

Jig and Fixture Tracks

1/4" T-Slot Track

5/16" T-Slot Track

3/4" Miter Slot Track

12K79.22, 12K79.24, 12K79.28

12K79.32, 12K79.34, 12K79.38

12K79.05, 12K79.06, 12K79.07

Usage

These aluminum extrusions are among the most useful for making jigs and fixtures. The 1/4" extrusion will fit into a standard 3/4" miter slot, the miter slot track, or a 3/8" x 3/4" dado. The 5/16" extrusion fits into a 7/16" x 7/8" dado. The outside surfaces are fluted to provide additional gluing area. The 3/4" miter slot extrusion is used primarily as a miter fence slot; it can be built into any surface by dadoing a 1/2" deep by 1" wide groove to accept it. It can be placed anywhere, but it should run all the way from one side of the workpiece, jig or table top to the other. All extrusions include a central V-groove for ease of drilling.

Installation

To install a track, you need only cut a dado of the appropriate width and depth. For small applications, the dado can be cut on a router table; for large applications, it can be cut on a table saw equipped with a dado stack or with a guided router.

For most applications, the top surface of the track should be flush with or slightly below the table or jig surface. This will prevent interference with mating jig features or workpieces. To achieve this, the dado should be ever so slightly deeper than the track thickness. Paper, plastic or brass shims can then be used to precisely adjust the height as required.

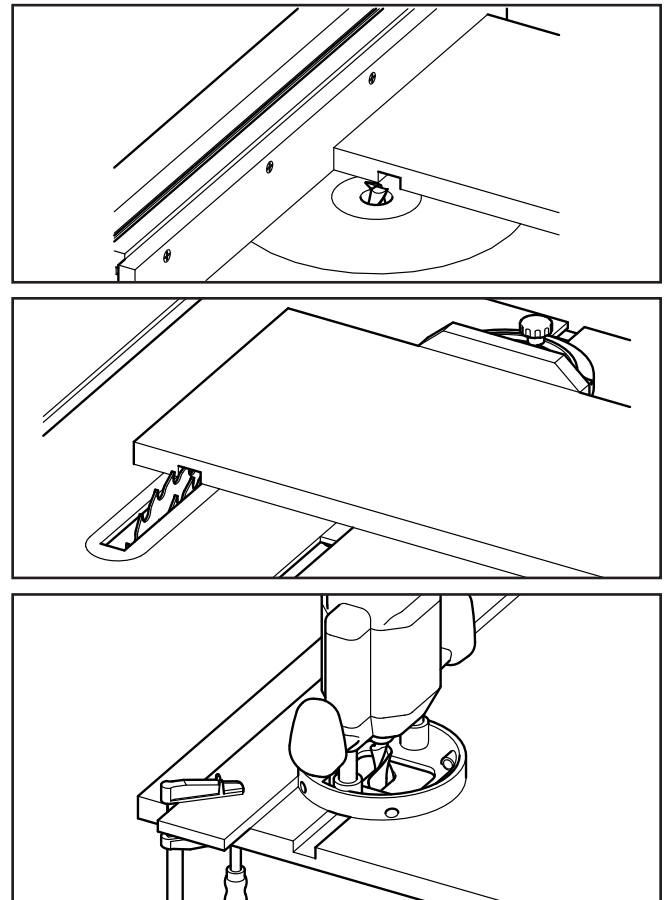
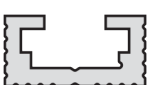


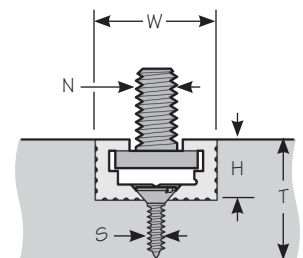


Figure 1: Dado cutting methods.

Table 1: Specifications

				
		1/4" T-Slot Track	5/16" T-Slot Track	3/4" Miter Slot Track
		12K79.22 12K79.24 12K79.28	12K79.32 12K79.34 12K79.38	12K79.05 12K79.06 12K79.07
Outer Width	W	3/4"	7/8"	1"
Outer Height	H	3/8"	7/16"	1/2"
Hardware Size	N	1/4"	5/16"	n/a
Screw Size	S	#6	#6	#6 or #8
Minimum Stock Thickness	T	3/4"	7/8"	1"



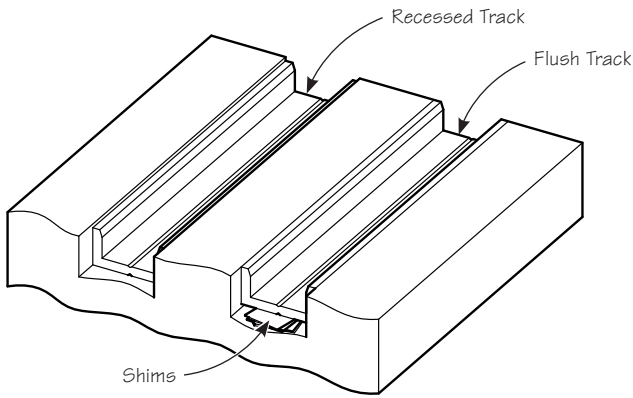


Figure 2: Shimming the miter slot track.

If you are routing the dado, it is recommended that it **not** be cut in a single pass, as this would be a very heavy cut. Instead, rout the dado in incremental depths, taking two or three passes.

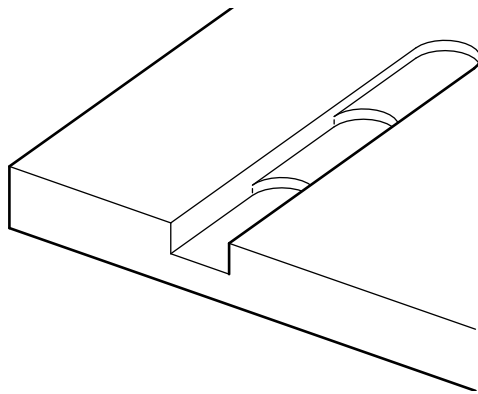


Figure 3: Routing in incremental depths.

Once the dado has been cut, but **before** breaking down the set-up, check the fit with a length of track. Another trimming pass may be required if the fit is too tight.

Cutting Aluminum Tracks

Aluminum track can be cut to length using a hacksaw or a bandsaw with a metal-cutting blade. The rough edges should then be deburred using a stationary belt sander, a flap wheel, or a file.

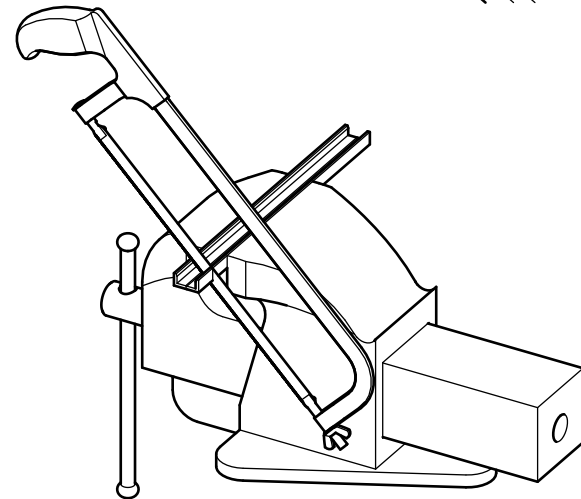
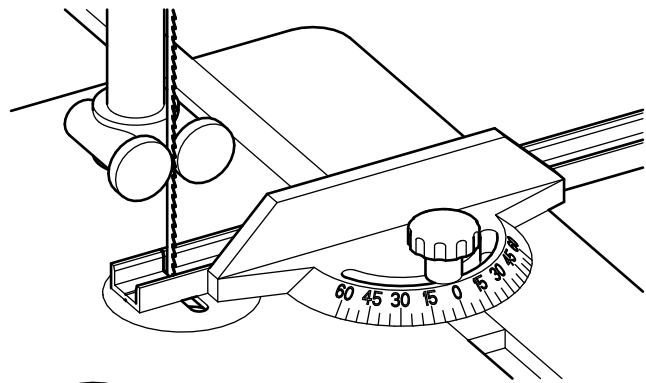


Figure 4: Cutting aluminum tracks.

Sealing the Dadoes

If your table or jig is made from particleboard, MDF or plywood, seal the dadoes, as well as any other exposed edges, before installing the tracks. Nearly any finish will work for this purpose, although penetrating finishes such as shellac and varnish are better than paint.

Gluing the Tracks

A glued-in track is guaranteed to stay exactly where it has been installed, due to the huge contact area between a track and the dado. While this is a good thing from a utility standpoint, it can be a disaster if, after the glue has cured, you discover that the track has lifted. As such, we recommend you secure the tracks with screws rather than with glue. Screws also allow the track to be reused.

Having said that, if you decide to glue the track in place, you can do so with cyanoacrylate or epoxy. If you are using epoxy, keep in mind that most epoxies have excellent gap-filling abilities. This can make it difficult to fully insert a track in a dado that has been routed to the perfect depth. As such, the dado should be slightly deeper than necessary.

Note: Water-based wood glues (e.g., PVA, yellow, 2002 GF glue) are not formulated to adhere to the aluminum track and can swell the table or jig material if it is not properly sealed.

To ensure that the **miter slot track** is glued in flush with the table or jig surface, use a long clamping block with a jointed face as shown in **Figure 5**. Place a layer of plastic wrap between the clamping block and table or jig surface to prevent the block from becoming unintentionally glued.

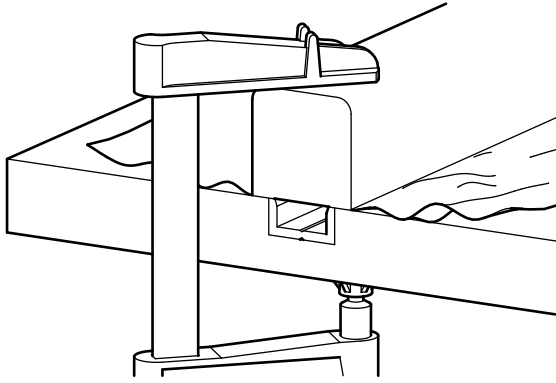


Figure 5: Miter slot track gluing block.

T-slot track may be glued using the method described above; however, better results are achieved if the inner Tee profile determines the depth of the track rather than the top outside surface. The T-slot track installation jig shown in **Figure 6** will ensure that the Tee is parallel to the table or jig surface. This will, in turn, allow jigs equipped with T-nuts or T-bolts to slide more freely as there will be no variation in the depth of the Tee.

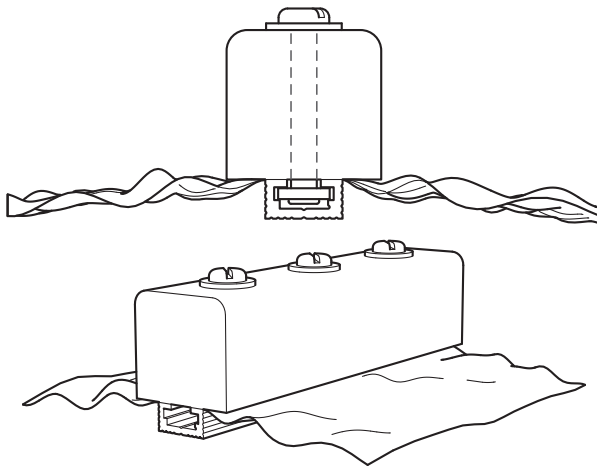


Figure 6: T-slot track installation jig made from a length of 2x2.

Joint the bottom face of a 2x2 flat, then secure the T-slot track to the 2x2 using at least three T-slot nuts with long machine screws. Place a layer of plastic wrap between the 2x2 and T-slot track to prevent the 2x2 from becoming unintentionally glued to the table top or jig. Including a thin shim (0.010" to 0.020") between the plastic wrap and T-slot track will ensure that the T-slot track is flush with or just slightly below the table surface.

Clamp the entire block to the table for as long as it takes for the glue to cure.

Attaching Tracks with Screws

There are three configurations that may be used for attaching tracks with screws, as shown in **Figure 7**:

1. Machine screws, washers and nuts (recommended).
2. Short wood screws (for stock at least double the thickness of the track; requires more screws).
3. Long wood screws into a backing block.

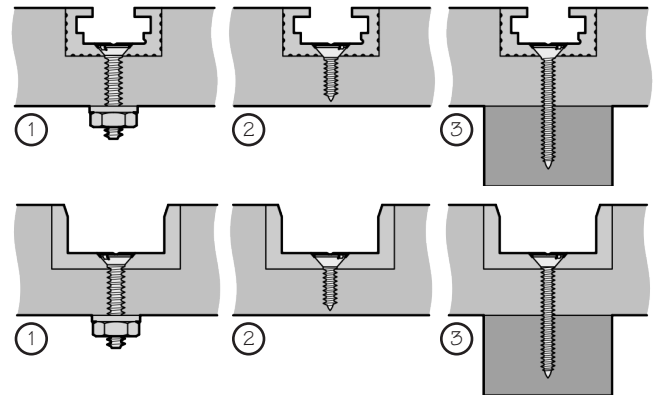


Figure 7: Track mounting options.

You will need the following tools and supplies:

- portable drill
- drill press (although a portable drill will do)
- 82° countersink (for the screw size listed the specification table)
- 3/16" or 5/32" drill bit (not brad point)
- mounting hardware (flat-head screws, washers, nuts)
- paper, plastic or brass shims (if required)
- flat object (e.g., try square) to check for catching points

If you are using wood screws, you will also need:

- 1/8" drill bit
- backing blocks (required only for the long screws)

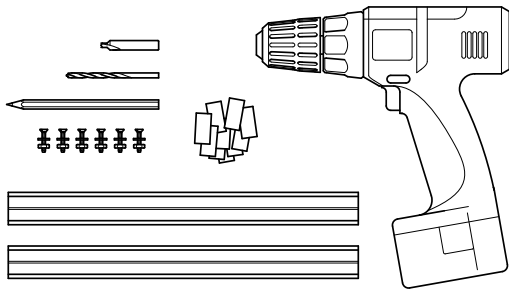


Figure 8: Tools required for track mounting.

1. Place your tracks in or beside the dadoes, upside down. Mark the screw locations on the bottom of each track, 3" to 5" apart and 1/2" away from any obstructions, as well as from either end. If you are using the short wood screws method, you will need to space the screws 2" to 3" apart.

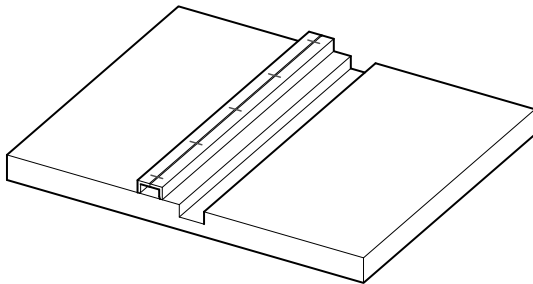


Figure 9: Marking the track mounting holes.

2. Install the 3/16" or 5/32" bit in the drill press and drill through the bottom of the track, aligning the bit with the groove. Do not worry about any blast out from the drill as the countersink will remove it.

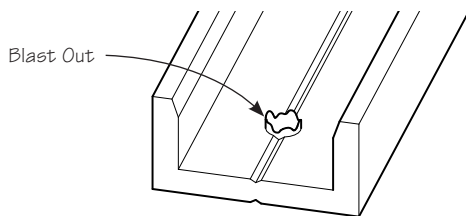


Figure 10: Drilling the holes in the track.

3. Turn the track right side up. Install the countersink bit in the drill press, and countersink the inside of each hole. Check that the head of the screw is flush with (or just below) the bottom surface of the track.

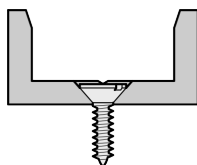


Figure 11: Countersink depth.

4. Place the tracks in their respective dadoes. If you are using the short wood screws method, install the 1/8" bit in the portable drill. For the other methods, use the 3/16" or 5/32" bit. Drill through the table or jig using the holes in the tracks as guides. Install the first screw to prevent the track from moving as the other holes are drilled.

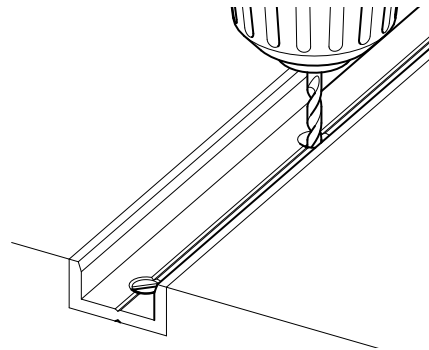


Figure 12: Drilling holes in the table or jig.

5. Remove the first screw as well as the track, and clean out any dust or wood chips. Replace the track. If required, shim up the track with layers of paper, plastic or brass shim stock. The shims should be placed between the screw mounting holes. As you shim, use an object with a square edge (e.g., try square) to check for catching points.

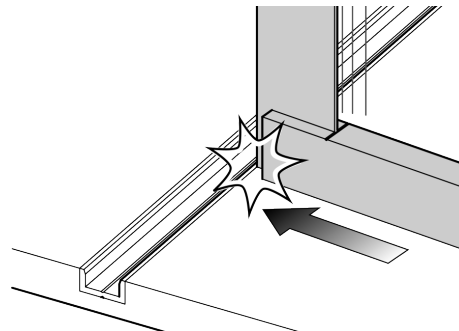


Figure 13: Checking for catching points.

6. Install the remaining hardware. If you are using the long wood screws method, you will need to make backing blocks into which to drive the screws. The blocks should be at least 1" wide by 1/2" thick and run the entire length of the track. Pilot holes for the screws will be required.

Table 2: Hole Sizes for Screws

	#6	#8
Clearance (for machine screws)	9/64"	11/64"
Hard Tap (pilot for hard woods)	1/8"	5/32"
Soft Tap (pilot for soft woods, MDF or particleboard)	3/32"	1/8"