e-RoK

User Manual

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INTRODUCTION

Thank you for purchasing the e-ROK line marking machine from Fleet (Line Markers) Limited, The most versatile line marking aid on the market today.
The e-ROK is designed so that the operator can mount a Fleet Kombi, a Beamrider or a MAQA on it and convert the pedestrian line marker to a 'ride on' line marker.

This manual contains the setting up, operating and maintenance procedures, which should be carefully followed in order for you to get the most out of your machine.

Of course it's not just the machines that Fleet are famous for, our range of line marking paints are used around the world, wherever the pitch, whatever the occasion.

For more details on any of the products in Fleet's range please visit www.flmuk.com

CONTENTS

SAFETY PRECAUTIONS

WARNING

This warning symbol identifies special instructions or procedures which, if not followed correctly, could result in personal injury, or loss of life.

CAUTION

This caution symbol identifies special instructions or procedures which, if not strictly observed, could result in damage to equipment

Keep this manual with the e-ROK at all times so that you can refer to it whenever you need information.

All drivers must read and understand the e-ROK manual before using the machine.

Perform and record daily safety checks as laid out in this manual. Correct any irregularities before use.

All operators should have suitable training and driving skills.

The vehicle is not designed or manufactured for use on public streets, roads or highways.

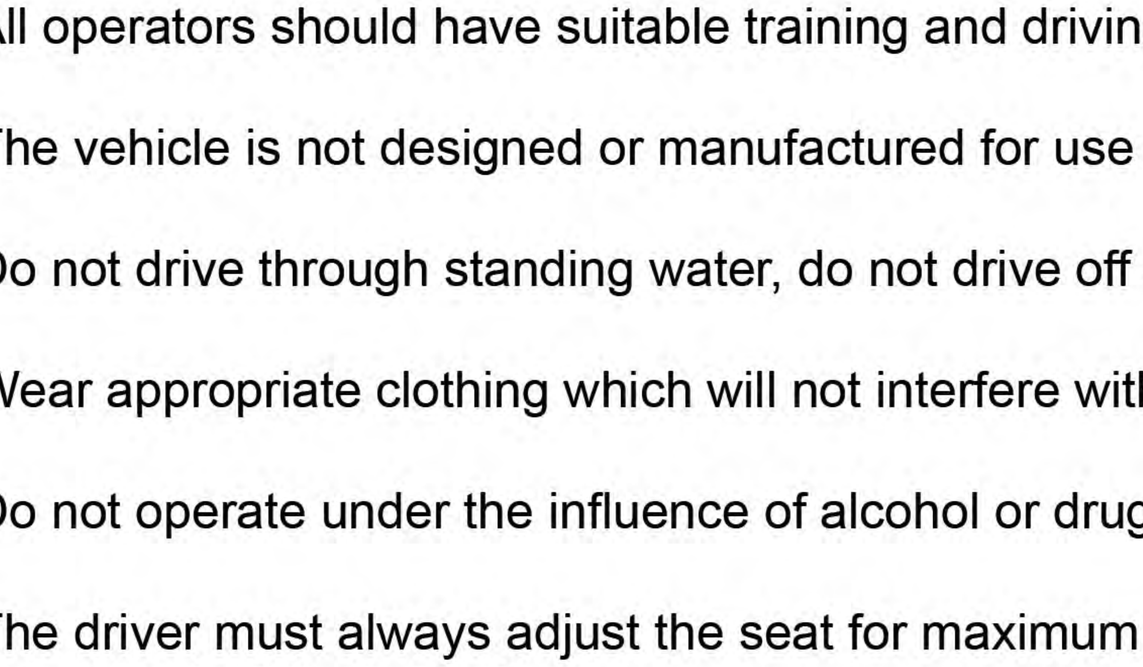
Do not drive through standing water, do not drive off curbs or other drops.

Wear appropriate clothing which will not interfere with operating the machine.

Do not operate under the influence of alcohol or drugs.

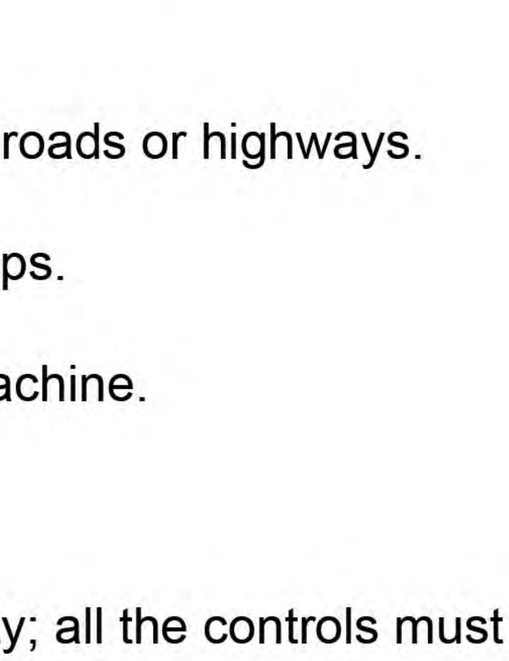
The driver must always adjust the seat for maximum comfort and safety; all the controls must be within easy reach. (Fig 1, Fig 2)

(Fig 1)



Forward / backward adjustment

(Fig 2)

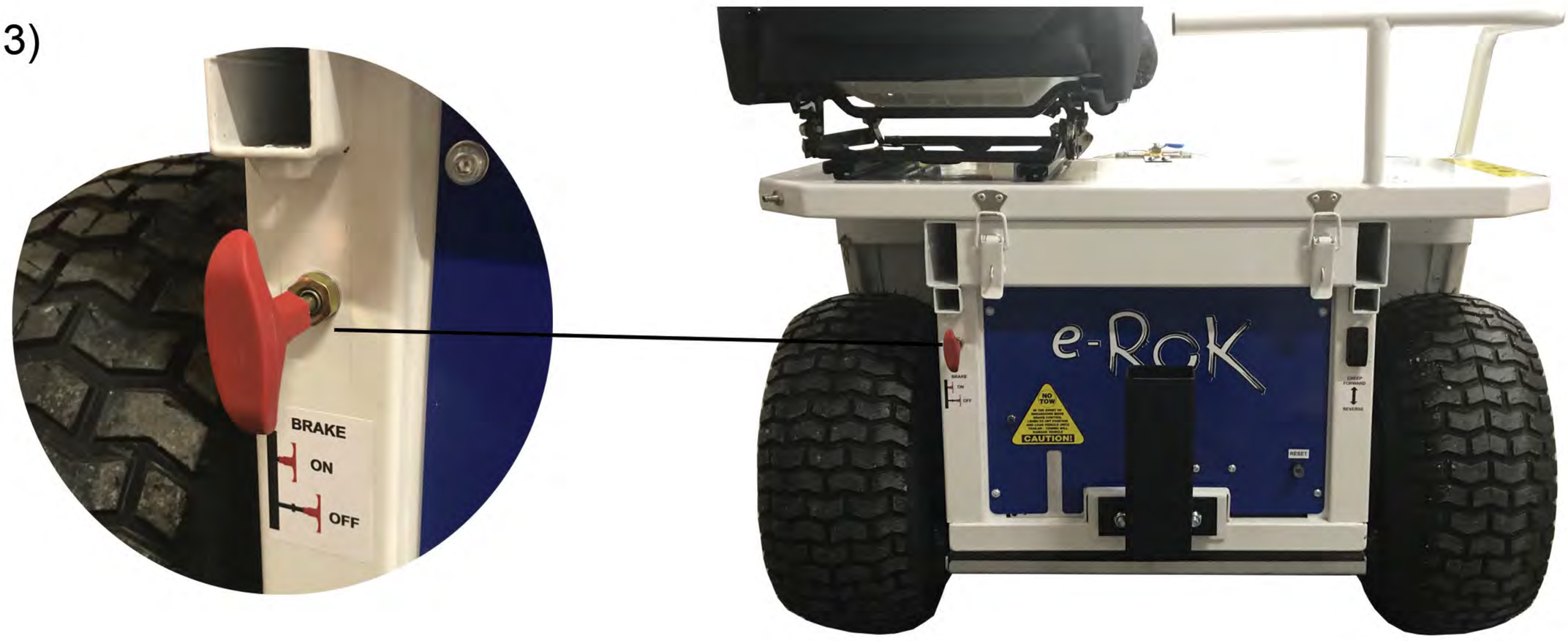


Back support adjustment

Never carry passengers.

Do not tow the machine or the electrics could be damaged. If the eRok has to be moved without driving it, it should be transported on a trailer or in a van. Releasing the parking brake (pull the lever at the rear) will allow the machine to be maneuvered by hand. (Fig 3)

(Fig 3)



Never modify the e-ROK in any way.

SAFE OPERATING PROCEDURES

The e-ROK is designed for use on a firm surface such as a grass field; the area being marked should be clear with no animals or people in the vicinity. The field can be undulating but it shouldn't contain ramps or steep slopes which could upset the balance of the e-ROK.

The operator needs to assure themselves that the e-ROK has been maintained to the highest standard and that the e-ROK's main systems are in good order and work correctly.

This includes:

- **The Brake System**:

  Brake pedal travel is not restricted.
  Brakes operate correctly and are not spongy.
  Brake shoes are not worn.

- **The Drive system**

  The battery is fully charged.

SAFETY OPERATION

BATTERY INSTALLATION

ALWAYS WEAR SAFETY GLASSES WHEN WORKING AROUND BATTERIES!

The battery is heavy **(34kg, 74.9 lbs)**. When lifting seek assistance if required.
Ensure all connections are free from oxidation or corrosion.
Inspect the battery tray or area where the battery is to be placed to be sure it is clean and free from objects that could damage the battery.

Replace any worn cables. Replace or repaint any corroded fittings.
Ensure the battery connections are kept dry. Take extra care when washing the machine. Do not use a pressure washer near the battery, the cover or the electrics.

When connecting the battery to the machine, make sure the connectors are pushed firmly together to ensure a good electrical connection.

Be careful when connecting any electrical wires, be absolutely certain that the proper wire or cable is connected to the correct terminal.

CHARGING

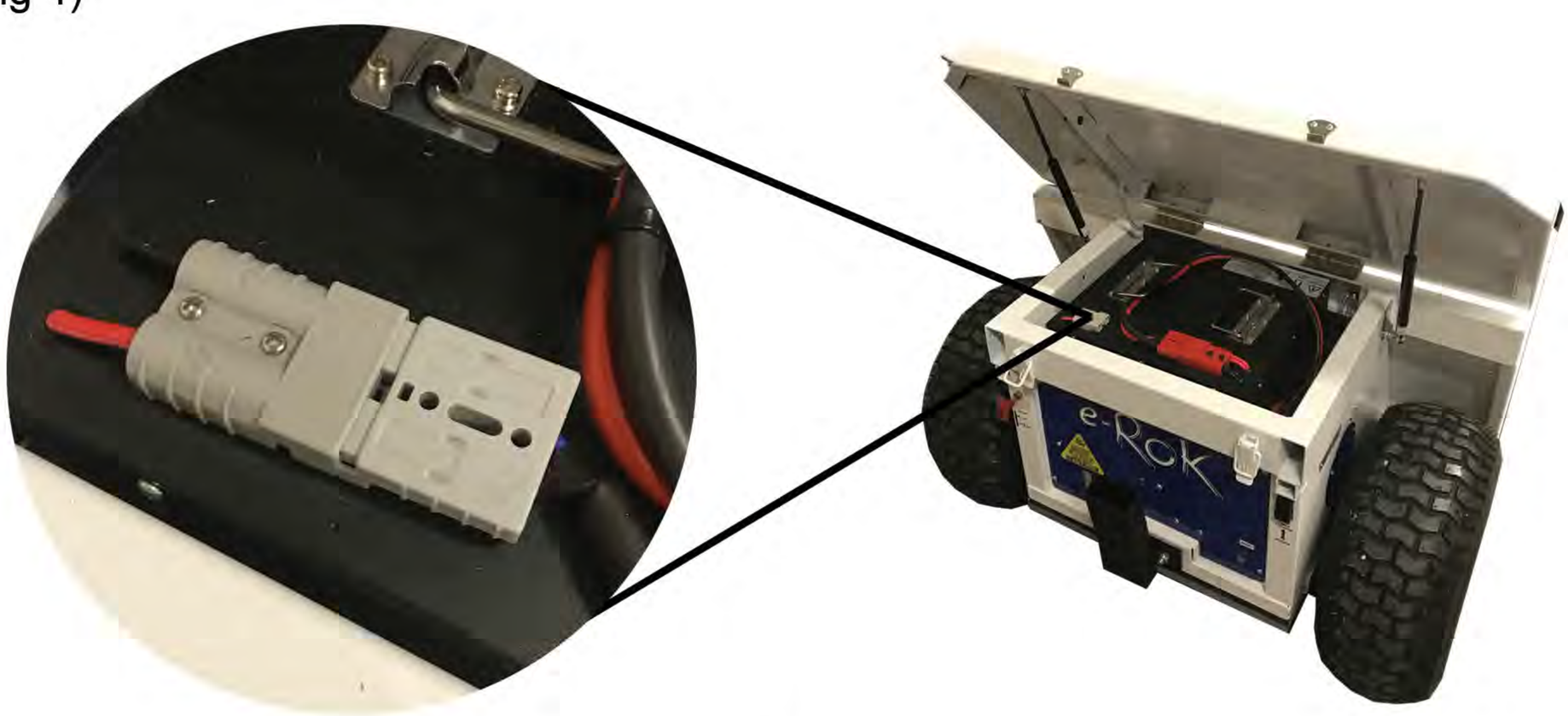
The charger is an ‘intelligent’ unit that alters the voltage and current depending on the level of charge in the battery. ONLY USE THE CHARGER SUPPLIED BY FLEET. Use of any other charger will invalidate any warranties including battery warranties.

Connect the charger only to a suitable power supply as shown on the charger information panel.
In order to prevent fire or explosion, never use the charger where flammable gases or vapors may be present.

Use only in well ventilated areas.
Do not modify the charger in any way.
Do not open the charger, this may cause electric shock or burns.
Keep the charger dry at all times.

Connect the charger to the charge socket on the e-ROK
battery. (Fig 4)

(Fig 4)



Plug the charger into a compatible power supply and turn on.
LED lights will illuminate when the unit is charging. The charger display will show the volts and amps of the battery. The lower the volts (indicates how much the battery has been used) then the higher will be the amps charging. As the battery is charged the volts will increase and the amps will decrease.
When the battery is charged there should be one red LED and one green LED lit, the voltage will read 54 volts and the amps nil.

Once charged, turn off the power supply and turn off the charger.

Disconnect the charger from the battery.

If a fuse fails in the charger plug, it must be replaced with a fuse of the same value.

CAUTION

Note If only one red LED is lit on the charger then it is not connected correctly and the battery is not being charged. Any connection problems, contact Fleet (Line Markers) Ltd. (Fig 5)

(Fig 5)

PUTTING YOUR BATTERY INTO STORAGE

Lithium batteries need to be regularly used to ensure a long life. If the eROK is not being used for a period of time then the battery should have some discharge and re-charge every month. If you have not used the eROK for a month, the machine should be switched on and driven for 10 to 15 minutes (to discharge the battery) you should then recharge it.
If the eROK is not going to be used for several weeks, disconnect the battery to minimize leakage. The battery will still need regular discharging and recharging as above.

Store the battery in a cool, dry area.

PROPER MAINTENANCE & BATTERY CHARGING

Disconnect the charger when the battery is fully charged.

CAUTION **Do not leave the battery on trickle charge**

Keep the battery clean, secure and ensure the terminal connections are tight in the plug. (do not pull on the cables when removing the charge socket).
Do not attempt to open the battery. Warranty will be void if opened.

ELECTRICAL PROTECTION

There is a 5 amp electrical inline fuse (Fig 6) protecting the controller circuits and a 50 amp trip (Fig 7) protecting the motor supply. The fuse is positioned in the battery compartment on the right under the battery tray.

The battery may have to be removed to access the fuse. Do not pull the wire connected to the fuse as this will damage the wiring loom. The 50 amp trip is mounted on the right hand side of the battery.

If there is no electrical power. The trip and then the fuse need checking.

CAUTION **Do not tow the eROK.**

Towing can cause an electrical back feed and damage the controller.
towing will **VOID** any **WARRANTY**

(Fig 6)

(Fig 7)

OPERATION

Do not use on public streets, roads, highways or footpaths.

· Assess operating area for hazards and plan work sequence accordingly.
· Do not travel across slopes, travel straight up or down. (See Site Specific Risk Assessment).
· Adjust the seat and pedal positions to ensure all the controls can be safely operated.
· Do not travel on gradients that exceed 10 degrees.
. Do not drive through water. Damage caused by water (including washing) is not covered by any warranty

WARNING

DANGER - Fitting auxillary attachments may affect stability, refer to attachment instructions for more information.

To start: Turn on the Isolator Key on the side of the console (Fig 8) and press the spring loaded button on the top of the console. You will hear the solenoid in the battery compartment engage and the Battery Level Indicator and led light will illuminate. The LED will flash if there is a fault.

1. Isolator Key
2. Spring Loaded Start Button
3. Varible Speed Limiter
4. Forward/Reverse Switch
5. Battery Level Indicator

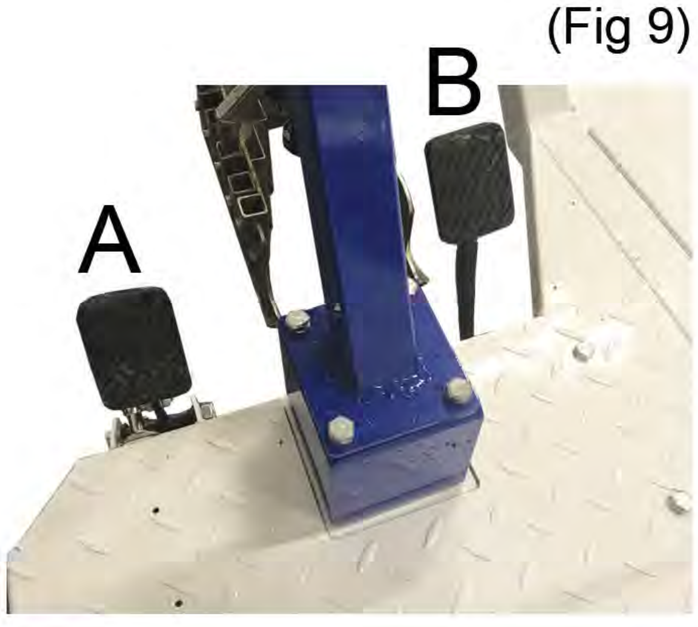
(Fig 8)

Select direction of travel on the Forward/Reverse Switch on the console.

Gently apply pressure to the foot (speed control) pedal (Fig 9), the electrical brake will be released automatically and further pressure will increase the speed of the vehicle.
The maximum speed when the foot peddle is fully depressed can be limited by adjusting the knob on the console. This allows the operator to set a speed which will ensure they mark at a constant speed giving an even paint distribution along the lines being marked.

(A) Brake pedal
(B) Speed control pedal

(Fig 9)



If the operator has dificulty reaching the pedals, there is an attachment available to raise the foot platform (contact Fleet Line Markers)

To slow down, release the speed control pedal slowly to the desired speed.
To stop, remove foot from the speed control pedal in a controlled manner. The electromagnetic parking brake will apply automatically to the rear wheels once the pedal is released and the vehicle has stopped moving.

In an emergency stop situation, apply the Emergency foot brake at the same time as releasing the speed control pedal.

The brake pedal should only be used in emergency, as motor braking should control the speed in normal use.

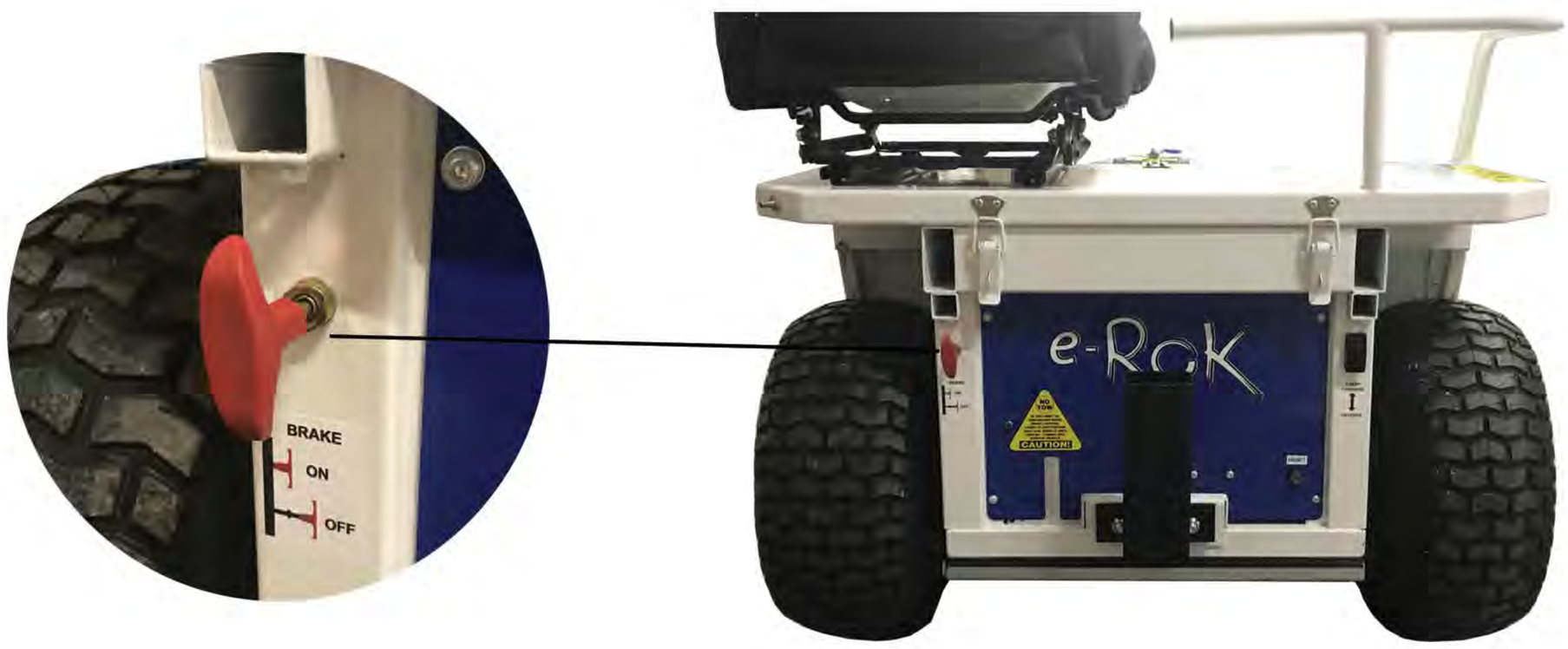
To change direction of travel, stop the eROK, then select direction required using the forward/reverse Switch on the console.

Always park the eROK on a level surface.
Turn the Isolator Key off when not in use.
Remove the Isolator Key to prevent unauthorised use.

If the operator uses the eROK for a long time and the battery becomes low the machine will automatically go into ‘creep mode’. There should still be enough charge remaining in the battery to take it to a charging point. However do not try to use the vehicle in creep mode for anything else because at very low battery levels the battery is programmed to cut off in order to protect the battery cells. The battery must be recharged as soon as possible to prevent irreversible damage.

If you need to move the eROK without battery power, move the brake control lever at the rear of the eRok to the off position, beware the eROK may roll if on a slope. (Fig 10)

(Fig 10)



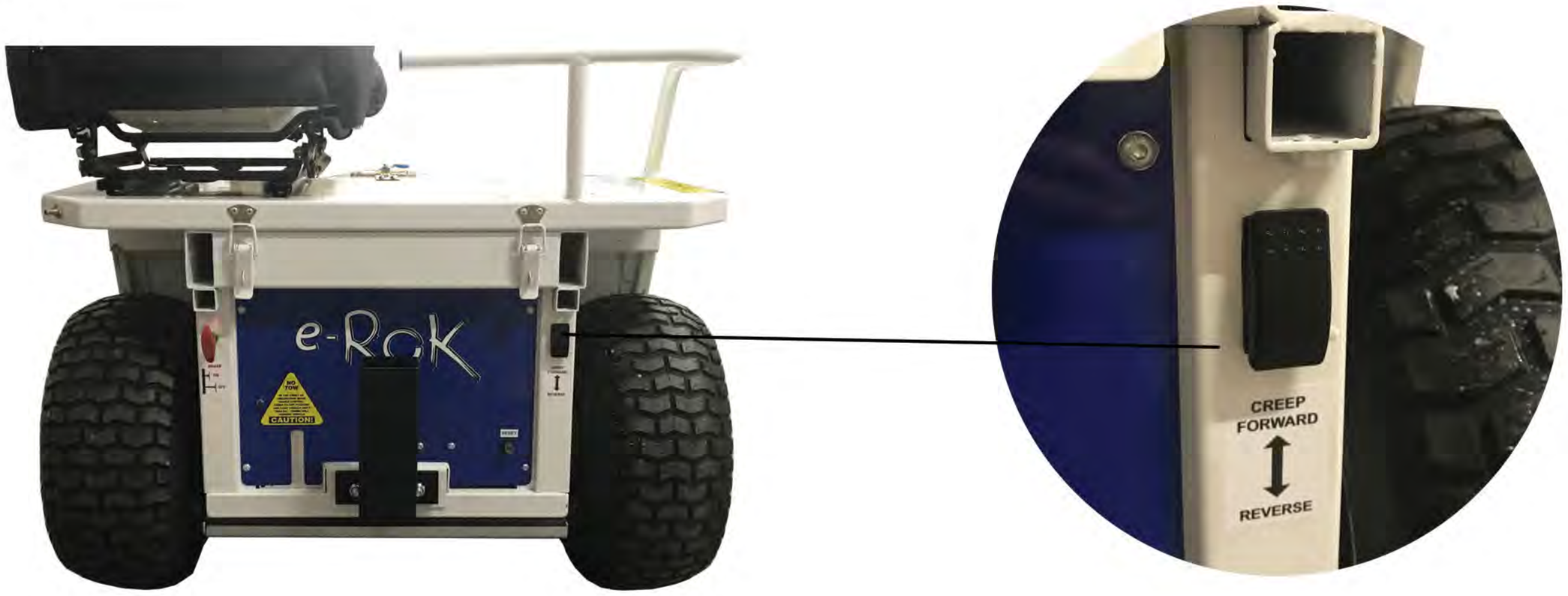
Do not tow the eRok as it will damage the electronics

LOADING AND UNLOADING

THE EROK ONTO A FLATBED VEHICLE, TRAILER, OR INTO A VAN.

- Park the vehicle or trailer on level ground
- Make sure the ramps are secure and will not move when being used.
- The ramps must be in a condition to prevent wheels slipping when loading or unloading.
- DO NOT DRIVE THE EROK UP OR DOWN THE RAMPS. There is an 'inching' switch located on the rear of the erok

(Fig 11)



Use the spring loaded rocker switch to 'walk' the eROK up or down the ramps. Walk alongside the machine. Do not walk or stand behind it. The Forward / Reverse switch on the console must be in the middle 'neutral' position otherwise the inching switch will not work. (Fig 11)

- The inching switch is programmed to work at a slow creep speed. It is set on a timer and will switch off after 30 seconds use. To restart release the switch and reuse.

- Ensure the power key is switched off when the machine is not being used for safety and battery use.

CAUTION

There is a timer fitted to the eROK so that if the machine is left switched on without being used for more than 5 minutes, it will switch off. To restart press the spring loaded button on the top of the console.

MOUNTING & DISMOUNTING A KOMBI

- Park the e-ROK on firm level ground.

- Rotate Kombi Mount on the e-ROK to face towards the right hand side of the machine. (Fig 12)

(Fig 12)

- Push the Kombi towards the right hand side of the eROK, tilt the kombi back and engage the right hand side of the kombi's front axle in to the Kombi Mount. (Fig 13)

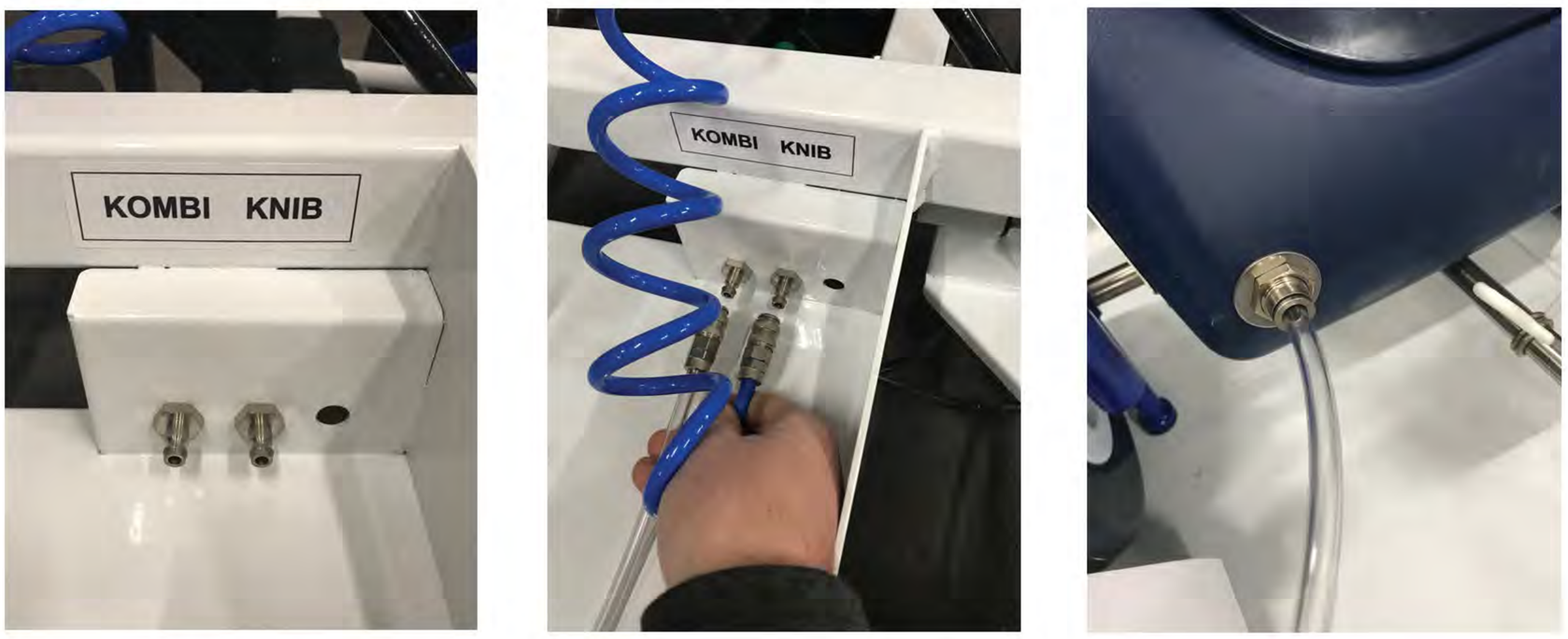
(Fig 13)

- Raise the rear of the Kombi by lifting the handlebars and rotate clockwise until in line with the wheel retainer, for the left rear wheel then lower the kombi onto the eROK floor. (Fig 14)

(Fig 14)

If using the e-ROK knib, connect the flexible hose on the spray nozzle and the hose to the front of the Kombi to the corresponding connectors. (Fig 15)

(Fig 15)



CAUTION If the operator is using a Beamrider or a MAQA on the e-ROK a ‘Fleet dropdown kit’ will be needed.

- Slacken the handlebar clamp screws,
- Lift out the handlebars from their sockets then rotate them 180 degrees and lower back them into the sockets and tighten the clamp screws. (Fig 16)

(Fig 16)

- Alternatively the handlebars can be set at an angle by locating one of the handlebar tubes into the securing device. (Fig 17)

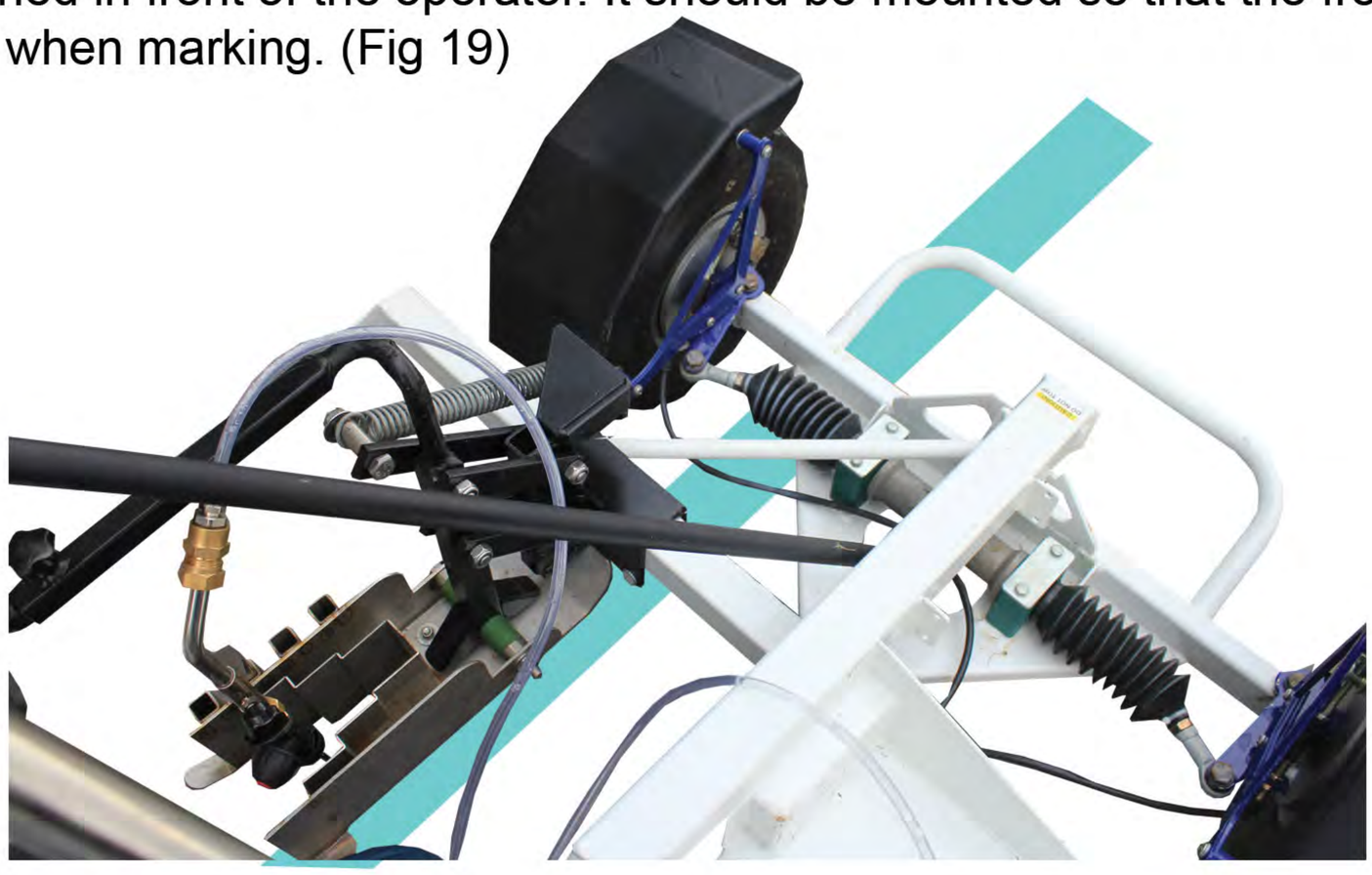
(Fig 17)

In order to take off the kombi for pedestrian use - reverse the above procedure

OPERATING THE KNIB

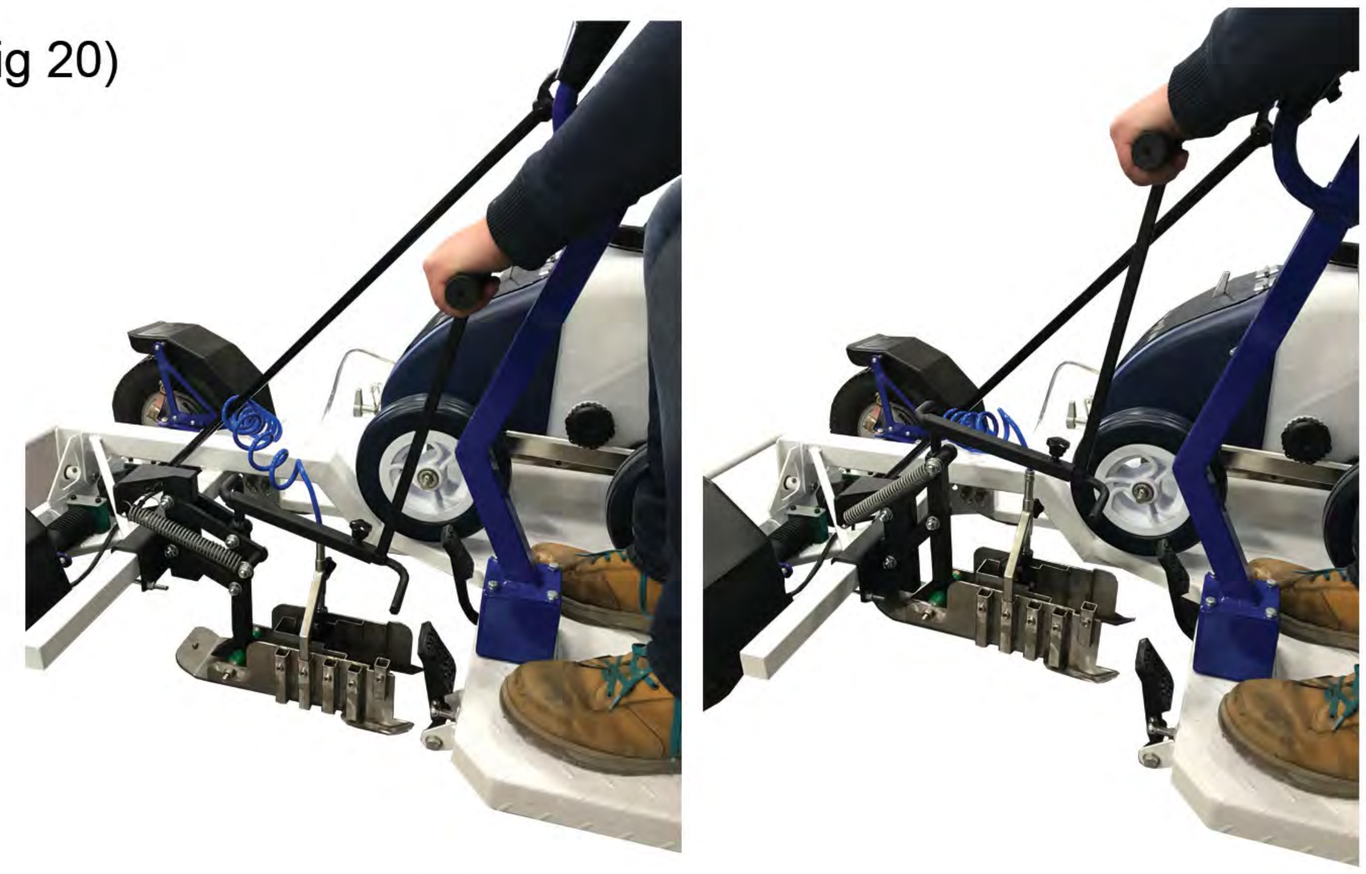
The main knib is positioned in front of the operator. It should be mounted so that the front ‘bumper’ can be used as a guide when marking. (Fig 19)

(Fig 19)



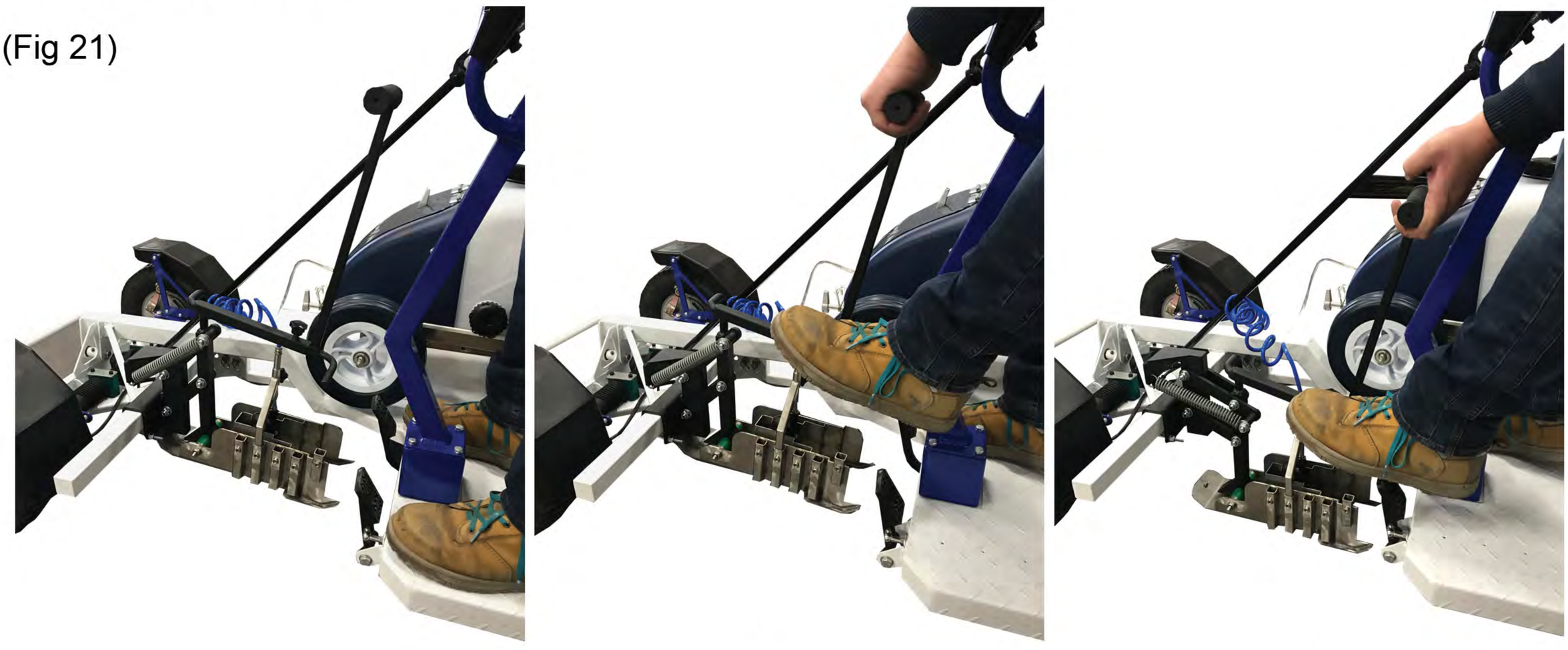
The operator can raise and lower the knib using the hand lever. (Fig 20)

(Fig 20)



or alternatively the foot lever. (Fig 21)

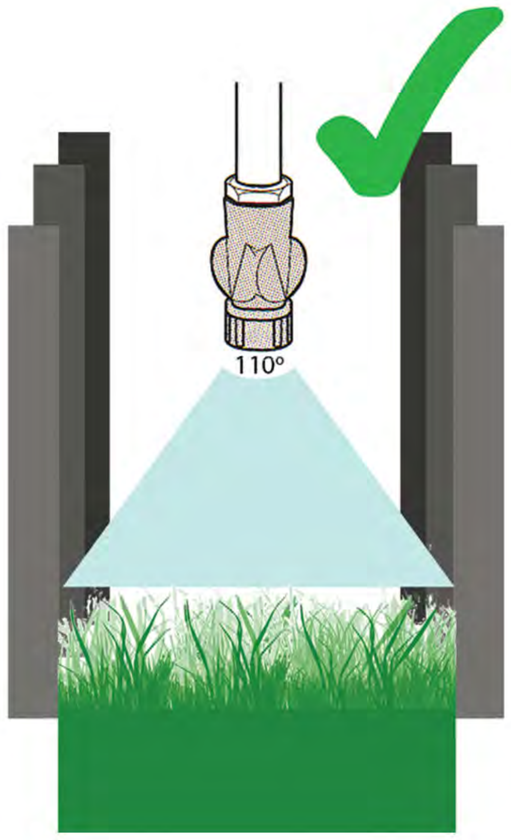
(Fig 21)

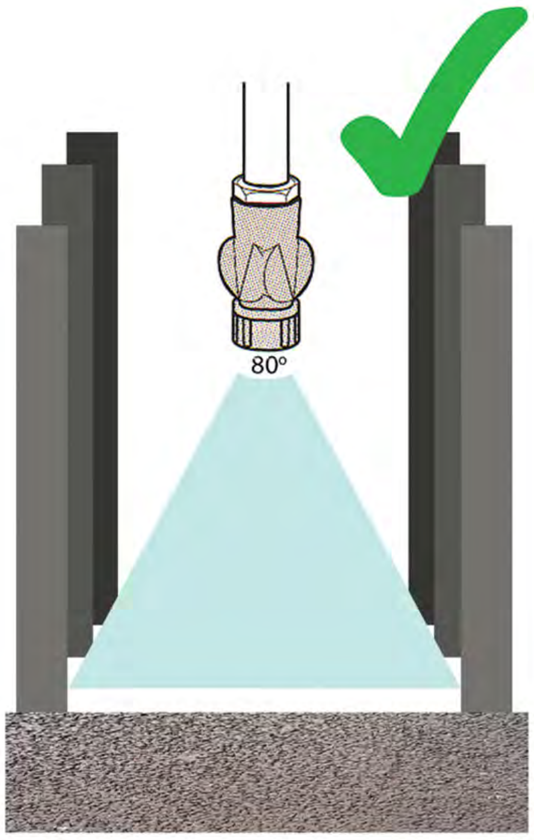


Select the nozzle position on the knib to achieve the desired line width and adjust the height of the nozzle to reduce excess paint on the side of the knib foot.

The paint spray fan should hit the inside of the knib foot just above the height of the grass.

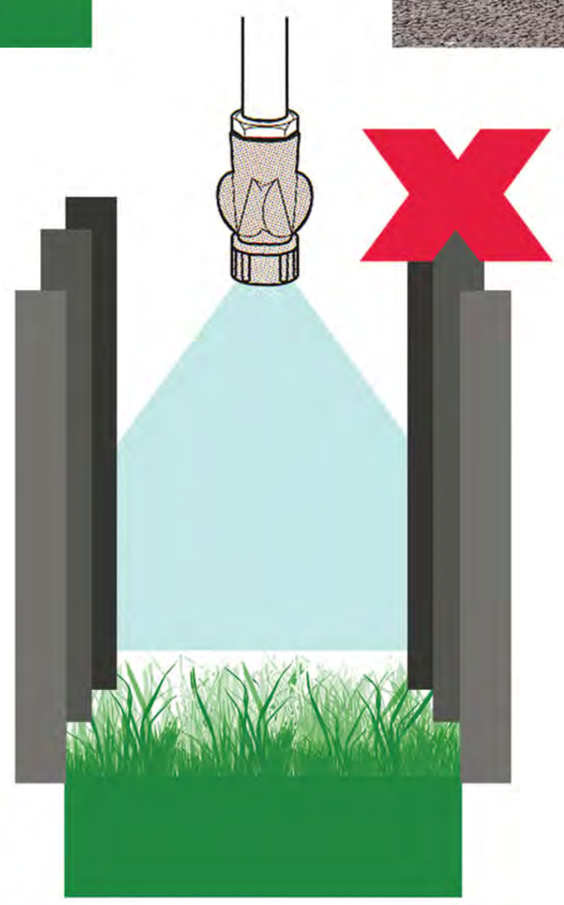
(see diagram)





For hard surface marking the spray fan should be just above the ground contact point.

Excessive paint deposits on the side of the foot will run off and leave unsightly paint drops or smears.



A secondary knib can be used alongside the operator. (Fig 22)

This is useful when marking lines with goal posts. The paint is switched between the two knibs by turning the two way tap. The nozzle for this knib should be set up as described for the front knib. (Fig 23)

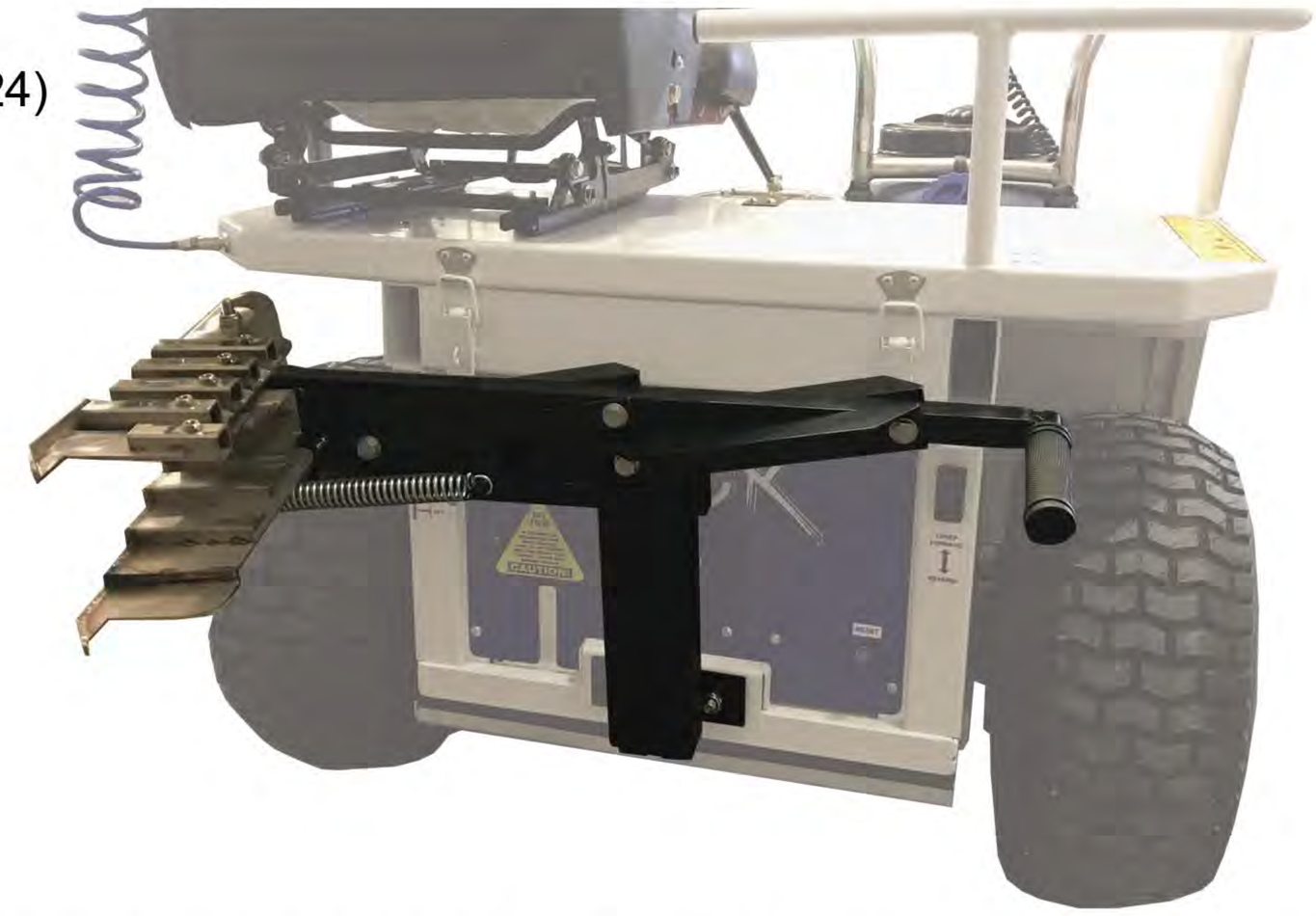
(Fig 23)

(Fig 22)

There is a second attachment point on the rear of the eROK for transporting the side knib when it's not being used. (Fig 24)

(Fig 24)

Picture of side knib in transport position



CAUTION (WHEN NOT MARKING ALWAYS RAISE THE KNIB TO PREVENT DAMAGE, THIS ALSO AVOIDS PAINT SMEARING FROM THE KNIB ONTO THE GROUND.)

CAUTION When using a Beamrider or MAQA with the eROK the wheeled knib must be used with an additional 'drop down' plate

INSPECTION & MAINTENANCE PROCEDURES

WARNING

MAKE SURE THE ON/OFF KEY IS REMOVED BEFORE PERFORMING ANY MAINTENANCE.

OVERVIEW

To ensure reliability and reduce lost time to breakdowns the operator should use the daily and weekly checklist. Any faults should be rectified before use.

CLEANING

CAUTION

Do not allow water near electrical components including, the battery, the controller, the accelerator control box, the motor, the parking brake and all terminals, sockets etc. Take extra care when cleaning the machine especially when using a pressure washer.

Do not wash inside the battery compartment

RISK ASSESSMENT

See example of a Site Specific Risk Assessment (page 21)

DAILY CHECKS

Chassis: Check machine is clean and free from excessive mud

The Drive System:
Check the battery is charged – Charger is disconnected and the battery cover has been latched down.
Forward and reverse controls operate correctly.
The throttle and brake pedals move easily when depressed and return to the rest position
Check the brakes work correctly

Seat: Seat is latched in the correct position so the operator is able to reach all the controls.

Steering: Steering components should be in good order with no excessive play.

Wheels: Tyre pressures must be correct in all 4 wheels.
Front tyres 10psi
Rear tyres 20 psi

Knibs:
Check knibs operate up and down correctly.
Pipework was cleaned after previous use and is not damaged

Driver Loading:
The e-ROK is made for a driver only, no passengers should be carried.

MONTHLY CHECKS

Chassis:
Check machine is clean and free from excessive mud
Check for loose bolts and fixings
Check for cracks and weld failure

The Drive System:
Check wheel bearings for excessive play.
The throttle and brake pedals move easily when depressed and return to the rest position – check for wear .
Adjust brakes – front brakes on the stub axles and rear brakes on the rear axle in the battery compartment.

Check electrical connections are tight and not corroded.

Steering:
Check for play on steering rack, king pins, and steering shaft universal joints

Wheels:
Check wheel nuts are tight and tyre walls are not damaged.
Check for tyre tread wear
Tyre pressures must be correct in all 4 wheels.

- Front tyres **10 psi**
- Rear tyres **20 psi**

Knibs:
Check all bolts on the knibs and their lifting mechanisms are correctly tightened. Check knibs still operate up and down correctly.
Check all pipework for leaks, damage and wear.

Lubrication:
Grease nipples

- 1 Steering shaft (Fig 25)
- 2 Front axle pivot (Fig 26)
- 2 King pins (Fig 27)

(Fig 25)

(Fig 26)

(Fig 27)

To check back axle oil level – this can be done 6 monthly if there has been no sign of leakage

- Unplug and remove the battery (two plugs)
- Remove the battery tray (four bolts). On some models there is an access hole in the battery tray and the filler can be accessed through it.
- Remove filler bolt.
- Use a clean dipstick (or screwdriver) to check that there is oil in the axle.
- Replace filler bolt etc

ANNUAL CHECKS

Brakes

It may be easier to remove the mudguards over the pedal brake mechanism while servicing the brakes.
Clean and check linkage. It should not be necessary to lubricate the slide (dirt and dust would collect on the oil) (Fig 28)
Remove brake drums front and rear.
Blow out dust and check brake pads for wear.

(Fig 28)

The Drive System

Change the oil in the rear axle every 100 hours use.
Access to the drain plug is through the hole in the splash cover underneath the axle/gearbox.
(Fig 29)

Use 90 gear oil (500 ml)

(Fig 29)

SPECIFICATION

Chassis:
Length 1945 mm
Width 1000 mm
Height 1075 mm

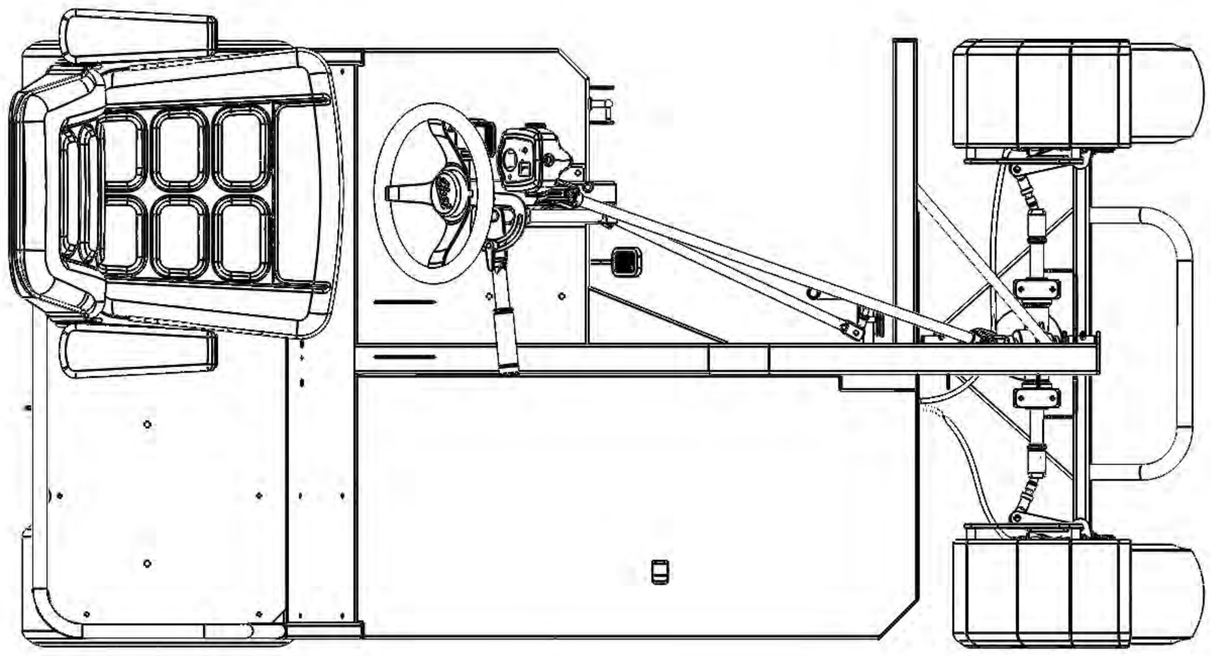
Un-laden weight :
360kg

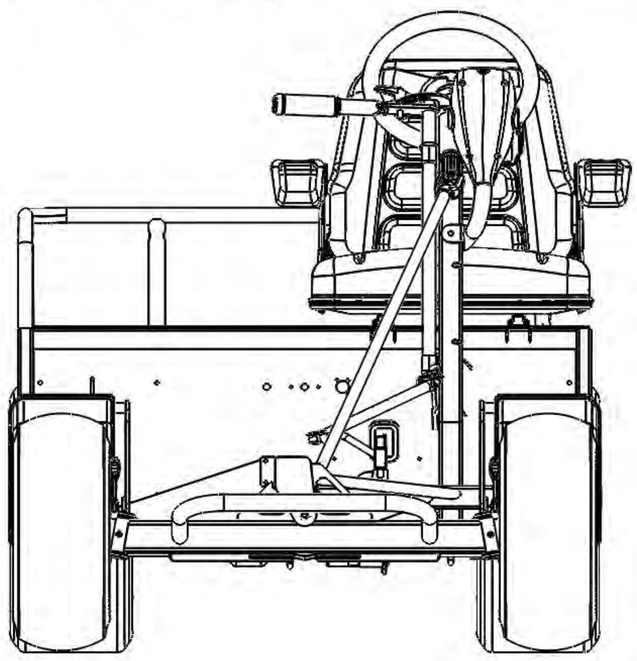
eROK with Kombi :
395kg

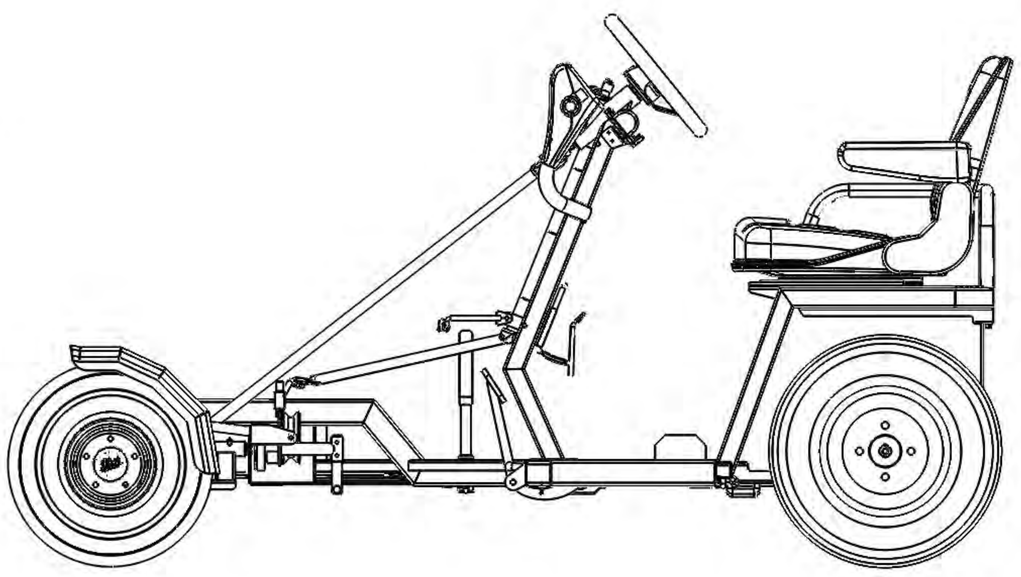
eROK with Kombi & Aux Tank (full):
445kg

Motor:
3kw

Brakes:
Cable operated drum







Package
Length: 201cm
Width: 110cm
Height: 123cm
Net weight inc crate: 395kg

FAULT FINDING

Electrical faults are indicated by the LED on the console.
The LED will flash a sequence:-
The first part of the sequence indicates the first digit and the second part of the sequence indicates the second digit.

For example – 1 flash followed by 3 flashes indicates fault 13
And 3 flashes followed by two flashes indicates fault 32

Faults are also displayed on the controller. However these are only visible with the battery and tray removed and therefore only viewed during maintenance.

A red LED and yellow LED flash alternatively.
- Count the number of yellow flashes after 1 red flash
- Then count the number of yellow flashes after 2 red flashes

For example if the sequence of flashes is:
1 red, 3 yellow, 2 red and 9 yellow – the fault is 39
1 red, 1 yellow, 2 red and 2 yellow – the fault is 12

Make a note of the fault number and contact Fleet (Line Markers Ltd) for advice.

Fault
23 Battery needs charging
28 Motor hot
32 Electromagnetic brake is disengaged
92 Electromagnetic brake is not holding and the machine has moved

Erok Risk Assessment	Site -		Persons at risk - Operative ( ) Visitors ( ) Public ( ) Staff ( )	
Hazard	**Risk**	**Risk Level**	**Controls**	**Risk Level**
Lack of knowledge of hazards	Risk of Managers and operatives not understanding the nature of the risks of working on slopes	25	ALL sloped areas that are above (or thought to be close to) 15 degrees to be measured for an accurate slope measurement Measure slopes with inclinometer or spirit level with adjustable sighting for degrees. Record the measurements of slopes and put specific measurements on site specific method statements All operatives to be trained on the slopes assessment and safety method statements	4
Use of ride on machinery on slopes	Risk of machinery overturning, causing injury or fatality	15	Always know the safe working level of ride on equipment, based on the operator's manual. NEVER EXCEED THIS LEVEL. Never operate ride on equipment on a slope above work colleagues and members of the public, in the event of a slip	8
Equipment use - General	Defective equipment increases the risk of accident	12	Carry out daily checks on all equipment. Pay specific attention to: • Tyre treads and pressures • Emergency Stop / Cut outs Report any defects to your Supervisor or Manager DO NOT USE DEFECTIVE EQUIPMENT AS THIS WILL INCREASES THE RISK OF INJURY / ILL HEALTH	4
Weather conditions	Risks are increased during wet or slippery site conditions	12	Do not drive on slopes during or after periods of wet weather. If the operatives are in any doubt as to their own or others safety, then the task must be ceased immediately until advice is sought from the Supervisor or Manager.	4
Changes to site features, vandalism or damage	Risk of unseen hazards or site differences causing obstruction, damage or injury	9	All operatives to check sloped areas prior to work starting to ensure it is safe to continue. Site checks should include checking for; • Ruts or uneven areas in the slopes that present a risk, this could include things like bike tracks or vehicle tracks • Holes or indentations, including where children may have played or dug into the slope • Debris or fly tipped material, all debris, litter and fly tipped material to be removed before work commences Any site defects shall be reported to the Manager for action and reporting,	2
Loading kombi onto erok machine	Risk of operator injury from lifting	10	Use the designed securing device on the Erok. Follow the instructions in the Operator's Manual All operatives to be trained on safe handling and lifting and safety method statements	2
Loading and unloading erok onto a trailer or into a van	Risk of personal injury, damage to erok and/or other machinery, tools and materials.	20	Load and unload the erok on level ground. Ensure ramps are secure and can't slip. The surface of the ramps must allow the wheels to grip. DO NOT DRIVE THE EROK ON OR OFF A TRAILER OR VAN. Use the 'inching' button on the rear of the erok to load or unload the erok. Walk behind and to the side of the erok.	3
Use of Fleet paints	Risk of spillage causing slip hazard and contamination	7	Follow instructions on the label. Wear correct PPE. Clear up any paint spills using clean water.	2

WARRANTY

The eROK is capable of producing outstanding lines.

The battery has been matched for ultimate performance and reliability when maintained correctly.

The eROK is guaranteed against any manufacturing defects.

The eROK is not guaranteed against normal wear and tear.

This guarantee does not interfere with the customer's statutory rights.

3 Year warranty on all parts except for misuse.
Machine must be registered by filling in the warranty card at the following url:
www.flmuk.com/erok-warranty

Extra warranty and deals available.

Please fill out the table below for quick reference should you require

eROK Serial Number : .....

Date purchased : .....

Where Purchased : .....

Fleet recommends the following products to keep your Kombi looking like new.

Fleet (Line Markers) Limited Fleet House, Spring Lane, Malvern, Worcestershire, WR14 1AT

Tel: + 44 (0) 1684 573535 Fax: + 44 (0) 1684 892784

www.flmuk.com sales@flmuk.com