



## The Flat Pack Key MK 2

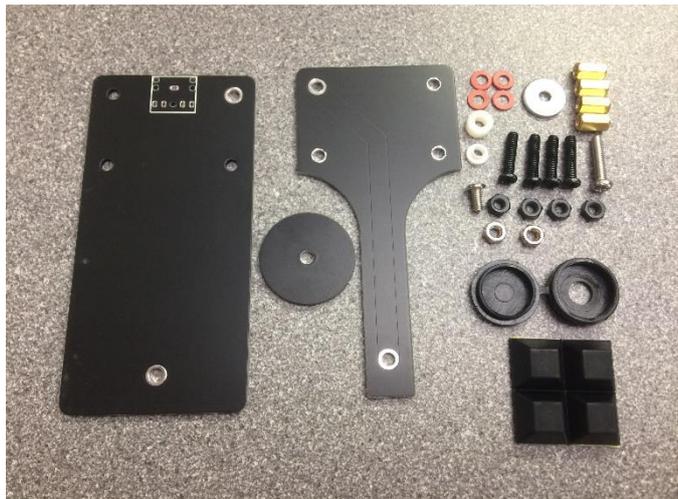
When starting to learn how to send Morse code it is always advisable to start with the straight key. The problem is that Morse keys are expensive and this can discourage people from learning the code. Many People try to make their own key and we have all seen simple designs made from hacksaw blades and drawing pins. Often these designs work but are difficult to reproduce and lack any form of adjustment.

This Flat Pack Key (FPK) is designed to be low cost and ideal for anyone needing a simple key suitable for classroom or back packer use. My own straight key, a Pettersson Swedish pump key cost over 30 to 40 times the price of the FPK and I would not be comfortable to take it out on a field day trip for fear of damage or losing it.

The FPK is easy to build but will require you to solder one PCB connector . The MK2 version changes are really only cosmetic but do allow for a wider range of gap adjustments.

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
- 5 x Steel 0.5mm Gap washers
- 1 x 3mm White spacer
- 1 x 3.5mm PCB Jack Socket (Not in Picture)
- 4 x Rubber Stick on feet.



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



## Construction of the key

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

Find the PCB Jack socket. This is fitted to the FPK 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 fit the bottom contact screw.

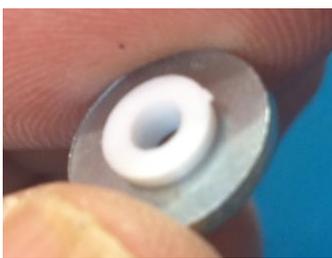
Find the 6mm Screw (The shortest in the kit, and now with a flatter cheese head) and BEFORE putting it on the bottom board put two of the small steel washers onto the screw (you may be removing one or both later to adjust the gap to your liking). Put the screw through the single

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 fastened 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, 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.



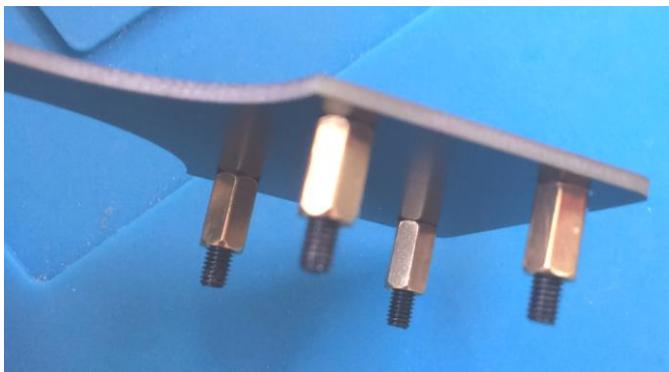
Now find the steel 14mm screw and push that through the hole so the head is on top of the washer.



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

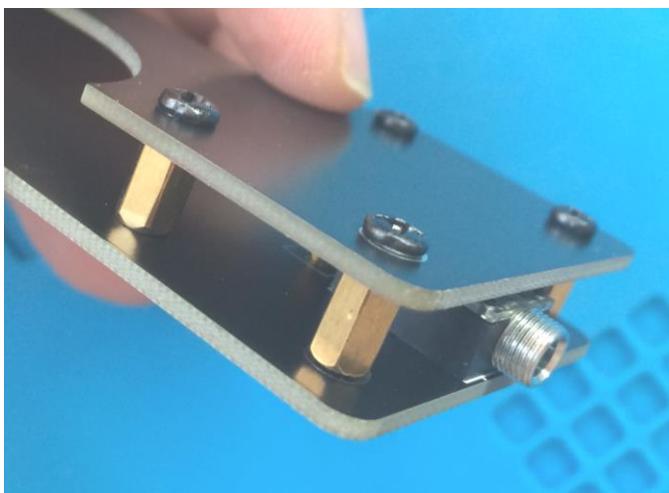
Put the disk onto the screw, then one of the small steel washers and finally the white 3mm spacer, place this assembly onto the Key top panel through the hole at the end of the arm, look carefully at both sides of the key top panel and you will see that one side has a wide track running to the hole at 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. At some stage in the future you may decide to remove the steel washer (or add another) as this in conjunction with the washers on the bottom contact control the key gap.



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. You have two small steel washers left over, these can be used to adjust the gap height. You could easily lose these so I suggest put one under each of the black nuts nearest to the front of the key.

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



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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 key's gap can be adjusted if you feel the need, you have the spare washers, you will need to separate the two halves to make adjustment. The

bottom screw currently has two fibre washers, if you need to you can add more washers or remove one (or both) of the two washers, this way the gap can be adjusted to your preference. You can even increase the gap more by adding one of the washers between the flange and the 3mm thick white spacer if you need more gap.

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)

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 Flat Pack Key without any worries.