

MANITOWOC TOOL & MACHINING, LLC



Over 50 Years of Precision CNC Machining Services



FACILITY LIST

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MANITOWOC TOOL & MACHINING, LLC

- Business established in 1965.
- Approximately 261,000 square feet of production machining and warehousing space.
- Entire plant centrally air-conditioned with special climate-controlled heating.
- Turnkey operations include:

Production Machining

Prototype Machining

Production Part Washing

Fixtures

Cleanliness (Millipore) Testing Lab using Gravimetric Method

Assembly

Honing Equipment

Spot Welding

Vibratory Finishing Equipment

- Equipment and experience to machine all types of materials including aluminum, stainless steel, steel, die castings, forgings, plastics, alloys and exotic materials.
- Owns and operates a fleet of trucks for local delivery.
- In-house Engineering Department for fixture design, build and maintenance.
- Separate In-house Prototype Department dedicated for Prototyping.
- Software includes:
 - ERP - Infor Visual
 - Quoting - Micro Estimating
 - CAD - IronCAD, PTC Creo, AutoCAD
 - CAM - Mastercam
 - Quality Data Collection - Infor Visual Quality, Mitutoyo MeasurLink
 - Gage Control - IndySoft

Production Machining Equipment:

CNC Horizontal Machining Centers

2 Mazak Nexus HCN - 6000

Travel Limits:

X=31.49

Y=31.49

Z=31.49

(1) 120 pocket tool changer per machine

(1) 80 pocket tool changer, 10,000 RPM

5 Mazak HCN - 6000

Travel Limits:

X=31.49

Y=31.49

Z=31.49

(4) 80 pocket tool changer per machine, 10,000 RPM

(1) 160 pocket tool changer per machine, 10,000 RPM

2 Mazak Nexus HCN - 6800

Travel Limits:

X=41.33

Y=35.43

Z=38.58

80 pocket tool changer per machine, 10,000 RPM

1 Mazak HCN - 6800

Travel Limits:

X=41.34

Y=35.48

Z=38.50

120 pocket tool changer, 8,000 RPM

2 Mazak FH-680

Travel Limits:

X=42.00

Y=32.00

Z=32.00

40 pocket tool changer, 10,000 RPM

Probe/coolant thru spindle

5 Mazak FH-6800

Travel Limits:

X=41.30

Y=31.50

Z=34.60

120 pocket tool changer, 10,000 RPM

3 Okuma MA-60HB

Travel Limits:

X=40.00

Y=32.00

Z=32.00

60 pocket tool changer, (2) w/ 10,000 RPM, (1) w/ 12,000 RPM

1 HAAS HSIR 4 AXIS

Travel Limits:

X=24.00

Y=20.00

Z=22.00

24 pocket tool changer, 7,500 RPM

2 Mori-Seiki NH-4000 DCG

Travel Limits:

X=22.00

Y=22.00

Z=24.80

40 pocket tool changer, Probe/coolant thru spindle

3 Mori-Seiki NH-5000 50 DCG

Travel Limits:

X=28.70

Y=28.70

Z=33.50

54 pocket tool changer, 8,000 RPM

Probe/coolant thru spindle

1 Mori-Seiki NH-6300 DCG II

Travel Limits:

X=41.34

Y=35.40

Z=38.60

100 pocket tool changer per machine, 10,000 RPM

Probe/Coolant thru spindle

4 Mitsui Seiki HJ63A

Travel Limits:

X=35.40

Y=31.50

120 pocket tool changer per machine

3 Mori NHX 5500

Travel Limits:

X=31.50

Y=31.50

Z=34.66

60 pocket tool changer per machine, 8,000 RPM

CNC Boring Bars

2 Toshiba BTD-13 R22

Travel Limits:

X=118.00

Y=91.00

Z=63.00

Table Dimensions: 71 x 87
Rotary indexable table, programmable
Max Weight Capacity: 24,000 lbs.
Spindle extension: 27

348 pocket tool changer per machine, 10,000 RPM
Ultra-High Precision Machine*

CNC Multiple Pallet Machining Centers

1 Mazak Nexus HCN 5000 (6 Pallet Pool)

Travel Limits:

X=28.70

Y=28.70

Z=33.50

160 pocket tool changer per machine, 18,000 RPM

1 Mori NHX 5500 (5 Pallet Pool)

Travel Limits:

X=31.50

Y=31.50

Z=34.66

180 pocket tool changer per machine, 15,000 RPM

Mitsui Seiki HJ80

4 Machine - 40 Pallet Fastem System

Travel Limits:

X=47.20

Y=37.40

240 pocket tool changer per machine

Coolant thru spindle

Mazak 6000-2

3 Machine - 20 Pallet Palletech System

Travel Limits:

X=31.50

Y=31.50

Z=31.50

160 pocket tool changer per machine, 10,000 RPM

Mazak FH-6800

4 Machine - 30 Pallet Palletech System

Travel Limits:

X=41.30

Y=31.50

Z=34.60

120 pocket tool changer per machine, 10,000 RPM

Mazak 8800

2 Machine - 8 Pallet Palletech System

(1) Mazak 8800

(1) Mazak u-8800*

Travel Limits:

X=55.12

Y=47.24

Z=52.17

Mazak 6800

4 Machine - 30 Pallet Palletech System

(3) Mazak 6800

(1) Mazak u-6800*

Travel Limits:

X=41.30

Y=31.50

Z=34.60

(3) w/ 160, (1) w/ 120 pocket tool changer, 10,000 RPM

Ultra-High Precision Machine*

Mazak 6800

5 Machine - 38 Pallet Palletech System

(4) Mazak 6800

(1) Mazak u-6800*

Travel Limits:

X=41.30

Y=31.50

Z=34.60

(3) w/ 330, (1) w/ 160, (1) w/ 120 pocket tool changer

10,000 RPM per machine

Ultra-High Precision Machine*

Mazak 6800

6 Machine - 46 Pallet Palletech System

(5) Mazak 6800

(1) Mazak u-6800*

Travel Limits:

X=41.30

Y=31.50

Z=34.60

(5) w/ 160, (1) w/ 120 pocket tool changer

10,000 RPM per machine

Ultra-High Precision Machine

Five Axis CNC Machining Centers

6 Mazak Integrex 200

Mark III with Gantry Loaders

10" Chuck

Travel Limits:

X=22.54

Y=6.3 +/- 3.15

Z=41.14

1 Mazak Integrex e-650H

Travel Limits:

X=40.35
Y=25.60
Z=122.91

15-24" Chuck

32 pocket tool changer
Z=25.00

1 Milltronics RH30

Travel Limits:

X=60.00
Y=30.00
Z=30.00

1 Milltronics VM6030IL

Travel Limits:

X=60.00
Y=30.00
Z=24.00

Five Axis CNC Machining Centers

Continued

1 Mazak i-500

Travel Limits:

X=13.78
Y=21.66
Z=20.08

60 pocket tool changer
15" x 19" Table

1 HAAS VF-OE

Travel Limits:

X=30.00
Y=16.00
Z=20.00

20 pocket tool changer

1 Mazak i-600

Travel Limits:

X=20.08
Y=35.83
Z=20.08

120 pocket tool changer
Two pallet changer (15.75" x 15.75")

7 HAAS VF 3 SS

Travel Limits:

X=40.00
Y=20.00
Z=25.00

40+1 pocket tool changer, 12,000RPM

1 Mazak VTC200C

Travel Limits:

X=65.00
Y=20.00
Z=20.00

24 pocket tool changer

CNC Vertical Machining Centers

1 Haas VF-6

Travel Limits:

X=64.00
Y=32.00
Z=30.00

31 pocket tool changer
7500 RPM spindle

1 Okuma MF-46VA

Travel Limits:

X=30.00
Y=22.00
Z=18.11

20 pocket tool changer, 15,000 RPM, Pallet Changer

2 EMag VL3 DUO

Travel Limits:

X=19.50
Z=10.00

Twin Spindle/Twin Turret, 12 pocket tool changer x2
Workpiece Diameter=6.00, Chuck Diameter=8.50
Gantry load system, Live turret tooling

1 Brother CNC Drilling/Tapping Center

Travel Limits:

X=24.00
Y=14.20
Z=10.60

3 Fanuc Robodrill

QT21 IDL – BTD 30 Plus

Travel Limits:

X=27.50
Y=15.70

2 Okuma MC-6VA

Travel Limits:

X=60.00
Y=25.00

Z=12.90

21 pocket tool changer, 10,000 RPM

1 Fanuc Robodrill

QT21 IEL – BTD 30 Plus

Travel Limits:

X=27.55

Y=15.70

Z=13.70

21 pocket tool changer, 10,000 RPM

8" Chuck

1 Mazak Quick Turn Primos 100S

Maximum turning diameter: 11.00

RPM: 6000

8" Chuck

1 Mazak Megaturn Nexus 900M VTL

Maximum machining diameter: 36.22

Maximum height: 31.50

24" Chuck

12 pocket tool changer

2 Mazak Nexus QTN 250

Chucker CNC turning center

Maximum turning diameter: 13.80

10" Chuck

CNC Turning Centers

1 Mazak Multiplex W-300Y

Maximum turning diameter: 16.93

Distance between centers: 8.86

RPM: 4000

10" Chuck

Dual Spindle/Dual Turret

2 Okuma Captain L-470

Maximum turning diameter: 16.54

Distance between centers: 25.59

RPM: 3000

12" Chuck

2 Okuma LB-3511

Maximum turning diameter: 19.40

Distance between centers: 37.00

RPM: 3200

15" Chuck

4 Mori-Seiki NL3000 MC700

Maximum turning diameter: 16.50

15" Chuck

Distance between centers: 28.00

3 Okuma LB-45

Maximum turning diameter: 25.50

Distance between centers: 39.25

15-24" Chuck

1 Milltronics ML 26

Maximum turning diameter over the carriage: 16.00

Maximum turning diameter over the ways: 26.00

12" Chuck

Distance between centers: 36.00

1 Okuma LB-45

Maximum turning diameter: 25.50

Distance between centers: 75.75

15-24" Chuck

1 Doosan Lynx 2100LB

W/ LNS Alpha 552 Bar Feeder

Multiple Bars ¾-2.0" Diameter x 12' Long

Maximum turning diameter: 13.78

W/ Fanuc (200-i) Robot 6 Axis

6" Chuck

1 Clausing 24 x 40

Maximum turning diameter: 16.34

Distance between centers: 40.00

RPM: 2500

One of only a few machines in the US with this accuracy
 DCC Coordinate Measuring Machine
 VAST Scanning Probe
 Calypso Software

1 Starrett Coordinate Measuring Machine

IBM-AT compatible computer system
 Statistical Process Control (SPC) readout capability

1 FARO Platinum CMM ARM

0.0005" Accuracy, 7 Axis, 8ft Measuring Range
 SPC capability both through CMM and shop floor

Quality Control Equipment:

Coordinate Measuring Machines

1 Brown & Sharpe GLOBAL IMAGE 12-15-10

DCC Coordinate Measuring Machine
 SP-800 Scanning Probe
 PC-DMIS

1 Brown & Sharpe GLOBAL IMAGE 9-20-8

DCC Coordinate Measuring Machine
 SP-800 Scanning Probe
 PC-DMIS

1 Hexagon GLOBAL S 12-30-10

DCC Coordinate Measuring Machine
 TP200 Touch Trigger Probe
 HP- S-X1 Scanning Probe with 2.5 degree
 Hexagon Articulating Wrist
 PC-DMIS

1 Hexagon GLOBAL S 12-22-10

DCC Coordinate Measuring Machine
 TP200 Touch Trigger Probe
 HP- S-X1 Scanning Probe with 2.5 degree
 Hexagon Articulating Wrist
 PC-DMIS

1 ZEISS UPMC 1200 CARAT

DCC Coordinate Measuring Machine
 Zeiss Scanning Probe with Table Rotation Capability

1 ZEISS PRISMO ULTRA 12-24-10

List of Certified Tools:

Dial Indicators	Taper Gages
Digital Readouts	Hole Micrometers
Surface Gages	Telescoping Gages
Height Gages	Inside & Outside Vernier Calipers
Inside & Outside Micrometers	Precision Squares
Surface Plates	Dial Bore Gages
Granite table (10" thick x36 x 60)	Profilometer
4 Granite tables (12" thick x60x140)	Rail Gages
Gage Blocks	Spectrophotometer
Plug Gages	12x18x4 Granite Tri-Square
Depth Micrometers	Thread Plug Gages
Thread Micrometers	Master Setting Rings
	42" Precision Granite Straight- Edge

The Scope of Quality System Compliance Includes:

Production CNC machining, prototype machining, fabrication and assembly, design and manufacture of tools and fixtures.

MTM will furnish customers with a Quality Control Manual upon request.

Manitowoc Tool & Machining, LLC

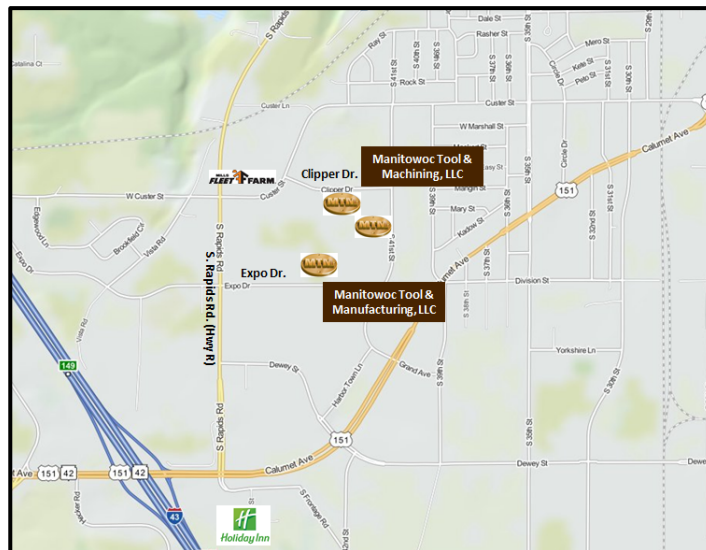
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Manitowoc, Wisconsin, USA
(920) 682-8825



Manitowoc Tool & Machining, LLC

(Shipping & Receiving)
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Manitowoc, Wisconsin, USA
(920) 682-8825

DIRECTIONS TO MTM



DESTINATION – Manitowoc Tool & Machining, LLC:

FROM MILWAUKEE, WISCONSIN AIRPORT: (Approximately 85 miles)

Take I-94 West (towards Madison) to I-43 North (towards Green Bay) to Manitowoc exit #149 (US Hwy 151 East).

- Upon exiting I-43, turn right On US 151 and immediately enter the left turn lane at the traffic light intersection of US 151 & Rapids Road (Hwy R).
- Turn left and proceed North on Rapids Road (Hwy R). See below for further directions.

FROM GREEN BAY, WISCONSIN AIRPORT: (Approximately 42 miles)

Take US 172 East to I-43 South (towards Milwaukee) to Manitowoc exit #149 (US Hwy 151 East).

- Upon exiting I-43, turn left On US 151 and immediately enter the left turn lane at the traffic light intersection of US 151 & Rapids Road (Hwy R).
- Turn left and proceed North on Rapids Road (Hwy R). See below for further directions.

Once traveling North on Rapids Road (Hwy R):

- In approximately 0.8 miles, proceed to the third set of traffic lights at the corner of Rapids Road and Custer Street.
- Turn right onto Custer Street (Fleet Farm is on the North East corner).
- Once on Custer Street, take the next right onto Clipper Drive.
- MTM is 0.3 miles East and is the second place of business on your right at 4211 Clipper Drive.
- Turn right into our parking lot and use the designated Visitor Parking.