

## Do It Yourself

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### Wooden Tool Chest -- Stock Preparation and Joinery Design

From "[Wood Works](#)"

episode WWK-308 -- [More Projects »](#)

Storing the many hand-tools in the woodworker's arsenal -- like chisels, scrapers, calipers, gauges and hand-saws -- can be a challenge. In this episode of *DIY Wood Works*, host David Marks builds a tool chest for storing hand-tools. The distinctive tool-chest is itself handcrafted from Peruvian walnut and maple, and features classic dovetail joinery -- the strongest type of joinery used in woodworking. The piece also includes solid-brass hardware and book-matched maple panels for the lid. The distinct grain and amber tone of the maple makes for a striking contrast with the dark walnut case.

#### Materials:

Peruvian-walnut stock

Maple stock

Table saw

Cabinetmaker's scribe

Bevel gauge

Straight-edge

Masking tape

Carpenter's pencil

Safety glasses or goggles

**Note:** Cut sizes may vary. For exact measurements, please contact David Marks through his Web site -- information below under Resources.

**Safety Alert:** *Always* wear safety goggles or safety glasses when working with wood, power-tools, saws, drills, routers, etc.

#### Preparing the Stock and Laying Out the Joinery Pattern

- Peruvian walnut is ideal for this project since it typically comes with an impressive grain pattern and can be found in sufficiently wide widths. Using wider stock pieces eliminates the need for edge-



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David Marks shows how to make a tool chest from Peruvian walnut using some of those very same tools.



gluing. Because this wood is easy to work with, it's a good choice for fine handwork like cutting dovetails.

- Begin by cutting the walnut stock to length on the table saw using the cross-cut sled (**figure A**).
- The front and back pieces are cut to 30 inches long, while the two end pieces are each 12 inches long (**figure B**).
- Typically a dovetail jig (**figure C**) and router is used to create dovetail joinery. For this piece, however, the jig will not be used. For aesthetic reasons, the neck of the pins on the dovetails for this piece are cut very thin -- to about 1/8 inch (**figure D**). The shanks on router bits are generally 1/4-inch or larger. For this reason, the band saw is better suited for cutting these finer pins and tails.
- As seen on the prototype (**figure E**), the dovetail pins are cut on the side pieces, and the tails on the front and back of the piece. Here are several other factors to keep in mind:
  - When laying out the pins, keep in mind that a **through dovetail** will be cut, meaning that the length of the pins is longer than the thickness of the stock by about 1/32-inch.
  - The dados cut in the case to hold the top and bottom panels are positioned so that they fall between two pins.
  - The chest is actually constructed as a closed box. Once the box is glued up, the lid is created by band-sawing the top off in a single cut. As with the dados, the cut for the lid is positioned so that it falls between two pins.
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- To begin the layout for the pins, use a cabinetmaker's scribe set slightly wider than the width of the stock. This setting defines the length of the joinery. Scribe a line on the inside and outside faces on the ends of each board (**figure F**). The scribe scores the top grain with a fine cut that will help prevent the wood from chipping out as the dovetails are cut out.
- As seen on the prototype, the joinery design calls for the pins on each side of the case are evenly spaced, with one pin perfectly

Dovetail joinery dates back to ancient Egypt and is the strongest form of joinery used in woodworking.



Figure A



Figure B



Figure C



Figure D

centered in the stock (**figure G**). To make room for the dados that will hold the top and bottom panels, and the saw-cut that will create the lid, the pins are spaced 5/8-inch apart. This symmetrical design simplifies cutting the pins since the cut is the same for all four ends of the side stock.

- With the end-grain covered with a strip of masking tape, lay out the marks for the half-pins on the ends of the stock. Measure in 1/8-inch (**figure H**).
- Use a bevel gauge, set to 14 degrees, to mark the cut lines (**figure I**).
- To lay out the center pin, mark the half-way point on the end of the stock, then measure out 1/16 inch in both directions from the exact center-point. Use the bevel gauge to make the marks (**figure J**).
- Use the bevel gauge, and the measurements described above, to mark out the two whole pins on either end of the side piece. Each pin is spaced 5/8-inch apart.
- Repeat the steps on the opposite side of the first piece.
- Repeat the entire process for the other side-piece.

### Sponsored Resource

> [Click here](#) to order your tools and materials for this project from **Woodcraft!**

### RESOURCES:

#### Fine Woodworking

A magazine devoted to high-quality craftsmanship in woodworking.

The Taunton Press Inc

Newtown, CT 06470

Phone: 203-426-8171

Fax: 203-426-3434

Email: [service@taunton.com](mailto:service@taunton.com)

#### The Small Wood Shop (The Best of Fine Woodworking)

Model: 1561580619

Author: Helen Albert (Editor)



Figure E



Figure F



Figure G



Figure H



Figure I

## **Woodworking Techniques: Best Methods for Building Furniture from Fine Woodworking**

Model: 1561583456

Author: Fine Woodworking Magazine

The Taunton Press Inc

Newtown, CT 06470

Phone: 203-426-8171

Fax: 203-426-3434

Email: [service@taunton.com](mailto:service@taunton.com)



Figure J

## **Mastering Woodworking Machines (Fine Woodworking Book)**

Model: 0942391985

Author: Mark Duginske

## **David Marks Website**

David Marks, DIY's *Wood Works* host, is a master woodworker. For more information on cut sizes and project details, please contact him via his Website at [www.djmarks.com](http://www.djmarks.com)

## **The Complete Book of Wood Joinery**

Model: 0806999500

Author: Richard J. Descistofofo

(1997)

Sterling Publishing Co. Inc.

New York, NY 10016

Phone: 212-532-7160

Fax: 800-542-7567

### **• ALSO IN THIS EPISODE:**

[Wooden Tool Chest -- Stock Preparation and Joinery Design](#)

[Wooden Tool Chest -- Cutting Dovetail Joinery on a Band Saw](#)

[Wooden Tool Chest -- Dados, Maple Panels and Assembly](#)

[Wooden Tool Chest -- Finishing Touches](#)