

WISPER

Owner's Manual

Wisper 705 / 905 Classic 2013 Model

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

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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, 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, handle bars 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

WISPER 

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 you and your Wisper bike. The 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 full 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 bicycle and turn on with the key.
- 2.1.8 Press the **on / off** switch once on the LED display unit, on the left hand side of the handle bars. Check the **power assist and capacity level indicator lamps** are illuminated.



- 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 key on the battery when stopped or walking with the bike.
- 2.1.10 Remember to validate your warranty by visiting 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 do 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).

- 2.2.1 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 charge and discharge cycle. This is achieved by charging your battery for 12 hours on the 42V setting, 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 not going to use your bike for more than four weeks, you must ensure that the battery is fully charged using the 39V conditioning setting on the charger before you leave it. You must then recharge it every six to eight weeks using the 39V setting. This prevents the voltage from declining below safe levels that can cause unreparable 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 Always remember that you can consume up to three times more power when setting off using just the throttle. To extend the range and battery charge level, always set off using pedal assist if possible.

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

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

2.3.7 For best results, always recharge and store the battery at room temperature.

2.3.8 Before unloading the battery, make sure it is fully turned off at the key, then raise the saddle and unload the battery using its handle.

2.3.9 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.

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

2.4 Recharging your battery

2.4.1 The charger supplied with your 2013 model bike has two settings. The standard setting charges the battery to 42 Volts for normal battery use and should be used if charging the battery ready for use on the bike.

2.4.2 The 39 Volt position allows you to condition your battery accurately before putting it into storage. By using the 39V conditioning charge when storing your battery for the winter etc, you will significantly extend the useful life of your battery.

2.4.3 The 39V conditioning charge should only be used if you intend to keep your battery in storage for more than four weeks without use.

2.4.5 To use, simply click the switch from the standard 42V position to the 39V position and charge normally. The charger will cut off when the battery reaches 39V instead of the full 42V.

2.4.6 Whilst in storage, please recharge / condition your battery using the 39V position every six to eight weeks.

2.4.6 At all other times, use the standard 42V charge position.

2.4.7 Before charging, make sure the charger is turned off and connect your battery to the charger at the charging socket (see images below). Then plug the charger into a mains socket and turn on the charger using the switch at the rear of 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. However, to optimize battery life, leave the charger connected for a further two hours and then turn off the charger and disconnect it 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 twelve hours to charge on the first three charges.

2.4.8 When charging the battery, always do so in a well ventilated area.

2.4.9 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 bicycle, 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. Handlebar and saddle tubes 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.	46N.m
Back axle nuts.	70N.m
Handlebar and stem clamp bolts.	12N.m
Handlebar stem expander bolt.	10N.m
Seat pillar clamp nut/bolt.	5-8 N.m
Seat clamp nuts.	24N.m
Crank axle Allen bolts.	40N.m
Gear shifter nuts.	4N.m
Brake caliper nuts.	10N.m
Rear carrier nuts.	8N.m
Mudguard bracket nuts.	8N.m

Other general torque settings depend on the thread size. M4: 2.5-4.0N.m, M5: 4.0-6.0N.m, M6: 6.0-7.5N.m.

2.6.3 Your bike has a rear derailleur that will automatically tension your chain. However, if the chain becomes loose or frequently comes off the front chainwheel, 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 handle bars.

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

2.6.6 Front and rear brake pads must be replaced if the pad material wears to less than 1mm.

IMPORTANT! braking distances increase on wet or icy roads.

2.6.8 Lubrication:

6.8.1. Lubricate all pivot points on the derailleur and chain with light oil or chain lube on a regular basis.

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

2.6.9 Recommended tools for proper maintenance:

Torque wrench with lb/in or N/m gradations

2, 4, 5, 6, 8mm Allen wrenches

9, 10, 15 mm open-end spanners and 15mm box end spanner

14, 15, and 19mm socket

T25 Torx wrench

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

2.7 Technical specifications & performance

Motor	High efficiency, high torque, brushless rear wheel drive by Dapu Japan. 250Watt (200Watt and 350Watt available for outside Europe)
Battery	Lithium Polymer with advanced battery management system (BMS) Medium range 37V 11Ah 407Wh Capacity 3.16kg Long range 37V 16Ah 592Wh Capacity 4.06kg
Mains charger	42V output plus 39V conditioning output, fan cooled intelligent charge system communicates with BMS, auto stop when fully charged. Vented aluminium case. Medium range 1.5Amp Long range 4Amp
Car/boat charger	12V input, fan cooled, intelligent charge system, auto stop when fully charged. (Optional at extra cost)
Assisted range	Medium range average 45miles / 70kilometers Long range average 60miles / 100kilometers
Assistance modes	1. Throttle only to 4mph/6kph (15.5mph/25kph in UK) 2. Throttle assist - complete throttle use when pedaling forward 3. Pedelec with six levels of assistance power and safe mode

Maximum speed	15.5mph/25kph under powered assistance, this does not affect top speed when pedaling or freewheeling.
Controls	LED display panel Battery power available Bike on/off switch Instantaneous Power consumption Lighting on/of switch Power assistance controls Diagnostics
Bicycle weight	Including battery and all accessories Medium range 25.4kg Long range 26.3kg
Frame	Hydro formed, hand welded 6061 Alloy T4 and T6 tempered
Frame size	20" / 51cm
Finish	Graphite Silk powder coated and lacquered - oven hardened
Forks	Magnesium RST VITA adjustable hydraulic suspension forks with lock out
Seat post	Kind Shock adjustable suspension
Saddle	Rio Plus by SelleRoyal Italy
Handlebars	Black anodised alloy with ergo support grips
Stem	Black alloy with adjustable height and reach
Kick stand	Black anodised alloy
Gears	SHIMANO Deore RDM-592 9 speed 13-32 Sunrace
Chain ring	Alloy Equip 48 tooth
Chainguard	Full alloy powder coated in Graphite Silk
Chain	KMC Z51RB rust resistant
Crank	Pewter alloy
Pedals	City and touring style alloy non-slip, sealed bearings
Brakes	Tektro Auriga e-Comp Hydraulic vented disc brakes, front and rear
Rims	Alloy double walled 26" x 1.5" by Büchel Germany
Spokes	13g stainless steel by Büchel Germany

Tyres	26" x 1.75" Schwalbe Energizer Plus with 3mm Green Guard puncture protection
Lighting	Front: 36V 15W LED super bright - power from bike battery Rear: 36V light - power from bike battery Reflectors: front white, rear red, wheels / tyres white
Extra equipment	Full shatterproof polycarbonate mudguards, 25kg rack with luggage cords, bell and toolkit
All bike fixings	A4 grade stainless steel or alloy

2.8 Simple Trouble shooting

Problem	Possible reason	Solution
Top speed too slow	<ol style="list-style-type: none"> 1. Low battery voltage 2. Handlebar control problem 3. Damage to motor driveline 	<ol style="list-style-type: none"> 1. Recharge battery fully 2. Call service 3. Call service
Power on, but motor not working	<ol style="list-style-type: none"> 1. Battery not connected 2. Battery fused 3. Motor connection damaged 4. Handlebar control problem 	<ol style="list-style-type: none"> 1. Re install battery 2. Replace fuse 3. Call service 4. Call service
Low range after recharging the battery	<ol style="list-style-type: none"> 1. Tyre pressures too low 2. Undercharge or charger fault 3. Battery capacity loss or damage 4. Hill climbing, frequent stops, strong headwinds, overloading. 5. The charge has been made on the 39V conditioning Voltage 	<ol style="list-style-type: none"> 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 5. Switch charger back to 42V charge and finish charging battery <p>Also see section on Wisper website regarding range issues</p>

The bicycle is equipped with built-in diagnostics. During a normal start up, after switching on the bike, all the lights on the power assist LED display will light sequentially and then extinguish. Should a fault be detected on start up, the LED lights will flash as shown below to indicate the fault.

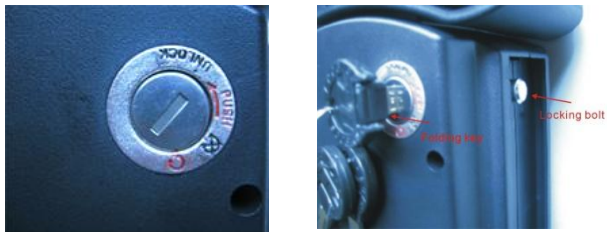
LED Handlebar Mounted Display Diagnostics / Fault Identification	LED Status	Solution
Excessive motor current	First light flashes	Check wiring to motor for damage. Use a smaller throttle opening particularly from rest
Throttle fault	Second light flashes	Check connections at front manifold. Replace throttle
Motor connection or internal fault	Third light flashes	Check wiring to motor for damage. Check connections at the controller
Motor sensor fault	Fourth light flashes	Return the bike to the dealer
Brake cut-out fault	Fifth light flashes	Unplug each brake lever in turn at the manifold to identify which lever is faulty. Replace faulty lever
System electronics / software failure	All Six lights flash at the same time	Return the bike to the dealer

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 switch and lock

3.1.1 Your Wisper bike is supplied with three identical keys. The key turns the battery on and off and locks the battery to the bike. **Please keep a careful note of the key numbers, as they cannot be replaced without these numbers should they become mislaid.**



3.1.2 The battery is connected to the electrical system of the bike automatically when you slide the battery into the frame. To turn on the bike's electrical system, turn the key in the battery fully clockwise. To turn off the power, turn the key anticlockwise.

3.1.3 When the battery has been turned on, the bike is now ready for use. The ON/OFF button (marked with a +) on the LED handle bar display isolates the power from the bike. When the + (on) button is pressed for 3 seconds the battery capacity indicator lights will illuminate. When the + button is pushed again for 3 seconds, the lights will go out - you have turned the bike "off". When the bike is "off" you will not get any assistance from the battery and motor and the bike is effectively an unpowered pushbike.

3.1.4 To lock the battery into the bike frame, turn the key clockwise until the locking bolt holds the battery in the frame. To turn the battery power on, turn the key clockwise again by one click. To unlock the battery, push the key in and turn the key fully anticlockwise.

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

3.1.6 To remove the battery, turn off the power by turning the key fully anticlockwise to the unlocking position, and remove the seat post. Using the handle on top of the battery, lift out the battery.

3.1.7 To replace the battery, reverse the procedure for removing it.

3.1.8 Check there is no excessive movement of the battery when riding the bike. If movement is found, adjust the position of the small L shaped bracket, located at the top of the battery guide rail, until the excessive movement is eliminated. This is done by slackening the two adjusting screws and

self-locking nuts located beneath the frame brace at the front luggage rack mount and moving the bracket forward. Retighten the screws securely. See picture below. (Caution – do not remove all clearance as it will be difficult to remove the battery if this is done).



3.2 The ON/OFF button and Light button

3.2.1 To turn the power on so the pedelec system and throttle work, simply press the ON/OFF button (marked with a +) on the LED handle bar display for 3 seconds - the battery capacity lights will illuminate showing the power is on. When the ON/OFF button is pushed again for 3 seconds and the capacity indicator lights go out you have turned the bike “off”. When the bike is “off” you will not get any assistance from the battery and motor and the bike is effectively an unpowered pushbike. If the bike is left for ten minutes without being ridden, the bike will automatically turn off. The four capacity indicator lights provide an indication of the battery capacity remaining with all four lights indicating the battery is at full capacity. The display also incorporates a diagnostic function as described above. If any of the lights flash continuously, refer to the above section for the description of the fault.



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



3.3 The Throttle

3.3.1 The twist grip throttle can be found on the left hand side of the handlebars. Further details of the operation are provided below.



3.4 Pedelec mode and ASSIST mode

3.4.1 When you first ride your Wisper bike, 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 back 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 buttons (marked with a + and a -) on the panel on the handle bars with six associated LEDs (small red lights). Each time the + button is pressed, the LEDs illuminate sequentially ranging between one and six and the corresponding power level in pedelec mode increases in increments of 20%. Setting six provides 100% power. For safety reasons the default level

is set to zero assist when the bike is first turned on. To obtain power assistance, the + button must be pressed at least once such that one LED is illuminated. Likewise, each time the - button is pressed the assistance level is reduced until all the LED lights go out and the assistance is turned off.

3.4.3 Setting six is generally used when you need the maximum amount of assistance from the motor, but this will drain the battery the fastest. 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 instant full power could be dangerous. Power settings can be changed when the bike is stationary or when on the move.

3.5 Throttle mode

3.5.1 The throttle can be used independently to the pedelec mode and will work in any of the six assistance settings; 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 (100%) up to 15mph (25kph) or reduced power; up to 4 mph (6kph) (walk along mode) independently of the pedelec. However, in order to obtain power from the throttle, the + button must be pressed once after switching on the bike such that at least one assist level LED is illuminated.

3.5.2 The independent use of the throttle, when available, will enable you to use the throttle without pedaling and maximum power will be available in pedal assist regardless of which one of the six assistance levels is selected.

3.5.3 The use of the throttle in pedelec mode is legal in most countries. Throttle in pedelec mode enables you to apply 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 by turning the throttle towards you.

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

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 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's electronics providing 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 the 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.

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 that 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 42 Volts to a minimum of 31.5 Volts. 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.

3.7 Brakes

3.7.1 Hydraulic disc brakes are fitted to the front and rear wheels of the bicycle. Hydraulic disc brakes offer several advantages over traditional rim brakes, including better braking in wet, muddy or other adverse conditions, less braking power fade over extended downhill braking and the ability to continue braking even if your rim becomes bent or distorted.

3.7.2 The brakes are fitted with cut-out switches 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 Details of how to adjust and maintain your brakes are as follows:

Regularly inspect the brake pads for wear. If they have reached the wear limit of 1mm, replace them immediately.

For the front brake, remove the caliper from the fork leg, complete with the mount adapter by removing the two 6mm Allen caliper fixing screws. For the rear brake, remove the caliper from the adapter by removing the two 6mm Allen caliper fixing screws leaving the adapter fitted to the mounts on the bike frame. The pads can then be removed by unscrewing and removing the pad retaining screw (which passes through the tabs of the brake pads) using a 3mm Allen wrench. Then lift the pads complete with the spring out of the rotor slot in the caliper body.

Warning! Do not loosen any other screws on the caliper.



Front



Rear

3.7.4 To refit the pads, hold the pads complete with spring as an assembly and insert into the caliper slot with the metal backing towards the pistons. Refit the pad retaining screw ensuring it passes through the holes in the pad tabs and through the hole in the spring and tighten to 3– 5 N.m. Refit the caliper loosely using the two Allen screws, apply the brake lever and tighten securely to 6 to 8 N.m whilst continuing to apply the brake lever. (N.B. use of a thread locking compound is recommended on the caliper fixing screws).

Warning: If you are unsure about any part of the brake installation process you should seek advice from a Wisper service center or qualified mechanic.

Caution: The pads and rotor must be kept clean and free from oil or grease based contamination. If the pads become contaminated you must discard them and replace them with a new set. A contaminated disc should be cleaned with a proprietary brake cleaning solution.

3.8 Stem and handle bar clamp

3.8.1 Your bike has been fitted with an adjustable handlebar and stem clamp that allows you to change the angle and height of the bars to find the most comfortable riding position.

3.8.2 The handlebars can be adjusted before you use the bike by slackening the four clamp bolts (shown in the picture below) using a 4mm Allen key. Once a comfortable position is achieved, securely tighten the four clamp bolts evenly, ensuring an even gap is left between the two halves of the clamp housing, and the serrations on the two halves of the clamp mate correctly with the fixed part of the stem. Tighten the four bolts to a torque setting of 12N.M.



3.8.3 To raise or lower the stem, remove the rubber plug from the top of the stem and slacken the 6mm Allen screw one complete turn. Leaving the Allen key in place, gently tap the top of the Allen key with a mallet until the expanding wedge fitted internally in the stem is felt to move. Raise or lower the complete stem to the desired position and retighten the Allen key securely, ensuring the handlebars are aligned in the straight ahead position and that the stem has not been raised beyond the minimum insertion marks shown on the side of the stem. Replace the rubber plug.



3.8.4 To change the angle of the stem, slacken the central Allen screw in the side of the stem and rotate the stem up or down until the desired position is obtained. Retighten the Allen screw securely to 17-18.5 Nm.



3.9 Front suspension forks

3.9.1 Your bike has been fitted with RST Vita adjustable front suspension forks

3.9.2 Adjustment can be made by turning the black preload adjuster located on the left hand side of the fork crown. Turn the adjuster clockwise to increase the suspension preload and anticlockwise to reduce. The red damping adjustment is located on the right hand side of the fork crown. Turn the

adjuster clockwise to make the damping softer and anticlockwise to make it harder. When turned fully anticlockwise the forks will be locked with no suspension movement.



3.10 The front connection box (manifold)

3.10.1 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 push 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, as damage may occur to the pins if this procedure is not followed.



3.11 Quick release saddle height adjustment

3.11.1 Your Wisper bike has been fitted with a quick release saddle post fitting to facilitate the movement of the saddle height or to remove the battery.

3.11.2 It is important that the knurled nut on the fitting is tightened so the post will not move in the bike tube. Make this adjustment with the quick release lever in the open position.

3.11.3 Adjust the seat to the correct height and close the lever firmly. When you sit on the saddle there should be no vertical movement at all in the saddle post beyond the seat post suspension movement. Never apply grease to the saddle post.



3.12 Saddle post suspension

3.12.1 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”.

3.12.2 The suspension post can be adjusted by removing the whole post with the saddle attached from the bike. On the bottom of the post you will find an Allen key adjuster inset into the post. Simply turn it clockwise to tension the spring for heavier people and anticlockwise to release tension for lighter people.



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

3.13 Rims and spokes

3.13.1 It is essential to have 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 Warrantee.

3.14 Chain and drive wheel removal

3.14.1 To completely remove the rear wheel, it is necessary to disconnect the main motor cable connecting the motor to the bicycle electrical system. This operation is best achieved by turning the bicycle upside down.

3.14.2 Locate the motor cable where it emerges from the centre of the wheel axle on the left hand side of the bicycle and slide back the rubber top hat cover to gain access to the nut below.



3.14.3 Trace the route of the motor cable along the rear forks of the frame and locate the quick release motor cable connector shown in the image above. (N.B. this image is for illustration purposes only). Disconnect the two halves of the connector, taking care not to strain the cables, and unclip the motor cable from the frame. Note the alignment marks on the two halves of the connector.

3.14.5 Loosen the two large motor axle nuts and remove the nut from the right hand side, taking care to note the position of any tab washers fitted. Unscrew the left hand nut as far as is possible towards the cable exit from the motor axle, being careful not to damage the cable.

3.14.6 Lift the wheel from the frame dropouts, being careful not to snag or strain the motor cable.

3.15.6 Installation is the reverse of the above. Take care to locate the tab washers correctly in the drop out slots and tighten the axle nuts to the torque specified in the manual. Reconnect the two halves of the quick release connectors, taking care to ensure the pins and alignment arrows align correctly. Re-clip the cable to the frame, ensuring that the cable cannot rub against the tyre and that the cable exits in a downwards direction from the axle to avoid water ingress into the motor. Refit the rubber top hat cover.

Because the bicycle has a rear derailleur, the chain will be automatically adjusted.



3.15 Derailleur and gear change

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

If difficulty is experienced with changing gear after initial operation of the bicycle, it is likely that some cable stretch will have occurred in the gear change cable. To compensate for this turn the knurled adjuster shown in the centre left hand side of the image below by pulling it away from the outer cable stop in the direction of the cable towards the rear of the bicycle and turning it $\frac{1}{2}$ turn anticlockwise when viewed from the rear. This will compensate for the cable stretch. If necessary, repeat the operation again until smooth gear selection is obtained or return your bicycle to your Wisper dealer for further adjustment.



3.15.2 To change gear, use the 9 speed rapid fire gear shifter located on the right side of the handlebar. The two levers located underneath the shifter can be pulled and pushed to select the gears over the range 1 to 9.



4 Warranty, battery maintenance and user responsibilities

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. 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 15 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 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 (polymer) battery. Lithium ion (polymer) is recognised as being the very best type of battery for electric bicycle use.

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.

A key point to remember when choosing a battery is to check the battery capacity ($V \times Ah = Wh$ the battery's capacity) i.e. $17Ah \times 36V = 592Wh$. When such a battery loses 30% of its capacity, it will still have nearly 400Wh left, only a little less than a new 24V 18Ah (432Wh) 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.

4.1.4 The key to having a long lasting 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 weeks or longer, recharge it using the 39V conditioning charge on your charger. 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

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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
	Mechanical Parts	
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	
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 seat post quick release clamp is properly in	Adjust as necessary

	place and secure and saddle is correctly fitted.	
16	Check smooth operation of gear change on either derailleur or 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	
20	Ensure chain guard is not rubbing on models equipped with guard	
21	Ensure all reflectors are in place on pedals, wheels etc	
	Electrical Parts	
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, 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 functions correctly	Check status lights on charger and battery LEDs during and after charging. Advise customer to complete one more 12 hour charge.
	Road Test	
1	Road test the bike in a safe environment to test functionality of both electrical and cycle systems as described in the user manual - 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 place on re-tensioning of spokes at the 300 mile service to ensure compliance with the Wisper warranty.

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