Kurt's clinic Kurt Hertzog answers some readers' questions

Broken segmented turning

Question: I was almost done hollowing this segmented turning and it broke off right at the chuck mount. This has happened to me before. Even with the solid base, not segmented, it wasn't strong enough. What can I do to fix this problem?

Answer: Since your base was a solid piece and the failure wasn't at the attachment glue interface, it is solely a materials failure with nothing to do with the segmented aspects of your turning. Differing species used for the mounting block, whether glued on or integral to the turning, can have some impact on the failure of this type.

Regardless of species, all will fail when you exert more force that the wood fibre bonding can withstand. Lignin is the 'glue' that holds the wood fibres, essentially straws, together as a solid piece of wood. Overcome that glue strength holding the fibres of the wood together and you get the failure you indicate. While there are many other failures possible with chuck mounting work, yours is simply a strength of materials failure. You were asking too much of this bonding of the wood fibres and it failed.

This type of failure will be encouraged by creating a cut that will allow a stress riser to propagate. Far beyond our needs to discuss here, but suffice to say that sharp, pointed corners in your tenon will aggravate the situation. You need to prepare the chuck jaws interface properly. A small radius in the corner of the tenon is far better than a sharp, pointy corner. The jaws need to fit correctly but you can be certain of a good clamp surface and still include a small radius. Even with the absence of any feature helping a stress crack begin and propagate, asking too much of the strength of the base materials will cause failure. Proper speeds and feeds, sharp tools, and light touch will keep the stress on the mounting base to a minimum. Working too far away from the mount, creating leveraged forces, and hogging off too much at a time will add to the stress on the internal material bonds.

PHOTOGRAPHS BY KURT HERTZOG

An ideal chuck tenon will be as wide as practical, reach almost to the bottom, be cut at the jaws angle, and have a small radius in the corner

Proper prep of your tenon, sufficient size of the tenon with respect to the turning size, selection of an appropriate species, orientation of the tenon in the jaws, and a good cutting technique that doesn't demand excessive strength in the clamped tenon can help prevent this failure in the future. Visit the *Woodturning* series on Workholding (*WT238-250*), specifically part 5 in *WT*242, for far more detail and explanation on effective chuck mounting practices.

When the need for remounting in the chuck exists, I mark the jaw location (here jaws #1) so variation can be minimised

You can help yourself by orientating the clamping to take advantage of the grain. Intentionally clamp in the green marked areas rather than red

Slipping tailstock clamp

Question: My tailstock clamp sometimes slips regardless of how hard I clamp it. I've been able to get more leverage on the handle by using a length of pipe but I don't think I should have to do this. Any ideas on fixes?

Answer: The simplest fix is to require less force on the work mounting from the tailstock. Many times, turners clamp the turning between centres with excessive force, often because of an ineffective, slipping drive method. They attempt to overcome that problem with lots of tailcentre clamping force.

Assuming that issue is fixed using sufficient but not excessive tailstock force, you can still have slippage problems. I learned something about this many years ago from a very famous woodturner during my class with him. I'll leave his name out since the practice I learned and will suggest is considered heresy by many. Making your lathe bed nice and slippery is totally counterproductive. The clamping action being a squeeze action between the underside of the tailstock and the eccentrically actuated clamp block. Smoothness and slipperiness of the ways requires more clamp force. Waxing the ways of the lathe just aggravates this situation.

Everyone believes that they are protecting the steel and keeping their lathe pristine by doing this. Granted, it makes the tailstock easy to slide back and forth as needed. Its ability to ice skate makes movement as needed a breeze, but can cause the problem you are experiencing. Rather than make things smooth, give them a bit of friction. Rust the ways of the lathe slightly. Not pitted and out of true, just the slightest of surface rust to provide some tooth. A wee bit of surface rust on the ways will still allow easy – although perhaps not skating – movement of the tailstock. That slightly increased effort will pay dividends when you clamp the tailstock in place. There will be far less incentive for it to slip. Gone will be the need for using leverage from a pipe or far longer clamp handle. On all of my cast iron bed lathes, after uncrating and degreasing the preservative from the ways of the lathe, I immediately slightly rust their surface. I put wet paper towels on the entire surface of the ways of the lathe and repeat if necessary. Once I have that nice brownish-red surface rust, I clean it off, dry it, and enjoy reasonable effort tailstock clamping forever. The surface rusting really can't be seen or felt but it serves the needed purpose. No pipes, no fancy replacement handles (read longer providing to more leverage), or need for excessive clamping force. Yes, occasionally putting heavy tail centre pressure on the turning still requires a good lockup of the tailstock to the lathe bed, but that can be accomplished with the factory designed and OEM lever. Of course, you can't rust your stainless steel bedded lathes but you can certainly degrease the ways with a solvent and never add anything to make it more slippery. By the way, did you know that rust can be a rust preventative?

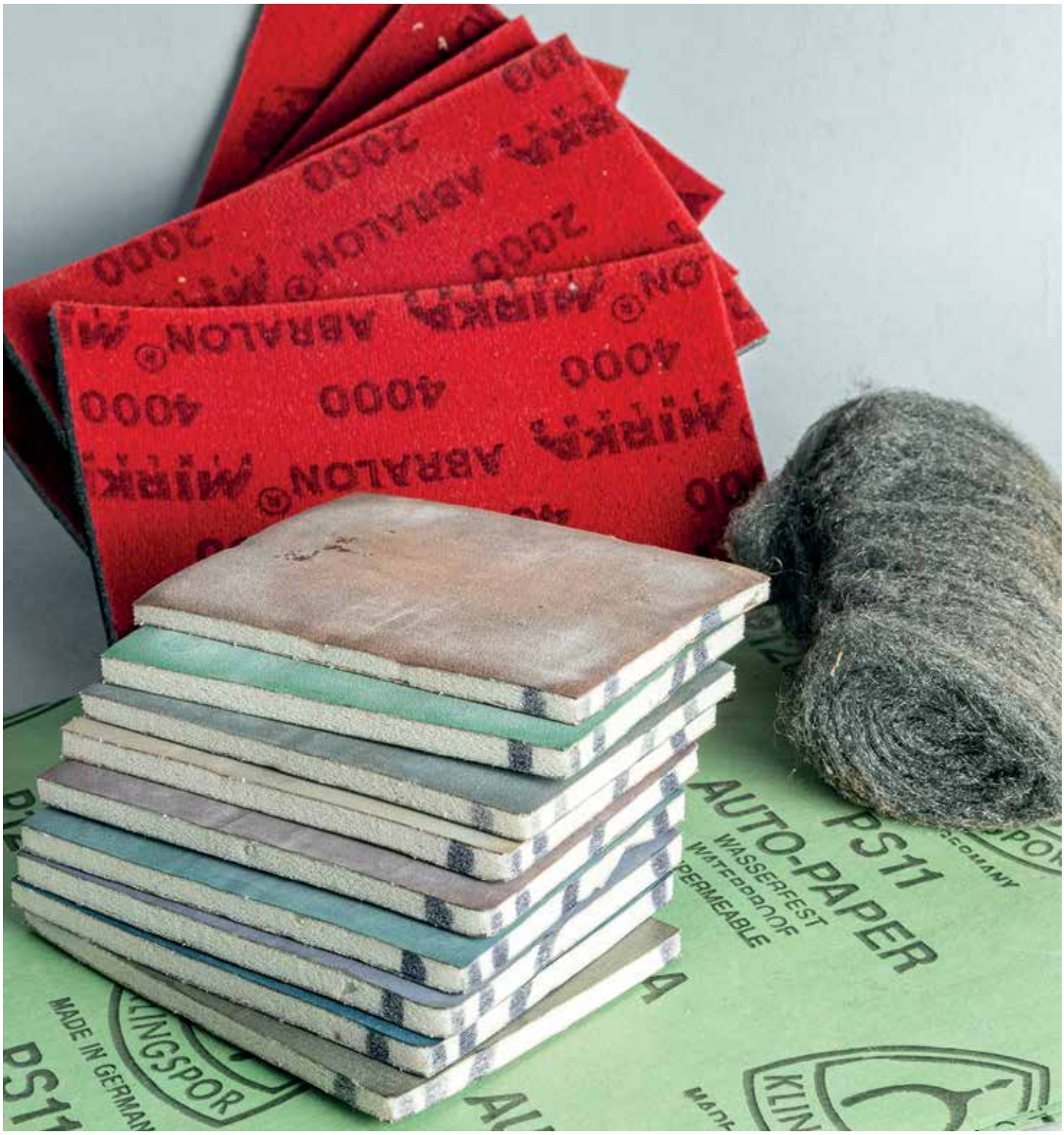
If I didn't rust the ways intentionally, I let nature take its course. Everything moves easily but clamps very securely with modest leverage

You don't need an enormous amount of rust to provide tooth for clamping. Add some or just let nature provide it. Don't wax the ways

Reducing Gloss Finishes

Question: I'm wondering if there is any way to make a CA finish satin or matte without the milky effect. Any suggestions?

Answer: For the finishes I use most – lacquer, CA and wipe-on poly – I abrade them back from high gloss. Only after fully cured, adding fine scratch patterns will interrupt the shine reflection and provide a satin finish. The amount the finish is matted back is a function of the abrasive pattern, depth, and coarseness. Micromesh, fine sandpaper, or fine steel wool will accomplish this. By nature of the reduction in reflectivity, the underlying finish becomes somewhat milky. I'm not aware of any way to reduce reflectivity without creating some appearance of milkiness.



My kit for matting back my lacquer or CA finishes, whether flat work or turning. Abralon, micromesh, very fine sandpaper or fine steel wool

Send your questions to Kurt's email: kurt@kurthertzog.com