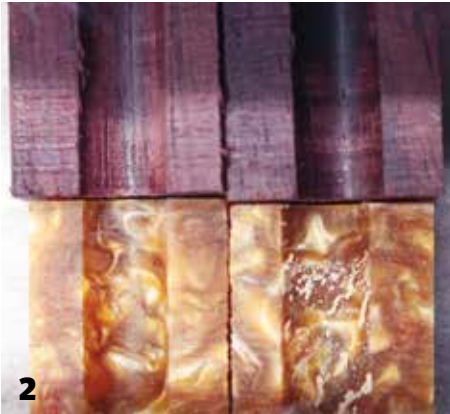


Kurt's clinic

Kurt Hertzog answers readers' questions

I don't usually have only one topic in a column, but there have been a lot of CA questions lately.



PHOTOGRAPHY BY KURT HERTZOG

1 If the tubes aren't already scuffed at the factory, do so with some coarse abrasive. The tooth on the tube makes for a great bonding surface **2** You'll get a much better adhesive bond from the hole surfaces on the left than those on the right. Drilling properly makes the hole adhesive friendly **3** Drill hole sizes appropriate for the adhesive and viscosity you intend to use. Upsize or downsize the drill used as needed **4** I'm a fan of polyurethane adhesives for bonding in tube when time permits. It retains a bit of compliance through out time **5** Where polyurethane isn't the best choice, my fall-back is epoxy. The bubble pack 5-minute variety is fine

I have been using CA to glue my wood to my brass tubes. The problem is that I'm having too many that separate and break free. What am I doing wrong?

I'm unsure exactly what your problem is since it could be one or a combination of many things. Let me offer some thoughts that may be of help. First and foremost, are your tube and hole properly prepared? The brass tube should be mechanically scuffed, either from the factory or by you, to provide some 'tooth' for the adhesive. The tube surface also needs to be grease and oil-free. Contaminants of any kind – grease, debris, oils, or even dust – that prevent intimate brass-to-adhesive-to-wood contact can be troublesome to a successful and strong joint. Is your hole properly sized and prepared? Depending on the tube you are bonding and the viscosity of your adhesive, your hole needs to be a slip fit rather than a wobbly, sloppy, rattle-around-inside size. Too small so it squeezes off the adhesive on insertion isn't good either, although thin can wick into tight fits. Your CA, reasonably fresh and decent quality I assume, should be the proper viscosity. You can't expect thin or medium to gap fill a glaring gap. That isn't to say you always have to use thick. It only means the clearance dictates the viscosity of CA that will function properly. Often, failure is caused when the hole is either wrong sized or poorly drilled. I've seen far too many holes that are polished or burned through. Rather than sharpen a drill or replace it, many turners just increase the speed and use more force to essentially 'burnish' their way through when their drill has gone functionally dull. A

polished, burned smooth hole inner surface doesn't provide a good bonding surface. Poor drilling especially goes for drilling plastic too. If you see egg shaped, improperly sized holes or lots of recast inside plastic blank holes, you're drilling far too fast and not cutting properly. Drilling a hole isn't a mindless task. Sharp drills along with proper speeds, feeds, and techniques yield good results. Just using high rpm and lots of pressure doesn't produce good results. Like your turning tools, drills are cutting tools. Properly sharpened along with material-appropriate speeds and feeds yields good results. Any or all the potential pitfalls I share above can be the cause or part of the cause or your bonding failures. The last item I'll mention is the coverage. To be successful, you need to have complete tube coverage and bonding throughout the blank to provide a strong durable bond. If you have big contact or adhesive gaps in the bonding surfaces, you'll get the fractures and blank separation that many experience. It usually appears when they stress the bond during turning as you comment in your question. Gluing in tubes need not be a major stumbling block regardless of the type or viscosity of your adhesive. Many pen turners are very successful with CA so you can be as well provided you pay attention to the above pitfalls. Personally, while I do use CA successfully, usually using medium or thick with the proper clearance when the time situation dictates it, for my typical process, I favour polyurethane or five-minute epoxy for bonding brass tubes into blanks regardless of the material. Just a reminder... Five-minute epoxy isn't five-minute epoxy. It is five minute open or working time. It takes 24 hours to reach full strength although you can turn it sooner.



6



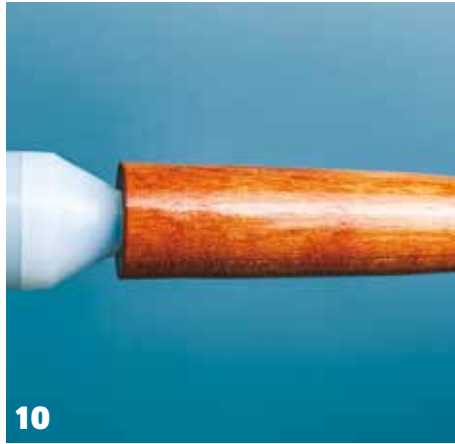
7



8



9



10



11



12



13

6 My kit for gluing tubes into pen blanks. Any of these adhesives will work well and outlast the hardware with proper prep and use **7** My everyday carry pen. The original CA finish still shines after nearly 20 years and at least four sets of hardware replacements **8** In my opinion, a CA finish on pens not only looks superb but provides exceptional protection for the tough life pens live **9** Learning to apply a CA finish is easily done. There are a variety of techniques that will work. Pick the simplest that works for you **10** For those who have difficulty applying a CA finish without sticking to the bushings, a variety of non-stick bushings are available **11** Except for the rare occasion of using epoxy as a finish, this is my entire finishing inventory for pens **12** Fresh air and sunshine beats nearly any paint booth. I've found that the inexpensive snap on pistol grip makes spray can use more effective **13** I find CA or rattle can lacquer can provide fine-looking, durable and tough finishes to many of your turning

Ready to scrap the CA glue. What else is out there for finishing pens?

I'm guessing you are struggling with applying CA as a finish for pens. I highly recommend that you learn how to do it rather than walk away. I can't suggest anything more durable and pleasing than CA as a finish for pens. Pens live a terrible life and CA, being a plastic coating after application and curing, provides incredible mechanical and chemical protection to the pen. That said, sticking yourself to things or having your blank bonded to the bushings or mandrel will likely cause you heartache and your desire to find something else. To answer about other finishes... there are others you can consider but let me offer my favourites. In addition to CA, I also use either lacquer or epoxy for pens and my other turnings. For my lacquer applications, I use inexpensive brands of rattle can lacquer bought at a local discount store. The keys to using

it well, in my opinion, are having a snap-on pistol-grip handle helping make spraying a precise and very controllable process, along with shaking it for the label indicated time. When I'm doing an epoxy finish, I use the bubble pack five-minute epoxy, although for larger surfaces I'll break out my West Systems epoxy. The key to all the finishes is the technique. For learning the CA finish, research on the web the various methods. I suggest if they recommend adulterating the CA with other chemicals or needing a specific brand of paper towels, you run away from their advice. Unnecessary and essentially baloney. Find some other advice. All three finishes are easily learned and applied. There isn't sufficient space here to teach you each technique, but you can find much more finishing information in *Ten Tips for Perfect CA Finishes* (WT298, Nov 2016), *Finishes for Turnings* (WT299, Dec 2016), and *Bulletproof Pen Finishes* (*American Woodturner*, February 2017) •