



**The Ultimate in Performance**

## **MH Series**

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

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

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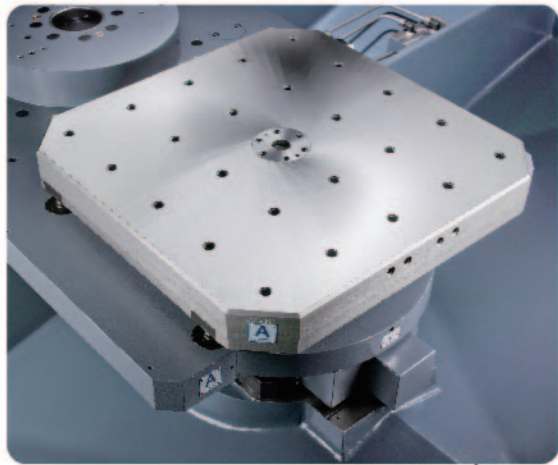
\* All performance are based on 220V/3PH/60HZ. Specifications are subject to change without notice.

2017.02

## STRUCTURE

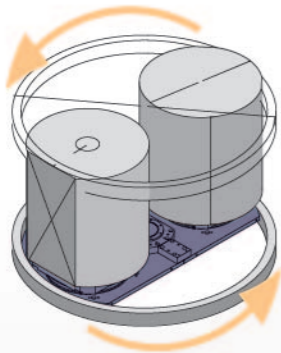
### CAST IRON CONSTRUCTION

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.

## STRUCTURE



### 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.

# 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

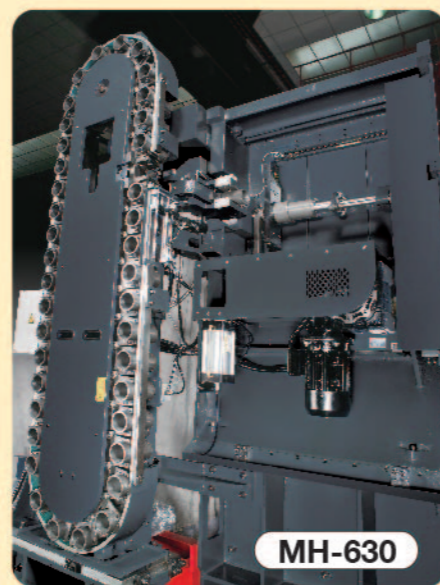


## 5 AXES ROTARY TABLE (OPTIONAL)

The contouring rotary tables with a minimum indexing increment of 0.001 offer simultaneous machining functions 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.



MH-500i



MH-630

## CHAIN-TYPE MAGAZINE

• 40/60/90/120 available

## 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.

# FEATURES

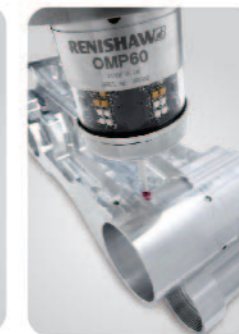
## OPTIONAL



■ Oil Skimmer



■ Mist Collector



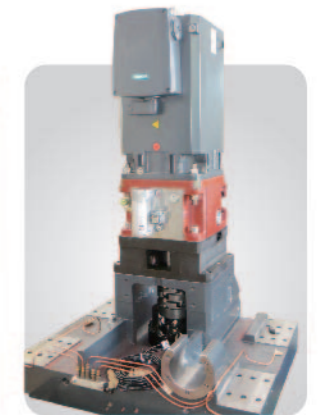
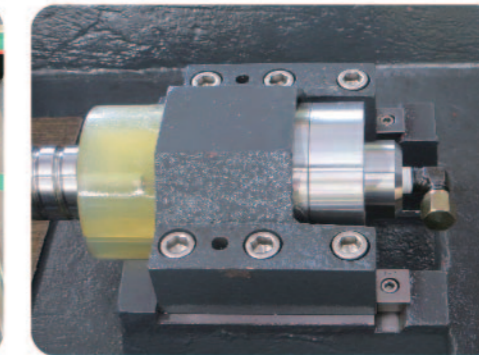
■ Automatic workpiece measurement



■ Automatic tool length measurement



■ Ball Screw with Hollow Shaft Design



■ Direct Gearbox

## FEA REPORT(Finite Element Analysis)

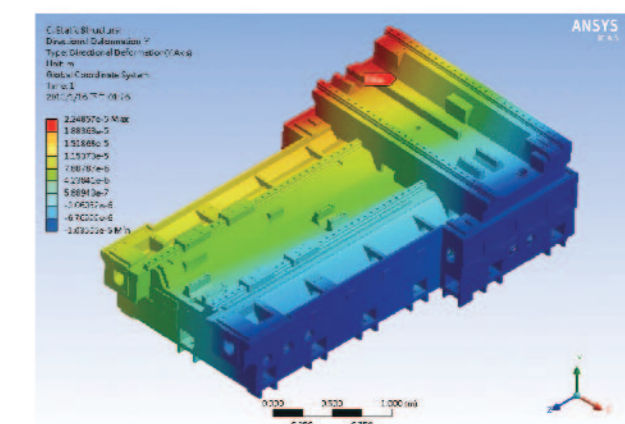
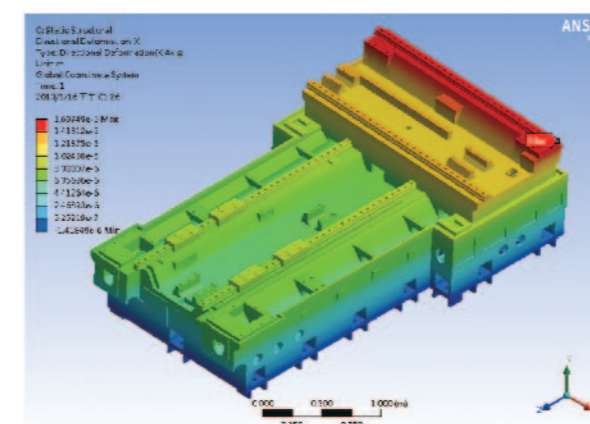
### Optimum

- 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 .

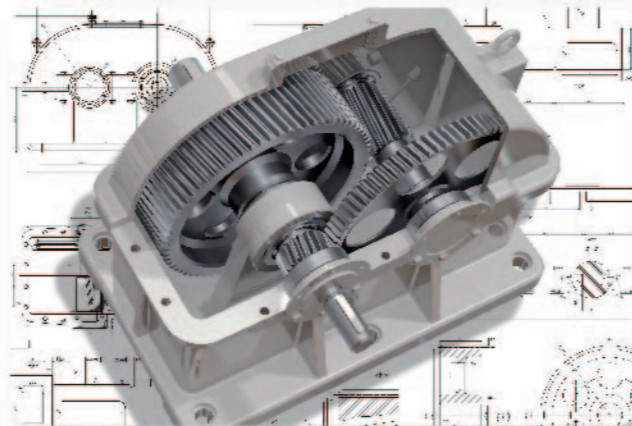
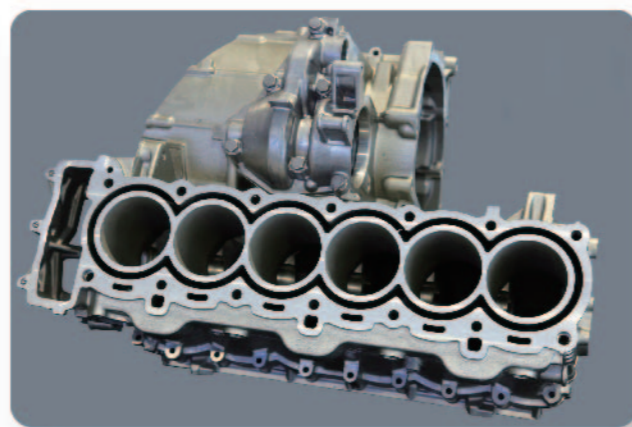
### MH-630



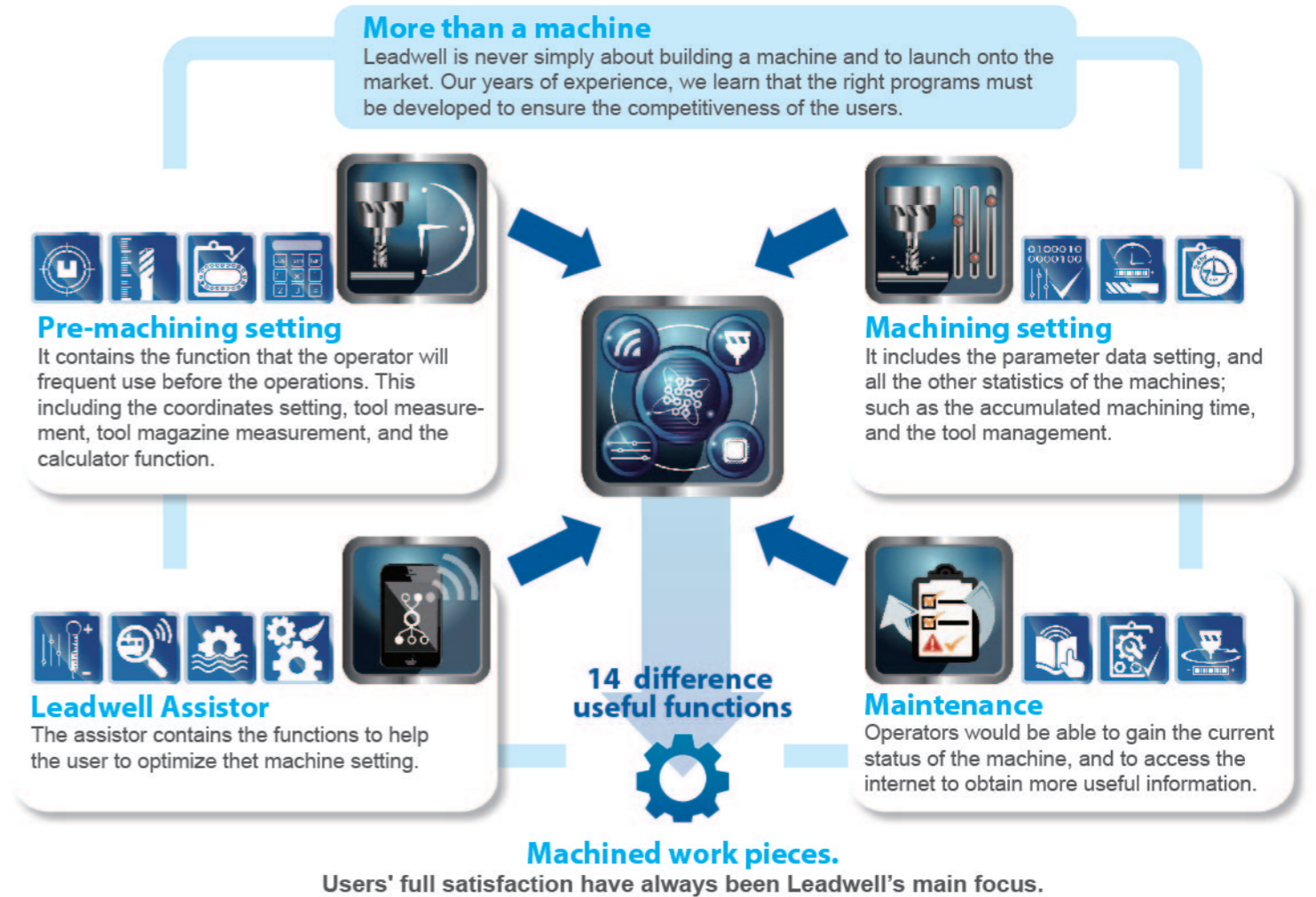
# HORIZONTAL MACHINING CENTER

## 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



# 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

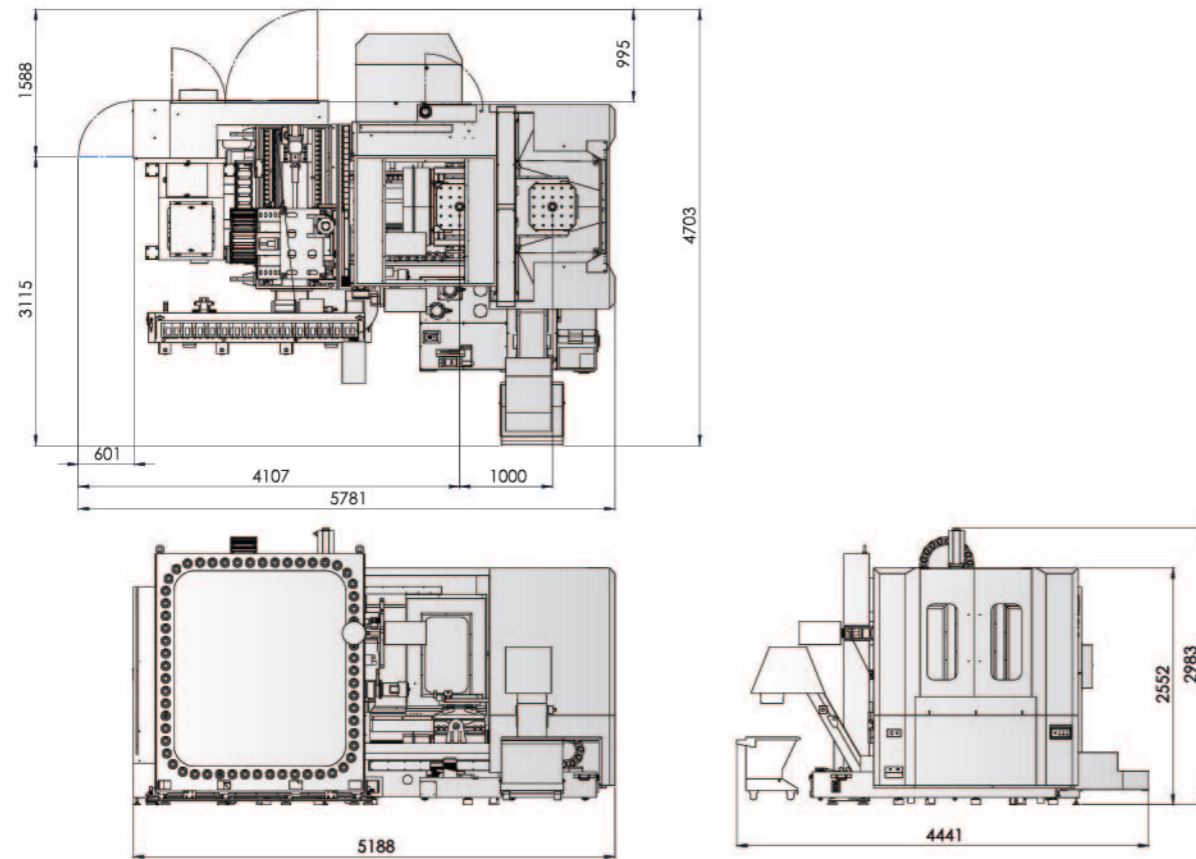
TAP	
Tapping	<b>M20</b>
Spindle Speed	300rpm
Feed Rate	750mm/min.

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

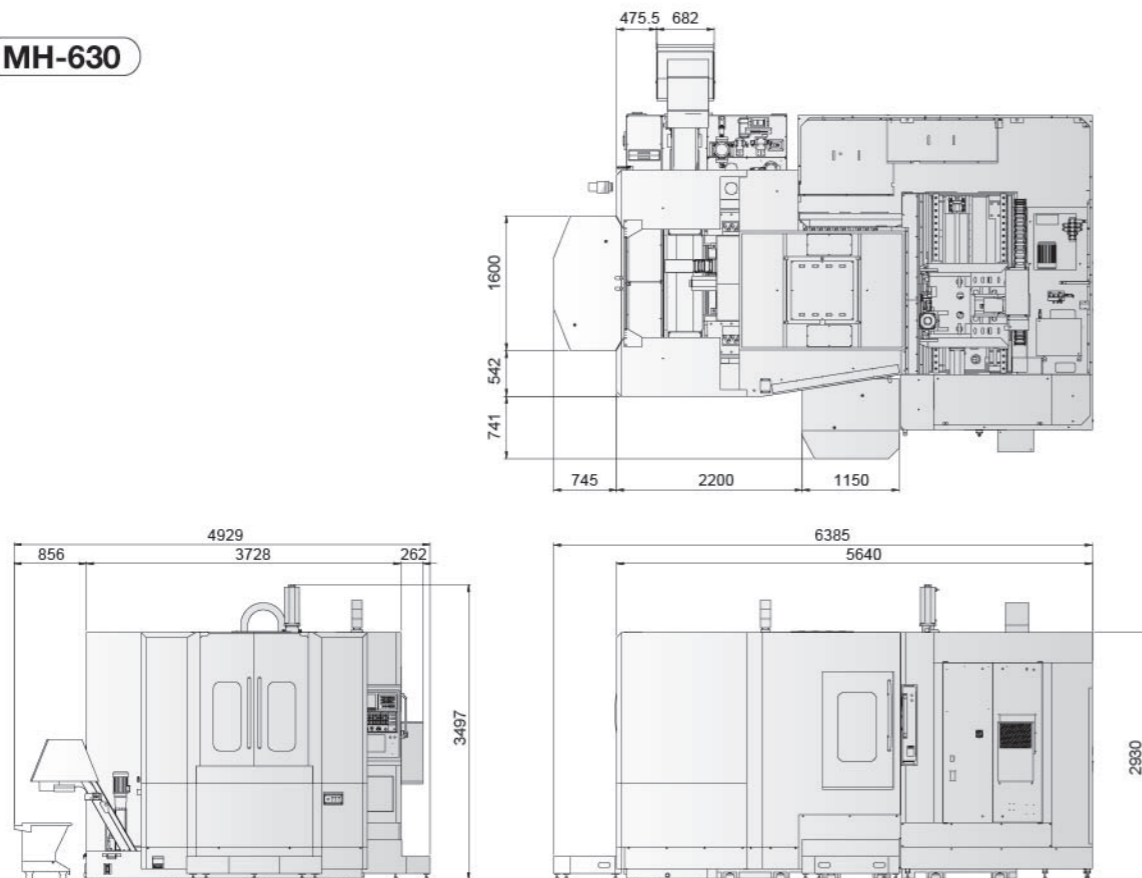
RIGID TAP	
Tapping	<b>M20</b>
Spindle Speed	1000rpm
Feed Rate	2500mm/min.

# OUTLINE DIMENSION

MH-500i

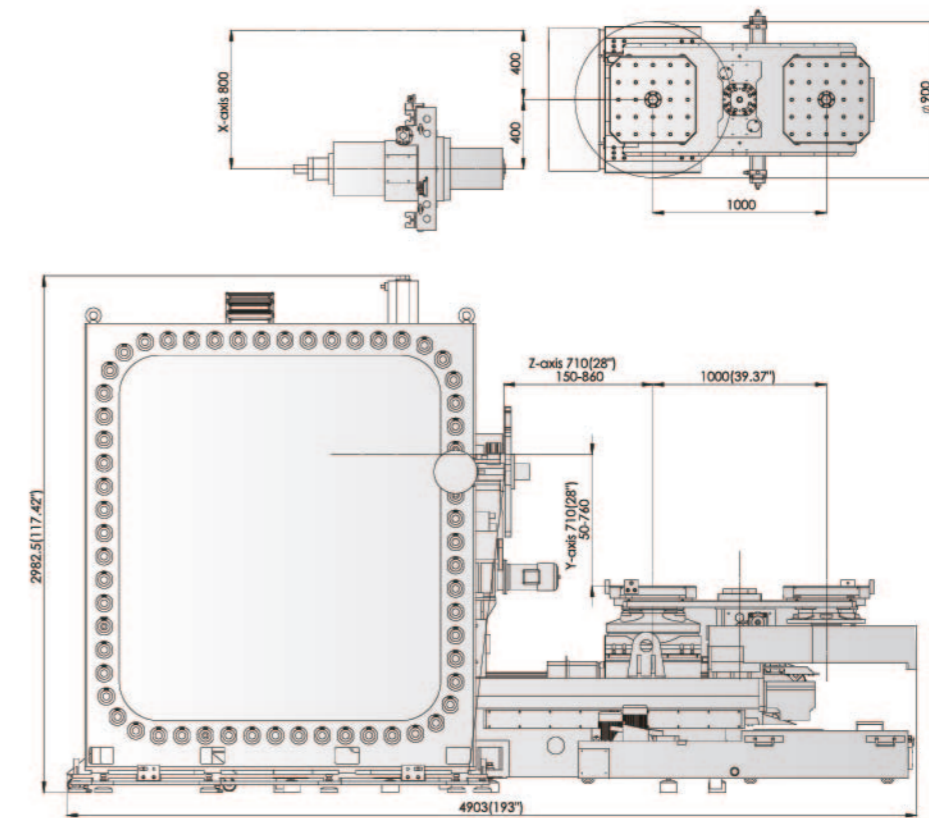


MH-630

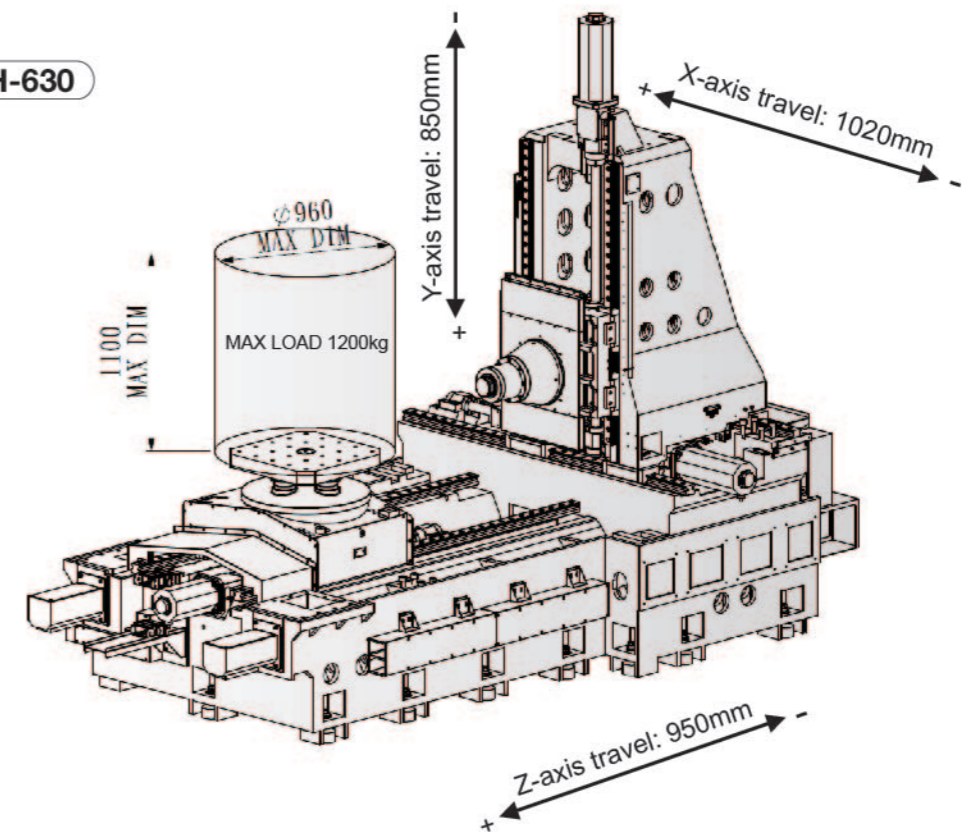


# INTERNAL DIMENSION

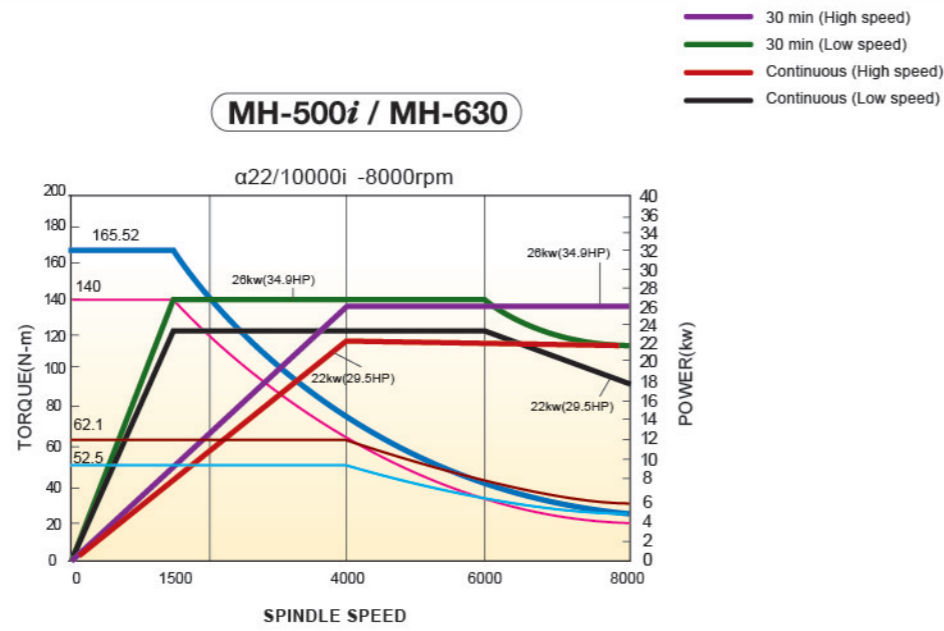
MH-500i



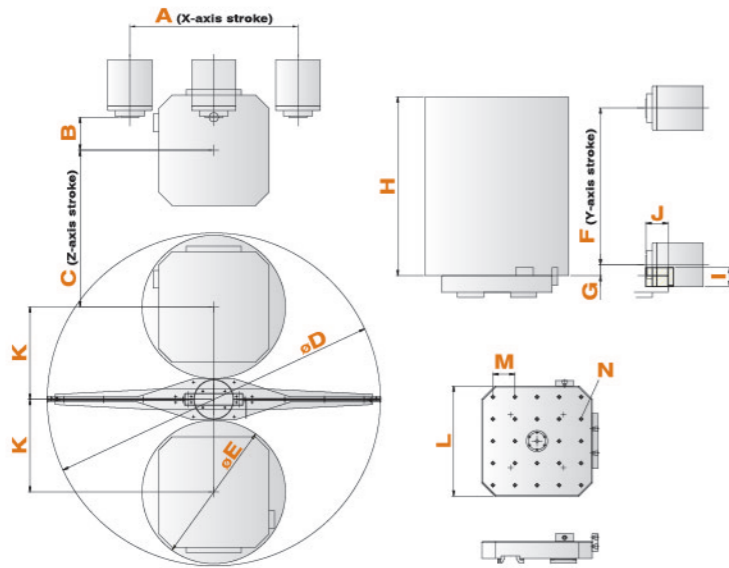
MH-630



# SPINDLE POWER CURVE



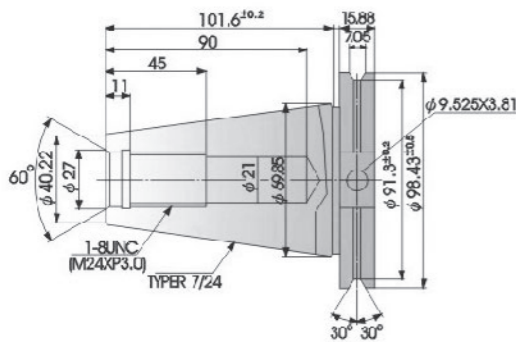
## THREE AXES TRAVEL RANGE



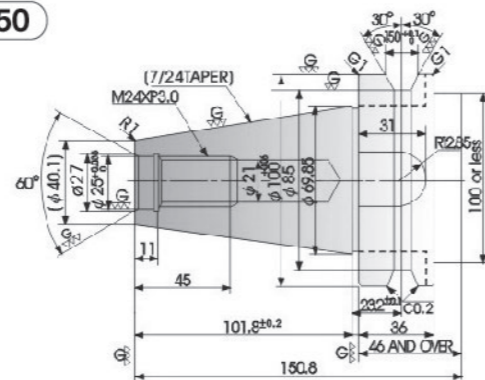
ITEM	MODEL	MH-500i	MH-630
A		800	1020
B		150	150
C		710	950
D		1900	2190
E		900	960
F		710	850
G		50	100
H		850	1100
I		90	---
J		109	---
K		500	615
L		500	630X630
M		100	125
N		25-M16x2.0x30L	24-M16X2.0P

## TOOL SHANK SPECIFICATIONS

### CAT-50



### BT-50



# MACHINE SPECIFICATIONS

ITEM	MODEL	MH-500i	MH-630
<b>CAPACITY</b>			
X axis travel	mm(in)	800(31.5)	1020 (40.2)
Y axis travel	mm(in)	710(28)	850 (33.5)
Z axis travel	mm(in)	710(28)	950 (37.4)
Distance from table top to spindle center	mm(in)	50-760(2-30)	100-950 (4-37.4)
Distance from table center to spindle end	mm(in)	150-860(5.9-33.9)	150-1100 (6-43.4)
<b>TABLE</b>			
Table size	mm(in)	500x500 (19.6x19.6)	630X630 (24.8X24.8)
Max. workpiece swing diameter & height	mm(in)	900X850(35.4X33.5)	960X1100 (37.8X43.4)
Permissible mass of workpiece	kg(lb)	500X2(2204)	1200 (2645)
Min. table indexing angle	deg	1	1
<b>SPINDLE</b>			
Spindle speed	rpm	8000	8000
Spindle nose (nominal size, NO.)		ISO NO.50	7/24 Taper, NO.50
Spindle bearing inner diameter	mm(in)	90 (3.5)	90 (3.5)
<b>FEED RATE</b>			
Rapid traverse	m/min	60	X/Z axis=48 , Y axis=36
<b>A.T.C</b>			
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)	500(19.7)	400 (15.7)
Tool change time ( T-T/C-C)	sec	2.3/---	5 / ---
<b>A.P.C</b>			
Number of pallets		2	2
Pallet changing time	sec	11	15
<b>MOTORS</b>			
Spindle motor (30min/cont.) FANUC	kw(hp)	α22/10000i 18.5/22(24.7/29.3)	α22/10000i 18.5 / 22 (24.7 / 29.3)
X/Y/Z axis feed motors	kw(hp)	4/7/4(5.4/9.3/5.4)	6 / 6 / 7 (8 / 8 / 9.4)
<b>MACHINE SIZE</b>			
Height of machine (H)	mm(in)	3024(119)	3500(137)
Floor space (LXW)	mm(in)	4188x5427(164.8x213.6)	6382x4700 (251x185)
Total machine weight	kg	14500	22500
Power requirement	KVA	60	70
Controller	FANUC	0i-M	0i-M

AVAILABLE CONTROLLER: SIEMENS

### STANDARD ACCESSORIES

- Spindle oil cooler
- Rigid tapping
- 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
- Coolant gun(MH-500i)
- Simple tool life

### OPTIONAL ACCESSORIES

- A.T.C 60/90/120 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 (MH-630)
- Oil skimmer
- Oil mist collector
- Air conditioner