

## Manufacturing Equipment

We are always willing to invest in the latest and most innovative machine tool technology based on the changing needs of our current and prospective customers. If you don't see equipment on our list that you feel would meet the needs of your project, please call us today to discuss. Our knowledge, experience, and long-standing business relationships give us the ability to find quick solutions and meet your project demands.

**Citizen-Cincom L20E-2M12-LFVRD 9-Axis Swiss Machine** Thread whirling, 10,000 RPM main/sub and 40,000 RPM live tool spindles and includes fire suppression for unmanned operation,

### **Matsuura LX-160 5 Axis Linear Motor Machine**

91 Pallets, 50 Tool Magazine, 46,000 RPM Spindle,  
Travel in inches (X,Y,Z) 17.13/18.31/22.05

### **Matsuura MX330-PC10 5 Axis Vertical Machining Center**

10 Pallets, 90 Tool Magazine, 20,000 RPM Spindle,  
Travel in inches (X,Y,Z) 19.68/9.84/11.81

### **(2) Matsuura MAM72-35V 5 Axis Vertical Machining Center**

32 Pallet, 520 tool Magazine, X-Axis Travel 21.65Inch, Y-Axis Travel 17.32inch, Z-Axis Travel 22.83inch, B-Axis Rotation Angle deg +65 ~ -125 C-Axis Rotation Angle deg 360

### **(3) Mazak HCN5000 Horizontal Milling Centers**

Matrix control. 500mm pallets, 2362IPM rapids, Up to 18,000 RPM spindle. NC rotary table (360,000 positions). 120, 240 tool magazine. Maximum workplace height 39.37 pallet size 19.690, maximum table load 700kg (1543 lbs). OMP60M work measuring system probe. 1000 PSI coolant.

### **Mazak Horizontal HCN5000 Pallettech High Rise System**

2 Level Pallet Robot with 32 stations.

### **Mori Seiki Dura Vertical 5080 Milling Center**

20" X 30" Y 20" Z travel, 10,000 RPM spindle. 30 station tool changer. Renishaw probing system. 1000 PSI thru spindle coolant.

### **(2) YCM FX-380A 5 Axis Milling Centers**

Fanuc 31iA-5 Control. 12,000 RPM spindle, 15,000 RPM full 5 axis contouring. 40 tools/60 tools. Renishaw work piece probe, tool touch off probe.

---

P&F Machining, Inc.

🌐 8450 Quaday Ave. NE Otsego, MN. 55330 USA 📞 (763) 428-3100

✉️ info@pfmachining.com 🌐 www.pfmachining.com

## **(2) YCM NSV-102A Milling Centers**

40" X 20" Y 20" Z travel. 15,000 RPM spindles, 2400ipm rapids. Tsudakomo RNA200R high accuracy 4<sup>th</sup> axis rotaries. Renishaw work probes, 1000 PSI TSC

## **YCM 1680A Milling Center**

64" X, 30" Y 27" Z travel. 15,000 RPM. 30 station tool changer. Renishaw probing system. 1,000 PSI coolant 4<sup>th</sup> axis capable.

## **Brother 5700X1 Milling Center**

25.5 " X, 15.75" Y, 11.8" Z travel. 16,000 RPM spindle. 21 station tool station, 1.4 chip to chip tool changer. Nikken CNCZ 180 4<sup>th</sup> Axis

## **(2) Haas VF3 Super Speeds Milling Centers**

40" X 20" Y 25" Z travel. 12,000 RPM spindles. 24 station tool changer. Renishaw probing system. 1000 PSI thru spindle coolant.

## **Haas VF2 Super Speed Milling Center**

30" X 16" Y 20" Z travel. 12,000 RPM spindle. 24 station tool changer. Renishaw probing system. Thru spindle coolant. Simultaneous 4<sup>th</sup> axis capable of linear, arc and spiral milling.

## **Lagun FTV-2 Vertical Milling Center**

Mill master readout.

## **Bridgeport Vertical Mill**

Power feed, digital read out.

## **Haas HRT 210, HRT 210 High Speed, HRT 210 Super High Speed Servo Rotary Tables**

Pneumatic Brake, 19" Swing capacity, 2" thru capacity, 1000-pound weight capacity.

## **Haas HA5C Super High Speed, Servo Rotary Indexer with Tailstock**

## **(2) Mazak Hyper Quadrex 200MSY 9 axis Turning and Milling Center**

Matrix control. 2 ½" bar capacity, 34" between chucks, 4" Y travel on both turrets. 4,600 RPM. Twin 30 HP spindles. LNS Sprint 565 bar feeder 2 5/8" diameter X 12' long capacity. Custom M-code operated part unload conveyor system.

## **Mori Seiki ZT1500YB 8 Axis Turning and Milling Center**

MAPPS II Operating System. 2 3/8" bar capacity, 39.4" between spindles, 3.9" of Y- axis travel, 5,000 RPM main, 6,000 RPM sub. Twin 30 HP spindles. VDI quick change tooling. Renishaw probing system.

## **Mazak Super Quick-Turn 200MY Turning and Milling Center**

PC-Fusion 640 Control. 8" chuck. 20 HP Main Spindle. 5,000 RPM. 5 HP rotary tool spindle motors. 12" maximum cut diameter X 21.30" maximum length. .001 degree minimum C-axis indexing increment. 3.94" Y-axis travel.

### **(2) Mori Seiki NL 2500 Turning and Milling Center**

MAPPS II Operating System. 10" Chuck. 4,000 RPM. 25 HP. 16" maximum diameter. "Y" Axis with 7.5 HP live tooling. 30" between centers.

### **Nakamura SC 300-227 Turning Center**

Fanuc CNC Control. Max cutting diameter 13.78", maximum turning length 43.3. 12 position turret. Twin spindle 3500 RPM. Renishaw probing system.

### **Mazak Quick Turn 250 Turning Center**

Smooth G Control. 10" chuck. 3.58 spindle bore, 4000 RPM, 35 HP. Maximum turn diameter 16.25", maximum turn length 39.37". 213 PSI coolant.

### **(2) Okuma LB4000 EX-11-1500 Turning Center**

12"chuck. Big bore A2-11, 3,000 RPM, 50 HP, 4.41 spindle bore. Maximum turn diameter 18.90, Max turn length 59." 300 PSI coolant.

### **Okuma Genos M560-V Milling Center**

Spindle Speed 15,000, Rapid Traverse IPM X-Y: 1,575, Z: 1,262, 32 Tool magazine capacity, Max Machining volume 41.34 x 22.05 x 18.11 inches

### **Mazak Nexus 300 Turning Center**

PC-Fusion 640 Control. 30HP, 10" chuck, 16.50" maximum cutting diameter X 32" in length, 3" diameter thru spindle (1300 IPM Rapid).

### **Mazak Nexus 200 Turning Center**

PC-Fusion 640 Control. 8" chuck. 5,000 RPM. 30HP. 14.00" maximum cutting diameter X 20.100" length (1300 IPM Rapid).

### **Mazak Quick-Turn 30 Turning Center**

T-Plus Control. 10" chuck. 30 HP. 2.76 thru hole 15.35" maximum swing X 38" maximum length, 19" swing is possible for lengths of 6" or less.

### **Mazak Quick-Turn 20 Turning Center**

T-Plus Control. 8" chuck. 5,000 RPM. 20 HP. 2" thru hole, 12" maximum cutting diameter X 26." maximum length.

### **Hardinge Chucker**

Manual threading head. Read out. Complete tooling.

### **Okamoto ACC16-32DX Surface Grinder**

### **Mitsubishi Diagrind RB32-B100P Cylindrical Grinder**

Fanuc OG CNC Control, 12.6" swing, 39.4 center distance. Programmable locator. Marposs I/P gage. Straight head. .00004 input resolution.

### **Mitsubishi PD32B100 CNC Cylindrical Grinder**

Fanuc Series 21i-T Control. Angle head, 12.6" swing X 39.4 center distance. 20" wheel. Programmable locator. Control 760 in progress gage. .00004 minimum input resolution.

### **Marvel PA460HD Bandsaw**

10 HP. 1 1/2 blade. 18" capacity

### **Cosen C 460NC Bandsaw**

10 HP. 1 1/4 Blade. 18" capacity

### **Rob, Inc. Vertical Band Saw**

### **(2) 5 Ton Kone Crane**

Used for handling incoming material.

### **(12) ½ Ton Overhead JIB Cranes**

Used to load material into the CNC Lathes, CNC Mills and CNC Cylindrical Grinders.

### **Four Stage Custom Parts Cleaning System**

Includes a heated dual station 200-gallon cascade filtered clean tank, heated dual station 200-gallon cascade filtered rinse tank, heated single station spray rinse tank, heated dual station 200-gallon final rinse tank with rust inhibiting additive.

### **ESMA E386 UltraSonic Cleaning System**

3 Tanks, Heated, and hot air drying

### **Boge S75 Rotary Screw Compressor 75HP**

### **Boge S29-2 Rotary Screw Air Compressor 30 HP**

### **Boge C30 Rotary Screw Air Compressor 30 HP**

## **Inspection Equipment**

### **Zeiss O-INSPECT 5/4/3**

Multi-Sensor Measuring Machine

### **Zeiss Contura G2 CMM**

Measuring range X = 1000mm, Y = 1600mm, Z = 600 mm

VASTxt Probe head. Calypso Software

### **Zeiss Contura G2 CMM**

Measuring range X = 700mm, Y = 1000mm, Z = 600 mm

VASTxt Probe head. Calypso Software

### **Zeiss DuraMax CMM**

Measuring range X = 500mm, Y = 500mm, Z = 500 mm

VASTxt Probe head. Calypso Software

### **ST Industries Video Scope**

Measuring range X = 6 inch Y = 12 inch, Z = 12 inch

M3 Metrology Software with Video Detection Capability

### **Mitutoyo Laser Micrometer**

LSM-512 Laser with LSM-6200 Display

43.72" Measurement Range

### **Deltronic DH214 Optical Comparator**

### **Mitutoyo SJ201 Surface Profilometer**

### **(3) Fowler Trimos Digital Height Stand (1000, 700, & 600mm)**

### **4 FT x 6 FT Grade A Trustone Inspection Plate**

### **Precision Hand Tool Instruments**

Micrometers up to 24"

Calipers up to 62"

Dial Bore Gages

Groove Gages

Library of Thread Gages

Library of Deltronic Class X Plug Gages