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FEBRUARY/MARCH 2012
ISSUE #76

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FEBRUARY/MARCH 2012

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COVER STORY

Cover photo by: Rob Brown

editor's letter

rbrown@canadianwoodworking.com

I have spent most of my adult life considering how objects are made. I can't claim to know everything (in fact, it seems the older I get, the less I know for sure), but there's one thing that seems to remain true: the allure of hand-made objects. There's something missing from factory-made, mass-produced items; their "perfection" lacks a certain tactile quality. Whether it's how a richly textured surface feels under my palm, how a drawer slides or an edge feels when you touch the object, I really enjoy interacting with things that are hand-made. It's as though I need to know it was made with care and patience, and the minor imperfections, variances or deviations from the norm tell me the story of its creation. Sometimes they tell me the story of their maker. Yes, I'm referring to the nicks, and bumps we woodworkers work hard to eliminate, but I'm also saluting the creative choices made that honour the wood we use. These natural qualities add character to a piece. Really it would be a shame – almost disrespectful – to ignore those marks left by hand. And a shame for the woodworker to be embarrassed by them.

Though I haven't had the pleasure of seeing or touching them in person, there are a few pieces of furniture in this issue I'm sure you'll agree have that certain 'something'. The Southern Alberta Woodworkers Society recently had their biennial show, presenting their very best work to the public. I'm very glad to have their work in our pages. Also in our pages are some of Jason Klager's pierced carvings. He takes you through the steps to produce woodwork that you can't help but touch. Another object you really need to see and touch to fully appreciate is Roshaan Ganief's tea-light holder. It wasn't until I held it in my hands that I realized how great it was. It's the little details that make all the difference. Cynthia White's sundial has layers of tactile allure; her original design withstanding the effects of months of wind and rain.

The flaw you find so glaring under shop lights could be the thing that draws a person to pick the object up and hold it in their hands.

Rob Brown

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readers' letters

In-Floor Shop Heating

I enjoyed the shop heating article in the last issue. Perfect timing because I'm planning on building a workshop. I'm a beginner woodworker and only use my shop a couple of hours per day, at the most. I planned on putting in a woodstove because I thought it would be cheap and efficient. I now know differently. My new shop will be 24' x 24'. I'm considering either floor heat or a construction heater. I can keep the heat fairly low during the day, as I'm not out there much. Do you have any suggestions?

Luke S.
Moncton, N.B.

In your case I would recommend an in-floor radiant system. Had they been widely available and proven when I poured my slab I would have done the same. The advantage of the in-floor is that it warms your entire slab and that thermal mass in turn moderates the temperature swings in your shop very well. There is also zero air movement which makes in-floor radiant the clear winner. The article was written from the perspective of having the shop already built, so in-floor was left out. Go for the in-floor...you won't regret it. — Ryan Shervill

Thanks for the Perfect Porch!

I just finished reading Matt Dunkin's article in *Canadian Woodworking* about how he restored the historic porch. I want to congratulate him, not only for his beautiful results and resourceful approach, but especially for the care Matt took to do a great job, both aesthetically as well as in terms of durability.

Congratulations and thanks for the great article.
Claude L.
Iroquois, Ontario

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woodworkers' gallery

Padauk Cabinet
by Rob Jackson

Rob Jackson from Stratford, Ontario made this tall cabinet from padauk with walnut and curly maple accents. In the recent past, he has built a lot of horizontally-oriented projects – mainly hall and console tables – so he decided it was time for a change. Over the course of a year, Jackson spent about 80 hours getting all the details of this cabinet just so. When asked about what inspired him, he was quick to reply, "The design started with a piece of padauk I had that needed something special done with it. It had an inclusion perpendicular to the grain." Jackson re-sawed it and used the veneer to make the panels for the sides and back. Ensuring that the doors were installed perfectly was the toughest part of the build. The cabinet was finished with tung oil.

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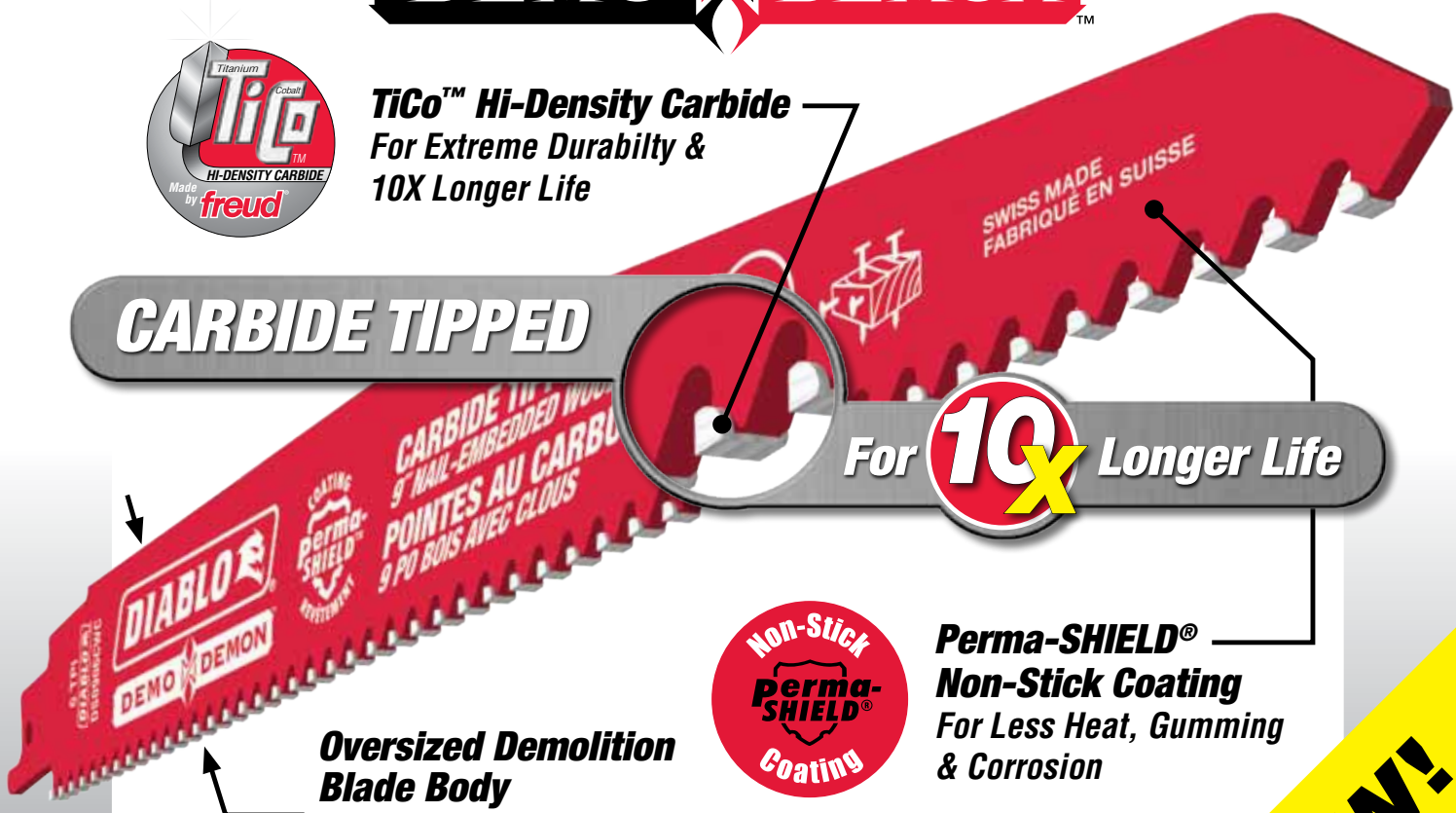

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For more woodworking events:
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Prize Winners!

'Turn Your Old Batteries Into New Power Tools' contest winner John Jackson, whose wife works at St. Thomas Aquinas C.H.S., won two Ridgid JobMax's at the recent Ottawa Woodworking Show: one for having his ticket drawn; the other for bringing in the most number of batteries to be recycled – a whopping 377! Congratulations to John (top) as well as to Francis Zandbelt and his students in St. Thomas Aquinas' technology department (bottom), who enthusiastically teamed up for the battery recycling program.

Ron Dennis is the winner of Canadian Woodworking Magazine's September '11 Subscription Draw. Here, Ron is shown in his home with his TradeMaster Compressor and Nailer/Stapler, courtesy of Home Hardware.

Ron's father, who taught him the basics of woodworking, made the grandfather clock in the background. Ron has also made several grandfather clocks since, along with frames, bins and cabinets. He is currently redoing his basement stairway and tells us, "When you have a home and are a woodworker you can always be busy at making something new or renewing something old."

Congratulations, Ron!

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Southern Alberta Woodworkers Society Biennial Exhibition

Design, execution and education play a large role in directing this dedicated group of artisans. Here is a sampling of their work that was on display during their most recent show.

BY ROB BROWN

Aric Hartley
Eighty
Etimoe
Swiss Pear
Wenge
Baltic birch

Tom Gorman
The Ring
Cherry
Figured English sycamore
Maple burl
"The concept for this table evolved from seeing a ring in a jewelery store window."

Michael Holton
Slab Table II
Cherry
Limestone
"I find the juxtaposition of the cherry and the stone to be to my liking. I found the technique of matching the surface of the stone to the wood to be challenging and satisfying."

Photos by Benjamin Laird

Joe VanKeulen
A Bowl of Blackberries
Best Amateur/Student
Birch
"The piece was turned thin, so piercing would complement the pyrography. On the outside, the piercing itself is decorated to create the illusion of sea creatures, prehistoric and birdlike shapes."

Bill Maniotakis
Compact Writing Table
1st Place
Black walnut
White ash
"I made the prototype from ash, but wanted to 'kick it up a notch' by modifying the original square floating top for more visual interest."

Andy Lockhart
Rockabye Rylee
2nd Place
Figured maple
Jatoba
African blackwood
"By dovetailing the seat components into the outside rails, there is a nice contrast, but also a great feeling of traditional strength."

Mike Mulvey
Curvilinear Hall Table
Jatoba
Satin walnut
"The design avoids complexity while providing visual interest."

John Lavoie
7 of 9
3rd Place
Curly maple
Ebony
"7 of 9, eight for the client and one for the maker. This was assimilated from spare parts of a chair project; seven is the designation of my favorite Borg."

Sundial

This project will not only be a great conversation starter, it will also help keep you on time.

BY CYNTHIA WHITE

Sundials have existed since about 3500 BC. There are several different types, and this easy weekend project is for a (Northern Hemisphere) horizontal sundial.

I chose to make an octagon, although you could use any outer shape as long as you use a circle for laying out your clock face. You can make it any size, but keep in mind the clock face is easier to read (and probably more accurate) if it's bigger. My octagon is 22" across at its widest point. You may need to laminate more than one board together to achieve that width, but I happened to find a piece of Mahogany that width at my local wood supply store so I grabbed it. I want to warn the novices here that working with a 22" wide piece of wood is awkward at best. I used a circular saw to cut it to shape.

You will need one other piece of wood for the "gnomon" or "shadow caster", the piece that sticks up off the board for indicating the time. I chose a contrasting wood, purpleheart. Some of the woods generally recommended as being resistant to weather and bugs besides mahogany and purpleheart are white oak, cedar, teak, yew, cypress, walnut, and redwood.

Once you have your circle and have drawn noon, 6 a.m. and 6 p.m., the equation for finding the other hour points on your circle is tan ∂ = sin (whatever your latitude is) tan (15° × t) where t = the number of hours before or after noon and theta (∂) is the angle of a given hour and the noon hour. And if you don't want to bother with that (I didn't), there are several places on the Internet where all you do is plug in your latitude and click and voila, all the calculations are done for you (www.anycalculator.com/horizontalsundial.htm). Note that

Photos by Cynthia White

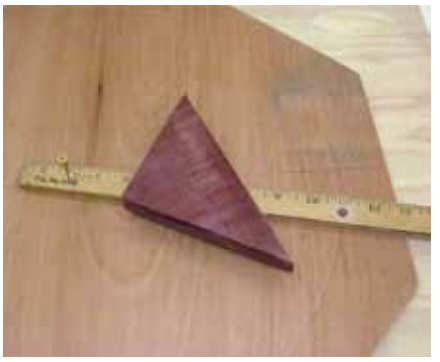
the hour points on your circle will not be equally spaced apart. I drew my hour points and drilled some small pilot holes for each hour before I sanded.

Next make your gnomon. The only thing required for the gnomon is that it must project from the board at the angle of your latitude.* (You can incline the horizontal sundial if you like, as long as you compensate with the angle of the gnomon. For example, instead of using a 50° angle on my gnomon, as my latitude is 49 ¾°, I used 40° and am inclining the Sundial 10° so I don't have any pooling water on it during the rainy season. A future weekend project will be a rain dial.) And make it as narrow as you comfortably can. I didn't want to make my gnomon less than $^{5}/_{8}$" for fear of it disintegrating outside. I recommend you make the gnomon project between half and three-quarters of the radius of the circle in order to project a shadow close to the hour point, but there is no rule. You can also make the gnomon as fancy or simple as you like as long as the top of the projection is straight and flat, and the bottom doesn't project past the tip.

My gnomon is a triangle and attaches to the base with a small stub mortise and tenon on the underside. For the novices, cutting a small mortise by hand is nerve-wracking, so my advice is make sure your chisels are razor sharp, and go slowly. I put a little trim around the base of the gnomon for looks, stability, and to hide my mortise misadventures. You could also run a router equipped with a straight bit along a straight edge.

The mahogany was a breeze to work with but that purpleheart is evil. It machines okay with the table saw, but was difficult to sand (it felt like polishing marble) and hard to work with hand tools. If you get a burn mark on it, good luck getting it off. For cutting the tenon, I tried four different handsaws before I finally had success with a small Japanese pull saw. I broke three – yes, three – drill bits while drilling pilot holes for decorative finishing nails.

Your sundial needs numbers; you could certainly carve them, or make them with a scroll saw. I don't have either of those tools (yet), so I got a local sign business to cut 1 ½" vinyl numbers for me, which adhere well to raw wood – provided it's sanded very smooth and doesn't have a severely open grain. Use whatever strikes your fancy for marking the hours. You can also indicate lines on the sundial from the center point to each hour.

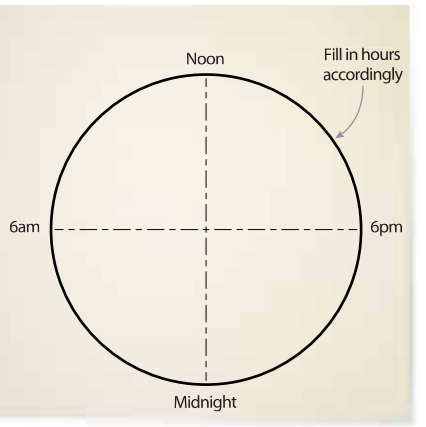


Simple Circle – A wooden ruler, or even a strip of scrap wood, is great for marking the circle. Temporarily fasten it to the center of the sundial and drill a hole at the correct radius.

Lay Out the Mortise – Use your layout tools to position the mortise. You can cut the mortise by hand or use a straightedge and router. You could also simply screw the gnomon on from the underside.

Hours – A selection of tacks and screws were used to indicate hours on the sundial.

Place the sundial in a sunny location directed at "True North". This is not "Magnetic North" on your compass. To find True North, place a vertical stick in the ground in the sun and mark where the tip of the shadow is. Wait 15 minutes and mark where the tip of the shadow is now. With another stick, draw a line between those two points. Make a perpendicular line from that line in the direction of the projected shadow. That's True North.



How to Draw an Octagon – Draw a circle, then draw a horizontal line across the circle through the center point. Draw another line perpendicular to the first line, again going through the center point. Add two more lines, each one between the two perpendicular lines. Now just draw a straight line between each two adjacent endpoints on the circle.

If drawn and placed carefully, the sundial is amazingly accurate and you will have a great conversation piece for your garden. However, the sundial shows you apparent solar time (the time given by the true sun in the sky). That's not exactly the same as the time on your watch or standard time. In order for it to match your watch time, the sundial has to be corrected for longitude, equation of time (EOT) and daylight savings time. It's too long to go into here, but if anyone wants to know more, then email me.

I decided to leave my sundial unfinished and let it weather outside. If I do finish it at a later date, I intend to use a System Three epoxy resin (bar top coating) finish.

CYNTHIA WHITE
frogdog@me.com

Cynthia divides her time between working on a too-advanced-for-her bookcase project, studying Lee Valley Catalogues, doting on her husband and bulldogs, swimming, quilting, and removing splinters in front of the Mystery Channel.

Interior Door Installation

Although it seems simple, hanging an interior door can be really tricky, not to mention frustrating. With the right approach, it will become second nature.

BY MATTHEW KINZEL

Measure Twice – In order to measure the rough opening, you will need to remove the existing trim.

Lay the Door Down – Attach the hinges to the jamb, then the door. Double-check that you're installing the hinges so the door swings correctly.

When I first starting working construction, no procedure reflected the mystical skills of the carpenter more clearly than the installation of an interior door. My door hanging skills never felt quite honed enough until I spent a year on a crew constructing in a condominium complex where we would often install about 10 doors in a day. During this time, I asked a great many questions and did a fair bit of reading on door installation. The following steps are what worked best for me.

1 – To order your new door, first measure the dimensions of the rough opening (RO). This involves removing the casing (trim) so you can measure the height and width of the opening from the framing itself. In addition to the RO, you may need to specify to your supplier either a right- or left-swing door. Stand outside the opening, facing into the room you wish the door to open into. Your swing side is the side with the hinges; the side the door swings into. Doors that are not pre-hung in a frame will often allow you to determine swing at time of assembly.

2 – With the door laying flat on the ground, mount the hinges to the door hinge-side jamb and then to the door. Be careful to ensure the door will swing in the direction you wish it to once mounted. The hinge screws are usually self-drilling and I mark their location with an awl that is slightly off-center so that they pull the hinge into the factory-routed mortise.

Photos by Eva Kinzel

Screw the Jamb Together – After pre-drilling, secure the head jamb to the hinge-side jamb using 3" #8 wood screws.

Tape Marks the Spot – Apply tape to a long level to mark how far the hinges are positioned from the ground.

Shims Add Strength – Put the end of the level on the ground and install shims where the tape is. This will ensure strength is where you need it – near the hinges.

3 – Lift the door onto its edge with the hinge-side jamb up. Connect the head jamb to the hinge-side jamb using three #8 wood screws, pre-drilling as required to avoid splitting the jamb. When using MDF jambs, it may be necessary to use brads to avoid splitting. Next, flip the door over and attach the lock-side jamb to the head jamb.

4 – With the door ready to go, it is time to prepare the rough opening. Using a 6" level, or a smaller level and a straight edge, transfer the location of the hinges to your level with tape measuring up from the floor. The upper hinge will fall just at the top of your level.

5 – Now, hold the level against the hinge-side opening and shim it level against the rough framing. The shims should be placed in line with the tape on your level so that when you install the door, each hinge will be backed by shims against the framing. The shims split easily, so it's best to secure them with a hand-operated staple gun to prevent the fastener from pulling through.

6 – If the floor spanning the doorway is not level, it will be necessary to cut one side of the jamb to compensate. Use a straight edge the width of the doorway and shim it until level. The distance it has been shimmed off the ground is the distance you need to cut off of the high side. The high side will be the side opposite the side you needed to shim. To make the cut, prop the door on its side and mark your line. I use a circular saw for the cut, but if you doubt the steadiness of your hand then use a handsaw.

Is the Floor Flat? – Of course not! A straight piece of wood, the same length as the opening, is used to determine how far off the floor is.

Hinge Side First – Secure the hinge side of the jamb with 3" #8 screws. The screws will be covered by the door stop.

7 – Find a buddy, or spouse, to help lift the door into the rough opening. To secure the hinge-side jamb, use three 3" #8 screws countersunk where they will later be covered by the door stop. Securing the jamb with screws allows for future fine tuning, but a true door master may opt for the use of 15g finish nails for speed. A short straight edge can be handy to help keep the jamb flush with the drywall to provide a level surface to which casing can be neatly secured. At this point, you won't need your level anymore. With your hinge-jamb secured plumb, you have ensured that the door will not swing open; the rest of your installation is about getting the plumbed door to look right in an opening that is often irregular.

8 – If you were off by a hair when cutting the jamb to accommodate for an uneven floor, you may have to tune that with a screw and shims to dial in the head jamb prior to anchoring the latch-side jamb.

9 – When securing the latch-side jamb, you want to work down from the top, shimming in locations that roughly correspond to the other side. Don't worry about the jambs being plumb or level; your concern is for the jamb to be on the same plane as the drywall and for the gap between the door and the jamb to be consistent. Before and after anchoring the jamb at each point, close the door to check the gap. If the gap is off, then loosen the screw and adjust the shims as needed. Ensure that you shim behind the door latch as this is a high-impact point.

10 – Now, with the door set, I like to install the latch plate and door hardware. At this point, I will also replace one screw in each hinge on the hinge-side jamb with a 3" screw going into the framing.

Reach Up – If you need to, use a 3" screw to adjust the head jamb. You just want the gaps on the hinge side of the door and the head jamb side of the door to be equal.

A Strong Latch – When securing the latch side of the jamb, install shims that mirror the hinge side and take extra care to shim the area around the door latch.

Give the Door a Handle – With the door in place, install the latch plate and door hardware.

Cover Your Tracks – Use finishing nails to install the doorstop. It should cover all the screws used to fasten the jamb.

Final Score – With a sharp utility knife, score all the shims and snap them off. At this point, no shims should protrude beyond the edge of the jamb, and the game is over – this time you won.

11 – Latch the door and tack the door stop in with finishing nails. I like to start the nails on the ground. You will want to hold the doorstop snug against the door so you will not have any play when the door is closed. Your screw holes should now be hidden from view.

12 – The final step is to snap off the shims. So you don't end up with a jagged edge proud of the door frame it works best to deeply score both sides of the shims before snapping. In the case of a thick stack of shims, cutting with a small hand-saw works best. You are now ready to trim out the door.

When selecting a door for the project I would encourage you to consider spending a little more. Though MDF jambs will look good once installed, they are much less forgiving for the installation. An inexpensive finger-jointed pine jamb will be less prone to splitting during assembly, hold screws better, and take a mortise easier for any required hardware installation. Given the choice I would also pay for a pre-hung door, it easily cuts the time of installation in half.

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Matt has closed his contracting business to pursue a degree in communications. His family hopes that he will finally have time to finish the backlog of their home renovation projects, the leaky roof being the top priority.

WHICH HVLP SPRAY FINISHING SYSTEM is Right for You?

The world of spray finishing can seem daunting at first. Learn about the different types of HVLP spray systems so you can make a purchase with confidence.

BY BILL PERRY

"Don't be afraid of spray finishing," were the first words of advice from my good friend, fellow woodworker and coatings expert Julian Hay, who is also the president of Associated Coating Services. Hay has sprayed just about everything from jewellery boxes to oil refineries. Hay continued, "Get some drop cloths and a box fan with a furnace filter over it. Then get a bunch of cardboard or scrap MDF and start spraying it. It's like learning any other woodworking skill: get out the scrap and make your mistakes on it. Get out the good wood once you stop making mistakes." Good advice, I would later learn.

Why use HVLP?

HVLP evolved because conventional spray systems, while effective for atomizing finishes, are far from efficient. Their average is to put about one-third of the finish onto the work-piece, with the other two-thirds in the atmosphere. In contrast, an HVLP system puts about two-thirds or more of the finish onto the work-piece and a third or less ending up in the air.

This is good for a couple of reasons. First, it's good for the environment (whether our government cares or not). Second, it's good for your pocketbook. When you stop blowing two-thirds of your finish out the window, the savings add up fast.

What makes HVLP more efficient?

A spray gun uses air to atomize a finish, which means that it breaks it into a mist. With the proper balance of air

Lead Photo by Keith Barker; Photos by Bill Perry

Lots of Benefits – An HVLP system puts the majority of the finish material on the work-piece, as opposed to putting it into the surrounding air. Good for the environment and your pocket book. (Photo by Apollo)

The Full Range of Finishes – Perry sprayed latex paint, deck stain and a waterborne alkyd varnish in order to get a good idea of what each system was capable of.

pressure and coating viscosity, combined with the distance of the gun from the surface being sprayed and the speed of application, that mist will condense back into a smooth, even coating that both protects and beautifies.

A conventional spray gun needs about 50 PSI at the inlet from the compressor, and it will still have 50 PSI at the cap, where atomization takes place. That wastes a ton of paint through overspray and blowback. (Blowback is when paint hits the surface so hard that it bounces back, leaving an uneven surface.)

An HVLP gun, on the other hand, will have less than 10 PSI at the cap. That's because its air supply comes from a low pressure turbine instead of a high-pressure compressor.

To confuse matters, there are conversion HVLP guns, which are used with a regular compressor, and turbine HVLP systems, which are self-contained units comprising a gun, a turbine and a hose.

To keep the length of this article manageable, I'm limiting it to turbine HVLP systems.

I'm also leaving out solvent-based finishes, as government and industry move toward removing these from the market. With these changes underway, it's worth a quick review of some nomenclature so we know what we're working with.

Ask your average woodworker what kind of finishes are available and chances are you'll hear "oil-based and water-based" as an answer. It's not quite so simple. "Oil-based" is more accurately called "solvent-borne," while "water-based" coatings can be either "water-based" or "water-borne." So what's the difference?

Water-borne finishes are blended using a solvent base. They can be thinned and cleaned up with water, but in fact combine oil, water, resins, and various additives to control the sheen, viscosity, flow-out, colour and so on. They have a limited shelf life and, if frozen, are probably ruined.

Water-based finishes use water as their solvent, along with the various resins, additives, etc. that make up a finish. Their shelf life is longer, they can withstand a few freeze-thaw cycles and they're lowest in VOCs (volatile organic compounds, a.k.a. nasty fumes).

Either water-borne or water-based should perform equally well. However, either product must be properly formulated to reflect its method of application. And although most manufacturers will state "Can be sprayed" on the label, what you really want to find is "RTS," which stands for "Ready to Spray."

A finish to be manually applied by brushing or wiping will have a different blend of additives than one formulated for spraying. That's because the two application methods dry differently. This is often overlooked.

Before committing to a finish for your next project, it's worth a call to the coating manufacturer's customer service department – not to the store where you bought it – or to a knowledgeable distributor such as Wood Essence Distributing. Ask for their advice about RTS products and describe your project and spray system. Good advice goes a long way.

From time to time you will almost certainly spray finishes that are formulated for brushing, since they are the ones most available in the DIY market. So I decided to break a few rules here and use the HVLP units to spray finishes, whether they were intended to be sprayed or not, particularly latex emulsion.

Also, this is not a head-to-head tool review, so please consider each unit based on its own capacity and features relative to the job you have to do. That should help you decide what you need both in terms of equipment and materials.

Using HVLP

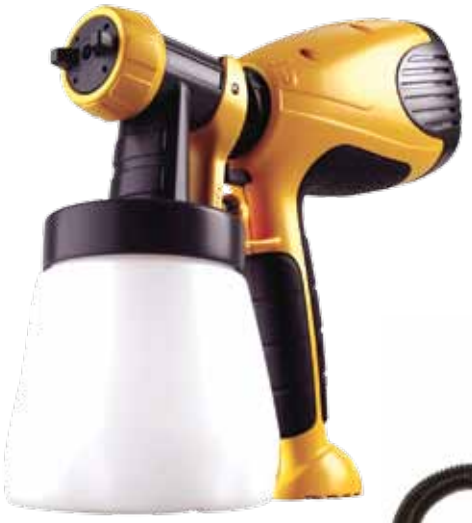
Instead of using a tank of pressurized air, an HVLP system uses a turbine to provide warm, clean air to atomize the finish being sprayed. It is made up of a series of fans, called stages, that move large volumes of air at low pressure, much like a vacuum cleaner.

Although other factors such as motor speed and turbine blade design will affect a system's output, the number of stages provides a quick gauge of its power.

The HVLP spray gun has controls for fluid flow and spray pattern. Most systems will also have an airflow control either on the turbine or the end of the air line. Guns that have a control for fan width allow you to adjust the shape of the spray pattern from round to a narrow ellipse. Some models permit basic adjustment (round, horizontal or vertical fan shape) by turning the air cap, but an adjustment knob or ring gives better control.

Although the hose may seem to be the least important piece of the package, it does need to be light, strong and flexible. A heavy hose is tiring to drag around, and if it's stiff it restricts the movement

What you get: a snapshot of each system



Wagner Control Spray™ 0417005

Single-stage. $104.15 at Sears; $68.00 online from Home Depot.

The Wagner Control Spray is an entry-level HVLP system for the DIY and home improvement markets, designed to spray thin fluids such as stains and sealers. It includes a turbine/trigger assembly, 1 ½ quart paint cup, siphon tube and nozzle unit, plus viscosity cup. The components of the all-in-one unit screw and lock together in seconds and, although made of plastic, are quite robust. Three position spray pattern adjustment. (Photo by Wagner)

Earlex Spray Station HV5500

Two-stage. $379.99 at www.thetoolstore.ca; $359.00 at www.busybeetools.com.

The Earlex Spray Station is a self-contained unit that is convenience at its best. It includes a turbine unit and storage pod with carry handle, bleeder-type spray gun with 2.0mm needle and nozzle installed plus 1.0mm and 1.3mm sets included in our test set, 13' hose, 1 qt. Teflon-coated aluminum cup, cleaning kit and viscosity cup. Three position spray pattern adjustment. (Photo by Earlex)

[A bleeder-type spray gun blows air out of the nozzle constantly, instead of shutting it off when the gun's trigger is released.]

of the spray gun. Some systems include a pliable "whip" section of hose at the business end to improve flexibility.

Hose length can also be a factor if spraying solvent-borne lacquer or other potentially explosive finishes. Motors that power the turbines in HVLP units are not explosion-proof, so place the turbine as far as possible from where you are spraying.

Kinks or bends in the hose restrict airflow, causing back-pressure, which degrades performance and increases heat build-up. The turbine's motor generates heat, so adequate ventilation is vital.

Motors also generate noise – about the equivalent of what you'd get from a shop vacuum. But don't be tempted to place a turbine into another box to muffle the sound. Without proper ventilation, the motor will overheat.

As with many tools on the market, HVLP systems have a confusing array of features and prices. To help you make some sense of this, we decided to look at five different price and performance levels of machine, and to select one representative system from each of five manufacturers. We would then use each of the systems to spray Home Hardware's Wood-Shield water-borne semitransparent deck and fence stain, their Beauti-Tone brand of latex (emulsion) trim paint, and Target Coatings' Emtech™EM2000 water-borne alkyd varnish, supplied for the test by Wood Essence Distributing.

The idea was not to make a head-to-head comparison of the HVLP systems and determine a "Best in Show." Instead, it was to spray three finishes that might typically be used in a home shop, using systems of varying capacities, to get a picture of what you might expect when using them yourself.

Also, I know that some of you (us?) will attempt to spray a finish that was never intended to be sprayed – such as heavy latex (emulsion) paint – using a system that has nowhere near the power required to spray it – such as a one- or two-stage turbine. So we went ahead and tried that too.

Fuji Mini-Mite 3 Xpc

Three-stage. $579.00 at www.busybeetools.com; $599.00 at www.feldercanada.com.

The Fuji unit includes a turbine, 25' hose, air control valve, Xpc non-bleeder spray gun with pressure cup or G-Xpc non-bleeder spray gun with gravity cup equipped with 1.4mm needle and nozzle set, 6' whip hose (optional), viscosity cup, cleaning brush.
This three-stage turbine has enough power to spray almost any finish. Choose either a siphon feed cup or pressurized gravity feed cup. An air control valve at the end of the hose controls pressure from the turbine. The gun's Fan Pattern Control knob lets you dial the fan from about 18" wide down to a 1" circle. (Photo by Fuji)

Lemmer T90Q

Four-stage. $1,150.00 direct from www.lemmer.com.

The Lemmer system features a four-speed turbine, 25' air hose and air control valve. Its excellent quality non-bleeder spray gun with fan control comes with 1.3mm needle installed and 2.0 mm needle/nozzle set included, a 250ml detail paint container and viscosity cup. Reducing the speed when full power isn't needed makes this very quiet machine even quieter. It also cools the air supply, which can help when spraying latex or lacquer. The gun uses the 3M PPS™ Paint Preparation System (a hard plastic outer paint cup containing an inner plastic liner and cover that hold the finish being sprayed). (Photo by Lemmer)

Apollo Sprayers 1050VR

Five-stage. $1,599.00 at Amazon.com

Apollo's 1050VR turbine unit comes with an auto variable turbine speed/air pressure control and LCD pressure display, 20' air hose with 4' flex hose (⅝" hose instead of the ¾" on other suppliers' units, for less weight), 7500 Series non-bleeder spray gun with 1.3mm needle set installed, 1 litre pressure cup and 250ml detail cup, paint filter stand. Spray gun set includes gun, five sets of fluid nozzles and needle assemblies, three air caps, spare gaskets, wrench, cleaning brush and lubricant. Gun is made of stainless steel, paint cup made of Teflon-coated aluminum. (Photo by Apollo)

General observations and comparisons

Each price level of system features incremental improvements in capacity and quality. For example, the Wagner is made of moulded plastic; the others are metal. Earlex uses a cast aluminum gun and air cap with stamped trigger; these parts are machined in the Fuji, Lemmer and Apollo guns. The Lemmer has a machined aluminum gun and a manual four-speed turbine control; the Apollo has a machined stainless steel gun and an automatic speed control. Lemmer is unique in using 3M's PPS Paint Preparation system instead of paint cups. The PPS setup actually allows spraying with the gun held in any position, including upside down.

None of these steps up are necessarily deal-breakers. Hay and I tried out each system with ergonomics and functionality in mind and found little to complain about.

We also checked the sound levels of each unit using a decibel meter, held six feet away from the turbine with the hose and gun connected. These

In any Position – Instead of using the typical spray cup, the Lemmer spray gun uses 3M's Paint Preparation System. This allows the gun to be used at any angle, including upside down.

readings gave us a semi-objective comparison of how much noise to expect.

The Wagner Control Spray was quietest. It sounded like a hair dryer and it didn't even register over the background noise of the exhaust fan we were running. The other units scored as follows:

Earlex	96 db
Fuji	106 db
Lemmer	86 db
Apollo	100 db

The meter confirmed our subjective impressions. The Earlex and Apollo were both audible over the sound of the exhaust fan, but not bothersome – similar to the sound of a vacuum cleaner but not as loud as a Shop-Vac. The Fuji and Lemmer systems stood out – the Lemmer for the amount of noise it didn't make, and the Fuji for the amount it did.

The Fuji was loud enough that I'd consider wearing ear protection; the Lemmer was so quiet that at six feet away, over the exhaust fan's noise, I couldn't tell when it was turned on.

While inspecting the systems, we noticed that the Fuji, Lemmer and Apollo units all used connectors smaller than the diameter of the air hose. That surprised us since any air or vacuum system should be free of restrictions and obstructions.

Only the 1-inch diameter Earlex hose has no extra fittings or size restrictions. It plugs into both the turbine and gun with a friction fit. This may contribute to the Earlex's surprisingly good performance; it's almost like getting an extra turbine stage by reducing back-pressure.

With any unit, pay attention to the hose where it connects to the turbine. The Fuji's hose was prone to kinking in spite of a larger diameter rubber sleeve that fits over the connection. Lemmer uses a better system with a stainless steel spring that fits over the hose, plus their hose has an internal moulded spiral rib that prevents it from being kinked or flattened.

Small, But Important Details – The Lemmer system is equipped with a stainless steel spring that fits over the hose. Their hose also has an internal moulded spiral rib that protects the integrity of the hose.

Bottleneck – Many of the systems use a connector that is a smaller diameter than the hose. This potentially causes a reduction in air pressure at the gun. The Earlex system (far right) is the only system that doesn't use a smaller diameter connector.

How we tested

We had to make some arbitrary choices about spray-gun setup. The first had to do with the size of the nozzle and needle sets we used. The Wagner doesn't have interchangeable nozzles so no adjustment was possible; however, the needle measured to be 2.0mm.

We used the standard 1.4mm nozzle in Fuji's gun and the closest match to that – 1.3mm – in the Lemmer and Apollo guns. The Earlex gun comes with 0.8mm and 2.0mm nozzles; we chose the 2.0mm to make up for the lower power of the Earlex two-stage turbine when compared to the others, and to better match the Wagner.

Next we checked viscosity. The Wood Shield waterborne stain took 24 seconds to run through a Zahn #2 viscosity cup. The Emtech waterborne varnish took 34 seconds and the Beauti-Tone latex emulsion paint took more than a minute.

We used the stain as our baseline and sprayed it first, without thinning. Each system handled it well and it also gave us a clear picture of the spray pattern from each gun. This boosted our confidence enough to try the varnish, also without thinning. Once again, each system handled it well. But how much would we have to thin the latex?

When thinning latex emulsion you want to (a) lower the viscosity so it sprays and (b) extend its drying time so it levels. But you don't want to overdo it; otherwise, all of its nice "painty" attributes disappear and using it becomes as gratifying as spraying skim milk.

First, use water to lower the viscosity (thin the paint), then use a conditioner like Floetrol, DynaFlo, or Target Coatings' SA5 retarder to extend its drying time. Hay thinned the

Testing, Testing – With the systems loaded with finishing material Perry started spraying pieces of cardboard. He got an idea of how the different systems performed without wasting lots of expensive material.

It All Depends – What you plan to spray with your HVLP system will help determine what system is right for you. If outdoor furniture makes up most of your work then you need not break the bank. (Photo by Wagner)

The Perfect Finish – If you're looking for a top-rate finish, a higher end system is more appropriate. This humidor, by Ryan Shervill, is the perfect example of where a quality system makes sense. (Photo by Eddie DeJong)

latex in a 5:1:1 paint:water:conditioner ratio, which lowered its viscosity enough to run through the Zahn cup in 30 seconds after mixing and filtering.

How they performed

The big surprise was how well each system did. Frankly, I thought this was going to be like throwing mud at a wall: the wall gets covered but nobody could call it pretty. Instead, every system managed to spray every finish, with some limitations.

Atomization is a function of pressure and viscosity: high pressure plus low viscosity gives good atomization, while low pressure plus high viscosity yields poor atomization.

This became apparent with the Fuji, Lemmer and Apollo systems. Their greater power permitted better control, mainly in the "fine-ness" of the atomization. The more powerful systems were capable of almost "fogging" the finish onto the surface; the lower-powered ones had spray patterns that were more "splattery."

Since the Wagner lacks an air pressure control and the nozzle/needle is fixed, you set the fluid control and then how much finish you apply depends on your speed of application and the distance of the gun from the work.

It's similar with the Earlex. Using some cardboard as a target, adjust the volume of finish to be sprayed, then turn the air cap and ring to adjust the size and pattern of the spray. Fine-tune the volume of finish, then vary the speed at which you move the gun and its distance from the work-piece to control the finish thickness.

While getting a "feel" for the varnish, we sprayed coats with the Wagner and with the Earlex that were heavy and "wet" enough that we expected them to run and then to dry with a heavy "orange peel" pattern. Neither happened. The Emtech varnish levelled and dried beautifully. The more powerful systems with better adjustments on the gun gave even better control in laying down multiple light but wet coats that levelled into a first-rate finish.

I must admit we doubted that the latex emulsion was going to spray at all. This is thick stuff. But after thorough stirring and filtering we'd blended in the water and reducer and had a very smooth paint.

The Wagner and Earlex systems will spray this, but I'd recommend that you be careful about masking before you start. With the larger nozzles there is a fair bit of overspray and blowback plus they spray a heavy coat so you have to keep the gun moving. If you hesitate you're risking runs and drips.

Frankly, a good painter can paint a room's trim with a brush in less time than it would take just to mask everything, so I'd question the wisdom of spraying. You can obtain very fine atomization that levels down to an excellent finish from the three more powerful units, but you still have to mask. Plus, don't think that you'll get away without some kind of spray control and filtration. There may be little overspray, but what there is goes everywhere if you don't control it.

Now ask yourself, "Will I get better results by spraying?" "Will spraying save me time?" "Will I do enough work to justify the purchase of an HVLP system?" and "How much do I need to spend to get the quality I want from HVLP?"

Answering those will make your choice quite simple. Each of these HVLP systems does a good job on the work for which it was intended. Just choose rationally. You probably don't need to spend a thousand dollars to spray-paint your fence. But neither is a $100 unit likely to give you the finish quality you want for your humidors or jewellery boxes. So spend the hundred bucks on your fence and invest the thousand dollars on finishing your humidors.

Recently, I had two rattan deck chairs in need of refinishing and I considered how long it would take. Staining them with a brush is a very picky two-hour job. Spray finishing took seven minutes. That's what you call a no-brainer.

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Since completing his English degrees, Bill has been a photographer, designer, drug rehab director, darkroom tech, corporate news editor, retail clerk and online website editor. Woodworking was his last resort.

Lightweight Fabric Spray Booth

Make this simple fabric booth so spray finishing will be a joy, not a task.

BY KAREN MCBRIDE

I needed a spray booth to fit into the oddly shaped upstairs dormer of my 200-year-old log workshop, and that quickly got me thinking how a hospital-curtain design might work. My booth needed to be bright and large enough to spray beds and dining room tables, but still easy to set up and stow away. For a number of reasons this style of spray booth is for water-based finishes only.

When a friend suggested that I permanently install an exhaust fan on the ceiling, the concept for my curtain booth was complete. Essentially, my design consists of fabric walls that are held taut with bungee cords when the booth is set up. When it's in storage, the fabric walls roll up and are kept in dust-free tubes on the wall. Between the two fabric walls, a drop-down, fabric-panelled frame holds lights and an exhaust fan in front of the window, used to expel the overspray.

The booth walls are constructed from about 12m of approximately 1.25m wide substandard parachute ripstop nylon cloth. Additional supplies for the booth include two lengths of household central-vacuum tubing, six simple wooden battens, an exhaust fan, two bungee cords, epoxy, PVC glue and hook-and-eye hardware.

To build the booth, cut and sew the parachute material together to make two 8' wide panels that run floor to ceiling, minus 4". The cut edge of the parachute material can be melted with a lighter to prevent fraying, so there is no need to create elaborate seams when sewing it together.

To create the dust-proof storage tubes, cut two lengths of central-vacuum tubing that run from floor to ceiling. Using a jigsaw, cut out and save a 1 3/8" PVC strip the full length of each tube. This creates the storage opening for each wall.

Make four wooden battens 3/8" x 3/4" for wall-terminating poles. They should be a few inches longer than the material is tall, but no longer than the floor-to-ceiling height of your shop. Carefully glue a set of battens to each wall panel by sandwiching the material between battens. I used epoxy for this job and left clamps in place until it set. Be careful not to let too much epoxy squeeze out onto the curtain material.

To form the spray-booth front, temporarily tack a piece of PVC tubing to the wall so the tubes are about 4' apart, with the slots in the tubing facing out. Now use PVC glue to attach the 1 3/8" wide PVC tubing offcuts that were removed earlier to each of the fabric wall panels. This PVC glue will not be a substantial glue bond, but it will hold long enough to screw the PVC strip to the inside of the tubing. First, roll the fabric around the PVC strip once or twice and then screw it to the inside of the tubing using washers and screws every foot, to secure both the fabric and the tubing in

Almost Invisible – The spray booth is so compact and simple that once it's out of the way, you will almost forget you have it.

Photos By Karen McBride

Use Your Offcuts – In order to attach one side of each fabric wall in place, wrap the fabric end around the PVC offcut a couple times. You can then screw it through the PVC storage tube, into the wall.

A Small Hole – Drill a small hole in your floor to house the lower end of the fabric walls. If you don't have wooden floors, you can drill holes in either end of a thin, long plywood strip and place it on the floor between the two ends each time you set up your spray booth.

A Helpful Bungee Cord – Drill a small hole in the batten and use a bungee cord to keep the spray booth taut. Notice the bungee cord is on a downward angle, helping to keep the batten seated in the hole in the floor.

place. Now each 8' wide fabric panel is attached to the storage tube at one end and has a wooden batten on the other end.

To complete the spray booth, determine the placement of each spray-booth wall and drill two 1" dia. x $^{3}/_{16}$" deep recesses in the floor to hold each wooden batten in position when the walls are in place. My booth is 12' wide at the back. Drill a small hole about eye level on each batten to attach the bungee cord that keeps each wall taut. The force on the bungee cord should be down and out, not horizontal, in order to keep some downward pressure on the batten so it stays seated in the hole. Be sure you can still walk under the bungee cords when moving around the booth.

The exhaust-fan frame can be constructed from wood and parachute cloth, or from plywood. A short length of central-vacuum tubing with a cut-out is mounted on the bottom of the exhaust-fan frame. It houses a length of parachute material, weighted with a wooden batten, which protects the area below the exhaust fan from overspray. Suspend and hinge the exhaust-fan frame from the ceiling using large eye-bolts and hooks fastened to a ceiling joist. The frame is also an excellent location to install task lighting for spraying.

To use the booth, simply unroll each wall. Place the wooden battens in each of their drilled detents in the floor, and secure the walls with bungee cords. Open the window, drop the exhaust fan from the ceiling and unroll the protective fabric panel from the bottom of the exhaust-fan frame. Plug in the lights and the exhaust fan and let the spraying begin.

Don't Get Fancy – Simple hardware will hold the exhaust-fan frame in place, wether it is in use or not. Task lights are also a great way to shed some light on your furniture as it's being sprayed.

Protection Below – The same sort of method for attaching the two main fabric walls can be used to make a small wall directly below the fan to direct any overspray outdoors.

KAREN MCBRIDE
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Karen creates contemporary furniture of her own design, never missing the chance to do complex, intricate work well beyond her skill level.

SPRAY FINISHING – TIPS FOR GETTING STARTED

BY ROB BROWN

Before you spray

- Maintain a temperature of 17–25°C and don't spray if the humidity is very high.
- Use ample lighting and have it come from a number of directions. For best colour rendition, use daylight-balanced tubes in your fluorescent fixtures.
- Spraying outdoors – because there is little overspray with HVLP spray units, working outdoors might be a good option, if weather permits. Spraying outside is also more appropriate when spraying low VOC materials.
- Indoors – best to work in an enclosed area – booth, room or draped-off area. Sweep and clean the area well before spraying.
- Cover tools, machinery, etc. with drop cloths before spraying.
- Use a turntable and keep the piece at a comfortable height while spraying.
- If you're spraying smaller pieces or furniture parts, use a number of riser blocks to hold the piece off the main turntable surface.
- Spraying furniture sub-assemblies is much easier than finished pieces of furniture; even if you are able to remove the back from a cabinet, your finishing job will go much smoother.
- Follow the manufacturer's instructions for spray equipment and finishing materials.
- Heaters – don't spray flammable material around heaters, furnaces, etc. that have an open flame; you can turn the heat source off until overspray clears the area, and remember pilot lights too.
- Have a fire extinguisher rated for flammable liquids nearby.
- Use an appropriate respirator.

Protect Your Lungs – A proper respirator is a must. Get one that will protect you from organic and paint vapours. (Photo by 3M™ TEKK Protection™ Brand.)

As you spray

- Keep tip about 6" from the surface that you're spraying. Don't arc the gun in any direction; make straight, even passes, moving your arm, not your wrist.
- Overlap each pass 50 percent with the previous pass.
- Practise on flat cardboard and boxes, wood scraps, old furniture items that are heading to the garbage, etc. to get an idea of how much material is being applied, the necessary motions and the order of operations. Practice is the only way to quickly get well acquainted with how the spray equipment performs.
- Don't be afraid to adjust the width of the spray pattern as you work, depending on what part of the piece you're finishing.
- Also feel free to rotate the air cap so the spray pattern is appropriate for the work you're doing.
- If you get a drip or run on a horizontal surface, or near a corner, wipe it with your finger, removing much of the run, then quickly continue spraying.

Familiarize Yourself – Understand what the knobs and adjustments do while you're practicing on scrap material so that, when the time comes, you'll be able to adapt to the situation and apply an appropriate coat. Though there's generally not much to adjust, each gun is slightly different.

A Good Foot to Stand On – Attach a lazy Susan bearing to the underside of a piece of scrap material and you have a great surface for spraying smaller parts. I also use some Bench Cookie Cones to help keep the workpiece away from any overspray on the turntable.

Follow Orders – Make sure to follow all the manufacturers' recommendations regarding their products. Both spray equipment and finishing materials will only work well if you use them appropriately. A cup to check a material's viscosity is a good place to start.

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Pierced Carving

Add texture and visual interest to your next project with these techniques.

BY JASON KLAGER

I believe, if done sensibly, playing with such things as prismatics, colour, proportions or asymmetry can add visual interest to a piece of furniture. The introduction of texture takes this one step further, turning something that is visual into something tangible as well. One way to add texture is with pierced carvings. They can be used in a number of ways on a piece such as a door, lid, panel, table leg, etc. Using a panel from a recent vanity I built as an example, I will show the steps involved and share a few tips along the way to ensure your efforts become successful.

When designing this vanity, I decided to place a panel between the two drawers in the table to add visual interest and provide a way of accessing the secret box hidden behind. I wanted the image on the panel to be a simple continuation of another pierced carving of a tree silhouette located in the chest above, which balanced nicely with the leaf marquetry of the chest. After completing the drawing, I considered possible wood choices and decided to use East Indian Rosewood. I knew the rosewood's density and fine grain would provide the strength I needed when working on the finer details of the carving, and its colour would blend harmoniously with the wenge table. Rosewood, like wax, is friendly to carve, gives a polished surface right off of the blade, which reduces time sanding, and enables you to remove material without the panel moving too much due to its stability.

Although you can glue a pierced panel into a veneered piece, I decided to go with frame and panel since this table presented certain design challenges. This method is normally used when working with solid wood. To prepare the panel, I brought it down gradually to a final thickness of 3/8", a more critical step when working on larger panels. You will know right off the saw if the wood is under tension; if it is, you may need to allow the wood an extra day to relax before continuing to remove material. I routed a 1/8" tongue around the perimeter of the panel and shaped a slight dome profile on the face using a chair scraper and files. At this point, I made small adjustments to fit

Transfer the Drawing – Once you have a sketch that you like, use tracing paper to transfer the design to the wood. Klager used a white pencil to lighten the line on the dark rosewood he was carving.

Lead Photo by Ingeborg Suzanne, Photos by Jason Klager

Drill Some Holes – In order to insert the scroll saw blade into each section to be removed, many small holes are required.

Remove Some Wood – At the scroll saw remove the bulk of the waste. Spend some time getting comfortable because you may be there for a while! Take your time, as attention to detail is important.

the panel into its opening, a step that is better performed now than with the delicate finished carving. For other applications, such as creating a pierced carved lid or table leg, this would be the best time to mortise for hinges, drill pilot holes, or complete necessary joinery.

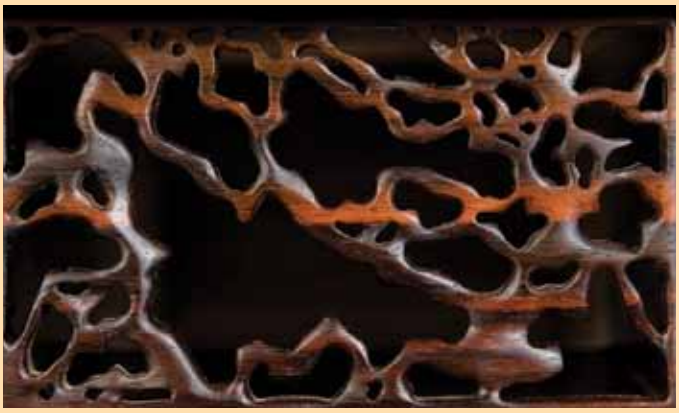
I transferred the drawing onto the panel using carbon paper. However, the dark colour of the rosewood made seeing the carbon outline difficult, so I went over it with a white pencil crayon. Taking the panel to the drill press, I drilled a pilot hole just inside the perimeter of each waste that was slightly larger then the #5 scroll saw blade I planned on using for the removal of each waste area. I also used smaller sized drill bits to remove the waste in the tight areas between some branches, which would have been difficult to remove later on with the scroll saw. I then took my Swiss cheese panel to the scroll saw and, starting with the middle section, slowly cut out each waste area.

Bringing the panel back to the bench, I placed it into a custom-made holder to prevent any possible movement when using hand tools. I added a little more dimension using carving gouges and files, while still maintaining its overall impressionist appearance. The amount of detail and realism you want your panel to include depends on your personal preference. Although I kept things simple, one could spend several hours carving to achieve a three dimensional panel filled with intertwined branches. Once I had the shape I was looking for, I softened and rounded the edges using a file and sandpaper.

The finish you apply needs to go on easily and provide you with sufficient time to remove any excess. On this panel I used a three part mixture of Waterlox orginal satin, pure tung oil, and mineral spirits; once it dried, I applied a single coat of Clapham's beeswax polish. I always like to pre-finish the separate parts of a piece before assembly to give me enough time to resolve any possible finishing issues and ensure crisp joints after glue-up.

To ensure you enjoy both the results and experience of pierce carving, it is important to carefully consider each step, from finding a suitable design to selecting an appropriate type of wood and deciding on the most effective methods for the removal of material. The possibilities are endless after creating a pierced carving, making it a sound option if one wishes to add a tangible difference to your upcoming piece.

Start Carving – With the carving mounted in a jig, Klager is able to carve and shape it as needed.



The Finished Pierced Carving – A finish is applied and the carving is mounted in the piece of furniture. It's hard not to look at and touch the carving. (Photo by Ingeborg Suzanne.)

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Northern B.C. woodworker Jason enjoys his craft of creating one-of-a-kind pieces of studio furniture. His creativity is also useful when he faces the 500 thought-provoking questions his two young boys give him daily.

An Introduction to Stringing and Banding

Part 2

Here's how to add a high-end accent to your furniture projects without spending a high-end fortune on tools and materials.

BY BILL PERRY

In this article, Bill Perry covers how to install and finish the stringing, as well as how to use pre-made bandings to dress up your next project. Perry covered how to produce the stringing material and how to cut grooves in wood that will accept the stringing in our Dec/Jan 2012 issue.

Prepare your stringing by planing a slight bevel onto one edge. This matches the bevel cut by the scratch stock while you were making the groove and makes it easier to fit the string into the groove, even if the groove was routed and has vertical sides. Then plane a bevel onto the other edge, checking the fit as you go. (It's easier if you plane the bevel onto the edge of a wider strip of wood and then rip the string off of it when it fits.) Have all your tools and materials laid out and ready, and be sure to test-fit all the stringing before you start.

The choice of glue is up to you. Standard yellow glue works fine, while white glue gives you a bit more open time. Hide glue or fish glue are also good choices; they have the added benefit of being reversible with warm water should you make a mistake. How you apply the glue is also up to you. A glue syringe is a good choice. A small bottle that lets you squeeze out a small bead of glue also works well, or you can dab glue into the grooves using a toothpick or splinter of wood. There's no need to be especially neat; the stringing and any glue squeeze-out are scraped flush with the surface once the glue dries.

With glue applied, press the string into the channel. It's important to work at a good pace here: the glue will start swelling the wood so you want to get the string in place quickly. Tap it gently into the groove with a hammer and a block of softwood, then burnish it down until it's well seated. Once the glue dries, use chisels, planes and a scraper to bring the stringing flush with the surface of the wood.

On larger pieces of furniture, your stringing often won't be long enough to fill a groove and you will have to join two shorter lengths. In such cases, a scarf joint yields a better result than a 90° butt joint. Trim the end of one piece

Photos by Bill Perry

Light Pressure – A softwood block is a good tool for applying pressure to the stringing. You want the stringing to seat properly in the groove.

A Slight Chamfer – With a block plane, cut a slight chamfer on the bottom edge of the stringing. It will fit into the mating groove more easily, as glue tends to swell the wood fibres and cause problems while inserting the stringing.

Flush Things Up – Plane the stringing flush with the rest of the wood surface.

of stringing into a long bevel using a very sharp chisel. Glue this piece into its groove. Then carefully trim the next piece of stringing to match the bevel, checking its angle against the piece that is already glued in place. When you have a good match, glue it down.

Another situation where you may have to join multiple pieces of stringing is when you have it extending across the grain of a panel. This gives you the classic dilemma where the cross-grain panel expands and contracts with changes in humidity, while the long-grain stringing does not.

It's a little picky to deal with, but not difficult. Take a piece of the wood you're using for stringing, and crosscut $^{1}/_{16}$" offcuts using the table saw and a zero-clearance crosscut sled. This produces wafers of end-grain wood. Use a wide chisel or plane blade to chop these wafers into shorter slices that will fit into the groove. Bevel them as necessary. These end-grain sections can then be glued end-to-end into their groove, where they will move seasonally along with the rest of the panel.

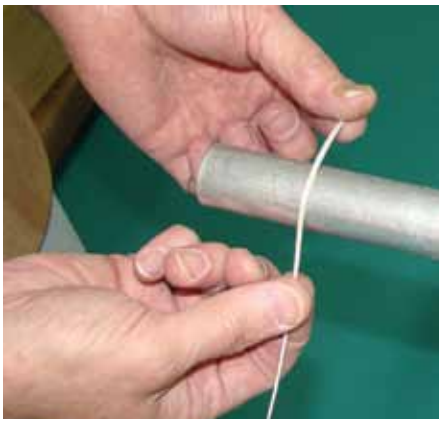
Add Some Curves

So far, I've been talking about straight or slightly curved stringing. Tighter curves require you to bend the stringing first to prevent it from splitting so this presents an opportunity to try out hot pipe bending. With this technique, you soak your stringing in water for a few minutes and then gently bend it into a curve around a hot pipe. The heat softens the lignin, which binds the wood's cells together, allowing it to be bent. Once cooled, it holds its shape. (See Scotty Lewis' article in *Canadian Woodworking & Home Improvement* #70 for a complete how-to on this technique.)

Working with bandings

While string inlay provides a very fine accent, sometimes you might want something a bit more robust. Bandings are combinations of veneers assembled into patterns and then cut into strips, typically from about a quarter of an inch wide to even an inch or so. You can make your own bandings, but that's the subject of a whole other article. If you're just getting started with this,

Cross Grain Stringing – When inserting stringing across the grain of solid wood, expansion can cause major problems. Cutting strips of stringing, splitting it into smaller pieces and inserting it will allow the stringing to move with the wood's seasonal movements.



Hot Pipe Bending – To get a tight radius try using a hot pipe. You'll be surprised how enough heat will cause wood to be easily bent.

you can find a good selection of premade bandings from several suppliers, usually with online ordering. (See suppliers list.)

Since banding often runs across several components of a piece of furniture – around the legs and across the apron, for example – it's best to insert it into each component before final glue-up. Once your joinery is cut, dry-fit the components together and mark the positions of the banding from one piece to the next. Then you can disassemble the parts and cut the grooves knowing that the final positioning will be just right.

The grooves can be cut using a router with a straight bit and mounted in a router table. Match the size of the bit to the width of the banding, and set the depth of cut by making test cuts in some scrap. Then set up your cut by positioning a fence on the router table, and again check for accuracy using scrap. Once all is in place, you can rout the grooves.

Banding Adds Character – While you can make your own banding, it's not easy. Dozens of banding styles can be purchased, and they add a lot of character to a piece of furniture.

A Simple Alternative – A router plane offers a quieter, less risky way of removing wood to form the groove or dado. In addition to this full-size model, Veritas also has small (¼-inch blade) and miniature (⅛-inch blade) versions of its router planes. They excel at small runs of precise work such as cutting the channels for this banding.

Slow Things Down with Hand Tools

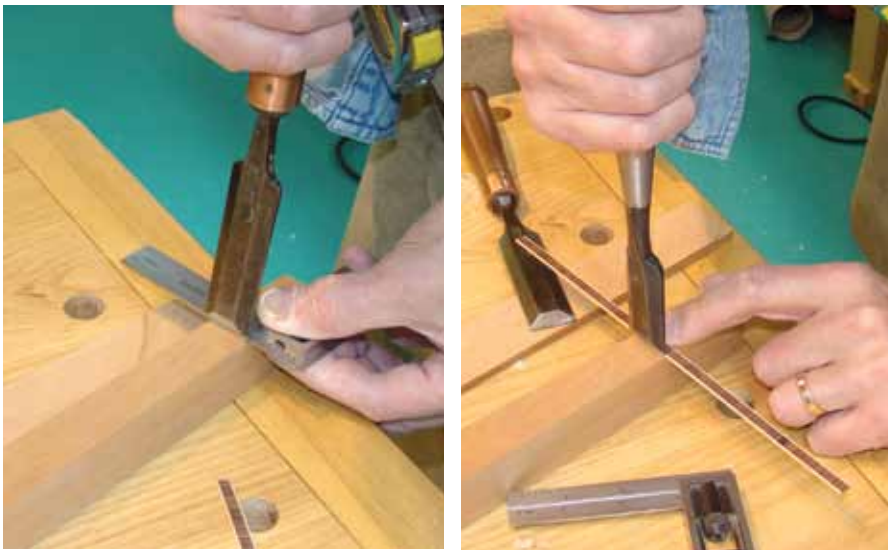
Although the test cuts minimize the risk, routing these shallow grooves is still white knuckle stuff. I'm a lot calmer using a lower-tech tool: the router plane, designed to cut accurate grooves, rabbets and dadoes. Stanley has manufactured its number 71 router plane and the smaller ¼" number 271 for more than a century. These can be bought new or found at used tool auctions, but recently Veritas has introduced its own versions.

The Veritas planes sport some improvements over the Stanleys –particularly the blade adjustment mechanisms – while providing the flawless fit and finish we have come to expect from this manufacturer. About all you need to do is take a few minutes to hone the blade to your very best edge before you start work; the time spent will pay dividends.

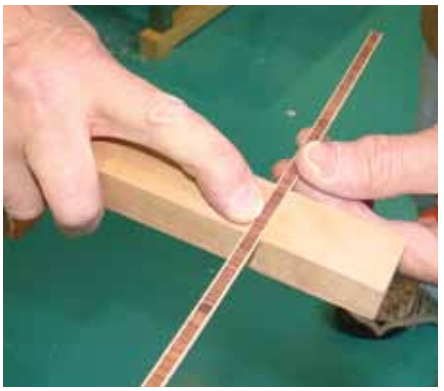
To use the plane, use a marking or cutting gauge to define one edge of the groove for the banding. Then, with a knife, deepen the gauge's mark. Align a piece of banding with the knife cut, using it as a spacer to position the knife for a second cut, and make that cut, with a straightedge guiding the knife. When cutting into long grain, the knife will tend to follow the grain of the wood, so it's important to keep the cuts light.

With the edges defined, set the router plane's fence to bear against the workpiece's edge so the plane's blade is centered between your cut marks. Adjust the blade to take a very light cut. Then, starting at the *far* end of the cut, make light passes with the plane.

The channel opened up by the plane's blade directs the blade and helps keep it on track with each successive pass. Work carefully, keeping the fence firmly against the workpiece while gradually increasing the depth of cut. Stop when a



Start With a Chisel or Knife – Hand tools are great for doing smaller work, like this leg cuff. The first cut should create a square score mark (left). The second cut should reference off the width of the banding.



Friction Fit – The fit should be just enough to hold the banding in place while turning the workpiece upside down. Any tighter and water in the glue will cause swelling and the banding will be too tight.

Angle Jig – Using an angle jig to trim any mitered ends will help to ensure a precise fit.

piece of banding can be pressed into the groove, sitting just slightly proud of the surface.

Dadoes for short lengths of banding such as that forming a cuff around the bottom of a table leg can usually be cut by hand. Use a piece of the banding as a template to guide your knife or chisel when you make your layout lines. This all but guarantees a perfect fit. Define the edges with deep, clean cuts, then work slowly and precisely with the plane, taking light cuts until the dado is deep enough to accept the banding.

Banding that wraps around furniture components must be cut with the ends mitred for a neat joint. You can cut these mitres by hand with a chisel, but a simple jig consisting of a block of wood cut at a 45° angle will improve accuracy.

Scrape the bandings flush

Bandings are quite delicate, so a scraper is your best choice for bringing them flush with the furniture's surface. A plane risks tearout due to the changing grain directions, while sandpaper grinds

A Scraper Works Wonders – The perfect tool for the job, a sharp cabinet scraper will bring the banding perfectly flush with the rest of the surface, without muddying the surface, like sandpaper.

Look Closely – When complete, banding or stringing will be examined very closely by anyone who sees it. What they will find here are mismatched miters at the top corners (top left comes to a point while top right is squared off), and a sloppy joint at the bottom apex of the loop. It's time for more practice.

sawdust into the banding's surface, muddying its appearance. (The same applies to smoothing string inlay: scrapers yield a crisper appearance than sandpaper.)

Once you've completed your project you need to choose a finish. If you use an oil-based finish that warms the appearance of the wood, it will do the same with the string and banding you have inlaid.

If you're seeking an antique patina, this may be the best choice. However, if you want to keep your holly stringing looking a nice bright white, you may be better off using a water-borne finish, or sealing the stringing first with super-blond shellac. Use a fine artist's brush to apply the shellac.

Tip: A wash coat of methyl hydrate (wood alcohol) will give you a preview of how the wood will look with a finish applied. It evaporates within a couple of minutes.

You don't need to stop with just basic stringing and banding. The precise depth adjustment of the Stew-Mac router base allows you to excavate cavities into which inlay can be glued. This opens up possibilities of using figured woods, metals, colored epoxy, mother-of-pearl or any other materials as decorative elements. Don't be afraid to experiment, but keep the following tips in mind.

One: Less is more. A few understated lines of stringing can elegantly highlight details of a piece of furniture; a hodgepodge of stringing, banding and inlay running off in all directions is just visual distraction.

Two: There are only three secrets to doing fine work here. The first two are patience and practice. The third is more patience and practice. Remember that the nature of this work is to invite people to examine it closely. So when you're mitering two pieces of stringing to form a tiny, perfect joint, and you cut one piece just a hair too short – maybe only $\frac{1}{64}$" or less – if there's a gap big enough to bother you, scrap the piece and make a new one. This is the one place where close enough isn't good enough.

That isn't meant to intimidate you. If you like fine work you'll have lots of fun with this. And even if you're still more comfortable with a chop saw than a chisel, you should find this well within your ability. I hope you'll give it a try.

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Bill worked as a diesel fuel injection repairman, railroad crew dispatcher, offset press operator, warehouseman and construction labourer before becoming distracted by woodworking and the joys of HVLP spraying.

GOING AGAINST THE GRAIN

If you're working with veneered panels, you're free to inlay stringing and banding in any direction you'd like, as wood movement is virtually non-existent. It's solid wood that can pose problems. When running stringing and banding parallel to solid woods' grain, there are no wood movement discrepancies. The problems arise when stringing or banding runs perpendicular to the grain of solid wood. One solution is to use short sections of stringing or banding, separating them with a gap or another inlaid element. It can be time-consuming, but ignoring wood movement will only create larger problems down the road.

Most woods will move at least $^{1}/_{8}$" per every 12" in width. With that in mind, I like to keep the inlaid piece no more than about 4" long, but less is preferable. Since some species will move less than others, and quarter-cut material will move less than flat-cut material, there is no definitive maximum length. On top of that, different geographic regions will have wider swings in relative humidity, which means you should use even shorter lengths.

Though you can easily use short lengths of inlay separated by small gaps, I prefer the look of adding another element between the short strips. I often add solid wood plugs that contrast or match the stringing or banding species. Using a more exotic material (for us woodworkers anyway), such as mother of pearl, stainless steel or copper, also works well.

Design options are almost endless, and the techniques to bring everything together nicely don't have to be difficult. Whichever method you choose, layout is essential, as you want to end up with a balanced look.

Nice and Simple – The easiest option is to start by cutting and installing the stringing lengths. Don't spend too much time fussing with the start and end points of each strip, as they will got covered by the plugs later. Once the inlay is dry drill holes at the end of each strip and install plugs.

Centre the Plugs – Install the stringing, having each end terminate a specific distance from each other. Take care to fit the stringing to its groove, paying special attention to the ends, as everything will be visible. Drill and install a combination of different sized wood plugs between the inlay strips.

Heavy Metal – Using metal instead of wood will add another element to your work. You can cut pieces of metal to size and inlay them, or simply hammer in a nail and flush it to the surface. Nails are easy to install and come in many different varieties. Copper is one of my favourites.

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Build a Tea-Light Candle Holder

Choose from either an Art Nouveau- or Art Deco-inspired design when making this great accent lighting project.

BY ROSHAAN GANIEF

Today, if you enter any home, you're likely to find some sort of candleholder with the homeowner's favourite candle. These candles, although mainly used as a soothing escape from the day's stresses, can also be a source of light during a power outage. There are an abundance of different candle styles and scents, which can come in varying shapes and sizes. With so many to choose from, I opt to go with a simple and understated tea light candle with a faint pleasant scent. What better way to house your candles than a well made, handcrafted, simple yet elegant and modern candleholder?

I have two patterns for you to choose from. While I will be demonstrating one design, it is just a simple matter of changing out the scroll saw patterns to get the style you are looking for. You can also easily modify the patterns to size the holder to your liking; for example, if you wanted to make the candleholder house four candles instead of three, you could easily elongate the pattern to accommodate the new length. All you will need for this project is white glue, some $^{5}/_{8}$" thick medium-density fibreboard (better known as MDF), wood veneers of your choice and solid wood of your choice. There is no need for fasteners or fancy joinery. Make a few to give away or make one to keep at home.

The candleholder itself reflects my love of Asian aesthetics, evident in the streamlined, minimalist design. This makes the perfect backdrop to showcase the scroll saw patterns I will be featuring. I took inspiration from two very different design movements, both of which are still very relevant today. Art Nouveau and Art Deco still influence many designers and artists. Words to describe Art Nouveau include natural, organic, sensuous and flowing; apparent in the use of stylised motifs such

Photos by Roshaan Ganief

Materials List

Part	Qty	T	W	L	Material
MDF base core	1	1 ¼	3 ¾	10 ¼	2 pieces of ⅝ thickness laminated to get 1 ¼ thickness
Solid Sides	2	⅛	1 ¼	10 ½	Cherry or choice
Solid Ends	2	⅛	1 ¼	4	Cherry or choice
Solid Top	1	⅛	4	10 ¼	Cherry or choice
Runners	2	¾	1	4 ¼	Contrasting species
Veneer Faces	5	varies			

as insects and plant life. On the other hand, you would describe Art Deco as streamlined, industrial, geometric and graphic, as seen in the use of elaborate curves and geometric shapes, one of which is the iconic sun burst design. Whatever your style, I'm sure you will find inspiration in this project.

A couple of notes on safety when using a wooden tea light candle holder: always use the metal housing that comes with the tea lights and never leave a burning candle unattended.

You will also need some contrasting wood veneer to cover the MDF base core.

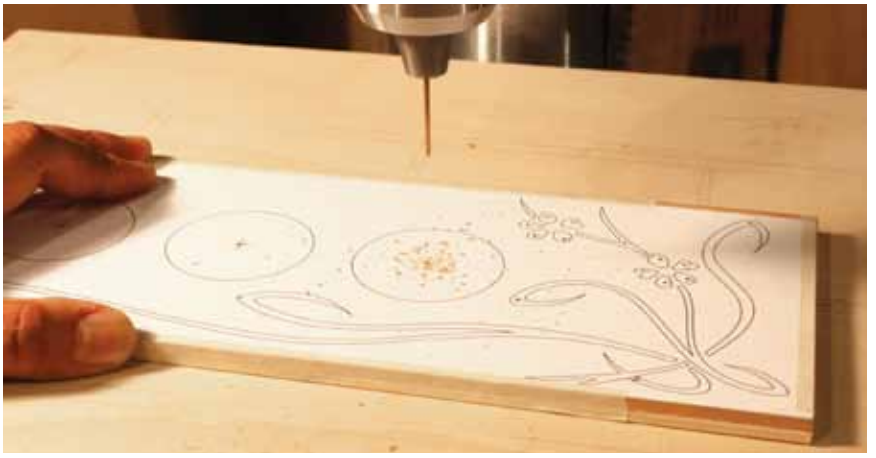
Keep the cutting list handy to ensure you have all the parts accounted for. It is best to keep most parts a bit longer and trim them to final length later. Prepare the MDF base core/block by laminating two pieces of ⅝" thick MDF together to achieve the final 1 ¼" thickness. Cut the MDF block to final width, but leave an extra bit in the length to be trimmed after it is veneered.

Veneer the MDF block

Use some contrasting veneer of your choice to cover the MDF block. Here I'm using walnut veneer covered with solid cherry. With the aid of some cauls (in this case I am using some scrap 2x2s that were lying around the shop), I first glue the side veneer strips to the MDF block. To ensure that you don't glue the veneers to the caul, simply run a few strips of packing tape along the cauls.

Once the side veneers have dried and been trimmed flush and sanded smooth, proceed to glue the top and bottom veneers to the MDF block. There is no need to veneer the ends of the block; however, it is essential that if you veneer one side, you must veneer the exact opposite side. Since the veneer is so thin, glue tends to squeeze out through the pores of the wood; therefore, it is important to use

Apply Contrasting Veneer – Veneer is glued to the MDF block in stages, starting with the two longer sides. Wood cauls provide a flat surface to transfer pressure to the glue joint.



Lots of Small Holes – Small holes must be drilled in the solid sides and top in order to insert scroll saw blade.

Cut the Design Out – With the scroll saw, remove all the waste material. Patience is important here.

some kind of buffer, in this case some wax paper, to prevent the veneer from being glued to the clamping cauls. After the veneer has adhered to the MDF block, trim all edges flush with a sharp utility knife and cut the veneered block to final length. Be careful not to chip any of the veneer.

Fit the Solid Sides First

Before you attach the paper patterns to the solid wood, it is necessary to mitre all the sides and ends. It is best to take the measurements for the parts right from the veneered block. Attach the paper patterns to the parts using temporary spray adhesive. It is important to align the patterns precisely onto the parts. I attach the patterns to the squared right edge of the top piece and the right mitred side of the side piece. I also tape a scrap backer to the parts to prevent tear-out. Proceed to drill the blade entry holes. While you're at it, also go ahead and drill locating pilot holes for aligning the 1 5/8" diameter forstner bit at a later step.

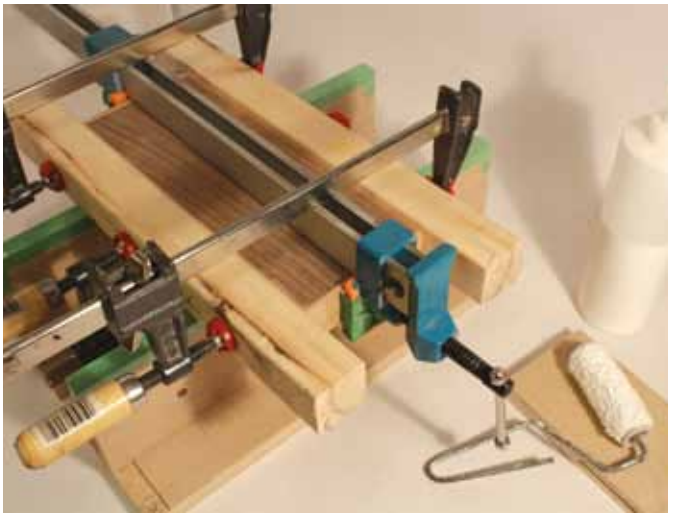
Now it's time to cut out the pattern with a scroll saw. I use a #2/0 scroll saw blade to cut out the delicate parts of the whip-lash cherry blossom and a #5 blade to cut out the linear lines of the Art Deco sun burst. If possible, start in the center with the most delicate parts and work your way to the perimeter with the least delicate parts.

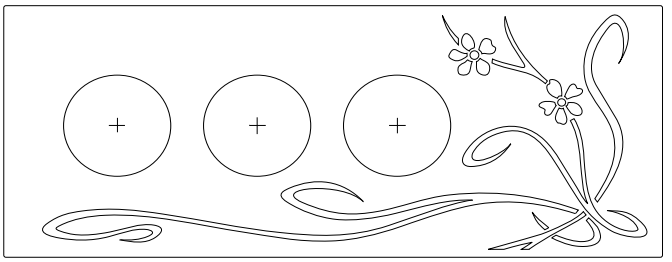
It's a Wrap – Use clear packing tape or masking tape to hold the sides and ends together during glue-up. Once the four pieces are in place, use cauls and clamps to apply pressure.

Glue mitred sides, ends, then top to veneered block

After the designs are cut out, promptly remove the paper pattern. The longer you leave the paper on the wood, the harder it is to remove it. A great tip for gluing mitres together is to use clear packing tape or masking tape on each corner and just wrap the pieces onto each other. Clear packing tape makes a great clamp and you can easily see through it to verify the fit of the mitres. Masking tape is more common though. Spread glue onto all mitres with a glue brush and also onto inside faces with a glue roller. Make sure to use glue sparingly on the scrolled out parts to prevent excessive glue squeeze-out.

In addition to the taped mitred corners, I also clamp all sides. I like to use my shop-made T-stands for a hassle-free glue-up. They simply provide clearance for the clamps and ensure a flat glue-up.





top view (1/8 x 4 x 10 1/2)

front view (1/8 x 1 1/4 x 10 1/2)

After the assembly has dried, flush all edges and sand the top and bottom of assembly to a smooth finish. With the top scrolled part flipped upside down, spread an even layer of glue onto the part using a glue roller. Flip the top right-side up and place it onto the veneered block by carefully aligning the corners. Use clear packing tape or masking tape to tape the top in place to prevent it from wanting to move as clamping pressure is applied to the assembly.

Drill recesses for tea lights

Use a drill press equipped with a 1 5/8" diameter forstner bit to drill the recesses which will house the tea light candles. First, make sure to set the depth stop appropriately. Use the pilot holes drilled earlier to help align the forstner bit and plunge down a little bit at a time to clear away the chips to form the recess. Make sure to set the speed of your drill press accordingly. The rule of thumb is the bigger the bit, the slower the speed.

Cut dadoes for the runners

Lay out the shallow 1/8" deep recesses or dadoes that will house the runners to about an inch in from the ends of the assembly. Equip your table saw with a stacked dado blade set and stack it to ¾" inch thickness. Attach a wooden sacrificial fence to your table saw mitre gauge. Use your layout lines to position and clamp a stop block to the fence. Now all you have to do is cut one dado and simply flip the assembly end for end against the stop block to cut the other dado in the exact same location. If you don't have a dado blade set, you could simply use your combination table saw blade to nibble away material to create the dado.

Cut the runners to fit the dado. Leave the runners with some extra length, so that you can flush it up with a flush trim saw after it is glued in place. Now all you have to do is sand the whole assembly to a smooth finish and apply your finish of choice.

Easy with the Glue – When you apply glue to the sides, ends and top, do so sparingly. The top is applied only after the sides and ends have dried and have been flushed up.

Drill Large Holes – Set your drill presses depth stop and create spaces for the tea lights to sit.

Flush Everything Up – Once the runners are glued in place, trim any excess off with a flush trim saw. Sand the two sides then apply a finish.

Lots of Design Options – Pretty much any design is possible. This is an Art Deco-inspired candle holder in black walnut.

ROSHAAN GANIEF
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Recently dubbed a "crazy cat lady" for reasons unknown to her, Roshaan Ganief is honing her skills as a fine woodworker; skills she acquired through the Fine Furniture Program at Camosun College in beautiful British Columbia.

Blundstone
CSA Approved Boots

When you're working in the shop, your main focus should be safety rather than style. Blundstone has come out with new CSA-approved footwear that combines comfort and style with safety, to give you a pair of do-everything, no-nonsense work boots. Away from the shop, I've been wearing Blundstone footwear for years; it's very comfortable, easy to take on and off and it looks good. When I noticed a small green CSA tag on a pair of my favourite boots, I had to try them out. This winter, whether I'm working in the shop, meeting with clients or shovelling my way towards the shop, my feet will be warm, comfortable and well protected. Looking great is just a bonus. $189.95 CAD. Visit **www.blundstone.ca** for more information. — *Rob Brown*

Veritas
Miniature Router Plane

Timed nicely with Bill Perry's two-part article on stringing and banding, Lee Valley has introduced another tiny gem: a miniature router plane. After using it to inlay some stringing across a set of tapered legs, I'm glad they did. It does what its full-sized brother does, except on a smaller scale. A ⅛" wide blade is perfect for detailed stringing and banding work, as well as tasks like inlaying hardware and precious metals. It's available for $39.50. To learn more about Veritas tools, visit **www.leevalley.com.** — *Rob Brown*

Elliptical Router Jig

An ellipse is fairly easy to make, and looks very impressive. All you need is an accurate jig.

BY ROB BROWN

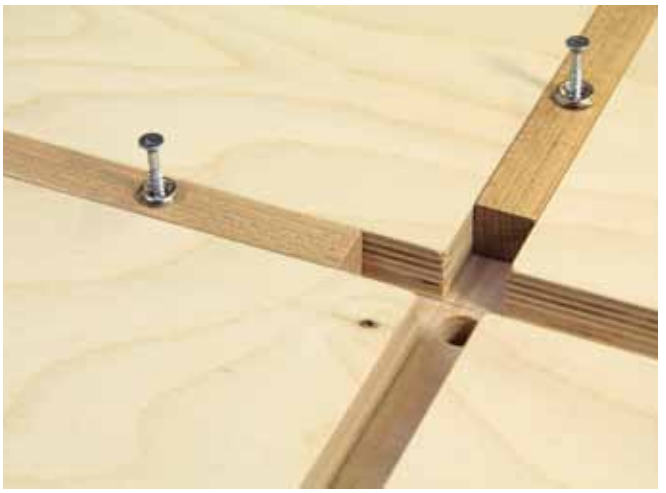
In reality, there are two jigs used to cut an ellipse: the ellipse jig and a very simple circle jig. To make the circle jig, cut a piece of ½" plywood to 6" x 48" and drill the appropriate holes in it to attach your router to one end, so the router is centered on the jigs' width. Remove the material under the center of the router so the bit can protrude through the jig. A 1/16" deep groove, cut on the table saw, will assist in attaching the center of the circle jig accurately to the ellipse jig.

Determine what general size of ellipse you want to make, as one size jig can't cut all sizes of ellipses. I was aiming for anything from a small coffee table to a small dining table when I built this 18" x 18" jig. If you want to make smaller ellipses, you might want to take about 6" or more off both dimensions. Alternatively, you can make the jig larger if you have a conference table in your sights. The circle jig will also have to be sized accordingly.

Build the ellipse jig

Laminate two pieces of ¾" plywood together so you have a blank about 20" x 22". You will get the jig out of this blank, plus a 2" x 6" leveller strip, which we'll discus later. Trim the jig square and to finished dimensions. Machine two ¾" deep grooves, either with a dado stack in your table saw or a straight bit in your router. The grooves should be at right angles to each other and intersect near the center of the jig. Drill a ½" diameter

Photos by Rob Brown



No Slop – The two 5" long sliders should be machined to fit in the grooves with no sideways movement at all, so the path of the router will be smooth and even. The holes to attach the circle jig to the ellipse jig are in the center of the sliders so the shape and positioning of the ellipse will be accurate.

hole where the grooves intersect so the jig can be centered over future workpieces easily. Machine a 15" long strip of hardwood to the exact width of the groove; it's very important there is no slop whatsoever. Cut this strip about $^{1}/_{16}$" less than the depth of the groove so any wood chips will not interfere with the strip sliding in the groove during use. Cut two 5" sliders from the hardwood strip, making sure to not include any planer snipe or other imperfections. Ease the edges of these hardwood sliders, as well as the jig, and apply a light coat of wax to reduce friction between the moving surfaces. Drill a small hole in the center of each 5" slider. The circle jig will be attached to the sliders via these holes.

Locate Two Holes – Measuring from the inside edge of the router bit, mark on the circle cutting jig where the two holes need to be located. Drill undersized holes so the screws hold the jig in position precisely.

Uh oh…Math.

To determine where to attach the two sliders to the circle jig, you need to do some math. Don't worry, you likely won't even need a calculator for this equation. Once you have the overall width and length of the ellipse, divide both those measurements in half. Those two measurements are the distances that the screws need to be installed away from the close side of the router bit. For instance, if the finished ellipse will be 40" x 30" then one slider needs to be attached to the circle jig 20" from the inside of the bit, and the other needs to be 15" from the bit.

This is when the 2" x 6" leveller strip comes into play. The circle jig will sit on the ellipse jig, about 1 ½" above the surface of the workpiece. The end of the circle jig that holds the router will

need the leveller strip attached to its underside, so the router bit remains perpendicular with the worksurface. Attach the leveller strip under the circle jig, about 1" away from the bit. When not in use, I screw the leveller strip to the ellipse jig so it doesn't get thrown out.

Even Things Out – Attach a block the exact same thickness as the ellipse jig to the underside of the circle jig so the router bit remains perpendicular to the workpiece.

Position the ellipse jig over the center of the workpiece by sighting through the ½" hole. Use either screws or double-sided tape to secure the jig in place. Your choice depends on whether the surface is finished. With your sliders attached to the circle jig, place the sliders into the grooves in the ellipse jig.

Make some sawdust

With a long straight or spiral bit chucked in your router (I usually use a 3/8" dia. bit), double-check to see if the path of the bit will cut where you're hoping. Turn the router on and make numerous light passes. I often make the first pass then remove the workpiece and cut the majority of the waste off with my bandsaw. To ensure the jig goes back on the workpiece the same way, I marked the jig with an "A" and the workpiece similarly. Removing the jig is really only practical when the jig is screwed to the workpiece, as the screws will reattach the jig precisely. After I reposition the jig on the workpiece, the final few passes with the router are much easier and crisper, as I'm not removing much material.

ROB BROWN
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Still Renovating

BY DON WILKINSON

Renovation: n /rénna váy shun/ (heavy accent on shun, as in: stay away from)

A "suggestion" or idea postulated by one's spouse to drive the other insane or to divorce (either option is usually fine).

When I left you last month, I had just completed the installation of laminate flooring in the mistress bedroom, only to discover I had done it all wrong, according to the smug article in the previous month's issue of *Canadian Woodworking.* While comparing my floor with that in the magazine, I noticed there were a couple of small areas that might benefit from some minor adjustments in order for it to be absolutely perfect. Unfortunately, it would entail tearing up the entire floor and starting over. Probably using a professional flooring crew and Mike Holmes.

I came up with a much simpler and quicker solution than that. Quickly move all the furniture back into the room, throw down a rug or two, replace all the light bulbs with much lower wattage ones and close the drapes half way. Two months later and no one has noticed any flaws yet. Mind you, we sometimes have a hard time finding the right dresser or wardrobe in the dusky murk. I once ended up in a simply stunning, baby blue peignoir by mistake one evening while searching for my robe.

Shortly after installing the floor, we (she) decided to paint the walls. Paint tends to drip, I discovered. All over my nice new floor.

Since we were painting everything anyway, we (she) decided to paint the exterior of the house as well. If you recall from last issue, a previous owner who was clearly colour-blind or under the influence of some substance or another, possibly wine, had painted the entire house pink. Still don't fully understand how we missed that. Anyway, we decided that beige was the way to go for the walls because that's the predominant colour of the Okanagan in the summer, and a simply divine (her words) chocolate brown for the trim. Because that's the predominant food group in our house.

We purchased the paint and some deep nap rollers for the stuccoed walls and went to work. In an amazingly short time, we were done. Or at least as done as it's going to get for the foreseeable future. The rear wall is still pink but it faces the only neighbours who aren't friendly, so who cares? Most of the trim is finished but with some minor splash-over on the windows and a lovely beige streak down the side of the dog; but overall, the house looks a lot better. So does the dog. At least the house isn't pink anymore. We happily stood back and admired what we had accomplished. Then we hit another winery.

Shortly after our triumph with the exterior, we (she) decided the laundry room needed some adjustments because of the toilet located in the middle of the room, the washing machine located over in one corner and the dryer in the opposite corner.

According to her, by simply smashing a hole in the wall between rooms and then simply throwing up some other walls to form a walk-in closet and simply moving all the plumbing to the same wall, moving the toilet, installing a bathtub, wiring-up some in-floor electric heating, installing ceramic tile on pretty much every level, near-level and hopelessly un-level surface we could find, we could easily turn a worthless laundry room into a lovely walk-through closet and three-piece en-suite. Simple!

Much time has now passed. The bathtub is installed and the drain works perfectly. Or at least it will once I get the water lines hooked up. The boxes of ceramic tile remain stacked chest-high in the garage, the in-floor heating is still in-boxes. There are no doors on the walk-in closet so the drywall dust has turned all her clothes a uniform grey, including the aforementioned peignoir (my clothes are safely stored on the floor under the bed). The washer works well … but only with cold water since I broke the hose adaptor off while installing the bathroom door. Said door leans gracefully and somewhat mockingly against the bathtub (which doesn't work anyway) and the dim bulb on the ceiling dangles from bare wires because we can't decide what fixture would look best. None of which really matters because we (she) still haven't decided what colour to paint the room anyway.

The toilet, however, works great!

Although the roll of toilet paper remains on the bare plywood floor because we don't have a holder for it yet.

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When Don ran his custom furniture shop in Whitehorse, Yukon, his wife never said "Goodbye" in the morning; instead, she would say, "Don't hurt yourself." It never caught on.

Illustration by Mike Del Rizzo

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