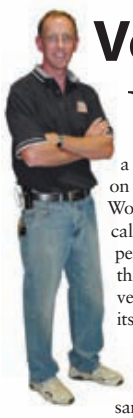
From the Centre With Steve Bader



Veneering: Part I

Webster's dictionary defines the word veneer as, "A thin sheet of a material: a layer of wood of superior value or excellent grain to be glued to an inferior wood." Indeed a reversed-diamond pattern veneered top or book matched gables on a piece of furniture can greatly increase its value. Here at the Woodworking Centre, veneering is a major component of our practical machining courses, but many students shy away from it with their personal projects for fear of less-than-desirable results, such as sand-throughs and de-lamination. However, if done properly, the process of veneering can dramatically enhance the design of a piece – as well as its value.

A defect-free veneered part starts with careful attention to its core. Any indentation in the core, for example, will telegraph through to the veneered surface. Any chip or high spot will likely result in a sand-through.

Manufactured sheet goods like particleboard and MDF can normally go straight from the panel saw to the press due to their high quality surfaces. Solid wood cores, however, should be sanded to a consistent thickness to remove machine marks from the planer as well as obtain uniform clamping pressure while in the press. For veneering onto melamine, I've found that scuff sanding the smooth surface prior to pressing generally results in better veneer adhesion.

Another key ingredient in the veneering process has to do with the choice of adhesive. Whether it be a polyvinyl acetate (white glue), a urea formaldehyde resin-based glue or something else, be sure to follow the manufacturer's specifications. If the glue is in powder form, mix properly and thoroughly until all the powder is dissolved.

A common occurrence here is glue with many small lumps of powder still suspended in the mix due to impatience. I tell these students to keep mixing. It is not uncommon to spend 10 to 15 minutes at the glue mixer to get the adhesive smooth.

Be aware of the glue's shelf life and correct storage conditions (temperature and humidity) as well. If the glue is old, it's better to dump it now instead of scrapping parts later.

The method of application and quantity of adhesive applied is also important. Our supplier for powdered adhesive, for instance, recommends that around 12 wet mils of glue be applied. An inexpensive wet mil gauge can be invaluable to an operator for checking glue quantity.

Too much glue results in the excess bleeding through the veneer, especially with open-pored species like oak and walnut. Be careful to avoid the situation where the core falls onto the bottom supply roller (the bottom roller that supplies glue to the bottom feed roller). When this happens, the trailing edge of the core gets overloaded with glue.

Obviously too little glue may result in de-lamination. Check the condition of the rollers on the glue spreader as well. If there are bald patches or inconsistencies in diameter due to wear, consider getting them re-machined to ensure a consistent spread of glue across the core.

So far the issues of core surface quality, adhesive preparation and application have been discussed. If everything is done properly, the veneer should press onto the core with no problems. Next time, we'll see the process through to the finished veneered part. WW

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The CNC Shop With Tom Morin

Just another tool

I apprenticed with a brilliant, uncompromising cabinetmaker named Mark Hennebury, who has two main passions: joinery and the machines to make joinery. Mark had rebuilt and reinvented each machine in his shop to perform flawlessly. Whether it was his loyal Maka oscillation chisel mortiser or the Marunaka Super Surfacer, each one could machine a flawless surface on curly maple as effortlessly as in clear pine.

Through trial and error, Mark knew where to grind a cutter, where to dampen a vibration and when to install a bigger bearing. His combined expertise in wood and tooling allowed him to extract amazing performance from his machines in tricky situations, and to get results that others would have thought impossible.

When I got a job in a kitchen shop, I was introduced to CNC machines and the software that drives them. If I thought that 21st century technology was going to make woodworking easier, I was wrong. Sure the machining centre could do amazing and complex things, but now you have to have the knowledge of Norm Abrams *and* Bill Gates to get it done.

With some help, and the perseverance I learned from Mark, I went about getting to know the machines and software as well as I could. I made horrible and costly mistakes, but eventually I learned for a second time that extracting good results takes mastery of the tools and of the trade.

The trouble with CNC shops is that they are difficult to staff. There aren't many people who understand both wood and computers. This is a huge challenge for shops to overcome. It takes training and patience.

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I have always found it easier to teach computer skills to a cabinetmaker than to teach cabinetmaking to a computer expert. Luckily, lots of younger workers are comfortable with computers and are easy to teach.

Really, the CNC, or AutoCad or a CAM package, is just another tool to be learned by the cabinetmaker. The cabinetmaker understands the materials, the construction methods, the limitations of a given machining process, and the end product. This is the essential knowledge that makes a successful shop work – not shiny new machinery.

I get frustrated reading the articles that appear in industry magazines that go something like this: Joe Smith from Acme Millworks has increased productivity by 32 per cent after purchasing the fantabulous gizmotronic processing centre from manufacturer X. Joe says, "Gee I don't know how we did it before the Gizmotron." Not to take anything away from the machine, I'm sure it is fabulous. However, the focus should be less on the machine and more on the planning and expertise that went into extracting that higher production from the machine. In a CNC shop, machines are part of a system. Good systems are not simple nor are they quick to build.

Computers, software and CNC machines are tools just like any other tool. They are only as good as the cabinetmaker who sets them up. WW

Tom Morin is a freelance troublemaker, and the owner of Morinwood Manufacturing Inc. Questions, comments and suggestions are welcome at info@morinwood.ca.