

 **Matsuura**

5-Axis Vertical Machining Center

# **MX-850**



**MAXIA**  
Innovation by  Matsuura

# **Matsuura MX-850**

## Cost Effective, Large Capacity 5 Axis Excellence

### Introducing the big brother of the globally acclaimed **MX-520**

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.

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

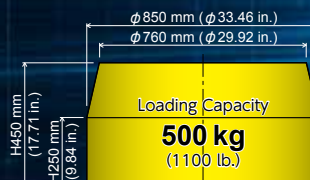
Equipped with a new operating system that allows for direct, instinctive control as well as MIMS (Matsuura Intelligent Meister System) and Matsuura's proprietary Intelligent Protection System for the prevention of collisions, the **MX-850** can be used simply, safely, and with confidence.

### Superb & Efficient Design

Designed for efficient, safe working practices and operator comfort, the **MX-850** offers superb access to the enclosure for the rapid 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 Ø500mm. Optional side tables offer superb versatility with the 500 table - taking the outer rotary side table size to SIZE REQUIRED. An optional Ø700mm rotary table is also available. The maximum workpiece size on the standard Ø500mm table is 850mm in width with a height of 450mm, combined with a maximum weight of 500kg



The Matsuura **MX-850** - bringing raw cutting power and Matsuura 5 axis high speed finesse 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.







**MAXIA**  
Innovation by  Matsuura

# MAXIA Spindles from Matsuura - the Pioneers of High Speed Spindles

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



## High Precision, High Durability and Maintenance Free

**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

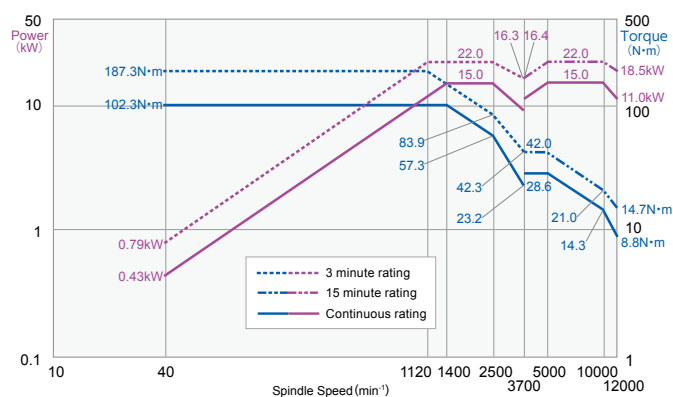
## Spindle Thermal Displacement Compensation Function Equipped as Standard

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

### Spindle Motor Torque & Power Diagram

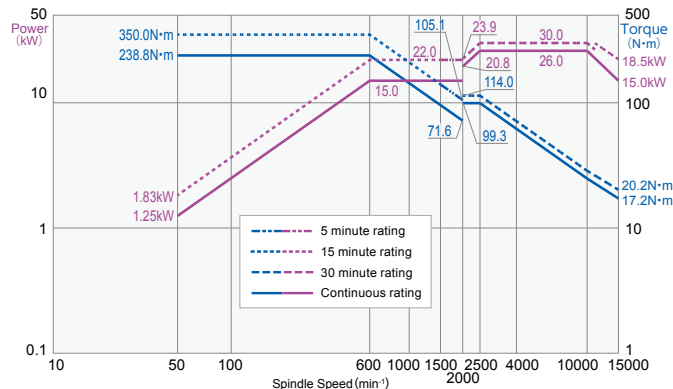
#### Standard BT40 12,000 min<sup>-1</sup>

An all-round spindle that offers excellent cost performance.



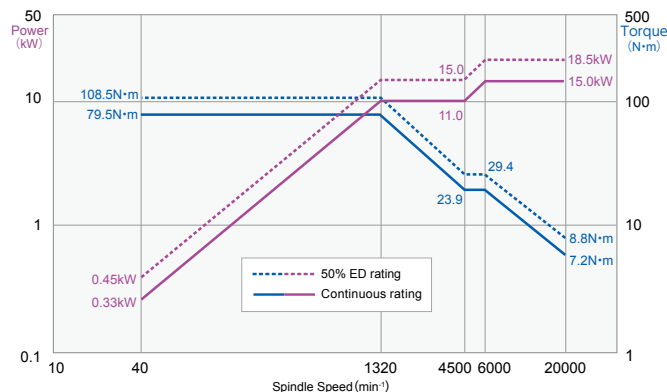
#### Option BT40 15,000 min<sup>-1</sup>

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



#### Option BT40 20,000 min<sup>-1</sup>

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

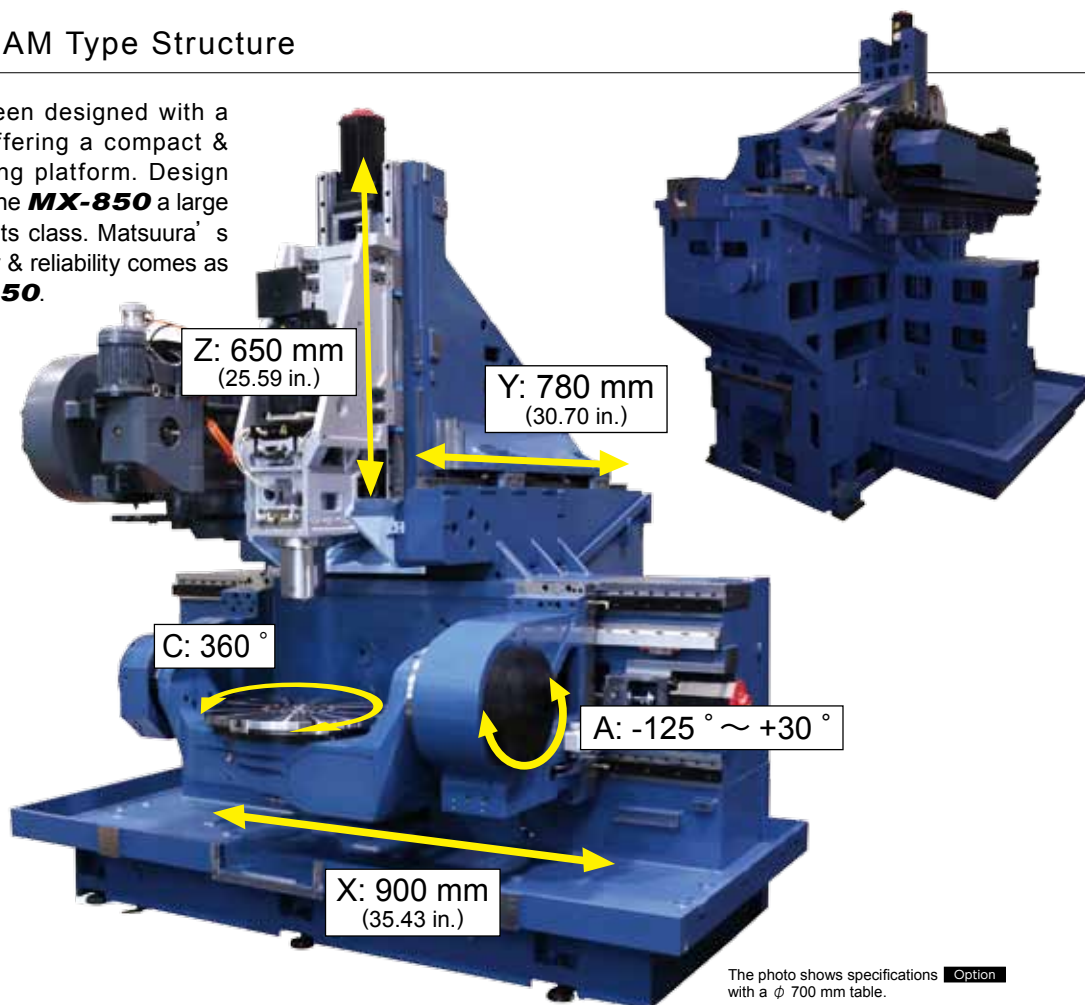




# A high speed type, excelling during high speed machining such as on aluminium.

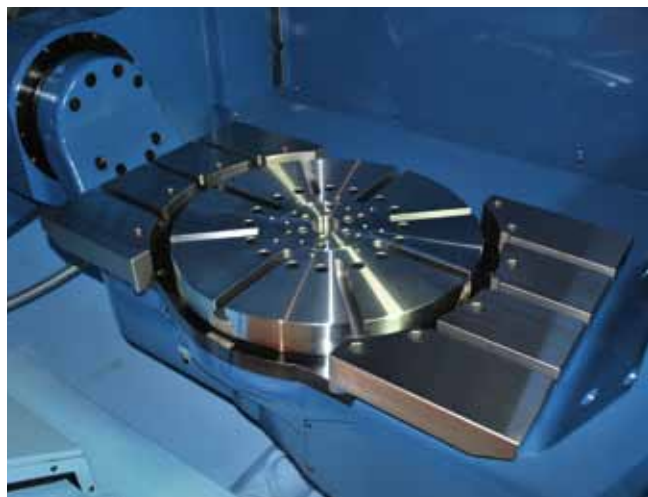
## Highly Durable RAM Type Structure

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**.



## Table Options That Meet All Machining Needs

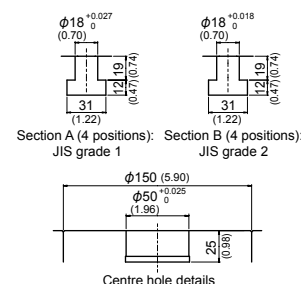
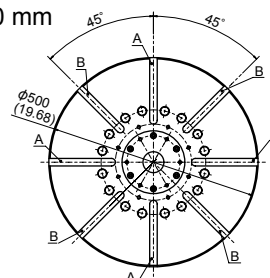
The  $\phi$  500 mm table comes equipped as standard. You can also choose from a  $\phi$  700 mm table or one with an attached flat table ( $\phi$  500 mm) according to your machining needs.



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

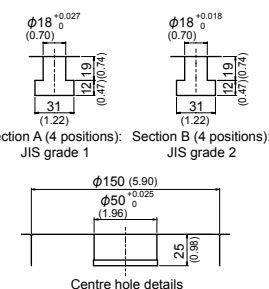
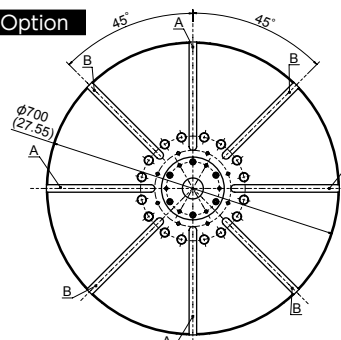
### Table Top View (Unit: mm (in.))

$\phi$  500 mm

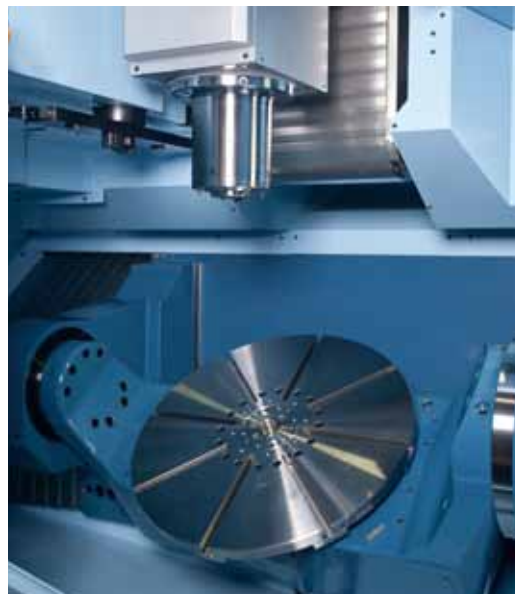


$\phi$  700 mm

**Option**



# Designed for Sustained Performance



The photo shows specifications with a  $\phi$  700 mm table. **Option**

## Excellent Workpiece and Spindle Accessibility – by design

The **MX-850** possesses a cavernous 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.

## 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.

### Easy operator access to the spindle



### Crane access



### Excellent accessibility



### Easy tool setup



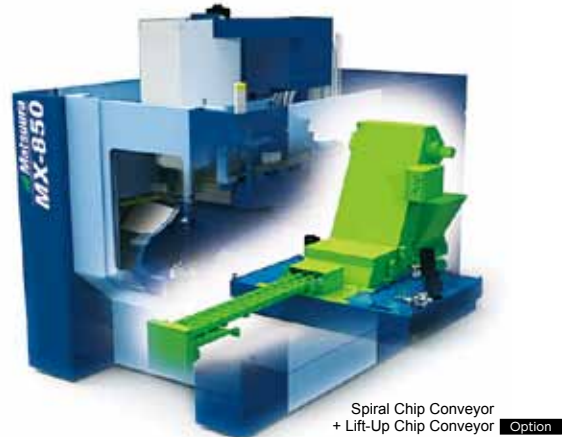
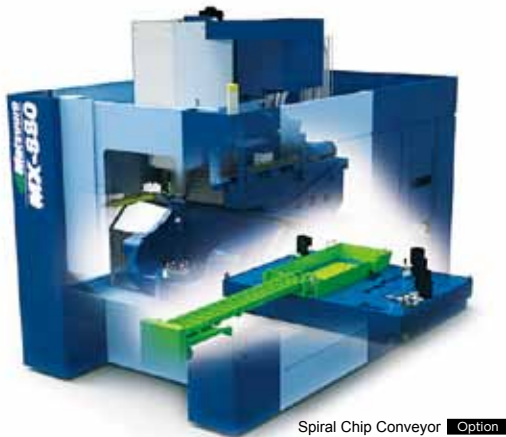
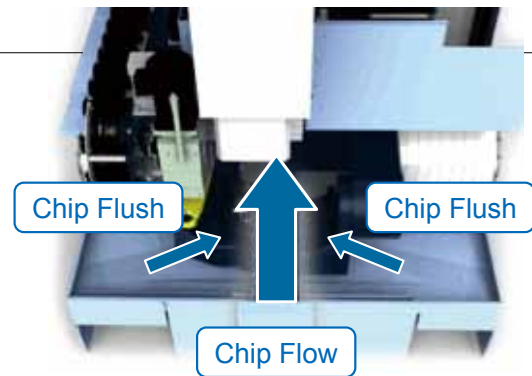
The photo shows specifications with a  $\phi$  700 mm table. **Option**



# 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 offers ample storage for a vast array of machining processes.



## 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)



# Intuitive, Superlative Control – from Beginner to Advanced Operators

New Operating System, Incorporating Large Touch Screen Technology – Effortless & Safe NC Navigation & Operation.

Running, set-up and maintenance screens are just a touch away – offering status at a glance to the operator and full control over all functionality and systems. Effortless, fast navigation and a custom view function allows the operator to set the control to match the work undertaken. From beginner to advanced – all levels of operator will get the very best out of this NC - & the **MX-850** it controls.



Program transmission screen



Category editing screen



## Swing Control Panel; Easy to Operate

The swing control panel allows easy access to the controls at any time, even while setting up or performing adjustments.





# MIMS

## Matsuura Intelligent Meister System

A Master Craftsman's Knowledge, Skills, and Ideas Combined

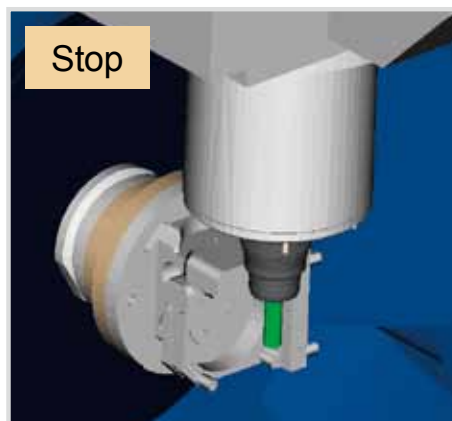
OEM Matsuura operator support software to maximise rapid operation and usability.

Environment	<b>Eco Meister</b> Eco Mode Power Saving <ul style="list-style-type: none"> <li>Power cut-off function</li> <li>Energy-saving devices installed</li> <li>Eco operation function</li> </ul>	Accuracy	<b>Thermal Meister</b> Stable Accuracy <ul style="list-style-type: none"> <li>Spindle thermal displacement compensation</li> </ul>
	<b>Operability Meister</b> Fuss-free Simple Operation <ul style="list-style-type: none"> <li>Tool setup support</li> <li>Workpiece setup support</li> </ul>		<b>Reliability Meister</b> Machine Down Time Reduction <ul style="list-style-type: none"> <li>Preventive maintenance support functions</li> <li>Machine restoration support functions</li> </ul>
Simple		Secure	<b>Reliability Meister Plus</b> <span>Option</span> Increased Security Provided <ul style="list-style-type: none"> <li>Electronic manual</li> <li>E-mailing function</li> </ul>

## Intelligent Protection System Standard

### Ultra Safe Collision Protection

The Intelligent Protection System provides Matsuura's proprietary anti-collision function that prevents machinery collision resulting from programming mistakes at the time of automatic operation and human errors while the machine is under manual control or during workpiece setup time.

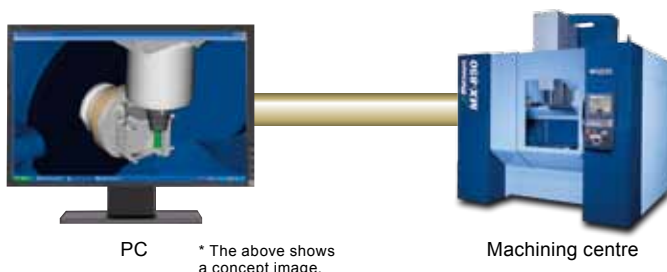


## Intelligent Protection System

Manual / Automatic operation supported  
Simultaneous 5-axis machining supported

\* The above shows a concept image.

### On-line Link with PC



\* The above shows a concept image.

\* Under normal operations, the Intelligent Protection System prevents collisions when the shape and position of the machine model, tools, workpieces, jigs match.

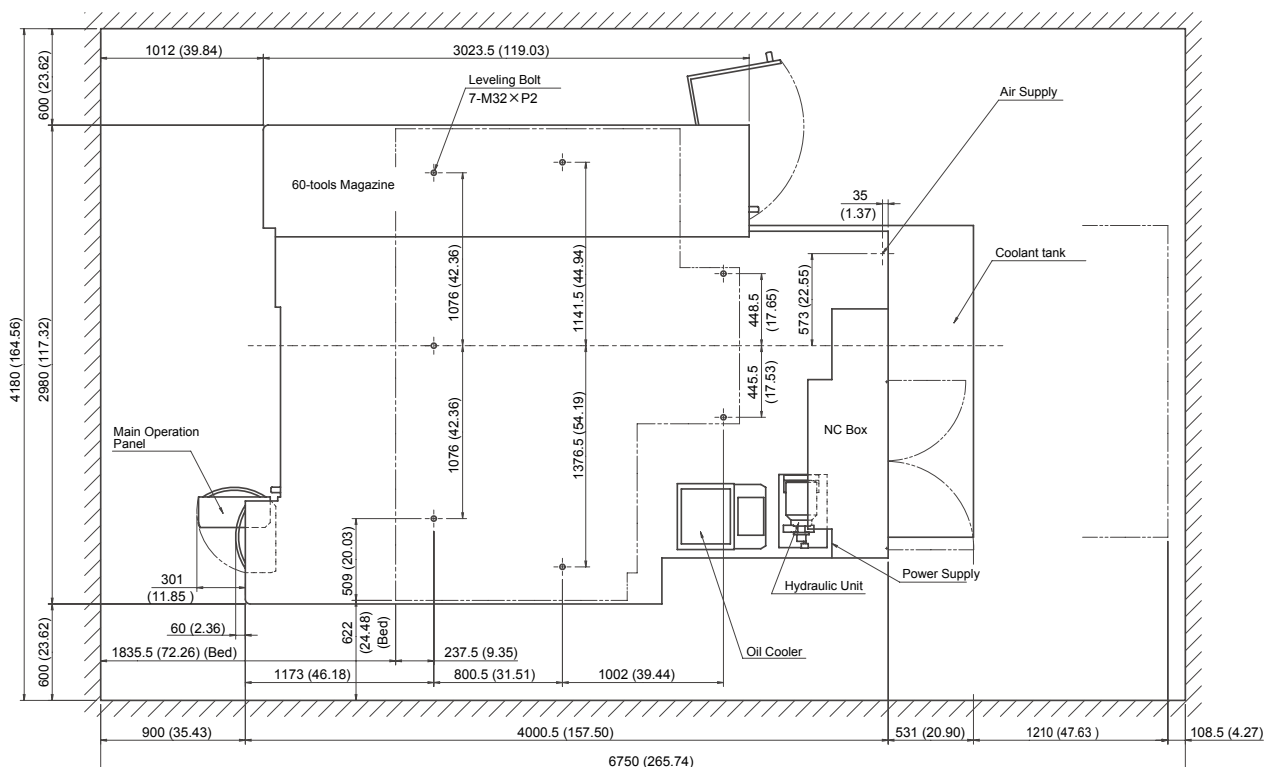
\* Requires end-user PC. Contact Matsuura for full specifications.

## 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" )
■ Spindle		
Spindle Speed	min <sup>-1</sup>	40 - 12000 (GREASE LUBRICATION)
Spindle Speed Change Command		S5DIRECT
Spindle Taper		7/24 TAPER BT40 (DOUBLE FACE CONTACT)
Spindle Bearing Inner Diameter	mm (in.)	80 (3.14")
Spindle Motor Power	kW	AC 15 / 22 (Low Speed : Contin. / 15min)
Max. Spindle Motor Torque	N·m	187 / 1120min <sup>-1</sup>
■ Feed Rate		
Rapid Traverse Rate X / Y / Z	mm/min	40000
A / C	min <sup>-1</sup>	17 / 33
Feedrate X / Y / Z	mm/min	1 ~ 40000
A / C	min <sup>-1</sup>	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")
Max. Tool Mass	kg (lb.)	10 (22)
Methods of Tool Selection		Memory random system

■ Power Sources		
Power Capacity	kVA	56 (Depending on options)
Voltage	V	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
■ NC System		
Control System		<b>Matsura G-Tech 31i</b>
■ Standard Accessories		
01. Total Splash Guard	02. ATC Auto Door	
03. Synchronized Tapping	04. <b>MIMS</b> Function	
05. <b>AD-TAP</b> Function	06. <b>IPC</b> 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	
<b>19. Intelligent Protection System</b>		
20. Leveling Pads and Bolts		
21. Scale Feedback for A / C		

## Floor Plan (Unit : mm (in.))





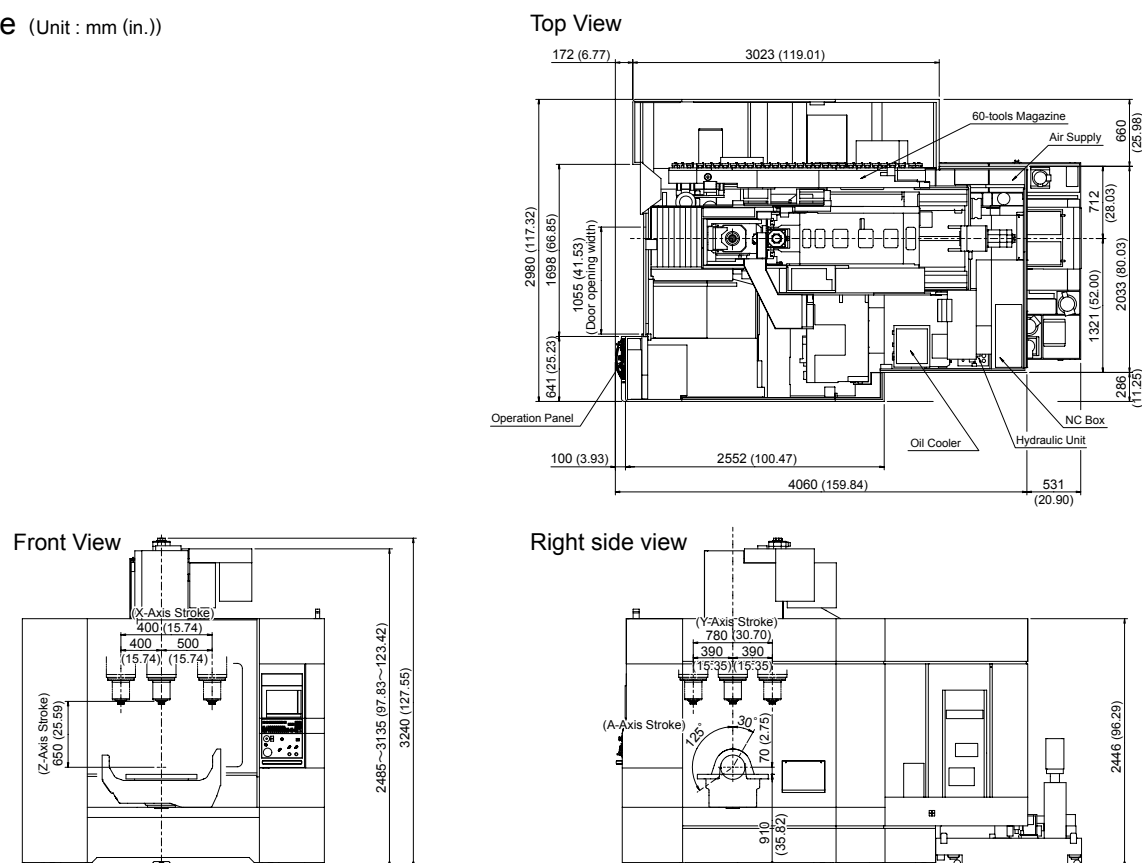
## List of Fittings

○ : Standard ▲ : Option

<b>■ Spindle</b>			
12,000min <sup>-1</sup> (BT40 Grease Lubrication)			○
15,000min <sup>-1</sup> (BT40 Grease Lubrication)			○
Spindle motor output	kW	Low : 15 / 22、High : 26 / 30	▲
Spindle max. torque	N·m	350	
20,000min <sup>-1</sup> (BT40 Grease Lubrication)			▲
Spindle motor output	kW	Low : 11 / 15、High : 15 / 18.5	
Spindle max. torque	N·m	108.4	
<b>■ TABLE</b>			
φ500			○
φ700			▲
φ500 + Flat Table			▲
<b>■ High-precision Control</b>			
Scale Feedback X / Y / Z (HEIDENHAIN)			○
Scale Feedback A / C (HEIDENHAIN)			▲
<b>■ Coolant</b>			
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			▲
<b>■ Automatic Measurement/Tool Damage Check</b>			
Automatic Measurement/Automatic Centering (optical type)			▲
Tool Damage Check/Full Automatic Tool Length Measurement (laser type)			▲
Tool Damage Check/Full Automatic Tool Length Measurement (laser type)			▲
Automatic Measurement (optical type) and Tool Damage Check (laser type)			▲
Automatic Measurement (optical type) and Tool Damage Check (laser type)			▲

<b>■ Swarf Management</b>	
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)	▲
<b>■ Control / Maintenance Support</b>	
AD-TAP Function	○
IPC Function	○
Work Light	○
MIMS Function	○
<b>Intelligent Protection System</b>	○
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	▲
<b>■ Optional Package</b>	
High-speed, High-precision Package	▲
5-Axis Package	▲
High-speed, High-precision / 5-Axis Package	▲
Value Package	▲
TRUE PATH	▲
Machine module	▲

## Outline (Unit : mm (in.))





# **Matsuura**

URL : <http://www.matsuura.co.jp/>

E-MAIL : [webmaster@matsuura.co.jp](mailto:webmaster@matsuura.co.jp)

---

## **MATSUURA MACHINERY CORPORATION**

1-1 Urushihara-cho Fukui City 910-8530, Japan

TEL : +81-776-56-8106 FAX : +81-776-56-8151

---

## **MATSUURA EUROPE GmbH**

Berta-Cramer-Ring 21

D-65205 Wiesbaden-Delkenheim, Germany

TEL : +49-6122-7803-80 FAX : +49-6122-7803-33

URL : <http://www.matsuura.de/>

E-MAIL : [info@matsuura.de](mailto:info@matsuura.de)

---

## **MATSUURA MACHINERY Ltd.**

Gee Road, Whitwick Business Park, Coalville Leicestershire, LE67 4NH, England

TEL : +44-1530-511-400 FAX : +44-1530-511-440

URL : <http://www.matsuura.co.uk/>

E-MAIL : [sales@matsuura.co.uk](mailto:sales@matsuura.co.uk)

Facebook : [www.facebook.com/pages/Matsuura-Machinery-Ltd/427006380682983](https://www.facebook.com/pages/Matsuura-Machinery-Ltd/427006380682983)

---

## **MATSUURA MACHINERY GmbH**

Berta-Cramer-Ring 21

D-65205 Wiesbaden-Delkenheim, Germany

TEL : +49-6122-7803-0 FAX : +49-6122-7803-33

URL : <http://www.matsuura.de/>

E-MAIL : [info@matsuura.de](mailto:info@matsuura.de)

---

## **ELLIOTT MATSUURA CANADA INC.**

2120 Buckingham Road Oakville Ontario L6H 5X2, Canada

TEL : +1-905-829-2211 FAX : +1-905-829-5600

URL : <http://www.elliottmachinery.com/>

E-MAIL : [sales@elliottmachinery.com](mailto:sales@elliottmachinery.com)

---

## **MATSUURA MACHINERY USA INC.**

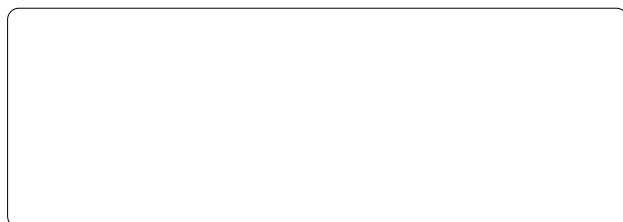
325 Randolph Ave., St.Paul, MN 55102, U.S.A.

TEL : +1-651-289-9700

URL : <http://www.matsuurausa.com/>

E-MAIL : [info@matsuurausa.com](mailto:info@matsuurausa.com)

- 
- 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

