Formula 1

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Formula 2

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Formula 3

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Related Content

Title	Type	Slug
CNC Machining Optimization - Complete Guide	main_page	cnc-machining-optimization-guide
CNC Machining Optimization - Complete Guide	hub	cnc-machining-optimization-complete-guide
CNC Optimization Parameter Matrix (Aluminum/Ti/Inconel/Steel)	resource	cnc-parameter-matrix
GD&T Warpage Compensation Checklist	resource	gd-t-warpage-compensation-checklist
CNC Machine Rigidity Mapping Template (Excel + MATLAB script)	resource	machine-rigidity-mapping-template

Detailed Explanation

Yield loss cost attribution addresses the challenge of moving beyond simple yield percentage calculations (e.g., First Pass Yield or Final Yield) to assign *monetary value* to quality failures. Scrap represents material discarded without recovery; rework involves corrective labor and resources to bring non-conforming units into specification; downgrade refers to dispositioning product at lower grade or price due to partial nonconformance. Accurate attribution requires tracing each loss event to its originating process step, identifying associated resource consumption (e.g., raw materials consumed but not sold, machine time spent on rework), and applying consistent costing methodologies—often activity-based costing (ABC) or standard cost modeling. The guide prescribes rules for distinguishing avoidable vs. unavoidable losses, handling shared overhead allocation (e.g., using driver-based apportionment like machine-hours or labor-minutes), and adjusting for recovery value (e.g., scrap salvage credits). Practically, it supports cross-functional decision-making: engineering uses it to prioritize process improvements, finance validates cost-of-quality (COQ) reporting, and operations benchmarks line efficiency against true economic impact—not just throughput. Integration with MES (Manufacturing Execution Systems) and ERP data streams ensures traceability from defect detection to cost posting, enabling real-time loss visibility and predictive analytics for yield risk mitigation.

Key Components

#	Component
1	Loss Classification Framework (Scrap/Rework/Downgrade Taxonomy)
2	Cost Driver Mapping (Labor, Material, Overhead, Opportunity Cost)
3	Attribution Logic Rules (Step-Level, Cause-Based, Time-Phased Allocation)

Applications

#	Application
1	Root-Cause Analysis in Six Sigma and Lean Manufacturing initiatives
2	Cost-of-Quality (COQ) Reporting for internal audits and ISO 9001/AS9100 compliance
3	Product Lifecycle Costing and New Product Introduction (NPI) yield ramp forecasting

Related Concepts

#	Concept
1	Cost of Quality (COQ)
2	Activity-Based Costing (ABC)
3	First Pass Yield (FPY)

Tags

> manufacturing-costing, quality-engineering, yield-analysis