

## THIN PINS AND NARROW TAILS

### A Unique Feature of the AKEDA Jig

The AKEDA is the only dovetail jig that will allow you to form a row of variable spaced, repeatable, consistently sized thin pins on less than a 1" pitch in a layout that you can also duplicate at any time you choose.

### Nomenclature

You already know the difference between a pin and a tail.

An alternative way of thinking about pins and tails is to think instead of pin sockets and tail sockets. After all, you form tails in a "tail piece" by routing pin sockets, and you form pins in a "pin piece" by routing tail sockets.

The term "pitch" is often used to refer to the distance between the teeth on a gear. In the same way, we use the term "pitch" to refer to the distance between the pins on a dovetail joint, but not usually the tails.

These alternative terms are used in this document.

### Traditional Thin Pin Dovetails

If you take a close look at old furniture, particularly English furniture, you'll notice that the pins are often very thin, but quite wide apart.

No one knows quite why this became tradition, despite the fact that it's not necessarily the strongest way to dovetail a joint. Nevertheless, the thin pin "look" is generally regarded as elegant and thus it has become desirable. It is often the mark of a hand-made dovetail, which machines and dovetail templates cannot duplicate.

Variable pitch dovetail jigs, such as the Leigh and Porter Cable, cannot make these kinds of traditional dovetails. But the AKEDA jig can!

### Dovetail Jig Limitations

Dovetail jigs have limitations, but don't be too harsh on dovetail jig designers! These limitations exist for some very real physical reasons:

- The strength of materials,
- Guide finger minimum width to ensure mounting stability,
- Tail guide width,
- The manufacturing limits for narrow profile dovetail bits, and
- The smallest possible guide-bushing diameter that will allow the smallest possible router bit shank to go through it with sufficient clearance.

Assuming the thinnest router bit shank possible is 1/4", the smallest guide bushing has to be 7/16". The legs of the tail guides can't be much less than 1/4" for stiffness, so there you have it – a 7/8" or 1" wide tail guide. Virtually all dovetail jigs are limited by these same constraints, and therefore, most dovetail jigs have a pin pitch limit of 1" (or 25mm).

## Thin Pins

Why would I want to form thin pins? Most likely for the elegant look described above.

The "normal" size of the thick end of the pin on virtually all dovetail jigs is 1/2". On the AKEDA jig it's about .450", so it looks a little more like hand cut to start with. But you can do better.

The other choices of size of the thick end of the pin on the AKEDA jig (other than the standard .450") are .325" and .200". They are accomplished simply by shifting the pin guides incrementally. Here's how it's done.

Rout on one side of the pin guide only, move it over either one increment (to get .325" pins) or two increments (to get .200" pins), and then rout on the other side of the pin guide. You've just formed a thin pin! It sounds complicated in writing, but in practice it's straightforward.

The thin end of the pin will vary depending on the angle pin guide you use and the thickness of your stock. You'll need to cut some test joints first to find out what you get. Of course, you have a choice of five different angle pin guides to work with.

That was the easy part. Of course, there's a catch!

It's not possible to make a dovetail bit narrow enough to form a matching pin socket in the tailpiece, because it would be too weak. So, you guessed it, you will have to cut the pin sockets by hand. Use the previously formed pin board to layout the tails and use a fine-tooth dovetailing saw, coping saw and chisel, using the hand-cut technique you prefer. The result will be elegant thin pin dovetails in that special project.

Always cut a test joint first, before you form the dovetails on your finished stock.

## Narrow Tails

Why would I want to form narrower tails? Possibly for small boxes.

Because the guide fingers on the jig are 1" wide, you will have to install them one at a time. If you do that, you can get them closer than 1". If you are careful, you can get down to 5/8" pitch between the pins.

First form one pin with a single guide finger installed. Make sure to rout right up against the pin guide surfaces without wandering away. You'll understand why as you go to the next pin.

Now install the next pin guide on a pitch of 7/8", 3/4" or 5/8" and form the next pin. The straight bit will be very close to the first pin you formed, so take care not to touch it with the straight bit.

Repeat the procedure across the pin board, varying the spacing if you wish. Use a pencil to mark the pin guide finger position on the guide rail as you proceed.

Install the tailpiece, and using the pencil marks, install the tail guides one at a time, and rout out the pin sockets.

Always cut a test joint first, before you form the dovetails on your finished stock.

## The Challenge

Up for a real challenge? Try combining the above two procedures into one joint. Send us your images!

Discovered anything else unique about the AKEDA jig? Tell us about it!