

# **“AQUA PEARL” ACRYLIC BLANKS**

## **Item # AQP01 - AQP08**

### **TIPS FOR PREPARING THE BLANKS:**

For your convenience, PSI “Aqua Pearl” pen blanks are all provided with predrilled holes to fit a 7mm tube, and the outside surface is turned round to 5/8” diameter. This will save you time and wear on your tools.

When using these blanks on products requiring 7mm tubes, no additional drilling is needed. Just saw off the length of each blank you need for the specific tube length to be inserted. (PSI pen blank trimming set #PKMITRE works well to accomplish this). When cutting the whole blank to make two pen blanks, always measure and cut the sections from the outside ends of the blank towards the center. (The hole in the tube was drilled from both ends and may not be perfectly aligned in the center).

PSI “Aqua Pearl” acrylic blanks are transparent in many sections where there is little color pigment, especially visible when the blank is turned down to a thin wall. The golden shade of the brass tube inside may show through the surface and cause an unwanted appearance. To remedy this look, we recommend you paint the surface of the tubes with a thin layer of white. For the best adhesion, use sandpaper to roughen the surface of the tube prior to spraying.

To glue-in the tubes, use a flexible type of glue. It will cushion the bond and prevent cracking when turning. PSI “Mid-Cure” 15-min. epoxy or “Tite-Bond” polyurethane glue both work well on acrylic. Apply glue generously per your pen instructions and follow the manufacturer’s recommendation for curing time.

### **ADOPTING BLANKS TO VARIOUS PEN KITS:**

PSI “Aqua Pearl” blanks can be used for pen kits with various larger diameter tubes. What is needed is to re-drill the pilot hole to the desired diameter.

### **ENLARGE (RE-DRILL) HOLES:**

Prepare a wood jig to hold the blank in the correct position when drilling. The jig can be made either with a “V” groove or a pre-drilled 5/8” hole cut in a 2” thick wood block. The hole must be perpendicular to the base so the pen blank is seated square to the table, and parallel to the drill press spindle. Once the proper hole is drilled in the block, simply cut the block in half through the center of the 5/8” hole, creating two identical halves. When the blank is placed in the jig, it must be held in place with a vise or c-clamp while drilling. Due to the heat build up during drilling, the blank must be supported throughout its entire length to prevent twisting or distortion.

## **DRILLING:**

Select a good quality, machinist flute drill bit (do not use a brad point bit). Secure the blank in the jig and the jig firmly on the drill table. Set the drill press to a slow speed. When starting, direct the bit to the center of the pilot hole. Apply little pressure on the bit. Use short strokes, cleaning the shavings often to avoid melting the scrap. Stop the drill frequently to cool off the bit, and if necessary, use a wet paper towel on the bit for additional cooling. Because you are re-drilling over a pilot hole, hold the handle of the drill press firmly, the bit may tend to run quickly down inside the hole out of control and split the blank. Be sure to place the jig on top of a wood support base. When the bit gets close to the bottom of the blank, ease up on the penetration. The wood base will absorb the pressure of the bit and prevent cracking of blank end.

## **TURNING “AQUA PEARL” BLANKS:**

If you can turn wood, you can turn acrylic. The blanks are already rounded so, you will experience smooth turning from the beginning. Start with sharp tools and keep them sharp throughout. Use a medium speed in the 1200 rpm range to produce the best finish. To get the nice long shavings, use a 3/4” roughing gouge to take the blank down to the initial profile. Stop the lathe frequently to remove the shaving. When the blank diameter is close to the bushings, stop and continue turning with a 5/8” skew. The skew will remove and straighten the uneven surface. A sharp skew will leave a smooth, cutting edge as you approach the bushings. Leave about 1/64” for sanding.

## **SANDING AND FINISHING:**

Sanding the remaining plastic down to the bushing diameter is critical. At this stage you remove the scratches and ultimately end up with a high gloss finish. Use the same type sandpaper you have been using for your woodworking. Run the lathe at a slower speed to avoid overheating the blank by friction generated by the sandpaper. If small specs of acrylic are embedded in the sandpaper, when applied to the spinning barrel you will form a groove in your barrel from the melted material. You will experience the sandpaper quickly filling up with material as you sand. Keep the paper moving on the blank, and rotate the sandpaper to a new unused spot frequently to avoid these problems. Move from one blank to the other to allow each to cool down. At this point in the sanding process of acrylics, you may see a white fuzzy surface appear. This will soon be replaced by a smooth surface. When you reach 400 grit, you may now use water as a lubricant and coolant. Then advance to a wet 600 grit paper. You may choose to sand with even higher grits of dry sandpaper going from 1500 to 12000 grit. You will achieve an excellent “*wet look*” finish stopping with 600 grit. Continue with “Ultra Gloss Plastic Polish” (#PKULTRA) to complete your pen barrels.