



We lead the way by a new business model



UGSERIES

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Universal Gantry Type
5 axes Machining Center



WELE MECHATRONIC CO., LTD

UG550	UG800	AA65 Series RB Series	AA80 Series SB Series	AA90 Series LB Series	AQ Series MB Series	VQ Series HB Series	UG Series UB Series	UA Series MG Series	VTC Series MVB Series	MT series
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High Performance, High Quality High Speed, High Precision

Apply to Die & Mold, general precision parts, High Tech Industries, Aerospace, Automotive, Automation, Medical, Electronic, Communications, and so on.



Strictly Designed Product through Structure FEM analysis
Max. deformation value is only 0.0014 mm

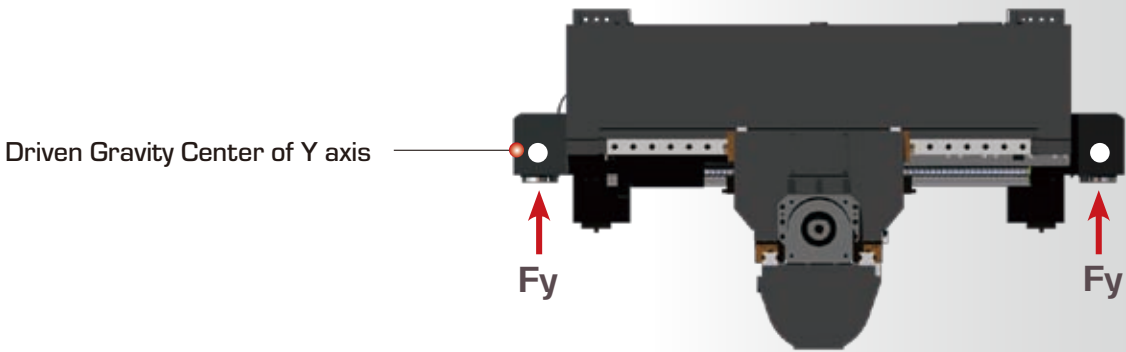
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Universal Gantry Type 5 axes Machining Center

Advanced mechanism design for the high end 5 axes structure. Overhead gantry type the latest construction driven by twin ball screws, and integrated with high precision Trunnion rotary table. Through FEM analysis and process control to approve its high performance.

Unique patent for Backlash eliminated system and Rotary axis brake system. Trunnion rotary table's accuracy and stability will be highly upgraded, and lasting large Cutting Torque. The Trunnion rotary table is own-developed and manufactured with Core Technology, ensure machine Quality and Reliability, including :

- (1) High rigid & precision large Bearing
- (2) Backlash eliminated system (patent pended)
- (3) Rotary axis brake system (patent pended)
- (4) Unit structure.



High Rigidity in Moving Gantry Structure

Linear Guide Way Use Roller Bearing in X/Y/Z axes

Cutting Feedrate 10m/min

Tool Exchange When Trunion In Any Angle

Max Rotating Angle in A Axis: +30°/-120°

Tool Magazine For 30 Tools (Std.)
60 Tools (Opt.)

Precisely Synchronize Rapid Driving in Y Axis

Rapid Feedrate 48 m/min at X/Y/Z

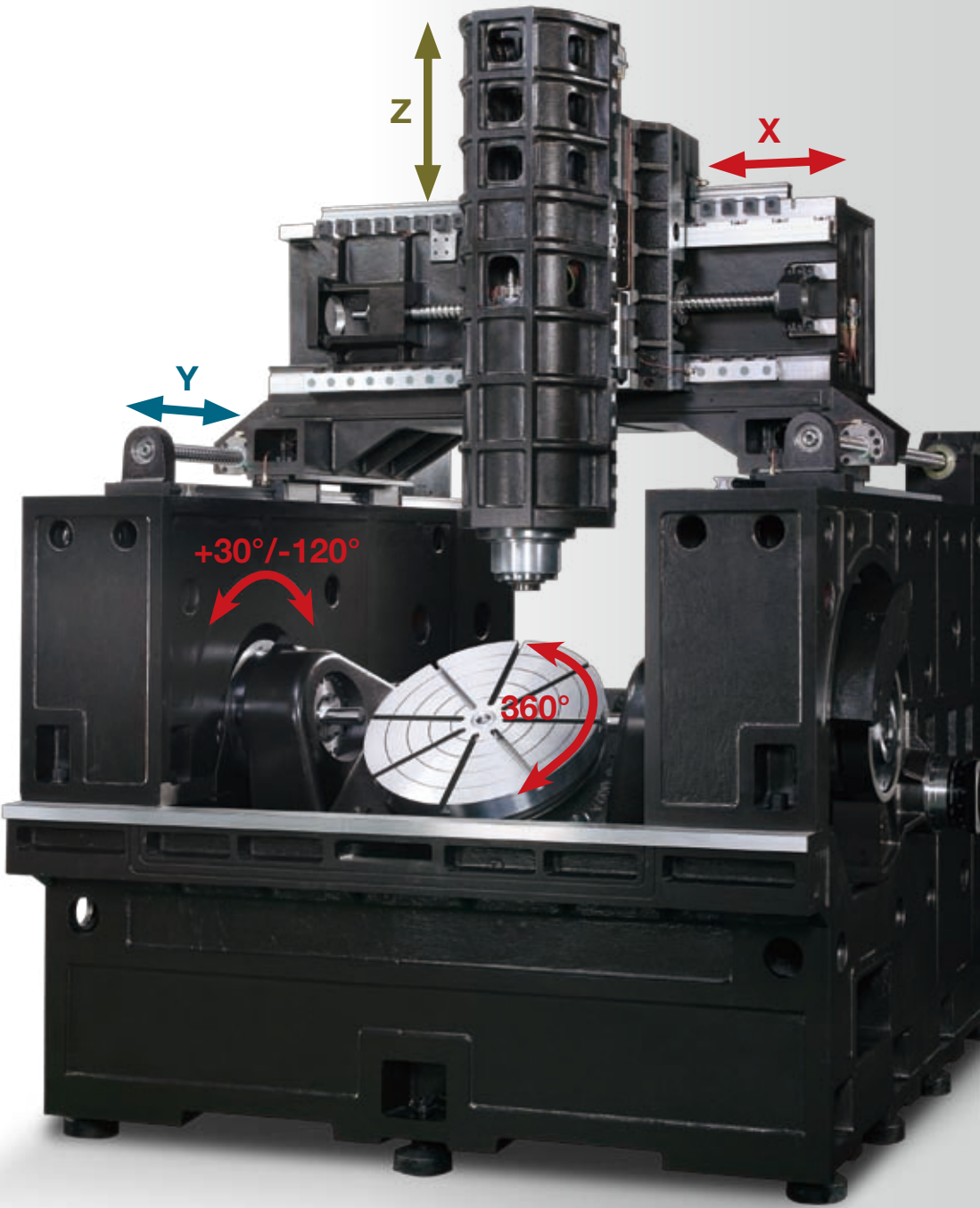
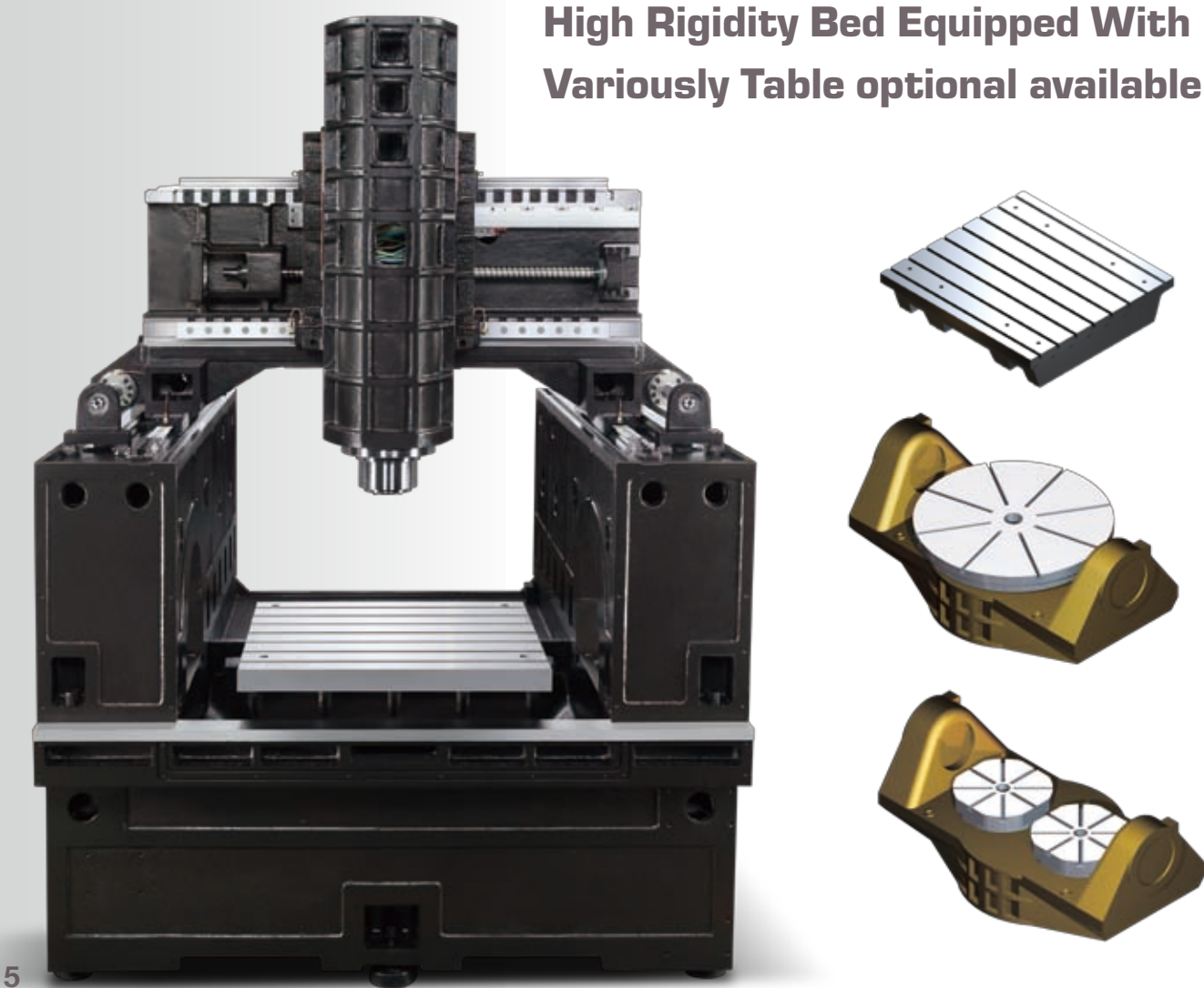
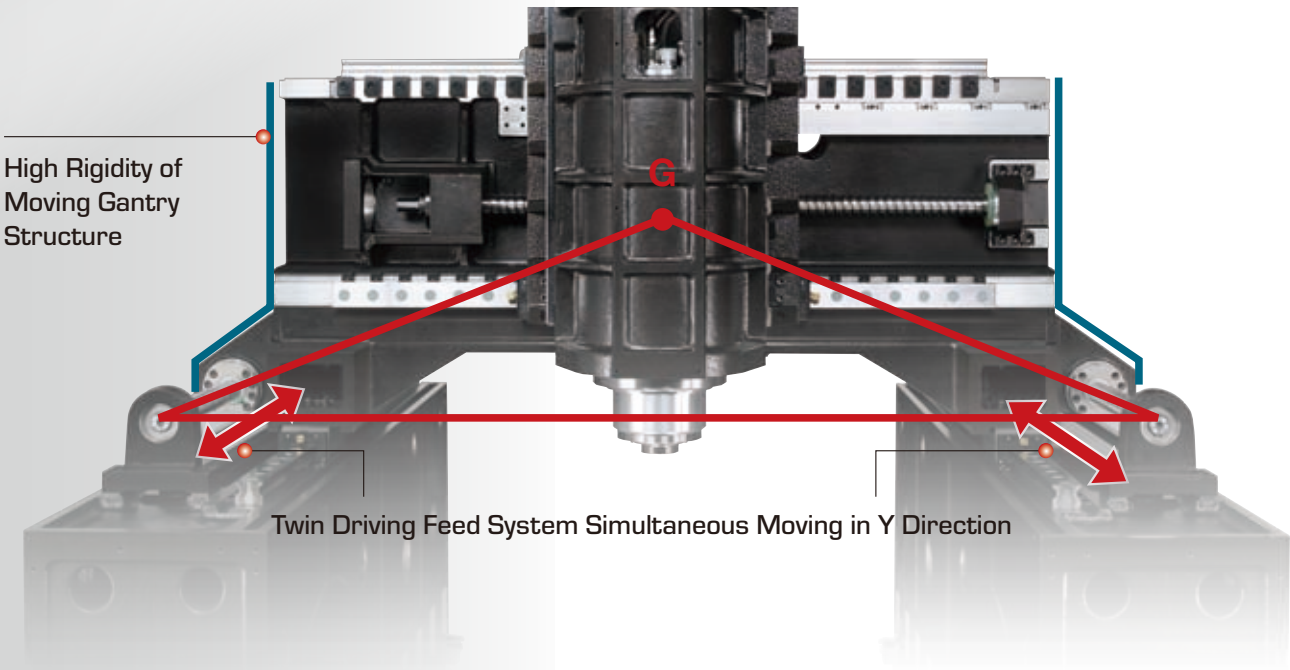
High Rigidity and Solid Design in Y Column

Precisely and Smoothly Driving in A axis, Max. Torque 6,000 Nm

Special Positioning and Lock Design in C axis, Max Torque 2,000 Nm

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Driven Gravity Center of Y Axis

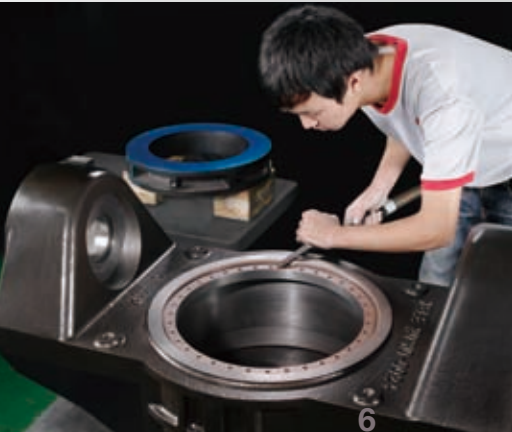
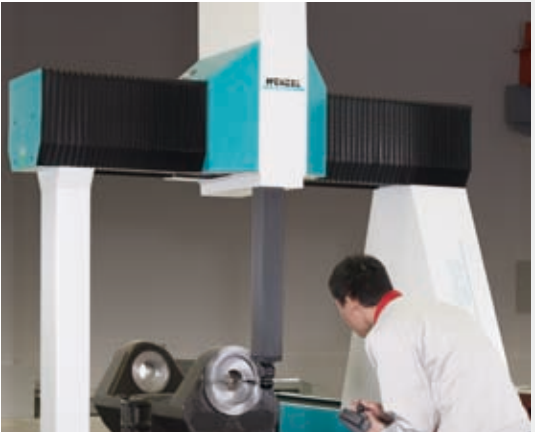
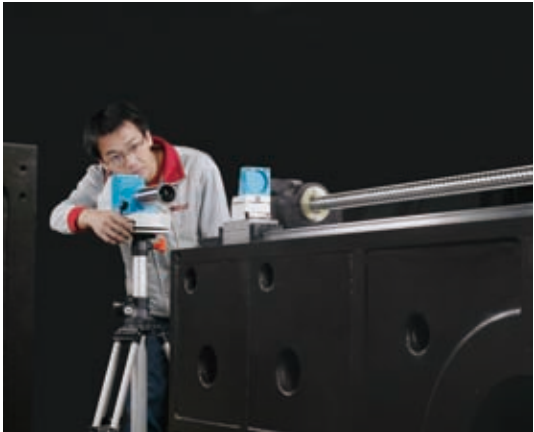


	X	Y	Z
UG550	550	700	500
UG800	800	950	650

German Standard
VDI 3441 Certificated

Quality assurance and Reliability is
our first Priority

Accuracy Comes from our
core Scraping Skill Technology

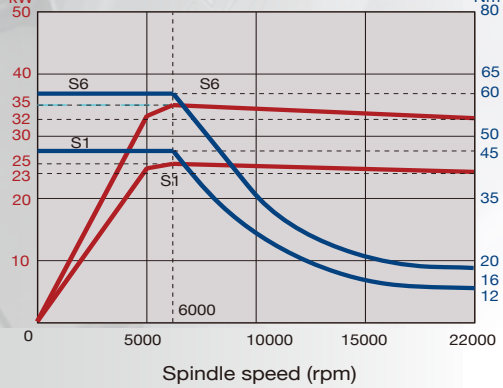


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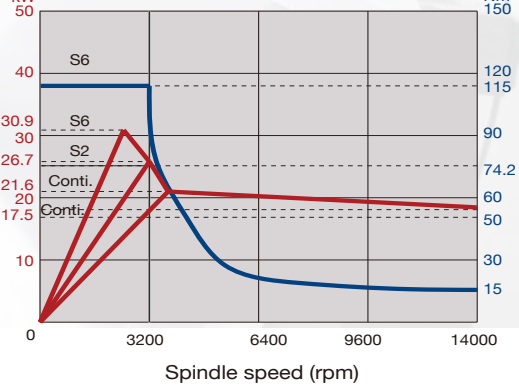
Spindle Configuration



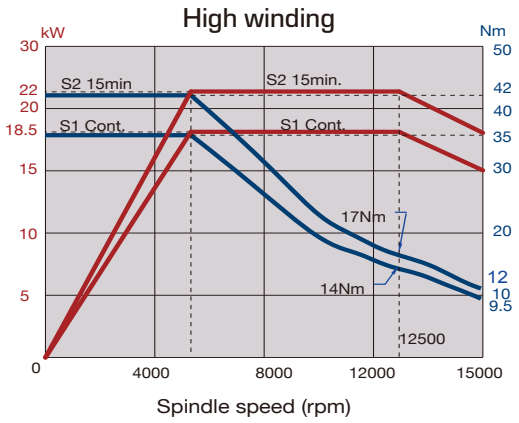
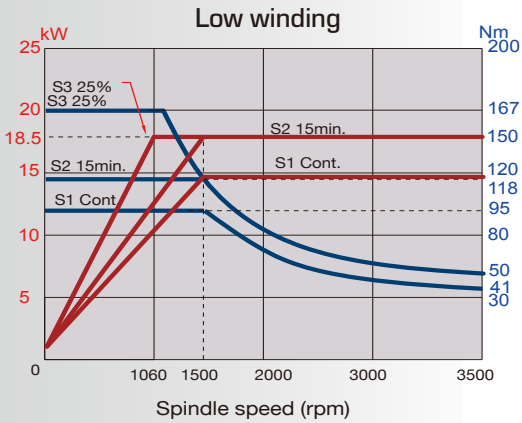
22,000rpm Built-in Spindle (OPT)



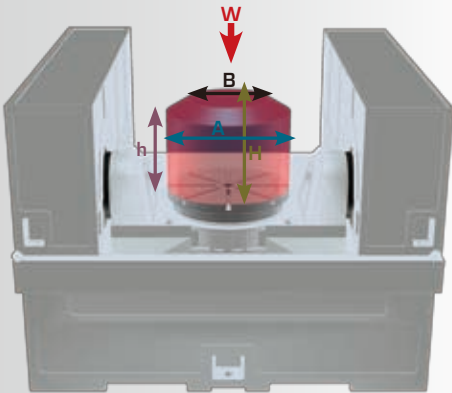
14,000rpm Built-in Spindle(STD)
(Heidenhain controller use only)



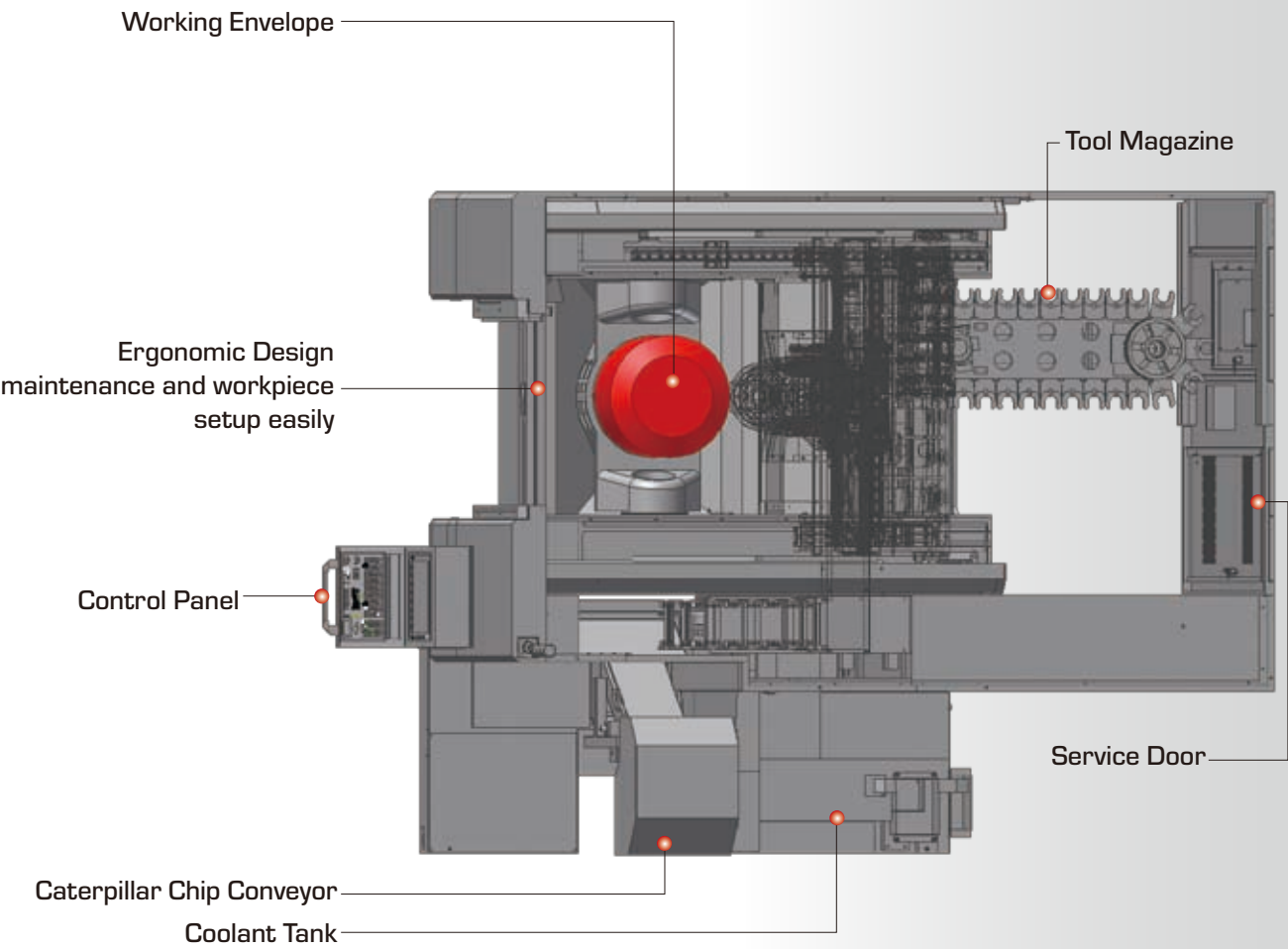
15,000rpm built-in Spindle (FANUC controller use only)



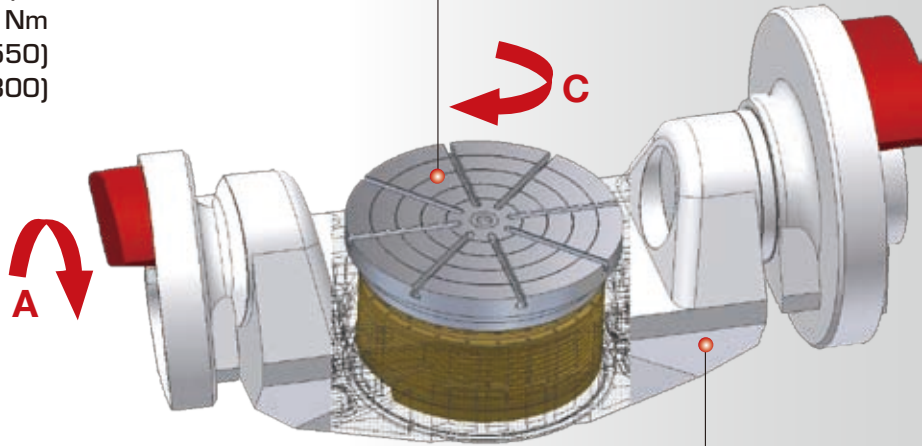
Working Envelope and Table Loading Capacity



Type	A (mm)	B (mm)	H (mm)	h (mm)	W (kg)
UG550	ø500	ø550	400	345	500
UG800	ø650	ø800	500	370	1,000



C axis Driven by DD Motor,
Continuously Rotating Speed: 100 rpm
Max. Torque: 2,300 Nm
Table Loading Capacity: 500 kg (UG550)
1,000 kg (UG800)



A axis
Max. Torque: 6,000 Nm
Backlash Eliminated Design

UG550	UG800	AA65 Series RB Series	AA80 Series SB Series	AA90 Series LB Series	AQ Series MB Series	VQ Series HB Series	UG Series UB Series	UA Series MG Series	VTC Series MVB Series	MT series
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The Working Zone Interference is Eliminated

When automatic tool changing, Trunion Table could be at any angle and never Interferenced by the spindle. It will be saving Idle Time while tool change In Progress.

Saving Space

Moving Gantry type design makes machine more compact and saving space requirement for more than 20%



Easy Loading/Unloading

Moveable Roof Enclosure Guarding design concept gives the operator not only prevent any sputtering by the high pressure through Spindle Coolant, but also positioning and removing the workpiece easily by Overhead Loading/Unloading Equipment.



User Friendly Design

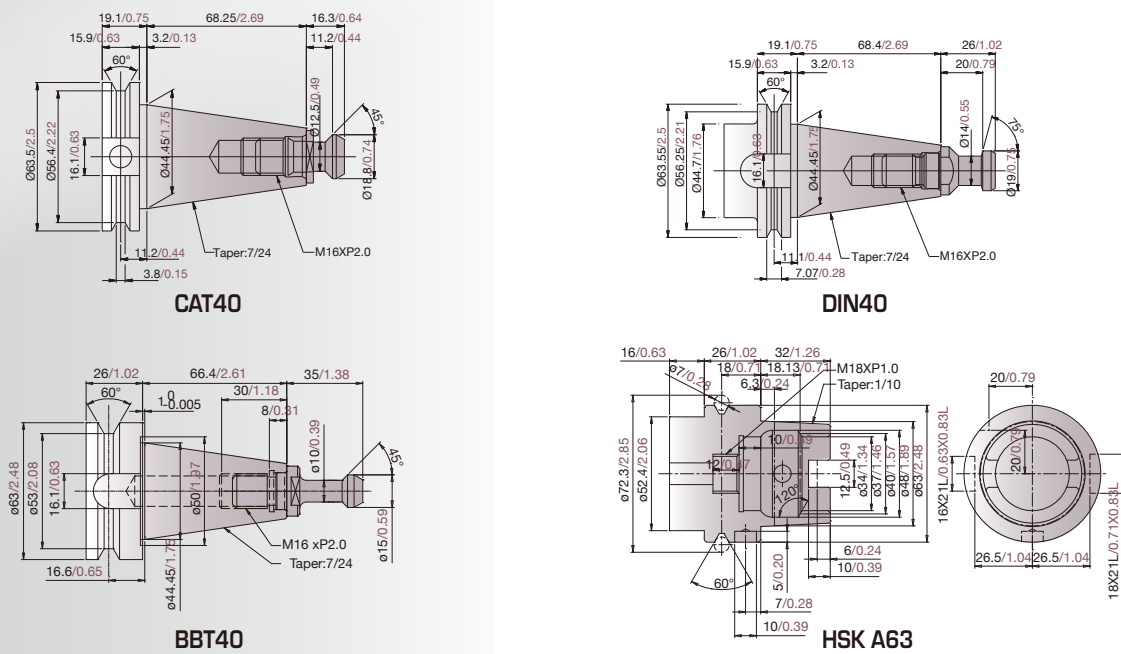
"Easy to approach the working zone" will save time for workpiece setup and manual tool change, furthermore increasing machine efficiency.



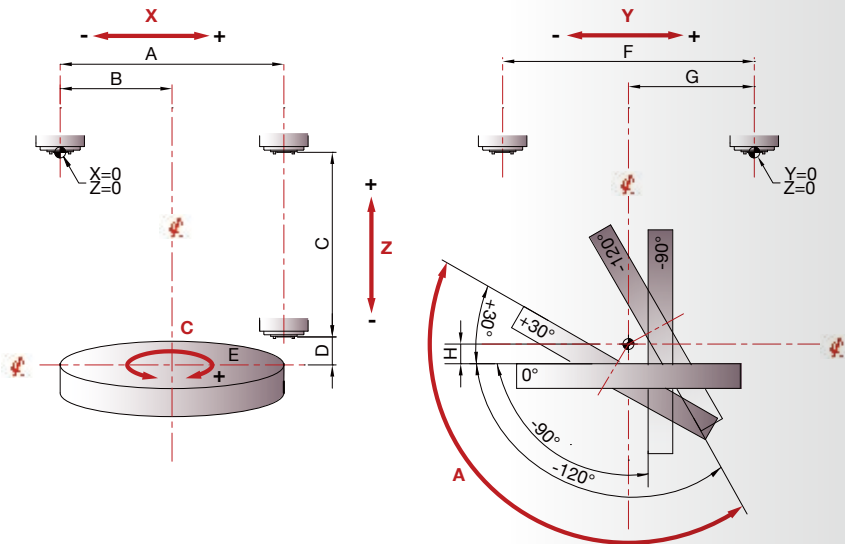
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Tool Shank and Pull Stud Dimension

Unit : mm(inch)



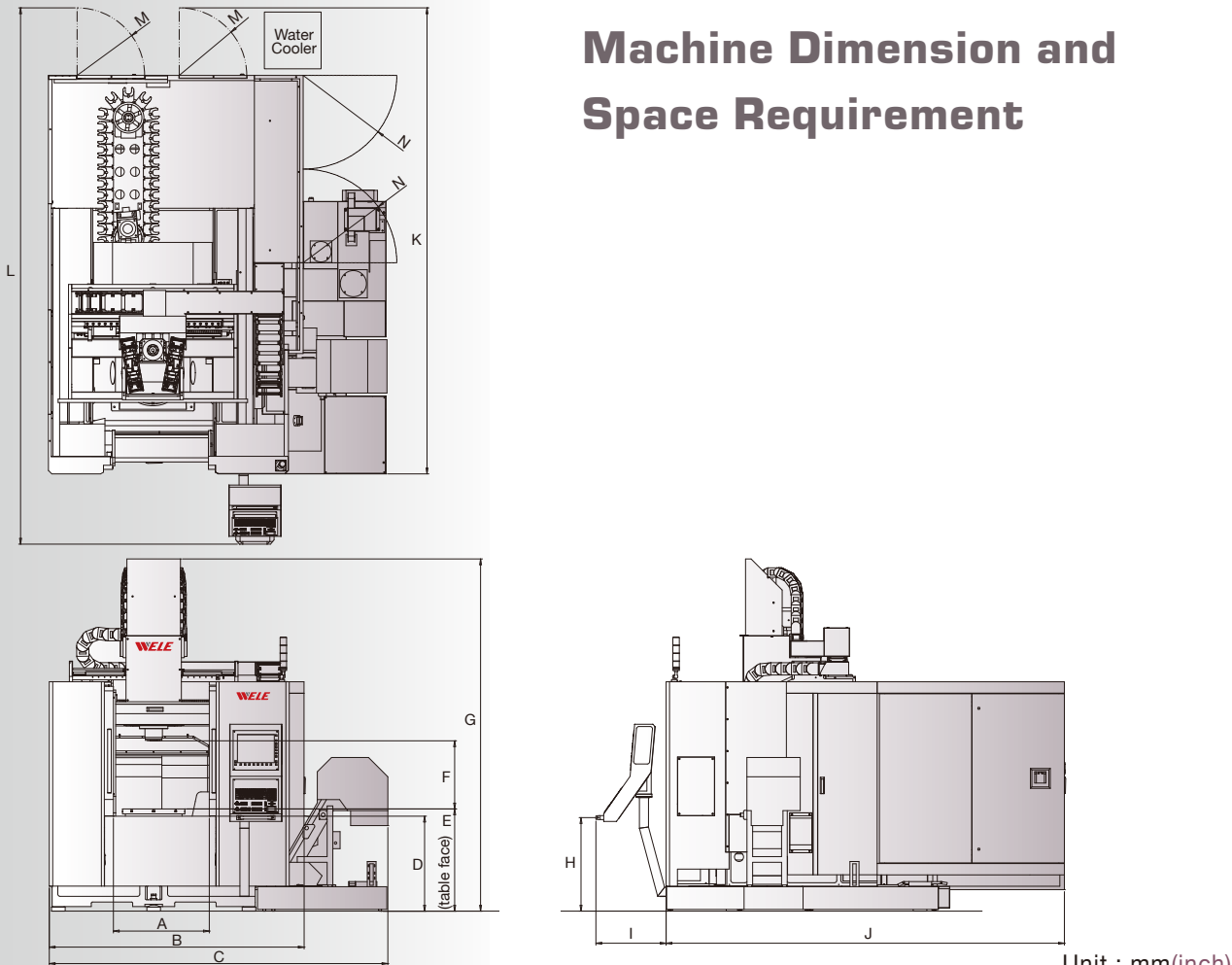
Inside of working Area Dimensions



Unit : mm(inch)

	A	B	C	D	E	F	G	H	I	J
UG550	550 (21.7)	275 (10.8)	500 (19.7)	100 (3.9)	360°	700 (27.6)	300 (11.8)	0	+30°	-120°
UG800	800 (31.5)	400 (15.7)	650 (25.6)	0	360°	950 (37.4)	425 (16.7)	50 (2)	+30°	-120°

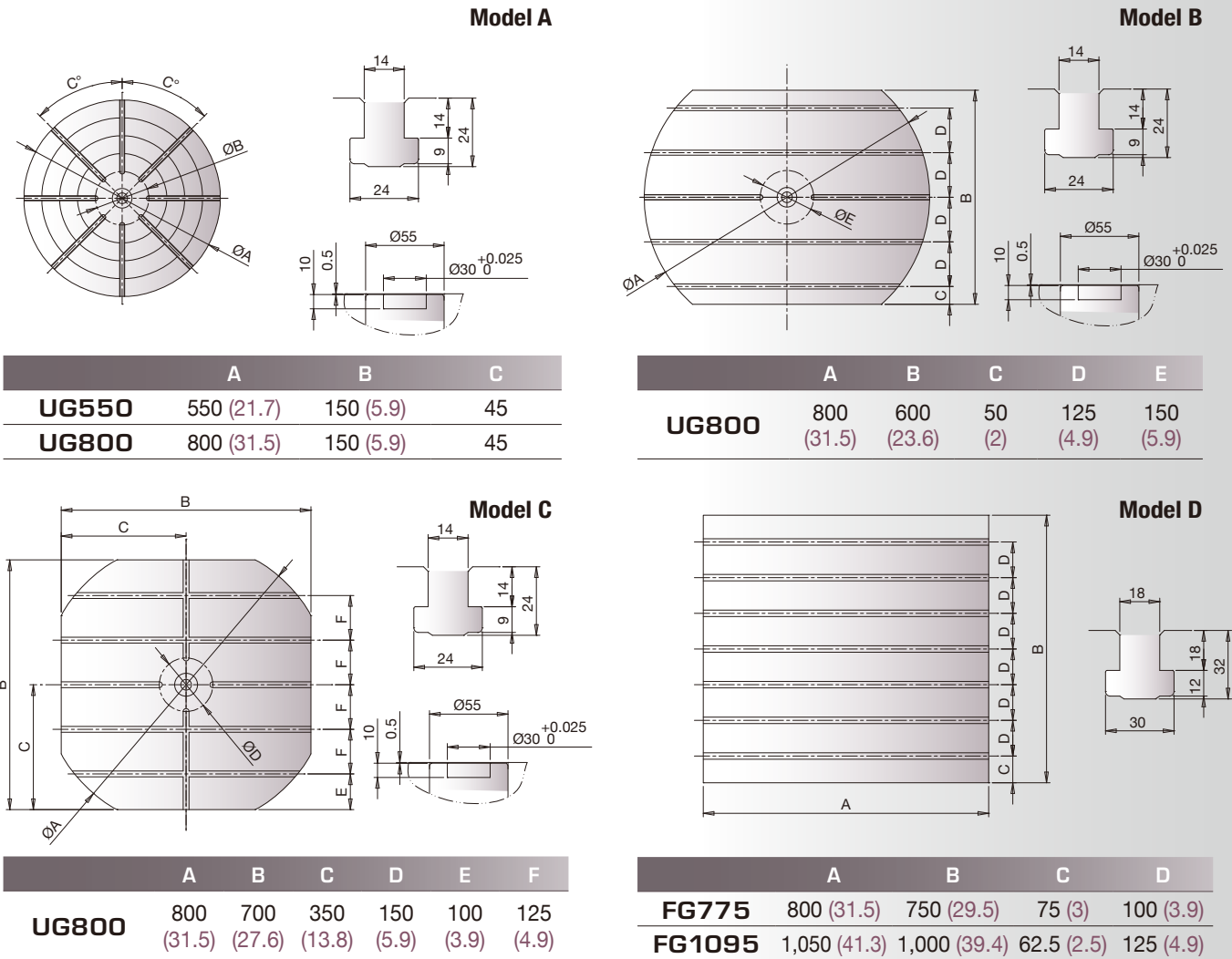
Machine Dimension and Space Requirement



Unit : mm(inch)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
UG550	845 (33.3)	2,246 (88.4)	2,983 (117.4)	836 (32.9)	900 (35.4)	600 (23.6)	3,102 (122.1)	824 (32.4)	619 (24.4)	3,510 (138.2)	4,105 (161.6)	4,724 (186)	595 (23.4)	825 (32.5)	1,320 (52)
UG800	1,095 (43.1)	2,246 (88.4)	3,250 (128)	836 (32.9)	900 (35.4)	650 (25.6)	3,410 (134.3)	824 (32.4)	619 (24.4)	3,860 (152)	4,455 (175.4)	5,000 (196.9)	595 (23.4)	825 (32.5)	1,570 (61.8)

Table Dimensions



Technical Specifications

Specification / Model	Unit	UG550	UG800
Travel			
X travel (left & right)	mm (in)	550 (21.7)	800 (31.5)
Y travel (in & out)	mm (in)	700 (27.6)	950 (37.4)
Z travel (up & down)	mm (in)	500 (19.7)	650 (25.6)
A travel (along X axis to rotate)	degree	+30 / -120	+30 / -120
C travel (along Z axis to rotate)	degree	360	360
Distance from spindle nose to table center	mm (in)	100-600 (3.9-23.6)	0-650 (0-25.6)
Table			
Table diameter	mm (in)	550 (21.7)	800 (31.5)
Table for divide degree	degree	0.001	
Table load capacity	kg (lb)	500 (1,100)	1000 (2,200)
Table T slot size (W x degree)	mm (in)	14 x 45 (0.55x45)	
A axis output torque (rate/ brake/ max.)	Nm (ft-lb)	1,469/5,000/5,304 (1,082/3,682/3,906)	1,956/5,000/7,680 (1,443/3,690/5,655)
C axis output torque with DD motor (rate/ brake/ max.)	Nm (ft-lb)	1,260/1,800/2,330 (930/1,328/1,719)	1,800/3,500/3,320 (1,328/2,580/2,450)
Spindle			
Spindle motor STD(cont./30 min.)	kW (HP)	21.6/30.9 (28./41.4)	
Spindle motor OPT(cont./30 min.)	kW (HP)	25/35 (33.5/47)	
Spindle speed (STD / OPT)	rpm	NEO 14,000/HDH, 15,000/FANUC (STD) Swiss TDM 22,000 (OPT)	
Spindle output torques(Max.)	Nm (ft-lb)	115(84.8)/HDH, 167(123.1)/FANUC (STD) 60(44.2) (OPT)	
Spindle taper (STD / OPT)		#40 / BBT/ CAT/ DIN/ HSK A63 (STD) #40 / HSK A63 (OPT)	
Spindle clamping force (STD/OPT)	N (lbf)	9,000/4,300 (2,023/967)	
Spindle bearing diameter	mm (in)	70 (2.75) (STD) 60 (2.36) (OPT)	
Feedrate			
Rapid traverse rate X axis	mm(in)/min	48,000 (1,889.8)	
Rapid traverse rate Y, Z axes	mm(in)/min	48,000 (1,889.8)	
Rapid traverse rate A axis	rpm	25	
Rapid traverse rate C axis	rpm	100	
Cutting feedrate (max)	mm(in)/min	1-10,000 (0.04-393.7)	
Tool Magazine			
Tool magazine capacity	pcs	30 (60 OPT)	
Max. tool diameter / adjacent pocket empty	mm (in)	90/130 (3.54/5.12)	
Max. tool length (from guage line)	mm (in)	300 (11.8)	
Max. tool weight	kg (lb)	8 (17.6)	
Tool change time (Tool to Tool),Arm type	sec	6	
Accuracy			
Positioning accuracy (JIS 6338)	mm (in)	± 0.01 (0.0004) / full travel	
Positioning accuracy (VDI/DGQ 3441)	mm (in)	P 0.020 (0.0008)	
Repeatability (JIS 6338)	mm (in)	± 0.003 (0.0001)	
Repeatability (VDI/DGQ 3441)	mm (in)	Ps 0.015 (0.0006)	
Indexing axial positioning accuracy	degree	± 0.002	
Indexing axial repeatability	degree	± 0.0015	
Space Requirement & Weight			
Machine length	mm (in)	4,050 (159.4)	5,000 (196.9)
Machine width	mm (in)	3,000 (118.1)	3,300 (129.9)
Machine height	mm (in)	3,100 (122)	3,400 (133.8)
Machine weight	kg (lb)	11,000 (24,200)	15,000 (33,000)

*Product specifications and accessories are subject to change without notice.

Standard and Optional accessories

● : Standard ○ : Option

Specification / Model	UG550	UG800
*BBT40 spindle taper	●	●
*CAT40 spindle taper	○	○
*DIN40 spindle taper	○	○
*HSK A63 spindle taper	○	○
*14,000 rpm built-in spindle (28/41HP) #40, NEO	●	●
*15,000 rpm built-in spindle (25/30 HP) #40, FANUC	○	○
*22,000 rpm built-in spindle (33/47HP) #40, TDM	○	○
*Machining air blast system	●	●
*Spindle temperature control system	●	●
*Linear scale feedback system for 3 axes (Heidenhain)	●	●
*A & C axis rotary encoder (Heidenhain)	●	●
*Centralized automatic lubricating system	●	●
*Roof enclosure guarding system	●	●
*Flood Coolant system (Pump & Tank)	●	●
*Recycling lubricating oil collector for 3 axes	●	●
*Caterpillar Type chip conveyor	●	●
*Scraper type chip conveyor	○	○
*A & C axis hydraulic clamping	●	●
*30 capacity of umbrella type tool magazine (Tool holder #40)	●	●
*60 capacity of arm type tool magazine (Tool holder #40)	○	○
*Rigid tapping	●	●
*Switch for manual tool clamping	●	●
*Remote handwheel control	●	●
*Work light	●	●
*Operation cycle finish and alarm lights	●	●
*RS232 interface	●	●
*Spray hose for chip wash down (with air, water gun)	●	●
*Foundation bolt kit	●	●
*Machine manuals	●	●
*Coolant through the spindle (Form A)	○	○
*Spindle thermal compensation	○	○
*Oil skimmer	○	○
*Automatic tool length measurement (Blum)	○	○
*Automatic workpiece measuring system (Blum or Renishaw)	○	○
*4th axis interface prepared (Only for non-Trunion table)	○	○
*Air-conditioned electronic cabinet	●	●
*Heidenhain iTNC 530 controller	●	●
*Fanuc 31iM-A5	○	○

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