

MCH-630

MCV-720

VERTICAL MULTI-TASK MACHINING CENTER

MCV-1020A

# DMT-500

MCV-1020BA

MCV-1250

MCV-1450

MCV-1700

MCV-2100

MCV-2600

DCM-2213



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The Latest and Best Quality Machinery.  
**DAHLIH®**



# Vertical Multi-Task Machining Center

The DAH LIH **DMT-500** is designed to perform complex milling and turning operations in one setup. This machine reduces the use of jig and fixture. Another benefit is that it saves time and minimizes accuracy errors in secondary machining.



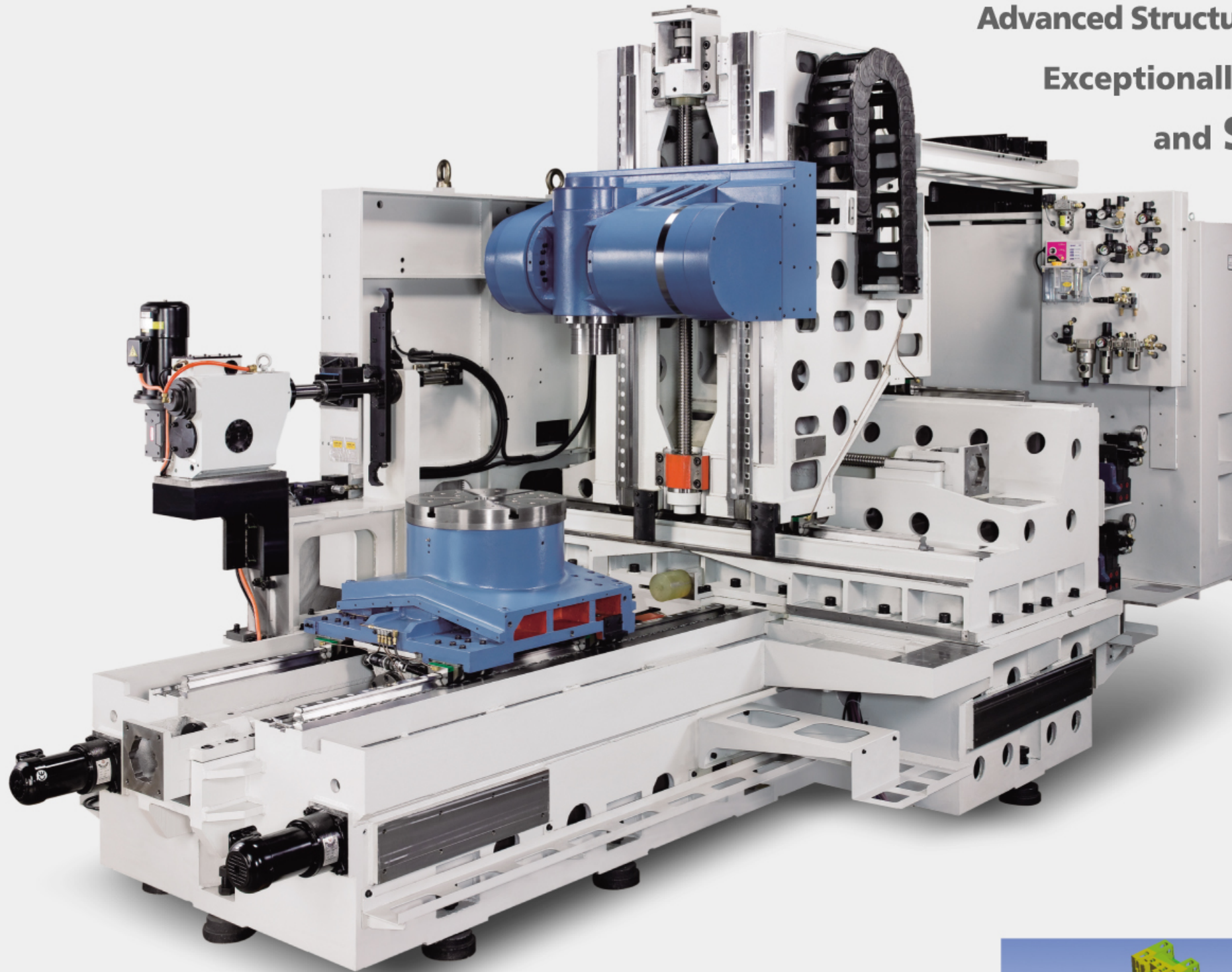
## DMT-500

- » Combined milling and turning operations in one machine for greatly saving time in secondary machining and upgrading efficiency.
- » Multi-axes machining allows turning, milling and drilling operations to be accomplished quickly.
- » Traveling column construction.
- » 12,000 rpm built-in type milling turning complex spindle.
- » X,Y,Z-axis move on roller type linear ways.
- » Choice of 40 or 60 tools chain type magazine.
- » Friendly CNC control provides maximum operational convenience.



# Advanced Structure Design Concepts!

## Exceptionally High Rigidity and Stability!



### HYDRAULIC DISC BRAKE

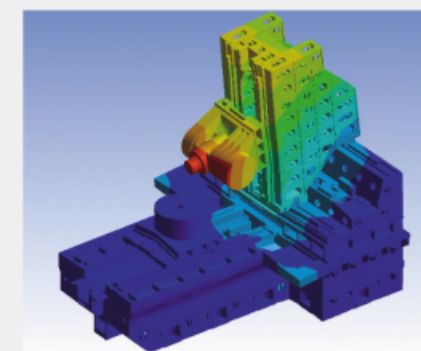
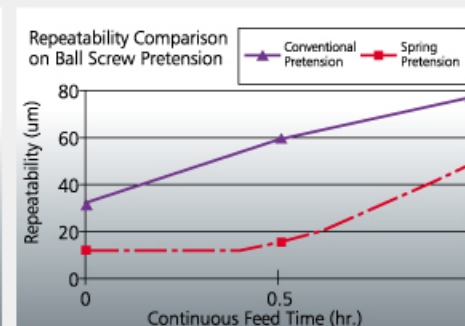
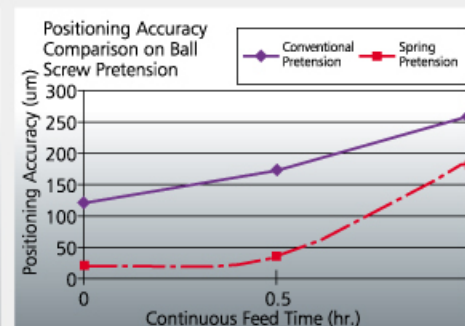
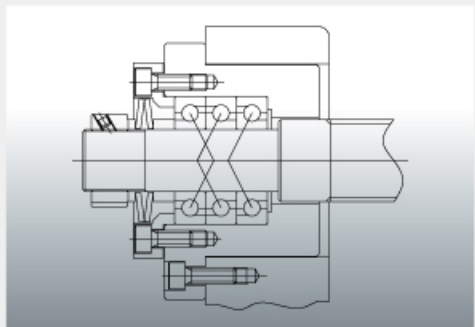
» A hydraulic disc brake is employed for the spindle head positioning, effectively upgrading the head positioning accuracy.

- » The base is a "T" shape construction that provides solid support for the entire machine.
- » The traveling column construction combined with high/low slideways on saddle fully represents excellent rigidity that increases feed speed and stability.
- » X,Y,Z-axis slideways are mounted with roller type linear guide ways to optimize stability of both cutting feed and rapid traverse.
- » The machine is built with oil/fluid separation device without need of an additional separator, which meets energy-saving and environmental protection requirements.
- » Clip augers are equipped at both sides of base for saving time by manual cleaning, and keeping the machine interior clean at all times.
- » All of the major casting parts are manufactured from high quality cast iron, stress relieved for lifetime stability.
- » The swiveling spindle head swivels 150°.
- » Positioning accuracy of rotary table and swiveling head reaches within 3 seconds.

### THREE AXES BALL SCREWS

#### Exclusive Pretension Retainer (Patented No. M317899)

» The three axes ball screws are supported by fixed and semi-fixed type. This is combined with exclusively designed ball screw pretension retainer to ensure consistent feed accuracy. The unique feature also results in increased feed rigidity and longer bearing life.

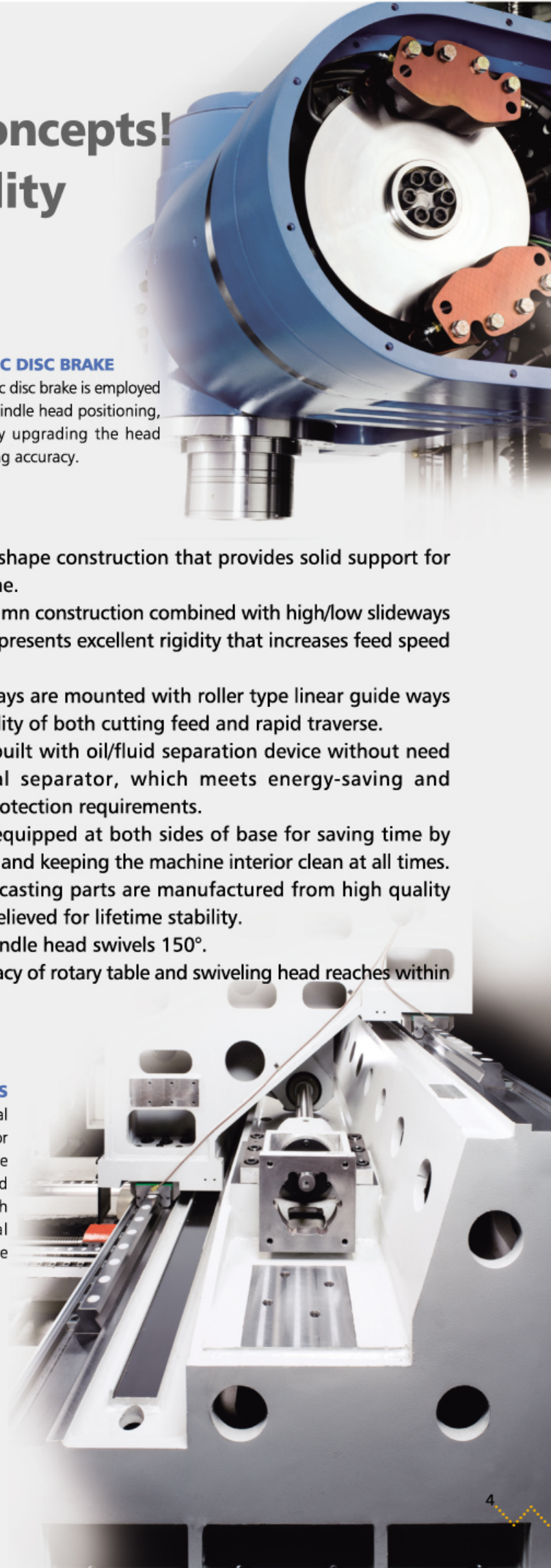


### FINITE ELEMENT ANALYSIS

» To ensure the best structural rigidity and stability, the major casting parts of the machine are analyzed by advanced "Finite Element Analysis". With this advanced structural analysis, the optimal machine design can be achieved.

### HIGH / LOW SLIDWAYS ON SADDLE

» The traveling column structure combined with high/low slideway design on saddle increases feed speed and structural rigidity, while shortening tool change distance and time.





# High Efficiency Multi-axis Machining



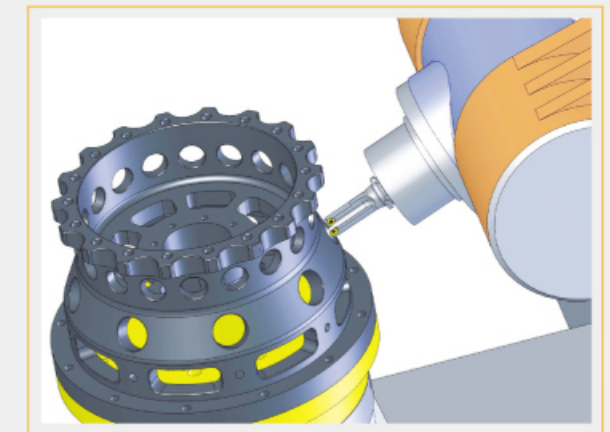
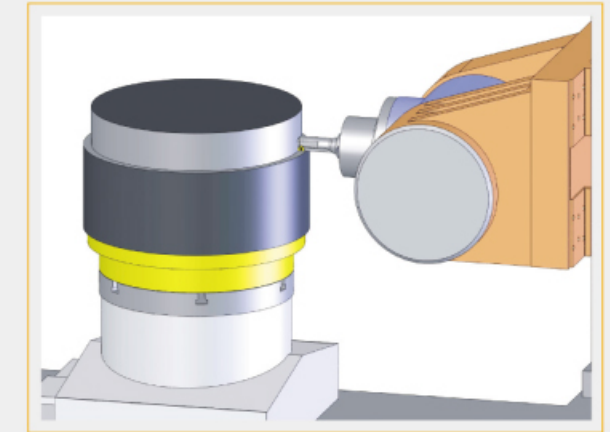
## SWIVELING SPINDLE HEAD (B-AXIS)

- » The swiveling spindle head is directly driven by a motor. Swiveling angle is 150°.
- » The spindle head swiveling mechanism is equipped with a magnetic scale, permitting indexing accuracy to reach within 3 seconds.
- » Hydraulic system is equipped with accumulators for protection in case of power failure.

150°

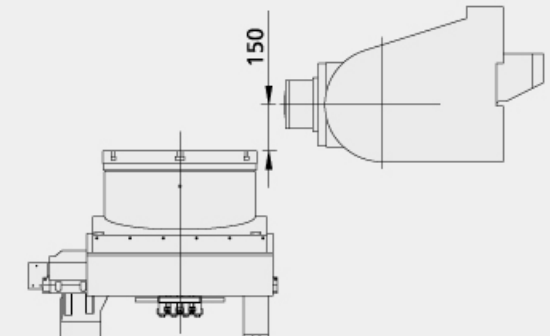
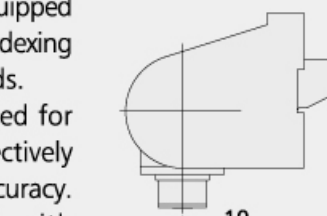
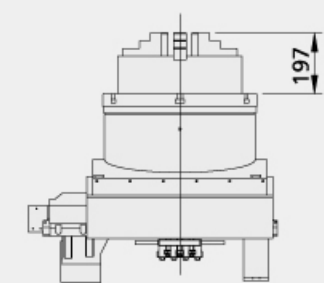
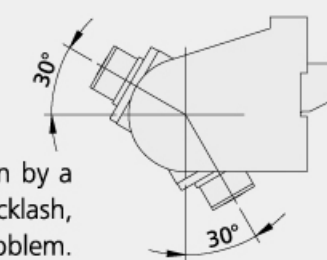


360° C-Axis



## ROTARY TABLE (C-AXIS)

- » The rotary table is directly driven by a motor that eliminates wearing, backlash, temperature growth and noise problem.
- » Maximum speed is 600 RPM.
- » The table indexing mechanism is equipped with a magnetic scale, permitting indexing accuracy to reach within 6 seconds.
- » A hydraulic disc brake is employed for the spindle head positioning, effectively upgrading the head positioning accuracy.
- » Hydraulic system is equipped with accumulators for protection in case of power failure.
- » A manual chuck is fitted on the table.





### BUILT-IN TYPE MILLING TURNING COMPLEX SPINDLE

- » The spindle accommodates KM63 tool shank, upgrading axial and radial repeatability accuracy. Another benefit is that it also upgrades the fitting rigidity between the spindle and the tool shank.
- » Thermal growth and vibration detecting function.(Optional)
- » Spindle thermal displacement compensation.(Optional)

Orientating Point



» The spindle provides 4-direction positioning by means of clutch gear (turning complex tool only).



Control



PLC



A/D Converter

Output

Input



Spindle

Vibration  
Temperature



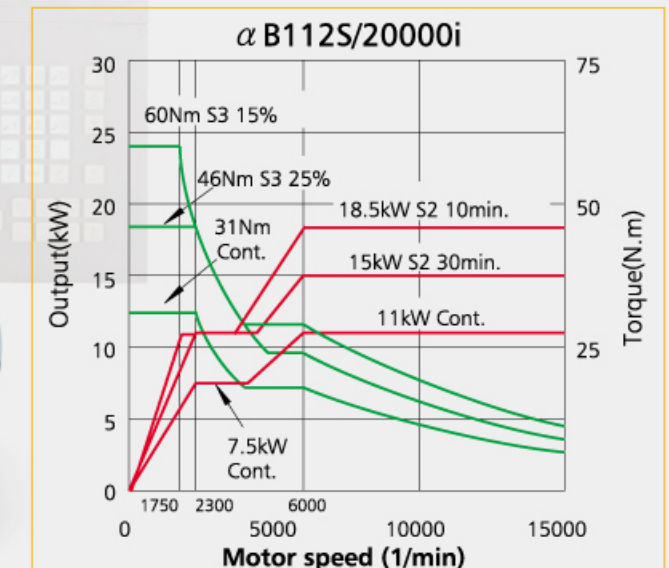
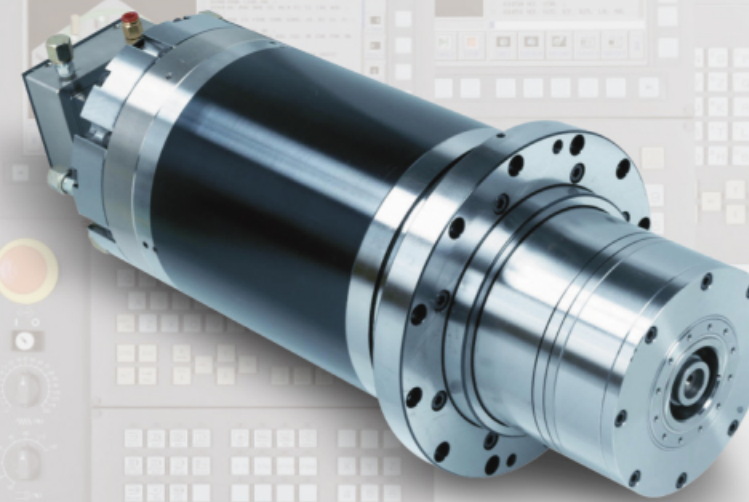
Data  
Registration



Parameter Setting

## Spindle Thermal Growth & Vibration Detecting System

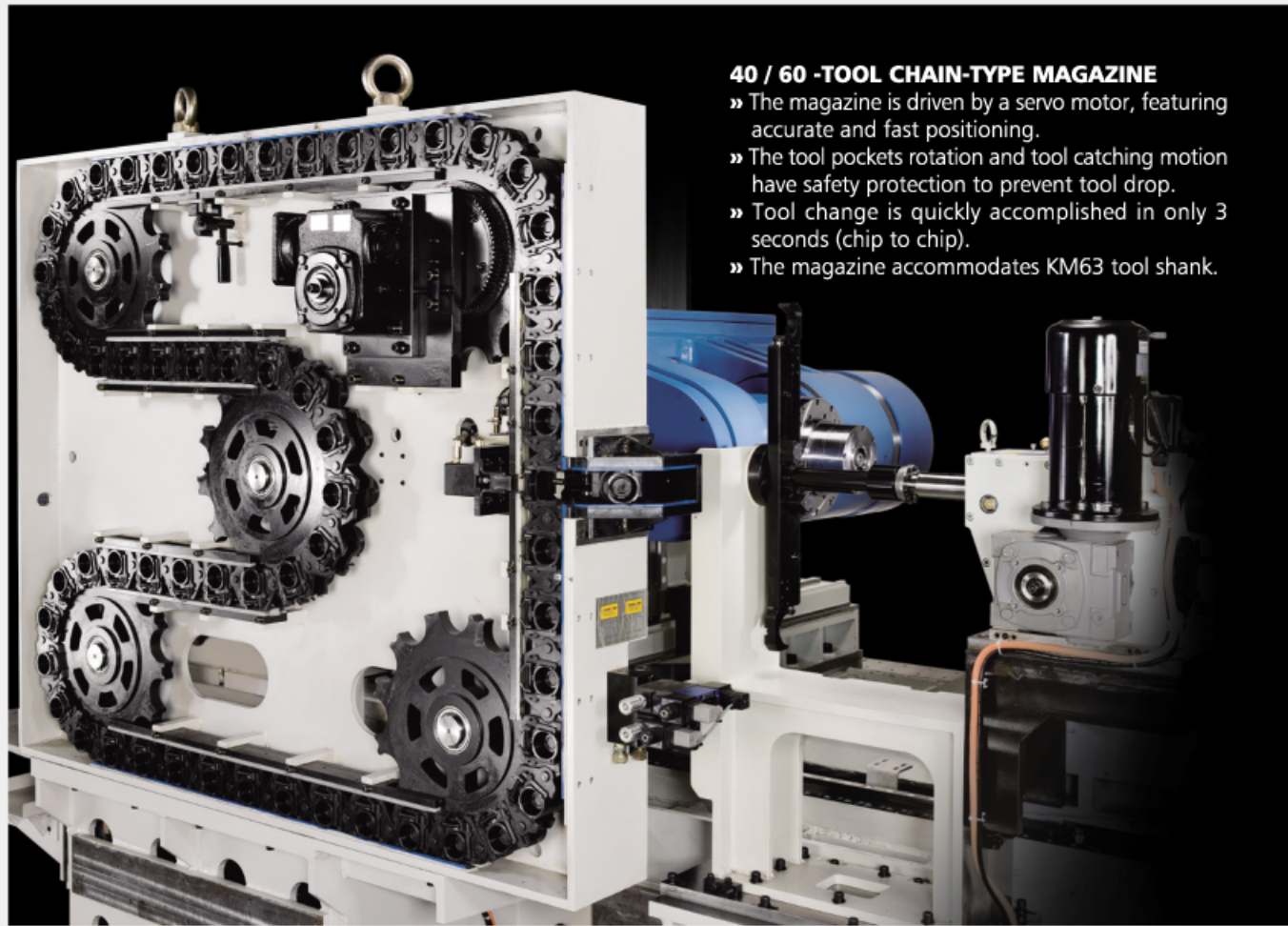
## Advanced Technology. High Precision. High Speed. Outstanding Performance Output.



### Rotary Window (Optional)

- » The see-thru window is equipped with a specially designed rotary window. It effectively removes coolant on the window and that allows operator to check the cutting condition of the machine.





#### 40 / 60 -TOOL CHAIN-TYPE MAGAZINE

- » The magazine is driven by a servo motor, featuring accurate and fast positioning.
- » The tool pockets rotation and tool catching motion have safety protection to prevent tool drop.
- » Tool change is quickly accomplished in only 3 seconds (chip to chip).
- » The magazine accommodates KM63 tool shank.

## SPECIFICATIONS, ACCESSORIES AND DIMENSIONS

### SPECIFICATIONS

MODEL	DMT-500
<b>TRAVEL</b>	
X-axis travel (Table forw./fackw.)	1000 mm
Y-axis travel (Spindle head rightw./leftw.)	800 mm
Z-axis travel (Spindle head upw./downw.)	950 mm
B-axis travel (Spindle head tilts)	150° (-30°~+120°)
C-axis rotation (Table rotation)	360° (Continuous)
B-axis rotation center to table center (X-axis at home position)	990 mm
B-axis rotation center to table center (at limit end)	-10 mm
Spindle nose to table center line (B-axis at 90; X-axis at home position)	675 mm
B-axis rotation center to table surface	150~1100 mm
Spindle nose to table (B-axis at 0)	-165~785 mm
<b>CAPACITY</b>	
Table diameter	Ø500 mm
Max. turning diameter (O.D.)	Ø730 mm
Max. workpiece sizes	Ø730 mm x 950 mm
Max. table load	800 kgf
<b>C-axis</b>	
Max. speed of turning shaft (rpm)	600 rpm
Rapid traverse (C-axis)	50 rpm
Min. indexing angle (C-axis)	0.0001°
<b>SPINDLE</b>	
Max. spindle speed	12,000 rpm
Spindle nose taper	KM63
Spindle speed range	0~12,000 rpm
B-axis rapid traverse	50 rpm
Min. indexing angle (B-axis)	0.0001°
<b>FEED RATE</b>	
X, Y, Z-axis rapid traverse	30 m/min
Tool shank	KM63
Tool storage capacity	40 (60)
Max. tool diameter/length/weight	Ø100mm/300mm/7kgf
Max. tool diameter (no adjacent tool)	Ø150 mm
Tool selection	Random
Tool change time (chip to chip)	3 sec
<b>MOTORS</b>	
Spindle motor (Cont. 30 min)	11/15 kw
Servomotor (X/Y/Z/B/C)	7/7/9/4.2/9.8 kw
<b>INSTALLATION REQUIREMENT</b>	
Power required	75 KVA
Air flow required	100 L/min
<b>TANK CAPACITY</b>	
Coolant tank capacity	120L
Flush fluid tank	380L
<b>MACHINE SPACE AND WEIGHT</b>	
Floor space	3040 x 4640
Machine weight	14500 kgf

Specifications are subject to change without prior notice.

### » STANDARD

- Spindle cooling device
- Heat exchanger
- Removable type manual pulse generator
- X, Y, Z, B, C. linear scale
- Coolant around spindle
- Coolant tank
- Spiral type chip conveyors
- Automatic power off
- Call light
- Work light
- Tool kit & tool box

### » OPTIONS

- ATC 60 tools storage
- Flat type chip conveyor
- Coolant through spindle with filter
- Automatic workpiece measuring device
- 15,000 rpm built-in spindle

### MACHINE DIMENSIONS

