CNC Mill Operations

OVERVIEW

This certification validates that an individual is able to successfully machine parts by operating a computer numerical control (CNC) machine; maintain quality and safety standards; keep records; maintain equipment and supplies; and perform routine preventative maintenance.

COMPETENCIES | **KNOWLEDGE + SKILLS**

Competency	Knowledge + Skills	
Applied Mathematics	Arithmetic IPM Calculations SFM to RPM Conversion	Sign Numbers Use of Scientific Calculator
Cutting Tool Assembly	Configuration (LOC and EOH) Fitting (tightening and setting) Holder Applications	Inspection of Cutters Inspection of Holders
Geometrical Dimensioning and Tolerancing	Feature Control Frame Geometric Control Symbols Geometric Tolerancing Categories	Geometric Tolerancing Characteristics Geometric Tolerancing Zone Shapes Symbols Associated with Feature Control Frames
Inspection	Feature with Size Verification Feature without Size Verification Flatness Verification Hole Gaging	Perpendicularity Verification Position Verification Profile of a Surface Verification Surface Finish Verification
Machine Maintenance	Coolants Oils and Lubrications	Refractometer Readings
Machine Safety	Machine Guarding	
Machining Applications	Drilling Face Milling Peripheral Milling	Pocket Milling Reaming Tapping
Measurements	Reading Micrometers Reading Steel Rule Reading Vernier Scales Use of Calipers	Use of Dial Indicators Use of Drop Indicators (travel dial) Use of Micrometers Use of Steel Rules
Operations	Deburring Fixture Offset Adjustments Geometry Offset Adjustments Machine Controls	Machine Startup and Shutdown Machine Warm Up Part Loading (vise/fixture) Tool Height Offset Adjustments
Print Reading	Block Tolerances Line Types and Conventions Orthographic Projection	Surface Finish Requirements Title Blocks and Revisions

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COMPETENCIES	KNOWLEDGE + SKILLS	
Shop Safety	Blood Born Pathogen	Personal Protective Equipment (PPE)
	Fire Prevention/Suppression	Safety Data Sheets (SDS)
	Hazardous Material Information System (HMIS)	Waste Removal
	Lock Out/Tag Out	