F1 Folding Bike

Thank you for purchasing a Dillenger F1 Folding Bike, please read this manual before using your new electric bike.

Before the first use, please fully charge the battery, this can take up to 6 hours. The smart charger will turn off the charging current once the battery is full and will **NOT** overcharge the battery. Also ensure the tyre pressures are correct, check that all the nuts and bolts on the bike are secure ESPECIALLY THE QUICK RELEASE FOLDING JOINTS as they may have become loose during shipping and that the breaks work correctly.

Folding Joints

The main folding joint latch is spring-loaded and must be lifted vertically to allow the frame to rotate into position. This acts as a secondary restraint should the quick release clamp fail.

The handlebar folding joint uses a wedge to keep the handlebars locked into place, this wedge is tightened with a plastic wing nut. Ensure this is firmly tightened before riding.

Front Wheel

Before the front wheel can be installed the spindle must be installed. Undo the knob and remove the first spring. Slide the spindle through the hub, put the spring back (narrow section pointing towards the wheel, wide section away) and screw the knob back onto the spindle a few turns. DO NOT TIGHTEN THE KNOB ALL THE WAY YET.

Once the spindle is installed in the wheel, the wheel can be installed into the bike. Lift the front of the bike and slide in the wheel. Some resistance may be felt as the brakes are often set narrower than the tyre; deflate the tyre if you are not able to get the tyre between the brakes. With everything lined up, the weight of the bike can be rested on the front wheel. Open the quick release lever and tighten the knob to the point where closing the quick release lever offers a reasonable amount of resistance. If the quick release cannot be closed try undoing the knob a quarter of a turn. If the lever is easy to close try tightening the knob a little.

Once you have installed the front wheel lift the front of the bike off the ground and spin the wheel. It should spin freely and should be straight when viewed from the front. If the wheel drops out or is not straight re-read the instructions and repeat the previous steps.

Pedals

Attach the pedals before riding. Each pedal will only fit on its respective side; they are marked for easy installation either with a sticker on the pedal or embossed on the end of the threaded section. A 15mm spanner is needed for this. The thread direction is different for each pedal so the direction that tightens the pedals is different for each side. The right-hand pedal is done up by tightening clock-wise and the left is anti-clockwise.

Turning On/Off

Once ready, turn the key in the battery to the on position (most clockwise position), then press and hold the on/off button and the display will light up. The bike is now

on. Hold on/off again to turn the bike off or turn the key to the off position (one position anticlockwise from the on position

Lights

The bike is fitted with a front light. With the display turned on, press and hold the "MODE" button to turn on the front light. Turning the bike off will also turn the light off.

Battery Charging

The battery can be charged while still in the frame, or can be removed for charging. The charge port is located under the battery handle. With the charger unplugged from the mains outlet, lift the handle and plug the charger into the battery checking the orientation of the plug as you insert it. Once the plug is securely in place plug the charger into the mains outlet and turn it on. The light should show red while charging and green once charged. See the charger instruction for more detail. See below for removing the battery.

Battery Removal

To remove the battery lift the seat up by lifting the lever underneath the seat (the quick release clamp for the seat tube may also need to be opened depending on the orientation of the clamp). Turn the battery off and remove the keys. Insert the keys into the locking mechanism at the base of the battery and turn the key ½ a turn to unlock the battery. The battery can now be removed by lifting it vertically out of the frame.

TAKING CARE OF YOUR BATTERIES

- Charge the battery at least every 90 days for li-ion batteries
- Charge your battery pack after every time you use your bike / scooter
- Always store bicycles / scooters with a fully charged battery
- Disconnect the charger from the wall outlet and bicycle when charging is complete
- Make sure the battery is fully charged (as indicated by status on charger)
- Do not store batteries below 10°c and never allow batteries to freeze (below 0°c)
- Bikes are equipped with a 5 minute sleep mode. If no activity is detected after a short period the bike will turn off to conserve power
- FREQUENT "STOPS AND STARTS" WILL DRAIN A BATTERY MORE QUICKLY THAN CONTINUOUS RIDING leading to a reduction in range

FREQUENTLY ASKED QUESTIONS

Q: DO I NEED TO "BREAK IN" MY BATTERIES?

A: Yes, it is recommended that you perform a "break-in" cycle consisting of three discharge/charge cycles to allow your batteries to reach optimum performance. This involves three complete discharges and three complete recharges. After this initial "break-in" cycle the batteries will have maximum possible performance and less line voltage fluctuations under load.

Q: IS IT NORMAL THAT THE BATTERIES GET WARM WHEN RECHARGING?

A: Yes, it is normal that the batteries will become warm to the touch during the recharging process. This is because the increase of internal resistance and less energy conversion efficiency from electric energy to chemical energy.

Q: HOW LONG WILL MY BATTERIES LAST BEFORE NEEDING REPLACEMENT?

A: Average battery life depends on use and conditions. Even with proper care, rechargeable batteries do not last forever. Conservatively, an SLA battery will come to the end of its useful life after ~200-300 full discharge/charge cycles, while Li-Ion batteries will last about 500-2000 cycles depending on quality and technology of the battery. This product has been fitted with the latest $LiFePO_4$ (Lithium Iron Phosphate) battery technology to maximise the battery design life.

A partial charge/discharge counts fractionally against those numbers; running the battery down halfway then recharging it completely uses up one half of a charge cycle. "End of useful life" refers to the point at which a battery can no longer supply 80% of its original rated capacity in ampere-hours. After this point, the aging process will accelerate and the battery will need to be replaced.

Q:I HAVE HAD MY ELECTRIC BIKE A WHILE NOW AND ITS NOT GOING AS FAR AS IT DID WHEN NEW, DOES THE BATTERY NEED REPLACING? – Yes, quite possibly, but not always. There may certain other factors causing this -

- Are your tyres inflated correctly? It's important to keep your tyres inflated to the correct pressure as stated on the side of the tyre. It's amazing how much effect this can have, in fact a tyre that is half the pressure it should be can affect your range up to 40%! So check them every couple of weeks and inflate as necessary.
- When was your bike last serviced? Something as simple as a brake pad rubbing can slow you down considerably. With the extra assistance on an electric bike, you may not even notice the extra drag. But the motor will be working much harder to assist you and therefore will drain the battery faster. Its best to get your bike serviced once a year to keep it in good shape, which can rub off well on your battery. (electric bikes are very similar in design to a regular push bike, your local bike shop should be able to assist you in maintaining your bike).

- Already described above, but you may notice this during the winter. If the range is significantly reduced, it could be because the battery is operating in much lower temperatures.
- Your battery could possibly benefit from a complete conditioning cycle, this allows the battery to re-learn its full capacity and charge state. Please read the information below.

***SHOULD I PERFORM A FULL CONDITIONING CYCLE OFTEN?* -** No, the battery is very intelligent, the on board BMS takes the hassle away to make a really user-friendly battery. Really all you have to do is charge it and the system will take care of the rest. The BMS will self balance the cells when charging, it will control everything from deep discharging, over charging through to short circuiting. If you do wish to perform a full conditioning cycle then you can do this by simply discharging the battery completely by riding it until it is flat, then charging it back up fully with no interruptions. This can be done twice in a row to make sure it has fully conditioned. This is not recommended to do all of the time. Once a year is sufficient but not necessary in most cases.