77 HOT PRODUCTS

ISSUE #129
DECEMBER/JANUARY 2021

CANADIAN Woodworking & HOME IMPROVEMENT

Make 3 Christmas Ornaments

+ 4 GREAT GIFT PROJECTS

TOP 10 Reasons Why We Work Wood p.10

4 AWESOME GIFTS p.68
for the Dedicated DIYers in Your Life

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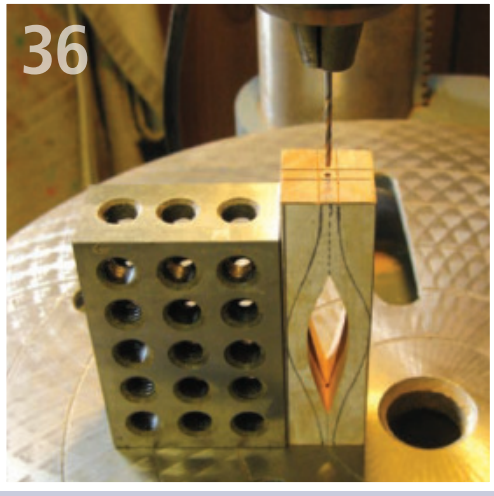

COVER STORY

Cover photo by Rob Brown

editor's letter

rbrown@canadianwoodworking.com

We woodworkers are a lucky bunch. The holiday season is right in front of us, and not only do we have the same opportunity as everyone else to purchase gifts, but we also have a secret weapon in our arsenal — making wooden objects with a personal touch. Everyone loves a gift that's handmade, and since I'm never very good with selecting gifts at the local store (or online), I have to rely on my woodworking skills to save the day.

I enjoy gift projects that allow for a bit of design creativity, and we have four of them in this issue. The simplest one is a live edge cribbage board, though it could be made with regular dressed stock or even a veneered base. If you're a turner, check out the colourful pencil crayon pen. Assemble the blank with a rainbow of colours or stick to a simpler colour scheme, depending on who it's for. Hosting big dinner parties may not be as common as it once was, but a charcuterie board can still see a lot of use, and hopefully one day we will all be able to invite friends over for a big meal. And a necklace stand is always going to be a cherished gift for someone who has a jewellry collection. The lilac leaf-shaped base of the necklace stand in this issue can be your introduction to the wonderful world of power carving, or it can be left a bit simpler. The choice is yours.

If you're one of those wild and crazy people who've had their Christmas shopping finished since Labour Day, I envy you. Now you can relax and check out some pieces from the Vancouver Island Woodworking Guild's recent exhibition, learn about CBN grinding wheels or read about all sorts of exciting new products in our "Hot Products" section. There are also many other columns in this issue to enjoy.

Now remember, making wooden gifts does have its drawbacks, as I've realized pretty much every year for the past 25 years. Starting a gift project on December 24 rarely works out, but I can always learn from last year's mistake…or so you'd think.

— Rob Brown

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letters

Christmas Ornament Surprises

Ever since I saw the Christmas ornament article (Inside-Out Ornament, Dec/Jan 2011) in your magazine I knew I had to try. I started with the tree inside the cavity, just like the article described, and I made a dozen to give as gifts to my family. Since then I've made them every Christmas with something different in the middle. Thank you very much for the great idea! My workshop becomes Santa's workshop every year and my family can't wait to see what will be in the middle. It's a surprise each year.

Stephane G.
Bathurst, NB
Via email

Thanks for the Spoon Issue

I recently received my issue of *Canadian Woodworking & Home Improvement* (Oct/Nov) and was bothered by one of the letters to the editor. I really enjoyed the spoon issue (Aug/Sept). What was interesting is that I had just started carving, so the entire magazine issue was exactly the push I needed to continue on with this great hobby. People have to realize that carving is another branch of woodworking and can be very rewarding. It's simple, cost effective to get into and a lot of fun.

Keep up the good work.
Bob K.
Via email

Addicted to Spoon Carving

I absolutely loved your spoon carving issue. I usually build items as large as furniture down to cutting boards, small boxes and turned pens. I had considered trying my hand at spoons but never seemed to get around to it. The Aug/Sept 2020 issue kickstarted me, and so far I've carved a half dozen spoons with different species. I have difficulty standing for long periods of time and I can do much of the spoon work sitting down.

Thanks.
Otto L.
Via email

Hi Otto,
I'm very glad you enjoyed our spoon carving issue and have made an assortment of spoons already. They're addictive, aren't they? Spoon carving is a rewarding aspect of woodworking, as it allows you to complete a project quickly and without a lot of upfront expenditure on tooling or machinery.

Rob Brown
Editor – CW&HI

news

Chad Martin is our new sales director

For magazines, a sales representative performs two important roles: representing the benefits and opportunities of the magazine brand to prospective clients, and representing the ambitions and plans of clients back to the magazine team. For *Canadian Woodworking & Home Improvement* under the ownership and leadership of Paul and Linda Fulcher from 1999 to 2020, Paul was the enthusiastic advocate and patient listener in building long-term business relationships with advertisers and partners.

After Paul and Linda sold *Canadian Woodworking* to Michael Fox in February 2020, they remained involved to ensure a smooth transition. Paul gets to finally retire (at least from the magazine) on Oct. 31, and Chad Martin takes over as Advertising Director.

Chad lives in Brantford, Ontario, and has worked in sales for companies that create fixtures and other items for libraries, museums and schools. He is a woodworker, with pieces he created and produced sold in nine artisan shops, and volunteers at Westfield Heritage Village in the cabinetmaker shop.

To symbolize sales handover, Paul Fulcher (left) passes an antique hand plane to Chad Martin.

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*Receive 1-year warranty on your tool purchase and get an additional 2-years when you register your tool online. For warranty terms and conditions visit festoolcanada.com/service

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Tool Reviews

Gerber Armbar and Prybrid Utility

View these reviews and more at:
canadianwoodworking.com/**reviews**

Events

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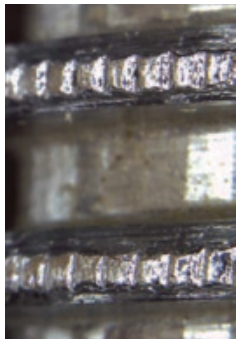
experience. woodshows.com



Micro Mystery

Can you guess this object commonly found in most shops?
Follow us on Instagram and Facebook to see regular close-up photos of common workshop tools and objects.
We will post the answer to this one in our Feb/Mar issue.

Previous issue: Angle adjustment knob

Best Build

Check out the **Turning** section of our forum for our latest "Best Build" thread – a turned and decorated plate. This month's winner, Jacques Leclerc, 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

Make a Triangle Box

Fun to make, and even more enjoyable to give as a gift, this box is highly customizable and very eye-catching.
canadianwoodworking.com/free-plans

Product Watch

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milwaukeetool.ca

Video Links

canadianwoodworking.com/**videos**

Trend Air Stealth Lite N99 Rated Dust Mask

Canadian Quotes: Wyatt Walkem

Forum Thread

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

- **Load-bearing Walls?** – If you're removing walls for a large renovation it's critical to know whether they're load-bearing or not. Our forum members have a few thoughts on how you can tell the difference.
- **Undermount Sink in a Wooden Countertop** – Like all solid wood products, a solid wood countertop will move with seasonal changes. Attaching a sink to a solid countertop can be done, but only by following some basic guidelines.

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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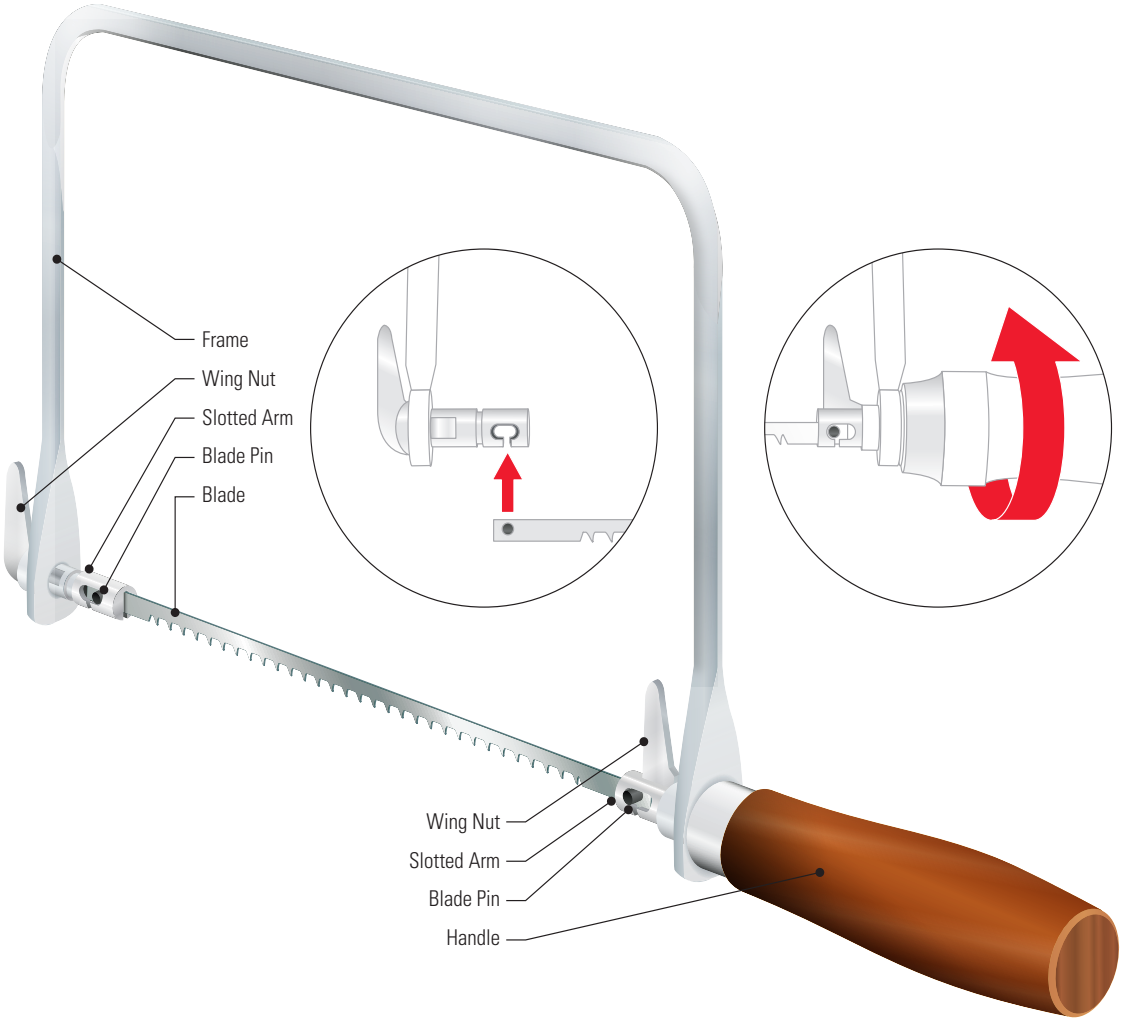
Coping Saw



Although a coping saw can be used in several situations, the most common time it's used is when coping inside corners of crown and baseboard mouldings. Its thin, shallow blade allows for tight curves to be cut into the ends of the moulding, allowing mating pieces to fit together gap-free. The basic form of a coping saw includes a handle threaded onto a "U"-shaped metal frame. The blade gets positioned between the ends of the "U" frame. The blades have a pin installed in both ends (perpendicular to the blade) that's accepted by two-pronged hooks at either end of the saw. Once the blade is positioned, the handle is rotated to add tension to the blade. The two-pronged hooks at either end of the "U" frame can rotate 360°, and some frames have detents at certain angles so both hooks are at the same angle. Sharp after-market blades will improve accuracy and quality of cut. Woodworkers and DIYers will use a coping saw to remove waste from dovetail joints, as well as other tasks around the workshop.

Price: $15 to $225
Blade length: 6-1/2"
Typical Blade TPI: 20
Throat Depth: 4" – 7"

Get the Most Out of Your **Coping Saw**

Adjust the Pressure

Rather than using a death grip on the saw's handle, relax your hand a bit and let the blade do the work. Focus on following the line.

Support the End

Making coping cuts with the end of the moulding unsupported causes lots of problems. A low bench or sawhorse is a nice addition when coping.

Take the Time

Slow down and be accurate when making your cut. This goes a long way to having a tight-fitting joint. Using a wide range of other tools to improve the joint, or having to re-cut the joint, is going to be slower in the long run.

File is a Last Resort

If you really are having trouble getting a tight-fitting coped joint, try fine-tuning the coped end with a fine file or sharp chisel to close the gap.

Practice on Scrap

Coping the end of a piece of trim doesn't take long, nor waste a lot of material. Even practicing a few times is going to improve the final look of your trim.

Photos by Rob Brown Illustration by Len Churchill

DON'T JUST Finish IT. Varathane IT.

SINCE 1958

rustoleum.ca/woodworking

toptenTop 10

Reasons why we Work Wood

Though I'm sure more than one of these reasons applies to each of our readers at any one time, there are lots of reasons why we all love to work wood.

BY ROB BROWN

1 Produce Something Tangible – Just the act of having something to show for your time spent in the shop is a large reason why many woodworkers work wood. I bet they generally don't even care what they're making or who the project is for. They just want to be able to emerge from their shop after a session with something to show for their hard work.

2 A Nice Change – The daily grind – no matter what you're doing – can take its toll over the long haul. Having something to trick your mind into completely letting go of what you did at your day job, and what's waiting for you tomorrow, is a wonderful thing.

3 Make Functional Items for Our Homes – Creating interior woodworking projects like furniture and accessories is a big reason why our readers work wood. Whether it's something they just couldn't otherwise find, or they just wanted the opportunity to casually mention "I just made this" to dinner guests, making projects for our home interiors is satisfying. Outdoor projects like a bike jump or a deck don't usually have the tight tolerances that most indoor projects do, and that's a great thing.

4 Home Improvement – From functional to decorative, DIY home improvements are very common these days. Even improving a home for resale happens very regularly. As long as you have the knowledge, a lot of money can be saved by doing something yourself, while the satisfaction of a job well done is immeasurable.

5 Make Gifts – Whether it's small Christmas or hostess gifts, or large wedding and birthday presents, making things for others is a lot of fun. We've all started making a Christmas gift way too late, but I guess we enjoy the pressure for some strange reason.

6 To Earn Income – Furniture makers, part-time businesses and people in the cottage industry all make at least a portion of their income via woodworking. They very likely got into the trade because they enjoy it – and probably spend more time working wood than most of our readers – but rather than taking the fun approach, they often take the fast and efficient approach.

7 Teaching Others – From time to time I'm guessing many of us teach friends or kids about woodworking. There are also people who teach woodworking as a business, and earn their income that way.

8 To Pass the Time – Some folks just like to stay busy, and shop time is one of their "go to" activities to keep their minds occupied. Maybe they got into woodworking as a hobby years ago, and rather than pick up a new hobby and need to amass a new collection of tools, they just stick with what they know and have.

9 To be Part of a Community – Talking with others during club meetings, socializing online and meeting someone at their shop are all aspects of woodworking some folks really enjoy. By nature, woodworking is generally a solo activity, but there's nothing saying we can't turn it into a more communal thing from time to time. Even branching out and doing something for the community can be very rewarding.

10 An Excuse to Buy or Use Tools and Machinery – Admit it. Many of us have likely started a project at least in part to justify a tool purchase. I've never been one to put the kit before the finished project, but the main goal for some woodworkers is to have a fully equipped workshop, and to be ready for action whenever the need strikes.

Did I miss your main reason for going into the workshop? Share why you work wood by sending me an email. *(See address below.)*

ROB BROWN
rbrown@canadianwoodworking.com

Go Online for More

RELATED ARTICLES: Top 10 Jig Making Parts *(June/July 2020)*, Make Better Use of Your Shop Time *(Feb/Mar 2011)*

Photo by Rob Brown

Canadian Woodworking's first two covers:
August 1999 and June/July 2000

Paul and Linda Fulcher with new publisher Michael Fox in February.

Good Luck, Paul and Linda!

In 1999, Paul and Linda Fulcher started the ambitious project of building a business to serve woodworkers across Canada with *Canadian Woodworking* magazine. Over more than two decades they built the magazine's readership, innovated ways to help marketers reach the woodworking community and expanded digital offerings. With this issue, Paul and Linda complete a carefully planned transition to new ownership and fully retire from the magazine.

This has always been a magazine team that has worked from their homes across Canada, so there is no office where we could gather to give them a hearty round of applause and swap stories. For the those of us continuing on, this is our way of saying, "Paul and Linda, congratulations and thank you. Best wishes for your other endeavours."

Paul and Linda Fulcher and King Canada have been part of each other's business families for 20 years. I like to think together we collaborated to help change the landscape of woodworking in Canada. As the magazine grew in popularity among woodworkers, we found our regular spot as an advertiser. Paul always made our discussions pleasant and memorable, and always thought of his readers. When we would meet at the many wood shows, Paul and Linda always greeted us with a cheerful "How are you doing?" and "What's new with your business?" which shows it's much more than a business to them. They were always able to bring together an interesting mix of informative articles, unbiased opinions and progressive advertisers. An enviable track record for any publication.

On behalf of everyone at King Canada, our dealers and distributors, we wish both Linda and Paul much happiness, good health the very best of luck in any future endeavors they may undertake. Collectively, we thank you for everything you brought to our business, *Canadian Woodworking* and woodworking in Canada.

Ted Fuller
Vice President
King Canada Inc.

Congratulations on your retirement, Linda and Paul. It's not often we meet and get to work with such nice people who turn into true friends. You two did. We saw how much skill, heart, effort and dedication that you put into reaching every milestone the magazine achieved. Thank you for the last 20 years.

Thank you, also, for passing *Canadian Woodworking* magazine on to an industry veteran like Michael Fox. We look forward to an exciting future with Michael and *CW&HI.*

Love and best wishes.
Gina & John Downes
woodshows.com

Two of the most fabulous people we've dealt with. Paul and Linda have been a precious part of our woodworking "family" for decades, enthusiastically cheering our personal triumphs like children, weddings and grandchildren. They always offered invaluable wisdom, genuine kindness, support and encouragement in times of difficulty. Their innovative and adventurous spirit helped guide us professionally to establish a strong presence in the woodworking market. With Paul and Linda it was never just about business, it was always about good friends/family you just happen to do business with. We will miss you and wish you all the very best on your next new adventures.

Everyone (Bob, Sonya, Angela, Danielle and Nima)
at R&D Bandsaws
Brampton, ON

Paul and Linda have done a great job over the years making *Canadian Woodworking* the successful business it is today. Having worked alongside Paul and Linda for more than 15 years I admire their sense of integrity and commitment. Together we formed a friendship that will not be forgotten. Happy retirement!

Bonnie Wittek
Burford, ON

We would like to say congratulations on a job well done, Linda and Paul! Where others gave up, your perseverance paid off. You gave vendors like ourselves a place to get our word out to the experienced and to the up-and-coming woodworkers alike in Canada. Your enthusiastic, beaming-with-energy faces will be missed. May the years ahead be good to you and your family.

Workshop Supply
Embro, ON

Wyatt Walkem

…on sanding all night, travelling and trying to turn stones.

BY ROB BROWN

Burl and Root Coffee Table – The tabletop is a piece of 2,000-year-old redwood burl from California, balanced on top of a salvaged 300-year-old pine root base. These roots were originally used as fence lines when southern Ontario was first expanding its farming fields. The finish is sprayed polyurethane and buffed out to a high sheen.

In order, what are the three most important items in your shop apron?
Metric/imperial tape measure, mechanical pencil with HB lead, digital caliper.

Do you prefer hand tools or power tools?
Hand tools, for the level of control.

Solid wood or veneer?
Solid wood

Figured wood or straight grain?
Figured wood

Inherited vintage Stanley Sweetheart or fresh-out-of-the-box Veritas?
Japanese pull plane, otherwise fresh-out-of-the-box Veritas

Flowing curves or geometric shapes?
Geometric shapes

Favourite wood?
Bubinga

Least favourite wood?
Pine

Excalibur Coffee Table – Walkem designed this table in his third year at Sheridan College in Furniture Craft and Design. The key elements he chose for this piece were to pierce and to fold. It's constructed with solid black walnut and cold-rolled steel that was pickled and oiled. The legs pierce through the table and the skirt folds in to tie the piece together.

Photos by Wyatt Walkem (Photo of Walkem by Erich Knoespel and Ryan Pechnick)

Wyatt Walkem, 26 years old, Wyatt Walkem Design, wyattwalkemdesign.com
Studio – 8708 10th Line, Norval Ontario, L0P 1K0. Size approximately 2,200 square feet.

Education – Diploma for Furniture Craft and Design from Sheridan College. I have been building furniture and turning for nine years. I specialize in tables, cabinets and one-off artistic pieces.

Personal life – I love Harleys, cooking, the outdoors, anything Japanese and a great conversation.

quotes

My studio is located on the second floor of a 1970s barn on my family farm. I have separate areas for each aspect of my work: wood storage; turning; sanding; assembly; and finishing.

My daily routine usually includes answering emails in the morning, and gardening and farm work during summer days. I save heavy machining until the early evening, then I will usually do light work like sanding until 2 a.m. The schedule will vary between the seasons. Woodturning in the winter months, as that is the correct time to harvest trees for my bowls. In late spring I make small items for my summer craft shows. During summer and fall I build furniture. I teach woodturning year-round.

My music is very important in the studio. Classic rock, but when I need to focus, I listen to some light coffee house music or traditional Japanese instrumental music.

I get design inspiration from many places, but when I really hit a wall I reach into a box of folded-up phrases and pull out two or three (tall, curved, light, steel, etc.) and will design from there.

I will continue to travel the world because every nation and culture has a design I can learn from.

When designing furniture, I usually start with five-minute sketches to pull up five to 20 ideas, moving a few into 1/8 scale mockups. Then I make a full-scale mockup before creating the final piece. There is more a full-scale mockup can tell you about proportion and assembly than any drawing can.

When I don't like something in one of my pieces it's usually the first piece to sell at a show. The buyer doesn't look at the same things I do. Makers are too hard on themselves. There is always room to learn, grow and try again.

I prefer a compromise with a client. I like to build for them what I would want to build for myself. I don't like to be pushed to create something that isn't exciting and compromises the quality of the finished piece.

For serious pieces, I will create a photo album of each process so they can feel that they were right there with me.

Most of my business I find at art shows and local farmers' markets. Word of mouth is a great way to grow a business, and social media is beginning to draw a large amount of attention as well.

It's important to continue to be creative by trying to develop new ideas and new work, however, with 4000+ years of makers before me, originality can be difficult. Don't be shy to make something that someone else has made if you like it, but always give credit where credit is due.

My work is a balancing act between one piece of material and a million possible ideas for the design.

To minimize complications, I prefer to have a design completed before starting a project. To work on the fly, constantly changing ideas, can become stressful and I lose the initial idea.

My life goal is to never stop learning. Being a woodworker has granted me a career that is full of potential to never stop learning.

What motivates my work is understanding that the trees I work with get a second life that may live on for years to come. I can also pass along the knowledge I've learned from my mentors by teaching others the skills of wood turning.

I'm most proud of a sculptural bowl I produced from the root of an apricot tree. It was the most challenging piece I've ever turned. It was both mentally and physically gruelling. It even included stones that had to be dealt with while turning.

Supporting local artisans versus overseas markets will keep our "Made in Canada" identity strong.

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SLIDESHOW: View a slideshow of Wyatt's work on our website.

Visions in Wood 2020
A Story of Creativity

Chair
Glenn Bartley
Arbutus, Danish cord

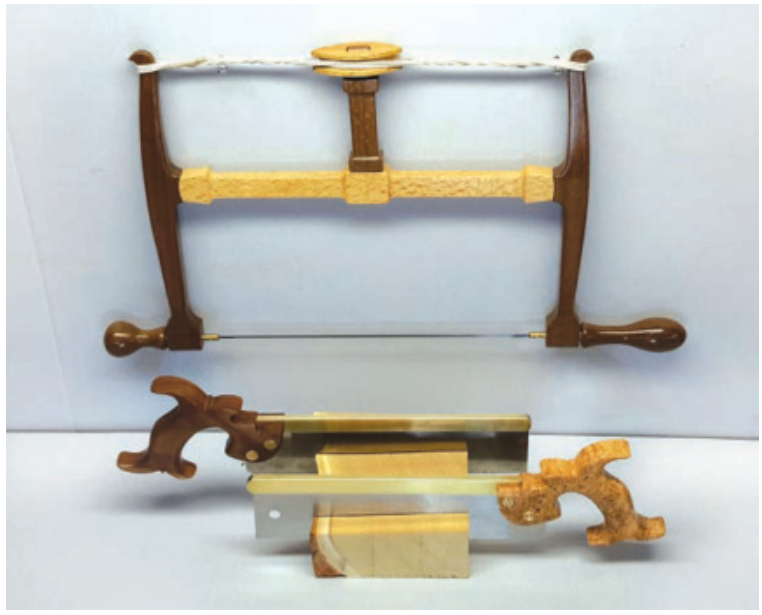
Generally, every two years, the Vancouver Island Woodworkers' Guild mounts a show of works created by its 150 members. Their most recent show was a challenge, as COVID-19 forced them to take a different approach and put on a virtual show. Phil Makin (show co-ordinator), Frank Letchford (show committee) and Bruce Thomson (web guy) worked to display to the general public the guild's work online, as they didn't want all the great work of their members to not be seen. Here are some highlights from the show. To view all the pieces in the virtual show, go to viwg.com and select Visions in Wood 2020.

BY ROB BROWN

Queen Size Bed
Geoff Burton
Bigleaf maple, Cambodian rosewood
(Photo by Armando Tura)

Photos by makers

Electric
Telecaster-style Guitar
Bernard Funston
Mahogany, ash, ebony



Three Saws
Don Gray
Garry oak, maple burl, walnut

Hall Table
John Dennison
Spalted maple, arbutus, apple branch

Candy Bowl
Phil Cottell
Pacific yew, pyrographed rim

Wavy Cutting Board
Eric Koob
Walnut maple, ash, sapelle

Tansu Tree Wall Cabinet
Ken Guenter
Bamboo

Poplar and Walnut Drawer Set
Jude Murphy
Poplar, walnut

Elliptical Hallway Table
Michael Walker
Honduras mahogany, holly, ebony

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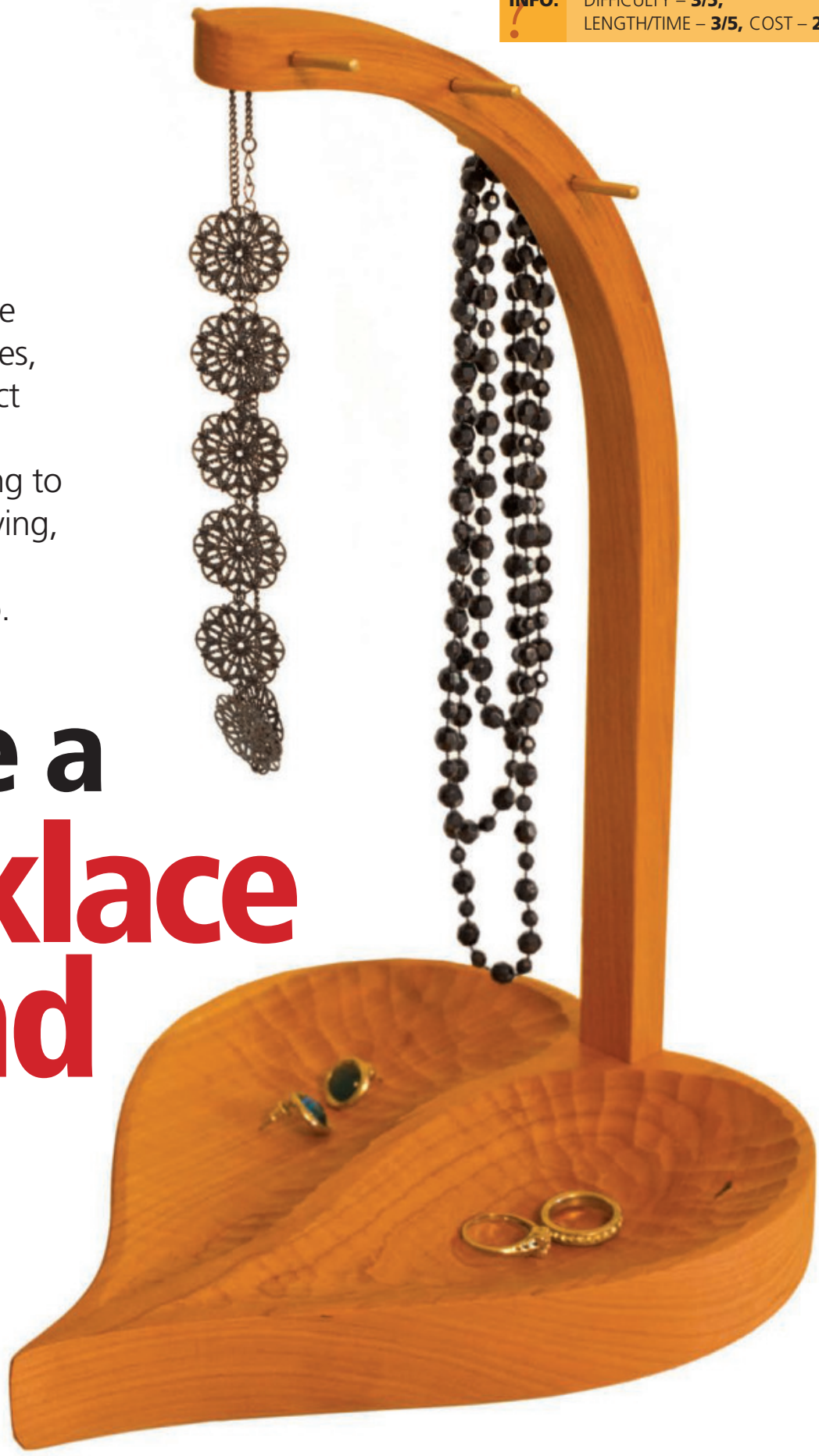
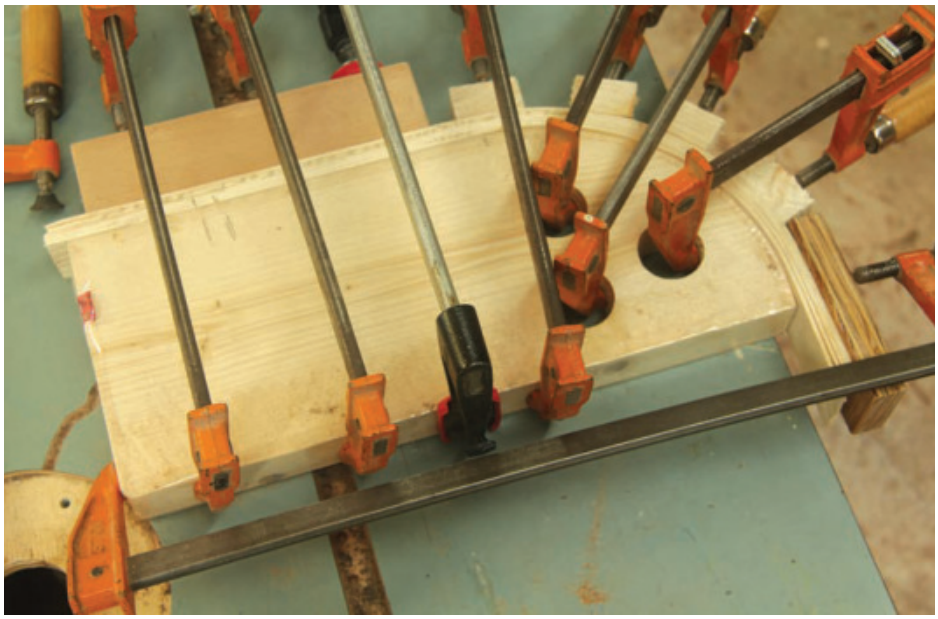
INFO: DIFFICULTY – **3/5,** LENGTH/TIME – **3/5,** COST – **2/5**

If there's a special someone in your life who wears necklaces, this is a great project for you. If you also happen to be itching to get into power carving, this is the perfect project for you, too.

Make a Necklace Stand



Photos by Rob Brown



Form the Caul – A caul spreads out clamping pressure. It's easy to use a straight piece of wood on the straight portion of this form, but for the curved end I decided to make a curved caul with this form. Because there will eventually be the laminations that make up the workpiece between the form and the caul, the radius doesn't work out perfectly, but this curved caul is thin enough to flex a bit and press the laminations up nicely.

BY ROB BROWN

I really enjoy power carving. The ability to quickly shape the wood into 3D shapes is addictive, and once you get the basics down you will only want to see how far you can go with it. It involves a few different tools that aren't commonly used in typical hobby furniture making shops, but they're probably not entirely unfamiliar to most handy folks, either.

An angle grinder is the main power tool used for removing the bulk of waste wood. A range of different power carving discs can be installed in the angle grinder to remove the wood. Companies like Kutzall and Arbortech both make a number of different types of cutters, all with slightly different advantages. Some are coarse, while others are much finer. Some are able to follow a template, while others can't. Some discs will remove wood on the face and the outer edge, while others only cut on their face. One disc even has holes in it so you can somewhat view the wood as it's being cut.

Burrs are other tools that can be used for power carving. They don't remove wood as quickly as discs, but they certainly have their benefits. They come in many different shapes, sizes and types. Used in a rotary tool, they offer the user a lot more control when getting into smaller areas and can be used to carve more intricate details into wood and some other materials.

Make a form

I started with the curved support, as that was the hardest part to make. The exact radius and height aren't critical, as long as it's tall enough so the necklaces don't come too close to the base.

I made a one-sided form that I could use to press the thin laminations against while clamping them. I used a 2×8 about 15" long for my form. I jointed one face flat and one long edge true, then drew a 5" radius arc so the straight edge of the form was tangent to the arc. Once it was cut on my band saw, I used a disc sander to fair the arc and smooth the cut surface. The curved support would be clamped directly against this edge, so I wanted it to be fairly smooth, though it didn't need to be perfect.

A curved caul

The main job of a caul is to spread clamping pressure. Clamping up a curved workpiece like this can result in portions of the glue lines being open, as there's not clamping pressure on the entire lamination. In this case, a curved caul can be

Mark the Laminations – Mark the end grain of the board you're going to cut the laminations from. This will allow you to re-position the strips in the same order they were cut from the board, keeping grain and colour as close as possible.

Cut, Then Use, the Caul – Because the curved end makes the caul hard to use, Brown made a sawcut leaving about 1-1/2" of straight caul on the curved section. During use, he positioned the glued laminations against the form, then brought the straight section of the caul into place with clamps. The next step was to use a few clamps to press the curved section of the caul into place to complete the bent lamination (top). The assembly was left for a few hours so the glue could cure (bottom).

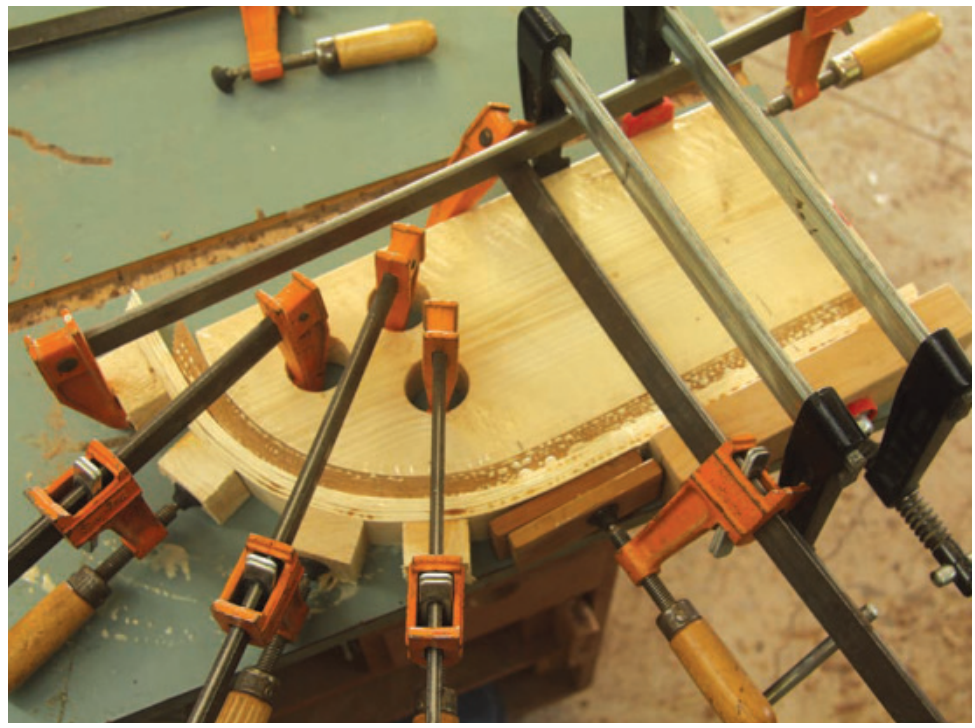
made to spread out the clamping pressure and keep the entire length of the curved section tight during glue-up.

I ripped 15" long lengths of 2×4 spruce slightly over 1/16" in thickness, then glued them together using the form. When dry, I cut the caul so the curved section of the caul had about 1-1/2" of straight at the end of it. This was because it's just far too awkward to use the caul whole.

Make the curved support

Similar to making the curved caul, I cut strips of cherry to about 1/16" thick. They needed to be thin enough to easily curve around the form without breaking, so I checked the first strip and adjusted the thickness as needed. Before ripping all the strips, I marked their end grain to ensure I could press them up in the same order they were cut from the board. This ensures grain and colour are as even as possible.

After applying glue to their faces, I positioned them against the form, brought the straight portion of the caul into place and added a few clamps. I had to make sure the position of the straight part of the caul didn't interfere with where the curved portion needed to sit. I then added the curved portion of the caul and applied pressure to it with clamps. I left it to dry for about an hour and a half, as I wanted to make sure the glue was dry. The internal stress of the tightly bent laminations might otherwise stress the glue lines too much. Besides, there was no rush, because I turned my attention to the carved base.



Power carving 101

If you're at all new to power carving you'll want to do a few things before carving this fairly simple base. First, practising on another workpiece (I would suggest some 2× material, as it's cheap and plentiful) will pay off heavily. Power carving isn't overly complex, but some practice will go a long way to allowing you to feel comfortable and have success shaping the base. This base is perfect for your first power carving project because it's not an overly complex design and the hollow doesn't need to be cut too deep. Also, if you mess it up, you're only wasting a small amount of material.

But before you even practice on a piece

of scrap, you'll want to educate yourself about power carving. Do a bit of reading and watch some videos online. I would recommend starting with an article we ran about power carving (Power Carving, June/July 2011) to learn many of the basics. Whether you read up on the subject or not, be sure to learn about personal protection before turning your angle grinder on. This is critical, especially for anyone just getting into power carving.

Power carved base

Working with a piece of 8" wide 6/4 black cherry, I cut off a piece about 15" long. The base was only going to be about 9" long, but the extra length would allow me to better secure the base while I was power carving and hand shaping the base. I jointed one face and one edge, then dressed the other face with my planer.

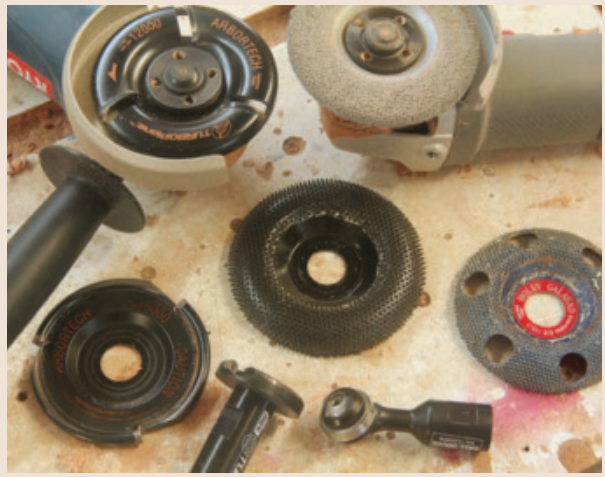
I needed a notch to accept the curved support, and the best time to machine that was before any power carving took place, as the piece was still whole. I clamped the base to my mitre gauge and machined a 3/4" wide × 3/4" deep notch in the center of the end grain.

Cut a Notch – A notch to accept the curved support needs to be cut into the end grain of the base before shaping occurs. A mitre gauge and a few clamps will simplify this step.

Sketch it Out – Brown drew the outline of the lilac leaf onto the board, keeping in mind the notch should be positioned at the center of the base of the leaf. Next, he added a slightly wavy center line. To complete the shape, a line offset about 1/8" was drawn around each of the two hollows. This line gave Brown something to work towards using power and hand carving tools.

Power Carving Discs

Similar to the job a router bit does in a router, power carving discs really are the special ingredient that makes power carving fun and dynamic. Companies such as Kutzall and Arbortech make a range of cutting discs that all have unique characteristics. Some discs are flat on the face, while others have a dished shape to them. Some abrade the wood, while others cut the wood with knife edges. The size of cutter is also something to consider. A 4-1/2" diameter disc is a bit better for larger, flatter surfaces, while a smaller disc or ball-shaped cutter will allow you to cut deeper into the wood. No one cutter is perfect for everything. Do some research and learn what type of cutter is best for you.



Before pulling the trigger, I needed to lay out the shape of the base on the workpiece. Starting from the position of the notch for the curved support, I drew an outline of the base. I opted for a simple, nearly symmetrical lilac leaf, but a bit of creativity will supply you with a lot of ideas. A lilac leaf is very similar to the shape of a heart, so that worked well for this gift, which will be for my daughter. With the outline done, I added a gentle S-curve down the center of the outline. Because I wanted to leave a small flat surface around

Drill to a Depth – Although it's not absolutely necessary, drilling holes near the center of the hollow to a determined depth will help you realize when you've power carved deep enough. When the holes disappear, you're at the right depth.

Almost There – After some power carving, Brown can see the holes are almost gone, so he's almost at the finished depth. You'll also notice he has stayed away from the edges of the hollow to ensure he doesn't carve beyond the pencil lines.

the perimeter, as well as between the two hollows, I added a line offset by 1/8" around both hollows. All of these lines were just roughly sketched.

Time for power

I screwed the base to my table saw's outfeed table. To guide me in obtaining a fairly even depth for the two hollows in the base, I bored a few small holes to 5/8" deep towards the center of the sections to be hollowed.

With the base secured to a solid surface and my personal protection on, I was ready for action. I opted for a Kutzall Original disc with a coarse coating, as I find that's a great middle ground for wood removal speed and smoothness of the finished surface. Because the edges of these discs have grit on them, I can also tilt the disc on its edge and use it to get into slightly narrower spaces.

Starting in the center of each hollow, I worked my way downward and outward until I was at the depth of the bored holes. That gave me my final depth. Now it was just a matter of widening the hollow towards the pencil lines. I stopped power carving before I got to all of the lines, as hand tools are far easier to control. In this project, power carving is used to remove the bulk of the waste, not obtain a perfectly formed hollow. Hand tools will complete this task for me.

Hand tools for the hollows

I used a medium-sized carving gouge to continue shaping the two hollows. If you didn't have any, you could just use the power carving discs very carefully, making sure not to go over the pencil lines. Without carving gouges, you might have to aim for a smooth surface inside each hollow, which can be obtained with a small sander or a lot of hand sanding. Once the surface was

Hand Tools Take Over – With the majority of the power-carved hollow complete, Brown switches to hand carving tools. They remove wood more slowly but in a more controlled fashion, allowing him to carefully work towards the pencil lines. He first evens out the area to create a nice visual base for the final carving.

generally even, and the hollow was shaped, I used a sharp carving gouge with a #7 sweep to add some texture to the hollows. I started at the center of each hollow and moved upwards towards the perimeter of the hollow as I went.

Perfectly Imperfect – With the hollow relatively even, Brown focuses on using a carving gouge to leave a smooth facet on the entire surface of the hollow. Perfection isn't the goal, just a vaguely uniform series of gouge marks, leaving a visually pleasing surface.

A Simple Jig – Rather than go to a lot of work aiming for the perfect angle, Brown used a piece of maple supported on one end by a strip of wood about 1-1/2" wide to provide a drilling support to give him angled holes. This will leave the hanging pins at a slight angle once they're installed, keeping the necklaces from falling off the pins.

Brass Pins – Brass pins are a nice visual touch for this refined project. Chuck 1" long lengths of 1/8" diameter brass rod in your drill and use abrasives and steel wool to smooth and polish the pins before fixing them in the curved support.

Attach the Curved Support – Glue should hold the curved support in place for a long time, though a plugged screw driven through the curved support into the base would add even more strength.

Trim the base to size

As long as you didn't power or hand carve too far over the line you can use a band saw to cut to the outer line, leaving a very small amount of material to sand off. Sand the edge with whatever selection of hand and power sanders you have at your disposal.

Before the base is ready for the curved support, it needs its lower edge softened. I ran a 1/4" diameter round over bit around the lower edge and sanded it smooth. I also sanded the narrow perimeter of the upper edge as well as the underside of the base smooth.

Back to the curved support

I placed the completely cured curved support on my jointer's infeed bed and carefully jointed one face flat, keeping my hands away from the cutterhead. Next, I adjusted my planer and dressed the other edge with a few passes. I had to adjust the position of the workpiece while the planer machined the curved end. I did this by pulling sideways on one end of the workpiece, rotating it with my hand. The reason for this was so it wasn't going through my planer somewhat sideways, as the planer blades might blow out the grain. I stopped once the curved support almost fit into the notch in the end of the carved base. A bit of sanding and the base of the curved support fit nicely in the notch.

I then cut the curved end to length and shaped it smooth. Like much of this project, the exact length of the curved support isn't critical. I left it fairly long so I had more room to add an extra couple of necklace hanging pins towards the end.

Drill the hanging pin holes

There are fairly simple jigs that can be made to give you exact angles while boring holes on the table saw but, once again, I wasn't too picky on the details. I knew the hanging pins needed to be on a bit of an angle so the necklaces wouldn't fall off, but what that angle was didn't worry me too much.

I opted for three holes per side, about 2" away from each other, and marked them with a pencil.

I grabbed a piece of scrap wood about 15" long and wide enough to support my curved support. I found another piece about 1-1/2" wide that would raise one end of the first piece and give me an angle to rest the curved support. With the workpiece and jig oriented so the holes would point the hanging pins upwards when installed, I drilled the holes slightly short of halfway through the curved support. Make sure to test the fit of your pins to the hole size you drill before drilling them.

Copper pins

Wood pins are an option, though I think the look of copper and cherry is gorgeous, so that's what I went with. I cut the pins 1" long, then lightly chucked them in my drill to sand their outer end smooth, followed by a polish with some #0000 steel wool. I used a small amount of epoxy to fix the pins in place.

Attach the curved support

Before attaching the curved support, I drilled five holes to accept small rubber bumpers on the underside of the base. This will minimize the amount of sliding the stand does and provide a nice feel to the piece.

After sanding the curved support and breaking all the edges, it was time to glue it into the notch in the base. I applied a small amount of glue to the sides of the notch, as well as the end grain of the notch, then clamped it in place for an hour. The fit of the curved support in the notch I made was fairly snug, otherwise I would have opted to add a screw and plug to hold the curved support to the base.

A finish

Applying a finish on a project like this is mostly for looks. Sure, it will help protect it from a small amount of wear and tear, but not much. Test a finish on the wood you've chosen to see if you like the look.

Applying a finish to textured wood can be difficult. Brushing is an option but wiping generally isn't. Lint from a cloth is virtually guaranteed to get stuck in the texture and be very unsightly. I find spraying a finish on is usually the best option. Lacquer and polyurethane are widely available in aerosol spray cans, and that's what I used. I applied three coats of Varathane's Professional polyurethane, allowing it to dry thoroughly, then sanded between coats.

A buff with wax and #0000 steel wool and the stand was ready for the crowning jewels. I hope my daughter enjoys this gift for many years to come. I sure enjoyed making it for her.

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CBN GRINDING WHEELS

Although they have been available since about 1970, cubic boron nitride (CBN) grinding wheels have only recently started to gain popularity among woodworkers.

Photos by Chris Wong

BY CHRIS WONG

No woodworking tool or accessory has impressed me more than my 80-grit cubic boron nitride (CBN) wheel. CBN is a synthetic abrasive that's almost as hard as diamond and is best used on hard ferrous metals. A CBN wheel consists of a metal body (usually steel) with CBN grit on the working surfaces.

I had my first experience with a CBN wheel when I was restoring a 1-1/4" wide chisel. It seemed somebody had been abusing it, as there was a big chunk missing from the corner of the edge. I set the bench grinder's tool rest at approximately 90° to the wheel and, bevel up, proceeded to grind the edge straight, removing about 1/4" of steel. Then I flipped the chisel over, adjusted the tool rest and ground the bevel. All this was done in a matter of minutes without needing to pause to cool the tool.

With the "cool wheels" I was used to, I would have had to quench the steel in water every 10 seconds to avoid overheating, and the process would have probably taken three times longer.

Most grinding wheels are made of either silicon carbide or aluminum oxide abrasive bonded together to form the wheel. Both materials are insulators. Through use, the grit particles are released from the wheel to expose sharp, unworn abrasive. This keeps the wheel cutting efficiently but has the downsides of the wheel needing to be dressed frequently and a continually changing diameter.

CBN, on the other hand, is a conductor so it cools the tool as it works. CBN wheels don't wear so they don't need to be dressed or trued, and they remain the same diameter, meaning sharpening jigs don't need to be reset in order to maintain the same geometry. The wheels have an exceptionally long service life and I don't expect to replace mine in my lifetime.

Constantly flat

An added benefit of wheels that stay flat is that you can rely on them to aid you in grinding edges straight.

CBN wheels are available in a variety of grits and a 6" wheel can easily cost over $100 and an 8" wheel over $200. I started with a medium-grit wheel, 180. I found it painfully slow for reshaping and modifying tool geometry, something I do quite often, so I subsequently purchased a coarse 80-grit wheel. If you don't often radically change the geometry of your tools, consider a 180-grit CBN wheel.

Nice and Straight – Wong ground this plane iron by hand using only a flat tool rest. While he was not being super-careful about keeping the edge straight, the resulting edge was very straight. This is a benefit of a wheel working with the user, rather than against the user.

Outfitting CBN wheels on a slow-speed grinder will further reduce the chance of overheating, but I have been more than happy with my 80- and 180-grit CBN wheels on my high-speed 6" bench grinder. Regardless of what grinder you plan to use, look for balanced wheels or be prepared to invest some time repositioning the wheel on the arbor for the best balance and smoothest performance. Properly set up, the grinder will hum.

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INFO: DIFFICULTY – **3/5,** LENGTH/TIME – **3/5,** COST – **3/5**
SPECIAL TOOLS – **LATHE**

Turn a PENCIL CRAYON PEN

You may have seen these turned pens made from pencil crayons before, but you've probably never seen one that's so easy to make. Forget about resins, casting and pressure pots. All you need here is plenty of CA glue.

BY JAMES DOBSON

I was first approached by a long-time customer who wanted a set of pens as a wedding present for two teachers who were getting married. He showed me a photo of a similar pen that used round pencil crayons with the spaces between them filled with resin. At first, I told him I couldn't take the job as I didn't have the necessary tools, and that one job wouldn't pay for their initial cost. A few days later I happened to find myself in my local dollar store where I found hexagonal pencil crayons. I had a lightbulb moment and bought a couple of packs.

CA adhesive to the rescue

Cyanacrylate, or CA, glue is a staple in many shops. It's quick to dry, forms a very strong bond, dries clear and is relatively inexpensive. Turners are especially drawn to it as a durable finish for pens and other small items. It comes in different viscosities from a thin, water-like glue, all the way up to thick, syrup-like glue. The glue also responds to an accelerator that causes the glue to cure instantly. I'll be using both the thin and the thick glue as well as the accelerator on this project.

Photos by James Dobson

Cut into Short Lengths – Though Dobson uses a band saw to cut short lengths of pencil crayons, a hand saw would also work well. He holds each pencil securely while cutting so it doesn't rotate.

Start with a Triangle – CA glue will bring the short lengths together quickly. Start with a trio of pieces, ensuring they are as aligned with each other as possible.

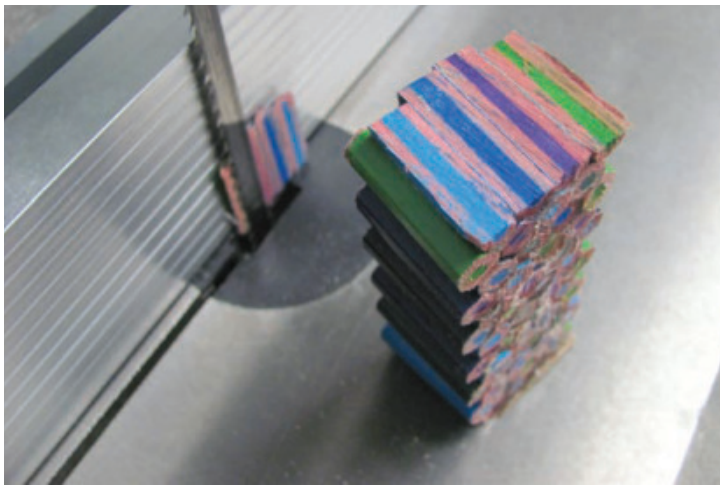
Keep Adding – Add more short lengths as you go, making sure to keep them all as aligned and straight as possible.

The Final Blank – When the blank is large enough to create the final workpiece, you can stop adding to it.

Short lengths

I start with a package of hexagonal pencil crayons. Twelve is just enough to build up a blank long enough for the kit that I'm using. You may need more or less depending on the kit you're using. Cut the pencils to lengths of 1" with the saw of your choice. I used a band saw, but made sure to hold the pencil crayons securely with each cut so they wouldn't rotate. A Japanese hand saw and bench stop is a good option for many woodworkers.

With your thick CA glue and accelerator handy, start by gluing a triangle of three blanks. Keep adding to this until you have two layers of four pencil segments. Work quickly so squeeze out doesn't harden on surfaces you need to glue to later. Also mind your fingers. CA glue forms very strong bonds with skin and it's common for me to glue my fingers together several times while building a blank. Use the accelerator to ensure joints are adhered to each other as you work. Continue to build up your blank, piece by piece, until it's slightly longer than the brass tube.



Trim One End Square – Although it doesn't need to be perfect, creating a fairly flat, square end makes boring a hole through the center of the blank easier.

Prep your blank

Now that you have your blank you can prepare it for the lathe. I square up one end of the blank using the band saw again. This doesn't need to be perfect, but it helps with layout for drilling. Mark for, and drill out, the center with the appropriately sized drill bit. Some people use CA glue to attach the brass tube to the blank, but this is not the time for that. Use a good five-minute epoxy. You want the added strength to keep each segment secure and it helps with gap filling if needed. There are products that you can buy to plug the ends of your tube while gluing, but I have gotten good results with playdough. Make a ¼" thick disc and push the ends of your tubes into to block them. This keeps the inside of the tube clean, because as the playdough dries it shrinks, making it easy to remove.

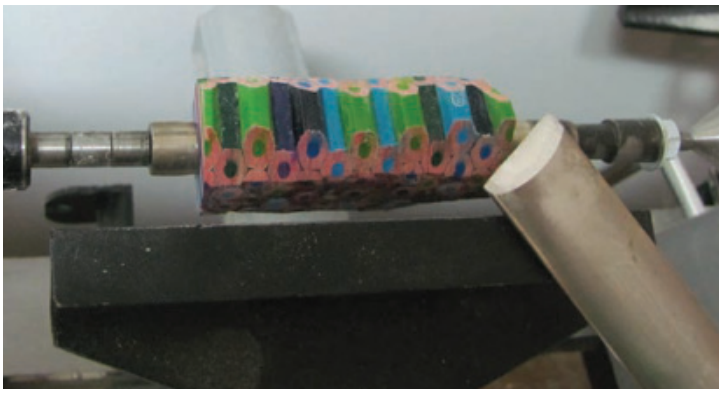
Once the epoxy has fully cured you can finish cleaning up the ends. I use a disc sander I made for my lathe, but there are many other options available. If you have an end mill you can use that here, but note that I have never tested how the tool cuts through the pencil segments so proceed at your own risk. I cut the corners

Epoxy is the Solution – For relatively fast curing and great gap filling abilities, epoxy is a great adhesive for securing the tube to the workpiece.

Down the Middle – With the blank securely held, use a drill press to bore a hole to accept the pen hardware.

Not Just for Kids – Playdough is great for capping the ends of the tube while you're using epoxy to secure it in the workpiece. It soon dries and falls out.

Even Up the Edges – Touch up the ends of the blank with a disc sander.



One Turning Tool – Dobson uses a 1" oval skew to do all the turning. Before turning the lathe on he removes some of the material off the four edges to make turning easier and quicker.

CA Adhesive Finish – Dobson applies six coats of CA glue to the turned workpiece to protect it and provide a glossy finish.

off of the blank with my band saw here. This isn't 100% necessary but it speeds the turning process. No need to be overly precise; just don't cut too close to the tube.

Mount on the lathe

Mount the blank on your lathe with the right mandrel and bushings and get to turning. I use a 1" oval skew chisel exclusively. Its shearing cuts are perfect for this application. I turn around 1800 rpms. Turn your blank down to the size required by the bushings. You should use a very sharp tool for your final pass as we will not be sanding this blank. We want to avoid staining the wood with the dust made by the leads. However, in my experience, a little staining is unavoidable. Coat the blank with dewaxed shellac and allow this to dry before proceeding with finishing. This coat seals the colours and helps reduce staining.

Finishing it off

For the finishing process I turn back to CA glue. Turn your lathe speed to as low as it will go. Grab a blue shop towel and fold it over itself a few times. Hold this on the bottom of the spinning blank with your left hand. With your right hand hold the bottle of thin

Removal – Dobson uses a sharp blade in a utility knife to remove the turned blank from the mandrel.

CA glue and run a line of glue from left to right. Your left hand should follow the right so that the towel is levelling out the glue as it pours. Wait for the glue to dry and then give it another coat. Continue until you've applied six coats. Some people recommend more but I've found six to be sufficient.

You can use the accelerator to speed this process, but be careful. If you spray it too close to the blank or the droplet sizes are too big you may be left with white spots in your finish. If this happens, you need to sand away all the glue, but if you recall, we're trying to avoid sanding these blanks. It's better to just be patient and allow the glue to cure on its own.

Time to sand

With the CA finish applied and cured we can finally break out the sandpaper. Lay a towel over the ways of your lathe bed and get a small container of water. Lightly wet sand starting with 600 wet/dry paper before switching to micromesh pads. Continue wet sanding all the way up to 12,000. You can apply a plastic polish at this point if you wish or just buff with paste wax.

To remove the finished blank from the mandrel I use a fresh blade in a utility knife. Hand spin the lathe away from you while keeping the knife just on the edge of the bushing. A few passes will do. Remove the blank from the lathe and a little lateral pressure will break the blank free from the bushings. If any glue is protruding past the edge of the blank, trim it with the disc sander as well. I use a drill bit that fits inside the brass tube to align the barrel to the sanding disc. Assemble the pen as per the kit instructions and you're finished.

JAMES DOBSON
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RELATED ARTICLES: Pen Making 101 *(Feb/Mar 2010)*

INFO: DIFFICULTY – **2/5,** LENGTH/TIME – **2/5,** COST – **2/5**

MAKE A CHARCUTERIE BOARD WITH DRAWERS

Sitting down to enjoy delicious food and quality time with guests is great. Even better is being able to deliver a charcuterie board everyone can eat from.

Photos by Robert Zakarian

BY ROBERT ZAKARIAN

I was in the market for a cheese serving board, however all the boards I found in stores were quite small and not what I was looking for. It was a great opportunity to design and make a custom board. This board measures 45" in length by 11-1/4" in width and is 4" in height.

Wood selection

I used solid maple for this project. The drawer fronts are solid walnut for accent. Pretty much any wood will do. You could choose a bold wood like padauk or zebrawood, but I thought that approach was a bit too over-the-top for my taste. To each their own. Using a closed-grain wood is likely best, as there's less chance food will get left in the grain to grow bacteria. Although wood is naturally resistant to that sort of thing, I prefer to be on the safe side.

Make the top

The top is 45" long and 11-1/4" wide. The final thickness is 1-1/4". I dressed four boards to about 2-1/2" wide, then glued them up to exceed the final width. When dry, I sent the plank through my thickness planer and cut it to final size. Rout a pleasing edge around the upper perimeter of the top. I opted for a 1/4" chamfer.

Four supports

Another custom thought I had while making this board was including storage. I added two drawers to keep assorted serving utensils organized and nearby. The drawers could be made to whatever size you like. I made these drawers with the size of my utensils in mind. I decided to attach four supports to the underside of the top. Their function was two-fold. First, they would support the top. Second, they would have grooves in their sides that would guide and support the two simple drawers.

Though there are a number of options, I decided to use sliding dovetails to fasten the supports to the underside of the top. I cut the four supports to size, keeping in mind the extra material needed for the sliding dovetail tenon. The overall height of the top was 4". Subtract the 1-1/4" thick top and you get 2-3/4" for the supports. Then add in the height of the sliding dovetail tenons (1/2") and you have a final width of 3-1/4" for the supports. Cut those four parts to size now.

I used my Porter Cable jig to cut the sliding dovetails on the underside of the top and all four drawer support pieces. There are many ways to cut sliding dovetails. If you don't have a jig, rout the four sliding dovetail grooves in the underside of the top first, then install the same router bit in your router table and carefully adjust the height to allow you to router the sliding dovetail tenons.

As for the spacing between the sliding dovetails, I located the outermost supports 1-1/4" from either end. The two innermost supports can be positioned according to how wide you want the drawers.

Sliding Dovetail Grooves – Zakarian routed four sliding dovetail grooves on the underside of the top. These grooves received the sliding dovetail tenons on the side of the four supports. Placement of these grooves isn't critical, but will determine how wide the storage drawer is.

Drawer Sub-Assemblies – Though you can install the supports and then add the back rail, Zakarian opted to bring the three parts together first. The length of the back rail has to be cut exactly to length if you go this route.

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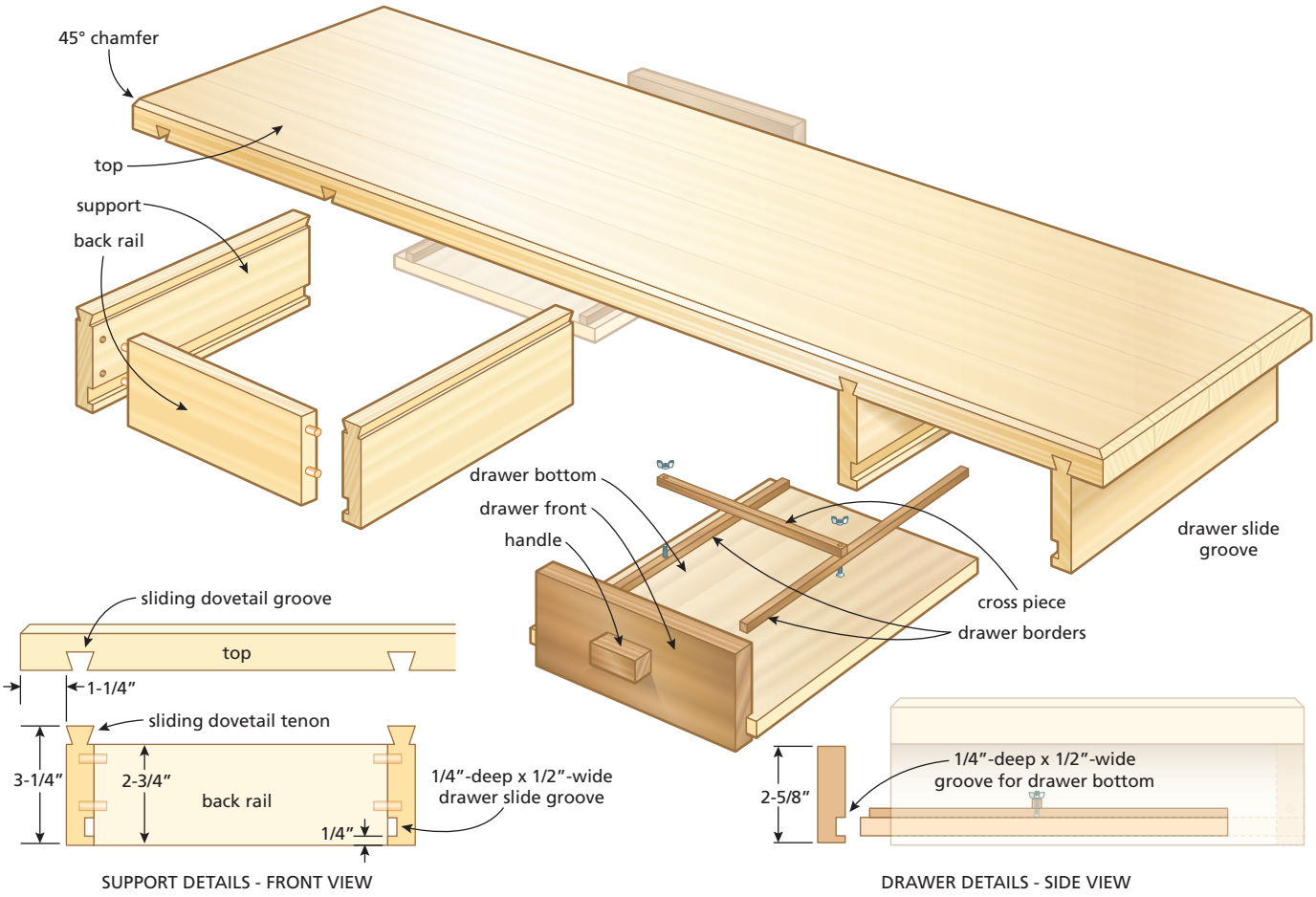

Materials List

Part	Qty	T	W	L	Material
Top	1	1 1/4	11 1/4	45	Maple
Support	4	3/4	3 1/4	11 1/4	Maple
Back Rails	2	3/4	2 3/4	To Fit	Maple
Drawer Bottoms	2	1/2	To Fit	To Fit	Maple
Drawer Fronts	2	3/4	2 5/8	To Fit	Walnut
Drawer Borders	4	3/8	3/8	To Fit	Walnut
Cross Pieces	2	3/8	3/8	To Fit	Walnut

Hardware List

Name	Qty	Size
Handle	2	To Fit
Adhesive Bumpers	4	
Wing Nuts	4	1/8"
Bolts	4	1/8" x 3/4" long

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Simple Drawer – This may be the simplest drawer in the world. A flat bottom inserts into a groove in the rear of the front. The sides of the bottom run in grooves in the side of the supports.

With the dovetails compete and dry fit, I machined a drawer groove on the inner face of each of the supports. These 1/2" wide grooves are cut using the table saw and a dado set. I positioned these grooves 1/4" away from the bottom edge of the support. The drawer bottom will fit into these grooves and allow the drawer bottom and face to slide in and out.

Two back rails

So the drawer cavity isn't left open on the back side, I added a simple back rail between the two supports at either end of the board. From simple to complex, there are lots of joinery options. I chose simple, and used a butt joint strengthened by a pair of 1/4" dowels to hold each joint secure. These back rails are 2-3/4" high and are cut to length during assembly so they fit perfectly between the supports.

Two-piece drawer

The drawer bottom was glued up so it would fit between the two supports. I then planed it down to just under 1/2". This will allow the drawer to slide freely in the 1/2" wide groove in the sides of the supports. The two drawer fronts are also machined to size now, and a 1/2" groove is cut in the rear of the drawer front to accept the bottom. This joint will only be glued at the center 5" or so to allow the drawer bottom to shrink and swell with seasonal movement.

Dry fit and assembly

Once all the parts are complete, I double check everything with a dry fit before final glue-up and finishing. All the parts were sanded prior to the final glue-up. The assembly was quite simple. You can assemble two supports with a back rail, then install that assembly in the sliding dovetail grooves on the underside of the top first. Another slightly different variation is to install each support, then add the back rail between them. The choice is yours. I chose to assemble two supports and one back rail, then added that assembly to the underside of the top.

Glue two supports with the mating back rail and fasten them. Next, partially install the support assembly into the front of the top, so only half of the length of each support is inside the sliding dovetail in the top. Apply glue to only the portion of sliding dovetail that's visible. This allows the top to move with the seasons, but keeps it in place. Repeat for the other side.

Customize It – In order to keep his utensils from moving around, and to add a sleek finished look, Zakarian added a pair of walnut side rails, and a third cross rail to the interior of his drawers. A pair of small wing nuts are removed to access the utensils.

At this stage the drawer faces can be glued to the drawer bottom and ensure the fit is perfect.

The 3/8" × 3/8" drawer borders were made and attached to the sliding tray with glue. They help contain the drawer's contents. By adding another cross strip to the borders, you can lock the utensils in place. If that's the approach you'd like to take, countersink a small bolt into the underside of the borders, and install it with its head pointing downward. A mating hole can be drilled in the crosspiece, and a small wing nut can be added to hold the crosspiece in place.

A handle is next. I shaped and attached a wooden handle, but a store-bought handle is also an option.

Finishing

I used a food grade oil from Ligna for a finish, but there are many other good options out there. Once a few coats are applied, and a rubber bumper is added under each corner of the project, the charcuterie board is ready to be delivered to its new home and enjoyed.

ROBERT ZAKARIAN
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RELATED ARTICLES: Super-Simple End Grain Cutting Board *(Dec/Jan 2020)*

INFO: DIFFICULTY – **2/5,** LENGTH/TIME – **2/5,** COST – **1/5**

MAKE AN INTRICATE CHRISTMAS ORNAMENT

This little gem will get people asking, "How did you do that?" As they hold it close, looking for the secret, they'll also ask, "Is it one piece?" I like to tell them it's magic before I reveal the truth.

BY HEATHER CRAIG

Start off with deciding on an ornament pattern. You're more than welcome to use one of mine, but if you're interested, half the fun can be designing your own. Determine the size of your ornament. A width any smaller than 3/4" doesn't leave much room for beads, and any larger than 1" and it is difficult to cut on the scroll saw. As for the length, I recommend 2" minimum or it becomes difficult to hold.

Start with a rectangle, then create your design within its boundary. Consider the size of beads or crystals you plan to use and make sure they will fit the opening. Ensure the length between the top of the ornament and the opening doesn't exceed the length of your drill bit. The same goes for the bottom.

Photos by Heather Craig (Lead Photo by Rob Brown)

Happy with your plan? Then fold the paper along the length and trace the pattern. It helps to hold it up to a window during the day or use a light table if you have one. Unfold the paper and your design should be duplicated and side by side.

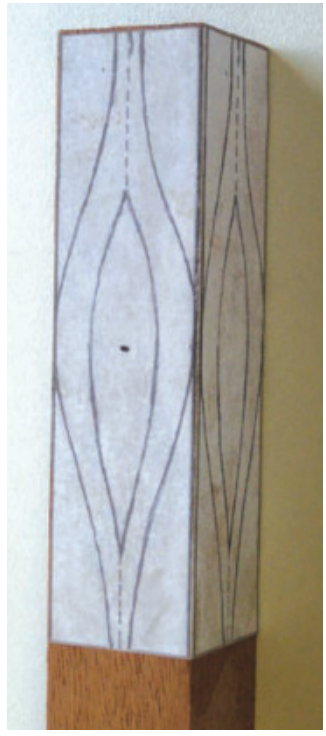
If you prefer a high level of accuracy, instead of tracing the image, scan it and duplicate it using Photoshop or similar image editing software. You may want to make more than one ornament of the same design; if so, copy the pattern before you use it. If you scan the pattern, you can duplicate it with the click of a button using image editing software; fill the page if you feel ambitious. Re-sizing the design is also much easier with this type of software.

You may have a particularly showy piece of wood that deserves more presence. It may be a nice piece of burl. Maybe a piece of walnut where the light sapwood meets the darker heartwood. In this situation, consider incorporating a solid section into your design.

Preparing

The traditional ornament pattern I have selected is 7/8" wide by 3-1/2" long. Cut a blank to that dimension. I tend to have several cut-offs from other projects hiding in the corners of my shop. I start with a piece at least a foot long, rip it to within 1/16" of the width, then put it through my thickness planer, bringing it to the final width.

Fold the pattern along the length and position it on the blank. Verify the pattern doesn't extend past the edge of the blank. If it is slightly within the edge, that's okay, but if it extends past the wood, either cut a new blank or change the size of the pattern. Use spray adhesive to glue the pattern to the wood. If you're making more than one ornament, glue several patterns to the piece. Leave at least 1/8" between them to allow for waste when cut to length on the mitre saw.



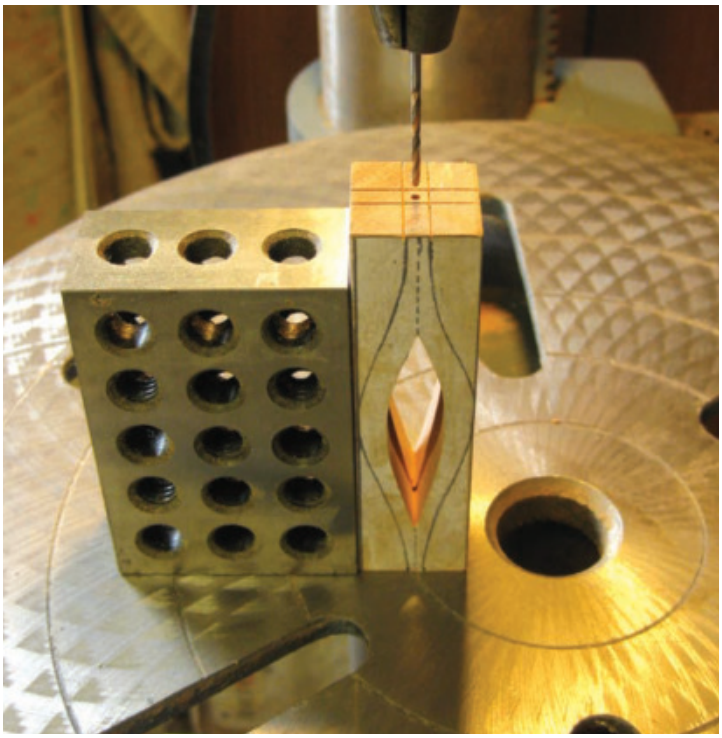
Adhere the Pattern – A pattern will go a long way to keeping the ornament symmetrical and even if that's the look you're going for. Use spray adhesive to affix the paper template to the blank. Repeat the same on one of the adjoining faces.

Play it Safe – Craig prefers the safe approach of slightly starting the cuts in the ends of the ornament, then marking the center point of the end grain with an awl. This ensures minor differences in layout and cutting don't translate into ruining the workpiece by drilling through the face of the finished ornament.

Drill the cord holes

Once the glue has dried, cut the block to length. Make sure both ends are square, then mark the center of each end. Normally, I would do this by drawing lines corner to corner. The intersection of the lines would mark the center. But I have found that if anything is slightly off — and something often is — then when I cut out the pattern, there is a chance of cutting into the hole for the cord. So, to mark the center, begin all four cuts at each end. Using an awl, mark the center of the little square.

Next, drill the holes for the cord using a 1/16" spiral bit. To drill the hole exactly vertical, so it ends up in the center of the opening,



Drill Cord Holes – While ensuring the workpiece is square to the drill press table, bore a hole for the cord in both ends of the workpiece.

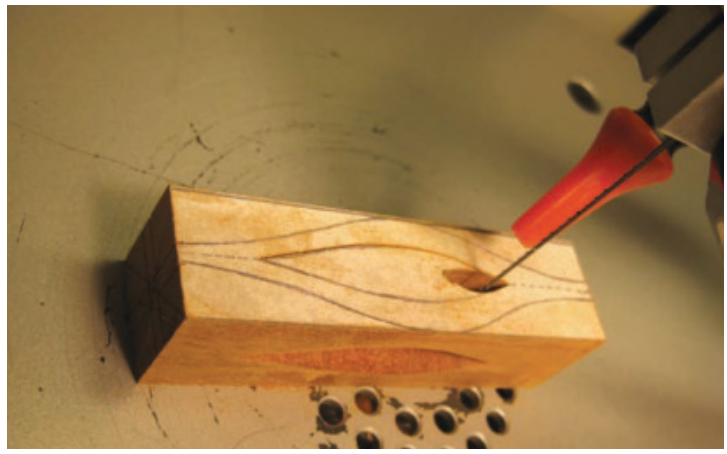
I use a drill press and a square. With the square tight against the wood and firmly on the drill press table, line up the drill bit with the awl mark at the center of the end grain. Slowly lower the bit into the wood part way, raise it out, lower again, and repeat until the hole is drilled. If these holes are bored too quickly, the bit is thin enough that it will drift and the hole won't be centered in the ornament opening. Drill pilot holes in the center ovals to be cut out.

Let the magic begin

It's time to start cutting, but first you need to choose the right blade and make sure you have a good supply of 1/2" transparent tape.

Generally, thicker blades (#5 and up) are recommended for thicker (3/4" and up) and harder wood. They tend to cut faster and straighter (less drift), and they break less often. Thinner blades (#3 and under) are recommended for thinner, softer wood, providing better control and cutting more intricate contours.

For this pattern any of #5, #7 or #9 works well. Most of the time I prefer #5. It cuts a bit slower, but for me it's a comfortable balance between speed and accuracy.



Into the Corners – Craig makes a series of cuts to remove the waste from the inside corners of this design. Taking the time to complete this process carefully improves the overall look of the finished ornament.

Even though thinner blades are generally recommended for thinner wood, they can still be used in thick wood. I used a #3 to cut out the more intricate portion of this pattern. Don't force the blade. It takes a bit longer, but it will get the job done. It won't make the corner in one swoop, but there is a way around that. I cut into the corner along the line, then back out slightly. Cut into the corner again, but to the open side of my original cut, the width of the blade. Then back off again. Now there is enough room to turn the corner and continue along the line.

It's worth investing in precision-ground, reverse-tooth blades. The cutting is more aggressive, allowing you to use a thinner blade than generally recommended. The finished cut is cleaner because it cuts both on the way down and the way up.

I also recommend investing in a desktop tape dispenser. It can be tricky holding the ornament pieces together while trying to pull a length of tape from a handheld dispenser. You could tear off a number of pieces ahead of time and have them hanging from your work station, but they lose some of the adhesive and get tangled.

Now that you have the right blade and transparent tape at the ready, cut out the center of the ornament and discard the pieces. Using the cuts you made earlier, at the top end of the pattern, cut along one side. Put the piece you just cut off back and tape it into place. Cut off the piece on the opposite side and tape it back together. Rotate the block, cut the next piece and tape it back into

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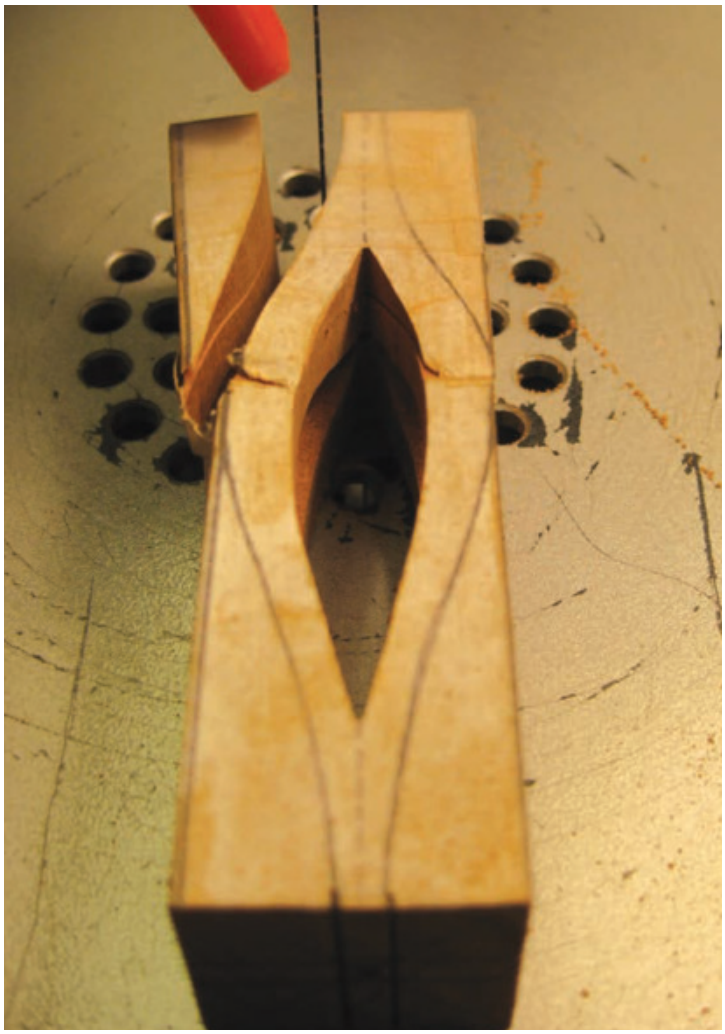


Cut, Tape, Rotate, Cut – Craig made some cuts in one face, taped the waste back onto the workpiece, then rotated the ornament 90° to cut in the other direction. It's a process that's similar to making a cabriole leg.

place. Continue cutting each section and taping them back into place. Once you've cut the last section, no need to tape it into place. Reveal the magic and peel off all outer pieces.

Sand and finish

Smooth the contours with 80 grit sandpaper. Then finish the surface to 180 grit paper. Apply a finish of your choice. What finish you use isn't overly important, as these ornaments won't see a lot of abuse and won't have to stand up to water or chemicals. The decision comes down to ease of application and the look of the finish on the wood you've selected. I chose polyurethane, and applied four coats, sanding with Crocous cloth between coats.

If you've selected an intricate shape to cut you might have to take extra care to apply finish to the entire surface of the ornament. Small brushes can be used to get finish into corners and tight areas. Often a can of spray finish makes applying a finish to uneven or curved surfaces like these a bit easier. Getting at least one coat on the entire ornament is critical, as one coat will at least provide an even colour to the project, and viewers will be less likely to notice any spots that didn't get extra coats.

Some of the finish will likely have plugged the cord holes, so redrill to clean them out. No need to use the square, as you can just let the drill bit follow the existing hole.

String the beads

Begin by laying out the arrangement of beads next to the ornament. I like to start with a large, eye-catching one for the middle, followed by progressively smaller beads in a symmetrical pattern on each side.

There's an overwhelming selection of jewelry beads both in-store and online. Every shape, size, color and material you can imagine, but they're often sold in large quantities. If you're making just a few ornaments, you may want to look for local bead shops. Although more expensive, they sell individual beads and small strings of beads. If you enjoy hunting for a bargain and repurposing materials, then check out local thrift stores. Old jewelry is a good, inexpensive source of beads and looking for them is a fun outing.

Next, cut a piece of cord 10" long. String or fishing line can be used, but it's sometimes difficult to obtain sufficient tension so the beads don't sag. To avoid unnecessary frustration, I use a clear, 0.6mm elastic beading cord.

A knot can be used to hold the cord at the bottom of the ornament, but it looks clumsy. I use a colour-coordinated crimp bead at

Bead Time – With the wooden ornament sanded and finished, it's time to choose the right amount and type of beads that will fit nicely into the available space, and look good with the wood ornament.

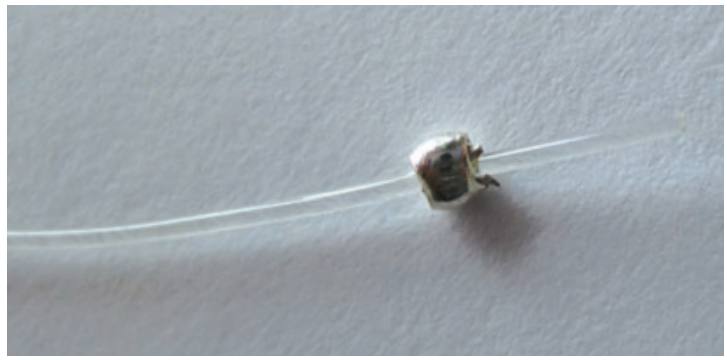
the bottom end of the cord. Crimp the bead to one end of the cord with a pair of pliers. Trim excess cord below the bead.

Feed the long end of the cord through the bottom of the ornament. String the beads and fish the end of the cord through the top of the ornament. Hold up the ornament and check that the beads fill the space. If there is a gap at the top or the beads don't fit, remove and substitute other beads accordingly. If you select the beads before designing the ornament, you can make the opening fit the beads.

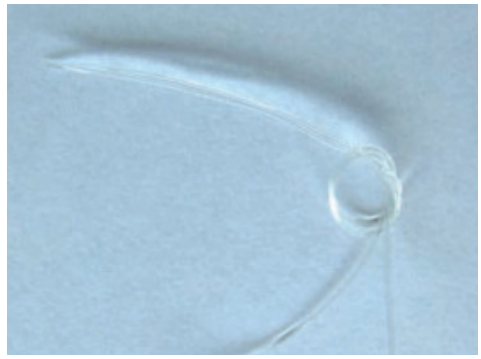
Tie a loop

Now that the beads are selected and strung, and the second end of the cord has been thread through the upper hole in the ornament, tie a loop in the cord at the top of the ornament. The final loop size should be about 2" high so it will fit over a tree branch. If you're going to hang it somewhere else, adjust the size of your loop. The trick is to tie the loop so the knot holds the cord in place, and the cord remains tight so the beads don't sag. That's where the elasticity of the cord is handy.

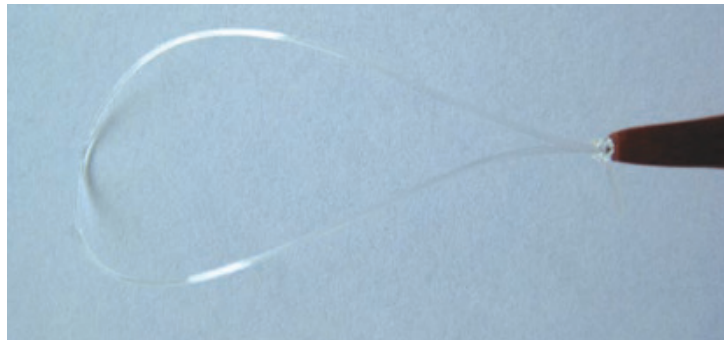
Stretch the cord upwards and hold, maintaining tension at the top of the ornament. Tie an overhand loop knot. To do this, double the cord to create the loop. Fold the loop over to form another loop. Pass the first loop through the second loop. Pull it tight so the knot is firmly against the ornament. An Internet search will clearly explain how to tie an overhand loop.



Cord and Beads – Though there are a number of options when it comes to what cord to use to string the beads and how to secure it, Craig prefers elastic beading cord and crimp beads.



Overhand Loop Knot – An overhand loop knot is easy to do if you know how. An Internet search will assist you if this knot isn't already in your arsenal.



A Nice Loop – Tie a loop at the top of the ornament that will allow you to easily affix the ornament to a tree or other hook.

If you lose some of the tension, then slide the knot down. Pinch each side of the loop between your thumb and finger and gently pull them away from each other until the knot is snug to the ornament and the beads don't sag. There should be extra cord at the base of the knot. Trim it to about 1/2" long and tuck it into the hole in the top of the ornament.

Hold it up to the light and marvel at its magic. If you want to enjoy it throughout the year, hang it in a window.

HEATHER CRAIG
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RELATED ARTICLES: Inside-Out Ornament *(Dec/Jan 2011),* Build a Tea-Light Candle Holder *(Feb/Mar 2012)*

INFO: DIFFICULTY – **2/5,** LENGTH/TIME – **2/5,** COST – **1/5**

Make a Live Edge Cribbage Board

Cribbage is a great game to play with friends and family. A handmade cribbage board can make a nice gift, and, best of all, it's an easy project that can be made in only a few hours with minimal material and tools.

BY RODGER NICHOLSON

I used a piece of live edge walnut for this cribbage board, but you could easily glue up a few scrap pieces to form a blank. This small project is also a great time to use some solid exotic wood. If you've ever been intrigued by veneer, this is the perfect chance to practice the basics, because this is a small workpiece and there's only one piece that makes up the entire project. The rough blank (whether laminated, a single piece or veneered) should be about 6" x 20". This will allow room for hand plane work and trimming after the material is milled.

I used a jointer and planer to mill up my blank, but a piece of pre-milled lumber would be fine if you don't have access to milling machines. The final thickness is not critical, but I wouldn't go any thinner than 1/2" for aesthetics. My final blank was 3/4" thick, 5-1/2" wide and 17" long.

Photos by Rodger Nicholson

Veneering: Taking That First Step

Veneering is a dirty word to some folks, but those familiar with the techniques involved know how helpful incorporating veneered panels into furniture can be. A properly veneered panel is both more stable and often stronger than solid wood. It's also easier to find quality figured species in veneer form than in solid wood. The challenge for most woodworkers is learning different techniques to properly harness the benefits veneer has to offer. Any woodworker with a few clamps and a couple of flat cauls slightly larger than the workpiece is ready to jump head first into the wonderful world of veneering. Vacuum bags are another option, and they work well for veneering larger panels. To learn more about veneering basics, pick up *CW&HI* contributing writer Steve Der-Garabedian's new book, *Veneering Essentials*, due to be released in late 2020 from Cedar Lane Press.

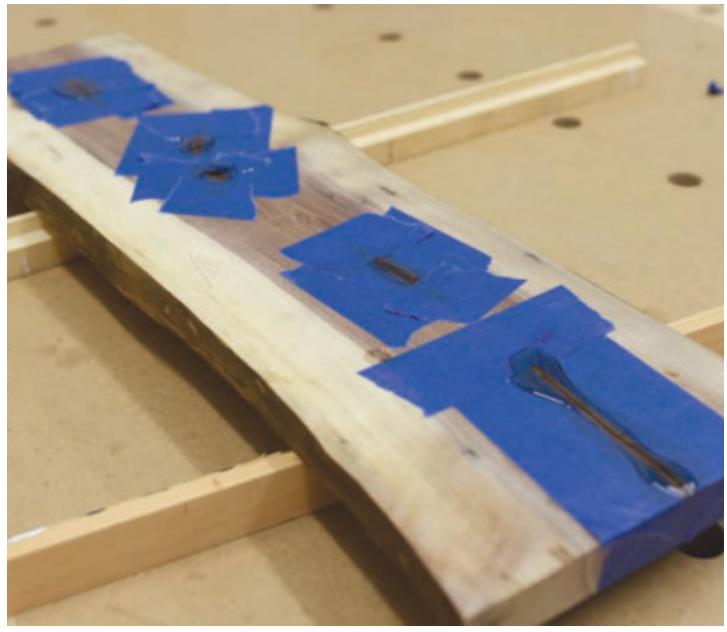
Repair any defects

It's rare to find a piece of live edge lumber that doesn't have any defects, but they add to the charm of the finished project. The first task was to remove the bark and clean up the edges. I pried the bark off with a paint scraper, and then cleaned up the edge with a wire brush, followed by some sanding. Next, I mixed up some two-part epoxy (adding a drop of black dye) and over-filled any voids or cracks in the show surface. Using painter's tape can help keep the epoxy off surrounding areas. After letting the epoxy dry overnight, level off the surface with a block plane, card scraper or sanding block.

Pre-finish for less hassle

It will be much easier to prepare and finish the blank now, before all the holes are drilled. Sand the project up to 220 grit and round over all the edges with a 1/8" round over bit.

Remove the Bark – Use a drawknife to help remove any loose bark. Follow up with a wire brush and some sandpaper.



Epoxy Fill – Mask off any areas that need repair, then overfill the gaps with tinted epoxy. Go with a matching colour for a more muted look, or a bright or bold colour for a bit of extra zing.

For a finish, I sprayed on two coats of water-based polyurethane (sanding with 400 grit between coats). Other finishes would be very

shopnews

Titebond Instant Bond CA Adhesive

Sponsored: Available in four viscosities - thin, medium, thick and gel - there's a CA glue available that matches how much absorption is required and/or the surface texture of the object you're applying it to. CA works on most surfaces, including wood, metal, stone, ceramic, plastic and glass. It's sold in 56g (2 oz) containers. Titebond has a new product line for the Canadian market; their proven Instant Bond product has been especially packaged, featuring a removable "childproof" cover, English/French labelling and a convenient aerosol accelerator for rapid assembly. Visit **Titebond.com** for more information.

Completed Blank – It's easiest to finish the project before the holes are drilled. Most finishes will work, so the choice for what finish you apply will likely come down to how the finish makes the wood look and how easy it is to apply.

Using a Template – Accuracy is important. Use an awl and a template to lay out and dimple all the holes so your drill bit will have a physical guide to help locate each hole.

Depth Setting – Nicholson marks a line 3/8" down on a piece of scrap the same thickness as the workpiece to ensure the drill press is set properly. He also tests the fit of the peg, aiming for a slightly loose fit so the pegs aren't difficult to remove during play.

suitable here, including shellac or wipe-on polyurethane. Whatever finish you use, let it cure for a few days before coming back to drill out the board.

A template saves time

You could manually lay out all the holes in a custom pattern, but I chose to buy an inexpensive commercial paper template (about $2). Tape the paper template to the blank and then punch each hole with an awl. This will allow the drill bit to "find" the dimple left by the awl and drill a perfectly placed hole.

With the holes all marked, remove the template and set it aside. Chuck up a 1/8" brad point drill in your drill press and set the depth stop to drill 3/8" deep holes. Test in scrap to confirm your settings and that your game markers will fit nicely in the hole, then begin the task of drilling out all the holes. You don't want your pegs to be difficult to remove from the holes.

Finishing touches

With the holes drilled out, an optional final step is to add a marking for the "skunk line." I used a simple dot of red paint at the 90th hole set to add a visual reference for the players. Cribbage pegs can be purchased commercially from a games supply store (often metal or plastic), or you could use 1/8" dowel for custom pegs. If you use custom pegs, make sure to use wax for the finish to allow them to move in and out of the holes with ease. Finally, add adhesive-backed cork or vinyl feet to the bottom of your board to keep it from slipping around as players move the pegs across the board. Now, deal the cards!

Using a blend of modern and traditional methods (and relying heavily on organization) allows Rodger to build furniture pieces that would otherwise be challenging to make in a very small workshop.

RODGER NICHOLSON
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The Roots of Mys-Teak Plantation Teak

The Mys-Teak story began in 2001 with the question of where to start a teak plantation. After four years of searching for the best location, Costa Rica was chosen. First of all, its growing conditions are excellent, but also high on the list was political stability and a healthy cultural and governmental respect for the environment. Interestingly, Costa Rica is the only country in the world to achieve a net increase in forested area in the last 25 years. Attention to detail from the beginning has played a huge role in the product Mys-Teak is now harvesting. Working very closely with the local community, Mys-Teak started by planting seeds and today supplies high-quality, plantation-grown teak.

Lumber grade is of high importance to Mys-Teak, which allows their customers to get exactly what they need at a price point indicative of that grade. There are four grades to choose from. "First European Quality" (FEQ) is often used for marine applications, and includes minimal to no knots or pinholes, and has zero sapwood. Slightly below FEQ is their "G1S Grade" teak. This grade displays FEQ standards on one side, and the possibility of tight knots on the other side. Next, their "100% Heartwood" grade is comprised of only heartwood and includes sound knots. Finally, Mys-Teak's "Designer Grade" mixes sapwood and heartwood which can be used for strong visual benefit, especially with indoor projects. Thicknesses range from 4/4 to 8/4.

"A common misconception with teak is that it is purchased only for its beauty, and if a similar looking wood is found for cheaper, it can replace teak. This is false," says Robert Hick, owner of Mys-Teak. "The value of teak," Hick explains, "is in its physical stability, strength and in the chemical properties found in the heartwood. The attractiveness is simply an added bonus. Traditionally, the North American market has only ever had interest in pure heartwood with a tight grain pattern; the sapwood and any heartwood with knots has simply not been used. With the scarcity of old growth teak, growing consumer demand for ethically sourced teak and the growing dependence on well-managed plantations, this market demand is being revisited."

In addition to their careful grading process, Mys-Teak's rough sawn lumber is 100% natural. Harsh chemicals aren't a part of their growing or harvesting process, which means their wood is very safe to use, essential for both indoor and outdoor projects.

"Different cultures have different requirements, uses and tolerances for the end product," Hick says. "As we knew our wood was destined for Canada, we invested heavily in continual pruning of limbs to reduce knots, in tying up trees to ensure straight trunks, and heavy thinning in order to maximize volume in a smaller quantity of select trees."

Every decision Mys-Teak has made focuses on ethical, social and responsible environmental development. Not only have these decisions allowed them to provide high-quality plantation teak to their current customers, but their long-term approach means they will be able to continue doing so for many years to come.

FILM FINISHES

When versatility and durability are of paramount importance, you won't go wrong choosing a film finish.

BY CARL DUGUAY

There are two broad categories of wood finishes for furniture and cabinetry. Both are indispensable to woodworking and have their respective advantages. Penetrating finishes, which permeate wood surfaces by means of capillary action, include pure (or straight) oil, polymerized oil and oil/varnish blends. These "rag on, rag off" finishes are the easiest to apply and maintain which makes them particularly well suited for novice woodworkers, and for projects that won't be subject to a lot of handling (see "Penetrating Oil Finishes," Dec/Jan 2020). There is also a relatively new class of "hardwax oil" finishes that are similar in application to penetrating finishes but provide a higher level of durability and moisture resistance (see "Hardwax Oil", Aug/Sep 2018). However, they aren't the most durable of finishes. For long-lasting endurance, we need to look at the second category of finishes – film finishes.

Film finishes refer to those finishes that build a strong, resilient film on the surface of the wood. These are "brush-on" or "spray" finishes. The three most popular types of indoor brush-on finishes for both professional and hobbyist woodworkers are varnish (including polyurethane/urethane), shellac and waterborne (or water-based). While lacquer is typically sprayed, there are brush-on products as well. The two-part film finishes (conversion or catalyzed varnish and catalyzed lacquer) are also part of the film finish family, but more typically used by professional finishers and in production shops that use HVLP spraying equipment and a spray booth.

Varnish – durable, dependable, long-lasting

The recipe for a varnish consists of oil (such as linseed, tung or soybean oil), resin (usually a synthetic acrylic, alkyd or polyurethane resin, and rarely a natural resin, such as copal or rosin), solvent (such as naphtha, acetone or mineral spirits) and one or

Lead Photo by Old Masters

Application Type – It's common to both spray and brush on film finishes. There are pros and cons to each approach, so do your research before deciding on an option. (Photo by Old Masters)

Brushing is Common – Brushing on a film finish is a very common approach in a small shop. As long as you can keep the dust down, it offers a simple, cost-effective way to apply these types of finishes. (Photo by Old Masters)

more additives that can include dryers, anti-skinning agents, flattening agents, ultraviolet stabilizers and anti-oxidants.

Go into any hardware store and you'll likely see an array of "varnish" for indoor use: oil-based varnish, waterborne varnish, oil-based polyurethane, waterborne polyurethane and waterborne oil-modified polyurethane. It might seem confusing, but they're all varnishes, though made from different recipes.

The proportion of oil in the recipe has a bearing on how durable and flexible the cured finish will be. Using less oil makes for a harder, more durable finish, but it will have less elasticity. The type of resin affects the durability and stability of the finish. Synthetic resins, particularly polyurethane, are the hardest and most durable.

Oil-based varnish usually contains an alkyd resin, waterborne varnish contains acrylic, while all the polyurethane varnishes contain a polyurethane resin (but may have some other resin as well). The polyurethane resin adds greater scratch and heat resistance, but makes the finish less flexible. All the oil-based varnishes impart an amber tone to wood that tends to darken somewhat over time. However, oil-based polyurethane usually contains soybean oil, which imparts a lighter amber tone to the finish.

Anything that is water-based will dry clear and much more quickly than an oil-based finish (making the finish less susceptible to dust contamination), have less of an odour during application, have a low VOC (volatile organic compound) content and be somewhat less durable than its oil-based counterpart.

Varnish – Varnishes are durable and add an amber tone to wood. Oil-based varnishes are the most durable, though there are more water-based varnishes on the market today due to tightening environmental regulations. (Photo by General Finishes)

All the varnish finishes are very durable and provide good resistance to wear, moisture, stains and heat. They're available in various sheens from flat to gloss. The hardest of these finishes is oil-based polyurethane which is why you most often see it promoted as a floor finish. If you plan to rub out the finish (see "Rubbing the Finish," Oct/Nov 2005), an oil-based varnish is a better choice, as the alkyd resin makes the finish more flexible.

Spar (or marine) varnish is manufactured for outdoor use. It typically contains a higher oil content and somewhat lower resin content (often a phenolic resin) which makes it more flexible. It also contains UV blockers.

Sources: generalfinishes.com; minwax.ca; myoldmasters.com; rustoleum.ca (Varthane, Watco); saman.ca; woodessence.com

Shellac – Overlooked by many woodworkers, shellac has a lot going for it. It's easy to apply with a pad, protects against moisture and is easily repaired. (Photo by Wood Essence)

Shellac –
develops a beautiful patina over time

There seems to be a certain mystique associated with shellac. Perhaps it has to do with "French polish," the traditional technique for applying shellac. Or the smooth gloss-like finish that gives an exceptionally deep luster. Whatever the reason, shellac is a versatile finish made from a natural resin secreted by the female lac beetle. The resin is processed into flakes that are dissolved with alcohol to form a fast-drying, moderately wear-resistant finish with excellent

water and moisture resistance, but susceptible to damage from alcohol and heat.

Shellac has a short shelf life (whether premixed or mixed in your own shop). Fortunately, it's easy to dissolve shellac flakes as needed with alcohol (isopropanol, methyl hydrate or ethyl alcohol) in a mixture called a "cut." A typical one-pound cut consists of one pound of flakes dissolved in one gallon of alcohol (or any proportionate ratio, such as 1/4 pound to one quart). Flakes are available in a range of sheens, from clear (super blonde shellac) to rich, darker reddish brown (garnet shellac). Choose dewaxed shellac especially if you plan to top coat the shellac finish with polyurethane or lacquer, as neither will bond well to waxed shellac.

Shellac is easy to apply and repair, and buffs (or rubs out) to a wonderful finish. You don't have to sand between coats of shellac unless there are bumps caused by dried dust on the surface. If you need to colour-match the wood, you can add an alcohol soluble dye to shellac or you can stain over the shellac.

Sources: leevalley.com; woodessence.com

Lacquer –
unsurpassed clarity, quick drying, super hard

Lacquer has been a preferred finish in production shops for decades because it dries so fast when sprayed, can be easily buffed to an even sheen, takes pigments and dyes very well, and is easy to

Wiping Varnish

This is any varnish that has been diluted with mineral spirits. You can buy a commercial blend or make your own using a non-critical ratio of 1:1 or 1:2 (mineral spirits to varnish). It makes the varnish easier to apply and quicker to dry. The more coats you apply, the more durable the finish will be once it's cured. For projects that won't be handled a lot, four or five coats should suffice. Otherwise, a dozen or more coats aren't out of the question.

Lacquer – Though most people spray lacquer in industrial settings, hobby woodworkers can wipe on some special formulations of lacquer if they don't have spray equipment. (Photo by Old Masters)

Oil/Varnish Blend

These finishes are sold under names such as Danish oil or antique oil finish. Essentially, they consist of varnish mixed with a penetrating oil (boiled linseed oil or tung oil) and mineral spirits. You can make your own using a non-critical ratio of 1:1:1. An oil/varnish blend is more durable than wiping varnish but takes a bit longer to dry.

repair. While brushing lacquers are available, they're not nearly as popular as the other film finishes.

There are nitrocellulose, acrylic and waterborne lacquers. Most brushing lacquer is made from nitrocellulose (a celluloid made from cellulose and nitric acid), solvents (naphtha, xylene, toluene and others) and plasticizers that make the nitrocellulose less brittle.

Like waterborne finishes, lacquer dries quickly and crystal clear. Unlike most other finishes, lacquer is self-levelling, which makes it somewhat easier to brush. As with shellac, there's no need to sand between coats, it rubs out to a wonderful luster and is easy to repair. While lacquer is a durable finish, it's less resistant to scratches, heat and solvents than polyurethane.

You should always wear a respirator equipped with an organic vapor cartridge when brushing lacquer or cleaning your brush with lacquer thinner, as both have a high VOC content.

Sources: minwax.com; myoldmasters.com; rustoleum.ca (Watco); saman.ca

Product Names

Sometimes product names can be confusing. "Polycrylic," a brand name owned by Minwax, is a waterborne finish comprised primarily of acrylic resin. "Varathane," a brand name from Rust-Oleum, consists of a product line that includes oil-based and waterborne finishes, stains and conditioners. Tried & True's "Varnish Oil," which contains polymerized linseed oil and modified pine sap, is strictly not a film finish, but a penetrating oil finish.

(Photo by Lee Valley)

Waterborne –
transparent, quick drying, durable

Waterborne finishes have become very popular over the past few decades, in part because they dry clear and don't yellow much over time (though some include an amber cast that mimics the traditional oil-finished look). They dry very fast (with little time for dust to dry on the wood surface), clean up quickly with water, and provide very good wear, water and water vapour resistance. However, because they dry so fast, they're somewhat more of a challenge to brush than varnish. You can add pigmented dyes directly to waterborne finishes, or stain or dye the wood before applying the finish.

You might get a bit confused when you see the term "waterborne" combined with "varnish" or "polyurethane" on the same container, as with Saman's "Waterbased Varnish." Waterborne finishes are coalescing finishes. Similar to oil-based finishes, they contain a resin (acrylic, alkyd or urethane) along with a much smaller amount of solvent and water as a carrier. After you lay on a coat of waterborne finish, the water evaporates more quickly than the solvent. The solvent softens the resin so that it bonds into a continuous film.

Depending on the type of resin used, waterborne finishes may be referred to as "water-based varnish," "water-based lacquer" or "water-based polyurethane," or simply as a "water-based" wood finish.

Waterborne finishes do raise the grain of wood, usually right after the first coat has been applied. Following coats don't tend to raise the grain at all. Light sanding between each coat abrades the surface for the next coat to go on more smoothly. Along with shellac, waterborne finishes are the safest to use—they have negligible VOC levels, no toxic additives, are virtually odour free and are non-flammable. And, as environmental restrictions become tighter, it's likely that waterborne finishes will become much more popular in the future.

Waterborne – Increasing in popularity over the past few decade,s waterborne finishes have a lot of pros. They are generally quick to dry, easy to apply, are quite durable and have low VOCs. (Photo by Saman)

(see "Waterborne Finishes", Oct/Nov 2019)

Sources: generalfinishes.com; minwax.ca; myoldmasters.com; rustoleum.ca; saman.ca; woodessence.com

CARL DUGUAY
cduguay@canadianwoodworking.com

The 100% Food-Safe Finish for Cutting Boards

Walrus Cutting Board Oil, 100% food-safe and designed for new cutting boards or reconditioning. It's a heavy-duty cutting board oil that doesn't require multiple coats. It will leave your board with a silky smooth finish, rich colour and a little shine. The perfect ratio of ingredients locks in the natural wood tones while repelling water and food particles when in use. And it only takes seconds to apply. You can also use it on butcher blocks, charcuterie boards, bowls, spoons and knives.
walrusoil.com

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flexcut.com/KN500

A Woodcarving Set in Your Pocket

The six-blade **Flexcut Carvin' Jack (JKN91)** is the world's first folding multi-tool for woodcarving. It's equipped with two scorps, straight gouge, a hook knife, chisel and a detail knife. You also get a slip strop, a bar of Flexcut Gold polishing compound to keep your blades sharp, and a leather belt-mounted sheath that looks good with jeans or even your better pants.
flexcut.com/JKN91

The Ultimate Spoon Carving Knife

The **Flexcut Spoon Carvin' Jack (JKN96)** has both a shallow and a deep hook knife designed to form the hollows of spoons and bowls. It also features a straight blade for shaping and carving fine details into the design. This tool fits neatly in your pocket, so you can carve wherever you go. The handle is made of rugged aerospace aluminum with an ergonomic design that contours to fit the palm of your hand. There is also deep crosshatching on the handle to keep the knife from slipping while carving.
flexcut.com/JKN96

The Precision Air-Cooled Dry Sharpening System

The **Work Sharp WS-3000** is a bench-mounted sharpening system for discerning woodworkers and dedicated hobbyists who want ultra-sharp, precision wood-cutting tools quickly and easily - without spending a lot of time or money setting up cumbersome jigs, the mess of liquid cooling, or the learning curve required to master antiquated sharpening techniques. It accurately grinds, sharpens and hones to a perfect 20°, 25°, 30° or 35° bevel angle and enables you to sharpen a perfect 5° micro-bevel for even faster re-honing. You can also create custom edge profiles using the horizontal, low-speed abrasive wheel.
worksharptools.com

Expand the Capability of Your Compact Router

Specifically designed for use with compact routers, the **Veritas Table for Compact Routers (05J6710)** lets you make the most of the tool's small size and maneuverability for freehand use and adds the stability, safety and control of a router table that is compact, portable and easy to store. The sturdy 15 1/2" × 11 1/2" table and 14" machined aluminum fence combination brings repeatable accuracy to a wide range of common routing operations.

leevalley.com

Keep Your Card Scraper in Tip-Top Condition

With the **Veritas Card Scraper Burnisher (05K2040)** you can roll precisely the sort of hook you want on your scraper. Held between the thumbs and forefingers, it gives you excellent tactile feedback that helps you maintain control of both force and angle as you run it along the edge of a scraper (typically clamped in a vise). The burnisher's relatively small size helps prevent you from pressing too hard, so you're less likely to overwork the edge. It has a 3/16" diameter, 1" wide rod injection-moulded into a plastic body and is compact enough to slip into an apron pocket.

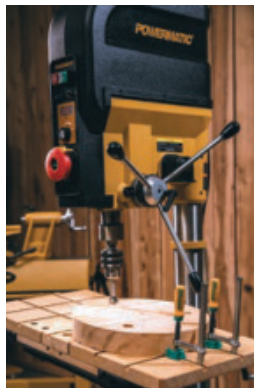
leevalley.com

The Easiest Way to Flatten Large Slabs of Wood

The **Lee Valley Router Sled Hardware Kit (15K0701)** provides the necessary hardware to build an inexpensive large-capacity router sled for flattening slabs. The assembled sled lets you pass your router back and forth in an XY-plane to consistently flatten an entire slab. It includes a CNC-routed Baltic birch router carrier and a pair of trunnions, as well as U-bolts, hex nuts, washers and nylon wheels. The wheels strung onto U-bolts form the glide mechanisms that allow the router carrier to travel along the rails. Made in Canada.

leevalley.com

Professional-Grade Gear-Driven Power with EVS Control



The 20" **Powermatic 2820ES** drill press is engineered for superior torque and productivity with a gear drive system and electronic variable speed (EVS) motor. Its geared drive transfers torque more consistently and dependably than a belt drive at all speeds for use on wood, steel, aluminum and plastics. A 1 hp 8-amp motor delivers spindle speeds of 150-870 rpm (low) to 600-3600 rpm (high). It has a 6" range of travel for the spindle and 20" swing, and also features a removable center table, laser crosshairs for workpiece positioning, patented depth stop and premium fence with adjustable stop.

powermatic.com

Computer-Assisted Hand Held Router

Bring the most advanced precision cutting solution to your workshop. The **Shaper Origin** and **Shaper Workstation** combine to make even the most demanding projects approachable and intuitive. Enjoy unrivalled precision cutting for a variety of applications — create complex joinery, tight-fitting box joints and much more. Origin + Workstation is the "complete system" solution to unlocking next-level projects in your shop.

shapertools.com

Dual Operating Mode CNC

Hobbyist and professional woodworkers will find the **Shark SD110**, with its 12" by 18" worktable, ideal for milling custom parts, complex joinery, precision drilling, decorative inlaying, relief carving and decorative engravings. You can operate the Shark SD110 by means of a convenient touch screen Pendant interface that eliminates the need for a computer, or from your computer taking advantage of the exclusive patented Virtual Zero Unlimited programming that will adjust your design to fit curves and angles perfectly.
nextwavecnc.com

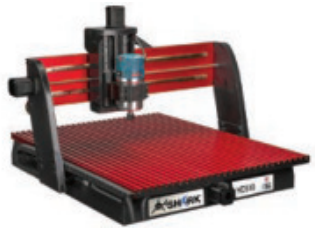
Designed for Larger Projects

The **Shark SD120** features a longer 12" x 24" worktable designed for larger projects such as carving plaques or signs, ornamental boxes and precision parts machined from wood, soft metals or plastics. With the included 3D carving capability and a 3D model library you can cut beautiful relief carvings, intricate inlays and create exquisitely detailed engravings with ease. The incredible accuracy of the Shark SD120 allows you to even engrave custom circuit boards. Like the Shark SD110, the SD120 provides dual modes of operation.
nextwavecnc.com

Built Like a Tank

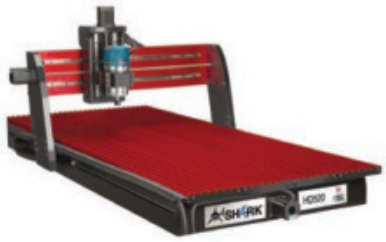
The **CNC Shark II** with Color Pendant Controller features a heavy-duty gantry reinforced with plate aluminum and a rigid interlocking aluminum table. It has anti-backlash, wear-compensated high-precision lead screws on all three axis and is built to handle your large 2-1/4HP routers such as the Porter Cable 890 series, Bosch 1617 series or the new water-cooled spindle from Next Wave Automation. A new electronics package expands the capabilities of the CNC Shark and allows attachments like Laser, 4th Axis and water cooled spindle.
nextwavecnc.com

The Full-Featured, Mid-Size CNC



The **Shark HD510** features a 28" by 36" worktable that can easily handle all but the very largest projects in your shop. It comes standard with everything you need to quickly get it set up and running: the latest version of Vectric VCarve Desktop design software; a colour pendant controller, two hold-down clamps, carbide V-bit; and Next Wave CNC's exclusive, patented Virtual Zero Unlimited software. Built with industrial-grade components, the Shark HD510 also features a heavy-duty aluminum and steel reinforced gantry, a new extruded aluminum router mount system, interlocking aluminum table, linear rails and guides on the gantry, and anti-backlash, wear-compensated lead screws on all axis.
nextwavecnc.com

The Large Format CNC Machine



With its impressive 28" by 63" worktable, the **Shark HD520** will handle all your machining needs, whether it's in a home shop environment or on the production floor. Built with industrial-grade components, it comes standard with everything you need to quickly get it set up and running: the latest version of Vectric VCarve Pro design software; a colour pendant controller; two hold-down clamps; carbide V-bit; and Next Wave Automation's exclusive, patented Virtual Zero Unlimited software. The HD510 is fully compatible with Next Wave CNC's extensive product line of additional accessories, such as laser, 4th axis, scanner and more.
nextwavecnc.com

Compact Entry Level CNC

Featuring a compact 12" by 18" worktable, the **SHARK SD100** is a full-function CNC machine capable of producing high-quality 3D carvings and machinings in a large variety of mediums including wood, soft metals, plastics and other solid-surface materials. It comes with all necessary software, including VCarve Desktop for project design and Next Wave CNC's exclusive easy-to-use Ready2Control basic panel software allowing the user complete visibility and control over the entire project during operation.
nextwavecnc.com

The Best Way to Control Dust While Sanding

If you want a cleaner, healthier workshop, then you need to collect dust at the source with a downdraft sanding table. They're portable, durable, quiet and powerful. SandMan Products LLC has tables to suit the needs of hobbyist woodworkers, small professional shops, superior and large production shops. For objects too large for sanding tables there's the **Sand Pro Sanding Booth SBP10**, a complete self-contained 9,300 CFM backdraft unit. With the Sand Pro Inspection Light you can easily see scratches, swirl marks and other imperfections before the material is finished.
sandmanproducts.com

The Ultra Smart Pinless Wood Moisture Meter and Temperature Sensor

The **Orion 950 Smart Pinless Wood Moisture Meter Kit** is the all-in-one solution for busy professionals desiring superior accuracy and multi-tool functionality. The Orion 950 features an on-board Equilibrium Moisture Content (EMC) calculator, Bluetooth connectivity to free smart device apps, built-in temperature and relative humidity sensor, and more. It provides true in-the-field calibration capability with the included On-Demand Calibrator. A flexible rubber boot makes the 950 durable enough to withstand your toughest jobs.
wagnermeters.com

Whether You're a Novice or Pro You'll Love This Midi Lathe

The **RIKON Variable Speed Midi Lathe (70-150VSR)** has been designed to offer features seen on larger industrial lathes. It has a powerful 1HP DC motor, electronic variable speed controls, a wide range of operating speeds, digital RPM readout, and ample diameter and spindle length turning capacities in forward and reverse drives. It includes spur center, live center, 3" faceplate, 6" tool rest with 1" diameter post, knock-out bar, wrenches and tool holder.

Add the 13-1/2" **RIKON Bed Extension (70-903)** to your RIKON 70-150VSR lathe and turn bowls and platters up to 15" in diameter. Installs easily on the left, outboard end of the lathe bed.
rikontools.com

Dust-Free Routing

The **Oneida Universal Dust-Free Router Hood (AXH000001)** captures nearly all the wood chips and dust produced by handheld routers from both above and below the bit. It virtually eliminates post-project cleanup, facilitating fine detail work, and reducing wear and tear on bits. Moulded from clear polycarbonate, it offers excellent clarity and superior durability. It's designed to work with most of the fixed-base and plunge-style routers from major brands and comes with multiple snap-on chip covers for edge, shallow edge and inset routing. It's made from the same material used to make bulletproof "glass", motorcycle helmets and jet fighter canopies. Incredibly tough and extremely durable. Tame the dust!
oneida-air.com

Versatile Soft-Face Mallets

Original **HALDER SIMPLEX** soft-face mallets are solid quality tools that are ideal for use in the shop, on the jobsite and around the home. They stand out due to their versatility, variety and perfect finishing. You can replace worn inserts quickly and easily. Eight impact inserts with different hardnesses and diameters from 30 mm to 140 mm, three housing variants and two different handle options are available. This enables you to configure your SIMPLEX soft-face mallet for the requirements of the job at hand.
qualitytoolsonline.com

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With products like **Pica-Ink Deep-Hole-Marker** and **Pica-Dry Longlife Automatic Pen**, Pica-Marker has modernized the marking industry and craft. They are the best marking tools you can get for the workshop or jobsite. Use them on just about any surface – wood, metal or plastic. They mark more clearly and last longer than just about any other marker on the market.
qualitytoolsonline.ca

The Starlock Plus Renovation Accessory Set

For anyone who owns a Fein oscillating MultiMaster or any oscillating tool that is Starlock Plus compatible, this 34-piece **Starlock Plus Renovation Accessory Set** offers great value at a stellar price. Packed in a convenient plastic case, it has everything you need to tackle any interior renovation job. Included in the kit are E-Cut long-life, universal, HSS, segmented and carbide saw blades; carbide file and short scraper blades; triangular and round packing pads; and a range of sanding sheets.
qualitytoolsonline.ca

Industry Award-Winning Dust Extractors

FEIN Turbo dust extractors have a reputation for being the best overall value in quality vs price. Available in two different capacities, the extractors offer superior dust management for workshops, garages and metal shops. These quiet, powerful and durable dust extractors feature auto start (the extractor starts when a tool plugged into the on-board power socket is turned on) and suction control (so you can increase or decrease suction depending on the task at hand). When equipped with the proper accessories, they're suitable for wet applications.
qualitytoolsonline.ca

The Do-All Drywall Blade

The **Imperial IBOA800-1 drywall blade** is the perfect addition to your oscillating accessories. This 4-in-1 drywall blade is versatile, allowing for all types of cuts in drywall. The slim dagger blade design allows for detailed cuts, especially tight circular cuts. Depth gauge increments reflect drywall thickness so you can monitor cut depth. A piercing tip initiates the cut for a clean start, along with push/pull cut capabilities, while shaver notches help remove excess drywall for a better fit.
qualitytoolsonline.com

Variable Speed Sanding with Turbo Boost

The **Metabo 6" SXE 450 TURBOTEC** random orbital sander has a user-selectable sanding orbit for either fine sanding or quick stock removal. Vario-electronics enable you to work at customized speeds to suit various application materials while the TurboBoost feature allows additional power reserves to be employed for achieving maximum removal. Metabo's Power Control System eliminates scratches when placing the sander directly onto the material at speed. Includes a removable side handle and fabric dust bag.
qualitytoolsonline.ca

Turn Your Angle Grinder Into a Power Carver

When it comes to free-hand carving on your larger projects, no other tool gets the job done better than **Kutzall Shaping Wheels.** Paired with a quality right angle grinder, these wheels have helped skilled craftsmen create truly remarkable things. The rugged tungsten-carbide coating allows for superior material removal and outstanding wear-life. With minimal clogging and effortless control, you'll use them project after project.
kutzall.com

Shape and Smooth Wood with Finesse

Kutzall Hand Rasps strike a fascinating balance between the shaping and smoothing functions of a conventional file and the aggressive stock removal of a wood rasp. Each rasp is made with a rugged tungsten-carbide coating, providing you with an aggressive, multi-directional tool that will cut efficiently, resist loading and stay sharp project after project. Available in flat, half-round and warding.
kutzall.com

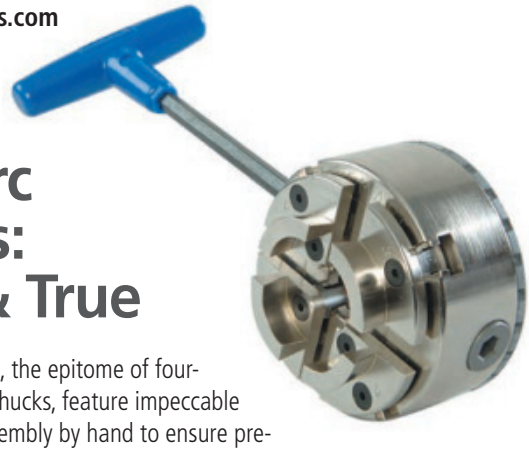
Extreme Tool Life Coated Router Bits

Spektra router bits feature a micro-thin nACo (aluminum titanium nitride + silicon nitride) ceramic coating that enables the tool's cutting edge to retain crucial sharpness and lubricity – with up to 2.5 times longer life. The coating prevents high heat buildup and oxidation, which are detrimental to cutting performance. There is a range of cost-effective Spektra bits to choose from for both CNC and router applications.
amanatool.com

The Lathe Woodturners Dream of Owning

Don't be fooled by the size of this professionally designed, fully-featured cast-iron **Vicmarc VL150-V2 lathe**. It performs beautifully with up to 150% torque at low RPMs with a powerful 1 HP motor. Variable electronic controls take the spindle speed from 30 to 3,460 RPM. Vicmarc's legendary quality is evident with user-focused design features like containing the digital display and switch controls within a moveable steel box that can be mounted where it's most convenient, including attached to the belt access door. The lathe has a 300mm swing over the bed and 350mm between centres. Bed extensions of 250mm and 500mm are available to allow you to either park the tailstock or do longer spindle work. An optional adjustable stand lets you adjust spindle height range from 39.75" to 47.25" to increase turning comfort. Solid construction and user-focused design makes the new Vicmarc VL150-V2 a woodturner's dream.
branchestobowls.com

Vicmarc Chucks: Tried & True



Vicmarc Chucks, the epitome of four-jaw woodturning chucks, feature impeccable machining and assembly by hand to ensure precision and quality. An enclosed back keeps dust and debris from clogging the pinions and scroll, ensuring a smooth-running chuck. Chucks are operated by a T-bar Allen key, providing one-handed tightening with incredible gripping power. Chuck jaws are machined as a solid piece, cut into four sections and numbered sequentially to create a matched set to give you a precise and true running grip. A full range of jaws complement these chucks. Vicmarc chucks are available in direct thread to fit 1" x 8", 1.25" x 8" and M33 x 3.5" spindles. Also available with a full range of thread inserts to fit your lathe.
branchestobowls.com

A Woodworker's Delight

The **Steel City 10" Professional Table Saw (10-300S2)** is powered by a TEFC 1-3/4" HP motor that will give years of reliable service. Key features include a 27" by 76" worktable, robust steel base, riving knife, anti-kickback pawls, blade guard, dust collection under the blade for better dust extraction, an internal stop for quick 90° blade adjustment, shaft lock button, quick-release rip fence and cast-iron miter gauge with adjustable width guide bar.
steelcitymachines.ca

Get Maximum Protection at Your Table Saw

The **Centurion 10" Overarm Blade Guard (12-210)** allows for efficient dust collection and ease-of-use for different cutting applications such as strip cuts, rabbeting or dado cuts. This telescopic blade cover is suspended over the material, can be locked in place, and offers 5'' high clearance above the table. It consists of a solid boom made of 3" and 4" metal tubes, a metal frame blade cover with translucent panels, and a 23-1/2" long by 3-3/4" high boom support that is bolted on the side of the table saw. The whole unit can easily be removed when required yet quickly dropped back into place.
steelcitymachines.ca

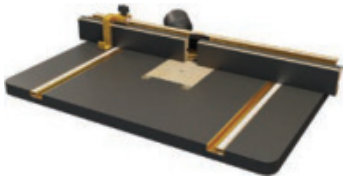
Precision Mitre Gauge

The **Centurion Deluxe Mitre Gauge (12-120)** is fitted with high-quality components that form a very rigid unit ensuring accurate cuts. The 17-3/4" long guide bar is equipped with a safety disc that holds the mitre gauge on the table securely. Four adjustable pressure balls allow a tight adjustment in the table slot. It has an easy-to-read graduation scale with 13 precision machined pre-set angle holes. A rugged rubber grip makes it easy to manipulate the gauge and to lock it firmly in place at any angle.
steelcitymachines.ca

A Great Combination of Speed, Power and Features

The high-quality cast-iron **Steel City 17",12-Speed Drill Press (40-310S1)** features a 3/4" HP motor that delivers 12 speed settings from 340 to 2800 RPM. It's equipped with a 5/8" chuck and a spindle travel of 3-1/4". Features include a cast-iron table that is left and right tiltable to 45°, an adjustable tension spindle return spring, cast-iron pulleys to reduce vibrations, swing-away chuck guard, and a positive depth stop for adjustment.
steelcitymachines.ca

Kit Out Your Drill Press with an Oversized Auxiliary Table



All drill presses come with small cast-iron tables designed for metal-working. The **Centurion Universal Drill Press Table (42-015)** is specifically designed to meet the needs of woodworkers. The 15-1/2" by 23-1/2" table is made of MDF with a smooth black laminated surface to prevent damage to the stock and includes a 4-5/8" square replaceable sacrificial table insert to prevent damage to your drill bits. There are two aluminum T-tracks with measuring scales to allow for precise fence adjustment and setting. They can also be used with hold-down clamps to keep workpieces from climbing the drill bit.
steelcitymachines.ca

The Perfect Machine for Ripping, Shaping and Resawing

The robust steel frame and powerful 1HP motor on the **Steel City 14" Bandsaw (20-302S1)** make it easy to rip lumber, cut curves and irregular shapes, and resaw lumber into thinner slabs. It has a 7-1/2" maximum cutting height and 13-3/4" maximum cutting width. Features include a 14" square cast-iron table that tilts from -10° to 45°, a quick blade tension handle, combination ball bearing and cool-block alignment guides, and a 4" dust collection outlet. The saw takes 101" blades from 1/8" to 3/4" wide.
steelcitymachines.ca

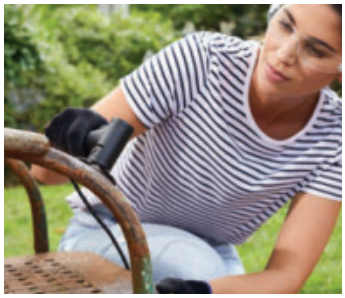
Cut, Drill, Sand, Polish, Engrave, Etch and More

The **WORX MakerX Rotary Tool (WX739L)** is one of the most versatile tools in the MakerX system. This brushless rotary tool features a micro-ergonomic grip to handle projects with precision and control. The MakerX Rotary Tool is 50 percent lighter than the leading cordless rotary tool brand. It comes with a 1/8" collet and accepts other major brand accessories with 1/8" shanks, which are widely available at hardware stores and home centers. Other collet sizes, including 3/32", 1/16" and 1/32", will also fit the tool. The kit includes 42 assorted accessories, Power Hub, 20V 1.5 Ah battery, five-hour charger and storage bag.
canadiantire.ca

Personalize Your Craft Projects with Pyrography

The **WORX MakerX Wood and Metal Crafter (WX744L.9)** is ideal for DIY projects and hobbies, as well as arts and crafts, such as creating wooden signs and embellishing leather goods, jewelry-making and metal-crafting. It features dual temperature sensors to enable the crafter to reach optimal temperature in seconds. A built-in temperature digital read-out assures that the tip's temperature is set for optimal results regardless of material or application. Its slim body design provides a micro-ergonomic grip for superior control of the .12 lb. tool. The kit includes six wood-burning and four soldering tips, a silicon comfort sleeve for users who prefer a thicker grip, and a cradle stand. Requires a WORX Power Hub and 20V 1.5 Ah battery.
canadiantire.ca

Compact, Lightweight, Maneuverable Grinding



Most noticeable with the **WORX MakerX Angle Grinder (WX741L.9)** versus a conventional angle grinder is the tool's weight and the diameter of its barrel or handle, which is significantly smaller. Plus, the alignment of the MakerX tool and the rotating wheel along with the position of the user's forearm results in greater control with less strain. Its variable-speed ranges from 0 to 20,000 rpm, and it accepts 1-1/2" wheels with a 1/4" arbor including Dremel EZ-Lock wheels and 2" wheels with a 3/8" arbor. Requires a WORX Power Hub and 20V 1.5 Ah battery.
canadiantire.ca

The Modern Woodworker's Hand Plane

Its ergonomic design and light weight makes the **RALI 260 Evolution Hand Plane** a favourite in the tool box. If the blade gets dull or has a nick while on a job, it can be replaced within seconds. Each disposable blade has two cutting edges so it can be rotated and used on both sides. No more sharpening required! Thanks to its clever design, no wood chips get caught between the blade and holder. The blade in the Rali plane is fastened by a clamping mechanism and requires no adjusting. Replacement blades are available in chrome steel and hard metal.
tersaknives.com

Precision Drill and Knife Sharpening

Get factory-sharp performance from your dull drill bits, knives and tools in minutes. The **Drill Doctor X2** sharpens carbide, black oxide tin coated, HSS and masonry drill bits from 3/32" to 1/2" diameter (3.0 to 13.0mm). Using technology from Work Sharp Sharpeners, the X2 also sharpens kitchen knives, pocket knives, scissors, hatches and other edged tools. Backed by a three-year warranty, Drill Doctor is a brand you can trust to save time and money by extending the life of your tools.
canadiantire.ca

One Hand Rapid and Easy Clamping

The Jorgensen **E-Z HOLD Expandable Bar Clamp (#33412)** allows for rapid and easy clamping and can easily be converted to spreader clamps. It opens to a full 12", has a 3-3/8" reach, and a 300-pound clamping force. The contoured comfort grip and quick-release lever make it simple to get a firm grasp, and an exclusive patented feature lets you join two clamps together to create a clamp with more than double the opening capacity of a single clamp. Deep-reach pads help protect your work.
ponyjorgenson.com

Light Duty Steel Spring Clamps

When you need instant, easy application and removal, turn to the proven durability of the classic **Pony Spring Clamp (#3203-HT).** They provide a 3" opening with a 3" reach. Throughout the clamp's range of opening, the point of pressure always remains at the lightweight, zinc-plated steel jaw tips to ensure they'll hold it together exactly where you need them. Poly-vinyl protected handles and jaw tips mean you can use them on metal, wood, plastic, fabric and beyond. And their contoured handles won't dig into your hands.
ponyjorgenson.com

Workhorse Shop Clamps

Bar clamps are a fundamental shop accessory, and Jorgensen **Steel Bar Clamps (3700 series)** are seriously strong. Cast-iron stationary and sliding heads with an orange, powder-coated finish are merged with a high-carbon, rust-resistant steel bar that packs a whopping 80,000 pounds per square inch of tensile strength. The fast-acting sliding head is acme-threaded to accommodate a cold-drawn steel screw with a large easy-grip handle and swivel pad. A multiple-disc-clutch design allows the sliding head to hold securely at any point along the bar. Available in a wide variety of sizes and clamping forces.
ponyjorgenson.com

The Best Way to Clamp Face-Frames

Complete your cabinetry projects in a fraction of the time with **Pony Cabinet Claws (#8510).** This unique and patented tool combines the various steps of face-frame cabinet installation into one easy process. The high-quality aluminum claws and alignment plate have protective rubber pads to cushion and protect cabinetry.
ponyjorgenson.com

Light Duty, Powerful Clamping

Super handy to have around the shop and competitively priced, it's no wonder that **Pony Light-Duty C-Clamps (2600 series)** are the most popular and complete line of light-duty C-clamps on the market. The smoothly cut, acme-threaded steel screw is zinc plated and protected with a black finish for lasting durability. And the clamp casting is made with ductile iron for strength before receiving a powder-coated Pony-orange finish. Available in a wide variety of sizes and clamping forces, all with full-closing screws.
ponyjorgenson.com

The Iconic 3/4" Pipe Clamp

The iconic **Pony 3/4" Pipe Clamp (#50)** has become North America's most popular and widely used pipe clamp fixture design. The original steel multiple-disc-clutch design allows a secure hold and instant adjustment at any point along the pipe, without fear of slipping or pipe crushing. Use any length of 3/4" pipe, as long as the pipe is seven inches longer than your workpiece. Crafted with strong, durable iron castings and featuring a 1-3/4" clamping face.
ponyjorgenson.com

Still the Oscillating Tool of Choice

Enjoy a soft-start motor for super smooth speed acceleration, electronic speed control that delivers constant speed under load and exceptional build quality for maximum durability and long tool life. Add that to the game changing snap-fit QuickIN mounting system for super quick accessory changes and it's no wonder the **FEIN MultiMaster** is so popular among cabinet installers, renovators, finish carpenters, flooring installers and trades people. Reliable, durable, unbeatable.
fein.ca

Arbortech Power Carving Unit

The **Arbortech Power Carving Unit (PCU)** is the ideal power source for all your Arbortech attachments. To use this first-of-its-kind grinder designed specifically for woodworkers, simply secure any Arbortech attachment and experience power carving like never before. Equipped with variable speeds, robust sanding capabilities, a levelling guide for flat planing, a chip catcher and dust collection, the PCU is the new standard for power carving excellence.
arbortechtools.com

The Cutting System That Adapts to Your Needs

Take your project-building skills to the next level with the **Kreg Adaptive Cutting System**. It offers all the advantages of a guided cutting system for cutting plywood, panels and solid-wood boards with its high-performance Plunge Saw and Guide Track. Plus, the Project Table takes the Adaptive Cutting System to unparalleled levels of versatility, precision, safety and portability by creating a compact cutting center that allows you to rip, crosscut, mitre, bevel, cut angles and more in plywood and solid wood. Whether you're cutting solid wood or plywood, wherever you're working – from the garage to the driveway to the workshop – and whatever you're creating, you can take your project-building skills to the next level with the versatile, precise, safe and portable system that adapts to your needs.
kregtool.com

The Quietest HVLP Turbine on the Market

The five-stage turbine motor develops approximately 9.5 psi allowing you to apply a finish faster and with less time spent on material preparation. The **FUJI Q5 PLATINUM** can spray higher viscosity finishes, producing flawless results in less time. Incorporated into its design is a proprietary Heat Dissipation Chamber (HDC) that expels excess heat from the turbine resulting in much cooler operating temperatures. Less heat translates to longer motor life for your turbine. Since the hot air is routed to the rear of the turbine and passes through 60 optimally designed holes the process is silent. A Variable Speed Control Dial allows you to adjust motor speed, providing the ultimate in versatility. Includes a T-Model spray gun with cup, 25' hose with quick-connect, air control valve, viscosity cup, wrench, cleaning brush and a two-year warranty on parts and labour.
fujispray.com

Portable Large Format CNC Router

Take CNC routing from the factory into your workshop with the portable 4' by 8' **Yeti SmartBench** – a UK built, large format, budget-friendly CNC router. Featuring touchscreen controls, Wi-Fi and USB connectivity, and onboard design apps. The Yeti is a user-friendly, full-feature three-axis CNC with a 6" height capacity. Capable of 3D carving in non-ferrous materials and processing cuts, mortises, dados, pockets, and line boring on full panels while you work on other tasks. Disassembles in three minutes for storage or transport, only requires a vacuum for dust extraction, and comes in 120v or 230v models. A truly universal machine ready for your shop at an affordable price.
feldercanada.com

A Simple Jig That Makes Great Fitting Box Joints

The **Leigh Box Joint & Beehive Jig (B975)** is a multipurpose box joint jig. It's a simple, easy-to-use tool for making 1/2" and 3/4" box joints on boards up to 13/16" thick, and from 1-7/16" to 17-13/16" wide. Along with boxes, drawers and benches, it's also well suited for making beehive boxes. Easily adjust joint fit with the included Leigh patented elliptical guide bushing so you can achieve great fitting joints every time. Added feature – works on a router table! See demo video at
leightools.com

Classic Through Dovetails at an Affordable Price

With the **Leigh Through Dovetail Jig (TD330)** you can make tight-fitting dovetail joints in multiple sizes and on boards of different thicknesses up to 12-7/8" wide. It's perfect for drawers, boxes, case goods and much more. It can even be used to join boards with different thicknesses. Works with most fixed-base routers with a 1/2" collet. Leigh's included patented elliptical guide bushing is uniquely adjustable so you can achieve great fitting joints every time. Added feature – works on a router table! See demo video at
leightools.com

Mid-Sized Router and Trimmer Kit

King Canada's Variable Speed Router/Trimmer Combo Kit (8366K) features a powerful 1-1/4 HP motor that can handle a wide range of your daily routing and trimming jobs. The spindle accommodates both 1/4" and 3/8" collets. The robust aluminum fixed base has a quick clamp for easy release and a rack & pinion system. The aluminum plunge base has a 1-1/2" plunge capacity and fine depth adjustment with three pre-set depth stops. A spindle lock enables quick and easy bit changes and eliminates the need for two wrenches.
kingcanada.com

Add Versatility to Your Turning with a NOVA Chuck

With a **Nova G3 Reversible Chuck (48232C)** or **Nova G3 Pen Turning Chuck Bundle (48265C)** lathe chuck you can turn bowls, platters, vessels, pens, tool handles and more. Both economically priced chucks feature a 1" by 8 TPI right/left hand direct thread, a smooth gear drive for positive and effortless locking, and are compatible with lathes that have up to a 14" swing over the bed. Both chucks include a 55mm jaw set, four-segment jaw, woodworm screw and T-bar chuck key. The 48265C also includes a pen jaw set.
kingcanada.com/48232C
kingcanada.com/48265C

Keep Your Cutting Tools Razor Sharp

This **King Canada 10" Wet/Dry Sharpener (KC-4900S)** has everything you need to keep your plane blades, chisels, knives and other cutting tools razor sharp. A heavy-duty 1.6 amp motor quietly rotates a 10" by 2" aluminum oxide sharpening wheel and 8" by 1-1/8" leather stropping wheel at 115 RPM for maximum precision during sharpening. Includes a two-position universal jig support that adjusts to both horizontal and vertical positions, square edge jig, angle guide, honing compound and a water tray. The KM-130 accessory is also available for holding long and short knives, scissors and axes/hatchets.
kingcanada.com

The Smart Drill Press with State-of-the-Art Technology

The 1HP DVR (Digital Variable Reluctance) Smart Motor on this **King Canada 16" Floor Model Nova Viking DVR Drill Press (83705)** doesn't have any belts, pulleys, brushes, permanent magnets or electrical connections to moving parts, and no current flow in the rotor. This means you get smooth, vibration-free, constant torque drilling speeds from 150 to 3,000 RPM. The 83705 features simplified menus, large icons, built-in LEDs and laser guidance, a 4-1/2" stroke, and a standard MT #2 spindle taper. It's capable of drilling wood, metals, plastics and glass.
kingcanada.com

Superior Dust Collection with a Cyclone System

Turn your 1.5 to 3 HP dust collector into a heavy-duty two-stage cyclone dust collection system. The **King Canada Cyclone Separator (KC-2940S)** removes 99% of dust and wood chips before they reach your dust collector. Cyclonic action separates heavy debris from the fine particles and directs them into the 29-gallon steel drum. The drum has quick-release latches for easy debris disposal and castor wheels for portability. Includes a 6" inlet with two 4" adaptors.
kingcanada.com

The Vacuum Designed for Wood and Pellet Ashes

Regular household and shop vacuums aren't designed to handle fireplace ash, sheetrock dust or other ultrafine dust. What you need is a specialty vac. The **King Canada Ash Vacuum (8521AV)** features a powerful 6 HP motor that generates 375 peak air watts that quickly and efficiently sucks up debris and deposits it into a five-gallon cannister. Quick-release lid clips make it easy to remove the top and empty the cannister. Reposition the hose to convert the vacuum to a blower. The vac comes complete with HEPA cartridge filter, durable 3 ft. x 1-1/4" hose, 9" aluminum nozzle, and 10-foot power cord.
kingcanada.com

Economical Plywood for Projects to be Painted

With a smooth sanded, flat and consistent surface, Canadian-made FSC-certified **PureBond Aspen Plywood** is suitable for woodworking projects that will be painted – from cabinetry to closets, shelving, entertainment centres, tables, shelves, headboards, wall panels and furniture. The lightweight, all-wood veneer construction also makes it the perfect substrate for veneering, high-pressure laminate or other specialty surface treatments. These economically priced 4' by 8' panels are available in 1/4", 1/2" and 3/4" thicknesses, and made with soy-based, formaldehyde-free PureBond technology so they won't degrade your indoor air quality.
homedepot.ca

Strong, Lightweight Trigger Clamps

Engineered from the start to offer a clean ergonomic design, **Bessey EHK Series Trigger Clamps** are available in a range of clamping forces, from 40 to 600 pounds, and in sizes from 4-1/2" to 50". No tools are required for conversion from clamping to spreading, and removable soft-touch jaw pads eliminate marring of work. Ergonomically shaped composite handles with an integrated trigger make it easy to achieve maximum clamping force.
besseytools.com

Desktop CNC Perfect for Shop, Home or Hobbyist

The **CanCam D-23LT miniTron** desktop CNC router with optional fold-out legs fits into tight work areas. It provides a 24" by 36" machining bed and has a positioning accuracy of 0.0079" and a cutting speed of 240" per minute. The constant power air-cooled high-frequency spindle performs reliably at high speeds. The miniTron offers low noise operation, low maintenance and a long service life. Features include a high-efficiency TBI ball screw drive for smooth and durable performance and long service life; a NK105 embedded IPC-based controller; Delta variable frequency drive for constant torque; and high-performance Yako Stepper Motor Drive for reduced noise and increased steadiness.
cancam.ca

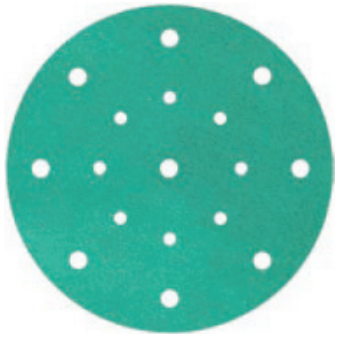
Beautiful Gift Projects That You'll Enjoy Making

Wood veneer artist Patrick Skidd, whose work has been seen on three Lee Valley catalogue covers, is offering a limited-edition introductory series of **300 DIY kits** in eight brilliantly colourful options. Patrick's how-to video guides you through his amazing unique lamination and shaping process to help you produce your own stunning 3D art pieces. The kits are for all skill levels and include carefully sourced and prepared components to achieve high-quality, stunning results. Everything you need is in the box.
woodenoceans.com

Tear-Resistant Wide Sanding Belts

The **Klingspor Wide Belt (PS 29 F ACT)** features a tear-resistant polyester backing with an antistatic coating that holds up exceptionally well – even when subjected to aggressive material removal. Combined with the bonding agent formulated from Klingspor's ACT recipe, these belts deliver outstanding stock removal, phenomenal service life and minimal clogging. Many standard sizes are available from stock. Custom belts (any size) can be ordered from Klingspor's manufacturing facility in Stoney Creek ON.
klingspor.ca

High-Performance Sanding Discs



Klingspor Film Back Discs (FP 77 KT-ACT), with optimized clogging behaviour, are specifically designed for paint, varnish, filler, primer, gel coats and composite materials. These highly flexible aluminium oxide self-fastening film-backed discs deliver increased service life due to a new coating that prevents the adhesion of paint and dust particles. Available in 5" and 6" diameters with grit sizes from 240 to 2,000 and in various hole patterns.
klingspor.ca

MANPA Power Carving Attachment

The **MANPA Power Carving Attachment** lineup has been evolving since 1988. The Multi Cutter provides a smooth cut with its low vibration and carbide insert cutters. It is a safer carving alternative to other grinder-attached cutting devices, with a belt drive system that allows the head to slip instead of kicking back when the situation arises. With multiple cutter options and extensions, it is truly a versatile tool. For when your project is too large or requires a lot of stock removal, there is nothing like MANPA Tools to do the job and carve away wood as easy as cutting through butter.
manpatools.com

Food Safe, Solvent Free, Non-toxic Wood Finish and Stabilizer

Odie's Oil (OOUNI9OZ) is a proprietary blend of oils and waxes, born out of inspiration, hard work and a driving need to solve problems specific to the woodworker. The culmination of 30+ years of research, development and field testing in the most extreme environments produced a revolutionary product that out-performs and out-covers the competition. It's great for all species of wood – exotic and domestic – and formulated to work on even the oiliest of woods. Does not contain driers or any toxic chemicals, and all ingredients are food safe.
feldercanada.com

Lightweight, Powerful and Versatile Impact Drill

Equipped with an EC-TEC brushless motor, integral LED and many more features, the **Festool Cordless Impact Drill TID 18 HPC 4,0 I-Plus (576480)** delivers at every level while being supported by a 3-Year Wear-and-Tear Warranty. The TID 18 comes with a free 1/4" tool holder, integrated bit storage, optimum LED illumination of the work area and belt clip for attachment on both sides. It's available in a tool-only format with a Systainer or in a set that includes two 4.0 Ah high power batteries, a rapid charger and Systainer.
festoolcanada.com

An Edge Sander for Every Edge

The **Festool Edge Sanding Guide (205316)** gives you the speed and reliable finish quality that you would otherwise only expect from stationary edge-sanding equipment. Easily and quickly attaches to the 5" Festool Random Orbit Sander ETS 125 REQ and the Festool Cordless Sander ETSC 125. Its intuitive and ergonomic design adapts to practically any kind of edge, angle or curvature. Create finished results with consistency and in less time than hand sanding.
festoolcanada.com

Assemble Pens with Control and Precision

Assemble and disassemble pens with the all-in-one deluxe **Magnum Industrial Deluxe Pen Press (MI-99260)**. Like a conventional pen press, it assembles pens with control and precision. Thanks to its advanced design, this press also disassembles almost any pen with ease. The sturdy arm features a rubber handle for comfort and a secure grip. An on-board rack stores extra punch rods and a spring-loaded press head. The press includes six push rods (3.0mm, 5.5mm, 6.0mm, 7.0mm, 8.5mm and 9.0mm).
kmstools.com

Versatile Production Disc Sander

The **Magnum Industrial Heavy-Duty 12" Disc Sander (MI-16240)** is designed and manufactured to provide long-lasting service for busy production shops, educational facilities and serious woodworking enthusiasts. Its 12" precision-ground cast-iron disc spins at 1,720 rpm, so you can accurately and efficiently sand workpieces of various shapes and sizes. Whether it's wood, plastic or metal — no problem — simply install the right PSA disc for the project and get started. Adding to this machine's versatility is its tilting cast-iron table with crossing mitre slots and included mitre gauge. These features make it easier to perform repeatable sanding tasks, especially helpful in production settings.
kmstools.com

Full Featured Industrial Grade Table Saw

Equipped with a true 1.75 HP motor, the **Magnum Industrial 10" 1.75 HP Cabinet Saw (MI-51180)** is among the most powerful 110-volt cabinet saws available. And it arrives prewired for 110 volts—no rewiring necessary. The saw features a router table extension wing and deluxe self-aligning rip fence assembly, as well as base-mounted trunnions for stable, vibration-free operation. Its trunnion guides are silicone-coated for smooth action when raising and lowering the blade, and a forged one-piece blade arbor limits runout, helping to make this saw both durable and precise.
kmstools.com

Magnum Industrial Longworth Chucks

Magnum Industrial Longworth Chucks (MI-99250, MI-99251 and MI-99252), designed for light cutting at low speed, are available in 12", 16" and 24" diameters. They feature strong grabbing, non-marring jaws and a smooth adjustment mechanism. As the jaws move in and out, front and back discs are rotated, automatically centering your project on the chuck. Outside grip capacity ranges from 4-1/2" to 8" for the 12" chuck and 6-1/2" to 22" for the 24" chuck. Inside grip capacity ranges from 6-1/2" to 10" for the 12" chuck and 8-1/2" to 24" for the 24" chuck.
kmstools.com

Get Better Results with a Spiral Cutterhead Jointer

Jointing is an integral part of any woodworking project. The **Magnum Industrial 8" Benchtop Jointer w/ Extensions (MI-81190)** offers the perfect solution where space may be a factor in your hobby shop or jobsite that requires a jointer. The MI-81190 has a powerful 120-volt, 10-amp motor and features a strong, durable cast-iron table. The spiral-style cutterhead has 16 sharp carbide four-sided inserts. These provide unparalleled sharpness and a lower noise level than the straight-knife cutterhead provides. The long extended fence allows for a 90° to 135° tilt.

kmstools.com

Get Better Sharpening Results with Low-Speed Grinding

The **Magnum Industrial 8" Low-Speed Bench Grinder (MI-15300)** features a totally enclosed ball bearing motor and is designed to be dynamically balanced for smooth operation. With a powerful 3/4 HP motor, this 8" grinder features a low speed of 1,800 RPM and is ideal for tool and chisel sharpening. Its compact motor housing allows you to press against both buffing wheels without ever touching the motor frame, while its removable wheel guards make it easy to change grinding wheels. The MI-15300 comes with a spark guard and and safety eye shields.
kmstools.com

Reviews

Our staff writers review new tools and products on the market that are ideally suited to the woodworker and DIYer.

(Photo by JessEm)

Keep it Snug – "Snuggers", keep the mitre gauge bar fitting perfectly in your saw's mitre gauge slot. This ensures an accurate and straight cut each time. One snugger is visible at the right side of this photo, inside the bar that runs in the table saw's mitre gauge slot. (Photo by Rich Keller)

JessEm Mite-R-Excel II Mitre Gauge

Most mitre gauges that come with a table saw suffer from three major problems. First, the support surface for the workpiece is usually very limited. Second, often the bar doesn't fit the table slot overly well. Third, the angle scale is usually not very accurate. Most mitre gauges can be set square with some effort and the use of a separate square, but a good mitre gauge should not take effort to make square and should not need the use of an additional tool. The overall accuracy is usually affected by all three of these problems, leaving the user with something less than usable. JessEm has addressed these three problems and more with their new mitre gauge.

The mitre gauge comes mostly assembled, and the little bit that has to be done is fairly simple. The instructions are quite good and lead you through what has to be done step by step. Assembly takes about 20 minutes. The gauge is adjustable for squareness and has a system of "snuggers" to keep the bar tight in the mitre slot and eliminate any play. Every table saw is a little bit different so the ability to adjust the gauge for squareness and fit in the mitre slot is important. Both the overall angle and the

Bang On – A Vernier scale on the gauge helps the user dial in the angle very accurately. This is the difference between close and bang on. (Photo by Rich Keller)

fence-to-table are adjustable for square. The length cut-off scale on the top of the gauge is also adjustable, so I can use the gauge to accurately cut pieces to length once set. JessEm provides a positive stop at 0°, 15°, 22.5°, 30° and 45°. The mechanism is solid and has no play in it. One of the first things I noticed when setting the angle is the laser engraved markings on the gauge. I also noticed that there is a vernier in 1/10° markings. This made me fairly confident when setting the gauge that I was getting exactly the angle I was looking for.

I was able to take the mitre gauge for a test drive on some angled chair tenons. In order to make angled tenons, a mitre gauge that can be changed both quickly and accurately is necessary. I cut a number of angled tenons and was pretty impressed. Cutting an angled tenon requires setting the gauge to one side of 90°, and then the same angle to the other side of 90° when the piece is flipped over. If the angle isn't perfect, the shoulders of the tenons won't be parallel and it won't not fit tightly on one side when installed in the mortise. I was quite pleased that the shoulders were tight on both sides, meaning that the gauge had been set to the exact same angle for the cuts on both sides. Of course, if a tenon is slightly oversized, it can always be shaved with a hand tool, but I'm working on a set of eight chairs, with 24 mortises each, of which only four are square. That's a total of 192 mortise and tenon joints. For obvious reasons it would be great to make 192 tenons that required little or no hand fitting.

Apart from my excitement at making 3° tenons quickly and painlessly, the JessEm mitre gauge certainly performs the more mundane and standard tasks of cutting boards square and to length well. The mitre gauge has a flip stop like most after-market mitre gauges, but this one is a little different from standard ones. The vertical face of the flip stop can be adjusted in and out from the aluminum cross fence to allow for the use of a sacrificial wood sub fence. Any wood up to 3/4" thickness can be used, and the flip stop will be able to flip down properly and be tight to the fence face.

One problem I did encounter with the mitre gauge is that the washer on the end of the slot bar did not work with my table saw. It was too wide for my table saw's T-slot. I ended up taking the washer off to be able to use the gauge. I don't personally care for T-slot mitre gauges. I find them more of a nuisance than anything, so this was not a deal breaker for me. The idea behind them is that when cutting wider stock, you can pull the gauge back past the edge of the saw table and it won't fall out. I never use a mitre gauge for wide stock and I prefer to be able to drop the gauge in the mitre slot anywhere on the table. But if you would like to use the T-slot feature of the gauge, double check to see that it works with your saw or possibly modify the washer to work.

Overall, I'm quite happy with the performance of the JessEm's mitre gauge. Once set up, it's quick and easy to set different odd angles and it has a good, long face to support the work properly and accurately during the cut. The gauge has a good feel in the hand and slides nicely on the saw once the bar "snuggers" are adjusted.

JessEm Mite-R-Excel II Mitre Gauge
MSRP: $359.98
Website: jessem.ca
Tester: Rich Keller

Work Sharp WS3000

(Photo by Work Sharp)

Woodworkers know how important it is to use sharp hand tools, both from a quality and a safety perspective. We also know how challenging it can be to get razor-sharp tools, especially if we're new to the intricacies of sharpening and honing. There are many approaches to sharpening plane blades, chisels and other edges, and deciding on which one to use for your workshop can be confusing.

I had a chance to check out the Work Sharp WS3000 recently. It's a system that uses a series of abrasives to grind, sharpen and hone an edge. I've always been a stone user, so this approach was a bit different for me. Also new to me was the fact that my hands weren't what was powering and moving the edge that was being sharpened.

A low-speed rotating disc helps make using this system a snap. An easily adjusted surface positions the tool at either 20°, 25°, 30° or 35° to the abrasive, and the user lightly presses the tool into the underside of the rotating disc. An adjustable metal guide gently guides the tool and keeps it perpendicular. Using this guide, the bevel of a blade is sharpened on the underside of the disc, then the tool's back is flattened on the upper face of the disc, freehand.

It's very easy to set up, and I was sharpening a chisel edge within a few minutes. After applying the four included grits to either side

How Sharp? – A properly sharpened edge is keen enough to hone end grain in soft spruce directly off the WS3000. (Photo by Rob Brown)

Easy to Set – Honing angles of 20, 25, 30 and 35 are easily set by the user by squeezing the lower bar on the support surface and manually adjusting the angle. The readout just above the ON/OFF switch displays the angle that's set. (Photo by Rob Brown)

of the two supplied round glass plates, then installing the coarsest grit face up, I was ready to flatten the back of a dull chisel. After about 10 seconds I flipped the disc over to start work on the bevel. The adjusted metal guide held the chisel while the rotating abrasive ground my edge to a perfect 25° angle with virtually no effort on my part. When the bevel was ground, I moved onto the next grit. In a matter of a few minutes I had completed the process. Now the moment of truth — testing the edge by cutting end-grain spruce. Wafer-thin shavings were easy to remove and no fibres were crushed. I finally had no excuse not to have all of my chisels and plane irons razor-sharp and constantly at the ready.

Although many attachments are available so you can easily sharpen lots of other household items, I didn't have any of them. I was still able to easily sharpen large and small pocket knives, as well as a large kitchen knife. I'm sure a jig would have made the process even faster and more accurate, but a steady hand and even approach was all I needed to be slicing through paper in no time.

Carving gouge users will enjoy the slotted plate and abrasive papers, as the gaps allow the user to see what's happening to the bevel edge of the curved gouge from above while they sharpen.

The only real downside I can see to this system is the need for adhesive abrasive papers to allow for frequent, fast and efficient sharpening. This isn't a deal breaker for me, though, as the papers supplied with the system seem to be of good quality and new ones aren't prohibitively expensive. I would suggest having a few extra discs of each grit around. You should also use the included crepe to remove debris from the discs during use, as this will extend the life of the abrasives.

This sharpening system is easy to use, virtually foolproof, can be used to sharpen many shop and household edges, and does a great job at giving the user a keen edge. The Work Sharp WS3000 will go a long way to taking the confusion out of sharpening, and making sharp edges appear in workshops coast to coast.

Work Sharp WS3000
MSRP: $345.95
Website: worksharptools.com
Tester: Rob Brown

(Photo by MicroJig)

MicroJig Zeroplay 360 Degree Sled Kit

Sometimes angles can be dealt with by simply heading to your mitre saw. Other times a hand saw is the ticket to give you the ultimate in flexibility for cutting angles. There are times when a workpiece is too large for a mitre saw or hand saw, and you need a completely different approach. A table saw and dedicated sled are great for many other angled situations, though it's often hard to zero in on the correct angle and make repeated cuts to many workpieces. This is where the Zero Play 360 Sled Kit from MicroJig excels.

The kit comes with two precision mitre bars that fit face-to-face and run in your table saw's mitre gauge slot, as well as four dovetail track screws that allow you to secure a fence or stops to the upper face of the plywood sled at any position or angle.

Making the necessary plywood base for the sled kit to work with involves routing some dovetail grooves in the base and drilling a few holes to fix the base to the sled kit mechanism. It's not hard work. There are a number of approaches to using the completed sled. One simple approach is to use shop-made wood blocks with holes drilled through them to act as stops. These stops can be quickly and easily positioned and clamped on the sled, providing you with virtually any angle to cut a workpiece at. Another approach is to make a solid wood or plywood fence with long slots in it. The dovetail track screws extend through the fence and into the routed dovetail grooves on the plywood base. With a bit of ingenuity, users can very likely come up with many other approaches to using this kit for help around their shops.

If you've ever wondered how to cut angles on some unique parts, or are just looking for a safer, faster and more accurate way of dealing with simple angles, you should consider this sled kit.

MicroJig Zeroplay 360 Degree Sled Kit
MSRP: $34.56
Website: microjig.com
Tester: Rob Brown

Dovetail Screws – The dovetail track screws fit into the routed dovetail grooves in the upper face of the jig. These allow the user to quickly and easily adjust the position of the stops or fences. (Photo by Rob Brown)

Width Adjustment – The angled slots on one of the lengths of miter bars allow the user to obtain a nice fit between the sled and the table saw's mitre gauge. Once the bolts are snugged up the fit is customized to your exact saw. (Photo by Rob Brown)

4 Awesome Gifts for the Dedicated DIYer in Your Home

Choosing the right gift isn't always easy. Here are gift ideas that will please even the most finicky.

Greenworks Snow Thrower – Greenworks has 20" and 22" snow throwers with a range of battery options to cover your snow removal needs up to 12" deep.

Photos by manufacturers

BY CARL DUGUAY

Cordless snow blower

Unless you have a driveway the length of a runway or the size of sports stadium, a cordless snow blower might be a fabulous alternative to a noisy, heavy, gas-powered blower. Advances in high-capacity lithium-ion battery technology and digital electronics, along with the advent of brushless motors, mean more large-scale power tools are cutting the power cord and ditching the fuel tank.

While not as powerful or durable as gas or electric models, cordless units are typically much lighter in weight, quieter to operate, start instantly and are compact and easy to store. Cordless machines called "snow throwers" are typically single-stage

Snow Joe Snow Blower – Powered by two 4Ah 24V batteries, Snow Joe can clear snow up to 10" deep. Available in 18" and 20" versions.

Very Solid Lineup – The Milwaukee cordless combo kit includes a hammer drill/driver, impact driver, reciprocating saw, circular saw, grinder, two extended capacity batteries and a charger.

(they use an auger to discharge the snow) while those called "snow blowers" are usually two stage (use both an auger and impeller). You can expect to get from 45 to 60 minutes of run time.

Snow Joe has both 18" ($458) and 20" snow blowers powered by two 4Ah 24V batteries that clear snow up to 10" deep. **Greenworks** has 20" ($279) and 22" snow throwers with either 40V, 60V or 80V 4AH batteries that clear snow up to a foot deep. You'll also find snow blowers from Ego (egopowerplus.com) and Ryobi (ryobitools.com).

snowjoe.com
greenworkstools.ca

Power tool combo kit

You can't go wrong giving your favourite handy person a power tool combo kit – that is, unless you don't want to earn their undying affection. It's the gift they'll keep on using. There are combo kits for every skill level, from the person who just likes to tinker around the home to the fanatical hobbyist or DIYer. The advantage of a combo kit is that it's much more economical than buying tools separately. Don't choose a kit based solely on price, though. It's performance, durability and features that count.

Combo kits can be had with two to 10 tools and in both 12V and 18V (20V max) formats. There are six key differences between tools that run on 12V versus 18V batteries. Tools rated 12V tend to be lighter in weight, more compact and cost less. Tools rated 18V have more power, deliver more torque and have a longer run-time before the batteries need to be recharged.

Kits with two to four tools are a good choice for those who aren't likely to undertake large-scale projects or major renovations. Two-piece kits usually consist of a drill/driver and impact driver.

Exceptional Value – The King Canada 20V kit comes with a drill/driver, an impact driver, two batteries and a charger. This basic kit is good value for any woodworker or DIYer.

Small But Mighty – The lightweight design of Bosch's drill/driver and impact driver kit offers a lot of bang for the buck, and provides powerful drivers that are very easy to handle.

A Quality Selection – Festool offers many kits, including this one with a cordless track saw, driver, two batteries, Systainer, blade, charger and more. It sells for $1,139 CAN.

Four-tool kits often have a drill/driver, impact driver, circular saw and reciprocating saw, though some kits contain a work light in place of one of the saws. There are also kits designed for specialty tradespeople, such as plumbers, electricians, carpenters and cabinet installers. While all combo kits come with a battery charger, some will have only one battery. Once that battery runs out of power, there will be downtime while the battery recharges – an inconvenience for some, but not everyone. Larger kits with 10 or 12 tools may contain specialty tools, such as a right-angle drill, impact wrench or cut-off/grinder, that may be rarely used.

All the major brands have combo kits. The **King Canada 20V** kit (#8020L/8022LK) comes with a 1.5Ah battery, quick battery charger, a two-year warranty and can usually be found on sale for around $150 ($75 per tool). The **Bosch 12V Max** kit (#CLPK22-120) comes with two 2Ah batteries, a one-year warranty and can be had on sale for around $100 ($50 per tool). The more extensive six-tool **Milwaukee M18** kit (#2696-26) has two 3Ah batteries, a five-year warranty and costs $529 (or $88 per tool). **Festool** has a range of combo kits including a selection of drill/drivers, track saws, jigsaws, batteries, blades and more.

kingcanada.com
boschtools.com
festoolcanada.com
milwaukeetool.com

Smart house lock

According to Statistics Canada, 88% of Canadians own a smartphone. So, buying someone a smart device to use with their smartphone isn't such a bad idea. Given our penchant for security and safety, a smart digital house lock makes a unique gift.

Smart locks are convenient, secure and highly configurable with no keys to lose. You can give out digital "lock code" keys to family members, guests and even service providers, change the keys at a moment's notice, and keep a record of everyone's comings and goings. Just in case you mislay your smartphone, or the battery powers out, most smart locks can also be opened from a numeric keypad or with a physical key. And you don't need to be an engineer to install one of these devices; it's well within the skill set of the average DIYer.

They're available for Bluetooth-only, Wi-Fi, Z-Wave and Zigbee technologies. You can also get locks that work with your favourite

Schlage Encode – Compatible with Alexa and Google Assistant, this smart lock even connects to Wi-Fi. It also has a built-in alarm and low-battery indicator.

Weiser Halo – Also compatible with Alexa and Google Assistant, this smart lock connects to Wi-Fi as well. It features SmartKey Security technology, further protecting you against break-ins.

shopnews

Langevin Forest Positioning Squares – 12 pack

Sponsored: Whether you're making a picture frame or repairing one, repairing a drawer or building a box, these squares from Langevin Forest will increase accuracy and lend a much needed helping hand. With this set of 12 positioning squares, getting that job done right with that perfect 90° angle on inside or outside corners will be a snap. The positioning squares make your small glue-ups and complicated larger jobs much easier. You know how it goes with tools - you always wish you had a couple more. Stock up and be sure to get a couple of sets so you will always have enough. They work great with quick clamps. Learn more at **langevinforest.com.**

voice assistant as well, such as Siri, Alexa or Google Assistant.

There are quite a few models on the market. The **Schlage Encode** and the **Weiser Halo** are both compatible with Alexa and Google Assistant and have built-in Wi-Fi so you can connect to your front door from just about anywhere in the world. The Schlage Encode also has a built-in alarm and a low-battery indicator that warns you ahead of time when the internal battery needs to be replaced. The Weiser Halo features SmartKey Security technology that prevents advanced break-in techniques. Both models come in a couple of different styles and finishes, and retail for just under $300.

schlage.com
ca.weiserlock.com

Portable power station

Also called "battery-powered inverter generators," these are a good choice when you need occasional power around the home or cottage, on camping trips, at the beach, on the job site or for short-duration power outages. They're compact, portable and quiet, and output power for both AC and DC appliances. And while they don't deliver as much power and have shorter run-times than petroleum-powered generators, they can be used safely in confined spaces.

There are both modified and pure sine wave inverters. A major difference between the two is that pure sine wave inverters will let variable-speed motors run cooler and more efficiently and are less likely to interfere with more sophisticated electronic equipment such as laptops, tablets, smartphones and LED lighting. You'll get longer run time from any of these inverters using batteries

Ego Nexus Power Station – Delivering 1,680 watt-hours of power, the Ego Nexus Power Station is one powerful tool.

MX Fuel Carry-On

Anyone who's big on the Milwaukee power tool platform will have to wait until early 2021 for the new MXF002, a pure sine wave inverter that runs on one or two of the new MX FUEL batteries. Like the DeWALT power station, it will deliver 3600W of peak and 1800W of continuous power. It has two 15A 120V outlets.
MilwaukeeTool.ca.

DeWALT Power Station – Converting the power from four 20V MAX batteries, the DeWALT Power Station delivers 960 watt-hours of power.

with more amp hours. For comparison purposes, if an inverter delivers 1,600 watt-hours of power and you use it to power a laptop that consumes 50 watts per hour, you could run the laptop for 32 hours. For an 800-watt microwave oven you could run it continuously for two hours. Better yet, you could brew around 18,000 cups of coffee.

For the DIYer who has already invested in the DeWALT power tool platform, there is the modified sine wave output **DeWALT 1800-Watt Portable Power Station** (#DCB1800B). It runs on four 20V MAX batteries (from 3Ah to 12Ah) and provides continuous power output of 1800W with a peak output of 3600W. It features a temperature-controlled cooling fan, has a single 15A 120V outlet and also serves as a battery charger. With four 12Ah batteries installed, it delivers 960 watt-hours of power. $529

For a lot more power there is the **EGO Nexus Power Station**, a pure sine wave inverter that runs on one to four EGO 56V batteries. It delivers up to 2000W of continuous power and handles surges up to 3000W. It has three 15A 120V outlets and four USB ports. With four 7.5Ah batteries installed, it delivers 1,680 watt-hours of power. $797.99

dewalt.com
egopowerplus.com

CARL DUGUAY
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Demolition Man

While my construction skills need some work, I'm a pro when it comes to demolishing backyard sheds.

BY JAMES JACKSON

It's no secret that building things with my own two hands isn't exactly my forte. If it were, I probably wouldn't have this column and you wouldn't be reading it right now.

I am, on the other hand, quite good at smashing things. Whether it's a crowbar against a rotting piece of wood, my keyboard against the desk when I can't seem to string two coherent sentences together, or my head against the wall when my kids just won't go to sleep.

But I digress.

Earlier this summer my wife and I decided it was a good time to replace our old, worn-out shed with a new one. Not only would it help with the resale value of our house should we decide to move in the next few years, but I was growing tired of finding the wheel wells of my summer tires full of stagnant water every spring.

We also decided that given my relative lack of experience when it comes to construction projects, I shouldn't be the one to spearhead the project. So, we opted to buy a shed and have it assembled in our yard instead.

We looked around for a few weeks and decided we could afford one that was about 10' × 8' – fairly close to our existing 12' × 5' shed. We got a few quotes and settled on one company, but balked at the $750 demolition and removal portion of the quote.

I didn't mind putting a little sweat equity into the project to save a few bucks. Unfortunately, I chose one of the hottest weekends in early July to get started.

Just after 8 a.m. Saturday morning I climbed to the top of the ladder that was perched against the shed wall and realized right away why my tires were wet every spring – most of the shingles had rotted away, leaving just the bare quarter-inch plywood to hold out the rain and snow.

Once the roof was down, I started taking apart the walls, and I noticed the building was seemingly built to withstand hurricane-force winds. Multiple 2×4s were nailed together to form the frames, and the builder used about twice as many construction nails as needed to hold it all together.

As I pulled the boards apart the nails were literally coming out of the woodwork, suggesting the builder had nailed boards on top of boards on top of boards to build up the frame.

When that first day finally came to an end, the walls and roof were down and all that remained was the wooden floor. It would only take a few more hours of work the next day to finish.

With the hardest portion of the work done, just before 9 a.m. the next morning my father-in-law texted me to ask if I needed any help demolishing the shed.

I'm sure his timing was purely coincidental.

JAMES JACKSON
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Illustration by Mike Del Rizzo

The right tools make it easier to make a gift you can be proud of. At Veritas, we're proud of our 100+ patents and are confident that our innovative tools will help you create a gift that feels as good to give as it does to receive.

Free shipping on orders of $30 or more. leevalley.com

Lee Valley & veritas

Wyatt Walkem

Apricot Bowl

This bowl was made from the rootball of an old large apricot tree, filled with sand, stones and many other challenges. This turning opportunity pushed Walkem to break through his boundaries and create something very special. After turning the bowl, it was slowly dried over the course of a year in a climate-controlled room, followed by many hours of slow and careful sanding. It won "Best in Show" at a Toronto woodturning competition and was featured on CTV news in 2019.

Turn to page 12 for more quotes.
(Photo by Wyatt Walkem)