



**WATERBORNE
FINISHES**

p.42 **CLASSIC
COFFEE TABLE**



p.32 **FREE
POSTER:
ROUTER BITS**



ISSUE #122
OCTOBER/NOVEMBER 2019

CANADIAN Woodworking & HOME IMPROVEMENT

BLOCK PLANES

The birth of a classic and versatile tool

ALSO IN THIS ISSUE:

Build Custom Mirror
& Picture Frames p.18

DVR Motors:
Quiet Power For
Your Workshop p.50

Turn a
'Sunrise'
Bowl p.52

Transform
Your Scraps
Into a Work
of Art p.14

TOP 10
Tips For Using
a **ROUTER**
p.10

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14"
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FEATURES

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A straight-forward approach will guide you to picture-perfect results.

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Tapered legs and a clean design will leave you with a classic coffee table for the center of your room.

50 DVR Motors BY CARL DUGUAY

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Cover photo by Linda Stella

34 The Cast Iron American Style Block Plane

Learn about how the block plane we all know and love came to be. BY DOUG EVANS

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editor's letter

It's now impossible for me to look at my block plane without feeling a sense of appreciation and wonder. Seeing all of the great historic examples of block planes in Doug Evans' cover story is astounding. Though they've come a long way since their inception, they really haven't changed that much in the last 150 years. Just seeing photos of those planes makes me think of all the artisans that have used them over the years to remove shaving after shaving from today's antiques. Hold your block plane a little tighter the next time you're in your workshop.

Now that we're all back in our shops after a busy summer, it's time to select the perfect project for friends, family or yourself. In this issue we'll offer up a few great ideas. If you're an art collector, or would like to customize a mirror in your home, you'll enjoy Mark Salusbury's article on how to make custom frames. We also have a coffee table for you, complete with classic lines and solid joinery. Rodger Nicholson took a subtle, yet refined approach to designing this living room centerpiece. If you'd rather be turning, a 'Sunrise' bowl by Ken Rude might be where you'll want to focus your energy. It can also be customized, as changing the types of woods, as well as their shape and thickness, will yield different results.

Ripping on the table saw has always provided its fair share of challenges. One approach is to use a pushstick, and the shop-made version we feature here is a simple and fantastic option. Mark Salusbury takes you through the construction process and shows you how to use it. Pushsticks save fingers, so this isn't to be overlooked.

As always, all of our regular columns are packed with great information and stories. Mark Salusbury (who seems to be taking this issue over!) is featured in *Canadian Quotes*. The *Top 10* column focuses on using the router. Our web editor, Carl Duguay, gives you the skinny on DVR motors, and the benefits they can offer you. Just promise me that, even though you'll love what DVR motors can do for you, you'll never forget about the centerpiece of your hand tool collection – your block plane – and where it came from. — Rob Brown



rbrown@canadianwoodworking.com

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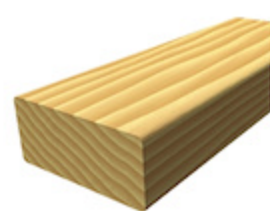
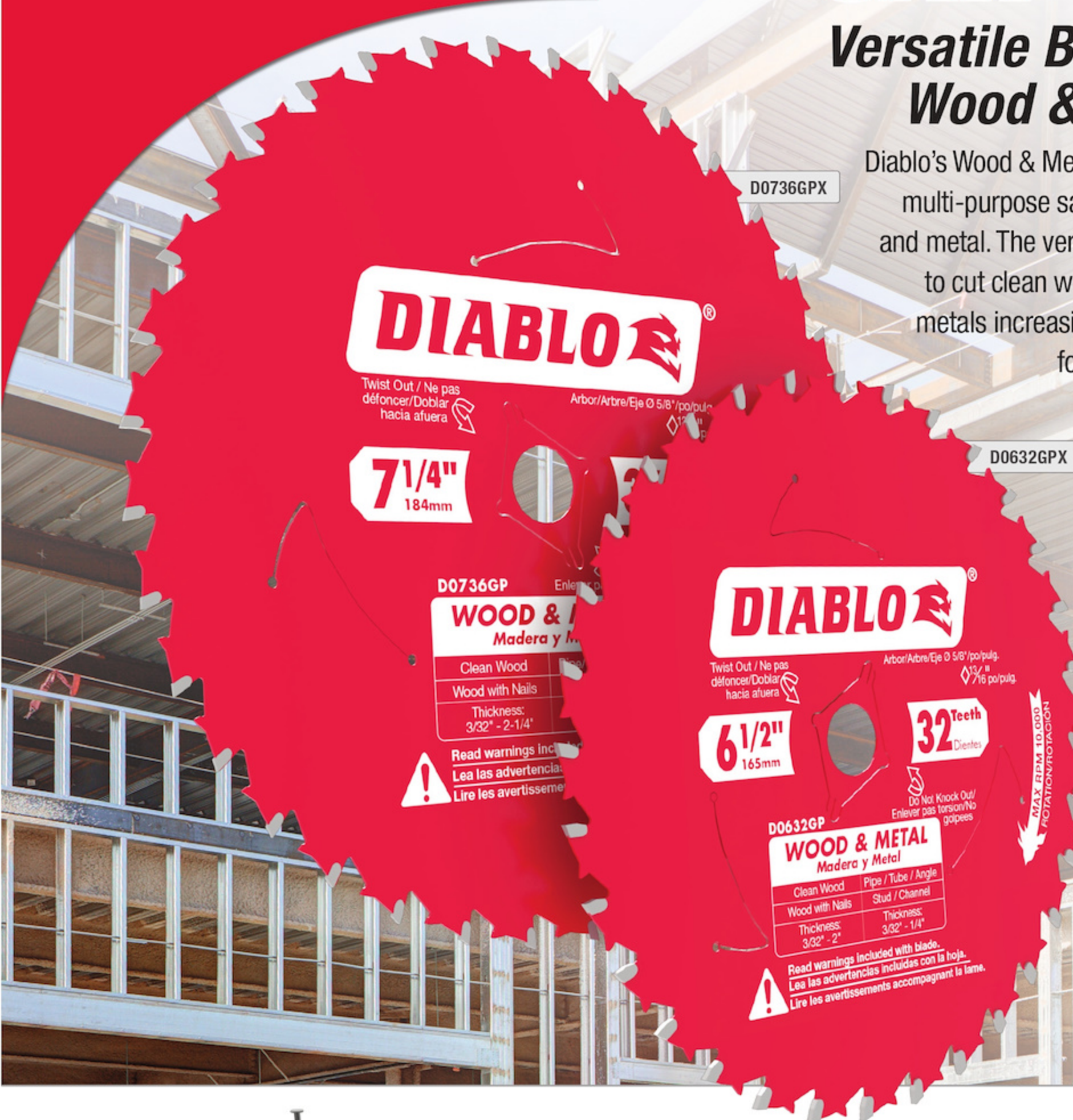


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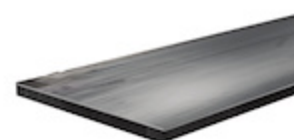
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www.DiabloTools.com

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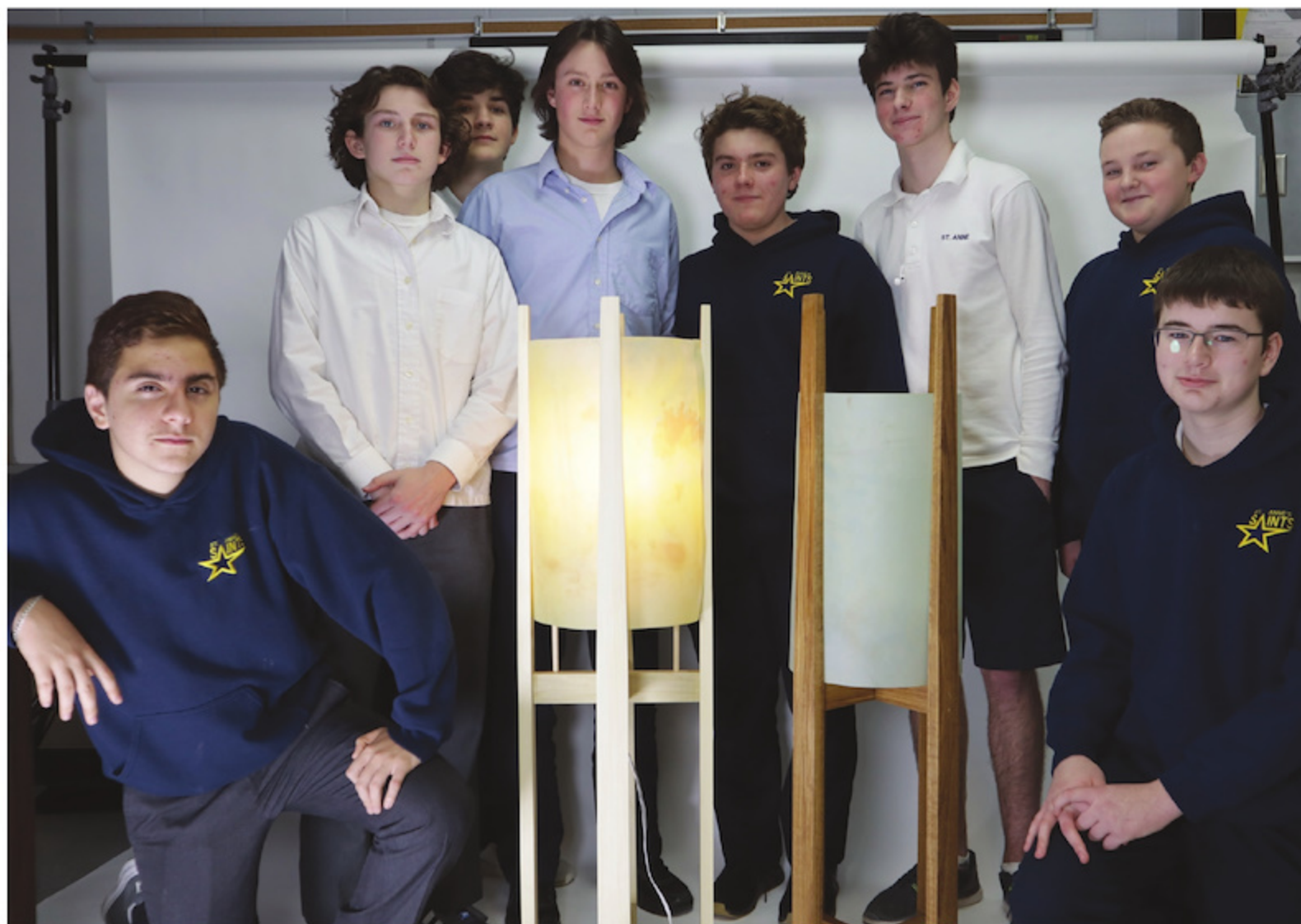
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letters

Very Good Floor Lamp Project!

Here is a photo of a couple of floor lamps that my students made from issue #117. One lamp is made of poplar, the other of white oak – both were sealed with a few coats of polyurethane. The grade 10 students also experimented with making their own ‘Japanese paper’. All in all, a very good project with some challenging joinery.

Mike Gignac
Construction/Woodworking teacher
St. Anne CHS
Lakeshore, ON.



Tools for Schools

Our first Tools For Schools draw was made Aug 1 2019, with seven prizes being won by schools across Canada. Prizes included five mitre saws, a finishing nailer and a random orbit sander – all tools that we have reviewed in recent issues. Congrats to those teachers/schools that won, and thank-you to those manufacturers who participated in our tool reviews and donated those tools for this exciting new project.

For those teaches who entered but didn't win, and for those who didn't get a chance to enter – don't worry, there are lots more draws coming! And to make it easy to enter and win – one entry will get you into all future draws! Shop teachers only need to let us know that you'd like your school to be

included in this ongoing contest/give-away, and your school will be entered into and remain in all of our tool give-aways. Also, if a school has several shop classes/teachers, you are eligible for one entry per shop teacher

To enter, email Paul at pfulcher@canadianwoodworking.com, and let us know your school's name and address.



Some prizes from recent Tools for Schools contest



Superb Small Shop Issue

I always enjoy your themed issues, but the latest “Working in a Small Shop” issue was fantastic. I loved the article on shop tips, and I was literally in the market for a mitre saw. I thought the most interesting article was about buying and restoring used machinery though. Can't wait for part 2 of that article!

Jeff D.
Saskatoon, SK

Subscription Draw Winners

Lachlan M. Milton, ON
has won a Portable Clamping Workstation from King Canada.



Ashley J. Burlington, ON
has won a \$250 gift card from Lee Valley.



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- Maximum cutting height: 3 5/8"
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- Approximate shipping weight: 49 lbs.

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- Spindle length: 3"
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14" DELUXE BANDSAW

- Motor: 1 HP, 110V/220V, single-phase, prewired 110V, 11A 1/2, 5A
- Table size: 14" x 14" x 1 1/2"
- Table tilt: 10° L, 45° R
- Floor-to-table height: 43"
- Cutting capacity/throat: 13 1/2"
- Max. cutting height: 6"
- Blade size: 93 1/2" (1/8" to 3/4" wide)
- Overall size: 27" W x 67 1/2" H x 30" D
- Footprint: 23 1/2" L x 16 1/2" W
- Approx. shipping weight: 246 lbs.



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G0555LX Only **\$625⁰⁰**

8" X 72" JOINTER WITH SPIRAL CUTTERHEAD

- Motor: 3 HP, 240V, single-phase, TEFC, 3450 RPM
- Amps: 15A • Cuts per minute: 21,400
- Precision-ground cast-iron table size: 9" x 72 1/2"
- Cutterhead: Spiral with 40 indexable carbide inserts (G0656X)
- Cutterhead speed: 4800 RPM
- Cutterhead diameter: 3"
- Max. depth of cut: 1/8"
- Max. rabbeting depth: 1/2"
- Deluxe cast iron fence size: 35" L x 5" H
- Approximate shipping weight: 522 lbs



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8" x 72" Jointer with Straight Knife Cutterhead

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8" x 72" Jointer with Spiral Cutterhead

G0656X Only **\$1325⁰⁰**

10" 2 HP 115V PORTABLE TABLE SAW

- Motor: 2HP, 115V, single-phase, 60 Hz, universal motor
- Amps: 15A
- Arbor: 5/8"
- Table size: 22" x 26 3/8"
- Blade tilt: Left, 45°
- Arbor speed: 2000-4000 RPM
- Max depth of cut @ 90°: 3 1/8"
- Max depth of cut @ 45°: 2 1/8"
- Rip capacity: 28" right

New!



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13" 2 HP BENCHTOP PLANER

- Motor: 2 HP, 120V, single-phase, 15A
- Maximum cutting width: 13"
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- Knife size: 13" x 1/2" x 1/16"
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- Approximate shipping weight: 71 lb.

New!



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G0889 Only **\$399⁹⁵**

8" X 72" JOINTER WITH BUILT-IN MOBILE BASE

- Motor: 3HP, 230V, single phase
- Total table size: 8" x 72"
- Fence size: 4 5/8" x 38"
- Max depth of cut: 1/8"
- Rabbeting capacity: 1/2"
- Cutterhead knives: 4
- Cuts per minute: 22,000
- Power transfer: V-belt drive
- Switch: standard push button type switch with large off paddle for safety
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- Cutting capacity: 8" left, 32" right of blade
- Maximum depth of cut @ 90°: 3"
- Maximum depth of cut @ 45°: 2 1/8"
- 4" dust port included
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- Powder coated paint
- Footprint: 20 1/2" x 20 1/2"
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Stanley Sweetheart Low Angle Jack Plane

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Toronto, ON

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Best Build

Check out the **Woodworking** section of our forum for our latest "Best Build" thread – a trinket box. This month's winner, Danny Belley, wins a **Veritas Dual Marking Gauge** from Lee Valley.



To find out more about this project, go to: forum.canadianwoodworking.com or simply go to CanadianWoodworking.com and click **FORUM**.

Free Plan

Build a Gorgeous Hall Table

This sleek, modern take on a classic design will look great in almost any home. By using understated tapers, gentle curves and solid joinery this table will also fit in for decades to come.

View this plan and more at:
canadianwoodworking.com/free-plans



Product Watch

Geo Nexus POWER+

Generators are loud and rambunctious – tolerable if you use them outdoors, but unbearable (and unsafe) to use indoors. Not so for the EGO Power+. It's a portable 56V battery powered generator that rivals a lot of gas generators. It generates 3000 watts of peak power and 2000 watts of continuous power. Power household appliances, computers, mobile devices and the like. And because it's so lightweight (about 30 pounds without the battery pack installed) you can use it at the campsite, cottage or while boating. **EgoPowerPlus.com**



Video Links

www.canadianwoodworking.com/videos

Slabbing a
Big Silver Maple



Laguna Woodworking
Pro Shaper

Canadian Quotes –
Mark Salusbury



Forum Thread

Check out these home improvement threads and many others at forum.canadianwoodworking.com

- **Is there life after Sikkens?** – Selecting and applying a finish to exterior wood surfaces is much different than dealing with an interior finish. Learn from a few forum members about what to consider when you're applying an exterior finish, and how to stack the deck in your favour.
- **Window sizing help needed** – Windows often have to be ordered well beforehand, so they can be fabricated. A few of our forum members share some information on the different approaches that are common in different parts of Canada, and how they feel the job should be completed.

Got a question? Join our forum so you can ask our skilled and experienced members any home improvement question you like. It's free, and is just a click away.

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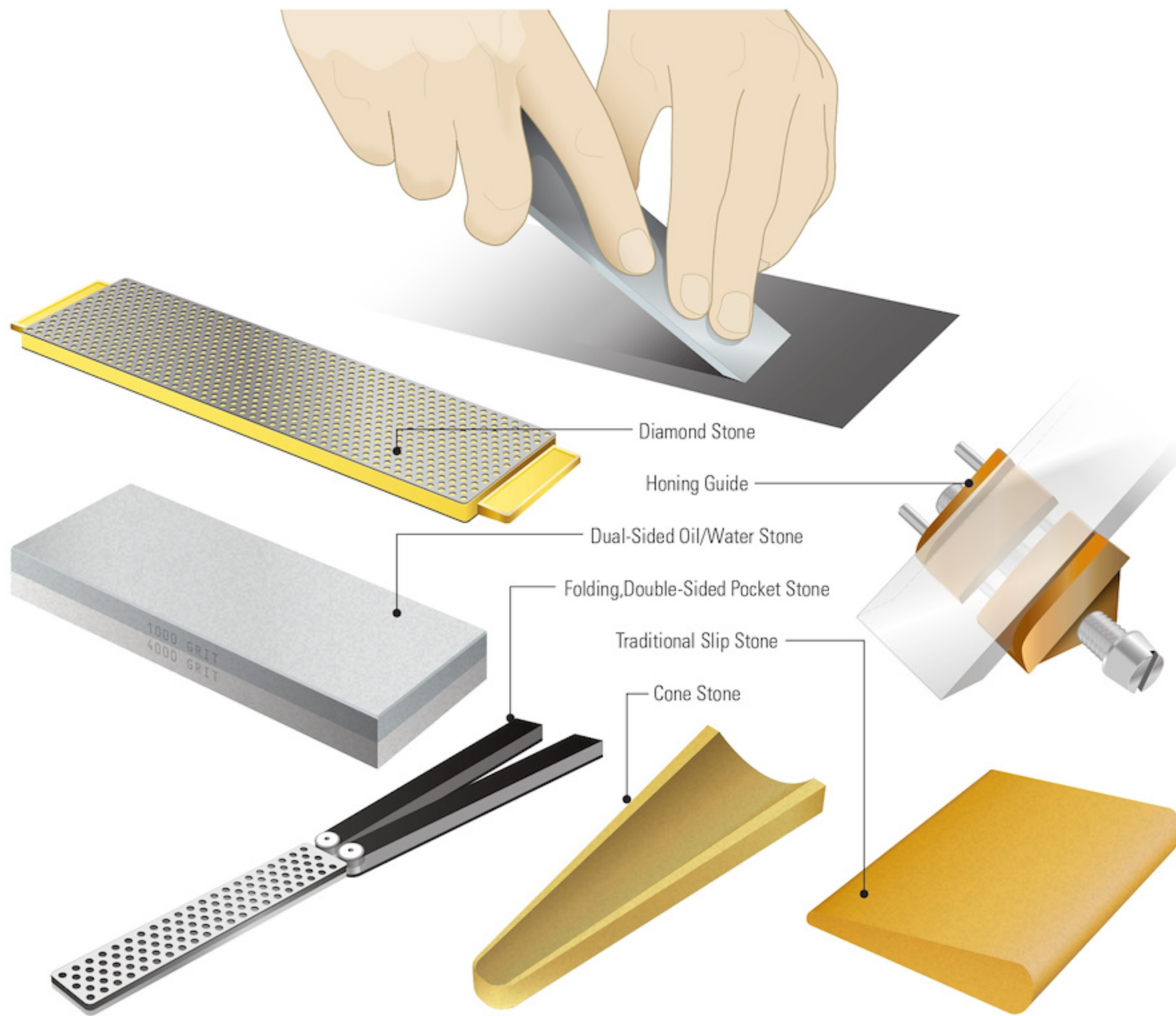
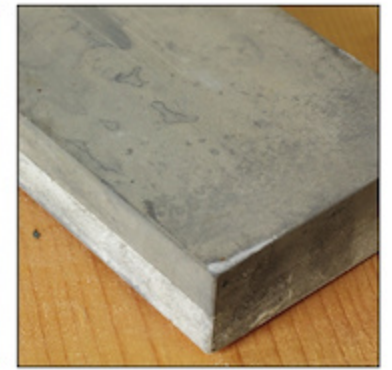
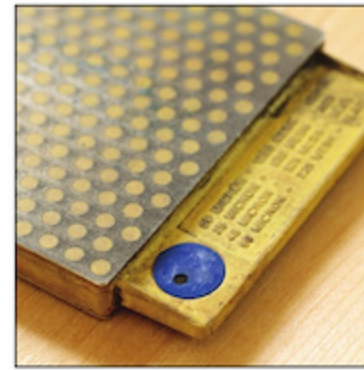
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Sharpening Stones



Generally speaking, if a hand tool isn't working well consider the sharpness of its cutting edge. A **sharpening stone** is used after a grinding wheel and will remove small amounts of steel from both the bevel and the back of a blade, causing those two edges to meet at a very fine point.

Some stones are **double-sided**, offering a different grit level on opposing sides. These stones can offer good value. In the west, sharpening stones traditionally used **oil** to lubricate them. Today, more and more stones use **water**. Though there are slight differences between oil stones and water stones, both types will allow you to obtain a sharp edge. Some water stones require you to submerge them in water for up to 30 minutes prior to using, in order to saturate the stone with water so it will be properly lubricated. There are many powered sharpening systems on the market that will assist with getting a sharp edge with minimal effort.

Many new woodworkers start with a basic full-sized two-sided stone (in grits about 1000 and 4000), and then add other stones as needed. Flat and curved slip stones will help you sharpen tools like carving gouges and router bits.

Price Range (full-sized stones):
\$40 - \$200

Dimensions (full-sized stones): About 3" wide x 8" long x 1" thick

Types of Cutting Materials: Ceramic, Diamond, Aluminum Oxide

Get the Most Out of Your Sharpening Stones

Practice Makes Perfect

At first sharpening can be frustrating, but with practice you'll find a sharp edge can be obtained with little fuss. Stick with it because a sharp edge is crucial when using hand tools.

Don't Drop It

Many sharpening stones will break if dropped, rendering them useless for most tasks.

Get Set Up

Sharpening can be wet and messy. Create a small area that will protect against water or oil so you can focus on the task of obtaining a sharp edge.

Keep it Flat

An older stone that has been dished out due to frequent usage will not provide you with good results. Use another stone, or an abrasive on a flat surface, to flatten a dished stone face.

Consider a Jig

A honing jig will allow you to accurately sharpen most cutting edges to precise angles. They also go a long way to keeping you from digging into the stone with the cutting edge while sharpening.

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Tips for Using a Router (Part 1)

Routers can do so much in a small shop setting. Learn how to use them to their fullest potential so you can harness their efficiency, accuracy and flexibility. Here are 10 things to consider before you even turn your router on.

BY ROB BROWN

- 1 Do Your Homework** — Read the manual, purchase a dedicated book, watch a few videos from a respected woodworking teacher or take a course from an experienced maker to learn the basics.
- 2 Chuck it Properly** — Chucking a bit in your router is taken for granted, but the last thing you want to have happen while routing is for your bit to start bouncing around your work surface while rotating at 20,000 RPM.
- 3 Protect Yourself** — Routers are loud and constantly shoot wood chips. Eye protection is obvious, but hearing protection will allow you to not only protect your hearing, but also direct more concentration at the operation. Dust protection is also important.
- 4 Keep Things Secured** — When routing most workpieces it's important to keep them from moving. Secure them to a work surface so bad things don't happen.
- 5 Don't Climb Cut** — As a general rule, climb cutting should be avoided, at least until you're very knowledgeable about how a router works. Climb cutting can cause kickback, damage to the workpiece and damage to the user.
- 6 Actually...Learn When to Climb Cut** — Although not for beginners, climb cutting can help reduce tear-out and produce less heat.



7 Router Size Matters — Use a larger, more powerful router when working with larger bits. It won't bog down during a cut, it won't tax the router and the resulting cut will be smoother.

8 Bigger Isn't Always Better — A small trim router is very easy to manipulate, can get into tighter areas and is very cost effective.

9 Consider a Router Table — There are times when the only thing better than a router is a router in a properly designed table. You can do additional operations that are virtually impossible with a freehand router, and it can be much safer in many instances.

10 Buy Bit Sets — I have two large sets of bits. The majority of my routing needs are filled with bits from these sets, and when I need something unique I purchase a single bit. This may not improve my routing skills, but it will help make good use of my shop time, as I rarely have to go out to purchase a bit during my shop time.

ROB BROWN

rbrown@canadianwoodworking.com



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Mark Salusbury

...on design, when he works best and his enjoyment of finishing.

BY ROB BROWN



How long have you been building furniture?
For my own enjoyment since 1973 with 15 years as a professional artistic woodturner (1990-2005).

Tell us a couple interesting things about your personal life

I've lived closely to the Yogi Berra quote "When you get to the fork in the road, take it". I like to try things; if they suit me I'll keep at it, if not I move along until the next opportunity presents itself.

If you were not a furniture maker what would you be?

A hydroponic farmer.

In order, what are the three most important items in your shop apron?

A sharp HB Pencil, a 24" Rabone Chesterman rule, a 6" double square.

Do you prefer hand tools or power tools?

Whichever offers the greatest efficiency and best result.

Solid wood or veneer?

I value the benefits of both equally.

Figured wood or straight grain?

Depends entirely on the intended function and aesthetic.

Inherited Vintage Stanley Sweetheart or fresh-out-of-the-box Veritas?

Whichever is the most friendly in my hand and holds the best edge.

Flowing curves or geometric shapes?

I actually prefer to include both in the same piece; geometry provides structure while curves and rounded surfaces offer a complimentary softness and flowing energy.

Favourite wood?

Quartersawn Figured Bigleaf Maple.

Least favourite wood?

Purpleheart.

Centerpiece – Salusbury first made this style of bowl in the early 1990's and has crafted many variations of the theme over the years since. 14" in diameter, the rim of this figured bigleaf maple bowl was dyed.

Mark Salusbury, Salusbury Studios, salusbury@nexicom.net
Location & size of studio – Cavan, Ontario, 600 square feet
Education – Seneca College of AA&T, High Honors,
Audio Visual Technician

quotes

My studio was purpose built 20 years ago. I designed it to offer me the optimum volume and workflow within the most efficient footprint and the most natural light to work by. A 400 sq. ft. shop space with an attached 200 sq. ft. tool/storage room connected via a breezeway to the rear of my garage and lumber storage rack.



I do my best thinking, designing and planning in the morning. After morning coffee I'm most productive until afternoon coffee, stopping for lunch and a rest in between. The rest of the day, and possible the evening, is time for completion and contemplation, nothing heavy mentally or physically.



My favourite tool is the one I'm using at the moment; I parted ways with those that have failed to satisfy me; I enjoy most the perfect union of well designed and executed joinery and while most woodworkers probably think it's heresy, I really enjoy the finishing process, transforming the promise of raw wood into rich, glowing reality with a perfect application of varnish or paint.



Inspiration begins with necessity and is expressed through accumulated life experience and the resultant personal taste.

I'm orderly, exacting, and have a satisfying sense of taste and proportion.



I use paper and pencil sketches to conceptualize, scaled paper and pencil engineering drawings (front view, side view, top view) to plan out proportions and joinery and prototypes occasionally. Most often I can envision and correct my designs enough from my drawings and go straight to making.



I think new makers should remember this quote: "There is hope in honest error, none in the icy perfections of the mere stylist" – Charles Rennie Mackintosh.



A few of my mistakes have made excellent firewood. The root of my failures is always that I tried too hard, worked too hastily and thoughtlessly forced the outcome.



I'm tired of any furniture style that's overtly ornate. Say no more!



Modern adhesives make exposed, complex joinery less necessary; unless it's really necessary for structural reasons,



Number One Chair – This American whitewood chair prototype was finished with three coats of waterborne alkyd semi-gloss finish. Salusbury found the process so satisfying, and the prototype worked out so well, he completed it with waterborne alkyd semi-gloss finish and fabric upholstery for his den.

"Keep it simple". Prove your skill through original design and cleanliness rather than ornamentation.



I'm no longer working commercially but now, and when I did, I only found satisfaction in executing my own designs regardless of the incentive.



When I worked commercially almost all my work came through requests or referrals from galleries.



We can inspire young kids via media and clubs and associations that offer the mentorship and instruction the secondary school system has failed to provide since the 80's.



Effective design is the most misunderstood part of building custom furniture.

ROB BROWN
rbrown@canadianwoodworking.com



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RELATED ARTICLES: Arthur Perlett (Oct/Nov 2015), Steven Kennard (Oct/Nov 2014)
SLIDESHOW: To view a slideshow of Salusbury's work, visit the Videos section of our website.



Saving Scraps For Special Projects

Rather than consigning them to the garbage, or using them as kindling for the summer campfire at the lake, save your scraps so you can make a unique piece of furniture or woodwork down the road.

BY JERRY HAIGH

Okay, hands up...who can honestly say you never have any scraps left over after a project? Clear a small shelf in your shop so you can store all of your scraps there, out of the way of all the action. They do not have to be all the same length.

When there are enough accumulated scraps run them through a thickness planer. Or if you prefer, use a hand plane. Either way the strips will be easier to glue if they are all the same thickness when the time comes.

Sort by colour

Lay them out side by side, making sure each one is straight-edged by running them through the jointer and then the table saw, so that they can be properly glued. Now for the first fun part. The colours and kinds of wood can be re-arranged. It may be wise to leave the layout overnight to see how it looks, or have a second try at arranging them until you like the pattern.

Glue the arranged pieces together. Some shorter pieces can be butt joined as long as the two are the same width. This is easy to do with the table saw. Butt joining pieces will weaken the panel, but sometimes that's not of much concern. It all depends on how the finished panel will be used.

Next, it's off to the workbench where the strips are glued and clamped side by side. Cauls are applied and clamped at each end to keep the pieces from buckling. Narrow strips of newspaper laid on top of the work prevent wooden cauls from sticking to the piece.



Cauls are Necessary – Cauls help keep these thin strips aligned during glue-up. Without them the panels will be warped, or even impossible to laminate in the first place.



Scrape Before it Hardens – After the glue has cured, but before the glue has hardened, scrape the excess off. This will make your life easier down the road, and be easier on your machinery.



Accurate Crosscuts – If one end of your panel is uneven it can be trimmed at 90° with a table saw crosscut sled. You will also notice where Haigh marked lines at the butt joints, so the panel could be crosscut at those lines, removing the butt joints.

After an hour the glue is set. Take the board out of the clamps and remove the surplus glue and any newspaper with a paint scraper. It's easy to see that the long strips are not all of the same width. This will add to the charm of the finished work.

At this point the glued board will not be exactly even, so it needs to be sanded on both sides. You can start with a hand plane to remove the high spots, then move to a random orbit sander on one side. It need not be the finished sanding job at this point. Depending on how much butt joining there has been in the piece, it might be safe to run the panel through a thickness planer. As long as there's a decent amount of strip overlap beside the butt joints it will likely be fine.



Another Caul – When gluing the crosscut sections together, and for adding any edge strips, a caul or two will come in handy.

Short strips?

After one of the edges has been run through the jointer to make sure one side is indeed straight, the piece can be squared off at one end. This can be done in one of many ways. Then a set square is used to draw lines across every one of the butt-end joints, perpendicular to the grain of each strip. Those lines can be cut through, and both ends cut right across. There's nothing wrong with not cutting the panel into short lengths. If you do leave the panel as longer lengths it will be stronger, but it won't have as interesting of a look.

Shift everything

Once the cross cuts are made and the strips are in line they can be shifted sideways so that a random pattern appears. This gives another opportunity for artistic license. Now it's back to the



Serving Trays – A great way to decorate an otherwise simple piece, a small section of short scraps are now the focal point of these trays.

clamps, the glue and the caul. Next comes a second trimming so there are right angles to the shape (using a square pattern is an option now).

Depending on how I'm using the panels, I sometimes like to add thin pieces for an edge. Having said that, if the panel is too

large there can be some cross grain gluing problems, and the joint may fail over time. Any strips that run parallel to the grain are going to be fine, but the pieces running perpendicular to the grain may be problematic.

More elaborate pieces are possible. Trays, side tables and so on. Skirts, edges, and table legs may be anything one fancies, though surrounding the panel with a strong frame, similar to a frame and panel door, is a sound approach. The frame will provide strength, while the panel can move with seasonal changes in humidity.

The time taken on the simplest jobs is mostly waiting for the glue to set. Three or four coasters or hot plates from one collection of scraps can be designed, cut, sanded and finished in under two hours. Tables, trays and other projects will inevitably take longer. I'm sure there are countless design options to show off this sort of gluing approach.



JERRY HAIGH
jerry.haigh@usask.ca



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A Decorative Frame-up

Frames are a great addition to a room, whether it be surrounding a mirror in a bathroom or living room, or a painting in a dining room or bedroom. Use this method, and maybe even include a few decorative add-ons, to add a harmonious look and feel to your home.

Photos by Mark Salusbury
Illustration by Len Churchill

shopnews

BESSEY GearKlamp

Sponsored: With the new GearKlamp, BESSEY moved the handle to make clamping easier. The rail-mounted handle is now offset from the point of contact and allows a wider variety of assembly applications in comparison to more traditional clamps. The GearKlamp reduces or eliminates the need for awkward glue-up workarounds.

The BESSEY GearKlamp also offers a more compact solution than the classic bar clamp. Broad movements of the clamping arm are done with a quick-adjust button that allows one to get to the right clamping position quickly and productively. The final clamping action is completed by turning the handle, which is uniquely positioned around the rail. Visit www.Besseytools.com for more information.



BY MARK SALUSBURY

Recent renovations meant making frames, in a variety of sizes and wood species, to enhance mirrors in several spaces, providing harmonious additions to the style and decor of each space. I used one frame design and construction to complete the commission, altering each slightly to suit while retaining continuity throughout the home.

Different, but the same

Each mirror was a different size, but the scale was such that making frame stock of all the same width and thickness proved perfect. All I had to vary was the part lengths and the depth of the rabbet that would accept the mirror glass. This same design can just as easily be used to surround artwork so it's very versatile and easily adaptable as you'll see.

After designing the finished material thickness and width, I milled and sanded enough stock to rough cut all the lengths I'd need to suit the mandate. All were milled from straight-grained, stress-free stock, which milled easily and remained straight and

true; there's no way to correct bows and twists after assembly and installation.

I wanted the frame profile to include three notable elements; a proud 3/8" bead surround, a 1/8" inner edge to abut the mirror (or glass) as this will be doubled via reflection and anything thicker would look too heavy, and a 3/8" wide rabbet to accept the glass behind the frame. Knowing the thickness of the glass now allows for the depth of the rabbets to be determined and, once established, the angle of the chamfer can be decided upon. I wanted the chamfer to start at the 1/8" inner edge and end at or within 1/8" of the base of the 3/8" bead surround. Drawing this profile boldly and crisply on the end of one piece of the finished frame material allows for quick setup and alignment at each machining stage.

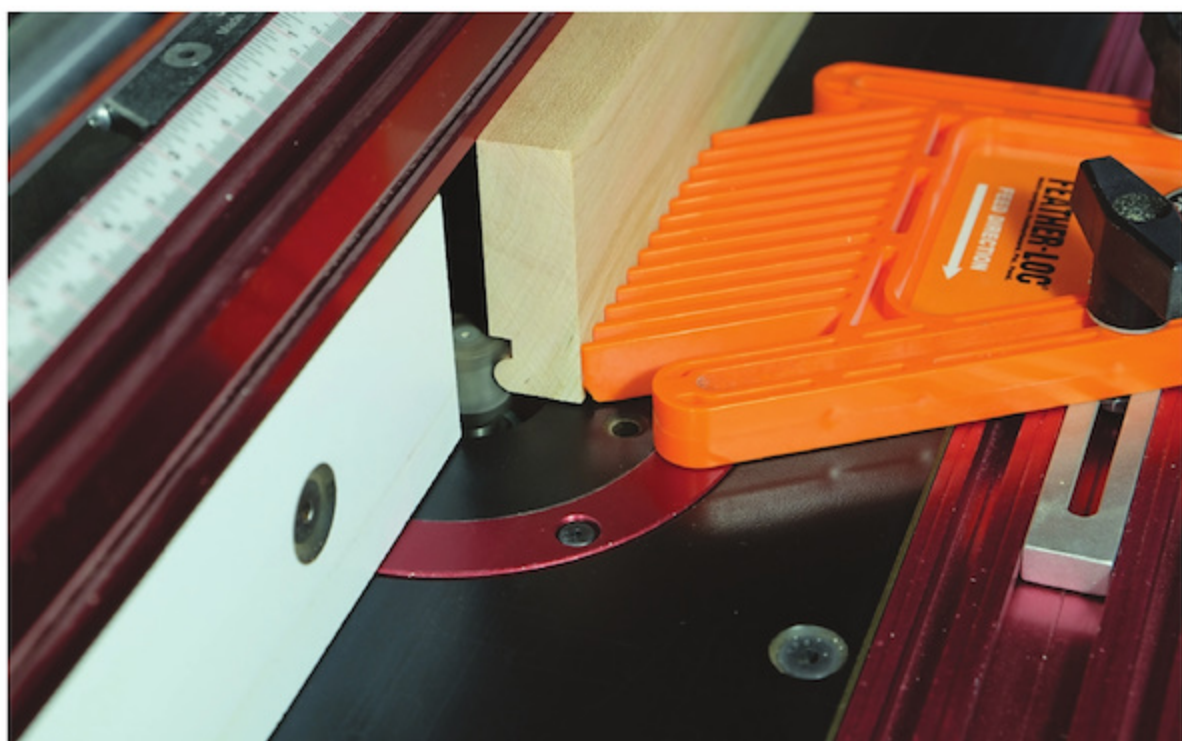
Three easy profiles

First rout the 3/8" bead on the upper outer edge. Next, rip the chamfer that will reveal the face of the frame. Lastly, rout a 3/8" rabbet behind the frame to accept the mirror or glass and artwork. By doing these steps in that order it provides the optimum support and control when machining each stage, especially for the chamfer.

Routing the 3/8" bead profile is done on a router table with a fence and featherboards. The fence and table support the stock precisely and featherboards both above and beside the stock assure consistent positioning, control and backpressure, maintaining a uniform feed rate and a smooth surface needing little cosmetic sanding.



Draw the Details – With the precise profile drawn on the end grain of one of the lengths set-ups can reference off this pencil line. Additionally, order of operations can be numbered on the end grain to help keep you focused.



First, a Bead – The first pass is to create a bead on the outer front edge of the workpieces. This is done with a single pass, assisted by featherboards, for an even finished look.



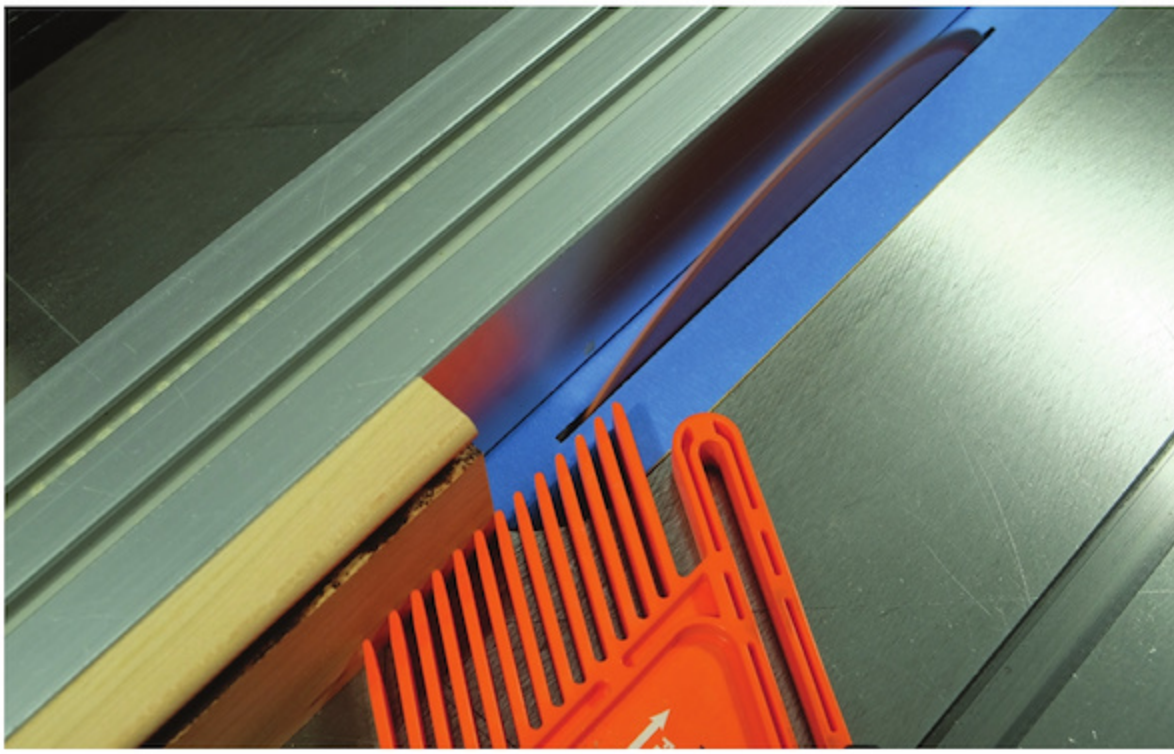
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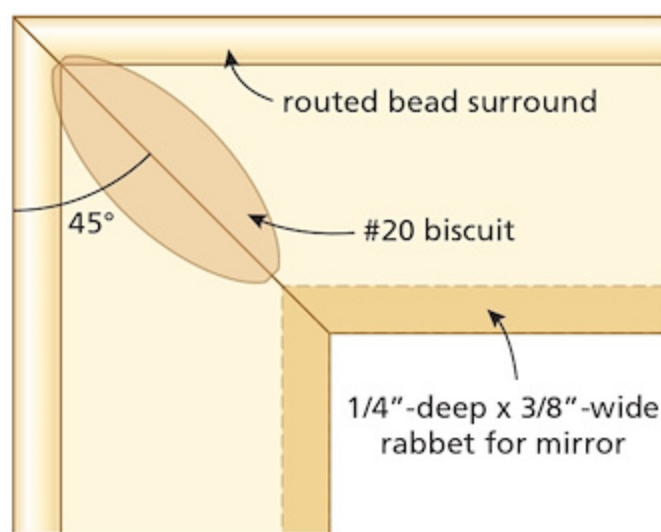
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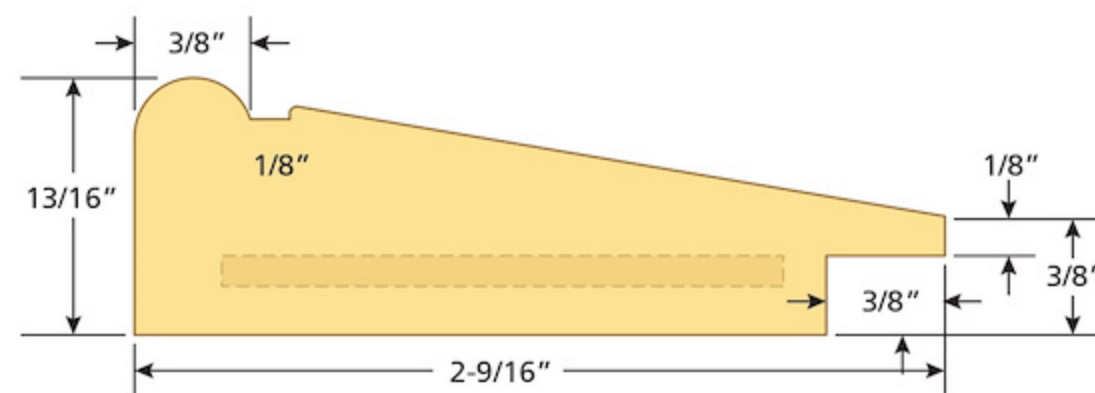
Taper the Face – With the table saw set up to rip the tapered surface onto the face, a featherboard can be positioned to help keep the cut smooth and safe. Notice the forward end of the featherboard doesn't pass beyond the blade.



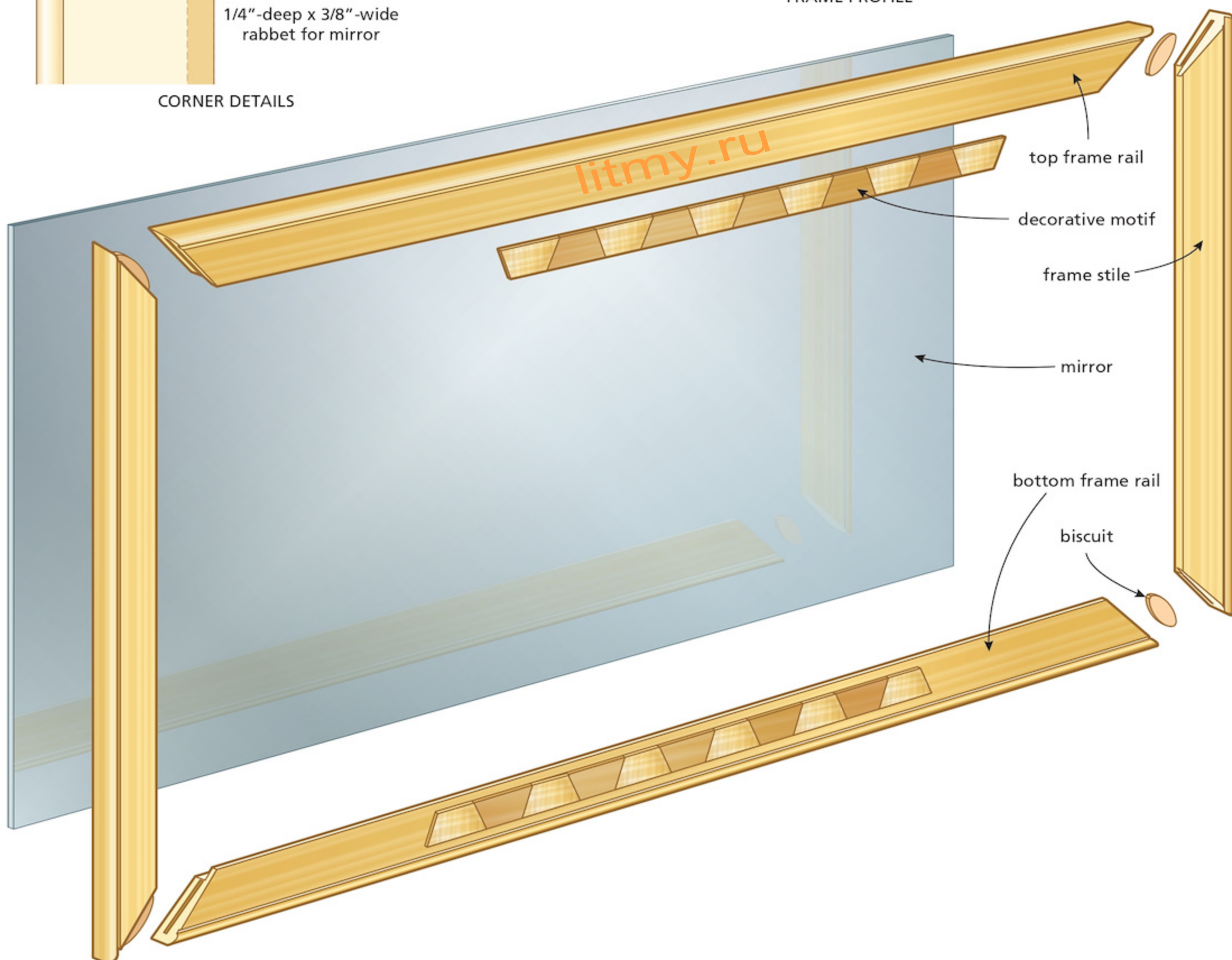
A Helping Hand – A dedicated push block helps keep your hands free of the blade, and ensures the workpiece keeps moving, eliminating any burn marks on the freshly cut surface.



CORNER DETAILS



FRAME PROFILE



A featherboard becomes essential at the table saw when ripping the chamfer. Here, the saw blade will be exposed over 2-1/4", so a featherboard, in addition to guiding and supporting, offers safety, a visual reminder and anti-kickback protection. The resultant cut will be almost glass smooth and burn-free. When you position the featherboard on the table saw's surface ensure it's behind the blade. If it overlaps the blade at all it could cause dangerous kickback during or after the operation.

Enhance safety and quality easily

A stable push block designed to smoothly follow the fence and advance the stock past the blade offers safe, repeatable control of the stock and keeps fingers away from danger.

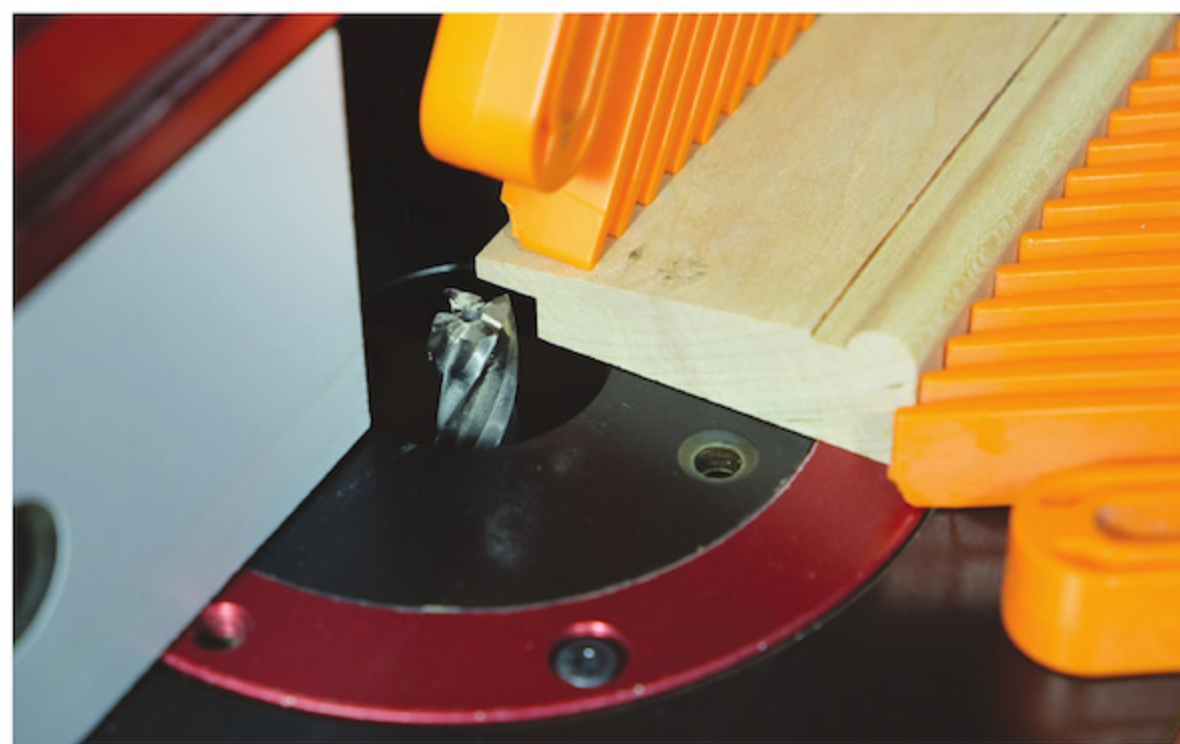
Another simple safety measure that also improves the cut quality is a zero clearance table saw insert. I refresh my insert prior to each session by firmly and smoothly applying two layers of blue painters tape to my stock insert, well trimmed so the stock can't catch on it or wear it as I rip stock. Cover the insert fully, insert in into the table saw making sure it's flush with the table surface then advance the blade up through the tape no more than the final operating height. Safety is enhanced and blowout below the cut is near zero.

A note about ripping anything

Ripping any stock, you need to be sensitive to the resistance of the process and adjust your feed rate and /or depth-of-cut per pass to safely achieve a smooth even pass and good result. Other factors to consider are the style of blade, its kerf width and sharpness. A thin, keen blade with fewer teeth works best.

Thin kerf is fine

I use thin kerf saw blades almost exclusively. The cuts they produce are smooth and controllable plus resistance and the potential for kickback are both greatly reduced; so are effort and anxiety. A 10" x 60 tooth, thin kerf, alternate top bevel (ATB) fine finish blade to rip stock; the blade geometry produces an extremely smooth, controllable cut with good swarf removal. For cross cutting, a 10" x 80 tooth ATB fine finish blade yields an exceptionally clean cut, smooth and crisp, perfect for fine joinery. Used with a pair of stabilizing plates or stiffeners which



Tidy Rabbets – With a bit set in his router table, Salusbury machines a rabbet in the inner edge of each length. He uses two passes in order to be left with a clean cut.

remove any blade flex or vibration in use takes cutting to the next level of smoothness.

Back at the router table

Once the chamfers have been ripped, it's time to rout the rabbet to accept the glass behind the frame. A good width is 3/8" and the depth is determined by considering the thickness of the mirror or glass/matting/artwork plus a margin for mounts (framers points, pins, tape, etc). As my weighty mirrors (5mm glass) will already be fixed on the wall with metal brackets I make these rabbets 3/8" deep. For a decorator mirror (2mm glass) that was added to the job, I'll rout a rabbet just 5/16" deep.

I prefer a machinists' 1/2" diameter, four fluted HSS end-mill for rabbeting. With four sheering cuts per revolution plus a fine end-cutting action, it produces an excellent cut. With the bit set to final height, the first slow pass is a shallow 1/16" to ensure crisp edges. The second pass removes the remaining 5/16" of the rabbet's width.

After shaping, and while the stock is rough length, I sand the profile smoothly and crisply then prepare to mitre the parts to final length.

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Repeatability – Once the frame stock has all been profiled it's time to cut the different parts to length. Salusbury's favourite approach is to use his mitre guide and stop block.

To get these lengths

I take the dimension of the mirror/glass, add 1/8" for margin plus twice the width of the distance between the rabbet shoulder and the outer edge of the frame stock. For example, for my 18" wide mirror: $18" + 1/8" + 2 \cdot 3/16" + 2 \cdot 3/16" = 22\text{-}1/2"$ framing material length tip-to-tip after mitering.

A precision mitre guide or shop-made sled, either fitted with a stop block, dials in exact, repeatable angles and lengths.



Time for Biscuits – Biscuits are essentially loose tenons, and they are quickly and easily machined to locate the corners and add strength to the frame.

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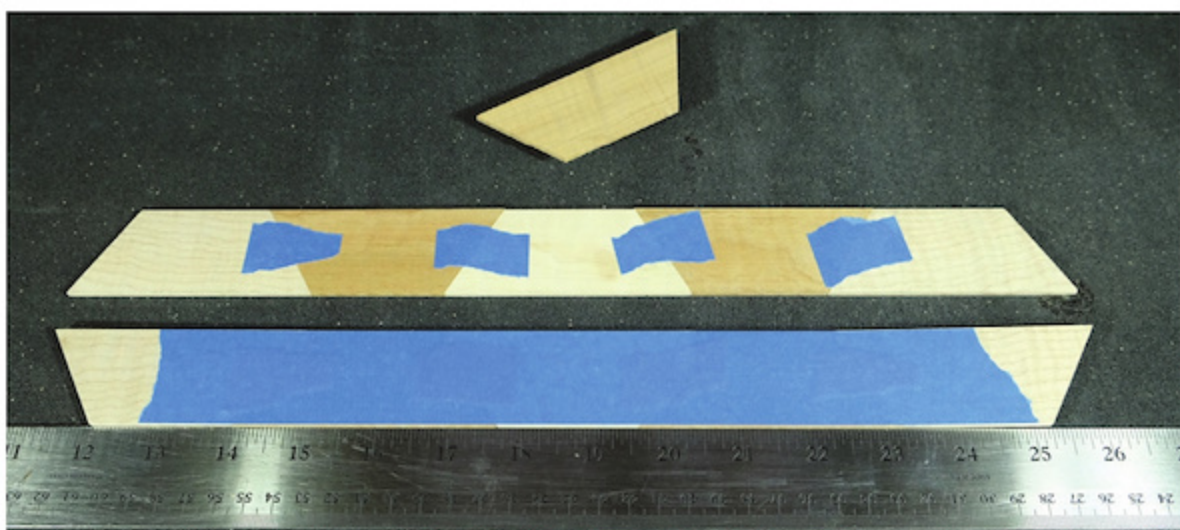
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Tight Appliqués – Salusbury used shop-made veneers that, when taped together, created appliqués that match his bathroom tile.



Clamp it Up – Using one of the tapered offcuts from the ripping operation earlier in the project, clamp the lightly glued appliqué lengths in place.

Floating tenons

To join the mitred corners, I mortised slots for #20 biscuits, centred within each mitre, using a plate joiner. A floating tenon, biscuits are available in a variety of sizes to suit projects large and small.

Assembly

Next, I dry assemble each frame, alternating parts if required, making certain everything aligns, fits and assembles smoothly, precisely and fuss-free. Now's the time to make any tweaks to avoid anxiety during glue-up. Satisfied, I lightly mark each part with a symbol or letter for at-a-glance final assembly.

Titebond III offers long open time for a relaxed glue-up, plus produces a strong waterproof bond once cured. A 1/8" dowel or popsicle stick and an acid brush make good applicators. Clamp each assembly on a known perfectly flat surface to avoid a twisted frame and check each corner for square before the glue sets up; they should be if your lengths and mitres were exact.

After an hour, remove the clamps, pare away any slight squeeze-out and sand the frame overall using a sanding block and fresh P220 grit paper, preserving defining details.

A cool appliqué

To celebrate a tile design in one of the rooms, I appliquéd a pattern created from shop-made veneers onto the mirror frame. Assembled face-up, I taped the individual pattern pieces together tightly then applied a full length strip of tape overall. Next I centred it on the frame and added a strip of tape along one long edge,

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forming a hinge, flipped the assembly and applied a small amount of glue using an acid brush. A tapered glue-block made from a chamfer ripping, complimenting the angle of the frame's chamfer, allowed me to clamp flatly from the rear of the frame, fixing the appliqué in place while the glue dried.

Getting ready to apply three coats of waterborne varnish, I misted the frame uniformly with distilled water (no stain causing minerals therein). Once dry I gently block-sand with fresh P320 grit paper, levelling all raised fuzz and easing sharp edges and corners.

Finishing

I spray three coats of waterborne varnish (my choice is Target Emtech EM 2000WVX Gloss) sanded gently between coats. I like the sheen and transparency of gloss varnish for this application, but if I want a duller result, I'll buff gloss varnish with a grey micro-fibre pad to simply knock the sheen back as much or as little as I'd like; satin and semi-gloss varnishes employ fine dulling agents which obscure the rich vibrancy of a wood's natural tones, grain and figure.

Secure the Mirror – Salusbury used Bristol-board, along with some DAP to hold the mirrors in place. Framers points, brads or other hardware could be used to secure the mirror or glass in place.

Finally

The larger mirrors are hung using metal brackets so the frames are applied and secured using dabs of silicone or other such adhesive, temporarily aided by painters blue tape until the adhesive has cured. The smaller decorator mirror was placed within its rabbet and backed by a fitted sheet of Bristol-board, behind which several "framers points" or small brads driven into the frame would hold the mirror in place; instead I use 2" long beads of clear DAP bathroom caulk / adhesive in each corner and midpoint, allowed to cure overnight for a resilient backer. Now it's time to stand back and enjoy the frame; an enriching addition to any space.



MARK SALUSBURY
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This is a Push-over

One of the most daunting woodworking shop tasks is ripping stock or parts on a table saw. Especially when the stuff is small and/or close to the rip fence. This simple jig will calm your mind, give you confidence and allow you to better control the workpiece while making ripping operations.

BY MARK SALUSBURY

You want to push the stock past the spinning blade deftly to feel you have control over the cut but you're rightfully afraid of being cut or worse...the dreaded kick-back. Push sticks have been around for ages, are better-than-nothing extensions for your hands and fingers, but merely keep your body parts further away when disaster strikes. They really offer little more than misplaced confidence.

What's needed to rip stock safely, with confidence, is a feather-board and a "Pushover". The featherboard, shop made or store bought, exerts lateral pressure, keeping the stock snug to the rip fence while also providing comforting anti-kickback insurance. The Pushover solidly supports the stock, and the resulting off-cut, from before the cut to beyond the blade, keeps your fingers away from the action and helps prevent the stock from potentially being lifted by the rising rear of the spinning blade when/if unexpected tension in the stock rears its ugly head.

Photos by Mark Salusbury

What is this magic device?

I make my Pushover from straight-grained hardwood, three #10 woodscrews with washers, a stout metal grip and some glue. The design is flexible so it can be made to suit whatever rip fence it's saddling. Overall dimensions aren't critical, though some general guidelines will help. Most dimensions will have to be determined according to the width and height of your rip fence. It comprises five principal parts; a top, a side, a shoulder, a leg and a grip.

What's important is:

- it's long enough to not tip forward when pushed along the fence
- it's precisely supported by the top of the fence and/or the saw table on both sides of the fence
- its rear-mounted sacrificial push "leg" be positioned snug to the side of the rip fence yet free, allowing the Pushover to glide easily along the fence.

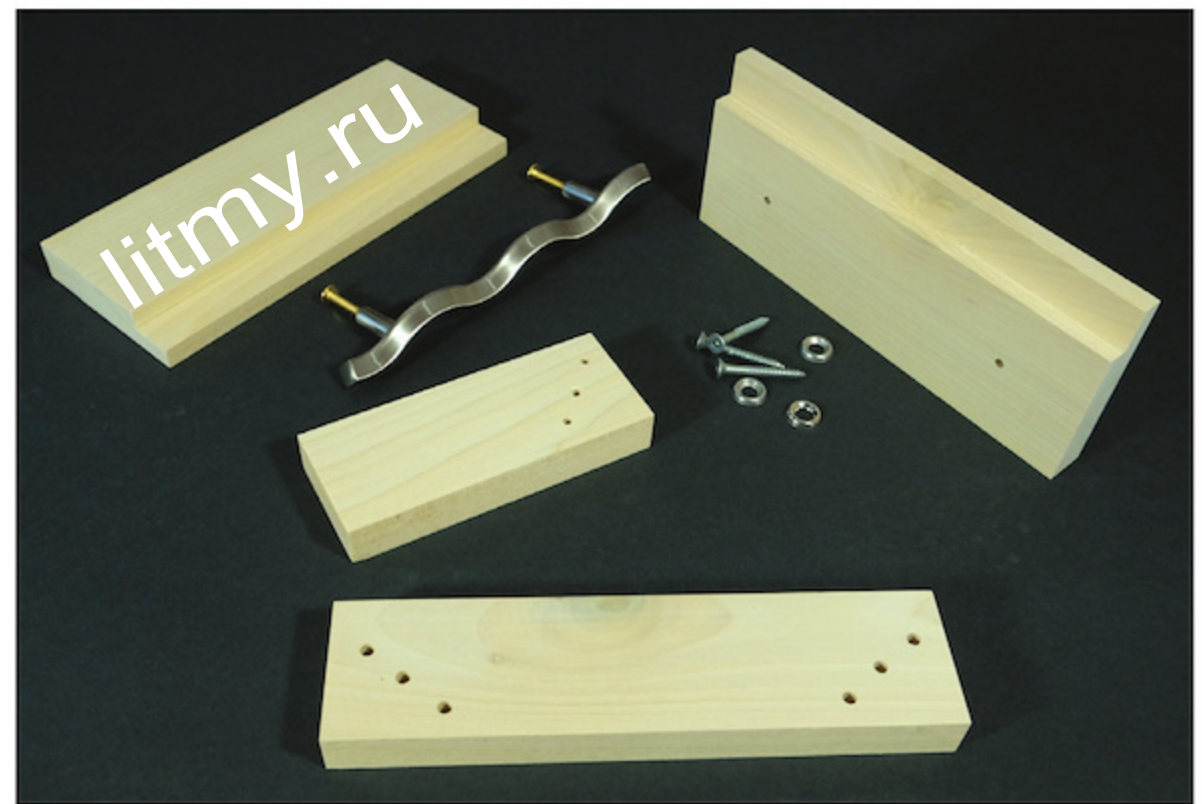
8" is a good length, stable yet small enough to keep close-at-hand and put in place when needed, but not bulky/awkward. My rip fence has a smooth supportive top tuned quite parallel to the table top so my Pushover rides the fence-top and the sacrificial "leg" and opposing side stop 1/32" short of the table. Otherwise, the leg and side could come down to be supported by the table. Regardless, the inner width between the side and the leg should be fixed so a shim the thickness of a playing card can be pressed in on one side of the fence when the Pushover is in place.

The shoulder

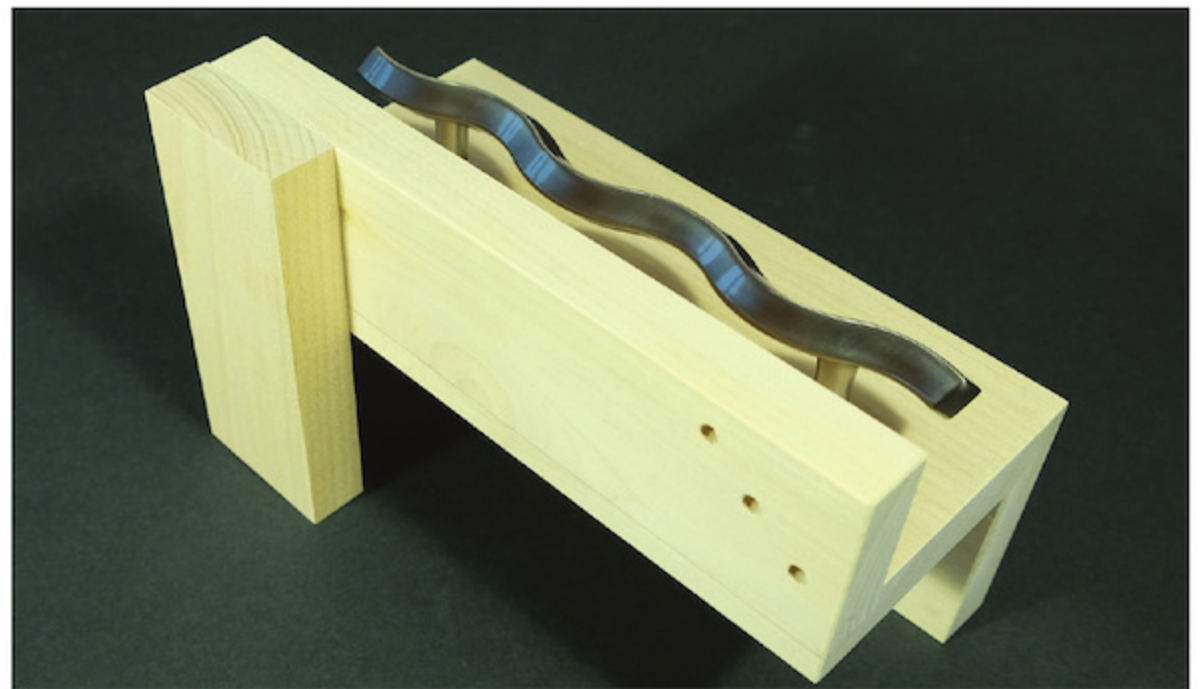
The shoulder should be tall enough that it provides solid support for the attached sacrificial leg but not so tall that it interferes with your grip. Holes drilled to clear three #10 screws at both ends of the shoulder allow the mounting of a sacrificial leg at either end, making the Pushover equally adaptable for use on either side of the rip fence, depending on the task at-hand.



Helping Hand – If you use one, position the featherboard just behind the leading edge of the blade. You'll notice here how a portion of the leg has been cut away, as a pass has already been made. If this leg gets too small you can easily replace it.



Unassembled – The parts of the Pushover, all ready for assembly. Notice the trio of holes on either end of the longer piece at the bottom of this photo. This part is called the shoulder. Depending on which side of the rip fence you will be using this rip jig on you can attach the sacrificial leg to the appropriate end. Don't use glue for this as you may want to change sides down the road.



All Together Now – Assembled, the jig can be used on one or the other side of the rip fence. It's shown here to guide a workpiece on the right side of the rip fence.

In use

If you've squarely crosscut the stock you're ripping at both ends, the Pushover becomes an extension of your hand as you pass the stock over the table, between the fence and featherboard while its sacrificial leg guides the stock past the spinning saw blade. The first pass will rip the profile of the cut into the leg so the leg thereafter will safely compliment the off-cut as well as the stock. The leg can be easily changed to offer safe support to match the task at hand.



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WATERBORNE FINISHES

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Waterborne finishes have improved quite a bit over the past few years – to the point where they make an excellent finish for just about any woodworker.

BY CARL DUGUAY

In particular, waterborne (aka water based) finishes offer a lot of advantages for DIYers and hobbyist woodworkers, especially those working in small shops. You can use a waterborne finish in place of just about any other film finish (varnish, polyurethane or lacquer) on just about any wood surface (furniture, cabinetry, trim work and flooring). While it can be sprayed on, it's likely that most DIYers and hobbyists will brush it on, which is what I do.

What is waterborne?

If you've been woodworking for any length of time you've no doubt heard about waterborne finishes, even if you haven't tried them. Essentially, it's any finish that uses water as a thinner and some kind of organic compound, such as glycol ether, as a solvent. If the product says to "clean up with water," then it's a waterborne finish. Waterborne is just another name for water based – though perhaps a more accurate moniker. Unlike shellac or lacquer, which can be dissolved, respectively, by alcohol or lacquer thinner, a waterborne finish can't be dissolved with water.

Waterborne finishes also contain resins (along with some chemicals) that are dispersed in the water, so you'll see these products variously labeled as waterborne varnish or waterborne polyurethane (containing a urethane or urethane/acrylic resin blend) or waterborne lacquer (containing acrylic resin). The water and solvent evaporate, and the resin coalesces (merges) into a film on the surface of the wood, which is why they're referred to as coalescing finishes. As with any other film finish, they're available in gloss, semi-gloss and matte sheens.

While there have been various problems associated with these finishes in the past, the new generation of waterborne finishes are pretty darn good. Manufacturers are constantly improving both the quality of the resins they use, and their formulations (the secret recipes) for blending the various ingredients, to make the finishes easier to apply, tougher, more durable, and more resistant to scratching, heat and solvents.

Advantages of waterborne

There would be no reason to switch to a waterborne finish if it didn't offer some tangible advantages. The most important reason, in my mind, is that they offer a level of toughness and durability comparable to other film finishes. They are also a lot quicker drying so that less dust will settle and dry on the finish. You can usually re-coat your project within a couple of hours.

Waterborne finishes are also the clearest finishes you can get, and they won't yellow over time, as is common with oil-based finishes. However, some waterborne finishes, such as General Finishes Enduro-Var now have an amber cast that mimics the traditional oil-finished look.

They are also better for your health and the environment, and are safer to use. They have very low VOC (volatile organic compound) levels, they're non-toxic, non-polluting, virtually odour free, and they're non-flammable.

Cleaning up after applying a waterborne finish is a piece of cake. Water, a bit of soap, and you're done.

Some issues with waterborne

A common complaint with waterborne finishes is that they raise the grain – which shouldn't be surprising, given that there is water in the finish. While you could moisten the wood surface to raise the grain and then sand away nibs before applying the finish, it's quicker to use the first coat of the finish as a sealer. It's unlikely that anyone's shop is so dust free as to preclude denibbing between applications of finish anyway. I use P320 or P400 sandpaper between coats.

Waterborne finishes are, however, more finicky when it comes to temperature and humidity. They like to be applied when the temperature is between 70 and 80 degrees, and the humidity is no more than 70%. If your shop is too cool, turn up the heat. You can even warm up the finish by putting the can in a bucket of warm water. If your shop is too warm or too humid, add a dry-time extender or small amount of distilled water to thin the finish. You'll find this also helps when finishing a large project. Make certain you use an extender specifically designed to work with waterborne finishes. The only one I've used is General Finishes Enduro Extender.

The characteristics that make waterborne finishes exceptionally clear, which is often desirable on light-coloured woods, are not so



Starts White – Water-based polyurethane is white in the can but turns clear once it's on the wood's surface.



A Clearer Finish – Oil-based finishes add a darker, richer look to most woods, and that involves imparting a yellowish tinge to the wood. Water-based finishes don't add nearly as much yellow to the overall colour of the finished wood. This is especially important for people finishing a light-coloured wood, like the maple frame in this cabinet.



Smooth the Surface – Water-based finishes raise the grain of wood, mainly after the first coat has been applied. Sanding between each coat will smooth the surface for the next coat to go on smoother.

attractive on darker woods that tend to look drab. To enhance the grain you can stain or dye the wood before applying the finish, or add a dye directly to the finish.

Brush on

Because I now work in a fairly small shop, I apply finishes with a brush. I've found that I get much better results on waterborne finishes using a fine synthetic bristle brush with flagged bristles (Chinex or Taklon are good choices, along with Gramercy synthetic badger-hair brushes). I've not used foam brushes or applicator pads, so can't attest to how well they work.

You'll need to modify your technique a tad. Because these finishes don't flow as well as other film finishes, and they dry very quickly, you don't want to go back over your work. Lay down a single coat, and then walk away. Don't worry too much if you miss the odd spot – you'll cover it on your next application. The finish will be dry in a couple of hours, enabling you to lay down a follow-up coat. Because of their high solids content, waterborne finishes build up quite fast – typically three or four coats is all it takes.

It's a good idea to use your brush solely with waterborne finishes, and to clean it thoroughly after each use. Work the bristles back and forth under warm water to remove the excess finish, and then add a little dish soap to the brush and work it through completely. End off by rinsing the bristles thoroughly, and wrap the brush in Kraft paper or Scott towels held in place with an elastic band. This allows the bristles to dry while maintaining their shape, and keeps shop dust from contaminating the bristles (and your finish).

Once a can has been opened, I always strain the finish through a paper paint strainer before I use it again. Any dried bits of finish that fall into the can won't re-dissolve – they'll just end up on your project.

Rubbing out

Just like other film finishes, you can rub out a waterborne finish. It's best to wait at least a couple of weeks, longer if you can. I use the same technique as when rubbing an oil-based finish, except I use synthetic pads rather than steel wool and substitute mineral oil for mineral spirits. I've had better luck rubbing out waterborne



Brush Options – Some woodworkers swear by a foam brush when applying a water-based finish. Others prefer a more traditional synthetic bristle brush.

lacquer finishes than waterborne polyurethane, possibly because there's more acrylic in the lacquer finish.

If you've not used a waterborne finish before, or it's been quite some time since you last used one, give it a try. I think you'll be quite pleased with the results.

Sources: GeneralFinishes.com, Minwax.ca, Saman.ca, Rustoleum.ca



CARL DUGUAY

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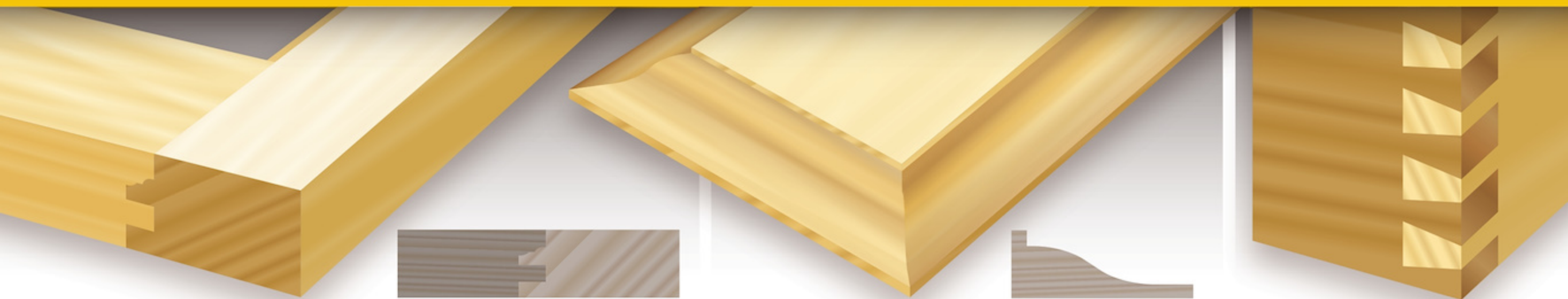
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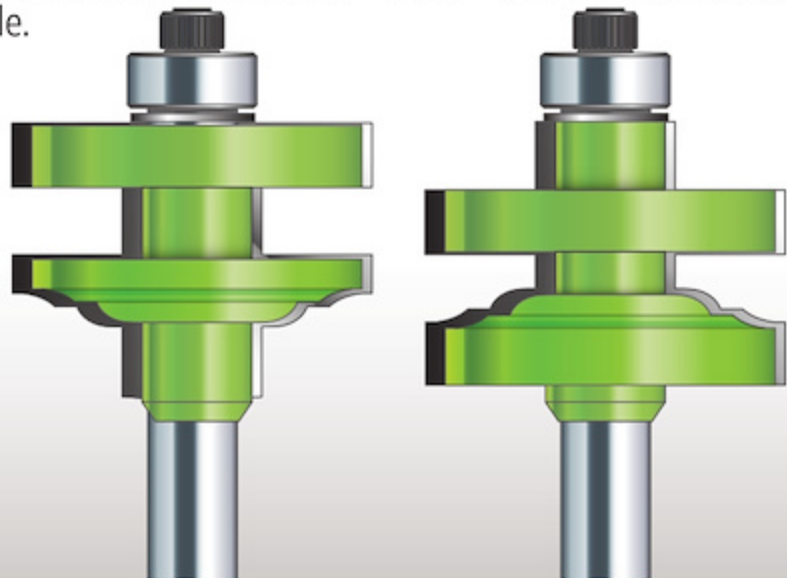
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INTRODUCTION TO Router Bits



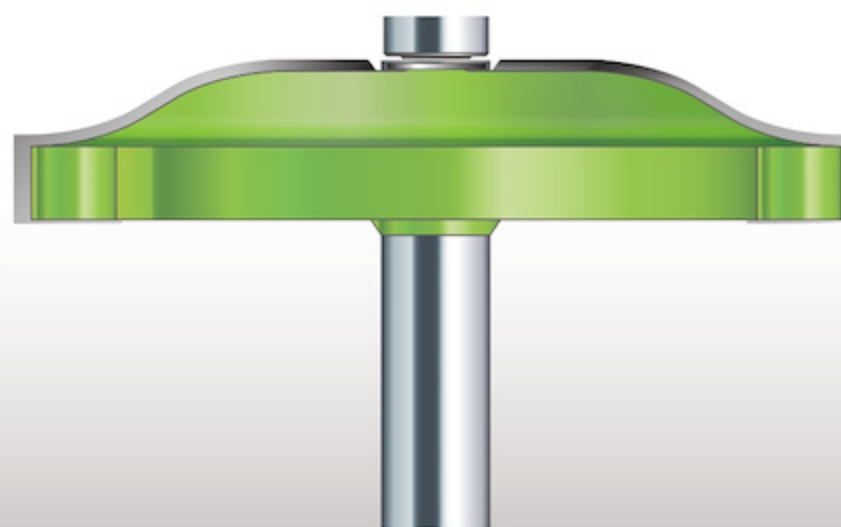
RAIL & STILE

Also known as frame and panel bits or cope and stick bits, they're available in many profiles. These bits machine the male and female portion of the joints that connect door and panel rail and stiles. Generally for material between $\frac{3}{4}$ " and 1" thick. Must be used in a router table.



PANEL RAISING

Used to produce a panel with an edge thin enough to be captured by the profile of a rail and stile of a panel or door. Available in many profiles. Best used in a router table.



DOVETAIL

Available in a wide range of widths (from about $\frac{1}{4}$ " to 1"), lengths and angles (from about 7° to 14°). Dovetail bits can be used with a jig to create through and half blind dovetail joints, as well as with a straight edge / router table to create sliding dovetail joints.



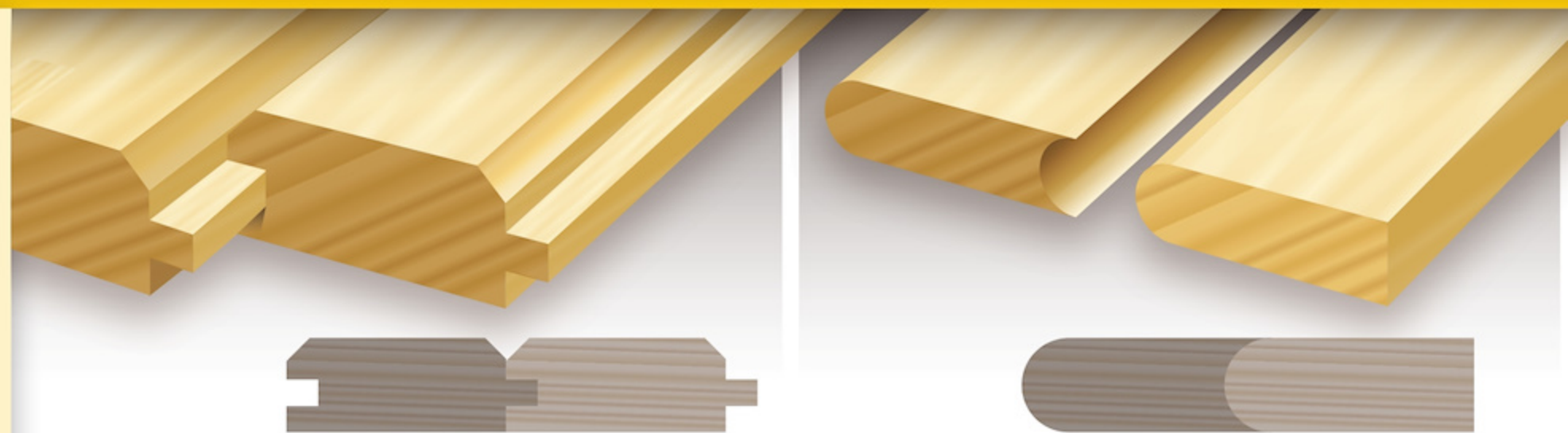
- Many common woodworking joints can be created with a router
- Machining joints with a router is generally best when the amount of material removed by the router is minimal; multiple passes sometimes helps, but in some instances this is impossible
- Best to use $\frac{1}{2}$ " diameter shanks for routing joints, as the bit is less likely to break
- A router table is sometimes necessary to create some of these joints
- There are times when jigs are needed in order to properly create some of these joints

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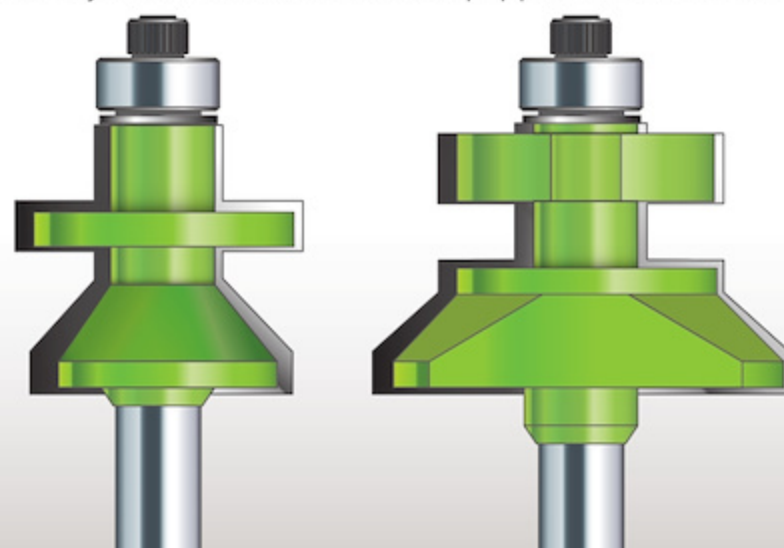
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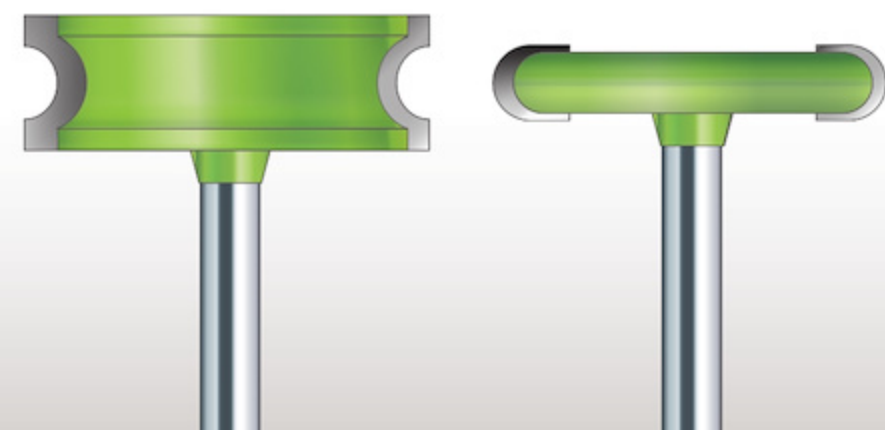
V-JOINT TONGUE & GROOVE

Often used to produce a slightly decorative edge on, as well as securely join, lengths of wood for back panels or solid wood flooring. A 45 degree chamfer is left between adjoining boards. Though they often have a bearing, these bits are generally used in a router table equipped with a fence.



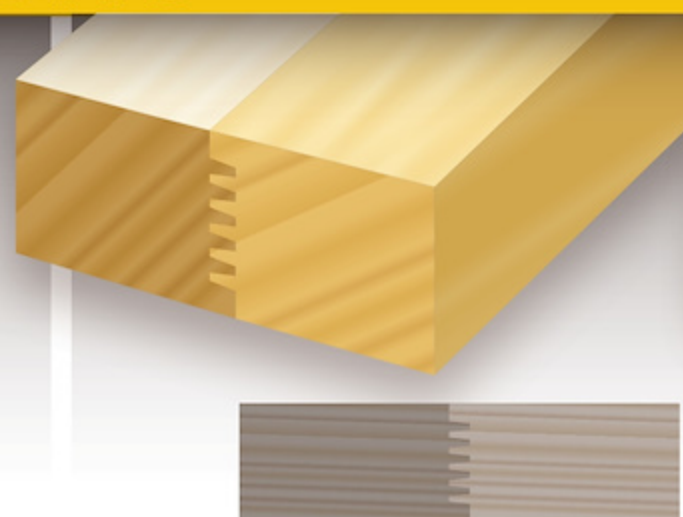
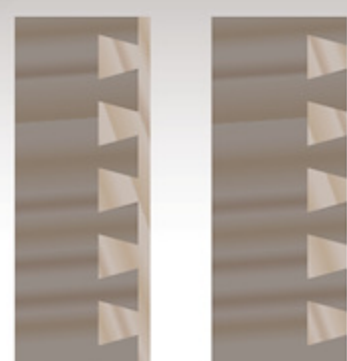
FLUTE AND BEAD

Also called 'canoe bits', these bits machine a gentle radius on the edges of workpieces that allows mating parts to be edge jointed at a bit of an angle, similar to the long strips that make up the exterior of a traditional cedar strip canoe. These bits should never be used freehand.



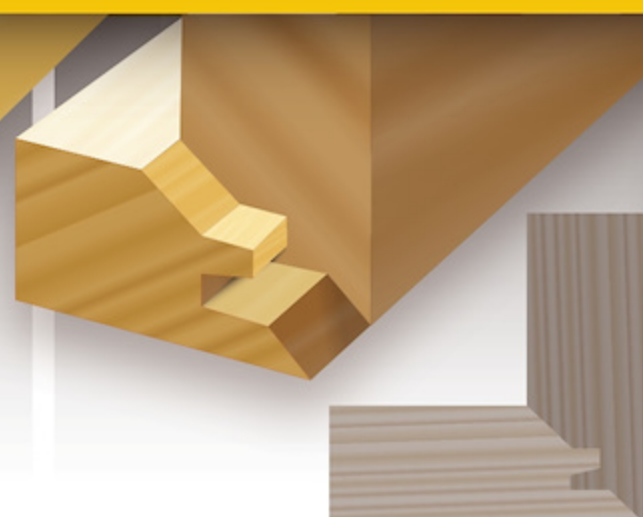
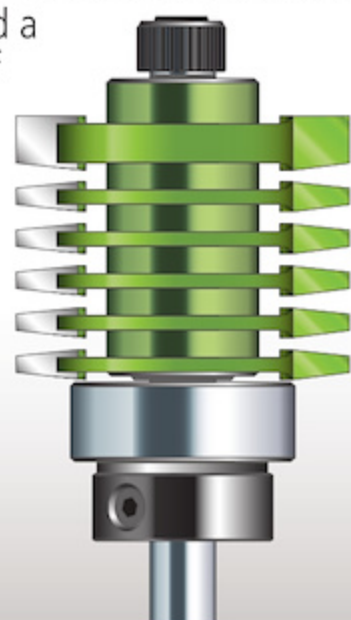
JOINERY

ROUTER BITS



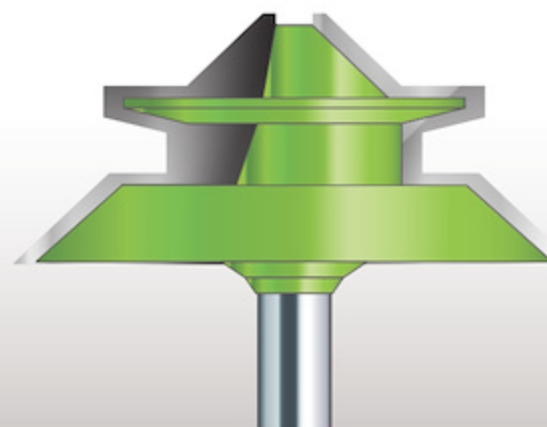
FINGER JOINT

A finger joint typically joins wood end-to-end with a strong joint. The fingers of the resulting joint come into contact with one another and a large amount of surface area is created. It's often used on end grain, though it can be used on side grain too. These bits are usually used in a router table.



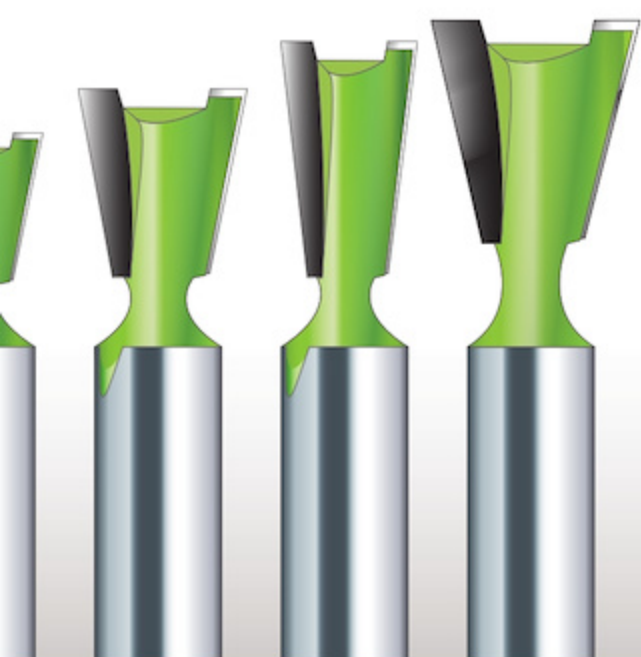
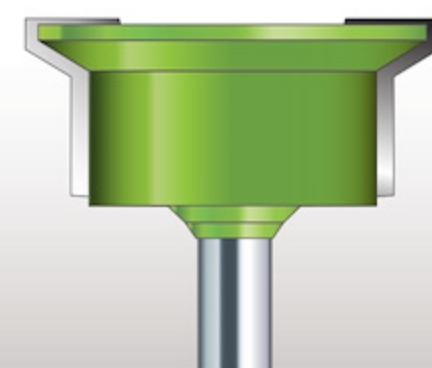
45° LOCK MITRE

Used with a router table and fence, this bit machines a 45 degree mitre joint with a small spline and groove towards the center of the joint. The spline fits into the groove, locates the joint precisely and creates an even stronger joint between the two workpieces.



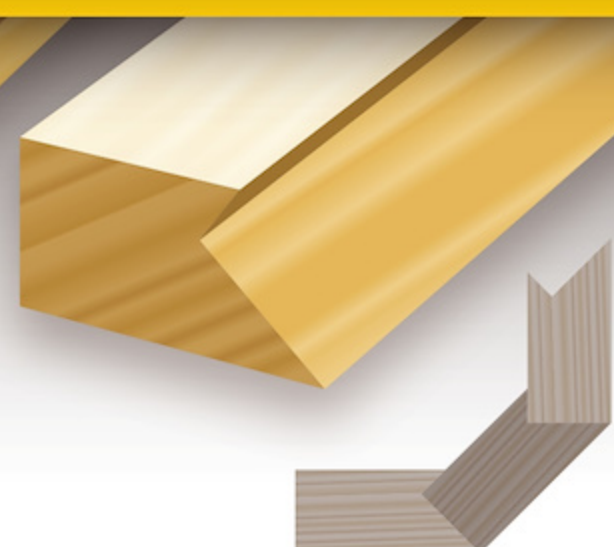
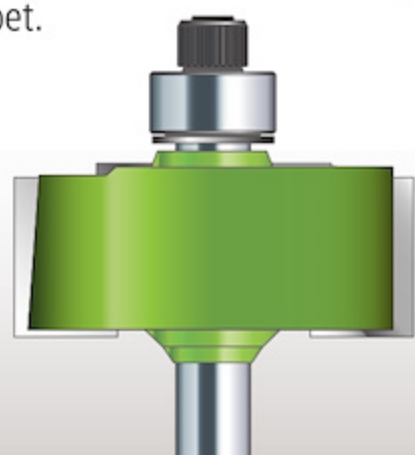
DRAWER LOCK

Essentially a rabbet joint for joining drawer corners, but with the addition of a small groove and tenon that accurately mate, ensuring the joint is not only seated properly, but is stronger than a regular rabbet joint. This bit should be used in a router table equipped with a fence.



RABBET

A simple bit that can be used freehand or in a router table. A bearing traces the profile of the workpiece, while the cutters machine a rabbet in the upper edge of the workpiece. Different sized bearings adjust the width of the resulting rabbet.



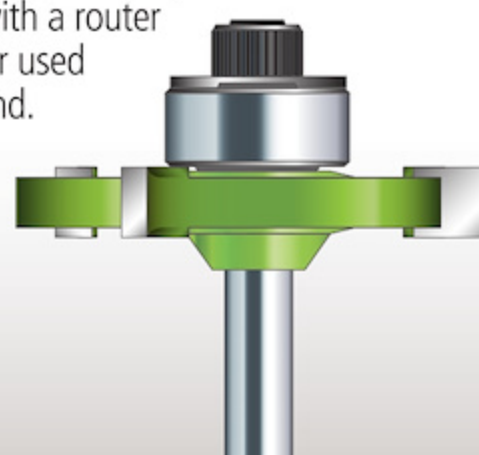
BIRD'S MOUTH

Typically used to create joinery for straight or tapered columns, these bits are great for creating joinery with columns of 6, 8, 12 or 16 sides. The joints make column assembly easier and more accurate. These bits should always be used with a router table and fence.



3-WING SLOTTING CUTTERS

Used to machine a groove in mating pieces to assist with alignment and strength. Once the grooves have been cut a spline needs to be cut and inserted into the grooves. The spline and grooves can be glued to increase the strength of the joint. These bits can be used with a router table or used freehand.



STRAIGHT

Not a dedicated joinery bit, though straight bits can be used to create many joints including rabbets, dados, grooves and mortises. Straight bits are available in a wide range of diameters and lengths, and can be used freehand or in a router table.







The Cast Iron American Style Block Plane

One of the most common and practical hand planes of all time, the block plane has seen many iterations over the decades. Learn a bit more about how it became the tool we all know and love today.

BY DOUG EVANS

It has always been a mystery to me why the versatile cast iron block plane never really received a great deal of marketing fan-fare during its dramatic rise in popularity in the early 1870's. If there's one hand plane we still find in a woodworker's kit, the most likely would be one of the many varieties of the block plane.

The historical path to the origins of the cast iron block plane in North America is "overgrown". The size, form, and function changed across continents and many years. It is amusing that some 25 years after the relatively quiet introduction of the first North American block plane; it was more or less copied... twice... and was at the centre of one of the greatest woodworking tool battles in North American hand tool history.

Photos by Linda Stella

Ancient history

The small plane that you can hold in the palm of your hand was for many years typically a much larger hand tool. In wooden body form (the strike block and the smooth block) the stresses involved in securing and maintaining a bevel up iron at a low angle dictated bulkier arrangements.

In wooden planes, heavy bolstered cheeks helped to secure the wooden wedge and tapered iron. It is interesting to note that the large low angle wood planes were actually called block planes. Those with straight sides were called straight-blocks. Those with curved sides were called smooth blocks. Due to the wear in the throat area of a wooden low angle plane commercial makers developed a sacrificial vertical tapered piece that formed the lead edge of the throat. These were called strike block planes.

Almost all of the early European metallic hand planes were low angle bevel-up planes. They were custom made and very expensive to produce. Tapered irons were secured with wedges designed to fit under metal bridges. Most were intended for marquetry and mitre applications, where their much longer life justified their cost. Very few of these early planes survive.

Small block planes

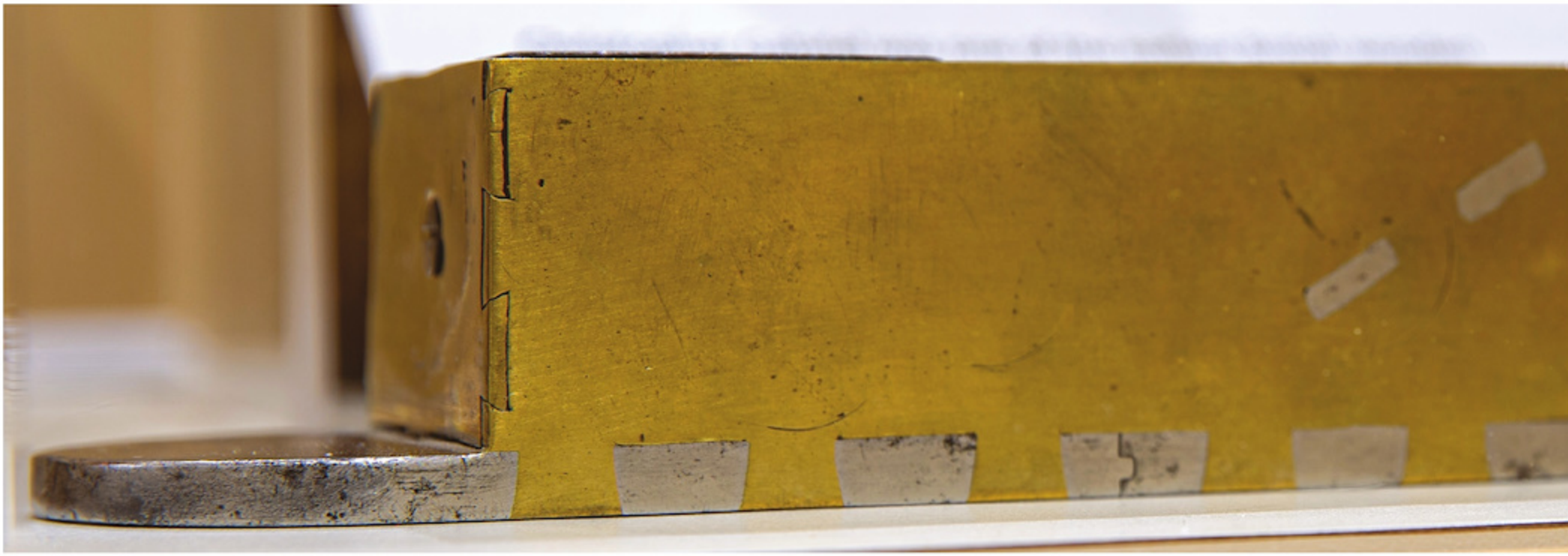
Some of the European metal planes were made in a smaller size, but these were very rare chariot style planes from the continent. Later on, about the same time that the cast iron block plane was developing in North America, commercial British plane makers were making cast chariot block planes.



Historical Examples – Starting at the front, left, and moving counter-clockwise; Stanley No 9 block plane; Stanley No 25 transitional block plane; Mathieson (made by Spiers) dovetailed steel improved mitre plane, 1870, Ayr, Scotland; wooden strike block plane, unmarked, United States; and at top is a Christopher Gabriel dovetailed brass and steel mitre plane, London.



Small Block Planes – From left to right, two wooden smooth planes – their bevel-down irons do not make them block planes, Moir, Scotland; Mosely cast iron chariot block plane (probably made by Norris); and an unmarked pattern makers cast brass chariot block plane (Great Britain, mid-to-late 19th C).



Dovetailed Plane – Detailed shot of a Christopher Gabriel dovetailed brass and steel mitre plane. Production dates for this plane ranged from 1770-1809.

Cast iron planes in North America

The first known North American cast iron hand plane was patented by Hazard Knowles in 1827. It was a bench plane design and was produced in limited numbers. It was not until the early 1850's that Birdsill Holly would develop the first North American cast iron block plane. These were not widely distributed, and production numbers were relatively low over their six or seven year existence. Holly did not patent his block plane, and as a result, the basic design re-surfaced in the mid-1870's. The Holly design was quite interesting in that it was boat-shaped and relatively small.

Without question, the most prominent 19th century cast iron hand plane inventor was Leonard Bailey. His important lever-cap

and blade depth adjuster patents remain intact in the offerings of almost all modern-day plane makers.

About 1867, Leonard Bailey created the No 9 and the No 25 block planes. The No 9 was a 10" long rectangular-box mitre plane embellished through the use of his various patents. In essence, it was an adaptation of the earlier straight block plane. Sometime in 1868, a rosewood ball-tail was added to avoid the corners of the box digging into the hands during use. The No 25 transitional plane was 9-1/2" long and featured the coffin body sidewalls of its forerunner, the smooth block plane.

In 1869, the Stanley Rule and Level Company, looking to diversify, offered to buy Leonard Bailey's patents and to employ him. Stanley



Adjustable Block Plane – A rare Metallic Plane Company No. 8 adjustable block plane, circa 1870's.



Birdsill Holly – This is the earliest known North American cast metal block plane. It's non-adjustable and dates back to the 1850's.



Front and Rear Views – A front and rear view of the Stanley No. 25 (at left in both photos) and No. 9.



brought Leonard into the factory and began to manufacture his numbers 1 through 8 (no half sizes were available at that time); the No 9 mitre (which was called a block plane); the No 10 rabbet; a No 11 belt maker's plane; a No 12 scraper and a No 13 circular plane.

During the fall of 1871, Leonard Bailey developed the 9 1/2

cabinetmakers block plane. The 9 3/4 tailed block plane was also offered at this time. When it comes to block planes, this is the point where we should all get up, head to the libation cabinet, and tip a glass to the downright greatness of Leonard Bailey. In his first cut at a small-scale adjustable cabinetmakers block plane, he



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incorporated both the throat and depth adjustments. Technically, the 9 ½ might have been numbered 13 or 14, if the company had extrapolated their numbering sequence. In context with the period, the 9 ½ was a small straight-block, in other words, a smaller No 9. It featured a levered depth adjust and lockable throat adjust. The January 1872 Stanley Pocket Catalogue did indeed include the 9 ½, however there was no depiction. At that time, in its two and a half year existence, the company had sold 20,000 planes. The front cover of the July 1872 Stanley Pocket Catalogue proclaimed “OVER 30,000 PLANES NOW IN USE” above a picture of a ball-tailed 9 ¾ block. Three months later the SR&L Co would claim that number had risen to 40,000. The 9 ½ would continue to undergo twenty-five design changes over its 109-year existence.

The SR&L Co, paying considerable royalties to Leonard Bailey for a relatively costly plane to manufacture, began to look for ways to make the highly popular small block plane more profitable. They recognized the need for a small hand plane with more basic features. It is quite possible that Leonard Bailey made an attempt to fulfill this need for them. In a parallel effort in 1873 or 1874, one of Stanley’s great designers Justus Traut started to devise a low-cost alternative, the 9 ½.

Over the years, Traut would be credited as the originator of the Model 110, however the plane the SR&L Co launched may not have been the plane that he intended. In coming up with his concept, Traut didn’t have a lot of options for inspiration. He had Bailey’s 9 ½ design and he had the old Birdsill Holly design.

Tumultuous Times – These planes are central to the period where The Stanley Rule and Level Co. and Leonard Bailey parted ways in the mid-1870’s. From left to right, Stanley No 9 ¾ cabinetmakers adjustable block plane, Leonard Bailey, 1872, New Britain, CT; Silsby, Race, & Holly, non-adjustable block plane, Birdsill Holly, 1850’s; Victor non-adjustable block plane, Leonard Bailey, 1870’s; Stanley No 110 non-adjustable “Shoebuckle block”, Justus Traut, 1874, New Britain, CT.

Production of the original non-adjust 110 began in the fall of 1874, however Justus Traut’s patent appeared with an adjuster on February 16, 1875. The SR&L Co probably opted to begin with the lowest cost offering. In almost all respects, Traut’s plane was a dead copy of the Birdsill Holly with a fancier shoe-buckle cap. He mimicked the Holly so well, that he may have inadvertently reproduced a design element intended for a different purpose. The Birdsill Holly had a 15° bed angle and so did Traut’s Type 1 No 110 design. In fact, Justus Traut carried it through to his February 1875 patent drawing. This was probably not the best option for a low-cost homeowner plane.

In the early 2000’s, a study of planes found in the old Stanley model room yielded the following:

Model No 47, an original Birdsill Holly block plane (circa 1852-1859);

Model No 48, an L. Bailey design No 0 Victor block plane with manufacturing defects (circa 1874);

Model No 49, a prototype of the original 110 block plane the SR&L Co launched (circa 1874).

It’s interesting that the Leonard Bailey Victor design was

Pamphlets

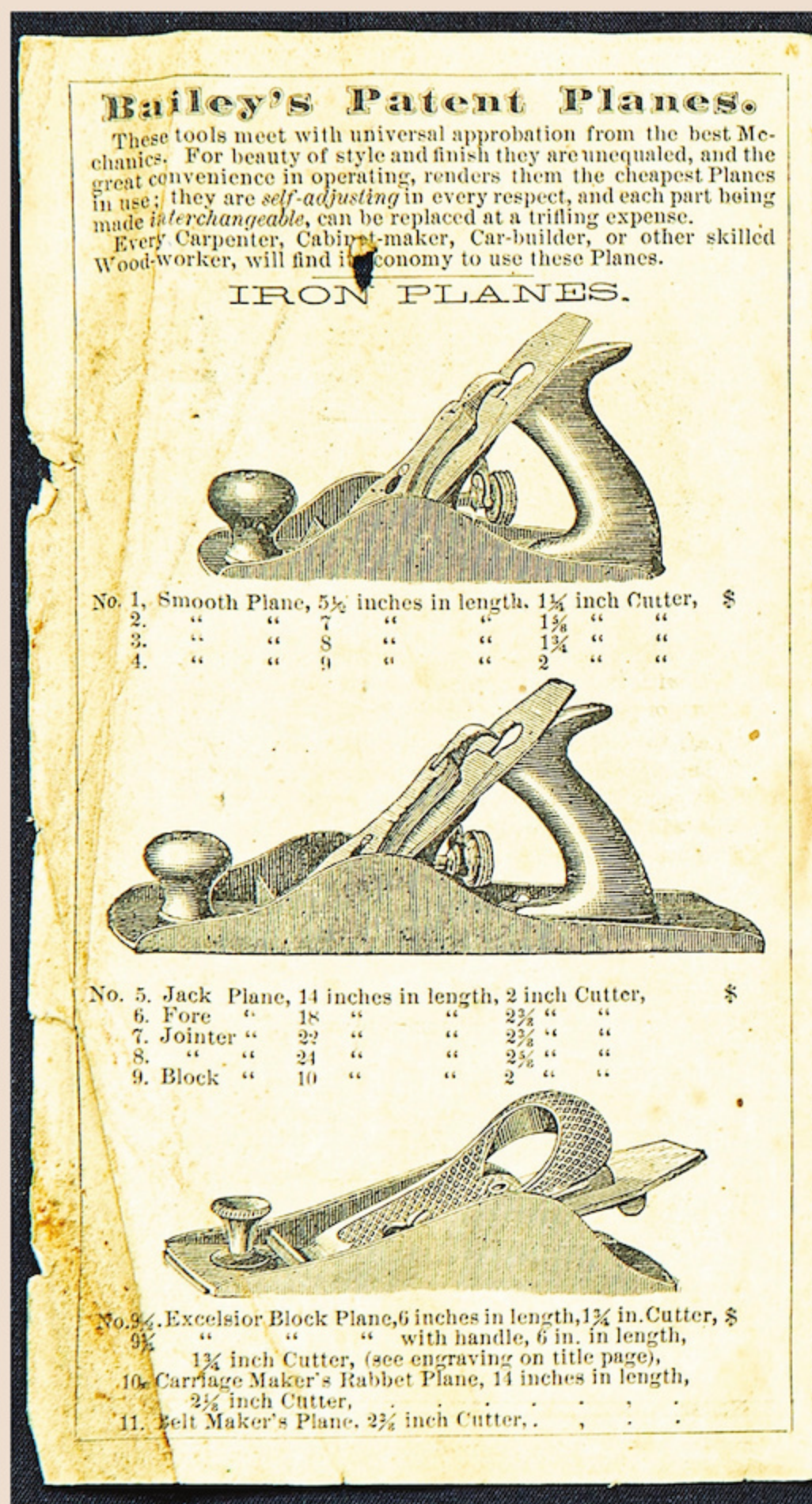


The date of this pamphlet is September 1, 1873. The No. 9 1/2 Block was developed by Leonard Bailey in 1872 using his existing patents.

The No. 9 1/2 plane shown in Panel 1 of the 1873 brochure was actually a true 1873 model (brass knob on the front securing the throat plate). The No. 9 3/4, with the ball-tail, and on the front cover of the same 1873 pamphlet, is actually from an earlier 1872 engraving. The throat plate of a true 1872 No. 9 3/4 (and the 1872 No. 9 1/2) Excelsior block was secured with a slotted screw. This would not be the only time when printers would show older models of planes than those

that were current. Stanley didn't want to invest money into updating all the aspects of their pamphlet. Not only was it expensive, but they also thought potential customers would likely miss these details anyways.

The interesting thing is that in Panel 1 of the pamphlet, right above the depiction of the No. 9 1/2 is the No. 9, which was listed as a "Block". In Panel 3 the No. 25 Transitional Plane is listed as a "Block". These are bigger planes and the model numbers are the same numbers that Leonard Bailey used prior to 1869 when he sold out his patents to Stanley.



Patented in Canada – William Steers, Brattleborough Tool Co. block plane. Steers was from Sherbrooke, Quebec and patented his first smoother in Canada, later having his planes manufactured in Vermont.

included in the SR&L Co model room before the actual 110 Prototype. Perhaps the Bailey model was rejected. It certainly followed the Birdsill Holly boat-shaped form. Unlike Traut, Bailey bedded his Victor 0 with the same 20° bed angle as his 9 1/2.

By choosing to manufacture the Traut design, the SR&L Co significantly cut its manufacturing costs and carved the home-use market out of the Leonard Bailey royalties.

Within six months of its creation, the 110 was dramatically changed with straight sidewalls and a 20° bed. Ultimately, it was another one of the most successful products in the SR&L Co's line and would enjoy a 108-year reign.

The bickering between Leonard Bailey and the SR&L Co culminated in the termination of his contracts on June 1, 1875. To his credit Leonard Bailey was up and running with his own company again in Hartford, CT within a month. Ultimately, the lowly block plane had ended the relationship between North America's most beloved hand tool designers and its most colossal hand tool manufacturing enterprise.

The block plane in use

In their basic form, small iron block planes offer some different options. For example, a 9 1/2 with a 20° bed and a 25° bevel can have a 45° effective angle much like a normal bench plane. Honing to a 30° angle, one can create a quick York Pitch plane for hardwoods. Sharpening to angles less than 25° gives more of the knife-cutting action desired for end grain.

If you are working with end grain, it probably makes more sense to use a plane like a 60 1/2 or a 65 low angle block. These planes are bedded at 12°. Ideally, an iron with a 20° bevel (effective angle of 32°) makes these a better solution for an end grain plane. If one finds one of the low angle planes in the field, confirm the bevel angle. More often than not, these planes are found with much higher bevel angles than their intended use.

Others enter the race

It's possible that The Bailey Tool Company (Seldon Bailey has no relation to Leonard Bailey) of Woonsocket, Rhode Island may have launched its Defiance cabinetmakers block planes back in 1872. Some sources suggest this, however, this may be due to patents related to smooth planes rather than block planes. Almost all irons observed on these planes bear the 1875 battle-axe logo, suggesting that this company was a little later into the block plane market.

Other forms of the block plane

Within a very short time after the No 110 block plane was introduced specialized forms of Stanley block planes began to appear:

Iron Adjustment (120-1876)

Pocket (102/3-1876, Victor 12-1879)

Thumb Plane (101-1877, Victor 50, 1880)

Low Angle (60-1898, 65-1888)

Skewed (140-1895)

62-1905

64-1915

95-1911

97-1905

Rabbet (Sargent 507, 1912)

Measured Planes:

Stanley No 9,
20° bed angle, 25° bevel angle

Stanley No 9 1/2,
20° bed angle, 25° bevel angle

Stanley No 60 1/2,
12° bed angle, 25° bevel angle

Stanley No 9 3/4,
20° bed angle, 25° bevel angle

Scottish Mitre,
35° bed angle, 25° bevel angle

Stanley No 110 Type 1,
15° bed angle, 20° bevel angle

Stanley No 110 Later Type,
20° bed angle, 25° bevel angle

Birdsill Holly Block Plane,
15° bed angle, 30° bevel angle

Stanley 103 Block,
20° bed angle, 25° bevel angle

Steers Block Plane,
22° bed angle, 15° bevel angle

Metallic Block Plane,
18° bed angle, 15° bevel angle

Many of the planes which appear in this article are on display at the 'Prior to Power' Exhibit at the Wellington County Museum and Archives. Doug Evans' Collection of Hand Tools will be at the museum up until January 5, 2020. Doug will be on hand for a presentation at the museum's Harvest Home Event on Sunday, September 29th.



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Build a CLASSIC COFFEE TABLE

A coffee table is a great woodworking project, as it's not overly large or hard to build, and it will be the focal point of your living room. The elegant look of the tapered legs and understated decorative bead make this table a respectable place to rest your coffee or books for years to come.

BY RODGER NICHOLSON

This coffee table is made from solid cherry, but could easily be constructed from any wood. You could even go that extra mile and try your hand at some inlay in either the top, or in place of the beading in the apron, if that sort of thing appealed to you. You may also want to adjust the dimensions of this table to suit your space.

As always, begin by milling up your rough lumber. Rough lumber is the best choice, as it gives you the most options for grain layout and colour match. Dimension the parts for the base to the final thickness, but leave them a few inches long for now. After doing the initial jointing and planning of the top boards, sticker them while you concentrate on the base.

Photos by Rodger Nicholson Illustration by Len Churchill



Keep it Flat – Sticker your workpieces to help keep them flat while you work on other aspects of the build.



Organization is Key – Using a chalk triangle on the end grain of the legs will go a long way in keeping the parts organized in your mind, and avoiding any mistakes in joinery and tapering.

With your final thickness achieved, square up one end of each leg and then cut the legs to their final length. Stand the four leg blanks up and decide on their orientation. Once satisfied, draw a triangle on the tops, spanning all four legs, so you can easily place them back in the same position later. Draw a rough pencil line on which faces will receive mortises and tapers to avoid getting mixed up later.

Next, square up one end of each apron and cut them to their final lengths. Decide on their orientation as well, and mark the top and outside face of each piece to help with joinery layout.

A tale of two squares

After you've decided which leg goes where, set one combination square to 3/4" and a second combination square to 1-1/2". These

settings should not be adjusted throughout the remainder of the base construction. Using the top of the leg as your reference surface, make a mark on all the faces that will receive a mortise using the first square, then repeat the process with the second square. Score the lines and transfer them to the appropriate adjacent faces for laying out domino mortises.

Without adjusting the squares, and using the top and inside faces of the aprons as your reference surface, draw the mating lines on the faces of the aprons.

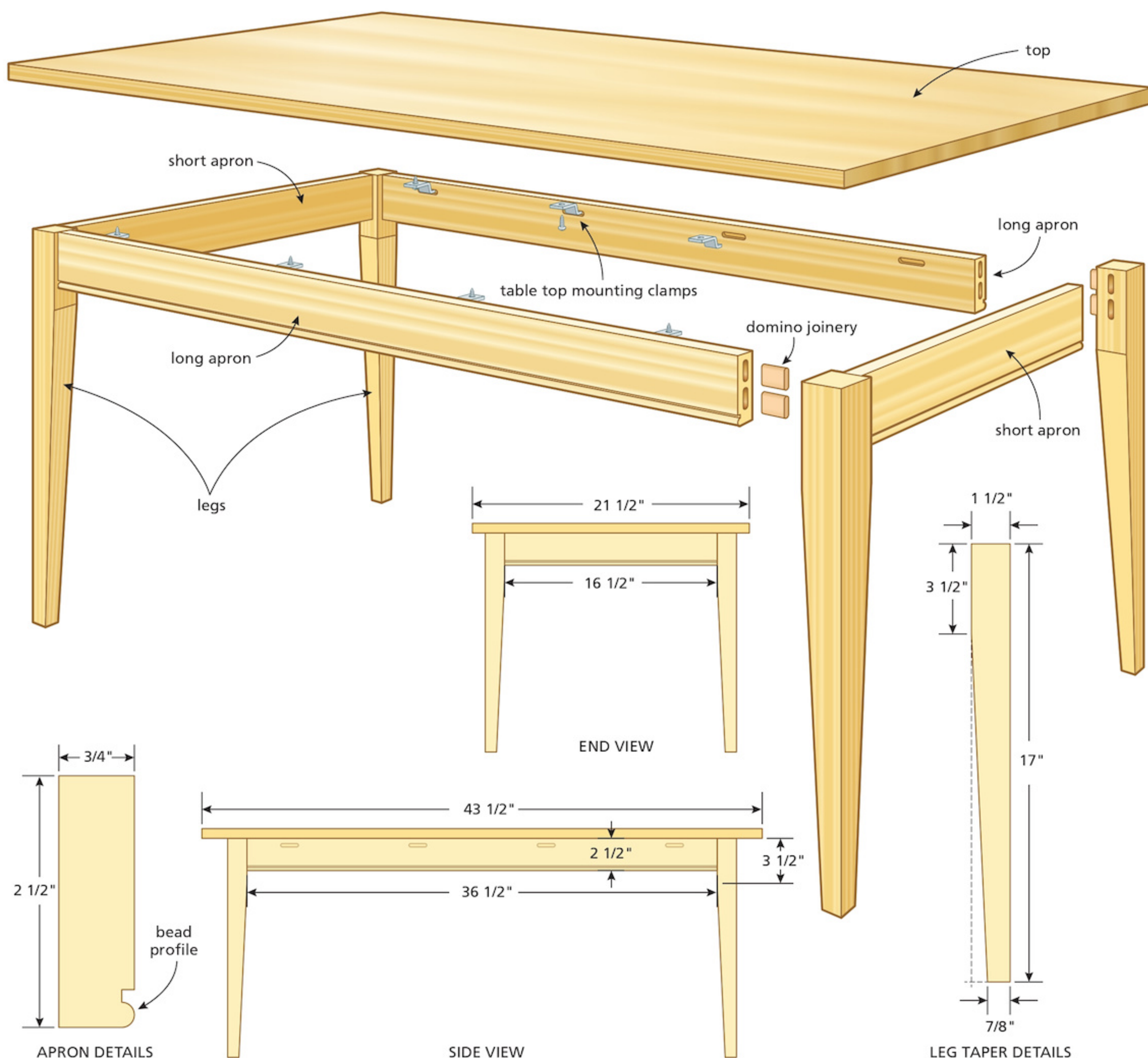
Cut the mortises

I am using the Festool Domino for loose mortise and tenon joinery, but the apron to leg joint could be made using dowels or an integral mortise and tenon. Avoid biscuits, as they are not designed for this application.

Ensure the depth of your mortise is appropriate; you don't want



Consistent Layout – Using two combination squares, and not changing their settings during your project, will help keep layout accurate and consistent.



the mortises to “meet” in the middle of the leg. I used two 5mm × 30mm dominos for each joint, at a depth of 15mm. I placed the mortises in the center of each leg and apron to provide a 1/4" reveal. After the mortises are cut, do a quick dry fit to ensure everything fits well.

During the dry fit, if you find your aprons don't meet the tops of the legs perfectly, remove the dominos and sand the edges of them a bit using a sanding block. This should give you just enough play to be able to adjust the aprons. This will not sacrifice any strength, as the strength of the joint comes from the faces of the tenons.

Taper the legs

Tables look far more elegant with tapered legs, as it gives the table a more delicate feel. Start by making a line 7/8" in from the bottom of one leg, on two adjacent faces (the faces without the mortises). Then make a second mark 3-1/2" down from the top of the leg on

the same two faces. Connect the lines with a straight edge. You now have all the information you need to create a taper jig.

Start with a plywood base about 10" × 24", and cut some appropriate sized dados for two short sections of metal T-Track (about 10" apart). Fasten the tracks down with screws. For the fence, stack up two 3/4" pieces of plywood (about 2" wide), and glue/screw them together and ensure the two long edges are even and parallel. Drill some 1/4" holes through the top of the fence to align with the T-tracks in the base below. Slide a 1/4-20 T-bolt into each track, place the fence on, and spin a star knob and washer onto each bolt. Finally, screw two hold down clamps on top of the fence and your adjustable taper jig is ready to go.

With your jig made, organize and place your table leg blanks on your bench in such a way as you will not get confused on their orientation. Marking the different faces of the legs can go a long way to ensuring you don't taper the wrong face. Set the first leg in

Materials List

Part	Qty	T	W	L	Material
Legs	4	1-1/2	1-1/2	17	Cherry
Long Aprons	2	3/4	2-1/2	36-1/2	Cherry
Short Aprons	2	3/4	2-1/2	16-1/2	Cherry
Top	1	3/4	21-1/2	43-1/2	Cherry

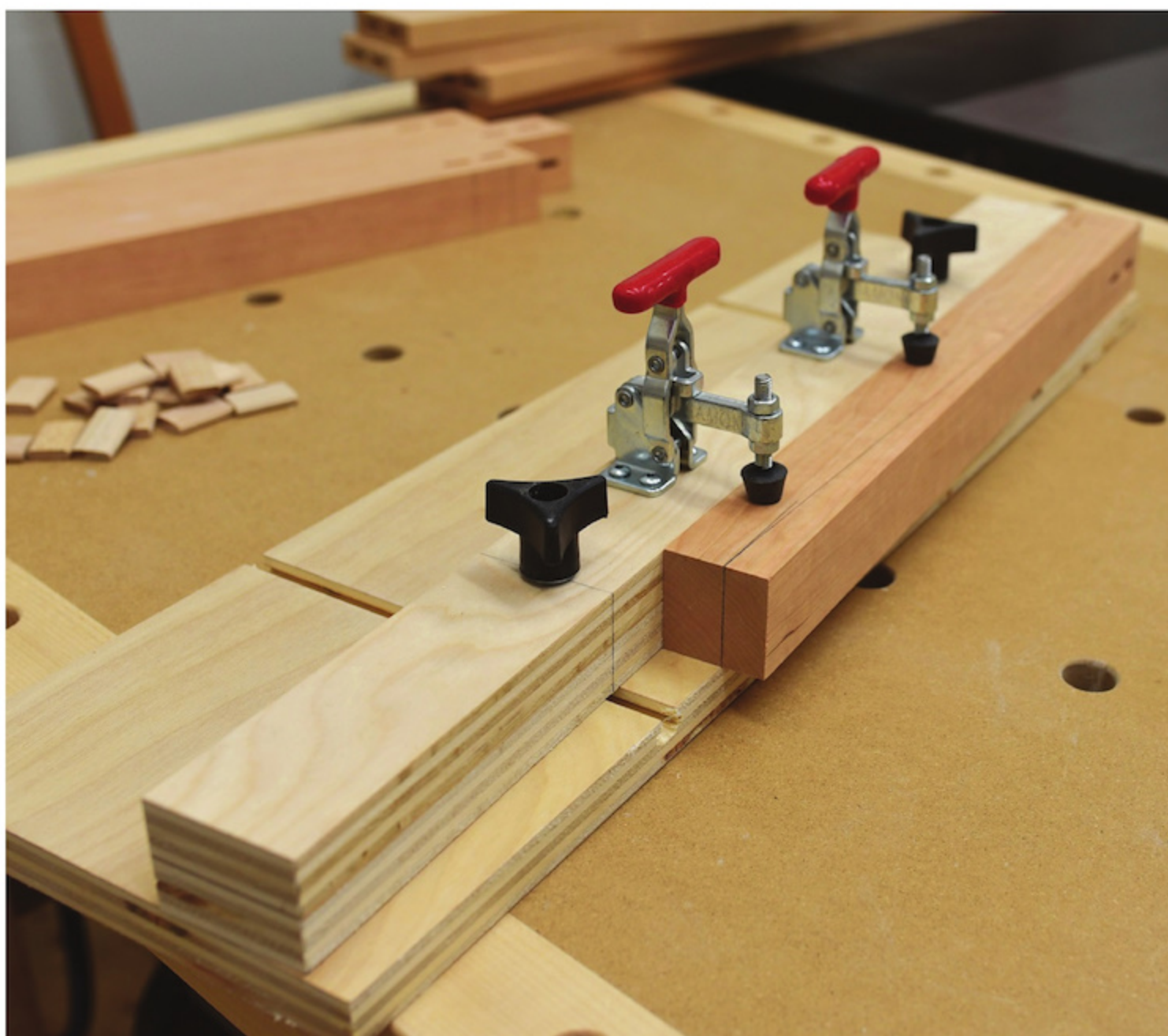
Hardware List

Name	Qty	Size	Details	Supplier
Table Top Mounting Clamps	12		Misc / Lee Valley	
Pan Head Screws	12	#6 x 5/8"	Misc	

the jig by aligning your reference line on the work piece with the edge of the jig. One set of mortises should be facing up and one set should be facing the blade. Angle the fence of the jig so it supports the full length of the work piece. Clamp down the jig's fence using the star knobs, and then use the toggle clamps to secure the work. Raise the blade to an appropriate height, place the sled along the table saw's fence, and slide the tablesaw's fence so the edge of the jig lines up with the blade. Lock down the saw's fence, and make your cut, keeping your hands away

from the blade. Turn off the saw, retrieve your sled, and remove the leg. Repeat for the three other legs.

Rotate the leg 90° counterclockwise, hot glue the offcut on top of the leg where it was just removed, and clamp it back in the jig. When repositioning the offcut the lower end of the offcut won't line up with the lower end of the leg. It's crucial the face of the tapered side aligns and is coplaner, so the leg sits on the jig properly. This is due to the fact that material was removed from the leg during the tapering process. Repeat the cut for the second



Time to Taper – A table saw taper jig makes creating tapers safer and more consistent. It's also an easy jig to make.

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Proper Alignment – Use a steel rule to zero the front quadrant of the router bit bearing to the face of the router table fence.

taper, standing well off to the left to avoid a potential kickback. Finally, remove the glued-on offcut and clean up the saw marks on the tapers with a sharp smoothing plane.

Cut the bead

Mark the lower outside face of each apron with a pencil line to



An Even Bead – Having the fence and bit aligned will go a long way to ensuring you end up with an even bead.

indicate where the bead will be cut. With the router unplugged, chuck up a beading bit in the router table, and set your fence in line with the bearing. Using a feather board to keep constant pressure of the work piece against the fence, do a test cut on scrap. Once you have it just right, cut beads on the bottom of all four aprons using push pads.

Back at the bench, it's time to begin sanding and surface prep. Use a card scraper and/or sandpaper to get a finish-ready surface and to ease the edges.

Glue up in stages

Glue up the two end assemblies first, leaving the long aprons aside for now. This will help to maximize your chances of getting a perfect glue up. Apply glue to the tenons and the mortises. Tap the parts into position and apply a parallel style clamp. Clean up any glue squeeze-out with a wet rag, and set aside the assemblies to dry.

Next, glue the long aprons to the end assemblies. Again, clean up any squeeze-out. After breaking all the edges and doing a final sanding on the base, set it aside and turn your attention to making the top.

Make a solid wood top in two pieces

In order to accommodate a typical 13" planer, the top will be built in two individual glue-ups, each being about 12" wide. Then these two "sub-tops" can be thickened separately and glued together to achieve the final width.



One Step at a Time – Gluing up the base in two stages reduces assembly stress.

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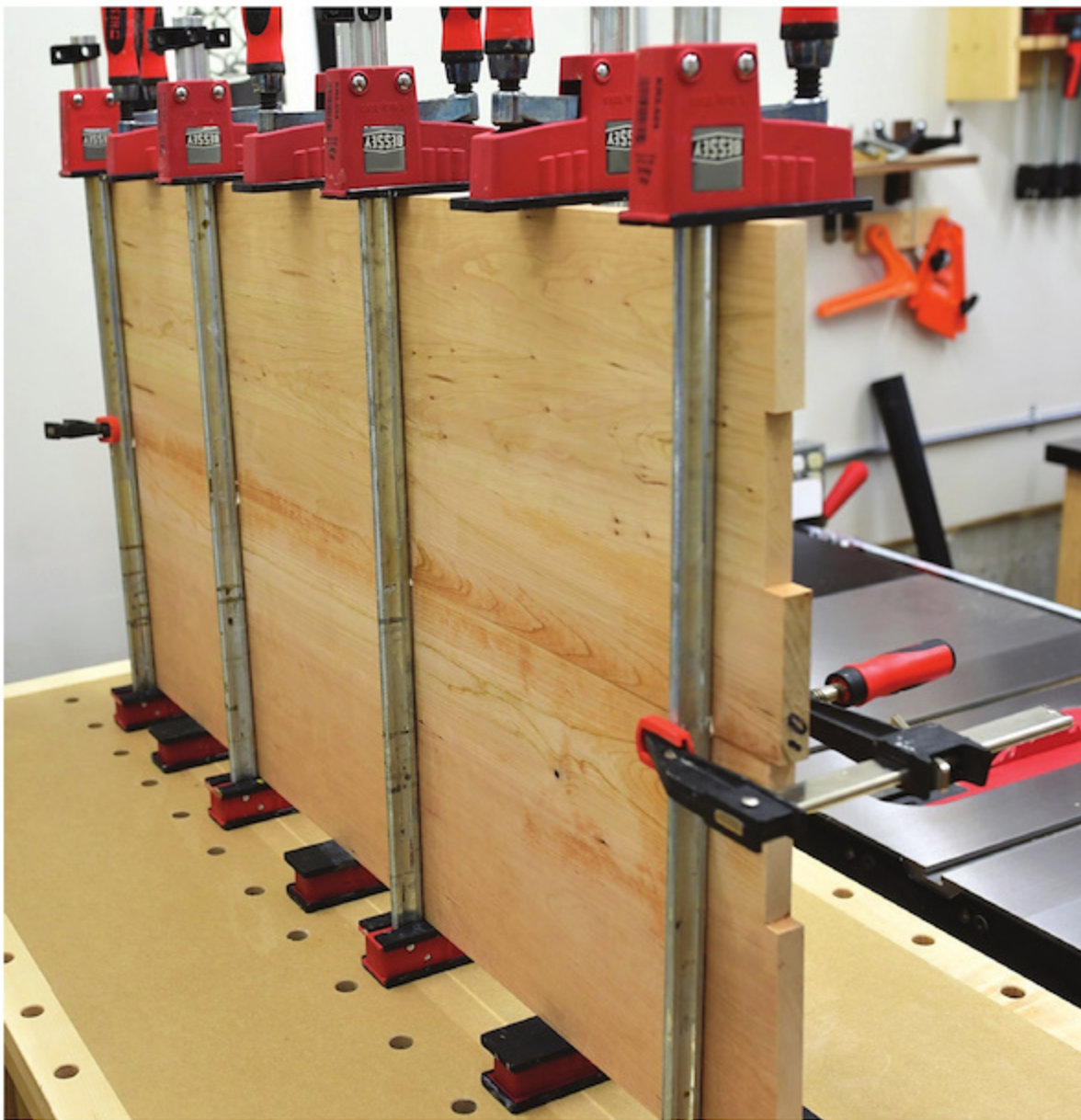


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Gluing in Stages – Glue up the top in two assemblies, dress them both to final thickness, then joint their mating edges and glue them together.

To begin this process, return to the oversize pieces you set aside earlier. Mill them down to about 13/16" thick. Joint one edge of each piece, and rip each piece to 6" on the table saw. This should give you four pieces with parallel edges.

Select two pieces, taking some time to decide which faces look best together. Your goal here should be to create as invisible a glue line as possible. Once satisfied, mark some lines across the joints for biscuits or dominos. The biscuits or dominos will really help with alignment. Just be careful to place them a few inches from the ends so you don't cut into them later. Glue up the assembly, clean off any glue squeeze-out, and repeat with the other two pieces.

After letting the assemblies dry overnight, remove the clamps and scrape away any leftover hardened glue. Set your planer for very a



Fill any Gaps – Small imperfections can be filled with coloured epoxy, then sanded flush.

light cut, and send each 12" assembly through the planer to clean up any inconsistencies in the joints. It should only take two very light passes on each side to get everything flat and clean.

Joint a fresh edge on each of your 12" sections, and repeat the domino/biscuit exercise from earlier. There is no power planing after this step, so take all the time you need to ensure the two pieces go together well. Clamp your top up, clean off any squeeze-out, and set it aside for the night.

If you have any imperfections in your top, you can fill them with a bit of 2-part epoxy and some dye. Simply mix up some epoxy in a paper cup, add one drop of ebony dye, and then stir for five minutes. Pour the epoxy into the voids (slightly overfilling), and let the air settle out. Allow the epoxy to cure overnight before attempting to flush it.

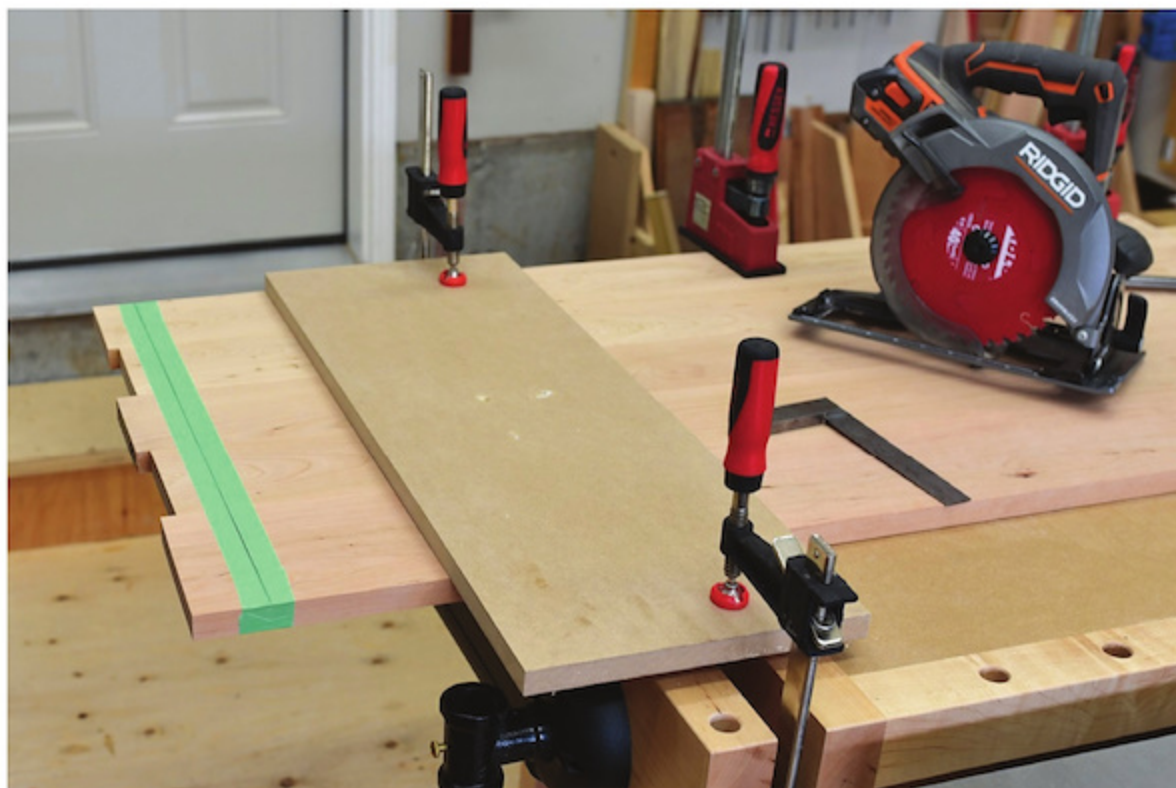
Finalizing the top

The next day, scrape off any hardened glue with a cabinet scraper and sand the faces of the top up to 220 grit. Clean up one edge at the jointer, then take the top to the table saw. Rip it with the fence set to just over 21-1/2" (to allow for some hand plane work). Using a track saw (or circular saw and edge guide), square off an end of the top. Measure over 46-1/2" from your cut, and cut the top to its final length. Finally, use a random orbit sander or card scraper to prepare the top for finish.

Applying a finish

I applied three coats of satin wipe-on polyurethane I made from Varathane's oil based polyurethane to the base, and four coats to the top.

After allowing the project to dry for a week, I applied a light coat of wax with #0000 steel wool. This will give your project a nice feel and rid it of any remaining dust nibs.



Many Options – Although a large panel saw would work nicely, a circular saw or router that runs against a straight edge also cuts the top to length.



A Smooth Surface – Once the finish is fully cured Nicholson used wax and #0000 steel wool to smooth the surface, and provide an additional level of protection.

Attaching the top

A solid wood top will expand and contract with the seasons, so it needs room to move. To help accommodate this, cut some shallow slots in the apron using a biscuit joiner or domino machine. These slots will house some specialized hardware designed to allow for wood movement. Simply place the tongue of the fastener in the slot, and screw the other end to the underside of the top. For a project of this size, about eight fasteners is enough.



Attach the Top – Specialized hardware, known as Z-clips, are used to secure the top to the base, yet still allow it to move with seasonal changes in humidity.

All that's left to do is to place your new table in its home, and enjoy a hot cup of coffee with your favorite magazine.

RODGER NICHOLSON
rodgernicholson@hotmail.com



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DVR

The Smart Motor

You're bound to see more of these motors over the coming years. We take a closer look at what all the fuss is about.

BY CARL DUGUAY

Most of the machinery in a typical woodworking shop – planers, jointers, drill presses, and the like – is powered by conventional AC (alternating current) induction motors. Inside the motor housing is a stator – essentially a mass of copper wire (referred to as ‘windings’), which uses electricity to produce a rotating magnetic field that turns a rotor, which in turn drives the machinery we use. Along with the stator is a commutator, armature, and brush assembly.

DVR (Digital Variable Reluctance) motors, also referred to as ‘Smart Motors’, have moved the conventional motor into the post-modern digital age.

Externally a DVR motor looks no different than a conventional motor. But inside you won't find permanent magnets, brushes, or electrical connections to any moving parts. As well, there is no current flow in the rotor, which means less wear, less heat, and a

much longer service life. What you will find inside a DVR motor is a micro-processor that constantly monitors motor load and adjusts power to accommodate the changing load status – it can increase and decrease motor speed (RPMs) depending on the load. This results in energy savings that can be as high as 50 percent over a conventional motor. The micro-processor can also store information on different speed settings and switch from one speed to another with the press of a button.

Another significant advantage of a DVR motor is that it can accommodate a wide range of motor speeds, from as low as 50 RPM through to 100,000 RPM. Because the DVR motor is mounted directly to the drive shaft there is no need for belts or pulleys, which means no associated loss in power due to friction, vibration and heat. DVR motors also feature Electro Magnetic Boost, which enables the motor to produce the highest torque at the lowest speed, and more constant torque over a wide range of speeds.



Looks Can Be Deceiving – Although they look no different on the outside, a DVR motor like the one in this drill press is very different on the inside. (Photo by King Canada)

Striatech

You may hear the name Striatech over the coming years. They're a subsidiary of Teknatool (teknatool.com), the company that manufactures and markets the NOVA line of lathes and drill presses. Teknatool is the company that designed the DVR motor, now marketed through Striatech (dvrsmartmotor.com), who will likely be licensing their technology to other woodworking companies in the future. (Photo by Teknatool)



The DVR motor has electronic braking that enables the machine to rapidly come to a stop without wear or tear on any parts. In the event of a sudden increase in motor load or an abrupt spindle lock, the DVR motor cuts power to the drive shaft instantaneously, significantly reducing the risk of user injury or internal damage to the motor.

Along with infinitely variable speed and continuous torque, these motors operate at the 'whisper' level – virtually silent – and vibration-free.

Currently you'll see 1-3/4 HP and 3 HP DVR motors on drill presses from King Canada, Teknatool

(Nova), and Rikon, and a 2.3 HP lathe from Teknatool. Rikon also sells a conversion DVR motor that can be mounted on Rikon's 14" band saws (10-324, 10-325, and 10-326).

It will be interesting to see where, and when, DVR motors turn up on other woodworking machinery. Like most new technology, the initial pricing on DVR powered machinery is appreciably higher than on conventional AC machinery. However, if you operate a band saw or lathe over extended periods of time, the energy cost savings, along with longer motor life and operational flexibility that these motors offer, might induce you to become an early adopter.

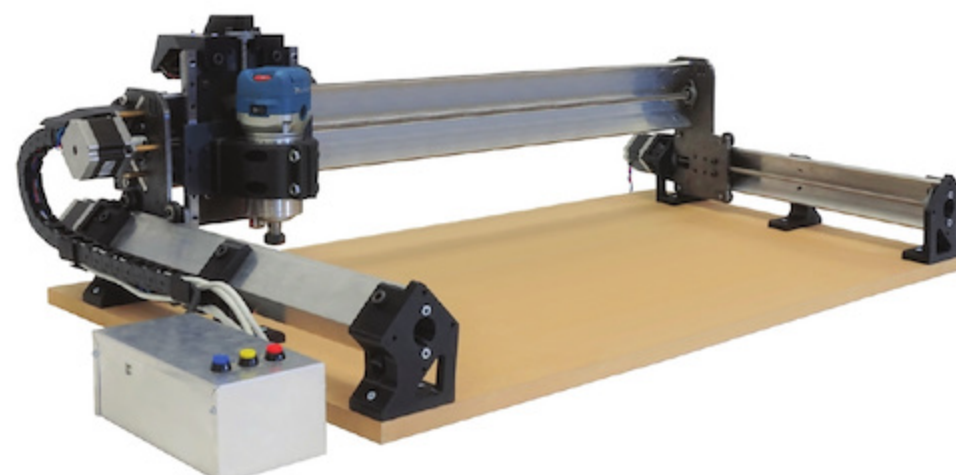
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Turn a SUNRISE BOWL

Adding some contrasting, figured wood to a piece is sometimes all that's needed in order to make it stand out from the crowd.

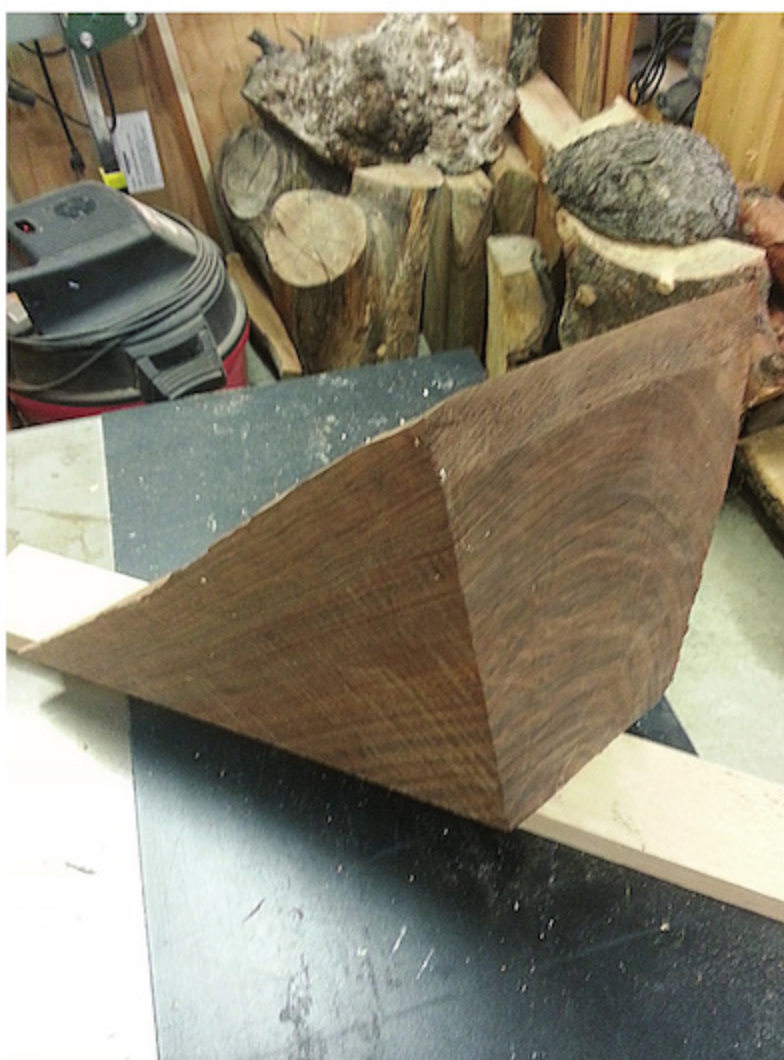
Photos by Ken Rude (Lead Photo by April Steegstra)

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Great Pyramid – The blank Rude received was a basic pyramid shape, and fairly small.



Making Wedges – Rude cut maple wedges on his bandsaw, though a plane sled would also make very uniform wedges. A simpler option is to use flat dressed pieces of wood as contrast.



All Glued Up – Once the layers of maple and walnut were cut, Rude glued them together. Gluing these layers a few at a time might be the safest approach.

BY KEN RUDE

One of my suppliers gave me a piece of wood and asked me to make him a turned bowl. This piece of wood was a pyramid shaped eastern walnut that was planted in the mid to late 1800's near Chilliwack, BC. He was able to salvage this wood when the city had to take down some of the trees to widen the streets. It took me a year to decide what I was going to turn with this piece, as it came to a narrow peak at the top end. The finished bowl is about 8-1/2" wide

and 4-3/4" tall. I decided to use bird's eye maple slices to give me four tapered wedges I could glue between walnut layers.

Contrasting maple slices

The next step was to cut four 1/2" thick slices off the one side of the walnut piece. I did this with my bandsaw. By placing the tapered maple pieces between the walnut slices, with the wide part of the taper to the top, it would spread the narrow top to give me more of a foot or tenon to hold the piece with the chuck while turning the inside.

All the pieces were glued and clamped tight and left for the next day. As I did not try to cut the maple to fit, I then had to trim off the excess maple slices to get a reasonably smooth surface. I forgot to clamp the centre of the slices on the wide bottom end so ended up with a gap between the slices in the middle of the piece of wood. I now needed to find some brown pigment quickly to mix with some epoxy to fill this void. This bowl was to go on a showpiece shelf and I wanted to ensure that there were not any colour breaks. Without the pigment, I



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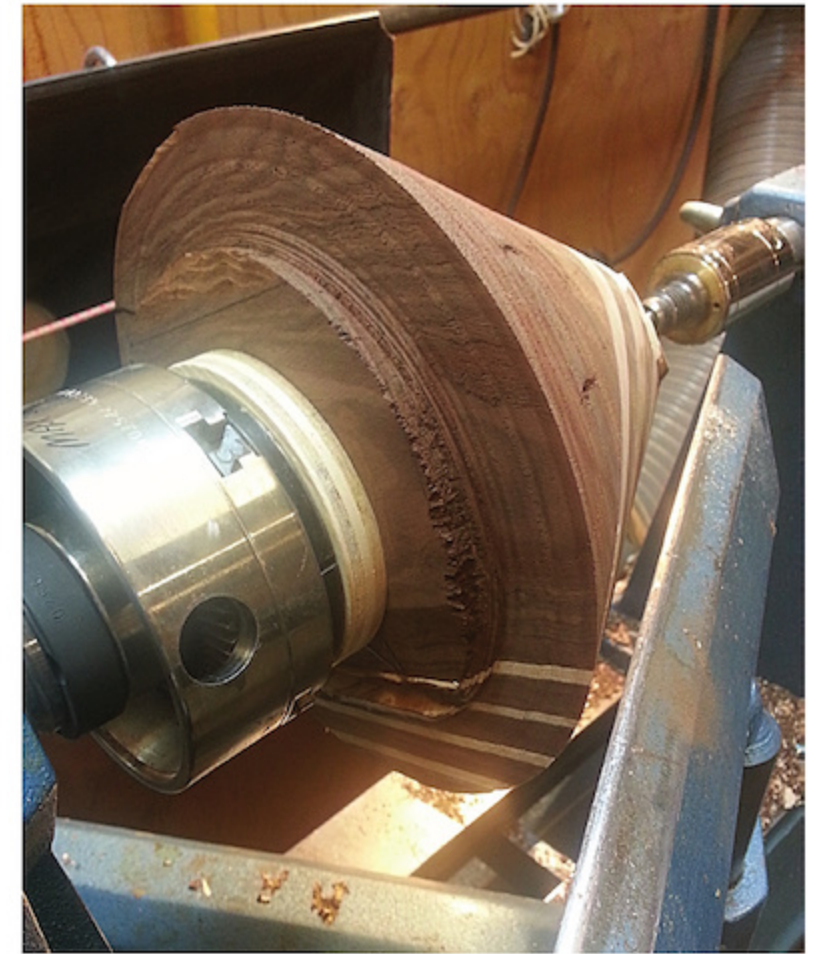
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Take it for a Spin – When the layers are cured, Rude trimmed them relatively flush before mounting the blank on his lathe to begin the turning process.



The Exterior First – At this stage the exterior shape of the bowl can be turned, as well as the tenon on the base.



Define the Top Edge – Adjust the tool rest and define the top edge of the bowl.



First Coat – Once the exterior of the bowl has been shaped and sanded, apply a finish to the outer surface.

could fill it with epoxy but it would have shown as a clear fill; I wanted it to blend in.

Mount the blank

With the coloured epoxy cured it was time to mount the piece of wood on the lathe, and start turning the basic shape of the bowl. I was very excited to see how the colours were going to look. One of the things I enjoy about turning is that you never know what treasures you will find in the grain or colour of the wood, as the surprises unfold in front of you while you turn, and are often spectacular.

Start turning

Turning the shape of the bowl starts to show the colours in the walnut - the dark brown, light brown and the reds. At this time, I defined the placement of the base of the bowl and made the tenon in which to hold the bowl when it is turned around to secure in the chuck. The end is still held secure with the live centre in the tail stock. I found there were a few voids in the walnut and these would be filled with more brown epoxy.

Adjust the tool rest

By changing the position of the tool rest, it was time to give the top of the bowl a smooth flat top by cutting off the uneven wood on the top and making it parallel with the bottom of the bowl.

The wood looks smooth as silk as it spins at approximately 1200-1500 rpm. All of the colours blend together giving another view of the mystery of what will finally show in the finished bowl.

First finishing step

When I completed the outside turning and had it sanded to my liking it was time to apply an orange paste wax finish. After the finish is applied the extra wood below the tenon needs to be removed

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Turn it Around

– Remove the bowl, rotate it, chuck the tenon and start to hollow out the center of the bowl. Rude used the tailstock to support the bowl during the initial stages of hollowing out the bowl.



Getting Closer – With the majority of material removed from the center of the bowl Rude sanded the inner edges.

so it can be mounted to the chuck for completion.

This was a very dense and heavy piece of wood so when I mounted it in the chuck, I also used the tailstock to help support the wood until I had removed some of the weight out of the centre. I left the tailstock on until I had most of the centre wood removed, almost to the bottom of the bowl. I then did some preliminary sanding at this time, then removed the tailstock from the centre post so I could finish turning the inside of the bowl.

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Further Wood Removal – Rude removed the center of the bowl and the tailstock, then finished turning the inside of the bowl before sanding it.

The centre of the bowl is now finished turning, the voids in the walnut have been filled with the coloured epoxy as needed, and the bowl is ready for sanding and finishing. The orange paste wax finish enhances the colors, the grains and the contrast of the maple inlays in the wood.

Remove the tenon

Mounting the almost completed bowl onto the bowl jaws, it is time to take the tenon off. I did not want the bowl to become airborne at this time so I used zip-ties to secure it to the bowl jaws.

After removing the tenon, I signed, dated and numbered this bowl, a process I do with each of the bowls I make. I have returned this bowl to its owner in Chilliwack where he displays it on the shelf with other renowned turners.



KEN RUDE
ken@branchestobowls.com

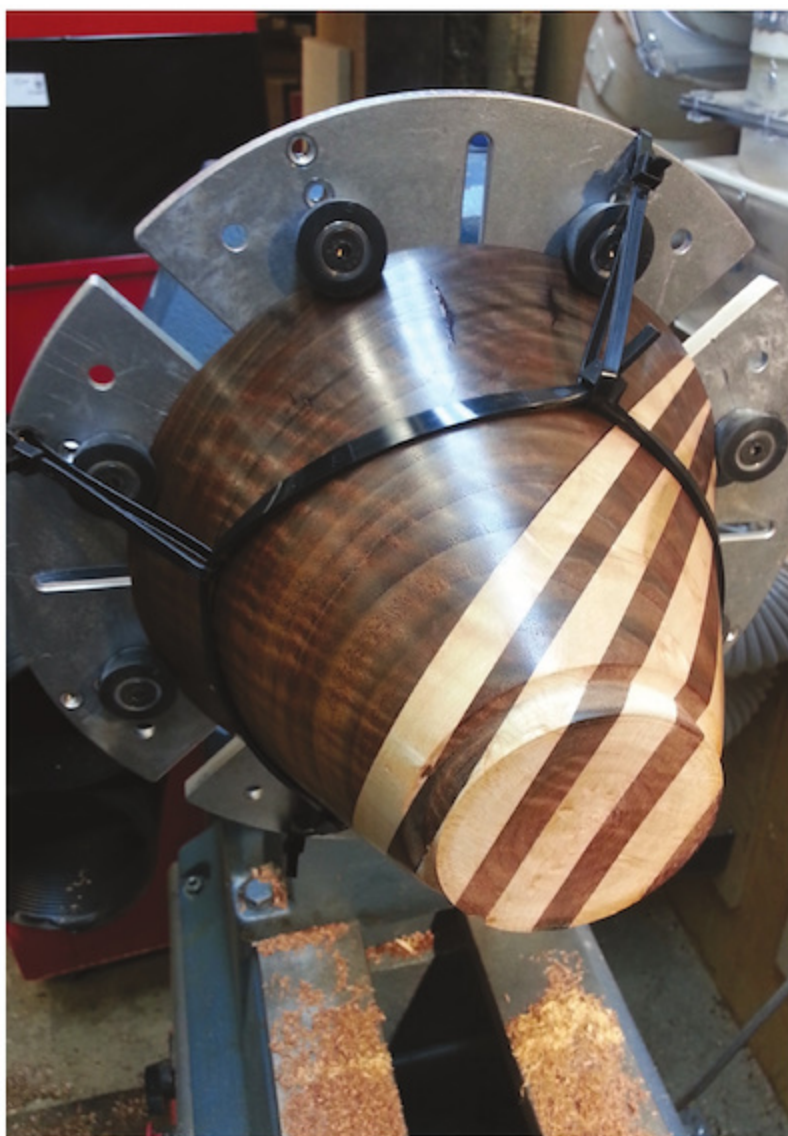


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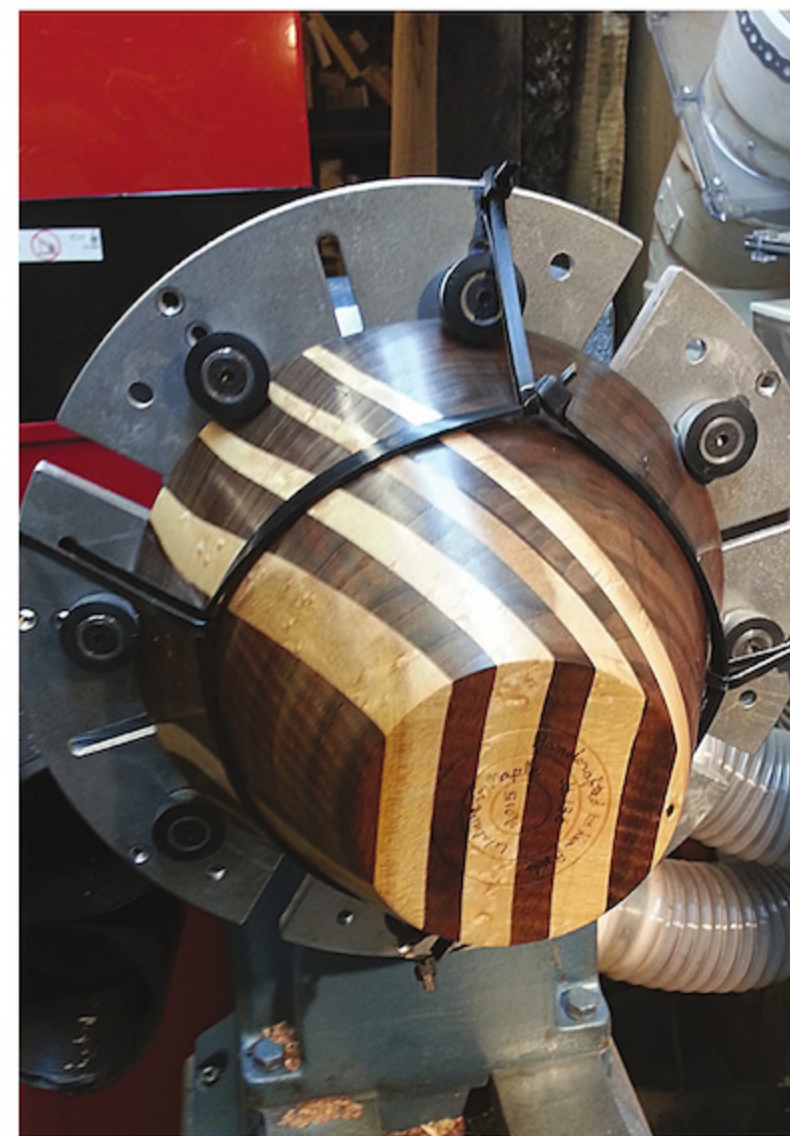
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Finish the Inside – The proper finish will accentuate the wood's natural colour and grain, while not obscuring the wood.



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Final Details – With the tenon removed, and the base finished, it's time to sign and date the piece.

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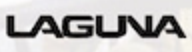


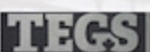






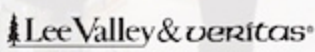








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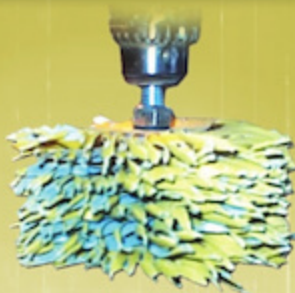
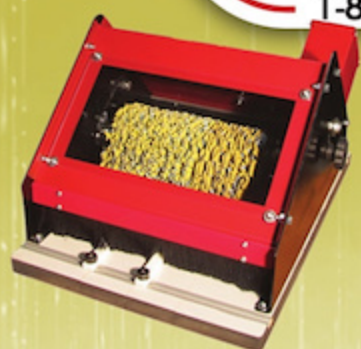
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DIY – The Millennial Way

Millennials get blamed for just about everything. The question is... do they deserve it?

BY JAMES JACKSON

A few weeks ago I saw a headline that really bothered me. Ok, with the way the world is heading right now I see a lot of headlines every day that bother me. But this one in particular irked me.

“Millennial dads have pathetic DIY skills compared to baby boomers,” the New York Post proclaimed. It cited a study that found when a DIY task needed to be done around the home, more than half of millennials preferred to call an expert.

That same proportion of millennials also reported not owning a cordless drill or a stepladder, while a third didn't own a set of screwdrivers or a hammer.

Millennials are those born from 1981 to 1996 and we've been blamed for ruining a whack of industries, from diamonds to laundry softener. Boomers meanwhile are those born from approximately 1946 to 1964.

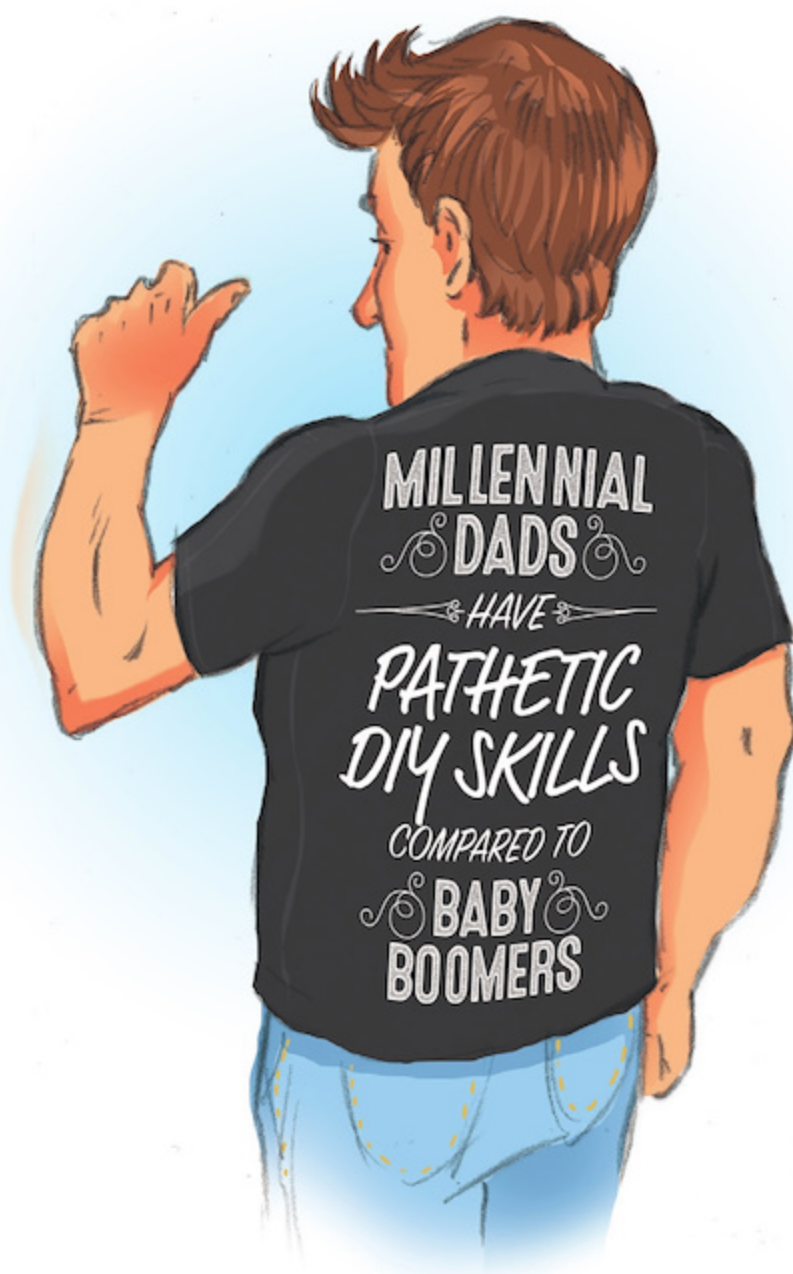
I am a millennial who was born in 1985, so when I saw this story I posted a snarky response on Twitter: “Or... maybe I'm more willing to admit my shortcomings and don't want to risk burning down the house, flooding the basement, or electrocuting myself.”

Over the past few months my wife and I have been toying with the idea of selling our 950 square-foot, 1.5 storey wartime home and buying something bigger for our family of four. We've owned it for about seven years now and are ready to move on.

We've actually done a lot of DIY work ourselves; we patched holes in the walls, painted the kitchen and hallways, primed and painted the backsplash in the kitchen, put up a new railing around the back porch (with a lot of help from my boomer dad), and a few other items on the list.

But we know our limitations. We called a plumber to reinstall some pipes and a new laundry tub in the basement that wasn't up to code because – surprise, surprise – it was installed by a DIYer who had owned the house before us.

And in the coming weeks I'll also be calling a drywaller to come and re-tape and putty many of the drywall seams in our bedroom and stairwell because you can see all the tape lines and most of the drywall screws that have popped.



Thanks again, DIYer.

Electricity is something that really scares me. A few years ago, the stove's heat element stopped working and when I pulled it out from the wall I could see one of the wires had a bad connection. I knew exactly what needed to be done to fix it, but I didn't have the confidence or skill to do it myself.

I spent \$200 to have an electrician come and spend 15 minutes repairing the problem.

Someone on Twitter responded to my tweet with a similar response; much of the first year in their house was spent getting DIY mistakes fixed.

There's an important distinction between not wanting to DIY, and knowing when to step away and call in the experts.

Besides, not owning tools isn't a good indicator of someone's skills either. Many cities and towns have tool libraries where you can rent almost any tool you need for just a few hours; home building centres also rent a long list of tools as well. And with home ownership getting more and more difficult for millennials, it's no wonder many are eschewing tool ownership and DIY home repair skills.

There's also a whole host of online and in-class sessions available, known as “adulting” classes where millennials and others can learn basic life skills we either didn't learn growing up, or were never taught. Things like car and home maintenance, sewing, and budgeting. Many of these classes were among the first to be cut when school budgets were slashed when I and other millennials were growing up.

Millennials get a lot of flack for not knowing their way around home repairs – but can you guess who my in-laws call every spring and every fall to recalibrate their thermostat?

litmy.ru JAMES JACKSON
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Illustration by Mike Del Rizzo



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