

INSTRUCTIONS FOR TURNING M3 METAL BLANKS

M3 metal blanks are made with real metal that has been deconstructed to the macromolecular level, re-alloyed and then reconstructed creating a completely new metal composite material called M3 (short for "Macro Molecular Metal"). The new metal has the same visual characteristics of the source metal with a surface hardness that will allow an unbelievable gem quality finish, yet it will turn on a wood lathe with standard wood turning tools. This is a remarkably dense and stable material which will hold the finest of details down to a knife's edge.

REQUIRED ACCESSORIES:

- Dust Mask or Safety goggles – important to use when turning, sanding and polishing
- Well Sharpened HSS or Carbide Spindle Gouges (#LCPM3 or similar)
- Graduated Sand paper 150 – 600x (#PKSPSET or similar)
- Micro Mesh Finish Sanding System (#PKFINKIT or similar)
- Nuvite PMP 2 part finishing cream (#WXMMMP)
- Latex or rubber gloves (used to apply Nuvite)
- Polishing cloths, terry cloth and soft micro fiber or similar

TURNING INSTRUCTIONS:

Note: No special tools are required to work with M3. It will cut, turn, sand, grind, carve and drill with standard wood working tools. M3 will turn on any lathe; wood or metal.

When drilling tube holes, drill speed should be set low at around 600rpm and you should back the bit out every inch in order to control heat buildup. Using a slow but steady pressure and sharp drill bits should result in a clean exit hole.

Before turning, knock off the blank's edges on a belt sander to simplify rounding (optional). To turn, run the lathe at a high speed around 3000rpm and use sharp tools (HSS or carbide). Note that different M3 metals exhibit the surface hardness associated with the source metal. Titanium and stainless steel will be a little harder on the tools than copper and aluminum. Use a light touch and take the material down in thin layers using care not to build up too much heat.

After turning down to size, sand from 150 through 600 grit using traditional wood sandpapers. M3 will sand down easily so be careful with the lower grits not to be too aggressive. Hold sandpaper with your fingers so that you can control the heat buildup. For a mirror finish, fine sand wet with micromesh grits to 12,000 (#PKFINKIT)

POLISHING:

Use the 2 part PMP Nuvite creams. Remove all sanding dust and residue before polishing. Wipe down with water to make sure your blank is clean and dry. With the lathe turned off, use the end of a gloved finger to apply a small dab of PMP A to cover the blank completely.

Turn your lathe to about 1700 RPM. Carefully apply medium pressure to the underside (for safety) of the blank using a soft cloth (like terry or cotton) tri-folded to about 1" wide. Move the cloth side to side slowly to get even constant contact without creating more heat than is comfortable to the touch. After about one minute, move to a clean part of the cloth to remove polish residue and expose the shine level.

Repeat the above step, applying and polishing with PMP A again. Before proceeding to the next polishing step, wipe off all of the PMP A cream.

Turn off the lathe, and apply PMP B covering the blank. Process PMP B with the soft cloth using the same steps as PMP A above. Repeat the process with PMP B a second time. When done, clean the blank of PMP B to expose the final shine.

FINAL CONSIDERATIONS OF FINISHED M3 BLANKS:

Glue the pen kit's brass tubes into the M3 blanks with the same glues used for wood. M3 metal will patina with standard metal patina chemicals that are readily available. The metals used in producing M3 maintain a very high level of purity and will patina naturally over time and with use. Most artisans feel that this allows the finished product to take on part of the persona of the person using it, but if you want it to always look the same as when first produced use a clear coat, metal sealer wax or polish.

PRECAUTIONS: PMP contains petroleum distillates. Avoid eye or prolonged skin contact. Use with ventilation. In case of contact: Skin: Flush with water; Eyes: Flush with water for 20 minutes and immediately seek medical attention; Inhalation: Administer fresh air or oxygen; Ingestion: Do not induce vomiting immediately seek medical attention.

