



**The Ultimate in Performance**

## **MH Series**

**MH-500i / MH-630  
Horizontal Machining Center**

**LEADWELL**  
LEADWELL CNC MACHINES MFG., CORP.

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No. 23 Gong 33th Road, Taichung Industrial Park  
Taichung 407, Taiwan  
T: 886 - 4 - 23591880  
F: 886 - 4 - 23592555, 886 - 4 - 23593875  
E: sales@leadwell.com.tw

[www.leadwell.com.tw](http://www.leadwell.com.tw)

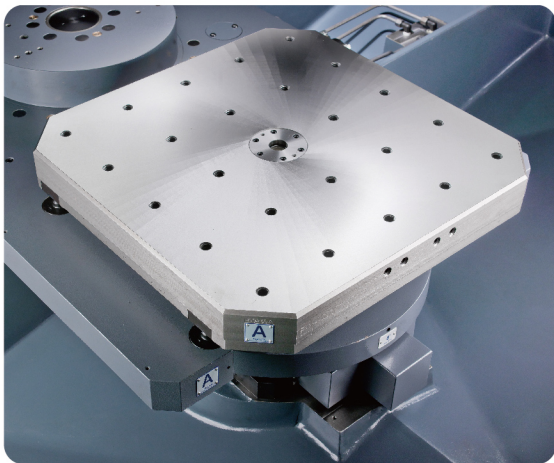
\* All performance are based on 220V/3PH/60HZ. Specifications are subject to change without notice.

2016.06



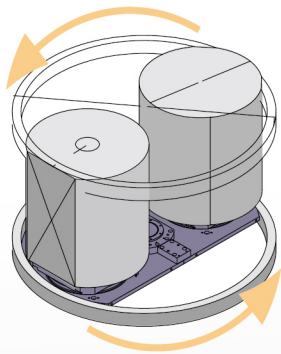
CAST IRON CONSTRUCTION

LEADWELL uses only top quality well-ribbed castings. Finite Element Analysis (FEA) is used on each new casting to determine the size and location of all internal ribs ensuring high torsional stiffness and minimum vibration. The travel column design reduces the required floor space and provides excellent accessibility to the machine table. Heavy duty linear guide ways ensure accurate positioning and rapid travel for all axes. The cast iron base column, saddle, headstock and tables have over 10 times the dampening capacity of those made from steel resulting in superior cutting performance.



B AXIS

- B-axis has a standard of one degree turning with oversized bearing.
- The force driving position between the worm and worm gear has a curved surface which provides 2-3 times higher driving capacity than the conventional complex screws. The driving force is properly distributed, and this ensures the backlash between teeth is controlled under 0.1mm.



SWING TYPE APC

The MH-series machine has a standard 2 pallet swing type changer system, the load position at the front of the machine allows easy loading and unloading of workpieces. The pallets are positioned and clamped to the table with four precision taper cones to ensure accuracy and rigidity. During the pallet changing cycle compressed air is blown through the cones to clean the clamping surfaces, removing chips and coolant. This air assures pallet location accuracy and long component life.



OVERSIZED  
TAPERED CONES

- The B axis movement and Z axis cross movement are equipped with oversized tapered cones for extremely accurate pallet positioning. This assures outstanding machining accuracy.
- The bigger O.D. of cones than other makers and over 75% contact surface each other for each pair. The rigidity and the repeatability of continuous cutting with 0.001 degree better than the 1 degree divided cutting.



# MH SERIES FEATURES



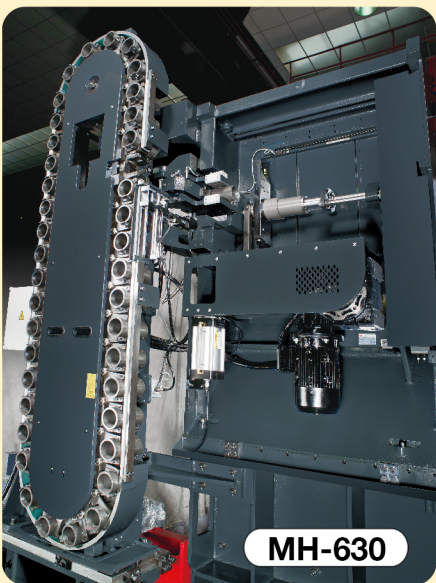
## BALL BAR TESTING

LEADWELL uses a stringent ball bar test that checks not only linear accuracy but also machine geometry. This test ensures that each machine meets the three-dimensional squareness and accuracy requirements



## 5 AXES ROTARY TABLE (OPTIONAL)

The contouring rotary tables with a minimum indexing increment of 0.001 offer simultaneous machining factions for complex profiles workpieces. Extra large preloaded thrust bearings insure smooth and accurate table rotation. Four clamping cones ensure accurate and repeatable pallet location along with excellent rigidity.



## CHAIN-TYPE MAGAZINE

- 40/60/90 available (MH-500i)
- 40/60/80/120 available (MH-630)

## AUTOMATIC TOOL CHANGING SYSTEM

The high-speed ATC activates a high-pressure air blast to clean the spindle taper and the pot to ensure accurate tool holding. Tools are automatically returned to their original location, eliminating tool interference from oversized tools in the magazine.

# MH SERIES FEATURES

## OPTIONAL



■ Oil Skimmer



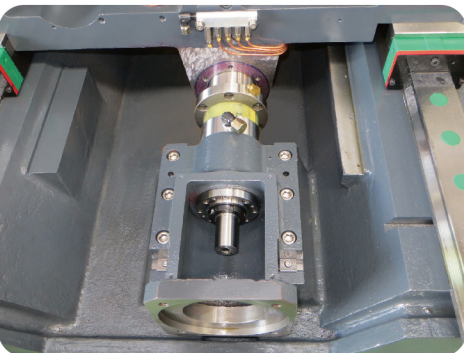
■ Mist Collector



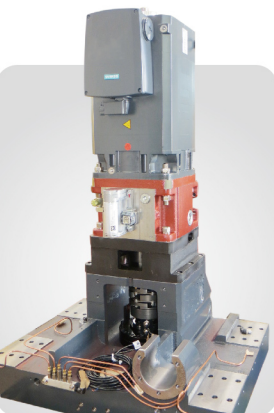
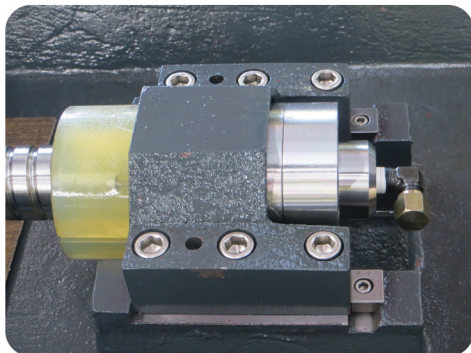
■ Automatic workpiece measurement



■ Automatic tool length measurement



■ Ball Screw with Hollow Shaft Design



■ Direct Gearbox

## FEA REPORT(Finite Element Analysis)

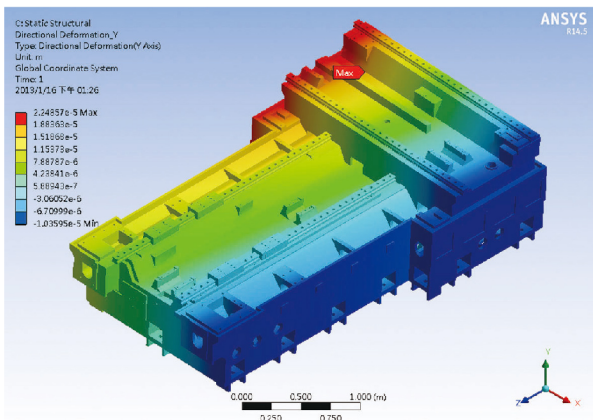
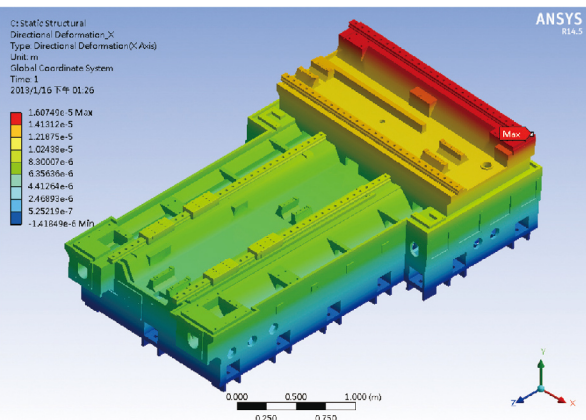
### Optimum

- Section areas
- Moments of inertia
- Torsional constant
- Plate thickness
- Bending stiffness
- Transverse shear
- Vibration reduce

### With FEA you can:

1. Predict and improve product performance and reliability.
2. Reduce physical prototyping and testing .
3. Evaluate different designs and materials .
4. Optimize designs .

### MH-630

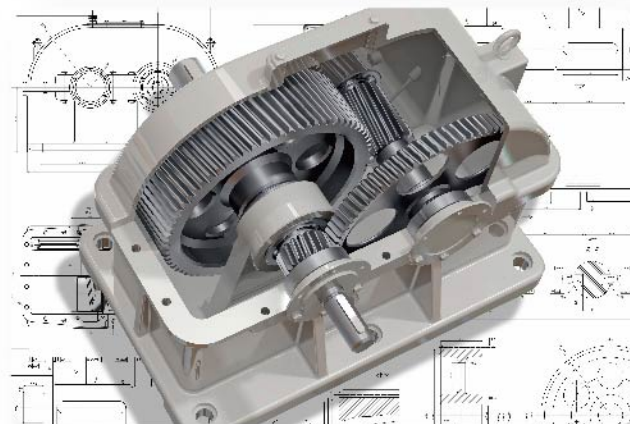




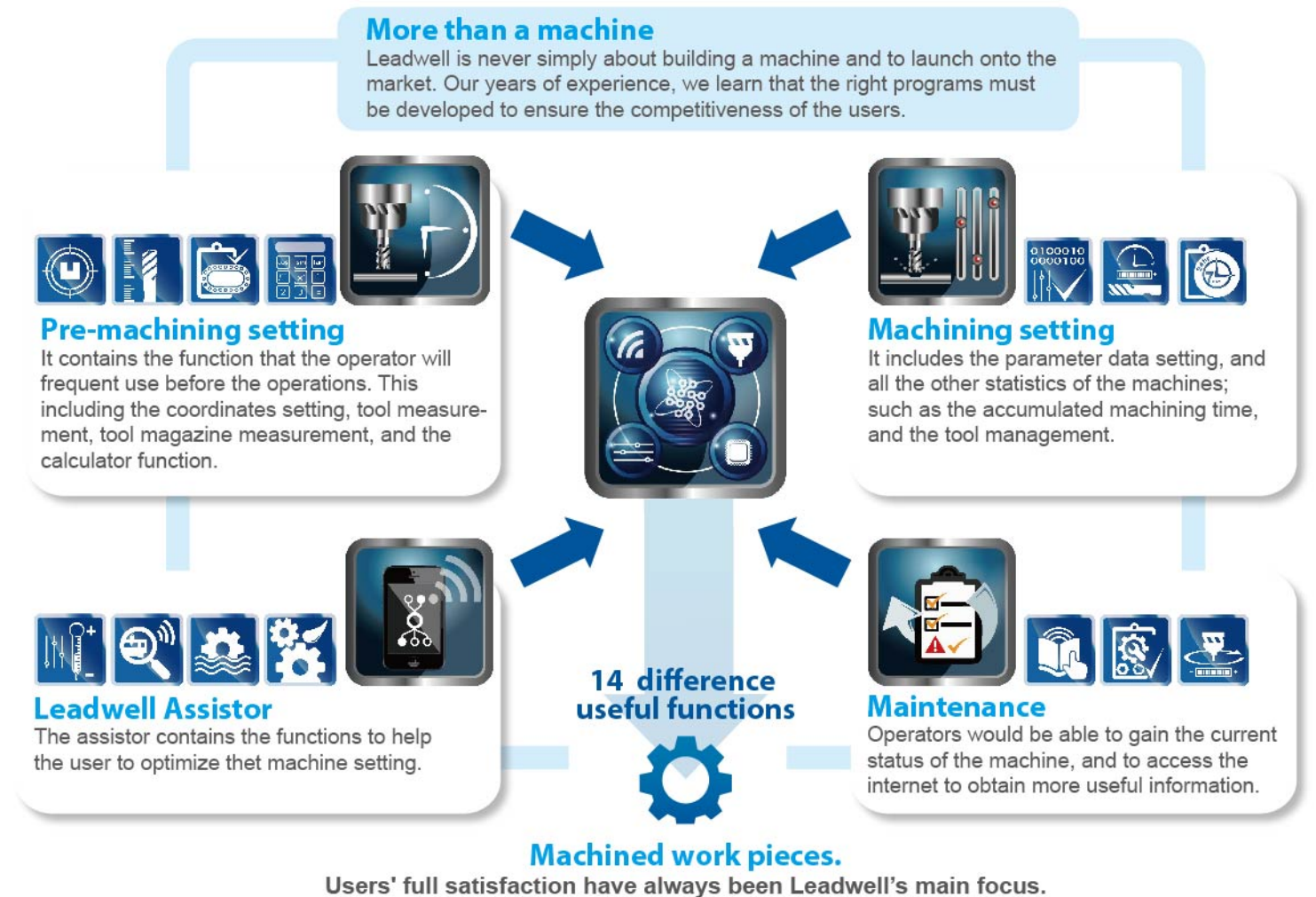
# MH SERIES HORIZONTAL MACHINING CENTER

## EXCELLENT FOR DIVERSIFIED INDUSTRIES

- Precision (profiled) parts machining
- General mold machining
- Automotive and motorcycle part machining
- 3C industries
- Aerospace parts machining
- Semi-conductor industry
- FMC & FMS unmanned production lines



# MH SERIES LEADWELL SMART PROCESSOR



## PERFORMANCE

### MH-630

FACE MILL	
Removal Rate	<b>600cc/min.</b>
Tool	Ø125mm
Spindle Speed	1500rpm
Feed Rate	150mm/min
Width of Cut	80mm
Depth of Cut	5mm

TAP	
Tapping	<b>M20</b>
Spindle Speed	300rpm
Feed Rate	750mm/min.

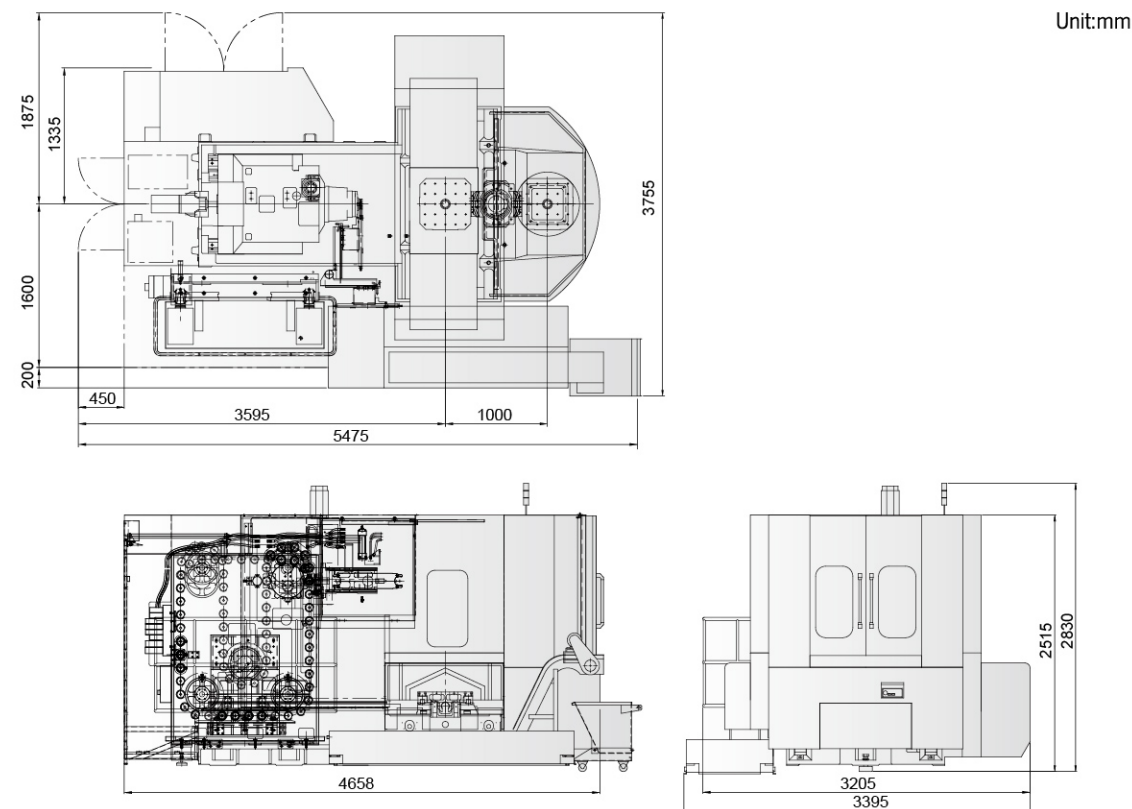
DRILL	
Drilling	<b>Ø60mm</b>
Tool	Ø60mm
Spindle Speed	1500rpm
Feed Rate	100mm/min.
Depth of Cut	55mm

RIGID TAP	
Tapping	<b>M20</b>
Spindle Speed	1000rpm
Feed Rate	2500mm/min.

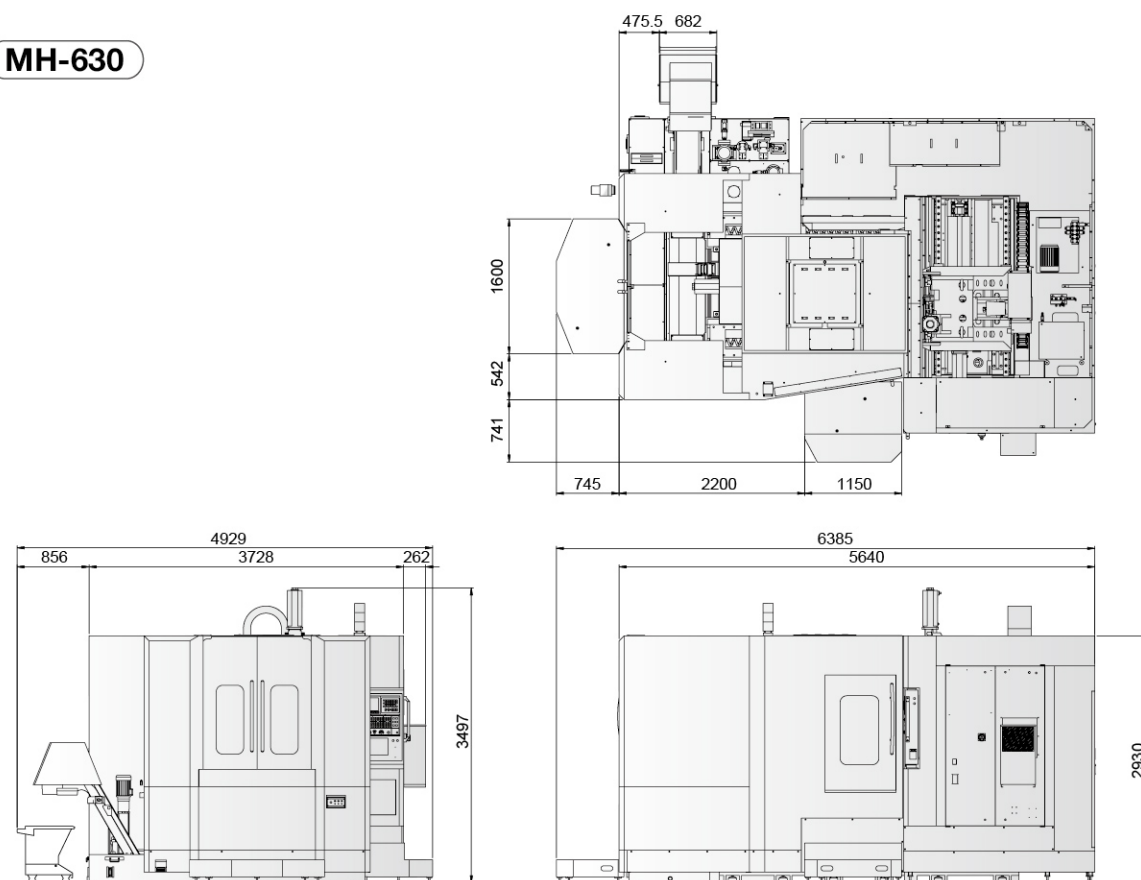


MH SERIES  
OUTLINE DIMENSION

MH-500i

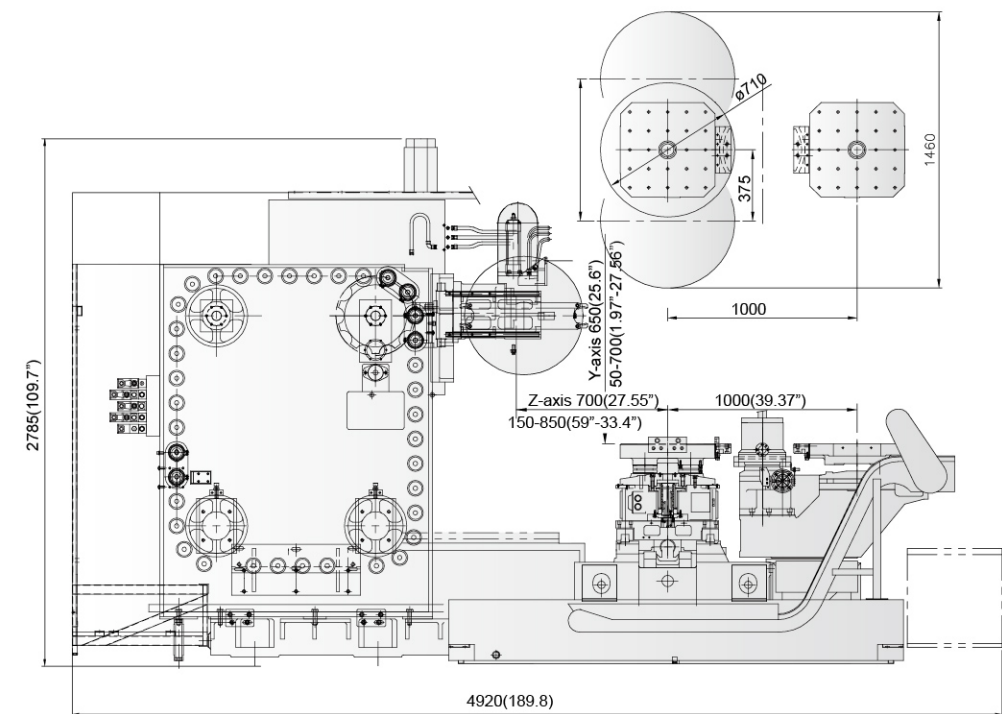


MH-630

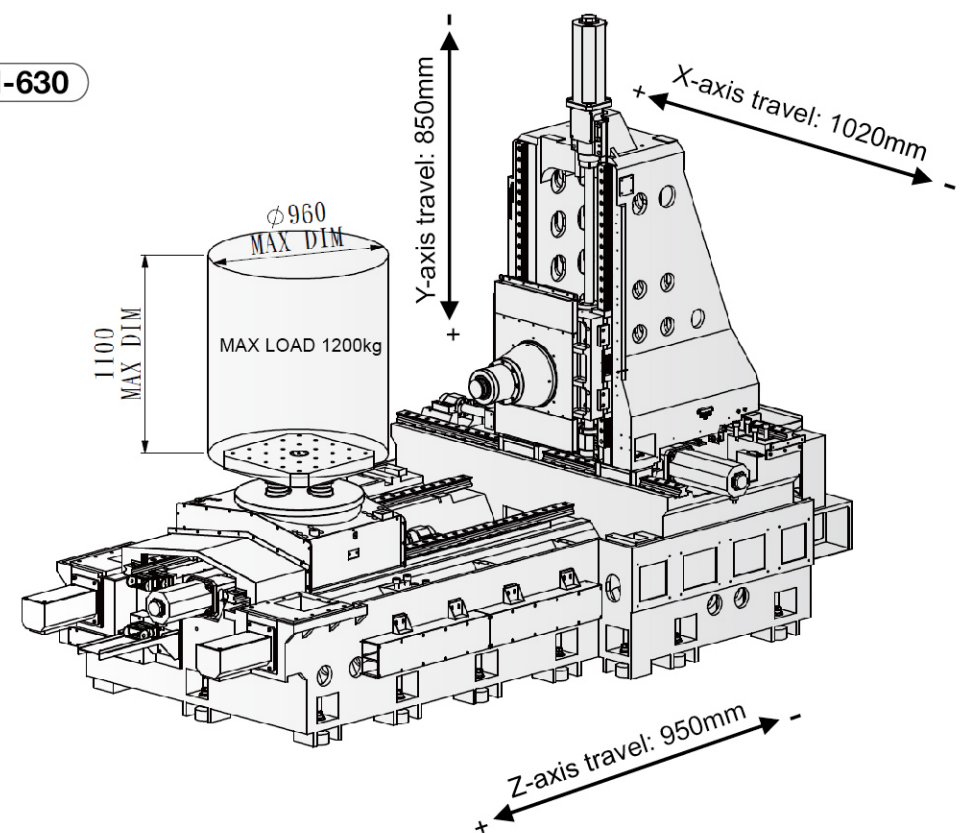


MH SERIES  
INTERNAL DIMENSION

MH-500i

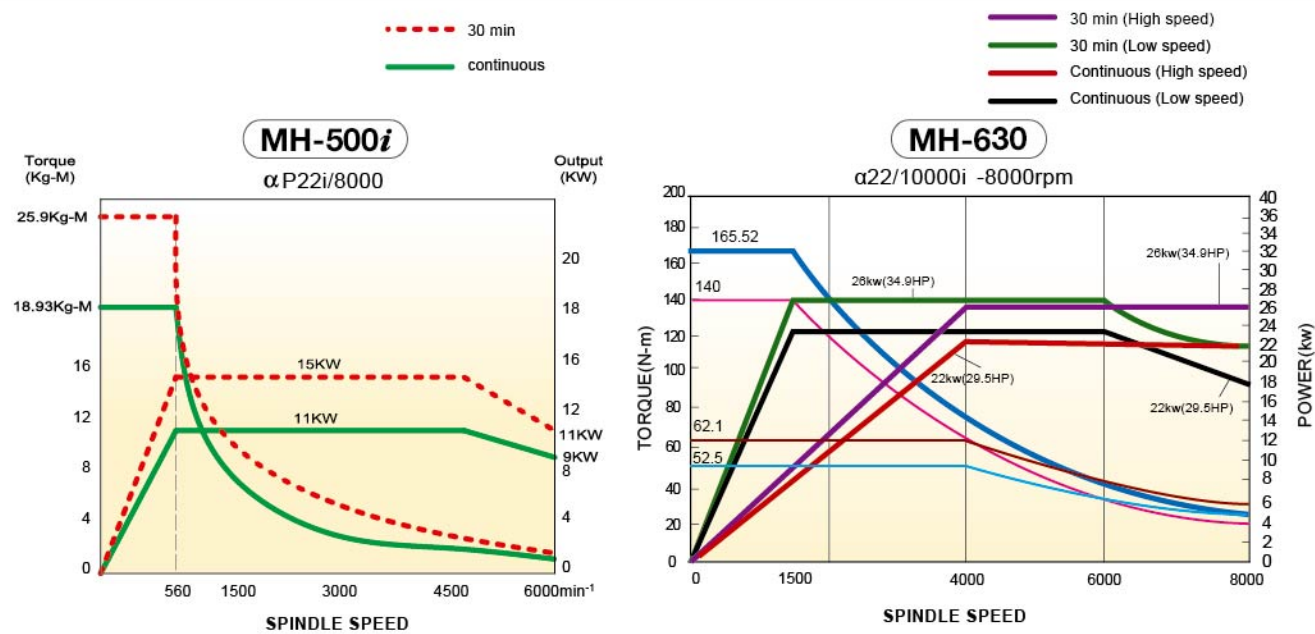


MH-630

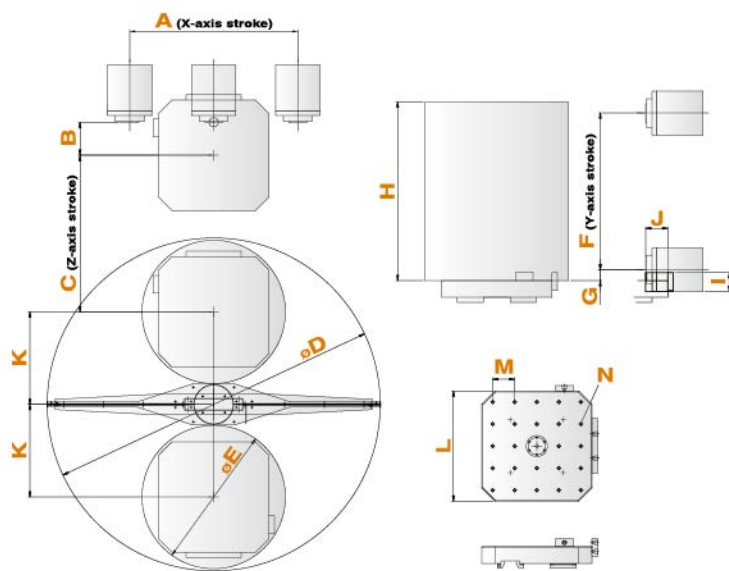




## MH SERIES SPINDLE POWER CURVE

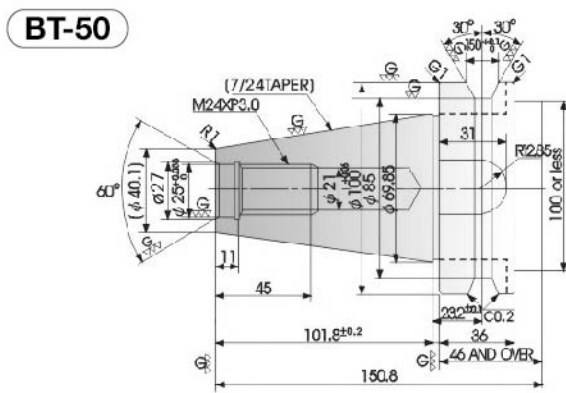
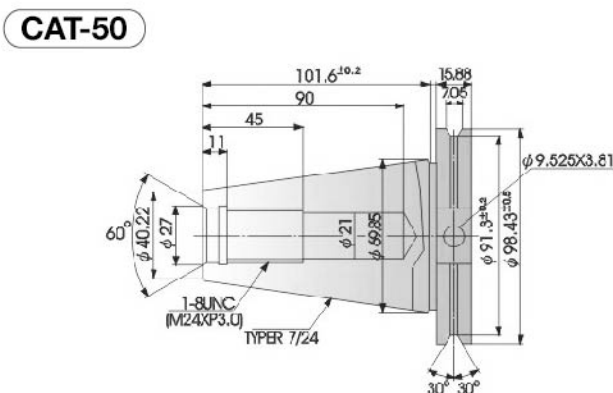


## THREE AXES TRAVEL RANGE



ITEM	MODEL	MH-500 <i>i</i>	MH-630
A		750	1020
B		150	150
C		700	950
D		1670	2190
E		710	960
F		650	850
G		50	100
H		800	1100
I		80	---
J		100	---
K		500	615
L		500X500	630X630
M		100	125
N		24-M12X1.75P	24-M16X2.0P

## TOOL SHANK SPECIFICATIONS



## MH SERIES MACHINE SPECIFICATIONS

ITEM	MODEL		MH-500 <i>i</i>	MH-630
CAPACITY		Unit		
X axis travel		mm(in)	750 (29.5)	1020 (40.2)
Y axis travel		mm(in)	650 (25.5)	850 (33.5)
Z axis travel		mm(in)	700 (27.5)	950 (37.4)
Distance from table top to spindle center		mm(in)	50-700 (2-27.5)	100-950 (4-37.4)
Distance from table center to spindle end		mm(in)	150-850 (6-33.4)	150-1100 (6-43.4)
TABLE				
Table size		mm(in)	500x500 (19.6x19.6)	630X630 (24.8X24.8)
Max. workpiece swing diameter & height		mm(in)	710x800 (27.9x31.5)	960X1100 (37.8X43.4)
Permissible mass of workpiece		kg(lb)	500 (1100)	1200 (2645)
Min. table indexing angle		deg	0.001	1
SPINDLE				
Spindle speed		rpm	6000	8000
Spindle nose (nominal size, NO.)			7/24 Taper, NO.50	7/24 Taper, NO.50
Spindle bearing inner diameter		mm(in)	90 (3.5)	90 (3.5)
FEED RATE				
Rapid traverse		m/min(IPM)	30 (1181)	X/Z axis=48 , Y axis=36
A.T.C				
Tool storage capacity		pcs	40	40
Max. tool diameter (with adjacent tools)		mm(in)	125 (5)	118 (4.6)
Max. tool diameter (without adjacent tools)		mm(in)	250 (9.8)	236 (9.3)
Max. tool length		mm(in)	350 (13.7)	400 (15.7)
Tool change time ( T-T/C-C)		sec	10.5 / 15	5 / ---
A.P.C				
Number of pallets			2	2
Pallet changing time		sec	16	15
MOTORS				
Spindle motor (30min/cont.) FANUC		kw(hp)	aP22/8000i 15 / 11 (20 / 14.7)	a22/10000i 18.5 / 22 (24.7 / 29.3)
X/Y/Z axis feed motors		kw(hp)	4 (5.4)	6 / 6 / 7 (8 / 8 / 9.4)
MACHINE SIZE				
Height of machine (H)		mm(in)	2820 (111)	3500(137)
Floor space (LXW)		mm(in)	5650X3600 (222X141)	6382x4700 (251x185)
Total machine weight		kg	15000	22500
Power requirement		KVA	50	70
Controller		FANUC	0i-M	0i-M

AVAILABLE CONTROLLER: SIEMENS

## STANDARD ACCESSORIES

- Spindle oil cooler
- Rigid tapping
- Tool tip air blow system
- Metric table
- Fully enclosure guarding
- Shower coolant
- Chip conveyor inside machine (auger type)
- Chip conveyor outside machine & Chip bucket
- Work light
- Alarm lamp
- Heat exchanger
- Remote MPG
- Air conditioner (MH-630)

## OPTIONAL ACCESSORIES

- 8,000 rpm spindle (MH-500i)
- A.T.C 60 tools magazine
- Two speed gearbox
- C.T.S from A
- Inch table
- Linear scale (X/Y/Z)
- Tool overload detection
- Automatic tool length measurement
- Automatic workpiece measurement
- Simple tool life management
- Coolant gun
- Oil skimmer
- Oil mist collector
- Air conditioner