

Maintenance Log Entry

- **Date:** 2025-02-04
 - **Technician:** Jamie R.
 - **Machine Type:** CNC Lathe (Model: LT-200)
 - **Failure Type:** Tool Wear Failure
 - **Error Code:** TWF-007
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Symptoms:

- Noticeable degradation in part surface finish.
 - Increased vibration and occasional tool chatter during cutting.
 - Slightly elevated spindle noise.
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Diagnostic Steps:

1. **Visual Inspection:** Examined the cutting tool and confirmed significant wear on the edges.
 2. **Sensor Review:** Analyzed vibration data which correlated with the wear signs.
 3. **Coolant Check:** Verified coolant flow; confirmed it was within normal parameters.
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Final Resolution:

- **Tool Replacement:** Removed the worn tool and installed a new, calibrated cutting tool.
 - **Parameter Adjustment:** Fine-tuned spindle speed and feed rates for optimal performance.
 - **System Reset:** Cleared error TWF-007 and conducted a brief test run to confirm stability.
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Recommendations:

- **Regular Inspections:** Implement visual tool inspections every 30 operational hours.
 - **Vibration Monitoring:** Continue tracking vibration data to detect early signs of wear.
 - **Usage Logs:** Maintain a log of tool usage hours to anticipate and schedule timely replacements.
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End of Log Entry