



Fritz Wilhelm, LLC

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Tentbuilding - Tools

Introduction

A tent can be made with no more than a few hand tools, or with many thousands of dollars worth of machinery. The machinery makes much of the work easier and/or faster, but does not inherently improve the quality of the final product. I'll give you some insight into what tools I've found to be useful and how you might go about acquiring them.

Sewing Machine

Industrial Sewing Machine

A heavy industrial walking foot machine is ideal for sewing tents. You don't need anything fancy. Even zig-zag is a luxury. If you keep an eye out on [craig's list](#) you can probably pick one up used for a good deal less than a new one. You can also get used ones from industrial sewing supply places. If you live in a big city you might have one in town; otherwise... google it.

Consider upgrading to a speed-controlled motor, it shouldn't cost much more (mine cost \$200 for the motor and I swapped it out myself) Most industrial machines come with a "clutch motor" which is very difficult to control. My machine was initially named "Godzilla" ('cause it came from Japan and went on rampages). A DC speed-controlled motor was both more powerful and much more controllable, and the monster has been tamed.

Industrial sewing machines use a completely different needle to those used by home machines. Actually, different industrial machines use different needles, so you need to know the full designation of the needle, or at least know what machine you have. You can find needles online, or at an industrial sewing shop if you are lucky enough to have one nearby. You will almost certainly not find them at a local fabric or sewing store.

Home Sewing Machine

While an industrial machine is nice, you CAN sew a tent on a standard home machine. You will have to hand crank through the hard parts and will have to work extra hard to keep it feeding well.

On the other hand, it may be a bit abusive to the sewing machine. An older machine with all metal gears will certainly handle the job better, but I made my first 3 tents on a cheap Brother sewing machine. By the end, the machine didn't seem to be working quite as smoothly, but it wasn't broken.

Whatever machine you have, you will most likely have to adjust the bobbin (lower) tension to be able to handle the heavy thread. Look in the manual to find out how.

Needles

Size 18 needles are the largest size available for home machines. Luckily they work fairly well. The TEX-120 thread that I use supposedly requires a size 21 needle, but feeds fine through a #18 needle in all but the thickest stacks of material. If you are using a home sewing machine, use #18's and hand-crank or hand-sew in places where you break a lot of thread. On an industrial machine, use #18's for seams and step up to #20's or even larger for detail areas with a lot of material coming together.



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Hand Sewing

You can hand sew a tent. After all, that's how it was done for centuries. Even if you do sew most of your tent on a sewing machine, you may well find that some of the detail work is easier to do by hand. For handsewing you will need: Sailmaker's **needles**, sailmakers **Palm**, & **beeswax**

Sailmaker's needles have a smooth triangular head that is slightly larger than the shank of the needle. This makes it easier to pull the needle through after you have pushed it in with the palm. It is very important that the edges of the triangular head are rounded and smooth, otherwise they will grab or cut the fibers of the canvas. You can get good ones from [R&W Rope Warehouse](http://www.rwropewarehouse.com), or other traditional sailboat chandlers.

A sailmaker's palm is like a thimble that fits in the palm of your hand with a strap that goes around the back of your hand to hold it in place. You can purchase one from R&W or, make one yourself. There is a nice article on making your own Palm at the online boat-zine Duckworks.

<http://www.duckworksmagazine.com/08/howto/palm/index.htm>

Beeswax is used to keep thread from binding up while hand-sewing. Just a small block is needed (an ounce should be enough). You just run the thread over the block of wax with finger pressure. One pass should do it.



Other Stuff

Other tools that will come in handy are:

1. Scissors: Get a decent new pair and tie a scrap of fabric on the handle to mark them. Although a really great pair of shears is nice, a ten dollar pair will work satisfactorily. Don't use them for anything but fabric and thread.
2. Pencil: You can use tailors chalk instead, but pencils work.
3. Stapler/Staple Remover: Use a standard desk stapler instead of pins. It's much faster and actually distorts the fabric less than pins.
4. Piece of Wood: A bit of wood 6" long or so and the same thickness as you want your seams to be is very handy for laying out seams. Normal "1 by" material is 3/4" thick. This is a fine width. I personally prefer about 5/8", but it's difficult to get wood in that thickness. Don't go any thinner than 1/2" or your seams won't hide the printing on the selvage.
5. Long Ruler: Helps a lot for doing panel layout.
6. Tape measure (a standard handy-man 12' or 25' tape measure works nicely for panel layout.
7. Seam ripper (not that you'd ever make a mistake): A cheap one from the a local sewing shop works fine.



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Woodworking

I'm not going to go into too much detail here. There are more ways to do a thing in wood than there are woodworkers. The tools you have change the way you think about a project, and the way you think changes what tools you get.

If you don't have any (or much) skill at woodworking, consider taking a community college beginning woodworking class. This is a great way to learn the skills to not just butcher wood and more importantly to not butcher yourself.

An additional advantage to taking a course (if you don't have a fully equipped shop of your own) is that you generally get access to a nicely equipped shop while you are enrolled. Hell, you might even be able to get some college credit for making your own tent poles, if you do a nice enough job :~)

Machinery

A table saw is very nice for ripping the spokes and center pole out of larger planks. Alternately, most lumber yards will do this for you. They aren't cheap, but it's still much less expensive than buying a table saw for one project.

A thickness planer makes quick work of get poles to a certain thickness, but it should be added that this is not strictly necessary.

Hand tools

After your basic measuring and marking tools and a good handsaw, probably the most useful things are decent chisels and a drawknife. [Lee Valley Tools](#), [Highland Woodworking](#), and [Tools for Working Wood](#), are a great place for buying new tools. [Ebay](#) is a good place to find an old drawknife.

It should go without saying, but keep your tools SHARP!

Good Luck and Happy Tentbuilding,

Gene "Fritz" Eisele
Proprietor