



CNC Turning: 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

Applied Mathematics	Arithmetic IPM Calculations SFM to RPM Conversion	Sign Numbers Use of Scientific Calculator
Cutting Tool Assembly	Fitting (tightening and setting) 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 Runout Verification	Surface Finish Verification Total Runout Verification
Machine Maintenance	Coolants Oils and Lubrications	Refractometer Readings
Machine Safety	Machine Guarding	
Machining Applications	Facing OD Turning	
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 Fixture Offset Adjustments Geometry Offset Adjustments Machine Controls	Machine Startup and Shutdown Machine Warm Up Part Loading (chuck/collet) Workshift Adjustments
Print Reading	Block Tolerances Line Types and Conventions Orthographic Projection	Surface Finish Requirements Title Blocks and Revisions
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