

Cutting Tool Life Tracker

How-to guide: what the workbook does, how to use it and what every number means.

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Log every edge and tool change with the parts it made and why it came off, and see life achieved, early failures and tool cost per part by tool and machine.

For: CNC shop leads, manufacturing and process engineers, tool crib managers and machine-shop owners.

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Quick start

1. On Setup, type your shop name, currency and targets, then replace the example machines, tools (price, edges or regrind lives, standard life) and change reasons.
2. On Tool Change Log, add one row each time an edge is indexed or a tool is changed: date, machine, tool, part number, parts made on that life and the reason.
3. Read the Check column: anything other than OK names the problem in words.
4. Open the Dashboard and use the machine and date filters to look at one machine or one week.
5. Start with the tools at the top of the early-change Pareto and the lowest life achieved.

What is in the workbook

Start Here	Read this first: what the workbook does and how to use it.
Setup	Your plant, currency, targets and the dropdown lists.
Tool Change Log	One row each time an edge is indexed or a tool is changed: parts made on that life and why it came off.
Dashboard	Life achieved against standard, early tool changes and their cost, for the machine and dates you choose.
Method	How every number is calculated, with assumptions, limits and sources.
Verify	Self-check: the workbook's formulas recomputed on fixed inputs against an independent reference.

What each number means

Quantity	How it is calculated	Units
Cost per life (Setup)	$(\text{Price} + \text{regrind cost} \times (\text{lives per tool} - 1)) / \text{lives per tool}$. An insert with 4 edges and no regrinds: price / 4.	currency/life
Standard cost per part (Setup)	Cost per life / standard life: the tool cost of one part when every life reaches its standard.	currency/part

Quantity	How it is calculated	Units
Standard life, life cost, category	Looked up from the Tools and Reasons lists on Setup by tool ID and reason (INDEX/MATCH).	parts, currency, -
Life achieved	Parts made / standard life for one row. Over several rows: sum of parts made / sum of standard lives, so long and short lives weigh by their parts.	%
Cost per part	Life cost / parts made for one row; over several rows, sum of life costs / sum of parts made for the same tool. Not added across tools: a part cut by four tools carries four tools' costs.	currency/part
Standard cost	Parts made x life cost / standard life: what the parts made would have cost at the standard life.	currency
Tool spend	Sum of life costs of the changes in view: each logged change uses up one life.	currency
Spend above standard (est.)	Tool spend - standard cost. Positive when lives end early, negative when they run past the standard. Tool cost only; it leaves out machine time, scrap and set-up.	currency
Premature failure share	Changes whose reason is in the Premature failure category (chipping, breakage, crash) / all changes in view.	%
Early changes	Changes whose reason is not in the Planned category, counted per reason and ranked largest first (Pareto by COUNTIF ranks, ties keep list order; helper columns AO:AQ on the Dashboard are hidden).	changes
Dashboard roll-ups	SUMIFS and COUNTIFS over the log restricted to rows whose View date is filled in (inside the machine and date filters).	-

Assumptions, limitations, sources and the self-check (the Verify sheet, which recomputes the workbook's formulas on fixed test inputs) are in the workbook. The last page shows the Dashboard with the example data for Kestrel Precision Machining, a fictional business.

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Machine

From

To

Showing 116 tool changes. Leave the filters blank to include everything; dates are inclusive. Money in USD.

LIFE ACHIEVED (OF STANDARD)	PREMATURE FAILURES (OF CHANGES)	TOOL SPEND (USD)	SPEND ABOVE STANDARD (USD, EST.)
88.0%	16.4%	1,812	154
Target 90.0%	Limit 10.0%	Cost of every life used up in view	Tool spend - standard cost of the parts made
Near target	Above target		

