

Make same to different



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 Gantry Mercury

 Gantry Neptunus

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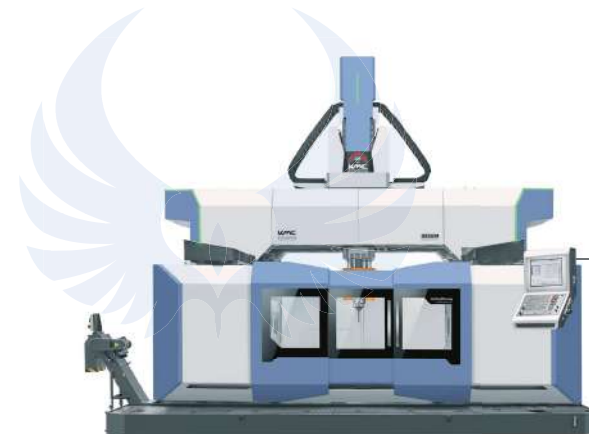
GN&GM

Gantry Type Machining Center


KAOMING



OVERVIEW



KMC-GM Gantry Mercury Intelligent Five-axis Gantry Machining Center

- 02 Machine Main Features
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KMC-GN Gantry Neptunus Box-way Gantry Type Machining Center

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KMC - GM & GN [Mercury] [Neptunus]

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Make same to different



KMC-GM Series

Gantry Mercury

Running light but wild, the earth rumbling and the mountains spewing out hot flames that is burning life at a very high rate.

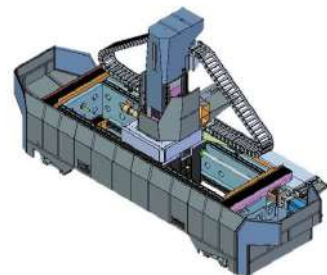
KMC-GM Series

- 1 Box-in-Box Design
- 2 Z-axis Dual Motor Drive
- 3 Chain Type Tool Magazine Unit
- 4 THK Linear Guideways & Ballscrews
- 5 Three Axes Cooling System
- 6 KESSLER 2-axis Head
- 7 Self-milling Working Table



KMC-GM

[Mercury]



Box-in-Box Design

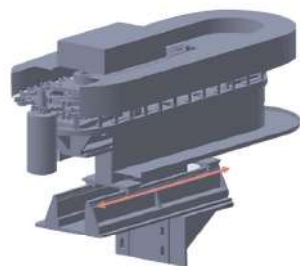
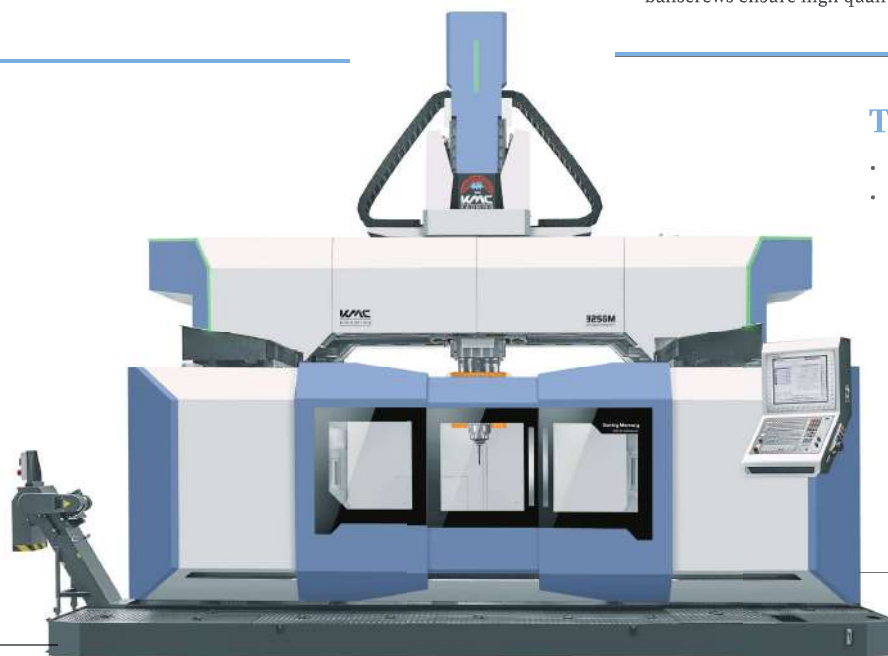
- Thermal symmetry construction
- Fully integrated crossbeam, improving rigidity by 32%



Z-axis With Dual Motor Drive

Without High Pressure Hydraulic Cylinder

- High speed movement with high precision and fast dynamic response without oil pressure hysteresis. Suitable for high precision cutting.



Chain Type Tool Magazine Unit

- Standard: 32 ATC/group
- Tool shank shape: HSK-A100
- Tool-changing arm
→ More stability & longevity



KESSLER 2-axis Head

- Spindle taper: HSK-A100(opt. HSK-A63)
- Standard CTS
- Spindle speed: 12000rpm~30000rpm
- A-axis rotation angle: $\pm 105^\circ$
Motor torque (S1/Smax): 382/575 Nm
Clamping torque P0/Pmax: 1200/2160Nm
- C-axis rotation angle: $\pm 200^\circ$
Motor torque (S1/Smax): 810/1100 Nm
Clamping torque P0/Pmax: 930/1680Nm
- Controller: Siemens, Heidenhain

Machine Main Features



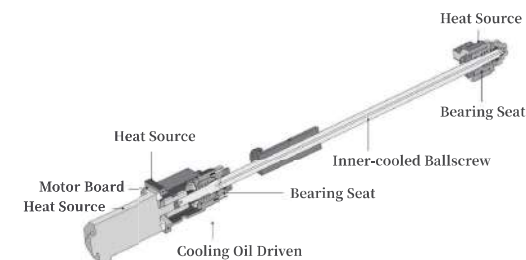
THK Linear Guideways & Ballscrews

- THK "made in Japan" linear guideways and ballscrews ensure high quality and precision.



Three Axes Cooling System

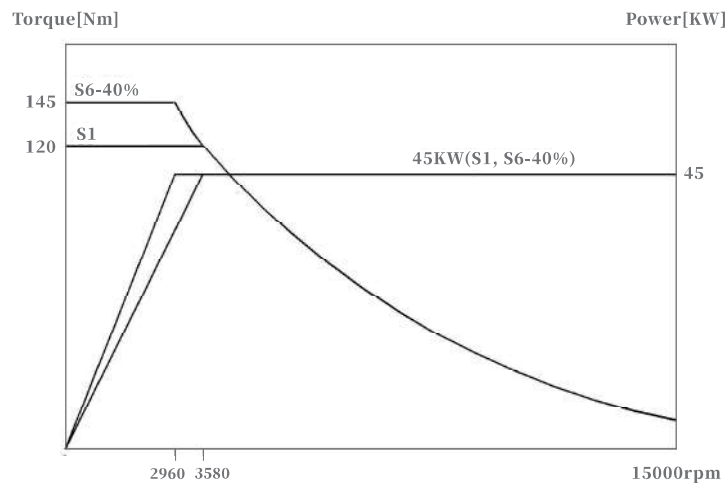
- Inner-cooled Ballscrew
- The head and tail cooling system, providing optimal control over thermal growth on the three axes.
- Motor-board equipped with cooling circuit
- Patented unique design M634822



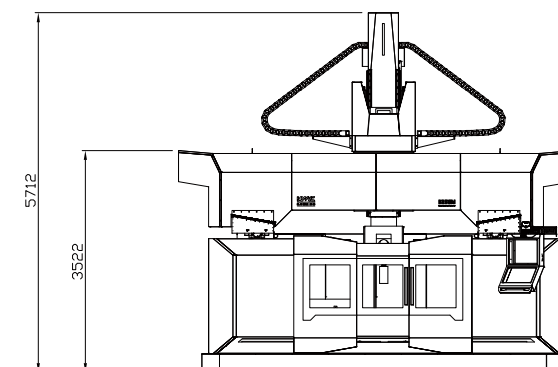
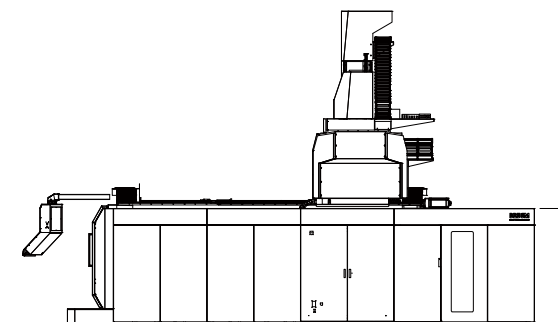
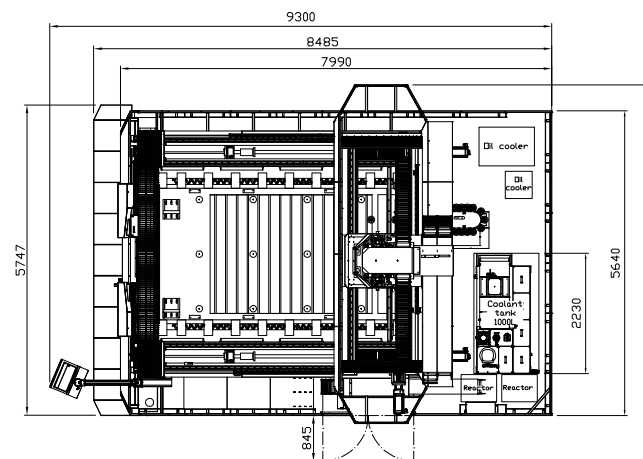
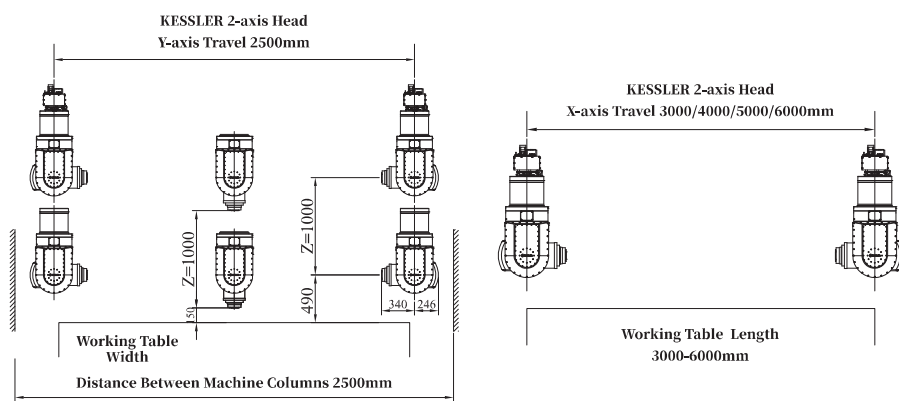


KMC-GM Series Torque Diagram

Spindle | KESSLER-SMS 080.40-681.520 (15000rpm)



KMC-GM Series Machining Range





KMC-GN Series

Gantry Neptunus

The icy water breaks the calm, it is a cold weapon skimming the ocean, and all the subjects decomposition in the storm in which he arrived.

KMC-GN Series

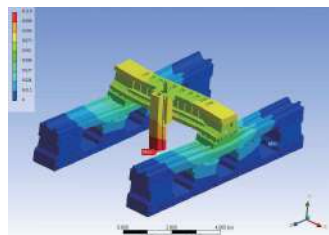
- 1 Gantry type construction with fixed table and traveling crossbeam.
- 2 High-rigidity structure, most suitable for processing ultra-long and oversized workpieces, with extremely stable machining accuracy.
- 3 Extra-large three-axis travel
X-axis 4.5-14.5 meters
Y-axis 2.5/3.1/3.7 meters
Z-axis 1.2 meters
- 4 25% floor space saving compared to conventional machining center.
- 5 Maximum load capacity of fixed table up to 3000 kg/m.
- 6 X&Y-axis stepped design
- 7 Z-axis ballscrew head and tail integrated with saddle casting.
- 8 Standard 2-position AAC (Automatic Attachment head Changer)
- 9 Optional 3 to 4-position AAC



KMC-GN

[Neptunus]

Machine Main Features



X, Y-axis Transmitted Through Rack And Pinion Drive

- Torsional rigidity up to 504 Nm/arc min, and radial rigidity up to 675N/ μm .



Stable Column Structure

- Specially-designed separated column structure effectively combats structural deformation.
- Columns are reinforced with stiff ribs interior, providing resistance against bending and torsional stress.

Finite Element Analysis (FEA)



Steel Inserted Box Way And Link-chain Type Roller Bearings On Three Axes



Linear Scales on X&Y-axis

- The positioning accuracy is $\pm 0.01/4000\text{mm}$, maintaining the highest precision during long-term operations.

Eliminating Backlash Through Mechanical Preload

- Two reducers on which preload is created through two helical gears, fitted on their output shafts that engage with the rack.
- Eliminating backlash through mechanical preload on the rack and pinion transmission. With a pinion in the middle absorbing the rebound, making it nearly backlash free.



X&Y-axis Step Design

- The step difference between the upper and lower box ways on the Y-axis is 120mm, and the step difference between the X (U) axis is 70mm.



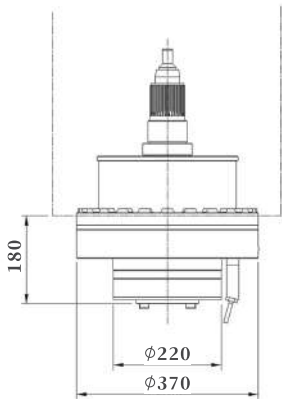
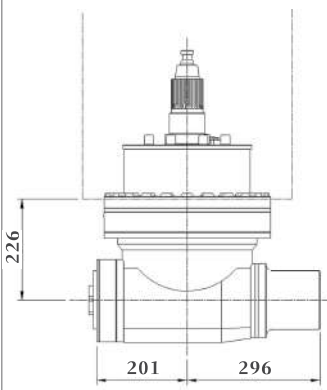


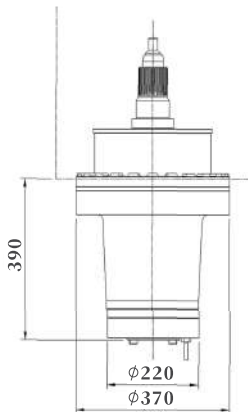
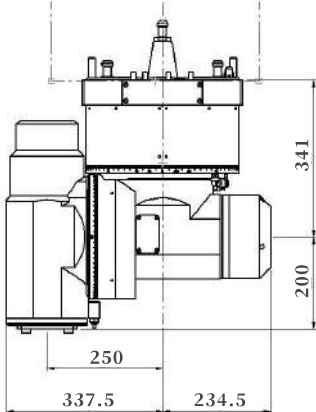
KMC-GN

[Neptunus]

Head Attachments Configuration

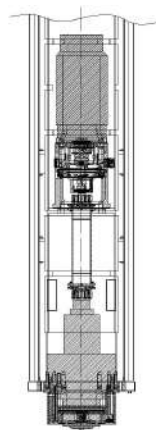


Item	Vertical Head	Horizontal Head
Appearance		
Max. speed	6000 / *8000 rpm	3500 rpm
Application	Powerful vertical cutting	Powerful horizontal cutting
Dimensional Drawing	 180 φ220 φ370	 226 201 296

Item	*Extension Head	*Automatic Indexing Universal Head
Appearance		
Max. speed	4000 rpm	3500 rpm
Application	For narrow processing with deep cutting	For tilting surface cutting
Dimensional Drawing	 390 φ220 φ370	 341 200 250 337.5 234.5
Notes	* Optional Accessory	



Dual Speed Gear Drive Spindle Head With In-line Design

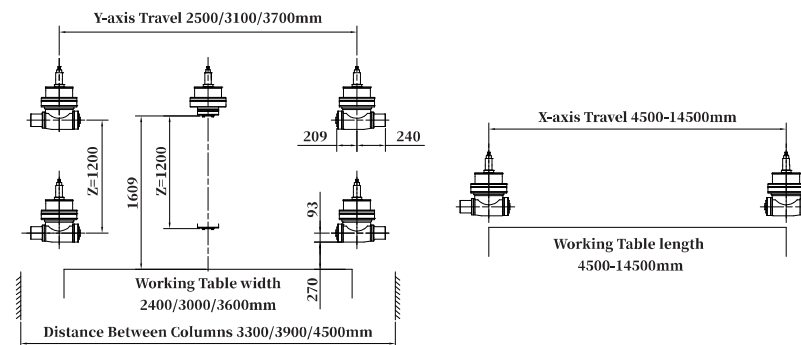


- Thermal symmetrical design of dual speed gear drive spindle head, with the spindle and motor on the head centerline.
- Coolant flows straight through the motor, reducer, spindle, and attached head (optional).
- 26KW (35HP) high-power spindle motor drives the spindle through a reducer, with a spindle speed of 6000rpm and a maximum spindle torque of 670Nm (68kg-m). It can also perform heavy cutting at a low speed of 375rpm.
- The spindle can perform vertically and horizontally through automatic indexing head.

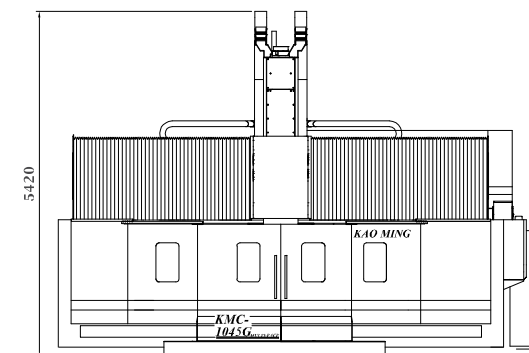
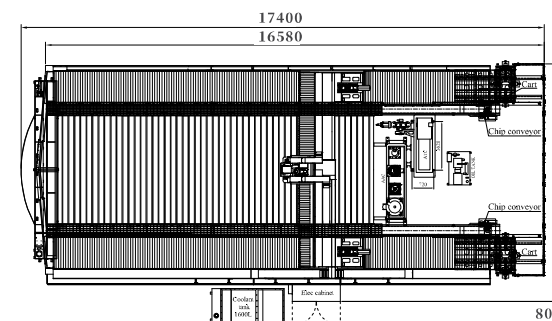
Technical Drawings & Diagrams



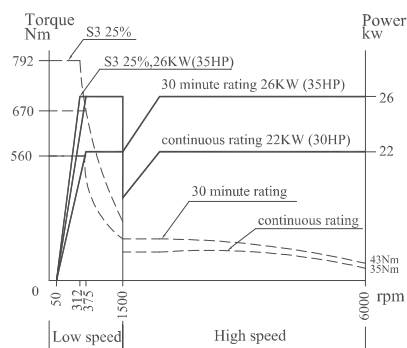
KMC-GN Series Machining Range



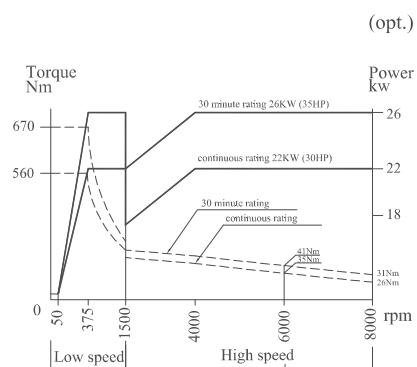
KMC-GN Series Floor Space Drawing



FANUC Spindle Motor: 22/26KW(35HP)6000RPM



6000/8000RPM(C.T.S)





Technical Specification



Item	Model		325 GM	425 GM	525GM	625GM
Travel	Distance between columns		2500			
	X-axis	Vertical	3000	4000	5000	6000
		Horizontal				
	X-axis	Vertical	2500			
		Horizontal				
	Z-axis (up and down) (mm)		1000			
	Distance from vertical spindle nose to table surface (mm)		150-1150			
Distance from horizontal spindle center to table surface(mm)		490-1490				
Table	Working table surface (mm)		3000*2000	4000*2000	5000*2000	6000*2000
	Max. load capacity (kg/m)		3000			
	T-slot (mm)		28H8x200			
Spindle	Spindle taper		HSKA100			
	Spindle speed		15000			
	Spindle speed conversion		Built-in style			
	Spindle motor		120Nm/45kW			
	Max. spindle torque (Nm)		120 Nm			
Feed	Rapid traverse rate (m/min)		30/30/24	30/30/24	24/30/24	20/30/24
	Cutting feed (m/min)		1~10000 mm/min			
Tool Magazine System	Tool magazine capacity		32(*64)			
	Tool shank shape		HSKA100(*A63)			
	Pull stud					
	Max. tool diameter (mm)		100(130)			
	Max. tool length(mm)		300			
	Max. tool weight (kg)		7kg (total weight of full blade is less than 160kg)			
Electricity	Electrical power supply KVA		90			
Air Pressure	Compressed air supply (kg/cm²)		5-7			
Accuracy	Positioning accuracy (mm)		±0.004/300, ±0.008/full process			
	Repeatability		±0.002			
Mechanical Dimension	Floor space		6500x9300	6500x10300	6500x11300	6500x12300
	Machine height (mm)		5800			
	Net weight of machine (kg)		50000	60000	70000	80000
Controller			HEIDENHAIN			



GM & GN

[Mercury] [Neptunus]

Item	Model		433 GN	439 GN	445 GN	633 GN	639 GN	645 GN	833 GN	839 GN	845 GN
Travel	Distance between columns		3300	3900	4500	3300	3900	4500	3300	3900	4500
	X-axis (forth and back) (mm)		4500			6500			8500		
	Y-axis (left and right) (mm)		2500	3100	3700	2500	3100	3700	2500	3100	3700
	Z-axis (up and down) (mm)		1200			1200			1200		
	Distance from vertical spindle nose to table surface (mm)		409-1609								
	Distance from horizontal spindle center to table surface (mm)		363-1563								
Table	Working table surface (mm)	X(mm)	4500			6500			8500		
		Y(mm)	2400	3000	3600	2400	3000	3600	2400	3000	3600
	Max. load capacity (kg/m²)		3000								
	T-slot (mm)		28H8*200								
Spindle	Spindle taper		ISO50								
	Spindle speed (rpm) (vertical)		6000 (*8000)								
	Spindle speed (rpm) (horizontal)		3500								
	No. of spindle speed		Two-speed gear shifting								
	Spindle motor (continuous/30 minutes)		AC 22/26kw (30/35HP)								
	Max. spindle torque (Nm)		670								
Feed Rate	Rapid traverse rate (m/min)		30/30/24								
	Cutting feed (m/min)		8								
Automatic Tool Changing System (ATC)(V/H)	Tool magazine capacity		30(*40, *60) (Distance between columns of 3.3 meters, not suitable for 40 tools)								
	Tool shank shape		MAS403-BT50								
	Pull stud		MAS-P50T-1								
	Max. tool diameter (mm)		Ø130 ((Ø200))								
	Max. tool length(mm)		350								
	Max. tool weight (kg)		20								
Electricity	Electrical power supply KVA		90								
Air Pressure	Compressed air supply (kg/cm²)		5-7								
Accuracy	Positioning accuracy (mm)		±0.01/4000								
	Repeatability		±0.005								
Horizontal Head	Indexing		90° x 4 (*5° x 72)								
	Indexing Repeatability (sec)		±3								
Mechanical Dimension	Floor space(mm)		9600			11600			13600		
			6440	7040	7640	6440	7040	7640	6440	7040	7640
	Machine height (mm)		5420								
	Net weight of machine (kg)		35000	41000	48000	56000	65000	73000	80000	89000	97000
Controller			FANUC,*HEIDENHAIN,*SEIMENS								

Technical Specification



Item	Model		1033 GN	1039 GN	1045 GN	1233 GN	1239 GN	1245 GN	1433 GN	1439 GN	1445 GN
Travel	Distance between columns		3300	3900	4500	3300	3900	4500	3300	3900	4500
	X-axis (forth and back) (mm)		10500			12500			14500		
	Y-axis (left and right) (mm)		2500	3100	3700	2500	3100	3700	2500	3100	3700
	Z-axis (up and down) (mm)		1200			1200			1200		
	Distance from vertical spindle nose to table surface (mm)		409-1609								
	Distance from horizontal spindle center to table surface (mm)		363-1563								
Table	Working table surface (mm)	X(mm)	10500			12500			14500		
		Y(mm)	2400	3000	3600	2400	3000	3600	2400	3000	3600
	Max. load capacity (kg/m²)		3000								
	T-slot (mm)		28H8*200								
Spindle	Spindle taper		ISO50								
	Spindle speed (rpm) (vertical)		6000 (*8000)								
	Spindle speed (rpm) (horizontal)		3500								
	No. of spindle speed		Two-speed gear shifting								
	Spindle motor (continuous/30 minutes)		AC 22/26kw (30/35HP)								
	Max. spindle torque (Nm)		670								
Feed Rate	Rapid traverse rate (m/min)		30/30/24								
	Cutting feed (m/min)		8								
Automatic Tool Changing System (ATC)(V/H)	Tool magazine capacity		30(*40, *60) (Distance between columns of 3.3 meters, not suitable for 40 tools)								
	Tool shank shape		MAS403-BT50								
	Pull stud		MAS-P50T-1								
	Max. tool diameter (mm)		Ø130 ((Ø200))								
	Max. tool length(mm)		350								
	Max. tool weight (kg)		20								
Electricity	Electrical power supply KVA		90								
Air Pressure	Compressed air supply (kg/cm²)		5-7								
Accuracy	Positioning accuracy (mm)		±0.01/4000								
	Repeatability		±0.005								
Horizontal Head	Indexing		90° x 4 (*5° x 72)								
	Indexing Repeatability (sec)		±3								
Mechanical Dimension	Floor space(mm)		15600			17600			19600		
			6440	7040	7640	6440	7040	7640	6440	7040	7640
	Machine height (mm)		5420								
	Net weight of machine (kg)		105000	114000	123000	132000	142000	153000	164000	176000	187000
Controller			FANUC, *HEIDENHAIN, *SEIMENS								



GM & GN

[Mercury] [Neptunus]

GN Standard accessories

GN | GM Standard accessories

GN | GM Special accessories

30/40/60 tool magazine

The tool magazine is driven by a hydraulic index motor.

The rotation of the tool changing arm is driven by a hydraulic swing motor, which provides a fast, accurate, and stable tool changing motion.

(Distance between columns of 3.3 meters is not suitable for 40 tools)



2 -position AAC compartment



Automatic touch probe centering system



Automatic tool length measuring system



限GM



KESSLER 2-axis head

Link-type chip conveyor



NC rotary table



3 to 4 -position AAC compartment

Standard & Optional Accessories



Category	No.	Accessory name	GM	GN
Standard accessories	1	Vertical and horizontal additional head	○	○
	2	Linear scale feedback system for X&Y-axis	○	○
	3	Coolant equipment	○	○
	4	Centralized automatic lubrication system	○	○
	5	Rigid tapping	○	○
	6	Splash guard	○	○
	7	Adjustment tools (one set)	○	○
	8	Operation and maintenance manual and electrical diagram (one set)	○	○
	9	Foundation bolts and horizontal adjustment bolts (one set)	○	○
	10	Working lights	○	○
	11	Spindle cooling device	○	○
	12	Air conditioning electrical cabinet	○	○
	13	Surrounding warning lights	○	○
	14	Air blast	○	○
	15	Finished light	○	○
	16	Warning light of work completed	○	○
	17	Screw-type chip conveyor	○	○
	18	Transformer (excluding 220V power supply)	○	○
Optional accessories	1	Mist coolant unit	◎	◎
	2	Automatic tool length measuring system	◎	◎
	3	Automatic touch probe centering system	◎	◎
	4	Coolant through spindle system	◎	◎
	5	Link-type chip conveyor system	—	◎
	6	3 to 4-position AAC	—	◎
	7	NC rotary table	—	◎
	8	KESSLER 2-axis head	◎	—
Notes		○ Standard accessories	◎ Optional accessories	