

Do It Yourself

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Wooden Tool Chest -- Dados, Maple Panels and Assembly

From "[Wood Works](#)"

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

Dados, Maple Panels and Assembly

With all of the dovetail joinery cut in the walnut-case stock (**figure A**), dados must be cut in the case for holding the maple panels in place. The panels themselves must also be fashioned from slices of maple. Once those steps are completed, assembly can begin.

Materials:

Walnut assembly pieces

Maple stock

Table router; spiral carbide-bit

Band saw

Drum sander

Hand scraper

Sanding block; 220-grit sandpaper

Dead-blow hammer

Yellow wood-glue

Slow-setting glue

Carpenter's pencil

Clamps

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.

Steps:

- To join the pieces of the case together, gently tap the pieces to drive the pins on the side-pieces into the tails on the front and



Figure A



Figure B



Figure C



Figure D

back. With the sides of the case dry-fit together, take an inside measurement for the top and bottom panels.

- Cut the through dados on the inside faces of the side-pieces (**figure B**) using the table router and 5/16-inch bit raised to 5/16-inch. Set the fence so that the dado misses the pin when the cut is made.
- To cut the dado on the front and back panels, stop-blocks will need to be set up since these are not through-dados. For these, the cuts must stop 3/8-inch from the outside edge (**figure C**).
- Set up a stop-block on the table router, and cut the dados using a spiral carbide-bit (**figure D**). This will produce a cleanly milled dado.
- The panels for the top and bottom of the chest are made by edge-gluing book-matched pieces of figured maple. Using curly-maple stock, mill four pieces to proper dimension using the band saw.
- Edge-glue the panel pieces together using yellow woodworker's glue, and clamp them securely as the glue dries (**figure E**).
- Once the panels are dry, run them through the drum sander to bring them to their final thickness of 5/16-inch (**figure F**).
- Using the measurements taken earlier, and adding the combined depths of the dados, cut the panels to size.

Note: To allow for wood movement and expansion, the pieces should be cut just shy of the final measurement.

- Before glue-up begins, sand the edges of the panel, and make sure they fit the dados perfectly.
- With all of the elements prepared and sized to final dimension (**figure G**), sand the inside faces, and add tape to the inside of the joints to make cleanup easy.
- Use slow-setting glue for assembly of the chest to permit longer working time. Apply glue to the pins (**figure H**) and tails.



Figure E



Figure F



Figure G



Figure H



Figure I

- To secure the top and bottom panels, brush glue only to about an inch of the center of the dado (**figure I**). This will be sufficient to hold the panels in place, but will still allow the wood to expand and contract. Too much glue in the dado could cause the wood to get "frozen" in place, and eventually crack or split.
- Assemble the pieces carefully, beginning with the maple panels in the dados (**figure J**).
- Attach the side pieces (**figure K**), followed by the top and bottom.
- Dovetails are a self-squaring joint, but a few taps of a dead-blow hammer will help bring the joints together firmly (**figure L**).
- Clamp the assembly securely, using long clamps and wood cawls (**figure M**) as the glue dries for 24 hours.



Figure J



Figure K



Figure L



Figure M

In the segment that follows, the lid is made and a wood finish is applied.

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RESOURCES:

Fine Woodworking

A magazine devoted to high-quality craftsmanship in woodworking.

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The Small Wood Shop (The Best of Fine Woodworking)

Model: 1561580619

Author: Helen Albert (Editor)

Woodworking Techniques: Best Methods for Building Furniture from Fine Woodworking

Model: 1561583456

Author: Fine Woodworking Magazine

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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

The Complete Book of Wood Joinery

Model: 0806999500

Author: Richard J. Descistofofo
(1997)

Sterling Publishing Co. Inc.

New York, NY 10016

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