Job Planning, Benchwork & Layout

OVERVIEW

This certification validates that an individual has the skills and knowledge to successfully complete process planning, hand operations such as drilling, reaming, and sawing, layout, inspection techniques, and safety standards.

COMPETENCIES	KNOWLEDGE + SKILLS	
Applied Mathematics	Arithmetic IPM Calculations Pythagorean Theorem Right Angle Trigonometry	SFM to RPM Conversion Taper per Inch/Foot Calculations Use of Scientific Calculator
Assembly	Bushing Installation	Fastener Installation
Cutting Tool Selection	Cutter Applications Cutter Features/Attributes	Manufacturer's Technical Data References
Drilling	Hand Drilling	
Filing	Deburring File Maintenance File Selection	File Types Filing Techniques Flat Filing
Fits	ANSI Standard Fit Symbols	Classes of Fits
Inspection	Feature with Size Verification Feature without Size Verification Hole Gaging	Position Verification Surface Finish Verification Thread Gaging
Layout	Layout Fluid Layout Tools	Scribing Surface/Height Gage (with scriber attachment)
Machine Safety	Machine Guarding	
Material Preparations	Bar Stock Sizes	Cutting Blanks
Measurements	Reading Micrometers Reading Steel Rule Reading Vernier Scales	Use of Calipers Use of Micrometers Use of Steel Rules (scale)
Print Reading	Block Tolerances Line Types and Conventions Orthographic Projection	Surface Finish Requirements Title Blocks and Revisions
Process Planning	Machine Configuration Machine Selection	Operation Sequencing Workholding Concepts/Devices

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COMPETENCIES	KNOWLEDGE + SKILLS	
Reaming	Hand Reaming	
Sawing	Hack Saw Procedures	Hack Sawing
Shop Safety	Blood Born Pathogen Fire Prevention/Suppression Hazardous Material Identification System (HMIS) Lock Out/Tag Out	Personal Protective Equipment (PPE) Safety Data Sheets (SDS) Waste Removal
Threading	Hand and Power Tapping Thread Classes	Thread Percentages