Gluing Oily Exotic Woods

Natural oils in some exotic woods provide a beautiful natural polish, but also make these woods difficult to glue and can interfere with finish curing. Polyurethanes (PU), certain cyanoacrylates (super or CA glues) and certain epoxies perform well, given the correct conditions.

The choice of adhesive for gluing exotic woods is determined by personal preference, speed of cure and ease of application. Gloves and good ventilation are recommended. CA bonds skin rapidly, and both PU and epoxy are toxic and difficult to remove from skin.

When bonding wood to metal, such as when making pens, close-fitting joints (less than 0.003") and proper surface preparation increase bond strength. If bonds are found to be weak, the wood and metal surfaces may be washed with acetone or alcohol and allowed to dry for 15 minutes or so, before adhesive application. Roughening the wood and metal surfaces by sanding lightly will improve the mechanical bond.

Joint tightness is especially important when using Super T (a slow-curing CA) or PU adhesives. The adhesive should be applied almost immediately after the wood surface is freshly dressed (with no burnishing), before exudates build up.

Adhesive is best applied to the outside of the brass tube and worked into the hole by inserting the tube first into one end of the blank, then rotating the blank end for end and inserting the tube all the way, ensuring even distribution of adhesive. The tube can be held while spreading the adhesive by pressing it onto a finely tapered metal or plastic rod (a Special T cap works well).

If turnings are to be thin walled, it is recommended that the wood inside of the workpiece first be coated with a thin, fast-curing CA (such as Hot Stuff®) to strengthen the wood and fill pores. Special T (a slow-curing CA with better gap-filling properties than Hot Stuff) is then used to glue in the tube. Wood must have some moisture content for proper curing. Turning can proceed in several minutes.

Polyurethane can be used, but the tube must be a close fit in the hole. PU fills gaps larger than 0.003" with foam that has very little strength. Wood must have moisture content in the 8% to 20% range for proper curing. Dampening the inside of the hole with a wet cotton-tipped swab or pipe cleaner will ensure adequate moisture is present. Allow curing for 24 hours before turning.

It is inevitable that any adhesive remaining inside the tube will cause spoilage of the project during assembly. To prevent foam-out from obstructing the hole, plug the tube at each end. To make plugs,simply press the end of the tube through a slice of modelling clay (play dough) or raw potato about 6 mm thick.

G2 epoxy is recommended for oily woods. It has excellent gap-filling qualities, so the tube fit is not so critical. Allow curing for 24 hours at room temperature before turning. Wood moisture content is not an issue because epoxies cure by chemical polymerization. It is recommended that tube ends be plugged as described above.

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