

The Most Versatile System (MVS) Mandrel:

This single mandrel allows you to mount your pre-bored barrel two different ways, remount any call with the same bore diameter as your mandrel, hold kegs that are turned to your mandrel holder's diameter without using a center support (live center/tailstock), and rework previously made barrels that were not drilled in the center, all in one "system". A duck call maker who understands how a call mandrel should perform has made the MVS specifically for duck calls. No more using a pen turning mandrel for making duck calls and fighting those rubber bushings. After making calls for 13+ years without a mandrel, I designed the MVS, CLS, and PLS mandrels for my own use in 2002. After many people expressed interest, I decided to start building them to help all of the other call makers out there. I would suggest that you do some tinkering with this mandrel with practice wood to familiarize yourself with the mandrel. The practice will likely save you some grief with your good wood. I hope you enjoy your new tool.

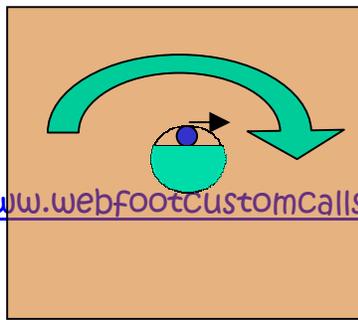
To assemble your mandrel, insert the mandrel rod into the holder. The end of the mandrel rod with the two narrow flats cut in the side about 3/8" apart is the end that fits inside the holder and the setscrew rests in one of those two flats. The two flats are machined into the mandrel to add versatility. Insert the mandrel rod into the holder completely and align the setscrew with the locking flat. If you wish to turn a longer part than the original specs, loosen the setscrew and slide the rod out until the setscrew aligns with the second locking flat. This will allow you to use a blank ≈ 1.00" longer. Be sure the setscrew sits in the flat machined into the rod. Do not tighten the setscrew on the main body of the mandrel or it may deform the rod and make removing the rod from the holder difficult or impossible.

Basic Components of the MVS

The MVS consists of six pieces: the holder with a #2 Morse Taper mount, the mandrel rod, the pin for the pin lock (.125" x 1"long), two nuts (1/2" X 20 TPI), and a crush sleeve. Using these six pieces in various configurations will allow you to do several operations with one simple tool. Once the mandrel is installed, and the blank is on the mandrel, slide the tail stock with live center up to the end of the mandrel and secure it, tightening the quill of the tailstock on the mandrel with slight pressure. It does not need to be "cinched down", just "snugged" up securely and the quill lock tightened.

How the 'PinLok' Works:

The Pinlok type setup simply uses the supplied pin placed in the pin slot, and the bored call blank slid onto the mandrel. With the blank in the desired position, rotate the blank in the opposite direction of rotation of your lathe while holding the mandrel holder stationary. AS you rotate the blank (usually backwards or away from you), the friction of the ID of the bore on the OD of the pin causes the pin to roll on the flat surface it is sitting on. As it rolls off center it wedges itself between the mandrel rod and the wood, locking it in place. As you can see rotates, the pin rolls into an causes it to wedge, and hold the the wedge effect will work in either



direction, but if you lock it in one direction, turning the wood the opposite direction will unlock it and the blank may move. Be sure if you are turning your work piece by hand, turn the holder rather than the wood so the piece remains locked in place. Though you can remount your call if it does get turned the wrong way, it may not re-lock in exactly the same spot and may become off center as far as .002 to .020”(in extreme cases), which is more than enough to cause issues with thinner walled calls. So be aware of where you grip to turn the call manually. Once the blank is locked in place, run your tailstock and live center into the center hole in the end of the mandrel, tighten the tailstock base, and then the center to the mandrel. Not much force is needed. Though too little force will result in the mandrel spinning on the point and ‘chirping’, and too much force will be hard on your center as well as make your holder very hard to remove from its taper. This is a ‘by feel’ thing, just enough pressure to keep it from chirping is ideal.

How the Crush Lock Works:

The Crushlok is a very simple design. The bored blank is put on to the mandrel rod with out the Pinlok pin and slid up against the face of the holder, then the crush sleeve is placed against the blank and the two nuts are threaded on. Tighten the first nut with a wrench while holding the call blank with your hands. Be careful not to tighten the nut too tightly or the blank may crack. You will get the feel for this with the various types of woods you use as time goes on. Once the first nut is tight, then tighten the second nut on to the first to keep it from loosening by using the second nut as a ‘jam nut’. Then run your tailstock and live center into the center hole in the end of the mandrel, tighten the tailstock base, and then the center to the mandrel. Not much force is needed. Though too little force will result in the mandrel spinning on the point and ‘chirping’, and too much force will be hard on your center as well as make your holder very hard to remove from its taper. This is a ‘by feel’ thing, just enough pressure to keep it from chirping is ideal. If the block should come loose while turning because of uneven end cuts or soft wood (hopefully if this happens, it does so in the roughing stage), just tighten the nuts again and maybe with a little extra ‘oomph’. Again, practice with some cheap wood such as pine 2x2s or the like to familiarize yourself with how this works and feels. Do not use the crush lock mounting for working on a call that is already made as it may scratch the surface that is in contact with either the sleeve or holder.

Using Both Lock Methods at Once:

You can use both the Pinlok and the Crushlok at the same time to facilitate faster call manufacture. Setting up this way allows you to make the complete call, sand, wax, and buff it all without removing it from the mandrel until it is completed and ready for bore sanding. To do this, you must have a blank that is longer than the finished product by roughly ½” to 1” or more. Place the pin in the Pinlok groove, slide the blank over the mandrel and pin and against the holder face. Put the crush sleeve on and start the nuts on the threads. Rotate the blank in the correct direction for your lathe (away from you on all hand held tool lathes and most others as well), until it locks in position. Once the blank has locked on the pin, while holding the blank locked in position, tighten the first nut firmly. You can turn loose now. Now tighten the jam nut (nut #2), and you are ready to roll.

Rough out your call, and cut the ends down almost to the mandrel. Leave 1/16” of wood remaining. Then do your fine and finishing cuts. After that is complete, take the tool of your choice (I prefer an old junk skew, and cut down to the mandrel. This is where the optional recessed cuts come in. If you don’t have the recessed cuts, you will run your tool into the mandrel, and though the mandrel doesn’t care much, the tool wont like it at all (that is why I use an ‘OLD JUNK SKEW’).

If you have the recessed cuts and are careful, you can cut the ends down and not touch the mandrel at all. With ends cut off, shut the lathe down and take a chisel or the old junk skew and break the two end cutoffs off of the mandrel. Now you are ready to sand until your heart is content, as well as polish, buff, wax, or what have you. Once the call is done, back the tailstock off, remove the nuts and washer/sleeve, and gently slide your call off of the mandrel. (If you make very thin walled barrels, as I do, be EXCEPTIONALLY CAREFUL! I have cracked more calls taking them off of the mandrel than I have any other way combined.) And there is your call ready for bore sanding and a keg (insert).

The Holder:

One of the nifty features of the MVS is the 'holder', which is part of the mandrel system. If you remove the mandrel rod from the holder by loosening the setscrew, you have a centered 5/8" hole. So now you can turn your kegs down to the 5/8" diameter, remove the mandrel rod from the holder, insert your mandrel holder into the headstock, and then with a little fitting, slide your keg into the holder and turn the other end. Use masking tape wrapped around the 5/8" portion to create a friction fit inside the holder. Wrapping it in two places will help center the keg even more. Once you have it mounted in the holder, you can cut on it, sand, buff, wax etc. Ever dropped a keg and chipped the end? Now you can re-insert the keg in the holder and refinish the chipped portion. You can also drill your kegs with this holder. If you have a tailstock mounted drill chuck, just insert the drill bit in the chuck, put the keg in the holder, adjust the tailstock up to the end of the keg, lock it down, and feed the bit into the keg to your proper depth. Voila – a centered hole. Does the fun ever stop? True this method is not as ideal as a collet chuck setup, but it is less expensive. Another option is to purchase a collet chuck, and use the chuck as the mandrel holder. There are various collet chucks available and can add more versatility to your current setup.

Recessed Cuts:

Recessed cuts are an available option for almost all of the WEBFoot mandrels. These additional cuts allow you to turn, sand, and finish the entire face of each end of the barrel. Using a narrow tool, you can actually access and turn from the bore of the barrel to the outside. Typical use of the recessed cuts is to add a small chamfer to the keg end of the barrel to ease insertion of the keg if using o-rings and to add 'bell-mouth' to the mouthpiece of the barrel. Recessed cuts also make it easier to sand and finish areas that are otherwise inaccessible with other mandrels.

Some things to keep in mind:

The PLS and MVS mandrels are designed for use with a 60° pointed live center. Much like the ones you see for metal lathes. Many of the newer – less expensive lathes have started coming out with very small live center points. The only thing one can do is test the fit. If it seats properly in the center drilled end hole then there should not be a need for a different live center. If the fit is loose, then a different style live center may be required. Many call makers prefer the larger metal lathe style live centers due to the larger point section of the live center, which allows one to actually use the point of the live center on the bore of the barrel – provided it is larger than the bore of the part.

Coating the mandrel with oil or wax is not recommend as it may have a negative effect on the holding abilities of the mandrel, particularly in the area of the center section of the mandrel or Holder Face.

Though drill bits are the same size, each cuts in its own way, so you might find that the blank is too tight on the mandrel and the harder it goes on, the harder it comes off. There are a

few things you can do to deal with this. One is to sand the bore until it slides on fairly easily (again 'by feel'). Try a different bit or run the same bit through it a few more times to clean up any burrs. You can also, if you so desire, take a metal file or emery cloth to the entire surface of the mandrel while it is running at a medium speed and reduce the OD of the mandrel by a few thousandths, though this is very hard to do accurately. And lastly, you can send the mandrel and a call blank back to WEBFoot and we will fit the mandrel to the blank (shipping charges may apply).

The Pinlok can be a bit touchy when it comes to bore fit. If it is too loose, the pin will not contact the bore and therefore not roll when the blank is rotated, paying close attention to this, as it too is 'by feel'. Generally, if the .125" pin will not lock, try a incrementally larger pin (use old drill bits and cut them to length), or you can put a piece of scotch tape on the flat surface where the pin sits to tighten it up.

You can use this mandrel for all kinds of materials; Acrylic, all woods, aluminum and brass, and depending on composition, rubber and softer plastics. It is very strong and should last a lifetime if well taken care of.

Depending on the fit of your call to the mandrel, you can sand or polish the call without using any lock method at all. If there is just a little friction between the call and the mandrel, you should be good to go, keeping in mind that it will not hold up to cutting without a lock pin or crush sleeve and nuts.