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The Basics

The Plunge Saw is ideally suited not only for “breaking down” sheet goods: plywood, MDF, Melamine coated particle board as well as other materials but also for making ready-for-glue-up parts free of splinters depending on your make of saw and the type of saw blade.

Woodworking comes with risks, so protect yourself:

- Read and follow the Instructions provided by the saw’s manufacturer and especially the instructions relating to safety and injury prevention;
- Practice your set-up and technique on low-cost disposable material before attempting to cut your project material.

Sequence of Cuts

1. **Rip** the longest edge of your material by trimming approx. ¼” (6mm) off the “mill edge” with your saw, using a Guide Rail overhanging the workpiece by at least 7” inches at each end.
2. **Parallel Rip Cut** opposite the first cut using a TSO Parallel Guide System designed to be compatible with FESTOOL, Makita and Kreg Plunge saws and other brands. If only one parallel cut is required, it can also be accomplished by using a hand-layout.
3. **Crosscuts** to square required parts to size.

Check Guide Rail(s)

Guide Rails are a very critical component for successful precision cutting.

The GRS-16 family of Guide Rails Squares are designed to work with FESTOOL Style extrusion profiles as well as KREG guide rails for use with the left hand KREG Plunge Saw.

Don’t assume they are straight and flat. Check your Guide Rails carefully anytime you encounter straightness- or squareness of cut problems. More on that further on.

Using GRC-12 Guide Rail Connectors

If two guide rails are joined end-to-end with GRC-12, verify they are in straight alignment immediately before starting the first cut. Until your technique is developed through practice, use a 48” or longer straight edge to verify guide rail straightness. A 4-foot STABILA® precision level will also work well.

Use the raised Guide Rail profile which guides the saw, as the reference for alignment check.

Compare two guide rails to verify rail straightness. The two rails, when placed spine-to-spine, should not exhibit any daylight between them.

GRS-16 vs. GRS-16 PE (or PE K)

The GRS-16 PE (and GRS-16 PE K) models can do everything the GRS-16 version can do – but not the other way around. The GRS-16 is completely capable of performing all squaring operations from the starting edge of the cut but it cannot be used for squaring from the far end of a sheet of material.

Plunge Cut Best Practices

- Be aware of your body position and stance while pushing the track saw to prevent any side loading of the saw or the guide rail.
- Ensure the dust collection hose and power cord follow you freely entire length of cut.
- Start the saw and plunge to selected depth before moving the blade into the material. Exit the cut completely before stopping the saw blade.

GRS-16 Troubleshooting Guide

GRS-16 Series Guide Rail Squares are literally “Born Square.” They are machined from one solid piece of aluminum in one precision machining set-up. Each tool is marked with a 3-digit lot code verifying conformity to extraordinary accuracy to ensure it cannot detract from the accuracy of your cut.

Everything else can and will contribute to expected dimensional variations – which are normal in woodworking.

User technique and skill level with plunge saw cutting is the most common cause of initial disappointment experienced by some users.

All other tools used in connection with plunge saw cuts can also contribute to less than “perfect” accuracy.

Patience, practice and persistence will carry the day in your craft!

5-Cut Method for Accuracy Check

View and perform this detailed user test-cut demonstration: <https://youtu.be/AmNyPvsfSCo>

1. If your cut is not square, determine if your set-up is square BEFORE making a saw cut.
2. Place the guide rail exactly where you intend to cut and mark the cut line with a marking knife. Make additional cut marks to create a triangle pattern resulting in a three-sided layout.
3. Measure the diagonal Hypotenuse of this triangle and determine its dimension.
4. Compare to the calculated dimension using a Pythagoras Calculator found via Google search.
5. If this Hypotenuse calculation is very close to the measured distance of your marking knife lay-out, then any observed out-of-square condition on earlier cuts implicates factor(s) other than the guide rail or guide rail square placement.
6. If the hypotenuse calculation shows an unacceptable variation, then the guide rail straightness or square placement is questionable.
7. Identify which of the above recommendations you did not follow exactly. This time follow all the instructions explicitly. If you are still not getting satisfactory results: Repeat and practice. Repeat and practice until your results consistently meet your realistic expectations.
8. Most problems are technique related. Only a very small number have been traced to guide rail product defects or handling damage after leaving the factory.

For further assistance: email us info@tsoproducts.com

This User Guide is available online for download with revision updates as they occur.

We welcome your comments or suggestions.