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MAM72-35V. The flagship of Matsuura Advanced Manufacturing.

Proven, globally acclaimed platform for unmanned 5 axis production.

For over two decades the MAM72-35V has been synonymous with excellence in state of the art unmanned 5 axis production. Truly a global brand in itself and utilised in every industry where unmanned close tolerance prismatic machining and profit are key delivery requirements, the MAM72-35V enters a new era with an upgraded specification built on our heritage as technology pioneers of state of the art multi pallet 5 axis machining centres.
Direct Drive Linear Motors
enhanced performance on B / C Axes.
Equipped with proven Direct Drive Linear Motors, high precision and accuracy are assured. Sustained longer tool life through the dynamic thrust & acceleration of the B / C axes offers consumable cost down performance.

Extending the range of possibilities with one-chucking.
The movement and range of B-axes has been extended 19 more degrees (106 → 125 degrees). Now, one-chucking covers a larger operational range.

Providing support for larger workpieces.
The workpiece height has been extended by 20% (60 mm). Support is now available for a maximum workpiece size of 350 mm (d) × 300 mm (h), 60 kg.
* In case of storing the pallets on the top stacker, workpieces of H315mm are acceptable.

Tailored Options from PC2 to Full Automation & Unmanned Running.
Maximum flexibility to match your workload – Twin, 32 and 40 pallet variants available – and up to 520 tools.

Designed Ergonomics for More Performance.
Ease of access to the spindle & workpiece has always been a design feature of the MAM72-35V – now more so through considered design. The NC interface is touchscreen – for faster, easier operation.

Proven history and capable of machining a vast spectrum of materials – including hardened steels, titanium, casts & aluminium.
Increased speed, enhanced rigidity and sustained precision.

Technology advances maximise flexibility & profit.

**MAM72-35V**

**Conventional model**

Utilising Direct Drive Linear Motors on the B / C axes delivers faster operation and a reduction in non-cutting time. Moving at 50min⁻¹ and 100min⁻¹ respectively, these gearless & robust axes perform without noise and are maintenance and lubrication free for life.

**Increased speed, enhanced rigidity and sustained precision.**

**Direct Drive Linear Motors**

**Optimising machining time.**

**Increased by 19° to +65° ~ -125°**, the B Axis movement and operational range offers new production possibilities, delivering more tool access to the cutting face of the component.

**Extended B-Axis movement and range.**

**Compact B-Axis design delivers faster operations and increased capacity.**

Changing the centre position of the tilted axis by designing a new B Axis structure, the new **MAM72-35V** is more compact yet can accommodate workpieces that are 60mm larger in Z.

**Providing support for larger workpieces.**

Workpiece volume dimensions have been increased by 20% to 350mm (d) ~ 300 mm (h).

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and sustained precision. Flexibility & profit.

Renowned the world over for their reliability, precision, rigidity & outstanding durability and performance, Maxia is the brand name for Matsuura spindles – the leading technology innovators for HSM spindles.

Pursuing ever more reliable and maintenance free technologies, the proven auto-grease spindle lubrication system is a standard feature on Maxia Spindles – delivering maintenance free operation for life.

MAXIA Spindles from Matsuura – the pioneers of High Speed Spindles.

Equipped with a proven auto-grease lubrication system.

Spindle Motor Torque & Power Diagram

- **12,000min⁻¹ (7.5 / 11 kW(Continuous / 30 min))**
  - Torque (N·m): 167, 102
  - Power (kW): 11, 7.5

- **15,000min⁻¹ (Low : 7.5 / 11 kW, High : 11 / 15 kW)**
  - Torque (N·m): 135, 84.2
  - Power (kW): 35.8, 9.54

- **20,000min⁻¹ (Low : 11 / 15 kW, High : 15 / 18.5 kW)**
  - Torque (N·m): 108.9, 79.3
  - Power (kW): 15, 18.5

- **Standard**
- **Option**
Across the production spectrum – from 60 to 520 Tools – maximum choice and flexibility.

The standard chain ATC contains 60 tool place stations. Expandable retrofit options are available to enlarge the ATC from a Matrix 120 tools in steps of 40 up to a maximum of 520 tools.

Upgrade your machine as your business grows.

From 60 to 520 Tools – maximum choice and flexibility.

The 130mm diameter pallets effortlessly accommodate workpieces of 350 × H300 (φ13.77 × H11.81) and utilise the standard high precision CAPTO interface.

Compact pallets offer generous worksize with CAPTO precision.

Pallet Surface (Unit: mm (in.))
From one offs to low volume to full lights **MAM72-35V** is the machine for all seasons.

Through all of its incarnations the **MAM72-35V** has always been renowned for its integrated multi pallet technology and groundbreaking, profit making unmanned running. Now there is also a twin pallet variant to cater for companies engaged in low production one offs and short production runs. The revered 32 and 40 pallet stockers with integrated robot loading / unloading are of course available, as is the option of integrating the **MAM72-35V** into a multi machine FMS.

* In case of storing the pallets on the top stacker, workpieces of H315mm are acceptable.

**Pallet magazine options to suit your workload and business growth.**

From twin pallet, to 32 and 40 vertical stockers to full FMS.

<table>
<thead>
<tr>
<th>Workpiece Size</th>
<th>PC32</th>
<th>PC40</th>
</tr>
</thead>
<tbody>
<tr>
<td>D350 H300 mm</td>
<td>15 10 7</td>
<td>15 15 7 3</td>
</tr>
<tr>
<td>60kg</td>
<td>60kg</td>
<td></td>
</tr>
</tbody>
</table>

**32 and 40 Pallet Diagram.**

- **B-Axis 0 degree** (Unit: mm (in.))
- **B-Axis 90 degree** (Unit: mm (in.))
As with all Matsuura machines, exceptional high standards of accuracy across the range are an accepted standard feature. For bespoke companies seeking micron tolerance performance over prolonged production runs Matsuura offer eZ-5 as an option – eliminating geometric errors. eZ-5 utilises a touch probe and correction ball to ascertain performance measurements in just three minute, without having to remove the workpiece.
MIMs Matsuura Intelligent Meister System

OEM Matsuura interface to maximise rapid operation and usability.

- **Eco Meister**
  - Power Saving
  - Power cut-off function
  - Energy-saving devices installed

- **Operability Meister**
  - Fuss-free Simple Operation
  - Tool setup support
  - Workpiece setup support

- **Simple**
- **Accuracy**
  - Stable Accuracy
  - Spindle thermal displacement compensation
  - X/Y/Z thermal displacement compensation

- **Reliability Meister**
  - Machine Downtime Reduction
  - Preventive maintenance support functions
  - Machine restoration support functions

- **Reliability Meister Plus** (Option)
  - Increased Security Provided
  - Electronic manual
  - E-mailing function

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**Intelligent Protection System**

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.

- **Standard**
  - Power cut-off function
  - Energy-saving devices installed

- **Ultra Safe Collision Protection** (Stop)

- **Environment**
- **Operability Meister**
- **Accurate**
- **Simple**
- **Eco Meister**
- **Operability Meister**
- **Reliability Meister**
- **Reliability Meister Plus**

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**On-line Link with PC**

*The above shows a concept image.*

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* Intelligent Protection System simulates your programmed component alerting the user to any interference or collision before any actual machining takes place.
* Requires end-user PC—consult Matsuura for full specifications.
**Standard Machine Specifications**

<table>
<thead>
<tr>
<th>Movement and Range</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>X-Axis Travel mm (in.)</td>
<td>550 (21.65)</td>
</tr>
<tr>
<td>Y-Axis Travel mm (in.)</td>
<td>440 (17.32)</td>
</tr>
<tr>
<td>Z-Axis Travel mm (in.)</td>
<td>580 (22.83)</td>
</tr>
<tr>
<td>B-Axis Rotation Angle deg</td>
<td>360</td>
</tr>
<tr>
<td>C-Axis Rotation Angle deg</td>
<td>360</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pallet</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Working Surface mm (in.)</td>
<td>Ø 130 (Ø 5.11)</td>
</tr>
<tr>
<td>Loading Capacity kg (lb.)</td>
<td>60 (132)</td>
</tr>
<tr>
<td>Max. Workpiece Size mm (in.)</td>
<td>Ø 350 × H300 (Ø 13.77 × H11.81)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spindle</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Spindle Speed min⁻¹</td>
<td>40 - 12,000 (Grease Lubrication)</td>
</tr>
<tr>
<td>Spindle Speed Change Command</td>
<td>S5-digit Direct Command</td>
</tr>
<tr>
<td>Spindle Taper</td>
<td>7 / 24 taper #40 (BT dual contact type)</td>
</tr>
<tr>
<td>Spindle Bearing Inner Diameter mm (in.)</td>
<td>Ø 80 (Ø 3.14)</td>
</tr>
<tr>
<td>Spindle Drive Motor kW</td>
<td>AC 7.5 / 11 (Continuous / 30min)</td>
</tr>
<tr>
<td>Max. Spindle Motor Torque N m</td>
<td>167 / 630min⁻¹</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Feed Rate</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rapid Traverse Rate X / Y / Z mm min⁻¹</td>
<td>60000 / 60000 / 60000</td>
</tr>
<tr>
<td>B / C min⁻¹</td>
<td>50 / 100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Automatic Tool Changer</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Tool Shank</td>
<td>JIS B 6339 tool shank 40T</td>
</tr>
<tr>
<td>Pullstud</td>
<td>JIS B 6339 pullstud 40P</td>
</tr>
<tr>
<td>Tool Storage Capacity pcs.</td>
<td>60 (chain magazine)</td>
</tr>
<tr>
<td>Max. Tool Diameter mm (in.)</td>
<td>Ø 80 (Ø 3.14) (with adjacent tools)</td>
</tr>
<tr>
<td>Max. Tool Length mm (in)</td>
<td>350 (13.77)</td>
</tr>
<tr>
<td>Max. Tool Mass kg (lb.)</td>
<td>10 (22)</td>
</tr>
<tr>
<td>Methods of Tool Selection</td>
<td>Memory random selection, Bidirectional random rotation</td>
</tr>
<tr>
<td>Tool Changing Time sec</td>
<td>1.7 (Tool to Tool) 5.9 (Chip to Chip)</td>
</tr>
</tbody>
</table>

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

- Lift-up Chip Conveyor

Add another option to perform even longer operation cycles without operator oversight.

Our chip flush is a standard feature that blows air to get rid of chips and swarf. An additional option is also available which uses a spiral chip conveyor and lift conveyor to dispose large quantities of chips and swarf efficiently.
List of Fittings

- Spindle
  - 12,000min. (BT40 Grease Lubrication)
  - 15,000min. (BT40 Grease Lubrication)
  - Spindle motor output 1 kW
    - Low: 7.5 / 11, High: 11 / 15
    - Spindle max. torque N·m: 135 (850min.)
  - 20,000min. (BT40 Grease Lubrication)
  - Spindle motor output 1 kW
    - Low: 11 / 15, High: 15 / 18.5
    - Spindle max. torque N·m: 108.4

- ATC
  - 60 tools (Chain Magazine)
  - 120 / 160 / 120 / 280 / 320 tools (based on 320-tool Matrix Magazine)
  - External Tool Breakage Detection System (for Matrix Magazine, contact type)

- Coolant
  - Coolant Temperature Controller with 200-liter Tank (installed separately); large 200L
  - Coolant Temperature Controller with 100-liter Tank (installed separately); small 100L

- Machine module
  - 360 / 400 / 440 / 480 / 520 tools (based on 520-tool Matrix Magazine)
  - 60 tools (Chain Magazine)

- Scale Feedback X/Y/Z (HEIDENHAIN)

- Matsuura Safety Specifications

- Reliability Meister Plus TYPE A

- Reliability Meister Plus TYPE B

- Movable Manual Pulse Generator

- Coolant Flow Checker

- Mist Separator (without Fire Damper)

- Mist Separator (with Fire Damper)

- Coolant Temperature Controller with 100-liter Tank (installed separately); small 100L

- Coolant Temperature Controller with 200-liter Tank (installed separately); large 200L

- Automatic Measurement/Automatic Tool Damage Check

- Automatic Measurement/Automatic Centering (optical type)

- Tool Damage Check/Full Automatic Tool Length Measurement (contact type)

- Tool Damage Check/Full Automatic Tool Length Measurement (laser type)

- Automatic Measurement (optical type) and Tool Damage Check (contact type)

- Automatic Measurement (optical type) and Tool Damage Check (laser type)

- External Tool Breakage Detection System for Chain Magazine, contact type

- External Tool Breakage Detection System for Matrix Magazine, contact type

- Tail Stock

- Cell Manager

- Tool ID System Balluf Format-A

- Tool ID System Balluf Format-B

- Tool ID System Balluf Format-C

- Tool ID System

- Touch Probe/BT40-UMT200W+JIS Pullstud

- Optional Package

- High-speed, High-precision Package

- 4-Axis Package

- High-speed, High-precision / 5-Axis Package

- Value Package

- TRUE PATH

- Machine module

External View
Unit: mm (in.)

Top View

Front View

Right Side View

Oil cooler

Hydraulic unit

Main operation panel

Work station

Chip bucket

Chip Removal Air Blow

Work Light

Semi Dry Unit

Weekly Timer

Semi Dry Unit

Weekly Timer

Semi Dry Unit

Weekly Timer

Semi Dry Unit

Weekly Timer

Semi Dry Unit