

Sliding Table Saw Riving Knife Thickness Selection Guide

1.0 Maintenance Objective & Frequency

The objective of this procedure is to ensure the correct riving knife thickness is selected and installed on a sliding table saw to match the saw blade kerf. Proper riving knife selection prevents kickback, reduces binding, and maintains safe operation. This check must be performed each time the saw blade is changed or at the start of each shift if multiple blade changes occur.

2.0 Lockout/Tagout (LOTO) & Safety

- **Electrical Isolation:** Disconnect the saw from the main power supply and apply a personal lockout tagout device to the disconnect switch.
- **Mechanical Isolation:** Ensure the saw blade has come to a complete stop and the arbor lock is engaged if required.
- **PPE:** Wear cut-resistant gloves (ANSI A4 or higher) when handling blades and riving knives. Safety glasses are mandatory.

3.0 Required Tools, Parts & Lubricants

- Digital caliper (0-150mm range, 0.01mm resolution) or micrometer (0-25mm range)
- Set of OEM riving knives for the specific saw model (various thicknesses: e.g., 2.0mm, 2.5mm, 3.0mm, 3.5mm)
- Hex key set (typically 4mm, 5mm, or 6mm for riving knife mounting bolts)
- Clean lint-free cloth
- Saw blade (to be installed)

4.0 Step-by-Step Maintenance Procedure

1. Remove the saw blade from the arbor following the manufacturer's procedure. Place the blade on a clean, flat surface with the teeth facing away from you.
2. Using the digital caliper or micrometer, measure the kerf width of the saw blade. Measure at three different points along the blade's circumference (avoiding carbide tips) and record the average. The kerf is the width of the cut made by the blade, typically 0.1-0.3mm wider than the blade body thickness.
3. Measure the body thickness of the saw blade (the plate thickness, not including the teeth). Use the caliper to measure at three points near the arbor hole and average the readings.
4. Select the riving knife thickness: The riving knife must be thicker than the blade body but thinner than the kerf. A general rule is: riving knife thickness = blade body thickness + 0.2mm to 0.5mm, but never exceeding the kerf width. Refer to the saw manufacturer's chart for exact specifications.
5. Using the caliper, measure the thickness of the candidate riving knife at three points along its length (top, middle, bottom) and average the readings. Ensure the knife is not bent or warped by checking for flatness on a known flat surface.
6. If the measured riving knife thickness falls within the acceptable range (greater than blade body thickness and less than kerf width), proceed. If not, select a different knife from the set and repeat step 5.

7. Clean the mounting surfaces of the riving knife and the saw's riving knife bracket with a lint-free cloth to remove any sawdust or debris.
8. Install the selected riving knife onto the saw's bracket. Align the mounting holes and insert the bolts. Tighten the bolts to the manufacturer's specified torque (typically 8-12 Nm for M6 bolts, check manual). Use a torque wrench if available.
9. Verify the riving knife alignment: The knife should be in the same plane as the blade and centered relative to the blade's kerf. Use a straightedge or a combination square to check that the knife is parallel to the blade's plane. Adjust if necessary by loosening bolts and repositioning.
10. Reinstall the saw blade onto the arbor. Tighten the arbor nut to the manufacturer's torque specification (typically 30-50 Nm for a 10-inch blade). Ensure the blade rotates freely by hand.

5.0 Verification & Return to Service

1. Remove the lockout/tagout device and restore power to the saw.
2. Perform a dry run: With the saw unplugged (or using the emergency stop), manually rotate the blade through one full revolution to ensure the riving knife does not contact the blade teeth or body. Listen for any scraping sounds.
3. Conduct a test cut on a scrap piece of wood (e.g., 2x4) at normal feed rate. Observe that the wood passes smoothly through the blade without binding or kickback. The cut should be clean and the riving knife should follow the kerf without resistance.
4. Inspect the riving knife after the test cut for any signs of scoring or damage. If damage is present, replace the knife and re-verify.
5. Document the blade change and riving knife selection in the maintenance log or ServiceGrid work order. Record the blade kerf, body thickness, and riving knife thickness used.

Regulatory Disclaimer: This document is a generic maintenance template provided for educational and informational purposes only. It does not constitute professional engineering or reliability advice. The end-user assumes all liability for validating all step sequences, torque specs, and LOTO protocols against specific machinery OEM manuals before deployment to a live production floor.