



## The NanoKey

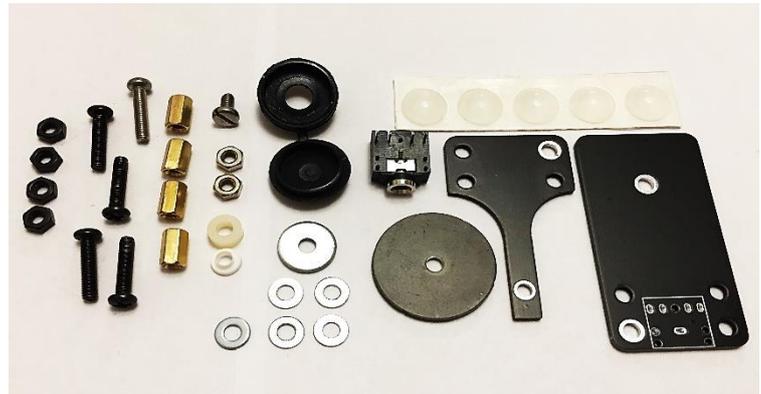
The NanoKey is a little fun project that allows you to build a very small straight key that really works. This must be one of the smallest keys around! The design is based on our well known Flat pack key and shares many parts with that.



The NanoKey is easy to build but will require you to solder one PCB connector. The user can make changes to the Gap of the key by simply changing the supplied spacer washers. The build instructions will form a good starting point that most users will find to be about right.

Before building check you have all the parts:-

- 1 x Base Panel
- 1 x Key Top Panel
- 1 x Round Flange Panel
- 1 x Key Knob
- 4 x 14mm Black M3 Steel Screws
- 1 x 6mm M3 Steel Screw
- 1 x 14mm M3 Steel Screw
- 4 x M3 Black Nuts
- 2 x M3 Steel Nuts
- 4 x 8mm Brass Threaded Spacer
- 1 x White Flange insert Spacer
- 1 x large steel washer
- 2 x Red Fibre Gap washer
- 5 x Steel M3 0.5mm Thick Washers
- 1 x 3mm White spacer
- 1 x 3.5mm PCB Jack Socket (Not in Picture)
- 5 x Rubber Stick on feet.



If any parts are missing contact me right away. [parts@phoenixkitsonline.co.uk](mailto:parts@phoenixkitsonline.co.uk)

## Construction of the key

Please take care to fit the right length screws into the correct places.

### Step One:-

Find the PCB Jack socket. This is fitted to the NanoKey base panel, it's the only panel with a silk screen component layout print on it. Make sure you fit it on the right side of the board, look for the white square that shows the right side to mount it. Now carefully trim the soldered pins of the key socket, trim them to make them as flush as you can.



Now fit the bottom contact screw. Find the 6mm Screw (The shortest in the kit) and BEFORE putting it on the bottom board put three of the M3 Steel washers onto the screw. Put the screw through the single hole at the one end of the base panel away from the jack socket. The head of the screw needs to be on the same side as the jack socket. The screw head is the bottom key contact. This screw is then fasten to the board by putting a M3 steel nut under the board. Tighten the screw so it's secure.

Next find the plastic folder over knob, the large M3 washer, the two small plastic spacers, the 14mm steel screw, 1 steel washer, 1 fibre washer and the round flange disk.

First push the small white T shape spacer into the hole on the large washer, its nice tight fit.

Now put the washer with the spacer inserted into the top of the knob.





This will click into place, this makes sure the knob is fitted in the centre of the flange.

Now find the steel 14mm screw and push that through the hole so the head is on top of the washer.

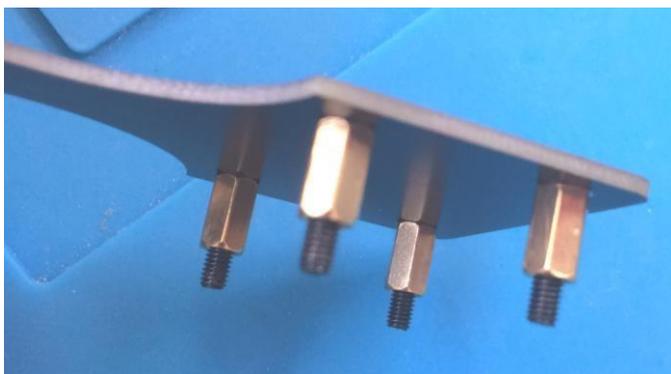


Find the flange, the 3mm white spacer, fibre washer, steel M3 washer, the Key top panel and a M3 steel nut.

Put the disk onto the knob fitted with the screw, then the fibre washer, follow that with the steel M3 washer and

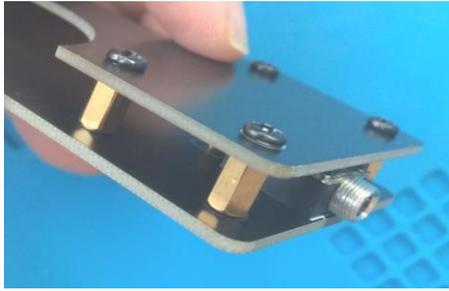


finally the white 3mm spacer, place this assembly onto the Key top panel through the hole at the end of the arm, look carefully at both sides of the key top panel and you will see that one side has a wide PCB track running to the hole at the end of the key arm, this should be on the **underside** of the top panel. Make sure that the hinge part of the knob is correctly aligned. Rotate the knob and flange to get this alignment right before nipping up the screw and nut securing the knob and flange. This screw also serves as the top 'contact' point for the key.



Find the four Brass 8mm spacers and the four black 14mm screws. Pass the screws through the top of the key panel and secure the spacers as shown.

That completes the top panel.



Now drop the top panel onto the base, the black screws should line up with the four fixing holes in the base. Use the four black M3 nuts to attach the two halves.

On the bottom of the key attach the 5 rubber feet rubber feet.



That's it the key is built and ready to test, connect a lead from the keys socket to the radio or oscillator and tap away.

The gap may be a little large for you and so you MAY find it better if the gap is reduced, this is a little trial and error now, The best way to adjust the gap is to change

the washers under the flange on the top panel, I have removed the M3 steel washer on my key so I just have the red fibre washer on top of the 3mm high white spacer. Some may like that or if that's too small a gap remove the fibre washer and leave the steel one, the steel washer is 1mm thick and the fibre is 0.5mm thick.

You will need to separate the two halves to make adjustment.

It is NOT intended to be used for applications where high voltages are present on the keyer line, the brass standoffs and screws are exposed and would be dangerous if use to switch HT circuits. (So would any metal/brass key)

It's not going to match the fine adjustment and smooth operation of a key costing hundreds of pounds but it will work as a no frills key for use in places that you would normally feel disinclined to take your expensive key too. Ideal for beginners and holiday/backpack use. (Or as an emergency backup key). This key is not going to add much in size or weight to your portable setup!

Best of all if you lose it or break it it's replaceable for the price of a sandwich and a cup of coffee! So get outside and enjoy your CW with the NanoKey without any worries. One tip, since the key is so small use a nice thin cable for the connecting cable so it doesn't pull the key around the desk, I use a lead I made with some thin single screened microphone cable on mine.