

## QUALITY EQUIPMENT

**ZEISS MC 550/500** CNC coordinate measuring machine, equipped with quartz 3D probe and Hewlett Packard 9000 Model 332 computer and printer. Resolution is 1 millionth and 10 millionths repeatability

**3 ZEISS Contura** CNC coordinate measuring machines, equipped with  $\delta$ VAST $\delta$  scanning probe and Compac Pentium II computer and printer including special Zeiss software for SPC. Resolution is **1 millionth** and **10 millionths** repeatability

**SEEBREZ 5300** Fully automatic **Vision system** with touch probing and optical edge detection for accurate measurement of parts with features that can not be checked by our Zeiss CMM $\delta$ . With Contact probing and Vision checking in the same machine, it allows for a more accurate picture of a part in one setup.

NIKON micro stage tool makers microscope with quadra-chek 2000

Numerex Model Mini-Cord measuring machine

Bendix 1000 computer coordinate measuring machine with electronic probes

14 $\delta$  Optical comparator

14 $\delta$  Vertical squareness gauge

18 $\delta$  Heightmaster

### **Zeiss Surface Analyzer**

Bench micrometer to .00001 and Air Gauging of diameters

12 *each*

Pentium IV computers with Mitutoyo M-STAT software for SPC requirements

10 *each*

Microscopes

## EQUIPMENT:

### CNC MILLING CENTERS

1 *each*

Kitamura H400 Supercell

**Full 5 axis 20 Pallet** Horizontal Machining Center

200 Tool Magazine Storage

1 *each*

Kitamura HX400 12 Pallet expandable robotic cell

**4 axis** Horizontal Machining Center

200 Tool Magazine Storage

1 *each*

DMG 50EV Full **5 axis** high speed CNC vertical milling center with **3000 IPM** Rapid traverse and 20 H.P. 15,000 RPM spindles. 20 inch cube

1 *each*

Kitamura HX400 Horizontal

Horizontal Machining Center

1 *each*

Kitamura Mycenter-3X **5 axis** rigid tapping CNC vertical milling with 1.5 second tool change and 950 IPM rapid traverse 20 HP 10,000 RPM spindle.

1 *each*

Kitamura Mycenter-0 **4 axis** rigid tapping CNC vertical milling machine with 1.5 second tool change and **1800 IPM** rapid traverse

5 *each*

Kitamura Mycenter-3X **4 axis** rigid tapping CNC vertical milling centers with 1.5 second tool change and 950 IPM rapid traverse 20 HP 10,000 RPM spindle and **Renishaw Electronic Probing. 30" x 18" x 17"**

5 *each*

Kitamura Mycenter-3X pallet changing, (two of these are Spark Changers), rigid tapping CNC vertical milling machines with 20 HP 15,000 RPM spindle 1.5 sec. tool change 30 x 18 x 17

3 *each*

Kitamura Mycenter-1 4 axis CNC milling machines. 13,000 RPM rigid tapping and **Renishaw Auto Probing** of parts. 20ö x 14ö x 14ö

*5 each*

Kitamura Mycenter-1 pallet changing 4 axis CNC milling machines. 13,000 RPM rigid tapping and **Renishaw Auto Probing** of parts. 20 x 14 x14

*1 each*

Fadal 4020 HT with glass scales **40** inch pallet changing CNC vertical milling machine with 800 IPM 15HP 10,000 RPM 800 IPM rapid traverse and .0001 resolution. **40 X 20 X 24**

*1 each*

Haas **VF-3 4 Axis** vertical machining center. 10,000 RPM 1000 IPM rapid traverse and .0001 resolution. Renishaw auto probing with visual quick code. 25 tools. 40x20x25

*3 each*

Fadal 4020 Marksman II 4 axis CNC machining centers. 20HP 10,000 RPM tool changer vertical milling machines with 800 IPM rapid traverse and .0001 resolution. 40 x 20 x 24

### **MILLING MACHINES**

*2 each*

Bridgeport milling machines, all equipped Trav-A-Dials

### **CNC LATHES**

*1 each*

Hardinge Super-precision Conquest T42SP CNC slant bed lathe with live tooling and **10 millionths** resolution and movements. 10 inch dia. max

*1 each*

Hardinge Super-Precision CHNC II+ CNC chucker and bar machine with **10 millionths** resolution and movements. 10 inch dia. max

*3 each*

Hardinge Super-precision Conquest T42SP CNC slant bed lathes with **10 millionths** resolution and movements. 10 inch dia. Max

*1 each*

Haas SL-30 CNC slant bed lathe with 10ö chuck. 30 HP with 1200 IPM Rapid Traverse. 3.0 bar capacity. Repeatability of .0001. Max turn length of 30ö. Max turn diameter of 17ö. 12 station turret.

Hardinge H.L.V. tool room lathes

Hardinge second operation lathes

### **CUBIC SIZE LIMITS FOR CNC MILLING & TURNING**

**5 AXIS X=19" Y=16" Z=15"**

**4 Axis X=30" Y=18" Z=18"**

**3 Axis X=40" Y=20" Z=26"**

**CNC Lathes 3" thru spindle or 17" diameter max single parts up to 30" length.**

### **SUPPORT EQUIPMENT**

1 Accuseal Nitrogen bagging system for shipping corrosion free parts

*2 each*

Chevelier 12ö x 24ö automatic surface grinder

Boyer Shultz 6ö x 18ö surface grinder

14ö abrasive cut off saw

24ö Grob vertical band saw

*3 each*

Speedycut lead screw tapping machines

6 each 20ö  
Clausing vari-speed drill presses

### **FINISHING**

1 each  
S.S. White abrasive jet machining system for precision deburring

Termite graining machine and Empire bead blaster

3 each  
Ultra-Matic 3.5 Cubic foot vibratory deburring machines

### **PROGRAMMING**

**MasterCam** and **DNCPLUS** software with simultaneous DNC hookup to all CNC machines. Purchase orders and forecasts for most of our customers are received via EDI. We have the capability of receiving drawing and CAD files via the Internet. We work with almost any cad software(including solids).

### **CUSTOMER REFERENCE LIST**

Agilent Technologies (5 divisions)

AGSR (Sonoma)

AGSC (Santa Clara)

AGMA (Malaysia)

AGRM (Germany)

AGWA (Washington)

Honeywell-Measurex

Nextest

Varian NMR Instruments Division

B.E.I. Systron Donner

Stryker (Medical)

Alza(Medical)

Symmetricom

Lockheed Martin

Composite Engineering Inc

Aerometals

Eagle Aviation

TYCO

Light and Motion

Bechtel Nevada

L3Comm

Northeast Electronics

Superior Mold

Raydiance

Lantis Laser

Data Physics

Stratalight

### **COMMUNICATIONS**

B & Z is EDI capable through the Internet. We are currently processing most of our transactions from CAD to Receivables online. E-mail us at [info@bzmfg.com](mailto:info@bzmfg.com)