

# Measuring Cup Set V2

## Kit Features

- Easy to Turn with a Straight Tube
- Minimal Parts—easy to assemble
- All measurements engraved on individual Cups
- Sturdy construction
- Available in Stainless Steel

## Required Accessories

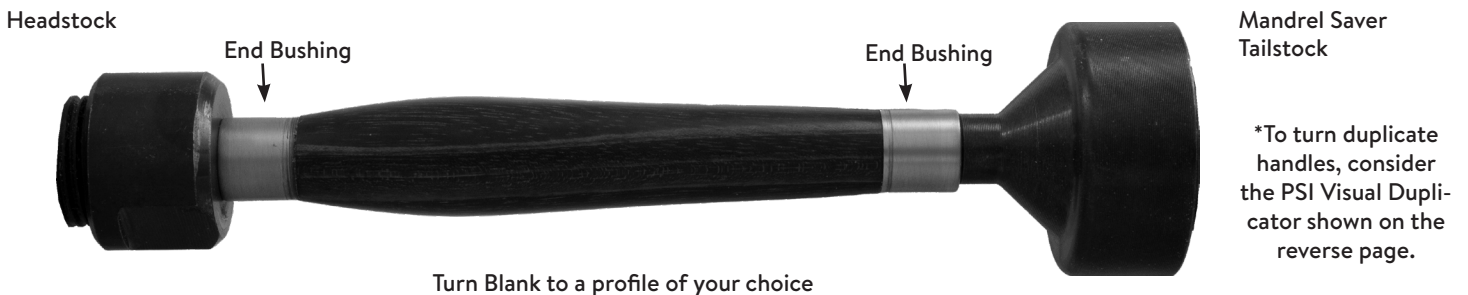
- 7mm Pen Mandrel
- Drill Bit: #PK-38BP for Wood, #PKEXEC-38 for Plastic
- Bushing Set(2pc): #PKKNBU
- Barrel Trimming: #PKTRIM38 or 3/8" sleeve from #PKTRIMSET with squaring jig on disc sander
- Live Tailstock or Mandrel Saver
- 2 part Epoxy or Thick CA (Cyanoacrylate) Glue
- Pen Blank Minimum Size: 3/4" x 3/4" x 3-5/16"L



## Preparing the Blank:

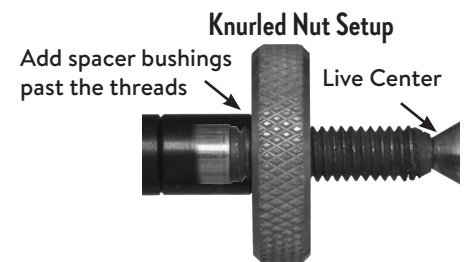
- Prior to cutting and gluing, always verify tube length is correct (see parts diagram on back page)
- Cut blank to the length of the tube, adding 1/16" for squaring off.
- Drill 3/8" hole lengthwise through the blank.
- Spread glue over tube, insert the tube into the blank while twisting to spread the glue evenly inside. You may wish to sand the tube prior to gluing for better adhesion.
- Center the tube lengthwise inside the blank.
- When the glue is dry, square the ends of the blanks, making sure the trimmed ends are 90° to the tube. Use PKTRIM38 or 3/8" barrel trimming sleeve with a pen blank squaring jig on a disc sander. Take the excess material down flush to the ends of the tubes. Do not trim past the end of the tube since this may interfere with assembly and the operation of the mechanism. Use a barrel trimmer to clean the inside of the tube.

## DIAGRAM B / TURNING THE BLANK\*

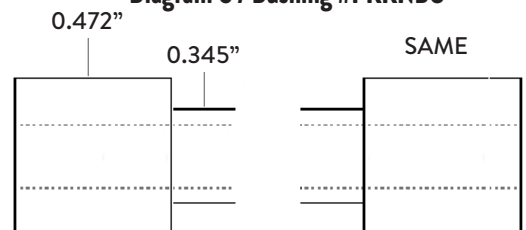


## Turning the Blank:

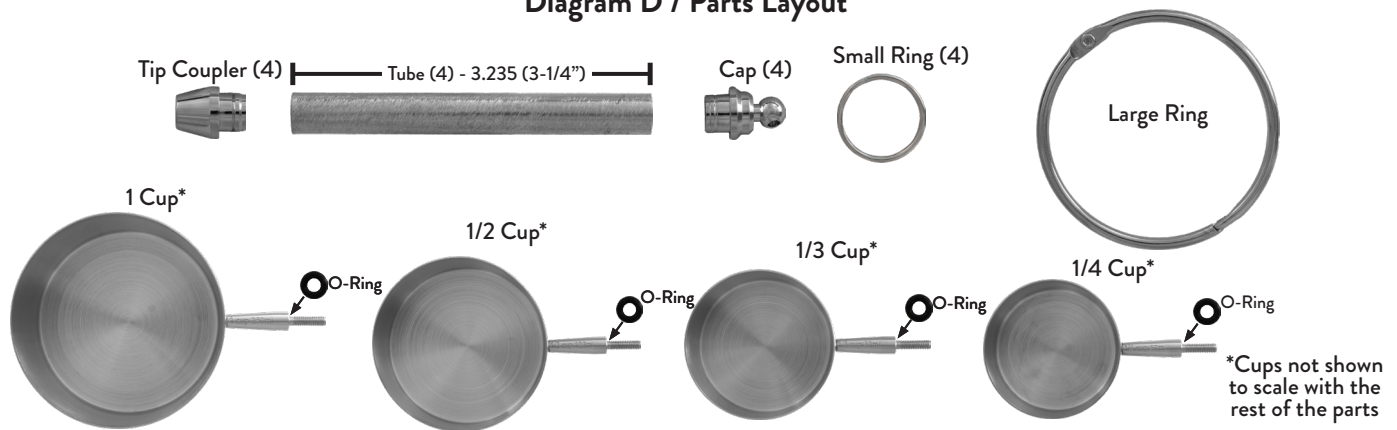
- Mount the bushings and blanks according to Diagram B.
- When using Mandrel Saver, there is no need for extra spacer bushings or the knurled nut. Slide and lock tailstock directly against bushings and tighten quill until blank and bushings are secure.
- To use Knurled Nut Setup (right), add spacer bushings until past the threads on the end of the Mandrel Shaft.
- Thread on the Knurled Nut and hand tighten to hold all components in place.
- Slide the Tailstock up snugly against the Mandrel shaft, inserting the live center point into the Mandrel dimple.
- Lock Tailstock and hand tighten the quill adjustment with wheel to steady the mandrel. Do not over-tighten, it could damage mandrel shaft.
- Using sharp tools, turn the blank down close to the bushing diameter. Turn the barrel straight or to a profile of your choice. For duplicating handles, see reverse page for using the PSI Visual Duplicator. It provides a good guide for replicating turnings while still providing a handmade look.
- Sand the blank down to be flush with the bushings, gradually increasing sandpaper grits.
- Finish the barrel using your choice of polish. Allow sufficient time for the polish to cure—refer to polish manufacturer's instructions.



## Diagram C / Bushing #PKKNBU



## Diagram D / Parts Layout

**Assembly:**

- Press the Cap into either end of Barrel. If you have difficulty pressing the on the rounded end, you can drill an 8mm hole in a scrap piece and slip it over the round knob on the cap so you can press against the flat rim.
- Slide O-ring onto the threads of the Cup and push it as far as it goes.
- Tip: To make sure hole in the cap is lined up with the Cup, You can thread the Cup into the Tip Couplers, line up in the orientation you want, and push the Tip couplers into the Tube by hand until it wedges in place. Carefully unthread the Cup to press in the Tip Coupler.
- Press the Tip Coupler into the remaining, open end of the Barrel.
- Thread the Cup into the Tip Coupler.
- Attach the Key Ring to the Cap.
- Repeat steps for each Cup.
- The completed Cups can then all be put on the Large Ring to keep them together for transport and storage.

## Diagram E / Using the Visual Duplicator #LDUPVIZ to make duplicate handles



- To use the Visual Duplicator, first make the original handle you wish to duplicate.
- Set up a new Blank to be turned on the Lathe according to the first page.
- Mount the Visual Duplicator onto to the lathe bed so it is behind the Lathe Center (see picture) close to the new Blank without interfering with the lathe spin.
- Mount the original turned piece on the Duplicator. The piece can be mounted on a spare set of bushings or held by the tapered nuts that come with the Duplicator.
- Adjust the nuts and alignment so the original and the new Blank look even.
- Turn the new blank and refer to the original for a visual guide to copy.
- Creates similar pieces while still looking like each was handmade.