

WISPER

Owner's Manual

Wisper 705 24" and 26" 905 2019-20 Model

Standard and Torque Power Pack

September 2019 4th edition



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. In the UK electric bicycles 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 riding 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.

Always test your brakes prior to using the bike 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 and can be illegal.

If you need to replace your battery, please either dispose of it properly or 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 and be safe, happy cycling!

Amps Electric Bikes Ltd

2 Caring for your Wisper bike and pre-use checks

Your Wisper bike has been thoroughly tested at the factory prior to delivery and has undergone a pre-delivery inspection 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.

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.
- 2.1.3 Check brakes 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 onto bicycle by sliding into the rack until the battery “clicks” in place. Then turn on with the switch located at the rear right hand side of the battery. Remove key from battery and keep safe during operation of the bike. To remove the battery, first turn the battery off at the switch, then turn the key and hold in the unlocked position then slide the battery out of the rack.
- 2.1.8 Turn on the bike by pressing the on/off switch adjacent to the left-hand grip for two seconds. (Turn off the bike by repeating the same process).



Fig 1

The bike will be ready to ride, and the LCD will activate showing battery state, assist level, time, trip and speed. Turning the pedals for more than $\frac{1}{4}$ of a revolution or twisting the throttle will now activate the motor. With the TPP upgrade installed the motor will start when you press down on the pedals.

Other functions

1. To set the assist levels: Toggle with the up and down arrows.

2. To toggle between Trip and ODO: Double click the up arrow for ODO. Double click the down arrow for Trip.
 3. To reset the Trip: When the bike is turned on, double click the on/off button whilst the bike is in Trip function.
 4. To turn lights on or off: Press on/off button, the bike must be turned on for the lights to operate.
 5. To change from KM to Miles and visa versa: Hold the Power and down arrow for three seconds.
 6. To engage walk assist: Push the down button (V) for 3 seconds and hold. The bike will move forward at 4mph or 6km/h. Alternatively twist the throttle, as long as the pedals are not turning forward the bike will stop accelerating at 4mph.
- 2.1.9 To avoid unplanned acceleration, always make sure that the LCD assist level is set to minimum and the single bar is flashing when mounting and dismounting. Turn the bike off when leaving it unattended.
- 2.1.10 For further information regarding the LCD display please refer to the Wisper web pages. <https://wisperbikes.com/tutorials/>
- 2.1.11 Remember to validate your warranty by visiting <https://wisperbikes.com/support/register-your-e-bike/> and filling in your details.

IMPORTANT

Riders over 6' or 182cm tall, must ask for 400mm seat-post when ordering. If the saddle is used with the seat post outside the limit makes serious damage and injury may take place. If there is no limit mark printed on the seat post please contact your supplier who will supply a new seat post.

2.2 Before each use

It is important you check 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 and changed or repaired by an electric bike mechanic or your retailer.

- 2.2.1 Check the tyres for any visible damage.
- 2.2.2 Check tyre pressures. The pressures are shown on the side wall of the tyres fitted to your bike.
- 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 Your Wisper bike comes with a high-quality lithium ion battery. All lithium batteries need to be looked after to ensure many years of full use.
- 2.3.2 Recharge your battery after every use if possible. Keeping your battery charged extends its life and your bike is always ready to go.
- 2.3.3 You do not have to “condition” your battery by charging and discharging before it’s first use. This was the case with old lithium ion technology but is not necessary on modern batteries
- 2.3.4 Never leave your battery completely discharged. Voltage dropping below minimum for any length of time will cause serious damage to your battery cells.*
- 2.3.5 Recharge your battery every month even if you are not using the bike. Most lithium Ion batteries will continue to discharge even when the bike and battery are turned off (see above). If your battery falls below minimum Voltage it may not be recoverable.*
- 2.3.6 Do not expose the bicycle or battery pack to fire, heat sources, acid or alkaline substances. Do not submerge the battery in any liquid.
- 2.3.7 When leaving your bicycle during hot weather, always leave in a shaded well-ventilated area.
- 2.3.8 For best results, always recharge and store the battery at room temperature.
- 2.3.9 Before unloading the battery from the bike, make sure it is turned off and unload the battery using its handle.
- 2.3.10 Further information on user responsibilities and battery maintenance are included in the warranty section of this manual.

* The most common cause of battery failure is the owner not keeping to points 4 and 5 above. This is the most common reason for customers having to replace batteries. This is particularly noticeable in the spring when customers are using their bike for the first time in the new year. We receive most calls regarding failing batteries during this period as this is the time when batteries are not being used.

IMPORTANT

If your battery cells are damaged due the battery being left in a discharged contition, or has not been recharged advised as per this manual your battery is not covered by our warranty.

Battery safety

- 2.3.11 i. **Never leave a battery connected to the charger or mains power over-night.**
- ii. **Never recharge a battery outside, in damp conditions or in temperatures less then 0 degrees centigrade.**
- iii. **Never open a battery case, try and fix the battery or give it to any one other than a registered Wisper Stockist for maintenance. (Failure to comply will void the warranty)**

iv. If a battery is or appears to be damaged or overheating for any reason, do not use the bike and leave the battery in a place where it cannot cause fire. Immediately contact your retailer for advice and a safety check.

IMPORTANT

Ignoring any of the safety rules above could cause serious injury or fire.

2.4 Recharging your battery

- 2.4.1 Before charging your battery, make sure the charger is turned off and connect your battery to the charger at the charging socket. Plug the charger into a switched mains socket that is switched off and turn on socket. A red lamp will light up on the charger and indicate the battery is charging. When the red light turns green, the battery is fully charged. To optimize battery life, leave the charger connected for a further hour, then turn off the charger, turn off the main socket and disconnect the charger from the mains. 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.
- 2.4.2 When charging the battery, always do so 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 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. | 5-8N.m |
| Seat clamp nuts. | 24N .m |
| Crank axle Allen bolts. | 40N.m |
| Gear shifter nuts. | 4N.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 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.
- 2.6.7 Your bike is fitted with hydraulic brakes that automatically adjust. If the brakes become soft contact your Wisper dealer for advice.

IMPORTANT! braking distances increase on wet or icy roads.

2.6.7 Lubrication:

6.7.1. Lightly lubricate all pivot points on the derailleur and chain with light oil or chain lube on a regular basis.

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

2.6.8 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 Torque wrench

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

2.7 Technical specifications & performance

| | |
|---------------------|---|
| Motor | Brushless, 250W hi torque brushless rear wheel drive. |
| Battery | Lithium with advanced battery management system (BMS) Medium range DLG 375Wh 2.6kg Long range DLG 575Wh 3.4kg Mega range LG 700Wh 3.6kg All batteries use identical battery cases so are interchangeable between 705, 806 or 905 Wisper bikes |
| Battery case | Polycarbonate/ABS mix, non conductive for extra safety, conforms to |

| | |
|-----------------------|---|
| | 2013 90cm drop test. |
| Mains charger | Lithium 42V output intelligent charger communicates with battery management system (BMS), auto stop when fully charged 2A, Charge time 2.5 to 8hours depending on battery state |
| Connections | All electronic components and motor wheel have individual connectors for ease of servicing |
| Assisted range | Medium range 375Wh Long range 575Wh Mega range 700Wh Total load, terrain, road surface, tyre pressures, speed, power setting used, wind conditions, and motor power all have a huge bearing on range. With this in mind, you may expect to achieve the following AVERAGE ranges. Due to the number of outside factors affecting bike ranges, our published ranges are estimated based on our experience and are not guaranteed. 375Wh battery 15 to 30 or 40 miles with TPP* 575Wh battery 25 to 45 or 60 miles with TPP* 700Wh battery 35 to 60 or 85 miles with TPP* *By upgrading to our high efficiency Torque Power Pack range may be extended by up to 30% |
| Assistance | 1. Twist throttle only: to 4mph/6kph 2. Cadence sensor or Torque sensor with TPP upgrade 3. 5 levels of assistance power and safe mode 4. Twist throttle to 15.5mph when pedals are turning forward. |
| Max speed | 15.5mph/25kph with powered assistance |
| Controls | Back lit LCD display panel with bike and light on/off switch Speedo, Range, Trip, Battery state |
| Bicycle weight | 19.5kg without battery Including battery and all accessories 375Wh: 22kg 575Wh: 23kg 700Wh: 23.5kg With suspension forks add 1kg |
| Load capacity | 19 Stone / 120kg |
| Frame | Hand welded, 6061 Alloy T4 and T6 tempered |
| Frame size | 705 26 18" 46.5cm 705 24 14.5" 36.5cm 905 20" 50cm |
| Finish | Black Silk painted and lacquered, three stage oven hardened |
| Forks | 705 26 in Black, Red or Blue 705 24 Red and Blue 705 24 Wisper light weight blade forks 905 and 705 26 Suntour NEX with Pre-Tension |
| Seat post | Promax 350mm black anodised aluminium |
| Saddle | Wisper comfort E-Bike Saddle with handle |
| Handlebars | Black anodised alloy with ergo support grips |
| Stem | Black anodised alloy adjustable |
| Kick stand | Black anodised alloy |
| Gears | SHIMANO 7 speed derailleur with 7 speed selector |
| Chain ring | 170mm 52 tooth |
| Chain guard | Full, alloy Stealth Black paintwork |
| Chain | KMC Z51RB rust resistant |
| Cranks | Anodised Black alloy |
| Drop outs | Stainless steel cassette |

| | |
|----------------------|--|
| BB | Sealed bearing Bikes with TPP option sealed bearing with torque sensor |
| Pedals | City and touring style alloy non-slip, sealed bearings |
| Brakes | Wisper Hydraulic 180mm disc brakes front and 160mm rear |
| Rims | Alloy double walled 26" x 1.5" |
| Spokes | 13g black |
| Tyres | Kenda 1088 26" 1.95 high puncture resistance with Kevlar and wall reflector |
| Mudguards | Polycarbonate shatterproof |
| Lighting | Front: 36V 15W LED, power from bike e-system Rear: 36V light, power from bike e-system Reflectors: front white, rear red, wheels orange and pedal reflectors |
| Rear Rack | Certified to 25kg |
| Metal 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. Motor connection damaged 3. Handlebar control problem | <ol style="list-style-type: none"> 1. Re install battery 2. Call service 3. 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 <p>Terrain, hills, frequent stops, strong headwinds, overloading and air temp will reduce range.</p> | <ol style="list-style-type: none"> 1. Check pressures 2. Recharge completely or have charger inspected 3. Replace battery |

3 Controls and equipment

In this section, the functions and any specific maintenance needed on 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 two identical keys. The key locks the battery to the bike.
- 3.1.2 The battery is connected to the electrical system of the bike automatically when you slide the battery into the rack. To turn on the bike's electrical system, press I on the switch located on the right-hand side at the rear of the battery. To turn off the power, press O.



Fig 2

- 3.1.3 When the battery has been turned on, the bike is now ready for use. The on/off button the handle bar control isolates the power from the bike.

When the on/off button is pressed for 3 seconds the LCD symbols will become visible. When the on/off button is pushed again for 3 seconds, the LCD symbols will disappear - you have turned the bike "off". When the bike is "off" you will not get any assistance from the battery and motor and the lights will not function.

- 3.1.4 To lock the battery into the bike frame, slide the battery into the battery holder on the rack until you hear a click. To unlock the battery, turn the key fully anticlockwise and hold in this position whilst sliding the battery out. Always turn the battery off at the switch before loading and unloading.
- 3.1.5 The battery can be charged either on or off the bike.

3.2 The ON/OFF button and Light button

- 3.2.1 To turn the power on so the pedelec system is operational, simply press the on/off button on the handle bar control for 3 seconds - the LCD symbols will become visible showing the power is on. When the on/off button is pushed again for 3 seconds and the LCD symbols become invisible 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 battery capacity indicator lights provide an indication of the battery capacity remaining with

four bars indicating the battery is at full capacity. The display also incorporates a diagnostic function for use by Wisper service.

- 3.2.2 The LIGHT button is the on/off button. If you click the on/off when the bike's power is on, the LED headlight and rear light will illuminate. The LCD display will also become back lit. Click it again to switch off the lights. The power for the lights comes from the bike battery, but due to the low power consumption of the LED lights, you will not noticeably reduce your range.

IMPORTANT

Do not press the (V) down button to turn off the lights as this will activate the walk along mode and the bike will start to move forward.

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. The twist and go throttle has two functions:
- To power the bike sufficiently to help when walking the bike to a maximum of 4mph or 6km/h. This can also be achieved by pushing the down button (V) for 3 seconds and holding.
 - To increase the power to the motor when on a level road. The throttle takes the bike out of torque mode if you have upgraded to TPP. Your range will decrease if you use this option.



Fig 3

3.4 Battery capacity meter, riding style and affect on range

- 3.5.1 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.
- 3.5.2 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.
- 3.5.3 The Wisper cadence sensor system detects the speed the pedal cranks are turning, and this information is fed into an on-board computer (the controller) to give the rider the most natural riding experience possible.

When the TPP is fitted, the torque sensor in the main bearing will turn on the motor as soon as the rider puts sufficient pressure on the pedals.

- 3.5.4 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.
- 3.5.5 The battery capacity indicator is provided to give an approximation of battery capacity remaining. Each bar on the LCD approximates to a ¼ 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, the meter should only be used for indication purposes.
- 3.5.6 The battery capacity indicator, built into the top of the battery provides a similar indication and operates on the same principle.
- 3.5.7 Under heavy power draw (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 the heavy power usage is reduced, the capacity meter will rise again as the battery naturally recovers its voltage.
- 3.5.8 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. 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 at the end of each journey.

3.5 Brakes

- 3.6.1 Disc brakes are fitted to the front and rear wheels of the bicycle. Disc brakes offer several advantages over traditional rim brakes, including better braking in wet, muddy or other adverse conditions and less braking power fade over extended downhill braking.
- 3.6.2 Details of how to adjust and maintain your brakes are as follows:
- 3.6.3 Regularly inspect the brake pads for wear. If they have reached the wear limit of 1mm, replace them immediately.
- 3.6.4 **To replace the brake pads, unless you are a competent bicycle mechanic always take your bike to your Wisper dealer.** Front brake: Remove the caliper from the fork leg, complete with the mount adapter by removing the two 6mm Allen caliper fixing screws. Rear brake: Remove the caliper by removing the two 6mm Allen caliper fixing screws 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.

- 3.6.5 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 Nm 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 brake disc rotor must be cleaned with a proprietary brake cleaning solution.

3.6 Stem and handle bar clamp

- 3.7.1 The handlebars can be adjusted before you use the bike by slackening the four clamp bolts 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 12Nm
- 3.7.2 To alter the rake of the handle bars, 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.

3.7 The electronic connectors

- 3.8.1 All electronic components have individual connectors, this allows for the easy removal for diagnosis, repair or replacement of any of the electronic parts. 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, damage may occur to the pins if this procedure is not followed.

3.8 Quick release saddle height adjustment

- 3.10.1 Your Wisper bike has been fitted with a quick release saddle post fitting to facilitate the adjustment of the saddle height.
- 3.10.2 It is important that the nut on the fitting 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.
- 3.10.3 Adjust the seat to the correct height and close the lever firmly. When you sit on the saddle there should be no vertical movement. Never apply grease to the seat post.

IMPORTANT

Height limit marks on the seat post must be strictly adhered to, if there is no mark on the seat post contact Wisper Support for advice. Frames damaged due to the seat post being used too high will not be covered under our limited Warranty.

Rims and spokes

- 3.11.1 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 Warranty.

3.9 Chain and 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 operation is best achieved by turning the bicycle upside down.
- 3.12.2 Locate the motor cable where it emerges from the centre of the wheel axle on the left-hand side of the bicycle, slide back the top hat protector to locate wheel nut.
- 3.12.3 Trace the route of the motor cable along the rear stays and locate the quick release motor cable connector, it is located in a recess in the chain stay for protection against weather and physical damage. Flick out the connector with an electrical screw driver and disconnect the two halves of the connector, taking care not to strain the cables, then unclip the motor cable from the frame. Note the alignment marks on the two halves of the connector.
- 3.12.5 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.
- 3.12.6 Lift the wheel from the frame dropouts, being careful not to snag or strain the motor cable.
- 3.12.7 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 into 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.

3.10 Derailleur and gear change

- 3.13.1 Full details on how to adjust and maintain your derailleur can be found in the Shimano manual available on the Shimano web site.

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 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 ½ 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.

3.13.2 To change gear, use the 7-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 8.

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.wisperbiks.com 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 | Five 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 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. | Parts and components worn in normal use. |
| 6. | Failure to register 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. |

4.1 Battery maintenance and user responsibilities

4.1.1 Your Wisper bike is equipped with a powerful, high quality lithium ion battery. Lithium ion 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. Your bike will feel less powerful as the battery gets older, and the range will diminish.

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. $16Ah \times 36V = 576Wh$. When such a battery loses 30% of its capacity, it will still have nearly 400Wh left, still more than a new 36V 10Ah (378Wh) 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 by charging the battery every 4 weeks when not in use.

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.

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 team support@wisperbikes.com

Amps Electric Bicycles Ltd
Unit A7
Watery Lane
Kemsing
Kent
TN15 6PW

support@wisperbikes.com

www.wisperbikes.com

6 Pre Delivery Inspection 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 Mechanical Parts | Notes |
|-----------------------------|--|--|
| 1 | Check front and rear wheel for alignment and run out | Tighten spokes if necessary |
| 2 | Check tightness of rear axle nuts and front quick release | Tighten to torque setting in user manual |
| 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 |

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| 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 place and secure and saddle is correctly fitted. | Adjust as necessary |
| 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 | Check correct operation of front and rear lights | |
| 2 | Check connections on all electronic components | |
| 3 | Check throttle returns smoothly to closed position and cuts out at 4mph | Adjust if necessary |
| 5 | Check functionality of LCD display | Includes selection of five power assist levels, speed readout, and all functions are |

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| | | correct as described in the user and service manual |
| 7 | Check battery locates properly and locks in place securely | Ensure keys are present |
| 10 | Charge battery off the bike and check charger and battery functions correctly | Check status lights on battery |
| | 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, providing photographs if possible of any faulty components. | |
| 3 | Run through the bike operation, battery charging and storage instructions and offer safety advice to the customer | |

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