

 **Matsuura**

5-Axis Vertical Machining Center

# **MAM72-63V**



**PC2**

**MAXIA**  
Innovation by  Matsuura





# MAM72-63V

## Matsuura **MAM72 Series** The Clear Leader in **5-Axis Machining**

For almost a decade, Matsuura's **MAM72 Series** of simultaneous 5-axis machines has been the clear market leader for machines in their class.

Highly productive and reliable excellence through constant and cost effective innovation are the main reasons why the Matsuura **MAM72 Series** has maintained its market leading position over the years in all industry sectors, throughout all its model variants.

Meeting the global market demand for ever lower costs, shorter delivery times, long periods of unmanned production and elimination of set up times have led the way for Matsuura to produce high quality, cost effective 5-axis machines and processes.

Incorporating the vast experience Matsuura has gained over the years in high performance 5-axis machining, the market now has a clear choice for the cost effective "one hit machining" of tolerance critical, large and complex components - the Matsuura **MAM72-63V**.



**MAM72-25V**



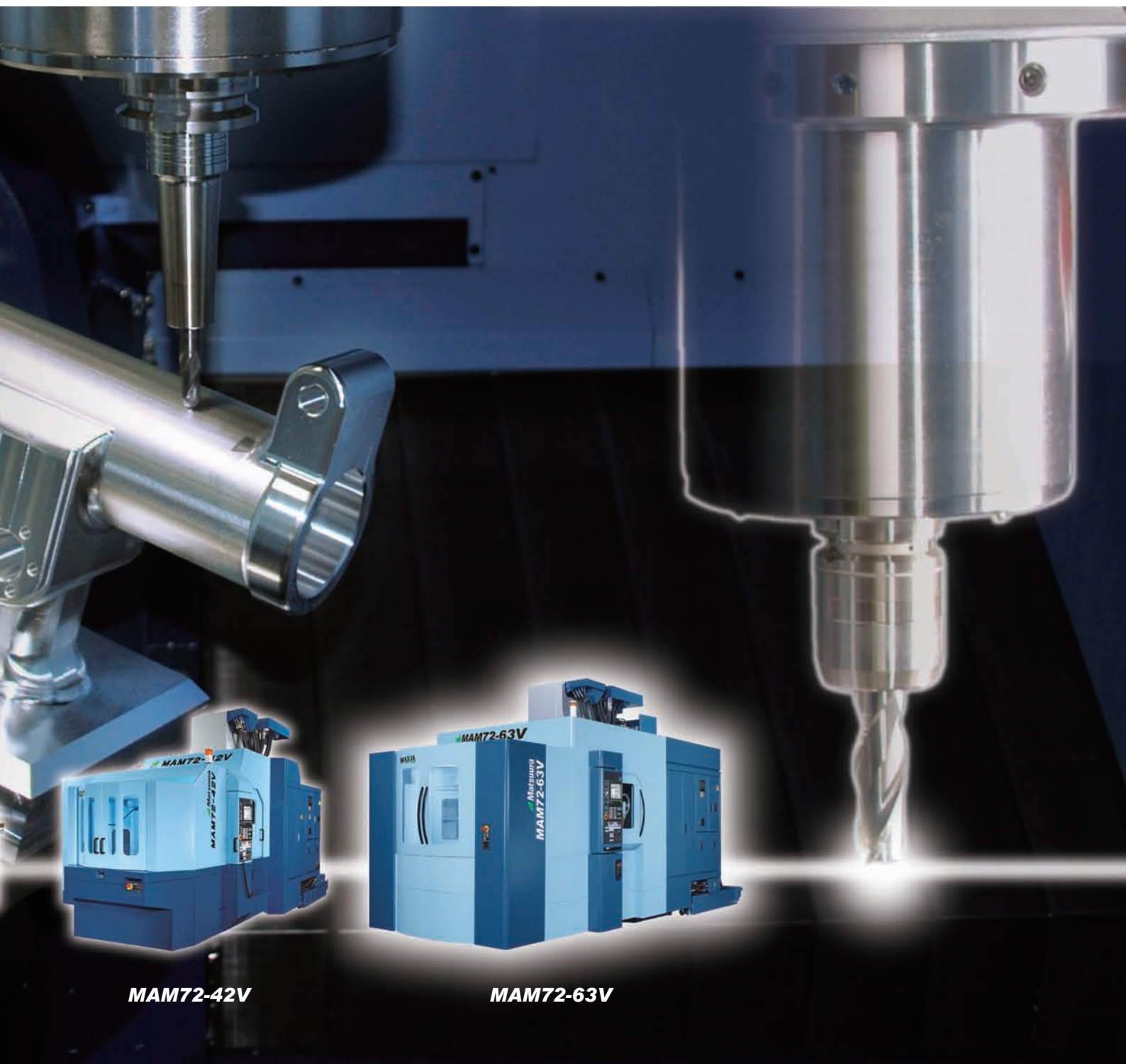
**MAM72-3VS**



**MAM72-35V**



**MAM72-3VM**

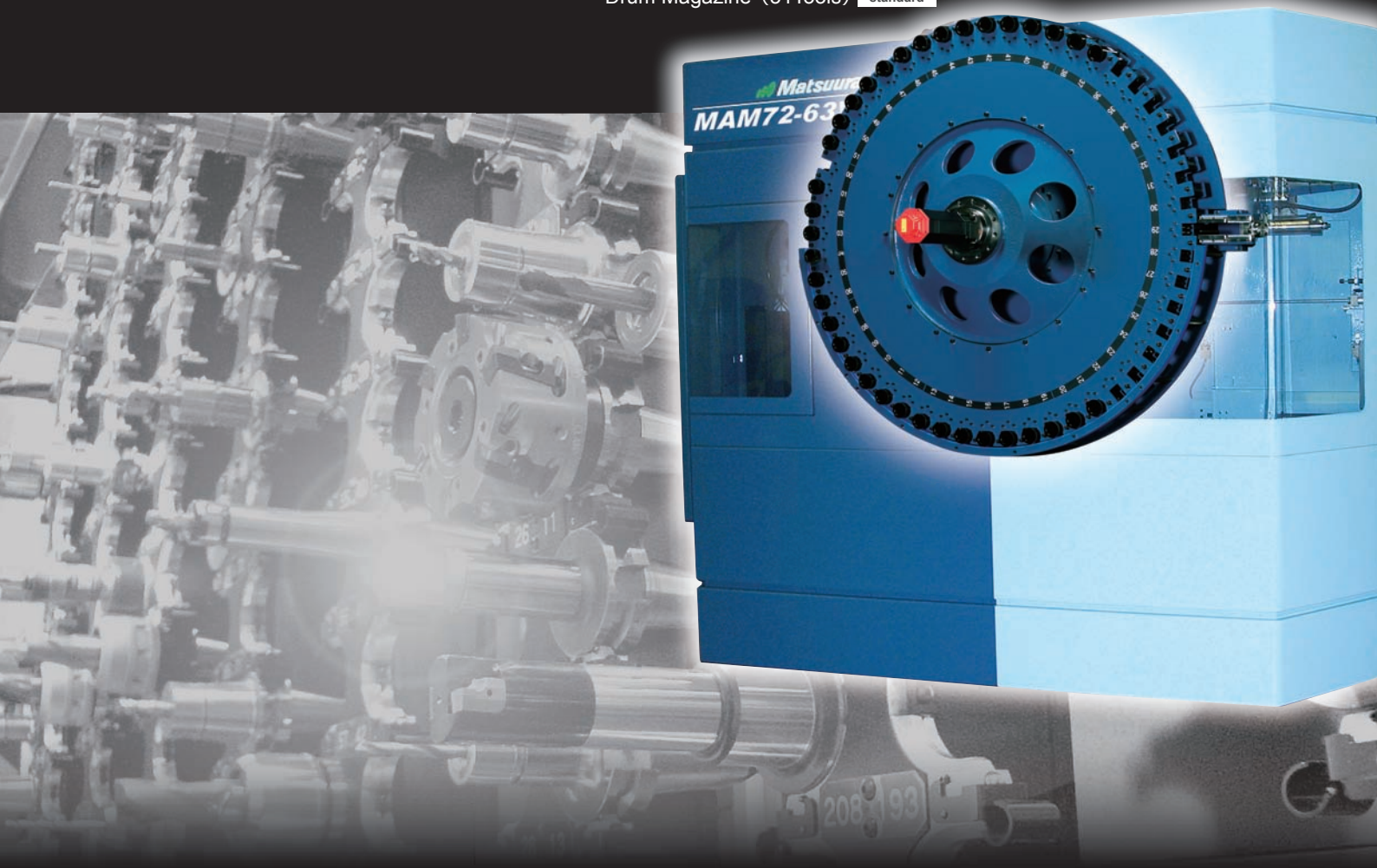


**MAM72-42V**

**MAM72-63V**

**MAXIA**  
Innovation by  **Mitsubishi**





# Ultimate Flexibility & Versatility

Matsuura have long extolled the virtues of the extremely cost effective nature of unmanned production. To those ends Matsuura have invested in decades of R & D, resulting in the proven high productivity multi pallet systems across our entire range of machine tools, & operated by some of the worlds leading companies.



## Linear Pallet System option

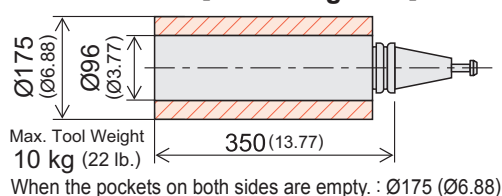
- 5-Axis vertical machining center × 1  
(**MAM72-63V**)
- Horizontal machining center × 2  
(**H.Plus-405**, **H.Plus-500**)
- **PC93** + Robot system

# New & Proven ATC – Fast & Reliable

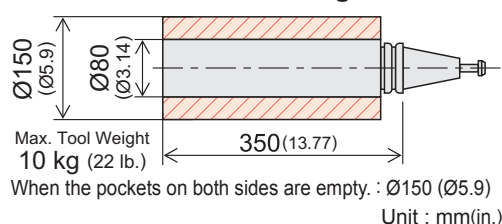
## ATC Tool Magazine

- Matsuura's own new & proven 51 station (standard) rotary ATC design offers users unique benefits in terms of the speed of tool change &, due to the reduction of mechanical parts, greater long term reliability. This new design, already a standard feature on Matsuura Horizontal **H.Plus** products, also improves the quality of the workplace environment being substantially quieter than other ATC designs. An optional Matrix type ATC is available – now with capacity for up to 520 tools to meet & support the growing demand for long periods of unmanned running & sister tooling.

### Max. Tool Size [Drum Magazine]



### Max. Tool Size [Matrix Magazine]



Matrix Magazine (320T) option

### BT40 Drum Magazine

|                          |                                                                                    |
|--------------------------|------------------------------------------------------------------------------------|
| 51 tools (Fixed Address) | <span style="background-color: black; color: white; padding: 2px;">standard</span> |
| 52 tools (Memory Random) | <span style="background-color: black; color: white; padding: 2px;">option</span>   |

### BT40 Matrix Magazine option

| 240T      | 320T      | 520T      |
|-----------|-----------|-----------|
| 120 tools | 120 tools | 360 tools |
| 150 tools | 160 tools | 400 tools |
| 180 tools | 200 tools | 440 tools |
| 210 tools | 240 tools | 480 tools |
| 240 tools | 280 tools | 520 tools |
|           | 320 tools |           |

### BT50 Chain Magazine option

|          |           |
|----------|-----------|
| 60 tools | 120 tools |
|----------|-----------|

### BT50 Matrix Magazine option

|           |           |           |           |
|-----------|-----------|-----------|-----------|
| 150 tools | 150 tools | 210 tools | 240 tools |
|-----------|-----------|-----------|-----------|

## Fluorescent lamp

- All Matsuura ATC's are ergonomically designed for operator comfort & process efficiency. High brightness fluorescent lighting is installed in the ATC enclosure. This is available with the Matrix Magazine options.



## ATC Operation Panel

- A new larger 10 inch screen has been added to the ATC – allowing effortless data control of all aspects of ATC management & functionality.



All Tools



NG Tools



Auto Recovery

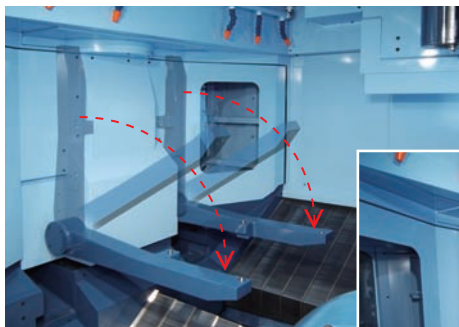




# Vast Array of Options in any Configuration Tailored to your process

## 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. Now an established feature on certain twin & multi pallet Matsuura 5-axis product lines, this APC design has proven itself to be one of the most reliable & trouble free currently available on the market.



## Thru-Table / Pallet Clamping

option

- A dynamic, versatile & reliable Thru-Table / Pallet Clamping System is available as an option

**NON-PC**: 6 Port

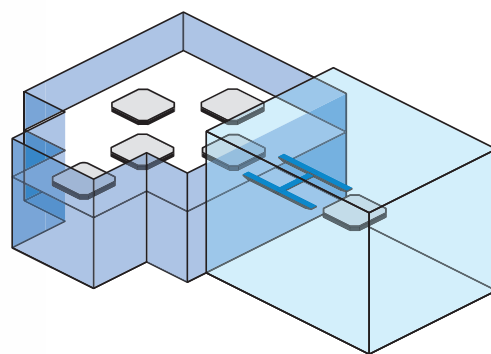
**with PC**: 2 Port

## APC Pallet Systems

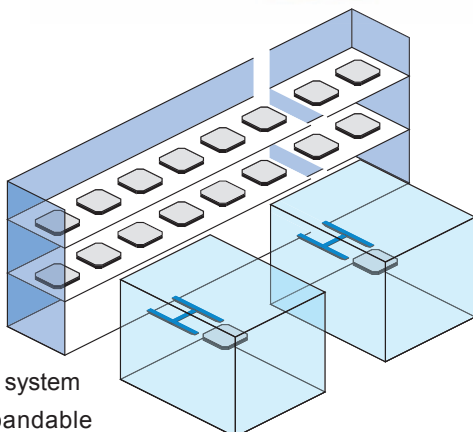
option

- APC option line-up for continuous unmanned production.
- Non-PC is standard.

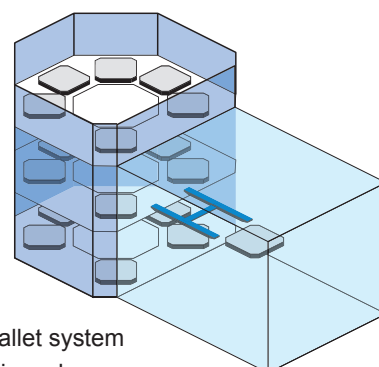
**PC6** Floor Pallet system  
Compact, fully integrated & expandable multi pallet system



**PC17~** Linear Pallet system  
Twin deck & fully expandable linear pallet system



**PC18** Tower Pallet system  
Vertically aligned space saving multi pallet system



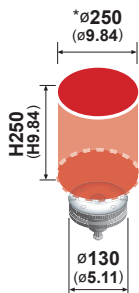
# MAM72 Series

## MAM72-25V



Loading Capacity : 40kg  
(88lb.)

Max. Work Size



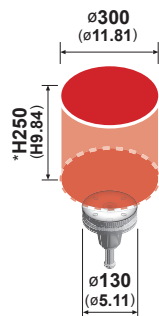
\*In case of **PC**,  
ø300(ø11.81) applicable.

## MAM72-3VS



Loading Capacity : 60kg  
(132 lb.)

Max. Work Size



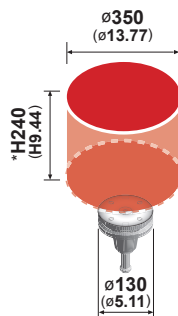
\*H315(H12.40) applicable on the top  
Stackers in the PC Magazine.

## MAM72-35V



Loading Capacity : 60kg  
(132 lb.)

Max. Work Size



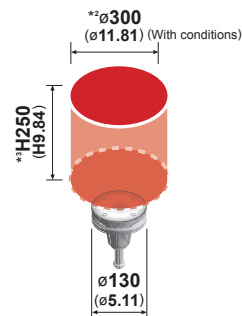
\*H315(H12.40) applicable on the top  
Stackers in the PC Magazine.

## MAM72-3VM



Loading Capacity : \*160kg  
(132 lb.)

Max. Work Size



\*1 Max. work weight on the pallet  
magazine(PC90) is altogether 2,520kg.

\*2 When the stackers on both sides are  
empty, ø300(ø11.81) applicable.

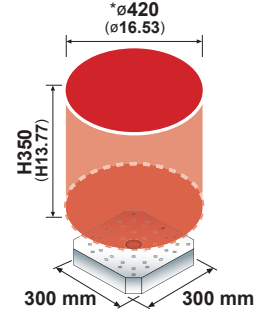
\*3 H315(H12.40) applicable on the  
top Stacker in the PC Magazine.

## MAM72-42V



Loading Capacity : 200kg  
(440 lb.)

Max. Work Size



\*In case of **PC**, ø520(ø20.47) applicable.  
(Working Surface ø300mm)

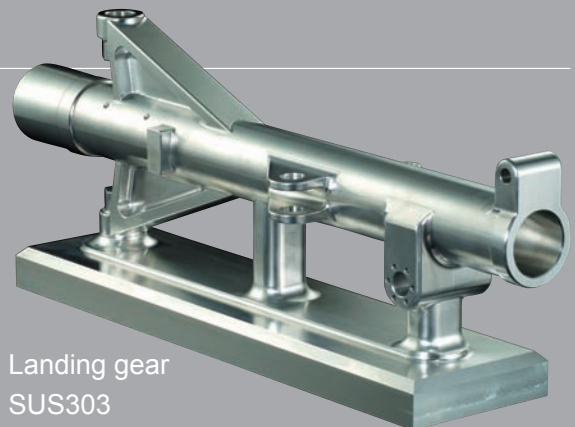
Unit : mm(in.)

## 5-Axis Machining Example #1

- Landing Gear component machined in a single operation with one set up, taking full advantage of the Ø800(Ø 31.49) worksizes capacity and 150 degree A-Axis stroke.

### Highlights

1. One hit, one set up 5 axis machining from solid billet
2. Solid billet size: 800 x 400 x 200  
(31.49 x 15.74 x 7.87)
3. Versatile machining platform for irregular unwieldy components



Work : Landing gear

Material : SUS303

No. of tools : 14

## 5-Axis Machining Example #2

- Blisk machining from solid – high accuracy geometry & impeccable surface finish required. Long periods of stable & accurate machining establishes the credentials of Matsuura's own Thermal Meister™ software. (Thermal Displacement Compensation for Spindle & Feed Axis.)

### Highlights

1. Billet size: Ø420 x H100  
(ø16.53 x H3.93)
2. Material: SUS303 requiring highly rigid machine platform
3. Simultaneous 5-axis machining
4. Utilising TCPC function (inclined plane machine command)

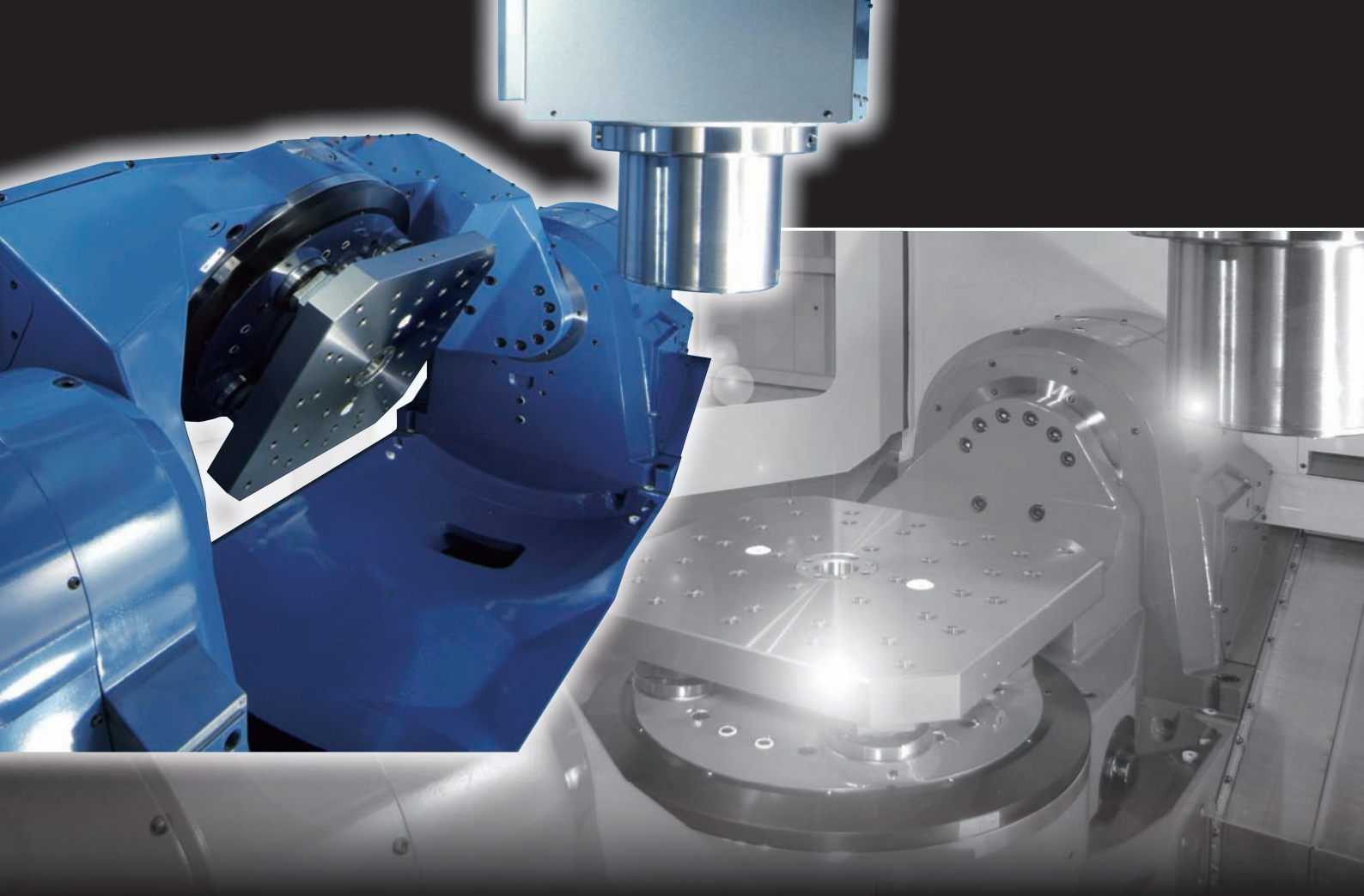


Work : Blisk

Material : SUS303

No. of tools : 6

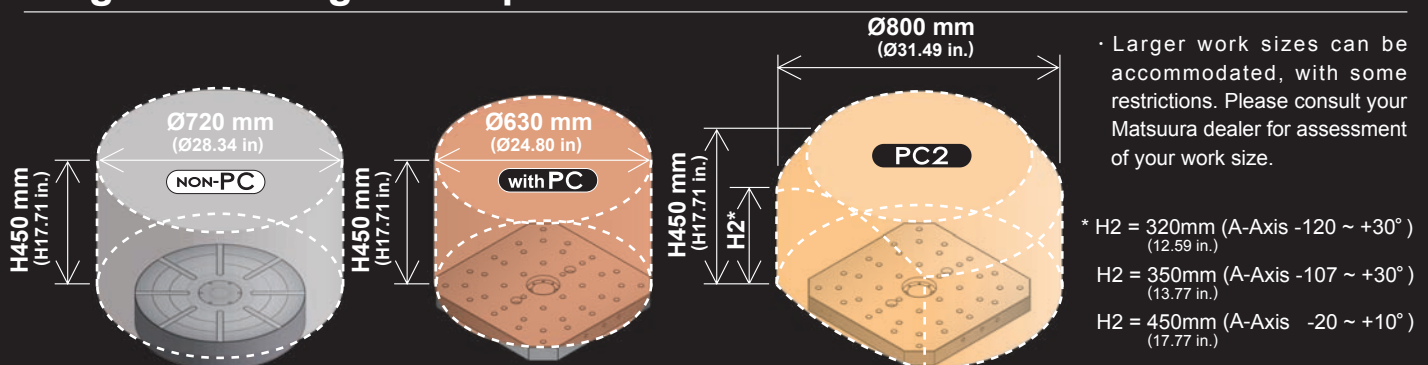
Unit : mm(in.)



# Optimized Design for 5-Axis Machining

The **MAM72-63V**, as with all Matsuura multi axis products, has been designed as a fully fledged & integrated 5-axis machine tool not just a 3-axis machine tool with "bolt on" 4th & 5th table. Due to total design integration from the inception of the machine, the **MAM72-63V** has an optimized work enclosure, that offers the maximum working envelop while minimizing interference throughout all movements of the machine axes.

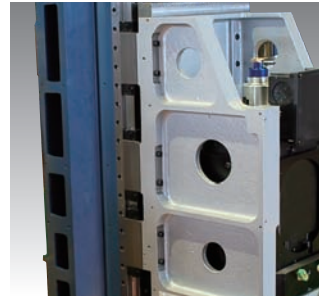
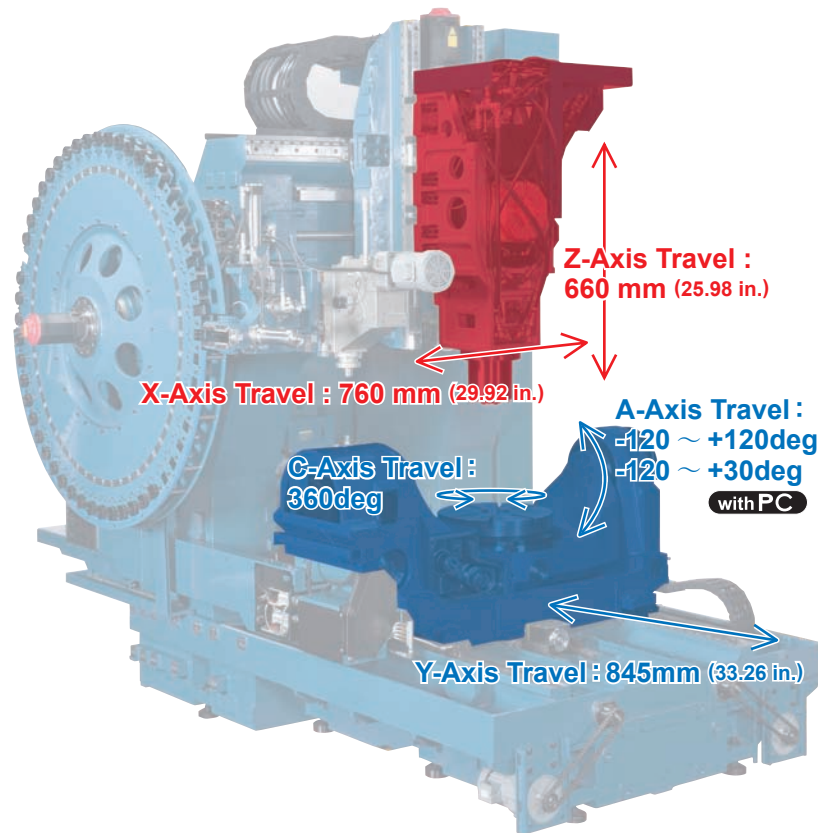
## Largest Working Envelope in its Class





# Highly Rigid Structure

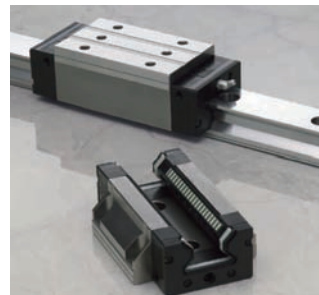
## Robust & Compact A / C-Axis Table, In-House Design



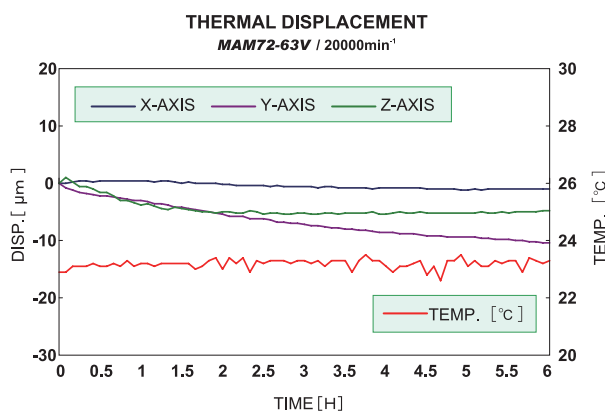
- Triple Slide Packs are utilised on the Z-Axis, assuring maximum rigidity.



- To maintain high accuracy for the lifetime of the machine, parallelism & straightness are set to within 2 microns for the full axis stroke during manufacture.



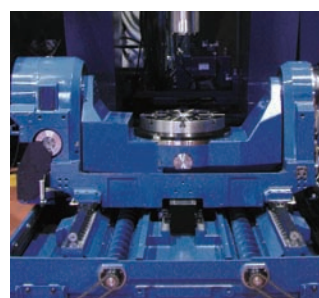
- All supplied components, such as the Roller Guides, are of the finest quality available.



- Thermal Meister™ monitors the temperature of the spindle and the X, Y and Z axes and supplies a constant feed of compensation values to the NC to maintain assured accuracy.



- Integrated fully into the design of the **MAM72-63V**, the Matsuura designed & tested A / C-axis table has been created utilising FEM analysis.



- The span of the A / C-axis between the roller guides has been calculated to offer maximum performance.



# Highly Reliable Spindle

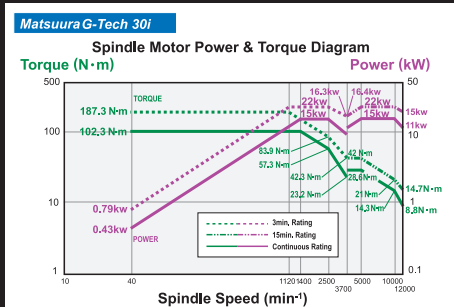
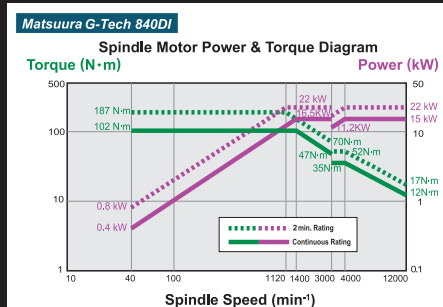
Designed by Matsuura for Matsuura – world leading Hi-Tech Spindle technology for all industries & a myriad of materials.

## Matsuura Hi-Tech Spindle

### BT40 Spindle Specification

standard

|                     |                                   |
|---------------------|-----------------------------------|
| Max. Rotation Speed | 12,000 $\text{min}^{-1}$          |
| Motor Power         | 15 / 22 kW(30HP)                  |
| Motor Torque        | 187 N·m / 1,120 $\text{min}^{-1}$ |
| Bearing Lubrication | Grease                            |





# Matsuura Hi-Tech Spindle

## Designed & Assembled“ in-house”



- Matsuura's Spindle Engineers work in a dedicated Clean Room complex to assure the highest standards of build quality & reliability.

Our ultra precision spindles are guaranteed to have a runout of less than 1  $\mu\text{m}$  (0.000039 in.) as the actual measured value at the spindle nose.

## Eco-Friendly Grease Lubrication

- The Spindle bearing is lubricated by grease. Low noise operation, with minimum air requirement. Eco friendly & maintenance free.



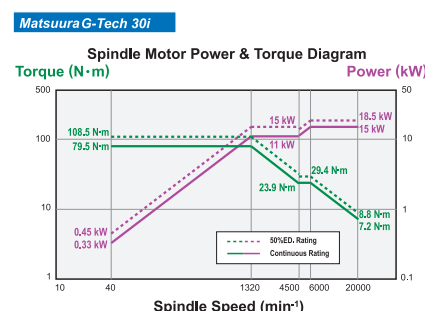
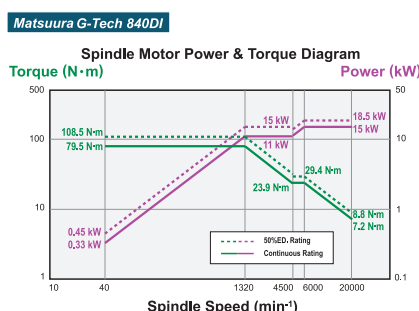
※ 20,000min<sup>-1</sup> spindle provide with spindle grease auto supply system

## Vacuum Type Coolant Thru Spindle option

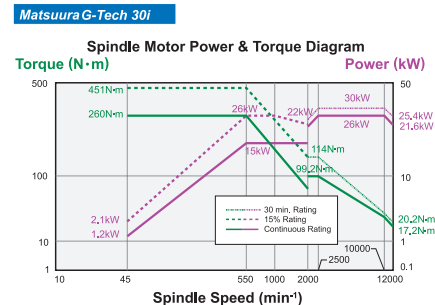
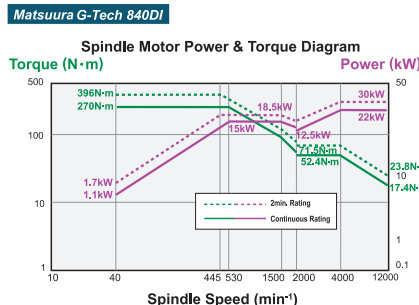
- This function prevents coolant from dripping & scattering in the machine enclosure & in the ATC during tool change. A vacuum mechanism aspirates the remaining coolant in the circuit.

## Spindle Specifications / Spindle Motor Power & Torque Diagrams

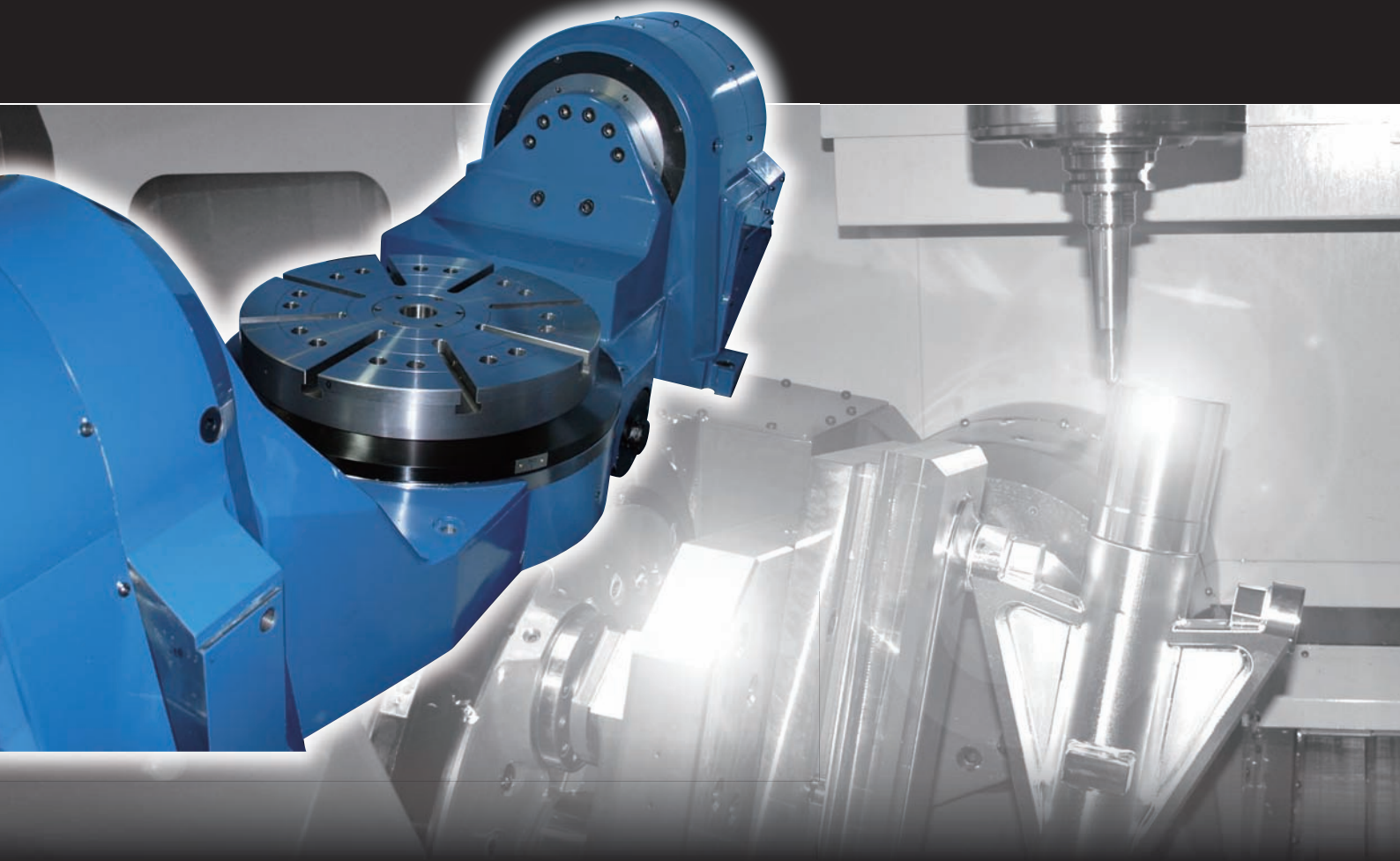
| BT40 Spindle Specification <span style="float: right;">option</span> |                                    |
|----------------------------------------------------------------------|------------------------------------|
| Max. Rotation Speed                                                  | 20,000 min <sup>-1</sup>           |
| Motor Power                                                          | 15 / 18.5 kW(25HP)                 |
| Motor Torque                                                         | 108.5 N·m / 1,320min <sup>-1</sup> |
| Bearing Lubrication                                                  | Grease                             |



| BT50 Spindle Specification <span style="float: right;">option</span> |                                |
|----------------------------------------------------------------------|--------------------------------|
| Max. Rotation Speed                                                  | 12,000 min <sup>-1</sup>       |
| Motor Power                                                          | 22 / 30 kW(40HP)               |
| Motor Torque                                                         | 396 N·m / 445min <sup>-1</sup> |
| Bearing Lubrication                                                  | Oil-Air                        |



- Optional BT40 30,000 min<sup>-1</sup> is available. option



# Ergonomic & User Friendly

Designed around the operator to maximize their productivity, efficiency & comfort, the **MAM72-63V** offers superb ergonomic functionality.

## Superb Dual Access

- Wide and capacious machine access at both the APC station and enclosure door.
- Tempered glass in the main enclosure window assures clearer vision for longer periods.

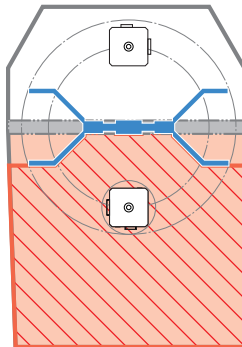




# Reliable Swarf Management

## 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.
- This exclusive Matsuura X-Type Door design still maintains the **MAM72-63V** 's largest in class working envelope & workpiece accommodation.

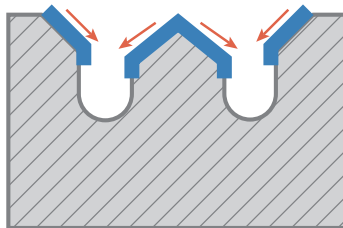


• X-type APC Door

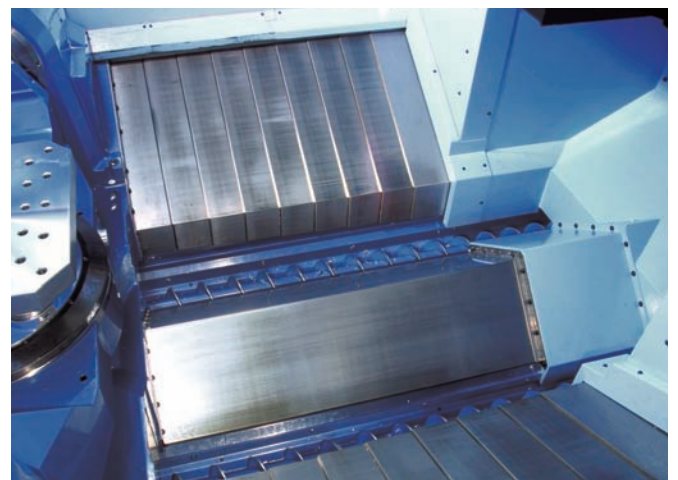


## W-Type Slide Cover

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



• W-Type Slide Cover



## Lift-Up Chip Conveyors option

### Scraper Type

- Drum Filter
- Oily Coolant Applicable (less than 10 cSt)

### Hinge Type

- Drum Filter
- Only Water Solution Coolant Applicable



# The Latest High Performance NC System

## Matsuura G-Tech 840DI

- Equipped with the latest high performance CPU, Windows XP Professional, graphical user interface.
- 10.4 inch color LCD, soft keys vertically arranged.
- Expanded media interfaces for data back-up Compact Flash.

### For High Speed and Finer Machined Surface

Machining for General Parts or Mold & Die  
**Advanced Zee Lag Y** standard

Machining for more Complex, Precision Parts  
**IZ-1 / COMP** option

(Max.5,000 Block Look Ahead + Spline Interpolation After compressing a maximum of 50 blocks and engaging the 100 Block Look Ahead function, IZ-1/COMP interpolates & applies to the B-Spline to the nearest point selected.)

## Matsuura G-Tech 30i

- High speed CPU and FSSB, internal CNC bus, optical fiber cables used for high speed data transfer.
- Nanometer resolution.
- 10.4 inch color LCD, Compact Flash Port, PC file management structure.

### For High Speed and Finer Machined Surface

Machining for General Parts or Mold & Die  
**IZ-1 / 15F** standard

Machining for more Complex, Precision Parts  
**IZ-1 / 30NF, IZ-2 / 150NF** option  
(Look Ahead Linear Acc./dec.+ Nano interpolation)

- Executing the max. 200(IZ-1/30NF) or 600\*(IZ-2/150NF) - block look ahead linear acc./dec. before interpolation achieves a smooth acc./dec. across the multiple blocks calculated by nano order.

※ max.1,000 block available as option.





# NC Software

## Proven Software Performance for 5-Axis Machining

### Human Machine Interface

standard

#### Handy Man II

Matsuura G-Tech 840DI

Matsuura G-Tech 30i

- **Handy Man II Y / F** provides major savings by reducing set-up, programming, operating & maintenance times.

### Automatically Controlled Toolpath / Tool Speed

option

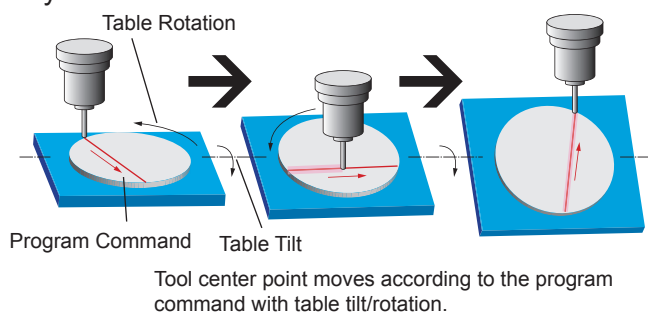
#### TRAORI

Matsuura G-Tech 840DI

#### TCPC

Matsuura G-Tech 30i

- 5-Axis Transformation (TRAORI) is the kinematic transformation function of **G-Tech840DI** which realizes easy tool center point programming for 5-Axis machining. The path and path velocity of the tool center point, can be programmed based on the workpiece coordinate system, in the same way as that for 3-Axis machine tools.



### Easy Programming (3+2-Axis)

option

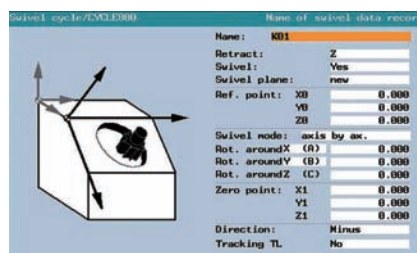
#### CYCLE800

Matsuura G-Tech 840DI

#### Tilted Working Plane Command(TWP)

Matsuura G-Tech 30i

- **G-Tech 840DI** offers, as standard feature, **CYCLE800** which takes over necessary calculations of coordinate values including necessary axes motions. When rotary axes are moved, complex calculations, in line with machine axes configuration, should be made for re-calculating and establishing suitable



work coordinate system for the new surface & its orientation.

### High-Speed Precision Machining Program Support Function

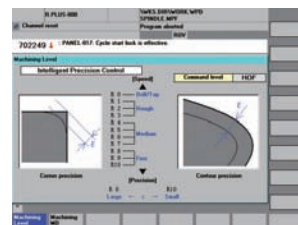
standard

#### IPC

Matsuura G-Tech 840DI

Matsuura G-Tech 30i

- When utilizing this software, setting the required part accuracy level is quick, simple and user friendly, allowing you to prioritize precision against speed.



### Tool Diameter Interpolations on 5-Axis

option

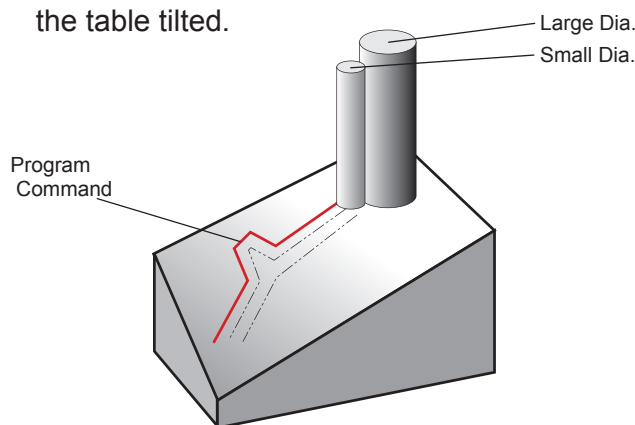
#### CUT3DC

Matsuura G-Tech 840DI

#### Three Dimensional Cutter Compensation

Matsuura G-Tech 30i

- **CUT3DC** sets the value of tool-offsets automatically for simultaneous 5-Axis machining according to the pre-set value. It enables the safe & automatic use of different diameter tools during 5-Axis machining with the table tilted.



### NC Package

option

#### High Speed High Precision 5-Axis Package

Matsuura G-Tech 840DI

Matsuura G-Tech 30i

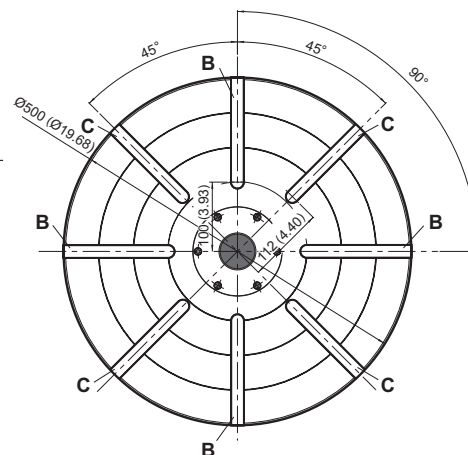
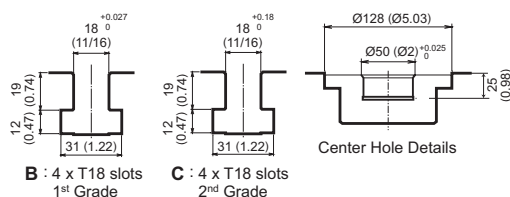
- Packages of NC Software, tailored to your production, are available. Please consult your Matsuura dealer for full details & assessment of your requirements.

# Main Specifications

| ■ Movement & Ranges                   |                         |                                                                      |
|---------------------------------------|-------------------------|----------------------------------------------------------------------|
| X-Axis Travel                         | mm (in.)                | 760 (29.92)                                                          |
| Y-Axis Travel                         | mm (in.)                | 845 (33.26)                                                          |
| Z-Axis Travel                         | mm (in.)                | 660 (25.98)                                                          |
| A-Axis Travel                         | deg                     | -120 ~ +120                                                          |
| A-Axis Travel <b>with PC</b>          | deg                     | -120 ~ +30                                                           |
| C-Axis Travel                         | deg                     | 360                                                                  |
| ■ Table / Pallet                      |                         |                                                                      |
| Working Surface                       | mm (in.)                | Ø500 (Ø19.68)                                                        |
| Working Surface <b>with PC</b>        | mm (in.)                | 500 × 500 (Ø19.68 × H19.68)                                          |
| Loading Capacity                      | kg (lb.)                | 400 (880)                                                            |
| Loading Capacity <b>with PC</b>       | kg (lb.)                | 350 (770)                                                            |
| Max. Work Size                        | mm (in.)                | Ø720 × H450 (Ø28.34 × H17.71)<br>Ø800 (Ø31.49) [ With conditions ]   |
| Max. Work Size <b>with PC</b>         | mm (in.)                | Ø630 × H450 (Ø24.80 × H17.71)<br>Ø800 (Ø31.49) [ With conditions ]   |
| ■ Spindle                             |                         |                                                                      |
| Spindle Speed Range                   | min <sup>-1</sup>       | 40 ~ 12,000 (Grease Lubrication)                                     |
| Type of Spindle Taper Hole            |                         | 7/24 Taper BT40                                                      |
| Spindle Bearing Inner Diameter        | mm (in.)                | Ø80 (Ø3.14)                                                          |
| Max. Spindle Torque                   | N·m / min <sup>-1</sup> | 187 / 1,120                                                          |
| Spindle Motor (Continuous / 2 min)    | kW (HP)                 | 15 / 22 (30)                                                         |
| ■ Feedrate                            |                         |                                                                      |
| Rapid Traverse ( X / Y / Z )          | mm / min (ipm)          | 60,000 (2,362.20)                                                    |
| Rapid Traverse ( A / C )              | min <sup>-1</sup>       | 25 / 50                                                              |
| Rapid Feed Acceleration ( X / Y / Z ) | G                       | 0.75 / 0.67 / 0.98                                                   |
| Min. Movement Increment ( X / Y / Z ) | mm (in.)                | 0.001 (0.000039)                                                     |
| Min. Movement Increment ( A / C )     | deg                     | 0.001                                                                |
| ■ Automatic Tool Changer              |                         |                                                                      |
| Type of Tool Shank                    |                         | JIS B 6339 40T                                                       |
| Type of Retention Knob                |                         | JIS B 6339 40P                                                       |
| Number of Tools                       | tool                    | 51 (Drum Magazine)                                                   |
| Max. Tool Diameter                    | mm (in.)                | Ø96 (Ø3.77)<br>When the pockets on both sides are empty Ø175 (Ø6.88) |
| Max. Tool Length                      | mm (in.)                | 350 (13.77)                                                          |
| Max. Tool Weight                      | kg (lb.)                | 10 (22)                                                              |
| Methods of Tool Selection             |                         | Fixed Address                                                        |
| Tool Change Arm                       |                         | Double Grip Type                                                     |

| ■ Power Supply                                                          |          |                 |
|-------------------------------------------------------------------------|----------|-----------------|
| Input Power                                                             | kVA      | 62              |
| Voltage                                                                 | V        | 200 / 220 ± 10% |
| Frequency                                                               | Hz       | 50 / 60 ± 1     |
| Air Source                                                              | MPa      | 0.54 ~ 0.93     |
| Required Air Volume                                                     | Nℓ / min | 400             |
| ■ Tank Capacity                                                         |          |                 |
| Hydraulic oil tank capacity                                             | ℓ        | 40              |
| Coolant tank capacity                                                   | ℓ        | 600             |
| ■ Standard Accessories                                                  |          |                 |
| 01.Total splash guard                                                   |          |                 |
| 02.ATC Auto Door                                                        |          |                 |
| 03.Synchronized Tapping                                                 |          |                 |
| 04. <b>AD-TAP</b> Function                                              |          |                 |
| 05. <b>IPC</b> Function                                                 |          |                 |
| 06.Spindle oil cooler                                                   |          |                 |
| 07.Auto grease supply to feed axis                                      |          |                 |
| 08.Coolant unit                                                         |          |                 |
| 09.Spiral conveyor                                                      |          |                 |
| 10.Chip flush system                                                    |          |                 |
| 11.Movable manual pulse generator                                       |          |                 |
| 12.Spindle overload protect                                             |          |                 |
| 13.Workpiece counter (9 sorts of M function )                           |          |                 |
| 14.Work Light (fluorescent)                                             |          |                 |
| 15.Standard mechanical tools & tool box                                 |          |                 |
| 16.Machine color paint                                                  |          |                 |
| 17.Levelling pallets and bolts (not utilized for the foundation)        |          |                 |
| 18.Scale feedback for A & C axis                                        |          |                 |
| 19. <b>Handy Man II Y / F</b>                                           |          |                 |
| 20.CD-ROM for Memory Card Operation only for <b>Matsuura G-Tech 30i</b> |          |                 |
| 21.Thermal Meister™                                                     |          |                 |
| 22.Matsuura Safety Specification                                        |          |                 |

## Table Surface **NON-PC**



Unit : mm (in.)



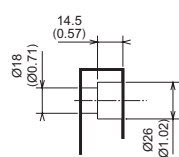
## Equipment

|                                               |               |                                   |   |   |
|-----------------------------------------------|---------------|-----------------------------------|---|---|
| <b>■ Spindle</b>                              |               |                                   |   |   |
| 12,000 min <sup>-1</sup> (BT40 Grease)        |               |                                   |   | ○ |
| 12,000 min <sup>-1</sup> (BT50 Oil-Air)       |               |                                   |   | ▲ |
| 20,000 min <sup>-1</sup> (BT40 Auto Grease)   |               |                                   |   | ▲ |
| 30,000 min <sup>-1</sup> (BT40 Oil-Air)       |               |                                   |   | ▲ |
| <b>■ ATC</b>                                  |               |                                   |   |   |
| 51 tools (BT40, Drum Magazine, Fixed Address) |               |                                   |   | ○ |
| 52 tools (BT40, Drum Magazine, Memory Random) |               |                                   |   | ▲ |
| 240base                                       |               |                                   |   |   |
| 120 tools (BT40, Matrix Magazine)             | ▲             | 210 tools (BT40, Matrix Magazine) | ▲ |   |
| 150 tools (BT40, Matrix Magazine)             | ▲             | 240 tools (BT40, Matrix Magazine) | ▲ |   |
| 180 tools (BT40, Matrix Magazine)             | ▲             |                                   |   |   |
| 320base                                       |               |                                   |   |   |
| 120 tools (BT40, Matrix Magazine)             | ▲             | 240 tools (BT40, Matrix Magazine) | ▲ |   |
| 160 tools (BT40, Matrix Magazine)             | ▲             | 280 tools (BT40, Matrix Magazine) | ▲ |   |
| 200 tools (BT40, Matrix Magazine)             | ▲             | 320 tools (BT40, Matrix Magazine) | ▲ |   |
| 520base                                       |               |                                   |   |   |
| 360 tools (BT40, Matrix Magazine)             | ▲             | 480 tools (BT40, Matrix Magazine) | ▲ |   |
| 400 tools (BT40, Matrix Magazine)             | ▲             | 520 tools (BT40, Matrix Magazine) | ▲ |   |
| 440 tools (BT40, Matrix Magazine)             | ▲             |                                   |   |   |
| <b>■ High Accuracy Control</b>                |               |                                   |   |   |
| Scale Feedback System                         | XY-Axis       | ▲                                 |   |   |
| Scale Feedback System                         | Z-Axis        | ▲                                 |   |   |
| Scale Feedback System                         | XYZ-Axis      | ▲                                 |   |   |
| Scale Feedback System                         | A-Axis        | ○                                 |   |   |
| Scale Feedback System                         | C-Axis        | ○                                 |   |   |
| <b>■ APC</b>                                  |               |                                   |   |   |
| NON-PC                                        |               |                                   |   | ○ |
| PC2                                           |               |                                   |   | ▲ |
| PC6 (Floor Pallet System)                     |               |                                   |   | ▲ |
| PC17 (Linear Pallet System)                   |               |                                   |   | ▲ |
| PC18 (Tower Pallet System)                    |               |                                   |   | ▲ |
| <b>■ Coolant</b>                              |               |                                   |   |   |
| Coolant Unit                                  |               |                                   |   | ○ |
| Vacuum Type Coolant-Thru-Spindle              | Type A        | ▲                                 |   |   |
| Vacuum Type Coolant-Thru-Spindle              | Type B        | ▲                                 |   |   |
| Vacuum Type Coolant-Thru-Spindle              | Type C (2MPa) | ▲                                 |   |   |
| Vacuum Type Coolant-Thru-Spindle              | Type C (5MPa) | ▲                                 |   |   |
| Vacuum Type Coolant-Thru-Spindle              | Type C (7MPa) | ▲                                 |   |   |
| Coolant Flow Checker                          |               |                                   |   | ▲ |
| Coolant Temperature Controller Tank 100 ℓ     |               |                                   |   | ▲ |
| Coolant Temperature Controller Tank 200 ℓ     |               |                                   |   | ▲ |

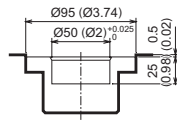
○ : Standard    ▲ : Option

| ■ Swarf Management                                                          |   |
|-----------------------------------------------------------------------------|---|
| Total Enclosure Guard                                                       | ○ |
| ATC Auto Door                                                               | ○ |
| Spiral Chip Conveyor                                                        | ○ |
| Chihp Flush System                                                          | ○ |
| 2MPa external nozzle with spindle thru                                      | ▲ |
| 5MPa external nozzle with spindle thru                                      | ▲ |
| 7MPa external nozzle with spindle thru                                      | ▲ |
| Lift-Up Chip Conveyor (Hinge Type, Drum Filter)                             | ▲ |
| Chip Bucket                                                                 | ▲ |
| Air Blow For Chip / Swarf Removal                                           | ▲ |
| Workpiece Cleaning Gun (Machine side)                                       | ▲ |
| Workpiece Cleaning Gun (APC side)                                           | ▲ |
| ■ Operation / Maintenance                                                   |   |
| AD-TAP Function                                                             | ○ |
| IPC Function                                                                | ○ |
| Handy Man II Y / F                                                          | ○ |
| Auto grease supply to feed axis                                             | ○ |
| Work Light (fluorescent)                                                    | ○ |
| Work Counter (9 sorts of M function )                                       | ○ |
| Movable manual pulse generator                                              | ○ |
| 8 Sets of Extra M Function                                                  | ▲ |
| Spindle Load Monitoring Function                                            | ▲ |
| Weekly Timer                                                                | ▲ |
| Spindle Run Hour Meter                                                      | ▲ |
| Rotary Wiper (by air)                                                       | ▲ |
| Rotary Wiper (by electricity)                                               | ▲ |
| Cumulative Run Hour Display Unit                                            | ▲ |
| Optional Block Skip 1~7                                                     | ▲ |
| Program End Announcement Light (Red, Yellow, Green)                         | ▲ |
| ■ Safety Features                                                           |   |
| Matsuura Safety Specification                                               | ○ |
| ■ In-Process Measurement / Broken Tool Detection                            |   |
| In-Process Measurement / Auto Centering (Touch Probe)                       | ▲ |
| Broken Tool Detection / AutoTool Length (Touch Sensor)                      | ▲ |
| Broken Tool Detection / AutoTool Length (Laser Sensor)                      | ▲ |
| In-Process Measurement (Touch Probe) & Broken Tool Detection (Touch Sensor) | ▲ |
| In-Process Measurement (Touch Probe) & Broken Tool Detection (Laser Sensor) | ▲ |

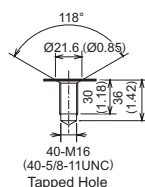
## Pallet Surface **with PC**



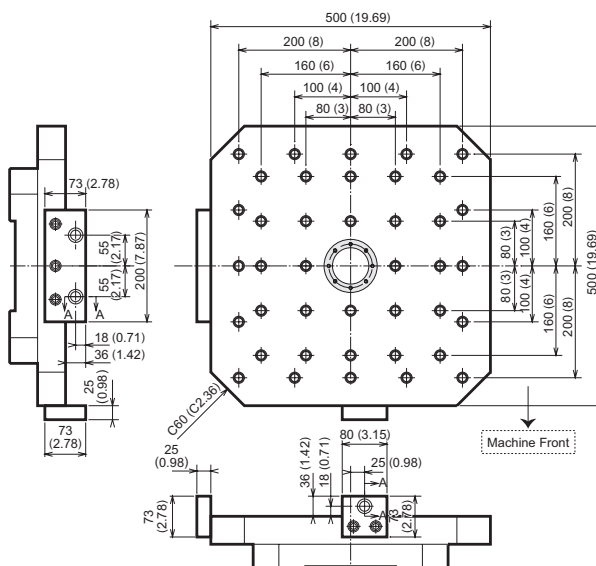
A-A Section



Center Hole



Tapped Hole

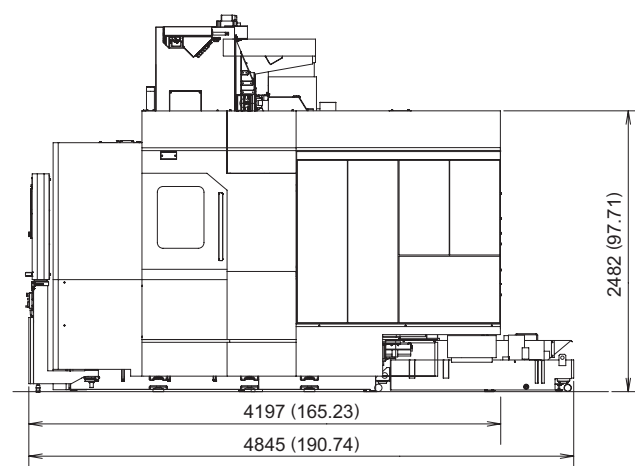
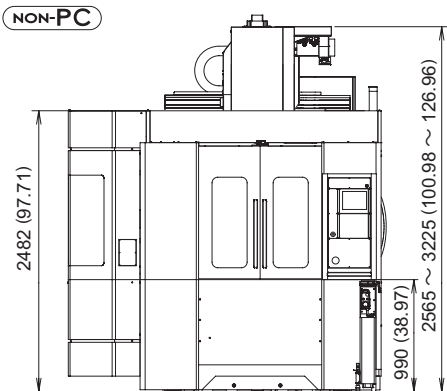


Unit : mm (in.)

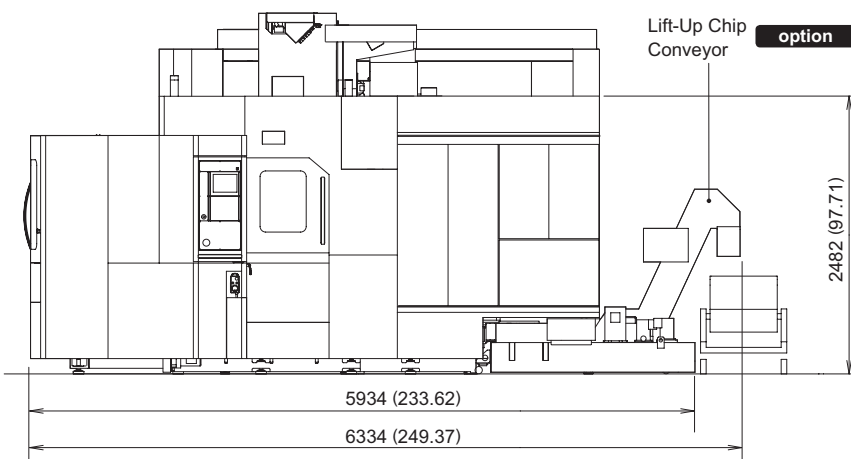
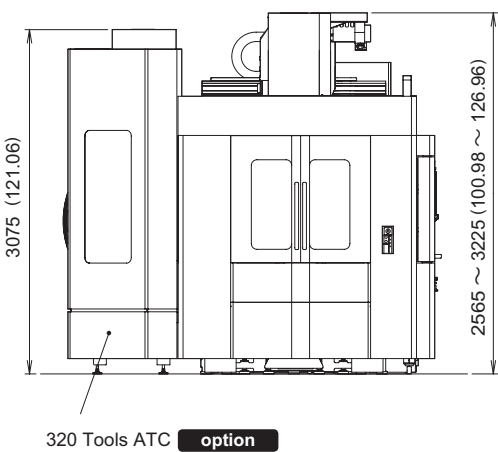
# Outline

Unit : mm (in.)

NON-PC

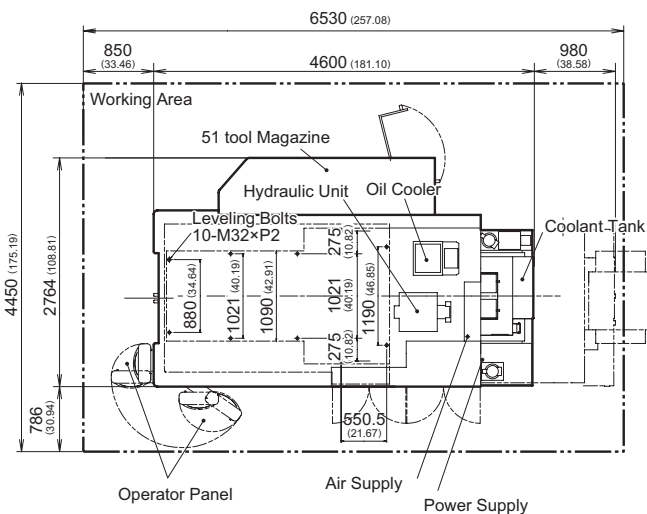


PC2

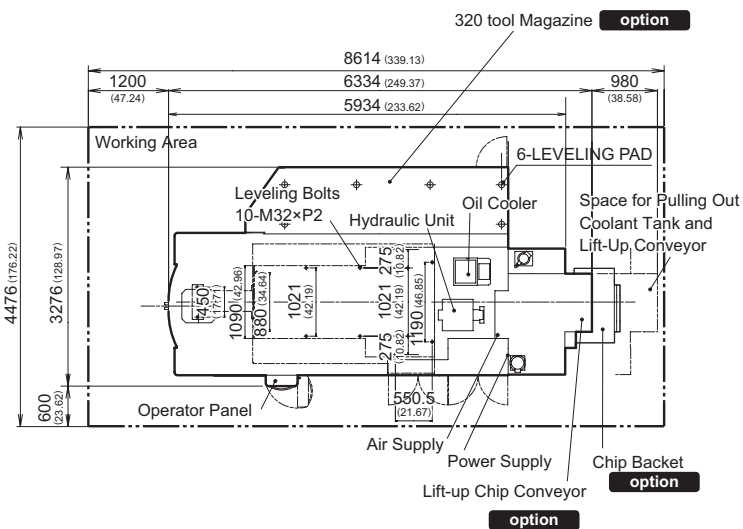


# Floor Plan

NON-PC



PC2





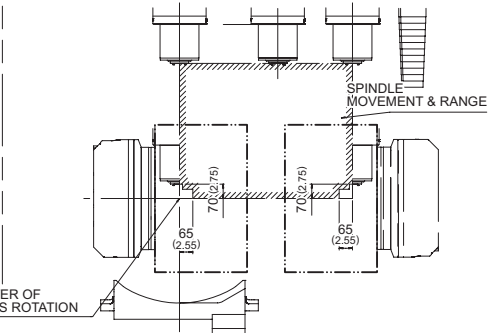
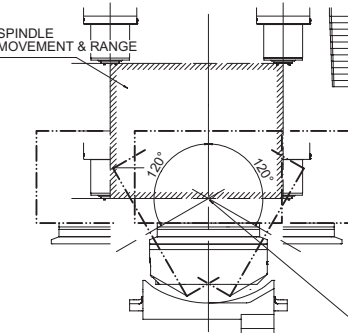
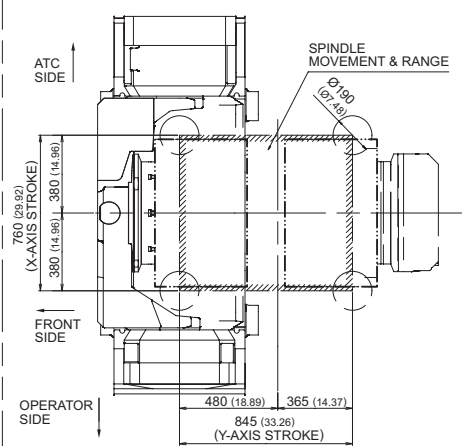
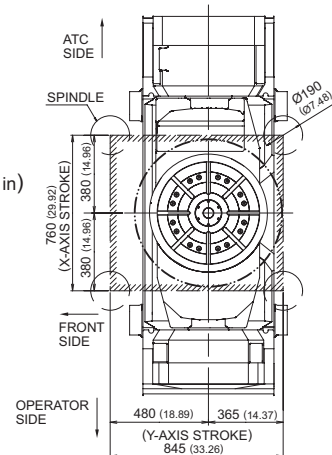
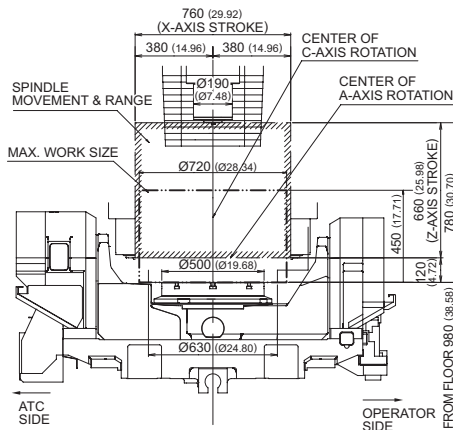
# Spindle Movement Interference

Unit : mm (in.)

## NON-PC

X-Axis stroke 760 mm (29.92 in.)  
 Y-Axis stroke 845 mm (33.26 in.)  
 Z-Axis stroke 660 mm (25.98 in.)  
 A-Axis stroke -120 ~ +120 deg.  
 C-Axis stroke 360 deg.  
 Max. Work size  $\varnothing 720 \times H450$  mm ( $\varnothing 28.34 \times H17.71$  in.)  
 Loading Capacity 400 kg (880 lb.)

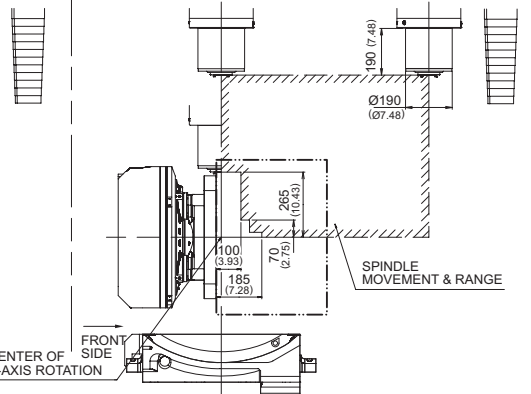
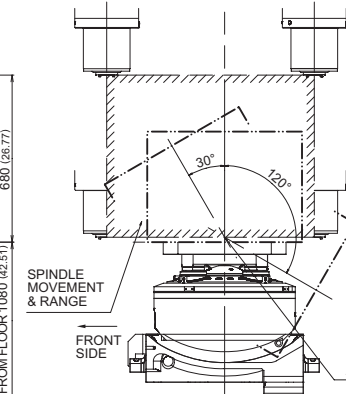
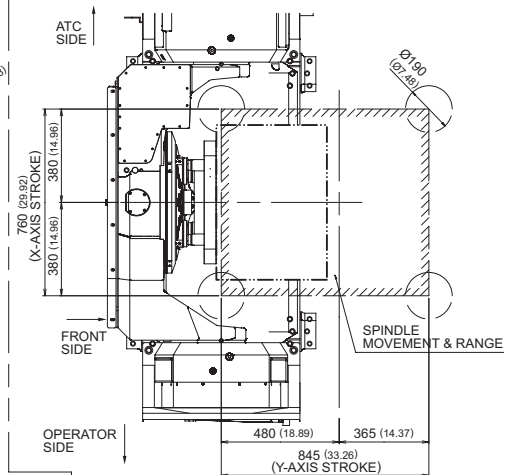
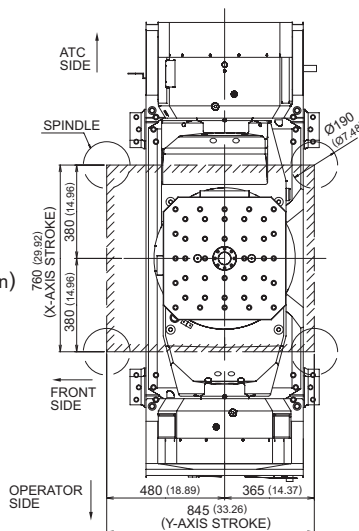
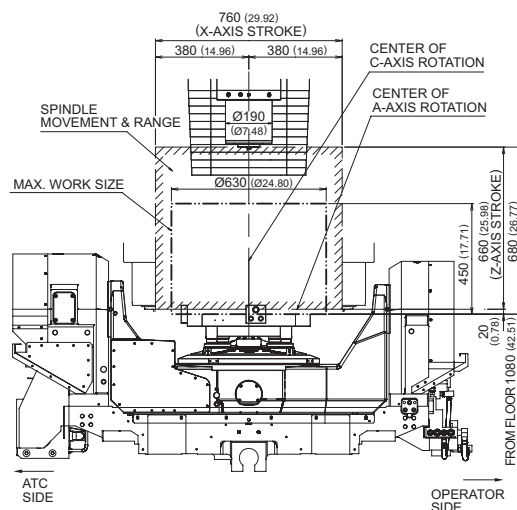
· Movable area show movement of the spindle end(Gauge line).  
 · This diagram show of the Y-axis travel as a movement of the spindle, however it is a movement of the table on the actual machine.



## PC2

X-Axis stroke 760 mm (29.92 in.)  
 Y-Axis stroke 845 mm (33.26 in.)  
 Z-Axis stroke 660 mm (25.98 in.)  
 A-Axis stroke -120 ~ +30 deg.  
 C-Axis stroke 360 deg.  
 Max. Work size  $\varnothing 630 \times H450$  mm ( $\varnothing 24.80 \times H17.71$  in.)  
 Loading Capacity 350 kg (770 lb.)

· Movable area show movement of the spindle end(Gauge line).  
 · This diagram show of the Y-axis travel as a movement of the spindle, however it is a movement of the table on the actual machine.





# **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 PLC**

Beaumont Center 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)

---

## **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)

---

## **ELLIOT 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)

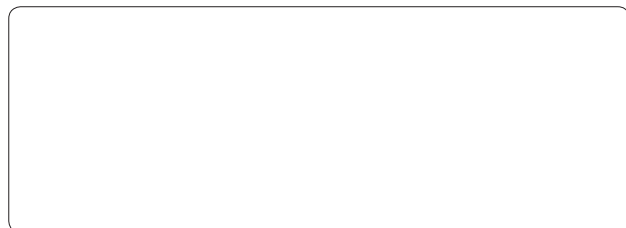
---

## **MMTS CORPORATION**

65 Union Avenue Suite2, Sudbury Massachusetts 01776, U.S.A.  
TEL : +1-978-443-5388 FAX : +1-978-443-9524

---

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



Products are subject to all applicable export control laws and regulations.