Assembly of the Mangrove Pushpole

Congrats on your push pole purchase! Please read this before you start installing the sections together. It's much better to be comfortable with the instructions and get your game plan together than to hastily slap the parts together…so here are the instructions and material list of a few things you'll need.

First, the material list.

solvent (acetone, lacquer thinner, unscented fingernail polish)
JB weld , large size (a two part thick epoxy adhesive found at most auto parts stores)
100 grt sand paper (up to 180 grt will do..nothing finer or courser)
Masking tape (1 to 2" will do)
2" clear cellophane mailing tape
Paper towels, shop cloths
Wax paper or tinfoil

A brief overview of the assembly of the sections

Each section of the push pole will require a ferrule to join the sections together. We'll install a ferrule in each section half way first..let that harden, then complete the pole by joining the first sections, the point and taping the joints all at the same time. The entire process will take only a few hours but the drying time for the Epoxy will stretch the beginning time to the time you can place the pole in service at about 48hrs…..it's worth the wait, trust me on that. Let's go!

As stated earlier…read this a few times before you begin…get all your materials in hand. First order is get the parts out and look them over…bet you already did that before you started reading.

There should be a ferrule (a short section of tubing) for each mid-section. If you ordered a three section pole, you should have 2 ferrules…four sections, there should be 3 ferrules. There should be a point and foot pieces too. You'll notice the ferrule will slide inside the pole tubing. There is no taper and will slide all the way through. These are what will distribute the load of pushing to each section. You will need a place to build the pole sections. Keep in mind the epoxy will need a temperature of 65f deg F to cure. During the install of the ferrules ½ way in the tubing, this may be done in the house..spread protective covering because JB Weld does not remove off most surfaces when dried…but you'll need a good flat surface that's longer when you join the sections together as one…A few suggestions are garage floors, a long tool bench, your driveway….saw horses may be used but make sure they line up to make a good support that will keep the pole straight while the epoxy (JB Weld) cures. Side bar note: The reason I advocate JB Weld is this product has a very high PSI (pounds supported per Sq inch) and has a relative long working time so you will not be rushed. Most 5 min hobby epoxies are less then 1/10 the compressive strength of JB Weld. Not good. And finally, JB Weld is available in lots of places…even on line if you wanted to order it. I get the large tubes….a bit more expense than buying the smaller tubes but I find a bunch of uses for the stuff around the home…it never goes to waste and finally, the larger tubes allow you to mix sufficient amounts at one time. It's better to end up with some on the cardboard left over than not enough. That said, step one!

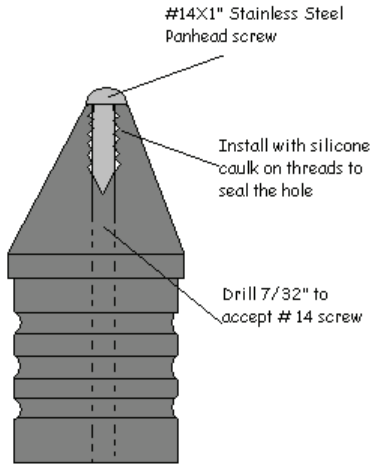
Step one: First wipe the inside of the pole tubes with (and I'll just use this from now on to make it simple to write…you have a few choices for solvents) acetone. Use a clean rag and make sure you get at least 6" to 8" inches wiped. Wipe the outside of the ferrules. This will remove all of the mold release on these parts.

. Next, hand sand the outside of the ferrules. This should be a 98% sand meaning the entire surface needs to be sanded. You can use the "shoe shine method" or lengthwise, either is fine but do not over sand. Once the surface is abraded that's when you stop. Clean with a dry clean cloth. There should not be any dust left on the surface.

Next, sand inside the pole sections…this is just a bit of a challenge. I've used the little flapper sander pads mounted on a length of dowel and that worked but sandpaper folded around the morning paper to make a soft dowel will do a nice job. Clean out the dust. Set your parts aside and keep them from getting dirty.

Now to prep the Foot and the pointed End Cap. To prep this and the point, take a small drill and just drill the surface that gets inserted into the pole section to dimple sized dots..I use a 3/16" drill bit. This will create small little areas that with the JB Weld cured will help keep you from pulling the point or foot off when you stick the pole in the mud…again, trust me on this one.

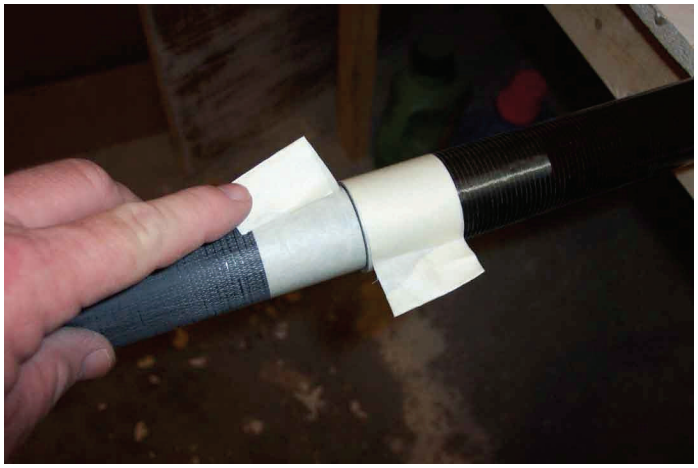
Now take a 7/32" drill bit and drill through the End Cap all the way to the other end of the cap… this will allow air to pass through and not be trapped causing the sections to move and expand as the JB Weld cures and possibly make a weak joint. Trust me, this little detail needs to be followed….and also provides later installation of a #14X1" SS panhead screw that will take the abuse of stabbing in shell bottoms without deforming the tip. Remember, the screw will be installed after the last step.



I found it easier to flatten the point of the tip to the diamenter of the head of the #14 screw first before I began drilling. This gave me a flat surface to begin drillin. you can flatten the point using a bence grinder, disc sander or just a piece of course sandpaper placed on a flat surface and move the tip against that.

Step 2: Take a ferrule and measure it half and place a small mark.

Tear off a piece of masking tape about 8" long and wrap it on the mark and take the end and fold on itself to make a pull tab to later remove the tape. Do this to all the ferrules. Now do the same tape to the very end of the pole sections. This will aid in the clean up



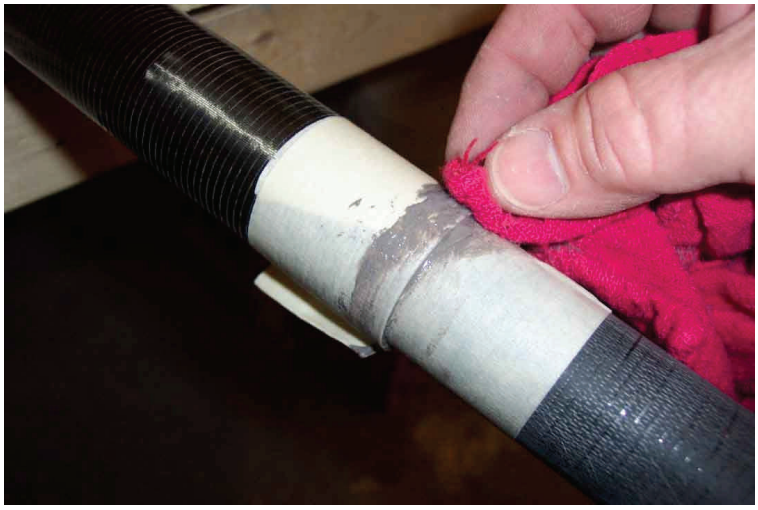
Decide where you will be doing the first part of the fabrication and move all the parts to this area. Mix about 2 tbs of JB Weld on a clean surface and follow the Mfg. instructions. When mixed, move this close to the work area. Remember…protection, this stuff gets everywhere.

With a popsicle stick or something like that, butter (BUTTER is to place a very thin layer) the inside of the pole section and wet the inside surface about 3" back.

Set that down and butter the ferrule..use a bit more on the ferrule than inside the tubing.

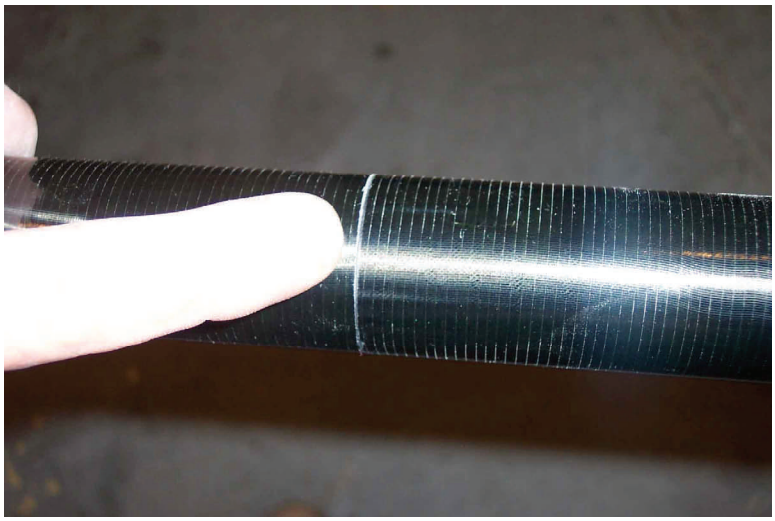
Slide (with a slight twisting motion) the ferrule inside the pole section up to the masking tape.

Take a paper towel and wipe the excess JBW off the tape and set it aside. I like to set mine so this will hang over the edge of the bench or where ever the work space. Do the rest like the first.



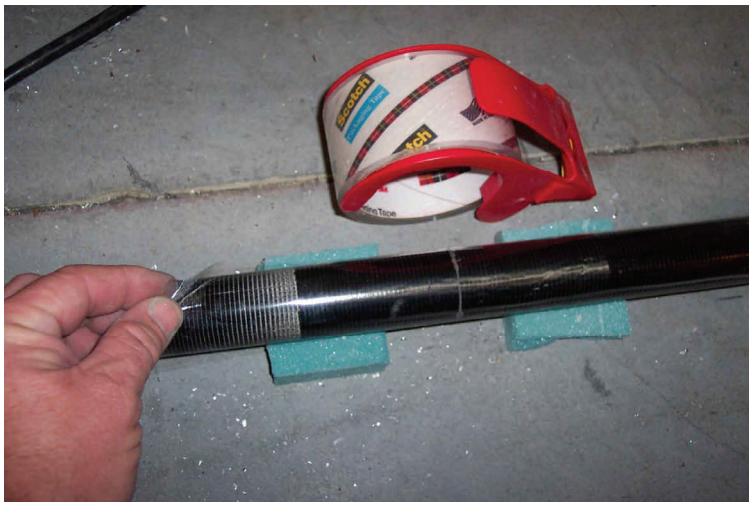
. Now you can take the foot and install it on one of the sections. Place the masking tape on the foot where the collar is just like the ferrules. Butter the pole section and then the foot section. Make sure to fill most of the dimples with JBW and with a slight rotation press the foot in place. Remove the excess with a paper towel and set it down. I like to have a piece of tinfoil or cellophane under the foot…I have stuck one to the table before. Almost done with this step but one last detail. The JBW will start to set up in a hour or more depending on the temp…the warmer the faster. When it becomes to thick that it no longer will run or drip and seems to be getting firm, carefully remove the masking tape now…if you wait till it's hard, it lots more difficult. Let the parts set over night to completely cure before moving to step 3.

Step 3: This is the last step in construction. With the sections in step 2 fully cured, take a few minutes to trial fit all parts together. You should be able to slide the sections together all the way till each pole section completely butts up to each other with a very small crack..if any. How big is to big of a crack? You should not have a crack between any of the sections greater than 1/16th of an inch.



You need to re-tape the ends of the pole sections that you removed it from in step 2. This again will aid in clean up.

You will for this step need a long reasonably flat surface to work on as you join the poll sections together. Since there is some small tolerance between the ferrule and the tube, there is some movement. It's pretty important to make sure your pole is placed straight for the final curing of the JBW. Note* JBW will stick your pole to what ever you sit it on to cure…please don't forget to place either a piece of cellophane or tinfoil under the joints if you lay your pole on a workbench or somewhere else. Ok, so all pieces mate up and look good and are ready for JBW. Take a pencil to mark on each taped joint a letter or number with a line-up mark before disassembly. This will always keep you mating up the same parts in the same location. Mix the JBW following the directions on the tube. You should, based on the step 2 have a fair idea of how much to mix. Follow the same buttering as explained in step 2 and starting with the section that has the foot, begin to apply JBW section by section saving the installation of the tip for last. As each section is married wipe the excess JBW off the tape.



Now take about a 12" piece of the 2" cellophane mailing tape and use it to tape the section(s) lenthways..this will keep the section from moving a great deal while you are working on the next one. Last, install the point.

You can keep tabs on the JBW to see when it looks like its firming up and remove the tape or if you cleaned it pretty good you may opt to wait till full cure to remove…either is fine. Make any final adjustments to the position of the now fully assembled pole so it can cure in a straight lineup of all sections. Final prep: after removal of the tape (unless you did it earlier), you may lightly sand any JBW that you can feel at the joints…but done right there should not be much sanding at all. Sanding will leave some scratches, you can use some clear fingernail polish, thin epoxy resin, clear spray polyurethane or rod building clear coat to make the sanding marks unnoticeable. Now install the #14X1" panhead screw into the hole you drilled in the tip. You can either use silicone or I prefer 3M 5200 caulking if you have some...or if you have a bit more time you may bed the screw into the tip using JB Weld. Any of these will keep water out. 24hours after you mixed the JB Weld in step 3 and you should be good to place the pole into service.

If you are new to using a push pole, keep in mind a few things. Your newly assembled pole is quite strong and will give great service. There are several things that you can do however that will cause the pole to fail. Never use the pole to lever against the side of your boat and try not to let the boat drift back on your pole as it's planted in the bottom. Either of these will create a point load on your pole and it may cause the wall of the pole to crack and eventually fail…When not in use for extended time frame, take the pole off the boat and store it out of the sun. No different than your fishing pole, the sun can damage the resins used in the pole's fabrication. I purchased a 20ft section of 2" PVC pipe and slid that under my deck and now just slide the push pole inside that…you could do the same on the side of a garage or on the ground beside your boat or house. If you are installing Push Pole holders on the boat, you should always try to spread these out so the maximum support can be made to your push pole. Most Push Pole holders come with mounting instructions and recommendations on spread. Your Mangrove Push Pole is made out of graphite and conducts electricity pretty good. Touching exposed power lines with your pole may turn it into a conductor of electricity and possibly shock, burn or result in death to the person holding the pole or persons close or in contact with the person holding the pole. Your pole is a great lightning attractor….keep that in mind while you are out on the water with a lighting storm approaching.

Keep it safe and play hard and Pole on!

Fred "Grass Rat" Slann
Speckrigg Charters
Grass Rat Composites