

## Facilities List

### CNC MACHINING CENTERS

DMG Mori DMU 65FD monoBLOCK

5 AXIS MILL/TURN  
SIEMENS 840D FD CONTROL  
RENISHAW PART PROBING  
BLUM LASER PROBE  
1160 PSI THRU TOOL COOLANT  
18,000 RPM  
47 HP Spindle / 60 TOOLS  
1,000/1,200 RPM C-AXIS  
1574 I.P.M. RAPID  
Travel X/Y/Z: 28.9" x 25.6" x 22"  
Workpiece up to Ø33.07" x 19.68"  
Turning Capacity Ø25.6" x 19.7"  
Max load 1,323lb

DMG Mori DMU 75 monoBLOCK

5 AXIS MILL  
CELOS w/ SIEMENS 840D sl CONTROL  
RENISHAW PART PROBING  
BLUM LASER PROBE  
580 PSI THRU TOOL COOLANT  
20,000 RPM 47 HP Spindle / 60 TOOLS  
1574 I.P.M. RAPID  
Travel X/Y/Z: 29.5" x 25.6" x 22"  
Table Size Ø25.6"  
Workpiece up to Ø33.07" x 19.68"  
Max load 1,323lb

Mori Seiki NV5000a1B/40

4 AXIS MILL  
MAPPS II MSG-501 CONTROL & DATA SERVER  
w/ HPCC-AI for HIGH-SPEED 3D MACHINING  
14,000 RPM 30 HP Spindle / 30 TOOLS  
1,653 I.P.M. RAPID  
Travel X/Y/Z: 40.2" x 20.1" x 20.1"

Mori Seiki NV5000B

4 AXIS MILL  
MAPPS MSG-501iMB CONTROL & DATA SERVER  
w/ HPCC-AI for HIGH-SPEED 3D MACHINING  
12,000 RPM 30 HP Spindle / 30 TOOLS  
1,653 I.P.M. RAPID  
Travel X/Y/Z: 40.2" x 20.1" x 20.1"

Mori Seiki SV40

3 AXIS MILL  
FANUC 18M CONTROL  
12,000 RPM 30 HP Spindle / 30 TOOLS  
1,270 I.P.M. RAPID  
Travel X/Y/Z: 23.6" x 16.9" x 18.1"

DMG Mori DMU 50 3rd Gen

5 AXIS MILL  
SCHUNK AUTOMATION INTERFACE PH150 (10 PALLET)  
CELOS w/ SIEMENS 840D sl CONTROL  
RENISHAW PP60 PART PROBING  
BLUM DIGILOG LASER PROBE  
580 PSI THRU TOOL COOLANT  
20,000 RPM 47 HP Spindle / 120 TOOLS  
1653 I.P.M. RAPID  
Travel X/Y/Z: 25.59" x 20.47" x 18.70"  
Workpiece up to Ø24.8" x 23.60"  
Max load 661lb

Mori Seiki NH4000 DCG 6CPP

4 AXIS MILL  
6 PALLET HORIZONTAL MANUFACTURING CELL  
MAPPS IV CONTROL W/ PART PROBING SYSTEM  
1000 PSI THRU TOOL COOLANT  
14,000 RPM 30 HP Spindle / 180 TOOLS  
1,968 I.P.M. RAPID  
Travel X/Y/Z: 22" x 22" x 24.8"

Mori Seiki MV40b

4 AXIS MILL (RESOLUTION = 0.001°)  
FANUC 16M CONTROL  
12,000 RPM Spindle / 20 TOOLS  
Travel X/Y/Z: 31.5" x 16.1" x 20"

Mori Seiki MV40b

3-1/2 AXIS MILL (RESOLUTION = 0.001° INDEX)  
FANUC 10M CONTROL  
8,000 RPM Spindle / 20 TOOLS  
Travel X/Y/Z: 31.5" x 16.1" x 20"

(2) Mori Seiki MV40b

3 AXIS MILL  
FANUC 16M CONTROL  
12,000 RPM Spindle / 20 TOOLS  
Travel X/Y/Z: 31.5" x 16.1" x 20"

Mori Seiki MV40a

3 AXIS MILL  
FANUC 10M CONTROL  
8,000 RPM Spindle / 20 TOOLS  
Travel X/Y/Z: 23.6" x 16.1" x 20"



## Facilities List

### CNC MACHINING CENTERS

Mori Seiki MV40m

3 AXIS MILL  
FANUC 0M CONTROL  
8,000 RPM Spindle / 20 TOOLS  
Travel X/Y/Z: 22" X 16" X 18"

Hurco VM20

3 AXIS MILL  
WINMAX CONVERSATIONAL CONTROL  
10,000 RPM 20 HP Spindle / 20 TOOLS  
600 I.P.M. RAPID  
Travel X/Y/Z: 40" x 20" x 20"

Mori Seiki MVjr

3 AXIS MILL  
FANUC 10M CONTROL  
6,000 RPM Spindle / 16 TOOLS  
Travel X/Y/Z: 22" X 16" X 18"

(2) TRAK DPM-SX3 Bed Mill

3 AXIS MILL  
5,000 RPM  
5 HP Spindle  
Travel X/Y/Z: 33" X 17" X 23.5"w

### CNC SUPPORT EQUIPMENT

Haimer Shrink Fit w/ Power Clamp Eco Plus  
CARBIDE & HSS TOOLS Ø.118" – Ø1.260"  
INTEGRATED CONTACT COOLING

Haimer UNO premium 20|40 Tool Presetter  
SK50 ULTRA-HIGH PRECISION SPINDLE  
+/- 2 µm repeatability

### CNC TURNING CENTERS

DMG Mori NLX 2500|700

TWIN SPINDLE 4 AXIS TURN/MILL  
MITSUBISHI M730UM w/ CELOS  
S1: 4,000 RPM Ø10" CHUCK / ROYAL QG-80 COLLET NOSE  
S2: 6,000 RPM Ø6" CHUCK / ROYAL QG-80 COLLET NOSE  
20 STATION LIVE TOOLING TURRET – 10,000 RPM  
WORKPIECE CONVEYOR / UNLOADER  
1015 PSI THRU TOOL COOLANT  
1181 I.P.M. RAPID  
CAPACITY: Ø7.6" x 27.7"

Mori Seiki SL25b

2 AXIS  
FANUC 10T CONTROL  
Ø10" CHUCK / Ø2.65" THRU  
LIVE CENTER  
3,500 RPM 20HP Spindle  
10 STATION TURRET  
CAPACITY: Ø10.0" x 24.6"

Mori Seiki CL25b

2 AXIS CHUCKER  
FANUC 18T CONTROL  
Ø12" CHUCK / Ø3.60" THRU  
2,800 RPM 25 HP Spindle  
10 STATION TURRET  
CAPACITY: Ø17.7"

TRAK TRL-2460V Lathe

2 AXIS  
Ø12" & Ø15" CHUCKS / Ø4.09" THRU  
1,800 RPM 15 HP Spindle  
CAPACITY: Ø24.0" x 60.0"

## Facilities List

### ELECTRICAL DISCHARGE MACHINING

#### Fanuc 0iD-10" Wire EDM

FANUC 310is WA CONTROL  
"A" AXIS, FULLY PROGRAMMABLE (Turn & Burn)  
SUBMERGED / AUTO THREADING  
U-V +/- 2.364"  
14.5" x 10.6" x 10"

#### Fanuc 1i Wire EDM

FANUC 18i W CONTROL  
SUBMERGED / AUTO THREADING  
U-V +/- 2.364"  
20.5" x 14.6" x 16"

#### Fanuc 0i Wire EDM

FANUC 18i W CONTROL  
SUBMERGED / AUTO THREADING  
U-V +/- 2.364"  
12.6" x 8.7" x 7.1"

#### Sodick K1C Small Hole Drilling EDM

Ø.0098" to Ø.118" (Ø0.25mm to Ø3.0mm)  
7.87" x 11.8" x 11.8"

### SOFTWARE

#### MasterCAM (4 SEATS)

- MILL
- MILL 3D
- MULTI-AXIS
- LATHE
- WIRE EDM

#### hyperMILL CAD/CAM by OPENMIND (3 SEATS)

- Full 5 axis MILL/TURN

#### CIMCO DNC-MAX

WIRELESS CNC NETWORKING

#### GLOBAL SHOP SOLUTIONS – ERP Software

QUOTING  
APS  
SHOP FLOOR CONTROL / DATA COLLECTION  
FINANCIAL  
CRM  
QUALITY  
DOCUMENT CONTROL  
PREVENTATIVE MAINTENANCE

#### HIGH QA – Quality Software (3 SEATS)

BALLOONING & GD&T EXTRACTION  
INSPECTION REPORT MANAGEMENT  
WIRELESS SHOP FLOOR DATA COLLECTION  
SPC & AQL BASED SAMPLE PLANNING  
TOOL & GAGE CALIBRATION MANAGEMENT

### MANUAL LATHES

#### Mori Seiki Engine Lathe

DIGITAL READOUT  
Ø8" CHUCK: Ø2-1/4" THRU  
CAPACITY: Ø16" x 48"; Ø24" GAP

#### (3) Hardinge HLV Toolmakers Lathes

DIGITAL READOUT  
Ø6" CHUCK: Ø1.1" THRU  
ENGLISH / METRIC



## Facilities List

### MANUAL MILLING

(3) Bridgeport Knee Mills  
DIGITAL READOUT  
3,000 RPM  
POWER FEED  
30" x 9" x 5"

### GRINDERS

Chevalier FSG-2A1224H Surface Grinder  
Automatic X,Y axis  
DIGITAL READOUT  
12" x 24"

Okamoto ACCUGAR 124N Surface Grinder  
Automatic X,Y axis  
DIGITAL READOUT  
12" x 24"

Harig 618 Surface Grinder  
3,600 RPM  
6" x 18"

Okamoto PFG-450B Surface Grinder  
Automatic X,Y axis  
6" x 18"

Harig 612 Surface Grinder  
3,600 RPM  
6" x 12"

## Facilities List

### MISC. SHOP EQUIPMENT

Clousing Drill Press  
VARIABLE SPEED  
20" x 20" x Ø1/2"

Amada HA-250W Horizontal Bandsaw  
SEMI-AUTOMATIC  
1-1/4" BLADE  
CAPACITY: 10" Ø

DoAll 3613-20 Vertical Bandsaw  
3hp / 36"

DoAll Model ML Vertical Bandsaw  
15.75"

HYD-MECH Horizontal Bandsaw  
1" BLADE  
CAPACITY: Ø8.25"; 7.75" Sq.; 7.75" x 10.5" Rect.

Pexto 12V4F Shear  
12 GA x 48"

(2) Gardner Denver Model L18 Air Stations  
25 HP ROTARY SCREW AIR COMPRESSOR  
REFRIGERATED AIR DRYER  
120 GALLON RECEIVER

Clean Room  
8' x 10' SOFT-WALL  
CLASS 1000

High Speed Sensitive Drill Press  
Ø.010" - Ø.040"

Sunnen Hone  
Ø1/8" - Ø1-1/2"

Empire Pro-Finish #2636 SRC-4 Suction Blast Cabinet  
DUST COLLECTOR / RECLAIMER  
26"D x 36"W x 30"H

Sweco FMD34A Vibratory Tumbler  
3 CUBIC FOOT BOWL - 5 HP

Ultramatic Portaburr Model 3 Vibratory Tumbler  
3 CUBIC FOOT TUB - 3/4 HP

Centrifugal Disc Finisher  
PNEUMATIC SAND BLASTER  
30" x 21" x 23"

Centrifugal Disc Finisher  
5 LITER BOWL

Yale GLC050 Propane Forklift  
5,000lb CAPACITY / 189"



**ASSEMBLY**



## Facilities List

### INSPECTION EQUIPMENT

Zeiss Contura G2 RDS 7/10/6 CMM

27.5" x 39.3" x 23.6" (700mm x 1000mm x 600mm)

Active Scanning

Measurement Accuracy 1.8 + L/300 (micron)

(2) Granite Surface Plates

48" x 36"

Granite Surface Plate

36" x 36"

(8) Granite Surface Plates

MISC. SIZES FOR IN PROCESS INSPECTION AT WORK AREAS

Brown & Sharpe Micro-Hite 900

36" ELECTRONIC HEIGHT GAGE

ACCURACY: 0.0002" (0.0045mm)

REPEATABILITY:  $\pm 2s = 0.0001$ " (0.003mm)

MAX. PERPENDICULARITY ERROR: 0.00048" (0.012mm)

MISC. ACCESSORIES & PROBES

Trimos V1004+ 48.6" Height Gage

RESOLUTION: 0.00005"

ACCURACY: 0.00012" (0.003mm)

Trimos V304+ 21" Height Gage

RESOLUTION: 0.00005"

ACCURACY: 0.00012" (0.003mm)

Mitutoyo HDS-12" CX Height Gage

RESOLUTION: 0.0001"

Mitutoyo 24" Height Gage

RESOLUTION: 0.001"

Fowler / Bowers Digital Bore Gages

.2500" Ø THROUGH 8.0000"

Ø RESOLUTION: 0.00005" / 0.001mm

Standard Dial Bore Gages

.2400" Ø THROUGH 12.1250"

Ø RESOLUTION: 0.0001"

Dorsey Benchmark 16H

Optical Comparator w/ edge detection

Quadra-Chek 200

Leica S8 APO Stereo Microscope

10× – 80× ZOOM (8:1 APOCHROMATIC)

INTEGRATED PHOTO/VIDEO

RESOLUTION: 300 Lp/mm

Lynx Stereo Dynascopic Microscope

7.0× – 40× ZOOM (5.7:1)

Mitutoyo Digital Micrometer Set

0" THROUGH 4"

RESOLUTION: 0.00005"

Micrometer Set

1" THROUGH 18"

RESOLUTION: 0.0001"

Mitutoyo Blade Micrometer Set

0" THROUGH 4"

RESOLUTION: 0.0005"

Mitutoyo Thread Micrometer Set

0" THROUGH 6"

Mitutoyo 24" Digital Calipers

RESOLUTION: 0.0005" / 0.01mm

(3) Fowler Gage Block Sets

0.1000" THROUGH 4.0000"

Numerous Sets of Gage Pins

.0060" Ø THROUGH 1.0000" Ø 0.001 INCREMENTS

PLUS & MINUS

Large Assortment of Deltronic Pins

0.0001 INCREMENTS

Starrett Master Level

Mitutoyo SurfTest 211

SURFACE ROUGHNESS TESTER

MEASURING RANGE:

Ra, Rq: 2-1600  $\mu$  inch (0.05-40  $\mu$  m)

Rz, Ry: 10-6400  $\mu$  inch (0.3-160  $\mu$  m)