



# CNC Machine ROI & TCO Decision Pack 2026

Professional workbook for machine cost, maintenance risk, 5-year TCO, payback, capacity, quoting impact, and approval assumptions.

| SAMPLE PREVIEW | CNC ROI | 5-Year TCO | Maintenance Risk |
|----------------|---------|------------|------------------|
|----------------|---------|------------|------------------|

- Evaluate machine acquisition cost beyond the quote price.
- Model 5-year ownership cost and cost per productive hour.
- Estimate preventive maintenance, downtime, MTBF/MTTR, and service-contract risk.
- Audit ROI, payback, capacity gain, cycle-time, quoting, and approval assumptions.

Built for job shop owners, manufacturing engineers, plant managers, buyers, procurement teams, and CNC newcomers preparing a capital decision.

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# Inside the Full Workbook

This preview shows the product structure and calculation style. The complete PDF includes the full 12-section workbook, seven worked examples, sensitivity tables, approval language, and printable checklists.

| Full Workbook Area            | What It Helps You Decide                                                                                                            |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Machine cost baseline         | Whether the quoted machine price is missing installation, tooling, software, training, or ramp-up cost.                             |
| 5-year TCO                    | What the machine costs per productive hour under conservative, expected, and aggressive utilization.                                |
| Maintenance and downtime risk | How preventive maintenance, MTBF, MTTR, repair reserve, and service contract terms affect the decision.                             |
| ROI and payback               | Whether the investment works from documented savings, outsourcing elimination, backlog, downtime reduction, or quality improvement. |
| Quoting and cycle time        | Whether a faster machine actually improves quote margin, capacity, or per-piece cost.                                               |
| Approval summary              | How to present the decision to owners, finance, procurement, or plant leadership.                                                   |

**Target reader:** job shop owners, manufacturing engineers, plant managers, buyers, procurement teams, and CNC newcomers preparing a capital decision.

# Sample Worksheet Page

## Cost per Productive Hour

This is one of the core calculations in the full workbook. It turns 5-year ownership cost into an hourly cost floor that can be compared against utilization, quoting rate, and capacity assumptions.

Cost per Productive Hour = 5-Year TCO / (Annual Available Hours x Utilization x 5)

| Utilization | 5-Year Productive Hours | Cost per Productive Hour |
|-------------|-------------------------|--------------------------|
| 55%         | 5,225 hrs               | \$45.93/hr               |
| 70%         | 6,650 hrs               | \$36.09/hr               |
| 85%         | 8,075 hrs               | \$29.72/hr               |

**Decision Rule:** If cost per productive hour is higher than your realistic billing rate at conservative utilization, the machine does not cover itself under the conservative case.

## Payback Stress Test

| Case                            | TAC       | Annual Net Benefit | Payback  |
|---------------------------------|-----------|--------------------|----------|
| Original expected case          | \$180,000 | \$72,000           | 2.5 yrs  |
| TAC increases 10%               | \$198,000 | \$72,000           | 2.75 yrs |
| Benefit drops 20%               | \$180,000 | \$57,600           | 3.13 yrs |
| TAC up 10% and benefit down 20% | \$198,000 | \$57,600           | 3.44 yrs |

If the decision still works after a stress test, it is more likely to survive real shop conditions.