

How We Solved a Recurring Webbing Misalignment on a Cross-Lapper

ReThink Manufacturing · Evidence-led manufacturing improvement

Summary: A nonwoven producer had been running the same cross-lapper for years with no issues. The webs had begun drifting — half a degree at first, then a full degree, then enough to misalign the lap every shift. Operators reset the alignment at the start of each run, and the fault returned within hours. The drift was small, repeatable, and quietly costing production time.

The usual suspects all looked plausible on inspection: web-stock tension, edge alignment at the feed rollers, operator loading at the input. None of them correlated with the drift when the machine was watched over several shifts.

I was asked to find the real cause and stop the fault from coming back.

Problem: The main drive pulley had drifted approximately 1.5 mm off-true after a bearing change six months earlier. Static inspection did not show it — the pulley looked aligned, the bolts were torque-checked, and the belt sat within tension specification. Under load, with the bearing warm from a full run, the misalignment became visible and large enough to push the web half a degree for every metre of travel through the lap. The bearing swap itself had not been wrong, but the re-convergence around it left a small residual geometry on the machine that nobody had re-checked once the new bearing had settled.

Approach: I observed a complete run from raw web through the lap and onto the downstream feed, returning for two more shifts so the cycle could be watched under normal operating conditions. I captured the drift on video at the lap edge across each shift. Web-stock tension at the creel, edge alignment of the feed rollers, and operator loading were each checked and ruled out — none of them correlated with the drift when the machine was watched over time.

The pillow-block was re-shimmed and the drive pulley re-aligned to less than 0.3 mm of total runout, measured hot after a full warm-up run. A short visual-check cadence was added at the start of every shift for the first month; once the new alignment held consistently, the cadence was relaxed to a weekly check folded into the routine maintenance walk. No replacement parts were required.

Outcome: The webbing misalignment fault stopped appearing. The lap returned to consistent alignment across shifts, the day-start reset disappeared from the routine, and production time lost to drift recovered immediately. The investigation took less than a day on the floor and the engineering change took an afternoon. The same class of fault has not re-occurred in the 14 months since.