



Operation Manual

Single Cab Dual Motor UTV
TU-SC2500E

Tuatara Machinery Ltd

Operation Manual TU-SC2500E

Single cab 3 seats, dual motor Tuatara UTV

Version 2

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Operations Manual

**READ THIS MANUAL CAREFULLY.
IT CONTAINS IMPORTANT SAFETY INFORMATION.**

MINIMUM RECOMMENDED: OPERATOR AGE: 16

**Single Cab Dual Motor Tuatara
TU-SC2500E**

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1. Foreword

Thank you for choosing our market leading, fully electric, Off-Road Utility Vehicle (UTV). This manual covers the TU-SC2500E Single cab model. We are sure that you will enjoy your new UTV. The electric version of the Tuatara Single cab UTV comes with the same no-nonsense robustness and “go anywhere” capability as our electric engine powered Tuatara Single cab UTV but with the simplicity and high torque characteristics of an electrically powered vehicle.

Before operating your new Tuatara Single cab UTV, please thoroughly read this manual as it contains important safety and maintenance information including Supplementary Operating Instructions. Failure to follow the warnings contained in this manual could result in damage to the vehicle or even serious injury or death to the operator.

Be sure to follow the recommended maintenance schedule and service your UTV accordingly. Preventative maintenance is extremely important to the life of your UTV. And in the interests of conservation and protection of earth’s natural resources, every Tuatara Single cab UTV owner is encouraged to recycle, trade in, or properly dispose of, as appropriate, used motor oil, coolant, and other fluids, batteries and tyres.

2. Important Information (Please Read Carefully)

eTUATARA SUPPLEMENTARY OPERATING INSTRUCTIONS

All operators must thoroughly read the user Manual before operating the eTuatara and should familiarise themselves with its controls and operation before becoming a regular user.

Primary battery charging procedure is as follows:

Turn the ignition off. Place the drive selector into the neutral position. Plug the charge cable into the wall socket and connect the “charge gun” to the charge port connector sited on the lefthand side of the vehicle adjacent to the driver’s seat. A red light will flash on the OBC (i.e. The Onboard Charger is under the middle seat - view with the cargo deck elevated). Charging is best done over-night. When charging is complete, the OBC will display a steady green light, which will extinguish after a period of time, and the OBC cooling fan will stop. Continue charging until the cooling fan completely stops. To check charging progress, turn the ignition on and view the SOC reading on the gauge. Turn the ignition off and wait for the charging process to complete. If the battery fails to charge, remove the charge cable from the charge port on the eTuatara, wait for no less than 30 seconds and plug the charge cable in again. It should now charge normally.

1. Once the primary battery is fully charged, turn the ignition key to the Start position and note the V.IN (i.e. voltage in) reading on the primary gauge. This should read at least 13V to confirm that the charging circuit to the secondary battery is operating correctly.
2. It is highly recommended, for the sake of the longevity of the primary battery, that it is not discharged beyond **20% SOC**.

Enhanced Battery Cell Balancing:

The longevity of a lithium battery really comes down to one thing, and that is, cell balance, and what follows is a procedure that is very efficient at achieving this. It is recommended that customers perform this procedure every two months.

- a). Charge the battery to 100% SOC and disconnect the charge cable once the Onboard Charger fan (OBC) has stopped. Even if the SOC is at 100% wait for the fan to stop.
- b). Leave the vehicle sitting for approximately 1 hour to allow the cells to settle.
- c). Repeat the procedure as in (1) above.

- d). Run the vehicle until the battery has discarded to 80% SOC.
 - e). Repeat the procedure as in (1) & (2) above one or two more times.
3. The eTuatara is fitted with regenerative braking. When the operator's foot is removed from the accelerator pedal, any forward movement will result in electricity being returned to the battery. It is strongly recommended that maximum use be made of the regenerative braking to achieve the greatest battery range rather than using the primary braking system. The rate of regenerative braking can be adjusted for different terrain types but this must be done by your Tuatara Dealer.
 4. The eTuatara is equipped with a secondary 12V battery, which activates the primary battery and powers all of the 12V componentry. This battery is recharged by the primary battery, but charging is not as efficient as that of an alternator on a combustion engine vehicle for example and the charging voltage of the 12V battery can become depleted over an extended time which may ultimately lead to there being insufficient voltage to activate the primary battery, preventing the eTuatara from operating. It is therefore strongly recommended that the 12V battery be fully charged with a 12V auxiliary battery charger on the 1st. day of each month. This provides a good date for easy recall and will ensure that the capacity of the 12V battery does not deplete to a level where the eTuatara will no longer operate.
 5. It is strongly recommended that the operator closely monitors the discharge current (i.e. Amperage) and the battery temperature. The amperage is displayed on the top left corner of the main gauge while the battery temperature is displayed at the bottom right. The operator should avoid using the eTuatara in circumstances where the discharge current exceeds 300amps. or where battery temperature exceeds 45°C. To do so will lead to the vehicle entering "self-protect mode" which will prevent the eTuatara from operating until it is reset by turning the ignition key off and back on again. Circumstances where this could occur would include operating on a steep incline while in High Ratio.
 6. If it is noted when turning the ignition on that there is a "0%" SOC reading displayed on the instrument panel, and / or the vehicle will not move forward when a drive gear is selected and the accelerator depressed, turn the ignition off for a minimum of 30 seconds. This will provide a system reset and should result in achieving a correct SOC reading and will allow the vehicle to be operated.
 7. If your eTuatara is fitted with full length doors or half doors, please note that slamming the door will result in cracking of the glasses or polycarbonate. The correct procedure to close the door is to retain your hand on the door handle and push it firmly until the latch connects with the striker.

8. Turning the ignition key off and then immediately back on again, and thus not allowing all current to dissipate, can result in the battery BMS turning itself off and the vehicle not operating. Should this occur, turn the ignition off for a minimum of 30 seconds and then turn it back on. The vehicle should now operate normally.

3. Warning Signs and Important Safety Information

Before you drive your UTV for the first time, we urge you to do following:

- Read this owner's manual and the labels on your **eTuatara** Single cab UTV
- Make sure you understand all the safety messages.
- Totally familiarise yourself with all of the controls.
- Never drive the **eTuatara** Single cab UTV if you are under 16 years of age.

Before driving, be sure:

- That you are of good physical and mental health.
- That you are not affected by alcohol or drugs.

3.1 Warning Signs

Foreword about safety

To keep everyone safe, it is important to understand the warning signs on the UTV. We have provided operating procedures and warning sign labels in this manual.

Warning Signs

This section contains some of the most important information and recommendations to help you drive your UTV safely. Please take a few moments to read these pages. The labels are considered permanent parts of the UTV. If a label comes off or becomes hard to read, contact your dealer for warning label replacements.



A Safety Alert Symbol



Operator warning message

CAUTION

Operator special care required



WARNING

SEAT BELTS MUST BE WORN BY THE DRIVER AND ALL PASSENGERS.
FAILURE TO DO SO COULD RESULT IN INJURY OR DEATH.



WARNING

Always bring the UTV to a complete stop before changing between 2WD & 4WD. Failure to do so could result in damage to the differential and or components within the drive train.

WARNING

Improper tyre pressure or overloading can cause a loss of control of the vehicle which could result in a serious accident leading to serious injury or death.

The recommended operating pressure is 15 – 25psi (Front & Rear)



Never set the tyre pressure below the recommended operating pressure. This could result in tyres being dislodged from their rims. Tyre pressure should be set when tyres are cold.



WARNING

Serious INJURY or DEATH could result if you ignore the following:

- **The maximum capacity of the rear cargo tray is 200kg.**
- **All cargo must be adequately secured. Unsecured cargo could move suddenly and affect handling and stability.**
- **All cargo should be centred and stowed as far forward and as low as possible.**
- **Top heavy and / or unbalanced loads increase the risk of rollover.**
- **Passengers should not be carried on the cargo tray.**
- **When loaded with cargo and / or towing a trailer, reduce speed and allow more time for stopping. Pay more attention when travelling up steep hills and over rough terrain.**

3.2 Important Safety Information

Driving Off-Road only

Your new UTV and its tyres are designed and manufactured primarily for off-road use, not for sealed roads. Driving on sealed roads can affect handling and control. When driving off-road, remember to always obey local off-road driving laws and regulations. Obtain permission to drive on private property. Avoid posted areas and obey “no trespassing” signs.

Age Recommendation

It is strongly recommended that no one under the age of 16 be permitted to operate this UTV and never without proper adult supervision.



WARNING

- It is not recommended that this UTV be operated by a person under 16 because inexperience and / or immaturity could result in a loss of control resulting in severe injury or death.
- A child under 16 must be supervised by a qualified adult when operating this UTV.

Driver Training & Practice

Practice driving the UTV in a safe area to improve your skills. Do not drive on rough terrain until you become accustomed to the controls of the UTV, and are comfortable with its size, weight and handling characteristics. Check with your dealer for more information on training courses.



WARNING

Operating this UTV without proper instruction could increase the risk of an accident, which could lead to serious injury or death.



WARNING

In the event of a rollover, ensure that you keep your hands and other parts of your body inside the vehicle.
Failure to do so could result in serious injury or death.



WARNING

No Alcohol or Drugs

Alcohol, drugs and the operation of an UTV doesn't mix. Even a small amount of alcohol can impair your ability to operate the UTV safely. Likewise, drugs, even if prescribed by a doctor, can be dangerous while operating a UTV. Consult your doctor to be sure it is safe to operate an UTV after taking medication.

Operating this UTV after consuming alcohol or drugs can seriously affect your judgment, causing the operator to react more slowly, affect your balance and perception, and could result in serious injury or death.

→ **Never consume alcohol or drugs before or while operating this UTV.**



WARNING

Is Your Vehicle Ready to Drive?

Before driving, it is important to inspect your UTV and ensure that any problems discovered are corrected. A pre-drive inspection is a must, not only for safety, but because having a breakdown, or even a flat tyre, can be a major inconvenience.

If the UTV has overturned or has been involved in a collision, do not drive the vehicle until it has been inspected by an authorised dealer. There may be serious underlying damage to the vehicle that may make it dangerous to operate.



WARNING

- Improperly maintaining the UTV or failing to correct a problem before driving can cause an accident that could result in serious injury or death.
- Always perform a pre-drive inspection before every drive and correct any problems discovered.

Pre-Drive Inspection

Check the following items before you operate the eTuatara UTV:

1) SOC

Check the State of Charge – should be sufficient to cover proposed journey and return. It is not good practise to allow the SOC to drop below 20%

2) Coolant

Check the coolant and add coolant if needed. Check for the leaks.

3) Tyres

Use a tyre pressure gauge to check the air pressure. Adjust if necessary. Also look for signs of damage or excessive tyre wear.

4) Nuts & Bolts

Check the wheels to see that the wheel nuts are tighten. Use a wrench to make sure all accessible nuts, bolts, and fasteners are tight.

5) Underbody

Check for and remove any dirt or other debris that could be a fire hazard or interfere with the proper operation of the UTV.

6) Leaks, Loose Parts

Walk around your UTV and look for anything that appears unusual, such as a leak or loose cable.

7) Lights

Make sure the headlights, brake lights and taillights are working properly.

8) Accelerator

Check the free play and adjust if needed. Press the accelerator pedal to make sure it moves smoothly without sticking, and “snaps” back automatically when its released.

9) Brakes

Press the brake pedal several times. Make sure that the pedal is not “spongy” and that there is increased resistance as more pressure is applied. Check the level of the brake master cylinder. Top up as necessary. Make sure there is no fluid leakage.

10) Steering

Check that the wheels turn smoothly as you turn the steering wheel and that the steering linkages are tight and without any play.

Keep Hands and Feet on Controls

Always keep both hands on the steering wheel and your feet on the foot controls. When driving your UTV, it is important to maintain your balance and control of the UTV. Removing hands or feet from the controls will reduce your ability to react and control the vehicle

Control Speed

Driving at excessive speed increases the chance of an accident. In choosing an appropriate speed, the operator must consider the capability of the UTV, the terrain, visibility and other operating conditions, plus his / her own skills and experience.



WARNING

- **Operating this UTV at excessive speeds increases your chances of losing control of the UTV, which could result in an accident.**
- **Always drive at a speed that is appropriate for the terrain, visibility, your experience and other operating conditions.**
- **Use care on unfamiliar or undulating terrain**

Before driving in an unfamiliar area, always check the terrain thoroughly. Don't drive fast on unfamiliar terrain or when visibility is limited. It is sometimes difficult to see obstructions, such as hidden rocks, bumps, or holes, in time to react. Never drive past the limit of visibility. Maintain a safe distance between your UTV and other off-road vehicles. Always exercise caution and use extra care on rough, slippery or loose terrain.



WARNING

- Failure to use extra care when Operating this UTV on unfamiliar terrain could result in the UTV overturning or a loss of control.
- Drive slowly and be extra careful when operating on unfamiliar terrain.
- Always be alert to changing terrain when operating the UTV.



WARNING

- Failure to use extra care when operating on excessively rough, slippery or loose terrain could cause loss of traction or vehicle control, which could result in an accident, including a rollover.
- Do not operate on excessively rough, slippery or loose terrain until you have learned and practiced the skills necessary to control the UTV on such terrain. Always use extra caution when driving on these types of terrain.

Do Not Perform Stunts!

You should always operate your UTV in a safe and reasonable manner. When driving, always keep all four wheels on the ground.



WARNING

- Attempting “wheelies” and other stunts increases the chance of an accident, including a rollover.
- Never attempt stunts, such as “wheelies” or jumps.

4. Specifications

DIMENSIONS

Overall Length	-----3580mm
Overall Width	-----1550mm
Overall Height	-----2110mm
Wheelbase	-----2480mm
Ground Clearance	----- 310mm
Rear cargo deck (Internal dimensions) (L x W x H)	----- 1600mm x 1390mm x300mm

MOTOR - FRONT

Type	----- PM (Permanent magnet)
Rated voltage	----- 102VAC
Rated power	----- 10kW
Peak power	-----20kW
Rated speed	----- 3410 rpm
Max. speed	----- 7500 rpm
Rated torque	-----28N.M
Max. torque	-----85N.M
Regenerative braking	----- Yes
Brake System	----- Hydraulic break with booster assist
Cooling	----- water, with radiator and thermo fan
Waterproof rating	----- IP67
Rated current	----- 130A
Peak current	----- 350A
Weight	----- 28kg±1KG

MOTOR - REAR

Type	----- PM (Permanent magnet)
Rated voltage	----- 102VAC
Rated power	----- 15kW
Peak power	-----30kW

Rated speed ----- 3500 rpm
 Max. speed ----- 6000 rpm
 Rated torque ----- 41N.M
 Max. torque ----- 110N.M
 Regenerative braking ----- Yes
 Brake System ----- Hydraulic break with booster assist
 Cooling ----- water, with radiator and thermo fan
 Waterproof rating ----- IP67
 Wiring insulation grade ----- H
 Rated current ----- 150A
 Peak current ----- 350A
 Weight ----- 38kg±1KG

PRIMARY BATTERY

Battery type ----- Lithium Iron Phosphate
 Battery voltage (V) ----- 115.2
 Capacity ----- 26.5KWH
 Cell Specification ----- 230AH,3.2V
 Operating temperature ----- 0°C -55°C
 Maximum charging current ----- 50A
 Weight ----- 205kg
 Fast charge ----- 42A
 Slow charge ----- 22A
 Maximum range ----- 150kms. *

** Estimates are based on a battery charged from 10% to 100% capacity, on a flat testing surface at 15 km/h with driver only and no load. Results will vary considerably depending on the conditions of use.*

CAPACITIES

Maximum load (Rear cargo tray) ----- 550kg
 Front differential oil ----- 0.65L
 Rear differential oil ----- 0.65L
 Radiating area ----- ≥1.5m²

SUSPENSION & BRAKES

Front Suspension ----- Independent Single A-Arm with MacPherson Strut

Rear Suspension ----- Independent Dual A-Arm with double coil springs

Tyres (Front & Rear) ----- CU68 All terrain 26×11-12

Tyre Pressure (Front & Rear)-----15-25 psi

Brakes ----- Hydraulic disc, with booster

STRUCTURE

Chassis ----- All steel ladder design welded box section

Anti Corrosion Treatment ----- Electrophoresis – chassis & all steel panels

Net Weight ----- 1180kg

Payload ----- 700kg

Gross weight----- 1930kg

VEHICLE

Secondary battery ----- 12V, 35AH Lead acid

DC/DC ----- 1000W, 144V

OBC ----- 6.6kW, 144V

Winch ----- Front mounted electric winch (2000kg pulling capacity)

Steering ----- Power assisted rack and pinion

Default Speed Settings

Maximum forward speed40kph

Maximum reverse speed10kph

5. Operation Instructions



Figure 1

Before operating your eTuatara Single cab UTV, ensure that you familiarise yourself with the operating switches. The eTuatara Single cab UTV is Equipped with two dashboard switch banks – see **Figure 1** above and *Figure 2* below.

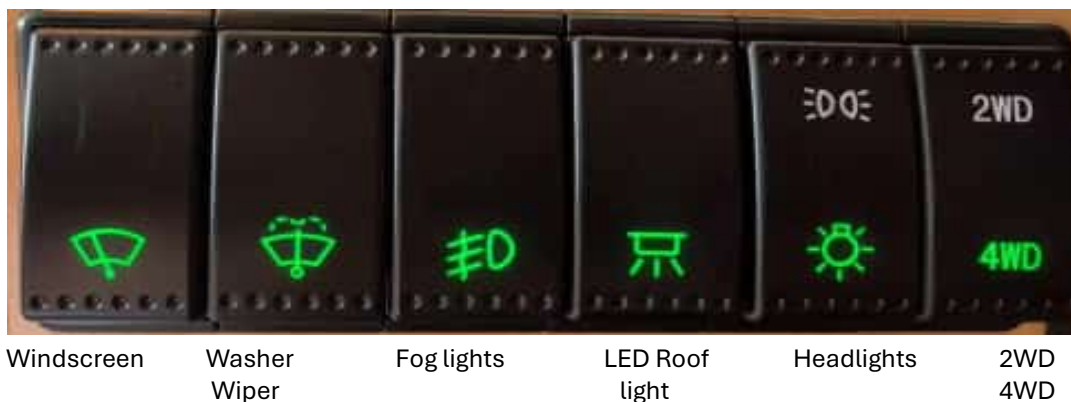


Figure 2 (Left Hand Side)

Windscreen Wiper

The eTuatara Single cab UTV are equipped with an operating switch and wiring for a windscreen wiper if the glass windscreen accessory is selected by the customer as shown in **Figure 2** above.

Windscreen Washer

The eTuatara Single cab UTV is equipped with a switch and wiring for a windscreen washer in the event that this accessory is selected by the customer as shown in **Figure 2** above.

Fog Lights

In addition to headlights, the eTuatara Single cab UTV is also equipped with front mounted LED fog lights, which can be activated by the dashboard switch as indicated in **Figure 2** above.

Roof Light

The eTuatara Single cab UTV is fitted with a very powerful roof mounted LED light bar which is operated by a dashboard mounted switch – see **Figure 2** above.

Headlight Switch

The eTuatara Single cab UTV are fitted with powerful LED, waterproof headlights that are operated from a dashboard switch as indicated in **Figure 2** above.

2WD / 4WD Drive Switch

The eTuatara Single cab UTV can be operated in either 2WD or 4WD, which is selected via the dashboard switch as indicated in **Figure 2** above. **DO NOT** switch between 2WD & 4WD while the UTV is in motion. First, bring the UTV to a complete stop before making the selection. **Damage to the differential may occur if these instructions are not followed.** Confirmation that the switch has been made between 2WD & 4WD, and vice versa, will be indicated on the Instrument Gauge (ie. See **Figure 9** below).

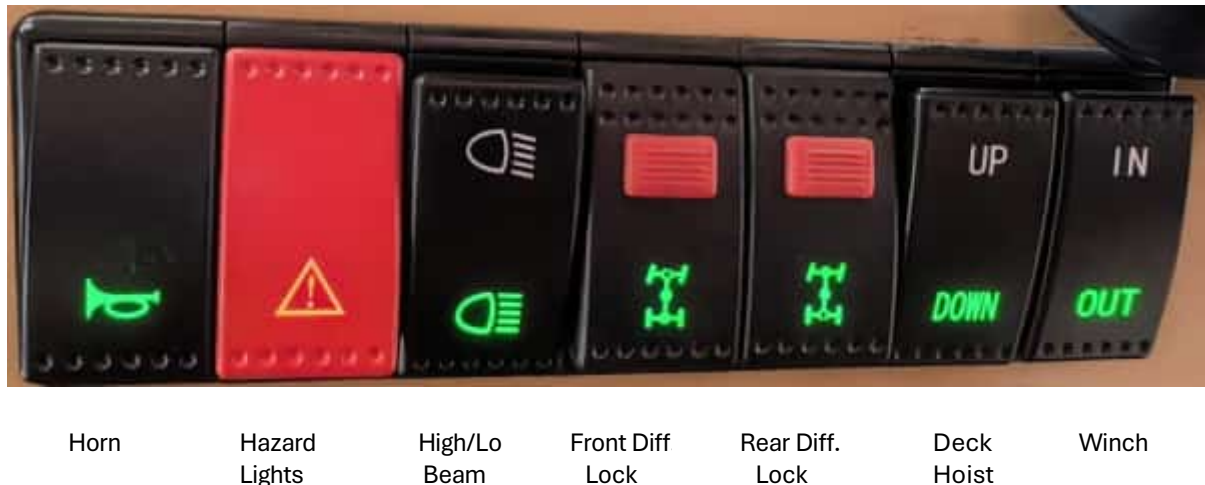


Figure 3 (Right Hand side)

Horn Switch

Activate the horn switch on the steering wheel to warn other vehicle operators of an impending emergency situation. – see **Figure 3**.

Hazard Lights Switch

To activate the Hazard lights, use the switch on the steering wheel as indicated in– see **Figure 3**.

High / Low Beam

An operator can switch the headlights between high and low beam by operating the switch on the steering wheel as indicated in **Figure 3**.

Differential Lock

Both front and rear differential locks can be applied together or individually. In the event of a loss of traction. To operate, bring the vehicle to a complete stop and switch on the diff. lock switch by operating the appropriate dashboard mounted rocker switch as indicated in **Figure 3** above. There is an individual switch for the front and the rear diff. lock. Note that once the diff. lock is engaged, you must keep the wheels straight at all times. Failure to do so risks damage to the differential and / or the drive line. It's also prudent to not use the diff. lock unnecessarily and commence by first applying the rear diff. lock. If this does not regain traction, then the front diff. lock should also be applied. As soon as traction is restored, disconnect diff. lock. Diff. lock is a great tool for regaining traction, or preventing its loss, but does also place additional strain of the drive train and therefore, should only be applied when necessary.

Rear Cargo Deck Elevation

The rear cargo deck fitted to the eTuatara Single cab UTV is equipped with a hand-operated release lever to allow the cargo deck to be raised manually.

Winch

The eTuatara Single cab UTV comes equipped with a front mounted electric winch, which has a pulling capacity of 2000kg. This is operated from the dashboard switch shown in **Figure 3** above.

Turn Indicators

The left and right turn signal indicators are operated by leaver on the steering column as indicated in **Figure 4** below.



Figure 4

Trailer Hoist

The eTuatara Single cab UTV is fitted with a dashboard mounted hoist switch to allow the cargo deck on an accessory trailer to be elevated and lowered electrically – see **Figure 5** below.



Figure 5

Note: If the vehicles are equipped with a cabin internal light, a roof amber light, and a whip aerial light. The corresponding switches are shown in *Figure 5* above."

Ignition Switch

The eTuatara Single cab UTV is fitted with an ignition switch, which is mounted on the dashboard proximate to the driver – see **Figure 6** below. The function of the Ignition Switch is to allow the driver to apply electrical power to the primary and secondary batteries, thus allowing the vehicle to be driven by the electric motor and for the 12V peripheral components to operate. The key is moved through two positions (ie. Accessory & Ignition). In the Accessory position, the radio and other accessories are operable, while full operation of the vehicle can only be achieved once the ignition key is moved to the On position – see **Figure 6 – 8** below. When the ignition key is turned off, only limited functionality is available such as the operation of the hazard lights.



Figure 6



Figure 7



Figure 8

Primary Instrument Gauge

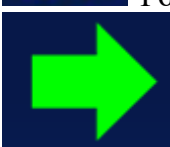
A. Home Screen. See Figure 9

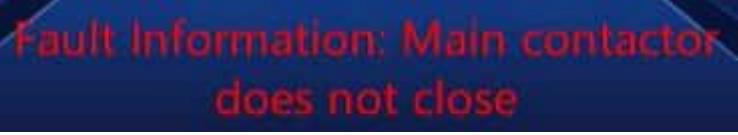


Figure 9

(A) -100A

- 1) : Represent power lithium-ion battery current, positive values indicate charging current, negative values indicate discharging current.

- 2)  Left turn signal
- 3)  High beam
- 4)  Low beam
- 5)  Position light
- 6)  Fog light
- 7)  Right turn signal
- 8)  Motor temperature
- 9)  Parking light (hand brake light)
- 10)  Motor overheat warning
- 11)  Current overheat warning
- 12)  4WD
- 13)  Front differential lock
-  Front and rear differential lock
- 14)  Brake failure
- 15)  Tire pressure (not available)
- 16)  Seat belt not fastened

- 17)  Gear indicator, N, R, D
- 18)  Home button, return to the home screen
- 19)  Total operating time
- 20)  Trip meter
- 21)  Odometer
- 22)  Fault information message
- 23)  12V system voltage
- 24)  Lithium-ion battery temperature
- 25)  Speedometer, tap the middle “km/h” , can switch the units from metric to imperial
- 26)  Power lithium-ion battery SOC value

B. Charging

When the charging plug is connected, the instrument panel automatically displays the charging screen. -See *Figure 10*.

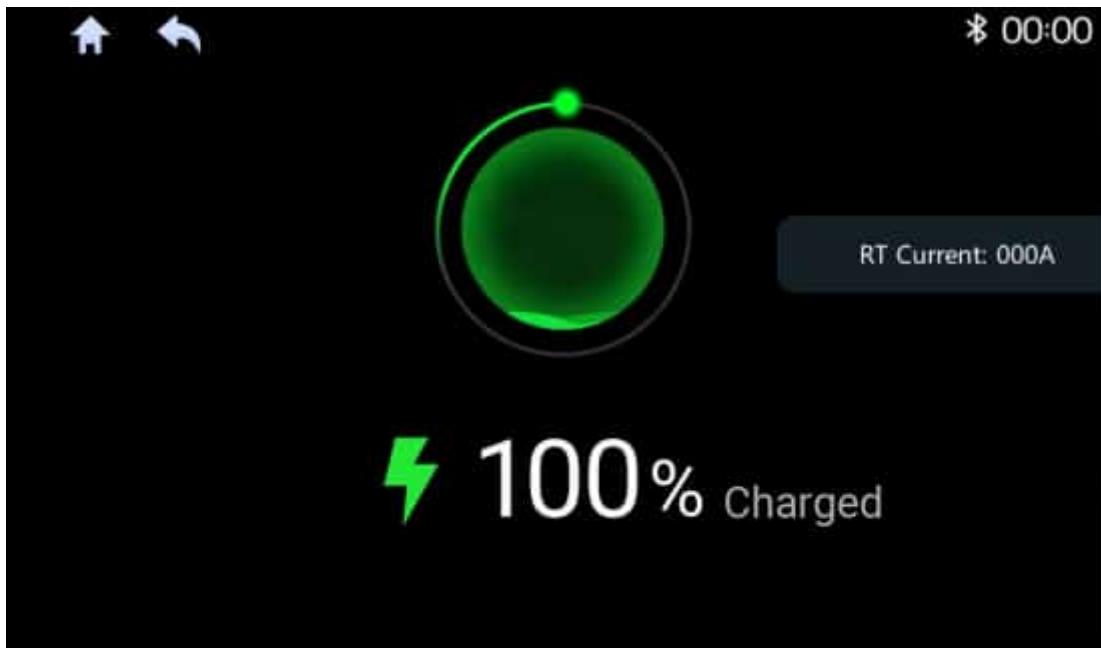
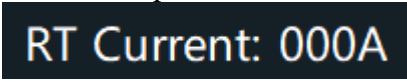
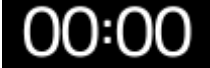


Figure 10

- 1)  Tap home button return to the home screen
- 2)  Tap back button return to the home screen
- 3)  Real time charging current
- 4)  Real time SOC value
- 5)  Connect Bluetooth (if available)
- 6)  Charging time

C. Main functional interface. -See Figure 11



Figure 11

- 1)  Tap home button return to the function main screen
- 2)  Volume
- 3)  USB connected
- 4)  Time
- 5)  Bluetooth connected to phone
- 6)  Tap to adjust screen brightness
- 7)  Tap to return to instrument panel
- 8)  Tap to go back
- 9)  Clock

- 10)  Music player/ Radio minimized
- 11)  Tap to access the radio
- 12)  Tap to open the Bluetooth
- 13)  Tap to access the USB
- 14)  Tap to access the phone casting interface
- 15)  Tap to access Equalizer setting
- 16)  Swipe left from the bottom to open the system setting

D、Radio



Figure 12

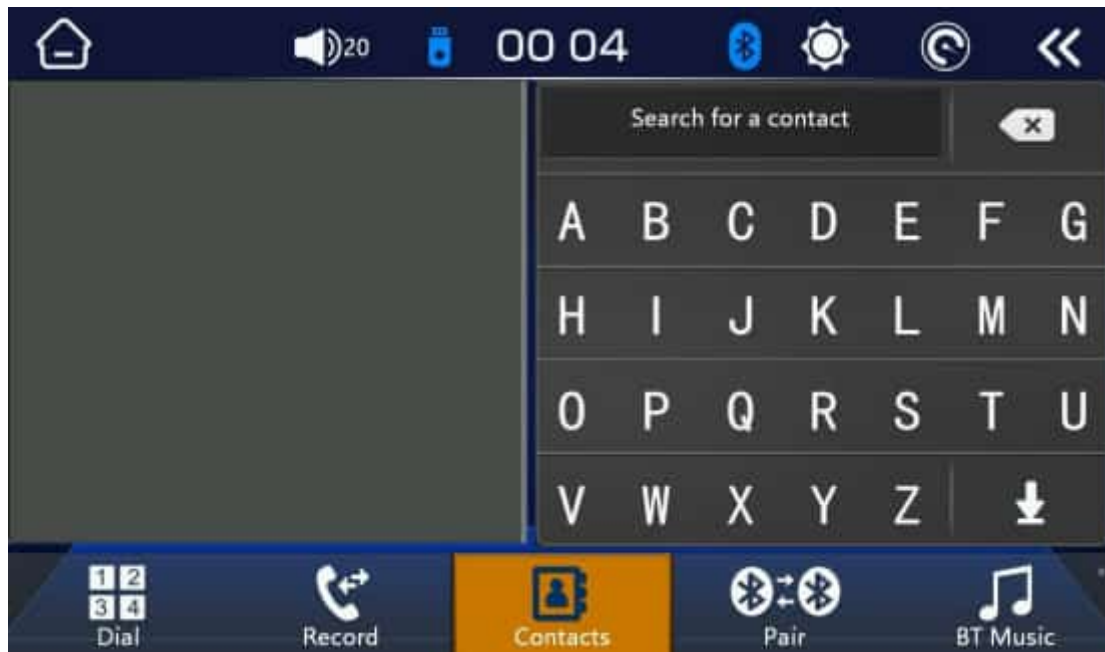
E、Bluetooth



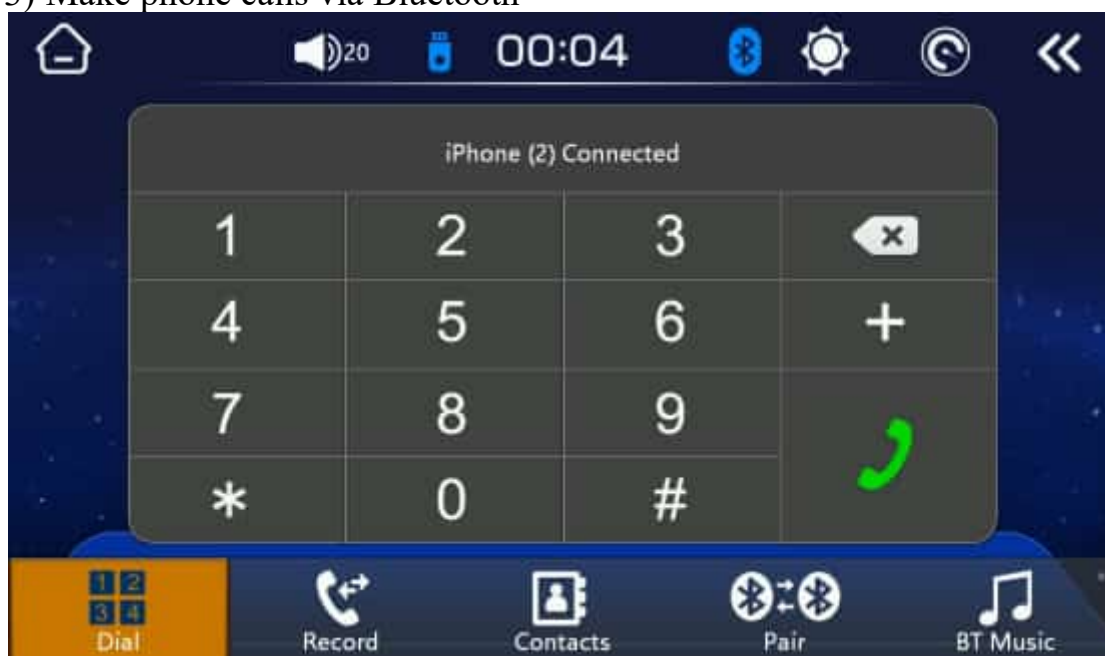
1) Connect a phone via Bluetooth enables to play music and make phone calls and more.



2) View contacts



3) Make phone calls via Bluetooth



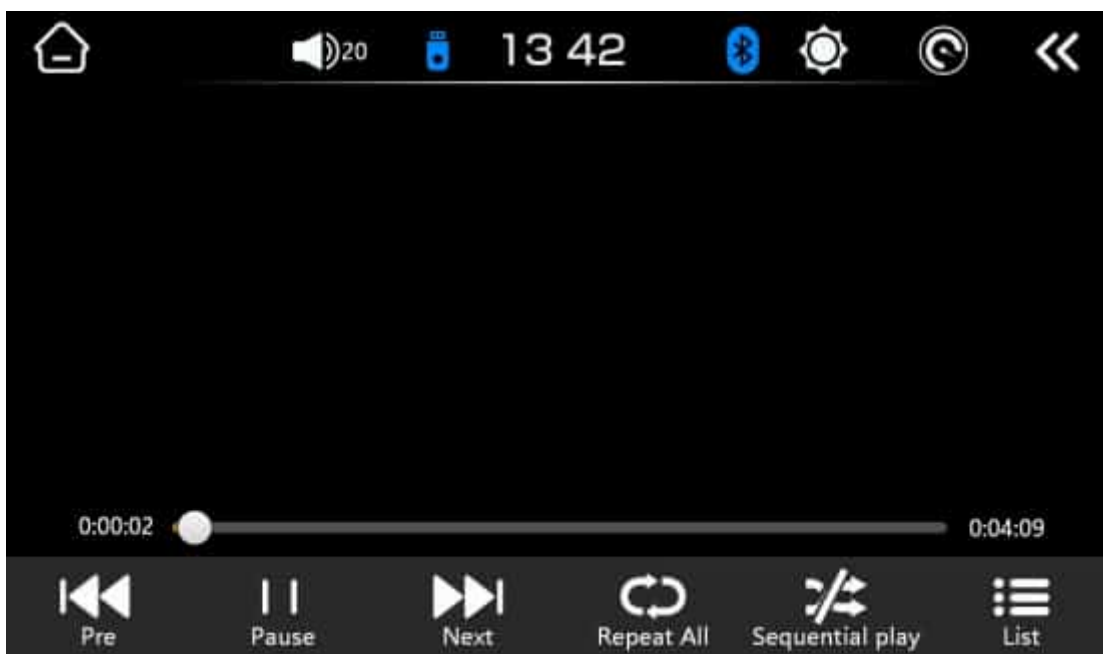


F、USB

1) View the pictures



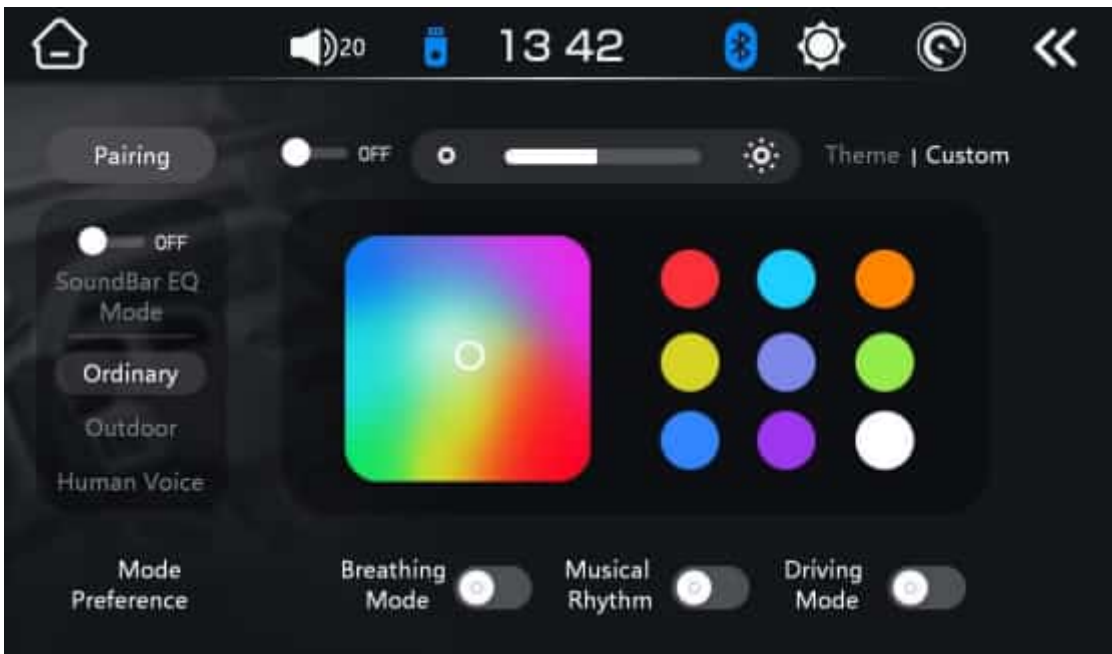
2) Play videos



3) Play music



G、Change background colour



H、System setting

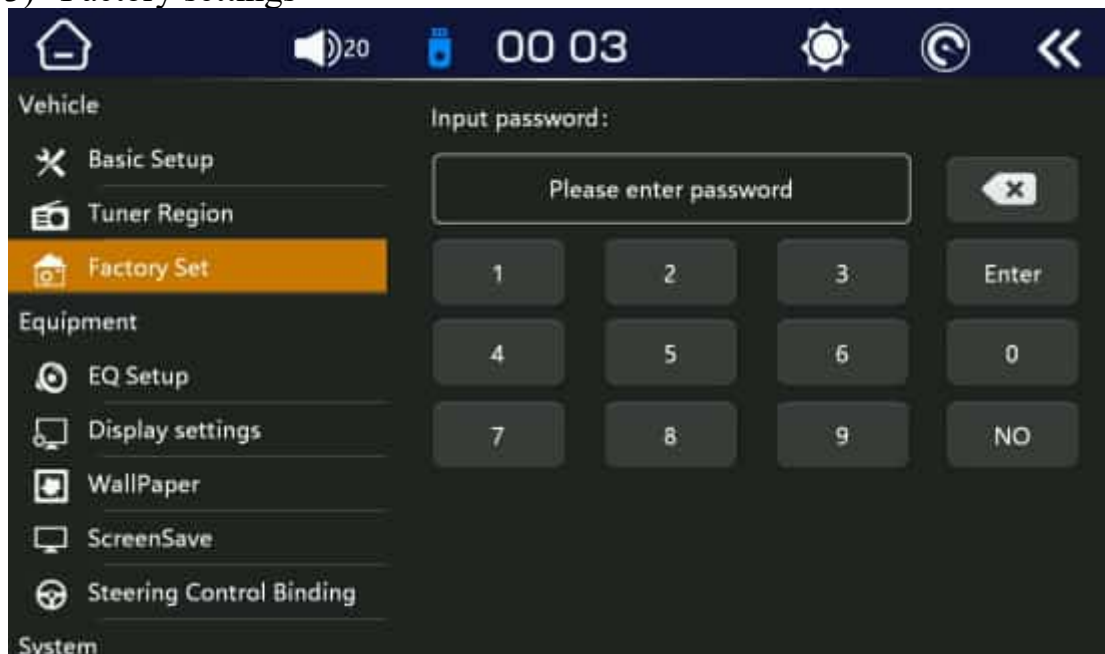
1) Basic setting



2) Radio



3) Factory settings



4) EQ settings



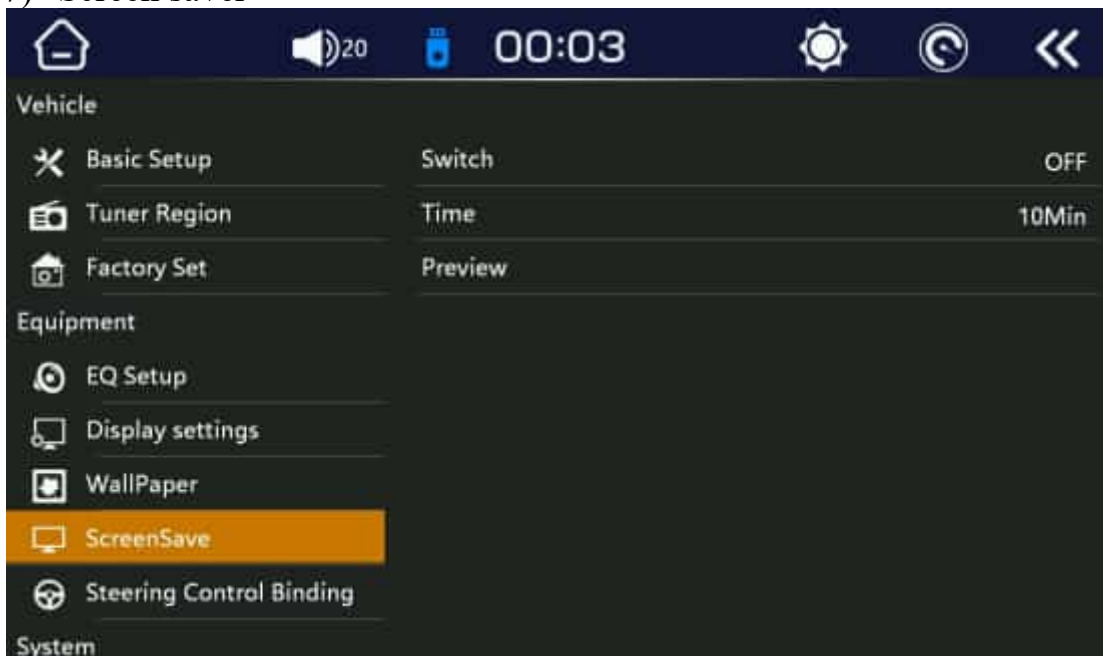
5) Display



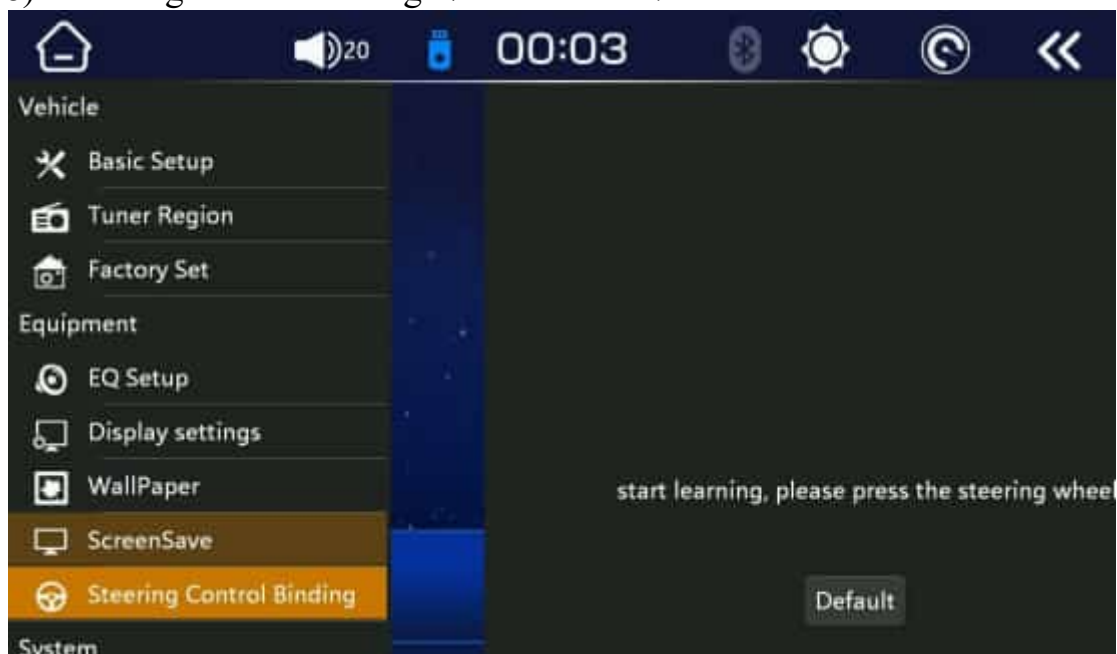
6) Wallpaper



7) Screen saver



8) Steering control binding (not available)



9) Language



10) Screen time

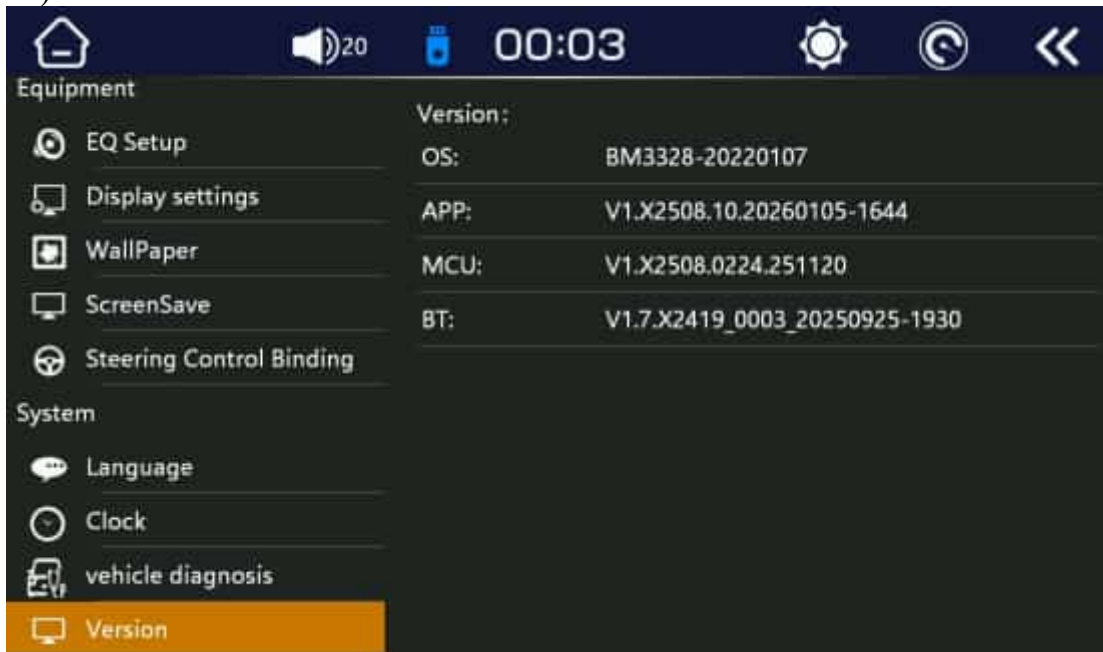


11) Vehicle diagnosis

Check the battery, motor and relative information



12) Version



WARNING

- The primary gauges shows the status of various primary components and must be closely observed by the UTV operator.
- Before operating the UTV ensure that status indicators on the Primary gauge are functioning correctly.

Differential Lock

The eTUATARA Single cab UTV is equipped with both front and rear differential locks (see *Figure 9*), which can be applied together or individually. In the event of a loss of traction, or in circumstances where the terrain is such that loss of traction is anticipated, the differential lock(s) can be applied to lock the axles to allow the UTV to regain full wheel traction. Before engaging the differential lock:

- Bring the eTUATARA Single cab UTV to a complete stop.
- Ensure that 4WD is engaged.
- Press the switch for the differential lock - see *Figure 13*
- **(Always try the rear diff. lock first, thus avoiding unnecessary overloading the front CV shafts)**

- Check the instrument gauge (i.e. *Figure 9 - K*) to confirm the differential lock(s) is engaged.
- **Do not exceed 10kph.** When the differential lock(s) have been engaged.
- Keep the wheels as straight as possible to avoid outside wheel drag.
- Disengage the differential lock(s) as soon as traction is restored, or the terrain no longer presents a likelihood of traction loss.
- Failure to comply with this operating procedure could result in damage to the Differentials / CV shafts.



Figure 13

A = Front differential lever in the locked position.

B = Rear differential lever in the unlocked position.



WARNING

Never engaged 4WD with the rear differential locked or while the UTV is traveling at high speed as serious damage to the differential could occur.

Foot Pedals

The eTUATARA Single cab UTV is fitted with two driver-controlled foot pedals – see *Figure 14*. The righthand pedal controls the accelerator. Depressing the pedal increases the motor speed relative to the amount that the pedal is depressed. Reducing the pressure on the pedal reduces the speed, with full removal of the foot will bring the motor to a complete stop.

The lefthand foot pedal controls the brake. The more foot pressure that is applied to the brake pedal will result in the application of more stopping force. More foot pressure will

be required on steep inclines, or when the eTUATARA is fully loaded, to bring the vehicle to a complete stop.

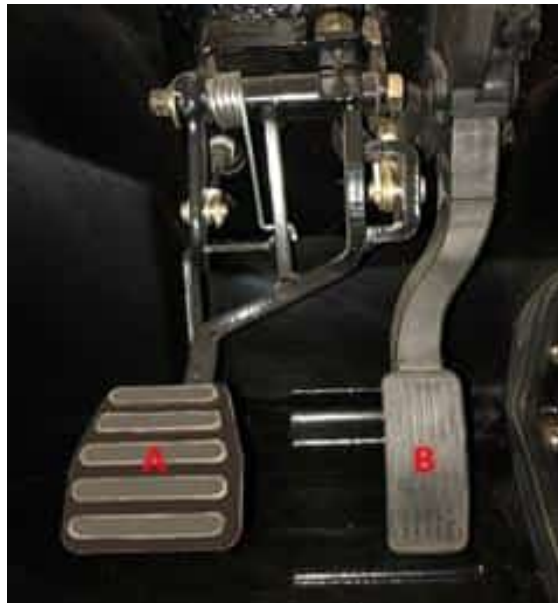


Figure 14

A - Brake pedal; **B** - Accelerator pedal

Primary Brakes

The primary brakes fitted to the eTUATARA Single cab UTV are foot operated hydraulic disc brakes on each wheel, with an air assisted booster.

Handbrake

The handbrake lever is located between the driver's and middle passenger's seats. To engage the hand brake, press the release button on the top of the lever (ie. See Figure 15 below) and pull the lever upward, keeping the release lever depressed. Once the lever encounters moderate resistance, release the button and the handbrake is now engaged (see Figure 16 below). If the eTUATARA UTV is to be held on a steep incline, more upward pressure may be required to hold the vehicle in a stationery position. It is a good practice to hold the footbrake down firmly while applying the handbrake. This will maximize the effectiveness of the handbrake. On steep inclines, it is also recommended that the wheels are chocked as a further safeguard. To release the handbrake, depress the footbrake, press the handbrake release button and move the handbrake lever downward to its unengaged position (see Figure 15) and release the button. The handbrake is now released and the eTUATARA UTV may be driven forward or backward.



Figure 15

Handbrake in unengaged position



Figure 16

Handbrake in engaged position

Brake Pedal Lock

The eTUATARA 1500E comes equipped with a Brake Pedal Lock, which is supplementary to the hand brake. To operate the Brake Pedal Lock, the operator must first apply the foot brake. With the brake pedal fully depressed, the operator then engages the Brake Pedal Lock Lever on the dashboard (ie. see Figure 17 & 18 below) by pressing the release button in the end of the lever and pulling the lever downward to its fullest extent (ie. see Figure 18 below). The button can now be released and the operator's foot removed from the brake pedal. This operation will lock the brake pedal in the fully depressed position without any need for the operator to use any foot pressure and the brakes will remain fully activated. The purpose of the Brake Pedal Lock is to provide enhanced braking when the eTUATARA is parked on a steep incline in circumstances where the handbrake may not provide sufficient braking to hold the eTUATARA in a fully stationary position. However, the Brake Pedal Lock is not intended to be used in place of the hand brake, and should not be activated for extended periods of time. Whenever, the eTUATARA is to be parked with no operator in attendance, the hand brake must first be applied and the ignition turned to the off position. The Brake Pedal Lock may also be applied if the steepness of the terrain makes this prudent.



Figure 17

Brake pedal lock in unengaged position



Figure 18

Brake pedal lock in engaged position

Regenerative Braking

The electric motor installed in the eTUATARA Single cab UTV is fitted with regenerative braking. This system captures kinetic energy during deceleration, storing it in the battery so it can be used as electricity to power the electric motor. It also provides a very effective form of engine braking that supplements the primary brakes and is particularly useful when traversing steep inclines. An operator can maximise the recharge available to the primary battery through regenerative braking by managing his / her driving habits. The highest rates of return are achieved when operators slow down well in advance of stopping, to open a gate for instance, so that the maximum usage is made of the regenerative braking to bring the vehicle to a halt rather than use of conventional brakes where all the energy is dispersed through the brake discs in the form of heat. Operators should avoid travelling on anything more than minor inclines when the

eTUATARA Single cab UTV has a fully charged primary battery as the regenerative braking may cause an over-charging situation which could cause damage to the battery. To avoid such a situation, it is strongly recommended that the primary battery is only charged to 98% capacity in these circumstances.

Drive Selector

The eTUATARA Single cab UTV is equipped with a drive selector to the right of the steering wheel – see **Figure 19** below. The drive selector has three positions – Drive, Neutral and Reverse. Before selecting Drive or Reverse, the eTUATARA Single cab UTV must first be brought to a complete stop. Failure to do so may result in damage to the transmission. It is also a good practice to apply the footbrake before moving the drive selector. Once the drive has been selected, the accelerator pedal may be depressed to move the eTUATARA UTV either forward or backward.



Figure 19

Steering Column Height Adjuster

The eTUATARA Single cab UTV is fitted with a pneumatic strut that allows the steering column height to be adjusted for individual preference. Simply press down on the lever (see *Figure 20 - A* below and move the steering wheel up or down to your requirements. Then release the lever and the steering column will be locked in your selected position.



Figure 20

A = Steering column release lever

Seat Belts

The eTUATARA Single cab UTV is equipped with retractable sash type seat belts for the driver and passengers – see *Figure 21* below. It is anticipated that the UTV will be

operated on uneven ground and in circumstances where passengers may be at increased risk of injury or even death if the vehicle is involved in a collision with a solid object or experiences a rollover. For this reason, seatbelts must be **worn at all times**.



Figure 21



Figure 22



Figure 23

The procedure for the correct fitment of your seat belt is as follows (see **Figures 21 – 22** above):

1. From a seated position, extend the seatbelt by pulling it from the retractor and draw it across your abdomen and insert the latch (**A**) into the latch receiver (**B**), making sure that the belt is not twisted and is not obstructed by any part of the vehicle, your clothing, or any equipment that you are carrying.
2. Pull on the latch to ensure that it is in the locked in the latch receiver. Also tug on the belt and pull it quickly forward to ensure that the belt will hold firm in the event of a sudden stop of the vehicle.
3. To release the seatbelt, simply press the Red Button (B) and pull-on seatbelt latch.
4. **Note – the drivers latch is wired to ignition. The vehicle will not drive without the seatbelt correctly latched**

6. Fuses and Relays

The fuse box is located in the glove compartment in the dashboard of the eTUATARA Single cab UTV – see **Figure 24** below.

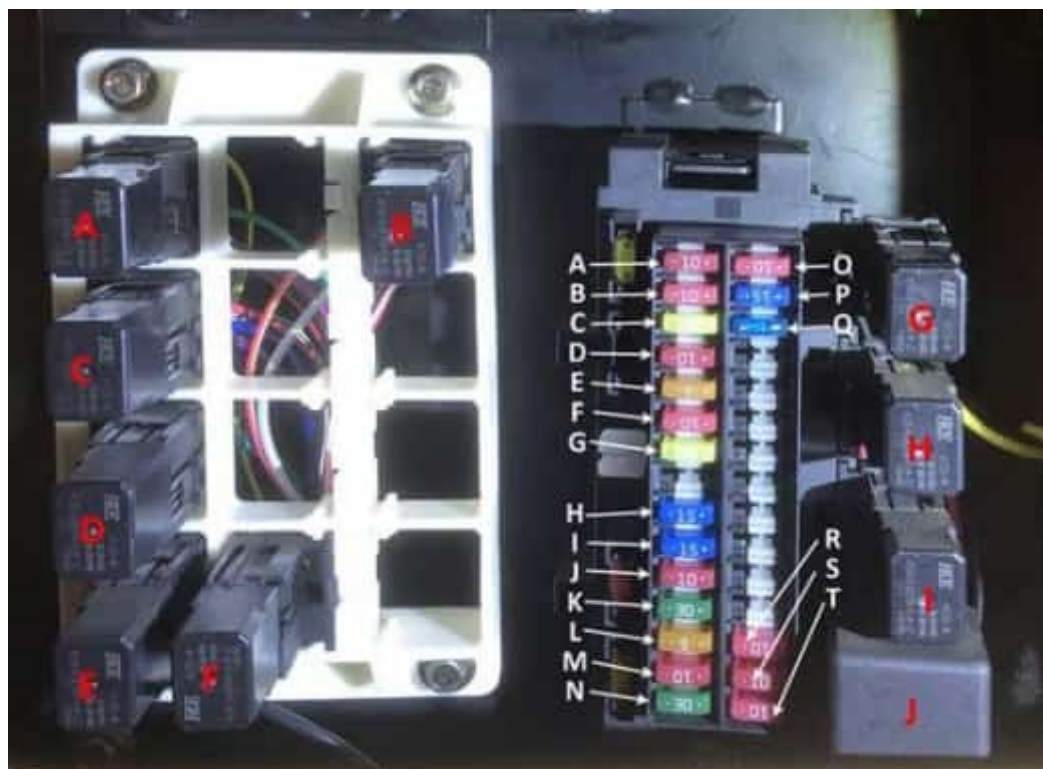


Figure 24

Fuses

A	Fog / Reverse lights (10A)	K	Cargo Hoist (30A)
B	Roof light (10A)	L	Winch (5A);
C	Cooling fan / Heater (20A)	M	Wiper (10A)
D	Spare (10A);	N	Brake pump (30A);
E	Radio (5A)	O	Instrument Panel (10A)
F	High beam (10A);	P	BMS (15A)
G	Cig. Lighter (20A)	Q	MCU (15A)
H	Water pump (15A);	R	Horn (10A);
I	4WD (15A)	S	Indicators (10A);
J	Power steering (10A);	T	Ignition (10A)

Relays

A	4WD	F	Cooling fan
B	High beam;	G	ACC
C	2WD	H	ON 1
D	Brake pump	I	ON 2
E	Wiper	J	Flasher

7. Power Supply System

7.1 Primary Lithium Battery Packs

26.5kwh capacity

The eTUATARA Single cab UTV is fitted with a lithium iron phosphate battery pack, mounted under the passenger seat. See **Figure 25** below. The battery pack is housed in waterproof heavy-duty case.

It has been fully sealed and opening it is forbidden. If the seal is broken and the battery pack is opened, the warranty will be immediately voided.



Figure 25

7.2 Secondary 12V Lead Acid Battery

The eTUATARA Single cab UTV is also fitted with a 12-volt lead acid secondary battery (see Figure 26 below). The electrical componentry on the eTUATARA Single cab UTV operates a standard 12-volt system, and this is supplied by the secondary battery. Charging of the secondary battery is accomplished via the primary battery through a DC-DC converter. It is important to check that the charging circuit is operating correctly as part of the start-up process. This can be achieved by checking the V.IN voltage readout (see **Figure 9 – I** on the Primary Instrument Gauge). When the ignition key is first turned to the “ON” position, the voltage reading should be no less than 13 volts. If it is below this level, this indicates that the secondary battery is not being recharged, and the battery may discharge to a level where the eTUATARA single cab UTV will not continue to operate.

Note that this check should only be carried out on initial startup before the transmission is engaged and the vehicle is moving forward or reversing.

Once the eTUATARA single cab UTV is being driven, the V.IN voltage will drop below 13 volts and this is completely normal. However, if V.IN voltage is below 13 volts on initial startup, this needs to be reported to your Tuatara dealer for corrective action to be taken.

Note It is also a good practice to undertake a top-up charge of the secondary battery on a monthly basis with a standard 12-volt charger. This can be undertaken in parallel with the charging of the primary battery.



Figure 26

7.3. Primary Battery Charging Procedure

If the charge is less than 100%, you may wish to charge it to full capacity.

Before operating your eTUATARA UTV for the first time, check the State of Charge (SOC) of the primary battery by turning the ignition key to the “ON” position – see **Figure 8** above. and the reading on the main instrument gauge (**Figure 9 – I**). If the charge is less than 100%, you may wish to charge it to full capacity. This can be achieved by plugging the supplied charger cable (see **Figure 27** below) into a suitable power supply. The power connector plug on the charger cable is a PDL 56 Series, 32 amp., three pin, single phase plug connector – see (**Figure 28** below). It is plugged into a wall mounted, female, mains connected power socket – see (**Figure 29** below).



Figure 27



Figure 28



Figure 29

Once the charger cable is connected to the mains supply, the other end (i.e. the Charge Gun) is connected to the OBC (On Board Charger) socket, which is mounted on the black plastic shrouding immediately to the left of the rear seat – see (**Figure 30**). To connect the charger cable, simply lift the spring-loaded cover on the OBC socket and align the Charge Gun (see below **Figure 31**) with the male post terminals on the OBC socket. Press the white button on the Charge gun, push the Charge Gun fully home and release the button. This will lock the Charge Gun in position. The electricity supply may now be turned on at the wall supply, and charging of the primary battery will now commence.



Figure 30



Figure 31

Confirmation that the charging process is proceeding normally can be confirmed by raising the rear cargo deck and examining the OBC, which is mounted behind the driver's seat – see **Figure 32** below. The sound of the OBC cooling fan operating should be apparent. Charging can be undertaken with the ignition on or off, but it is necessary to turn it on to monitor the SOC (i.e. State of Charge) reading on the primary instrument gauge. Continue charging until the SOC reads 100% and the OBC cooling fan is no longer operating. If the cooling fan is still operating, even if the SOC is displaying 100%, this indicates that some of the battery cells within the battery pack may not yet be fully charged. **Continuing to charge until the fan stops operating will ensure that all cells are fully balanced and will prolong the life of the battery pack.** Once charging is completed, removal of the Charge Gun is the reverse of the installation process.



Figure 32

Note that it is good practice to avoid immediately charging your eTUATARA Single cab UTV following a particularly rigorous drive. Give the primary battery a chance to cool down first. Also don't charge the battery in direct sunlight or in a hot environment. Charging should be done in the shelter of a garage or shed or in a shaded area. Charging once a day, preferably overnight, is the preferred option and will provide the best battery longevity.

Once the primary battery is fully charged, turn the ignition key to the start position and note the V.IN (i.e. voltage in) reading on the primary gauge. This should read at least 13V to confirm that the charging circuit to the secondary battery is operating correctly. It is highly recommended, for the sake of the longevity of the primary battery, that it is **not discharged beyond 20% SOC.**

8. Driving Procedure

Once the battery is fully charged, the e TUATARA Single cab UTV may now be driven.

1. Ensure that you and any passengers have securely fastened your seat belts. In accordance with (**Figure 21-23**)
2. Apply holding pressure to the foot brake pedal. (see **Figure 14** above)
3. Turn the ignition key to the "On" position. (see **Figure 8** above)
4. Choose either Drive or Reverse.
5. Release the foot brake while gradually applying pressure to the accelerator pedal to move in the desired direction.

The operator must thoroughly familiarise himself / herself with the handling capabilities of the e TUATARA Single cab UTV before travelling at speed and or negotiating steep and / or demanding terrain.

Motor Stopping Procedure

1. It is strongly recommended that the vehicle be brought to a complete stop before shutting off the motor.
2. Ensure that the gearshift lever is in the neutral position.
3. Engage the handbrake
4. Turn the key anticlockwise to the "Off" position to stop the motor.



WARNING

- Before starting the electric motor, ensure that the driver is seated Correctly and that their seatbelt is fitted and firmly fastened.
- A new operator must first familiarise his / herself with the controls as well as the handling capabilities of the eTUATARA Dual cab UTV by first testing it on open and level terrain.
- Operate your vehicle slowly until you are confident that you have the ability to operate it safely at a faster speed.
- Remember that centrifugal force is very high when turning the UTV at high speed. Slow down to a more controllable speed when turning to prevent a rollover.

CAUTION!

- Don't attempt to start or operate the motor until completely familiar with all of the instruments and controls necessary to operate this vehicle. The operator must know how to stop the eTUATARA Single cab UTV before starting and driving.
- Prior to starting the motor, check that the throttle pedal functions correctly when the pedal is depressed and released. Do not operate the vehicle if a fault is detected.
- Engage the handbrake before starting the motor and ensure that the gear shift lever (see Figure 12) and the drive selector lever (see Figure 14) are both in the neutral position.
- Turn the ignition switch to the "On" position (see *Figure 7* above) and move the gear shift lever to either the H or L position and the drive selector lever to either D or R.
- The handbrake may now be released, and pressure applied to the accelerator pedal to move the eTUATARA Single cab UTV either forward or reverse.

9. Enclosed Cabin

This model Tuatara UTV has the ability to install a modular fully enclosed cabin, which is in addition to our standard configuration and comprises the following items:

- Glass windscreen with wiper and wash bottle. The windscreen has a central lever that locks it closed against the ROPS frame, but the lever can also be repositioned to allow the windscreen to be held in vented position so that it is open approximately 5 cm. to allow air to circulate within the cabin while the Tuatara UTV is in motion. The windscreen can also be opened to a near horizontal position where it is supported by two pneumatic struts – see **Figure 33** below.

However, it is not recommended that the Tuatara UTV is operated with windscreen in its fully opened position as flexing caused by travelling over undulating terrain may result in damage to the windscreen including breakage of the glass.

The windscreen should only be fully opened when the Tuatara UTV is in a stationary position.



Figure 33
Windscreen in fully open position.

- Full length doors with a sliding windows and door locks. The structure comprises a steel tubular frame. – see **Figure 34** below.
- However, operators should consider that hardened polycarbonate is very strong but it's also brittle.



Figure 34
Half door

- Full length doors with a sliding windows and door locks. The structure comprises a steel tubular frame.-see **Figure 35**



Figure 35
Full length door in open position

For this reason, it is **NOT recommended that the doors are “slammed” shut as this is likely to cause cracking of the glass on the door.** The correct procedure for closing the door is to keep hold of the door handle during the closing process, and once the door latch makes contact with the striker, firmly push the door latch against the striker and release the hand only when the door is fully closed. This will avoid damage to the glass.

- (C) Rear passenger cabin rear enclosure with window – see **Figure 36** above. The enclosure is fabricated of light weight steel and completes the full enclosure of the cabin, providing excellent protection from the elements during wintertime or inclement weather. The cabin is modular, so any of the components can be relatively easily removed for summertime use for example.



Figure 36

eTUATARA Single cab UTV with rear passenger enclosure fitted

10. Winch Operation

The eTUATARA single cab UTV , comes equipped with a winch.

To engage the winch. Use the disengage lever to release the winch cable which is located on the outside of the winch (*Figure 37*). Turn the lever clockwise to “free spool”. This will release the cable so you’re able to manually pull it out from the winch using the red tow strap (*Figure 38*).



Figure 37



Figure 38

Turn the ignition on (*Figure 8*) and use the switch on the right-hand side labelled (in, out) (*Figure 3*) to operate the winch.

Stop winching as soon as the stuck vehicle is able to propel itself without the help of the winch. Detach the winch cable hook. Rewind the winch cable evenly back onto the winch drum following the instructions in the manual.

Turn the lever anticlockwise to lock the winch.

Further instruction and warnings are in the instruction manual. - please read carefully

11. Primary Maintenance and Service

Differential Oil Level – Checking / Replacing

The eTUATARA UTV is fitted with a front and a rear differential. To check the oil level, remove the oil drain plug – see **Figure 39** below, and confirm that the oil level is slightly lower than the level of the oil filling hole. It should have 650ml for each differential. If the oil level is below the recommended level, top it up to the correct level. Also check the condition of the oil. In particular, note any changes to the colour of the oil. If it appears “milky” or brown in colour, the oil should be replaced. Also check the oil breather tube to ensure that it is not cracked or damaged and that it is not obstructed. If oil is expelling from the breather tube once the differential has warmed, check to ensure that the differential has not been over-filled. And if the differential has been submerged, while travelling through water, it is recommended that the oil be checked to ensure that water has not entered through the breather tube. Water will compromise the lubricating properties of the oil and can result in serious damage to the differential.



Figure 39

Differential Oil Replacement Procedure

You must change the oil in both differentials in accordance with the intervals as indicated in the **Preventative Maintenance & Service Log** at **Page 51** of this manual. Complying with this requirement will ensure proper lubrication of internal parts and prevent costly repairs due to excessive wear.

The replacement procedure is as follows:

1. Park the vehicle on the level ground.
2. Stop the motor. Remove the drain plug (see **Figure 40** below) and allow all oil to drain

from the differential.

3. Clean the drain plug and reinstall it, making sure not to over tighten it.
4. Fill with 650mls. (ie. rear differential) and 650mls. (i.e. front differential) of BOT 350 M3 75W Fully Synthetic Oil. Check for leaks.



Figure 40

Cooling System Checking

The cooling system comprises a rear mounted radiator with a thermostatically controlled, shrouded, an electric water pump that circulates the coolant front and rear motor and the radiator.

The procedure for checking the cooling system is as follows:

1. Park the vehicle on a level surface.
2. Once the top of the radiator is cool to touch, remove the radiator cap – see *Figure 39* below, and check the coolant level. Remove the cap carefully as the cooling system may be pressurised, and it may be necessary to slowly remove the cap so that the pressure can be completely relieved before the cap is actually removed.
3. The coolant level should be approximately 20mm below the base of the filler spout. If it is below this level, add coolant to restore it to the maximum level. Monitor the level on at least a weekly basis to ensure that coolant is not being regularly lost. If this is the case, check the entire cooling system for leaks. Also check the radiator cap to ensure that the rubber sealing rings are in good condition with no evidence of wear that could lead to coolant leak. Repair any leaks that are found.



Figure 41



WARNING

- Removing the radiator cap while the motor is hot risks serious scalding.
- Avoid direct skin contact with coolant as this could be hazardous to your health. Wear waterproof gloves at all times while handling coolant and wash any skin with soap and water that does come in contact with coolant.
- Properly dispose of any used coolant.

Brake Fluid Checking

The brake fluid reservoir can be found beneath the front cargo tray, mounted in the cross-member immediately behind the radiator – see **Figure 42**. Unscrew the cap from the reservoir and check the brake fluid level each day before operating the eTUATARA the level should approximately 5mm from the base of the filler spout. Top- up with high quality DOT 4 brake fluid as required.



Figure 42

Windscreen Washer Reservoir

The windscreen washer reservoir can also be found mounted on the cross-member immediately behind the radiator assembly - see **Figure 42** Top-up the washer fluid as and when necessary.

Hand Brake Adjustment

Over time and use, the hand brake cable may stretch and / or need adjustment. Access to the adjustment mechanism is achieved by elevating the rear cargo deck. The mechanism is mounted on the left side of the sub-chassis – see **Figure 43** below



Figure 43

A = Handbrake primary adjustment nut.

B = Handbrake equalizer.

C = Left handbrake cable - secondary adjustment nut.

D = Right handbrake cable - secondary adjustment nut.

Drive the vehicle on to level ground and move the Drive Select Lever (**Figure 19**) into the neutral position. Then jack the rear wheels off the ground and disengage the handbrake. Remove any free play in the handbrake cables by first loosening the lock nut at A above (i.e. smaller of the two nuts) and then turn the adjuster nut in a clockwise direction until all free play has been removed. Rotate both rear wheels in turn to ensure that they turn freely without any resistance. If resistance only exists on one wheel, adjust the secondary adjustment nut on the side that the resistance is occurring until the situation is corrected. Retighten the lock nuts on both the primary and secondary adjustment nuts and test the handbrake operation. Move the handbrake approximately four clicks and rotate the rear wheels. It should not be possible to rotate the wheels manually. The handbrake is now correctly adjusted. Lower the wheels to the ground and test run the vehicle to confirm that the handbrake is operating correctly.

Greasing

The eTUATARA Single cab UTV needs to have its Suspension points, Tipper back tray hinge, grease and check on a regular basis, to prevent premature wear of these shafts. There are 2 grease nipples at the bottom of the front suspension on each side of the UTV. See *Figure 44* below. (looking down from top)

There are 2 grease nipples at the top and bottom, on the outside, of the back suspension on each side of the UTV. See *Figure 45 Below*. There are 3 grease nipples in the inside of the back suspension on each side of the UTV. See *Figure 46 below*.



Figure 44



Figure 45



Figure 46

12. Preventive Maintenance and Service Log

The following pages contain your vehicle **Preventive Maintenance and Service Log**. It is recommended that you review this checklist with your Dealer at the time of your purchase. You should return your vehicle to your Dealer for service as recommended below. If you choose to service your vehicle yourself, keep accurate records of the service activities. Failure to do so may void your warranty. If you require technical assistance, you can call or email your Authorized Distributor for further Technical Support.

Preventative Maintenance & Service Log												
	Dealership Responsibilities			Recommended Authorised Dealer or Service Centre				Operators Responsibilities				
Component	Assembly	Pre-delivery Inspection	Customer Initials	25hrs or 350kms	50hrs or 750kms	100hrs or 1,500kms	200hrs or 3,000kms	Weekly	Monthly	Quarterly	Yearly	
Electric Motor												
1. Check electrical connections				IC/TA	IC/TA	IC/TA	IC/TA	IC	IC	IC	IC	IC
2. Motor mounts				TA		TA				TA	TA	
Cooling System												
3. Radiator				IC	IC	IC	IC	IC	IC	IC	IC	IC
4. Radiator coolant level				LF	LF	LF	RC	LF	LF	LF	RC	RC
5. Radiator cap				IC	IC	IC	IC	IC	IC	IC	IC	IC
6. Radiator hoses & clamps				TA	TA	TA	TA	TA	TA	TA	TA	TA
7. Anti freeze							RC					RC
8. Thermo-fan				IC	IC	IC	IC	IC	IC	IC	IC	IC
9. Radiator mounting bolts				TA	TA	TA	TA	TA	TA	TA	TA	TA
Drive Train												
10. CV axel joints & boots				IC/LF	IC/LF	IC/LF	IC/LF	IC/LF	IC/LF	IC/LF	IC/LF	IC/LF
11. Wheel bearings				IC/LF	IC/LF	IC/LF	IC/LF	IC/LF	IC/LF	IC/LF	IC/LF	IC/LF
12. Differential oil				RC	LF	LF	RC	LF	LF	LF	RC	RC
13. Oil seals				IC	IC	IC	IC	IC	IC	IC	IC	IC
14. Differential lock cables				TA	TA	TA	TA	TA	TA	TA	TA	TA
15. Differential breathers				IC	IC	IC	IC	IC	IC	IC	IC	IC
16. Ball joints				IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA
17. Wheel nuts				TA	TA	TA	TA	TA	TA	TA	TA	TA
18. All nuts & bolts				TA	TA	TA	TA	TA	TA	TA	TA	TA

IC = Inspect & clean, TA = Tighten & adjust as required, LF = Lubricate and/or re-fill, RC = Replace / Change

NB. Service intervals: 25hrs. or 350kms., 50hrs. or 750kms., 100hrs. or 1,500kms, 200hrs. or 3,000kms, (Whichever first occurs) & then after every 200kms.

Preventative Maintenance & Service Log

	Dealership Responsibilities			Recommended Authorised Dealer or Service Centre					Operators Responsibilities				
Component	Assembly	Pre-delivery Inspection	Customer Initials	25hrs or 350kms	50hrs or 750kms	100hrs or 1,500kms	200hrs or 3,000kms	Weekly	Monthly	Quarterly	Yearly		
Braking System													
19. Brake fluid level				LF	LF	LF	RC	LF	LF	LF	RC		
20. Brake pads				IC	IC	IC	RC	IC	IC	IC	RC		
21. Rotors				IC	IC	IC	IC	IC	IC	IC	IC		
22. Callipers				IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA		
23. Master cylinder				TA/LF	TA/LF	TA/LF	TA/LF	TA/LF	TA/LF	TA/LF	TA/LF		
24. Brake lines				IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA		
25. Brake pedal				TA	TA	TA	TA	TA	TA	TA	TA		
26. Hand brake				TA	TA	TA	TA	TA	TA	TA	TA		
27. Brake pedal lock				TA	TA	TA	TA	TA	TA	TA	TA		
28. All nuts & bolts				TA	TA	TA	TA	TA	TA	TA	TA		
29. Break booster													
30. Break pump													
Suspension													
31. Tyres				IC/LF	IC/LF	IC/LF	IC/LF	IC/LF	IC/LF	IC/LF	IC/LF		
32. A-Arms				IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA		
33. Tie rods				IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA		
34. Ball joints				IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA		
35. Front suspension struts				IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA		
36. Rear suspension springs				IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA		
37. All suspension bushes				LF/RC	LF/RC	LF/RC	LF/RC	LF/RC	LF/RC	LF/RC	LF/RC		
Electrical System													
38. Primary battery				IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA		
39. Secondary battery				IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA	IC/TA		

IC = Inspect & clean, TA = Tighten & adjust as required, LF = Lubricate and/or re-fill, RC = Replace / Change

NB: Service intervals: 25hrs, or 350kms, 50hrs, or 750kms, 100hrs, or 1,500kms, 200hrs, or 3,000kms, (whichever first occurs) & then after every 200kms.

Preventative Maintenance & Service Log

Component	Dealer/Shop Responsibilities			Recommended Authorised Dealer or Service Centre						Operator's Responsibilities			
	Assembly	Pre delivery inspection	Customer initials	25hrs or 350kms	50hrs or 750kms	100hrs or 1,500kms	200hrs or 3,000kms	Weekly	Monthly	Quarterly	Yearly		
Electrical system continued													
40. MCC (Motor Controller)				K/TA	K/TA	IC/TA	K/TA	K/TA	K/TA	IC/TA	IC/TA	K/TA	
41. OBC (Onboard Charger)				K/TA	K/TA	IC/TA	K/TA	K/TA	K/TA	IC/TA	IC/TA	K/TA	
42. Instrument gauges				K	K	K	K	K	K	K	K	K	
43. Switches & connectors				K/TA	K/TA	IC/TA	K/TA	K/TA	K/TA	IC/TA	IC/TA	K/TA	
44. Lighting				K/TA	K/TA	IC/TA	K/TA	K/TA	K/TA	IC/TA	IC/TA	K/TA	
45. Horn				K/TA	K/TA	IC/TA	K/TA	K/TA	K/TA	IC/TA	IC/TA	K/TA	
46. Air fans & blots				TA	TA	TA	TA	TA	TA	TA	TA	TA	
Steering													
47. Steering shaft universal				K/TA	K/TA	IC/TA	K/TA	K/TA	K/TA	IC/TA	IC/TA	K/TA	
48. Power steering motor				K/U/TA	K/N/TA	K/N/TA	K/N/TA	K/N/TA	IC/N/TA	IC/N/TA	K/N/TA	K/N/TA	
49. Ball joints				K/TA	K/TA	IC/TA	K/TA	K/TA	K/TA	IC/TA	IC/TA	K/TA	
50. Steering rack				K/U/TA	K/N/TA	K/N/TA	K/N/TA	K/N/TA	IC/N/TA	IC/N/TA	K/N/TA	K/N/TA	
51. Steering rack boots				K	K	K	K	K	K	K	K	K	
52. Air nuts & blots				TA	TA	TA	TA	TA	TA	TA	TA	TA	
Frame													
53. Welds				K	K	K	K	K	K	K	K	K	
53. Mud bar bolts				TA	TA	TA	TA	TA	TA	TA	TA	TA	
54. Skid plates				TA	TA	TA	TA	TA	TA	TA	TA	TA	
55. Winch mount				TA	TA	TA	TA	TA	TA	TA	TA	TA	
56. Drawbar mounting				TA	TA	TA	TA	TA	TA	TA	TA	TA	
57. Seat belt mounts				TA	TA	TA	TA	TA	TA	TA	TA	TA	
58. All nuts & bolts				TA	TA	TA	TA	TA	TA	TA	TA	TA	

IC = Inspect & clean, TA = Tighten & adjust as required, LF = Lubricate and/or re-fill, RC = Replace / Change

NB. Service intervals: 25hrs. or 350kms., 50hrs. or 750kms., 100hrs. or 1,500kms., 200hrs. or 3,000kms., (whichever first occur) & then after every 200kms.

13. Warranty

As the UTV owner, you are responsible for the performance of the required maintenance listed in your Owner's Manual. TUATARA recommends that all receipts covering maintenance on a UTV are kept, but TUATARA will not deny warranty solely for the lack of receipts or for failure to ensure the performance of all scheduled maintenance.

You are responsible for presenting your UTV to the TUATARA Distributor or Dealer or an authorised repairer as soon as a problem exists. The warranty repairs should be completed within a reasonable time not exceeding 30 days. As the UTV owner, you should be aware that TUATARA may deny warranty coverage if the UTV or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

If you use your vehicle in any type of competitive event, this warranty is immediately and completely void. If you have any questions regarding your warranty rights and responsibilities, you should contact: TUATARA or one of its Authorised Distributors.

Limited Manufacturer's Vehicle Warranty

The manufacturer hereby warrants that all new eTUATARA Single cab UTV purchased from an authorised TUATARA dealer will be free from defects in material and workmanship for the period of time stated herein, subject to certain stated limitations. However, no warranty will apply to the purchase of an eTUATARA Single cab UTV from a non-authorised TUATARA dealer.

Warranty & Quality Assurance:

The eTUATARA Single cab UTV is warranted to be free from defects in materials and workmanship for a period of one year or 800 hours or 8,000 kilometres of operation, whichever first occurs, from the date of purchase by the customer. In the event of any material defect or component failure occurring within the warranty period, the customer must contact the TUATARA Dealer from which the machine was purchased to confirm acceptance of the warranty claim.

During the Period of the Warranty

Any authorised TUATARA dealer will evaluate, repair or replace any part adjudged defective by TUATARA due to faulty workmanship or material from the factory. Parts used in warranty repairs will be warranted for the balance of the product's warranty period. All parts replaced under warranty become the property of TUATARA. The warranty will cover defective parts and their replacement. The warranty does not cover any cost associated with the removal and / or installation of any defective part, nor any transport charges with the delivery of the eTUATARA Single cab UTV to a place of repair or for the cost of travel by a serviceman to affect repairs. The warranty also does not

cover any freight costs associated with the delivery of replacement parts under this warranty.

General Exclusions

Any use of the eTUATARA Single cab UTV in the following circumstances and / or activities will result in the complete voidance of the warranty cover:

1. Competition or racing use.
2. Installation of parts or accessories that are not qualitatively equivalent to genuine TUATARA parts.
3. Abnormal strain, neglect, or abuse.
4. Lack of proper maintenance.
5. Accident or collision damage.
6. Modification of original parts.
7. Modification of original design.
8. Discharging the lithium battery below 10% SOC.
9. Repeatedly discharging the lithium battery at a discharge rate above the maximum specified rate for the battery fitted to the operator's eTUATARA.
10. Failure to operate the TUATARA UTV in a reasonable manner that would likely avoid damage to the UTV and / or unnecessary strain or wear to any of the components.
11. Operating the UTV in water that is more than 300mm deep.
12. Operating the UTV at any time in salt water.
13. "Jumping" the UTV in any manner.
14. Failure to operate the UTV in compliance with all applicable laws and safety regulations.
15. Materially altering the UTV in any manner.
16. Installing additional seating.
17. Failure to regularly check the tightness and integrity of all bolts and nuts.
18. Failure to properly clean and remove any corrosive material after use of the UTV and / or before any new use.

Warranty Repairs & Servicing:

In order to validate the warranty offered by TUATARA all UTVs must be serviced in strict accordance with the **Preventative Maintenance & Service Log** as outlined in this manual. And any warranty claims must first be assessed by the TUATARA dealer from where the UTV was purchased or by an authorised repairer authorised by Tuatara. It will also be permissible for UTV owners to undertake some servicing and repairs themselves in circumstances where they possess the necessary competence and facilities to undertake the work themselves. In such circumstances, the UTV owner must first nominate a preferred serviceman, who must be a qualified motor mechanic, and who must first complete and return a **TUATARA NOMINATED SERVICEMAN DECLARATION** (ie. see **APPENDIX A**). The completed Tuatara Nominated Serviceman Declaration will be considered by TUATARA, and once approved, the UTV owner will then be able to arrange his / her own servicing and repairs of their UTV.

Primary Battery Warranty

TUATARA hereby guarantees that the battery cells supplied with its eTUATARA Single cab UTV will be of high quality and will meet the American UL2580 test standard.

The battery pack(s) is guaranteed for a period of **Three years or 1000 cycles**, whichever first occurs, from the date of delivery of the eTUATARA Single cab UTV. In the event that the capacity of a battery pack(s) drops below 70% of the rated capacity during the warranty period, the battery manufacturer undertakes to repair the battery pack to bring it within the rated capacity or to replace it in the event that a repair cannot be achieved. This warranty is subject to the following exclusions:

1. Any breaking of the battery pack seal without the specific approval of TUATARA will result in the immediate voiding of the warranty.
2. Damage caused by exceeding any of the specifications of the battery.
3. Damage caused by abuse of any nature.
4. Damage caused by misuse of any nature.
4. Damage caused by fire or excessive heat unrelated to the battery itself.
5. Damaged caused as a result of a collision, roll-over or submersion of the eTUATARA Single cab UTV
6. Damaged cause by force majeure.
7. Failure to comply with the instructions relating to the Primary Battery contained within this Owner's Manual.

14. Nominated Servicing Person / Company

APPENDIX A

TUATARA NOMINATED SERVICEMAN DECLARATION

eTUATARA Single cab UTV owner, VIN = _____

Purchase date / /

Wish to undertake some limited repairs and / or servicing myself, namely
the following:

The servicing that I wish to undertake will be in strict compliance with the requirements of the
Preventative Maintenance & Service Log as detailed in this manual.

(Signature)(Date)

Nominated Servicing Person / Company

I also wish to nominate the following person / company to undertake repairs and / or servicing on my eTUATARA Single cab UTV , being servicing and / or repairs that I don't have the competence and / or wish to do myself.

Nominated Servicing Person / Company

I wish to confirm that I would like to undertake servicing and repairs to the eTUATARA Single cab UTV owned by _____ I am a qualified motor mechanic.

I agree that I will undertake all servicing work in strict accordance with the requirements of the **Preventative Maintenance & Service Log**, a copy of which has been provided to me. I also undertake to complete in full, a **Warranty Claim Form** (ie. see **APPENDIX B**) and forward it to Tuatara Machinery Limited for approval prior to carrying out any warranty repairs on the said eTUATARA Single cab UTV.

I also agree to strictly comply with any credit requirements agreed between myself and Tuatara Machinery Limited in relation to payment for spare parts supplied by Tuatara Machinery Limited for the repair of the said eTUATARA Single cab UTV.

(Signature) ----- (Date) -----

APPENDIX B

WARRANTY CLAIM FORM				
Date: / /		Repairer / Company Details		
Name:	Address:	Telephone: 1.		
		Telephone: 2.		
Customer Details				
Name:	Address:	Telephone: 1.		
		Telephone: 2.		
Vehicle Details				
Chassis No.	Speedo:	km.	Hour metre:	
Vehicle Fault Description*				
Replacement Part(s) Required:	Part No(s).	Action Taken		

1. Note that the warranty provided on Tuatara UTVs covers defective parts only and does not extended to labour or travel charges by servicing staff. Before any parts will be supplied under warranty, this Warranty Claim Form must first be fully completed and emailed to info@tuataramachinery.co.nz. A decision as to whether part(s) will be supplied under warranty will be provided by TUATARA MACHINERY LTD in writing. Any parts requested that are not covered by warranty must be paid for in full before dispatch.

15 Tuatara Service Record

TUATARA SERVICE RECORD

Service date: / /

Service Interval: **25hrs. or 500kms.**

Model: ----- Motor No: -----

Chassis No: -----

Hours: ----- Kms:-----

Owner: -----

Address: -----

Tel. ----- Email: -----

Component	Code(s)*	Customer / Serviceman initials
Differential oil	RC	
Coolant levels	LF	
Coolant hoses & clamps	TA	
CV Joints & boots	IC	
Wheel bearings	TA / LF	
Oil seals	IC	
Ball joints	IC / TA	
Wheel nuts	TA	
Brake fluid level	LF	
Suspension bushes	TA / LF	

*Codes: IC=Inspect & clean, TA=Tighten & adjust as required, LF=Lubricate &/or refill; RC=Replace/change

Servicing undertaken by: ----- (Name)

Company: ----- (Name)

Address: -----

Telephone: ----- Signed: -----

WARRANTY VALIDATION

Note that in order to validate the **TUATARA** Warranty, all of the actions referred to in the Preventative Maintenance & Service Log recorded in the **TUATARA** User Manual must be undertaken at the required intervals. In addition, the applicable Tuatara Service Record must be completed and forwarded to:
Tuatara Machinery Limited
 291 Weedons Ross Road, R.D. 5, CHRISTCHURCH 7675

TUATARA SERVICE RECORD

Service date: / /

Service Interval: **50hrs. or 1000kms.**

Model: ----- Motor No: -----

Chassis No: -----

Hours: ----- Kms:-----

Owner: -----

Address: -----

Tel. ----- Email: -----

Component	Code(s)*	Customer / Serviceman initials
Differential oil	RC	
Coolant levels	LF	
Coolant hoses & clamps	TA	
CV Joints & boots	IC	
Wheel bearings	TA / LF	
Oil seals	IC	
Ball joints	IC / TA	
Wheel nuts	TA	
Brake fluid level	LF	
Suspension bushes	TA / LF	

*Codes: IC=Inspect & clean, TA=Tighten & adjust as required, LF=Lubricate &/or refill; RC=Replace/change

Servicing undertaken by: ----- (Name)

Company: ----- (Name)

Address: -----

Telephone: ----- Signed: -----

WARRANTY VALIDATION

Note that in order to validate the **TUATARA** Warranty, all of the actions referred to in the Preventative Maintenance & Service Log recorded in the **TUATARA** User Manual must be undertaken at the required intervals. In addition, the applicable Tuatara Service Record must be completed and forwarded to:
Tuatara Machinery Limited
291 Weedons Ross Road, R.D. 5, CHRISTCHURCH 7675

TUATARA SERVICE RECORD

Service date: / /

Service Interval: **100hrs. or 1,500kms.**

Model: ----- Motor No: -----

Chassis No: -----

Hours: ----- Kms:-----

Owner: -----

Address: -----

Tel. ----- Email: -----

Component	Code(s)*	Customer / Serviceman initials
Differential oil	RC	
Coolant levels	LF	
Coolant hoses & clamps	TA	
CV Joints & boots	IC	
Wheel bearings	TA / LF	
Oil seals	IC	
Ball joints	IC / TA	
Wheel nuts	TA	
Brake fluid level	LF	
Suspension bushes	TA / LF	

*Codes: IC=Inspect & clean, TA=Tighten & adjust as required, LF=Lubricate &/or refill; RC=Replace/change

Servicing undertaken by: ----- (Name)

Company: ----- (Name)

Address: -----

Telephone: ----- Signed: -----

WARRANTY VALIDATION

Note that in order to validate the **TUATARA** Warranty, all of the actions referred to in the Preventative Maintenance & Service Log recorded in the **TUATARA** User Manual must be undertaken at the required intervals. In addition, the applicable Tuatara Service Record must be completed and forwarded to:
Tuatara Machinery Limited
291 Weedons Ross Road, R.D. 5, CHRISTCHURCH 7675

TUATARA SERVICE RECORD

Service date: / /

Service Interval: **200hrs. or 5,000kms.**

Model: -----Motor No: -----

Chassis No: -----

Hours: -----Kms:-----

Owner: -----

Address: -----

Tel. -----Email: -----

Component	Code(s)*	Customer / Serviceman initials
Differential oil	RC	
Coolant levels	LF	
Coolant hoses & clamps	TA	
CV Joints & boots	IC	
Wheel bearings	TA / LF	
Oil seals	IC	
Ball joints	IC / TA	
Wheel nuts	TA	
Brake fluid level	LF	
Suspension bushes	TA / LF	

*Codes: IC=Inspect & clean, TA=Tighten & adjust as required, LF=Lubricate &/or refill; RC=Replace/change

Servicing undertaken by: ----- (Name)

Company: ----- (Name)

Address: -----

Telephone: ----- Signed: -----

WARRANTY VALIDATION

Note that in order to validate the **TUATARA** Warranty, all of the actions referred to in the Preventative Maintenance & Service Log recorded in the **TUATARA** User Manual must be undertaken at the required intervals. In addition, the applicable Tuatara Service Record must be completed and forwarded to:
Tuatara Machinery Limited
291 Weedons Ross Road, R.D. 5, CHRISTCHURCH 7675