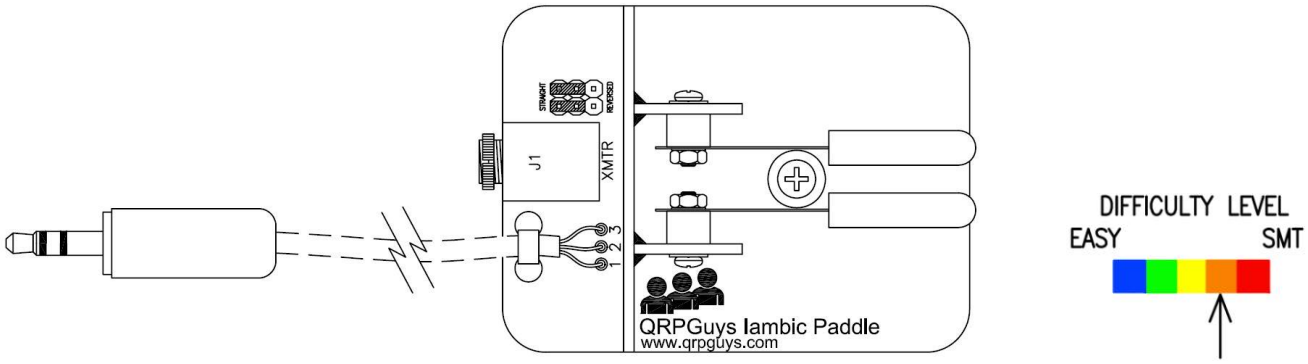
QRPGuys Iambic Mini Paddle w/Base



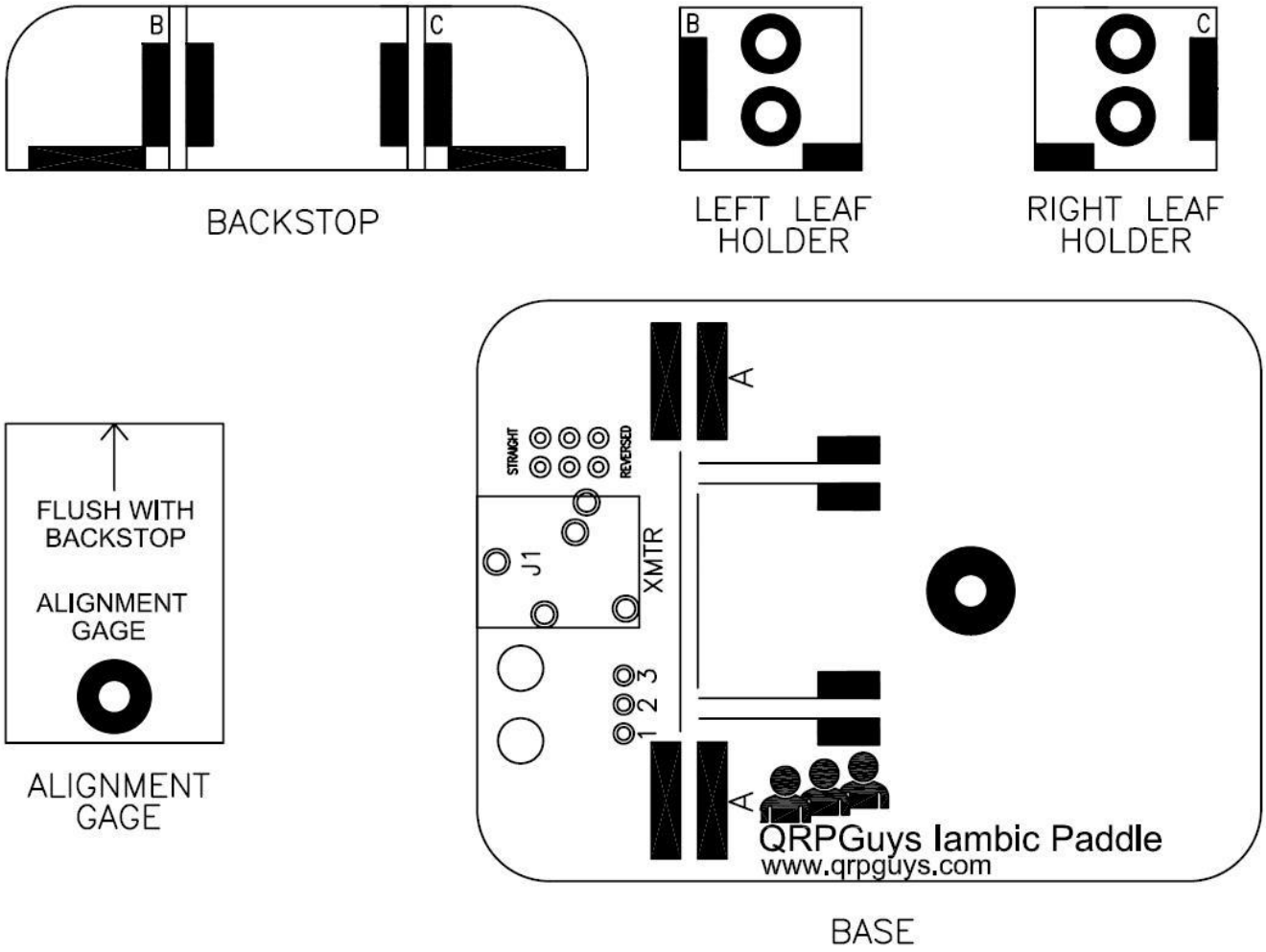
First, familiarize yourself with the parts and check for all the components. If a part is missing, please contact us and we will send one. You must use ***qrpguys.parts@gmail.com*** to request a part.

Parts List

1 – QRPGuys Iambic Paddle w/Base PCB, 5 pieces
1 – 3.5mm stereo audio jack
2 – 3 position in-line header
2 – header jumper (Berg connector)
1 – 3.5mm stereo plug
2 – SS paddle leaf
1 – 4-40 x 3/8”L SS pan head Phillips screw
1 - #4 SS flat washer
1 - #4 SS lock washer
1 - #4 x .187”L nylon spacer
1 – 4-40 brass nut
4 – 2-56 x .375”L SS pan head Phillips screw
4 – 2-56 SS nut
4 - #2 SS flat washer
4 - #2 SS lock washer
4 - #2 x .187”L nylon spacer
1 - #2 x 3/4”L nylon spacer
1 – 2-56 x 1”L SS pan head Phillips screw
2 - 1/2” x 1” vinyl caplug
2 - 1/2” wide x 2”L plastic shim
1 – 4” x 1/8” black cable tie
4 – Silicone self-adhesive foot, 6mm

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 the part of the 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 kit using five pieces of PCB material, and when assembled, form the electrical connections. There are solder pads, registration marks, and letter coded parts, that match each other. When you tack and solder the components it will make a sturdy mechanical and electrical assembly.

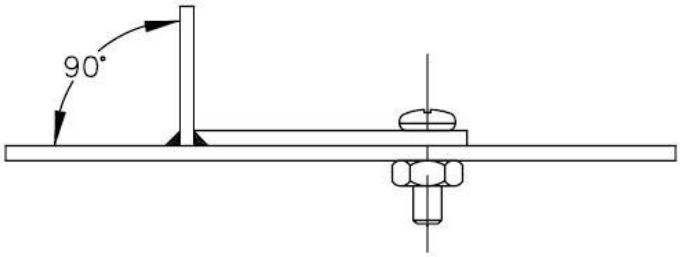
Refer to the figure below for identification of the individual PCB parts.

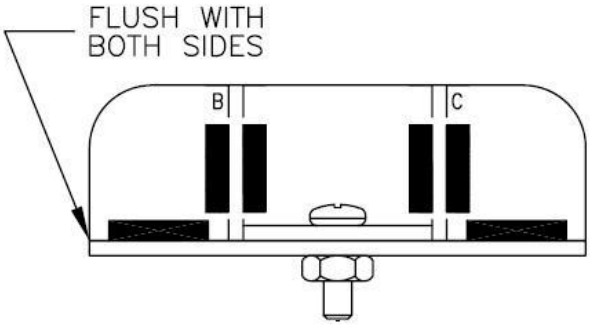


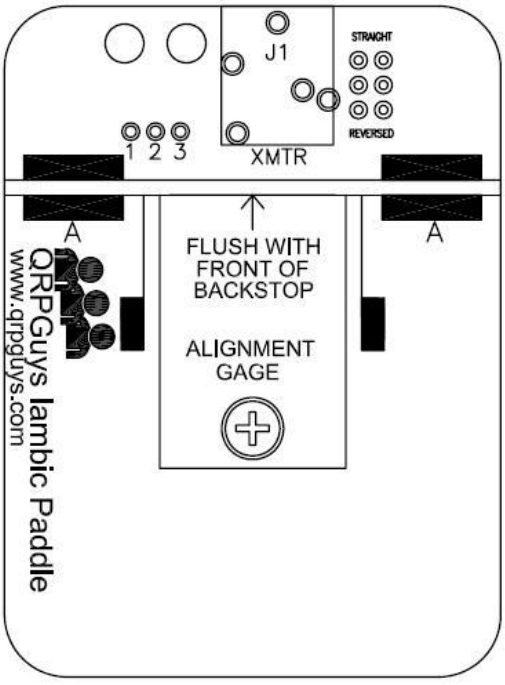
On all the mechanical assembly soldering you do, you will use the same technique. You tack a single tiny point first, and then check to see that it is square and aligned with the registration points. It is easy to re-heat the joint and adjust the alignment when there is only a single point. Then you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

Notice that the pieces are coded with letters that will match up when you have them in the correct alignment. The first two pieces to be joined are the **backstop** and the **base**.

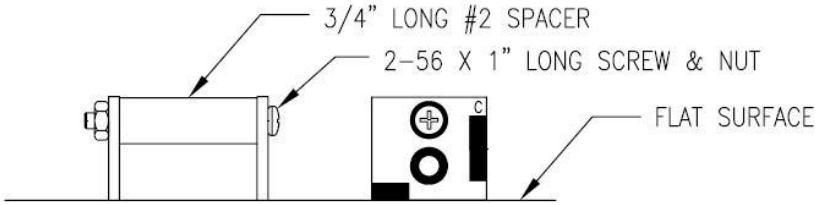
Attach the alignment gage to the base using a 4-40 screw and nut as shown in the figure below. Tighten the screw after you have placed the backstop against the gage and aligned it with the registration marks. The alignment gage should be centered between both leaf holder registration marks. The gage will stay in this position until the backstop and both leaf holders are soldered. You only slightly tack a point on one intersecting pad and then check to see that it is square to the base, aligned with the registration points, and flush with the sides. ***If it is not, do not try the bend it to fix it, you will lift the pad off the surface.*** You need to re-heat the tack and straighten it while the heat is applied. Once it is square, tack the opposite side pad. After a small tack is done on all the pads you can go back and touch up all the solder pads, and it will stay square and flush with the edges.

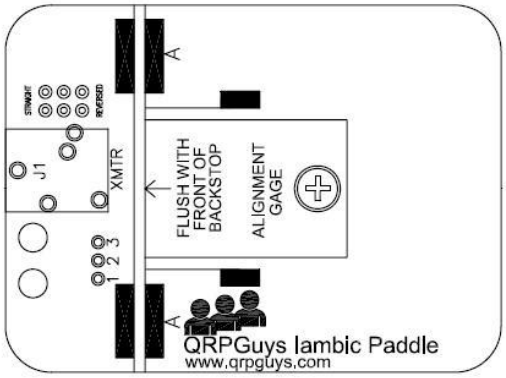


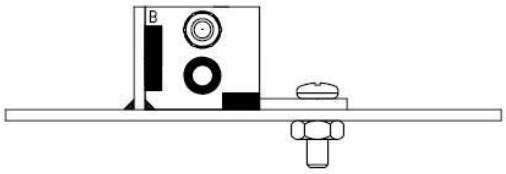


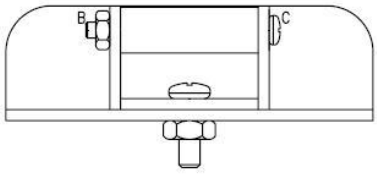


Use the same technique adding the **leaf holders**. Space the two leaf holders with the #2 x 3/4" long #2 nylon spacer, 2-56 x 1" long screw and one of the 2-56 nuts. Match the registration letters and alignment marks. Slide the leaf holder assembly between the alignment gage, up against the backstop and light tack the pad between the base and paddle leafs. Check for squareness. Adjust if needed by re-heating the tack. Once you are satisfied, tack both pads where they intersect the backstop. If all is in alignment, go back and finish soldering all of the pads. Remove the alignment gage, nylon spacer, 1" long screw, nut, and solder the inside pads between the base and leaf holders.

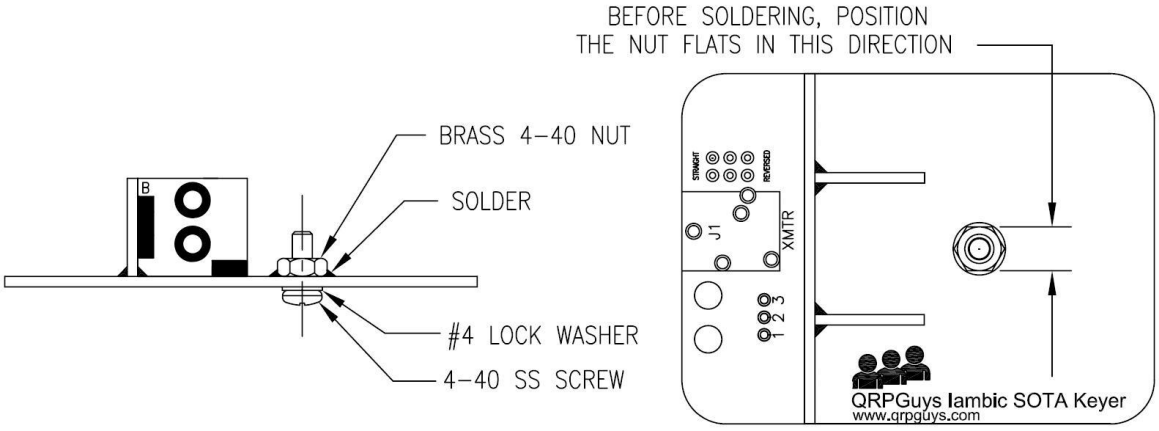




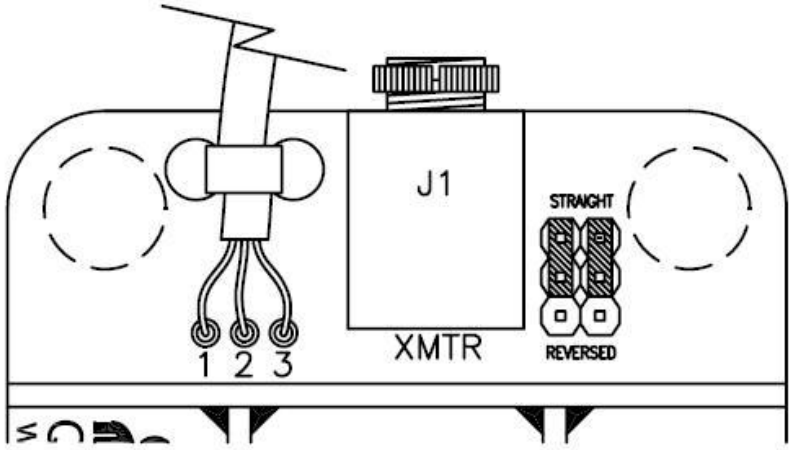




Solder the 4-40 brass nut to the assembly using the figure below as a guide. It is helpful to rub the brass nut on some scotchbrite or emery paper to remove any oxidation on the brass. Use the hardware as shown in the figure. The lock washer ensures the nut is square with the surface of the PCB when heated. Solder the brass nut to the base. Heat the nut from the side. 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.



This completes soldering the mechanical pieces. Continue the building the kit by soldering the electrical components. Use the figure below for the part placement.



Parts placement figure

[ ] Install the two 3 pin headers.

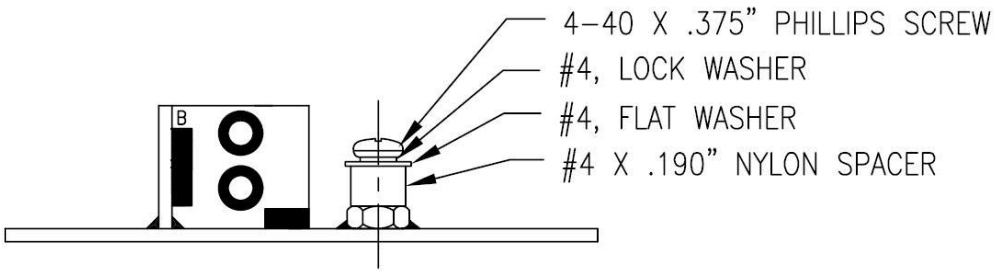
[ ] Install J1, the 3.5mm audio jack where indicated.

The attached cable for input to your transmitter is *optional*. You can use a male/male 3.5mm stereo jumper, or fabricate a permanently attached cable of your own choosing. We provide one male 3.5mm stereo plug and a small cable tie to attach your cable for that option. You supply your own three conductor cable. Use the ground connection on the plug as the common and connect that color wire to the #2 pad on the PCB. The ring and tip for the other two connections, #1 and #3. The two Berg jumpers on the PCB accommodate either combination for the dit/dah and ring/tip orientation.

This completes the electronic pcb assembly.

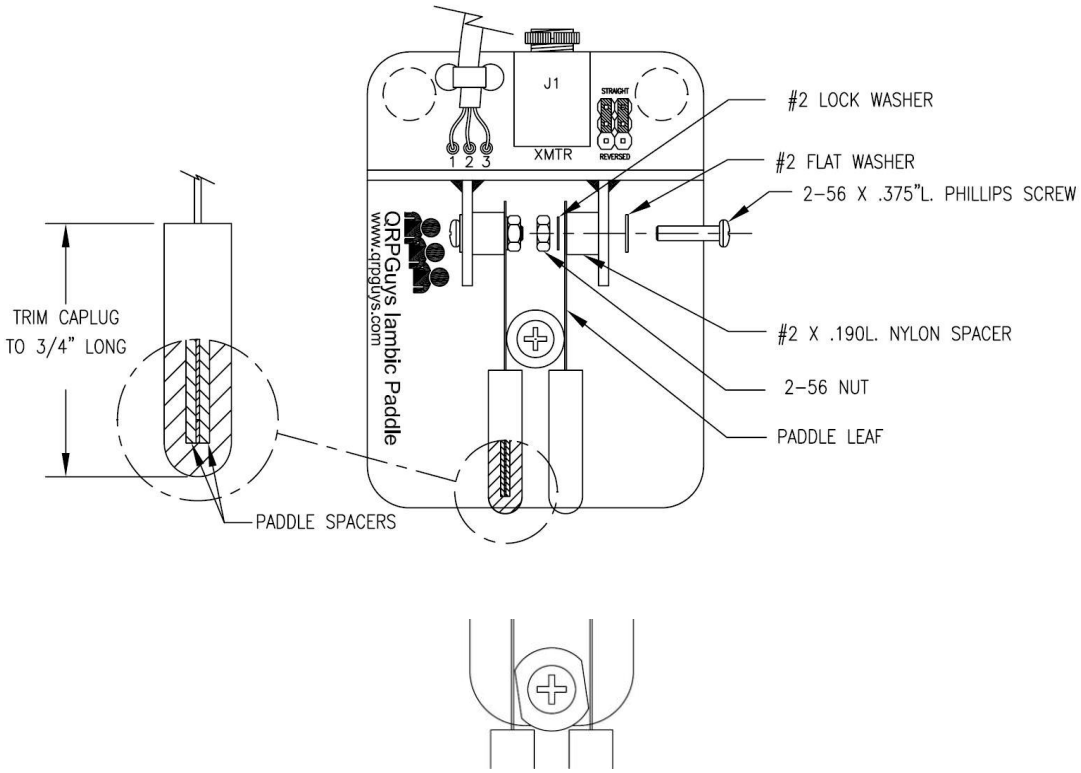
Assembling the center contact:

Finish the mechanical assembly of the center contact as shown in the figure below.



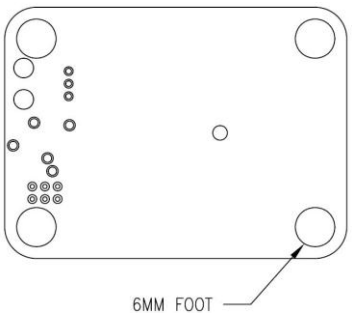
Assembling the paddle lever components:

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. 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 prior to use. There is also some clearance between the contact washer and the O.D. of the holding screw allowing the washer to be moved to the side. 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 use thicker material for a stiffer touch. Cut the vinyl caplug lever cover 3/4" long from the closed end. Scissors will work easily. Cut the piece of 1/2" wide plastic into two 5/8" long pieces. Sandwich the paddle lever with the plastic spacers and slide the caplug over the end of the paddle leaf.



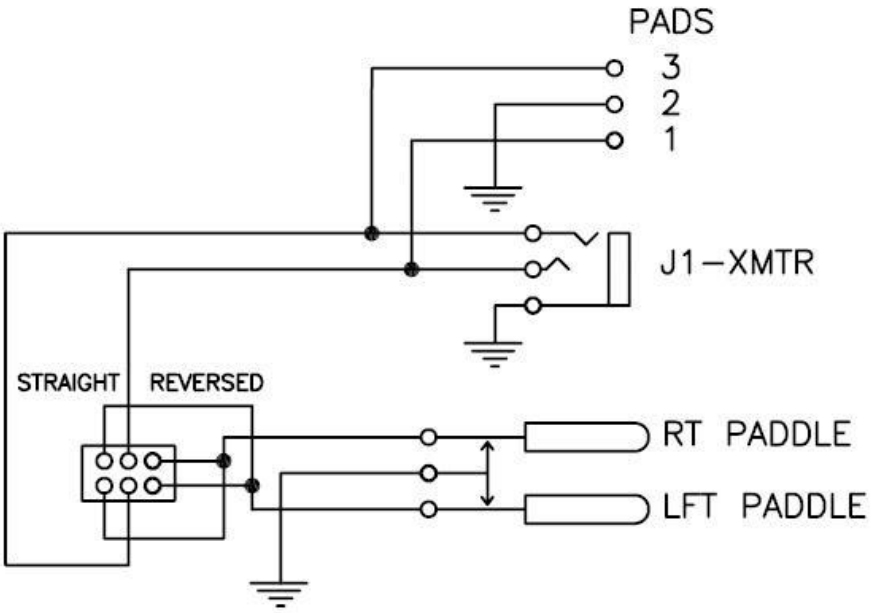
You may opt to use a different diameter washer of you own choosing. You could experiment with a larger washer with some flats filed on it for a different feel and or spacing.

[ ] Attach the four self adhesive feet to the bottom corners.



This completes the assembly

Schematic:



IAMBIC PADDLE W/BASE

Notes: