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Facility Machine List

Horizontal CNC Machining Centers

1 each 2018 Makino A51NX Horizontal Machining Center with Pro6/Fanuc Control
Capacity 22.05" x 25.20" x 25.20" with dual 400mm pallets.
Equipped with 133 tools, 14,000 rpm high torque spindle, Coolant thru the spindle,
Simultaneous 4- axis machining capability, Super GI.5 control, Super geometric intelligence.
Accuracy less than .002mm positioning and .001mm repeatability

1 each 2011 Makino A51NX Horizontal Machining Center with Pro5/Fanuc Control
Capacity 22.05" x 25.20" x 25.20" with dual 400mm pallets.
Equipped with 60 tools, 20,000 rpm spindle, Coolant thru the spindle, Simultaneous 4 axis
machining capability, Super GI.4 high speed, High accuracy control.
Accuracy less than .002mm positioning and .001mm repeatability

Makino MMC2 Expandable Production Cell

Equipped with 39 500mm pallets using rail guided high speed delivery vehicle.
Central PC based cell controller linking the following machining centers.
2 each 2007 A61 Makino Horizontal Machining Centers with Pro5/Fanuc Control
1 each 2009 A61 Makino Horizontal Machining Centers with Pro5/Fanuc Control
1 each 2011 A61NX Makino Horizontal Machining Center with Pro5/Fanuc Control
A61 Capacity 28.74" x 25.59" x 28.74"
A61NX Capacity 28.74" x 28.74" x 31.50"
Each equipped with 219 tools, 20,000 rpm spindle, Coolant thru the spindle,
Simultaneous 4 axis, Super GI4 high speed machining capability.
Accuracy less than .002mm positioning and repeatability

2 each 2004 Makino A55E with Simultaneous 5 axis and Pro3/Fanuc 16i Control
Capacity 22" x 23" x 20" with dual 400mm pallets.
Equipped with 60 tools, 14,000 rpm spindle, Coolant thru the spindle, Super GI high speed
machining capability.
Accuracy less than .004mm positioning and repeatability

1 each 2004 Kitamura Mycenter HX400iF with Fanuc 16i-M Control
Capacity 28.9" x 24" x 24" with dual 400mm pallets.
Equipped with 50 tools, 13,000 rpm geared spindle, Coolant thru the spindle,
Simultaneous 4 axis high speed machining capability.
Accuracy +/- 0.0001" positioning and repeatability

1 each 2003 Matsuura ES450H with Fanuc 18i-M Control
Capacity 17.5" x 15.7" x 15.7" with dual 300mm pallets.
Equipped with 30 tools, 10,000 rpm spindle, Coolant thru the spindle,
4th axis 1 degree rotary positioning capability
Accuracy less than .005mm positioning and repeatability

Vertical CNC Machining Centers

2 each 2016 Makino PS95 with Professional P/Fanuc Control
Capacity 36.2" x 20" x 18.1"
Equipped with 30 tools, 14,000 rpm 33.5hp spindle, Super GI high speed machining.
Accuracy up to +/- 0.0001" positioning accuracy and +/- 0.000078" repeatability

2 each 2013 Makino PS95 with Professional P/Fanuc Control
Capacity 36.2" x 20" x 18.1"
Equipped with 30 tools, 14,000 rpm 33.5hp spindle, Super GI high speed machining.
Accuracy up to +/- 0.0001" positioning accuracy and +/- 0.000078" repeatability

1 each 2011 Makino PS95 with Professional P/Fanuc Control
Capacity 36.2" x 20" x 18.1"
Equipped with 30 tools, 14,000 rpm 33.5hp spindle, Super GI high speed machining.
Accuracy up to +/- 0.0001" positioning accuracy and +/- 0.000078" repeatability

1 each 2008 Haas VF-6/40 with 5 Axis Machining Capabilities
Capacity 64" x 32" x 30"
Equipped with 40 tools, 15,000 rpm spindle, single platter full 5 axis trunnion, and high speed machining.
Accuracy positioning (\pm) 0.008 mm repeatability (\pm) 0.005 mm

1 each 2004 Haas VF-2SS
Capacity 30" x 16" x 20"
Equipped with 24 tools, 12,000 rpm spindle, and high speed machining.
Accuracy positioning (\pm) 0.008 mm repeatability (\pm) 0.005 mm

2 each 2017 Fanuc Robodrill D21LiB5 4 Axis with Fanuc 31i-Model B5 Control
Capacity 20" x 15" x 13"
Equipped with 21 tools, 24,000 rpm Spindle, High speed machining, Nano processing, Fanuc DDR260iB 4th axis rotary, .001 increment, 200rpm.
Accuracy less than .004mm positioning and repeatability

3 each 2009 Fanuc Robodrill T21iFL with Fanuc 31i-Model A5 Control
Capacity 20" x 15" x 13"
Equipped with 21 tools, 24,000 rpm Spindle, High speed machining, Nano processing, Dual station automatic pallet changer.
Accuracy less than .004mm positioning and repeatability

2 each 2006 Fanuc Robodrill T21iEL with Fanuc 31i-Model A5 Control
Capacity 20" x 15" x 13"
Equipped with 21 tools, 24,000 rpm Spindle, High speed machining, Nano processing, Dual station automatic pallet changer.
Accuracy less than .004mm positioning and repeatability

4 each 2004 Fanuc Robodrill T21iD with Fanuc 16i-MB Control
Capacity 20" x 15" x 13"
Equipped with 21 tools, 20,000 rpm spindle, AICC II high speed machining,
Dual station automatic pallet changer.
Accuracy less than .004mm positioning and repeatability

1 each 2003 Matsuura RA-1 with Yasnac MX3 control
Capacity 20" x 15" x 18"
Equipped with 20 tools, 10,000 rpm Spindle, and dual station automatic pallet changer.
Accuracy less than .005mm positioning and repeatability

CNC Turning Centers

1 each 2019 Doosan Puma 2100SY 5 axis Turning Center with Fanuc 0i-T Control
Equipped with 12 station 24 position high speed turret,
All stations have mill-drill capability, 5,000 rpm, and 7.5hp.
8" main spindle chuck with 16" turning diameter capacity, 20 hp motor, and 5,000 rpm.
6" sub-spindle chuck, 10 hp motor, and 6,000 rpm.
.001 degree minimum programmable angle in C axis, 4.13" stroke in Y- axis
Accuracy positioning: 0.00008", C = 0.008° Repeatability: ±0.00006", C ± 0.006°

Fanuc M20iA Robot Cell with Doosan 5 Axis Turning Centers

1 each 2015 Doosan Puma 2600SY with Fanuc 31i-A Control
1 each 2011 Doosan Puma 2600SY with Fanuc 31i-A Control
Equipped with 12 station 24 position turret, all stations have mill-drill capability.
10" main spindle with 14.8" chucking capacity, 29.5 hp motor, and 4,000 rpm.
6" sub-spindle chuck, 20 hp motor, and 5,000 rpm
.001 degree minimum programmable angle in C axis, 4.13" stroke in Y- axis.
Accuracy positioning: 0.00008", C = 0.001° Repeatability: ±0.00006", ±0.0005°
Robot repeatability 0.10mm, 20kg payload, 6 axis, 1811mm reach

1 each 2006 Doosan Puma 2000SY 5 Axis Turning Center with Fanuc 18iTB Control
Equipped with 12 Station 24 position turret, all stations have mill-drill capability.
8" main spindle chuck with 14" turning diameter capacity, 20 hp motor, and 5,000 rpm.
6" sub-spindle chuck, 10 hp motor, and 6,000 rpm.
.001 degree minimum programmable angle in C-axis
LNS magazine bar loader 1/4" to 3 1/8" bar diameter capacity.
4.13" stroke in Y- axis.
Accuracy positioning: 0.00008", C = 0.001° Repeatability: ±0.00006", C ±0.0005°

1 each 2008 Doosano Puma 2000SY 5Axis Turning Center with Fanuc 18iTB Control
Equipped with 12 Station 24 position turret, all stations have mill-drill capability.
8" main spindle chuck with 14" turning diameter capacity, 20 hp motor, and 5,000 rpm.
6" sub-spindle chuck, 10 hp motor, and 6,000 rpm.
.001 degree minimum programmable angle in C-axis
4.13" stroke in Y- axis.
Accuracy positioning: 0.00008", C = 0.001° Repeatability: ±0.00006", C ±0.0005°

1 each 2008 Daewoo Lynx 220 LM Turning Center with Fanuc Oi Series Control
Equipped with 12 Station turret, all stations have mill-drill capability
6" main spindle, 20 hp motor, and 6,000 rpm. Programmable tailstock
.001 degree minimum programmable angle in C axis.
LNS magazine bar loader 1/4" to 2" bar diameter capacity.
Accuracy positioning: $\pm 0.00008"$, $\pm 0.001^\circ$ Repeatability: $\pm 0.00006"$, $\pm 0.0005^\circ$

CNC Wire EDM Center

1 each 2004 Fanuc Robocut 1i-C with Fanuc 180is-WB control
Capacity 41" x 28.7" x 16.1"
Equipped with auto threading, adaptive cutting control, accurate up to .00004
4 axis cutting capability.

Quality Assurance Equipment

1 each Brown & Sharpe Global Performance 9158 CMM
Capacity 900 x 1500 x 800
Equipped with Tesastar probe with high speed scanning Leitz sensors
Accuracy: MPE_v = from 1.5 + L/333 μm
Software PC-DMIS 2018 CMM

1 each Brown & Sharpe Optiv Classic 4.5.3
Optical measuring CMM
Capacity 400 x 500 x 300 mm
Equipped with high- resolution camera, 12:1 CNC controlled zoom, laser pointer, LED top lighting,
backlighting, and ringlight
Software PC-DMIS 2018 CMM Vision

1 each Brown & Sharpe DCC-CMM Model One
Capacity 25" x 39" x 23"
Equipped with fully programmable Renishaw PH10 articulating probe head with quick change
stylus
Software PC-DMIS 2018 CMM

1 each Brown & Sharpe DCC-CMM Model Micro Xcel
Capacity 29" x 41" x 18"
Equipped with fully programmable Renishaw PH10 articulating probe head with quick change
stylus
Software PC-DMIS 2018 CMM

1 each Brown & Sharpe DCC-CMM Model Micro Val PFx
Capacity 18" x 20" x 12"
Equipped with fully programmable Renishaw PH10 articulating probe head with quick change
stylus
Software PC-DMIS 2018 CMM

Production Sawing

1 each Spartan PA 13/3 Horizontal Saw
Capacity Rectangular 8" x 12"
Capacity Round 10"
Equipped with automatic bar feed, and multi-bar stacker

1 each Wilton 20" Vertical Saw
Height Capacity 12"
Throat Capacity 20"
Table Size 24" x 22.5"
Table Tilt (deg) 8 fwd/back, 12 left, 15 right

Tooling Department

1 each Zoller Power Shrink
Equipped with inductive coil for HSS and carbide tooling.
High performance cooling unit.
Tool cooling adapters.

1 each Zoller Venturion Saturn 1 Tool Presetter
400mm measuring length and 320mm measuring diameter.
2um Repeatability, 1um resolution, Adjusting Accuracy < 2um.
Equipped with High Precision Spindle, Saturn 1 Vision Operating System

Computer Software / Programming

Epicor ERP software with company wide network implementation featuring software for Accounting, Order Entry, Job Costing, Bar Coded Labor Reporting, Shop Routers, Purchasing, as well as Finite and Infinite shop loading/scheduling capabilities.
MasterCAM 2019 Programming System.
SurfCam 3D Design, Modeling and Machining Software System.
AUTOCAD LT2000i Design, Drafting and Detailing CAD Software.
DNC Shop Link Communication to all CNC Machine Tools
Siemens Nx9 Software.
PTC Creo 4 Software.