

E-Z TENON CUTTER



WHAT'S INCLUDED:

- E-Z Tenon Cutter
- Two Cutting Blades; one mounted and ready to cut, and one spare blade stored on arm.
- One 3/8" drill bit for drilling pilot holes
- One 3/32" hex key to adjust tenon size
- One 3/16" hex key to install or replace cutting blades.
- Easy-To-Build Ratchet Strap Clamp Plans

To ensure correct and safe usage with a full understanding of this product's performance, please be sure to read through this manual completely and store it in a safe location. Unauthorized copying or transferal, in whole or in part, of this manual is prohibited. The contents of this operation manual and the specifications of this product are subject to change without notice.

Rustic Woodworking assumes no responsibility for any direct or indirect loss or damage which may occur through use of this product, regardless of any failure to perform on the part of this product.

Please use all common-sense safety precautions. Use safety glasses. Check electrical cords and sources. Be sure screws and chucks are tight and secure. Watch for people in immediate area. Make sure logs are clamped securely before cutting any tenon. The blades are very sharp so be careful.

Getting Started:

We suggest that you practice using your new E-Z Tenon Cutter on scrap wood, as it may take a few tries to adjust the tenon width to achieve a tight fit into the mortise.

Drill a mortise hole into a scrap log or branch using either a forstner bit or flat bit so that you are ready to test the tenon fit after you cut it.

Use a drill with some power, especially if you are cutting green, fresh cut wood, hardwoods, or if you are cutting many tenons. A higher amp drill will make the job easier, plus it won't over work and possibly burn out a smaller amp drill.



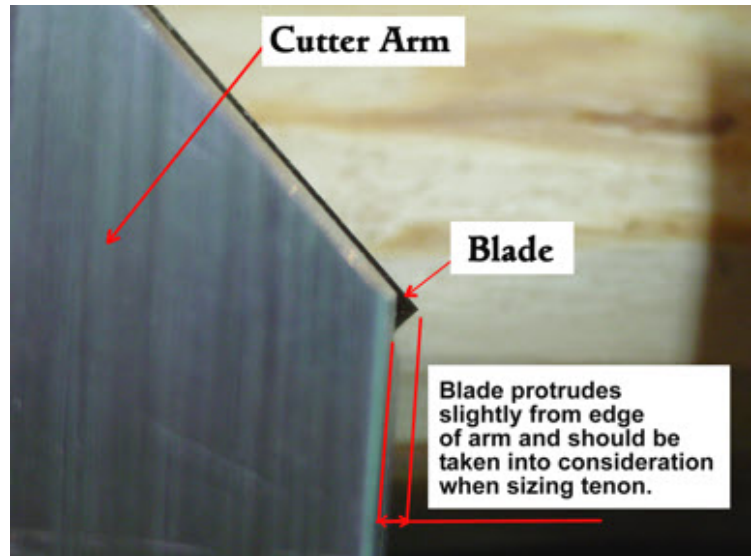
Adjusting Tenon Size:

The E-Z Tenon Cutter can easily cut tenon diameters from 1" up to 2.5" in diameter. Because of the 3/8" pilot hole necessary to guide the cutter, you don't want to go much under 1" in diameter.

A simple way to set up the tenon diameter is to place your forstner or flat bit in the center of the cutter on top of the guide bar. Then move the cutter arms in toward the bit and tighten the hex screws.

Keep in mind that the cutting blade extrudes slightly on the inside of the blade arm. To compensate for that, adjust that arm out slightly. The tip of that blade is where the tenon will be cut. If you do not compensate for the blade, your tenon will come out smaller than your bit, causing a loose fit.

Use a measuring tape to double-check your set up.



Cutting Tenons:



Be sure to tighten hex screws *BEFORE* cutting!

For best results you will need a higher amp drill, at least 6 amp, especially if you are working with larger logs, green wood, hardwood, or cutting many tenons repeatedly. A support handle on your drill will help hold it steady when cutting tenons and drilling mortises. If your logs are larger than 4.5" in diameter, use a draw knife or chain saw to taper the ends to accept the cutter.

Mark the center of the end of the log where you want your tenon. Determine how you want the tenon to fit into the accepting mortise.

Clamp your log securely so it doesn't turn, wobble, or move in any way. Use a bench clamp or use the plans included to build your own strap clamp. Clamping round objects is always a challenge and great care should be taken when using any power tool. Please use good judgement and common sense.

Insert the 3/8" drill bit into your drill. The depth of your pilot hole will determine the length of your tenon. If you want to be consistent, mark your drill bit so each pilot hole is drilled at the same depth. Either use a drill stop or piece of tape on your bit.

The E-Z Tenon Cutter will follow the 3/8" pilot hole.

If the pilot hole is drilled at an angle, that's how your tenon will be cut, and the shoulders will be angled as well, and may look off centered. In certain circumstances, you may need that effect for some curved branches, so practice to be sure. Most of the time it won't matter, but this should be taken into consideration.

Put the E-Z Tenon cutter into your drill, and insert the guide bar into the pre-drilled pilot hole. You may want to start slowly until the edges of the log are cut, and gradually add more pressure to finish the cut. The guide bar helps to cut a straight tenon that will provide full contact in the mortise.

Place the tenon into the mortise to check the fit. Adjust again if necessary.



Cutter will follow pilot hole.



Cutting Mortises:

Cutting the tenon is the easy part, especially with the E-Z Tenon Cutter.

Cutting a good mortise takes a good, sharp forstner or flat bit, and a lot of thought. It is important that the tenon fits tightly into the mortise if the joint is to endure normal wear and tear, as for log furniture, beds, chairs, etc.

If your logs *are* straight, use a drill press to drill the mortises if possible. Always use a clamp.

Since most logs and branches are not perfectly straight, some mortises might have to be cut at an angle to properly accept the tenon. The wood will not bend to fit the mortise. Some woodworkers purposely use curved and odd shaped branches to make interesting and unique works of art, or they may need to find and fit a particular shaped branch to finish their project.

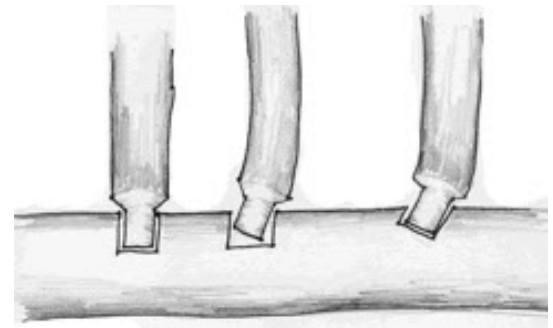
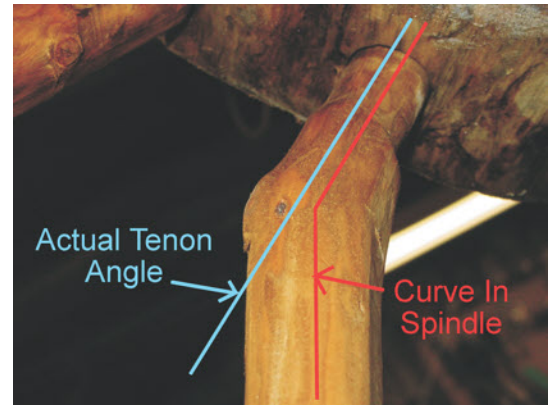
Most likely there will be several mortise joints in your project. The best way to determine how you will drill and cut your tenons and mortises is to cut your logs or branches, lay them all out on the ground and use a pencil to mark your cuts. After laying out your logs you may find out that one or two logs need to be shortened if the accepting log has a bend in it. You will understand more about this when you do a few projects.

To make an angled mortise, start by drilling slowly straight down into the log until the bit just starts shaving off some wood. Drilling slowly and gradually, pivot your drill to the proper angle. If you are doing the eye-ball method like I do, be sure to look from front-to-back, and side-to-side to check your angle. It is really easy to get off track. Then apply pressure to finish drilling the mortise to the depth of your tenon. Try your best to hold your drill steady, as wobbling may enlarge the mortise and your tenon won't fit tightly.

Putting It All Together:

Number your tenons so that when you assemble your project they are in the same order as when cut. For example, for a railing project, number the rails from left to right, and mark the top and bottom tenons. It's really easy to get them mixed up. In this digital age, you may want to take a photo of your lay-out for reference, especially for a large project. Sometimes, even though the rails are numbered, you forget how the curve was placed.

I have used bungee cords to hold it all together temporarily until I get everything just where I want it. Bungee cords allow movement, you can twist and turn the rails, and even remove one or two if you need to make some alterations.



HINT: For a super strong tenon, glue a piece of 3/8" wooden dowel into the pilot hole. This will make the tenon stronger than even a solid tenon. This is especially important when cutting small diameter tenons.

If you are cutting fresh-cut, green wood, the tenons may shrink quickly after being cut, as the water in the wood cells will evaporate quickly, causing shrinkage. By using a typical hardwood dowel, you can minimize shrinkage, and make a super strong tenon.



About The Blade:

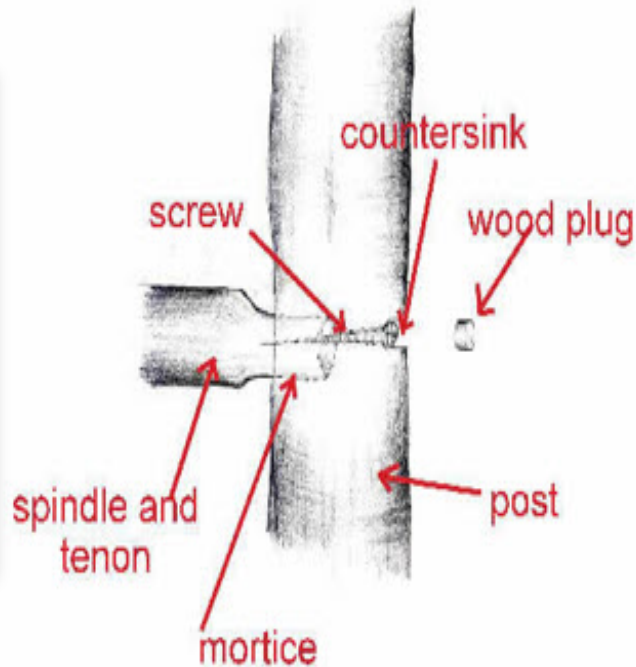
The cutting blades are made from hardened steel and cannot be sharpened. They are double-sided, and will last a very long time. Two blades are included with your order. One is mounted and ready to cut. One is stored on the arm of the cutter. If you need replacement blades simply send an email to sandy@rusticwoodworking.com. To clean your blades, use any good soap and water, followed with a light coating of oil to prevent rusting.



HINT: If your tenons come out a little loose and you simply **must** make them work, you can snug it up by doing the following:

Be sure that you have already glued a 3/8" wooden dowel into the tenon cutter guide hole and let the glue dry.

Drill a small pilot hole from the inside of the center of the mortise to the outside of the log. Then, from the outside of the post, locate that pilot hole and drill a countersink on the outside of the log to hide the screw and later add a wood plug. Apply wood glue to the tenon, and insert the tenon into the mortise. From the outside of the post, screw a screw through the pilot hole so that it screws part way into the tenon. This will expand the tenon and make a tighter fit. Glue a wood plug into the countersink. Sand down flush, and nobody will ever know.....



IMPORTANT SAFETY INFORMATION:

- The cutting blade is double sided, and is extremely sharp. Please use caution when handling the cutter and when changing blades.
- On the chuck end of the E-Z Tenon Cutter, there is a flat side to prevent slipping while in your drill. Be sure that the cutter is inserted properly into your drill and tightened to avoid slippage or disengagement.
- The blade is attached to the cutter with two hex screws. Please be sure that the screws are tight before using your cutter. After replacing a blade, check blade tightness after a few minutes of using the cutter to be sure that the screws have remained tight.
- After adjusting the arms to change tenon diameter, be sure that the hex screws are tight. Failure to do this may result in one or both of the arms sliding toward the end of the bar, and possibly sliding completely off the bar, which could cause tragic results.
- Clamp your log or branch securely so that it doesn't turn, twist, or move in any way while you are drilling a pilot hole, cutting a tenon, or drilling a mortise.
- We recommend using safety glasses and leather gloves.
- Keep people away from your immediate area when you are cutting tenons in case of any unforeseen situations. A bit, log, branch, drill or other flying object may harm somebody else.

If you have any questions at all about the E-Z Tenon Cutter, or need replacement blades, please send an email to sandy@rusticwoodworking.com

Thank you for your order.

sandy