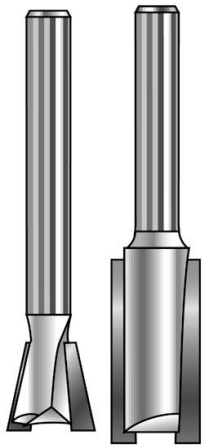
Dovetail Jig

The Pins & Tails Traditional Thru Dovetail Jig requires a simple, one-time setup and assembly. After this, boards to be dovetailed are clamped to the jig, router depth is set to match wood thickness, and dovetails are cut. The 3/4" plate cuts 3/4” wide tails, 1-1/2” on center, a good size for drawers. The 1" Template cuts 1” wide tails, 2” on center, a good size for chests. For 1/2”-7/8” stock.

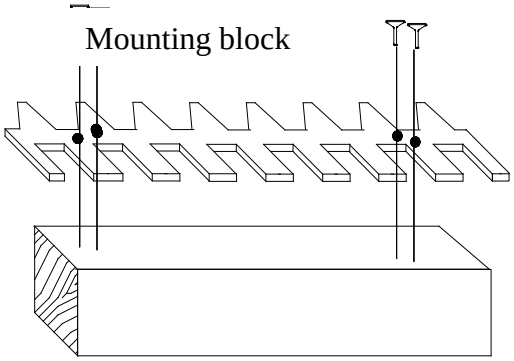
Setup for both templates is identical. In addition to the template you will need these items to get started:

- A 5/8” O.D. router guide bushing to fit your router base. If your router base does not accept template guide bushings, many router brands offer replacement bases as an accessory.
- **Note**: The bushing must not be thicker than the template to work with this jig.
- A mounting block for each template. It can be of any hard or softwood, and should measure 2-7/8” thick, 18” long, and 4” wide. Note that the templates are attached to the 2-7/8” edge of the block.
- Several test boards, about 6” square x 3/4” thick.
- 3/4" x 14 degree and 3/8" straight router bits



Mounting the Template to the Block:
Begin by attaching a template to the 2-7/8” width of the mounting block. Align the template on the mounting block so that the distance from the outside edge of the angled fingers to the surface of the mounting block is 1” on template 3/4" or larger and 3/4” on template 5/8" or smaller. The distance from the outside edge of straight fingers to the surface of the block should be 1-1/8”on template 3/4" or larger and 1” on template 5/8" or smaller. Use the slotted holes and #8 wood screws, centering the s crews in the slots, to start. After final adjustment you will drive screws permanently into the round holes in the templates to lock in the setting.

To install a Workbench Clamping Cleat to the Jig:
Cut a piece of stock 2-7/8” wide x 20” long x 3/4” thick. Using (4) 1-1/2” wood screws, attach the cleat to the bottom surface of the mounting block allowing 1-1/2” overhang past each end of the block. Using appropriate sized C clamps attach to any workbench edge, allowing the front surface of the mounting block to slightly overhang the edge of the workbench.



Making the Final Adjustment to the Template Position:
Final adjustment will be made by making a dovetail joint, and checking the fit. Set up your router with the 5/8” guide bushing and the 3/4”, 14 degree dovetail bit. Clamp a test board in a vise with the end grain pointing up. Using two clamps, clamp the test board, so that the end grain of the board is against the bottom of the aluminum template and

the face of the test board is clamped to the face of the mounting block. The straight fingers should be sticking out over the end of the test board, facing you.

To measure for proper router bit depth, lay a second test board up underneath the template and against the first board and draw a pencil line indicating the board thickness. Set the router on top of the template and adjust the router bit to this line. Make a test cut on the board, creating dovetails along the end of the board by feeding the router into the finger slots. Don't worry about the left-right adjustment at this point; it's easy to do this later.

Put the dovetailed board aside for the moment, and install the 3/8" diameter straight bit in your router (The same 5/8" guide bushing will be used). Clamp a second test board under the angled fingers of the template, the same way as you did before. Set the depth of the straight bit exactly like you did with the dovetail bit.

Cut the pins now by feeding the straight bit through the angled fingers. Remove this piece from the jig and try the fit with the first test board. By sliding the template forward and back in its slots, you loosen and tighten the fit of the joint (see the diagram below, right). The dovetail/pins cut (first cut) does not change; only the tails (second cut) are affected by moving the template.

In order to get equal spaced dovetails from the top and bottom edge, you should align the stock's edges so they are symmetrical under the fingers of the template. Making registration lines on the block will help in setting up your stock. The registration lines should be drawn at the outside edge of your stock. Use an engineer's square to transfer the registration line to the opposite face of the block. This is to insure the two pieces will match up evenly when all four pieces are assembled.

The dovetail pins and tails are cut basically the same. First clamp your stock to the face of the mounting block with the straight fingers. Install the 3/4", 14-degree dovetail bit and 5/8" guide bushing in your router. Cut the pins in the stock. Remove the stock from the jig. Next, mount your second piece of stock on the opposite face of the block, aligning the edge of it with the registration lines. Change to the 3/8" diameter straight bit and cut the tails. Remove the stock and do a dry test fit. Make any adjustments and when satisfied with the fit of the joint, make the position of the dovetail template permanent on the mounting block by installing screws into round holes. You can cut joints in boards that are longer than the templates by simply shifting them along the template using the last dovetail cut to align the template.