



Project Management and Engineering

Nicholson Manufacturing Ltd is a premier OEM manufacturer of Ring Debarking Equipment for the worldwide Timber industry with over 60 years of manufacturing experience. Nicholson has the capability to provide a "One Stop" solution for customers that require Heavy Metal Fabrication, Machining, and Assembly operations. Continued investment in technically advanced equipment and the training of our employees have allowed us to lead the challenge of manufacturing in the 21st century. Small to large projects are handled with "years" of manufacturing experience to support what ever requirements our customers might have.

Nicholson's in-house engineering department offers a wide range of skills and capabilities to support our customer's needs, including mechanical design, electrical design, controls design, pneumatic and hydraulic systems expertise. At Nicholson our engineering department collaborates with manufacturing engineers, production staff and most importantly, our customers to ensure our products are efficient in design, ease of manufacturability, and meet customer's expectations. Designs are created using state of the art Autodesk Inventor, 3-D solid-modeling, along with the use of finite elements analysis (FEA) software to make sure that our products are designed the most efficient way possible. PLC programming capabilities include Allen-Bradley and Siemens.

Machine Shop Equipment

Mazak Integrex E-1550
Vertical Machining Center
5 Axis Mill / Turn Machining Center
(See Mazak at www.mazakusa.com)
2 Units with identical features.
These two machines integrated with a FASTEMS FMS.

(FMS = Flexible Manufacturing System)
System is MLS-HD model
(See FMS at www.fastems.com)

Pallet Size: 1000mm, 1250mm, 1400mm,
1800mm

Maximum Diameter: 78.74"

Maximum Height: 56.96"

"X"-Axis Travel: 73.82"

"Y"-Axis Travel: 61.02"

"Z"-Axis Travel: 52.95"

"B"-Axis Travel: 150 Deg

"C"-Axis Travel: 360 Deg

Max Table Speed: 300 RPM

Max Spindle Speed: 5,000 RPM

Tooling Capacity: 330 tools per machine

Both machines are integrated with a FASTEM FMS that stores all raw material and machining pallets. The FMS system is equipped with 2 load/unload stations and 4 conveyors for loading and unloading parts. The system can handle parts up to 11,000 pounds, and store 50 machining pallets and 100 material pallets.

Mazak Integrex E-500HS
Horizontal Machining Center
5 Axis Mill Turn Lathe

(See Mazak at: www.mazakusa.com)

2 Units with identical features

Maximum Swing: 32.2"

Maximum Cutting Length: 120.00"

Main Spindle Speed and Ranges: 3300 RPM/2

Main Spindle HP: 40 HP
Sub-Spindle Speed and Ranges: 3300 RPM/2
Sub-Spindle HP: 40 HP
"B"-Axis Spindle Speed: 5000 RPM High
Torque
Tooling Capacity: 160 tool magazine
Number of Axis: "X", "Y", "Z:", "B", "C"
(main & sub), "W"

KIA KB135 Horizontal Boring Mill

Table Size: 78.7" x 70.9"
Pallet Load Limit: 22,000 Lbs
Spindle Diameter: 5.3"
X-Axis Travel: 118.00"
Y-Axis Travel: 78.70"
Z-Axis Travel: 63.00"
W-Axis Travel: 27.60"
RPM: 5 to 2000 rpm
Tooling Capacity: 90 tool magazine

Cincinnati Milacron 10HC-2500 D.N.C 4 Axis Machining Center

Horsepower: 10 HP
Axis Travel: X=100" / Y=40" / Z=40"
Rotary Table: 360 Degree Indexible
Spindle Speed: 25 to 4000 RPM
Feed Rate: 0.5 to 150 IPM
Siemens updated this machine with a Siemens 840D Controller.

Webster and Bennet Vertical Boring Mill

Horsepower: 30 HP
Maximum Swing: 59"
Maximum Height under rail: 48"
Speed Ranges: 6.3 to 140 RPM
Feed Rates: 0.005 to 0.250 IPM
Digital Readouts

Cincinnati Milling Machine Horsepower: 10 HP

Table Size: 87" x 16"
Travel: X=50" / Y=16" / Z=20
Digital Readouts

Mitts and Merrill Keyseater
Two Units
Horsepower: 5 HP
Stroke: 24"
Maximum Key Width: 2"

Pioneer Pull Broach
Currently set up for 3/4" Keyways

Engine Lathes
Horsepower: Up to 20 HP
Distance between Centers: Up to 133"
Swing over Carriage: 14.5 Diameter
Speed Ranges: 2 to 1200 RPM

Metal Bandsaw
4 Units
Up to 14" O/D maximum
Automatic feeding

Radial Arm Drill Press
2 Units
Maximum reach of 84",
Unit 1 has a #6 Morse Taper
Unit 2 has a #5 Morse Taper

Fabrication Equipment

Certified in Division 3 under CSA Standard W47.1-03.

Precision Lay-up Slabs
2 units
Unit 1 / 10' x 10'
Unit 2 / 19' x 4'

Accupress 310 Ton Press Break
Capacity 0.5" plate x 10' long

Gotha Plate Rolls

30" wide rolls

2" plate up to 7" wide

1 3/4" Plate up to 9" wide

Eutectic Surface Hardening

Apply Tungsten Carbide to high wear products

Motoman Robotic Welder with Dual Station

Motoman UP 20-6 Robotic Welder interfaced with a Cincinnati Dual Table Positioner allowing true 8 axis welding.

M.G DNC 4 Torch Thermal Burning Machine

Equipped with one Plasma Torch head and large Water table.

Plate sizes to 10' x 24' and maximum plate thickness of 8".

Welding Equipment

250 Amp DC Micro Wire welders

300 Amp AC/DC Welders

300 Amp DC Flux Core Wire Feed Welders

350 Amp Wire Feed MIG Welders (Inverters)

Additional Equipment

Overhead Cranes

6 each 10 ton bridge cranes

3 each 25 ton bridge cranes (100,000 lbs) capacity

Steel Shot Blasting Shop

20' x 40' with floor recovery system

Complete Enclosed Paint Shop

20' x 40' with High Volume Ventilation System and Electrostatic Painting capabilities

Thor Stress Relieving Furnace

8' x 28' x 6' Furnace with Automatic Tem-

perature Control and time/temperature Chart Recording System

Induction Furnaces

Silver Solder and Induction Harden small parts.

2 Units / 75 Kw and 35 Kw

Quality Control Resources

Qualifications and Certifications

Full Quality Assurance Capabilities.

Faro Digitizing Arm

Portable 3D measuring and digitizing arm with 0.0005 accuracy

Height Gages

2' and 3' Gages

Granite Precision Slabs

3 Units

4' x 8' Slab

2' x 3' Slab

3' x 4' Slab

Hardness and Surface Finish Testing Equipment

A full range of test procedures is available.



NICHOLSON MANUFACTURING LTD.

9896 GALARAN ROAD

P.O. BOX 2128

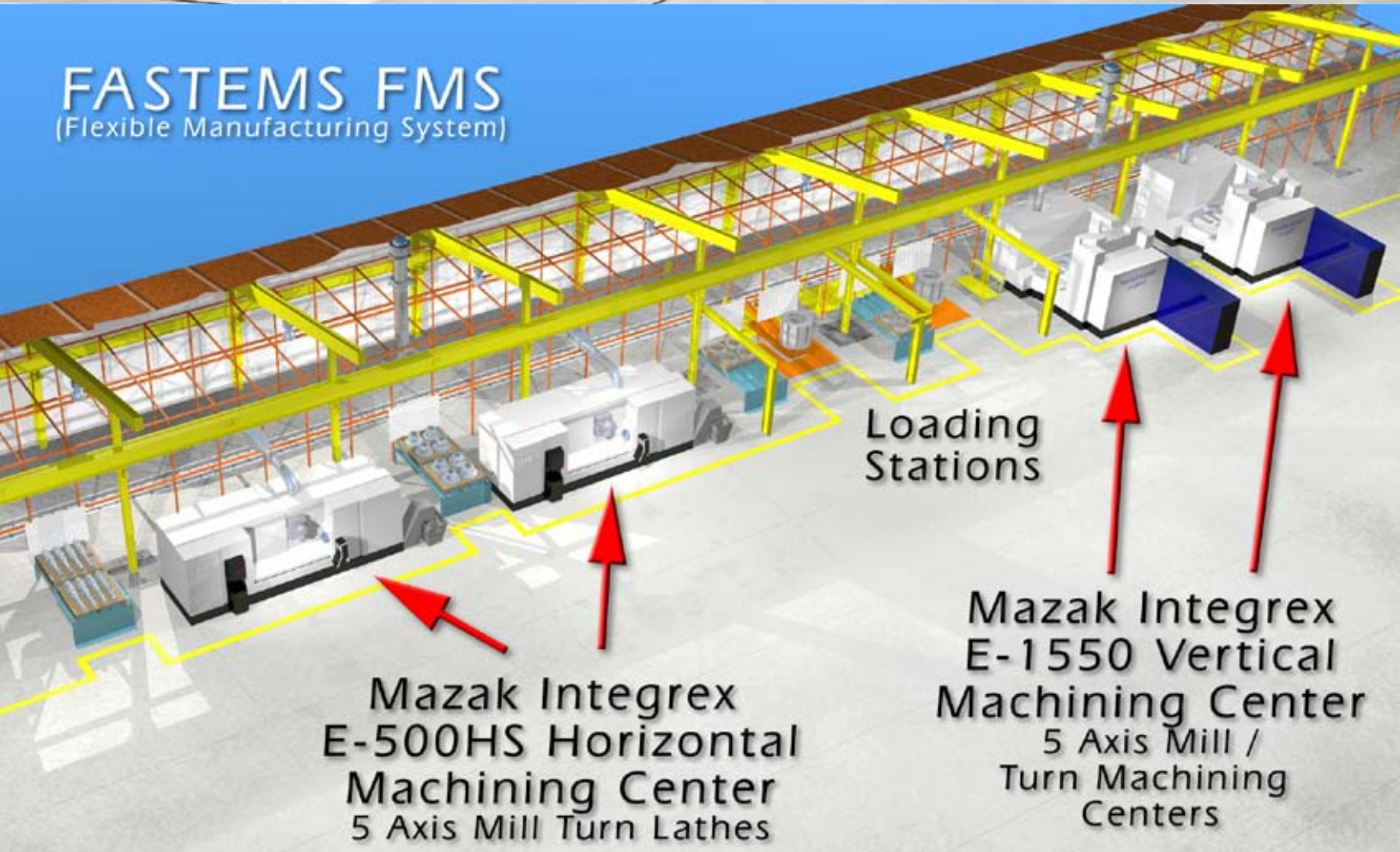
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FASTEMS FMS
(Flexible Manufacturing System)



Loading Stations

Mazak Integrex E-500HS Horizontal Machining Center
5 Axis Mill Turn Lathes

Mazak Integrex E-1550 Vertical Machining Center
5 Axis Mill / Turn Machining Centers