X-CROSS

SCRAMBLER

USER MANUAL

MARK 2

Contents

Introduction

Congratulations on your purchase of a new Mark2 electric bike!

Every Mark2 has been designed with intelligently integrated and hidden electronics, supreme reliability and exceptional ease of use. But more than this, they are a means of bringing real fun, enjoyment and a true sense of freedom. We adore our product for its ability to deliver this, and we really hope you do too.

However, before you get going, please read this manual, as it contains some important information concerning the use and maintenance of your new eBike.

Contact us: info@mark2.co.uk

Overview

Use of this manual

(!!!) – This symbol is used to highlight an instruction that concerns safety or requires special attention.

You should pay particular attention to the texts marked by this symbol and the warnings to avoid potential risks of injury to yourself or damage to your eBike. It is important that anyone who uses the eBike is familiar with and follows the instructions

We, Mark2, are ready to consult you and, if necessary, to provide timely and competent support. To contact us, please email info@mark2.co.uk or visit mark2.co.uk.

Product Description

Your eBike is produced, and CE approved according to the guidelines in Standard ISO4210 and EPAC EN 15194.

The frame is manufactured from aluminium, which provides a strong, rigid and lightweight construction.

To achieve optimal weight distribution and to hide the electronics from the untrained eye, the motor has been integrated into the rear hub and the battery integrated into the downtube.

The Mark2s handle and ride brilliantly with or without the power assistance.

To ensure safety while riding, the electrical controls have been ergonomically designed for comfortable use without having to let go of the handlebars.

Appropriate Use

Your Mark2 has been designed as a rugged and tough cross country eBike. As well as being capable on the road, it is well suited to off-road

conditions. Specifically, this means a normal and reasonable use of the eBike on terrains that cannot be classified as a road - rough terrain, rough stone paths and other trails off the road where riders are likely to encounter rocks and roots.

We must stress that your Mark2 should not be used on off-road terrain that exceeds these limits, such as sports activities, jumping, riding down from mountain peaks or downhill on rough terrain, freestyle, extreme ride, etc. Your Mark2 is not designed for the challenging and harsh conditions experienced at such special events, stunts and acrobatic performances. The eBike must only be used as intended.

Extreme use may be dangerous. The user is responsible for any injuries or material damages that they suffer due to extreme or improper use of the product or when used for purposes which the eBike has not been designed and built for.

If the purchased eBike is intended to be used by a minor (the law states you must be over 14 years of age to ride an e-bike on public roads), it is obligatory to pay particular attention to the safety measures, the behaviour on the road, and how important it is to follow the rules to avoid the risk of serious injuries or impairment. It is the responsibility of the adult or parent to evaluate the readiness of the minor for the use of the ebike.

It is the responsibility of the rider to know and follow the national and local laws and rules.

Explanation of Parts - Model Scrambler

The diagram to the right provides an overview of the parts on your new eBike. These will be referenced throughout the manual, and it may be useful to bookmark this page for quick reference.

1. Handlebar Stem
2. Handlebar
3. Front Fork
4. Tyre/ Inner tube
5. Rim
6. Spokes
7. Disc Brake
8. Hub
9. Brake Caliper
10. Battery
11. Chainwheel
12. Crank
13. Pedal
14. Front Derailleur
15. Motor power disconnect
16. Chain
17. Rear Derailleur
18. Seat Post
19. Saddle
20. Frame


1
2
19
20
18
3
4
5
6
7
9
8
10
11
17
16
15
14
13
12
SCHWALBE
SCRAMBLER
RACING RALPH

Explanation of Parts - Model X-Cross

The diagram to the right provides an overview of the parts on your new eBike. These will be referenced throughout the manual, and it may be useful to bookmark this page for quick reference.

1. Handlebar Stem
2. Handlebar
3. Front Fork
4. Tyre/ Inner tube
5. Rim
6. Spokes
7. Disc Brake
8. Hub
9. Brake Caliper
10. Battery
11. Chainwheel
12. Crank
13. Pedal
14. Front Derailleur
15. Motor power disconnect
16. Chain
17. Rear Derailleur
18. Seat Post
19. Saddle
20. Frame


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
X-CROSS
X-CROSS
MARK2

Assembly

Necessary tools:

- Wrenches from 8 to 15 mm
- Hexagon socket wrenches from 2 to 8 mm (Allen keys)
- Flat-head screwdriver
- Cross-head screwdriver
- Knife or snips

Take the eBike out of the cardboard box and cut out all the plastic ties fixing the disassembled components.

When removing the front wheel, you should bear in mind that the crank arm may be entangled with the spokes, and if you are not careful, you may bend them.

Please, remove all the packaging parts carefully, especially if you use a knife or a blade. Proceed in such a way as to avoid scratching any part of the eBike or cutting one of the tyres.

Your Mark2 requires some adjustments and minor assembly before it can be ridden. You may need to attach the front wheel to the quick release mechanism, straighten the handlebars and attach the pedals and seat post. These processes are outlined on the next few pages.

Turning the handlebars

The handlebars should be mounted perpendicular to the front wheel. When you have lined the handlebar and front wheel at the correct angle, you should tighten the two bolts on the handlebar stem, as shown in the image on the right.

The handlebars may be at the incorrect angle (along the axis running between the ends of the grips) for your personal comfort and safety. To angle the handlebars, loosen the four bolts on the headset, as shown in the image on the right.

You should be able to safely reach the brake levers, the gear shifting mechanisms and hold the grips with ease and without tension in the wrists.

Front wheel installation

Mount the front wheel, making sure you guide the rotor between the brake pads carefully. Close the quick-release and verify that the wheel is securely fixed. For further help with the Quick-Release (QR) mechanism, please go to page 34.

Make sure the front wheel is accurately centred between the fork blades and ensure the QR lever is properly closed.

After mounting the wheel and tightening the QR pull the brake lever several times and then spin the wheel. The rotor must not drag on the brake caliper and shouldn't rub on the brake pads either.

Pedal installation

Each pedal is designed for a specific side.
They have a corresponding L (Left) or R (Right) letter to identify the required side.

Identify the left and the right crank. Position the right pedal in the right crank and screw the bolt by hand in a **clockwise** direction.

Position the left pedal in the left crank and screw the bolt by hand in an **anticlockwise** direction.

Tighten the pedals with the torque regulated in the Instruction, using a 15mm wrench.

(!!!) Before each use make sure the pedals are securely fastened.

Seat Adjustment

The height of the saddle should be adjusted in such a way that when pedalling your leg remains slightly bent as the pedal is at its lowest point, see image to right. When the saddle is adjusted in an optimal way, you should be able to touch the ground with the tips of your toes on both feet at the same time.

(!!!) To make sure that the saddle is locked, test if your hand experiences some resistance when closing the QR lever. If this did not leave a mark on the palm of the hand, it means that the tension is not sufficient. In this case, open the QR mechanism lever, turn the adjusting nut to a quarter clockwise and then try again. If in doubt ask a qualified bike mechanic to set up your eBike for you.

Getting Started

Electrical Controls

After the battery is installed, you can switch on the display using the ON/OFF button.

When pedalling the motor starts to help you, depending on the selected assistant level.

The motor will kick in once you start pedalling and cut out when you stop. The level of assistance the motor provides depends on the assistance level chosen.

Display

The display is operated from the left handle on the handlebar.

There are four function buttons and a throttle placed in the handle.

On and off

Using this button, it is possible to turn on and turn off the electrical system. Press the button until it turns on/off. The system closes down automatically after 5 minutes of inactivity.

Battery indicator

These segments show the battery level. When reaching the lowest level, the indicator will start flashing.

Assist functions

The assist level can be controlled in 2 ways:

5 assist levels - On the right side of the display, the selected Assist level is indicated.

Throttle/walk assist (for quick change) – Turn the throttle when not pedalling, and the walk assist is activated.

Assist Selection

To select the different assist levels, use the up and down arrow keys.

Level 4 - is the highest level.
Level 1 - is the lowest level.
Level 0 - disables the assist, but keeps the throttle functioning.

Mode function

Press the Mode button to switch between odometer (ODO) and Trip counter.

Reset TRIP by holding the Mode button for 2 seconds.

ODO mode shows the total distance travelled.

Speed

Here your current speed is shown.

Press and hold “down arrow” for 10 seconds to change between mph and kph.

Throttle

The throttle operates by turning the inner part of the handle.

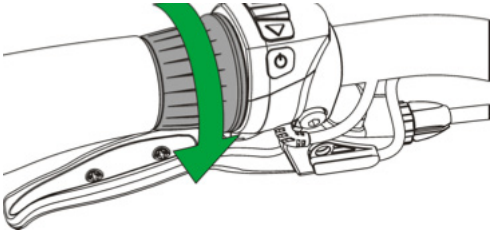
The throttle has a “booster” effect, which allows the throttle to override other assist settings when activated. By releasing the throttle again, the system will automatically return to the assist level shown in the display.

When not pedalling, the throttle is used to enable the walk assist feature. It can be activated by turning the throttle. For example, when not riding, this feature is well suited for pushing the eBike uphill.

When the pedals and the throttle are activated simultaneously, it is possible to variably adjust the speed up to the maximum speed level.

The throttle is particularly useful in heavy traffic when brief acceleration for quickly overtaking slower moving cyclists is required.

The motor is disconnected at a speed of 24.6 kph.



Battery

Your Mark2 uses maintenance-free Lithium-Ion batteries.

The battery is delivered with a capacity of approximately 40-60% charge from the factory. Before riding, it is necessary to charge the battery to full capacity with the supplied charger.

After charging, we recommend that the battery must be left plugged in for 24 hours, to equilibrate the cells in the battery.

Optimum battery charging conditions are at 20ºC.

Charging of the Lithium-Ion battery at frequent intervals should prolong the battery life.

Please note that the capacity of the battery will weaken over time and at lower temperatures.

The range of the battery is significantly influenced by a number of parameters. Some of these being user weight, riding manners, terrain, surface and tyre pressure, along with rider effort.

The range of the battery should be 45 -100km, but this is still subject to approximation due to the various parameters. With typical conditions and rider fitness, a range of 60kms should be possible.

Winter Storage

If you put away your eBike for periods greater than one month, it will be sufficient to charge the battery once a month. We also recommend that from time to time the battery must be left plugged in for 24 hours, to equilibrate the cells in the battery.

Warning

- Do not heat, short, puncture or in any other way damage the battery.
- Do not divide or destroy the battery.
- Do not throw the battery into open fire.
- Do not lower the battery into water or any other liquid.
- When charging the battery only use the enclosed battery charger.
- Do not charge the battery at a temperature below 0°C or above 45°C.

Disposal of battery

Batteries contain substances that can be harmful to human health and the environment if not handled properly. Batteries are marked with a

symbol of the crossed-out bin. It symbolises that waste batteries must not be disposed of with normal household waste, but must be separately collected.

It is important that you dispose of your used batteries in the proper manner, as set out by your local council.

Charger & Charging

While the charger is splash proof, it should not be subject to adverse weather conditions and so for best practice always charge the battery indoors or under cover.

Battery removal and insertion

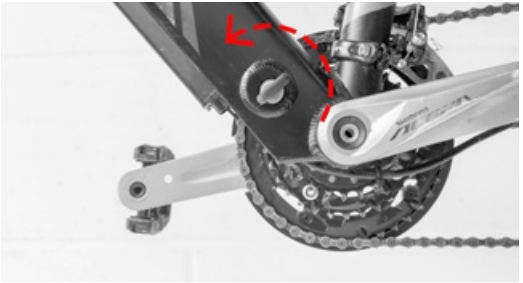
Turn the key anti-clockwise to unlock the battery.

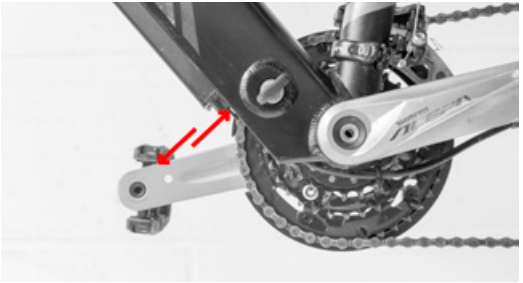
While pushing the battery catch in, pull the battery at the base.

Note, It is easier to remove the battery while the eBike is upside down, but be sure to rest the eBike on a soft surface to protect the LCD screen.

Push the battery into position in the downtube and lock the battery by turning clockwise.

Note, the key can only be removed if the battery is correctly mounted and locked.





Charging with the battery mounted on the eBike

Twist the plastic dirt cover out of the way, then insert the charger into the socket. After this is complete, plug in the charger to the mains.

The red LED will be on while charging takes place.

When the red LED changes to green, the battery is charged.

Switch off the charger at the mains, before removing the charging plug.

Once charging is complete twist back the dirt cover to protect the charging socket.

Charging with the battery removed from the eBike

Note: see page 18 for removing the battery.

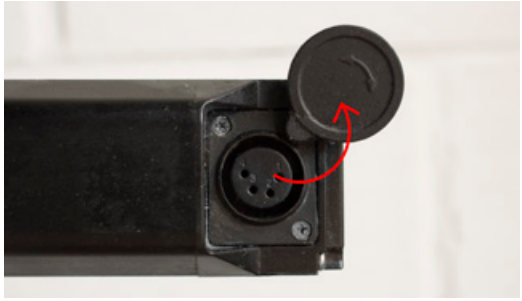
Twist the plastic dirt cover out of the way, then insert the charger into the socket. After this is complete, plug in the charger to the mains.

The red LED will be on while charging takes place.

When the red LED changes to green, the battery is charged.

Switch off the charger at the mains, before removing the charging plug.

Once charging is complete twist back the dirt cover to protect the charging socket.



Safety

Cycling, particularly off-road, can be dangerous. With the correct equipment and understanding, many of the risks can be minimised.

(!!!) Once you make up your mind to ride a eBike, you assume the responsibility for the risks involved as well.

We strongly recommend you always wear a helmet and appropriate clothing to reduce your risk of injuries from accidents.

High visibility clothing is ideal for when you are sharing roads or path with other users as it greatly increases the likelihood of you being seen.

When purchasing a helmet for an eBike, it is important to check whether it is in accordance with an applicable standard. The minimum requirement by law for helmets is a CE certificate.
When you are purchasing a helmet, try on several different styles and sizes. Choose one that is comfortable and safe, that fits well to your forehead and straps that are distant from your ears (see image below). Ensure you follow the instructions of the helmet manufacturer when attaching it.

(!!!) If the helmet was worn in an accident, it is essential that you replace it. Its shell may have been weakened, and the ability of the lining to absorb impacts may be limited.

Do not wear loose clothing while riding a bike. Make sure your clothes do not entangle with the moving parts of the eBike. Wear shoes that fit well to your feet with soles providing non-slippery contact with pedals. Never ride your bike with bare feet or sandals on.

For safety reasons, when riding, it is not recommended to listen to music through headphones as adequate reaction cannot be guaranteed by the cyclist to warning signals by other traffic participants.

Before each use:

- Check the reliability of the eBike including the stability and the proper installation of the saddle, the handlebar, the wheels and tyres, the pedals and the cranks;
- Check if the gears shift seamlessly and if needed, seek qualified assistance for their adjustment. You need to keep in mind that low gears are used when riding uphill, the middle gears – on flat terrain, and the high ones – when riding on descent;
- Check the effectiveness of the brakes.
- Check if you could easily reach the handles and if it is necessary - regulate them or seek qualified assistance for it;
- Adjust the quick release mechanisms and place the levers in the proper position;
- Make sure the seat post and the handlebar stem are not pulled out beyond the indicated marking for safety reasons;

- Lubricate the chain with appropriate lubricant, depending on the expected use;
- Check if reflectors and lights are correctly positioned and cleaned;
- Check if the fittings important for the safety are performed with the regulated torques, which are indicated in the present instruction.

(!!!) Do not use the eBike if you find worn, deformed or damaged parts and mechanisms until you have them repaired.

Tyres

The tyres should also be checked regularly for damage and wear and tear level. Do not use the eBike if there are any worn or damaged parts of the tyres.

Replace tubes and tyres as soon as you have discovered signs of wear or damage. Before replacing the tubes, tyres and rim tape, you must make sure that the new components are compatible with the old ones. Preferably have this operation carried out at a specialist service centre.

The maximum air pressure of the tube when inflating should be consistent with the specified one on the tyre, exceeding this pressure should be avoided.

Exceeding the allowable pressure results in cushioning effect being lost, traction deterioration as well as increasing the load on the tyre and the rim which results in their rapid wear and damage. Insufficient pressure involves risks of damaging the wheel rim, the tyre structure, tyre pinching and rupture of the inner tube, creating a higher rolling resistance and requires more effort in

controlling the eBike. Normal pressure is which allows for deformation of the tyre by 1/4 to 1/3 of the height of the profile with a loaded eBike.

(!!!) Before riding check the air pressure in the tyres. There is an increased danger of falling for the cyclist if the pressure is higher than the indicated figure; under-inflated tyres impair riding, could result in a damaged rim and highly probable inner tube rupture.
Use a hand or foot pump with a suitable pressure gauge to check the air pressure.

Should a rim be damaged due to a collision or natural “settling” of the spokes and nipples, you are advised to contact a specialist service centre, to have the necessary repairs and adjustments carried out.

Night Riding

It is UK law to always use electrical lighting when riding at night. Even if you can see where you are going, other traffic may not see you.

Wet Weather

Riding a bike in rainy and wet weather increases the likelihood of serious accidents. Your traction is reduced resulting in increased braking distances and reduced control. Avoiding sudden changes of direction, as well as harsh braking, minimises your risks. Further to this, other road users have reduced visibility and longer braking distances, and so to be safe in these conditions, always wear high visibility clothing.

Maximum Rider Weight

The load (rider and luggage) on your Mark2 should not exceed 120kg.

(!!!) Warning, do not exceed this maximum weight limit. Any overload carries the risk of a serious damage not only to the cyclist but to the eBike as well.

The eBike is designed and built to be ridden by one person only. Multiple riders increase the risk of accidents and serious injuries.

Luggage

The Mark2 is manufactured in accordance with an approved specification, and its safety is guaranteed by us. We cannot guarantee the safety of the eBike if the structure is modified in any way and modification will void your warranty.

If your eBike is manufactured with a carrier and front basket, you must take into consideration the maximum permissible weight of the luggage. This guarantees stability in riding, stopping, turning and changing directions. Under no circumstances should you exceed the weight on the rear rack by more than 10kg.

The luggage should be securely attached to the carrier, to prevent impeding the effectiveness of the lights. The position of the carrier should not be a cause for poor visibility and inefficient stopping.

No child seat or trailer coupling should be mounted on the eBike, as it reduces stability when riding the eBike.

We can not recommend vehicle eBike carriers that require the eBike to be mounted upside down. The eBike is not designed to handle the many forces that would likely be applied and so would be susceptible to damage.

Light and sound signals

Each time you use the eBike on the public roads, check whether the lights and the bell work and whether the cables are properly attached. Clean the reflectors regularly. Make sure the lamps and reflectors are not covered or hidden by luggage or clothing.

(!!!) Riding the eBike without a proper lighting system and reflectors is not safe, especially in the evening, at night, in fog, rain and dust with worsened view and can cause accidents with potentially serious consequences. Be very careful when riding in areas with a limited view such as slopes, bends or obstructions.

If the eBike is fitted with battery-powered lighting, make sure to regularly check the batteries. You need to use batteries of the specified type and voltage only; make sure to observe the correct polarity when placing them into the battery compartment. Do not mix old batteries with new or different type ones. Promptly remove the batteries if they are discharged or when not using the eBike for a long time to prevent damage to the contact surfaces.

Braking

The brakes on your eBike should be applied gradually rather than suddenly. The sudden application of the brakes can result in loss of control and reduced stopping distances.

The Mark2 is equipped with high-end hydraulic disc brakes that have superior stopping power and control compared to other types of brake. Even so, it is of particular importance to practice your braking method, if you are not confident. The eBike is likely to be travelling faster than a traditional eBike and typically with greater weight. This adversely affect your stopping distance.

If, under strong braking, the wheels lock up, release the pressure on the brakes slightly until rolling resumes. It is important to develop an instinctive sensitivity for the intensity of the power and pressure on the lever and, therefore, on the brakes of each wheel, at different speeds and different types of terrains. To acquire this sensitivity, complete short experiments cycling at low speeds, testing the brakes, applying greater levels of power to the lever until you understand when the eBike wheels lock.

To stop effectively, you should apply both brakes simultaneously. When you apply the brakes, the eBike starts to slow down, but your body inertia continues to move at the velocity with which you have travelled before activating the brakes and the burden shifts to the front wheel. During abrupt braking, the weight is shifted beyond the hub of the front wheel, which can result in being thrown forward over the handlebar, potentially suffering serious injury. Therefore, when you apply your brakes, you should shift your body backwards to move the weight on the

rear wheel. When riding down steep slopes, you should reduce the rear braking force and increase the front one, as when riding down a slope your weight normally shifts forward. Key elements for efficient deceleration and safe stopping are good sensitivity to avoid wheel lock up and proper weight shift. Practice the techniques of stopping and shifting the weight on safe areas where there is no traffic, hazards or other distractions while acquiring the right skills.

(!!!) Improperly adjusted brakes are a serious risk to your safety. Always make sure both brakes operate properly before riding the eBike. The adjustment or change of the brakes should be carried out at a specialised service centre only.

Practical

Emergency

It is recommended to have with you the following emergency set on the road:

- wrenches from 10 to 15 mm to use for tightening of screws when loose;
- a spare inner tube;
- tyre levers;
- pump for inflating tubes;
- a set of Allen keys (hex keys).
- an ID so the people who help you in case of an accident would know who you are;
- mobile phone.

In case of a flat tyre: Remove the damaged wheel and push onto the tyre valve to expel any air from the inner tube. Remove the tyre from the rim. If the edge of the tyre proves too hard to remove by hand, use special tyre levers.

Remove the inner tube. Inspect the external and internal surface of the tyre carefully to find any sharp objects that caused the damage. If it is left stuck in the tyre, you should remove it, If the tyre is cut, cover the cut on the inside with whatever you have at hand - adhesive tapes, back piece or a piece of inner tube to prevent damaging the inner tube by the cut. Repair the punctured inner tube with an adhesive tape or use a new inner tube.

Reinstall the tyre and inner tube, starting with placing one end on the wheel rim. Make sure

not to pinch the inner tube between the edge of the tyre and the rim.

Slowly inflate the tube up to the specified air pressure meanwhile making sure the tyre edges remain inserted in the rim. The control circle of the tyre and rim contour must be concentric. Manually screw in the plastic cap on the valve until it tightens properly. re-install the eBike wheel.

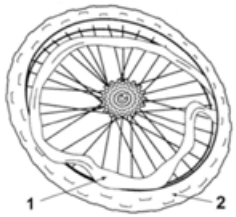
(!!!) A new inner tube is a better and more secure solution than simply repairing.

A wheel with a broken or sagged spoke is much more vulnerable compared to a wheel with well-tensioned spokes. If during a cycling a spoke gets broken you should return home at a very low speed and ride very carefully as the wheel is unbalanced due to the broken spoke which could result on other spokes being broken as well thus making the eBike unusable.

Wind the broken spoke around the closest one to avoid the risk of the free end whipping the wheel or being entangled between the wheel and the frame.

If the wheel does not rotate because of tyre friction on the frame, carry it by hand, if necessary. Contact a specialist service centre or seek qualified assistance.

1. Rim Tape
2. Rim
3. Valve



1. Inner tube
2. Tyre

Cleaning, lubrication and storage

Regular cleaning and lubrication prevents wear and tear and keeps your eBike in good condition. Additionally, this guarantees that the energy that you spend while riding is used predominately for pedalling and is not wasted in overcoming unnecessary friction. Clean and lubricate your eBike regularly. This is important especially after riding on an unpaved or wet road.

Regular cleaning protects the varnish coating and reduces the risk of corrosion. If you live close to the coast, it is necessary to increase the frequency of these actions.

Clean your eBike with a water moistened cloth or sponge. Use warm water with a detergent or car shampoo.

Do not use a high-pressure jet washer, gasoline, strong alkalis, aggressive or abrasive detergents to clean the eBike as they can cause damage.

Clean your eBike in an upright position on its wheels. Rinse with warm water, washing away all traces of the detergent from the brake pads and rims. Once this is complete, you should wipe dry with a cloth.

The chain of the eBike is a component that requires frequent cleaning and lubrication. We recommend cleaning and lubricating it once a week or at least fortnightly.

Do not allow the lubricant to reach the brake discs, calipers or the tyres. If that happens, you must wipe them immediately.

If you have passed through water, or ridden in wet weather, it is recommended to clean the chain before applying the lubricant. You should use a degreaser, which you can apply with a toothbrush or a special brush for chains, and then wash it away with water and sponge. Do not use paper to dry the chain since it tears up and jams the chain.

Have the chainring disassembled and lubricated once or twice a year at a specialist service centre.

When the eBike is not used for a long time, it is advisable to keep it indoors and suspended in such a way so that the tyres do not touch the floor. Storage indoors with high humidity, outdoors, at high or low temperature is not recommended.

Maintenance recommendations

After the first ride of the eBike its nuts, bolts, cables and wheel spokes undergo settling and will probably need adjustment. Even if everything seems all right it is always advisable to take the eBike to a service technician for a careful inspection. We advise you to do it within 10 days or after you have covered 20 - 30km.

- Regularly inspect the eBike for loose connections or worn parts. If you find a similar problem, immediately contact a service technician.

- Maintenance work and repairs must be performed at a specialist service centre by qualified professionals who use appropriate tools and follow the procedures specified by the manufacturer.

(!!!) Regardless of the circumstances, we do not recommend and shall not be held responsible for the safety of your eBike if the following repairs and setup of the brake system, the gear shift system, the straightening of the wheel rims and the tensioning the spokes have not been performed at a specialist service centre.

The maintenance, regulation and repair can significantly influence the safety of the eBike and become a cause for severe injuries and accidents.

After a long and demanding ride, or if the eBike has been exposed to water or sand, we recommend you:

- Clean the eBike and carefully lubricate the chain and gear unit always making sure to remove the excess oil.
- Inspect the frame, particularly in the tube joint areas, the handlebar, the handlebar stem and the seat post. If you notice deep scratches, cracks or discolouration on their surfaces, it means that they have been subjected to excessive loads and should be taken to a specialised service centre.
- Squeeze the front brake lever and push the eBike forward and backwards. If it does not behave in a stable way, contact a service technician for inspection and adjustment.
- Check that the brake pads are not worn beyond the thickness of the return spring.
- If the pads are smooth rub them with sand paper to roughen them to improve the bite on the disc.

- Inspect the cables and their encasing. In case of visible wear, rust, twisting or other deformation, contact a specialist service centre.

- Lift the front wheel off the ground and turn the handlebar in both directions. If you notice a slack or seizure of the bearings, contact a service technician.

- Squeeze between the thumb and forefinger each pair of spokes on each side of the wheels to check the tension. If you notice loose ones, contact a service technician to have the tension of the spokes and wheel centring inspected.

- Make sure that all parts and accessories of the eBike are secured and tighten any loose component.

WARNING! The eBike and its components experience high loads and wear. Materials and mechanisms respond differently to wear or load fatigue.

If the eBike component design life is overdue, the component may break suddenly and irreparably, potentially causing serious harm to the user.

Do not make any changes to the structure. Each eBike is manufactured in accordance with an approved specification, thus guaranteeing the safety by the manufacturer. If there is a need of replacement and/or repair do not perform these actions by yourself. Contact Mark2 or a service centre for advice or repairs.

We assume no responsibility for safety should unauthorised changes, or modifications have been made to the structure or replacement parts other than original have been used.

Deformed or damaged structural parts (frame, handlebar, forks, pedals, cranks, brakes, etc.) because of accidents and improper handling, should be replaced before your next use of the eBike due to the risk of their breakdown and the safety risks they involve.

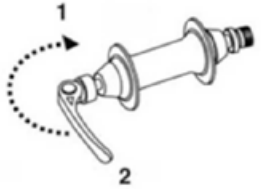
(!!!) You are required to have your eBike inspected in detail at a specialised service if it has been subject to an accident.

Quick Release Mechanism (QR)

The shape and mark of the QR clearly indicate “open” and “close” positions. eBike wheels are securely locked if the quick release mechanisms are properly adjusted, and levers are in the “close” position.

To make sure that the wheel is locked test if your hand experiences some resistance at the time of closing the lever. If the closing operation did not leave a mark on the palm of the hand, this means that the tension is not sufficient. In this case, open the QR mechanism lever, turn the adjusting nut to a quarter clockwise and then try again to close the lever. If you have any doubts about the successful result, contact Mark2 or a local eBike mechanic.

(!!!) An improperly adjusted mechanism for quick-release (QR) may bring about a shift or sudden disengagement of the wheels that could result in serious damage to the eBike and heavy traumas to the cyclist.



1. Open
2. Closed

Adjusting the wheel size

Press both arrow keys simultaneously.

Press the up or down arrow to increase or decrease the digits, then press the Mode button to change the next digit.

To store the wheel size in the display, you have to press the Mode button, until the display returns to normal.

The marked digits indicate the circumference of the wheel.

The circumference of the wheel is found by measuring the distance around the tyre from the valve to the valve. Type the measured value in the display.

Technical Information

Technical data

Gear:	Shimano Alivio, 9 speed
Motor:	250W brushless DC hub motor, planetary gear with freewheel
	Brushless DC hub drive
Controller:	PWM/microprocessor with LCD display and self-diagnostic system
Mode:	PAS (Pedal Assist System) (EU standard EN EPAC 15194)
Weight:	Scrambler 19.2kg
	X-Cross 21.7kg
Range:	45-100 km
Charge Time:	4-5 hours

Torques

Always follow the recommended torques when fixing screws, bolts and nuts. Otherwise, there are conditions for breaking and damaging of different parts or threads and the safety of the cyclist is at risk.

Torque	**Value (Nm)**
Bolt for handlebar stem	20-22
Pedals	36-41
Nuts for rear wheels	23-27

Troubleshooting LCD Error Codes

The error indicator appears on the display indicating any system errors.

Error codes from E02 to E09 indicate the type of error. The final diagnosis of errors requires professionals. Please contact info@mark2.co.uk or visit mark2.co.uk

Error codes	Description	Possible solution
E02	Indicate errors in power consumption.	Contact Mark 2.
E03	Indicate errors in the controller.	Contact Mark 2.
E04	Indicating errors on the throttle.	Ensure the throttle is at resting position, then check the handle.
E05	Indicate errors in the front brake.	Set the handbrake in the starting position.
E08	Low battery voltage	Charge the battery
E09	Overvoltage	Check battery voltage

General Information

Environment

Department for Transport figures show that currently, for every journey between 2-5 miles made by a eBike, 20 are made by a car. These car journeys are playing a significant role in the rising levels of hazardous air pollution in our cities and increasing the dangerous effects of global climate change We must reduce our reliance on fossil fuel powered cars for the health of our environment and ourselves.

Users of electric bikes are much more likely to travel distances of 2-5 miles (or more) compared with users of traditional bikes, and so as the entire eBike market grows, the use of cars for these shorter journeys should decrease.

While in most circumstances the electrical power needed for an eBike is abstracted from a carbon-heavy national grid, the amount of power needed is relatively minimal. As a result, the carbon footprint compared to a fossil fuel, or even an electric car, is almost negligible. This is why we believe eBikes have the potential to be a key tool in a clean and healthy future for us all.

Lithium-Ion batteries are currently the best battery technology available. But they are not perfect. There are many serious environmental consequences in using Lithium-Ion. The mining is dirty and the lithium is an unsustainable rare earth mineral, which is toxic to the environment. It is a matter of time before a cleaner technology becomes available and we will use that technology as soon as it is reasonably possible. To avoid damaging the environment we ask you dispose of your batteries at a household recycling centre. The batteries cannot and

should not be disposed of in your household waste or recycling bins.

Legal

To be legally allowed to ride on public roads, each of our bikes has been manufactured in accordance with the UK, EU and Global standards.

(!!!) The product packaging (plastic, cardboard, polystyrene bags) should be kept out of reach of children - both during unpacking and afterwards. This will prevent the risk of strangulation and/or asphyxiation (suffocation) due to the entanglement of the pack around the child or external obstruction of the airway through the mouth or nose.

Mark2 Guarantee Programme

Mark2 Bikes guarantees that all of our bikes are free from defective materials, constructional defects and oxidisation (rusting) so long as the conditions set out in this Mark2 Guarantee Programme are met.

The rights from the Mark2 Guarantee Programme are only applicable to the first owner of the eBike. These rights are in no way transferable.

Specification and terms of the Mark2 Guarantee Programme

- A guarantee for the period of 2 years applies to the frame, batteries, other

electronic equipment and all other Mark2 parts (including the paint and clear coat) after the date of delivery. For the parts of third parties, the guarantee conditions for the relative producer are valid and applicable.

- The guarantee does not apply to parts that are susceptible to wear and tear, such as tyres, chains, brakes, cables, cassettes, derailleur in the circumstance that they are not assembly or material defects.

The guarantee lapses in the event:

- The eBike has been used for rental or any other professional purposes;
- The eBike has been subject to damage due to use in competitions, jumping, downhill, trial or due to exposing/ riding the eBike in severe conditions or climates.
- The eBike has been involved in an accident.
- The eBike has been operated in a manner not concurrent to its sort and type. This includes any other means that deviate from the usual.
- The eBike has been assembled with non-original parts.
- The first owner has transferred the eBike to a third person.

Mark2 Bikes Ltd has the ultimate decision on the acceptance of a guarantee claim and the choice between replacement or reimbursement.

Liability

Mark2 Bikes excludes any and all liability for damage to the eBike or parts that have arisen from incorrect tuning of moving parts, the improper use of the eBike and the improper maintenance of the eBike. This includes damage as a result of untimely replacement of parts which suffer wear and tear.

Under the circumstance that a claim is accepted by Mark2 Bikes, this does not imply an acceptance of the liability for possible damages. Mark2 excludes all liability for which we are not legally bound to compensate these damages.

The guarantee offered in the Mark2 Guarantee Programme is an addition to the legal rights in your respective country.

Battery Registration

Your Mark2 uses a Promovec manufactured battery which comes with a 2-year capacity guarantee. The guarantee covers a guaranteed minimum capacity of 70% in 2 years from the date of purchase.

To qualify for this 2-year capacity guarantee, the battery must be registered on the Promovec website. Registration must take place within 8 days from the date of delivery.

Mark2 expressly highlights that the battery capacity and thus the range weakens over time and the intensity of use.

Insurance

In relation to insurance matters, the electric bike is regarded as an ordinary bike; thus it is usually covered by an ordinary family household insurance. However, we recommend that you talk to your insurance agent about the insurance aspects of the electric bike.

Notes

www.mark2.co.uk