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**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(29) Makino a51nx</td>
<td>60 Tool, Horizontal, 400mm x 400mm, 2 Pallet</td>
</tr>
<tr>
<td>Makino a61nx</td>
<td>218 Tool, Horizontal, 500mm x 500mm, 2 Pallet</td>
</tr>
<tr>
<td>(3) Hermle C42 Erowa Pallet Pool</td>
<td>234 Tools Per Machine, 130 Pallets, 320mm x 210mm</td>
</tr>
<tr>
<td>Hermle C42 Flex</td>
<td>234 Tool, 15 Pallet, 400mm x 400mm Pallets</td>
</tr>
<tr>
<td>Hermle C22 5-Axis</td>
<td>55 Tool, 450mm x 600mm x 330mm</td>
</tr>
<tr>
<td>Makino PS95</td>
<td>30 Tool, Vertical, 36 x 20 Table</td>
</tr>
<tr>
<td>Mori-Seiki NH5000-DCG</td>
<td>120 Tool, Horizontal, 500mm x 500mm, 2 Pallet</td>
</tr>
</tbody>
</table>

**Pointe Precision Turning**

**CNC Turning Centers**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(3) Mori-Seiki NZ 2000</td>
<td>T3Y3 triple turret multi-tasking turning center</td>
</tr>
<tr>
<td>(3) Okuma Multus 3000</td>
<td>25W/1500 Big Bore Lathes</td>
</tr>
<tr>
<td>Bumotec S191</td>
<td>High Precision CNC Mill-Turn</td>
</tr>
<tr>
<td>Mori-Seiki NZ 2000</td>
<td>T2Y Twin Turret multi-tasking turning center</td>
</tr>
<tr>
<td>Mori-Seiki NL2500SY/1250</td>
<td>12 Station, sub spindle with Y-axis control</td>
</tr>
<tr>
<td>(4) Mori-Seiki NLX2500SY/700</td>
<td>12 Station, sub spindle with Y-axis control</td>
</tr>
<tr>
<td>Mori-Seiki NL 3000Y/1250</td>
<td>10 Station, 15” Chucking capacity with steady rest</td>
</tr>
<tr>
<td>Citizen M432</td>
<td>13-axis capability, twin-spindle, internal multi-tasking</td>
</tr>
<tr>
<td>Citizen L720</td>
<td>7-axis capability, twin spindle, internal multi-tasking</td>
</tr>
<tr>
<td>(4) Citizen L20-X</td>
<td>Twin Spindle, internal multi-tasking</td>
</tr>
</tbody>
</table>
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 Scrapped 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 MV 2400R Wire 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 X/Y/Z 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 & Espirit – 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)