



## Our Manufacturing Capabilities

- Advanced Engineering Capabilities & Support
- Continuous Improvement + Six Sigma Quality Methodologies
- Ultra Precision Grinding (ID, OD, Surface, Creep)
- CNC Thread Grinding
- CNC Drilling
- Multi-Axis CNC Turning with Full Y-Axis
- Swiss Style Turning
- EDM Wire, Electrode & Production Drilling
- High Accuracy CNC Milling
- Precision Production Honing
- Laser Marking
- Internal Vacuum Heat Treat / Braze (including High Temperature Gold-Nickel)
- Assembly
- KANBAN / JIT
- Quality Planning Expertise
- Build to Forecast

## Pointe Precision Milling

### CNC Milling Centers

(29) Makino a51nx	60 Tool, Horizontal, 400mm x 400mm, 2 Pallet
Makino a61nx	218 Tool, Horizontal, 500mm x 500mm, 2 Pallet
(5) Hermle C42 Erowa Pallet Pool	234 Tools Per Machine, 130 Pallets, 320mm x 210mm
Hermle C42 Flex	234 Tool, 15 Pallet, 400mm x 400mm Pallets
Hermle C22 5-Axis	55 Tool, 450mm x 600mm x 330mm
Makino PS95	30 Tool, Vertical, 36 x 20 Table
Mori-Seiki NH5000-DCG	120 Tool, Horizontal, 500mm x 500mm, 2 Pallet

## Pointe Precision Turning

### CNC Turning Centers

(3) Mori-Seiki NZ 2000	T3Y3 triple turret multi-tasking turning center
(3) Okuma Multus 3000	25W/1500 Big Bore Lathes
Bumotec S191	High Precision CNC Mill-Turn
Mori-Seiki NZ 2000	T2Y Twin Turret multi-tasking turning center
Mori-Seiki NL2500SY/1250	12 Station, sub spindle with Y-axis control
(4) Mori-Seiki NLX2500SY/700	12 Station, sub spindle with Y-axis control
Mori-Seiki NL 3000Y/1250	10 Station, 15" Chucking capacity with steady rest
Citizen M432	13-axis capability, twin-spindle, internal multi-tasking
Citizen L720	7-axis capability, twin spindle, internal multi-tasking
(4) Citizen L20-X	Twin Spindle, internal multi-tasking





## Pointe Precision Grinders

### Studer S33 Cylindrical Grinder

- Dual OD Grinding Wheel Heads and Single ID Grinding Spindle
- Glass Scales with .000004"
- Granitan Machine Base with Vibration Reducing Mounting Parts

### Remanufactured Model #20M Cincinnati CNC Centerless Grinder

- 100% Replaced or Restored to Original Manufacturers Specifications or Better
- Frelon Coated Hand Scraped Slide Ways
- 0 to 3" Diameter Capable
- Thru Feed Capable

### Chevalier Surface Grinder

- Smart B1224II Surface/Creep Grinder
- Surface Grinding +/- .0001
- 12" X 18" Work Table

### (2) Voumard CNC 130

- 3 Spindle High Precision ID Grinder
- Ground Internal Diameters +/- .0001 (>50 millionths roundness/straightness)
- Match Grind to .000050 to .0001
- Scale resolution of 0.000004"

### Sunnen Stroker Hone – ML 2000

- .060" to 6.500" Diameters
- 1/8 to 16" lengths
- 3 additional Sunnen Manual Hones

### Ex-Cell-O EXL – Thread Grinder

- Thread Grind (max) 6" Round x 6" Long

### Additional Equipment

- Cincinnati Size-Matic - ID Grinder
- (1) Myford MG12-HPM - Groove, Side, Collet and OD
- (2) Cincinnati M2H1W-455 - End-Feed Centerless OD
- Model 3A Mini-Broach – 10 ton with 38" pull





## Pointe Precision NADCAP Accredited Non-Conventional Machining (EDM)

### (2) Makino EDBV3 CNC EDM Machine

- Travel X 14.5", Y 10.6", Z 19.6"
- 1000 RPM Rotating Spindle
- 2 Axis Integrated 360° Rotary Table
- 24 Station Tool Change

### Mitsubishi FA20S Submerged Wire EDM

- Travel X-Y 19.7" x 13.8", Work piece 41.3" x 31.5" x 11.7"
- Highly Reliable High-Speed Threading
- Average Dimensional Variance .0001"
- Surface Finish 6-8 Ra
- Machining Range from .250"-6.0"

### (2) Mitsubishi AJ & JFY EDM

- Travel X/Y/Z 23.6" x 15.7" x 12.2", Work piece 41.3" x 32.3" x 12.0"
- Intelligent Auto Threader
- Connected Via Systems 3R Robot

### Mitsubishi EA8PV Advance FP80V

- Travel 11.8" x 9.8" x 9.8", Work piece 29.1" x 18.5" x 5.7"
- 20 Position 3R Combination Tool Changer
- Five Hole Option C-Axis

## Pointe Precision Inspection Capabilities

Pointe Precision has over 15,000 pieces of inspection equipment, including over 5000 plug gages ranging in size from .010 to 4.000 and in increments from .0001 in smaller gages to .001 in larger gages. All are calibrated in our state-of-the-art, climate-controlled metrology lab using NIST traceable equipment. Our inspection equipment also includes:

- (1) NITON XLt Material Alloy Analyzer
- (4) Servo-driven Coordinate Measuring Machines
- (2) Optical Comparators
- (1) Premiere Optical Profile Inspection System
- (2) Mahr MMQ400, Servo Driven Roundness Checker
- (2) Electronic Pocket Surface Finish Checkers
- (1) Fluorescent Penetrant Inspection Unit
- (1) JenOptik Vision System
- (3) Marposs M39S Match Grinding Gauges
- (1) Optiv Multi-Sensor Optical Measuring System
- (1) Hommel-Etamic Match Grinding Gauges
- (2) Micro-Vu Sol 312 Vision Measurement Systems
- (1) Trimos Labconcept Calibration Gage





## Pointe Precision Special Processes

### Nondestructive Testing

- Magnetic Particle Inspection
- Fluorescent Penetrant Inspection

### Micro Deburring

- Clean Room with Isolated Buffing Room
- Tumbling
- Electro Chemical Deburring System

### 3D Printers

- MakerBot Z18 Printer - PLA Filament
- Fortus 450MC - FDM Nylon 12, PC-ISO & AMB-M30i, and ULTEM 9085 & 1010 - Build Envelope = 16" x 14" x 16"

### Clean Room Sub-Assembly

- S.T.I.
- Lee Plugs
- Pins and Components
- Heat and Freeze Bushings
- Soldering

### NADCAP Accredited Heat Treating and Brazing

- Abar-Ipsen HR - 26 x 36 Vacuum Furnace with diffusion pump
- Ipsen-Titan H402113 Vacuum Furnace with diffusion pump
- Deep Freeze Unit
- Blue-M Draw Furnaces (2)
- Gold-Nickel Furnace Brazing

### Part Washing and Cleaning

- Ramco Parts Washer
- 3 Ultrasonic Cleaning Stations
- Pressure washing

### Laser Marking

- (2) Mobile Laser Markers Systems

## Production Support Resources

- Gibbs & Esprit – CAM Software
- SolidWorks – Engineering Software – 3D Assemblies/Drawings
- Epicor/Avante ERP
- Epicor Advance Quality Powered by IQS, Quality Management Software
- Wireless DNC System

## Tolerances

- Turned Diameters +/- .0002
- Turned Lengths +/- .0004
- Ground External Diameters .0001 (50 millionths roundness)
- Ground Internal Diameters +/- .0001 (50 millionths roundness/straightness)
- Match Grind to .000050 to .0001
- Ground Shoulders +/- .0001
- Surface Grinding +/- .0001
- Turned Diameters to 14"
- OD Grind (max) 9" Round x 24" Long
- ID Grind (max) 3" Round x 6" Long
- Thread Grind (max) 6" Round x 6" Long
- Milling (max) 30" x 40" x 25" (Vertical)
- Milling (max) 28" x 28" x 29" (Horizontal)