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Tapered Dovetail Spline System Quick-Start Guide

System Components

- Tapered Dovetail Spline Router Jig – available in 12" and 18" sizes
- Brass Guide Bushings, one for each jig (compatible with Porter-Cable style baseplates)
- Tapered Dovetail Spline Table Saw Sled
- Dovetail router bits

Tapered Dovetail Spline Router Jig

The Dovetail Spline Jig is used to make a tapered dovetail slot that allows a tapered dovetail spline to lock in place eliminating potential gaps and creating a stronger joint.

The spline jig comes in two sizes:

The 12" Dovetail Spline Router Jig is compatible with dovetail router bits with a cutting diameter up to 5/8" and a cutting depth up to 7/8". **NOTE:** The 12" Jig cannot be used to create nested dovetails — use the 18" Jig instead.

The 18" Dovetail Spline Router Jig is compatible with dovetail router bits with a cutting diameter up to 1" and a cutting depth up to 7/8". **NOTE:** The 18" Jig is required for creating nested dovetails.

Setting Up the Dovetail Spline Router Jig

Mark out the desired centerline locations for the dovetail splines on the edges of your box. Draw lines at least 1-1/4" long from the corner of the box along the sides of the box parallel with the box top and bottom.

The spacing for splines using the 12" jig is 1" between centers. For the 18" jig, the spacing is 1-1/2" between centers. You can use different spacing for a custom look, but it will require repositioning the jig between cuts.

Secure the spline jig to the corner of the box with clamps and/or double-sided tape using the notches at the bottom of each opening to align the jig with your pencil lines. By repositioning the jig between cuts, these notches allow the jig to be used on long projects or for custom spacing of splines.

Install the appropriate brass guide bushing into the handheld router or router table insert. Use the 5/8"-dia. bushing for the 12" jig and the 1"-dia. bushing for the 18" jig.

Install the dovetail router bit in the router and ensure that the bit and guide bushing are centered.

NOTE: We recommend 14° or 18° dovetail bits as the effective angle of the bit will be reduced by roughly 22% due to cutting at 45° to the box.

When using the maximum diameter bit, it's possible that the bit will touch the sides of the jig if it's not perfectly centered in the baseplate or router table insert. While this will make a small cut in the jig it will not damage the bit and does not affect the performance of the jig.

Cut the spline grooves, being sure to follow the jig opening completely. The guide bushing should remain in contact with the router jig slot throughout the cut. Start by routing along the left edge of the slot then finish up by routing along the right edge. It is acceptable to make a second pass to insure the opening is routed completely.

Dovetail Spline Table Saw Sled

The dovetail Spline Sled is used at the tablesaw to make the tapered dovetail splines.

Table Saw Sled Assembly

1. Install the front and back rails to the sled base using eight #8 x 1-1/4" flathead screws.
2. Install the Zero Clearance Insert using the four #8-32 x 1/2" flathead screws.
3. Install the miter bar onto the bottom of the sled using the two M6 x 15mm flathead screws
4. Install the stop block using the 1/4-20 x 1-1/2" hex head bolt, washer and star knob.

NOTE: the Dovetail Spline Sled is designed to be compatible with table saws that fall within the following parameters:

Left Tilt Tablesaws with the left miter slot between 5-5/8" and 7-1/8" measured from the center of the miter slot to the arbor flange.

Right Tilt Tablesaws with the right miter slot between 5-5/8" and 7-1/8" measured from the center of the miter slot to the arbor flange.

Using the Table Saw Sled

To make splines, tilt the tablesaw blade to match the angle of the dovetail bit used to make the spline slots. If a 14° router bit was used, set the tablesaw blade to 14°.

Set the blade height to cut through the base of the spline sled and the spline blank and make a cut to create a zero-clearance cut in the sled. The spline blank should be roughly the same thickness as the cutting height of the router bit used to make the spline slot. Replacement Zero Clearance inserts are available to allow the use of different angle router bits.

NOTE: For the strongest splines, rip splines from offcuts so the grain will be oriented 90° to the joint line of your project. Spline blanks of roughly 8" wide or longer and 2-1/2" or longer are ideal.

Make an initial cut on the edge of the spline blank to create the proper angle for one edge of the spline. Flip the spline blank over and slide the blank against the stop. Position the stop to roughly the correct position to create the proper width spline and make a second cut. Test the fit of the spline and adjust the stop block until the spline fits snugly and is roughly centered in the spline slot.

Continue making splines with a cut/flip/cut operation until the desired number of splines are completed. Glue the splines in place, tapping the spline securely into the tapered slot for a gap free joint.

Once the glue is dry, trim the splines flush to the sides of the box or similar project. Our preferred method for trimming the splines to length is at the tablesaw using a spacer below the box and against the fence, trimming the spline to within 1/16" of the side of the project. Then flush trim the spline using a large diameter flush trim router bit like the Infinity 3/4" diameter 06-690.