
ROCKWELL
ShopSeries
ROCKWELL
ShopSeries
24
Carbide Teeth
Fine crosscutting
7¼" (185mm)

BEYOND VANILLA 22

DUNGEON FURNITURE CONSTRUCTION FOR KLUTZES!!!

JLubeJack

GOALS OF THIS SEMINAR

- Teach a few fundamental woodworking techniques common to all projects
- Know safety factors in furniture construction
- Learn project techniques by following one project — the hanging stock
- Learn to “deconstruct” any dungeon furniture you see and apply these techniques to successfully build your own, custom furniture

WHERE WE'RE HEADED

- Decide the goals of furniture project
- Think of the construction physics
- Learn basic construction techniques
- Decide on required tools & optional tools

WHERE WE'RE HEADED-2

- Making a plan/reverse engineering
- Planning projects step-by-step
- Finishing possibilities
- Furniture to consider

GOALS OF FURNITURE

- What do you want to do with it?
- Who will you use it with?
- How durable must it be?
- Stationary, convertible, or portable?

CONSTRUCTION PHYSICS

- Think about the stresses involved
- Static versus dynamic stress
- Bracing for stress
- Knowing your material weaknesses
- Build it twice

BAD DESIGN - NO NO!

Good as a plant stand…

Bad for buckin'!

Think of the stresses that will be involved horizontally…

BASIC CONSTRUCTION TECHNIQUES

- Cutting wood square
- Making strong joints
- Cross-grain versus end grain
- Lap joints
- Joist hangers
- Glues & screws

REQUIRED TOOLS

- Drill & bits
- Circular saw
- Screwdrivers & bits
- Squares
- Sandpaper

DRILL & BITS

Get a good cordless drill and then a good selection of wood bits—including a hole cutter!

CIRCULAR SAW

Circular saws come in two blade sizes; I recommend the 7.25” size. You can use one universal blade, but you’ll be happier with 3: cross-cut, rip, and fine blades

BE SQUARE

You can’t make square cuts without a square! The most accurate for furniture is the combination square, center.

SANDPAPER & ELBOW GREASE

Take your time filling, filing, and sanding! Your project can be screwed *permanently* during these stages!

Remember—filler will not stain like the wood… and it can be harder than wood!

OPTIONAL TOOLS

- Sabre saw
- Chisel set
- Clamps
- Hammer
- Planes

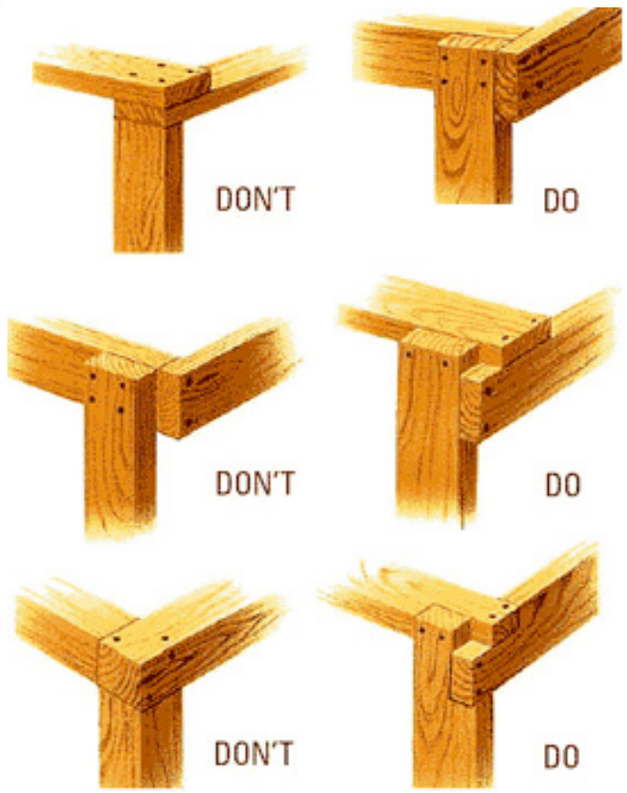
POWER TOOL #3

The sabre saw is the best hand tool for cutting curves and making inside cuts. Make sure you use the correct blade: narrow for curves, wide for straight cuts. Big teeth for fast/rough cuts, smaller for finer cuts.

HAND TOOLS

These are basic essentials you'll need…

BASIC LAP JOINTS



These pictures show how you can use simple, square-cut boards to make strong screw 'n glue joints, avoiding end-grain problems.

Even the lower right joint can be done easily with the basic set of tools!

MAKING A PLAN/REVERSE ENGINEERING

- The hanging stock
- One X-cross design
- Reverse engineering anything you see…

PLANNING A PROJECT STEP-WISE

- Figure the angles
- Determine the stresses
- Use the right joints
- Plan the steps
- Construct it in your mind—twice
- *Build the motha already!*

THE STOCK: STEP-BY-STEP

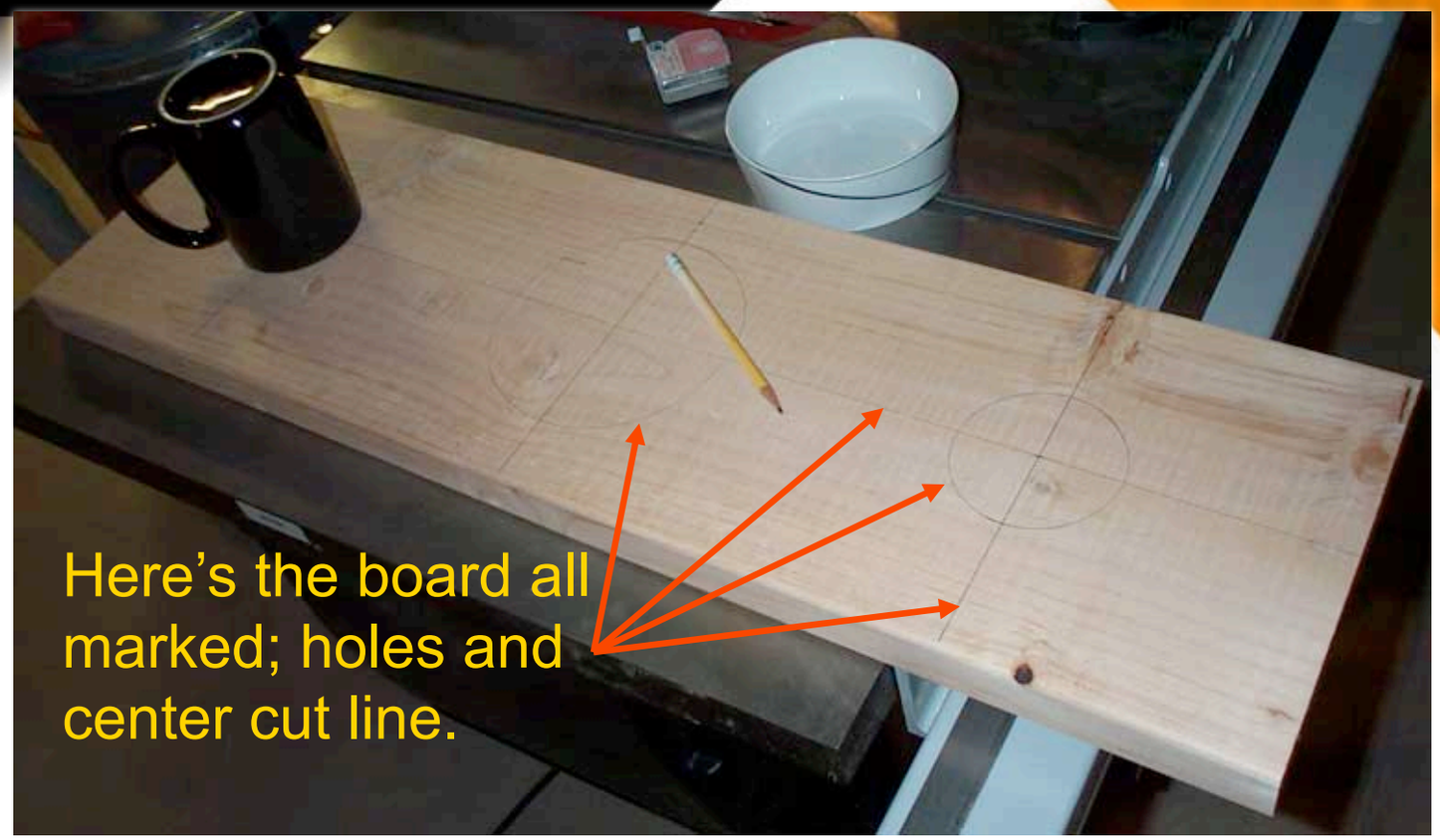
1. Determine neck & wrist hole requirements
2. Mark up 33″ board, middle split and center lines for neck & wrist holes
3. Drill starter bores for holes
4. Cut out neck & wrist holes (*before* half-cut)
5. Sand neck & wrist holes
6. Cut board in half
7. File (if required) then sand half cuts
8. Mark, drill holes for hinge & clasp
9. Mark, drill pilots, drill main holes
10. Attach hardware

HANGING STOCK - TIPS

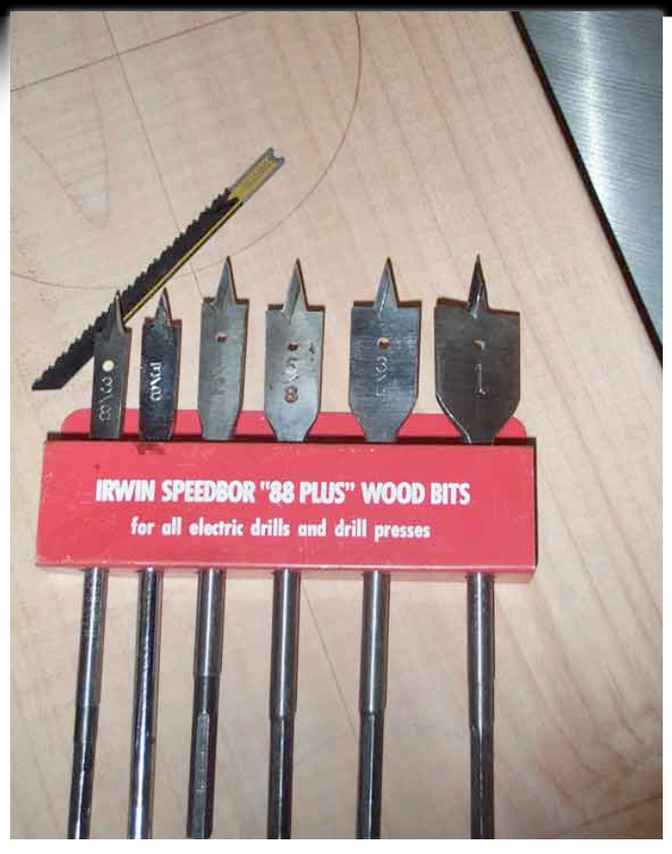
- Household protractors
- Pilot hole tricks
- "Pushing" a blade — no-no!
- Pushing a blade — tips
- Marking hardware holes (looooong screws… oh yah!)

HOUSEHOLD PROTRACTORS

MEASURED & RULED



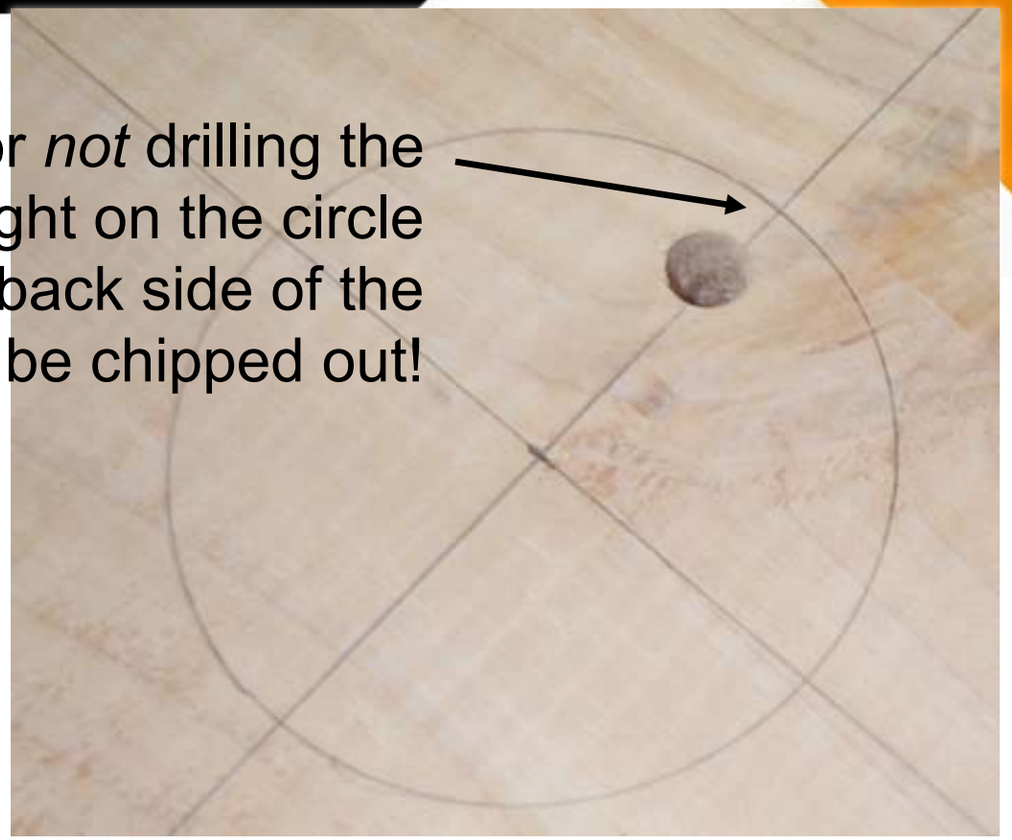
PILOT HOLE TRICKS



- Use a “spade” bit to get a pilot hole that will fit the required sabre saw blade. 3/8″ works fine here, and allows about the narrowest sabre blade that will cut “2-by” stock without breaking.

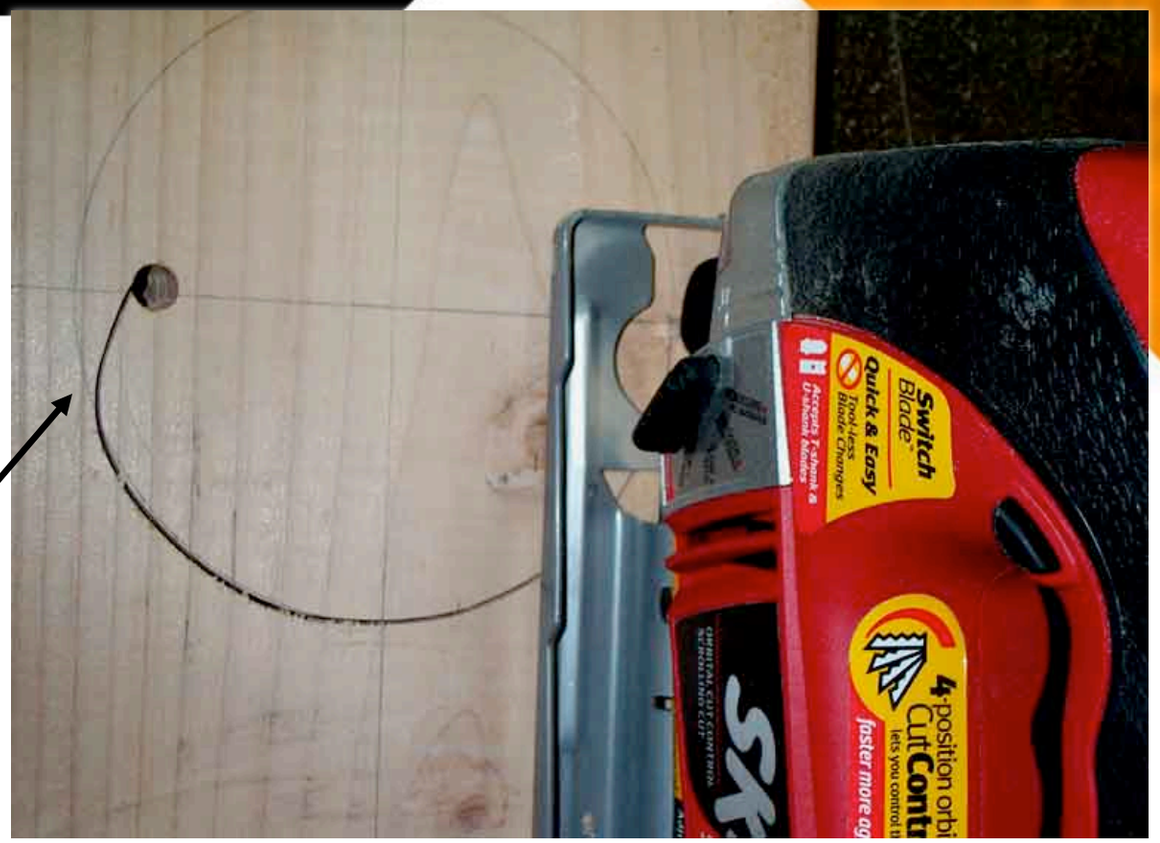
PILOT HOLE TRICKS

The reason for *not* drilling the blade hole right on the circle is that the back side of the board will be chipped out!

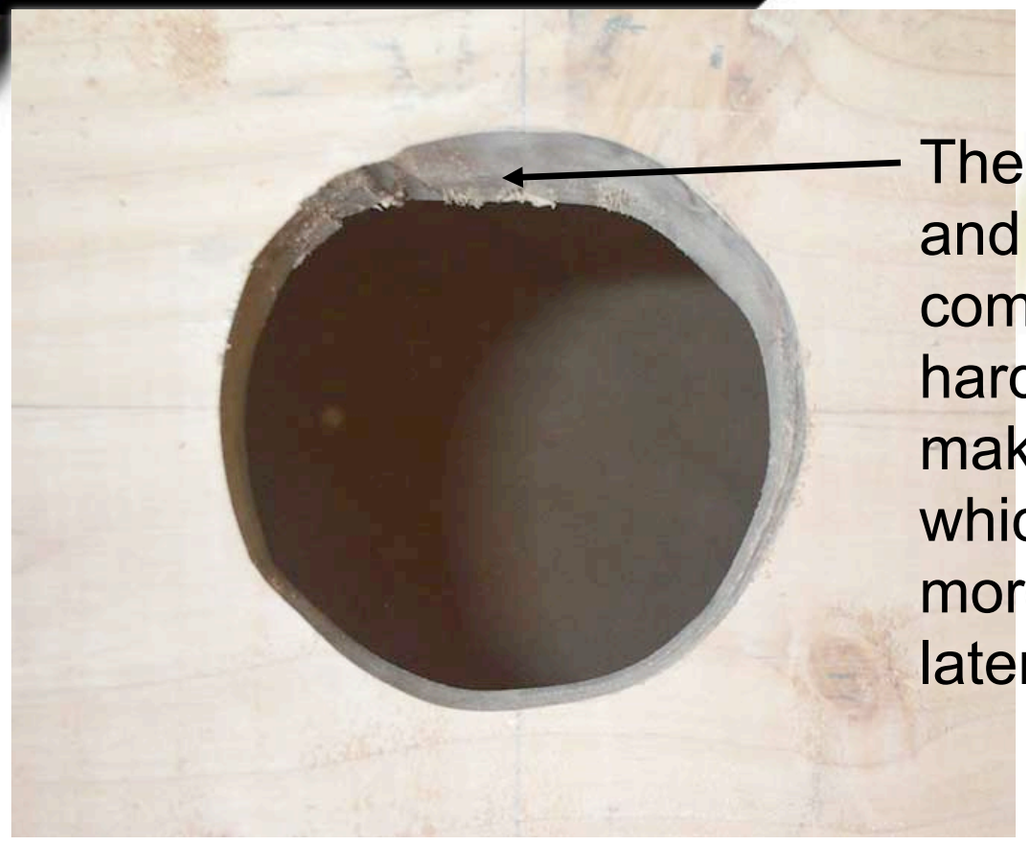


PILOT HOLE TRICKS

When you cut into your circle make it gradual or you'll miss the curve you marked out!

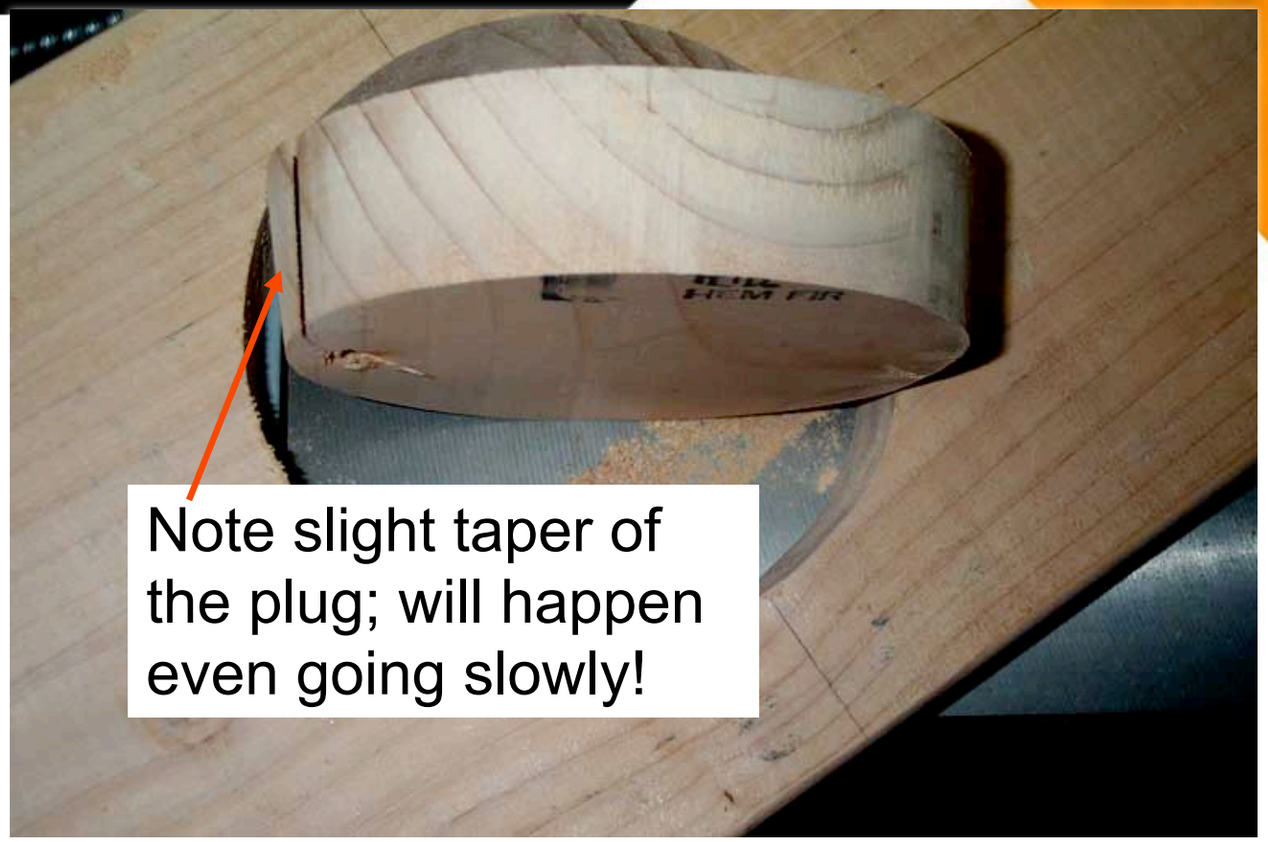


PUSHING A BLADE



These rough edges and misalignment come from pushing too hard when you're making the cut… which means *lots* more filing & sanding later on!

PUSHING A BLADE



PUSHING A BLADE

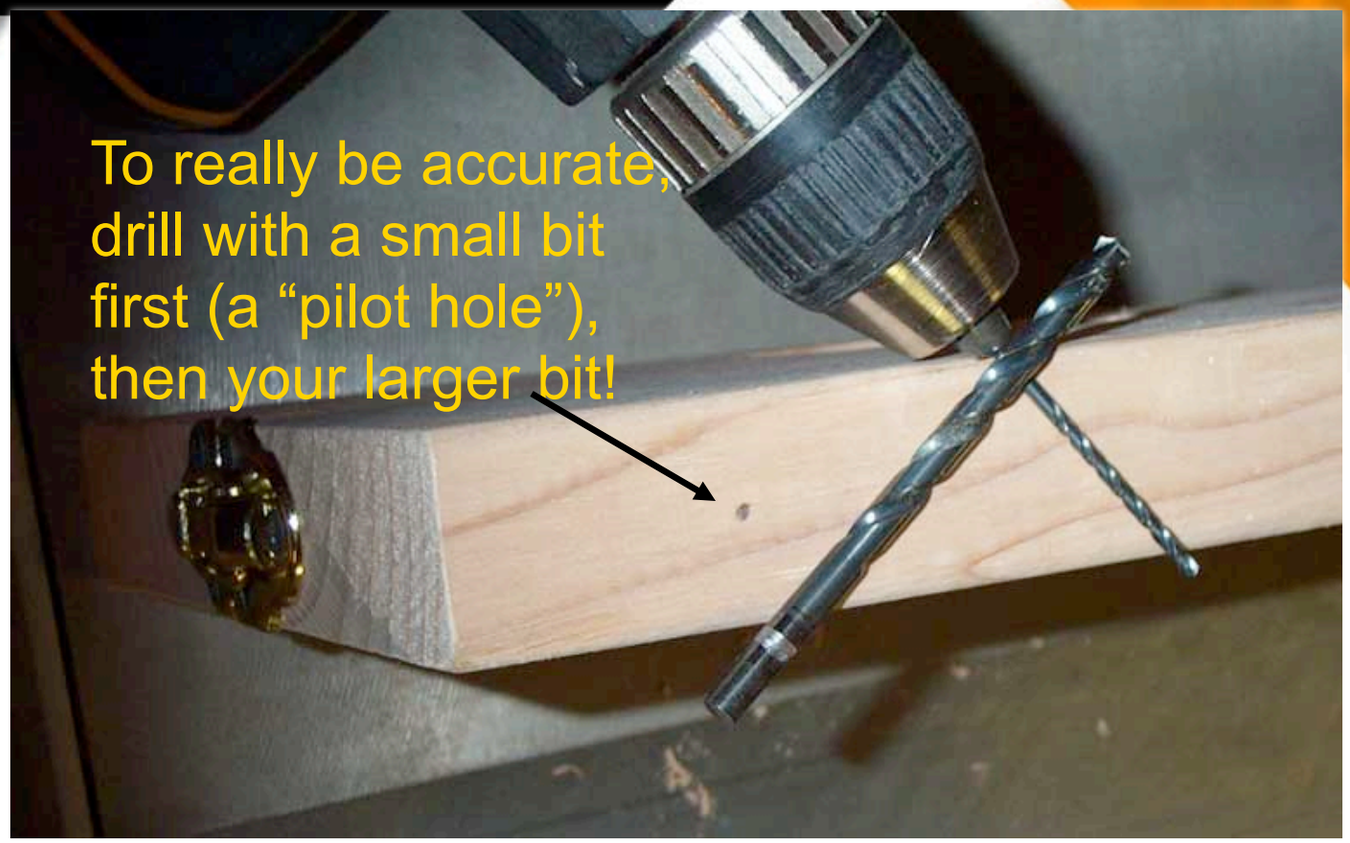
PILOT HOLES, PART 2

◎ **You can use heavy-duty hinges & hardware for effect — or decorative. But make sure to use long, sharp-thread screws, ‘cause you’re going into end-grain.**

PILOT HOLES, PART 2

Mark holes for the hardware—don’t try to drill pilot holes with the hardware in place!

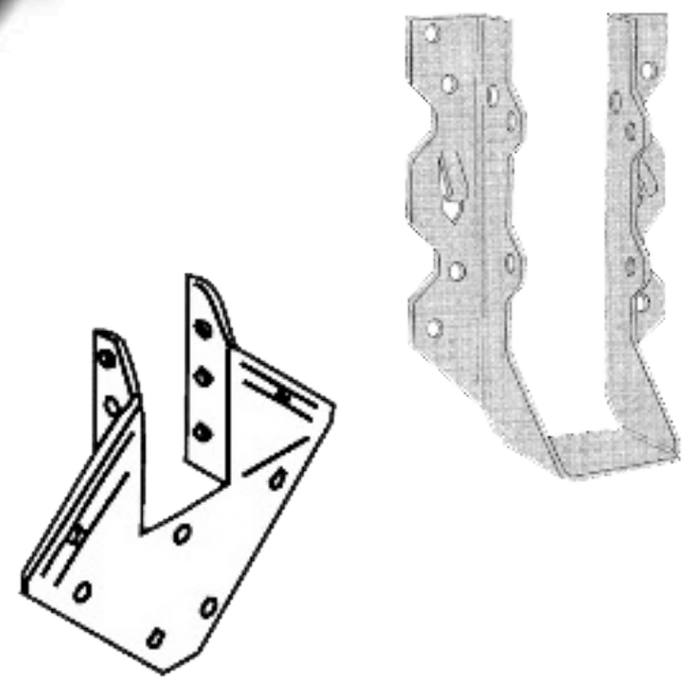
PILOT HOLES, PART 2



CONSTRUCTION ADHESIVE

- Use adhesive glue for VERY permanent construction projects; this stuff is stronger than the wood itself!
- Make sure you "dry fit" parts first, then align parts <u>perfectly</u> before final placement and clamping.

JOIST/DECK BRACKETS



- When making heavy, permanent furniture, use joist & deck brackets for easy, fast, and strong butt joints. I've used them for 4x8 "fuck"' tables, suspension tables, and racks. Remember to brace for "spread"! (The record for that table was 18 people... no problem!)

FINISHING

- Paint, antique, or stain?
- Prepare surfaces *carefully!*
- Test the finish on scrap
- Plan order of surface treatment—think drips!
- Upholster surfaces

PAINT / ANTIQUE / STAIN

Depending on the effect you want, you can varnish, stain, antique, or (simplest) just paint.

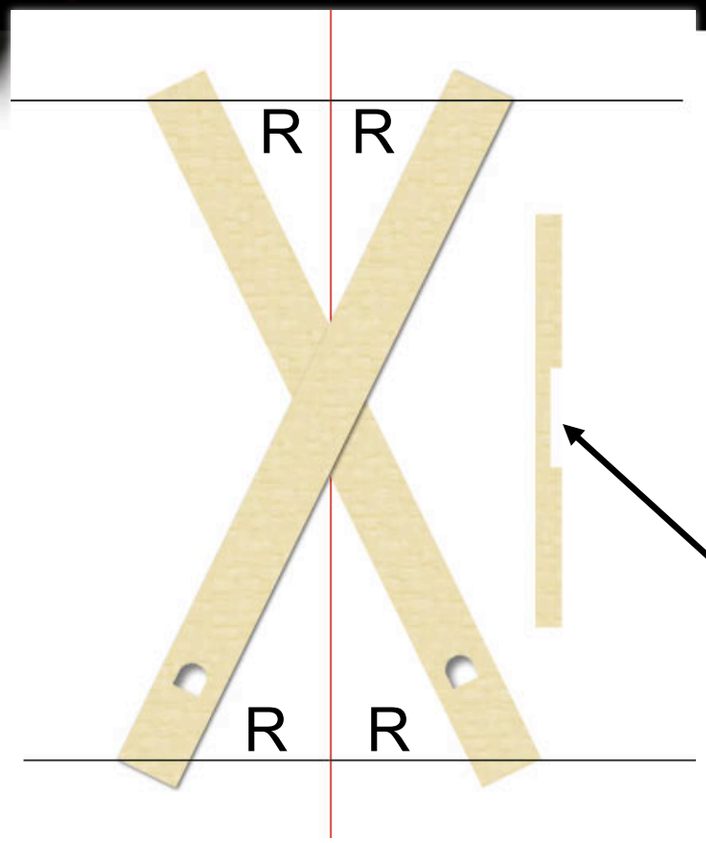
ADVANCED PROJECT: THE X-CROSS

- Determine if cross will be attached to wall or be free-standing (NOT recommended!)
- Consider max & min heights of "targets"
- Will your cross be permanent or must you allow for disassembly now and then?

X-CROSS PROJECT STEPS

1. Lay out one side on floor with marked center line
2. Lay other side on top of first, measure to make sure sides are symmetrical — then "tack" screw together
3. Mark cross-over section where wood will be removed
4. Make multiple cuts, .25" apart in removal area, depth = 1/2 board thickness
5. Chisel out kerfs
6. Repeat on second board
7. Join sides of cross together with construction cement and screws

MARKING OUT THE CROSS ANGLES



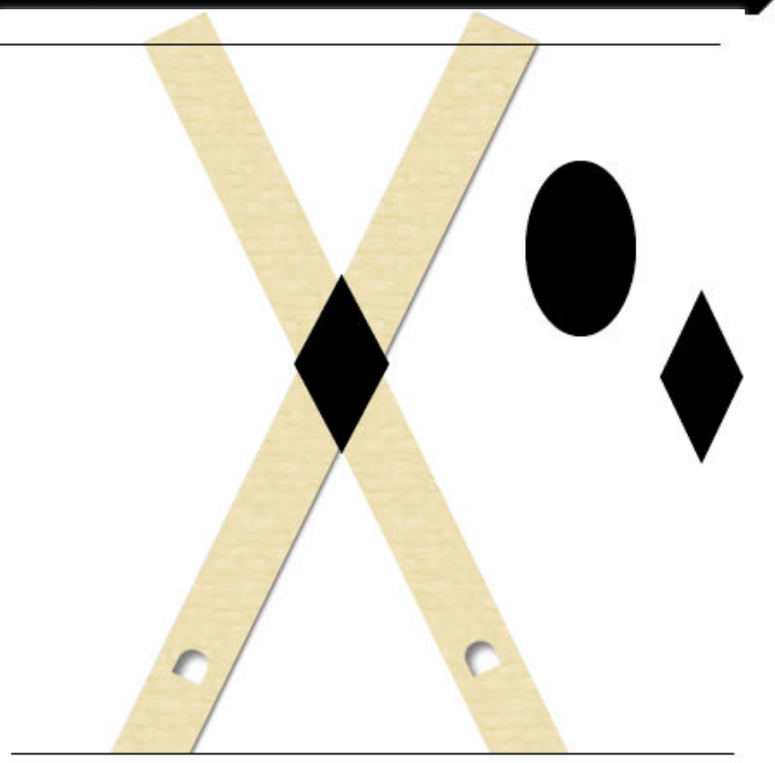
The first step is to lay out the main boards so they're square. A chalk line on a driveway will do fine. Make sure the distances "R" are all the same!

The side view shows how wood will be removed so the overlap is flat.

X-CROSS PROJECT STEPS

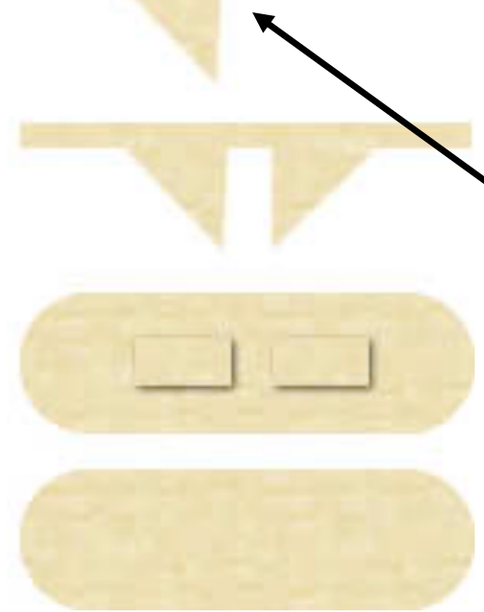
1. Trim top & bottom so they're parallel to future floor
2. Cut out foot holes
3. Lean against wall to determine desired cross angle to vertical on 3/4″ plywood cut to measure as base)quarter-round edging
4. Mark back of cross for mid-height angle support
5. Cut & align mid-height bracket
6. Mark for upper bracket, measure & cut bracket
7. Mount bracket to wall
8. Make foot platforms, mount with front bracket attached, then screw 'n glue back bracket
9. Finish cross, foot platforms, brackets, plywood platform

TRIMMING TOP & BOTTOM



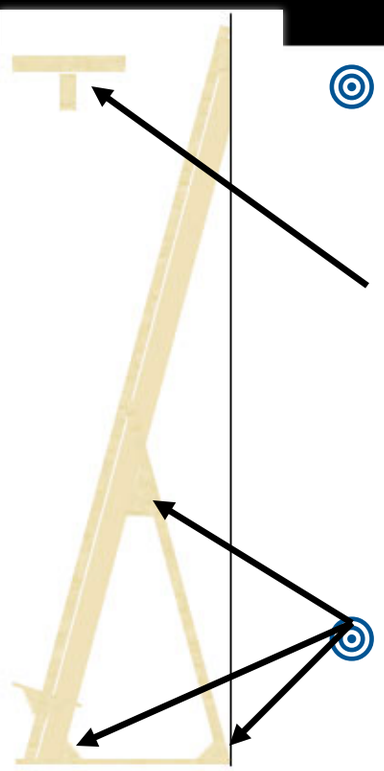
- This shows the step to trim the “feet” and “head” so that the surfaces will be parallel to the floor.
- The side art shows possible designs for the shield that will cover up the board laps.

THE FOOT PLATFORMS



- You need to cut out and prepare the foot platforms
- When you attach to the X-cross, make sure you've only mounted the back support bracket—the front one will be added later to ensure a perfect fit—*first to X cross, then to platform, important!*

MOUNTING TO WALL



- When you have the flat "X" made, you'll screw 'n glue another 2x4 perpendicular and in the center of each "X" arm. This will provide enormous support. Though this drawing doesn't show it, you'll also do the same for the mid-height bracket.
- Note the 45° brackets everywhere for additional support (these eliminate end-grain by the way)

X-CROSS PROJECT STEPS

1. Apply second coat of finish
2. Lean cross up on bracket on plywood base
3. Mark plywood base for mounting
4. Put in mid-height brace, mark plywood base for mounting
5. Remove cross from wall, mount base & mid-height brace
6. Put cross back up against upper bracket, permanently mount
7. Design, assemble, upholster X-shield (have bolts coming through, matching holes drilled in cross)
8. Mount shield
9. Tie someone up and beat ‘em!

DECONSTRUCTING – KNEELERS

$298.95

$235.50

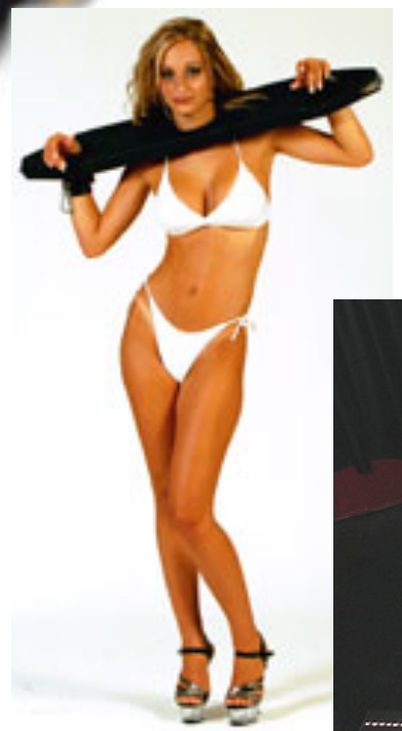
$289.95

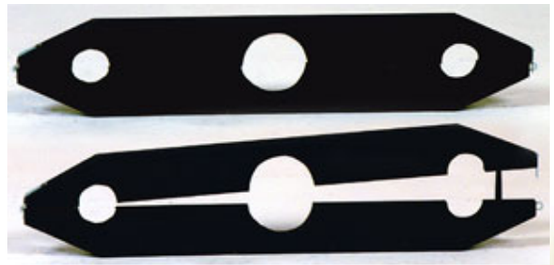
$249.95

$279.50

There are dozens of designs for every single piece of furniture you can imagine; again, think of your primary end use of the piece when you design it.

STOCKS & MORE STOCKS





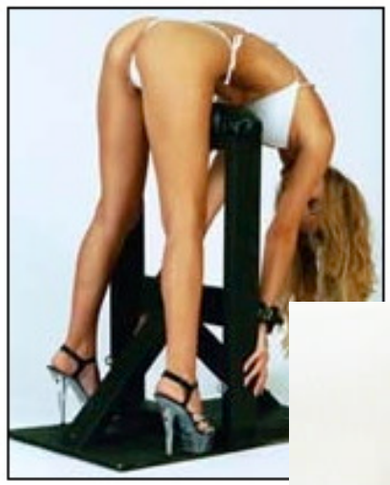
Variations on a very simple theme.

VERTICAL STOCKS

This *may* not be Mitt & Ron!

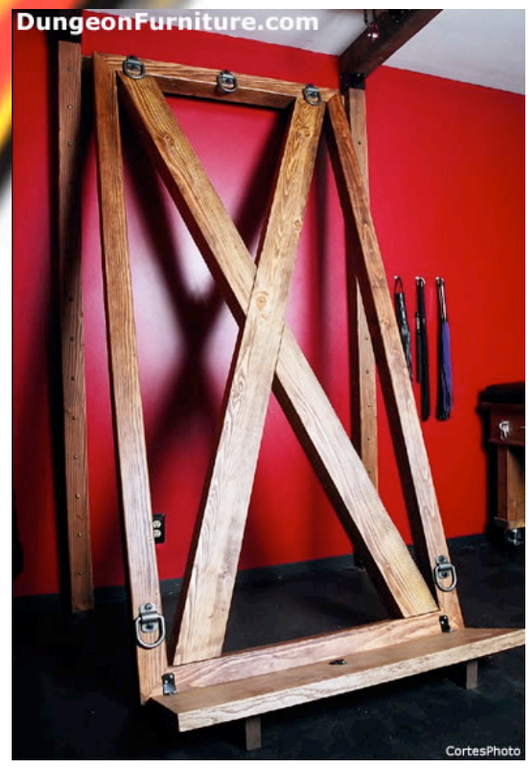
Two designs, same purpose; note the ankle stocks on both designs and simple height adjustment on right

HORSES & SEMIHORSES



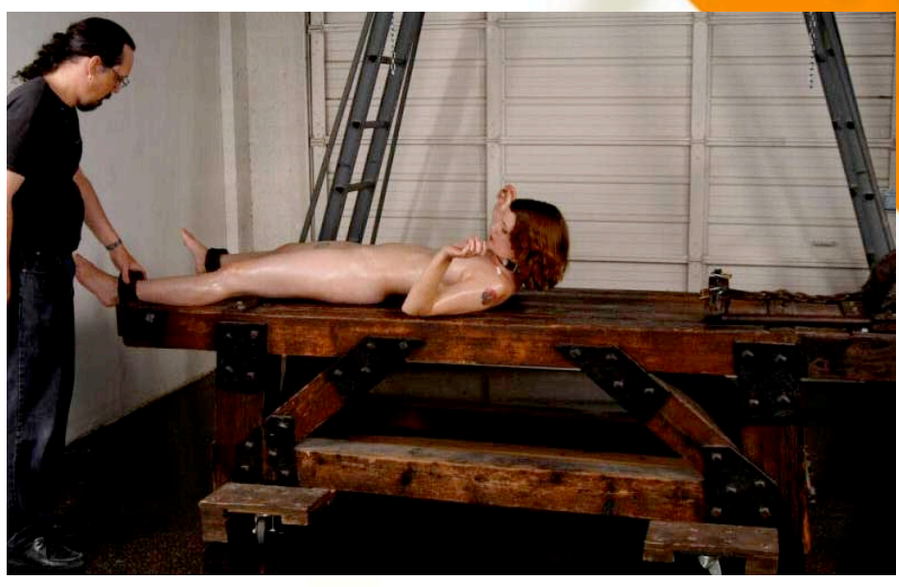
Take a critical look at bracing on these designs…

A- AND X-CROSSES



The center design could be hinged at top & easily hidden.

THE RACK



An elaborate piece built for very heavy use; note iron brackets!

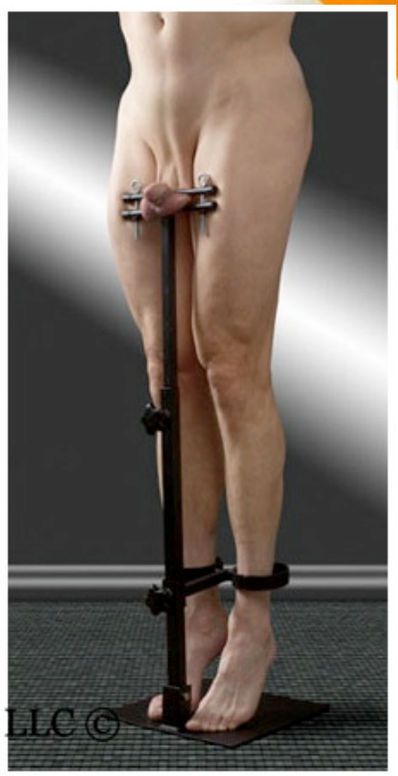
YOU DEVIANT YOU!

If you can think of a kink, you can devise furniture for it!

NON-WOOD OPTIONS

- Pipe construction
- Pipe & wood
- Steel rod, welded

PIPE CONSTRUCTION



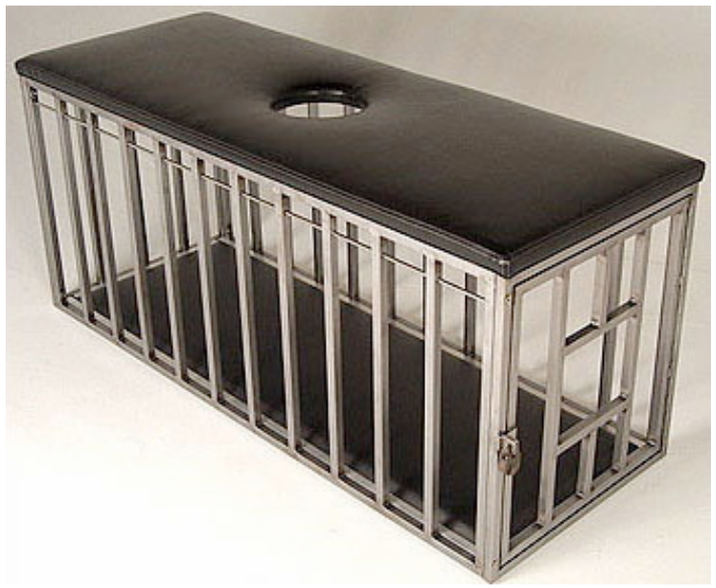
Delightful to contemplate… what about safety issues?

PIPE & WOOD

OK team, let's devise a way of making this all, or mostly from wood… and make it a convertible!

Figure a 350 lb. max static load too.

PIPE & WOOD



Both of these could be made entirely
of wood or in with wood & pipe.

FINAL EXAM

So, what could be done to this basic design to save it… with the least amount of wood possible?

QUESTIONS? COMMENTS!

- I hope you got what you needed out of this presentation!
- If you don't ask questions now, you'll wish you did as soon as you get home!
- You can always e-mail me with your questions at JlubeJack@gmail.com
- Thanks for listening!

LIKE BEYOND VANILLA?

TELL YOUR FRIENDS BACK HOME!!!

LINKS

Woodworker E-Tips
http://www.woodworkingtips.com/etips/

Tools
http://tooltime.texasdi.org/handpowertools

Tips
http://www.woodnet.net/tips/index/

Sawdust Making 101
http://sawdustmaking.com/

Multiple Tips Page
http://www.benchnotes.com/#%3CA%20NAME=%3E%3C/A%3E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Thanks!