

CHMER SELICA

HM SERIES

High Speed Milling Machine



HM43T / HM65T / HM86T

Features



Gantry Structure Design

The best and rigid design by FEA (Finite Element Analysis) to optimize the gantry structure of the high rigidity and heavy loading for the machining stability.



Automatic Tool Changer

Automatic tool magazine with 16 tools for various applications.



Automatic Tool Length Measurement

Measuring the tool automatically and automatic offset of tolerance during machining to ensure the accuracy.



CE Standard Layout

The electrical wiring layout comply with CE standard design.

Oil Shroud

(for graphite machining)
(Opt.)

The self-developed oil shroud to efficiently seal the graphite dust for a better protection for the operator.



Oil Shroud Off

Oil Shroud On

Suction Device

(for graphite machining)
(Opt.)

Efficiently suck off the graphite dust for a better protection for the operator.



Optional Spindles

(Std./Opt.)

The self-developed oil shroud to efficiently seal the graphite dust for a better protection for the operator.



Disk Oil Skimmer

(Opt.)

Efficiently remove the floating oil on coolant surface preventing the coolant from deterioration.



Oil Mist Blast

(Opt.)

For more efficient and better metal surface cutting and to reduce the wear of tools.



HM43T



HM65T



HM86T

Ball Screw Drive Type

Superior CNC System



Specs:

- 10.4" LCD (15" LCD option; touch screen option)
- User Memory: Minimum 1GB, Expandable by external CF card
- Network connectivity: Ethernet, USB
- Telediagnosis
- Tool life monitoring
- IIP Conversational programming cycles and touch probe cycles
- HD graphics simulation (option)
- Machining Time Estimate
- HSSA(high speed surface Accuracy) machining
- 300 blocks look ahead
- 1ms block processing time
- Feed forward; smooth jerk control



CNC simulator for PC

The CNC simulator provides the machine user a complete tool for programming the entire part from any external PC, comfortably and productively.

Tool life monitoring



HD graphics

Solid graphics and tool trajectories can be simultaneously displayed. The same part can be displayed from 4 different points of view.



Inclined plane machining

The CNC allows machining in inclined plane without having to make any mechanical set-up adjustments. Once the axis/tool has been manually or automatically oriented, it is enough to define the inclined plane and carry out various machining operations like pockets, rotations, etc.

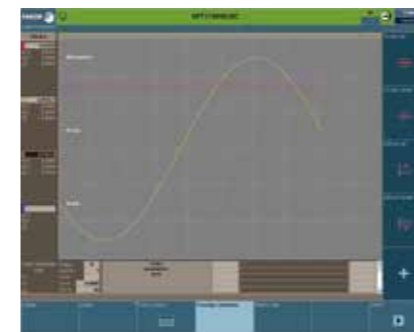
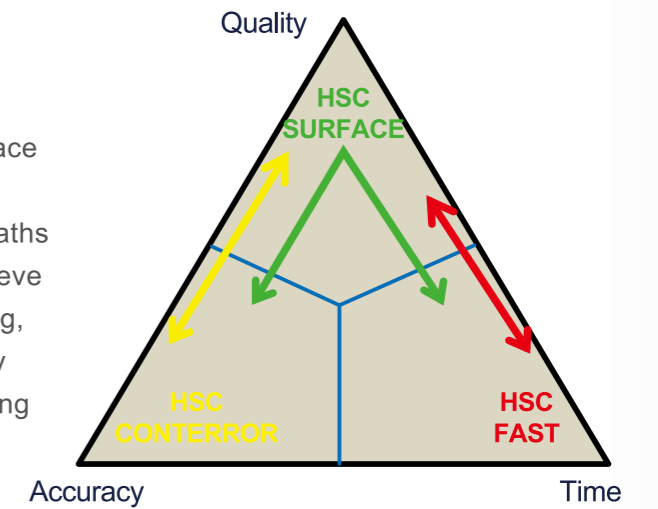


Dynamic override

The Dynamic Override system is a way to optimize the cutting conditions "instantly" while machining the component. Through the use of a simple bar, the user can improve machine behavior by reducing vibrations, while maintaining the programmed speed and yet still be able to achieve a high-quality part finish.

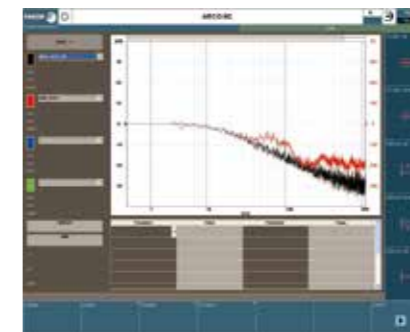
HSSA machining system

For the machining of molds, the HSSA (High Speed Surface Accuracy) machining system optimizes the set of points gathered from the Cad-Cam and smoothes out the tool paths by creating polynomials (Splines). This system helps achieve high-quality part finish and jerk-less high-speed machining, thus reducing mechanical vibrations and also significantly reducing machine mechanical stress hence ensuring a long machine life.



Auto adjustment of axis

The Finetune program automatically optimizes the various servo control loops of the machine to obtain the highest performance as demanded by the machine manufacturers.



IIP Conversational programming cycles



Probing cycles

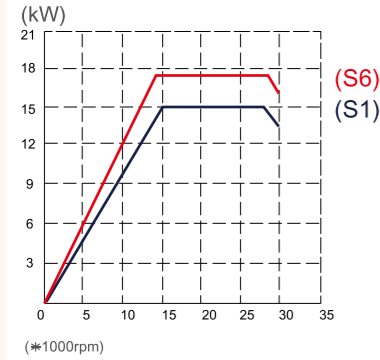


Spindle Features

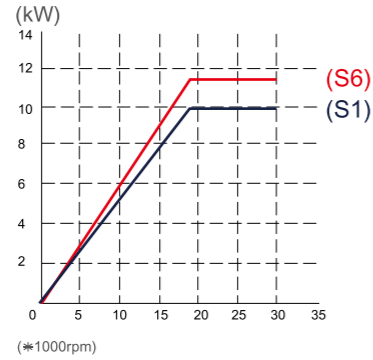
Built-In Motor

Motor Power rating

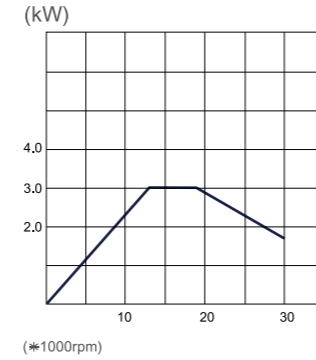
TH-150.1 (15kW)
Power-diagram



TH-120.2 (10kW)
Power-diagram



TH-100.4 (4kW)



PMSM-Permanent Magnet Synchronous Motor (Opt.)

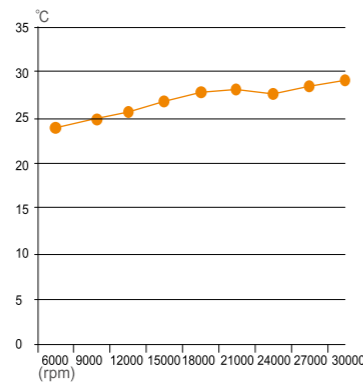
PMSM : smaller size, low rpm and high torque, lower thermal emission for less thermal inaccuracy, high and stable cutting accuracy, rapid forward and reverse switch, suitable for more accurate surface workpieces.

The Spindle Thermal Error Compensation



Compensation the difference of heat distortion through the spindle thermal detection to achieve the high accurate cutting.

Temperature Detecte Values At Different Spindle Rotate Speeds



Test Conditions : Spindle dynamic balance holding tool no-load rotary test.
Ambient temperature : 25°C
Oil Chiller temperature : 24°C
Test Method : Thermal stability of PMSM spindle which reach equilibrium at short period.
The temperature value is averagely temperature by recording the spindle speed per hour.

The Comparison Of Spindle Heat Distortion



PMSM
Tolerance 0 ~ -2μm



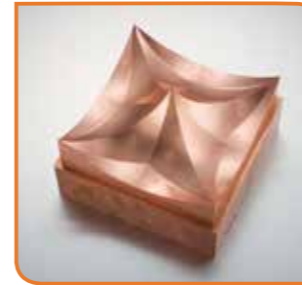
Built-In Motor
Tolerance 0 ~ -15μm

The Exceptional Machining Accuracy Of PMSM

The heat distortion is within 5μm after working for 2 hours in 30,000rpm by PMSM.

Application

Samples



Copper Electrode

Tool : flat end mill of 6mm,
ball end mill of 5R,3R,2R
Total time : 310min



Die Cutting mold

Area : 65x70mm
Total time : 72min



Plastic Injection Steel Mold NAK80

Tool : flat end mill of 6mm ,D10R1 and
ball end mill of 5R,3R,2R,1R
Total time : 420min



Graphite Electrode

Tool : flat end mill of 10mm
Total time : 85min



Graphite Electrode

Tool : flat end mill of 6mm ,
ball end mill of 6mm
Total time : 180min



Graphite Electrode

Tool : flat end mill of 6mm ,
ball end mill of 2R
Total time : 320min



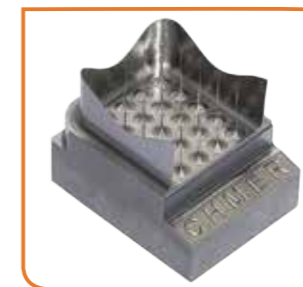
Workpiece Material AL6061

Tool : Φ10R1 Bull End Mill
Φ4R2 Bull End Mill
Working : 282min



Workpiece Material AL6061

Tool : Φ10 End Mill
Φ4R2 Bull End Mill
Working : 440min



Workpiece Material SKD61

Tool : Φ10 Bull End Mill
Φ4R2 Bull End Mill
Working : 427min



Workpiece Material SKD61

Tool : Φ6R3 Bull End Mill
Φ4R2 Bull End Mill
Working : 132min



Specification

Models	Unit	HM43(G)T	HM65(G)T	HM86(G)T
Spindle rpm	rpm		8000-30000	
Spindle taper	-	HSK E32	HSK E40	HSK E50
Spindle motor(S1/S6)	kW	3/5	10/11.5	15/17
Table dimension	mm	500x400	540x650	850x600
T-slot	mm	16x4x100	14x5x90	16x5x100
Max.loading of table	Kg	200	300	500
Travel(XxYxZ)	mm	400x300x200	500x600x300	800x600x400
Distance from table surface to spindle nose	mm	150-300	140-440	160-560
Work feed	m/min	10	10	10
Rapid traverse(X,Y,Z)	m/min	15	18	30
Total power consumption	kVA	15	25	35
Net weight	Kg	2680	4300	7500

Code G: adopting with the option of graphite cutting.

The max diameter of tool collect : 16mm(HSK E32) / 40mm(HSK E40) / 50mm(HSK E50)

Optional Accessory

● Standard ○ Option

Built-in Spindle	HM43(G)T	HM65(G)T	HM86(G)T
HSK E23/30000rpm(Grease) 3.5~5.5kW	●	-	-
HSK E32/36000rpm(Oil mist) 3.5~5.5kW	○	-	-
HSK E40/30000rpm(Grease) 10~11.5kW	-	●	-
HSK E40/36000rpm(Oil mist) 10~11.5kW	-	○	-
HSK E50/36000rpm(Oil mist) 15~17kW	-	○	●
Tool Magazine Capacity			
ATC Automatic tool changer(16tools)	●	●	●
Automatic tool length measurement	●	●	●
Laser control NT	○	○	○
System Controller			
FAGOR 8060	●	●	●
FAGOR 8065	○	○	○
SIMENS 840D	○	○	○
Cutting Process			
Cutting air blast	●	●	●
Graphite cutting device(oil shroud or suction)	○	○	○
Oil mist blast	○	○	○
Oil mist collector	○	○	○
Oil skimmer	○	○	○
Operational Support			
MPG(manual pulse generator)hand wheel	●	●	●
Ethernet card	●	●	●
X,Y,Zaxis linear scale	○	○	○
4/5th axis synchronous control	-	○	○
Accessory			
Chiller for spindle	●	●	●
Spindle air blast	●	●	●
3-color machine signal tower light	●	●	●
Work lamp	●	●	●
Tool kit	●	●	●
Power supply air conditioner	●	●	●
Pneumatic freezing dryer	○	○	○
Automatic voltage regulator	○	○	○
Patented cooling system	○	○	○
Visual monitoring device	○	○	○

The manufacturer reserves the right to modify the design for specifications ,mechanisms, etc
To improve the performance of the machine without notice.