

Making the Drum

Steps:

1. Design your drum
2. Disassemble pallets
3. Cut staves roughly to length
4. Bevel sides of staves
5. Finish-cut staves to length
6. Cut biscuit holes (optional, but recommended)
7. Drill cross-bracing holes (optional, but recommended)
8. Assemble drum
9. Sand drum round, fill holes, and finish sand
10. Decide on lacing method
11. Seal and finish the drum (optional)
12. Measure, cut, punch holes, and soak rawhide
13. Lace the rawhide head to drum
14. Let the rawhide dry and enjoy

Design: Decide on the drum's length and diameter. I suggest you start with a straight-stave drum, 13" long and 10" in diameter.

Decide on the number of staves. I've come to like a drum with 16 staves. I've used 16 staves with drums from 10" to 16" in diameter. You have to round the drum, probably with your belt sander. If you use fewer than 16 staves, they'll be fairly wide. This means that you have to take off a lot of wood to round them.

On the other hand, if you use more than 16 staves, they're going to be pretty narrow. Remember, you have to bevel both sides of the stave. As width decreases, difficulty in holding the stave flat against both your table saw's table and rip fence increases.

I know of people who use up to 64 staves. I imagine they must have pretty nice woodworking equipment and lots of experience.

Use these formulae to calculate the stave width and bevel angle:

Stave width = (drum diameter x 3.1416) / number of staves.

Stave bevel angle = 180 / number of staves.

A spreadsheet program makes it easy to see the result of varying drum diameter and number of staves.

If you're going to make a taper-stave drum, use Google to find Drumcalc and download it. Since the staves taper, you'll need to calculate the top and bottom width; Drumcalc does that for you.

Tip: Easier calculations. When you calculate the stave width, you end up with inches in decimals, 1.3176, for example. Rather than trying to figure out how many 16^{ths} or 32^{nds} of an inch this might be, just convert it to centimeters by multiplying inches by 2.54. You can read the results directly on any good ruler.

Disassembling Pallets: Here are the steps and alternatives if some of them don't work.

1. Wear eye protection and gloves!
2. Lay the pallet flat down on the floor.
3. Slip the short end of your pry-bar under the edge of one of the outside slats or under it as much as you can. Do not pry from the end unless there is no other option; the slat is almost certain to split.
4. Use your sledge hammer to drive the pry-bar under the slat as far as it will go.
5. Stand on the pallet and try to pry the slat up. It won't be easy! You might hear one of the nails creak. That's a good sign; it's coming up.
6. There will be two or more nails for you to deal with. Get your pry-bar near them however you can – from between the slats or even from the end. You may be able to drive the long end of the pry-bar further under the slat working from the outside edge.
7. After you've gotten as many of the nails to move as you can, but not high enough to grab with your pry-bar or crowbar, drive the short end of your crowbar under the outside edge of the slat and gradually pull the end up until you can get the crowbar on the nail. Pull it out and all of its brothers and sisters, as well. Prying up the end will sometimes pull the nails in the middle of the slat up, too. If not, repeat with the pry-bar.
8. The nail heads may pull through the wood, especially at the ends of the slat. If the damage is slight, use the slat and fill the nail hole. If there's a lot of damage, cut off the end.
9. Don't be too quick to discard slats that split. Drum staves are narrower than slats, and you might be able to salvage split pieces.

If you can't get the nails to move at all, consider cutting the slats between the places where they're nailed. There is almost always at least 1' of wood available, and this is a very usable length. Here's