
Sliding Table Saw Parallel Fence Alignment to Blade

1.0 Maintenance Objective & Frequency

The objective of this procedure is to calibrate the sliding table saw's parallel fence so that it is exactly parallel to the saw blade within 0.005 inches (0.127 mm) over the full length of travel. Proper alignment prevents binding, reduces kickback risk, ensures accurate rip cuts, and minimizes premature blade wear. This PM is required after any fence impact, blade change, or as part of a quarterly maintenance schedule.

2.0 Lockout/Tagout (LOTO) & Safety

- **Electrical Isolation:** Disconnect the main power supply to the saw and apply a personal lockout tagout device on the disconnect switch.
- **Mechanical Isolation:** Ensure the blade is fully retracted below the table surface and the blade guard is locked in the raised position.
- **PPE:** Wear safety glasses, cut-resistant gloves, and hearing protection. Remove loose clothing and jewelry.
- **Area Safety:** Clear the work area of debris, offcuts, and tools. Ensure the floor is dry and free of trip hazards.

3.0 Required Tools, Parts & Lubricants

- Precision straightedge (at least 36 inches long, ground edge)
- Dial indicator with magnetic base (0.001 inch resolution)
- Feeler gauge set (0.0015 to 0.010 inch range)
- Combination square with 12-inch rule
- Open-end wrench set (metric and imperial, typically 10mm, 13mm, 1/2 inch)
- Torque wrench (range 10-50 Nm)
- Non-marring mallet or dead-blow hammer
- Clean lint-free rags and isopropyl alcohol (99%)
- PTFE-based dry lubricant spray (for fence rails)

4.0 Step-by-Step Maintenance Procedure

1. Perform LOTO as per Section 2.0. Verify zero energy state by attempting to start the saw.
2. Remove the blade guard, riving knife, and any throat plate inserts. Clean the table surface thoroughly with isopropyl alcohol and a lint-free rag.
3. Install a sharp, full-kerf combination blade (or the blade type typically used for ripping). Torque the arbor nut to the manufacturer's specification (typically 25-35 Nm).
4. Raise the blade to its maximum height above the table. Use the combination square to verify the blade is perpendicular to the table (90 degrees). Adjust if necessary per the saw's tilt mechanism manual.

5. Slide the parallel fence to approximately 6 inches from the blade. Lock the fence handle firmly.
6. Place the precision straightedge against the fence face, spanning from the front of the fence to the back. Use the dial indicator with magnetic base on the table, with the plunger contacting the straightedge near the front of the fence. Zero the dial.
7. Slide the dial indicator base to the rear of the fence (keeping the plunger on the straightedge). Read the dial indicator. The difference between front and rear readings must be ≤ 0.005 inches. If not, proceed to step 8.
8. Loosen the fence mounting bolts (typically two or four bolts accessible from the top or side of the fence carriage) using the appropriate wrench. Do not remove them completely.
9. Gently tap the fence at the rear using the non-marring mallet to adjust its angle relative to the blade. Re-check the dial indicator reading. Repeat until the front-to-rear difference is ≤ 0.005 inches.
10. Tighten the fence mounting bolts to the manufacturer's torque specification (typically 20-30 Nm) using the torque wrench. Re-check the alignment immediately after tightening to ensure it did not shift.
11. Slide the fence to the full extent of its travel (front and back) and re-check parallelism at three positions: near the blade, mid-travel, and full extension. All readings must be within 0.005 inches.
12. Apply a thin film of PTFE dry lubricant to the fence guide rails. Wipe off any excess. Reinstall the throat plate, riving knife, and blade guard.

5.0 Verification & Return to Service

1. Remove LOTO and restore power to the saw.
2. Perform a test cut on a piece of scrap material (at least 24 inches long). Set the fence to 4 inches, make a rip cut, and measure the width at both ends with calipers. The difference must be ≤ 0.010 inches.
3. Check for any unusual vibration, binding, or noise during the test cut. If present, re-inspect the fence lock mechanism and guide rails for debris or damage.
4. Document the alignment readings (front, mid, rear) and the test cut results in the maintenance log or ServiceGrid work order.
5. Sign off on the PM work order in ServiceGrid, confirming the fence is within specification and the machine is safe for production use.

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.