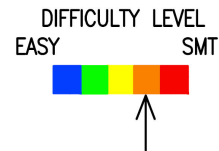




## QRPGuys KX Iambic Mini Paddle



First, familiarize yourself with the parts and check for all the components. If a part is missing, please contact us and we will send one. You must use [qrpguys.parts@gmail.com](mailto:qrpguys.parts@gmail.com) to request a part.

### **Parts List**

- 1 – QRPGuys KX Iambic Paddle PCB, 4 pieces in all
- 1 – J1, 2x2 female right angle header
- 2 – 4-40 x 3/16" L thumbscrew
- 4 – 2-56 x 5/16" L SS Phillips head screw
- 4 - #2 SS lock washer
- 4 – 2-56 SS nut
- 1 – 4-40 x 3/8" L SS pan head Phillips screw
- 1 – #4 SS flat washer
- 1 - #4 SS lock washer
- 1 – 4-40 brass nut
- 4 - #2 x .06" thick nylon washer
- 4 - #2 x .03" thick nylon washer
- 1 - #4 x .19" L nylon spacer
- 1 – 2-56 x 1" L SS pan head Phillips screw
- 2 – SS paddle leaf
- 1 - 1/2" wide x 3" L plastic shim
- 2 - 1/2" x 1" vinyl caplug

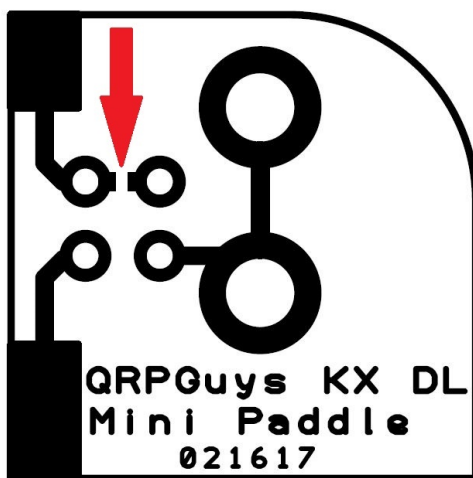
Even if you have done radio kit assembly before, please read through all the instructions before you start. This kit is a little different, in that the mechanical components are parts of a printed circuit board. The instructions give you the scope of the project and an understanding of the techniques we have employed. You will be assembling the paddle from PCB material, and when assembled, also forms the electrical connections. There are solder pads and registration marks that must be observed so that when you tack and solder, it will make a sturdy mechanical and electrical assembly.

The tools you will need are a soldering iron with a small tip, rosin core solder, a small Phillips screwdriver, needle nose pliers, tweezers for the small 2-56 screws and hardware, and a flat surface to work on.



These are the four pieces and the names we will be using during the assembly. Notice that the paddle base and contact holder are marked with registration lines. They will guide you when they are in the correct alignment.

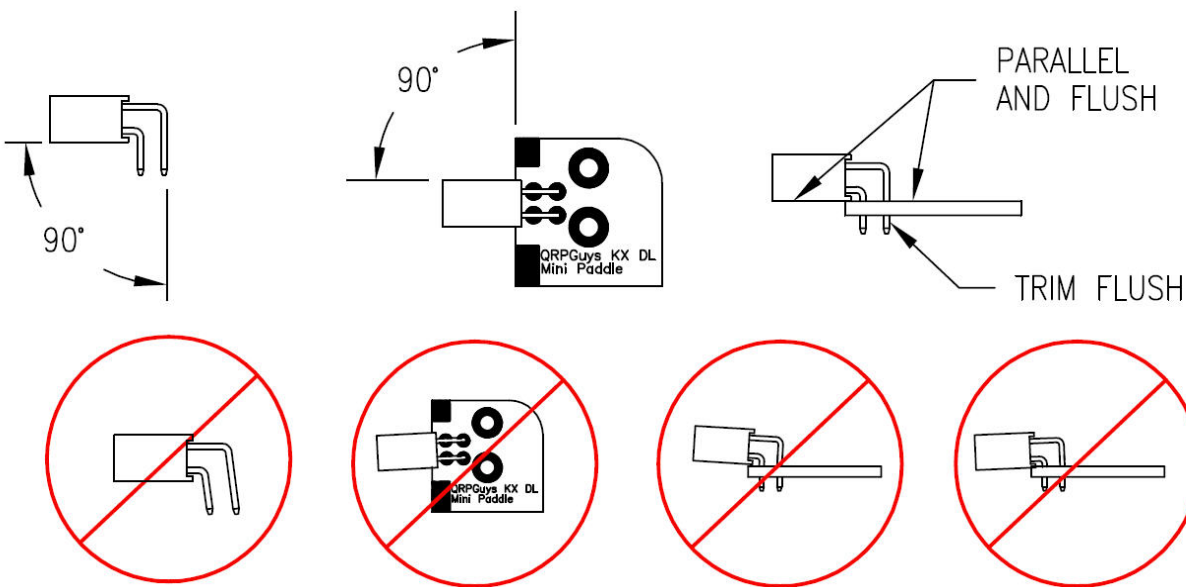
It has been brought to our attention that on some boards there may be a extra trace connecting the top two pads on the “Left Leaf Holder” for the 2x2 in-line connector. Before assembly please check to see with an ohm meter if they are connected. If they are, please cut the connecting trace between them with an xacto knife, separating them electrically as shown in the graphic below. You may then proceed with the assembly normally.



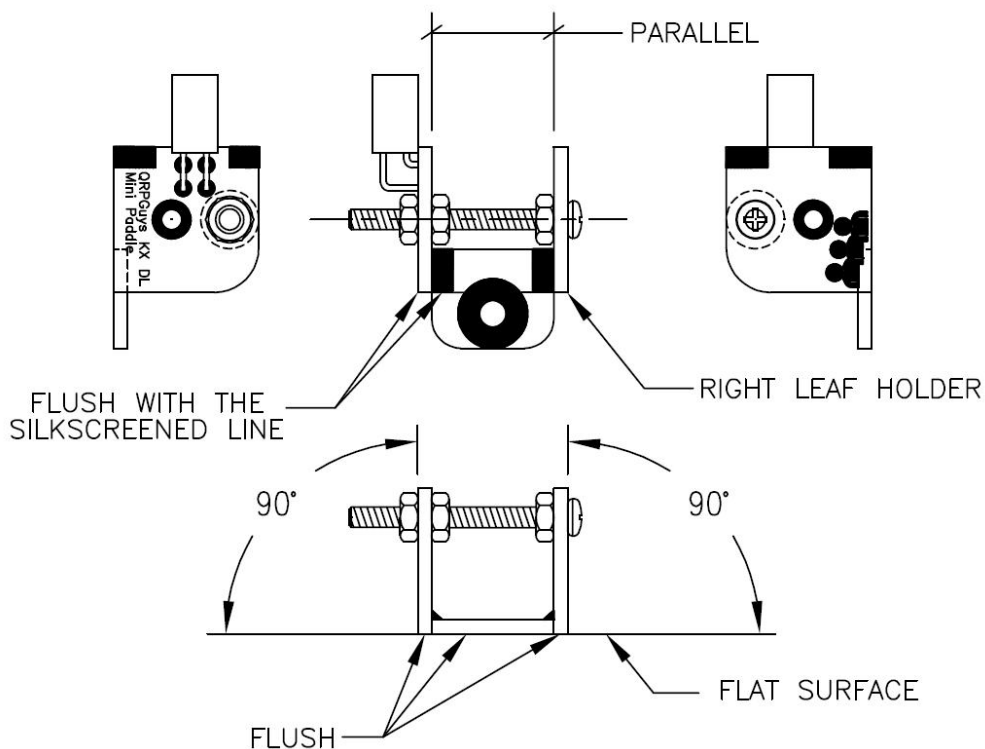
**Important:**

***On all the soldering you do, you will use the same technique. You tack a single tiny point first and, then check to see that it is square and aligned with the registration lines and other notes. It is easy to re-heat the joint and adjust the alignment when there is only a single point. Then you tack the other pads, before you do the finish soldering.***

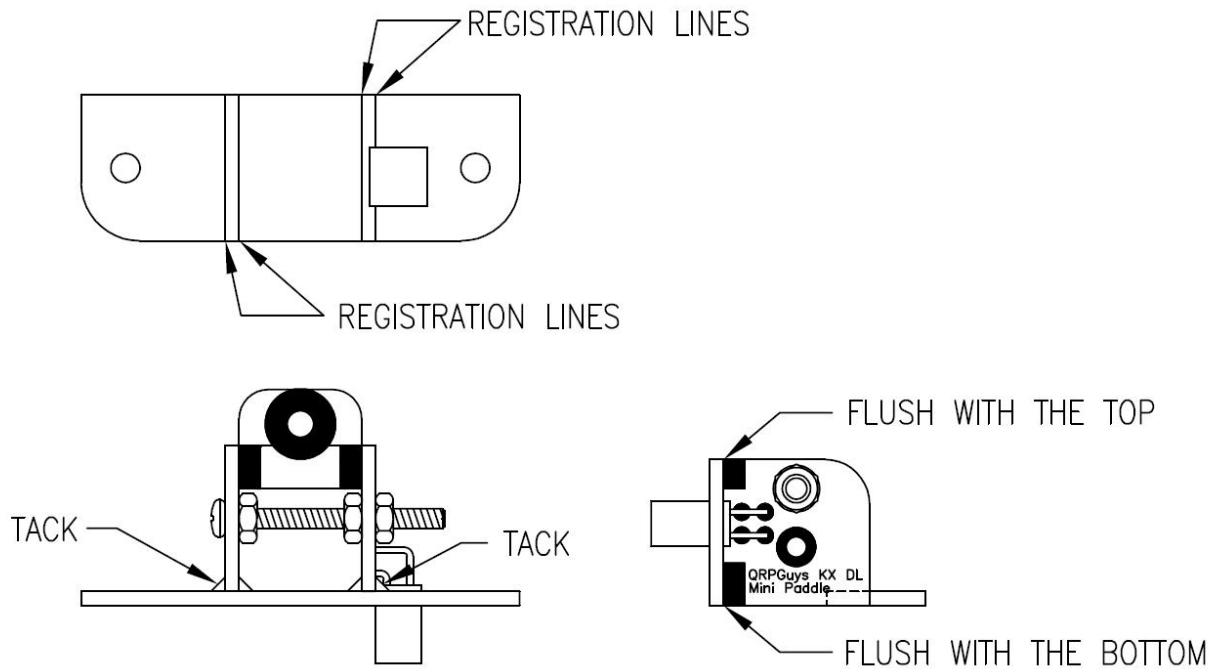
First, check that the pins on the female header are bent 90°, and correct if necessary. Solder the 2x2 female right angle header to the **left leaf holder** on the side with the silkscreen. **Solder only one pin and check for it being flush, parallel to the surface of the board, and square to the end of the board**, as shown in the graphic below. This is necessary so it aligns with the internal contacts of the transceiver. Solder the rest of the pins and trim flush with the back of the board.



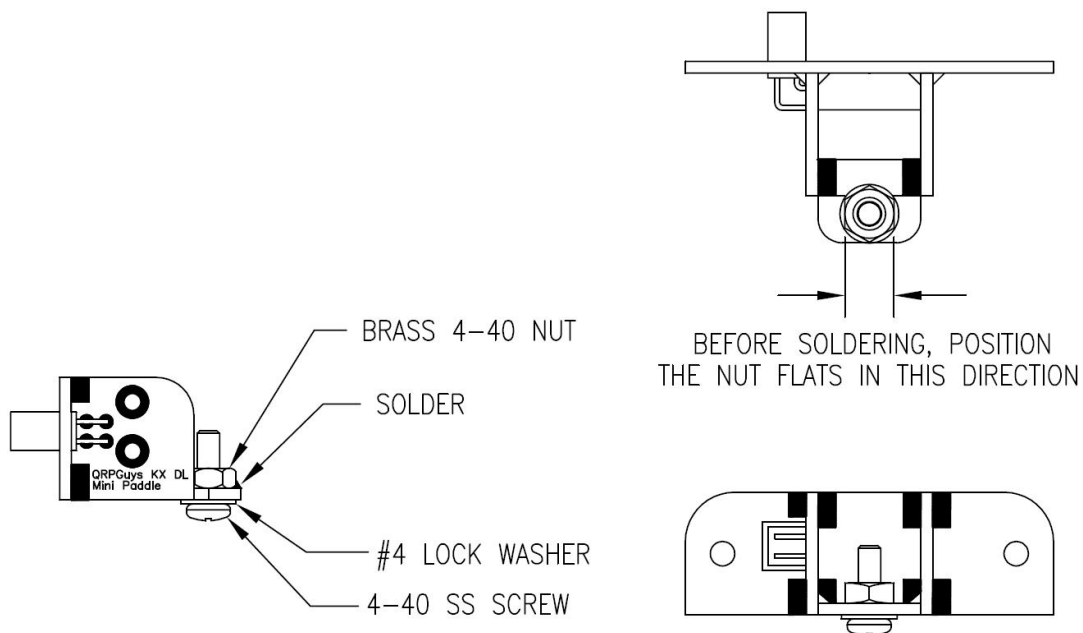
The next three pieces to be joined are the **left leaf holder** and **right leaf holder**, with the **contact holder**. Use the 2-56 x 1" screw, three 2-56 nuts, left leaf holder and, the right leaf holder. Position them as shown in the figure below on a flat surface with the screw in the upper hole. You must adjust the nuts so that the support just does fit between the two contact holders. Align the silkscreened line with the front edge of both leaf holders. When you are satisfied with the alignment and squareness, lightly tack the two sides of the leaf holders to the contact holder. **Leave the screw and nuts in place for now.**



Mate the previous assembly to the **paddle base** as shown in the figure below. Align registration silk screened lines and flush on the top and bottom. Tack one small joint and check for alignment. When you are satisfied with the alignment, lightly tack all the other points. Finish soldering all the pads, including the joints between the leaf holders and the contact holder. You may now remove the 2-56 screw and nuts.

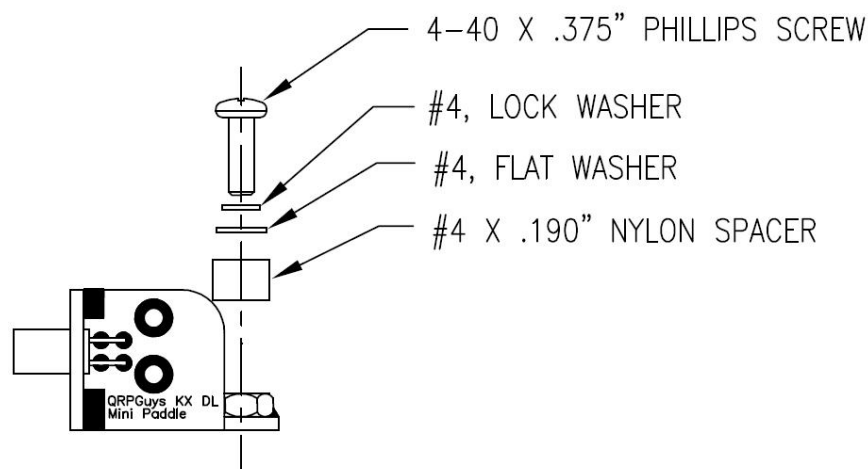


Solder the 4-40 brass nut to the contact holder using the figure below as a guide. It is helpful to rub the brass nut on some scotchbrite or emery paper to remove any oxidation from the brass. Use the hardware as shown in the figure to hold it in place. **The lock washer ensures the nut is square with the surface of the PCB when heated. Position the nut flats as shown.** Heat the nut from the side, and solder the brass nut to the contact support. Do not get any solder on the top of the nut. If you do, it must be cleaned off. Remove the holding screw and lock washer.



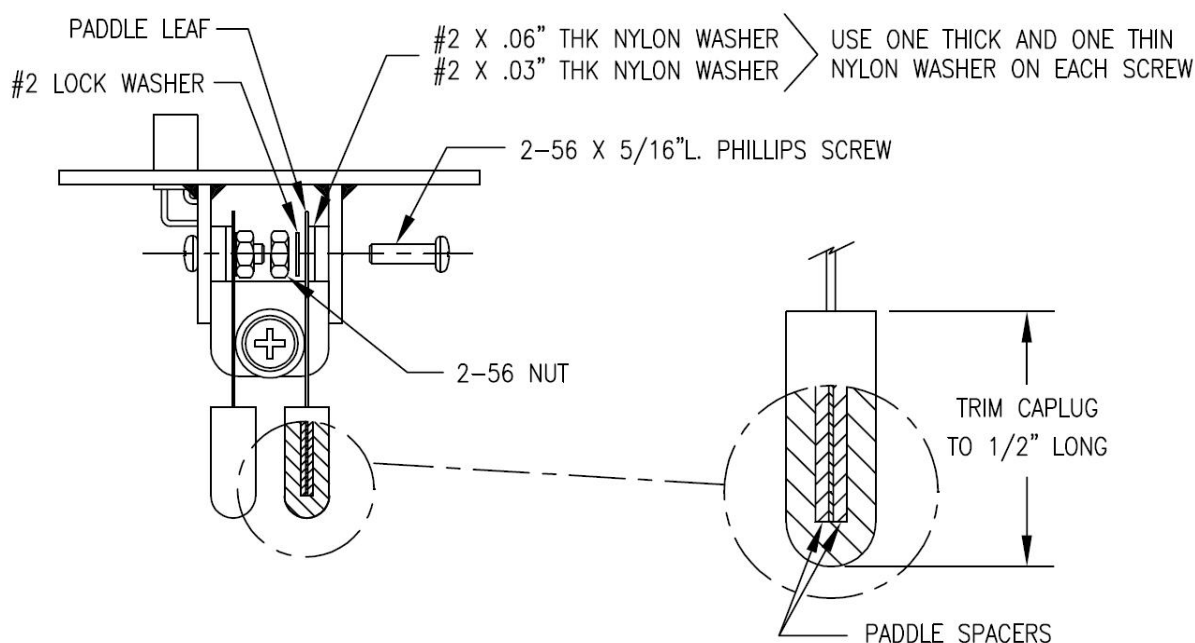
### Assembling the center contact:

The center contact is assembled as shown in the figure below.

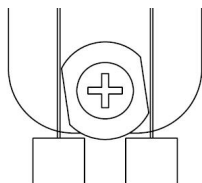


### Assembling the paddle lever components:

It's a good idea to assemble the hardware over a cookie sheet. Any hardware is difficult to find if dropped. Secure the paddle leaves to the holders using the hardware as shown in the figure below. The hardware is small but with some patience and tweezers, can be assembled. It is easier to do the bottom screw first. Observe the order of the hardware. After assembly, if the paddle leaf holder is not perfectly square, the paddle leaf may be off to one side, or on an angle. Simply bend it to be close to the contact washer. The distance to the contact washer is a matter of personal preference and feel, and may need final adjustment after some practice. The hole in the center of the washer is a little larger than the holding screw, and permits some centering adjustment as well. The paddle leaves can easily be bent to accommodate different tensions and distances. The .010" thickness paddle leaves provide a light touch. A user could make a leaf with thicker shim stock material for a stiffer touch.



Cut the vinyl caplug lever cover 1/2" long from the closed end with scissors or a razor knife. Cut the piece of 1/2" wide plastic into two 7/16" long pieces. Sandwich the paddle lever between the plastic spacers and slide the caplug over the end of the paddle leaf.

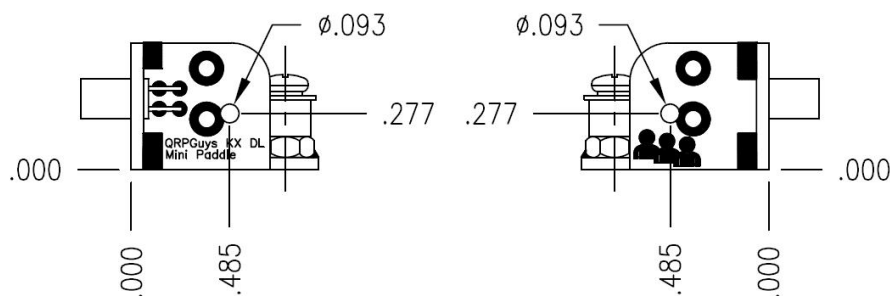


You may opt to use a different diameter washer of your own choosing. You could experiment with a larger washer with some flats filed on it for a different feel and or spacing.

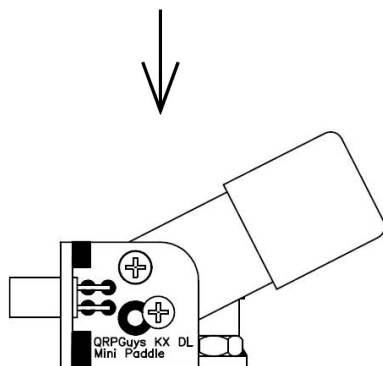
This completes the paddle assembly. Use the two 4-40 thumbscrews to secure the paddle to the transceiver.

Note: If you desire a stiffer feel or a lighter touch to the paddle, you can experiment with different paddle leaf thicknesses. You can easily make a set of leaves from a simple set of feeler gauges. Most auto parts stores or Harbor Freight carry an inexpensive set of 1/2" wide gages up to .030" thick.

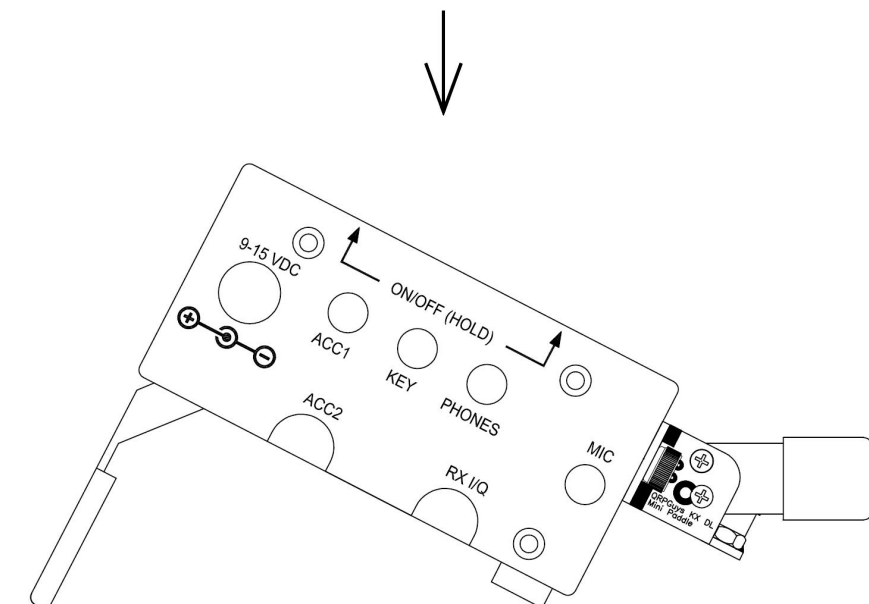
The paddle, as built, clears the table top with the kickstands engaged and retracted but Mike, K7DD, wanted to raise the paddles higher in the kickstand position and came up with this suggestion. Below is a possible solution. It will however raise the levers higher when the KX3 in the flat position as well. We have detailed the modification for those that may want to use it. If you do the modification, and you don't care for it, you will be able to revert to the original position without any problems. This modification only works with the KX Iambic paddle, not the KX Single Lever model.



ADD A  $\phi 3/32$ " HOLE ON EACH SIDE AS SHOWN



MOUNT THE TWO PADDLE LEAVES IN ONE ORIGINAL HOLE AND THE NEW HOLE YOU ADDED



ATTACH THE PADDLE TO THE KX3 AS YOU NORMALLY WOULD