This manual describes how to safely complete final assembly and includes tips for use and maintenance.
THANK YOU

Thank you for purchasing your new Dillenger electric bike! We know you'll love it, and with some care it should last for a very long time. Please read through this manual carefully before beginning final assembly.

SAFETY

Mechanical Safety Check:
Routinely check the condition of your bike. Make sure no fasteners have come loose. Perform a visual inspection of the whole bicycle before every ride. Make sure tyres are correctly inflated within the range given on the tyre sidewall. Check your brakes for proper operation.

Your First Ride:
Be sure to pick an area away from cars, other cyclists, obstacles or other hazards to become familiar with the controls, features and performance of your new electric bike.

PLEASE NOTE

We highly recommend the purchase of the Dillenger electric bike repair toolkit. It will make your setup and ongoing maintenance much easier. This can be purchased online.
ITEM CHECK LIST

Each electric bike is assembled under the most strict quality control standards. Upon completion, each electric bike is test ridden by a technician inside the assembly factory to check that every function and adjustment on the bike is perfect.

Item Check list:
• Electric bike with front wheel and handlebars
• Charger box (this may contain other important parts)
• Pedals (left and right) please note the left and right pedals are not identical
• Any loose boxes may contain other parts, such as a light (if where a light is provided or purchase) so please check all packaging thoroughly
Your Dillenger bike is fully assembled in our factory and tested to our high standards. To fit into an appropriately sized shipping carton to comply with the various courier networks, some basic parts of the bike are temporarily removed. This is so that the bike can fit into the shipping carton safely, and so that we can adequately package each part of the bike so that it is delivered in perfect condition.

These simple instructions will show you how to perform the final setup. Your bike may arrive in a more assembled state than what is shown here. These are the steps required for most customers (packaging and final assembly can vary by country).

In summary, these are the main steps.

Step 1, Unpacking/Unboxing
Step 2, Identify the pieces that require final assembly
Step 3, Handlebar alignment and fastening
Step 4, Front Wheel Fastening
Step 5, Left and right side pedals
Step 6, Seat

Tools required:
- Allen keys (5 and 6mm)
- Spanner (15mm)

These are provided and can be found in the charger box.

Other equipment not provided:
- Bike pump (or service station car tyre pump)
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Unboxing your Dillenger will be very exciting, but it's important to take care when unboxing the bike as it's possible to accidentally damage the bike or misplace crucial parts. It's also much easier to unbox the bike with someone to help you.

Remove the protective packaging from the bike carefully with a pair of scissors or a box cutter. Make sure you don't misplace any components in the lose packaging (there can be quite a lot of protective packaging used).

Note: Model shown is the PUMA

PLEASE NOTE

The keys will be securely fastened to the frame or handlebars of your bike. Make sure you do not lose these as they are coded and a replacement set can only be fitted in a Dillenger factory.
After you've taken your Dillenger out of its shipping carton, you should have these parts:

1. The Complete Bike

2. The Front Wheel

3. Handlebar Headstock (PUMA only)
2. Handlebars (Attached by the Cabling)

3. Charger

Note: The model of the charger depicted may not be the model of your charger rest assured the charger that came with the bike is the correct charger.

4. Pedals and Toolkit

Note: These can be in the same box as the charger, or fastened to the bike separately. (model maybe different)

5. Seat

Note: These can be in the shipping carton or fastened to the bike separately. Maybe different colour depending on model.
The handlebars will be connected by the cables and wires, all that's required for final setup is to mount the handlebar stem onto the head tube as shown here:

Insert the headtube into the handlebar tube. Make sure none of the cables are twisted or too tight (you may have the handlebars twisted).

Ensure that the handlebar tube is insert such that the minimum insertion length shown above is not visible.
Finally align the handlebars, tighten allen key to desired tightness.

Congratulations your handlebars are now ready for use.
The handlebars will be connected by the cables and wires. The first item you will need is the handlebar head stock shown below.

Use the allen keys to unscrew the two bolts that hold the clamp on.

Clamp the headstock around the handlebars where the dashed lines in the aluminium are. Retighten the headstock using the allen keys at an angle where the handlebars are usable.
Once the headstock is in position and tightened, insert it into the front of the bike. Some adjustment to the headstock may be needed to get your handlebars angled nicely for comfort. Simply loosen the headstock and rotate the handlebars until a comfortable angle is achieved and retighten.

Align the handlebars and tighten the single allen key on the top of the headstock to secure the handlebars at the desired height. Check the position of the handlebars and adjust if needed.
All bicycles (electric bikes included) have left and right side pedals. Make sure you identify each one. This image shows how to identify each pedal. You can see the ‘R’ written on this pedal, denoting this is the right side pedal, to be used on the right side of the bike (if you were sitting on the bike).

The right side pedal mounts to the right side crank (if you were sitting on the bike) and left side pedal on the left crank. The right side pedal is a right hand thread, it will tighten by turning clockwise (normal). The left side pedal is a left hand thread and will tighten by turning anticlockwise (opposite normal). It is essential not to confuse which pedal is used where and not to cross thread the pedal. If it feels too tight, you might have made a mistake. The simplest way of remembering is that the pedals always screw on toward the front of the bike. The pedals are designed this way so that the act of pedaling (while riding) does not loosen the pedals over time.

Screw in the pedals as described above for both left and right. Depending on the type of pedal they can be tightened using an allen key on the inside as shown above or by tightening with a spanner inbetween the pedal and the crank (model dependant).
This is the easy part. Simply insert your seat to the desired height (about hip height) as shown below:

At the rear of the seat is a latch. Use this latch to tilt the seat forward to remove battery or to help remove seat

Ensure seat clamp is aligned with the groove and loosely tightened using bolt handle

The seat is placed into the hole and adjusted to the desired height then the bolt handle is tightened clockwise to lock the seat in position
BATTERY OPERATION

The battery for your Dillenger is the most expensive single component and the most crucial. The battery can be removed following these steps. Use the key provided to unlock the battery:

*The key hole and charging plug is located on the bottom of the frame near the folding join*

*The key is placed in the smaller hole of the two. Turn the key from anticlockwise to unlock and clockwise to lock.*
Remove the battery by pulling the handle shown above after unlocking the battery with the key.

You may remove the battery to charge or the battery can be charged in the frame. For transport by car, we recommend taking the battery out of the bike and storing inside the car, in a safe place. When mounting the battery back into the frame, insert it in the same fashion that it was removed. The base of the battery should be inserted first and pushed into the frame of the bike slowly. Once the battery is reinsterted into the bike the key should be locked. It is a tight fit and this may take a couple of attempts to become proficient.

It is very important that the battery is locked into place before you use the bike again. Pull gently on the battery handle to make sure it is definitely locked.

Place the battery back into the chassis and checked that it is secure and locked by gently pulling the handle.
IMPORTANT POINTS

Please consider these important points for best use:

**Keys:**
The keys for your bike are zip tied to your handlebars. You will have 2 keys so please keep one as a spare separately. Replacing keys can only be done in the Dillenger Warehouse.

**Battery Indicator:**
The battery light indicator on the battery is not an indication of battery charge. The only approximation of battery charge level is on the LCD display. The only accurate way to know that the bike is 100% charged is by charging it until the charger light shows it is fully charged (next page). Conversely, the only way to accurately know that the battery is flat is to use the bike until the LCD cuts out and does not turn back on. You do not risk damaging the electric system by running the bike flat. Just make sure you charge the bike after every ride.

**Maintenence:**
Make sure you routinely check the tightness of key fasteners (nuts and bolts) such as the front wheel, rear wheel, seat, handlebars, forks, pedals, brakes, etc.

**Battery Charge:**
Make sure you keep the battery topped up as often as practical. Charge the bike after every use, at least once a month if not being used and before each ride if you have not charged it in a week. It is not necessary to run the battery down at all. Leaving the battery flat runs the risk of completely depleting the cells which could cause premature battery failure.

**Tyre Pressure:**
Make sure your tyres are pumped up to the correct PSI, which is indicated on the tyre side wall.

**Power Switch:**
The battery has an on/off switch located near the handle. You must turn the switch on before powering up the bike, and turn it off after use. The LCD display turns the system on, once the battery is turned on.
JAGUAR CONTROLLER OPERATION

There are two versions of this bike Sealed Lead Acid version and the Lithium Ion upgraded version.

Lithium Ion Handlebar Display

The handlebar display has 3 different button that perform different functions. These functions are outlined below.

ON/OFF - Press to turn the electric bike on and off (ensuring the key is switched on)

MODE - Pressing this will change the controllers level of pedal assistance from LOW/MED/ HIGH

LIGHT - Pressing this will turn the bikes lights on. A small LED will indicate the state of the lights

POWER - Indicates the estimated amount of charge remaining in the battery. 4 lights on meaning the highest amount of charge. 1 light indicating the battery is running low and should be charged.

There is also a green button located below the handlebar display that functions as a horn.
**PUMA CONTROLLER OPERATION**

There are two versions of this bike Sealed Lead Acid version and the Lithium Ion upgraded version.

**Lithium Ion Handlebar Display**

The handlebar display has 3 different button that perform different functions. These functions are outlined below.

- **C** - Hold this button to turn the electric bike on and off (ensuring the key is switched on). Pressing this button will toggle between displayable information in the bottom right hand of the screen. The information toggleable includes odometer, voltage, current, time operational and RPM.

- **S+** - Pressing this will increase the controllers level of pedal assistance. Holding this button will toggle the lights on/off.

- **S-** - Pressing this will decrease the controllers level of pedal assistance. Holding this button will toggle on and off the 6km/h cruising speed.

The screen displays speed, battery level, level of pedal assistance and the information display.

There is also a green button located below the handlebar display that functions as a horn.
LEAD ACID HANDLEBARS

Sealed Lead Acid Handlebar Functions

The left handlebar has two buttons, a red button and a green button. The red button activates the bike's lights. The green button activates the horn. To turn the bike on simply turn the key on the battery switch.

On the right handlebar there is a twist throttle and 3 LED's.

Each LED indicates the level of charge the battery has.

GREEN (MAX) - Indicates when the battery is a maximum charge or at a high level of charge.

YELLOW (MED) - Indicates when the battery is at a medium charge.

RED (MIN) - Indicates when the battery is approaching empty state. The battery should be charged as soon as possible.

PLEASE NOTE

When riding the bike for the first time, pick an area away from cars and pedestrians. This will allow you to familiarise yourself with the controls of the bike, this will ensure the safety of yourself and others around you.

1. Plug the charger into the wall socket/outlet, just like a laptop or mobile phone charger.

2. Check that one of the charger indicator lights glows green.

3. Plug the charger (battery end) into the battery plug carefully, making sure it is all the way in. Do not force it if there is an obstruction.

4. The charger indicator lights should glow red whilst charging.

5. Once one of the charger indicator lights changes from green to red, the battery is fully charged.

There is no way to over-charge the battery. When it is full, the charger will stop charging the battery automatically.

Charging time can vary from 1 to 8 hours if fully empty.

The battery should be charged once every month as a minimum to maintain healthy cells.

The best way to charge your battery is to plug it in after every use, and leave it on charge until the indicator light shows the battery is fully charged. It is not good practice to partially charge the battery.
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A little extra maintenance is required over and above a normal bicycle.

One of the main things you may come across is that your spokes need to be tightened more often than a non-electric wheel. Our wheels use 12G and 13G spokes which handle the load and torque of these motors very well, but are more susceptible to coming loose.

A spoke-tightening tool such as the one including in the Dillenger hub motor conversion toolkit, is ideal.

Check the tightness of each spoke ideally after the first 100km and then every 500km.

As well as caring for your spoke tension it’s important to do a check on all of your fasteners every few months. It never hurts to go over your bike with tools, tightening and checking everything that can be checked. This will ensure you have a safe and well-serviced bike.

Keep your bike clean! There’s nothing worse than having to work on a dirty bike...

Also keep in mind the usual bike maintenance like tyre pressures, brake pads, etc...

The motor is a sealed unit and requires no maintenance during the design life.

Lastly (just to reiterate) it’s important that you charge the battery at least once every month to ensure the battery maintains a safe storage level.

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**PLEASE NOTE**

Any modifications to any Dillenger product that isn't approved by Dillenger will void your warranty.
Dillenger’s troubleshooting advice will take you through a logical way to diagnose any issues that may arise during installation and use.

Before commencing troubleshooting, disconnect all components. Do not short cut this process. There are countless times a loose plug has caused grief. By disconnecting all the plugs and then reconnecting just the crucial components, this will solve any loose plug issue.

Go through one by one plugging in the other components (such as the e-brake plugs or the motor cable) to see if any of these are the cause of the problem. In this basic state you may discover the culprit quickly.

<table>
<thead>
<tr>
<th>Fault</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Display turns on, but motor does not Activate</strong></td>
<td>Check the motor plug from the controller. This is a very stiff connection and will not work unless the plug is all the way in to the indicator line. The twisting of the handlebars can sometimes cause the plug to pull out slightly if there is not enough slack in the motor cable.</td>
</tr>
<tr>
<td><strong>A high pitched rattling noise can be heard when accelerating</strong></td>
<td>The vibration of the motor is very small, but at this frequency it can do some odd things to the other components on the bike if they are loose. For example a loose spoke or even a bolt on your rear rack. If something is just a little bit loose, sometimes this can reverberate and make a harsh high pitch rattling sound. Nothing is broken or wrong, you just have to identify the loose part!</td>
</tr>
<tr>
<td><strong>Rim has a buckle or spokes coming loose all the time</strong></td>
<td>We would recommend a competent wheel builder to fix any major spoke tension issues, however there are some really good youtube tutorials on how to adjust spoke tension.</td>
</tr>
<tr>
<td><strong>Spokes has snapped or missing</strong></td>
<td>Dillenger stocks spare spokes for very reasonable prices, just check out our spares section online and you can find the right type and length for your product.</td>
</tr>
<tr>
<td><strong>Display won’t turn on, unless the battery charger is plugged in</strong></td>
<td>Check all the connections, make sure the battery is charged. If the display turns on only when the battery charger is plugged in, you will have to submit a service ticket with this information.</td>
</tr>
<tr>
<td>Fault</td>
<td>Solution</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Error message on the display</td>
<td>Please refer to display manual for error code definition and if needed, report the error code to Dillenger in a service ticket.</td>
</tr>
<tr>
<td>My kit loses power over bumps</td>
<td>Check all connections to make sure all the plugs are all the way connected. Check that the battery is locked to the cradle and not loose. A momentary discontinuity in power will turn the kit off.</td>
</tr>
<tr>
<td>My battery cuts out intermittently</td>
<td>If the battery is low on power, or you are going up a very steep hill with a load on the motor, you will likely experience a voltage cut-off if you have overloaded the controller, or dropped the voltage below the low voltage cut-off, which is more prevalent at low power. This isn’t a fault with the kit, it’s just physics.</td>
</tr>
<tr>
<td>I would like my battery capacity tested</td>
<td>Please contact Dillenger by submitting a support ticket to arrange the return of your battery for testing. If the battery tests above 85% capacity within the first year (from purchase date) you will be liable for return freight. If it is tested and is under capacity within the warranty period, your battery will be replaced.</td>
</tr>
</tbody>
</table>
Range extension:
If you’re not getting the approximate quoted range out of your e-bike system, take the following steps:

1. Battery indicator lights – full charge.
The LED and LCD battery level displays are a basic indication of battery charge, but they are based on voltage which is variable and not a true indication of battery capacity. The only accurate indication of a full charge, is having charged the battery and the battery charger lights glowing green to indicate that the battery is fully charged.

2. LED/LCD indicator light – running low
Some customers find that the LED/LCD charge indicator can lead them astray in terms of how far the bike will go on low power. You don't risk damaging the system by riding all the way to the controller low voltage cutoff. Keep riding on pedal assist even after the last battery indicator bar starts blinking.

3. Hills/riding style/other factors
The ranges quoted are from real world testing, with some hills and some flat areas. If your commute involves a lot of hills, that's going to impact on the range. High powered e-bikes are especially susceptible to being drained a lot more on hills. If you need to purchase a second charger to charge the battery at half way, or this can be a cost effect way of doubling your range.

4. General tips
   • Make sure the wheels are running free (rubbing brakes can halve your range quite easily)
   • Keep the battery topped up between uses (this is very important)
   • Make sure the tyre pressures are at optimum (ideal pressures are written on the tyre side wall)
   • Select the right gear for assisting up hills (the steeper the rise, the lower the gear needed)

If you would like to submit a Dillenger service ticket, please go to this URL:
Support Site
Dillenger Head Office
3/13 Olympic Circuit
Southport
QLD 4215
AUSTRALIA
Tel.: +617 5532 9235
dillenger.zendesk.com
www.dillengerelectricbikes.com