

Facilities List

CNC Milling:

- 7 Haas VF-2 SS:** Table 14"x36", Travel-X 30", Y16", Z20", 24+1 Tool Auto Tool Changer, 12,000 RPM Spindle, Thru spindle coolant, Automatic tool and part probe systems.
- 3 Haas VF-2:** Table 14"x36", Travel-X30", Y16", Z20", 20 Tool Auto Tool Changer, 10,000 RPM Spindle.
- 2 Haas VF-3 SS:** Table 14"x36", Travel-X 30", Y16", Z20", 24+1 Tool Auto Tool Changer, 12,000 RPM Spindle, Thru spindle coolant, Automatic tool and part probe systems. 5 axis trunion table.
- 3 Haas HRT210 Rotary Table,** Full 4th Axis, 10" dia. Capacity, 16C collet capacity, 1/58" diameter thru.

CNC Turning:

- 2 Citizen L25 Swiss w/Mitsubishi Control:** 5/8" dia, 8,000 RPM, Main and Sub Spindle, SMW Quick 32 Hydrodynamic Bar Feed.
- 1 Citizen C16 Swiss w/Mitsubishi Control:** 5/8" dia., 8,000 RPM Main and Sub Spindle, Citizen CAV Hydrodynamic Bar Feed.
- 1 Citizen K16 Swiss w/Fanuc Control:** 5/8" dia., 15,000 RPM, Main and Sub Spindle, Citizen CAV Hydrodynamic Bar Feed
- 1 Haas SL20:** 8" chuck x 20" long, 10 Station Turret, 10.3" Dia. Swing, Programmable Tailstock, 2" thru spindle, 30 HP 5,000 RPM spindle, Parts catcher, High pressure coolant, Tool presetter, Automatic bar feeder.
- 1 Haas SL20:** 8" chuck x 20" long, 10 Station Turret, 10.3" Dia. Swing, Programmable Tailstock, 2" thru spindle, 30 HP 5,000 RPM spindle, Parts catcher, High pressure coolant, Tool presetter.
- 1 Okuma LB-15C Big Bore w/Okuma OSP5000L-G Control:** 10" Dia. Chuck x 19.6", 12 Station turret, 15" Swing, 2.50" Dia. Thru spindle, 4,200 RPM Spindle, Spindle nose A2-5.
- 1 Mori Seiki SL-1A w/Fanuc 3TF Control:** 6" Dia. Chuck x 12", 12 Station Turret, 10" Swing, 1.3" Dia. Thru spindle, 6,000 RPM Spindle, Spindle nose A2-6.
- 1 McClean Production Lathe, Model 1000:** 1 1/16" Dia. 2000 RPM Spindle

EDM:

- 2 Agie Progress 2 Wire EDM:** Max work piece size x 13.77, Y 9.84, Z 10, Both have a robot to change pallets.

CAD-CAM System:

- 3 Pathtrace EDGE CAM, CAD-CAM System:** Milling & Turning, IGED, DXF, Pas E and Solidworks/ Parasolid importing.
- 1 CAS Mat 2D Scanning & Engraving Software**
- 2 Auto CAD Inventor**
- 1 Peps CAD-CAM:** Wire EDM

CNC Engraving:

- 2 Newing-Hall APX-460:** Travel -X 20", Y 15", Forth axis cylindrical attachment

Milling Machines:

- 3 Bridgeport Series I:** Table 9" X 42", Travel- X30", Y12", 4,200 RPM Spindle, w/DRO

- 3 Hurco SM-1:** Table 9" x 42", Travel- X 30", Y15", 4,000 RPM Spindle, w/DRO
- 2 Clausing 8520:** Table 6"x24", Travel- X17.25", Y5".
- 3 Clausing 8530:** Table 6"x24", Travel- X17.25", Y5".
- 1 Rockwell 21-100:** Tabel 6.5"x24", Travel - X17", Y7".

Engine Lathes:

- 1 Polamco TUB40:** 18" Dia. X84", 26" Dia. In Gap, 2"Dia.thru Spindle, Taper Attachment, 1,600 RPM Spindle.
- 2 Harrison AA Precision Toolroom Lathe w/Digital Readout:** 13" Dia. X25", 3,000 RPM Spindle, High Speed Threading Attachment, English-Metric Treads, Taper Attachment.
- 1 South Bend 10AA:** 10" Dia. X30".
- 1 Feeler Series II FSL-27 Second Operation Lathe:** 1 1/16" Dia., 4,000 RPM Spindle

Turret Lathes:

- 1 Harding DSM-59:** 1 1/16" Dia., 3 Jaw Chuck
- 2 Jet TL-25:** 1 1/16" Dia., 1,980 RPM Spindle
- 1 Feeler FTS-27:** 1 1/16" Dia., 3,500 RPM Spindle

Precision Grinding, Honing and Lapping Equipment:

- 1 Freeport Surface Grinder:** 6"x18", High Column, Coolant.
- 1 Brown & Sharp Surface Grinder:** 5" x 10"
- 1 Cincinnati Millicron Monoset**
- 1 Scripta Single Lip Cutter Grinder**
- 1 Tru Point Drill Grinder:** 1/16-47/64
- 2 SRD Drill Grinder:** 1/16" - 13/16"
- 2 Accufinish:** Diamond & Ceramic Wheels
- 1 Sunnen Hone MBB-1660:** .060-6.5" Capacity

Inspection Equipment:

- 1 Brown & Sharp Global Classic 575 Coordinate Measuring Machine :** X-19.69" (500mm), Y-27.56" (700mm), Z-19.69" (500mm) Scanning probe with motorized head. PCDIMIS and SPC Calc
- 1 OGP Smartscope Flash 200 Automated Video Measuring System:** Vision or touch probe, X-8", Y-8", Z-6" travel
- 1 Numerex 1312-10" Mini Ver.II" Coordinate Measuring Machine:** Travel X-12", Y-13", Z-10", Renishaw touch Probe, Unit-touch and Uni-measure software.
- 1 Mitutoyo SJ400 Profilometer w/stand.**
- 1 Mitutoyo LSM503H Laser Micrometer:** Measuring range .012-1.18.
- 1 Baty Gage Master 16" Optical Comparator:** With Edge Sensing, surface illumination, Travel- X-10", Y-14", Quadra Check 2000 D.R.O., 10x and 25x lens
- 1 Scherr Tumico 14" Optical Comparator:** Model 20-3500, Surface Illumination, Travel-X-7", Y-4", Quadra Check 2000 D.R.O., 10x and 20x lens.
- 1 Deltronic 14" Optical Comparator:** Model DH14-MPC, Surface Illumination, Travel- X-7.5", Y-4". 10x, 20x and 50x lens
- 1 Zoller V400 Tool Presetter**
- 5 Fowler Trimos Vertical 3:** Model TVA-600, 24" Capability, w/Squarness Checking and Printer

(continued)

Facilities List

Inspection Equipment Cont'd:

- 1 **Brown & Sharp Tesa-Hite Electronic Height Gage:** Model 00790042, 24" capability
- 1 **60" x 96" Surface Plate:** Grade A (Inspection)
- 1 **22"x96" Surface Plate:** Grade A (Inspection)
- 1 **48"x67" Surface Plate:** Grade A (Inspection)
- 1 **33"x44" Surface Plate:** Grade A (Inspection)
- 1 **12" x 18" x 3" Surface Plate:** Grade B (Tool Room)
- 1 **8" x 12" x 2 1/2" Surface Plate:** Grade B (Tool Room)
- 1 **Starrett Digi-Check Height Master:** 1 – 12" Riser Block for Height Gage
- 1 **Mitutoyo Metic Height Master**
- 1 **Fowler Digital Height Gage:** .0005 Resolution, 24" High
- 1 **Optical Flat and Polarized Light**
- 1 **Mitutoyo Ultra-Center Height Gage**
- 5 **Variable Power Microscopes**
- Gauge Pins Sets:** .001 Increments:
 - 1 Set .011-.060 minus
 - 1 Set .011-.060 plus
 - 1 Set .061-.500 minus
 - 1 Set .2515-.5005 plus
 - 1 Set .061-.1.000 plus
- Gage Block Sets:**
 - 1 81 pcs. Gage Block Set – Grade 2
 - 1 81 pcs. Gage Block Set – Grade B
 - 1 28 pcs. Gage Block Set – Grade 2
 - 1 38 pcs. Gage Block Set – Grade 3
 - 1 37 pcs. Gage Block Set – Grade 2
 - 1 34 pcs. Gage Block Set – Grade 3
 - 1 36 pcs. Space Block Set
- 3 **Federal Maxum Amplifier Head Bore Gage:** Set to 10" Capacity
- 2 **Federal Set Master's**
 - 1 Set Mitutoyo Analog Bore Gages: .100" – 4" Capacity
- 3 **Set Starrett Split Ball Bore Gages:** .107"-1.5" Capacity
- 1 **0-6" Slocomb Micrometer Set**
- 1 **0-12" Mitutoyo Micrometer Set**
- 1 **24" Carbon Fiber Mitutoyo Digital Caliper**
- 1 **60" Carbon Fiber Mitutoyo Digital Caliper**

Variable gauging: OD Mics, Groove Mics, Thread Mics, Disc Mics, Indicator Mics, Blade Mics., Pin Mics, Depth Mics, Indicators, Bases, Stands, and Verneer Calipers.

Hard Gauging: Thread Plugs, Thread Rings, Ring Master's, 0"-12" set masters, V-Blocks, Angle Plates, Precision Riser Blocks.

Sanding & Grinding Equipment:

- 1 **Timesavers 648 Deburring/Finishing Machine:** 6" wide x 4" High
- 2 **Baldor #500 Double End Carbide Tool Grinder**
- 1 **Powermatic 30-B Sander:** 6" Belt, 12" Disc
- 2 **Burr King Sander/Buffer, belt or wheel:** Model 750
- 2 **Burr King Sander/Buffer, Two Wheels:** Model 1000
- 1 **Airflow Systems, Inc. Down Draft Table:** Model DT-1700-BI
- 1 **Rockwell 31-710 Disc Sander:** 12" Disc
- 1 **Burr King Burr Mate Belt Sander:** 1/2" Belt Width
- 1 **Everett Belt Sander:** 2" Belt Width
- 2 **10" Pedestal Grinder**
- 2 **7" Pedestal Grinder**
- 2 **6" Pedestal Grinder**

Sawing Equipment:

- 1 **Amada HA250 Horizontal:** 9" x 16", Automatic Feed
- 1 **Do All C916 Horizontal:** 9" x 16"
- 1 **Kalamazoo 7AW Horizontal:** Up to 7" Diameter
- 1 **Do All 2013-2 Vertical:** 12"x20", Air Feed Table, Blade Welder
- 1 **Do All 2012-1A vertical:** 12" x 20"
- 1 **Powermatic 143 Vertical:** 14" Throat
- 1 **Soco MC-350N/FA Cold Cut-Off Saw:** Automatic, Non-Ferrous Metals Only, 3" Dia. Solids, 4.75 Dia Tubing.
- 1 **Safety Speed H-5 Panel Saw:** 1 1/4" x 64" Sheet Capacity

Drilling Equipment:

- 1 **Clausing-Arboga 2501:** 17" Geared Head
- 1 **Clausing 1672:** 15"
- 2 **Craftsman:** 15"
- 3 **Burgmaster 1-D Turret Drilling & Tapping Machine:** 6 Spindle, 1/2" Drilling Capacity
- 1 **Servo Miniature Drill Press 7050:** 500-20,000 RPM

Tapping Equipment:

- 3 **Millman T-100B:** Leadscrew Tapping Machine, #0-#10 Capacity, One Unit w/Multihead Attachment
- 1 **Brother BTO-263 Leadscrew Tapping Machine:** 5/16" Capacity
- 2 **Accu-Tapper:** 1/4" Capacity
- 1 **Flexarm Tapping Arm**
- 1 **Fast-Tap Tapping Arm:** 1/4" Capacity
- 3 **Enco 53000 Tapping Head:** #0-14" Capacity
- 1 **Enco 52007 Tapping Head:** 3/4-3/4" Capacity
- 1 **Tapmatic 500 XB Tapping Head:** 5/8" Capacity
- 1 **Tapmatic 90X Tapping Head:** 1/2- 1 1/8" Capacity
- 3 **Dahlstrom Tap Guide Hand Tappers**

Welding:

- 1 **Linde 225 Migmaster MIG Welder**
- 1 **Thermal Arc AC/DC Inverter Welder:** Model 300 GTSW
- 1 **PowCon 2005M MIG Welder**
- 2 **Oxy-Acetylene Torch**
- 1 **Acetylene Torch**
- 1 **Astrolasma 500 Plasma Cutting Torch:** 1/4" Thick Capacity

Finishing Equipment:

- 3 **Trinco Dry Blast Model 36/BP2 w/Dust Collector:** 24x36
- 1 **Pennwalt/S.S. White Dry Blast Model H**
- 1 **Empire Blaster:** 26x36
- 1 **Raytec Model AV-20 Vibratory Bowl Tumbler**
- 1 **Ultra Matic VB3.5 Vibratory Bowl Tumbler**
- 1 **B.V. Products Group BV3B Vibratory Bowl Tumbler**
- 1 **Vibrodyne Tumbler:** 1 cubic foot

Presses:

- 1 **Sea-Tech Model 10 Press:** 2 Ton, Small Punch and Forming
- 1 **Pressrite No. 0 Punch Press:** 5 ton, OBI, 1 1/2" Stroke
- 1 **Carver Laboratory Hydraulic Press:** 12 Ton, w/Heated Platens 6" x 6"
- 2 **Hydraulic H Frame Shop Press:** 10 Ton/50 Ton
- 2 **Arbor Press:** 1 Ton / 2 Ton

Heat Treat Oven:

- 1 **TPS Blue M:** 1300 Deg F, 4.2 Cubic Feet, Programmable cycle, Charting