover
 - [3 FLASH] Charge Timeout: the charge failed to complete in the allotted time. This might indicate a problem with the battery pack, or that the charger output was reduced due to high ambient temperatures.
 - [4 FLASH] Check Battery: battery pack could not be trickled charged to the minimum level required for initial charge. May indicate one or more cells in the battery pack are damaged or shorted.
 - [5 FLASH] Over-Temperature: auto-recover. Charger has shutdown because of high internal temperature. Typically indicates no sufficient airflow for cooling.
 - [6 FLASH] Fault: an internal fault has been detected. After disconnecting AC power for at least 15 seconds, if Fault 6 is again displayed, the charger must be taken to a qualified service depot.

General Information

Ruff & Tuff Owner's F.A.Q's & Routine Maintenance Guide

1) When do I charge my Ruff & Tuff Vehicle?

- a. Your Ruff & Tuff Vehicle is equipped with AGM Dry Cell batteries. These batteries have no memory. However, it is recommended to opportunity charge these batteries even after minimal use.
- b. When the red light begins to blink on the dashboard, you have approximately 1-2 miles of usage left. Charging the vehicle will take approximately 10-12 hours depending on the state of discharge.
- c. **Note:** It is normal for your onboard charger's operating temperature to be quite warm. This charger is fin cooled, not fan cooled. The best way to charge your Ruff & Tuff vehicle is to open the front seat or prop in the open position to help dissipate the heat created by charging the vehicle.

2) How do I charge my Ruff & Tuff Vehicle?

- a. Your Ruff & Tuff Vehicle is equipped with an onboard charger that is multiple rated and operates on a standard single pole 15-Amp breaker in applicable mode.
- b. This charger has a pigtail plug, which you attach to the supplied AC cord and then plug into the wall outlet.

3) How will I know when my unit is completely charged?

- a. Your onboard charger unit has an LED light that indicates completion of battery charge. A green light display indicates a full charge. Your onboard charger will automatically shut off after charging is complete. (Refer to Page 6 of your Owner's Manual for more details related to your onboard charger.)

4) What is the purpose of the toggle switch on the dash?

- a. This button turns the reverse buzzer on or off.

5) What function does the toggle switch serve that is located inside the passenger side glove box?

- a. If equipped with this feature, when pushing the toggle switch forward this decreases the speed of your Ruff & Tuff vehicle by approximately half. This is called the Speed Reduction Switch (SRS).

6) What tire pressure should I keep in my tires?

- a. 12 lbs. in the winter
- b. 16 lbs. in the summer

7) What parts of my Ruff & Tuff are not covered under the 2-year manufacturer warranty?

- a. Tires and 1157, 1156, 1156A lighting bulbs (Headlight bulbs are covered unless damaged)
- b. Any and all damages to unit due to incorrectly performed maintenance and charging procedures.
- c. Pick up and delivery of vehicle.
- d. Onboard Charger carries a 2-year manufacturer's warranty. AGM Dry Cell Batteries (standard 30 mile) carry a 1-year manufacturer's warranty. Upgrade dry cell batteries (50 & 70 mile) carry an extended warranty.
- e. Vehicles used for commercial purposes carry a one-year warranty.

8) How do I clean my Ruff & Tuff Vehicle?

- a. Turn the key to the OFF position and remove before washing the vehicle.
- b. Wash with soap and water. All parts of vehicle can be hosed off including battery terminals. Be sure to run the car after washing as the brakes may lock up if car is left to sit in place.

General Information

- c. Do not concentrate water stream in location of black box located on passenger side of battery box. This is where the controller and electronics are located in your vehicle.

9) When should I do routine maintenance on my vehicle?

- a. There is no routine maintenance required in the battery compartment other than checking battery nuts periodically. Your AGM dry cell batteries do **not** require routine maintenance such as watering, etc. These batteries are virtually maintenance free.
- b. Rear brakes are self-adjusting; they can be adjusted by using a front cantilever adjustment assembly. This should be done by a certified technician, or consulting the same.
- c. Tire care is basic. Keep tires clean and use tire care products as needed.
- d. Waxing vehicle should be done at regular intervals to maintain shine using a non-abrasive car wax specially formulated for clear coats.

10) Any other technical questions which may arise concerning operating procedures and/or maintenance procedures can be answered by contacting your local Ruff & Tuff dealer.

Specifications

Ruff & Tuff 2P Cruiser/Hunter

Weight	1030 lbs. / 467.20 kg
Load Capacity	800 lbs. / 362.87 kg
Height	72 in. / 182.8 cm
Tires (4-ply)	22" x 11" x 10"
Tire Pressure (Ruff & Tuff Street)	10-12 psi
Tire Pressure (Ruff & Tuff Mud)	10-12 psi
Lights	55-watt Halogen
Brakes	Rear wheel drum with automatic Adjusting mechanism
Motor	48-volt D.C. 14 H.P.
Electric voltage	48-volt D.C. Six 8-volt deep cycle AGM (Dry Cell) 2 gauge Copper wiring
Forward/Reverse Switch	Solid state rocker switch
Speed Controller	650-amp solid state
Speed	18-25 mph / 29 -40 km/hr
Charger	Fully automatic. On Board.

Specifications are subject to change as we continue to build you a better product!

Specifications

Ruff & Tuff 4P Cruiser/Hunter

Weight	1330 lbs/ 603.27 kg
Load Capacity	1000 lbs. / 453.59 kg
Height	72 in. / 182.8 cm.
Tires (4-ply)	22" x 11" x 10"
Tire Pressure (Ruff & Tuff Street)	10-12 psi
Tire Pressure (Ruff & Tuff Mud)	10-12 psi
Lights	55-watt Halogen
Brakes	Rear wheel drum with automatic Adjusting mechanism
Motor	48-volt D.C. 14 H.P.
Electric voltage	48-volt D.C. Six 8-volt deep cycle AGM (Dry Cell) 2 gauge Copper wiring
Forward/Reverse Switch	Solid state rocker switch
Speed Controller	650-amp solid state
Speed	18-25 mph / 29 -40 km/hr
Charger	Fully automatic. On Board.

Specifications are subject to change as we continue to build you a better product!

Specifications

Ruff & Tuff Golf

Weight	900 lbs/ 408.23 kg
Load Capacity	800 lbs. / 362.87 kg
Height	68 in. / 172.2 cm.
Tires (4-ply)	205 x 50 x 10
Tire Pressure (Ruff & Tuff Street)	10-12 psi
Lights	55-watt Halogen
Brakes	Rear wheel drum with automatic Adjusting mechanism
Motor	48-volt D.C. 4 H.P.
Electric voltage	48-volt D.C. Six 8-volt deep cycle AGM (Dry Cell) 2 gauge Copper wiring
Forward/Reverse Switch	Solid state rocker switch
Speed Controller	400-amp solid state
Speed	15-18 mph / 24 -29 km/hr
Charger	Fully automatic. On Board.

Specifications are subject to change as we continue to build you a better product!

Specifications

Ruff & Tuff Workman

Weight	1330 lbs/ 603.27 kg
Load Capacity	1000 lbs. / 453.59 kg
Height	72 in. / 182.8 cm.
Tires (4-ply)	22" x 11" x 10"
Tire Pressure (Ruff & Tuff Street)	10-12 psi
Tire Pressure (Ruff & Tuff Mud)	10-12 psi
Lights	55-watt Halogen
Brakes	Rear wheel drum with automatic Adjusting mechanism
Motor	48-volt D.C. 14 H.P.
Electric voltage	48-volt D.C. Six 8-volt deep cycle AGM (Dry Cell) 2 gauge Copper wiring
Forward/Reverse Switch	Solid state rocker switch
Speed Controller	650-amp solid state
Speed	18-25 mph / 29 -40 km/hr
Charger	Fully automatic. On Board.

Specifications are subject to change as we continue to build you a better product!

Safety

General Safety Information

This guide is provided to assist the owner or operator of this Ruff & Tuff electric vehicle in the maintenance and safe operation of the vehicle. The warnings in this manual are not a replacement for good common sense and safe driving practices. Your Ruff & Tuff electric vehicle is designed and manufactured for off-road use. It does not conform to Federal Motor Vehicle Safety Standards and is not equipped for operation on public streets unless equipped with LSV package option. (More information on the LSV package option is available through your local Ruff & Tuff Dealer.) Operators of the Ruff & Tuff electric vehicle should have a valid motor vehicle license. No one under 16 years of age should be allowed to operate a Ruff & Tuff electric vehicle.

Operating Safety

- 1) Always use your Ruff & Tuff electric vehicle in a responsible manner and maintain the vehicle in safe operating conditions.
- 2) Always read and observe all warnings and operation instruction labels affixed to the Ruff & Tuff electric vehicle.
- 3) Always follow all safety rules established in the area where you are operating the Ruff & Tuff electric vehicle.
- 4) Always use extreme caution when making sharp or blind turns.
- 5) Always apply brake to control speed on steep grades.
- 6) Always use extreme caution when traveling:
 - a. In wet areas
 - b. In blind spots
 - c. Along loose terrain
 - d. On uneven roads
 - e. In traffic with other vehicles
 - f. Near pedestrian areas.

Notes, Cautions, and Warnings

The following notations indicate important information. Failure to follow the warnings contained in this manual could result in serious injury or death.

NOTE

NOTE: Condition that should be observed. This provides key information that makes procedures easier and clearer.

CAUTION

CAUTION: Condition that may result in damage to the vehicle. Special precautions must be taken to avoid damage to the vehicle.

! WARNING !

WARNING: Hazardous condition that could result in severe injury or death to the vehicle operator, a bystander, or a person inspecting or repairing the vehicle.

Safety

General Safety Practices

Steep Grade: ! WARNING !

In areas where steep grades exist, vehicle operations should be restricted to the designated vehicle pathways where possible, and shall be identified with a suitable warning giving the following information: "Warning, steep grade, descend slowly with one foot on the brake."

Wet Areas: ! WARNING !

Wet grassy areas may cause a vehicle to lose traction and may affect stability. Wet areas should be chained or roped off to prevent vehicle operations or be identified by a suitable warning not to operate vehicles in this area due to wet terrain.

Sharp Turns, Blind Corners, and Bridge Approaches: ! WARNING !

Sharp turns, blind spots, bridge approaches, and other potentially hazardous areas shall be either chained or roped off to prevent vehicle operations or identified with a suitable warning to the operator of the nature of the hazard and stating the proper precautions to be taken to avoid the hazard.

Loose Terrain: ! WARNING !

Loose terrain may cause a vehicle to lose traction and may affect stability. Areas of loose terrain should be repaired if possible, or chained or roped off to prevent vehicle operation, or identified by a suitable warning to operators not to operate vehicles in this area due to loose terrain or possible hazardous conditions.

Pedestrian Areas: ! WARNING !

Areas where pedestrians and vehicles interfere shall be avoided whenever possible by rerouting the vehicle traffic or the pedestrian traffic to eliminate the interference. If elimination of the interference is not possible or is highly impractical, signs shall be erected warning pedestrian traffic and to drive slowly and use extreme caution.

Ventilation: ! WARNING !

During the charging process, we recommend lifting the seat bottom to allow more air flow and reduce heat build up.

Safety

Read and understand all labels located on this vehicle. For any questions on any of the information, contact a Ruff & Tuff representative for clarification.

Always replace any damaged or missing labels.

On steep hills it is possible for vehicles to coast at greater than normal speeds encountered on a flat surface. To prevent loss of vehicle control and possible serious injury, speeds should be limited to no more than the maximum speed on level ground. Limit speed by applying the service brake.

Catastrophic damage to the drive train components due to excessive speed may result from driving the vehicle above specified speed. Damage caused by excessive speed may cause a loss of vehicle control and is costly. This is considered abuse and will not be covered under warranty.

Use extra caution when towing the vehicle.

If the vehicle is to be used in a commercial environment, signs should be used to warn of situations that could result in an unsafe coasting condition.

Keep this manual as part of the permanent service record in case the vehicle should be resold.

Safety

This Ruff & Tuff electric vehicle is intended for **off-road use only**. The owner should check local and other applicable laws and regulations before operating.

SEVERE INJURY OR DEATH can result if you do not follow these instructions:

- Read this entire manual and all labels carefully and follow the operating procedures described.
- Only operate a Ruff & Tuff electric vehicle if you have had proper training or instruction.
- Follow these age recommendations:
No one under 16 years of age should operate a Ruff & Tuff electric vehicle or be left without adult supervision.
- Be weary of passengers or pedestrians.
- Do not operate a Ruff & Tuff electric vehicle on a highway.
- Do not consume alcohol or drugs before or while operating this machine.
- Never operate at speeds too fast for your skills or the outdoor conditions. Always operate at a speed that is suitable for the terrain, visibility and operating conditions, and your experience.
- Never attempt wheelies, jumps, or other stunts.
- Inspect your vehicle every time it is used to make sure it is in safe operating condition. Follow the inspection and maintenance procedures and schedules described in this manual.
- Always keep both hands on the wheel during operation.
- Always drive at slower speeds and be cautious when operating on unfamiliar terrain. Be alert to changing terrain conditions at all times when operating a Ruff & Tuff electric vehicle.
- Do not operate your vehicle on excessively rough, slippery or loose terrain until you have learned and practiced the skills necessary to control the vehicle on such terrain. Be especially cautious of these kinds of terrain.
- Always follow proper procedures for turning as described in this manual. Practice turning at low speeds before attempting to turn at faster speeds. Do not turn at excessive speeds.
- Do not operate the vehicle on hills too steep for the vehicle or for your ability. Practice on smaller hills before attempting larger ones.
- Always follow safety procedures for climbing hills. Check the terrain carefully before you start up any hill. Never climb hills with excessively slippery or loose surfaces. Shift your weight forward. Never open the throttle suddenly or make sudden gear changes. Never go over the top of a hill at high speed.
- Always follow safety procedures for going down hills and for braking on hills. Check the terrain carefully before you start down any hill. Shift your weight backward. Never go down a hill at high speeds. Avoid going down a hill at an angle that could cause the vehicle to lean sharply to one side. Go straight down the hill where possible.

Safety

- Always follow proper procedures for crossing the side of a hill as described in this manual. Avoid hills with excessively slippery or loose surfaces. Shift your weight to the uphill side of the vehicle. Never attempt to turn the vehicle around on any hill until you have mastered the turning technique on level ground. Avoid crossing the side of a steep hill if possible.
- Use proper procedures if you stall or roll backwards when climbing a hill. To avoid stalling, use proper gear and maintain a steady speed when climbing a hill. If you stall or roll backwards, follow the special procedure for braking. Dismount on the uphill side or to a side if pointed straight uphill. Turn the vehicle around and remount.
- Always check for obstacles before operating in a new area.
- Never attempt to operate over large obstacles, such as large rocks or fallen trees.
- Be careful when skidding or sliding. Learn to safely control skidding or sliding by practicing at low speeds and on level, smooth terrain. On extremely slippery surfaces, such as ice, go slowly and be very cautious in order to reduce the chance of skidding or sliding out of control.
- Never operate a Ruff & Tuff electric vehicle in fast flowing water or excessively deep waters. Contact with water may affect the batteries. Remember that wet brakes may have reduced stopping ability. Test your brakes after leaving water. If necessary, apply them several times to let friction dry out the linings.
- Always use the size and type tires specified in this manual.
- Always maintain proper tire pressure as described in this manual.
- Never modify a Ruff & Tuff electric vehicle through improper installation or use of accessories.
- Never exceed the stated load capacity for a vehicle. Cargo should be properly distributed and securely attached. Reduce speed and follow sound procedures for carrying cargo or pulling a trailer. Allow greater distance for braking.

Control Functions

Main Switch

Functions of the respective switch positions are as follows:

ON:

Engine can be started only at this position and the headlight and taillight come on when the light switch is on.

OFF:

All electrical circuits are switched off. The key can be removed in this position.

Entering the Vehicle

All passengers must be seated with seat belt properly fastened at all times while the Ruff & Tuff electric vehicle is in use.

Turning the Vehicle On

Hold brake, switch on key switch and select the desired direction (Forward or Reverse).

Driving the Vehicle

After selecting the desired selection, slowly press the acceleration pedal with your foot to engage the vehicle. Always be aware of surrounding terrain and use caution. Judge speed accordingly. Be cautious when encountering loose or wet terrain. Do not attempt steep grades.

Stopping the Vehicle

Slow down by pushing the bottom part of the brake pedal. Once the vehicle has come to a complete stop, apply the parking brake by applying pressure to the top part of the pedal which will lock the vehicle in a stopped position.

Turning the Vehicle

After applying the parking brake, switch the key to the OFF position and switch the direction selector to Neutral.

Exiting the Vehicle

Once the vehicle has come to a complete stop, the key switch is turned to the OFF position, and the direction selector is switched to Neutral, all passengers can carefully exit the vehicle. Never attempt to exit the vehicle while it is still moving. This could lead to severe injury.

Storing the Vehicle

Store the Ruff & Tuff electric vehicle with parking brake applied, key switch in the OFF position, and the switch selector in the Neutral position.

Riding the Vehicle

Ride With Care and Good Judgment

Get Training if You Are Inexperienced

This Ruff & Tuff electric vehicle should only be used by experienced operators with valid motor license. This vehicle requires special skills obtained through practice. Take your time to fully learn techniques before attempting more difficult maneuvers.

You should familiarize yourself with the operation of the vehicle to achieve the skill necessary to enjoy riding safely. Be sure you have read this entire guide and understand the operation of the controls before you begin to ride. Pay particular attention to the safety information. Please also read all caution and warning labels on your Ruff & Tuff electric vehicle.

Beginners should get training from a certified instructor. Become familiar with this vehicle at slow speeds first, even if you are an experienced operator. Do not attempt to operate at maximum performance until you are totally familiar with the vehicle's handling and performance characteristics.

! WARNING !

Proper Instruction

Potential Hazard

Operating this vehicle without proper instruction

What Can Happen

The risk of an accident is greatly increased if the operator does not know how to operate the vehicle properly in different situations and on different types of terrain.

How to Avoid the Hazard

Beginning and inexperienced operators should complete a certified training course for the vehicle.

Riding your vehicle requires skills acquired through practice over a period of time. Take the time to learn the basic techniques well before attempting more difficult maneuvers.

Riding the Vehicle

! WARNING !

Age Recommendation

Not recommended for children under 16 years of age.

Potential Hazard

Failure to follow the age recommendations for this vehicle

What Can Happen

Use by children of vehicles that are not recommended for their age can lead to severe injury or death of the child.

How to Avoid the Hazard

A child under 16 should never operate a Ruff & Tuff electric vehicle.

! WARNING !

During Operation

Always keep your feet inside the vehicle during operation. Otherwise, your feet may contact the rear wheels.

Potential Hazard

Removing hands from steering wheel or feet from inside the vehicle during operation

What Can Happen

Removing even one hand or foot can reduce your ability to control the vehicle or could cause you to lose your balance and fall out of the vehicle. If you remove a foot from inside the vehicle, your foot or leg may come into contact with the rear wheels or objects outside the vehicle, which could injure you or cause an accident.

How to Avoid the Hazard

Always keep both hands on the steering wheel and both feet inside the vehicle during operation.

Riding the Vehicle

! WARNING !

Alcohol and Drug Use

Do not operate after consuming alcohol or drugs. Operator's performance capability is reduced by the influence of alcohol or drugs.

Potential Hazard

Operating this vehicle after consuming alcohol or drugs

What Can Happen

- Could seriously affect your judgment.
- Could cause you to react more slowly.
- Could affect your balance and perception.
- Could result in an accident.

How to Avoid the Hazard

Never consume alcohol or drugs before or while driving this vehicle.

! WARNING !

Pre-Operation Checks

Always perform Pre-Operation checks before riding for safety and proper care of the vehicle.

Potential Hazard

Failure to inspect the vehicle before operating

What Can Happen

Increases the possibility of accident or equipment damage.

How to Avoid the Hazard

Always inspect your vehicle each time you use it to make sure the vehicle is in safe operating condition.

Riding the Vehicle

! WARNING !

Tires and Tire Pressure

Potential Hazard

Operating this vehicle with improper tires, or with improper or uneven tire pressure

What Can Happen

Use of improper tires on this vehicle, or operation of this vehicle with improper or uneven tire pressure, may cause loss of control, increasing your risk of an accident.

How to Avoid the Hazard

Always use the size and type of tires specified in this guide for this vehicle.

Always maintain proper tire pressure as described in this guide.

! WARNING !

Speed

Do not operate at speeds too fast for your skills or the conditions.

Potential Hazard

Operating this vehicle at speeds too fast for your skills or the conditions

What Can Happen

Increases your chances of losing control of the vehicle, which can result in an accident

How to Avoid the Hazard

Always go at a speed that is proper for the terrain, visibility and operating conditions, and your experience.

Riding the Vehicle

! WARNING !

Loading and Accessories

Use extra caution when riding the vehicle with additional loads, such as accessories or cargo. The vehicle's handling may be adversely affected. Reduce your speed when adding additional loads.

Potential Hazard

Overloading this vehicle or carrying or towing cargo improperly

What Can Happen

Could cause changes in vehicle handling which could lead to an accident

How to Avoid the Hazard

Never exceed the stated load capacity for this vehicle.

Cargo should be properly distributed and securely attached.

Reduce speed when carrying cargo or pulling a trailer.

Allow greater distance for braking.

Always follow instructions for carrying cargo or pulling a trailer.

! WARNING !

Seat Belts

Potential Hazard

Failure to properly wear seat belt while in the Ruff & Tuff electric vehicle

What Can Happen

Failure to properly wear seat belt can lead to potential injury or death of passenger.

How to Avoid the Hazard

Each passenger must always wear a seat belt while in the Ruff & Tuff electric vehicle.

Riding the Vehicle

! WARNING !

Wheelies and Jumping

Avoid wheelies and jumping. You may lose control of the vehicle or overturn.

Potential Hazard

Attempting wheelies, jumps, and other stunts

What Can Happen

Increases the chance of an accident, including an overturn.

How to Avoid the Hazard

Never attempt stunts, such as wheelies or jumps. Do not try to show off.

! WARNING !

Modifications

Potential Hazard

Operating this vehicle with improper modifications

What Can Happen

Improper installation of accessories or modification of this vehicle may cause changes in handling which in some situations could lead to an accident.

How to Avoid the Hazard

Never modify this vehicle through improper installation or use of accessories. All parts and accessories added to this vehicle should be genuine Ruff & Tuff Electric Vehicle Inc. products designed for use on this vehicle and should be installed and used according to instructions. If you have questions, consult an authorized Ruff & Tuff dealer.

Riding the Vehicle

! WARNING !

Road Restrictions

When attempting to ride on public road or street, always follow the restrictions and guidelines for this class of vehicle in the particular area you are riding in. These rules may vary from state to state. Never ride on any highway.

Potential Hazard

Operating this vehicle on highways

What Can Happen

You can collide with another vehicle.

How to Avoid the Hazard

Never operate this vehicle on any highway. In many states it is illegal to operate these vehicles on public streets, roads, and highways.

! WARNING !

Terrain

Know the terrain where you ride. Ride cautiously in unfamiliar areas. Stay alert for holes, rocks, or roots in the terrain, and other hidden hazards which may cause the vehicle to upset.

Potential Hazard

Failure to use extra care when operating this vehicle on unfamiliar terrain

What Can Happen

You can come upon hidden rocks, bumps, or holes, without enough time to react. This could result in the vehicle overturning or going out of control.

How to Avoid the Hazard

Go slowly and be extra careful when operating on unfamiliar terrain. Always be alert to changing terrain conditions when operating the vehicle.

Riding the Vehicle

! WARNING !

Terrain

Potential Hazard

Failure to use extra care when operating on excessively rough, slippery or loose terrain

What Can Happen

Could cause loss of traction or vehicle control, which could result in an accident, including an overturn.

How to Avoid the Hazard

Do not operate on excessively rough, slippery or loose terrain until you have learned and practiced the skills necessary to control the vehicle on such terrain. Always be especially cautious on these kinds of terrain.

! WARNING !

Visibility

Potential Hazard

Operating in areas where you might not be seen by other off-road vehicles

What Can Happen

You could be in a collision. You could be injured.

How to Avoid the Hazard

Watch carefully for other vehicles. Do not ride in areas posted “no trespassing”. Do not ride on private property without getting permission.

Riding the Vehicle

! WARNING !

Climbing Uphill

Use proper riding techniques to avoid vehicle overturns on hills. Be sure that you can maneuver your vehicle well on flat ground before attempting any incline and then riding first on gentle slopes. Try more difficult climbs only after you have developed your skill. In all cases avoid inclines with slippery or loose surfaces, or obstacles that might cause you to lose control.

Potential Hazard

Operating on excessively steep hills

What Can Happen

The vehicle can overturn more easily on extremely steep hills as opposed to level surfaces or small hills.

How to Avoid the Hazard

Never operate the vehicle on hills too steep for the vehicle or for your abilities. Practice on smaller hills before attempting large hills. Always follow proper procedures for climbing hills as described in this guide.

Always check the terrain carefully before you start up any hill. Never climb hills with excessively slippery or loose surfaces. Shift your weight forward. The vehicle could tip over backwards. Never go over the top of any hill at high speed. An obstacle, a sharp drop, or another vehicle or person could be on the other side of the hill.

! WARNING !

Crossing and Turning on Hills

If you are climbing a hill and you find that you have not properly judged your ability to make it to the top, you should turn the vehicle around while you still have forward motion (provided you have the room to do so) and go down hill.

Potential Hazard

Improperly crossing hills or turning on hills

Riding the Vehicle

What Can Happen

Could cause loss of control or cause the vehicle to overturn.

How to Avoid the Hazard

Never attempt to turn the vehicle around on any hill until you have mastered the turning technique on level ground. Be very careful when turning on any hill. Avoid crossing the side of a steep hill if possible.

! WARNING !

Dismount

Potential Hazard

Stalling, rolling backwards, or improperly dismounting while climbing a hill

What Can Happen

Could result in vehicle overturning.

How to Avoid the Hazard

Use proper gear and maintain steady speed when climbing a hill.

If you lose all your forward speed:

Keep weight uphill. Apply the brakes. Lock parking brake, after you are stopped.

If you begin rolling backwards:

Keep weight uphill. Apply the brake.

! WARNING !

Riding Downhill

When riding your vehicle downhill, shift your weight as far to the rear and uphill side of the vehicle as possible. Move back on the seat and sit with your arms straight. Improper braking may cause loss of traction. Use caution while descending a hill with loose or slippery surfaces. Braking ability and traction may be adversely affected by these surfaces. Improper braking may also cause a loss of traction.

Potential Hazard

Going down a hill improperly

Riding the Vehicle

What Can Happen

Could cause a loss of control or cause the vehicle to overturn

How to Avoid the Hazard

Always follow proper procedures for going down hills. Always check the terrain carefully before you start down any hill. Shift your weight backward. Never go down a hill at high speed. Avoid going down a hill at an angle that would cause the vehicle to lean sharply to one side. Go straight down the hill where possible.

! WARNING !

Crossing a Slope

Traversing a sloping surface on your vehicle requires you to properly position your weight to maintain proper balance. Be sure that you have learned the basic riding skills on that ground before attempting to cross a sloping surface. Avoid slopes with slippery surfaces or rough terrain that may upset your balance.

As you travel across a slope, lean your body in the uphill direction. It may be necessary to correct the steering when riding on loose surfaces by pointing the front wheels slightly uphill. When riding on slopes, be sure not to make sharp turns either up or down hill.

If your vehicle does begin to tip over, gradually steer in the downhill direction if there are no obstacles in your path. As you regain proper balance, gradually steer again in the direction you wish to travel.

Potential Hazard

Improperly crossing hills or turning on hills

What Can Happen

Could cause a loss of control or cause the vehicle to overturn.

How to Avoid the Hazard

Never attempt to turn the vehicle around on any hill until you have mastered the turning technique on level ground. Be very careful when turning on any hill. Avoid crossing the side of a steep hill if possible. When crossing the side of a hill:

Always follow proper procedures as described in the Owner's Manual. Avoid hills with excessively slippery or loose surfaces. Shift your weight to the uphill side of the vehicle.

Riding the Vehicle

! WARNING !

Crossing through Shallow Water

The vehicle can be used to cross slow moving, shallow water of up to a maximum of 35 cm (14 in) in depth. Before entering the water, choose your path carefully. Enter where there is no sharp drop off, and avoid rocks or other obstacles which may be slippery or upset the vehicle. Drive slowly and carefully.

Potential Hazard

Operating this vehicle through deep or fast flowing water

What Can Happen

Tires may float, causing loss of traction and loss of control, which could lead to an accident.

How to Avoid the Hazard

Never operate this vehicle in fast flowing water or in excessively deep water. Remember that wet brakes may have reduced stopping ability. Test your brakes after leaving water. If necessary, apply them several times to let friction dry out the linings.

CAUTION

Test your brakes after leaving the water. Do not continue to ride your vehicle without verifying that you have regained proper braking ability.

After riding your vehicle in water, wash the vehicle in fresh water as if it has been operated in salt water or muddy conditions.

Riding the Vehicle

! WARNING !

Riding over Rough Terrain

Riding over rough terrain should be done with caution. Look out for obstacles which could cause damage to the vehicle or could lead to upset or accident. Be sure to keep both feet inside the vehicle at all times. Avoid jumping the vehicle as loss of control and damage to the vehicle may result.

Potential Hazard

Improperly operating over obstacles

What Can Happen

Could cause loss of control or a collision. Could cause the vehicle to overturn.

How to Avoid the Hazard

Before operating in a new area, check for obstacles.

Never attempt to ride over large obstacles, such as large rocks or fallen trees.

When you go over obstacles, always follow proper procedures as described in this guide.

! WARNING !

Sliding and Skidding

Care should be used when riding on loose or slippery surfaces since the vehicle may slide. If unexpected and uncorrected, sliding could lead to an accident.

If the rear wheels of your vehicle start to slide sideways, control can usually be regained (if there is room to do so on) by steering in the direction of the slide. Applying the brakes or accelerating is not recommended until you have corrected the slide.

With practice, over a period of time, skill at controlled sliding can be developed. The terrain should be chosen carefully before attempting such maneuvers, since both stability and control are reduced. Bear in mind that sliding maneuvers should always be avoided on extremely slippery surfaces such as ice, since all control may be lost.

Riding the Vehicle

! WARNING !

Sliding and Skidding

Potential Hazard

Skidding or sliding improperly

What Can Happen

You may lose control of the vehicle.

You may also regain traction unexpectedly, which may cause the vehicle to overturn.

How to Avoid the Hazard

Learn to safely control skidding or sliding by practicing at low speeds and on level, smooth terrain.

On extremely slippery surfaces, such as ice, go slowly and be very cautious in order to reduce the chance of skidding or sliding out of control.

Warranty Information

Limited Warranty

Ruff & Tuff Electric Vehicles, Inc. hereby warrants that new Ruff & Tuff electric vehicles purchased from an authorized Ruff & Tuff dealer in the continental United States will be free from defects in material and workmanship for the period of time stated herein, subject to certain stated limitations. Ruff & Tuff Electric Vehicles, Inc. is not responsible for any abuse, negligence, vandalism or acts of nature.

The Period of Warranty

All 2007 and newer model Ruff & Tuff electric vehicles purchased by consumers shall have a warranty period of two years from the date of purchase. This two-year limited warranty extends only to the original purchaser and may not be transferred to subsequent purchasers. Vehicles used for commercial purposes carry a one-year warranty.

During the Period of Warranty

Any Ruff & Tuff dealer will, free of charge, repair or replace, at Ruff & Tuff's option, any part adjudged defective by Ruff & Tuff Electric Vehicle, Inc. during the warranty period due to faulty workmanship or material from the factory. Parts used in warranty repairs will be warranted for the balance of the vehicle's warranty period. All parts replaced under warranty become property of Ruff & Tuff Electric Vehicles, Inc.

General Exclusions

Exclusions from this warranty shall include any failures caused by:

- a. Competition or racing use.
- b. Installation of parts or accessories that are not qualitatively equivalent to genuine Ruff & Tuff parts.
- c. Abnormal strain, neglect, or abuse.
- d. Lack of proper maintenance.
- e. Accident or collision damage.
- f. Modification to original vehicle.
- g. Damage due to improper transportation.

Specific Exclusions

Exclusions from this warranty shall include parts replaced due to normal wear or routine maintenance; such as upholstery, tires, light bulbs, and brake shoes. Onboard Charger carries a 2-year manufacturer's warranty. AGM Dry Cell Batteries (standard 30 mile) carry a 1-year manufacturer's warranty. Upgrade dry cell batteries (50 & 70 mile) carry an extended warranty.

The Customer's Responsibility

Under this warranty the customer's responsibility shall be to:

- a. Complete and return the warranty card included in this manual.
- b. Operate and maintain the vehicle as specified in the appropriate owner's manual.
- c. Give notice to an authorized Ruff & Tuff dealer of any and all apparent defects within ten (10) days after discovery, and make the vehicle available at that time for inspection and repairs at such dealer's place of business.

Warranty Information

Ruff & Tuff Electric Vehicles, Inc. makes no other warranty of any kind, expressed or implied. All implied warranties of merchantability and fitness for a particular purpose which exceed the obligations and time limits stated in this warranty are hereby disclaimed by Ruff & Tuff Electric Vehicles, Inc. and excluded from this warranty.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Also excluded from this warranty are any incidental or consequential damages including loss of use. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

Any questions concerning warranty issues can be handled at your local dealer or at:

Ruff & Tuff Electric Vehicles, Inc.

1 Ruff and Tuff Drive
Winnsboro, SC 29180

Toll-free: 1-800-997-3547
Contact Your Local Ruff & Tuff Dealer



Cruiser 4-Passenger model shown with popular Bolt-On Options.

For complete information, contact your authorized Ruff & Tuff Dealer



800-997-3547

Ruff & Tuff Electric Vehicles, Inc.
1 Ruff & Tuff Drive Winnsboro, SC 29180

ruffandtuff.net