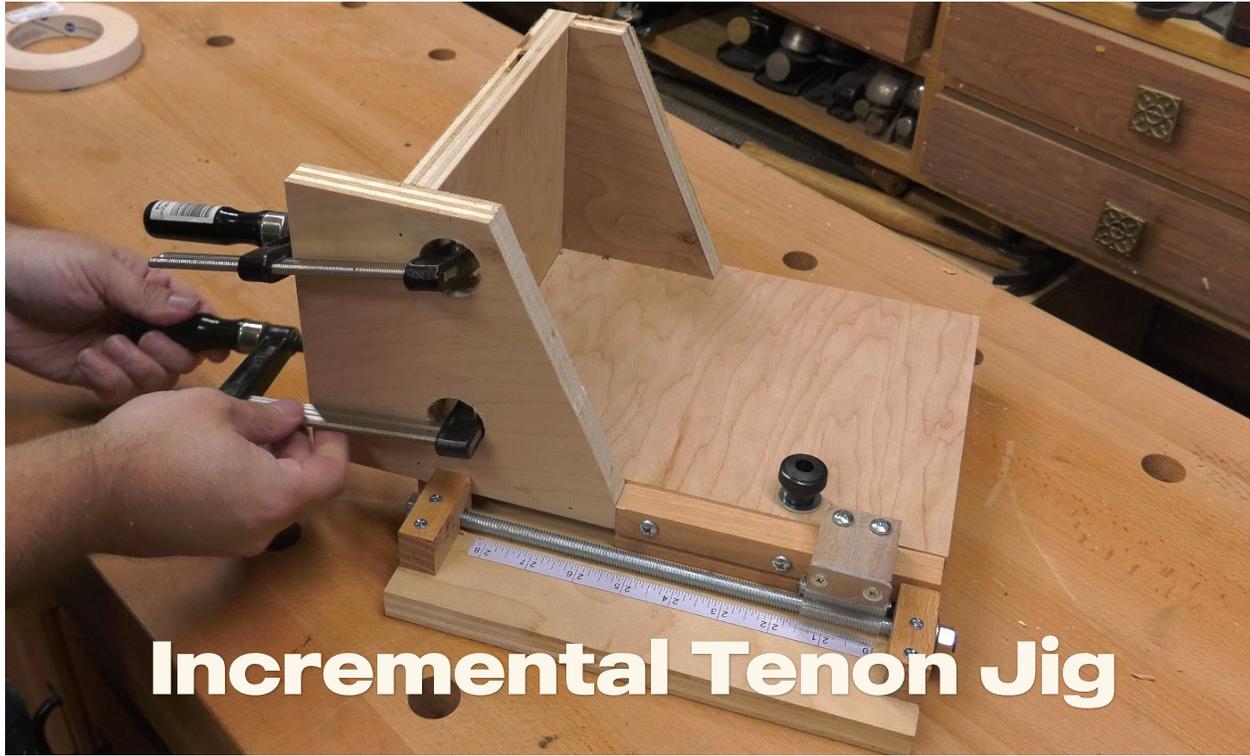




# Stumpy Nubs Woodworking Journal

ISSUE #1



## Incremental Tenon Jig



## Butter Churn Side Table

- **LEARN HOW TO SHARPEN YOUR ROUTER BITS!**
- **HOW TO MAKE PINE LOOK 100 YEARS OLD!**
- **MAKING RUNNERS FOR TABLE SAW JIGS**
- **EVERYTHING YOU NEED TO KNOW ABOUT PLYWOOD**
- **CHECK OUT SOME COOL TOOLS!**
- **QUICK-TIPS & MORE!**

# CHECK OUT THE ALL NEW STUMPYNUBS.COM

## **-HUNDREDS OF FREE WOODWORKING TUTORIALS:**

We've made a lot of videos over the years, and many have wished for a better way to search for and locate the information they need. At stumpynubs.com you will find a growing selection of our most useful videos, organized by subject. Looking for videos about safety? Videos about joinery? Videos about the band saw or the table saw? Just select the topic from the menu system and enjoy!

## **-GO BEHIND THE SCENES:**

Our popular shop vlogs have found a home at the new stumpynubs.com where you can find them all without sorting through our YouTube channel. The same is true for our Cool Tools video series- all 25 episodes (and growing) in one place. What could be better than sitting back with a cold one and enjoying a Stumpy Nubs video marathon?

## **-TOUR OUR WORKSHOPS:**

We've created a virtual tour of our the Stumpy Nubs Woodworking Journal facility. Check out all the awesome tools in the main workshop, or browse through the inexpensive tools in our smaller, corner workshop. Not only will this give you some insight into our day to day operations, but it's the perfect opportunity to find some solid tool recommendations for your own shop!

## **-GET PROJECT PLANS AND STUMPY-SWAG:**

Our project plans are second to none! We have clever ideas for homemade tools and workshop improvements and a growing selection of unique projects, many of which include detailed step-by-step build instructions complete with photos, drawings and more. Plus, we are now offering fan merchandise including hats, stickers and other swag!

## **-TAKE A WOODWORKING COURSE AT STUMPY NUBS UNIVERSITY:**

We are developing a whole series of affordable and comprehensive woodworking courses. Far more in-depth than our typical tutorials, these will teach you how to get the most from your tools, how to build new things and how to take your skills to the next level!

## **-SUPPORT US AND OUR SPONSORS:**

We work with a lot of great brands including many small, family-owned businesses who make quality tools that will make your shop time easier and more enjoyable. At the new stumpynubs.com we've built a resource where you can find them all in one place so you may support us by supporting them with your next tool purchase.

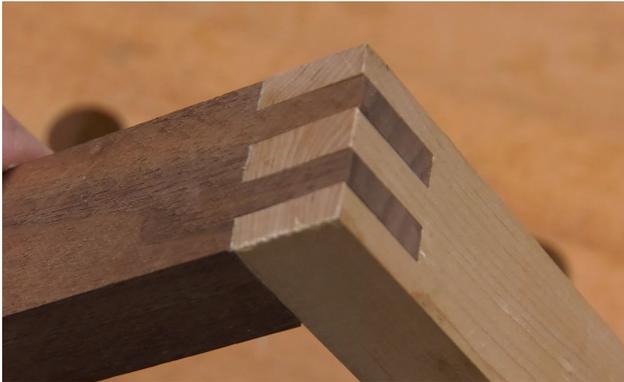
## **-BROWSE BACK ISSUES:**

And of course, the new stumpynubs.com is where you will find the full selection of *Stumpy Nubs Woodworking Journal* back issues, available to read for free!

## SEE YOU THERE!



# CONTENTS



## Behind the Sawdust:

Our New Journal ..... 2

Quick-Tips ..... 4

## Furniture Project:

Butter Churn End Table ..... 7

A Distressed Pine Finish ..... 11

## Shop Project:

Incremental Tenon Jig ..... 17

## Router Workshop:

Sharpening Router Bits ..... 22

## Table Saw Skills:

Making Jig Runners ..... 25

Choosing Plywood..... 28

Cool Tools ..... 32



## Stumpy Nubs Woodworking Journal

Stumpy Nubs Woodworking Journal  
(ISSN Pending) is a digital-only publication  
published by Midwestern Trading Co LLC,  
P.O. Box 102, Saint Charles, MI 48655.

Copyright© 2021 MWTco LLC

Subscription information: [www.stumpynubs.com](http://www.stumpynubs.com)

Advertising inquiries: [support@stumpynubs.com](mailto:support@stumpynubs.com)

YouTube: StumpyNubsWorkshop

Instagram: Stumpynubs

Twitter: @stumpynubs

Facebook: StumpyNubsWoodworkingJournal

Published six times yearly.



# BEHIND THE SAWDUST

with Stumpy Nubs

## Welcome to the first issue of the all new *Stumpy Nubs Woodworking Journal*!

As you flip through the pages that follow you will immediately notice that the new edition of the *Journal* is very different from the old edition. The very fact that it *has* pages at all is perhaps the most striking change. Originally, the *Journal* was a single web page full of embedded videos. This new edition is an actual woodworking magazine. Gone are the videos and in their place are articles fit for perusing on the toilet or wherever it is that you get your best reading done.

This new *Journal* will be published whenever we feel like it. The goal is six issues a year, but we won't be following a monthly or every-other-

month schedule. This will give us the flexibility we need to keep both our videos and our *Journal* the best they can be.

Each issue will begin with this column containing a little rambling about what's going on behind the scenes. I think you'll grow to enjoy these light-hearted and sometimes snarky articles that are exclusive to the *Journal*.

Future issues will also include several recurring "departments" including Quick-Tips, Table Saw Skills, Router Workshop, Old-Timey Woodworking, Cool Tools, and we may even throw in a bonus article or two.

Each issue will also include a shop project and a furniture project., but we will handle these differently from how you may be used to seeing them in other magazines.

Frankly, I almost never build a project I see in a magazine. I skim through the article looking for ideas of inspiration, but I ignore the step-by-step and other details.

This got me thinking... Why charge everyone for projects they won't likely build? Why not just give them the bits they want—the ideas and

the inspiration, for free? That is what we decided to do!

We are letting YOU decide if you want the full project details. If you don't, that's fine. Enjoy the highlights for free. If you do want to build a project, you can go to our website and purchase those plans. That way the only people who pay are those who build!

Yes, I know some will scoff at that idea. But I think it's a great way to ensure you only pay for what you find valuable.

Of course, this means we are counting on folks to buy project plans from our website to finance this magazine and keep it free. Thanks in advance for your support. It not only helps us bring more content to you, it also helps us teach a whole new generation of woodworkers!

Now let's talk about subscriptions. As I said, the *Journal* is free. This is a big risk for us, but I am confident enough folks will support it by buying plans and other items from our website and patronizing our sponsors.

Besides the labor involved in producing a magazine, the distribution is very expensive as well.— even for a fully digital publication. It costs thousands





of dollars just to maintain and operate the subscriber email list. This means we are asking folks to subscribe only if they read the magazine. It also means we must reduce the massive email list we accumulated from the original edition. We will be asking everyone to re-subscribe to the new *Journal* as a way of weeding out the inboxes that send our emails to the junk folder or those who don't care to open them. Thank you for your patience in this matter.

That brings us to the biggest question: Why publish a new magazine in an era when print media seems to be dying off?

Believe me, we asked ourselves that question many times and it is a big reason it took so long to release this new *Journal*. In the end, I realized what was becoming obsolete was merely the "print" part of print media. As more and more people consume their media on digital devices it makes less sense to print it on paper. Video has become very popular (as we well know) but many woodworkers still like to

read. We still enjoy quiet time! Digital magazines may be read without an internet connection. They may be enjoyed in the Lazy-boy while someone else is watching television, or in bed. They are better for taking into the workshop. And they may be saved on your device forever.

The era of the woodworking magazine is not coming to an end. It is just evolving, and with those changes comes opportunity for startups like *Stumpy Nubs Woodworking Journal* to come along and completely change the whole model. With a small staff and a fraction of the budget we can produce a periodical full of valuable tutorials and inspiring projects. And we can give it away for free!

But I want to be clear. We aren't out to compete with the existing woodworking magazines. I personally subscribe to all of the US editions and I've contributed articles to several. *Stumpy Nubs Woodworking Journal* is not intended to take subscribers away from them. After all, we are a free publication,

not a competitor for subscription dollars.

Our primary role is to serve our existing audience by bringing them the same content they have enjoyed for years in a format that many will find convenient. Many future articles will be based upon the hundreds of subjects we've covered in videos over the last decade and will serve as a valuable review. Others (such as this column) are brand new.

The bottom line is if you have enjoyed our videos in the past I know you will enjoy the new *Stumpy Nubs Woodworking Journal*.

I can't want to see what the future brings!

-James Hamilton





## 20 USES FOR BEESWAX IN THE WORKSHOP

Every shop should have at least one chunk of wax that's not in your ear. I prefer beeswax because paraffin can be a little squeaky in some applications, such as for lubricating drawer runners. But I don't only use beeswax in my drawers. Here are nineteen more uses for beeswax in the workshop:

- Wax makes nails easier to drive without bending them and screws without stripping them.
- You can put wax on the threads of a stubborn nut or bolt to help break it free.
- Rub a little wax on the bottom of a hand plane or jig runners for smoother operation.
- Rub wax on the side of a hand saw to reduce binding or on the teeth to slow dulling.
- Combine equal parts beeswax, turpentine and linseed oil over heat for a useful wood finish.
- Subtract linseed oil from the above recipe and you've got a paste wax to protect metal tools.
- Add a little wax to some mineral oil and microwave for a food-safe cutting board finish.
- Rub beeswax on cloth, canvas or leather. Warm it with a hairdryer for waterproofing.
- Keep rope from fraying by wrapping the end with a piece of wax-coated string.
- Wax your thread before sewing leather or flossing your teeth.
- Rub softened beeswax on copper or bronze hardware to prevent oxidation.
- Rub beeswax on a cut or scrape to reduce pain and inflammation.
- Beeswax is frequently used in blacksmithing and basketry. Ask them how.
- Use beeswax to clean the adhesive buildup off the iron you used to apply edge banding.
- Guess what Mustache Mike conditions with beeswax...
- If you mix beeswax with palm wax, you'll have a natural hair *remover*.
- Wax your wires before pulling a new circuit through a wall.
- Melt wax over dryer lint in the cups of an old egg carton to make fire starters.
- And finally, beeswax makes it easier to pluck the feathers from your shop-chicken.

-SN

## HOW TO ENLARGE A FORSTNER BIT HOLE

Have you ever bored a hole and then wished you'd used a larger bit? Or you wish to make an already existing hole larger? It's possible, but first you must find the center of the hole so the bit may be positioned to bore a new, larger hole directly over the old one.

Find a forstner bit that fits the existing hole. Put some tape over the hole and insert a forstner bit from the opposite side, using the spur in the center of the bit to pierce the tape.



Now you know exactly where to put the new, larger forstner bit's spur so you may bore your larger hole dead-center over the smaller one.

Begin boring with the large bit slowly so its rim may enter the wood without pulling off the tape. Of course, this will be easier with a drill press and a securely clamped workpiece. But if you must work with a handheld drill you may use a different method.



After piercing the tape over the smaller hole, as described above, use the larger bit to bore another hole through a scrap of wood. With the larger bit still in the larger hole, center the scrap of wood over the smaller hole in your workpiece by aligning the tip of the larger forstner bit with the hole in your tape. Clamp the workpiece down and use

it to guide your larger bit correctly as you bore a new, larger hole directly over the smaller one.

If it's not practical to clamp the scrap onto your workpiece, you may use double-sided tape, hot-melt glue, or even screws in the underside where they won't be seen.





## **INTRODUCING STUMPY NUBS WOODWORKING UNIVERSITY!**

For years we've been providing free woodworking tips, tricks, projects and tutorials through our videos and the pages of our e-magazine, *Stumpy Nubs Woodworking Journal*. While there is much to learn from our free content, many wish to delve deeper into specific subjects that are of particular interest to them. Or they want to learn the craft in a more organized manner rather than through the random and abbreviated format so common on YouTube and other websites.

### **SNWU IS THE NEXT STEP IN YOUR EDUCATION:**

SNWU isn't for the casual consumer of woodworking-related content. Our enrollees include new woodworkers who wish to learn the fundamentals so they work more safely and efficiently. Others are experienced woodworkers who desire a more intimate knowledge of specific tools or techniques. Still others are casual, weekend woodworkers looking to improve their workshops. And many are simply looking for a challenging project and the guidance they need to complete it.

### **LEARN WHAT YOU WANT, WHEN YOU WANT:**

Would you like to use your table saw or router more effectively? Would you like to learn to build and use essential shop jigs? What about improving your joinery skills so your future projects will last a lifetime?

While other online courses force you to build the projects that interest them, SNWU teaches you the skills and techniques you need to build your own projects. Choose from our growing selection of tool and technique-based courses and work on the parts of your craft that represent more pressing educational needs. Or select a project for a new challenge. Whatever you choose, you can learn at your own pace. Each course is yours forever; you can even download the articles so you can print them out and take them to the shop with you.

### **AFFORDABLE AND COMPREHENSIVE CURRICULUM:**

Are you a woodworker on a budget? **We are committed to keeping SNWU courses as affordable as possible, much less expensive than other online courses!** That's quite a bargain when you consider that our courses are not only extremely detailed, but they are carefully laid out to be easy to follow, understand and retain. Each lesson is broken down into bite-sized parts, with short video clips followed by photos and written instruction so you may enjoy the subject in an organized way and at your own pace.

### **TRY IT FOR FREE:**

Why not have a look for yourself? For a limited time we are offering out *Table Saw 101* course free-of-charge! This course covers the basics of table saw safety and use, and it's a good example of how our future courses will be laid out, broken down and presented in an organized way that's conducive to learning. Select the *Table Saw 101* course at [stumpynubs.com](http://stumpynubs.com) and get started!

**DIFFICULTY:** ★★☆☆☆  
**COST:** \$30-60  
**TIME:** 1 DAY



# BUTTER-CHURN SIDE TABLE

A reproduction of a unique piece of vintage furniture

Years ago, I happened upon an old butter churn that someone had converted into an end table. Half folk art, half furniture, it was reminder of a simpler time. I loved it!

Unable to buy it, I decided to make one that looked as old and well-used as the original.

This is a relatively easy pro-

ject to build. It can be made with inexpensive pine boards, as was the original. But some creative touches are what truly make this project unique.

The crank is salvaged from a meat grinder, a common device that may be found in many flea markets and antique shops. The hinges are salvaged

from junk (the rustier the better). Even the fasteners are antique cut-nails purchased on ebay.

The surface is then beat-up a bit and the aged-pine look is completed with an acid bath and a colored wax.

It's a fun project that will teach you some new things!

## This Shop Project Will Teach You These Skills:

Edge-gluing panels, laying out and transferring angles, working with salvaged materials, distressing techniques\*, applying an aged wax finish.

\*Plans for this project may be purchased at [stumpynubs.com](http://stumpynubs.com)



## BUILD NOTES

I built this project in my father's garage. It was more fun than I had had in a long time! Bonanza re-runs were playing on the little television in the corner, a cup of steaming coffee sat beside my work at the bench, and I got to chat with my dad for a few hours.

I recommend using this project to make a memory of your own. It's not a difficult build. In fact, it may be an ideal project to involve someone new to the craft. Remember, this is supposed to look like an old butter churn that has been *repurposed* as a table. Perfection is not the goal!

A butter churn was a common tool on many farms. The farmer himself would have most likely built it from whatever boards he had on hand. It wasn't intended to be pretty, even when it was new. And it would have seen a lot of wear and tear during decades of life *before* it became a piece of furniture.

Keep this in mind as you work. There's no need for fancy hardwood. While you should try to cut and assemble your parts accurately, a slightly misaligned hinge, a dented corner, a knot—such minor details are not a big deal in this project.

**This article is not intended to provide all the build details. It is merely an introduction to the idea. You may use these ideas as a starting point to design and build your own project, or you may purchase a set of detailed plans from our website at [stumpynubs.com](http://stumpynubs.com). Plan sales are one of the ways we finance all the free education we produce. Thanks for your support!**



This project has an old-timey feel to it. Not just because of the theme, but also because of the way it is built. The tools were very basic. The only truly modern tool I used was a table saw, which did come in handy for the beveled edges required on two of the boards. But a hand plane or even a sharp chisel could have done that job and a good,

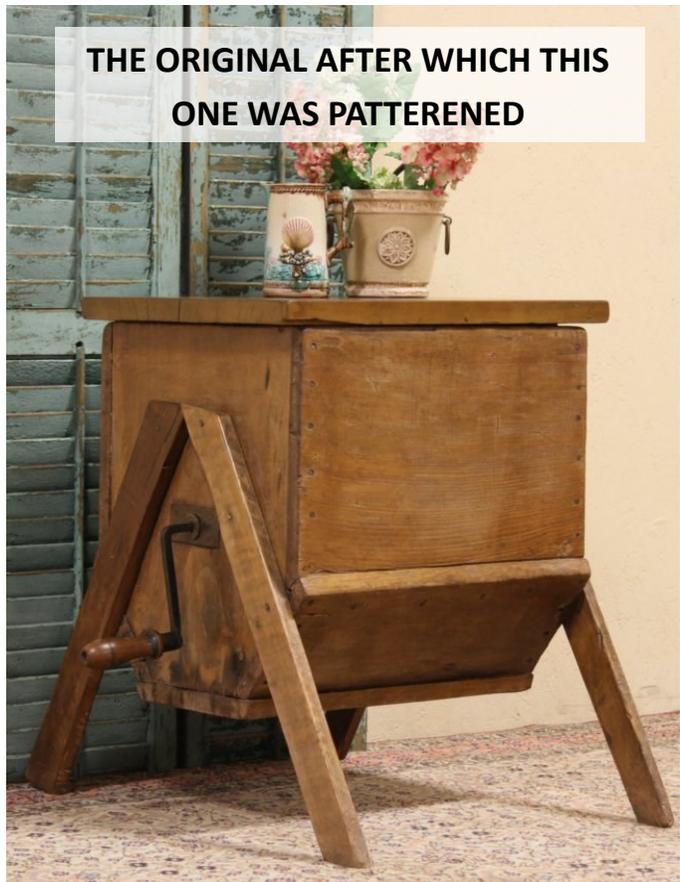
sharp hand saw would have made all the other cuts.

While salvaged boards would have been a nice touch, I settled for box-store pine, edge gluing boards together to create the wider panels I needed.

I did, however, use salvaged hardware. I picked up a pair of partially corroded strap-hinges at a flea market. But the nails

weren't just old, they were *really* old! They are "cut" nails, a variety that was common up until modern wire-style nails replaced them. I estimate their age at about 150 years. You may think them rare, but it is not difficult to find old cut nails on eBay. While the flat shanks are concealed in the wood, the distinctly imperfect oval heads are easy to spot.

When I first considered building this project I planned to make a crank handle from wood. After all, where could I find an antique handle that looked like that? I'm not sure at what point it occurred to me, but I recalled a meat grinder my father used to use during deer hunting season when I was a kid. I knew they were prolific at one time, and sure enough, I found one in the very first antique shop I checked. It cost less than \$20 and it was perfect. In fact, it looked very much like the original!





While the salvaged hardware is a big part of this project, the finish is what really makes it stand out. It simply wouldn't do to have a reproduction that looked brand new. From the very start I knew this project required an aged finish, and that's what I set out to achieve. I think you will find the process of distressing the wood, which is

described in the following article, to be both interesting and a lot of fun!

"Fun" is definitely the word for this whole project. From the nostalgic design to the hidden compartment in the bottom, I thoroughly enjoyed building this. I admit not everyone wants a butter churn in their living room. But it makes a great conversation piece and

it proves to be a very useful storage space for blankets or quilts!

I'm not sure if I will ever build another butter-churn. But I believe I will look for more projects with a historical context. And I will definitely jump at another opportunity to build something with my father.

SN





## A DISTRESSED PINE FINISH

Make new pine look old with these distressing techniques.

When we build most projects we hope they will last for many years without collecting too many bumps or dents. We sometimes apply a finish that will not yellow or darken the wood over time. Our goal is to keep the furniture we make looking brand-new as long as possible.

But once in a while, I prefer to see a little age, a few small dents and bruises or the patina of a dark finish with a little grime. These things speak to the history the piece may have witnessed. They are reminders

that furniture isn't just meant to be looked at; it is meant to be used.

As someone who appreciates both the old and the new, I occasionally find myself wanting to make the new look old. I don't want to wait a hundred years for a piece of furniture to accumulate the charm of age. I want it to appear to be well-used from the moment it leaves my workshop.

Of course, I am not suggesting you beat up your mahogany sideboard.

Age does not always enhance a piece of furniture and there is a fine line between adding charm and making a piece appear to have been abused. But some pieces, such as the repurposed butter churn table example in this article, look better when a little "history" is applied.

These techniques will also enhance other projects such as mantles, cabinets, frames and any sort of country pine furniture where brand-new isn't the look you're going for.



## DISTRESSING

To age a piece of furniture, you must think about how time would affect it. Where would the most wear occur? Which parts are most likely to be scratched or dented?

Surely, the corners and edges would take the most abuse. Doors and drawers will be touched by many hands. Legs will be battered by surrounding objects. Dents and scuffs will appear at waist level as many loads are carried past. Horizontal surfaces will be scratched and bruised from countless objects resting upon them.

Spend some time imagining what life may have been like and the scars a piece of furniture might accumulate. Then give it those scars!

Inflicting decades or centuries of damage is not a gentle process. One useful method includes attaching a ring of keys to a rope or chain and using it as a flail. Experiment by swinging it in different ways. Try glancing blows that scuff the surface and direct blows with the keys or with the chain itself.

For deeper bruises you may use a piece of 3/8" threaded rod (all-thread). Begin with light taps at first, then gradually harder strikes.

Concentrate on the corners and edges but don't neglect the large surfaces. Again, try to imagine where the most abuse would naturally occur.

Of course, you won't want to overdo it. There's a fine line between aged and abused! Harder wood may take more abuse than soft wood. You certainly don't want to splinter or break anything. The best strategy is to cause some distress to the entire piece. Then look it over and add more attention to areas that seem under-abused.



A direct blow from a ring of keys.



A glancing blow from a ring of keys.



Pay attention to the edges.



Threaded rod can create deeper dents in a hurry.

## APPLYING THE FINISH

Distressing will simulate wear. But adding a lifetime of mellowing and a touch of grime can also be accomplished with some finishing techniques.

I've tried making a wash with vinegar and steel wool. I've tried coffee grounds and half a dozen other common "aging" finishes. But for pine,

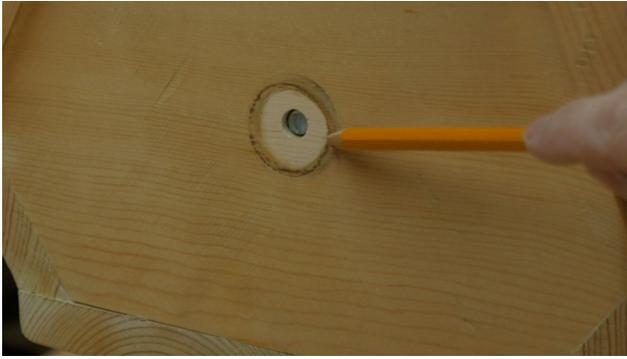
nothing adds the years like an acid bath and a couple coats of colored wax.

Keep in mind that the finer the grit you use to sand the wood, the lighter the color will be. Because time darkens pine, a course grit such as 120 will help the wood hold more color and better mimic age.

After sanding, prepare an acid solution by mixing one part liquid drain cleaner (sodium hydroxide) with one part water. The result will not be very caustic, but gloves and safety glasses are a good idea just in case.

Soak down the entire project, letting it absorb into the surface fibers.





You will immediately see the pine turn bright yellow. Don't panic- it will dull to a light grey-brown as it dries. The image above shows the difference between a spot that was covered with hardware and received no acid wash and the surrounding area that did.

The water will raise the grain a little bit. I don't recommend sanding as it may remove some of the darkening effect of the acid. The layers of

wax you apply will cover and smooth the surface.

There is no need to neutralize the acid as it is very mild. Once it is fully dry, wax can be applied.

I favor a light brown paste wax made by *Brimax* because it best mimics the color of very old pine.

Apply at room temperature so the wax spreads easily but is not too liquid. The first coat should be light, rubbing the

wax into the pores. The second coat should be applied with parallel strokes to reduce the appearance of swirls. A third coat may be added if needed to further darken the piece.

The wax will quickly build up on the edges and in the corners. Some buildup can simulate grime, but too much can be a bad thing. If the buildup dries, add a little more wax to the applicator.



Note the buildup on the edge in the left image, and how it was reduced in the right image.

The unevaporated mineral spirits in the fresh wax will dissolve the old wax so you can redistribute it.

You need not wait between coats; the wax will dry within minutes. I do, however, like to wait about an hour before buffing.

Buffing takes some elbow grease. The goal is to generate heat that will burnish the surface of the wax. An electric buffer such as used to wax

automobiles works very well if you have large surfaces to buff. Otherwise, a soft cotton cloth will do the job.

In time, the cloth may become clogged with wax and require changing. This is especially true with the terry-cloth pads common to electric buffers. Hardened wax buildup on the cloth or pad can scratch the finish.

In areas that are difficult to buff you may find excessive

buildup. I have applied light heat with a hair dryer and used a bit of cloth to get the worst of it.

Adding and buffing away the wax is a bit of an art. In the right places, the buildup can really help add the look of age to the piece.

This wax finish is quite durable. It is easy to repair by simply adding a new coat, which will dissolve the old wax.



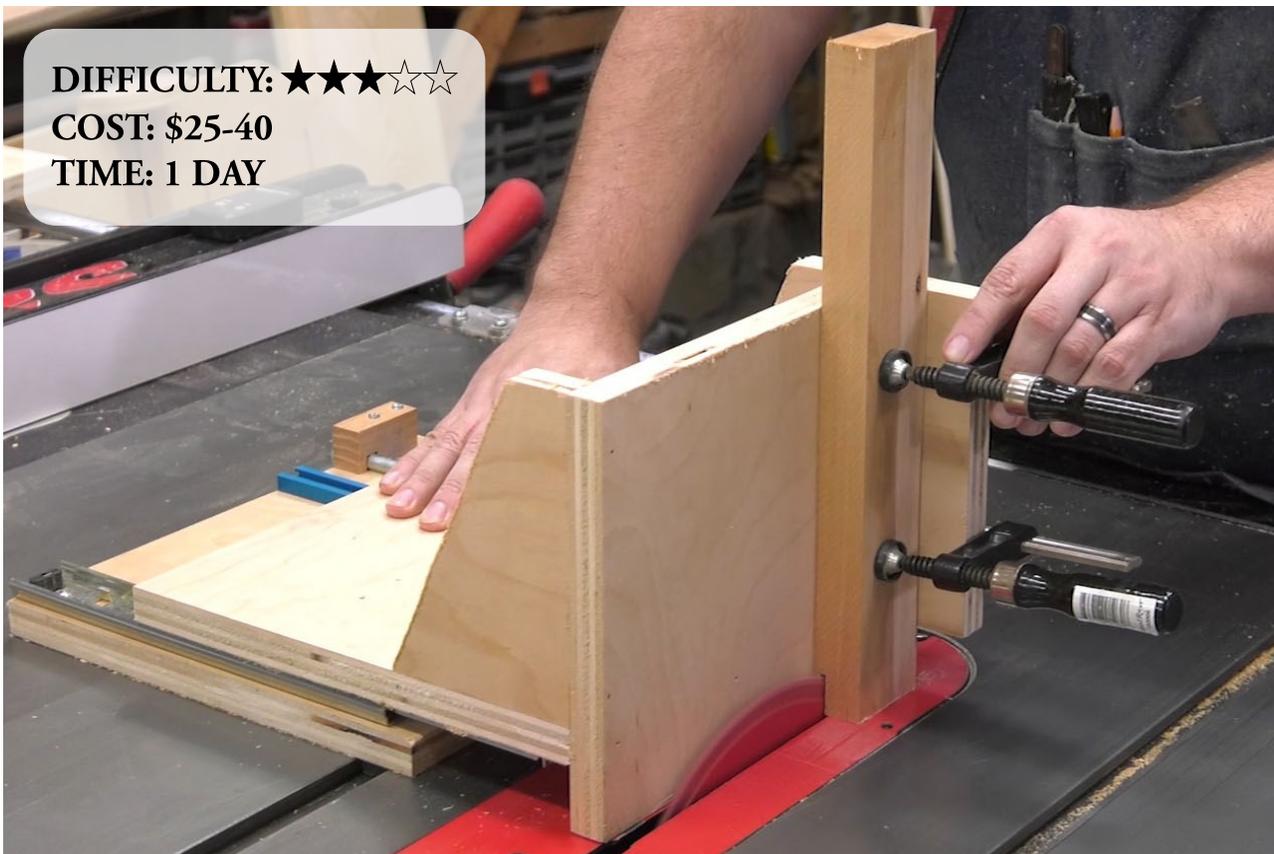
# PLEASE SUPPORT THE BRANDS THAT SUPPORT US!



DIFFICULTY: ★★☆☆☆

COST: \$25-40

TIME: 1 DAY



## INCREMENTAL TENON JIG

**A lead-screw with interlocking threads makes this jig do amazing things!**

I've built jigs with incremental positioners in the past, including a couple different box-joint jig designs. Others have as well. INCRA has built a table saw and router table fence brand around the idea. As far as I know, this is the first time the concept has been applied to a tenon jig.

The idea came to me when I was cutting tenons on the table saw. I normally set the jig to cut one cheek on all my tenons. Then I switch setups to cut all the opposite cheeks.

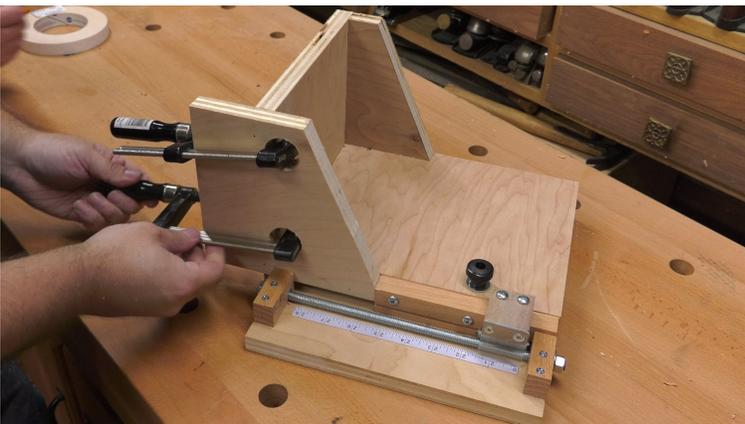
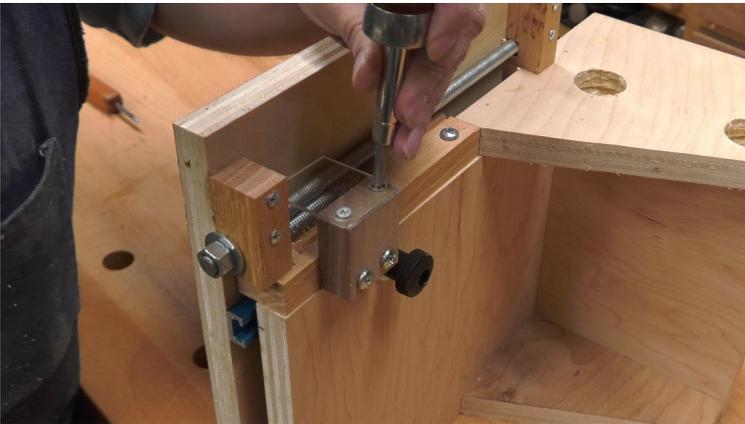
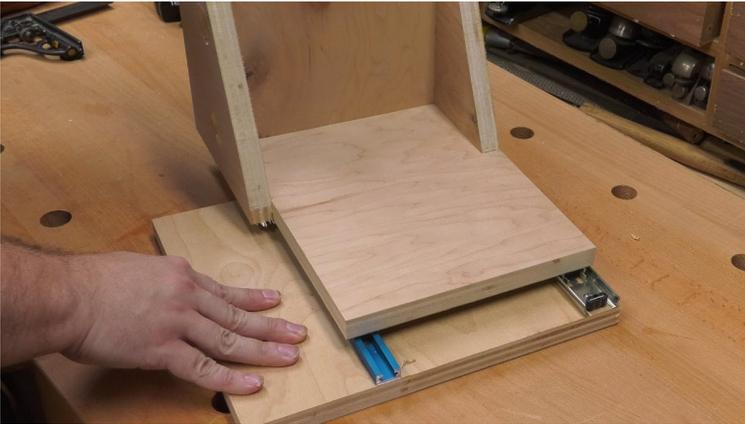
This requires a lot of clamping and re-clamping of workpieces. But what if you could cut both cheeks on each tenon without removing the workpiece from the jig?

This would require the jig to be adjusted back and forth between two settings for each tenon. If I could find away to make that adjustment fast and accurate, I knew I'd have the ultimate tenon jig!

A piece of 3/8-inch threaded rod (all-thread) features 16-threads per inch.

These conveniently align with the points on my ruler. If I place one piece on the base of the jig, and another on the moving carriage, I can create a set of positive stops by interlocking the threads. This means I can use a scale and cursor to manually change the position of the jig, and even if my eyes aren't perfect, the jig will auto-correct to the nearest 1/16-inch point on the scale.

Instead of telling you about it, why don't I just show you!



## BUILD NOTES

This was a surprisingly simple project to build. It only requires a few scraps of plywood, which is a good way to get rid of some of the offcuts you may have been saving.

This jig requires one 10" ball bearing drawer slide and a short piece of t-track. You'll also need a little bit of 3/8-16 threaded rod, and a few miscellaneous nuts and screws. If you can find a little piece of plexi-glass, it will make a great cursor. I added a piece of measuring tape which I attached with double-sided tape.

The runner may be made from hardwood, but I suggest some type of plastic if your shop gets very humid in the summertime. A strip of double-sided tape will make it easy to attach initially, but use screws to secure it more permanently.

As with any jig project, it is important to put it together carefully, making sure that each piece is squared up as you go. A little extra care during this critical process will pay off for years to come in an accurate jig.

This article is not intended to provide all the build details. It is merely an introduction to the idea. You may use these ideas as a starting point to design and build your own project, or you may purchase a set of detailed plans from our website at [stumpynubs.com](http://stumpynubs.com). Plan sales are one of the ways we finance all the free education we produce. Thanks for your support!

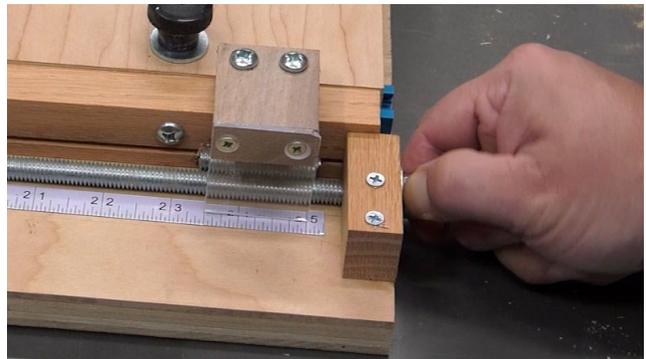
## HOW IT WORKS

When you move the carriage to a new position, the upper part of the positioner drops down onto the lower part. A locking knob forces two pieces of threaded rod to mesh, automatically nudging the cursor (the edge of the plexi-glass) to the nearest 1/16-inch on the

scale. This makes it all but impossible to set the jig to the wrong position. If you can see well enough to get it close to your mark, the positioner will take it from there.

If you wish to adjust the jig to a position finer than 1/16-inch, such as to shave a small

amount off a tenon to fine-tune the fit, you simply turn the end of the longer rod. This allows you to make micro-adjustments to the jig. It also makes it possible to realign your positioner's threads with the marks on your ruler.



You may hold your workpiece on the jig by hand if you like, or you may use a pair of clamps to secure it.

There are three ways to use the jig:

1) You may lay out your tenon with pencil marks on the end of the workpiece and

cut to the lines by eye, much like a standard tenon jig.

2) You may use the numbered scale to cut the cheeks of the tenon to the measurements you require.

3) You may place a piece of tape on the base of the jig along the ruler and place pen-

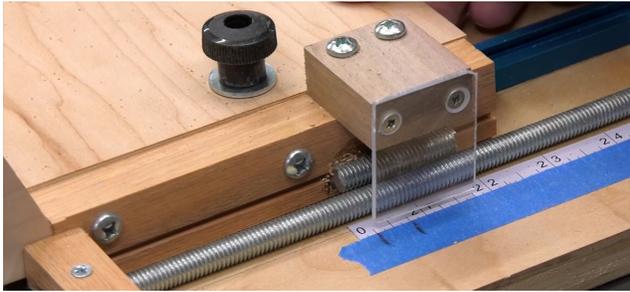
cil marks at each of your cut points.

I prefer the third option because it eliminates errors when reading the ruler. I lay out all four cuts on the tape and I don't worry about forgetting any measurements.

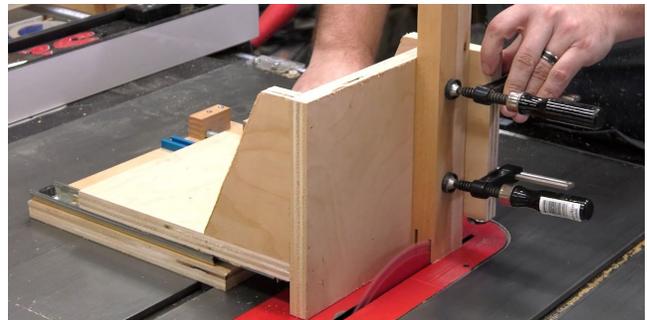
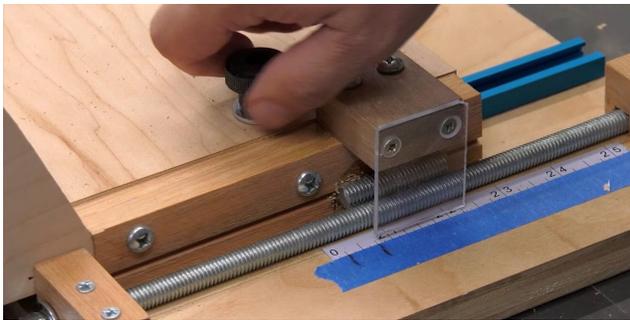


## SHOP PROJECT

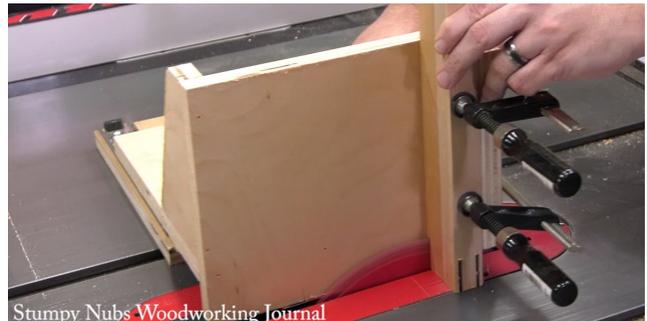
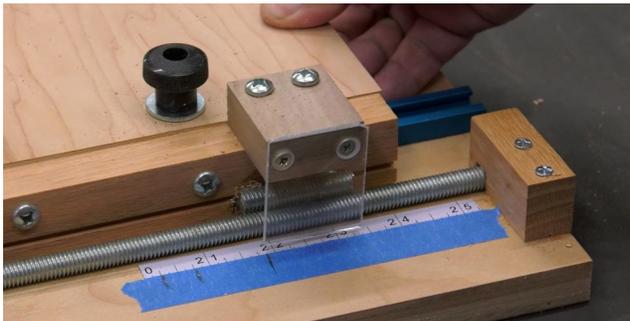
With the blade height raised to match the full length of the tenon, I move the cursor (edge of the plexi-glass) to the first cutting position and I cut the first tenon cheek.



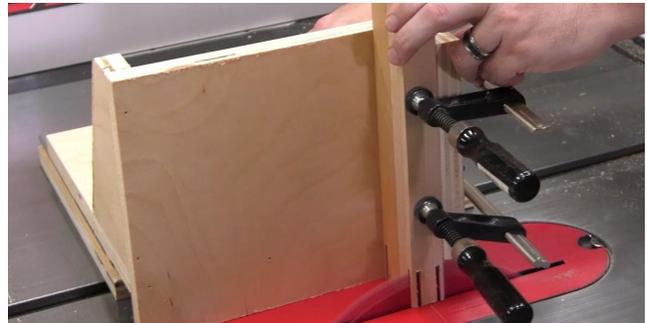
Then I rotate the workpiece 180 degrees and move the cursor to the second cutting position so I may cut the opposite tenon cheek.



Next I rotate the workpiece 90 degrees and move the cursor to the third cutting position so I may cut the first side-check.



Finally I rotate the workpiece 180 degrees and move the cursor to the second cutting position (in this case the same as the last position) so I may cut the opposite tenon cheek.

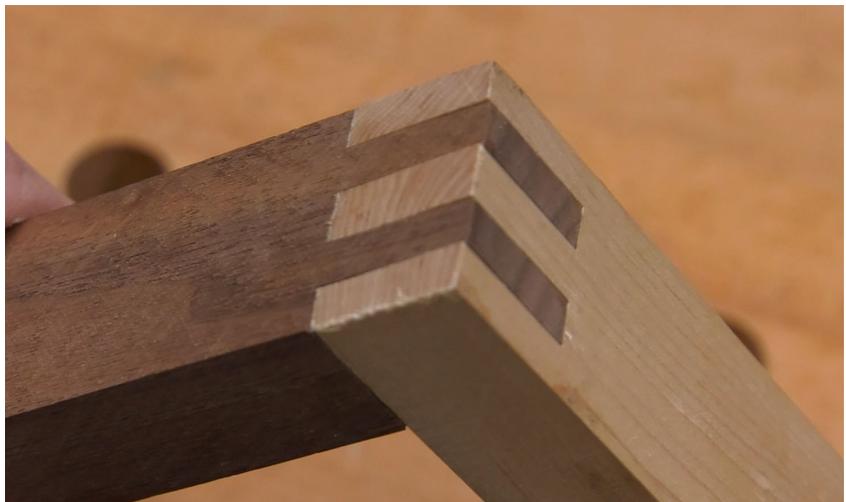


Of course, the shoulders are cut flat on the saw with a miter gauge or sled. After a test fit you may return to the jig to shave off a small amount from any cheek using the same marks to return to the exact cutting positions, and the micro-adjuster to dial in the fit.



I love the micro-adjustability of this jig and the fact that everything is precisely repeatable so each successive tenon will always come out the exact same size. Get a perfect fit on one, and any more you cut will also fit perfectly.

With that sort of accuracy you can also make other, more complex joinery like this double

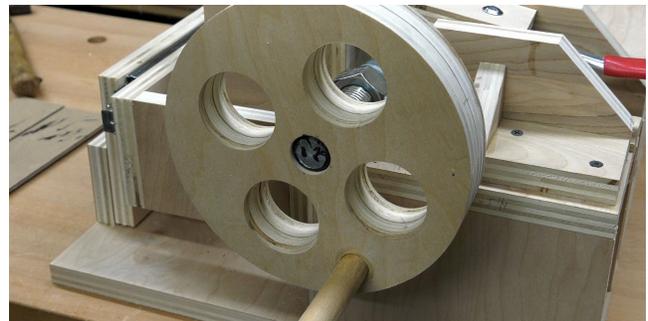


If you'd like to make your own incremental tenon jig, you can get downloadable plans including step-by-step instructions and photos at

[stumpynubs.com](http://stumpynubs.com). Of course, this isn't the only use for a homemade incremental positioner. If you'd like to see how I applied the idea to a

homemade router table fence and to a complex box-joint jig, you'll find those in the "plans" section of the website as well.

SN



# SHARPENING ROUTER BITS

Don't throw it away- give it a second life!

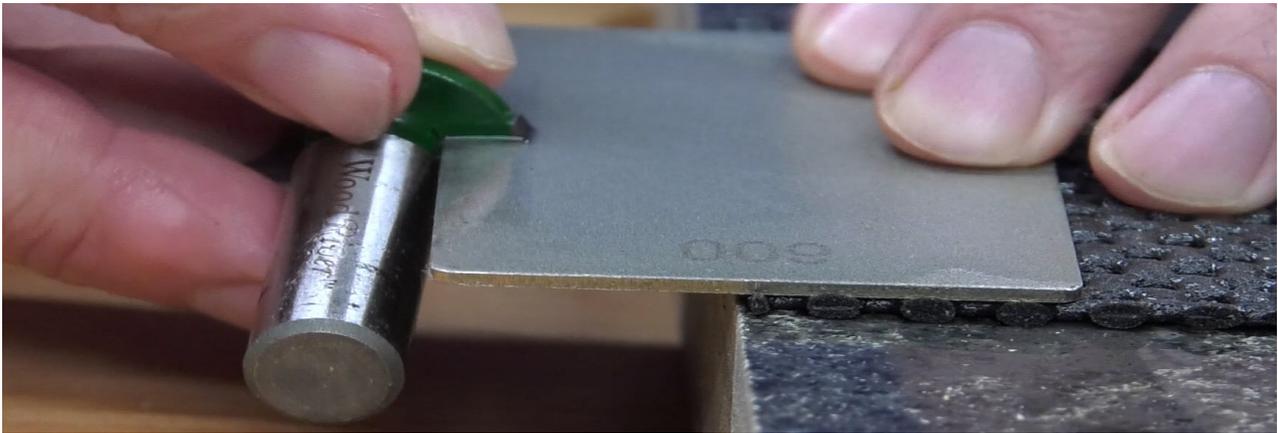
Router bits are expensive. It's important to get the most out of every one by keeping them sharp. Sharp bits cut crisper profiles with less tear-out and "fuzz" and with less scorching or burning.

You may be surprised how much longer even inexpensive bits last if you periodically take the time to keep them clean and sharp.

In this article I'll show you the simple maintenance tech-

niques you need to know to keep your bits in tip-top shape.

All you'll need is an inexpensive diamond hone, some cleaner, lapping fluid and about two minutes. Doesn't that sound simple? It is!



First, let's talk about cleaning your bits. As the crud builds up on the cutters the bit begins to generate more heat. Heat dulls steel. Therefore, the first step toward sharper bits is keeping them from dulling prematurely.

Whenever I use a bit I look it over. If there is any crud

built up on the cutter, I clean it. The process is fast and easy.

There are many cleaners on the market. My favorite is *Trend Tool Cleaner* because it is extremely effective, yet still environmentally friendly and won't bother my skin. It is also fairly inexpensive compared to other cleaners that don't seem to work as well.

I spray a generous amount on the bit and let it sit for about a minute. Then I wipe it and the crud off the bit's cutters with a paper towel.

The Trend cleaner works as a lubricant for the bearings as well, which is another reason why I like it.



Keeping your bits clean is important, but they will eventually begin to dull. As soon as I notice a bit is no longer cutting as it used to, I sharpen it.

All you need is a credit card sized diamond hone. I highly recommend one of good quality

with a thick steel plate that won't flex easily. Again, Trend is my brand of choice. They make a sharpening set called KIT/C that you can find online. It includes a high quality credit card hone, a diamond file (which is excellent for

sharpening forstner bits) and some lapping fluid.

This particular hone is double-sided. One side is 300 grit (excellent for heavier sharpening of high speed steel) and the other side is 600 grit, which is ideal for carbide.



Apply a little lapping fluid, or light oil (in a pinch you can use water) to the card so the diamonds will cut efficiently without clogging.

Let the hone hang off the edge of the work surface. Hold it with one hand and the bit in the other. Lay the flat face of one of the router bit's cutters on the hone. You must only sharpen the flat surfaces, not the profiled edges because you do not want to change the shape of the cutter.

Apply only enough pressure to keep the cutter flat on

the hone as you stroke back and forth ten times.

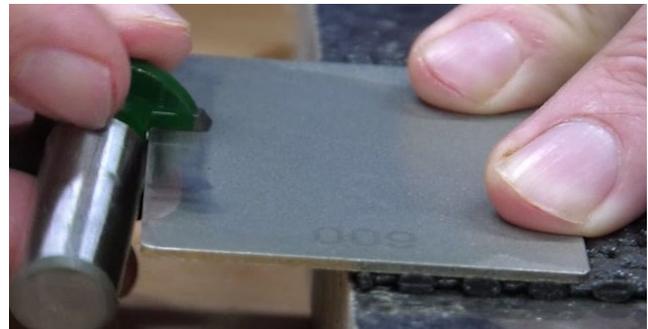
Switch to the other cutter, and repeat the same ten back and forth strokes.

Ten strokes per cutter seems to be the magic number, removing enough carbide to refresh the bit without taking too much off. Of course, if you let the bit get *really* dull you will need more than ten strokes to bring it back to working order. Removing too much carbide per sharpening, though, will increase the likelihood that you will reduce one

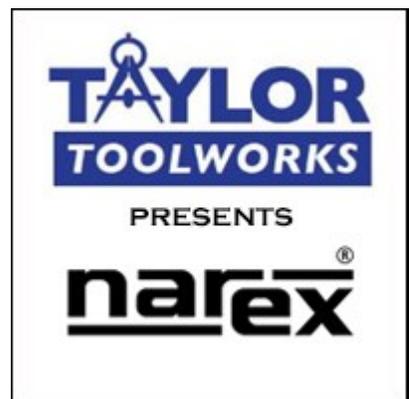
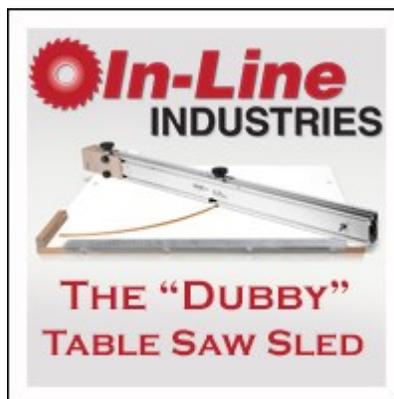
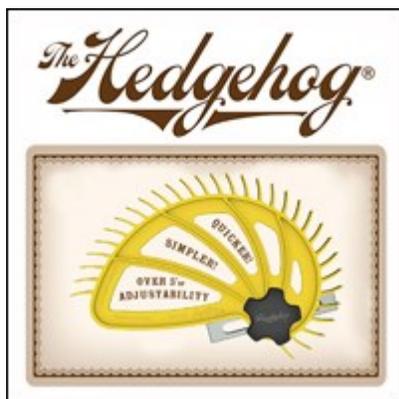
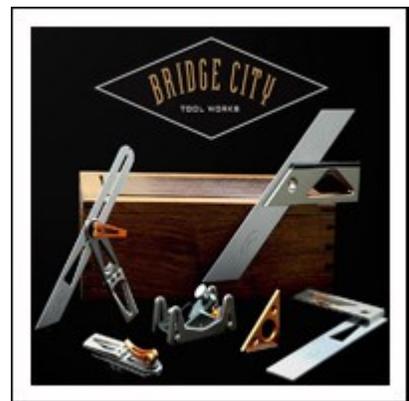
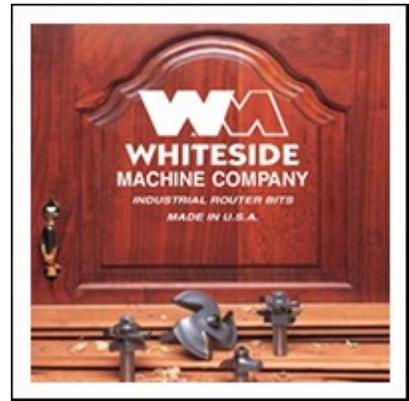
cutter more than the other and compromise the balance of the bit. Eventually, after several sharpenings this may happen, and you will have to discard it or send it to a professional sharpening service. Do not hasten its demise by letting it get so dull that it can't be refreshed with ten strokes per cutter.

That's it, you are all done. The bit will cut just like new again. Enjoy!

SN



# PLEASE SUPPORT THE BRANDS THAT SUPPORT US!





# MAKING JIG RUNNERS

How to take full advantage of your table saw's miter slot

I make a lot of different table saw jigs. And since commercially made miter bars can be expensive, I like to make my own runners.

This can be a challenging task. You must select a durable

and stable material. You must properly fit it to your miter slot. You must precisely align the runner to the jig's body. And you must attach it securely to ensure the jigs accuracy for years of use.

This article will give you some practical tips that may be applied to any jig runner, including those for the table saw, the band saw and the router table.



First, you need the right material. Hardwood is a popular choice because it's handy in a wood shop and some species such as white oak and hard maple are very durable- an important factor for a runner.

My material of choice is a common HDPE plastic cut-

ting board if you can find one that is about 3/8-inch thick. But beware because some are little more than a plastic shell over an MDF core which will fall apart when you cut it.

Use a scrap of wood to fine tune the position of your table saw fence before cutting your

runner material. You want a fit that's smooth without any side-to-side play, but not so tight that it binds.

When the wood scrap fits well, you may cut multiple runners from your good material at that fence position.

## TABLE SAW SKILLS

You will need some screws with “pan” heads (domed heads that are flat on the underside). Tapered (flat) screw heads will not work.

Bore at least three holes down the length of each

runner using a forstner bit that is about 1/8-inch larger than the head of the screw. Stop at a depth that will allow the head to sit below the surface.

Next, select a bit that’s 1/8-inch larger than the screw shaft and use it to bore out the center of each hole. These over-sized holes will make it possible to adjust the runners.



Every table saw sled I have ever built or bought commercially has a fence that is square to the side of the sled. You may take advantage of this to make the initial alignment of the runners much easier.

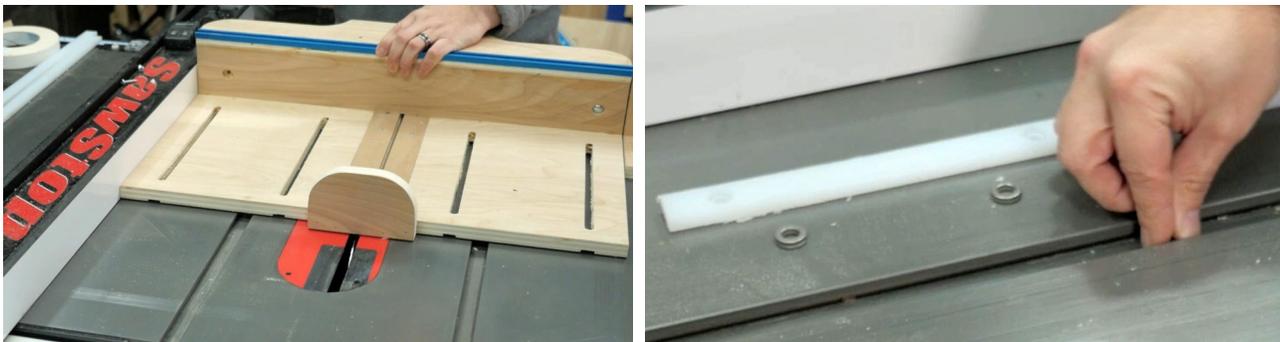
Place your sled on the saw over the blade as it will be

positioned when you make a cut. Slide the rip fence up against the side of the sled and lock it in place.

If your runner material is thinner than the depth of the miter slots, use washers as shims so you may place the runners upon them and they

will lay just above the surface of the saw. You may wish to align the ends of the runners with the front edge of the saw so it will be easier to keep track of their location when you position the sled on top.

Place some pieces of good quality double-sided tape on





the runners (as an alternative you may use super glue or hot-melt glue), then carefully place the sled, keeping its edge against the table saw fence as you lower it into position.

With the runners stuck to the bottom of the sled, lift it off the saw and flip it over.

Use an awl to create a dimple in the center of each hole. This will help you align the

screws as you drive them in place. Tighten them slightly, but not a great deal until you've had time to check the runner alignment with a test cut.

If you've attached two runners they may feel tight at first. Move the sled back and forth across the saw top and they should loosen up a bit.

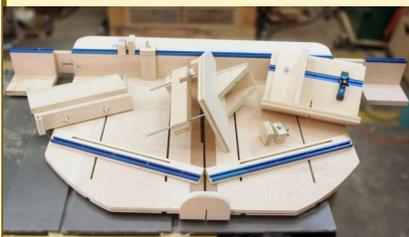
Make a test cut. If adjustment are required, you may remove the double-sided tape, replace the runners, and this time place a square against the fence and along the side of the saw blade. With the screws slightly loose, nudge the sled into alignment. Then fully tighten the screws.

SN



## THE ULTIMATE TABLE SAW SLED SET

Table saw sleds aren't just for crosscuts— at least THESE sleds aren't! The “Mini Sled” is for day-to-day cutting. The “Mega Sled” is for larger work. The “Miter Sled” is for frames and boxes. All the attachments are for cutting finger joints, splines, dovetails, tenons and more RIGHT ON THE SLED! Check them out in the plans section at [stumpynubs.com](http://stumpynubs.com)!



# CHOOSING PLYWOOD

How to make sense of the grading systems and types available for your next project.

Plywood should be simple, right? You should be able to go to the store, buy whatever looks good and make your project from it. Unfortunately, it's not that easy because not all plywood is created equal.

Two stacks may appear to be the same, but in reality they may be completely different. And what your local retailer sells one week may not be the same as what they sell the next. That's why you must

understand the fundamentals of how plywood is made, graded and sold. You'll find this article essential in that regard, even if you're a seasoned woodworker.



## Pine vs. Plywood

Most plywood is made from pine or some other soft wood. The sign at the home center may say maple, birch or oak, but that refers to the veneer on the outside of the sheet. The inner layers are made

from softer material such as poplar, fir or some type of pine. Even so, these veneered sheet goods are referred to as hardwood plywood and they have their own grading system based upon *appearance*.

Plywood that's entirely made from soft wood, without hardwood veneers is not intended to be used for furniture or cabinetry. This type is considered construction grade, and its grading system is based upon *strength*, not appearance.



Hardwood veneered plywood



Construction-grade "pine" plywood

The inner layers of construction-grade plywood is often made from whatever wood happens to be abundant around the mill without regard for quality. Everything is mashed together to make a sheet. For this reason, construction-grade plywood is very unstable. It will warp easily and it's a poor choice for woodworking.

Many home centers sell a higher quality sanded pine plywood that looks decent on one side. Still, the inner plies are often full of voids and it is rarely well suited for furniture or cabinetry. This is especially true of the 5-layer variety. Some 7-layer sanded pine plywood may be found in home centers. The greater number of plies make it less prone to crumbling when screws are driven into the edges. It may be a reasonable choice for some workshop fixtures.

As I stated, hardwood plywood is usually made from softwood with a thin layer of hardwood on the outer faces. That doesn't mean it's simply construction plywood in a fan-

cy dress. The softwood inner layers are of higher quality than found in the construction grades. All are made from a single species, well seasoned and with few knots. This produces a much more stable sheet that will stay flatter.

The industry has a system to grade hardwood-veneered plywood based upon the appearance of the outer veneers. Letters are assigned to the quality of the show face, and numbers to the back face. Yes, hardwood veneered plywoods have distinct front and back faces which are graded separately, A-E on the front, and 1-4 on the back.

A1 plywood will look great on both sides. A2 will be great on the front, but it may have a few slight flaws on the back. B2 may have those small flaws on the show side as well. And so it goes from A1 to E4 and every combination in between. When you buy plywood, look for a high letter and a low number for the best looking veneers on both sides.

If you require some general rules, stick to A's and 1's or 2's

for any surface that will be visible on a project and will receive a clear finish. Anything lower may be suitable for painted surfaces.

Since construction-grade plywood is not suitable for woodworking, we will not cover that grading system here.

### Rotary vs. Plain Cut

If you ever get a chance to visit a plywood factory and see how rotary-cut veneer is made, take it. It's truly a sight to behold! They shave the tree like a pencil in a sharpener, and the result is a surface with a repeating grain pattern like wallpaper. This is what you find on the surface of less expensive plywoods because it is a very efficient way to make veneer. This appearance is fine for some cabinets, but furniture looks better with plain cut or book matched veneer, giving the appearance of an edge glued, solid wood panel.

### Veneer Thickness

You may see two stacks of birch plywood at the home center that appear to be the same. The veneer grades on the labels may even be equal.



Rotary-cut plywood



Plain-cut plywood

One sheet may cost more than the other. What's the difference? Most likely, the thickness of the outer veneers.

Much of the cost of a sheet of hardwood plywood is in the surface. Low-cost hardwood plywood (\$50-60 per 3/4-inch sheet) will often feature very thin veneers that will be destroyed by all but the lightest sanding.

Some stores offer what they call an "extra thick" veneer for about 20% more cost. This can take a little fine-grit sanding, but it may not be the best choice for durable furniture.

For fine furniture, it's preferable to special order premium plywood with extra thick veneers. Look for something at least 1/40" thick for any surface that will be visible but not exposed to wear, and up to 1/16" thick for any surface that may get bumped or scuffed over time.

### Layer Count

Generally speaking, the more layers, the better. Less expensive 3/4-inch hardwood plywoods have five layers (not

counting the thin outer hardwood veneers). Some higher grades may have seven layers. Depending on its thickness, Baltic birch plywood may have up to thirteen layers. This makes for stiffer sheets due to all the extra glue between those layers, and greater stability due to the extra layers of alternating grain.

Sheet goods with many thin layers such as Baltic birch are sometimes called veneer core plywood. Some premium veneer core plywoods contain no soft wood at all. They are hardwood all the way through. This is the strongest, stiffest, most stable- and the most expensive- of plywoods.

### Baltic Birch?

The term "Baltic Birch" has become a general label applied to a wide variety of high quality veneer core plywoods. It may come from Latvia, Lithuania, Estonia or, most likely, Poland.

Baltic Birch plywood is generally of high quality with many thin layers that are entirely made from birch. This adds to its stability and makes

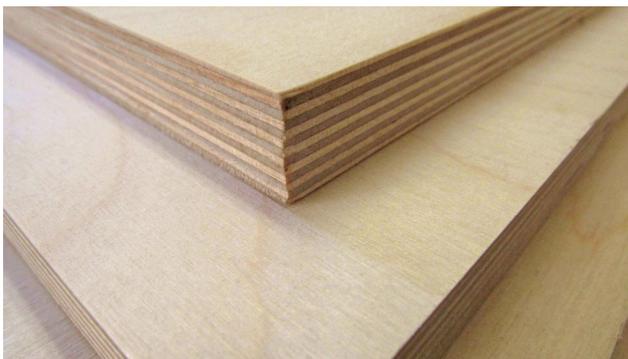
it a good choice for fine cabinetry and furniture, as well as for making jigs in the workshop.

Russian and Finnish Birch varieties are becoming more popular as well. It is sometimes regarded as of higher quality than "Baltic Birch", with greater stability and a total absence of internal voids.

Like all European sheet goods, Baltic, Russian and Finnish birch plywood comes with its own grading system: B is the best, followed by BB, CP and C, which is the lowest grade. The face and the back are often graded separately. You may find a BB/CP grade, for example- BB being the front and CP the back.

The downside for these imported birch sheet goods are the prices, they cost about twice as much as regular birch veneered plywood with a softwood core. And while it is sometimes available in 4X8 sheets, it may come in 5X5 sheets that are a pain to handle and store.

Incidentally, the US does make their own veneer core



Imported Baltic Birch



Domestic Appleply

Baltic-Birch style plywood. It's called Appleply, and no, it is not made from apple trees. It's birch and alder.

### Composite Cores

Many new woodworkers look at composite core plywood, which features a thick hardwood veneer on the outside with a particle board or MDF core, and dismiss it as junk. After all, wood layers are better than a mix of sawdust and glue, right? But many high-end cabinet makers prefer composite cores. Why? Because they are more stable. In fact, the Architectural Woodwork Institute, which certifies the quality of commercially manufactured cabinetry, requires composite core plywoods for certain applications such as frameless cabinet doors.

Of course, the downside of MDF and particle board cores are structural. Screws don't hold well, and even glue is iffy without a good mechanical joint. MDF and particle board will also sag if not well supported.

Composite core plywood is often an acceptable compro-

mise because it features layers of MDF for stability and layers of soft wood for stiffness and to better hold fasteners.

Personally, I do not use composite core plywood. If I need extra stability for flat doors or frameless cabinets I find Baltic Birch to be perfectly adequate.

### Sheet Thickness

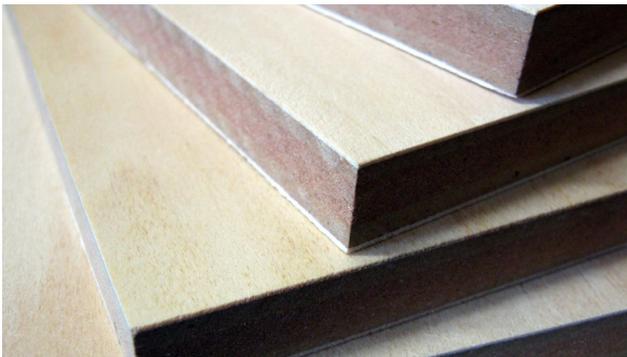
3/4-inch plywood is almost never truly 3/4-inch thick. Construction grade sheets may vary the most because the moisture content was all over the place when it was mashed together. Even hardwood veneered plywood is typically undersized by American standards because it was most likely imported from a country where they use the metric system.

Even if the thickness is clearly marked, it may not be consistent from sheet to sheet, or even from end to end on a single sheet. Bob Lang did some testing for Popular Woodworking some years back, and he found a variation of as much as 22/1000-inch

from corner to corner on the same sheet of plywood.

Why the inconsistency? Because wood is inconsistent by nature. Some fibers are denser than others. When the core layers are compressed during the manufacturing process, some areas may compress more than others. These inconsistencies are transferred to the adjacent layer, and so on through the thickness of the sheet. This is impossible to predict or to avoid. Luckily, almost all the quality plywood in the test showed only very small variations of a couple thousandths of an inch. Even so, it always pays to make test cuts and properly fit your joinery when working with plywood.

SN



MDF Core



Composite (Combination) Core

# COOL TOOLS

The tools we use in the Stumpy Nubs Workshop\*

## BORA NGX EDGE GUIDE SYSTEM

For several years I've been using the Bora WTX edge guide system. We've built entire projects with it including full pieces of furniture. It's a great option for folks who don't have a workshop, or for those who lack the table saw capacity to break down full sheet goods. But everything has changed.



Recently Bora released the upgraded NGX system. The NGX edge guide itself seems similar to the WTX version, but a close inspection reveals some key differences. For one thing, the NGX edge guide is faster to set up because the lever on the end nearest your body is adjustable, whereas the WTX guide required an adjustment on the far end before using the lever on the near end. This also addresses some of the occasional binding issues common to the WTX version.

Both the older WTX and the new NGX guides may be used to cut angles with the optional accessory clamps. Both edge guides may be used by themselves to guide various power tools or made more accurate with attachable guide plates. (The router and the jig saw guides are compatible with both systems.)

### Watch our Cool Tools video series at [Stumpynubs.com](https://stumpynubs.com):

Our "Cool Tools" video series is always very popular because folks love to see new tools that may make their shop time more efficient and enjoyable.

These selections are from a recent edition of that series. You can watch past Cool Tools videos in the "free tutorials" section of our website at [stumpynubs.com](https://stumpynubs.com)

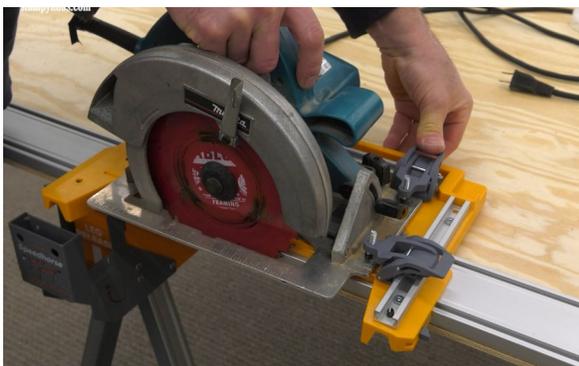
**\*SPONSOR/AFFILIATE DISCLOSURE:** Everything I say about these tools is my own honest opinion. Some tools may have been provided to us by sponsors. While no payment is accepted from a sponsor to be included in this article, these sponsors do compensate us for other ads, both in this journal and in our video content including Cool Tools videos. We also may earn a commission if you use any of the affiliate web links in this article.



The new NGX system features an improved clamping mechanism.



Angled cuts may be made with optional accessories.



The new NGX saw plate is easier to connect.



The router plate is compatible with the WTX and NGX guides.

The circular saw plate has been significantly upgraded for the new NGX version. It adjusts to pretty much any saw, even left handed saws. And the new toggle clamps make it faster and easier to remove and replace the plate without the need for a screw driver or tedious realignment steps.

My favorite upgrade found on the NGX system are the replaceable cutting strips. They attach to the edge guide and are trimmed with the saw. This provides protection from chip-out along the edges of your cuts and it eliminates the offset that is common to edge guides. Now the cutting strip may be placed right on your cut line and you're ready to go.

The Bora WTX and NGX guide systems are life-savers for folks without big shops and table saws. And the new upgrades make the NGX system very much like an expensive track saw, for a lot less money. Plus, you can use it for router dados and grooves as well!

*(Bora Tool has long been a sponsor of Stumpy Nubs Woodworking videos.)*

[Click here to get current pricing for the NGX edge guide system.](#)

## NAREX RICHTER BENCH CHISELS

Narex makes great chisels. They've been doing so for a hundred years. They have several different types available and they are all great tools. I've long recommended Narex chisels to our viewers because they are perhaps the best value for the price out there. But these are different.

These chisels are a special edition named after Vaclav Richter, a village blacksmith from the Czech Republic who started making and selling chisels and gimlets in 1919. His shop grew into the Narex



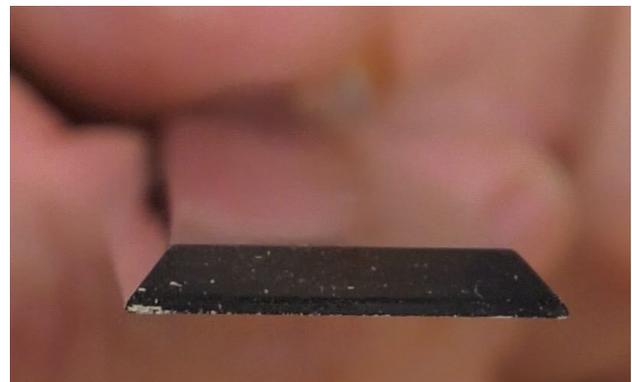
factory where chisels are still made today using old-world drop forging techniques.

A hundred years after the Mr. Richter made his first chisel, Narex decided to honor their founder by producing a set of ultra-premium chisels that rival any on the market.

They are stunning to look at. They put a great deal of effort into the fit and finish. All the steel surfaces are polished to a mirror finish.

The handles are made from domestically harvested European ash with stainless steel ferrules and leather washers. They are comfortable to hold and to grip. In fit and finish alone they rival just about anything out there. But let's talk about what really matters, the steel.

It's a hi-tech alloy with chromium for enhanced hardenability and vanadium for grain reduction and greater toughness. After drop forging and initial hardening, they cryogenically freeze the steel in liquid nitrogen to  $-300$  degrees Fahrenheit. This alters the metal on the molecular level, greatly increasing its strength and wear resistance. (They are rated for hardness at Rockwell 62.) All of this means they will take a very, very fine edge and their edge retention is as good as any premium tool on the market.



The Richter chisel (bottom) features a more finely beveled edge than a typical bench chisel.



Also worth pointing out are the finely beveled edges along the sides which allow the tool to get into tight places, such as between dovetails. It is very difficult to manufacture chisels with fine edges like this because many machines can not grip the tools during the grinding process. This are another sign of a very well made tool.

Narex chisels are always a good balance between quality and price. But their Richter line is different. They didn't try to balance anything here. They threw all the weight to the quality



side. These are lifetime tools, the good set you keep in a box and never let anyone else use.

The Richter chisel line is a little more expensive than other Narex products, but still less than comparable chisels from Lee Neilson or Veritas. If you are thinking of a premium chisel set, Narex Richter chisels are absolutely worth checking out!

*(Taylor Tools is a sponsor of Stumpy Nubs Woodworking videos.)*

[Click here to get current pricing for Narex Richter Chisels](#)



## CLEARVUE CV06 MINI CYCLONE

I have a love hate relationship with shop vacs. I love them for cleaning up the shop and for collecting dust from small tools. But I hate their clogging filters that gradually restrict suction. Filter bags help, but they fill up quickly and they aren't cheap.

I started using the ClearVue mini cyclone separator around 2015 and I've never looked back.

The design is based upon decades of research by dust collection Guru Bill Pentz. Put simply, his cyclone design includes tweaking the slope and length of the cone and tilting the inlet upward to a specific angle. These changes significantly increase its efficiency. He licenses this revolutionary design to ClearVue Cyclones, and they use it in their large dust collection systems as well as their mini-cyclones.

I have a carpeted shop. (It's wonderful on the feet.) When I vacuum, I can't afford to lose any suction power. If I'm go-

ing to use a shop vac separator it has to work really, really well. This one does. I have never compared the ClearVue mini side by side with other brands, but we use our shop vacuum every day with the mini-cyclone attached and I can't remember when I last cleaned the filter. It just flat out works.

I've started pairing these mini-cyclones with small shop vacuums elsewhere in the shop where I frequently need dust collection, such as on my horizontal router cart and my pocket-hole workstation. I may even get one for my miter saw. They aren't terribly cheap, but I'm saving about ten bucks per vacuum bag, so they are paying for themselves pretty quickly.



ClearVue is a small business that's worth supporting. I've known the Bushey brothers who own the company for years. They are good people.

*(ClearVue Cyclones is a sponsor of Stumpy Nubs Woodworking videos.)*

[Click here to get current pricing for the ClearVue CV06.](#)

**USE DISCOUNT CODE  
NUBS5 TO SAVE!**

## TREND ROUTER PODS

Our cheap tool selection this time is the Trend Router Pod. It's simply a cradle for your router so it can stand upright on the bench.

Why stand the router upright? Safety. When the router is on it's side the bit is exposed. If you bump it and it turns on, that's bad. It's especially bad when you finish a cut and lay the router down while the bit is coasting to a stop.

The router pod allows you to stand your router upright while it coasts to a stop, keeping yourself protected. You may even stack two together if you're using a long bit.

I have made wooden version of this over the years. And you can too. However, these are nice because they have little rubber feet on the bottom so your router doesn't vibrate off and, as I mentioned, they are stackable. In this case, it may be worth buying instead of making your own. But that's your call.

*(Trend is a sponsor of Stumpy Nubs Woodworking videos.)*

[Click here to get current pricing for the Trend Router Pod.](#)



