



Machining Level I Credential Overview

Turning Operations: Turning Between Centers

OVERVIEW

This certification validates that an individual has the skills and knowledge to successfully complete process planning, between centers applications, machine set ups, operations, inspection techniques and safety standards.

COMPETENCIES

KNOWLEDGE + SKILLS

Applied Mathematics	Arithmetic IPR Calculations	SFM to RPM Conversion Use of Scientific Calculator
Cutting Tool Assembly	Fitting (tightening and setting) Inspection of Cutters	Inspection of Holders
Cutting Tool Selection	Cutter Applications Cutter Features/Attributes	Manufacturers Technical Data References
Geometrical Dimensioning and Tolerancing	Datum Reference Frame (DRF) Degrees of Freedom (DOF) 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 Runout Verification	Surface Finish Verification Thread Gaging Total Runout Verification
Machine Maintenance	Coolants Oils and Lubrications	Refractometer Readings
Machine Safety	Machine Guarding	
Machining Applications	Facing Knurling OD Grooving	OD Threading OD Turning
Material Preparation	Bar Stock Sizes	Sawing Blanks
Measurements	Reading Micrometers Reading Steel Rules 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	Part Loading (chuck/collet)
Print Reading	Block Tolerances Line Types and Conventions Orthographic Projection	Surface Finish Requirements Title Blocks and Revisions



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COMPETENCIES	KNOWLEDGE + SKILLS	
Process Planning	Machine Configuration Machine Selection	Operation Sequencing Workholding Concepts/Devices
Setup	Mounting Chucks/Collets Setting Tools (center and diameter)	Tailstock Alignment
Shop Safety	Blood Born Pathogen Fire Prevention/Suppression Hazardous Material Information System (HMIS) Lock Out/Tag Out	Personal Protective Equipment (PPE) Safety Data Sheets (SDS) Waste Removal