



Manufacturing Corporation

8901 Blue Ash Road  
Cincinnati, Ohio 45242-7809  
(513) 793-6382  
Fax (513) 793-6390

## CNC MACHINING CENTERS

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### MAKE

Mazak Ultra-650  
Horizontal Machining Center

Okuma MX-60HB  
Horizontal Machining Center

Mazak H-630  
Horizontal Machining Center

Makino A71 (1)  
Horizontal Machining Center

Makino A71 (2)  
Horizontal Machining Center

Makino A71 (3)  
Horizontal Machining Center

Mazak H-500-50  
Horizontal Machining Center

OKK MCH 560  
Horizontal Machining Center

Mazak FH-5800 (1)  
Horizontal Machining Center

Mazak FH-5800 (2)  
Horizontal Machining Center

Brown & Sharpe 1500 VS  
Vertical Machining Center

Mitsui-Seiki VR5A-DS (1)  
Twin Spindle Vertical Machining Center

Mitsui-Seiki VR5S-DS (2)  
Twin Spindle Vertical Machining Center

Makino GN-106  
Vertical Machining Center

Mazak VTC-16B  
Vertical Machining Center

Victor V4-S  
Vertical Machining Center

### SPECIFICATIONS

X-40.0"; Y-31.5"; Z-31.02"; 7,000 RPM spindle, 80 tools, Full 4th axis contouring table, 360,000 positions, 2 pallet shuttle, Renishaw probing

X-39.4"; Y-31.5"; Z-31.9"; 5000 RPM spindle, 60 tools, 4th axis index table 360 positions, 2 pallet shuttle system

X-39.4"; Y-31.5"; Z-29.5"; 4,500 RPM spindle, 80 tools, 4th axis Index table, 360 positions, 2 pallet shuttle system, Renishaw automatic probing

X-28.7"; Y-28.7"; Z-31.5"; 10,000 RPM spindle, 60 tools, 4th axis Index table, 360 positions, 2 pallet shuttle system,

X-28.7"; Y-28.7"; Z-31.5"; 10,000 RPM spindle, 60 tools, 4th axis Index table, 360 positions, 2 pallet shuttle system,

X-28.7"; Y-28.7"; Z-31.5"; 10,000 RPM spindle, 60 tools, 4th axis Index table, 360 positions, 2 pallet shuttle system,

X-28"; Y-25.6"; Z-25.6"; 5,000 RPM spindle, 80 tools, Full 4th axis contouring table, 360,000 positions, 2 pallet shuttle system, Renishaw probing

X-28"; Y-22"; Z-22"; 4,000 RPM spindle, 36 tools, 4th axis index table, 360 positions, 2 pallet shuttle system

X-27.95"; Y-24.02"; Z-25.96"; 12,000 RPM spindle, 40 tools, Full 4th axis contouring table, 360,000 positions, 2 pallet shuttle, Renishaw probing

X-27.95"; Y-24.02"; Z-25.96"; 15,000 RPM spindle, 80 tools, 4th axis index table, 360 positions, 2 pallet shuttle, Renishaw probing

X-60"; Y-30"; Z-30"; 4,000 RPM spindle, 24 tools, 16" Makino 4th axis indexer, 360,000 positions; 18" center height

X-42"; Y-24"; Z-24"; 27" between spindle centers, 3500 RPM, 20 tool ATC for each spindle

X-42"; Y-24"; Z-24"; 27" between spindle centers, 4500 RPM, 40 tool ATC for each spindle

X-41.34"; Y-25.59"; Z-24.80"; 4,500 RPM spindle, 30 tools, 4 Axis control, 16" Makino 4th axis contouring table, 360,000 positions; 18" center height

X-44"; Y-16"; Z-20"; 7,000 RPM spindle, 24 tools, traveling column, 10" Troyke 4th axis indexer, 360,000 positions; 12" center height

X-27.5"; Y-16.5"; Z-18"; 6,000 RPM spindle, 16 tools, 10" Troyke 4th axis indexer, 360,000 positions; 12" center height



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## CNC TURNING CENTERS

### MAKE

Pensotti TP-1250 / CN  
Vertical Boring Mill

Churchill 450 NC  
Turning Center

Okuma & Howa 2SP-V60  
Twin Spindle Vertical Turning Center

Mazak SQT-30  
Turning Center

Victor TNS5  
Turning Center

Fortune VT-36  
Turning Center

Diahsatsu PNC-L56  
Turning Center

Okuma LFS15 - 1SP  
Turning Center

### SPECIFICATIONS

64" max swing, 48" under rail, 9" square ram, 45" ram travel, 12 tool ATC, 49" table with 4 jaw chuck, 20,000 # capacity, 80 HP spindle, 325 RPM

30" turning diameter, 36" swing, 34" turning length  
8 tool turret, 24" chuck, 50 HP spindle, 1500 RPM

24" turning diameter, 27" swing, 26" turning length  
12 tool turrets, 15" chucks, 40 HP spindles, 2000 RPM

18" turning diameter, 22" swing, 40.75" turning length, 42" between centers, 12 tool turret, 12" chuck, 35 HP spindle, 3500 RPM

20" turning diameter, 27.5" swing, 42" turning length, 47" between centers, 12 tool turret, 12" chuck, 35 HP spindle, 1500 RPM

21" turning diameter, 25.6" swing, 33" turning length, 35" between centers, 10 tool turret, 12" chuck, 35 HP spindle, 2000 RPM

13" turning diameter, 17" swing, 29" turning length, 30" between centers  
10 tool turret, 10" chuck, 30 HP spindle, 3500 RPM

8" turning diameter, 14" swing, 6" turning length, 12 tool turret, 8" chuck, 15 HP spindle, 4500 RPM

## ALUMINUM WHEEL MACHINING EQUIPMENT - 2 COMPLETE CELLS

Okuma LAW-2s (1)  
4 axis CNC Lathe  
Wheel Turning Centers

24.8" Upper turret, 18.9" Lower turret, 24.9" swing, 34.06" turning length, 6 tool upper turret, 4 tool lower turret, 75 HP spindle, 3000 RPM, max 20" car wheel aluminum rim capacity

Okuma LAW-2s (2)  
4 axis CNC Lathe  
Wheel Turning Centers

24.8" Upper turret, 18.9" Lower turret, 24.9" swing, 34.06" turning length, 6 tool upper turret, 4 tool lower turret, 75 HP spindle, 3000 RPM, max 20" car wheel aluminum rim capacity

Okuma LAW-F (1)  
2 axis CNC Lathe  
Wheel Turning Center

24.41" turning diameter, 24.41" max swing, 13.78" turning length, 12 tool turret, 50 HP spindle, 3000 RPM, 18" x 10 Aluminum Car wheel capacity, 1st turn or 2nd turn finger chuck, spindle orientation

Okuma LAW-F (2)  
2 axis CNC Lathe  
Wheel Turning Center

24.41" turning diameter, 24.41" max swing, 13.78" turning length, 12 tool turret, 50 HP spindle, 3000 RPM, 18" x 10 Aluminum Car wheel capacity, 1st turn or 2nd turn finger chuck

Chiron WM-05 (1)  
Vertical Maching Centers for Wheels

X-21.0"; Y-18.5"; Z-17.0"; 10,500 RPM spindle, 10 tools, Full 4th axis N/C rotary table, wheel fixture to fit 13" to 20" wheel diameter, Renishaw probing

Chiron WM-05 (2)  
Vertical Maching Centers for Wheels

X-21.0"; Y-18.5"; Z-17.0"; 10,500 RPM spindle, 10 tools, Full 4th axis N/C rotary table, wheel fixture to fit 13" to 20" wheel diameter, Renishaw probing

(2) Fanuc s430iF Robots

130 kg payload, 104" reach + end of arm tooling, six axis, floor mounted, Fanuc R-J3 controller with teach pendant



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## CONVENTIONAL EQUIPMENT

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### MAKE

### SPECIFICATIONS

(4) Cincinnati Broaches	Vertical hydraulic surface-type; 48" travel, 3 ton capacity
Detroit CH-220 Continuous Chain Broach	Horizontal continuous chain type; 220" stroke, 20 ton capacity
Prototrack Bridgeport Vertical Mill	42" Table, 2 axis Prototrack M2 control, quick change toolholder system, variable speed spindle, 2 HP spindle
Cincinnati # 4-48 Horizontal Milling Machine	18" x 67" Table, 48" Travel, 15 HP spindle
Cincinnati # 3 Universal Horizontal Milling Machine	16" x 62" Table, Vertical milling attachment
(2) Cincinnati Toolmaster Vertical Milling Machines	42" Table, 2 HP spindle
Supermax Vertical Mill Bridgeport dovetail type	42" Table, 2 HP spindle
Wasino Wildcat Engine Lathe	24" Max diameter, 60" between centers, 3-Jaw and 4-Jaw chucks
Do-All D8 Hydraulic Surface Grinder	8" x 24" electromagnetic chuck
HES Model PDM 200 Gundrill	Sandvick Ejector Drilling System, 2" diameter capacity, 30 HP spindle
Allen Multispindle Drill Press	(6) drill heads, 4 power feed and 2 reversing tapping heads
American Hole Wizard Radial Drill	3' - 9" column, L - Table
Deka Multispindle Drill	MR-712-3, 14 Spindles, MT #1 shank
Speedycut Leadscrew Tapper	3/4" tap capacity
(2) Drilldraulics Horizontal Multispindle Drills	Jarvis heads, 21 spindles, 5/8 Automotive shank
Sunnen Hone and Precision Hole Gage	Automatic honing machine .090-6.0", portable honing 2.5"-21.0"; The hole gage features .000 05" resolution for bores .375-2.9"
FMT Belt Type Pass Through Automatic Aqueous Parts Washer	Stainless Steel, Three chamber system, Heated wash, Heated Rinse, Heated Air Blow-off, Belt Width 24", maximum part height 18"
Cincinnati Industrial Machinery Automatic Aqueous Parts Washer	Model Cimatic 200, Three chamber system, Heated wash, Rinse, Heated Air Blow-off, maximum part capacity: 17-1/2" x 11-1/2" x 6"



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## QUALITY ASSURANCE

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Climate controlled inspection lab

Brown & Sharpe Micro Excel PFx 7105 DCC coordinate measuring machine, 41.6" x 29.5" x 19.7" measuring range, .0002" accuracy, 60 points per minute throughput; Micromasure IV software, Data Page real time statistical software; Renishaw PH10MQ motorized probe head, with 180° horizontal angular movement and 105° vertical angular movement; Renishaw TP200 touch trigger probe with detachable stylus

Sheffield Cordax 300 manual coordinate measuring machine, computer integrated, factory upgraded to .0004" accuracy, 27" x 17" x 16" measuring range; Renishaw PH6 probe head; TP2 touch trigger probe

Optical Gaging Products Horizontal Optical Comparitor, 10x and 20x magnification lenses, 8" x 5" stage travels, geometric function digital readout with .00004" resolution, internal automatic edge detection

Hunter GPS-9700 automatic wheel balancing system

Computerized statistical process control (SPC) and database generation

Standard inspection equipment, calibration per Mil-45662

Federal internal groove, snap, and shallow OD / ID gages to 60"

Federal, Mitutoyo, and Diatest I.D. measurement gages to 40"

Standard Gage digital electronic column gages

Micrometers and digital calipers to 60"

Mitutoyo surface roughness test equipment

24" x 48" grade A and B surfaces plates

72" x 120" laboratory grade surface plate

All standard hand gages and reference masters

Quality system certified to ISO 9001 : 2000