PHOTOGRAPHS BY KURT HERTZOG

Workholding aids & chucking – part 2

In the second part of this new series, **Kurt Hertzog** looks at the topic of adhesive workmounting and how this will open many new doors for the woodturner

Of the many workholding methods, few are as controversial as adhesive mounts. Opinions range from extremely versatile and appropriate to not properly secured and to be avoided. We will explore the opportunities that exist as well as the cautions to be observed.

If you are not using adhesive workmounting techniques, you are missing out on a very powerful and versatile tool. Adhesive mounting provides a huge range of opportunities from temporarily affixing completely finished pieces for a bit of touch up to very securely mounting ultra thin, or costly materials for maximum utilisation creating minimal workmounting waste.

You can find product offerings from your local retailer but don't overlook the household items you already have. There are many additional adhesive workholding materials available from the craft stores and the home improvement centres. Items that I find useful include double sided tape, masking tape, reinforced strapping tape, carpet tape, etc.

"Adhesive mounting provides a huge range of opportunities..."

KURT HERTZOG

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MOUNTING TECHNIQUES

Nearly all projects involve more than one mounting. With many workholding techniques available, the method of mounting at each stage of a project is usually is determined by the amount of force that will be exerted on the mounting during the next step(s). The tools at hand certainly affect the mounting selection. The process might involve roughing, turning, sanding, finishing, and special detailing.

The key word for any mounting technique is safety. Does this mounting technique provide a safe and secure hold on the work for the intended process? Obviously, hollowing is much more stressful that sanding or wiping on a finish. The other consideration is the failure mode. If the work becomes dismounted from the lathe, whether through an unexpected force imposed by a catch or other event, does the mounting fail gracefully and safely? Can I add a belt and suspenders to help with any failure mode?

SELECTION PROCESS

The selection process I go through, informally and on the fly, is: what is the purpose of the mount?; how long will I need this mount to last?; how strong do I need this mount to be?; and do I need it to be non-destructive?

What is the purpose of the mount? Am I extending my parent material because I am short of mounting real estate? Do I need it to save money because my parent material is very expensive or not available in the aspect ratio needed to create the desired mount? What leaps to mind is a 'glue block'. This is the attachment of an expendable piece of material allowing for plenty of low cost real estate for the chuck or faceplate mounting. The two things to consider here are strength and removal. If you are going to glue a block in place that you can cut away as needed, you do not need to worry about the attachment area. If you want to separate the turning from the glue block at the interface, you should use a glue method with a separation material such as craft paper. That wood, glue, paper, glue, wood bond can be cleaved at the paper interface to separate this very strong glue joint. A bit of water can then be used to remove the paper remaining on the mounting surface of the turning.

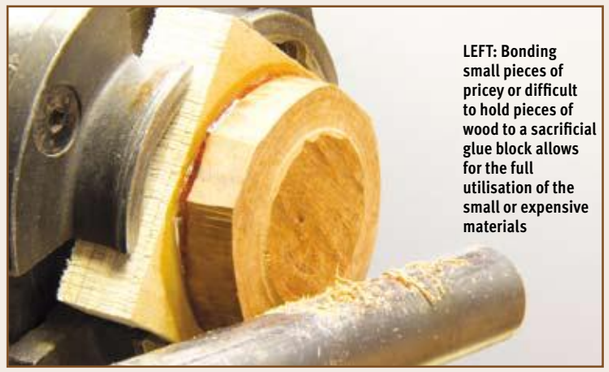
BELOW: I use only the standard wood glue and the various viscosities of Cyanoacrylate for my adhesive workholding

BELOW: When material thickness or amount prevents other mounting methods, a glue block with a kraft paper separator provides mounting material

SURFACE PREPARATION & GRAIN DIRECTION

As with any glue joint, the surface preparation and grain orientation will ultimately determine the strength of the join. Flush surface contact and face grain to face grain provides the best strength. End grain glue joints are tenuous at best. If you need to use end grain for either or both ends of your glue joint, it should be a 'drive' function bond only. From a safety perspective, it is always recommended to use the tailcentre until you absolutely must remove it.

LEFT: To use a glue block, the surfaces need to be flat and in good contact. Square cut plywood makes great glue block material



LEFT: Bonding small pieces of pricey or difficult to hold pieces of wood to a sacrificial glue block allows for the full utilisation of the small or expensive materials

LEFT: As with any turning endeavour, always use the tailcentre whenever possible just as a matter of good practice

DOUBLE-SIDED TAPES FOR WORKHOLDING

Moving from glues to tapes, you have the same issues. Ease of bond creation and removal. There is a host of tapes available ranging from painter's masking tape to very serious strength carpet tape. Are you lightly attaching a turning to be sanded or are you planning very serious work. Both single sided and double-sided adhesive tapes have their uses in workmounting.

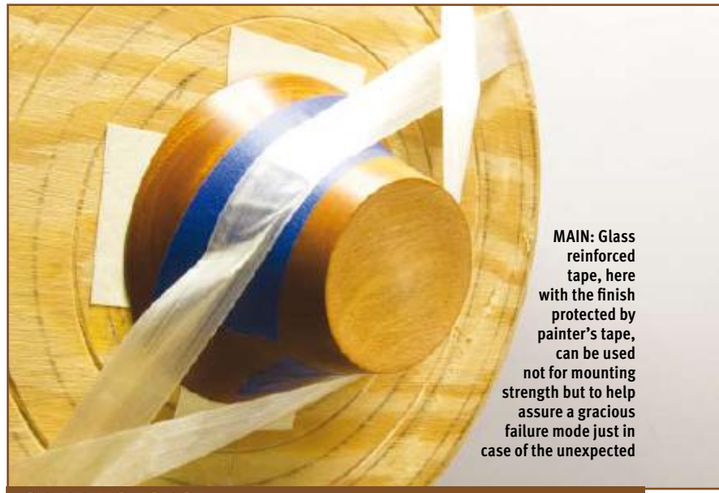
While there are some very strong bonding tapes, I recommend using tape mounting for lighter duty applications. Heavier demands can be made with adhesively mounted work if the tailcentre is used. With the tailcentre in play, always a good habit whenever possible, you are really relying on your adhesive bond to be a friction drive mechanism. As such, more work is possible. Once the heavy lifting is done and the tailcentre needs to be removed, only the lighter load tasks should be undertaken.

ABOVE: There is a host of double-sided adhesive tapes that can provide service in workmounting

ABOVE: With different adhesive characteristics, material thickness, and substrate reinforcement, tape selection is determined by the work load you expect to put on the bond

MAIN: For light duty with low workload and mass such as sanding or finishing delicate parts, regular stationer's double-sided adhesive will work nicely

MAIN: Larger parts with more mass and perhaps more work being performed require a thicker, reinforced fabric speciality turning tape



MAIN: Glass reinforced tape, here with the finish protected by painter's tape, can be used not for mounting strength but to help assure a gracious failure mode just in case of the unexpected

GRIPPING FORCE

Similar to using vacuum, the gripping force is proportional to the cross sectional area being adhesively bonded together. The more area, the more strength. That means both surfaces bonded together. The surfaces to be bonded together need to be clean and smooth. Even flat surfaces that are in intimate contact won't have maximum strength if the surface finish is not smooth.

Good practice in any adhesive bonding calls for matching surfaces that are clean and smooth. Selection of the adhesive is based on the needs of the bond. As the questions earlier suggest, you'll do well to plan for making the bond, separating the bond, and a safety plan. Both for you and the material. I call it 'failing gracefully'. Nobody plans to have a catch or to be a bit heavy handed but it occurs. I usually put a couple of wraps of tape in place to keep the work on the lathe rather than elsewhere. It can be as simple as a couple of loops of painter's tape over the turning. Another great method is stretch wrap. No adhesive to mess up anything. It sticks to itself. Wrap it around your work and the mount to keep things in place, just in case. Don't worry about wrapping. Wrap everywhere and then cut through it where needed. I cut right through with my turning tools where needed while turning. The ultimate is a few straps of fibreglass reinforced tape. Properly affixed, you'll need a knife to cut it loose.

CONCLUSION

I think you'll find that adhesive workmounting will add a whole new bag of tricks for you. You'll be able to deal with the delicate pieces, super thin items, troublesome pieces to grip, and deal with finished pieces that need a bit of attention. It will be one more method that will help you solve some of your workmounting problems. ●