

NORTHWEST TENON CUTTERS

TENON CUTTERS the tool that cuts tenons on the ends of your rails and spindles. For stair rails, use the 3" length. Requires use of 1/2" or 3/4" drill, depending on size of cutter. Two high carbon steel blades flare the material end about 60°. The two smallest sizes come with 1/2" shafts; the other sizes come with 3/4" shafts. The recommendation is to use a 3/4" electric drill to power the 1 1/2", 2", and 2 1/2" tenon cutters because the drill should have a maximum RPM of 500 for both safety and limiting tool overload. Made of cast aluminum.



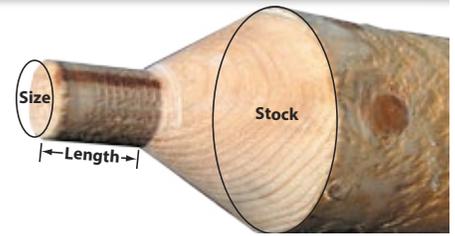
COUNTERSINKS

are used to cut the funnel shaped impression into the post (after drilling with a

self-feed bit) to accept the taper of the rail. This permits the ability to obtain a tighter fit for furniture or to give a stronger shoulder fit on rails. **Sizes:** 3/4", 1", 1 1/2", & 2"



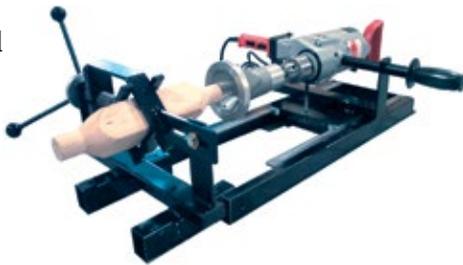
All the tenon cutters have an adjustable shaft to allow custom sizing of the length of the tenons. See chart for maximum tenon lengths.



Size	Length	Stock	Drill Size
3/4"	1 1/2"	2 1/2"	1/2"
1"	2 1/4"	2 1/2"	1/2"
1 1/2"	2 3/4"	3 1/2"	3/4"
2	3"	4 1/2"	3/4"
2 1/2"	3 1/2"	5"	3/4"

TENON CUTTER SYSTEM

The combination of the Drill Carriage and Manual Clamp(s) makes for hassle free alignment and cutting of tenons, especially if you are cutting numerous spindles for railings or for multipiece furniture production. You can add as many clamps as you would like to your setup, but for most applications one clamp is all that is really necessary. The Drill Carriage holds the drill in place on a slide-rail frame. The drill is manually pushed or slid onto the end of the clamped stock, cutting the tenon. The self-centering Manual Clamp locks into the Drill Carriage for maximum support. **Note:** The Drill Carriage is custom designed to work with the Milwaukee 3/4" Drill and is NOT guaranteed to work with other drills.



TENON CUTTER SYSTEM:

Drill Carriage

For use with Milwaukee model #1854-1 3/4" drill.

Manual Clamp

For bolt-on attachment to Drill Carriage.

Milwaukee #1854-1 3/4" Drill

OPERATING INSTRUCTIONS

Never hold the material with hands and push into tenon cutter. The Tenon Cutter is designed to be used with a drill motor or drill press with the appropriate size chuck for the tool. **It is not recommended to be connected to any other type motor or driving device.** The maximum operating RPM is 500.

The material being cut should be clamped in a vise or other appropriate clamping device and the cutter pushed onto the wood. Never hold the material in hands and push into tenon cutter. Always keep the cutter blades sharp for the tool to work properly. If sharpening is necessary, use a fine stone as you would on a knife or wood chisel. Never use a grinder or the blades will be damaged.

When reinstalling the blades, do not over tighten the retaining screws or you may strip the threads in the housing. Check the screws from time to time to see that they do not loosen. It is advisable to put a piece of wood dowel (the proper size) into the tenon pocket for the blade tips to seat against so when the dowel is turned or pulled out the blade tips scratch it to assure a proper diameter tenon finish. The better you set up the blades, the better the tool will perform.

The drive shaft is adjustable to get a short or long tenon. Using a metal ruler; measure from the blade tip to the end of the drive-shaft to get the desired length. Wood material should be clean and the ends cut off squarely.

If operating with a drill motor, hold onto it firmly to counter act the torque effect of the tenon cutter. You must aim the tool straight onto the material to get a straight tenon. A little practice will make a perfect tenon nearly every time. Do not use excessive pressure to force tool onto material. It should almost self feed onto material. Excessive pressure or chattering can damage the tool and usually means the blades need to be sharpened. The sharper the blades, the better.

Always wear safety glasses. Never allow clothing or other objects to touch the tool while in operation. Always keep hands clear. Never touch the tool while in operation.

When using very dry material, it may be necessary to apply a little water to the work place by dipping it in a bucket or spraying with a squirt bottle to avoid a dry screech or chatter.



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