

Buy on cost per part. Not on tool price.

Cutting tools are one of the four largest cost lines in a CNC shop — and the least measured. Tool-life monitoring counts every part on every tool automatically, so you replace tools on time, avoid scrap, protect the spindle, and finally know what each tool really costs you.

The cheapest tool is not necessarily the one with the lowest cost per part.

THE PROBLEM

Tool life lives in a spreadsheet — or in the operator's head.

01

Replaced too late — or too early

Too late means scrap, rework and a damaged spindle. Too early means money in the bin. Without a count, both happen every week.

02

Which tool is actually cheaper?

The tool price is on the invoice. The cost per part — tool price divided by the parts it really made — is nowhere.

03

Inventory guessed, not forecast

Shortages stop machines; excess ties up cash. Nobody has the usage history to plan from.

Tool price

what purchasing sees



Parts the tool really made

what nobody counts today

= Cost per part — the one number that settles the argument.

WHY IT MATTERS

The count is the proof. The proof is the decision.

Every tool decision — when to change, which supplier, which alternative, how much to stock — rests on one number nobody has: how many good parts each tool actually made. Guessed from sound and feel, the number is wrong in both directions. Counted by the machine, it becomes a fact that purchasing, production and the supplier can all agree on.

The count also changes the conversation with the tool maker. An improvement claim — longer life, faster cycle, better finish — is tested on your machines, on your parts, with your numbers. The tool that wins on cost per part is the one you keep, whatever its price on the invoice.



THE PAYBACK

Ten ways tool-life monitoring pays back.

Each one is a cost you already carry today, unmeasured. The count from the machine makes it visible — and recoverable.

01 Replace on time

The alert arrives before end of life, so the change happens at a planned stop — not mid-cut, not at 3 a.m.

02 Avoid scrap and rework

A dull tool drifts parts out of tolerance long before it breaks. Counted life catches it before the first bad part.

03 Protect the spindle

A broken tool in the cut is a damaged spindle and days of downtime. Timely changes are the cheapest spindle insurance.

04 Stop early changes

Tools thrown away at 60% of life are money in the bin. The count lets you run each tool to its real life.

05 Know the cost per part

Tool price divided by parts really made — by tool, job, machine and supplier. The number purchasing never had.

06 Compare tools and suppliers

Two alternatives on the same job: which one made more parts? Decide on evidence from your own floor.

07 Negotiate with data

Supplier claims are tested on your machines. The next price discussion starts from your numbers, not theirs.

08 Forecast consumption

Real usage history per tool and part turns inventory from gut feel into a plan: fewer shortages, less cash on the shelf.

09 Manage repair and regrind

Regrind cycles are tracked per tool ID, so you know when a tool has earned its keep and when it has not.

10 Prove every improvement

Cycle-time and tool-life gains are measured on production data — the proof each improvement cycle needs to stick.

WHY COST PER PART — OUR STORY

The tool price became irrelevant.

Twenty-five years ago, as an application engineer at one of the world's leading cutting-tool makers, I broke into a market held 100% by a local competitor selling at a third of our price. We won it with tests, not price: our tools cut cycle times by 70% and the site's throughput tripled. Years later the competition caught up, and the real fight began — convincing purchasers to evaluate tools on cost per part. Every improvement cycle needed proof. That proof is what Tool Life Monitoring produces: automatically, on every tool, every day.

Matti Tiano · Industry Expert, Visual Factories

-70%

cycle time with the right tool, proven in production

3×

throughput at the same site within six months

3-year

improvement cycles needed to keep the business

1

number that settles the argument: cost per part

HOW THE COUNT HAPPENS

Two ways in for the tool. One way in for the count.

1 · MANUAL INPUT

Log the change at the machine

Operator or setter records the change at the kiosk or tablet: machine, catalogue number, tool ID, standard life, PIN. Ten seconds.

2 · AUTOMATIC

Event from your tool system

A scheduled task reads a simple event file — machine, time, catalogue number, standard life — from your tool-management or presetter software.

TOOL SET · PER PART NUMBER

The right tools come with the part

Each part number carries its tool set — catalogue numbers and IDs — from the ERP gateway or a csv/xls export of warehouse stock. The setter selects the IDs he mounts.

COUNT · FROM THE MACHINE

Parts counted from the signals

An IoT device the electrician installs in under an hour; the Universal Adapter in the cloud does the rest. Every cycle adds to the tool's life.

REAL-TIME MONITOR

Active tools, live, per machine

MACHINE	PART	OP.	TOOL ID	LIFE	LIMIT	USAGE %
CNC-02	P-6208	20	A-1187	4,926	5,000	98.5
CNC-05	P-3312	40	A-2031	5,961	6,024	98.9
CNC-05	P-3312	40	A-2044	5,961	6,024	98.9
CNC-07	P-5540	10	A-3306	9,527	10,000	95.3
CNC-07	P-5540	10	A-3311	9,527	10,000	95.3
CNC-11	P-1170	30	A-4102	2,760	3,000	92.0

Machine, workpiece, operation, tool ID, actual life against its limit and usage % — for every tool currently in a spindle. Tools are monitored by their ID. Illustrative data.

ALERTS & REPORTS

Warned before end of life. Reported every morning.

Alert · floor monitor and phone

Tool life 92% — replace at next stop

CNC-02 · P-6208 · Op 20 · Tool A-1187 · 2,760 / 3,000 parts · ETA 41 min

Daily PDF · 06:00

Every change, early and late — and cost per part by tool

14 tools changed · 2 early · 1 over life. Analytics on demand: wear rates by tool and application, alternatives compared on the same job, consumption forecast from real history.

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