Tips for Turning Plastics

Drilling

Using a drill press with the blank held securely in a vise or clamp, drill the proper size hole through the center of the blank stopping an 1/8" or so short of the bit exiting the blank. Trim away a small amount of the material from the end of the blank to expose the hole. The remaining material should extend beyond the end of the tube. This drilling technique helps prevent cracking caused by the bit exiting the blank. Drill at 250–500 rpm backing the drill bit partially out of the hole every 1/2" or so to clear chips. When using larger bits, use a lower speed.

Scraping Only

To reduce the likelihood of the material chipping while turning, we recommend using a scraper with a small bevel ground on the topside of the tool (see photo below). Having a short bevel above the cutting edge makes the tool less aggressive and easier to control than a standard scraper. You can modify an existing scraper by grinding a short 10 -15 degree bevel on the top side of the tool (shown below). Scraping may also be done using a skew chisel flat on its side. Cutting should be done with the handle in a slightly raised position. Scrapers with this type of dual bevel grind also work extremely well on unusually hard wood and highly figured areas that are difficult to cut clean using traditional scrapers. Parting tools are safe to use on plastics.

Finishing

For a matte finish, wet sand through 600 grit. For a glass-like finish, wet sand through 12000 grit using Micro Surface abrasives (114-0400) then polish with 20/20 Plasti-Polish (042-0020) or similar polishing compound. Using water while sanding maximizes the efficiency of the abrasive and prevents loading. If you don't have wet/dry sand paper, try regular sand paper as it may tolerate water long enough for you to sand.

Lathe Speed

Plastic pen blanks should be turned at the same speed you would use to turn a wood pen blank.