

magnum

Cosmo S



PLEASE READ ME FIRST

www.magnumbikes.com

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1. General Introduction

1.1 Welcome

Thank you for purchasing a Magnum electric bike, and welcome to the Magnum Bikes family of e-bike enthusiasts. We encourage you to join our Facebook group "Magnum Bikes Community". Our Facebook group is a place for Magnum riders to ask questions, have discussions, share recommendations and experiences and connect with other Magnum Bike enthusiasts. You can find the group linked here: <https://www.facebook.com/groups/389290978573773>

1.2 Use of Manual

We encourage you to read this manual thoroughly before you take your new E-bike for a ride. It is essential not to overlook the safety instructions and explanations of both traditional and non-traditional bike parts. So please take a moment to read through the various sections before you get in the saddle.

1.3 Service and Technical Support

This manual is intended as a general overview of your new E-bike, and is therefore not an extensive reference. Please consult your local Magnum dealer or Magnum customer support team for technical support, including information about service, maintenance, and repairs. In addition, you can visit our website (www.magnumbikes.com) for more information about our products and technology or find a dealer close to you.

***Disclaimer**

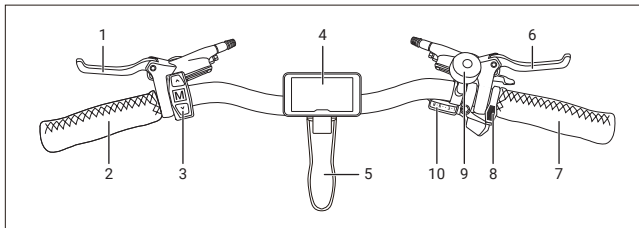
Because it is impossible to anticipate every situation or condition which can occur while riding, this manual makes no representations about the safe use of bicycles under all conditions. There are risks associated with the use of any bicycle which cannot be predicted or avoided, and which are the sole responsibility of the rider. You should keep this manual along with any other documents that were included with your bicycle. All content in this manual is subject to change without notice. Magnum Bikes makes every effort to ensure accuracy of its documentation and assumes no responsibility of liability if any errors or inaccuracies appear within. Assembly and initial adjustments of your Magnum e-bike requires special tools and skills. It is recommended that this be done by a trained bicycle mechanic if possible.

1.General Introduction

1.4 Bike Components



- | | | | |
|--------------------|--------------------------|-------------------|----------------------|
| 1. Rear Light | 7. Rear Disc Brake | 13. Kickstand | 19. Adjustable Stem |
| 2. Rear Fender | 8. Saddle Handle | 14. Chain | 20. Front Light |
| 3. Motor | 9. Saddle | 15. Pedal | 21. Front Fender |
| 4. Free Wheel | 10. Seatpost | 16. Crankset | 22. Tire |
| 5. Rear Derailleur | 11. Saddle Quick Release | 17. Controller | 23. Front Fork |
| 6. Carrier | 12. Battery | 18. Fender Holder | 24. Front Disc Brake |



- | | | | |
|---------------------|---------------------|----------------------|-------------|
| 1. Left Brake Lever | 3. Display Controls | 6. Right Brake Lever | 9. Horn |
| 2. Left Grip | 4. Display | 7. Right Grip | 10. Shifter |
| | 5. Adjustable Stem | 8. Thumb Throttle | |

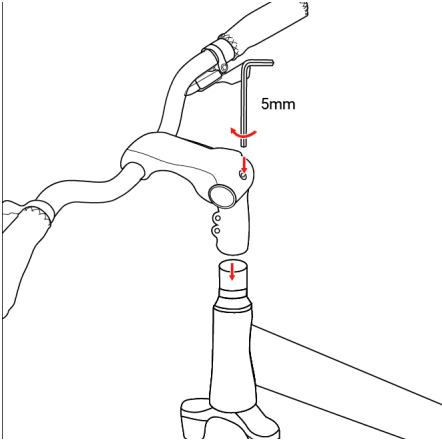
1. General Introduction

1.5 Technical Data

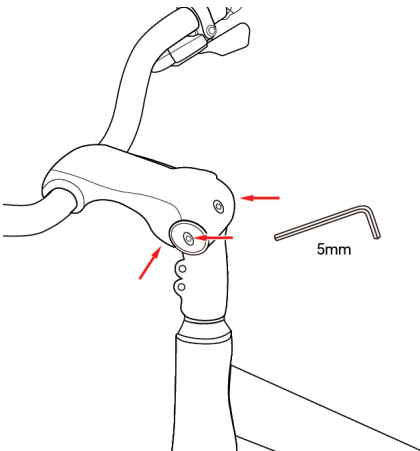
Component	Cosmo S
Motor	48V, 500W Bafang Rear Geared Hub Motor
Battery	48V 15Ah Lithium Ion
Display	Magnum LCD Display
Throttle	Thumb Throttle
Front Fork	SR Suntour NVX Suspension Fork with lockout and preload adjustment
Crankset	Lunfeng 52T*170mm
Brakes	Artek Mechanical Disc Brakes
Derailleur	Shimano Tourney Derailleur 7 Speed
Freewheel	Shimano 7 Speed
Tires	Innova 26" x 2.35"
Front Light	Integrated Front Headlights Controlled From Display
Rear Light	Integrated Taillights Controlled From Display & Brake Activated
Max Loading ¹	275 lbs
Max Speed ²	Cadence sensing PAS up to 25mph, trigger throttle up to 20mph
¹ Max load includes the bike	
² Can be configured to class 1, 2, or 3 e-bike	

2. Installation and Adjustment

2.1 Handlebar and Stem Assembly



Lift the handlebars/stem and align the stem with the head tube. Slide the stem onto the head tube and tighten the bolt at the top of the stem with a 5mm hex.



To adjust the angle of the stem use a 5mm allen wrench to loosen the two side bolts, then loosen the wedge bolt. Adjust the stem to your desired angle and then tighten the wedge bolt followed by the side bolts.

2. Installation and Adjustment

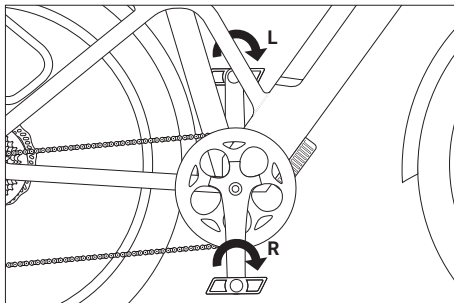
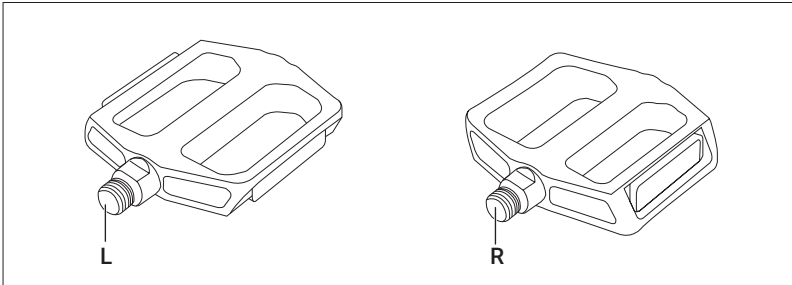
2.2 Assembly of the Pedals

Identify your pedals: check the letters on the pedals, "L" or "R".

The "R" marked pedal is for the right (when facing the forward direction). For attachment to the crank, tighten clockwise.

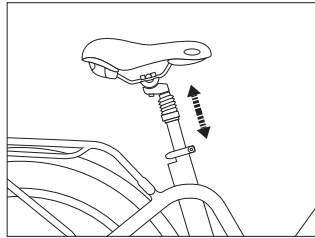
The "L" marked pedal is for the left. For attachment, tighten counterclockwise when facing directly.

⚠ WARNING First screw on the pedals by hand, then tighten with the wrench provided.



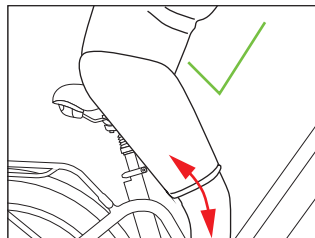
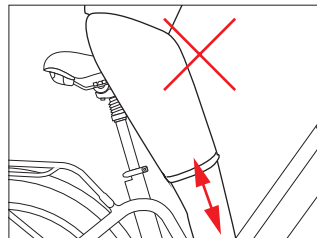
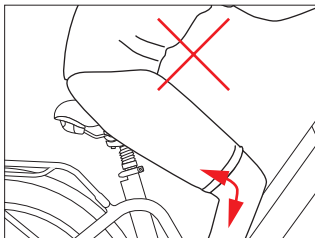
2. Installation and Adjustment

2.3 Seat Position



To enable comfortable, fatigue-free and safe riding, the saddle and handlebar height should be adjusted to the body size of the rider.

The saddle height is correct if the leg is near full extension while the foot is resting flat on the pedal in the bottom position of the crank cycle. The toes must still be able to touch the ground comfortably.



Optimal

2. Installation and Adjustment

2.4 Saddle Height

The quick-release lever must require noticeable effort to put into fully closed position to prevent any undesired movement while riding.

⚠ WARNING

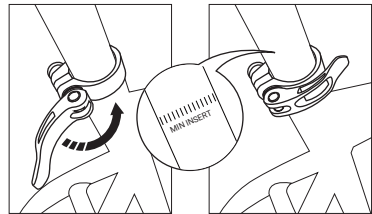
An improperly closed quick release lever can open again or have limited ability to keep the saddle in place. This may cause the saddle to suddenly drop into the seat tube, potentially leading to serious falls and injury.

There is a minimum insertion line marked on the seat post (failure to observe the minimum insertion line can result in serious injury); please ensure the seat post is always inserted into the seat tube beyond this line (the line must be inside the seat tube).

Loosen the quick release lever at the top of the seat tube, determine the appropriate saddle height and tighten the clamp.

The clamping force can be adjusted by adjusting the bolt on the quick release lever.

The quick release lever must be closed with considerable counter pressure.



2. Installation and Adjustment

2.5 Saddle Adjustment

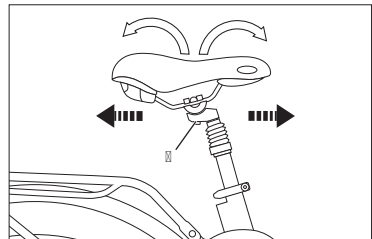
The saddle can also be tilted and adjusted in the forward/back direction.

Loosen the bolt at the bottom (4).

Adjust the saddle tilt by pressing down on the front or rear of the saddle

Move the saddle forward or backward to adjust for arm/torso length and desired riding position.

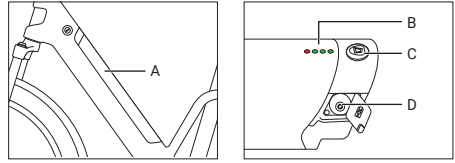
Tighten the bolt (4) to secure the saddle.



3. Battery and Charger

3.1 Overview

- A Battery
- B Capacity Level Light
- C Power Button
- D Charging Socket

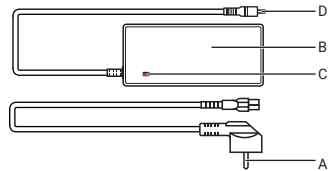


⚠ WARNING

Please ensure that the battery is locked in place before use

- A AC Plug¹
- B Charger
- C Charging Indicator
- D Battery Plug

¹Type will vary



3.2 General Remarks

Stop charging the battery immediately if you notice anything unusual, such as smoke or a strange smell; take out the battery and store it outside of the house, then take the battery to an authorized dealer or experienced technician for service or replacement.

In the unlikely case that the battery catches fire, do NOT attempt to put it out with water. Use sand or another fire retardant instead and call emergency services immediately.

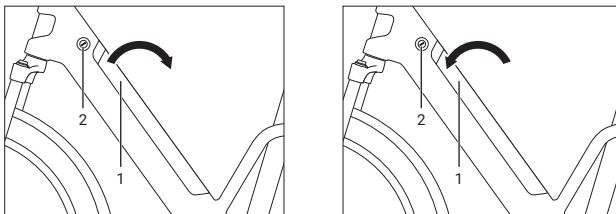
3.3 Installing and Removing the Battery

The battery (1) is secured with a lock (2)

Unlock the battery and pull it out

Insert the battery (1) into the frame until it stops

Remove the key from the lock (2). Ensure that the battery is well secured



3.4 Charging

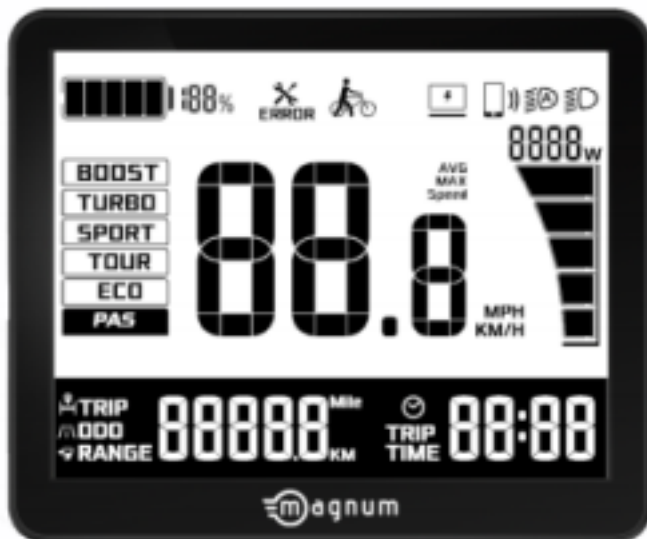
Charging at temperatures below 32°F (0°C) or above 140°F (60°C) can cause the battery to charge insufficiently and can be harmful to the life of the battery

During charging, the charger's LED light will be continuously red

Charging is completed when the charger's LED turns green

4. Display

4.1 Appearance



Powering ON/OFF

Press and hold the power button to turn ON the display. A start-up screen (see image below) will display for approximately 2 seconds before entering the main interface showing real-time information.

To turn the display OFF press and hold the power button until the screen goes blank. The display will turn off automatically if no operations are performed within the set sleep time, while the speed is 0, and current is less than 1A. The sleep time can be set by the user in the settings interface.

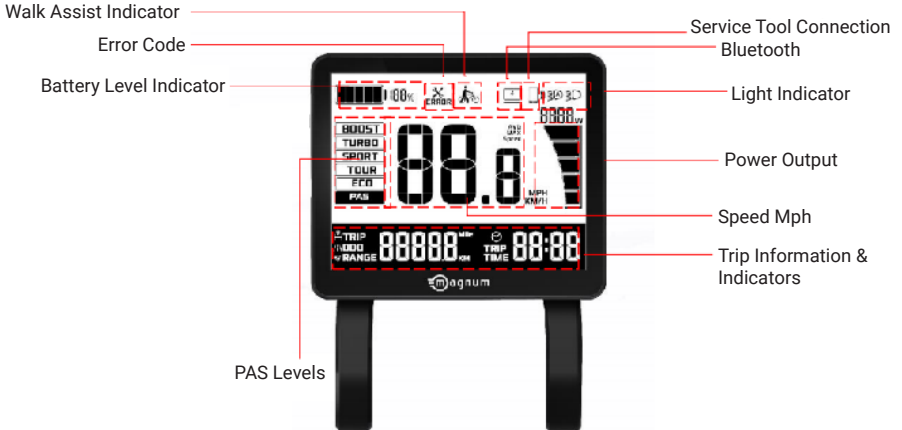


Start-up Screen

Main Interface

4. Display

4.2 Indicators & Buttons



Button Functions

Power ON: Turns the display ON/OFF

Adjust Up/Down: Changes the level of pedal assist during riding and switches functions in display settings

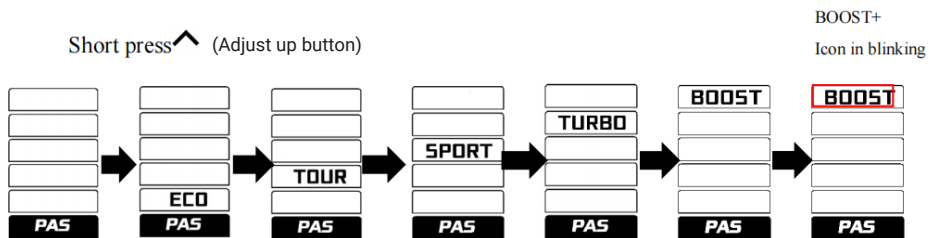
Mode Function: Switches interface functions and enters into the display settings

4.Display

Pedal Assist Level

Short press the arrow buttons to adjust the pedal assist level up or down. There are 5 PAS levels: ECO, TOUR, SPORT, TURBO, BOOST, and BOOST+. BOOST+ is indicated by a blinking BOOST icon. When PAS level is empty it means pedal assist is off.

PAS levels do not switch in cycles. Meaning, after reaching the BOOST level pressing the up arrow will NOT cycle the levels back to the beginning. The user must use the down arrow button to switch back down to PAS off.



Short press  (Adjust down button)



4. Display

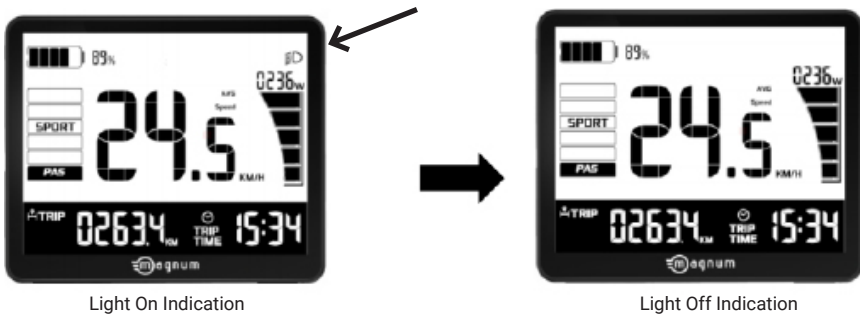
Trip, Odometer, & Range

Short press the M button to switch from TRIP, ODO, & RANGE on the display. The cycle order is TRIP/AVG, ODO/MAX, then RANGE/AVG. After 5 seconds with no operation performed on the M button and the bike speed greater than 0 the display screen will switch back to the main interface. The symbols below will indicate which value is being shown.



Light Control

Long press the adjust up button to turn the headlight on and off. While the headlight is on the display's back light is dimmed.










Speed Indication

The standard readout is real time speed, and can be switched to show average speed (AVG), and maximum speed (MAX).

How to change speed readout...

Battery Power

Battery power is shown by a battery bar indicator and percentage. The battery bar divides the power level into 5 bars. After battery capacity is lower than 5% the display enters low voltage mode. In this mode the battery level shows 0 bars. The battery outline will start blinking after reaching 1Hz, and with no power output from the motor, pedal assist will be disabled. The PAS level is displayed as OFF or 0. To get out of low voltage mode the battery will need to be charged.

SOC	Battery level	Description
$80\% \leq \text{SOC}$		Full battery level 5
$60\% \leq \text{SOC} < 80\%$		Level 4
$40\% \leq \text{SOC} < 60\%$		Level 3
$20\% \leq \text{SOC} < 40\%$		Level 2
$10\% \leq \text{SOC} < 20\%$		Level 1
$5\% \leq \text{SOC} < 10\%$		Level 0
$0\% \leq \text{SOC} < 5\%$		Level 0 and icon blink at 1Hz

Walk Mode

When speed is below 3mph long press and continue to hold the adjust down (down arrow) button to enter walk mode. Upon entering walk mode the display will show a walk mode symbol and the real-time speed while the PAS level displays as off (see image below). Release the adjust down button to exit walk mode. The motor is turned off and the display returns to the main interface.



Display Settings


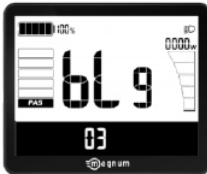



The following description explains how users can access the settings options in their display.

Within 10 seconds of turning on the display, long press the M button to enter the settings interface.

Short press the arrow buttons to switch between settings. Short press the M button to enter a specific setting. The selected setting will blink. Short press the arrow buttons to find the setting option you want then long press the M button to set the option. Long press the M button again to exit to the previous page.

In settings short press the M button to enter the next level menu and long press the M button to exit and return to the previous level menu.

Descriptions of individuals settings to follow:

Setting items	Interface	Description	Setting data	Remark
Unit setting		UNT=Unit	Value=KM/H MPH	Default Value=KM/H KM/H—Metric MPH—Imperial
Backlight level setting		bLg=Back light	Value= LEVEL1,backlight level 60% Value= LEVEL 2 backlight level 80% Value= LEVEL 3 backlight level 100%	Default Value= LEVEL 1
Auto shutdown time		SLP= Auto sleep	Value=0-30 min	Default Value=5min OFF means no auto shutdown
Real time clock		N/A	N/A	 Hour: minutes

Software version info		DPS= Display software version	Read only	Default fix value
Advanced setting interface		SET=setting	Enter with passcode	*For entering advanced setting items
—Advanced setting sub-level parameter interfaces:				
Speed limitation setting		SPd=Speed limitation	Value= PAS 3/4/6	Default: PAS 6 PAS 3= Pedal assist 3 levels, Speed limit 16MPH, PAS 4= Pedal assist 4 levels, Speed limit 20MPH, PAS 6= Pedal assist 6 levels, Speed limit 28MPH
Wheel diameter setting		dIA=Wheel diameter	Value= 16, 20, 24, 26, 27, 27.5, 28, 700C, 29, (default unit, inch)	Default: Value= 26
System voltage setting		Vol= system voltage	Value=36/48V	Default: 48v

Data Clearance

Within 10 seconds of turning on the display, when the display shows the TRIP interface, long press the M button to show TRIP data. While the TRIP icon is blinking short press the M button to confirm data clearance. To exit long press the M button. After clearance the subtotal mileage TRIP is 0, average speed is 0, and max speed is 0. ODO information can not be cleared manually on the display.



Error Code Table

Each error code corresponds to a specific fault in the system. The table below is intended for the e-bike owner to use as reference when working with Magnum Bikes technical support or a certified Magnum dealer.

Error Code	Definition	Suggestion
"0x20" shown at speed	Failure of controller	Check controller
"0x22" shown at speed	Failure of throttle	Check throttle
"0x23" shown at speed	Failure of motor's phase wire	Check motor
"0x24" shown at speed	Failure of the motor's hall	Check controller
"0x30" shown at speed	Communication failure	Check connector to controller

If you still have some questions about the display, please contact your Magnum dealer.

5. Recommendations and Maintenance

5.1 General Requirements

E-bikes use metal shells to cover the electric components, so we strongly advise against the use of excessive water to wash the shells and parts around them. Use a soft cloth with a neutral solution to wipe the dirt off the shells. Afterward, wipe everything dry with a clean soft cloth.

Do not use high-pressure water or air hoses for cleaning; this can force water into electrical components, which may cause malfunctioning.

Do not wash plastic components with excessive water. When the internal electrical parts are affected by water the insulator may corrode, leading to power-drain or other problems.

Do not use soap solutions to wash the metal components. Non-neutral solutions may cause discoloration, distortion, scratching, etc.

Avoid leaving the bike outdoors

When not riding, keep the bike in a location where it will be protected from snow, rain, sun, etc. Snow and rain can cause the bike to corrode. Ultraviolet rays from the sun can cause unnecessary fading of paint or crack any rubber or plastic on the bike.

Recommended Torque Values	
Handlebar	8-10 Newton Meters
Stem	8-10 Newton Meters
Saddle	18-20 Newton Meters
Front Wheel	16-25 Newton Meters
Rear Wheel	35-40 Newton Meters
Bottom Bracket Parts	35-55 Newton Meters
Pedals	35 Newton Meters
Rotor Bolts	6 Newton Meters
Disk Caliper Mount	10 Newton Meters
Crank Bolts	40 Newton Meters
Rear Derailleur Cable Pinch	6 Newton Meters
Front Derailleur Clamp	7 Newton Meters
Saddle Post Clamp	7 Newton Meters

5.2 Maintenance Schedule

To keep your E-bike in optimal condition and your riding experience at its most enjoyable, we strongly recommend following the suggested maintenance schedule.

Maintenance Schedule	Each Ride	Weekly	Monthly	6 Months	Yearly
Tire Pressure	X				
Tire Condition	X				
Visual Inspection	X				
Brake Lever Pressure	X				
Quick Releases	X				
Handlebar Alignment	X				
Saddle Alignment	X				
Battery Pack Locked	X				
Wheel Check	X				
Inspect Frame Condition ¹		X			
Clean & Lubricate Chain		X			
Check Brake Pads		X			
Lubricate Forks			X		
Lubricate Brakes & Cables			X		
Lubricate Folding Mechanism			X		
Check all Bolts & Torque Settings			X		
Clean Bicycle			X		
Charge Battery			X		
Check Heel Spokes			X		
Inspect Rim Condition			X		
Inspect Saddle, Rails & Clamp			X		
Grease Pedal Bearings				X	
Check Hub Bearings				X	
Check Headset Bearings				X	
Check Bottom Bracket Bearings				X	
Replace Brake Pads					X
Replace Brake Cables ²					X
Replace Tires ²					X

¹include welds for fissures, ²depends on use

Warning

As with all mechanical components, electrically power assisted cycles (EPAC) are subjected to wear and high stresses. Different materials and components may react to wear or stress fatigue in different ways. If the design life of a component has been exceeded, it may suddenly fail, possibly causing injuries to the rider. Any form of crack, scratches or change of coloring in highly stressed areas indicate that the life of the component has been reached and it should be replaced.

5.3 Definition of Tampering and Recommendations

Category 1			
Components which can only be replaced after approval from the bicycle manufacturer/ electronic system provider			
Motor	Controller	Electric Cables	Battery
Sensors	Display Controls	Display	Battery Charger

Category 2			
Components which can only be replaced after approval from the bicycle manufacturer			
Frame	Hub-motor Wheel	Brake Pads	Bottom Bracket
Fork	Brake System	Rear Carrier	

Category 3			
Components which can only be replaced after approval from the bicycle or component manufacturer			
Cranks	Wheel without Hub Motor	Tires	Brake System
Chain Belt	Rim Tape	Mechanical Brake Cables	Handlebar
Seat Post	Saddle	Hydraulic Brake Cables	Stem

Category 4			
Components which can be replaced without approval			
Headset	Inner Tubes	Shifting Housing & Cables	Kickstand
Pedals	Chainring	Cassette Freewheel	Grips
Derailleurs	Front & Rear Lights	Wheel Reflectors	Front Reflector
Shifters	Mudguards Fenders	Spokes	Rear Reflector

Warning

Modifications to any part of your bike, such as the fork or frame, may make that part or the entire bike unsafe. A poorly installed or modified component can increase the stress on all other parts, greatly increasing their chance of failure. Modifications can also adversely affect the handling of your bike, resulting in loss of control, falls and serious injury. Please do not add, remove, or modify parts of your bike in any way before consulting with a trained bike technician. We recommend you consult with us at before you make modifications or add parts, in order to confirm their safety and compatibility with your bike.

6. Warranty

Your Magnum E-bike comes with a limited warranty. Please visit www.magnumbikes.com or your local Magnum dealer for details.

Bike must be registered at www.magnumbikes.com/warranty in order to be covered by the one year warranty.

Stay Connected



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