

nano+ BROMPTON

Electric conversion for Brompton

Fitting Instructions

Congratulations on purchasing your Nano Brompton conversion kit. These instructions explain how to go about converting your Brompton - we have tried to make the process as straightforward as possible - but if you run into difficulties - please feel free to give us a call or drop us an email.

We hope you get lots of enjoyment from your new electric bike.

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Before you get started

You need an hour or two, and the following tools:

- 7mm, 10mm and 18mm spanner
- Angle grinder, chisel, hammer
- head race spanner
- metric hex keys,
- flat bladed screwdriver
- Tray (to hold parts removed)
- tie wrap gun (optional)
- light oil (WD40)
- grease
- Sheet/ Blanket to protect the bike (white is good to find any dropped bits)



Kit contents

The kit should contain the following. If anything is missing - give us a call.

- Control box with cable and attached luggage block, brake levers and throttle
- Wheel with nano motor built in
- Parts bag with metal wheel nut cover, luggage block fasteners and cable ties
- Parts bag with wiring for modifying Brompton front luggage OR pre-modified Brompton front luggage
- Fork widening bar

1. Modify the front fork slots

Remove the front wheel. Remove tyre, inner tube and rim tape and install on new nano motor wheel

Next you will need to widen the slots in the front forks with an angle grinder to allow the wider axle of the nano motor to fit.

Remove about 1 mm for each side of the slot and about 2mm from the top of the slot. Go slowly and remove a little then offer a motor axle to check whether you have removed enough.

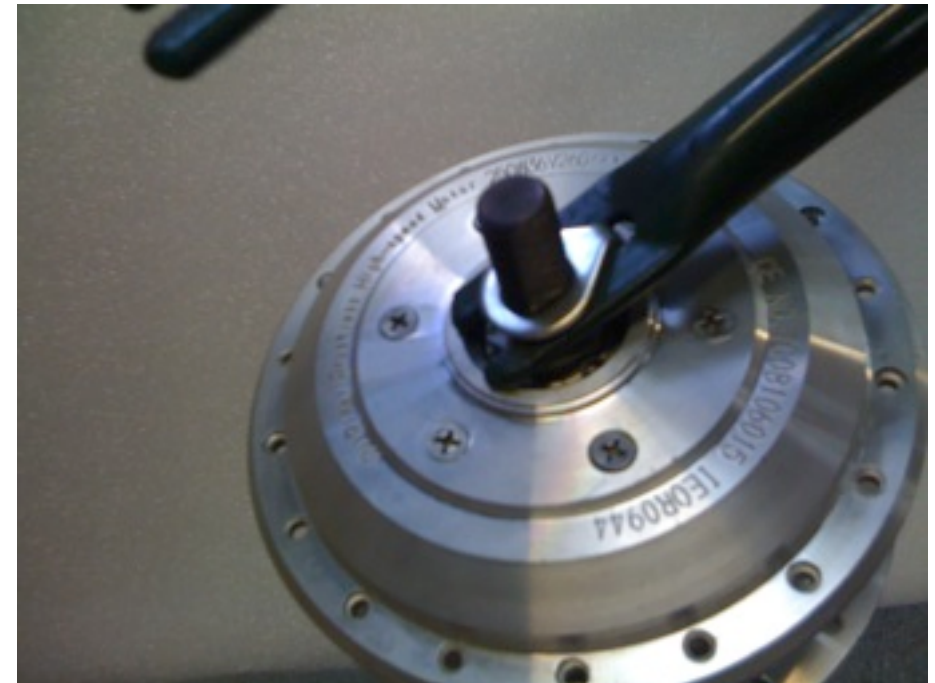
It is easier to remove material in stages than to try and put material back!

You want to remove just enough to allow the axle to slot in - and no more.



When finished - the fork slots should look like this. When the axle is in place the retaining washer should lie flat with the tab located fully into the hole above the slot.

We find it easier to turn the axles so they are in line vertically and grind the bottom fork slot - then turn by 180degrees and repeat. This way the shavings hit the floor and do not bounce off the other fork leg and back towards you.



2. Widen the forks

Use the bar provided. Locate each washer tab into the hole above the slots on each fork - then use a spanner to screw the nut clockwise. The movement of the nut along the bar will force the forks apart. Continue until the gap between the two legs is 11.5cm. Then leave for 5 mins and unscrew and remove the rod.



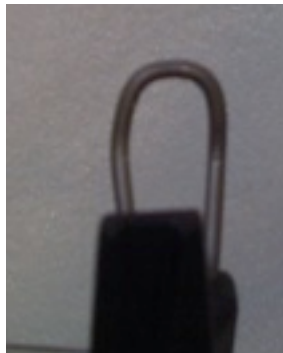
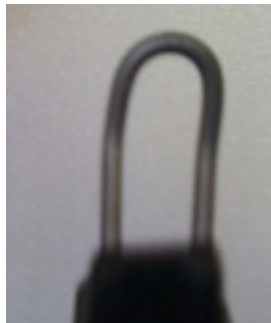
hammer

Then hit the top of the loop hard with the hammer - this will spread and flatten the end and allow it to fit.

3. Adjust the mudguard stay

Remove the front mudguard with the stay attached.

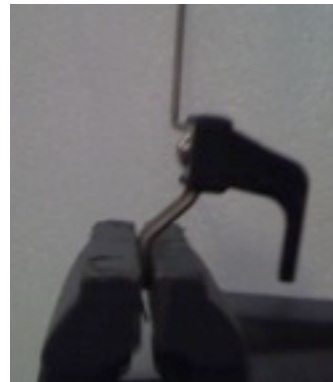
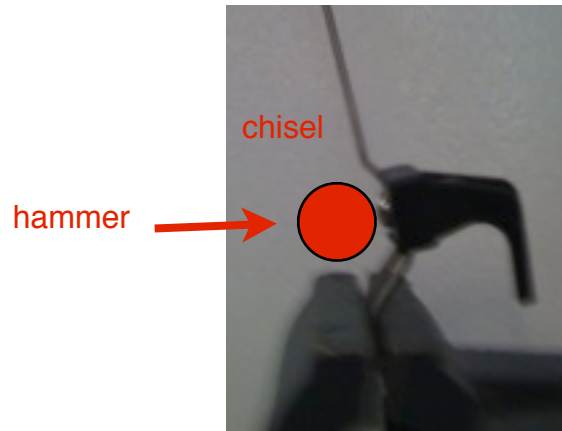
Place the loop over a chisel and gently tap it down the chisel head by about 5-10mm.



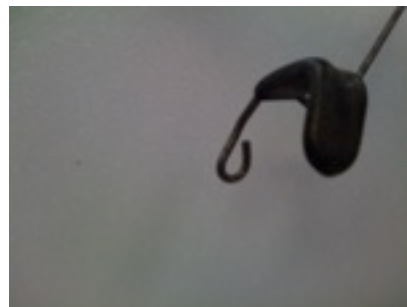
hammer

3. Modify the mudguard stay (cont.)

Increase the angle of bend in the mudguard stay by gripping in a vice and place the chisel barrel against the stay - then strike with a hammer.



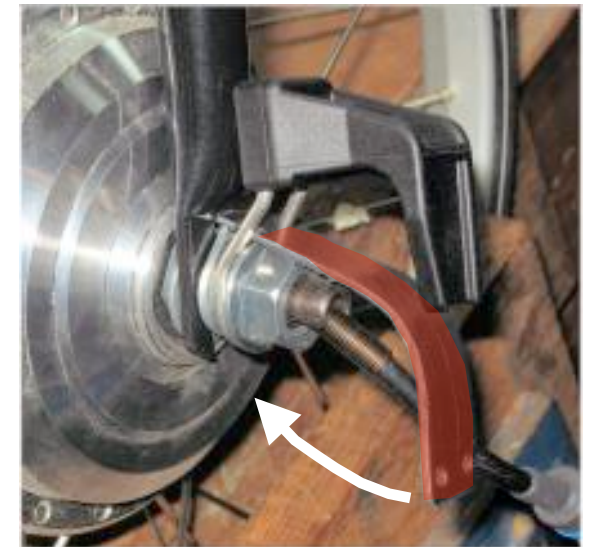
If the Brompton has an older style metal stay - simply widen the loop with a set of pliers.



Fit nano wheel to forks. Note the sequence of washers and mudguard clip in the pictures below. If looking from the front of the bike - the motor cable should be on the right hand side.



Fit the metal cover strip over the cable exit from the nano motor - one end fits on the wires holding the folding hook - the other end should be wrapped around the cable end and nut and secured around the nut with a cable tie. The cable should loop backwards inside the mudguard stay and is connected later to the motor wire which runs down the side of the fork.



4. Fitting the nano controller

Remove the existing brakes and handlebar grips from the brompton handlebars. You will need to loosen and unclip the rear brake cable from the rear brake caliper to give enough play to remove the brake lever.

Fit the left brake lever and throttle first - then fit the right brake lever. Finally fit the nano controller case using the p-clips - onto the handlebars as shown.



Remove the metal brake cable from the outer black tubes and re-thread with new brake cables. Don't remove the block outer brake cables - it should be possible to thread the new brake cables though without removing these.

Insert the brake cables into the brake levers and tighten at both calipers. Cut the excess brake cable and crimp the end with a cable end nipple.

Thread the power and motor control cable down the front tube - following the line of the front brake cable (in red on picture below). Screw in the front luggage block to the front stem. Connect end of cable to motor cable.

Cable goes around handlebar to front of bike - secure around the top of the handlebar stem with a thick cable tie.



Cable goes on the opposite side to the folding handle



Secure around frame with cable tie here

and cable tie here on fork

5. Modify Brompton front luggage (if applicable)

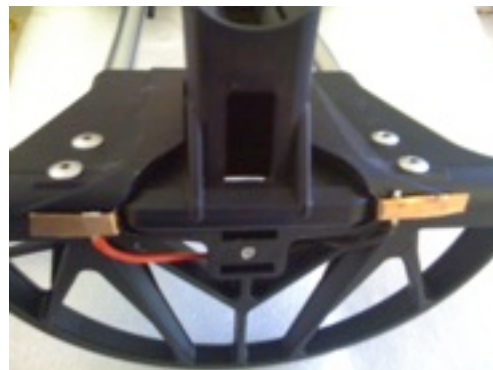
Remove the plastic and aluminum frame from the luggage by unhooking the velcro at the bottom of the luggage. If you have an all metal frame - the luggage connectors cannot be fitted and you will need to buy a replacement frame - we can supply this or obtain from your local Brompton dealer.



Pass the copper connectors through the holes in the plastic frame as shown. Note - red wire on right hand side.

Secure ends of copper connectors into the slots on either side of the plastic frame as shown. Stretch the connectors so that they are tight against the inside of the plastic moulding. It is useful to secure them in place by sliding in the brompton luggage block whilst securing them in place.

Drill a 2mm guide hole on either side and screw in place including the plastic screw cap. Snap the screw cap cover closed.



Secure the thick wire to the frame using a cable tie to provide strain relief on the cable



Make a hole in the rear face of the inside of the Brompton bag half way up. Feed the battery cable through and refit the bag frame.

Fit the battery plug -
Red to the 1+ terminal,
Black to the 1- terminal.

Don't forget to thread the plug cover over the wire BEFORE securing the wires. Screw the plug cover onto the plug body and push the gray collet home.

6. Fit the battery

Put the battery pack in the Brompton bag - It will fit neatly into the bottom of the bag.

Connect the battery by inserting the plug and twisting slightly - it will snap in place when fitted correctly. Turn the key on the battery pack to the second ignition position. Fit the Bag onto the luggage block.

Check the lights on the throttle - you should now have 3 LED's lit.

We recommend switching the battery off by turning the key to the off position when removing the bag from the Brompton.



7. Enjoy!

That's it. Please enjoy your Nano Brompton,

Check and tighten all bolts and screws, brake connections etc after a couple of days and again after a couple of weeks.

If you have any problems at all - please call us and we will try our best to help.

The nano motor, controller and connectors and battery are covered by a no-quibble 12 month return to base guarantee - so let us know if anything stops working.

We love to hear comments back from our customers - so please let us know how you get on.

Thanks

The Electric Wheel Company