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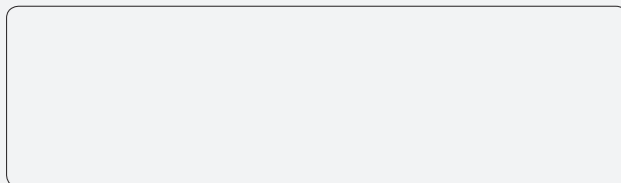
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Product specifications and dimensions are subject to change without prior notice.
 The photos may show optional accessories.



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

 **Matsuura**

5-Axis Vertical Machining Center

MAM72-63V



PC2

MAXIA
Innovation by  Matsuura



MAM72-63V

Matsura MAM72 Series The Clear Leader in 5-Axis Machining

For almost a decade, Matsura'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 Matsura **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 Matsura to produce high quality, cost effective 5-axis machines and processes.

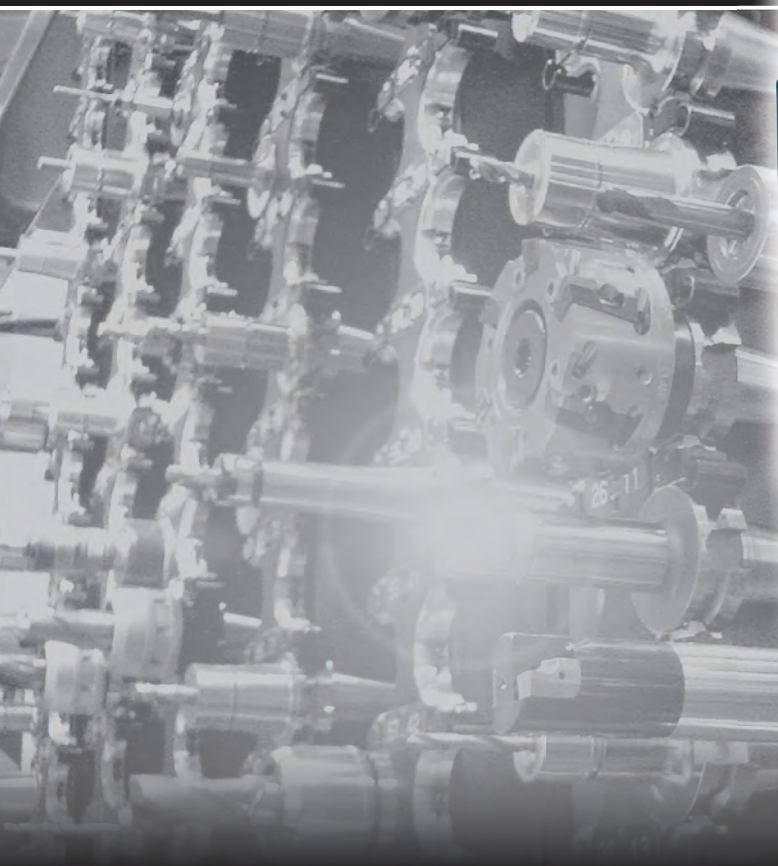
Incorporating the vast experience Matsura has gained over the years in high performance 5-axis machining, the market now has a clear choice for the cost effective "one hit machining" of tolerance critical, large and complex components - the Matsura **MAM72-63V**.



MAM72-35V



MAM72-63V



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.

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.

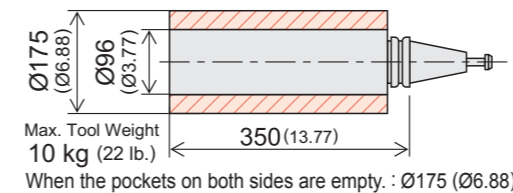
BT40 Drum Magazine	
51 tools (Fixed Address)	<input type="checkbox"/> standard
52 tools (Memory Random)	<input type="checkbox"/> option

BT40 Matrix Magazine		
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	

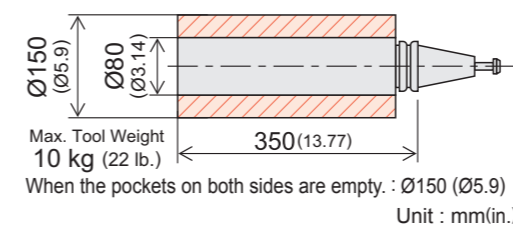
BT50 Chain Magazine	
60 tools	120 tools

BT50 Matrix Magazine			
150 tools	150 tools	210 tools	240 tools

Max. Tool Size [Drum Magazine]



Max. Tool Size [Matrix Magazine]



Matrix Magazine (320T) option

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

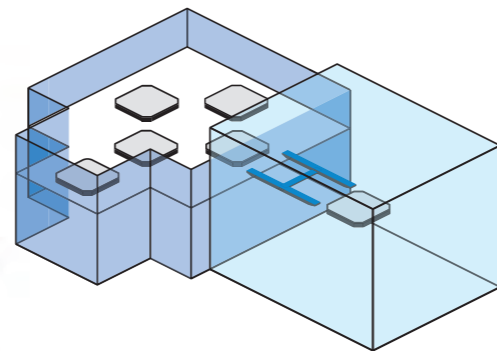
optin

· A dynamic, versatile & reliable Thru-Table / Pallet Clamping System is available as an option
 (NON-PC): 6 Port
 with PC: 2 Port

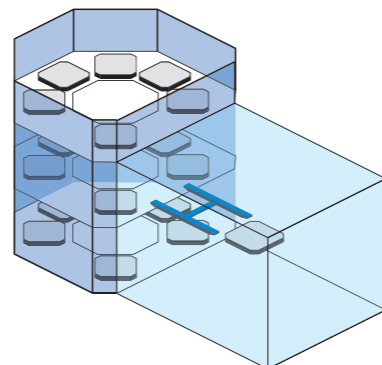
APC Pallet Systems

optin

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



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



PC18 Tower Pallet system
Vertically aligned space saving multi pallet system

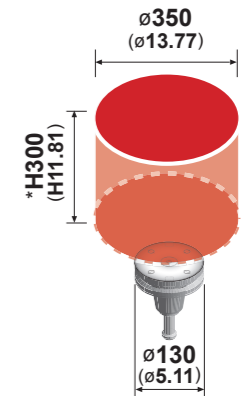
MAM72 Series

MAM72-35V



Loading Capacity : 60kg
(132 lb.)

Max. Work Size

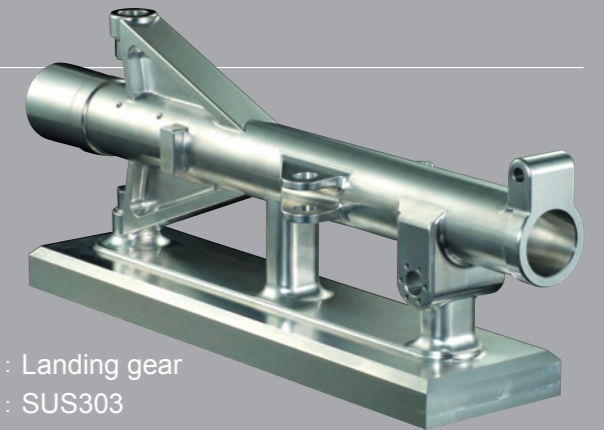


*H315(H12.40) applicable on the top Stackers in the PC Magazine.

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.



W o r k : Landing gear
Material : SUS303
No. of tools : 14

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

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.)

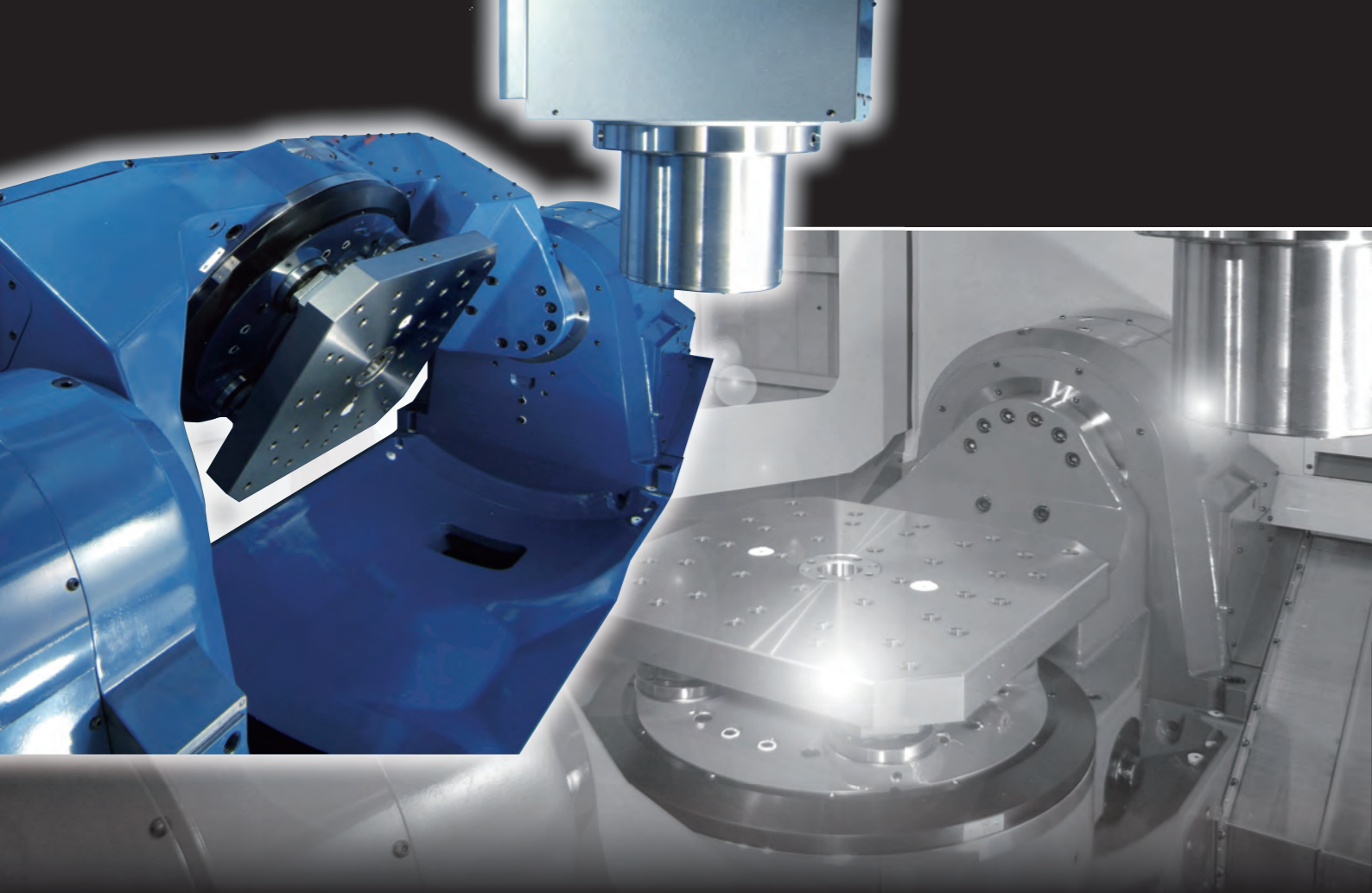


W o r k : Blisk
Material : SUS303
No. of tools : 6

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)

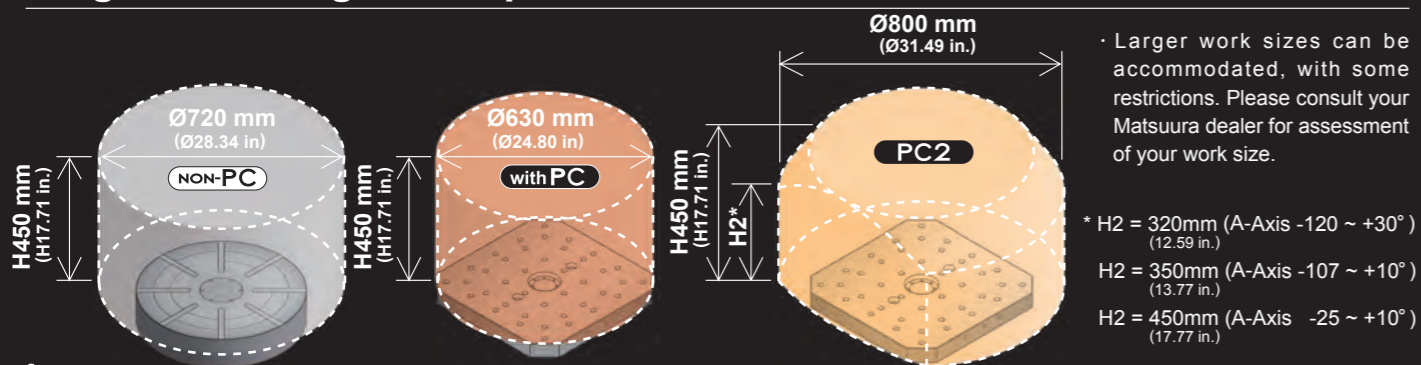
Unit : mm(in.)



Optimized Design for 5-Axis Machining

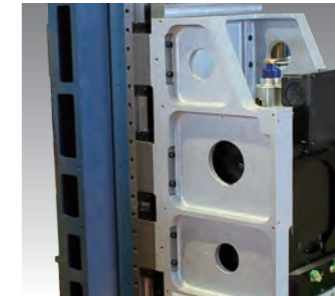
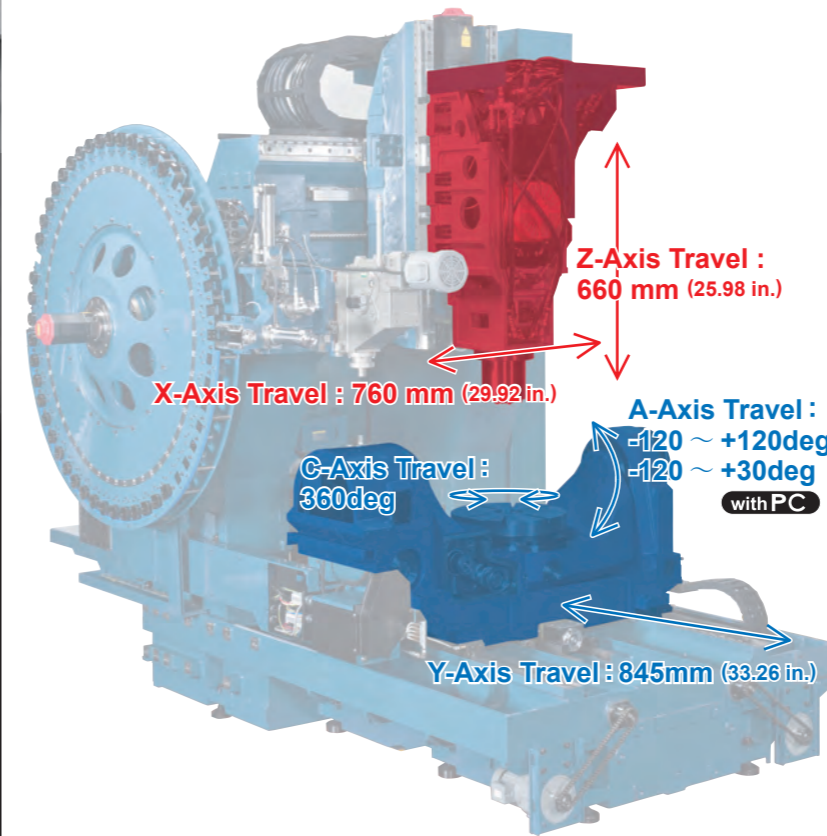
The **MAM72-63V**, as with all Matsuura multi axis products, has been designed as a fully fledged & integrated 5-axis machine tool not just a 3-axis machine tool with "bolt on" 4th & 5th table. Due to total design integration from the inception of the machine, the **MAM72-63V** has an optimized work 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.



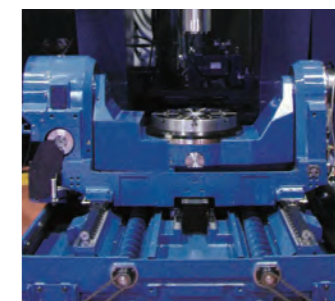
· To maintain high accuracy for the lifetime of the machine, parallelism & straightness are set to within 2 microns for the full axis stroke during manufacture.



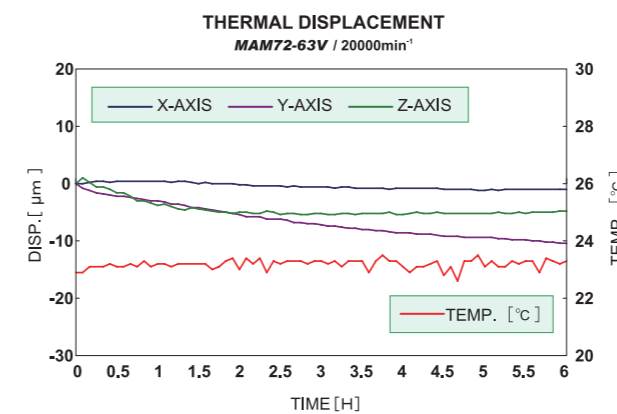
· All supplied components, such as the Roller Guides, are of the finest quality available.



· 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.



· 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.



Matsuura MAXIA 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 μm (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⁻¹ spindle provide with spindle grease auto supply system

Highly Reliable Spindle

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

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.

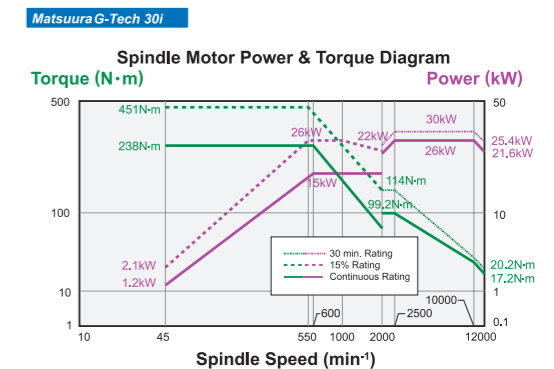
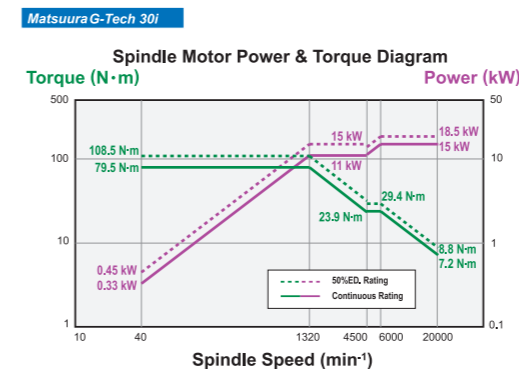
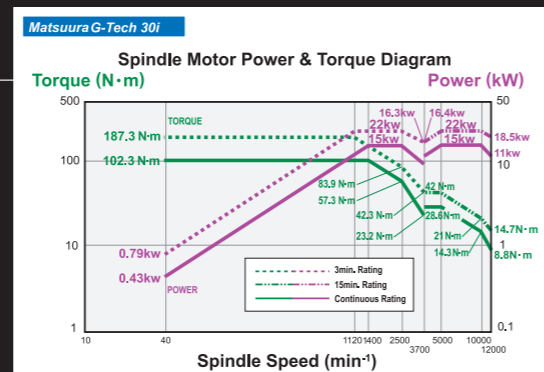
Spindle Specifications / Spindle Motor Power & Torque Diagrams

BT40 Spindle Specification option	
Max. Rotation Speed	20,000 min ⁻¹
Motor Power	15 / 18.5 kW(25HP)
Motor Torque	108.5 N·m / 1,320min ⁻¹
Bearing Lubrication	Grease

BT50 Spindle Specification option	
Max. Rotation Speed	12,000 min ⁻¹
Motor Power	26 / 30 kW(40HP)
Motor Torque	451 N·m / 550min ⁻¹
Bearing Lubrication	Oil-Air

Matsuura MAXIA Spindle

BT40 Spindle Specification standard	
Max. Rotation Speed	12,000 min ⁻¹
Motor Power	15 / 22 kW(30HP)
Motor Torque	187 N·m / 1,120 min ⁻¹
Bearing Lubrication	Grease



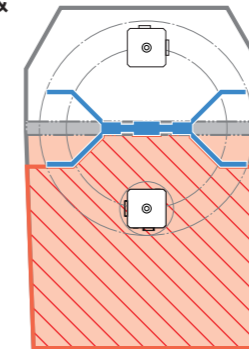
· Optional BT40 30,000 min⁻¹ is available. option



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



Ergonomic & User Friendly

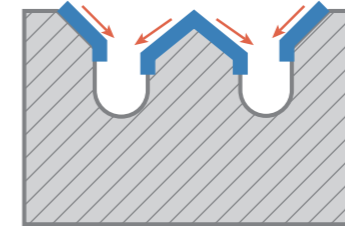
Designed around the operator to maximize their productivity, efficiency & comfort, the **MAM72-63V** offers superb ergonomic functionality.

Superb Dual Access

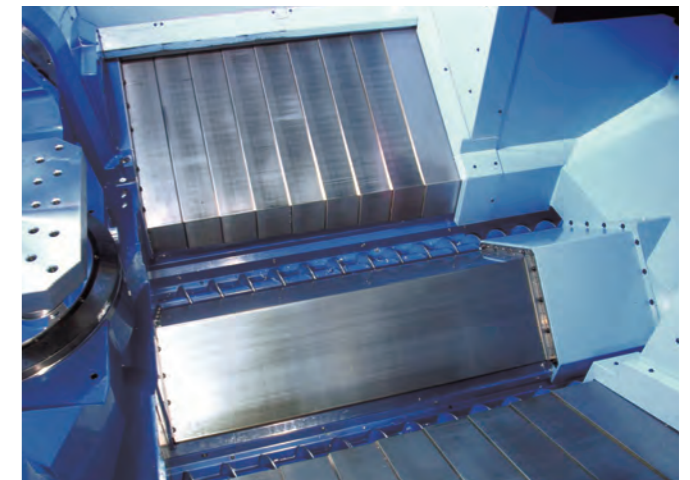
- Wide and capacious machine access at both the APC station and enclosure door.
- Tempered glass in the main enclosure window assures clearer vision for longer periods.

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)

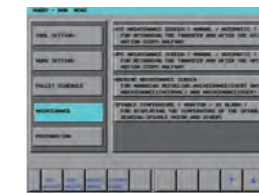
NC Software

Proven Software Performance for 5-Axis Machining

Human Machine Interface Standard

Handy Man II

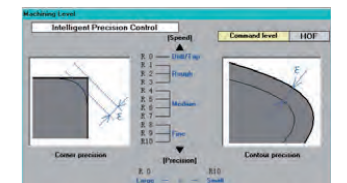
· **Handy Man II** provides major savings by reducing set-up, programming, operating & maintenance times.



High-Speed Precision Machining Program Support Function Standard

IPC

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



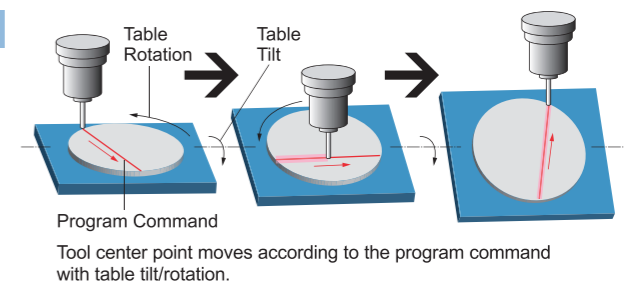
High-speed, high-precision 5-axis package Option

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

Automatically Controlled Toolpath / Tool Speed

TCP

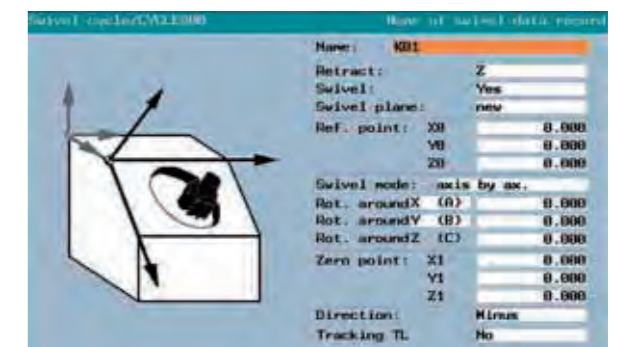
5-Axis Transformation is the kinematic transformation function of **G-Tech 30i** which realizes easy tool center point programming for 5-Axis machining. The path and path velocity of the tool center point, can be programmed based on the workpiece coordinate system, in the same way as that for 3-Axis machine tools.



Easy Programming (3+2-Axis)

Tilted Working Plane Command(TWP)

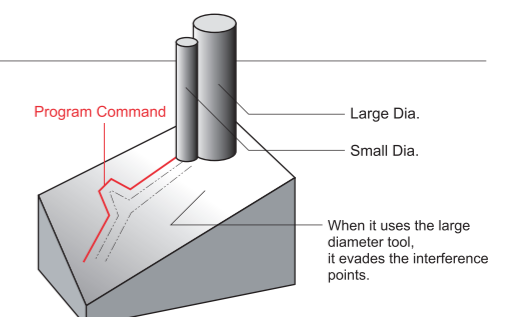
G-Tech 30i offers, as standard feature, **Tilted Working Plane Command(TWP)** which takes over necessary calculations of coordinate values including necessary axes motions. When rotary axes are moved, complex calculations, in line with machine axes configuration, should be made for re-calculating and establishing suitable work coordinate system for the new surface & its orientation.



Tool Diameter Interpolations on 5-Axis

Three Dimensional Cutter Compensation

Three Dimensional Cutter Compensation 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.



The Latest High Performance NC System

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)

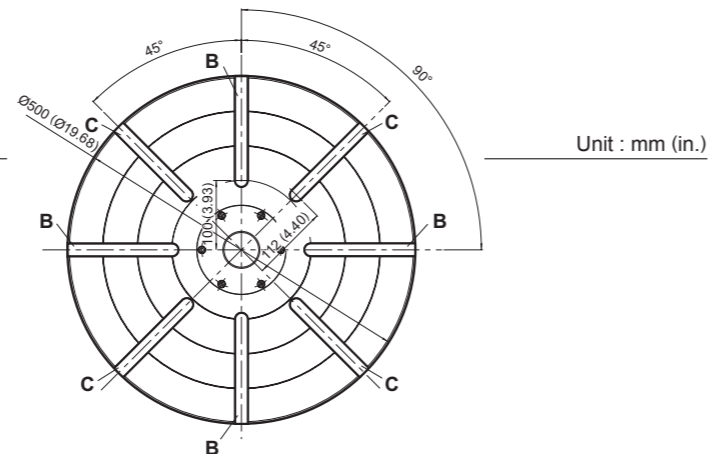
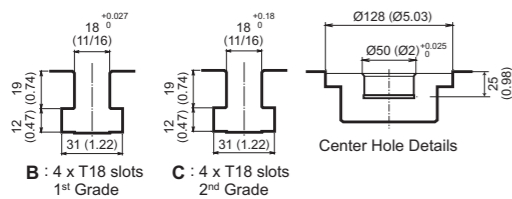
· Executing the max. 200(IZ-1/30NF) or 600*(IZ-2/150NF) - block look ahead linear acc./dec. before interpolation achieves a smooth acc./dec. across the multiple blocks calculated by nano order.
※ max.1,000 block available as option.



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 with PC	deg	-120 ~ +30
C-Axis Travel	deg	360
■ Table / Pallet		
Working Surface	mm (in.)	Ø500 (Ø19.68)
Working Surface with PC	mm (in.)	500 × 500 (Ø19.68 × H19.68)
Loading Capacity	kg (lb.)	400 (880)
Loading Capacity with PC	kg (lb.)	350 (770)
Max. Work Size	mm (in.)	Ø720 × H450 (Ø28.34 × H17.71) Ø800 (Ø31.49) [With conditions]
Max. Work Size with PC	mm (in.)	Ø630 × H450 (Ø24.80 × H17.71) Ø800 (Ø31.49) [With conditions]
■ Spindle		
Spindle Speed Range	min ⁻¹	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 ⁻¹	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 ⁻¹	25 / 50
Rapid Feed Acceleration (X/Y/Z)	G	0.75 / 0.67 / 0.99
Min. Movement Increment (X/Y/Z)	mm (in.)	0.001 (0.0001)
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) 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

Table Surface **NON-PC**



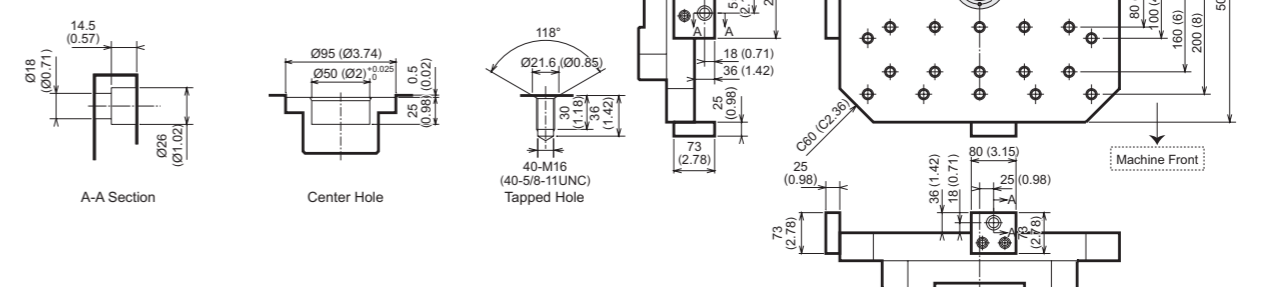
Equipment

○ : Standard ▲ : Option

■ Spindle		
12,000 min ⁻¹ (BT40 Grease)		○
20,000 min ⁻¹ (BT40 Auto Grease)		▲
30,000 min ⁻¹ (BT40 Oil-Air)		▲
10,000 min ⁻¹ (BT50 Oil-Air) [700Nm]		▲
12,000 min ⁻¹ (BT50 Oil-Air)		▲
■ ATC		
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)	▲	
■ High Accuracy Control		
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		○
■ APC		
NON-PC		○
PC2		▲
PC6 (Floor Pallet System)		▲
PC18 (Tower Pallet System)		▲
■ Coolant		
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 (7MPa)		▲
Coolant Flow Checker		▲
Coolant Temperature Controller Tank 100 ℓ		▲
Coolant Temperature Controller Tank 200 ℓ		▲

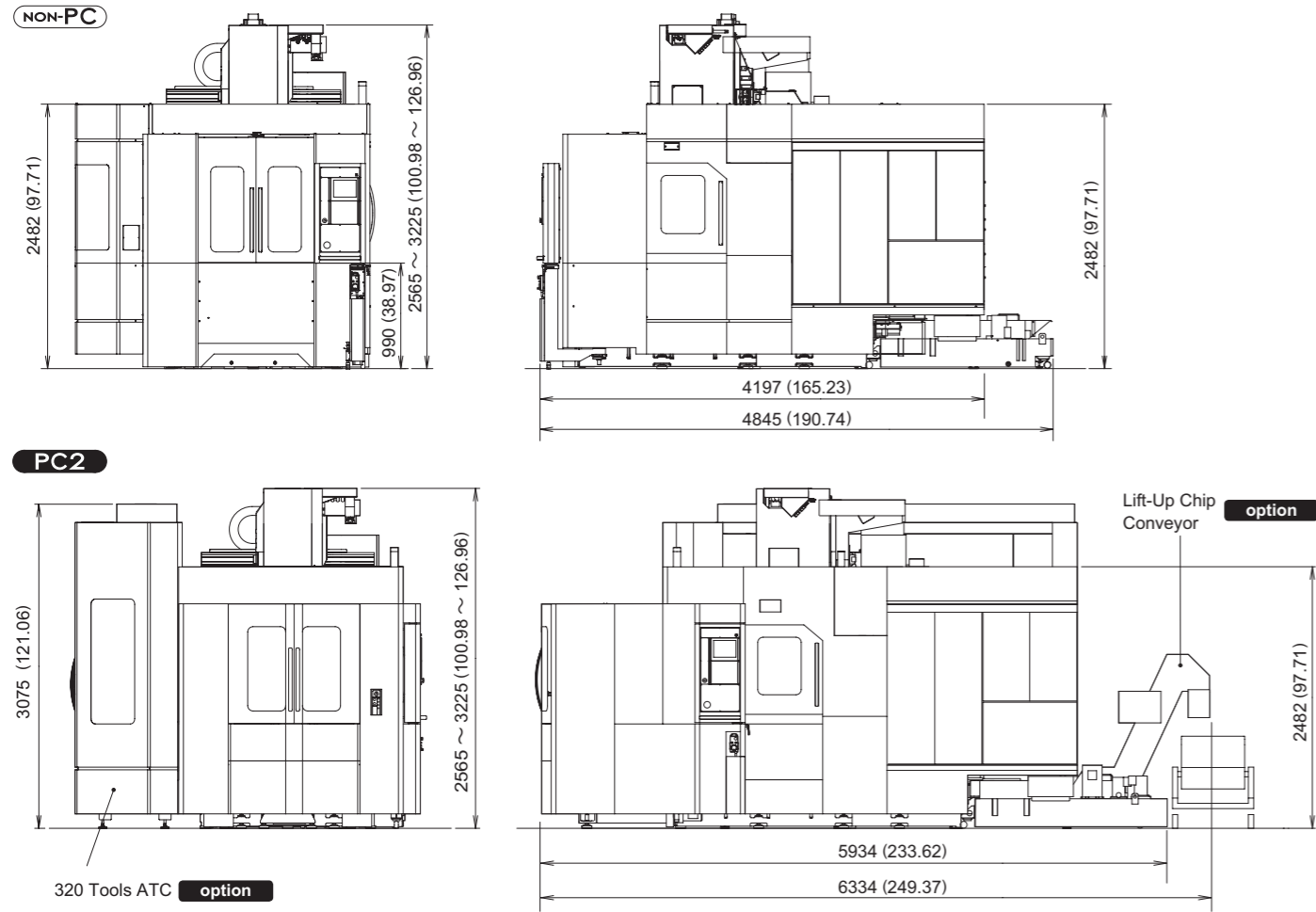
■ Swarf Management	
Total Enclosure Guard	○
ATC Auto Door	○
Spiral Chip Conveyor	○
Chihp Flush System	○
2MPa external nozzle with spindle thru	▲
7MPa external nozzle with spindle thru	▲
Lift-Up Chip Conveyor (Hinge Type, Drum Filter)	▲
Chip Bucket	▲
Air Blow For Chip / Swarf Removal	▲
Workpiece Cleaning Gun (Machine side)	▲
Workpiece Cleaning Gun (APC side)	▲
■ Operation / Maintenance	
AD-TAP Function	○
IPC Function	○
Handy Man II	○
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	▲
Program End Announcement Light (Red, Yellow, Green)	▲
eZ-5 (with Calibration Sphere)	▲
eZ-5 (without Calibration Sphere)	▲
■ 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**

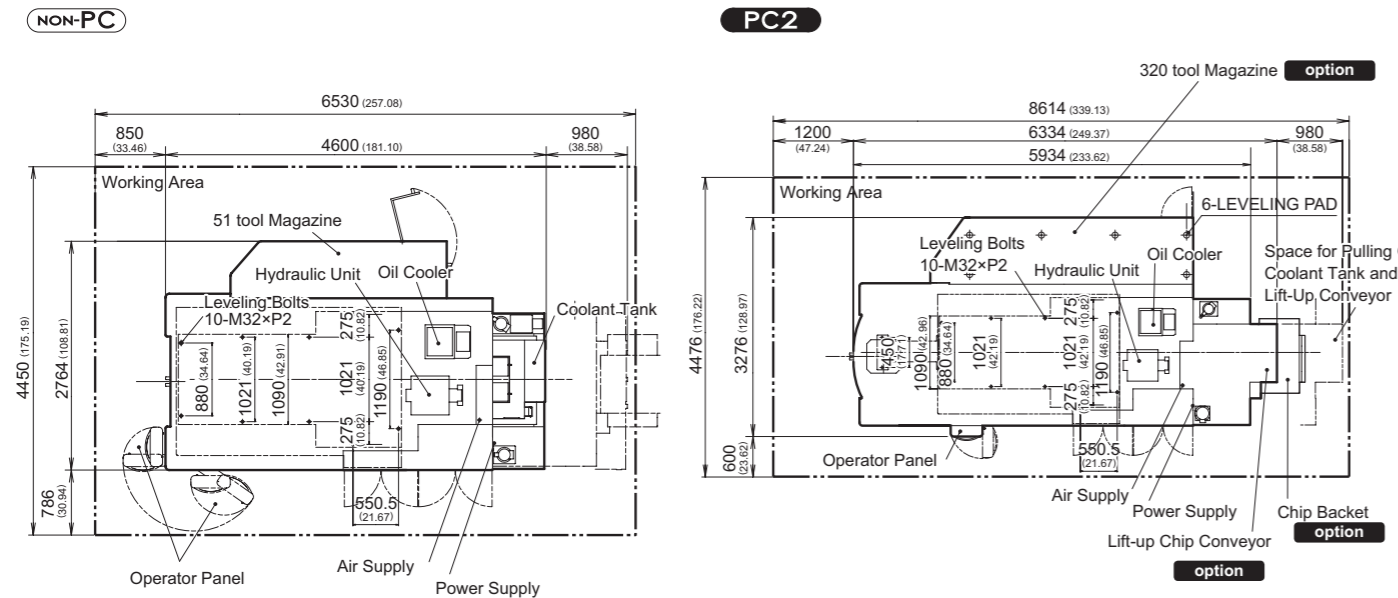


Outline

Unit : mm (in.)



Floor Plan



Spindle Movement Interference

Unit : mm (in.)

