Whippet User Manual

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1. Introduction

This manual is not intended as a comprehensive service or repair manual. Even if you carry out all the maintenance detailed in this manual, your Whippet bike will still benefit greatly from professional servicing, normally every 6 to 12 months, or sooner in the case of accident, damage, malfunction or heavy use. In addition to this, it is normal for any ebike to require regular cleaning, checking and small adjustments. This manual provides a guide for this.

It is impossible to anticipate every riding situation or eventuality, so this manual makes no representation about the safe use of the bicycle under all conditions. Some risks are inherent in the use of any bicycle which cannot be predicted or avoided, and these are the sole responsibility of the rider.

All parts of the ebike can be cleaned down with a damp/wet cloth or washed in the same way that a normal bike can be. Do not clean the ebike with a steam jet, high-pressure cleaner, or water hose. Water may seep into the electrics or drive and destroy the equipment. The ebike is waterproof in normal use and conditions.

2. Preparation for Riding

Before riding your Whippet for the first time it’s important that its adjusted to suit you and that you understand how the controls operate. Follow this procedure:

Standover Height. Wearing shoes, stand over the crossbar with your feet flat on the ground to check for adequate standover height. Ideally there should be at least 5cm (2 inches) clearance between your crotch and the crossbar. If your crotch is in

contact with the crossbar then the bike is too large for you and is not safe for you to ride.

Permissible total weight. The Whippet has a permissible total weight of 110kg including the rider and any luggage.

Intended use. Your Whippet is intended to be used on-road and on smooth paths and trails. It is not suitable for mountain biking, stunting, jumping etc or any other purpose. Using a Whippet for anything other than the type of riding that it was designed for may result in damage or injury to the rider or others.

3. Riding your Whippet

To start riding your ebike select a power level on the handlebar control. Upon starting to pedal the pedal assist will commence and continue until you reach 15.5mph (25kph), as long as you keep pedalling.

When you stop pedalling the pedal assist will cease, and re-start again if you start pedalling again.

Power can also be switched on or off at any time, both when cycling along or when the bike is stationary, for instance to save battery charge when cycling on the flat or down hill.

When you finish your ride then switch off the power using the handlebar control to save battery charge. If you forget to do this then the power will switch off automatically after about five minutes.

To make most effective use of your ebike use the gears in the same way as if there was no pedal assist, especially changing into a lower gear before starting up an incline.

Observe all local regulations applying to ebikes where you ride and always follow the highway code.

4. Safe Riding

To ensure safe use your Whippet must be checked for before every trip. The following must be checked:

- Correct tyre pressure.
- Tyres not damaged and with adequate tread
- Both brakes functioning correctly with brake pads at least 1mm thick.
- Check that the handlebars are not loose.

5. Electrical Health and Safety

Do not insert any object into the contacts in the base of the battery.

Do not puncture the battery or expose it to fire.

Do not dismantle the battery in any way.

Only use the charger supplied with your ebike to charge the battery and follow instructions shown on the label of the charger.

If you notice the battery becoming hot during use, charging or storage, developing a strong odor, changing appearance, or any other abnormality, do not continue to use the battery. Immediately stop using the battery and have a dealer check it before you use it again.

6. Saddle Adjustment

For optimum transmission of pedalling power and to prevent injury it important that the saddle height is adjusted to suit the rider. To do this sit on the saddle and push one of the pedals vertically downwards. (To avoid falling over whilst doing this you can support yourself with one hand on a wall) Put the middle of your foot on the pedal, your leg should be straight. If you are having to lean over to do this then the saddle is too high. If your leg is bent at the knee, then the saddle is too low.

To adjust the height, get off your Whippet, undo the quick release seat clamp, move the saddle up or down, line it up with the crossbar and push the seat clamp lever

fully home. Sit on the saddle again and check that your leg is straight when the pedal is vertically down. If not then repeat the process until it is.

When you receive your Whippet the saddle is fixed at the correct angle, that is horizontal with a flat road surface. If you wish you can adjust the angle or tilt of the saddle, and slide it forward or backwards slightly. Use a 6mm allen key to loosen the clamp bolt directly underneath the saddle. After altering the saddle to the desired position, fully tighten the bolt.

Important: On the back of the seat post the minimum insertion limit is marked. The top of the seat clamp must be above this level with the 10 or lower marked on the scale above, for rider safety, when the saddle is fixed in position.

7. Removal and Fitting the Front Wheel

To remove the front wheel open the quick release lever on the left hand side and undo the nut on the right hand side to allow the wheel to drop out of the forks.

To refit the front wheel reverse the process (this is most easily done by turning the bike upside down). Make sure that the wheel is sitting centrally in the forks before closing the quick release lever.

Important: The quick release relies on a clamping action to hold the wheel in place, controlled by the amount that the adjusting nut is screwed in. Make sure to adjust the nut so that the lever, which must be pushed fully home, embosses the fork strongly when closed to the locked position and should require a very strong hand pressure to close or open. Also do not depress the brake lever when the wheel is out of the forks as this will result in the hydraulic brake having to be adjusted.

8. Removal and Fitting the Rear Wheel

To remove the rear wheel it is necessary to disconnect the power cable near to the chain stay so that the wheel can be removed from the frame. It will probably be necessary to take off the re-usable cable tie securing the cable to the frame in order to do this. Remove the rubber caps from the wheel nuts. The rear wheel is fixed by two wheel nuts which should be loosened a couple of turns using an 18mm ring spanner until the wheel can be removed. This is most easily done by turning the bike upside down. The washers must be in place when the wheel is replaced so it is best not to fully remove the nuts so that the washers stay in place.

To refit the rear wheel place the wheel in the frame dropouts making sure that the tabbed anti-turn washer is facing upwards (when the bike is upside down). Make sure that the wheel is sitting centrally in the dropouts and then tighten both nuts very securely to 40Nm.

Important: If the wheel nuts are not tightened correctly then the axle can turn in the dropout, which can severely damage the frame.

Next reconnect the motor power cable by lining up the two arrows on the two parts of the connector and pushing fully home. Refit the cable tie around the power cable making sure that the cable cannot touch the wheel or tyre.

9. Tyres and Inner Tubes

Tyres should be regularly checked for damage, splits, cuts etc. There should be a defined, even tread pattern around the whole tyre. If the tread is excessively worn or the tyre damaged then it should be replaced immediately. Replacement tyres should be to fit 700c size wheels. The tyre width should be between 28mm and 35mm. (Your bike is supplied with 32mm wide tyres, which we think is ideal for this style of bike) Tyre widths up to 40mm can be fitted but widths greater than 35mm will require the mudguards to be removed. The front and rear tyre should be the same in all respects. Always keep the tyre pressure in the range shown on the side of the tyre.The front and rear tyre should be the same in all respects. Always keep the tyre pressure in the range shown on the side of the tyre. Even without punctures tyres will lose pressure over time so need to be frequently checked. Use a foot or track pump with a pressure gauge to ensure that tyre pressure is correct.

Use the correct size inner tube to suit the tyre. The inner tube should have a Presta valve. When repairing a puncture always follow the instructions on the repair kit.

10. Care of the Wheels

With use wheels can go out of true as some of the spokes loose their tension. This will cause the rim to distort slightly. If the distortion (buckle) is more than 3-4 mm side to side then it should be taken to a bike shop to be trued up. Failure to do this will eventually mean that the buckle becomes too large to repair and the wheel will have to be replaced. Spokes can also become broken, usually following an impact with an object or pothole. In this case have the spoke replaced right away as the buckling will quickly worsen once a spoke has been broken.

11. Lubrication

Chain: The frequency of oiling the chain varies depending upon usage, road conditions and season. Inspect your chain regularly to see if it needs oiling. Only use chain oil to lubricate the chain. There are two types of chain oil, dry and wet. Dry oil leaves a fine dry film which doesn't attract dirt, but washes off very quickly and therefore needs to be re-applied often. This is best used in dry weather. Wet oil can attract dirt if too much is applied, but otherwise can provide adequate, durable lubrication.

Before applying the oil wipe off any dirt by wrapping a rag around the chain and pull the chain through the rag by pedalling backwards. Move the chain by back-pedalling whilst applying a minimum amount of oil to all of the chain. With a clean rag wipe the excess oil off the chain. There is no need to oil the cassette cogs.

All chains wear out and need to be replaced. To avoid wearing out the rest of the chainset it is best to replace the chain before wear becomes excessive and chain slippage occurs whilst pedalling. To judge whether the chain is worn, change gear into the largest chainring and pull the front-most chain link forwards, away from the chainring. If the chain can be moved enough to reveal the tooth underneath, then the chain is worn. Chain replacement requires specialist tools so it is usual to get the chain replaced in a bicycle repair shop.

General Lubrication: About every 3 months or 500 miles lubricate the following with a small amount of bicycle oil:

- Brake lever pivots
- Quick release cam mechanisms
- Gear cables
- All derailleur pivots.

Every 12 months or 2,000 miles, whichever is the sooner consider greasing the wheel bearings and headset with quality bearing grease. This is normally done by a bike shop.

12. Adjusting the Gears

Your Whippet is equipped with a high quality Shimano rear derailleur which moves the chain across the gears in indexed amounts when the rider moves the lever on the gear shifter on the handlebar. When you receive your Whippet the gears will be perfectly adjusted and do not need any attention before riding. However, in time the gear shifting can stop working accurately due to either an impact on the derailleur arm or the cable stretching or deterioration through use.

To adjust the gears first check that the aluminium derailleur hanger is not bent. If it is take it to a bike shop who will have specialist tools to straighten it.

If the derailleur hanger is straight then check whether the gear cable is damaged, corroded or not running freely in its outer sheath. To inspect the cable, shift the gear shifter into 1 (largest sprocket) whilst pedalling, and then stop pedalling and shift into gear 7. The cable will then be slack enough to allow its release via the slots in the cable guides on the bicycle frame. Now the outer cable casings will slide over the inner cable to allow inspection of the entire length of inner cable. If the cable is frayed, kinked, corroded or damaged at all, then it should be replaced at your bike shop.

If the cable is only dirty, causing undue friction, then clean it with wire wool, lubricate it with bicycle oil and reconnect it to the gear shifter.

If the gears still are not shifting correctly then the cable may require adjustment. If the gears shift smoothly from the higher numbers (smaller sprockets) to the lower numbers (larger sprockets) but not in the other direction then the cable needs loosening slightly. To do this turn the rear derailleur's barrel adjuster half a turn clockwise and try shifting the gears again. Repeat until they change smoothly.

Conversely if the problem is when shifting from high gear to a lower one then the cable needs tightening slightly. Follow the procedure above, but this time turn the barrel adjuster anti-clockwise.

It is normal to make this adjustment every few hundred miles to take up cable stretch. However, if more than two full turns are required there could be other issues other than cable stretch involved and so it is best to consult a bike shop at this stage.

The rear derailleur has two limit screws marked H and L which limit its maximum sideways travel in either direction. The H (high gear) screw stops the derailleur arm

from travelling too far outwards, and should be adjusted clockwise if the chain is able to fall off the smallest sprocket onto the bike frame. The L (low gear) screw stops the derailleur arm from travelling too far inwards, and should be adjusted clockwise if the chain is able to fall off the largest sprocket onto the plastic guard in front of the spokes. These two screws are set when the derailleur is first fitted to the bike and normally do not need subsequent adjustment unless the derailleur or rear wheel is replaced. If one or both limit screws suddenly seem to need a lot of adjustment, it could be a sign of a bent hanger or some other problem. In this case its usual to consult a bike shop.

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13. Adjusting the Brakes

Your Whippet has hydraulic disc brakes. These are self adjusting and do not need routine adjustment or cleaning. Avoid squeezing the brake levers when the wheels are removed.

The disc brake pads will eventually wear down with use and need replacement. The pads when new are about 3mm thick. When they have worn down to 1mm they must be replaced by a bike shop. The Shimano model number of the brakes is on the brake callipers.

Disc brake pads can become contaminated with oil, grease or dirt. If your brakes feel firm when the lever is squeezed, but lack stopping power, or make a creaking/groaning noise in use, it is likely the pads have become contaminated, with

oil or maybe diesel thrown up from the road. Replace the pads immediately and thoroughly clean the disc rotor with a degreasing liquid.

Disc brake rotors can eventually wear thin, normally after many thousands of miles. If a disc brake rotor is less than 1.6mm thick at any point, or is at all unevenly worn, it should be replaced immediately.

14. Component Replacement

Depending upon usage eventually parts and components may wear out. When this happens always replace them with high quality genuine replacement parts so that there is no danger of using inferior quality parts that could fail and cause injury. Either replace components like for like, consult your local bike shop or contact Revolutionworks.

SAFETY WARNING: Do not ride a your Whippet with any crack, bulge or dent, even a small one, in the frame, forks or any component. Riding with a cracked frame, fork or component could lead to complete failure, with risk of serious injury.

In the event of an accident have your Whippet inspected by a professional to ensure that no damage has occurred that could make any component fail whilst riding.

15. Lights & Reflectors

Your Whippet is equipped with front and rear lights which must be used when riding in the dark or poor lighting conditions on the road. The lights can be re-charged by using the USB lead provided. (The Whippet battery can be used to re-charge the lights via the USB port).

Front and rear as well as wheel reflectors are provided. No maintenance is required and it is a legal requirement that they are fitted if the bike is to be used on a public road.

16. Handlebar Controls

Switch on the handlebar control by pressing the on/off button. The display will then light up.

The power level is selected by pressing either the - or + button which will increase or decrease the power level. There are three power levels, these are shown on the display.

Power levels can be selected at any time, both when cycling along or when the bike is stationary. Battery level is also shown on the handlebar display.

17. Charging and Care of the Battery

The level of charge in the battery can be checked in two ways.The first is to press the button on the top of the battery. There are four indicator light colours. Blue = Fully Charged. Green = Good level of charge. Red = Partially Discharged (approx 50% or less). Flashing Red = Almost Empty. If no indicator light is shown then the battery is fully discharged. When the battery is on the ebike its charge level is shown on the handlebar display. Press the on/off button once to show the level of battery charge on the display.

To charge the battery, plug the charger into a mains supply socket using the mains lead provided and then plug the charger's charging lead into the circular charging socket in the base of the battery. The battery can be taken out of the battery carrier to charge it or it can be left in place. IMPORTANT: Only use the charger supplied with your ebike to charge the battery and follow instructions shown on the label of the charger.

The indicator light on the charger will show red initially when charging commences. When the indicator light on the charger shows green the battery is fully charged and the charger should be disconnected from the battery. The level of charge on the battery can be checked after it has been disconnected from the charger by pressing

the button on top of the battery or checking the handlebar display. The battery will take around three hours to fully charge from fully discharged. The charging can be stopped at any time and the battery used, 100% charge level need not necessarily be reached.

The battery when not in use should be kept in dry conditions at normal room temperature. Storing the battery at less than zero degrees centigrade (freezing point) can damage the battery cells. To keep the battery in good condition it must be kept charged (ideally with the indicator light showing green) when stored. If stored for long periods the level of charge should be checked every 3 months and the battery recharged if necessary

At the top of the battery there is a USB port. Mobile devices or lights can be charged/powered from this port by using a USB cable. The battery cannot be charged via the USB port.

To put the battery into the carrier, have the Revolutionworks logo on the battery the right way around and facing upwards. Place the base of the battery into the bottom of the carrier, making sure the two projecting contact pins locate into the socket in the base of the battery. Rotate the battery across from the left so that the battery is fully in the carrier.

IMPORTANT: Before riding the ebike, lock the battery into the carrier to prevent it falling out.

As the service life of the battery increases, the capacity of the battery slowly decreases. This also reduces the range of your ebike. This is not a defect, it is a characteristic of all Lithium Ion batteries. The battery life depends on various factors: the number of charging operations, the age of the battery and the storage conditions. The battery will deteriorate and capacity will be lost even if it is not used.

18. Diagnostics

Issue	Possible Cause	Action

The battery won’t charge fully/doesn’t hold its charge.	1.The battery has been charged too many times. Cell capacity is reduced to between 70%-80% after 500 charge cycles. All lithium-ion batteries have this characteristic.	1. Purchase another battery from your dealer. Please dispose of your battery responsibly.
Display doesn’t turn on	1. Motor or display cable damaged or not connected.	1. Check cable connectors to motor and display2. Check cables to motor and display for damage.
	2. Battery not charged	1. Check battery charge level and charge if necessary.
Motor doesn’t turn on	1. Internal electrical issue.	1. Contact Dealer