



Owner's Manual

Operation and Maintenance Instructions

Wisper 805fe

June 2011 1st edition



We strongly recommend that you read this entire manual before
using your Wisper bike

Wisper Limited

User Guide

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Introduction

Thank you for choosing a Wisper electric bicycle.

By making the decision to use an electric bike you are helping to safeguard our environment by saving our planet's precious resources and reducing carbon pollution.

Before you use your Wisper bike it is important that you read this manual carefully. If there is anything you do not understand completely please contact your retailer.

Please observe traffic regulations, and don't lend your bicycle to anyone who is unfamiliar with it. The bicycle can only legally be used on the road by a person aged 14 years or older.

We strongly advise you to always wear a cycle helmet when using your bicycle and if you are unfamiliar with cycling to attend a cycle proficiency course prior to using it. Your Wisper Works 805fe is not a toy and should be considered a serious mode of transport.

As with all bicycles it is important that you stay within safe limits, if you feel as if you are traveling too quickly for the road conditions you probably are, so slow down. High speed will increase forces in the case of an accident and increase the possibility of injury.

Test your brakes prior to using the bike every time you use it and remember the bike will not stop as quickly in wet or icy conditions as it would on a dry road.

Before you use the bike for the first time you must make absolutely certain that it has been correctly assembled. You can do this by either taking it to your nearest cycle engineer or if you are proficient in cycle mechanics inspecting it yourself. In particular you must make sure that the pedals, saddle, handle bars and any self assembled items have been correctly fitted.

NEVER drink alcohol and ride your electric bike. The use of alcohol greatly reduces reflexes and limits your ability to ride safely. Even a very small amount of alcohol will limit your ability to be safe on the road.

When you need to replace your battery please either dispose of it properly or preferably send it back to us or your supplier and we will make sure it is properly recycled.

Happy cycling!

Wisper Ltd

Part 1 Caring for your Wisper bike and checks

Although your Wisper bike has been thoroughly tested prior to delivery, it is very important that you check the bike again before its first use. Equally important are frequent and regular spot checks, they will protect you and your Wisper bike.

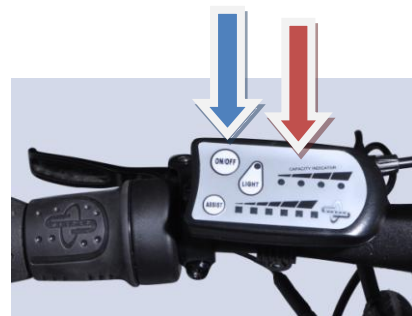
Please read this manual carefully. Only on full understanding of all the functions of this electric bicycle should you attempt to use it.

Your Wisper bike has been transported in a strong seven-layered corrugated carton. To save space it has been delivered with the handlebar stem, seat post seat, and pedals ready for assembly with the tool kit provided.

Your retailer may have assembled your bike for you if not you will find fitting instructions on the Wisper website www.wisperbikes.com

1 Before you set off for the first time

- 1.1 Check the handle bars and handle bar stem are properly tightened
- 1.2 Check all other nuts and bolts and fixings are properly tightened, pay particular attention to the motor fixings, side kick stand, yoke and steering head bearings
- 1.3 Check brakes and brake isolators are functioning properly
- 1.4 Check tyre pressures are correct and tyres are not damaged
- 1.5 Check reflectors and lights if fitted are functioning properly
- 1.6 Make sure battery is fully charged
- 1.7 Load battery into your bicycle's rear carrier and turn on the power ON/OFF button on the battery. Lock the battery into the rear carrier to ensure the battery's output connection is always connected properly. Remove the key.
- 1.8 Check the **power indicator lamps** are illuminated on the display on the left hand side of the handle bars if they do not illuminate press the **on / off** switch once
- 1.9 To avoid dangerous unplanned acceleration, always make sure that the electrical system is turned off and the **power indicator lamps** are not illuminated when mounting, dismounting or leaving the bike unattended. For your safety, please turn off the power switch on the battery when stopped or walking the bike



- 1.10 Remember to validate your warranty by visiting

www.wisperbikes.com/mywarranty and filling in your details.

2 Before each use

It is important you perform a quick check of your bike every time you use it, checks should include the following, if you find any damage or problems do not use the bike until the problem has been solved or you have had the faulty item checked by a bike mechanic or your retailer.

- 2.1 Check tyres for any visible damage
- 2.2 Check tyre pressures
- 2.3 Check for any loose nuts bolts or fixings
- 2.4 Check brake functions
- 2.5 Check electronic functions
- 2.6 Check reflectors are in place and lights are working
- 2.7 Check your battery for any visible signs of damage

3 Battery care

- 3.1 Before you use the battery for the first time it is best to give it a full deep charge for 12 hours. To fully condition your new battery give it complete deep charge/discharge cycles for the first three charges. This is achieved by charging your battery for 12 hours and then using the bike until the battery is completely drained. After this “conditioning” process you can then charge and discharge the battery as and when you require for long or short periods
- 3.2 If you are going to leave your battery uncharged for more than four weeks it is best left half to $\frac{2}{3}$ charged. You must then re charge it every 6 to 8 weeks for two hours to prevent the voltage declining below safe levels which can cause unrepairable damage to the battery cells.
- 3.3 Before setting off on any journey it is always better to have a fully charged battery
- 3.4 Do not expose the bicycle or battery pack to fire, heat sources, acid or alkaline substances
- 3.5 When leaving your bicycle during hot weather always leave in a shaded well ventilated area
- 3.6 For best results always recharge the battery at room temperature
- 3.7 Before unloading the battery make sure it is turned off at the switch and unlocked, then pull the battery box from the rear carrier housing. Please refer to the picture.
- 3.8 If your battery is damaged or appears to be overheating for any reason immediately return it to your retailer for advice and a safety check
- 3.9 Further information on user responsibilities and battery maintenance are included in the warranty section of this manual.



4 Recharging your battery

- 4.1 Make sure the charger is turned off and connect the charger to your battery then turn on the charger. Red and yellow lamps on the charger indicate the battery is charging, when the yellow light turns green the battery is fully charged. Always turn off the charger and disconnect from the mains after charging. Always disconnect the charger from the mains before disconnecting the charger from the battery. It is possible that the battery will take up to 12 hours to charge on the first three charges.



- 4.2 Always charge the battery in a well ventilated area.
4.3 Do not leave the charger connected to the mains when not in use.

5 Water

- 5.1 Your electric bicycle is rain and splash proof and can be used in all weathers.
5.2 The electrical components of the vehicle, such as motor, battery, and controller, must not be submerged in water.

6 Maintenance and adjustments

- 6.1 **IMPORTANT!** Do not attempt to open the casings of the battery, motor or controller it could be dangerous and all warranties will become void. If you experience a problem contact our service department or your retailer.
6.2 Wheel spokes should be adjusted after 300 miles riding. The saddle post should never be raised beyond the maximum indicated by a safety line around the tubes. The recommended torque on the nuts is as follows:

(A) Front axle nuts.	70N.M	
(B) Back axle nuts.	46N.M	
(C) Handlebar stem clamp bolt.	12 N.M	
(D) Seat pillar clamp nut/bolt.	5-8N.M	
(E) Brake cable anchor bolt.	5N.M	
(F) Brake centre bolt.	M6:11N.M	
(G) Seat clamp nuts.	24N.M	
(H) Crank axle nuts.	R:42N.M	L: 46N.M
(I) Gear shifter nuts.	4N.M	
(J) V brake caliper nuts.	10N.M	
(K) Rear carrier nuts.	8N.M	
(L) Mudguard bracket nuts.	8N.M	

Other nuts/bolts torque depends on their size. **M4**:2.5-4.0N.M

M5:4.0-6.0N.M **M6**:6.0-7.5N.M

- 6.3 Your bike has a rear derailleur that will automatically tension your chain.

However if the chain becomes loose or frequently comes off the chain wheel please seek advice from your dealer.

- 6.4 The brake levers should lock the wheels when compressed half way between their open position and touching the handle bars. When they need adjusting please do so according to the instructions below.
- 6.5 Warning: Handlebar hand grips or tube end plugs should be replaced if damaged, as bare tube ends have been known to cause injury.
- 6.6 Warning: Any replacement forks must have the same rake and same tube inner diameter as those originally fitted to the bicycle.

IMPORTANT braking distances increase on wet or icy roads.

- 6.7 Lubrication:
- 6.7.1. Once a month lubricate all pivot points on derailleur, and derailleur chain guides with chain lube.
- 6.7.2. Every three months lubricate the brake lever pivots, the gears and chain with light oil and the brake pivot bushes (not the brake shoes or disc) with a little grease.
- 6.7.3 Once a year, have your dealer re-grease the headset bearings, wheel bearings and pedal bearings.
- 6.8 Recommended tools for proper maintenance:
- Torque wrench with Nm gradations 2, 4, 5, 6, 8 mm Allen wrenches
9, 10, 15 mm open-end wrenches 15 mm box end wrench
Socket wrench, 14, 15, and 19 mm socket T25 Torque wrench
No. 1 Phillips head screwdriver Bicycle inner tube repair kit, tyre pump

7 Technical specifications & performance

Type	Wisper Works 805fe
Performance	(with 75kg 165lb rider)
Assisted range	Up to 50km
Maximum speed	25kph (15.5mph)

Weight with battery	22.1kg max
Maximum load	130kg (240kg)

Battery specifications

Cell Type	Advanced Environmental Panasonic Lithium Cells
Capacity	9Ah
Rated voltage	36V

Main Controller specifications

Low voltage safeguard	31.5V
Overload current safeguard	14A

Main hub motor specifications

Motor type Hi speed brushless
 Rated power Aus Singapore 200W / NZ Europe 250W
 Rated voltage 36V

Charger Lithium 115 to 230V 24V fan cooled

8 Simple Trouble shooting

Problem	Possible reasons	Trouble shooting
Top speed too slow	1. Low battery voltage 2. Damage to motor driveline	1. Recharge battery fully 2. Call service
Power on but motor not working	1. Battery not connected 2. battery fused 3. Motor connection damaged 4. Handle bar control problem	1. Re install battery 2. Replace fuse 3. Call service 4. Call service
Driving shorter distance per recharge	1. Tyre pressure too low 2. Undercharge or charger fault 3. Battery capacity loss or damage	1. Check pressures 2. Recharge completely or have charger inspected 3. Replace battery

LED Handlebar Mounted Display Diagnostics / Fault Identification	LED Status
Excessive motor current	First light flashes
Throttle fault	Second light flashes
Motor connection or internal fault	Third light flashes
Motor sensor fault	Forth light flashes
Brake cut out fault	Fifth light flashes
System electronics / software failure	Six lights flashes same time

Part 2 Controls and Equipment

In this section we will describe the functions and any specific maintenance needed on all the main controls and ancillary equipment.

9 Battery on off and battery lock

9.1 Your Wisper bike has one key. This key is for locking the battery into the bike. Please keep a careful note of the key number as we cannot replace it without this number should it become mislaid.

9.2 The battery is connected to the electrical system on the bike automatically when you push the battery into the rear carrier housing. To turn on the bike's electrical system, switch the on/off button in the battery box to on, to turn off the bikes electrical system, switch the on/off button in the battery box to off. (Please refer to the picture)



9.3 After the battery has been turned on the bike is ready for use. The battery box capacity indicator is on the handle bar for ease of use. Assistance from the battery is then available.

9.4 To lock the battery into the bike frame turn the key clockwise so the locking bolt secures the battery in position. To unlock turn the key anti clockwise. Please remove the key when riding. Please read 3 and 4 for battery care and advice on charging at the beginning of this manual.

9.5 The battery can be charged either on or off the bike.

9.6 To remove the battery first turn off the power by switching the on/off button to off. Unlock the battery and pull out from the rear carrier housing.

On the handle bars

10 Battery capacity indicator and on / off button

10.1 When the battery is switched on and the ON/OFF button in the handle bar is pressed the lights on the capacity indicator on the handle bars will illuminate showing the battery capacity available. When the battery is switched off the lights will go out and you will not get any assistance from the battery or motor. The bike is then an unpowered push bike. The display also incorporates a diagnostic function as shown in section 8. If any of the lights flash continuously refer to the above section for the description of the fault.



11 Gear shifters

- 11.1 The 805fe has 16 gears, comprising 2 front chainwheels (32 and 50 teeth) and 8 rear sprockets (11 to 30 teeth). The front shifter will move the chain between the high gear chainwheel **H** and the low **L**. The rear shifter will move the chain from the highest gear to the lowest by simply moving the lever from left to right.

12 Pedelec mode and ASSIST mode

- 12.1 When you first ride your Wisper bike you will notice that after one turn of the pedals the motor will start working, assisting you to ride the bike by adding power to the front wheel. This is the standard or pedelec mode. To continue using the pedelec mode you must keep turning the pedals, if you stop pedaling the motor will stop and the bike will slow to a halt. If you start pedaling again after one turn the motor will start again. No throttle is available on this bike.
- 12.2 You will find the ASSIST button on the panel on the handle bars with 6 associated LEDs (small lights). Each time the button is pressed the LEDs illuminate sequentially ranging between 1 and 6 and the corresponding power level in pedelec mode increases in increments of 20%. Setting 6 provides 100% power.
- 12.3 Setting 6 is generally used when you need the maximum amount of assistance from the motor. Lower settings are used when you do not need the instant 100% power, high traffic situations or poor conditions such as ice and snow when full power immediately could be dangerous. Power settings can be changed when the bike is stationary or when on the move.

Warning: The electric motor on your bike is very powerful and if you set of in high assist mode you may cause the front wheel to spin. This is the same on any motorized vehicle. We therefore highly recommend that you always start off with the bike set to the lowest level of assistance and only use a small amount of throttle until you are moving forwards at walking pace.

13 Lights

- 13.1 The LIGHT button can be found close to ON/OFF button. If you press it when the bike power is on, the LED headlight on the front fork and rear light will illuminate. Press it again to switch of the lights. The power for the lights comes from the bike battery. Due to a low power consumption use of the lights will not reduce your range.

IMPORTANT Make sure your handle bar grips are always intact and in good condition. Uncovered handlebar tubes can be very dangerous.

14 Brakes

- 14.1 Front and Rear: V brake
- 14.2 The brakes on your Wisper bike are fitted with cut outs which are required by

law. This means that when you pull on either the back or front brake lever the motor immediately stops working.

14.3 Full details of how to adjust and maintain your brakes:

Once a month, inspect brake pads for wear. If the grooves in the braking surface are less than 2 mm deep, replace the pads.

front and rear V brake adjustment

14.3.1. Use a 5mm Allen key to loosen bolt A, then take the cable out. Use a 5mm Allen key to loosen bolts C (right & left), then take the spacers and washers out

14.3.2. Install new brake pads, then with both pads pressed against the wheel rim, ensure that distance B (in the diagram) does not exceed 65mm. To decrease distance B, exchange wide & narrow spacers on each brake pad. Before finally

tightening brake pads, make sure they are aligned correctly on the rim, and there is a gap of 1mm between the top of the rim and the top of the pad. Hold each pad against the rim (one at a time) & tighten bolt C.

Finally tighten to 6-8N.M

14.3.3. Insert cable under bolt A, slot cable guide pipe into holder and fit protector over the guide pipe end. Set cable in bolt A so that combined pad/rim clearance (the gaps from left pad to left rim surface and from right pad to right rim surface) is 2mm, then tighten "A" bolt. Finally tighten to 6-8N.M.

Balance the brake arms by turning screws D. Apply the brake lever a few times while checking to see that tension is equal for both arms. Pad/rim contact should occur at the same time each side. Clearance should be 1mm each side. Do not set tensions too high.

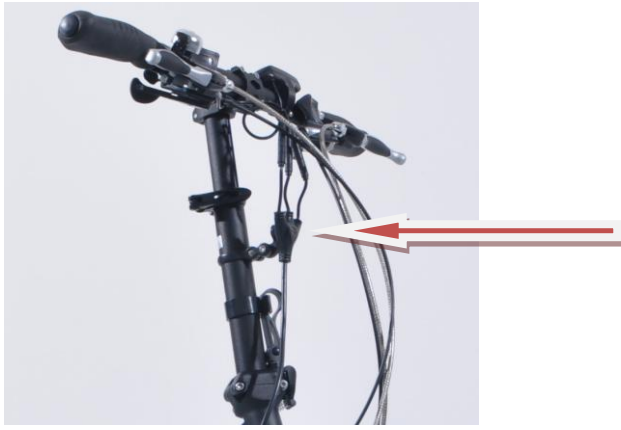
14.3.4. Re adjust the pads so they are properly aligned (see step 2), as tension adjustment may have altered the original pad alignment.



A-Cable clamp bolt B-No contact
C-pad fixing bolt D-Centering screw
E-Arm fixing bolt

15 The front connection box (Manifold)

15.1 The front connection box (manifold) allows for the easy removal for diagnosis, repair or replacement of any of the electronic components on the handle bars. The connections to the handlebar electronics are made through bayonet connectors. The bayonet connectors, being a push fit are simple to disconnect or re connect and click into position when fully engaged. Each connector has a different number of pins so it is important to ensure the connectors are only mated in their original positions as damage may occur to the pins if this procedure is not followed. The manifold is indicated by the arrow below.



16 Quick release saddle, handlebar adjustment and folding mechanism

- 16.1 Your Wisper bike has been fitted with a quick release seat post clamp to facilitate the movement of the saddle to change the riding position.
- 16.2 It is important that the nut on the collar is tightened so the post will **not** move in the seat post tube. Make this adjustment with the quick release lever in the open position.
- 16.3 Adjust the seat to the correct height and close the lever. When you sit on the saddle there should be no vertical movement at all in the saddle post.
- 16.4 The telescopic handlebar is fitted with a similar arrangement to facilitate adjustment of the handlebar height and the same procedure as above should be followed.
- 16.5 To fold the bike first fold each pedal by placing a finger in the latch hole in the pedals and pull the catch towards the end of the pedal. The pedal can then be folded through 90 degrees. Then release the quick release clamp at the base of the handlebar stem and fold the handlebars downwards taking care not to strain any of the control cables. Then release the quick release clamp located on the cross bar and swing the clamp through 90 degrees around a vertical axis. Then push vertically down on the plunger assembly to uncouple the two halves of the folding locking mechanism and fold the two halves of the bike together.

To unfold the bike follow the reverse steps above ensuring all quick release clamps are securely fastened and no cables are trapped. Ensure stainless spring cable protector is in place.

The picture below shows the bike in the correct folded position.



Saddle post suspension

- 16.6 For your comfort your bike has been fitted with saddle post suspension it has been set for a person weighing 75kg. If you are lighter than this you may not feel any benefit and if you are heavier you may feel the suspension bottoming out.
- 16.7 The suspension post can be adjusted by removing the whole post with saddle attached from the bike. On the bottom of the post you will find an Allen key adjuster. Simply turn it clockwise to tension the spring for heavier people and anticlockwise to release tension for lighter people.

IMPORTANT never raise the saddle past the point where the maximum marks on the saddle post are visible above the quick release collar and never grease the seat post.

17 Rims and spokes

It is essential to have your spokes checked and tightened after 300 miles or 500km. This is a free service provided by your supplier. If this service has not been undertaken at the correct time this may cause damage to the wheels and spokes that will not covered under our guarantee.

18 Chain and drive wheel

18.1 Lightly oil with bicycle chain oil the chain at least once a month.

18.2 Because your bike has a rear derailleur the chain will be automatically adjusted.

19 Derailleur

Full details on how to adjust and maintain your derailleur can be found on our website www.wisperbikes.com Electric bikes, Manuals.

Warranty

Repair or replacement of components

IMPORTANT To validate this Warranty the retail customer must register the bike at www.wisperbikes/mywarranty within 14 days of purchase.

Only use this product in accordance with this user manual. We offer a limited warranty of on the following items.

1	The main frame	Six years
2	Gears, bearings, motor shell, hub motor, front forks	Two years
3	Handle bar controls, brakes (excluding brake shoes and pads)	One year
4	Controller and Charger	Two years
5	Battery casing, battery leak, battery capacity step-down more than 25%	Two years
6	Paintwork (excluding deliberate or accidental damage)	Two years
7	Front and rear axle, flywheel or chain wheel	One year
8	Electro plating, on wheel rims, rack and kickstand	Six months
9	Other cases that render the bike unsafe to use.	By negotiation

1. If the product develops a fault within 14 days of delivery the part will be repaired or replaced or in exceptional circumstances we may replace the whole vehicle.
2. The period of assurance shall commence from the day delivery was made to the retail customer, or from the day the retail customer collected the bike from the retailer.
3. To validate this Warranty the retail customer must register his / her bike at www.wisperbikes/mywarranty within 14 days of purchase.

Exceptions to Limited Warranties

1. Damage resulting from misuse, not maintaining the vehicle or not following the guidelines within this user guide.
2. Accidental or deliberate damage.
3. Damage due to private repair or alteration by user or unauthorised service centre.
4. Failure to produce invoice or proof of purchase.
5. Spare parts and components worn in normal use.
6. Failure to register your bike at www.wisperbikes/mywarranty within 14 days of purchase.

It is essential to get your spokes checked and tightened after 300 miles / 500km. This is a free service provided by your supplier. If this service has not been undertaken at the correct time this may cause damage to the wheels and spokes that will not covered under our guarantee.

battery maintenance, and user responsibilities

Your Wisper bike is equipped with a powerful, high quality lithium ion (polymer) battery. Lithium ion (polymer) is recognised as being the very best type of battery for electric bicycle use.

All lithium ion batteries must be well cared for to optimise useful life and range. It is the responsibility of the bike owner/operator to ensure the battery is looked after properly. Incorrect use or storage of your battery may cause damage and void your warranty.

It is not unusual for a well-maintained battery to last for many years. Though your bike will feel less powerful as the battery gets older and the range will diminish you can continue using the battery for years to come. A key point to remember when choosing a battery is to check the battery capacity (V x Ah = Wh the battery's capacity) i.e. 16Ah x 36V = 576Wh. When such a battery loses 30% of its capacity it will still have 403Wh left, only a little less than a new 24V 18Ah (468Wh) or a 36V 12Ah (432Wh) battery. Choosing a larger battery not only gives you more power and range but is often more economical in the long term.

The key to having a long lasting Li Po battery is to look after it. This means never leaving your battery fully discharged and always conditioning the battery when not in use i.e. in the winter

If a battery is not cared for as per our instructions it will not reach it's optimum performance and may not be covered by our warranty.

Three simple rules

1. Never leave your battery completely discharged
2. Always charge your battery before storage
3. If your battery is left unused for 4 weeks recharge it for 2 hours

For optimum battery performance

1. Never leave your battery completely discharged
2. Always recharge your battery if convenient even after a short journey
3. During long periods of storage and non-use keep your battery about 2/3 full and top up with a 2 hour charge every 6 to 8 weeks.
4. Only use the charger supplied with your battery or a correct model replacement from Wisper.
5. When in storage keep your battery in a dry room.
6. For optimum power, range and longevity keep your battery in a warm room above 15 degrees centigrade.

We reserve the right to check batteries claimed under warranty to ensure they have been maintained as per our instructions.

Service through

Your retailer

or

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