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Universal Gantry Type
5 axes Machining Center

UG SERIES



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WELE MECHATRONIC CO., LTD

UG800

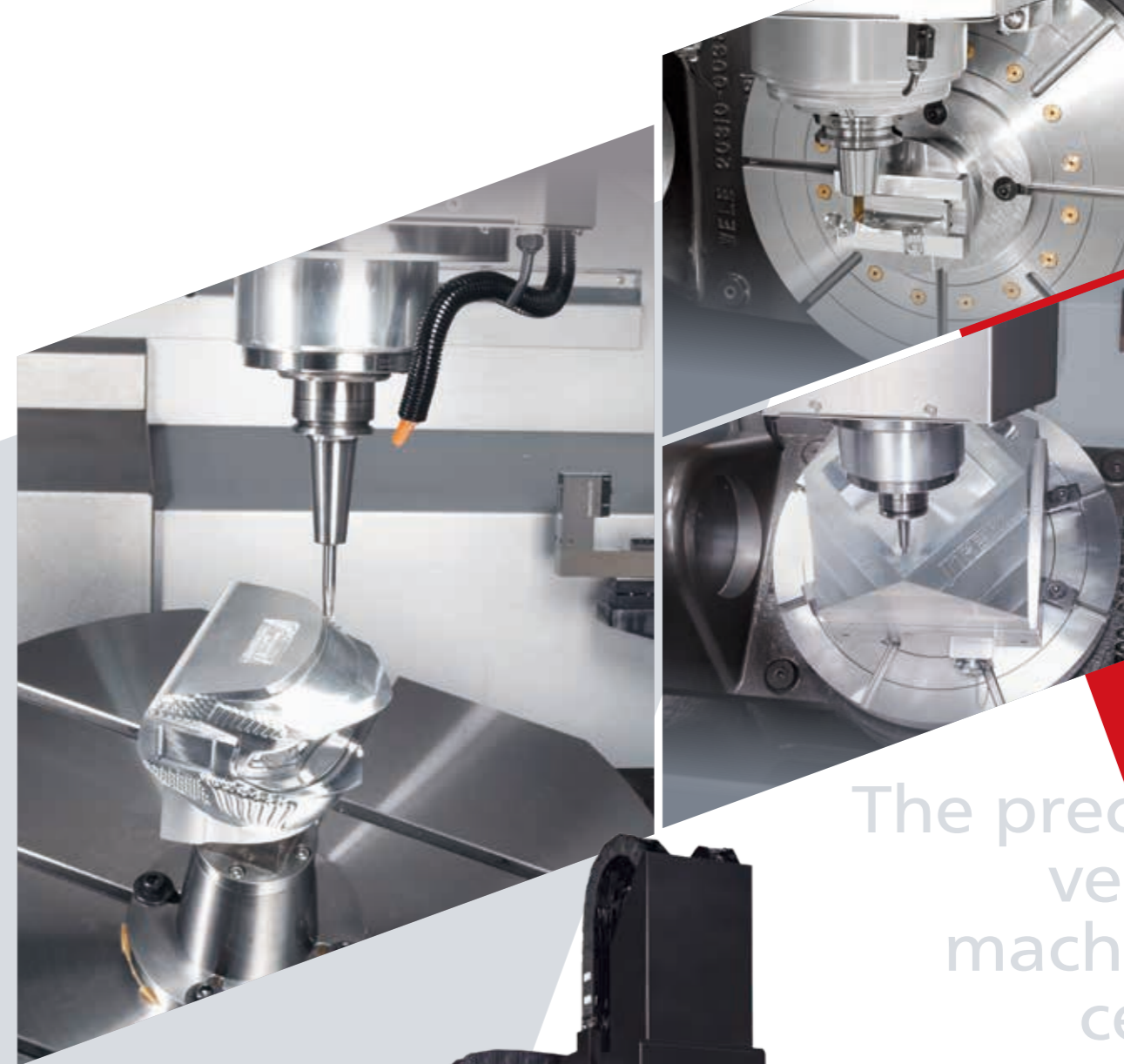
Universal Gantry Type 5 axes Machining Center

Advanced mechanism design for the high end 5 axes structure. Overhead gantry type the latest construction driven by twin ballscrews , 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)
- (3) Rotary axis brake system (patent)
- (4) Unit structure.



The precision vertical machining center

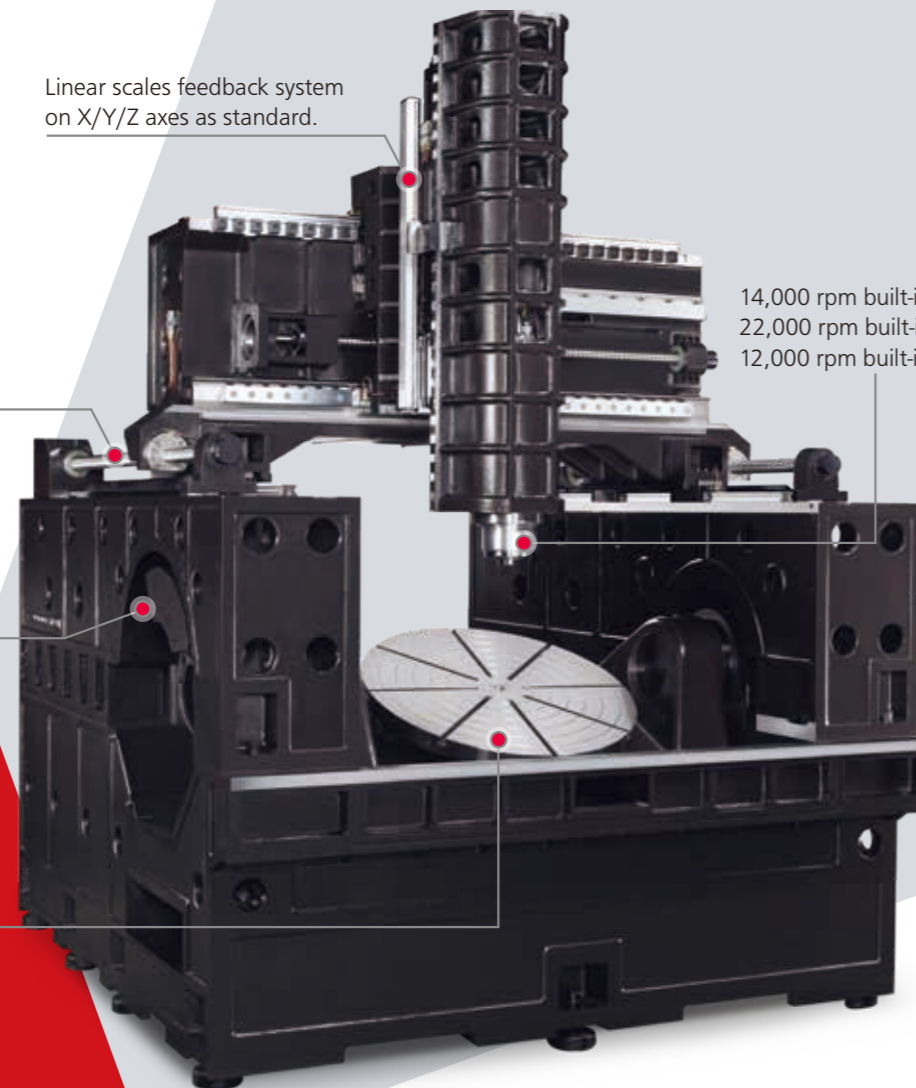
Linear scales feedback system on X/Y/Z axes as standard.

14,000 rpm built-in spindle (STD) .
22,000 rpm built-in spindle (OPT).
12,000 rpm built-in spindle (OPT).

Rapid federate: 40m/min at X/Y/Z axes

A axis torque (Rate/Max.) has 1965Nm /6528Nm. Providing the brake torque is 5000Nm

C axis torque (Rate/Max.) has 1800Nm /3320Nm. Providing the brake torque is 3300Nm

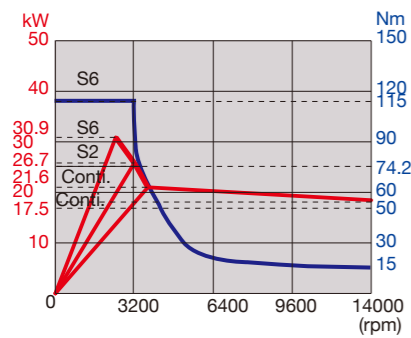


● Above photo as the UG800 main structure.

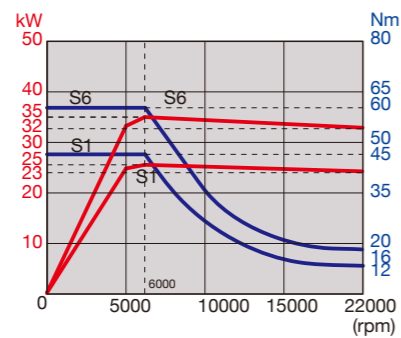


● Above photo as the UG800 machine with its standard and optional accessories.

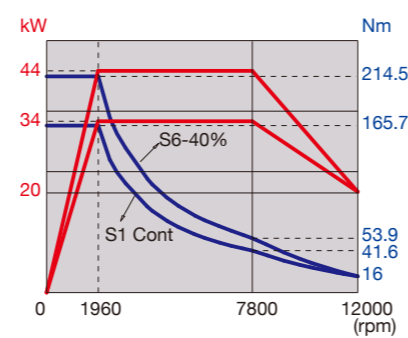
Spindle Output Torque Chart



#40/HSKA63,
14,000rpm built-in spindle (STD)



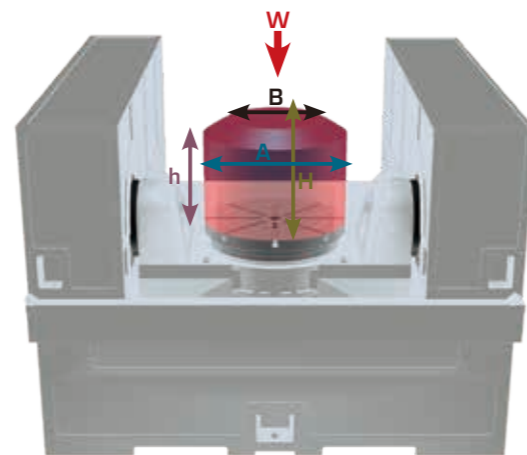
#40/HSKA63,
22,000rpm built-in spindle (OPT)



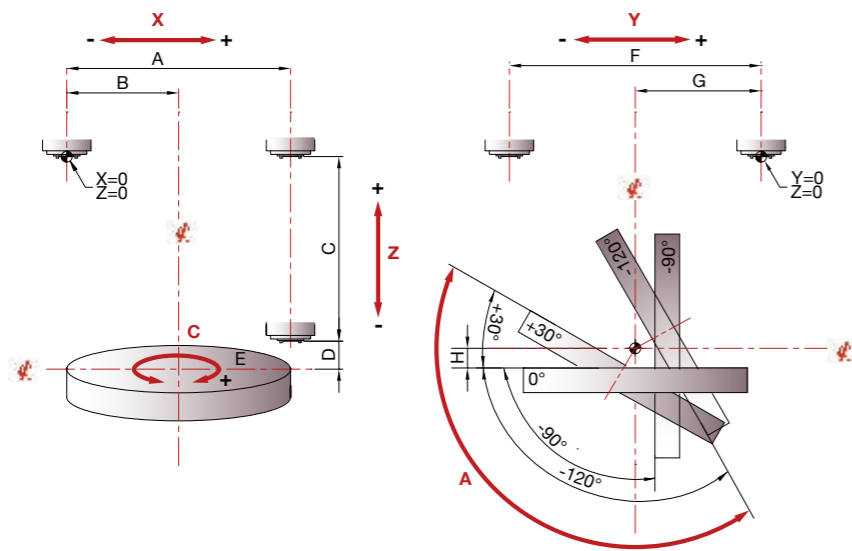
#50/HSKA100,
12000 rpm built-in spindle (OPT)

Working Envelope and Table Loading Capacity

A (mm)	B (mm)	H (mm)	h (mm)	W (kg)
ø650	ø800	500	370	1,000



Inside of working Area Dimensions



Unit : mm(inch)

A	B	C	D	E	F	G	H	I	J
800 (31.5)	400 (15.7)	650 (25.6)	0	360°	950 (37.4)	425 (16.7)	50 (2)	+30°	-120°

Tool Shank and Pull Stud Dimension

Unit : mm(inch)

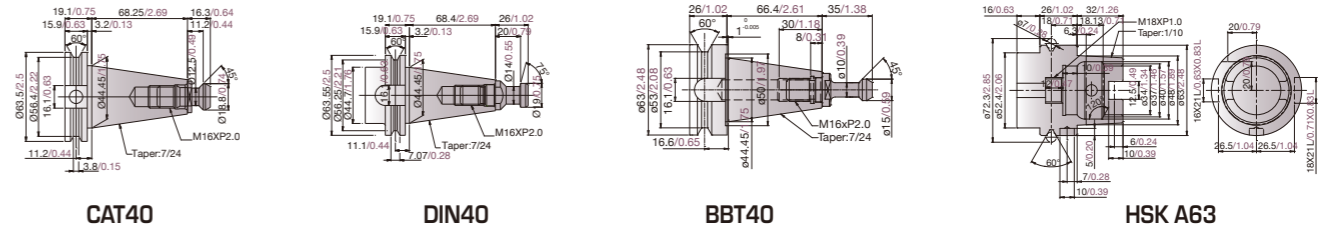
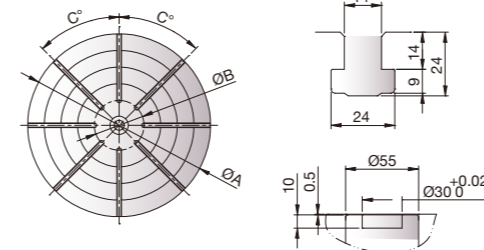


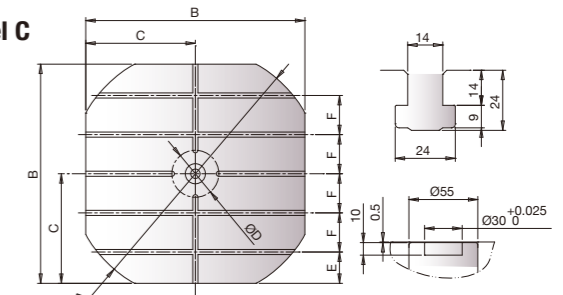
Table Dimensions

Model A



A	B	C
800 (31.5)	150 (5.9)	45

Model C



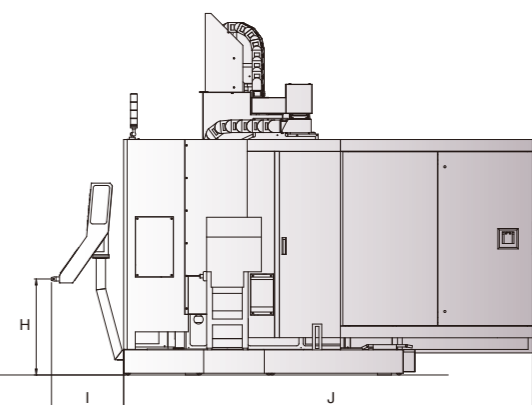
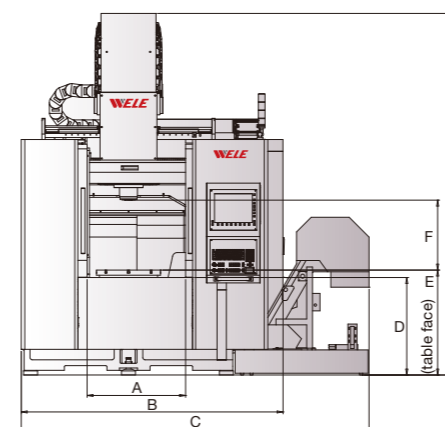
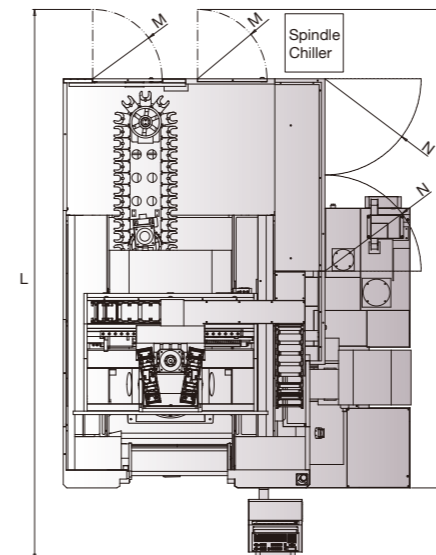
A	B	C	D	E	F
800 (31.5)	700 (27.6)	350 (13.8)	150 (5.9)	100 (3.9)	125 (4.9)

Machine Dimension and Space Requirement

Unit : mm(inch)

A	B	C	D	E	F	G	H
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)

I	J	K	L	M	N	O
619 (24.4)	3,860 (152)	4,455 (175.4)	5,000 (196.9)	595 (23.4)	825 (32.5)	1,570 (61.8)



Technical Specifications

Specification / Model	Unit	UG800
Travel		
X travel (left & right)	mm (in)	800 (31.5)
Y travel (in & out)	mm (in)	950 (37.4)
Z travel (up & down)	mm (in)	650 (25.6)
A travel (along X axis to rotate)	degree	+30 / -120
C travel (along Z axis to rotate)	degree	360
Distance from spindle nose to table center	mm (in)	0-650 (0-25.6)
Table		
Table diameter	mm (in)	800 (31.5)
Table for indexing degree	degree	0.001
Table load capacity	kg (lb)	1000 (2,200)
Table T slot size (width x degree)	mm (in)	14 x 45 (0.55 x 45)
A axis output torque (rate/ brake/ max.)	Nm (ft-lb)	1,956 / 5,000 / 6,528 (1,450 / 3,690 / 4,817)
C axis output torque with DD motor (rate/ brake/ max.)	Nm (ft-lb)	1,800 / 3,300 / 3,320 (1,328 / 2,435 / 2,450)
Spindle		
Spindle motor (cont./30 min.)	kW (HP)	21.6 / 30.9 (28 / 41.4)
Spindle speed	rpm	Built-in 14,000 / HDH, 15,000 / FANUC
Spindle output torques(Max.)	Nm (ft-lb)	115 (84.8) / HDH, 167 (123.1) / FANUC
Spindle taper		#40
Spindle clamping force	kg (lbf)	2,000 (4,400)
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
Max. tool diameter / adjacent pocket empty	mm (in)	90/130 (3.5 / 5.1)
Max. tool length (from guage line)	mm (in)	300 (11.8)
Max. tool weight	kg (lb)	8 (17.6)
Accuracy		
Positioning accuracy (VDI/DGQ 3441)	mm (in)	P 0.020 (0.0008)
Repeatability (VDI/DGQ 3441)	mm (in)	Ps 0.015 (0.0006)
Indexing axial positioning accuracy (A / C axis)	arc sec	15 / 10
Indexing axial repeatability accuracy (A / C axis)	arc sec	10 / 5
Space Requirement & Weight		
Machine length	mm (in)	5,214 (205.3)
Machine width	mm (in)	3,618 (142.4)
Machine height	mm (in)	3,642 (143.4)
Machine weight	kg (lb)	15,000 (33,000)

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

Standard and Optional accessories

● : Standard ○ : Option

Specification / Model	UG800
*BBT40 spindle taper	●
*CAT40 spindle taper	○
*DIN40 spindle taper	○
*HSK A63 spindle taper	○
*14,000 rpm built-in spindle (28/41HP) #40 (Brand: SETCO)	●
*22,000 rpm built-in spindle (33/47HP) #40 (Brand: TDM)	○
*12,000 rpm built-in spindle (34/44kW) #50 (Brand: WELE)	○
*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	●
*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	●
*Spray gun for chip wash down (with air, water gun)	●
*Tool box & foundation kit	●
*Machine operation & maintenance manual	●
*Coolant through the spindle (Form A, 20bar.)	○
*Spindle thermal compensation	○
*Oil skimmer	○
*Automatic tool length measurement (Blum)	○
*Automatic workpiece measurement (Blum or Renishaw)	○
*Air conditioned electronic cabinet	○
*Heidenhain kinematic function	●
*Heidenhain TNC 640 controller	●
*Fanuc 31iM-B5 Plus	○

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