T-Slot Router Bits

1/2″ Shank **16J60.71**
1/4″ Shank **16J60.72**
8 mm Shank **18J60.73**

Suitable for stock 1/2″ thick or greater.

Note: *Due to the nature of the T-slot router bit, the entire slot must be cut in a single pass. This is a very heavy cut, particularly in dense hardwoods. For this reason, the cut should be made with the router set to its highest possible speed. This will also help with dust ejection.*

The T-slot router bit can be used to create mounting slots for numerous applications in a variety of materials. For example, slots can be routed directly into part of a jig to provide adjustability, or a single slot can make a wooden T-track. Slots cut with the T-slot router bit are compatible with all Veritas® T-track accessories and T-nuts.

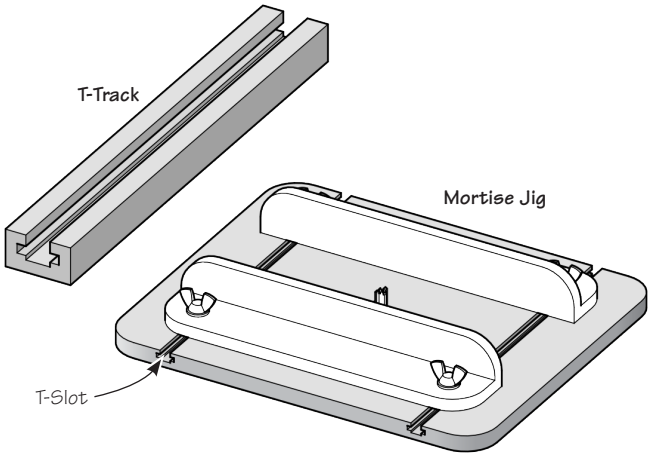

Figure 1: T-slot uses.

Making a T-Track

The T-slot router bit can be used to make wooden or plastic T-tracks that are the rough equivalent of aluminum T-tracks. A wooden T-track will need to have a larger outer profile in order to match the strength of an aluminum T-track.

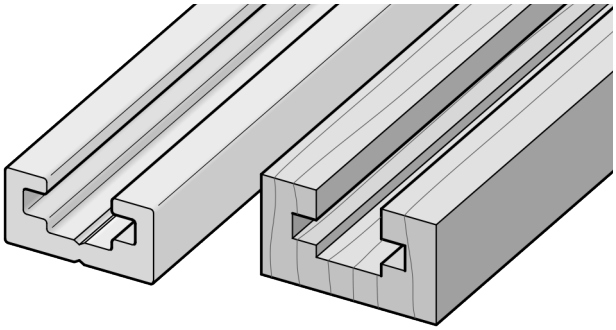

Figure 2: Aluminum vs. wooden T-track.

Routing a 0.26″ deep slot in 3/8″ × 3/4″ stock will produce T-track that is interchangeable with the Veritas® Aluminum T-Track. Stronger track can be made by increasing the cutting depth to 0.40″ and routing the slot in 1″ × 5/8″ stock. As shown in **Figure 3**, this results in a T-track with approximately the same material thickness on all wall sections (χ). The dimensions used can differ from those indicated, depending upon the application.

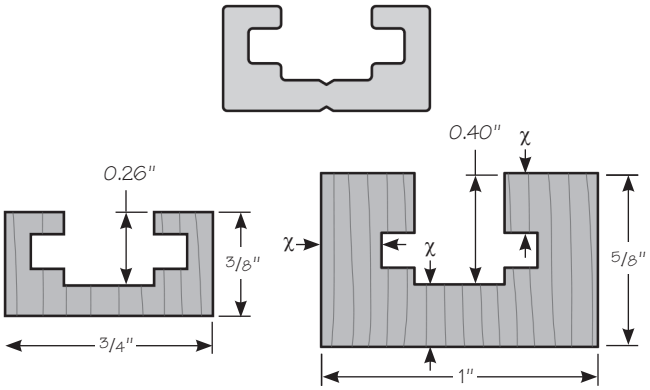

Figure 3: T-track dimensions.

The most suitable woods for T-track are non-porous hardwoods such as maple, birch and poplar. Ring-porous woods, such as oak, ash and hickory, should be avoided, as the layers are prone to delaminating. This same problem occurs with MDF, particleboard and plywood so these should be avoided as well. In the case of plywood, the layers can delaminate or shear off, depending on the grain direction. Soft plastics such as UHMW, as well as engineered plastics (e.g., nylon) can also be used to create a T-track. Brittle plastics such as acrylic, polystyrene and ABS should be avoided.

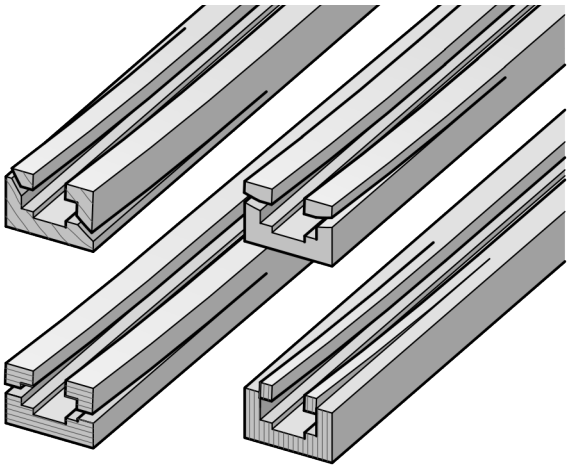

Figure 4: Various types of failure.

When preparing the stock to make wooden T-tracks, keep in mind the grain orientation. All woods are stronger in shear parallel to the grain than in tension perpendicular to the grain. The best material usage is achieved when the grain spans the thinnest wall section, as shown in **Figure 5**.

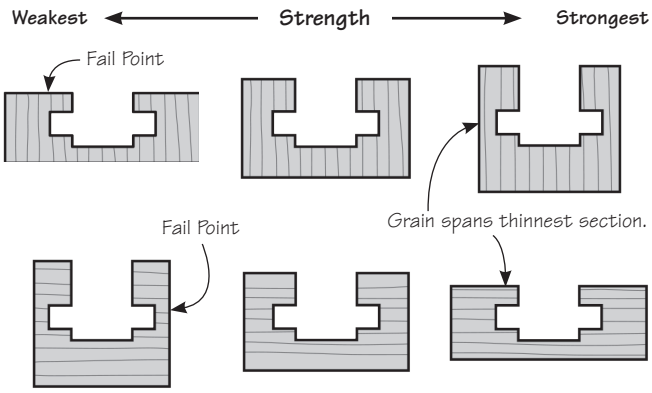

Figure 5: Grain orientation.

Since cutting a T-slot in small stock (e.g., 3/8″ × 3/4″) is unsafe, a better approach is to cut the T-slot in a larger piece of stock, then rip it to the appropriate size on the table saw. This can be done with the stock flat or upright, depending upon the required grain orientation (see **Figure 6**).

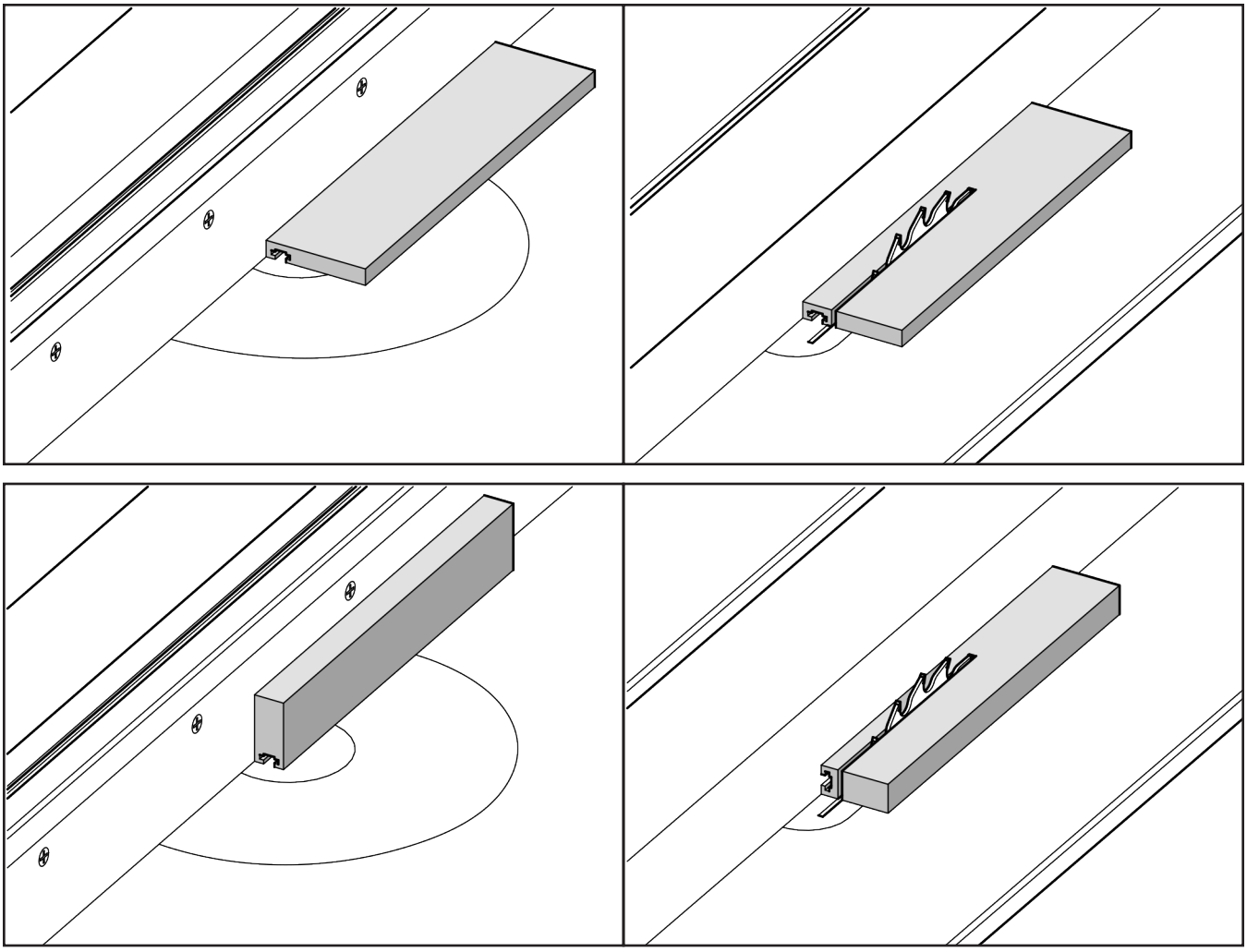

Figure 6: Cutting T-track.

For particularly dense hardwoods, such as maple, routing a T-slot in one pass is a very heavy cut. To prevent the possibility of burning and stall out, first remove most of the material with a 5/16″ or 1/4″ diameter straight cutter, then use the T-slot bit to finish the slot, as shown in **Figure 7**.

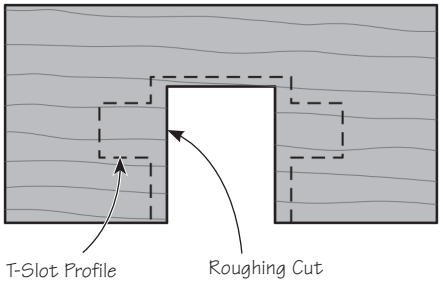

Figure 7: Creating a rough cut.

Variations

The T-slot bit is designed to cut a slot that accepts 0.1″ thick by 1/2″ wide T-nuts. By making several passes at different depths or offsets, you can cut a slot that accepts other sizes of T-nuts. T-nuts tend to vary in thickness and in width so a bit of trial and error will be required to determine which combination of settings produces the best fit.

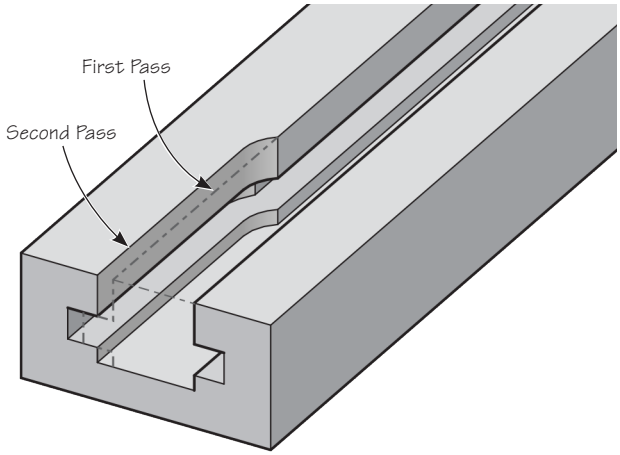

Figure 8: Cutting a T-slot in multiple passes.

A similar technique can be used to create T-slots for other types of fasteners, such as carriage bolts and hex- or square-head bolts.

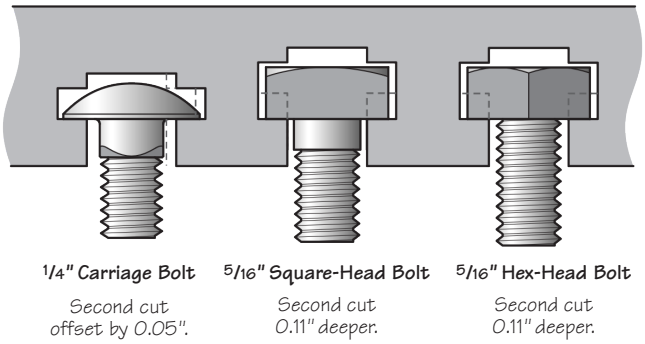

Figure 9: Cutting a T-slot for other fasteners.

Carriage bolts can be made to fit into a T-slot. Simply sand, file or grind off an opposing pair of flats, as shown in **Figure 10**.

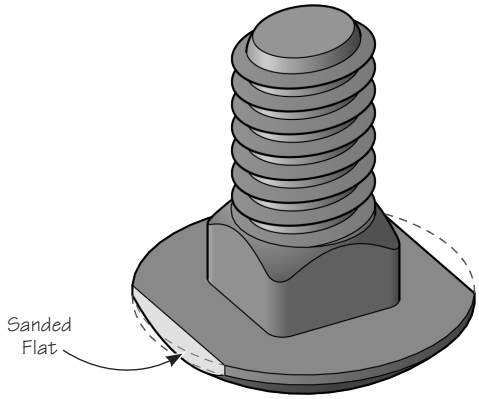

Figure 10: Modified carriage bolt.

In most applications, the ends of a T-slot will remain accessible for inserting and removing fasteners. However, in a few applications, where both ends are closed off, an access hole will need to be routed so that you can install the hardware.

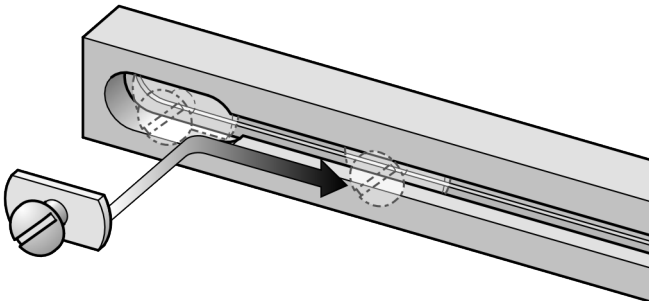

Figure 11: Using an access hole.

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