WELE

WELE MECHATRONIC CO., LTD
(http : //www.welegroup.com)

HEADQUARTERS:
No.458, Shinsing Rd., Hukou Town, Hsin-Chu County,
Taiwan 303
TEL : +886-3-696-0360 (rep.) FAX : +886-3-696-0370

TAICHUNG FACTORY:
No.206, Sec.1, Guofong Rd., Fong-Yuan city, Taichung County,
Taiwan 420
TEL : +886-4-2529-1545 FAX : +886-4-2520-1172

WELE MECHATRONIC (SU-ZHOU) CO., LTD.

No. 8, Ma-Qiao Industrial Block, Chang-Shu Economic
Development Zone, Chang-Shu City, Jiang-Su Province,
215513, China
TEL : +86-512-5229-7868 FAX : +86-512-5229-7866
SALES: 150-5141-3969,150-5141-3981

10080602 Macris. TEL:04-24753326

WELE
We lead the way by a new business model

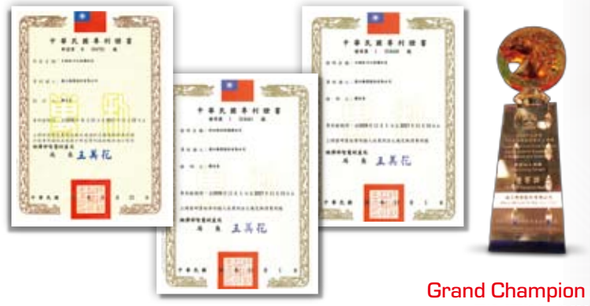
ISO 9001 ISO 14001 2009 TAMI Grand champion award

TOYODA qualified class,
precise manufacturing

2010 Instruction

WELE MECHATRONIC CO., LTD
A TOYODA Strategic Alliance Company

Table of content



Grand Champion Award,
TIMTOS 2009

WELE All series of Product

History

The founder Mr. Kuan, Yong-Chang and the managing team are mainly from ITRI (Industrial Technology Research Institute, Mechanical industrial research Lab.). They have been working for the CNC program that helping Taiwan Machine Tool builders to be independent in the field of R&D.

Through more than 20 years hard working, the founded company had become a well-known machine tool builder worldwide. In the past, the company had won the Superior Products Design Award, Innovating Brand Award, and National Golden Prize. Besides, the marketing channels were extended to the worldwide markets.

Cooperation

Signed an agreement with JTEKT group (Toyoda koki) Japan to create WELE. Based on the agreement, WELE and JTEKT both cooperate in products, sales, quality, and technology issues. WELE group and the JTEKT group both own stocks with proportion of 60% and 40%. Mr. Kuan is elected as the Chairman of Board of Directors and the General Manager.

In June 2007, established
WELE with 108 employees

Taiwan Industrial Technology Research Institute → Started CNC MC Program in 1975 → Founded CNC company (stock exchange, 1998) in 1986 → Own 60% → WELE

We secure shareholders, employees, and customers' efforts for mutual greater success with the well-organized alliance structure.

TOYOTA Motors → JTEKT / TOYODA → Own 40%

Plant Location

Headquarter & Hsinchu Factory

Taichung 1st Factory

Taichung 2nd Factory

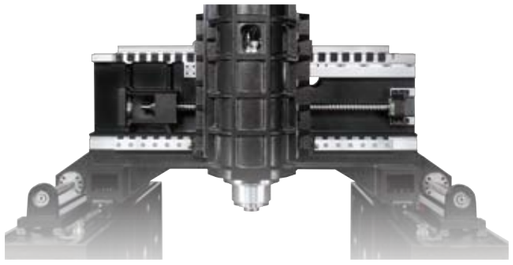
Taichung 3rd Factory

Suzhou Factory

Research and Development

WELE's core-value advanced technology meets customers' demand and satisfaction.

- Innovative and development fit generalization and customer needs.
- High rigidity developed machines with friendly maintenance & operation and excellent performance.
- WELE diversified products defeat various application demands by C frame, bridge, five sides, five axes, moving gantry, and horizontal types.



Genius Design and Experienced Technology

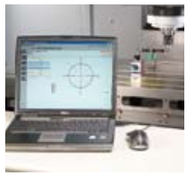
Professional manufacturing by strict quality assurance with customer's fully trust.

- Own developed key component capability to keep high performance and geometric accuracy quality.
- Best feature MEEHANITE casting parts to ensure machine stability.
- More than 20 years design and manufacture experiences to build every spindle through dynamic balance check with constant temperature control.
- Mechanical accuracy is base on the flatness less than 3 μm in 1.2m by 1.2m. (JIS 0 grade standard : flatness less than 7 μm in 1m by 1m).
- With optional CE and UL electrical component, wire, and related materials.

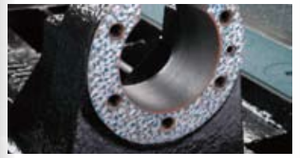
Quality Assurance & Professional Service

Strict quality assurance to pursue excessive demands for customers

- Keep improving MC quality by the strict accuracy control and machining test data through high precision 3D CMM measuring equipment WENZEL (Germany).
- 50% higher than JIS standard make excellent quality and geometric accuracy by German standard VDI 3441.
- 24 hours gear transmission trial run to conform spindle noise and temperature variation to stable condition.
- NASA standard test process guarantees machine performance with geometric and dimension accuracy check.

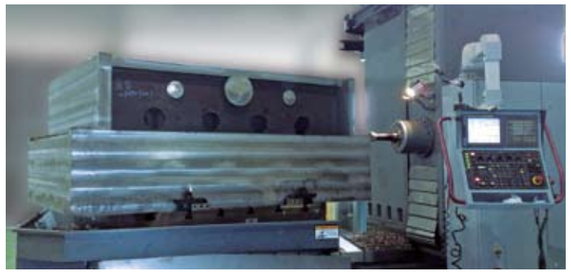


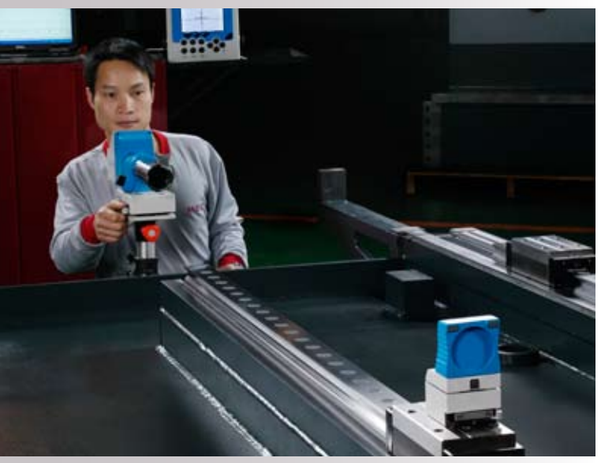
- Always be positive and sincere to serve every WELE customer.
- Customer's satisfactions are our accomplishment.
- Professional and fast response after services offer customers most efficient maintenance and overall operation.
- Always reach customers' demands, needs, and satisfactions: Create more higher profit for customers.

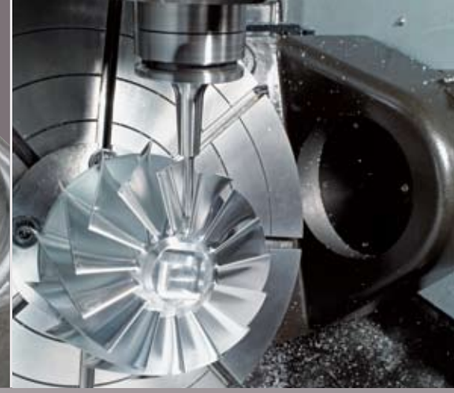


Facility

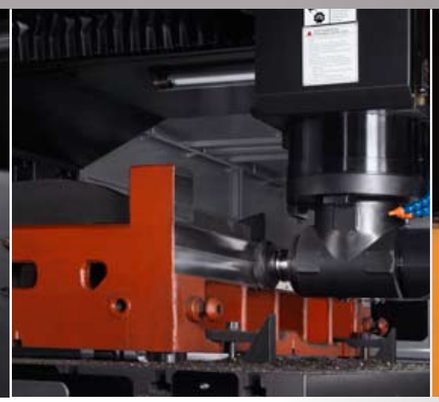
High accuracy and professional equipment stabilizes our extraordinary quality.







Outstanding Performance



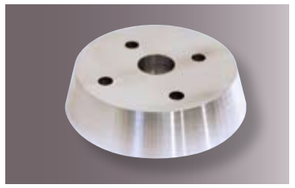
Sample application by UG series machine

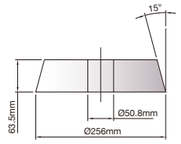
Turbine for Aerospace part

Material	Titanium Ti-A6l-4V		
Process	Rough machining	Precision machining	Finish machining
Tool type	ø10mm End mill	ø8mm Taper ball nose mill	ø10mm Nose ball mill
Spindle speed	1720 rpm	6300 rpm	10980 rpm
Feedrate	412 mm/min	2268 mm/min	2635 mm/min

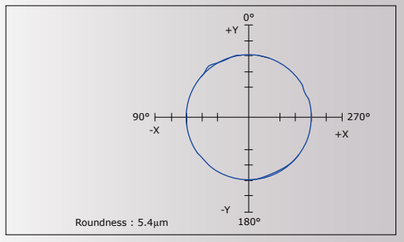
*Roughness=0.6 μ mRa

Taper cone

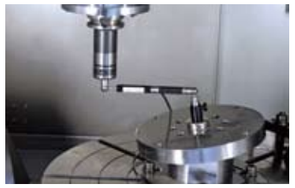




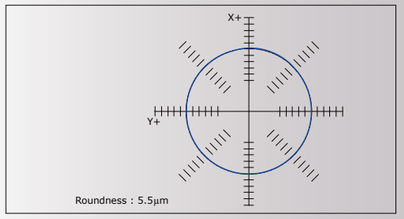
Material	A5052
Tool type	ø32 mm End mill
Spindle speed	5000 rpm
Feedrate	500 mm/min



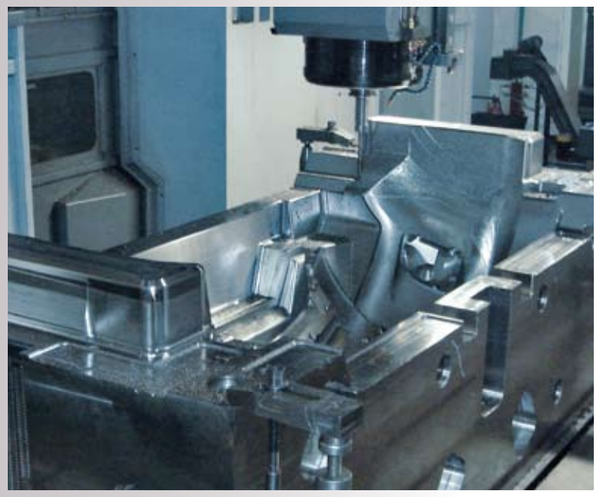
5 Axes DBB test



Radius	150 mm
Traverse speed	500 mm/min



WELE's Customers' applications



The wheel frame is made by AA1365

Voice comes from customer

Report comes from: Society of Manufacturing Engineering magazine
November 2009 Vol. 143 No. 5
Shop Solutions
VMC Sets Gears Up for Precision

About the customer

Since its founding in 1947, Arrow Gear Co. (Downers Grove, IL) has provided precision gears to industries including aerospace, defense, mining, racing, irrigation, and power tool. The company produces a full range of gears, including spur and helical designs and precision spiral-bevel gears for aerospace and commercial applications in mining equipment, automotive racing, and agricultural technology.

Listen to the cutomer's demands

When Arrow Gear was ready to purchase a new VMC, machine ergonomics and precision machining capability were of utmost importance. "Our operators spend more time setting up and loading/unloading parts than the machine actually spends in process," explains CNC Programmer Mark Murphy. "Operator accessibility was by far the most important factor in our decision," he recalls.

Meet to the customer

"When we saw the machine, there was no question that it had the most accessible design," says Kauzlarich about a TOYODA FV1165 VMC. In his 32 years at Arrow Gear, he has heard operator complaints that included backaches caused by restricted access and messy work areas due to coolant. "TOYODA was the only manufacturer that obviously invested time thinking about the best design for the machine operators," he says.

Satisfy with the customer

The deciding factors were found in overall performance factors. "The new machine delivered better part quality, faster setups, less downtime, and better accuracy. Runtimes are faster because of faster axis rapids, and the high-pressure coolant through spindle provides deeper hole-drilling capabilities," Kauzlarich says. "In terms of tolerances, we are holding 0.0005" [0.013-mm] total on key slots. We wouldn't even attempt those tolerances on our previous machine," says Kauzlarich. "Surface finishes depend on the requirements of the job, but we've had no problem meeting all required surface finishes."

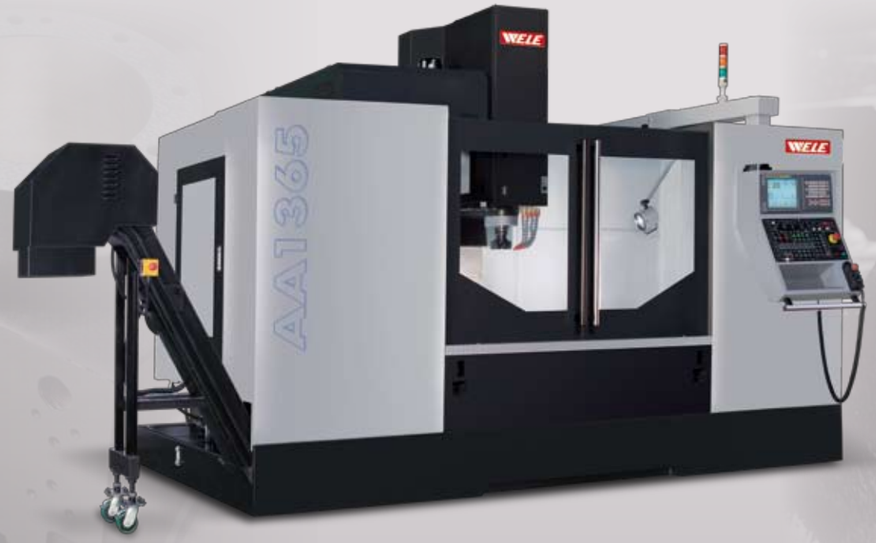
Create value for the customer

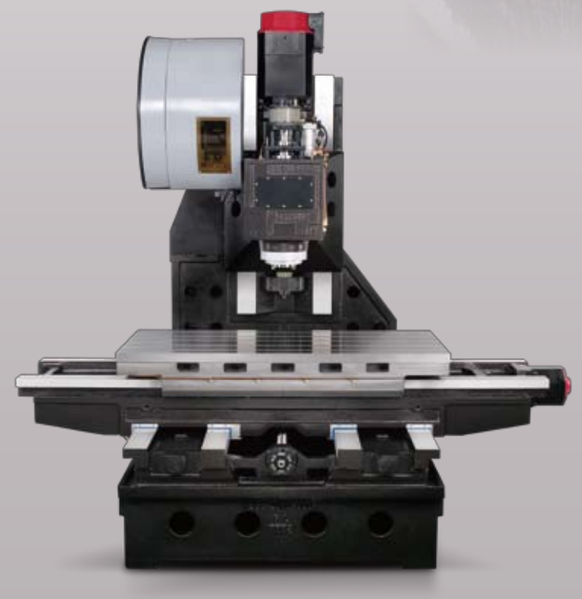
Between setup and cycle time on a 30–40-piece lot we're reducing total time by about 25%, and the parts have higher accuracy," says Kauzlarich. "Every job is different, but lost time was our biggest problem. The Toyoda made up for it with several benefits that all added up to a significant time savings.
"Design/ergonomic features that make setup on the Toyoda easier include height of table and bigger doors that make access easier. Machine axis travels and table dimensions are bigger, so we could leave the rotary table on with the fourth axis on the top when swapping parts in and out. There is no machine device to handle the workpiece, but it is easier for our operator to position workpieces inside the work envelope due to the larger opening and access," Kauzlarich concludes.

Reference :
http://www.sme.org/cgi-bin/find-articles.pl?&09nom001&ME&20091101&&SME&#article
http://www.practicalmachinist.com/vb/metalcutting-machining/vmc-sets-gears-up-precision-manufacturing-193580/

AA65 series

High Rigidity 4 Box Ways Machine





- Developed for general purpose heavy duty metal cutting. Available on #40 and #50 geared spindle.
- Compact design concept: easy to ship in regular container.
- Machine bed, column, carriage, and spindle head are well annealed with aged heat treatment.
- More than 56 surfaces are scraped by skilled technicians to get excellent geometric accuracy.
- 4 Harden ways well arranged on Y axis to be sure the work load full support.

ITEM	UNIT	AA965	AA1165	AA1365	AA1565
X travel (Left & right)	mm (in)	900 (35.4)	1100 (43.3)	1300 (51.2)	1500 (59.1)
Y travel (in & out)	mm (in)	650 (25.6)			
Z travel (up & down)	mm (in)	600 (23.6)			
Table size (X direction)	mm (in)	1100 (43.3)	1300 (51.2)	1450 (57.1)	1650 (65)
Table size (Y direction)	mm (in)	650 (25.6)			
Table load capacity	kg (lb)	900 (1984)	1100 (2425)	1300 (2866)	1500 (3307)

AA80 series

High Rigidity 4 Box Ways Machine

- Developed for general purpose heavy duty metal cutting. Available on #50 geared spindle.
- Machine bed, column, carriage, and spindle head are well annealed with aged heat treatment.
- Y travel 800mm with rigid overhang spindle head stock.
- More than 56 surfaces are scraped by skilled technicians to get excellent geometric accuracy.
- 4 Harden ways well arranged on Y axis to be sure the work load full support.

ITEM	UNIT	AA1480	AA1680	AA1880
X travel (Left & right)	mm (in)	1400 (55.1)	1600 (63)	1800 (70.9)
Y travel (in & out)	mm (in)	800 (31.5)		
Z travel (up & down)	mm (in)	700 (27.6)		
Table size (X direction)	mm (in)	1550 (61)	1750 (68.9)	1950 (76.8)
Table size (Y direction)	mm (in)	800 (31.5)		
Table load capacity	kg (lb)	1800 (3968)	2000 (4409)	2200 (4850)

AA90 series

High Rigidity 4 Box Ways + 2 Linear Roller Ways Machine

- Developed for general purpose ultra heavy duty metal cutting. Available on #50 geared spindle.
- Machine bed, column, carriage, and spindle head are well annealed with aged heat treatment.
- More than 62 surfaces are scraped by skilled technicians to get excellent geometric accuracy.
- Twin driven system used on Y axis to provide heavy movement performance.
- 4 Harden ways and 2 roller guide ways well arranged on Y axis with 900mm travel ensure the work load full support (available for AA2590).
- Triple screw type chip conveyor go along with Y axis direction to dispatch the chip from working envelope.

ITEM	UNIT	AA1890	AA2090	AA2590
X travel (Left & right)	mm (in)	1800 (70.9)	2000 (78.7)	2500 (98.4)
Y travel (in & out)	mm (in)	900 (35.4)		
Z travel (up & down)	mm (in)	900 (35.4)		
Table size (X direction)	mm (in)	1950 (76.8)	2150 (84.6)	2650 (104.3)
Table size (Y direction)	mm (in)	900 (35.4)		
Table load capacity	kg (lb)	2000 (4409)	2200 (4850)	3000 (6614)

AQ50/65 series

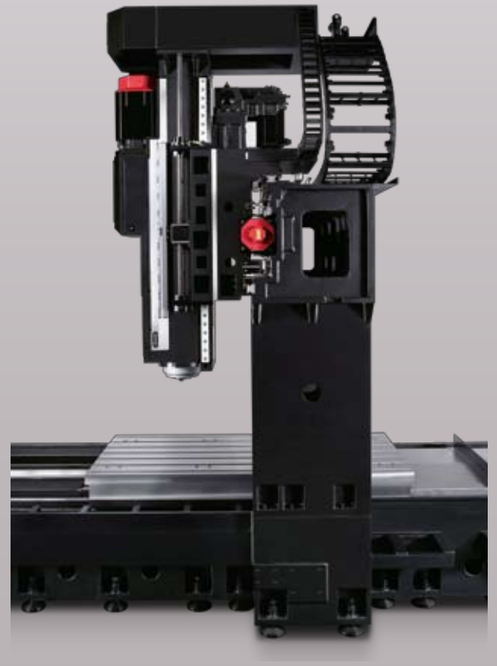
Linear Roller Guideway

- Developed for high performance axial movement by roller guide way, high response on feed system and higher spindle speed with 10000rpm or more.
- Well arrangement for light alloy material cutting and aluminum application.
- Y axis available to up to 650mm & X axis available to up from 1200mm thru 1600mm.
- 48m/min fast feed movement is to provide high response on this field.

ITEM	UNIT	AQ850	AQ1050	AQ1265	AQ1465	AQ1665
X travel (Left & right)	mm (in)	800 (31.5)	1020 (40.2)	1200 (47.2)	1400 (55.1)	1600 (63)
Y travel (in & out)	mm (in)	510 (20.1)		650 (25.6)		
Z travel (up & down)	mm (in)	510 (20.1)		610 (24)		
Table size (X direction)	mm (in)	1000 (39.4)	1200 (47.2)	1400 (55.1)	1600 (63)	1750 (68.9)
Table size (Y direction)	mm (in)	510 (20.1)		650 (25.6)		
Table load capacity	kg (lb)	500 (1102)	600 (1323)	1000 (2205)	1000 (2205)	1000 (2205)

RB series

Compact Fixed Column Machine



- Developed for high precision, heavy duty, and high performance on the smallest bridge range.
- All axes are using ultra-heavy roller guideway.
- Super wide operator door (full open). Easy to load and unload the workpiece.
- Max. rapid feed up to 24m/min.

ITEM	UNIT	RB212	RB312
X travel (Left & right)	mm (in)	2120 (83.5)	3060 (120.5)
Y travel (in & out)	mm (in)	1200 (47.2)	
Z travel (up & down)	mm (in)	800 (31.5)	
Table size (X direction)	mm (in)	2000 (78.7)	3000 (118.1)
Table size (Y direction)	mm (in)	1100 (43.3)	
Table load capacity	kg (lb)	3500 (7716)	4500 (9921)

SB series

Medium Fixed Column Machine

- The most economical equipment for 3 axes machining on this field.
- Economical multi-head exchange & storage with tool exchange function automatically upgraded to 5 sides function optional available on this series.
- Z travel with 800mm as STD.
- 5 sides work coordinate plane convert system auto attach with this optional function.
- Bridge casting made in one piece.

ITEM	UNIT	SB216	SB316	SB416
X travel (Left & right)	mm (in)	2120 (83.5)	3060 (120.5)	4060 (159.8)
Y travel (in & out)	mm (in)	1600 (63)		
Z travel (up & down)	mm (in)	800 (31.5)		
Table size (X direction)	mm (in)	2000 (78.7)	3000 (118.1)	4000 (157.5)
Table size (Y direction)	mm (in)	1500 (59.1)		
Table load capacity	kg (lb)	8000 (17637)	10000 (22046)	12000 (26455)

LB series

Large Fixed Column Machine

- The most economical equipment for 3 axes machining on this field.
- Economical multi-head exchange & storage with tool exchange function automatically upgraded to 5 sides function on this field.
- Z travel with 800mm as STD; Z travel from 1000mm thru 1400mm available on all LB series.
- 5 sides work coordinate plane convert system auto attach with this optional function.
- Y axis stroke from 2100mm to 4000mm available on all LB series.

ITEM	UNIT	LB321	LB421	LB521	LB325	LB425	LB525	LB625
X travel (Left & right)	mm (in)	3060 (120.5)	4060 (159.8)	5060 (199.2)	3060 (120.5)	4060 (159.8)	5060 (199.2)	6060 (238.6)
Y travel (in & out)	mm (in)	2150 (84.6)			2550 (100.4)			
Z travel (up & down)	mm (in)	800 (31.5)			800 (31.5)			
Table size (X direction)	mm (in)	3000 (118.1)	4000 (157.5)	5000 (196.9)	3000 (118.1)	4000 (157.5)	5000 (196.9)	6000 (236.2)
Table size (Y direction)	mm (in)	2000 (78.7)			2400 (94.5)			
Table load capacity	kg (lb)	12000 (26455)	15000 (33069)	18000 (39683)	12000 (26455)	15000 (33069)	18000 (39683)	20000 (44092)

MB series

Fixed Column 5 Sides Machine

- Full automatic Head Exchange/ Head Storage/ Auto tool exchange in vertical & horizontal/ 5 sides machining function.
- Z travel with 1000mm as STD; Z travel from 1200mm thru 1400mm available on all MB series.
- Automatic multi head exchange system and storage with tool exchange in vertical and horizontal.
- All series with linear scale feedback system on X, Y axes; Z axis (OPT).
- Extend head, 30 degree head, and universal head optional available.

ITEM	UNIT	MB425	MB525	MB625	MB725	MB432	MB532	MB632	MB732
X travel (Left & right)	mm (in)	4060 (159.8)	5060 (199.2)	6060 (238.6)	7060 (278)	4060 (159.8)	5060 (199.2)	6060 (238.6)	7060 (278)
Y travel (in & out)	mm (in)	3200 (126)				3900 (153.5)			
Z travel (up & down)	mm (in)	1000 (39.4)				1000 (39.4)			
Table size (X direction)	mm (in)	4000 (157.5)	5000 (196.9)	6000 (236.2)	6000 (236.2)	4000 (157.5)	5000 (196.9)	6000 (236.2)	6000 (236.2)
Table size (Y direction)	mm (in)	2000 (78.7)				2400 (94.5)			
Table load capacity	kg (lb)	15000 (33069)	18000 (39683)	20000 (44092)	20000 (44092)	15000 (33069)	18000 (39683)	20000 (44092)	20000 (44092)

MG series

Moving Gantry Machine

- Overhead moving gantry bridge machine with max up to 16m in X axis and 5m in Y axis is available.
- Twin driven system on X axis travel up to 6m with ball screw; rack and pinion driven system available with travel 6m above.
- Automatic multi-head exchange and storage system, AC tilting head with 5 axes simultaneous control are all optional available on this field.
- Max table load of 2500kg/m² is provided.
- Special foundation at customer site is required.

ITEM	UNIT	MG530	MG630	MG830	MG1030	MG640	MG840	MG1040	MG650	MG850	MG1050
X travel (Left & right)	mm (in)	5000 (196.9)	6000 (236.2)	8000 (315)	10000 (393.7)	6000 (236.2)	8000 (315)	10000 (393.7)	6000 (236.2)	8000 (315)	10000 (393.7)
Y travel (in & out)	mm (in)	3000 (118.1)				4000 (157.5)			5000 (196.9)		
Z travel (up & down)	mm (in)	1000 (39.4)									
Table size (X direction)	mm (in)	5000 (196.9)	6000 (236.2)	8000 (315)	10000 (393.7)	6000 (236.2)	8000 (315)	10000 (393.7)	5000 (196.9)	6000 (236.2)	10000 (393.7)
Table size (Y direction)	mm (in)	2800 (110.2)				3800 (149.6)			4800 (189)		
Table load capacity	kg (lb)/m²	2500 (5512)	2500 (5512)	2500 (5512)	2500 (5512)	2500 (5512)	2500 (5512)	2500 (5512)	2500 (5512)	2500 (5512)	2500 (5512)

HB series

Horizontal Boring Machine

- 1400x1600 & 1600x2000(mm) table size is available on this model.
- 110 & 130mm dia. quill with geared torque 1200Nm with 3500rpm spindle is available on those model.
- Own developed hydro-static bearing on the index table with every 1 degree or 5 degree backlash free indexable is optional provided.
- With max table load of 12000kg on the 1600x2000 mm capacity.

ITEM	UNIT	HB1416-110	HB1620-130
X travel (Left & right)	mm (in)	2000 (78.7)	3000 (118.1)
Y travel (in & out)	mm (in)	2000 (78.7)	3000 (118.1)
Z travel (up & down)	mm (in)	1300 (51.2)	1500 (59.1)
B travel (rotation)	degree	360	360
W travel (extend from Z axis)	mm (in)	500 (19.7)	700 (27.6)
Table size (X direction)	mm (in)	1440 (56.7)	1600 (63)
Table size (Y direction)	mm (in)	1600 (63)	2000 (78.7)
Table for divide degree	degree	0.001	0.001
Table load capacity	kg (lb)	8000 (17637)	12000 (26455)

UG series

Gantry Type 5 Axes Machine

Grand Champion Award
In TIMTOS 2009, Taipei

- Compact design for 5 sides & 5 axes simultaneous application jobs: Aerospace and general parts machining.
- Overhead moving gantry by twin driving system on Y axis.
- Own developed Trunion AC table provide max torque of 6000Nm on A, 2000Nm on C axis.
- Max. tool capacity of 60 is optional available.
- Heidenhain and FANUC controller both available on this field.

ITEM	UNIT	UG550	UG800
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 (rotation)	degree	+30 / -120	+30 / -120
C travel (rotation)	degree	360	360
Table diameter	mm (in)	550 (21.7)	800 (31.5)
Table for divide degree	degree	0.001	0.001
Table load capacity	kg (lb)	500 (1102)	1000 (2205)

UB series

Fixed Column 5 Axes Machine

- An additional tilting head available on all sizes of LB series machines called as UB series five axes simultaneous bridge machines.
- Own design or purchased tilting head are all available as required.
- Tilting angle range of ±110° on A axis and ±360° on C axis.
- Z axis travel in 800mm as STD, 1000mm, 1200mm & 1400mm available as options.
- The UB machine is mainly for European and US markets.

ITEM	UNIT	UB421Z	UB425YZ2
X travel (Left & right)	mm (in)	4060 (159.8)	4060 (159.8)
Y travel (in & out)	mm (in)	2150 (84.6)	3200 (126.0)
Z travel (up & down)	mm (in)	1000 (39.4)	1200 (42.4)
A travel (rotation)	degree	±110	±110
C travel (rotation)	degree	±360	±360
Table size (X direction)	mm (in)	4000 (157.5)	4000 (157.5)
Table size (Y direction)	mm (in)	2000 (78.7)	2400 (94.5)
Table load capacity	kg (lb)	15000 (33000)	15000 (33000)

Compact and Economic 5 Sides Machining Function As Option on SB/LB series

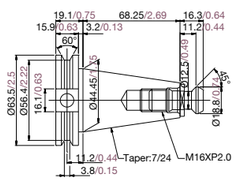
Vertical Head cover Exchange: 60 sec.

Horizontal Head Exchange: 60 sec.

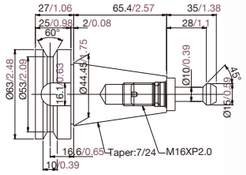
Automatic tool exchange in horizontal (C to C 50 sec.); In vertical (C to C 35 sec.)

Tool Shank and Pull Stud Dimension

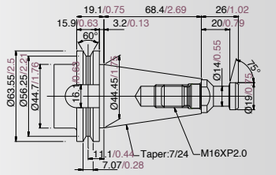
Unit : mm/ inch



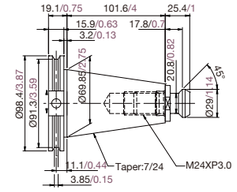
CAT40



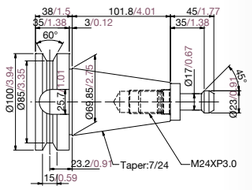
BT40



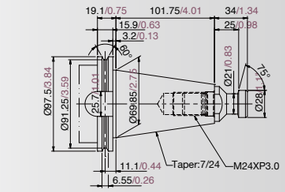
DIN40



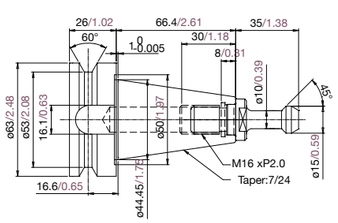
CAT50



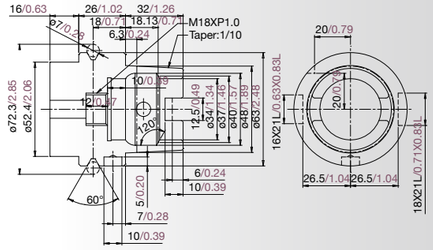
BT50



DIN50



BBT40



HSK A63