



## Owner's Manual

**Wisper 806 Classic 2013 Model**

January 2013 1st edition



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

## Contents

1	Introduction.....	3
2	Part 1 - Caring for your Wisper bike and pre-use checks.....	4
2.1	Before you set off for the first time .....	4
2.2	Before each use .....	5
2.3	Battery care .....	6
2.4	Recharging your battery.....	6
2.5	Water.....	7
2.6	Maintenance and adjustments .....	7
2.7	Technical specifications & performance .....	8
2.8	Simple Trouble shooting.....	11
3	Part 2 Controls and Equipment .....	13
3.1	Battery on off and battery lock .....	13
3.2	LCD function description .....	13
3.3	The LIGHTS .....	15
3.4	Pedelec mode and ASSIST mode .....	16
3.5	Throttle Mode .....	17
3.6	Battery capacity meter, riding style and affect on range.....	17
3.7	Gear shifter.....	19
3.8	Brakes .....	20
3.9	The front connection box (manifold) .....	21
3.10	Quick release saddle height, handlebar adjustment and folding mechanism.....	22
3.11	Saddle post suspension.....	25
3.12	Rims and spokes.....	25
3.13	Drive wheel removal .....	26
3.14	Chain adjustment.....	27
4	Warranty .....	28
4.1	Battery maintenance and user responsibilities.....	29
5	Service .....	30
6	Appendix 1 Pre Delivery inspection and 300 mile service check list.....	31

## **1 Introduction**

Thank you for choosing a Wisper electric bicycle.

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

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

We strongly advise you to always wear an approved cycle helmet when using your bicycle. If you are unfamiliar with cycling, we advise attending a cycle proficiency course prior to using your new bicycle on the public highway.

When using any bicycle, it is important that you stay within safe limits; if you feel as if you are travelling too quickly, you probably are.

Test your brakes prior to using the bike every time you use it and remember the bike will not stop as quickly in the wet as it would in the dry!

Before you use the bike for the first time, please 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, handlebars and any self assembled items have been fitted correctly.

Avoid consuming alcohol before you ride your electric bike. The use of alcohol greatly reduces reflexes and limits your ability to ride safely!

If you need to replace your battery, please either dispose of it properly or preferably send it back to us at Wisper or one of our distributors and we will make sure it is properly recycled.

Above all, enjoy your Wisper bike, happy cycling!

**Wisper Ltd**



## 2 Part 1 - Caring for your Wisper bike and pre-use checks

Your Wisper bike has been thoroughly tested at the factory prior to delivery, and undergone a pre-delivery inspection as detailed in the table in appendix 1 of this manual. Please ensure the table has been completed by your Wisper dealer.

It is very important that you check the bike thoroughly before its first use. Equally important are frequent and regular spot-checks, as they will protect both you and your Wisper bike. Your bike must be returned to the supplying dealer after approximately 300 miles/500km have been completed for a second safety inspection, as detailed in appendix 1.

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

### 2.1 Before you set off for the first time

- 2.1.1 Check the handlebars and handlebar stem are properly tightened
- 2.1.2 Check all other nuts, bolts and fixings are properly tightened, paying particular attention to the motor fixings, side kickstand, yoke and steering head bearings
- 2.1.3 Check brakes and brake isolators are functioning properly
- 2.1.4 Check tyre pressures are correct and tyres are not damaged
- 2.1.5 Check reflectors, and lights if fitted, are functioning properly
- 2.1.6 Make sure the battery is fully charged
- 2.1.7 Load the 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.



2.1.8 Press the **on/off** switch (labeled with O' symbol) on the LCD display, located on the left hand side of the handlebars. Check the **battery capacity** and the **power assistance level** selected.



2.1.9 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 with the bike

2.1.10 Remember to validate your warranty by visiting [www.wisperbikes.com/mywarranty](http://www.wisperbikes.com/mywarranty) and filling in your details.

## 2.2 Before each use

It is important you perform a check of your bike prior to each 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 resolved or you have had the faulty item checked by a bike mechanic or your retailer.)

- 2.2.1 Check the tyres for any visible damage
- 2.2.2 Check the tyre pressures
- 2.2.3 Check for any loose nuts, bolts or fixings
- 2.2.4 Check the brake functions
- 2.2.5 Check the electronic functions
- 2.2.6 Check the reflectors are in place and the lights are working
- 2.2.7 Check the battery for any visible signs of damage

## 2.3 Battery care

2.3.1 Before you use the battery for the first time, it is essential to condition the battery. To fully condition your new battery, give it a complete deep charge and discharge cycle. This is achieved by charging your battery for 12 hours until the charger LED turns green. Then use the bike until the battery is almost drained, and then recharge as above. After this “conditioning” process, you can then charge and discharge the battery as and when you require to best suit your usage and journey profiles. Always recharge your battery after use as part of keeping the battery in good condition; this will ensure your bike is always ready to go.

NEVER leave your bike for more than 24 hours with a completely drained battery.

2.3.2 If you are going to leave your battery uncharged for more than four weeks, it is best left about 60% charged. You must then recharge it every six to eight weeks for two hours to prevent the voltage from declining below safe levels that can cause irreparable damage to the internal battery cells

2.3.3 Before setting off on any journey, it is always better to have a fully charged battery

2.3.4 Do not expose the bicycle or battery pack to fire, heat sources, acid or alkaline substances

2.3.5 When leaving your bicycle during hot weather, always leave in a shaded well ventilated area

2.3.6 For best results, always recharge the battery at room temperature

2.3.7 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 adjacent picture.



2.3.8 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

2.3.9 Further information on user responsibilities and battery maintenance are included in the warranty section of this manual

## 2.4 Recharging your battery

4.1 Make sure the charger is turned off and connect the charger to your battery, then connect to a suitable mains socket. 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 charge.



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

## 2.5 Water

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

## 2.6 Maintenance and adjustments

2.6.1 **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 Wisper retailer.

2.6.2 Wheel spokes should be adjusted after 300 miles of riding. The saddle post should never be raised beyond the maximum permissible, indicated by a safety line around the tubes. The recommended torque (tightness) of crucial fixings is as follows:

Front axle nuts.	70 N.m
Back axle nuts.	50 N.M
Handlebar stem clamp bolt.	12 N.m
Seat pillar clamp nut/bolt.	5-8 N.m
Brake cable anchor bolt.	5 N.m
Brake centre bolt.	11 N.m
Seat clamp nuts.	24 N.m
Crank Allen bolts.	30 N.m
Gear shifter nuts.	4N.m
V-brake caliper nuts.	10N.m
Rear carrier nuts.	8N.m
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

2.6.3 Ensure the correct tension is maintained on your chain. Further details on how to adjust this are included later in this manual. However, if the chain becomes loose or frequently comes off the chain wheel, please seek advice from your Wisper dealer.

2.6.4 The brake levers should lock the wheels when compressed half way between their open position and touching the handlebars. When they need adjusting, please do so according to the instructions included in this manual.

## **IMPORTANT! braking distances increase on wet or icy roads.**

2.6.5 Warning: Handlebar hand grips or tube end plugs should be replaced if damaged, as bare tube ends can cause injury.

2.6.7 Lubrication:

2.6.7.1. On a regular basis, lubricate all pivot points on the derailleur and chain with light oil or chain lube and the brake pivot bushes (not the brake shoes or disc) with a little grease.

2.6.7.2 Once a year, have your dealer re-grease the headset bearings, wheel bearings and pedal bearings.

2.6.8 Recommended tools for proper maintenance:

Torque spanner with Nm gradations

Allen keys sizes 2, 4, 5, 6, 8mm

9, 10, 15mm open-end spanners

Socket spanners with 14, 15, and 19mm socket

No. 1 Phillips head screwdriver, bicycle inner tube repair kit and tyre pump

## **2.7 Technical specifications & performance**

<b>Motor</b>	High efficiency brushless front wheel drive by Dapu Japan 250Watt (200Watt available for Australia and Japan)
<b>Battery</b>	Lithium Ion with advanced battery management system (BMS) 36V 9Ah 324Wh Capacity Weight 2.5kg
<b>Controller</b>	36V 14A developed specifically for Wisper for optimum performance
<b>Mains charger</b>	Lithium 120V or 240V input, Intelligent charge system communicates with BMS, auto stop when fully charged 36V 2A. Charge time 2 – 4.5 hours
<b>Car/boat charger</b>	Lithium 12V input (Optional at extra cost)
<b>Connections</b>	All electronic components and motor wheel have individual connectors for ease of servicing
<b>Assisted range</b>	Average 30miles/50 kilometers*

<b>Assistance modes</b>	1. Throttle only to 15.5mph/25kph available in UK (4mph/6kph in EC) 2. Throttle assist - complete throttle use when pedaling forward 3. Pedelec with six levels of assistance power and safe mode/0%, 1/40% 2/50%, 3/60%, 4/80%, 5/90%, 6/100% power
<b>Maximum speed</b>	15.5mph/25kph with powered assistance, this does not affect top speed when pedaling or freewheeling
<b>Controls</b>	LCD display panel Battery power available Bike on/off switch Instant power consumption Front and rear light on/off switch Power assistance controls - six levels and safe mode E-system diagnostics
<b>Bicycle weight</b>	19.5kg without battery 22kg including battery and all accessories
<b>Load capacity</b>	100kg/220lb/15st 10lb
<b>Frame</b>	Hand welded 6061 Alloy T4 and T6 tempered
<b>Frame size</b>	13" / 32.8cm
<b>Finish</b>	Graphite Silk powder coated and lacquered - oven hardened
<b>Forks</b>	High tensile steel
<b>Seat post</b>	Alloy with adjustable suspension
<b>Saddle</b>	Rio Plus by SelleRoyal Italy
<b>Handlebars</b>	Black anodised alloy with ergo support grips
<b>Stem</b>	Alloy, telescope adjustable and folding
<b>Kick stand</b>	Black anodised alloy
<b>Gears</b>	Shimano NEXUS maintenance-free 7-speed hub. Gear changer 7-speed twist grip
<b>Chain ring</b>	170mm 48 tooth
<b>Chain</b>	KMC Z8RB rust resistant
<b>Crank</b>	Anodised black alloy
<b>Pedals</b>	Alloy folding, sealed bearings

<b>Brakes</b>	Rear: Tektro V Front: Tektro V Levers: Tektro comfort
<b>Rims</b>	Alloy double walled 20" x 1.5" Büchel Germany
<b>Spokes</b>	13g stainless steel Büchel Germany
<b>Tyres</b>	20" x 1.75" Schwalbe Energizer Plus with 3mm Green Guard puncture protection and hi-visibility reflective walls
<b>Mudguards</b>	Polycarbonate shatterproof
<b>Lighting</b>	Front: 36V 15W LED super bright - power from e-system Rear: 36V light - power from bike e-system Reflectors: front white, rear red, wheel side-wall white
<b>Extra equipment</b>	25kg rack with luggage cords, bell and tool kit
<b>Metal fixings</b>	A4 grade stainless steel or alloy

\*Bike ranges depend on many factors: Depending on rider weight and fitness, road and weather conditions, ranges will vary from 15 to 60 miles. See our web pages for more information.

## 2.8 Simple Trouble shooting

Problem	Possible reasons	Solution
Top speed too slow	1. Low battery voltage 2. Handlebar control problem 3. Damage to motor driveline	1. Recharge battery fully 2. Call service 3. Call service
Power on but motor not working	1. Battery not connected 2. Battery fused 3. Motor connection damaged 4. Handlebar control problem	1. Re install battery 2. Replace fuse 3. Call service 4. Call service
Low range after recharging the battery	1. Tyre pressures too low 2. Undercharge or charger fault 3. Battery capacity loss or damage 4. Hill climbing, frequent stops, strong headwinds, overloading.	1. Check pressures 2. Recharge completely or have charger inspected 3. Replace battery 4. Use pedal assist mode and try to avoid using throttle excessively  Also see section on Wisper website regarding range issues

The bicycle is equipped with built-in diagnostics. Should a fault be detected during use, the LCD display will display a fault code as shown below to indicate the fault.

	<b>Fault code</b>	<b>Description</b>	<b>Possible Solution</b>
<b>LCD diagnostics</b>	Code 02	Motor current is too high.	Check for motor cable damage.
	Code 03	Motor cable connection may be loose or excessive use of the throttle from rest.	Check connections. Use pedal assist where possible.
	Code 04	Battery voltage is too low.	Recharge the battery or use less power assistance.
	Code 05	Brake lever cut-out function problem.	Isolate each brake switch in turn by unplugging at the manifold. Replace defective brake switch.
	Code 07	The throttle is faulty.	Fit replacement throttle.
	Code 08	Controller faulty.	Check wiring connections at controller and manifold. Fit replacement controller if required.
	Code 09	Battery output voltage is too high.	Contact service department
	Code LO	Battery voltage is too low.	Recharge the battery or use less power assistance.

### 3 Part 2 Controls and equipment

In this section, the functions and any specific maintenance needed on all the main controls and ancillary equipment are described.

#### 3.1 Battery on/off and battery lock

3.9.1 Your Wisper bike is supplied with three identical keys. The key is only used for locking the battery to the bike. **Please keep a careful note of the key number, as we cannot replace it without this number should it become mislaid.**

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



3.9.3 After the battery has been turned on the bike is ready for use. There is a battery capacity indicator on the battery and on the LCD handle bar LCD display. Press and hold the battery indicator button on the battery to check the capacity LEDs. All lights should be displayed on a fully charged battery.

3.9.4 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 anticlockwise. Please remove the key when riding. Please read the sections in the manual for battery care and advice on charging at the beginning of this manual.

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

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

#### 3.2 LCD function description

3.2.1 The LCD display has the following functions: (Refer to the picture below, but note the set and on/off function are combined into one large blue button that is activated by pressing left and right sides respectively).

A: Power ON/OFF button. Push and hold for 3 seconds to turn on.

B: Up (increase) adjustment button. For increasing the level of pedal assistance.

C: Down (decrease) adjustment button. For decreasing the level of assistance.

D: Set: When pressed, you can switch the bike lights on and off and set the single trip distance. If you press it together with button C, you can set the bike's tyre size.

E: This shows the instantaneous power consumption. A longer bar means the motor's power output is higher.

F: Battery capacity: The bars indicate the charge capacity (level) of the battery. Each bar approximates to 25% capacity remaining.

G: Instantaneous speed figures.

H: Pedelec assistance strength levels.

I: Total riding distance since last reset.



3.2.2 When the ON/OFF button is pushed and held for three seconds, and the capacity indicator goes out, you have turned the bike “off”. When the bike is “off”, you will not get any assistance from the battery and motor - the bike is effectively an unpowered pushbike. To turn the power back on, so the pedelec and throttle work again, simply press the ON/OFF button once - the capacity indicator will illuminate showing the power is on.

### 3.2.3 How to adjust functions:

3.2.3.1 To adjust the pedal assistance. Refer to paragraphs 3.4 below.

3.2.3.2 To turn on the bike’s front and rear lights, press the “set” button once. You will see a light



symbol appear under the battery capacity indicator; then press the “up arrow” to turn the lights on and the down arrow to turn the lights off. This also turns the display backlight on and off.



3.2.3.3 To read the single trip distance, press the “set” button twice; you will see a KM symbol on the left side of the screen. Press the down arrow to clear the value.

3.2.3.4 To read the single trip riding time, press the “set” button three times; you will see a clock



symbol in the left side of the screen. This display does not provide the time of day – simply elapsed riding time since last reset. Press the down arrow to clear the value.

3.2.3.5 How to change display units from Km to miles: Press the up and down arrow together for six seconds. This will change the distance and speed readouts to miles and mph. If this operation is repeated, the units will change back to Km and Km/h.

3.2.3.6 How to calibrate the display for wheel size: It is important to calibrate the display to take account of the wheel size fitted to the bike. If this is not done, the readouts will be inaccurate. To do this, press the set button for six seconds until you see the symbol. Use the up or down button to change the wheel diameter (inches) and the corresponding tyre circumference (mm). Wait five seconds for the system to reset.

3.2.3.7 If a problem is suspected with the bike, press the set button and down arrow simultaneously to display any error codes. Refer to section 2.8 for the error code descriptions. Contact your Wisper dealer for advice should this occur.

### 3.3 The LIGHTS

11.1 The front and rear light is powered by the main battery and is switched on following the procedure above. Always ensure you observe the correct polarity of the connecting wires if they are removed for any reason.

11.2 Due to the low power consumption, use of the lights will not reduce the range of the bike.



## 3.4 Pedelec mode and ASSIST mode

3.4.1 When you first ride your Wisper 806 Classic, you will notice that after half to one turn of the pedals, the motor will start working assisting 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 half to one turn, the motor will start again.

3.4.2 You will find the ASSIST level shows on the LCD display. You can adjust the assistance strength by pressing the up or down arrow.

There are six levels of assistance. 40%/50%/60%/80%/90%/100% and zero assistance. The image below shows level six selected.



3.4.3 80%, 90% and 100% mode are generally used when you need a greater amount of assistance from the motor. 60% mode is used when you do not need the instant power of 90% or 100%. 40% and 50% are used in high traffic situations or poor conditions such as ice and snow when 80%, 90% and 100% power immediately could be dangerous.

3.4.4 Power consumption: When you increase the assistance, you will find the battery range is reduced. Further details on this are included later in this manual in Appendix 2.

3.4.5 Zero assistance mode: In this mode there will be no assistance from the motor, but the speed, distance and time displays on the LCD display will continue to operate as normal, as will the lights.

### 3.5 Throttle Mode

3.5.1 The throttle is located on the left hand handlebar. It can be used independently to the pedelec mode to provide full power, irrespective of assist level selected (providing at least level 1 is selected), but the operation will vary depending on the country where the bike is supplied. Bikes are set up to be legal in the region in which they are supplied and will either provide full power up to 15mph (25kph) or partial power up to 4 mph (6kph) (walk along mode) independently of the pedelec system.



3.5.2 The independent use of the throttle, when available, will enable you to use the throttle without pedaling. However to achieve optimum performance and life from the motor, it is recommended that opening the throttle fully from standing still should be avoided, and that's where possible pedal assistance should be used when starting the bike from rest.

3.5.3 The use of the throttle in pedelec mode is legal in most countries. Throttle in pedelec mode enables you to turn up the power to the motor, as long as you are pedaling the bike; if you stop pedaling, the motor will stop too. If you have the pedelec mode set too low, you can increase the assistance from the motor from 40% to 100% of available power, simply by turning the throttle towards you.

**IMPORTANT!** Make sure your throttle grip and the grip on the left hand side of your handlebars are always intact and in good condition. Uncovered handlebar tubes can be very dangerous in case of a collision. Ensure the spacer fitted between the throttle and the fixed grip is properly installed.

**Warning:** The electric motor on your bike is very powerful and if you set off in a 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.

### 3.6 Battery capacity meter, riding style and affect on range

The range of the bike (distance covered between recharging of the battery) is greatly influenced by the level of assist selected, the amount of pedal assistance provided by the rider and the use of the throttle. If a high level of assist is selected, then the range of the bike will be reduced compared to using a lower level of assist. Similarly, if the rider does not pedal at all and relies totally on the throttle, the range will be very significantly reduced.

The Wisper pedelec system simply detects that the pedal cranks are turning, and any continued forward motion of the cranks will result in the bicycle electronics proving the full level of assistance selected on the handlebar display, regardless of rider input effort. Hence in certain situations, where little rider effort is being provided, the range can be reduced.

The optimum range is achieved when rider pedal effort is maximized and an ideal situation is for the rider to aim to match the power being provided by the bike on an equal basis.

Assist level 1 is set relatively high at 40% power. Hence even using what appears to be a relatively low level of assistance, the bicycle electronics are actually providing almost  $\frac{1}{2}$  of the rated power output of the bicycle. For many riders assist level 1 will provide more than adequate assistance and it is recommended the lowest level of assistance possible is selected if maximum range is important.

The battery capacity indicator is provided to give an approximation of battery capacity remaining. Each bar (LED) approximates to a  $\frac{1}{4}$  of the capacity. However this indicator relies on sensing battery voltage which will rise and fall depending on the amount of power being demanded at any given time, ambient temperatures etc. Hence the meter should only be used for indication purposes.

The battery capacity indicator built into the top of the battery (four LEDs) provides a similar indication and operates on the same principle.

Under heavy power situations (full throttle or high levels of assist) the battery voltage will temporarily dip, resulting in the capacity meter showing a lower level of charge. When that heavy power is reduced, the capacity meter may rise again as the battery naturally recovers its voltage.

During the discharge period of the battery, the voltage will drop from an initial voltage of nearly 42Volts to a minimum of 31.5Volts. The bulk of the discharge period will be in the range of 38 to 36 volts which provides the optimum performance for the bicycle. Hence due to this wide range in voltage, the performance of the bike will vary depending on the state of charge of the battery. To achieve the best possible performance, it is better to start a journey with a fully charged battery and to recharge it, if possible, as soon as the capacity indicates less than  $\frac{1}{2}$  capacity remaining.

When the output of the battery reaches 31.5Volts, the bicycle electronics will cut power to the motor to protect the system. A "LO" code or "03" code may also be displayed on the LCD display. This is quite normal and a safety feature built into the system. Also as the battery discharges, particularly when only the final 25% capacity is remaining (one bar displayed on the capacity meter), it is likely that heavy use of the throttle, or use of high assist levels in pedelec mode, will cause the battery voltage to temporarily dip, resulting in the above error codes being displayed and a temporary cut-out of power. If this occurs, it is recommended that the minimum level of assist is used, and the use of the throttle is minimized until the battery is recharged.

### 3.7 Gear shifter

3.6.1 The 806 Classic is fitted with a 7 speed Shimano Nexus gear unit contained within the rear hub.



3.6.2 The twist grip gear shifter is located on the right hand side of the handlebars. Turning the twist grip away or towards you, as shown by the arrows on the grip, you will change gear that will be indicated by a corresponding gear number in the twist grip housing. It is not necessary to pedal while changing gear and gear changes can be made with the bike stationary. No maintenance is required under normal operation, apart from occasional adjustment of the cable and chain tension.



## 3.8 Brakes

3.7.1 Front and rear V-brakes are fitted to the bicycle.

3.7.2 The brake levers are fitted with cut-outs that are required by law. This means that when you pull on either the back or front brake lever, the motor immediately stops working.



3.7.3 Inspect brake pads for wear on a regular basis. If the grooves in the braking surface are less than 2mm deep, replace the pads as follows. (Illustrations are shown for front brakes)



3.7.4 Squeeze both brake arms together and unhook the curved tubular cable guide end from the left hand brake arm (as viewed from the front of the bike in the above image). This will allow the brake arms to spring clear of the wheel rim. Use a 5mm Allen key to loosen the bolts holding the brake pads to the arms (right and left), then take the spacers and washers out.

3.7.5 Install new brake pads, taking note of the spacer positions, then with both pads pressed against the wheel rim by squeezing the arms together, tighten the brake pad bolts, making 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. Finally tighten to 6-8N.m.

3.7.6 Reinsert the curved tubular cable into the left hand brake arm and adjust the brake cable so that the combined pad/rim clearance (the gaps from left pad to left rim surface and from right pad to right rim surface) is 2mm. This adjustment can be made either at the handlebar brake lever cable adjuster or the inner cable clamp screw on the right hand brake arm. If the latter is adjusted, retighten the clamp screw to tighten to 6-8N.m.

3.7.7 Balance the brake arms by turning the small screws located at the brake arm pivot points. 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.

3.7.8 Readjust the pads so they are properly aligned, as tension adjustment may have altered the original pad alignment.

3.7.9 Follow the same procedure for the rear brakes.

### 3.9 The front connection box (manifold)

3.8.1 The front connection box (manifold) allows for the easy removal for diagnosis, repair or replacement of any of the electronic components on the handlebars. The connections to the handlebar electronics are made through push fit connectors. The connectors, being a push fit are simple to disconnect or reconnect and click into position when fully engaged. Each connector has a different number of pins and an alignment arrow, so it is important to ensure the connectors are only mated in their original positions with alignment arrows correctly positioned, as damage may occur to the pins if this procedure is not followed.



## 3.10 Quick release saddle height, handlebar adjustment and folding mechanism

3.9.1 Your Wisper bike has been fitted with a quick release seatpost clamp to facilitate the movement of the saddle to change the riding position.

3.9.2 It is important that the knurled nut on the collar is tightened so the post will not move in the seat post tube when the clamp lever is closed. Make this adjustment with the quick release lever in the open position.

3.9.3 Adjust the seat to the correct height and close the lever firmly to the position shown below. When you sit on the saddle, there should be no vertical movement between the saddle post and the frame and the lever should just fold against the collar. If it is too tight or too slack, repeat the procedure and adjust the knurled nut until a correct tension is obtained.



3.9.4 The handlebar is fitted with a similar two-stage arrangement to facilitate adjustment of the handlebar height, and the same procedure as above should be followed ensuring all clamps are firmly secured and any locking devices are in place.



3.9.5 To fold the bike, first fold each pedal by pushing the pedal inwards and then fold the pedal through 90 degrees, as shown below.



Lower the handlebars to the lowest position using the quick release clamps above, 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. Note the position of the safety locking catch that secures the quick release lever in the vertical position and ensure this is correctly located when re-folding the handlebars to the vertical position before riding.



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.



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



3.9.6 To unfold the bike, follow the reverse steps above ensuring all quick release clamps are securely fastened and no cables are trapped. Ensure the safety catch for the handlebar lower quick release lever is engaged after making the adjustment. Also ensure the stainless spring cable protector is in place.

### 3.11 Saddle post suspension

3.10.1 For your comfort, your bike has been fitted with saddle post suspension that 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’.

3.10.2 The suspension post can be adjusted by removing the whole post with the saddle attached from the bike. Insert into 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 seatpost.**

### 3.12 Rims and spokes

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

### 3.13 Drive wheel removal

3.12.1 To completely remove the rear wheel, it is necessary to disconnect the main motor cable connecting the motor to the bicycle electrical system. This is located on the front fork. Turn off all electrical systems on the bike and unplug the two halves of the connector by carefully pulling them apart, taking care not to strain the cables. Note the position of the alignment arrows that must be as shown below before reassembly



3.12.2 Remove the single Allen screw, securing the motor cable clamp to the front fork (shown above) and the protective covers on the front wheel spindle nuts.

3.12.3 Slacken the front brake arms, as described in the brake adjustment section above, to provide clearance for the tyre to pass through the brake pads.

3.12.4 Slacken the nuts, taking note of any tab washers fitted and lift the wheel from the fork dropouts.

3.12.5 Reassembly is the reverse of the above. Take care to check and adjust the front brakes and ensure the motor cable connector alignment marks are correctly aligned. Retighten the wheel nuts to the correct torque shown in the manual and ensure the motor cable exits in a downward position, to avoid ingress of water into the motor. Re-clamp the cable to the front fork, ensuring it cannot rub against the tyre.

### **3.14 Chain adjustment**

3.13.1 It is important that the chain is correctly tensioned. The correct tension is obtained when the chain can be deflected by approximately 10mm in the middle of the chain run between the chainwheel and the rear sprocket, under moderate finger pressure. If it is necessary to adjust the tension, slacken the rear wheel spindle nuts and move the wheel spindle backwards or forwards in the frame dropouts until the correct tension is achieved. Ensure the yellow tab washers are correctly located in the dropouts before retightening the spindle nuts to the correct torque specified in the manual.



## 4 Warranty

### Repair or replacement of components

**IMPORTANT!** To validate this Warranty, the retail customer must register the bike at [www.wisperbikes/mywarranty](http://www.wisperbikes/mywarranty) within fourteen days of purchase.

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

Main frame	Six years
Motor shell, Hub motor, Controller and Charger	Two years
Electronic handle bar controls and electrical connections	Two years
Paintwork (excluding accidental or deliberate damage)	Two years
Battery leakage or battery capacity loss of more than 30%	Two years
Lights and lighting system	One year
All other parts other than consumables not shown above	One year

### Terms and conditions

1.	If the product has a quality fault within fifteen 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 their bike within 14 days of purchase.

### **Exceptions to Limited Warranties**

Your Wisper bike may not be covered by our warranty for any of the following reasons:

1.	Damage resulting from misuse, not maintaining the vehicle or not following the guidelines within our user guide or using the vehicle for any kind of competitive sport.
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 within 14 days of purchase.
7.	Failure to have your bike safety checked and the spokes tightened within 300 miles or three months of purchase.

**It is essential to get your spokes checked and tightened after 300 miles. 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 be covered under our warranty.**

## **4.1 Battery maintenance and user responsibilities**

4.1.1 Your Wisper bike is equipped with a powerful, high quality lithium ion battery.

4.1.2 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.

4.1.3 It is not unusual for a well-maintained battery to last for several 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 many years to come.

4.1.4 The key to having a long lasting lithium 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.

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

**Six rules for optimum battery performance:**

1. Never leave your battery completely discharged for more than 24 hours
2. Always charge your battery before storage
3. If your battery is left unused for four or more weeks, recharge it for two hours. 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.

## 5 Service

After sales service is available through your retailer. If you are unable to contact your retailer please contact our Wisper Support at [support@wisperbikes.com](mailto:support@wisperbikes.com)

Wisper Ltd  
10 Oakenbrow  
Sway  
Hants  
SO41 6DY  
Tele: 01590 681553

[info@wisperbikes.com](mailto:info@wisperbikes.com)

[www.wisperbikes.com](http://www.wisperbikes.com)

Copyright January 2013 Wisper Ltd

## 6 Appendix 1 Pre Delivery inspection and 300 mile service check list

The PDI is a critical part of the overall Quality Assurance process and must be completed by the supplying dealer followed by a test ride and sign off before passing the bike to the customer.

The following items below are a generic list for all current Wisper models and must be covered during the PDI.

Item Check off by No.	Activity	Notes
<b>Mechanical Parts</b>		
1	Check front and rear wheel for alignment and run out	Tighten spokes if necessary
2	Check tightness of front and rear axle nuts	Tighten to torque setting in user manual
3	Check front and rear axle plastic covers in place	
4	Check tyre pressures front and rear	Inflate to correct pressure
5	Check and adjust action of front and rear brakes	Ensure there is no noise or squeal
6	Check smooth action and adjustment of front suspension forks (if fitted)	
7	Check adjustment of bearings in headstock	Adjust if necessary
8	Check security of all handlebar stem fixings and clamps	Adjust to suit customer preferences
9	Check front and rear mudguards for security and clearance from tyres	
10	Check all cables are clipped securely and safely	Check motor cable cannot rub against the tyre
12	Check pedals have been fitted correctly and tightened fully	Note left and right hand threads
13	Check pedal cranks have been tightened fully on bottom bracket axle.	Tighten to torque setting in user and service manual
14	Check smoothness and running clearance of bottom bracket	

15	Check seatpost quick release clamp is properly in place and secure and saddle is correctly fitted and secure	Adjust as necessary
16	Check smooth operation of gear change on either derailleur or 806 hub gear and ensure all gears can be selected	Adjust as necessary
17	Ensure side stand supports bike correctly and does not interfere with other moving cycle parts	
18	Ensure motor wheel turns smoothly and quietly when rotated by hand in forward and reverse direction	Some additional resistance will be felt when rotated in reverse
19	Ensure correct chain tension on 806 Classic	
20	Ensure chain guard is not rubbing on models equipped with guard	
21	Ensure all reflectors are in place on pedals, wheels etc	
	<b>Electrical Parts</b>	
1	Fit and check correct operation of front and rear lights	
2	Check wiring at front connector box	All grommets to be in place and no bare wires to be visible
3	Check throttle returns smoothly to closed position and plastic spacer is in position	Adjust if necessary (see section in manual)
4	Check brake cut-out switches cut power to motor	
5	Check functionality of LCD display on 806 bikes	Includes selection of six power assist levels, speed readout, etc. and all functions are correct as described in the user and service manual
6	Check functionality of LED display on 705 and 905 bikes	Ensure six levels of assistance can be selected and all functions are correct as described in the user and service manual
7	Check battery locates properly in the lower cradle and locks in place securely	Ensure three keys are present with same number

8	Check alignment and clearance of pedelec sensor	Adjust if necessary (see manual)
9	Remove triangular cover beneath battery cradle and check security of all plugs and sockets.	Check motor cable cannot rub against the tyre
10	Charge battery off the bike for 12 hours and check charger and battery function correctly	Check status lights on charger and battery LEDs during and after charging. Advise customer to complete one more 12 hour charge.
<b>Road Test</b>		
1	Road test the bike in a safe environment to test functionality of both electrical and cycle systems as described in the user manual, and check noise and performance levels	Adjust / correct after test ride.
2	Notify Wisper support if any manufacturing faults are identified, quoting details on the QA label and providing photographs if possible of any faulty components.	Print out and sign off the above check list and pass to customer along with the QA label attached to the bike
3	Run through the bike operation, battery charging and storage instructions and offer safety advice to the customer	

Name of inspector and dealership .....

Signed on behalf of the dealer .....

The 300 mile service and any subsequent service should generally follow the above check list with particular emphasis placed on re-tensioning of spokes at the 300 mile service to ensure compliance with the Wisper warranty.

Copyright January 2013 Wisper Ltd