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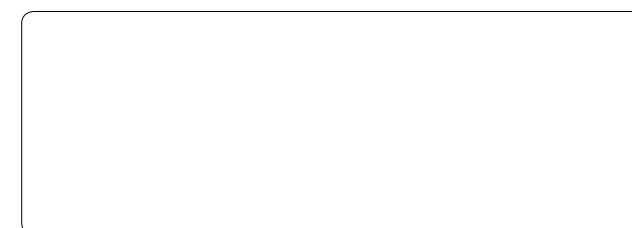
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- Product specifications and dimensions are subject to change without prior notice.
- The photos may show optional accessories.



This product is subject to all applicable export control laws and regulations

 **Matsuura**

5-Axis Vertical Machining Center

MX-850



MAXIA
Innovation by  Matsuura

Cost Effective, Large Capacity

5 Axis Excellence

Developed in response to global market demand following the runaway success of the *MX-520*, the *MX-850* is the largest in the series so far - offering established and aspirational companies alike a high quality, large capacity single table 5 axis Matsuura - at an investment level that will surprise you.

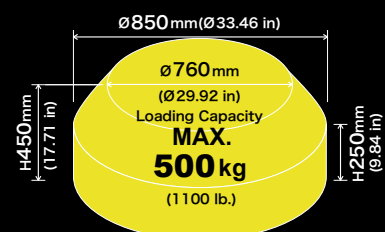


Table specification

From Beginner to Advanced, the *MX-850* Offers Sublime Usability

Equipped with a new operating system that allows for direct, instinctive control as well as MIMS (Matsuura Intelligent Meister System) and Matsuura's proprietary Intelligent Protection System for the prevention of collisions, the *MX-850* can be used simply, safely, and with confidence.

Superb & Efficient Design

Designed for efficient, safe working practices and operator comfort, the *MX-850* offers superb access to the enclosure for the quick set up of work - even utilising overhead cranes to load up to 500kg on the trunnion table.

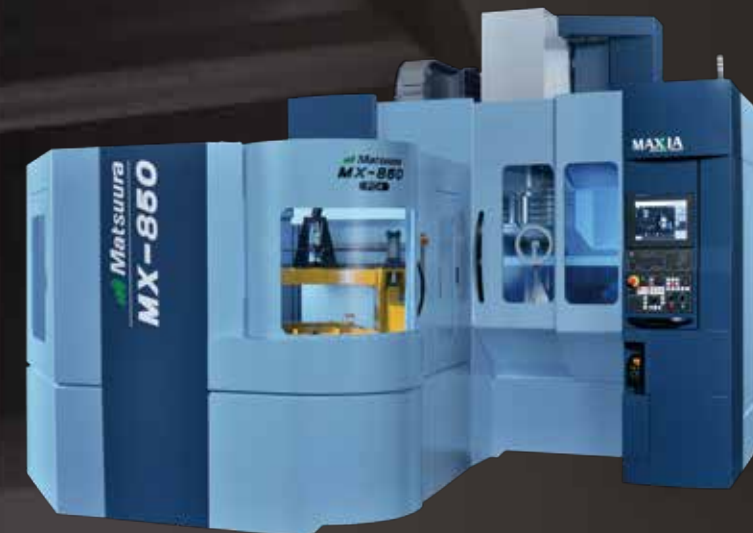
Large Workpiece Machining

The standard table has a diameter of $\varnothing 500\text{mm}$. Optional side tables offer superb versatility with the 500 table - taking the outer rotary side table size to **SIZE REQUIRED**. An optional $\varnothing 700\text{mm}$ rotary table is also available. The maximum workpiece size on the standard $\varnothing 500\text{mm}$ table is 850mm in width with a height of 450mm, combined with a maximum weight of 500kg.

The Matsuura *MX-850* - bringing from high-torque heavy cutting to high-speed machining to within reach of every company. From aluminium to hard to cut materials - the *MX-850* is the market solution to large and complex machining tasks.

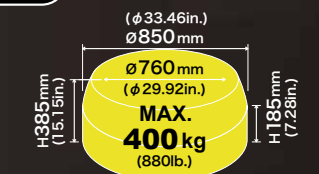


By customer demand, we present our PC4 automation package; designed and built by **Matsuura**



Simple Automation

PC4 + 90/120 tools magazine



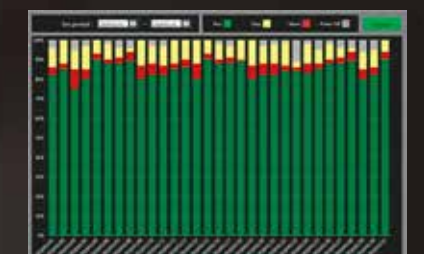
Pallet specification



OEE (Overall Equipment Effectiveness)



Operation History



Operation Result



Machining Record

Ready for “IoT”

Matsuura IoT is an open source platform, enabling the sharing of information from numerous machines to your production monitoring systems. Remote “status at a glance” visualization of current machine status maximizes and optimizes process efficiency and unmanned production whilst countering unscheduled maintenance and downtime.

Operation Status Monitoring Function

Option

Support process planning improvement by collecting the following right data.

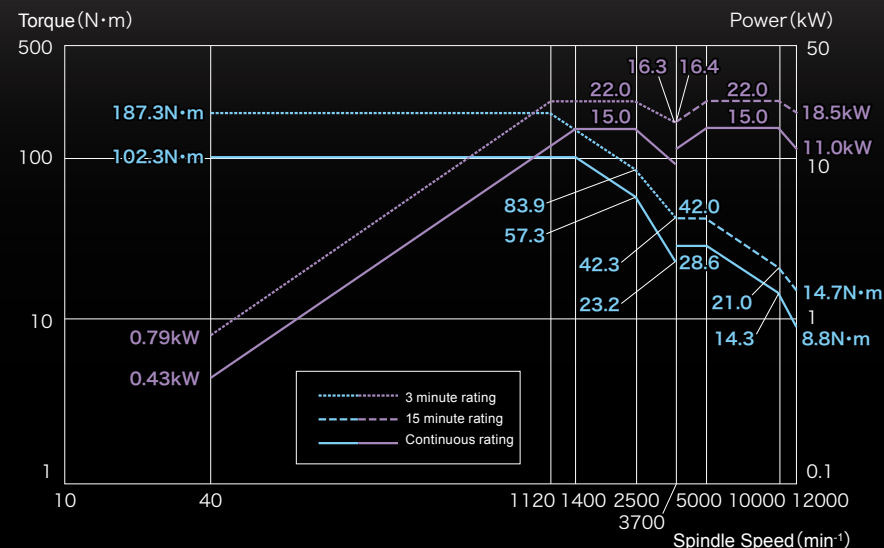
- A maximum of the past one year of operation status can be checked
- The collected data is graphically depicted on NC screen
- The collected data can be saved to the USB flash drive

MX-850 PC4

A replete line-up of spindles that meets all machining needs, from high-torque heavy cutting to high-speed machining.

Standard BT40 12000min⁻¹

An all-round spindle that offers excellent cost performance.



MAXIA Spindles – from Matsuura, the pioneers of spindle technology. **MAXIA** Matsuura spindles are renowned the world over for their robust operation, sustained high accuracy, low noise & low or zero maintenance – offering users the very best in machining versatility – from aluminium to pre-hardened materials. The **MX-850** is launched with three powerful spindle options

Thermal distortion caused by the spindle is corrected automatically, maintaining stable and precise machining at all times.

A high speed type, excelling during high speed machining such as on aluminium.

Highly Durable RAM Type Structure

The **MX-850** has been designed with a RAM type structure, offering a compact & highly durable machining platform. Design advances have afforded the **MX-850** a large machining enclosure for its class. Matsuura's established high accuracy & reliability comes as standard with the **MX-850**.

The photo shows specifications with a $\phi 700$ mm ($\phi 27.55$ in) table.

Option

Z: 650 mm
(25.59 in.)

Y: 780 mm
(30.70 in.)

C: 360°

A: -125° ~ +30°

X: 900 mm
(35.43 in.)

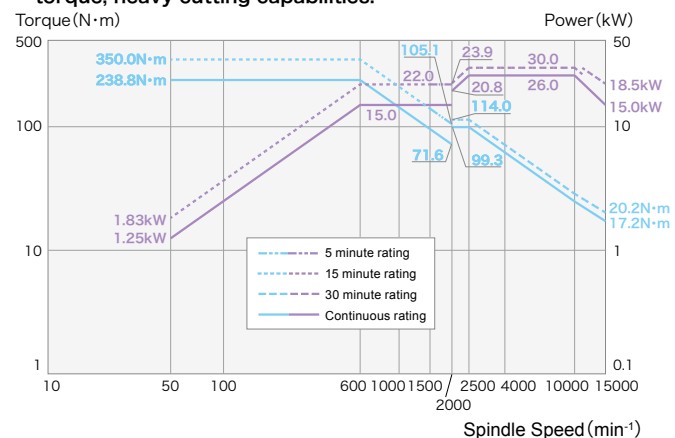
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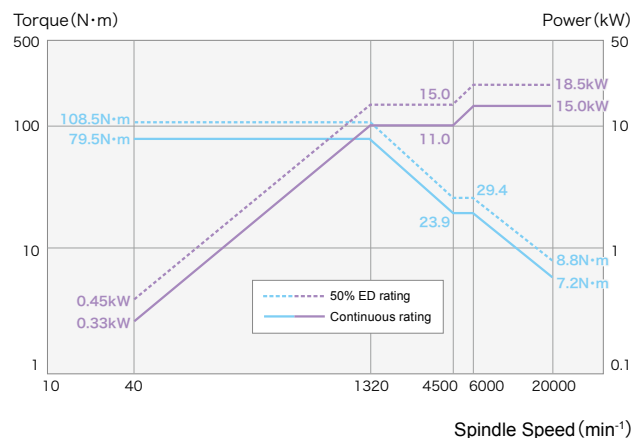
Option

Option BT40 15000min⁻¹

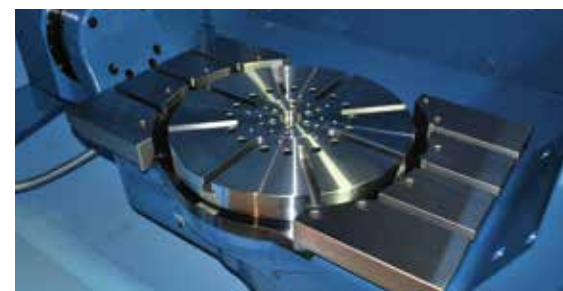
A new product, offering enhanced 350 N·m/600 min⁻¹ high torque, heavy cutting capabilities.

Option BT40 20000min⁻¹

The Matsuura **MX-850** – a true high speed machine



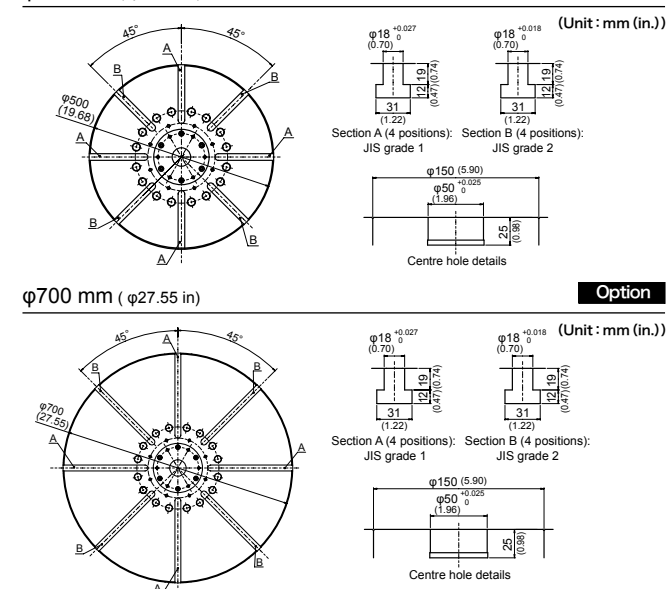
The $\varnothing 500$ mm ($\varnothing 19.68$ in) table comes equipped as standard. You can also choose from a $\varnothing 700$ mm ($\varnothing 27.55$ in) table or one with an attached flat table ($\varnothing 500$ mm ($\varnothing 19.68$ in)) according to your machining needs.



The photo shows specifications with a flat table.
($\phi 500$ mm ($\phi 19.68$ in))

Option

■ Table Top View
φ500 mm (φ19.68 in)



Option

Designed for Sustained Performance



Accessibility to workpiece and spindle

The MX-850 possesses a generous enclosure door opening width of 1,055mm – allowing safe and ergonomic loading of even the most unwieldy billets. The distance from the front of the machine to the spindle is just 110mm – assuring operator comfort whilst work setting & routine maintenance.



The photo shows specifications with a φ 700 mm table. Option

Designed for easy crane access

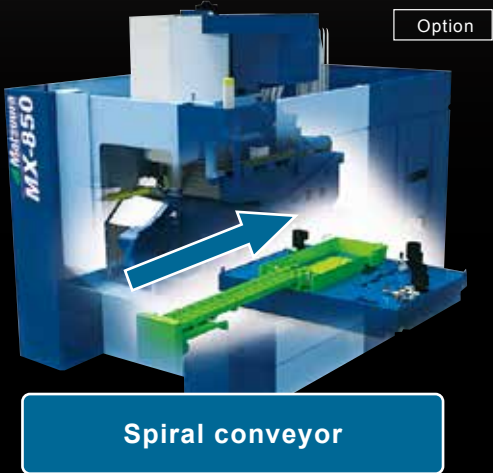
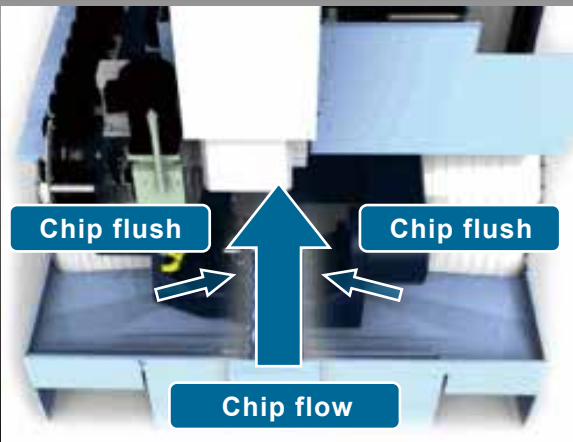
A sliding roof cover, incorporating a proven Matsuura design, affords the operator a spacious 435mm roof opening for loading billets safely by crane.



Proven Chip Removal Design

Smooth Chip Removal

Dynamic chip flush & chip flow are fitted as standard, evacuating the machining enclosure of chips. Optional larger tanks & conveyors can be added allowing longer periods of continuous machining.



60-tool Chain Magazine as Standard

The standard 60 tool chain type ATC for a vast array of machining processes.



90/120-tool Chain Magazine

Cover wide variety of machinings



90-tool chain magazine

Automation

Robotic Interface Enabling Connections to External Workpiece Conveying Machines Responding to demand for automatic workpiece conveyors using robotics.

- Robotic interface
- Automatic door (automatically opens and closes the operator door)
- Pressure supply system for jigs (supplies pressure to the auto clamping device for the workpiece)



MX-850 5-Axis Vertical Machining Center

[Operability]

Maximum functionality and optimised performance Easy Operation

Our latest NC is our most powerful yet, delivering fast access touch screen usability with a refined ergonomic & logical layout



Matsuura G-Tech 31i

MIMS Matsuura Intelligent Meister System

Secure	Reliability Meister Reduced machine downtime <ul style="list-style-type: none">■ Preventive maintenance support function■ Machine recovery support function■ Electronic manual function■ E-mail transmission function
Simple	Operability Meister Hassle-free, simple operation <ul style="list-style-type: none">■ Tool setup support■ Workpiece setup support
Accuracy	Thermal Meister Stable accuracy <ul style="list-style-type: none">■ Spindle thermal displacement compensation■ Environmental thermal displacement compensation Option■ X/Y/Z thermal displacement compensation Option
Environment	Eco Meister Eco mode Power savings <ul style="list-style-type: none">■ Power cut-off function■ Energy-saving devices installed■ Eco-operation

Operation Panel

Matsuura G-Tech 31i
(iHMI, 15-inch touch panel type)
Usability is drastically upgraded with context-sensitive screen icons and quick screen displays.

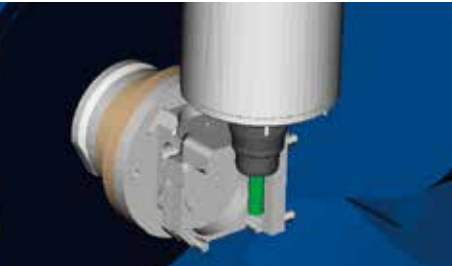


Program management

Tool offset

Electronic manual display

Intelligent Protection System



Collision prevention function

Standard

This collision protection function is developed solely by Matsuura. It prevents machine collisions due to programming errors in automatic operation, and also prevents human error in advance during manual operation and workpiece setup.

■ On-line link with PC



PC



Machining center

The **Intelligent Protection System** simulates your programmed components (tools, workpiece, fixtures, etc.) that match the machine model, alerting you to any possible interference or collision before actual machining takes place.
* Prepare a PC on your side. Contact Matsuura for PC requirements.

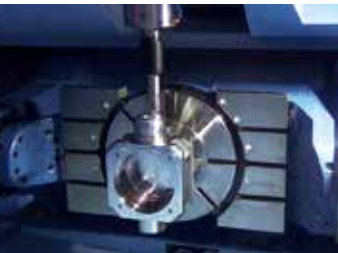
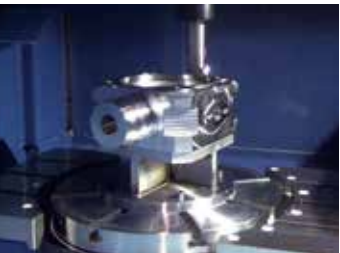
Synchro Tip + Orbit machining

Patent No. 5883535

Option

Simple turning function combining orbit machining and C-axis rotation

Turning processes can also be performed on this machining center by using a synchro chip. Since turning and machining can now be done in one process no additional setup time is required for the turning process.



* **Synchro Tip** (Orbit machining + C-axis rotation) * Orbit function

eZ-5

Option

Advanced 5-axis error measurement and correction

Geometric error correction is essential for multi-axis machine tools. eZ-5 completes measurement, using a touch probe and calibration sphere, in a mere 3 minutes. The high accuracy of the machine is maintained through quick and simple operations.
* eZ-5 requires a separately available NC option to add macro variables



Automatic measurement (interactive)

Option

Operators can perform alignment without being conscious of program contents.



MX-850 Specification / Equipment

Standard Machine Specifications

Movement and Range		
X-Axis Travel	[mm (in.)]	900 (35.43")
Y-Axis Travel	[mm (in.)]	780 (30.70")
Z-Axis Travel	[mm (in.)]	650 (25.59")
A-Axis Rotation Angle	[deg]	-125 ~ +30
C-Axis Rotation Angle	[deg]	360
Table		
Working Surface	[mm (in.)]	φ 500 (19.68")
Loading Capacity	[kg (lb.)]	500 (1100)
Max. Work Size	[mm (in.)]	φ 760×H 450 (φ 29.92"×H 17.71")
		φ 850×H 450 (φ 33.46"×H 17.71") With Conditions
Spindle		
Spindle Speed	[min ⁻¹]	40 - 12000 (GREASE LUBRICATION)
Spindle Speed Change Command		S5DIRECT
Spindle Taper		7/24TAPER BT40 (DOUBLE FACE CONTACT)
Spindle Bearing Inner Diameter	[mm (in.)]	φ 80 (3.14")
Spindle Motor Power	[kW]	AC 15 / 22 (Low Speed : Contin. / 15min)
Max. Spindle Motor Torque	[N·m]	187 / 1120min ⁻¹
Feed Rate		
Rapid Traverse Rate	X / Y / Z [mm/min]	40000
	A / C [min ⁻¹]	17/33
Feedrate	X / Y / Z [mm/min]	1 ~ 40000
	A / C [min ⁻¹]	17/33
Automatic Tool Changer		
Type of tool shank		JIS B 6339 tool shank 40T
Type of retention knob		JIS B 6339 pullstud 40P
Tool Storage Capacity	[pcs.]	60 (chain magazine)
Max. Tool Diameter	[mm (in.)]	φ 80 (φ 3.14") (with adjacent tools)
		φ 150 (φ 5.90") (without adjacent tools)
Max. Tool Length	[mm (in.)]	350 (13.77")

List of Fittings

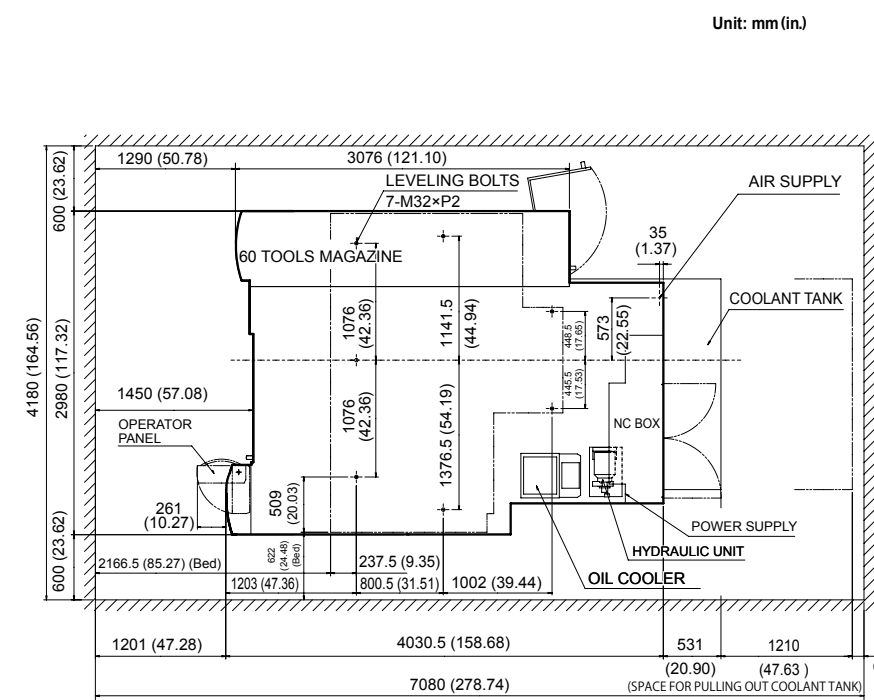
Spindle			
12000min ⁻¹ (BT40 Grease Lubrication)			○
15000min ⁻¹ (BT40 Grease Lubrication)			○
Spindle motor output	kW	Low : 15 / 22, High : 26 / 30	▲
Spindle max. torque	N·m	350	
20000min ⁻¹ (BT40 Grease Lubrication)			▲
Spindle motor output	kW	Low : 11 / 15, High : 15 / 18.5	
Spindle max. torque	N·m	108.4	
ATC			
60pcs (chain magazine)			○
90pcs (chain magazine)			▲
120pcs (chain magazine)			▲
Table			
φ 500mm (φ 19.68in)			○
φ 700mm (φ 27.55in)			▲
φ 500mm (φ 19.68in) + Flat Table			▲
Number of Pallets			
1 (Single pallet)* ¹			○
4 (Floor pallet system)* ¹			
High-precision Control			
Scale Feedback A / C (HEIDENHAIN)			○
Scale Feedback X / Y / Z (HEIDENHAIN)			▲
Coolant			
Coolant Tank			○
Vacuum-Type Coolant Through A 7MPa			▲
Vacuum-Type Coolant Through A 14MPa			▲
Vacuum-Type Coolant Through B 7MPa			▲
Vacuum-Type Coolant Through B 14MPa			▲
Vacuum-Type Coolant Through C 2MPa			▲
Vacuum-Type Coolant Through C 7MPa			▲
Mist Separator (without Fire Damper)			▲
Coolant Temperature Controller with 100-liter Tank (installed separately); small 100L			▲
Automatic Measurement, Tool Breakage Detection			
Automatic Measurement / Automatic Alignment (Optical)			▲
Tool Breakage / Full Automatic Tool Length Measurement (Laser BLUM)			▲
Tool Breakage / Full Automatic Tool Length Measurement (Laser RENISHOW)			▲
Automatic Measurement (Optical) & Tool Breakage (Laser BLUM)			▲
Automatic Measurement (Optical) & Tool Breakage (Laser RENISHOW)			▲

Max. Tool Mass	[kg (lb.)]	10(22)
Methods of Tool Selection		Memory random system
Power Sources		
Power Capacity	[kVA]	56 (Depending on options)
Voltage	[kVA]	AC 200 / 220 ± 10%
Frequency	[Hz]	50/60±1
Tank Capacity		
Hydraulic Oil Tank Capacity	[L]	20
Coolant Tank Capacity	[L]	560
Oil Cooler Tank Capacity	[L]	14
	[L]	7 (15000min ⁻¹ , 20000min ⁻¹ Option)
Machine Size		
Mass of Machine	[kg (lb.)]	16000 (35200)
NC System		
Control System		Matsuura G-Tech31i
Standard Accessories		
01. Total Splash Guard	02. ATC Auto Door	
03. Synchronized Tapping	04. MIMS Function	
05. AD-TAP Function	06. IPC Function	
07. Spindle Oil Cooler	08. Auto Grease Supply Unit for Feed Axes	
09. Coolant System	10. Chip Flush	
11. Chip Flow	12. Spindle Overload Protection	
13. Work Light	14. Standard Mechanical Tool and Tool Box	
15. Machine Color Paint	16. Leveling Pads and Bolts	
17. Spindle Run Hour Meter	18. Automatic Operation Run Hour Meter	
19. Intelligent Protection System		
20. Leveling Pads and Bolts		
21. Scale Feedback for A / C		
* 2 years spindle warranty		

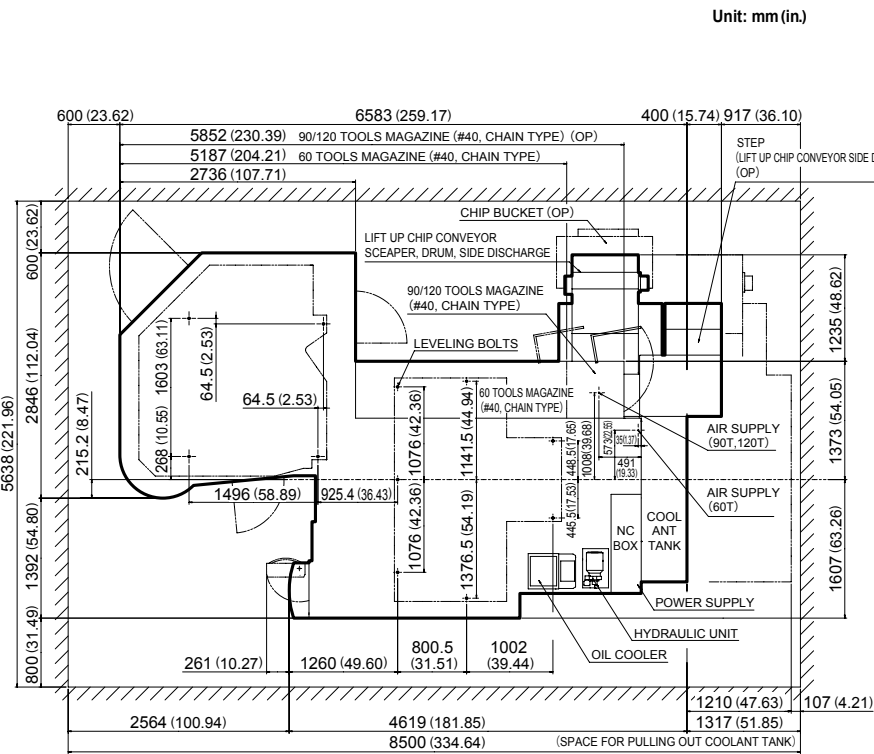
	○:Standard ▲:Option
Swarf Management	
Total Splash Guard	○
ATC Auto Door	○
Chip Flush	○
Chip Flow	○
Chip Bucket	▲
Spiral Chip Conveyor	▲
Lift-Up Chip Conveyor (scraper)	▲
Chip Removal Air Blow	▲
Workpiece Cleaning Gun (Main unit side)	▲
Control / Maintenance Support	
AD-TAP Function	○
IPC Function	○
Work Light	○
MIMS Function	○
Intelligent Protection System	○
Feed Axis Auto Lubricator	○
Reliability Meister Plus TYPE A	▲
Reliability Meister Plus TYPE B	▲
Eight additional M functions	▲
Spindle Load Monitoring Function	▲
Weekly Timer	▲
3-Color Signal Light (red, yellow, green from top)	▲
Movable Manual Pulse Generator	▲
Optional Block Skip 2~9	▲
Rotary Wiper (air type)	▲
Rotary Wiper (electric type)	▲
100 VAC outlet (3A)	▲
eZ-5 (with Calibration Sphere)	▲
eZ-5 (without Calibration Sphere)	▲
Pressure Supply System for Fixtures	▲
Robot Interface + Auto Door	▲
Optional Package	
High-speed, High-precision Package	▲
5-Axis Package	▲
High-speed, High-precision / 5-Axis Package	▲
Value Package	▲

*1 Max work size: φ850×H385(mm) (with restrictions). 400kg

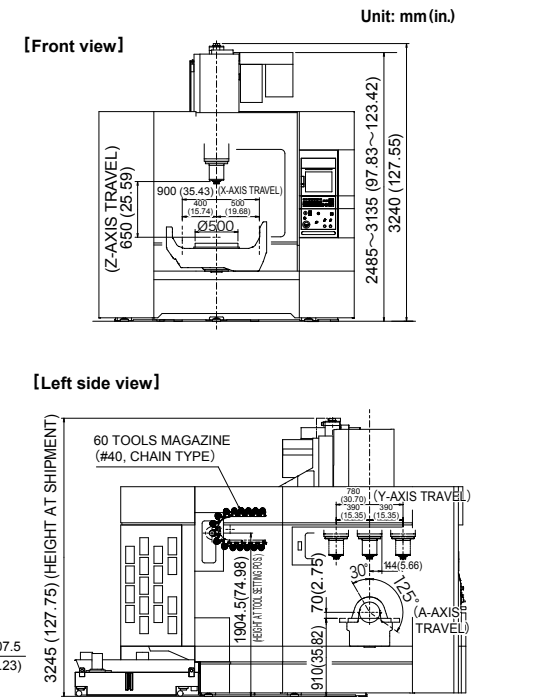
MX-850 Floor plan



MX-850 PC4 Floor plan



MX-850 External view



MX-850 PC4 External view

