Matsura 5-Axis Horizontal Machining Center

MAM72-100H

Products are subject to all applicable export control laws and regulations.
Introducing the **MAM72-100H**
Our Largest Capacity 5 Axis Machine Ever

**Robust, Stable & Highly Rigid Design**

Utilizing FEM Analysis and Matsuura’s prestigious engineering experience, the **MAM72-100H** is a highly rigid and stable machining platform – for any application cutting any material.

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**Movement and Ranges**

<table>
<thead>
<tr>
<th>Movement</th>
<th>X-Axis Travel</th>
<th>Y-Axis Travel</th>
<th>Z-Axis Travel</th>
<th>A-Axis Travel</th>
<th>B-Axis Travel</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm (in.)</td>
<td>1050 (41.33)</td>
<td>920 (36.22)</td>
<td>960 (37.79)</td>
<td>-120 ~ +30</td>
<td>360</td>
</tr>
</tbody>
</table>

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**Max. Work Size**

<table>
<thead>
<tr>
<th>Max. Work Size</th>
<th>mm (in.)</th>
<th>(\Theta 1,000 \times H770) ((\Theta 39.37 \times H30.31)) (with restrictions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loading Capacity</td>
<td>kg (lb.)</td>
<td>780 (1,719)</td>
</tr>
</tbody>
</table>
Matsuura High-tech Spindle

The Matsuura Hi-Tech Spindle delivers effortless power & unerring accuracy with any application and any material. Matsuura’s pioneering heritage with high speed & high torque spindles guarantees reliability & longevity of service.

High speed, high precision A / B Axis – powered by Direct Drives

The A-/ B-axis table configured with state of the art direct drive motors operate at a maximum feedrate of 50 min⁻¹ (A-axis: tilting axis) or 75 min⁻¹ (B-axis: rotating axis), ensuring high speed and high precision.

Drum Magazine

The automatic tool changer is equipped with a Matsuura designed & proven drum-type tool magazine driven by a servomotor for short tool indexing time, low noise and low vibration.

Matrix Magazine

Established & proven in all environments on Matsuura products – the Matrix Magazine ATC option can hold from 150 to 360 tools - ample storage for long periods of unmanned lights out production. A chain type ATC is also available with 120 tool places.
X-Type APC Door

Featured only on Matsuura products, our X-Type APC door design removes all opportunity for swarf to build up & become trapped, eventually causing machine downtime.

W-Type Slide Cover

By integrating steep angled steel Z-Axis covers, swarf is efficiently directed into 2 gutters, where standard spiral chip conveyors rapidly transport waste material out of the enclosure.

Matsuura’s own unique Flip Up Arm APC

Matsuura’s own & patented Flip Up Arm APC configuration shortens the machine length considerably & significantly reduces the overall machine footprint.

Spiral Chip Conveyor

To accommodate high volumes of metal removal of all types, a wide variety of swarf management system designs are available.

Lift-up Chip Conveyor

Scrapes Type

- Drum Filter
- Oily Coolant Applicable (less than 10 cSt)
Featured only on Matsuura products, our X-Type APC door design removes all opportunity for swarf to build up & become trapped, eventually causing machine downtime.

**X-Type APC Door**

By integrating steep angled steel Z-Axis covers, swarf is efficiently directed into 2 gutters, where standard spiral chip conveyors rapidly transport waste material out of the enclosure.

**W-Type slide cover**

Matsuura’s own & patented Flip Up Arm APC configuration shortens the machine length considerably & significantly reduces the overall machine footprint.

**Spiral chip conveyors**

Lift-up Chip Conveyor

Drum Filter

Oily Coolant Applicable (less than 10 cSt)

**Option**

Scraper Type

Ultra Safe Collision Protection

On-Line Link with PC

External PC

Machining center

* With Intelligent Protection System, interference check is available during cutting simulation.

Matsuura’s unique Flip Up Arm APC Patented Conceptual figure

To accommodate high volumes of metal removal of all types, a wide variety of swarf management system designs are available.

Spiral Chip Conveyor Standard

Reliability Meister

Machine Down Time Reduction

“Preventive maintenance support functions”

“Machine restoration support functions”

Operability Meister

Fuss-Free Simple Operation

“Tool setup support”

“Part setup support”

“Restart after machining stop”

Meister’s knowledge, skills, and ideas combined

Accuracy

Environment

Thermal Meister

“Spindle thermal displacement compensation”

“Environment Thermal Displacement Compensation”

“Feed Axis Thermal Displacement Compensation”

Eco Meister

“Power cut-off function”

“Energy-saving devices installed”

Reliability Meister Plus

Increased Security Provided

“Electronic manual”

“E-mailing function”

* Reliability Meister Plus requires a PC. Consult Matsuura for more information.
### Standard Machine Specifications

**Units:** mm (in.)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>X-Axis Travel mm (in.)</td>
<td>1050 (41.33)</td>
</tr>
<tr>
<td>Y-Axis Travel mm (in.)</td>
<td>920 (36.22)</td>
</tr>
<tr>
<td>Z-Axis Travel mm (in.)</td>
<td>960 (37.79)</td>
</tr>
<tr>
<td>A-Axis Travel deg</td>
<td>-120 to +30</td>
</tr>
<tr>
<td>B-Axis Travel deg</td>
<td>360</td>
</tr>
<tr>
<td>Tool Changing Time (tool to tool) sec.</td>
<td>2.0 (When tool mass is less than 10kg (22 lb.))</td>
</tr>
<tr>
<td>Max. Tool Mass kg (lb.)</td>
<td>20 (44)</td>
</tr>
<tr>
<td>Max. Tool Diameter mm (in.)</td>
<td>800 (31.5)</td>
</tr>
<tr>
<td>Rapid Traverse Rate (A/B) min⁻¹</td>
<td>50 / 75</td>
</tr>
<tr>
<td>Max. Spindle Torque N·m</td>
<td>451 (550min⁻¹)</td>
</tr>
<tr>
<td>Spindle Speed Range min⁻¹</td>
<td>45 to 12,000</td>
</tr>
<tr>
<td>Spindle Drive Motor (Contri. / 30min) kW</td>
<td>15 to 22 (Low Speed: continuous / 40% / 15%)</td>
</tr>
<tr>
<td>Rapid Traverse Rate (X/Y/Z) mm/min</td>
<td>60,000 / 40,000 / 50,000 / 32,023·1586.58</td>
</tr>
<tr>
<td>Rapid Traverse Rate (A/B) min⁻¹</td>
<td>50 / 75</td>
</tr>
<tr>
<td>Feedrate (X/Y/Z) mm/min</td>
<td>60,000 / 40,000 / 50,000 / 32,023·1586.58</td>
</tr>
<tr>
<td>Feedrate (A/B) mm/min</td>
<td>50 / 75</td>
</tr>
<tr>
<td>Type of Tool Shank</td>
<td>JIS B 6339 tool shank 50T</td>
</tr>
<tr>
<td>Type of Retention knob</td>
<td>JIS B 6339 pullstud 50P</td>
</tr>
<tr>
<td>Max. Tool Diameter mm (in.)</td>
<td>100 (3.94)</td>
</tr>
<tr>
<td>Max. Tool Length mm (in.)</td>
<td>600 (23.62)</td>
</tr>
<tr>
<td>Max. Tool Mass kg (lb.)</td>
<td>20 (44)</td>
</tr>
<tr>
<td>Tool Changing Time (tool to tool) sec.</td>
<td>2.0 (When tool mass is less than 10kg (22 lb.)) 3.6 (When tool mass is over 10kg (22 lb.))</td>
</tr>
</tbody>
</table>

### Power Sources

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Capacity kVA</td>
<td>122</td>
</tr>
<tr>
<td>Volume of Compressed Air NL/min</td>
<td>600</td>
</tr>
<tr>
<td>Tank Capacity L</td>
<td>600</td>
</tr>
</tbody>
</table>

### Standard Accessories

- Total Splash Guard 01
- ATC Auto Door 02
- Automatic Grease Supply Unit 03
- AD-TAP 05
- IPC 06
- Coolant Unit 07
- Chip Flask 08
- Chip Overload Protect 09
- Work Light 10
- MIMS (without Thermal Meister) 11
- Scale Feedback for the A/B Axis 12
- Leveling Pads & Bolts 13
- Machine Color Paint 14
- Workpiece Cleaning Gun (APC Side) 15
- Workpiece Cleaning Gun (Machine Side) 16
- Chip Bucket 17
- Spiral Chip Conveyor (right and left) 18
- Vacuum Type Coolant Thru B (14MPa) 19
- Vacuum Type Coolant Thru A (14MPa) 20
- Oil Cooler 21
- Air Dryer 22
- Power Sources 23
- Optional Block Skip 24
- Reliability Meister Plus 25
- Automatic Operation Run Hour Meter 26
- Coolant Thru Spindle Vacuum Type Coolant Thru A (7MPa) 27
- Coolant Thru Spindle Vacuum Type Coolant Thru B (14MPa) 28
- Coolant Flow Checker 29
- APC 30
- AD 31
- TAP 32
- MIMS 33
- Work Light 34
- NC BOX 35
- Chip Flush System 36
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- Auto Grease Supply Unit for Feed Axes 41
- Auto Fire Extinguisher 42
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- Chip Flush System 44
- Swarf Management 45

### Optional Specifications & Equipment

- Chip Bucket
- Chip Flush System
- Spiral Chip Conveyor
- 5-Axis Package
- Reliability Meister Plus
- Automatic Operation Run Hour Meter
- 20 Spindle Run Hour Meter
- Moving Manual Pulse Generator
- Work Light
- Auto Grease Supply Unit for Feed Axes
- Auto Fire Extinguisher
- Matsuura Safety Specification
- Operation/Maintenance Support
- Swarf Management

### Floor Plan

![Floor Plan](image)
## Optional Specifications & Equipment

### Spindle
- Max. Tool Mass kg (lb.) 20 (44)
- Max. Tool Diameter mm (in.)
- Type of Retention knob JIS B 6339 pullstud 50P
- Rapid Traverse Rate (A/B) min -1 50 / 75
- Max. Spindle Torque Nm 451(550min-1)
- Spindle Drive Motor (Contin. / 30min) 15 / 22 / 26 (Low Speed : continuous / 40
- Max. Spindle Speed Range min -1 45
- Working Surface mm (in.) 630
- X-Axis Travel mm (in.) kVA1050 (41.33)
- Y-Axis Travel mm (in.) 920 (36.22)
- Z-Axis Travel mm (in.) 960 (37.79)
- Standard Machine Specifications

### Movement and Ranges
- X-Axis Travel mm (in.)
- Y-Axis Travel mm (in.)
- Z-Axis Travel mm (in.)
- A-Axis Travel mm (in.)
- B-Axis Travel mm (in.)
- C-Axis Travel mm (in.)

### Coolant
- Coolant Thru Spindle
  - Vacuum Type Coolant Thru A (1MPa)
  - Vacuum Type Coolant Thru B (1MPa)
  - Vacuum Type Coolant Thru C (1MPa)

### Coolant Flow Checker
- Mist Separator Unit (without Fire Protect Damper)
- Mist Separator Unit (with Fire Protect Damper)
- Coolant Temperature Controller Separate Type, 100L Tank
- Coolant Temperature Controller Separate Type, 200L Tank

### In-Process Measurement + Tool Breakage
- In-Process Measurement/Auto Centering (Optical Touch Probe)
- Broken Tool Detection/Auto Tool Length Measurement (Tuch Sensor)
- Broken Tool Detection/Auto Tool Length Measurement (Laser Sensor)
- In-Process Measurement (Optical Touch Pr)\textsuperscript{a}, Broken Tool Detection (Tuch Sensor)
- In-Process Measurement (Optical Touch Pr)\textsuperscript{a}, Broken Tool Detection (Laser Sensor)

### External View

#### Units: mm (in.)

- Center Hole
- Tapped Hole
- Edge Locator
- Edge Locator

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### Optional Specifications & Equipment

- Total Splash Guard
- ATC Auto Door
- External Nozzle 7 MPa with Spindle Thru
- Lift-Up Chip Conveyor
- Chip Bucket
- Chip removing air blow
- Workpiece Cleaning Gun (Machine Side)
- Workpiece Cleaning Gun (APC Side)
- Operation/Maintenance Support
- AD-TAP Function
- IPC Function
- Hi-Speed Hi-Precision / 5-Axis Package + TRUE PATH
- Safety Regulation
- Matsuura Safety Specification
- Auto. Fire Extinguisher
- Option Package
- Hi-Speed Hi-Precision Package
- 5-Axis Package
- Hi-Speed Hi-Precision / 5-Axis Package
- Value Package
- Hi-Speed Hi-Precision / 5-Axis Package + TRUE PATH
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