

ELECTRIC BIKE KITS

fast, hands-free. As it's not a reported problem it was most likely an unfortunate combination of motor and bike geometry and probably not peculiar to the Tongxin.

Details are just in as we go to press about the next version of the Tongxin kit, known as V3. This will feature essentially the same motor and rack-mounted 24 V battery as my test kit, so performance should be very similar. The main difference is that it will be 'modular' – so rather than coming as a long 'snake' of components permanently attached to the integral battery and controller set-up, each component will plug into the next one in the chain. This should be a great improvement as far as installation goes, and will allow you to dispense totally with the rather pointless pedal motion sensor and brake levers which come with this particular kit.

Who would use it?

The Tongxin is not the most powerful motor out there so if you are after pure power you might want to look at the Alien or the high torque version of the Heinzmann. Where it does score is the light weight and silent running, making it the least conspicuous retrofit option.

Don't get the wrong idea though – powerwise it's no slouch up moderate hills. For an efficient, lightweight kit for long distance riding up nagging gradients and into will-sapping headwinds it has a lot going for it. The light weight also commends it for use on folders.



Specifications

Motor weight: Approx 2.3 kg

Battery weight: Approx 2.8 kg

Battery capacity: 240 Wh – rack mounted

Charger weight/recharge time:

To be finalized for Version 3

Replacement battery cost:

To be finalized for Version 3

Bike requirements:

Should fit all standard dropouts

Guarantee:

1 year on all components and batteries

RRP: Approx £750

Note: Complete Version 3 spec still awaited at time of writing so above details may vary slightly.

ALIEN

Installation and assembly of the Alien is similar to the Tongxin system, although it is already 'modular' (with plugs between the various components).

The rather snazzy looking alloy-cased front hub motor will be familiar to those who know the Ezee Torq E-bike. It came well-built into a sturdy deep-section, double-walled alloy rim which looked more than up to the job, though I suspect few will be familiar with the 'Hailian' branding. I connected up the spaghetti junction of wires coming from the controller to the various components (except brake levers and 'pedelec' sensor which I left off again – see Tongxin comments) and the motor



sparked into life at the end of the 'dry run' at a brief flick of the thumb-lever style throttle.

The wheel then slipped easily into the front forks of my chosen host bike, the urban-styled 26" -wheeled Dahon Jack. The anti-turn locating washers did need a bit of grinding and filing down for it to sit fully in the dropouts. A solid alloy rear rack goes on next (to house the hefty 36 V Li-Ion battery) before the most fiddly part – clearing the left side of the handlebar so as to mount the battery capacity meter and the thumb throttle.

With all of the wires gathered into the nylon zip bag it becomes apparent that mounting the controller and all of its protruding wires at the rear of the bike – as recommended – will mean two cables running the length of the bike across the folding frame joint. A quick trip to the local DIY shop and a bit of soldering later, I had an extended battery-to-controller lead which runs from the front to the back of the bike, allowing the Velcro-mounted controller bag to go on the handlebars, and keeping the wiring more compact.

First impressions? I always pedal E-bikes without power on the very first ride, and like the Tongxin, the Alien has good 'freewheel' speed when no power is applied. You don't really notice much extra resistance, just extra weight in handling when throwing the bike around, especially from the extremely sturdy looking alloy-encased battery at the back, which is quite heavy and quite high up. This proved more of an issue when parking the bike – I kept wishing it had a strong centre kickstand.

The motor is connected via a kettle-style lead – not very reassuring in theory perhaps, but it



survived several hours of driving, heavy rain while riding into the wind with no ill effects at all. In short, a winner in construction terms.

The Jack itself is a lovely bike for cross town jaunts, dropping off kerbs and soaking up potholes with its Schwalbe Big Apple tyres. If you don't need the motor or run out of power it's still a great bike to ride with that free running motor.

The main test was on a 100 mile tour in France, riding around Rouen then down the River Seine to Le Havre. The main difficulty proved getting the bike there in the first place – it was rather a heavy and bulky lump to heave on and off Eurostar and a variety of French trains (especially along with

