



## X-CROSS & SCRAMBLER



Images in this user manual are for illustrative purposes only and subject to change.



## USER MANUAL

Models covered: X-Cross 450, X-Cross 520, Scrambler 430, Scrambler 480

## Product details

### Type

- Scrambler 430                       X-Cross 450  
 Scrambler 480                       X-Cross 520

Frame number:

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### Power Pack

- 10.4Ah (375Wh) Promovec Li-ion smart memory power pack  
 12.8Ah (460Wh) Promovec Li-ion smart memory power pack

Serial number:

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**Register your battery for warranty online at**  
**[www.promovec.com/en/warranty-and-registration](http://www.promovec.com/en/warranty-and-registration)** (sic)

Purchase date

PDI carried out by:

   /   /     
\_\_\_\_\_  
DD  MM  YYYY

### **Please read the manual fully before use.**

If safety precautions are not respected then your warranty could be void.

For your safety and to ensure optimum performance always check operation of brakes, lights, bell and gears.

Check tyre pressures are correct (see tyre wall for pressure info).

Check all fasteners and release mechanisms before every ride.

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## Warnings

**Important! Always read the safety instructions before use. If the precautionary measures described are NOT followed, the warranty is void.**

- To ensure that the charger and battery are handled in a safe way, and that users involved understand the danger thereby, charging of the battery must only be handled by persons aged 8 and up. Persons with reduced physical, sensory or mental abilities, lack of experience or knowledge must be supervised or trained in the use of the battery and charger. Do not let children play with the battery and/or charger. Children must be supervised if they perform any kind of cleaning and/or maintenance
- DO NOT attempt to recharge non-rechargeable batteries with the battery charger
- For safety reasons, if charging the battery indoors then the battery should be recharged in a room with a fire alarm installed
- Only charge the battery with the included charger
- Do not dismantle or damage the battery
- Only use the battery included
- Do not throw the battery into a fire
- Do not immerse the battery in water or any other liquid
- Never charge the battery at temperatures below 32°F (0°C) or above 113°F (45°C)
- Do not heat, short circuit, puncture or otherwise mistreat the battery
- Do NOT change/manipulate the electrical system
- Disposal of batteries, see page 19
- Transportation of e-bike, see page 21



## Product description

The Scrambler and X-Cross are the perfect choice if you want an electric bike that can be used for varied purposes, as the bike is suitable for riding on both flat and hilly terrain.

The motor is integrated in the rear wheel and the battery is integrated in the frame. In that way the weight distribution is optimal.

The bike is UKCA marked and produced according to the guidelines in the standard BS 15194:2017.

### Note!

- Use of a bike trailer in combination with the e-bike is not allowed
- Always use original spare parts when replacing electrical components
- Do NOT clean the e-bike with a high-pressure cleaner
- If the electrical system is modified the warranty is void



## Class 2 description

Class 2 covers bicycles and Epacs that includes condition 1 as well as unpaved and gravel roads and trails with moderate grades. In this set of conditions contact with irregular terrain and loss of tire contact with the ground may occur. Drops are intended to be limited to 15cm or less.

Intended average speed range: 15–25km/h.

Intended Drop/Jump height: <15cm.

Intended riding purpose: Leisure and trekking with moderate effort.

## Quick start

1. Mount the battery (see page 17) and press the ON/OFF button.
2. Start pedalling and the motor will start assisting according to the assist level selected.
3. Adjust the assist level with the "Up" and "Down" arrows.
4. The assist function will cut off when the user stops pedalling or when the bike exceeds 24,6 km/h.

See page 8 for a more thorough explanation covering the display and buttons.



### ON / OFF-Button

Press and hold the button until the system turns ON/OFF. NB! The system will turn off after 5 minutes without use.



### Selecting Assist-level

Arrow up - Arrow down

### Note!

If you have the optional large centre LCD fitted then the appearance will vary but the functionality is the same (see page 13 for guidance).

## The Throttle

When the throttle is twisted towards you then the assist functionality is bypassed and the "Booster effect" is activated. Release the throttle and the system returns to assist mode.

The throttle has several purposes, for example:

- When pushing the bike up a hill, turning the throttle will activate "walk-assist". This means the bike will move at 6 km/h until the throttle is released
- In heavy traffic where short bursts of extra power is required e.g., in situations with overtaking of slower cyclists
- When it is required to reach max speed faster than when using level 4 assist level

## Display functions

You can manage the display from the left side of the handlebar. There are 5 function buttons and a throttle lever.



Light

Arrow up

Menu

Arrow down

On/off

## Light ON/OFF

Toggle the light ON/OFF by pressing the button. Note that the background light will dim down when the light is "ON".



## Menu function - TRIP - ODO

Press the Menu button to switch between ODO and TRIP Counter. TRIP is reset by holding down the Menu button for 2 seconds. ODO functions show the total distance ridden.



## Throttle

The throttle is operated by twisting towards you.







## Assist-level

The selected assist-level is displayed in the right side of the display. It defaults to level 1 when switched on.



## Current speed

Here the current speed is displayed.



## Battery indicator

Here you can see the status of your battery. The indicator flashes when the minimum level is reached. Be aware that the system may turn off if the battery level falls below minimum level.



## ON/OFF-Button

Press and hold the button until the system turns ON/OFF. NB! The system will turn off after 5 minutes without use.



## Selecting Assist-level

Arrow up - Arrow down

**Level 4** - is the highest level

**Level 1** - is the lowest level.

**Level 0** - (only bottom bar with the bike icon). The assist function is off; however, the throttle is still usable.

## Troubleshooting

Errors are displayed, with a code and a description in the display info area. If an error is displayed, then it is a signal about an error in the electrical system. When an error is displayed it must be remedied before the motor is able to start. Check the table below for more information covering error codes.

The error indicator has the following error codes

ERROR CODE	MEANING	SOLUTION
E0 <sup>2</sup>	Motor error.	Check that the connectors are connected (at the front fork) or contact your retailer.
E0 <sup>3</sup>	Controller error.	Contact your retailer.
E0 <sup>4</sup>	Display error.	Contact your retailer.
E0 <sup>5</sup>	Front brake error.	Contact your retailer.
E0 <sup>8</sup>	Low voltage error.	Recharge the battery.
E0 <sup>9</sup>	High voltage error.	Contact your retailer.

## Wheel size settings

Setting the wheel size is done by pressing the "up" and "down" simultaneously.

Use the arrow "up" or "down" to increase or decrease the wheel size. The numbers representing the wheel size are modified one by one. Accept and continue to the next number by pressing the "menu" button. Repeat until all numbers are correct.

Save the wheel setting by pressing the "menu" button until the display returns to normal.



The numbers representing the wheel circumference are displayed here. - Measured in cm.

### N.B.

Toggle between km/h and mph by holding the "down" arrow in for 10 seconds. - if km/h is off then mph is displayed.

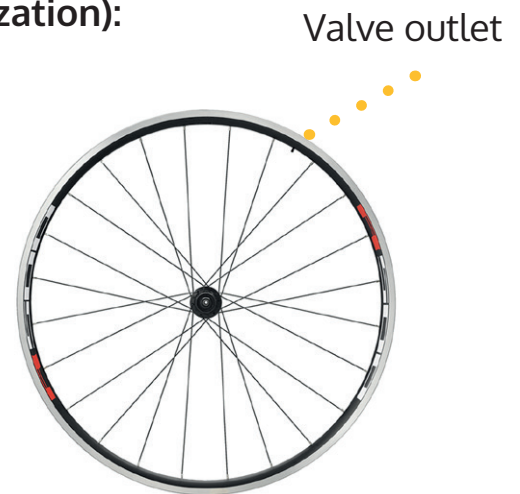
## Wheel size

The speed display can be adjusted by changing the wheel circumference. Wheel circumference is found by measuring the wheel from valve to valve.

(Check the table below for reference)

**TO (European Tyre and Rim Technical Organization):**

ETRTO	TYRE SIZE	LENGTH
40-406	20x1.50	1490
47-406	20x7.75	1515
50-406	20x1.95	1565
47-507	24x1.75	1890
50-507	24x2.00	1925
54-507	24x2.125	1965
40-559	26x1.50	2010
47-559	26x1.75	2023
50-559	26x1.95	2050
54-559	26x2.10	2068
35-622	700x35C	2168
38-622	700x38c	2180
40-622	700x40c	2200
42-622	700x42c	2224
44-622	700x44c	2235
45-622	700x45c	2242
47-622	700x47c	2268



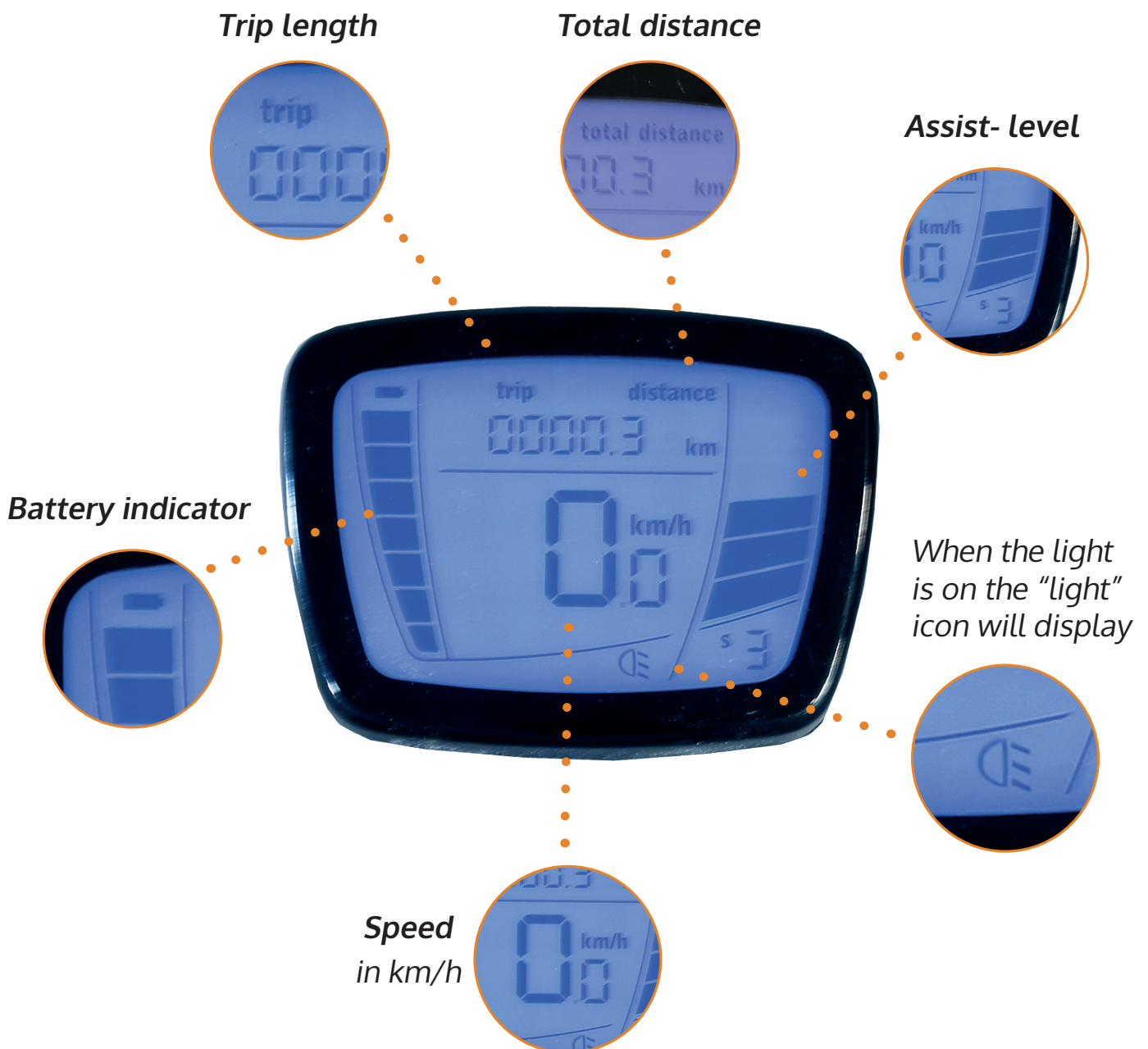
## **OPTIONAL** Centre LCD display

### Display functions

You can manage the display from the left side of the handlebar. There are 5 function buttons and a twist throttle (see next page).

An error indicator is integrated into the display. Read more about error codes and troubleshooting on page 15.

Press the "menu" button to toggle between "Trip distance", "Total distance" or to enter wheel size settings - see page 12 for more information about wheel sizes.

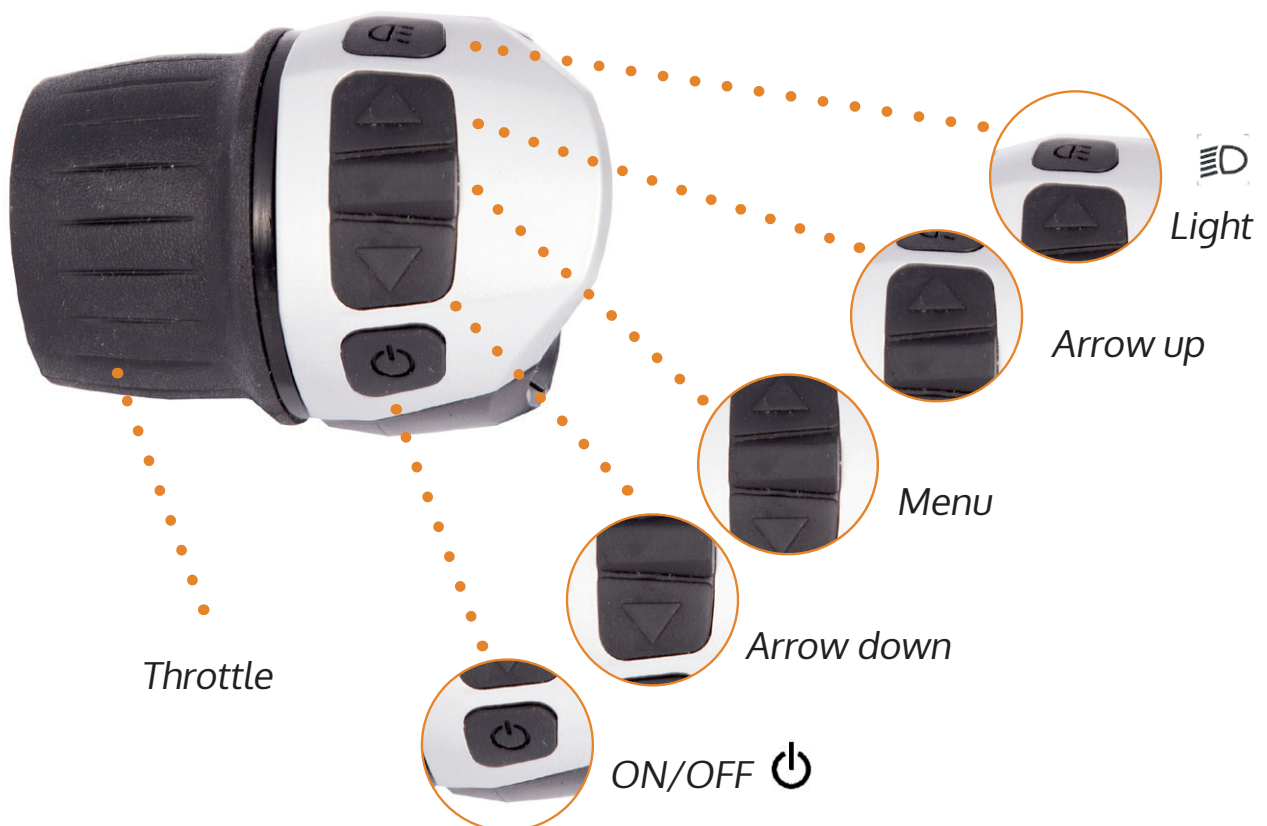


## The Throttle

When the throttle is twisted toward you the assist function is overridden to activate "Booster effect". Release the throttle and the system returns to assist mode.

The throttle has more than one purpose, for example:

- When pushing the bike up a hill, turning the throttle will activate "walk-assist". This means the bike will move at 6 km/h until the throttle is released
- In heavy traffic where short bursts of extra power is required e.g., in situations with overtaking of slower cyclists
- When it is required to reach max speed faster than when using level 4 assist level



## Troubleshooting - Centre display

If an error code is displayed, then it is signal about an error in the electrical system.

The number indicates the type of error.



FLASHES	MEANING	SOLUTION
2	Motor error.	Check that the connectors are connected (at the front fork) or contact your retailer.
3	Controller error.	Contact your retailer.
4	Display error.	Contact your retailer.
5	Front brake error.	Contact your retailer.
7	Sensor error.	Contact your retailer.
8	Low voltage error.	Recharge the battery.
9	High voltage error.	Contact your retailer.

## Wheel size settings

Setting the wheel size is done by pressing the "up" and "down" simultaneously.

Use the arrow "up" or "down" to increase or decrease the wheel size. The numbers representing the wheel size are modified one by one. Accept and continue to the next number by pressing the "menu" button. Repeat until all numbers are correct.

See page 12 for wheel size information.

**Save the wheel setting by pressing the "menu" button until the display returns to normal.**



The numbers representing the wheel circumference are displayed here. Measurement in cm.

### Note!

Toggle between km/h and mph by holding the "down" arrow in for 10 seconds. - if km/h is off then mph is displayed.





## Installing and removing the battery



Push the battery all the way into the downtube and lock the battery by turning the key to the right. You can only remove the key if the battery is properly mounted and locked in place.



When the key is turned to the right, press the battery button that is highlighted on the photo to release the battery.



Support the battery with one hand, then remove it from the frame by turning the key left and pushing the battery up and pulling down. The battery is a snug fit, so if too tight to remove, a sharp tap on the side of the downtube with the heel of your free hand will help release it.

## Battery charger/Charging

Recharge the battery with the charger according to the manual that is included with the charger. Recharging of batteries must be done indoors or under a roof in a dry environment under supervision.

**Note!** For safety reasons, if charging the battery indoors then the battery should be recharged in a room with a fire alarm installed.

## Battery capacity and use

Your Mark2 bike uses maintenance-free Li-ION batteries. The battery delivered with your bike is about 40-60% charged at the factory.

Before using the battery, it must be fully charged with the supplied charger (Green LED lights).

We recommend that the battery stays connected to the charger for 24 hours after the green light appears, as it provides a better balance between each cell in the battery. The optimal charging environment would be at 20°C (68°F).

Frequent charging of the Li-ION battery can extend the battery life. Be aware that the capacity of the batteries decreases over time. Several factors, such as low temperatures, tyre pressure, weather/road conditions, user weight and own physical effort has an influence on the range of the battery. As a user, you therefore have a big influence on the range.

## Winter storage

If the electric bike is set aside for storage (more than one month), it will be enough to recharge the battery once a month for 24 hours to keep the battery in good condition.

The battery should always be fully charged in storage since it cannot stand fully or partially discharged for a long time.

**If the battery is not charged at least once a month the warranty will be void.**

## Disposing of battery

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

Batteries are marked with the crossed-out rubbish bin icon. It symbolizes that wasted batteries must not be disposed of with normal household waste but must be collected separately.



It is important that you submit your used batteries to the collection systems established. In this way, you help to ensure that the batteries are recycled in accordance with the law and will not harm the environment.

All municipalities have established collection systems, where wasted portable batteries can be collected from households or disposed at recycling stations and other collection sites. Additional information is available from your local authority.

## Battery registration

Register your battery at [Promovec.com](https://www.promovec.com) and obtain a 2-year capacity guarantee with a third year backed by Mark2. In addition to the prevailing sale of goods act, 2-year guarantee/warranty provider Promovec A/S offers a 2-year capacity warranty on all batteries for electric bikes equipped with Promovec's electrical system, purchased from Mark2, and used for private use.

The guarantee covers a guaranteed minimum capacity of 70% in 3 years from the date of purchase.

To qualify for this 3-year capacity guarantee the battery must be registered at [Promovec.com](https://www.promovec.com). Registration must take place within 8 days from the date of purchase.

## Maintenance

It is recommended to clean the bike and lubricate moving parts at regular intervals.

In order to maintain and preserve your electric bike's condition, we recommend an inspection two times a year, and at least once a year by a professional workshop.

Be aware, that wearing parts such as tyre, chain, brake pads are replaced as needed.

Do NOT use a high-pressure cleaner when cleaning the bike as it may damage the electrical components.

## **Transportation of e-bike**

If the electric bike is due to be transported, this must be carried out in a responsible manner. We recommend that the bike is transported with an approved bicycle carrier marked with TÜV and is specially made for electric bike. The reason being, that electric bikes are heavier compared to traditional bike, which requires a bicycle carrier with a larger load capacity.

Before transporting your electric bike, remove the battery and cover the bike for any humid weather conditions.

## **Road Traffic Law**

The electric bicycle is part of the road traffic laws, such as regular bicycles. According to the "Order on traffic law" under section 49. You can read more about this [here](#).

You are therefore considered a cyclist in traffic with the same driving conditions. It is recommended to wear a helmet and have the right lights equipped for your bicycle.

## **Insurance**


An electric bike for insurance purposes is an ordinary bicycle, it can usually covered by a standard household insurance.

However, we recommend that you talk to your insurance agent about the technical aspects of an E-bike.

## **Frame number**

The electric bicycle is provided with a frame number. It is located on the bottom bracket under the crank.

## Battery specifications

<b>Charger:</b>	Swift mode, Splash proof. Charging time; Depends on battery capacity.
<b>Downtube 1 Battery (DT1)</b>	

## Approvals

The e-bike bicycle is UKCA/CE approved and thoroughly test by TÜV representatives ensuring that your electric bike is compliant with regulations for UK and EU countries.

## UK - Declaration of conformity

This declaration is issued at the responsibility of the manufacturer. In case the product is modified in any kind or way which is not coordinated with Mark2 Bikes and Promovec A/S this declaration of conformity is no longer valid.

<b>Declaration of conformity according to:</b>
Supply of Machinery (Safety) Regulations 2008
Electromagnetic Compatibility Regulations 2016
Design meet requirements in BS 15194:2017

## Technical data - Scrambler 430 / 480

**Gear:** Shimano, 27 speed Shimano

**Motor:** 250 W rear wheel motor

**Mode:** PAS (Pedal Assist System)  
(EU standard EN EPAC 15194)

**User Weight:** Max. 120kg



Pictures is for illustrative purpose and subject to change

## Technical data - X-Cross 450

**Gear:** Shimano, 10 speed Shimano

**Motor:** 250 W rear wheel motor

**Mode:** PAS (Pedal Assist System)  
(EU standard EN EPAC 15194)

**User Weight:** Max. 120kg



Pictures is for illustrative purpose and subject to change



## Technical data - X-Cross 520

**Gear:** Shimano, 10 speed Shimano

**Motor:** 250 W rear wheel motor

**Mode:** PAS (Pedal Assist System)  
(EU standard EN EPAC 15194)

**User Weight:** Max. 120kg



Pictures is for illustrative purpose and subject to change





# SERVICING

In order to maintain and preserve your electric bike's condition, we recommend an inspection two times a year or at least once a year. The inspection should include a check of brakes, tyres, steering and cables. A service check can be ordered at your dealer or directly with Mark2 Bikes by visiting [mark2.co.uk](http://mark2.co.uk).

<i>Date &amp; company stamp</i>	<i>Date &amp; company stamp</i>
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