



Facility List
Enter Into PGM's
World of Technology.



I. GRINDING EQUIPMENT

CREEPFEED GRINDING

BLOHM & MAGERLE (2)

- Full 4 axis CNC
- Continuous dress capability
- Indexing table - load/unload in cycle
- Table size 14" x 63" x 17" max. height
- 106 max. HP spindle - w/150psi coolant
- 8" maximum wheel width

CYLINDRICAL GRINDING

KELLENBERGER KEL-VARI (FLAGSHIP MODEL)

- Full CNC Z,X,B,C axis
- Two OD grinding wheels and one ID spindle
- CNC change over from ID to OD
- Hydrostatic guide ways
- Resolutions of 4 millionths

KELLENBERGER GRINDING CENTERS (2)

- Internal and external capacity
- Angular plunge grinding
- Contour grinding and form dressing
- Fischer internal spindle package
- 10" maximum work diameter x 40" work length

BROWN AND SHARPE UNIVERSAL #13 (1)

- Internal and external capacity
- Pope multi-speed 10 spindle drive
- 8" maximum work diameter
- 26" between centers with all accessories

JIG GRINDING

MOORE #3 & #2 JIG GRINDERS (3)

- 9K, 40K, 60K and 175K RPM grinding heads
- Universal wheel dressing attachment, slotting head
- Radius angle dresser, and other accessories
- Spherical cavity grinding attachment
- Table size 24" x 10"
- Table travel 16" x 10"

MOORE JIG BORE (2)

- Model #11/2 B
- Table size 10" x 19"
- Table movement 9" x 14"

SURFACE GRINDING

HARIG, PARKER, TAFT (23)

- 20"L x 6"W x 11"H.
- Simultaneous two axis linear & circular interpolation
- Table size 12" x 48" max size
- Tape and radius capabilities
- Integral two-diamond wheel dresser with wheel compensation
- High speed grinding attachments

PRECISION GRINDING ACCESSORIES

AIR BEARING SPINDLES (6)

- 200 lb. work piece capacity
- Radial and axial run-out less than .00001"

II. CNC MACHINING

HORIZONTAL MILLING

KITAMURA (4)

- 13,000 RPM spindle
- 1900 IPM
- 1000 PSI thru spindle coolant
- 8 pallet (1), 6 pallet (1), 2 pallet (2)
- Laser tool detection
- Internal probing / measuring
- Lights out manufacturing
- Up to 150 tools per machine

MORI SEIKI – NH4000 DCG (3)

- 2 pallet (size 400mm), 6 pallet (3)
- 14,000 rpm spindle speed
- Laser tool detection
- 1000psi coolant thru the spindle
- Probing and measuring
- 2.8 sec tool change
- 120 tools

HIGH SPEED VERTICAL MILLING

MIKRON (2)

- 42,000-RPM High Frequency Spindle
- Accuracy of 3 microns or better
- 787 IPM cutting rates
- 1G acceleration

HAAS SUPER SPEED VF3 TO VF4 (4)

- 40 tools, Probing, Tool detection
- 12,000 rpm spindle w/1000psi coolant thru

CNC MILLING

HAAS VF1 to VF6 & MINI MILLS (21)

- Max. table size 28" x 64"
- 3rd-5th-axis vertical machining
- 20-32 tool capacities
- Positioning accuracy +/- .0003"
- Thru spindle coolant
- Touch sensor probe
- Repeatability +/- .0001"

DOOSAN – VERTICAL MILL

- 2 pallet size 712x475 (free loan/unload)
- 40 tools
- 10,000 RPM Spindle
- 1000 PSI spindle thru coolant

OKUMA MACHINING CENTERS MC 40 VA TO CROWN V-4018 (9)

- Table size 20" x 48"
- 12-20 tool capacity
- 1.5 sec tool to tool, 5 second chip to chip
- 4,000 to 12,000 RPM maximum spindle speed

MATSUURA MACHINING CENTERS (2)

- Table size 29.9" x 14.96"
- Table travel 20" x 14" x 18.1" Z axis
- 10,000 RPM spindle speed
- Repeatability .00004"

MATSUURA – MC 500V (1)

- Table size 20" x 14" x 17"
- 30 tool changer

MATSUURA - 760V (1)

- Table size 30" x 16" x 19"

FADAL – VMC 4020 (1)

- Table size 40" x 20" x 20"

KITAMURA MYCENTER (2)

- Table size 20" x 14" x 16"
- MITSUI SEIKI VR – 3A (2)**
- Table size 25" x 17" x 17"

MULTIPLE SPINDLE MILLING

MATSUURA MC 760V-DC (1)

- Twin spindle with tool changers
- Table size 30" x 16" x 19"

CNC TURNING

DOOSAN 2000SY – TURNING CENTER (1)

- Turn and mill capabilities
- Main spindle speed, 5000 RPM
- Sub spindle speed, 6000 RPM
- Max length 29.50"
- Chuck capacity 8"
- 12 tool station up to 24 - reduce set up times
- 1000 PSI coolant thru

HARDINGE CONQUEST T42L (1) CNC TURNING CENTERS

- 5,000 max spindle speed, 10 HP
- Max. bar stock 1.5/8"-LNS quick load bar feeders
- Chucking capacity 8" x 30"
- Sub-spindle 6000 RPM 2-5" 16c 5 HP
- Live tooling 4000 RPM 6 vertical station

OKUMA/HAAS (2)

- Max chucking capacities 15"
- Max shaft capacities 29.00" x 9" dia.
- Live tail stock
- Spindle speed 55 - 3,500 RPM
- Maximum bar stock 2.56

CNC TURNING – SWISS

CINCOM A16 TO A32 (CITIZEN) (2)

- Max dia. 32mm (1.25") x Max length 320mm (12.590")
- 2000 PSI spindle thru coolant
- Main and sub spindle
- Live tools
- Extreme feed rates (45m/min)

TOOL ROOM MILLING & TURNING

HURCO KM-3P 3 AXIS VERT. MILL (1)

BRIDGEPORT MANUAL MILLS (12)

PROTO TRAX MILLING MACHINE (4)

COMPUMILLS (3)

MANUAL & PROTO TRAX LATHES (10)

III. FINISHING METHODS

PAINTING/ FIBERGLASS LAY-UP

FIBER GLASS LAY UP

- Epoxy resin coatings
- Pre-preg materials

PAINTING & SILK SCREEN

- Ovens / vacuum chambers / booths (3)
- Stencil silk screen capabilities
- Mil-spec compliant
- Paint after assembly for ESD components

HONING (2)

- Auto gaging of bore
- Model number 1804
- Complete set of standard mandrels

DEBURRING

HYDROTRON DHYD SERIES

- **Magnesium** deburring station
- 30"x36"
- Down draft table
- Water dust collection system
- Two sided station

VIBRATORY MACHINES (6)

- 14 max cubic ft. capacity
- Automatic unloading feature

VAPORMATT LIQUID ABRASIVE PROCESSING SYSTEM (1)

- Closed loop rinse system
- Shuttle system

MINI HARPERIZERS & 1 TIME SAVER (2)

- 6 Bowl capacity
- Bowl size 6" diameter x 3" deep
- Applicable to precision deburring

MICRO BLASTERS (10)

- Media variety

ETCH (CHEMICAL – OAKITE) TANK (1)

CLEANING

CLEANING MACHINES (10)

ULTRASONIC CLEANING LINE (1)

- 3 Blackstone 30 gal. ultrasonic tanks
- Integral air derraying pumps and filter system
- Triple flow rinse tank
- Single deionized rinse tank
- Vaponics deionized water system for ultra pure water

PART MARKING

TELESIS TMP6000 PIN STAMP (1)

- Model TMC100 & programmable

STAMP, PRINT, PAINT, SILK SCREENING

V. SHEET METAL & PRESS WORK

SHEET METAL

CNC TURRETT PUNCH (1)

- Amada – Pega
- 30" x 40" x 50"
- Large selection of tools

PRESS BRAKES

AMADA CNC PRESS BRAKE RG50

- 82" length bend x 15" throat depth
- 50 ton capacity
- 4" stroke
- Multiple stop set up, backgauge

WYSUNG – 55 Ton (1)

CHICAGO – 55 Ton (1)

CINCINNATI – 90 Ton (1)

PRESSES

150 TON MAX. HYDRAULIC PRESS (1)

- Stroke 0" - 10" adjustable
- Bolster: 30" x 50"
- Maximum shut height 17.25"
- Adjustable cushion: 45 ton lower
- 22 ton upper

HYDRAULIC PRESSES – 20 – 50 TON (5)

VI. WELDING

WELDING (6)

ROBOTIC TIG WELDING CELL

- Motoman UP6 Robot
- Miller maxstar 350 welder
- Jetline wire feeder
- 2 pallet with indexer
- Horizontal reach of 1373mm

VII. QUALITY ASSURANCE

PRECISION CONTACT MEASURING

ZEISS ECLIPSE 550-ST DRIVEN (CMM) (1)

- Measuring range of 20" x 21.6" x 22.8"
- Repeatability .00008"
- Resolution .00002"
- Passive anti-vibration system
- Maximum velocity of 17" per second
- Maximum part weight of 1,000 lbs
- Calypso Measurement Software – Windows NT, which accepts CAD Files (IGES, DXF, etc.)

SHEFFIELD - DISCOVERY II

- Discovery II Shop Floor Driven CMM
- Temperature compensation
- PC-DMIS PRO measurement software
- DataPage SPC
- Size (508mm) x 36" (914) x 16" (406mm)

BROWN/SHARP CNC GLOBAL (2) PERFORMANS – MODEL 9.12.8

- TESTAR-sm motorized probe head with true 3D probe scanning/probe
- More efficient data collection
- Size 35.4 (900mm) x 47.2 (1200mm) y 31.5 (800mm) z
- Up to 40% increased machine throughput

ZEISS RONDCOM 44 INSPECTION SYSTEM

- Max work piece weight 30Kg.
- Max measuring diameter 300mm
- Rotational accuracy (0.020 + 4H/1000µm) (H = measuring height in mm)
- Capabilities include:
 - Roundness, flatness, coaxiality, squareness, run-out, concentricity, and cylindricity

BROWN & SHARP PFX MICRO EXCEL (1)

BROWN/SHARP CMM (5)

- Table size 36" x 24" x 16"

NON-CONTACT INSPECTION

OGP SMART SCOPE (1)

- Video measuring /microscope system
- CNC programmable and motorized control
- Up to 410x
- Table size 7" x 13"

NIKON POWER MICROSCOPE (1)

- cross-line generator
- 100 permanent features stored

OPTICAL COMPARATORS (13)

Starrett & Jones/Lamson

- Standard lenses 10x to 100x
- Surface illumination capable
- Surface 9.5 fiber optics in non flex
- Profile and surface bulbs
- Mercury arc light source/surface illumination
- 6 sense turret / telescopic sense
- Rotary protractor screen
- Table size 5" x 16"

VIII. INFORMATION SYSTEMS

SOFTWARE

VANTAGE BY EPICOR

- A fully integrated system
- MRP, scheduling, cost analysis
- Accounting package
- Windows based system

SOLIDWORKS 2007

- 3-D solid modeling

SDRC I-DEAS MASTER SERIES (UNIGRAPHICS)

- 3-D solid modeling CAD/CAM system
- Accepts IGES, DXF and STEP file format

ESPIRT CAM SOFTWARE

- Knowledge based machining

PRO-ENGINEER

- 3-D solid modeling CAD/CAM system
- Accepts IGES, DXF and STEP file format





www.pgmcorp.com

High Speed Milling • 5-Axis Milling • Sheet Metal • Welding • Painting
Grinding-All Types • Turning • Assembly • Precision Stamping
3D Modeling and CAD/CAM Engineering

***Solving Our
Customers' Greatest
Manufacturing
Challenges***

Rochester, New York

1305 Emerson Street
Rochester, NY 14606-3098
Phone: (585) 458-4300
Fax: (585) 458-7281

Manchester, New Hampshire

5 Perimeter Road
Manchester, NH 03103
Phone: (603) 623-6363
Fax: (603) 623-4780

Sales e-mail: thockenberger@pgmcorp.com