Cat No. 092011

KIHEUNG MACHINERY CO.,LTD

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www.kiheung.com

U1350 / U1500

BED TYPE MILLING CENTER

KIHEUNG MACHINERY CO., LTD

MILLING MACHINE / MACHINING CENTER / COLUMN TRAVEL

KIHEUNG ENDEAVOURS TO OFFER THE ULTIMATE TO CUSTOMERS THROUGHOUT THE WORLD.

Since founded in 1968, KIHEUNG has become one of the most advanced and leading machine tool manufacturers with an effort to supply high quality product to customers.

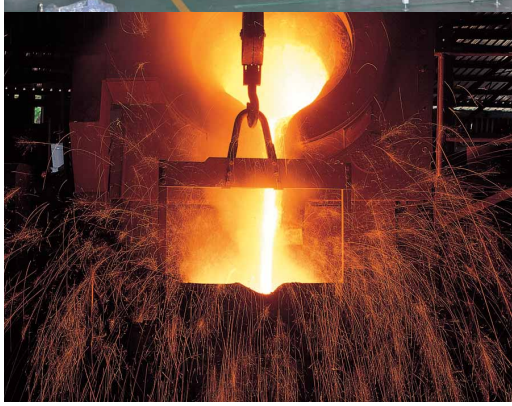
KIHEUNG specialized in CNC bed type milling machine, travelling column boring and milling center, Double column machining center, Simultaneous five axis machining center, Double column 5 axis and vertical turning machine, is determined to enhance the quality by respecting the customer's requirements with the philosophy of

"FULL SATISFACTION TO THE CUSTOMER AND ENDLESS SERVICE TO THE CUSTOMER"

Through the spirit of mutual co-operation, KIHEUNG is able to ensure the continuous distribution with high quality machine tools designed to satisfy customer's requirements all over the world. Thanking and trusting in your continuous support.

KIHEUNG History

1968	KIHEUNG machinery works founded
1978	Developed conventional bed type milling machine
1989	KIHEUNG foundry Co. established Start to exhibit EMO exhibition
1990	Developed CNC bed type milling machine
1995	The current plant(20,000 m^2) established in Daejeon, Korea
1996	CE certificate from TÜV, Germany
2002	KIHEUNG USA established
2003	Awarded ISO 9001 certificate
2004	Developed double column machining center, MiMAX
2005	Developed simultaneous 5 axis machining center, FTV 500
2006	Developed column travel boring and milling center, HiTRAX
2007	Developed double column 5 axis and vertical turning machine, FTU 1200
2008	KIEHUNG Germany established Developed fixed bed column travel boring and milling center, RiGiTRAX
2009	Awarded 20 million dollar export prize from Korea goverment
2010	Developed column travel boring and milling center, WiNGTRAX



BED TYPE MILLING CENTER

U1350 / U1500

Machine Specification		U1350 / U1500
TABLE	Surface (U1350)	3200 / 4200 / 5200 × 1150 mm
	(U1500)	3200 / 4200 / 5200 × 1300 mm
	T-slot (U1350)	No.8 × 22 mm
	(U1500)	No.10 × 22 mm
	Distance between T-slot	125 mm
	Max. permissible load	12000 / 14000 / 16000 kg
TRAVEL	Longitudinal travel	3000 / 4000 / 5000 mm
	Cross travel (U1350)	1350 mm
	(U1500)	1500 mm
	Vertical travel	1600 / 2000 mm
FEED	Axis feed rate	8000 mm / min
	Rapid feed rate	16000 mm / min
SPINDLE	Taper	50
	Speed	4000 rpm, 2 steps (0~1000, 1001~4000)
MOTOR	Spindle drive motor	28 / 42 kw
	Feed drive motor	X 3000, 4000 : 50, X 5000 : 70, Y : 27, Z : 50 Nm
WEIGHT	Approx. machine net weight	33 / 35 / 37 ton

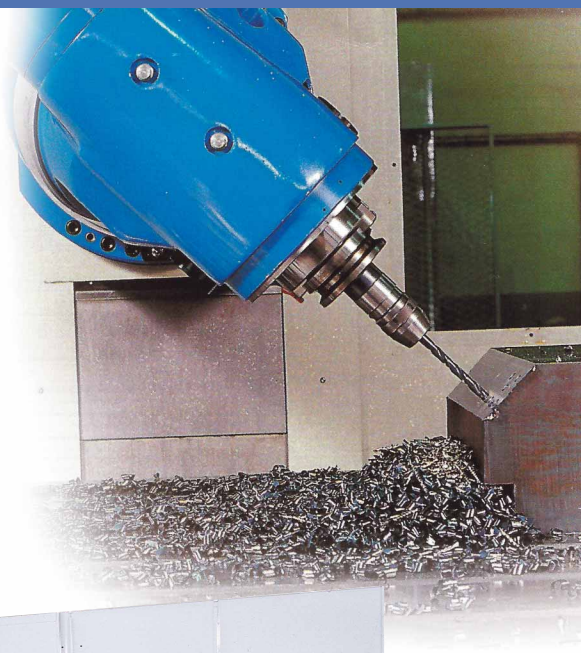
Standard

- Heideanhin iTNC530 BF150 CNC with smart TNC. Mouse pad and DXF converter.
- Heidenhain or Siemens spindle motor 28 / 42 kw
- Heidenhain or Siemens AC servo motor
- Heidenhain linear scale
- Heidenhain electronic hand wheel HR410
- Heidenhain DA300
- ZF gear box, 2 step (1~1000, 1001~4000 rpm)
- Universal head
- Spindle orientation for rigid tapping
- Hydraulic balance for vertical Z axis
- Automatic centralized lubrication system with pressure switch
- Flood coolant system
  The quantity of coolant water is adjusted by potention meter on the operator panel
- Oil cooler for cooling the head and ZF gear box
- 2(Two) sliding door in front and 1(one) sliding door at rear for CE norm
- Telescopic chip cover for X, multi cover for Z axis
- Preparation of TS220 work piece touch probe
- Spindle air blast for A2, A4 head with automatic tool change
- Air blow through nozzle
- Automatic power off

High Quality Component

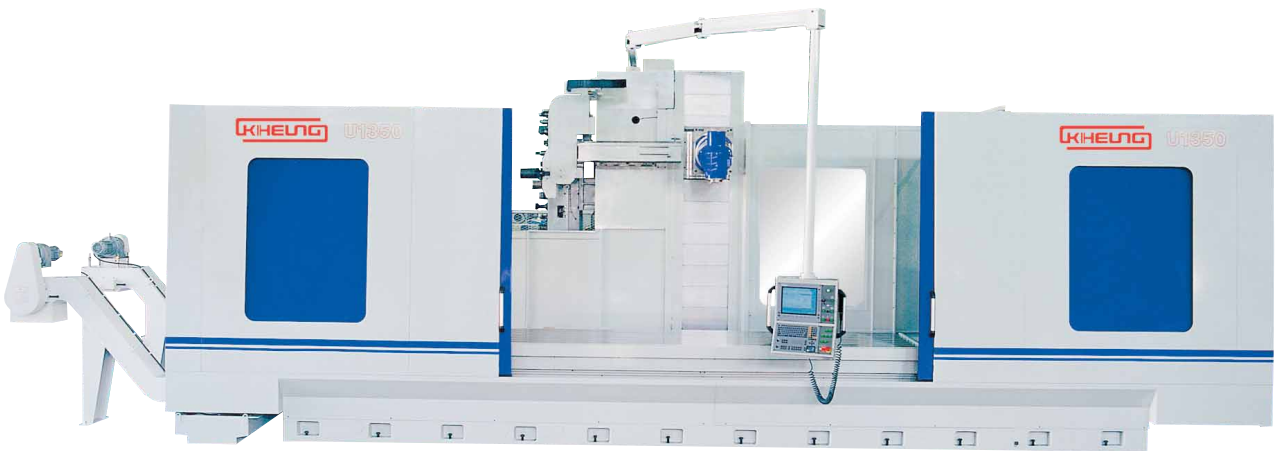
- CNC : Heidenhain, Siemens, Fanuc
- Motor : Heidenhain, Siemens, Fanuc
- Spiral bevel gear for universal head : Tandler, Germany
- Spindle bearing : SKF, Sweden
- Spindle gear box : ZF, Germany
- Ball screw for X, Y, Z axis : Korta, Spain
- Roller shoes and guide way for vertical axis : INA, Germany
- Lubrication pump : Dropsa, Italy
- Hydraulic unit : HAWE, Germany
- Electric component : Telemecanique / Schneider, Germany
- Electric cabinet : Rittal, Germany

BED TYPE MILLING CENTER
U1350 / U1500



Bed type Milling Center

X=3000~5000mm
Y=1350 / 1500mm
Z=1600 / 2000mm



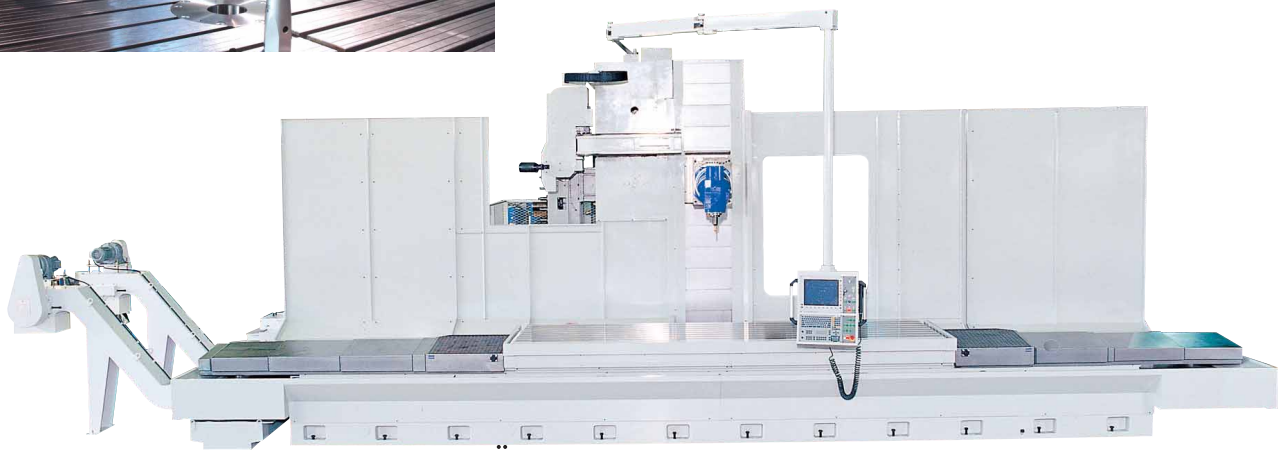
Flat-Ram design

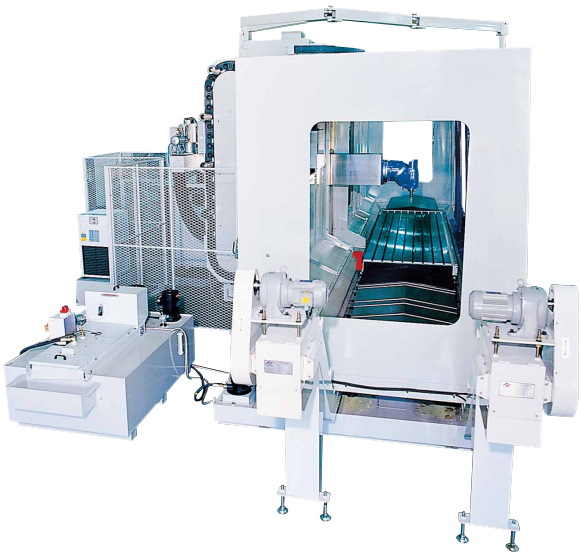
Flat-Ram design can not be disturbed with "inside-works", because all the transmission equipments (ZF gear box, Belt / Pulley) are located at the rear of the ram.

Furthermore, all the chips and coolant water can be protected perfectly and conveyed to the chip reservoir and coolant tank effectively.

Universal Head

Universal head consisting of upper head and lower head can be turned to desired angle, which is suitable for combined angle milling.





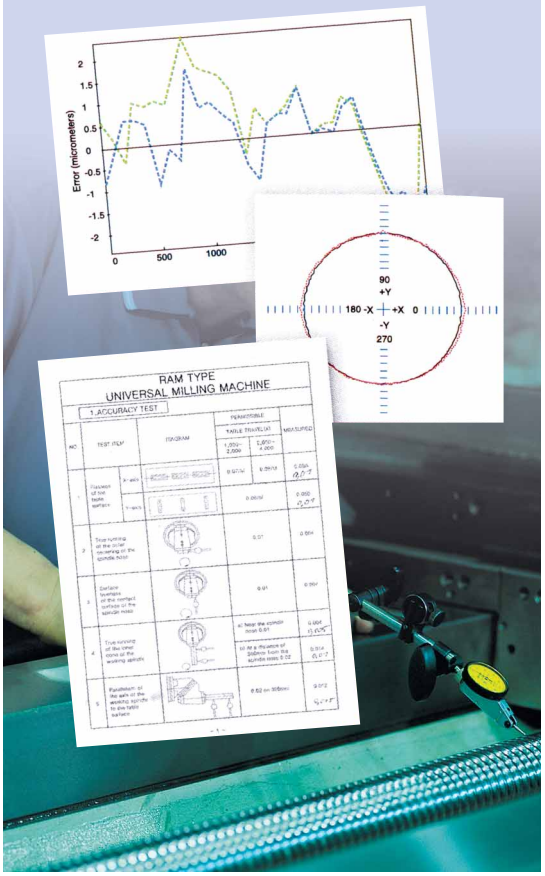
U1350 / U1500

KIHEUNG Quality Machine

KIHEUNG's every machine is tested with 100% actual machining to check the cutting power.

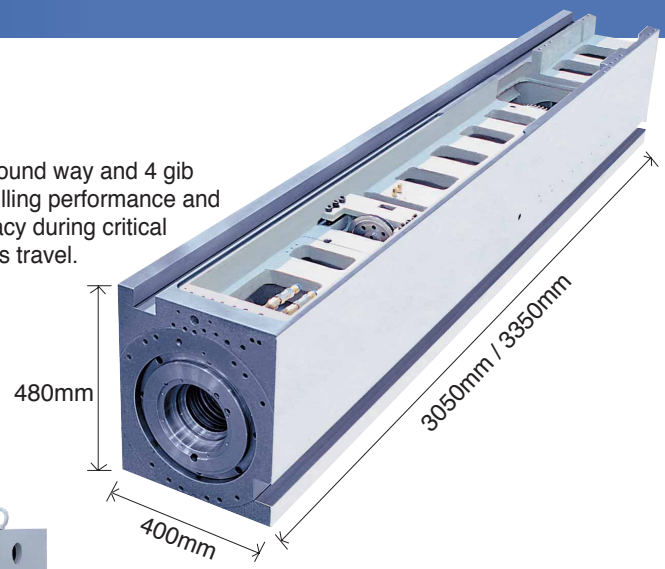
Furthermore, geometric accuracy is tested during assembly and after assembly.

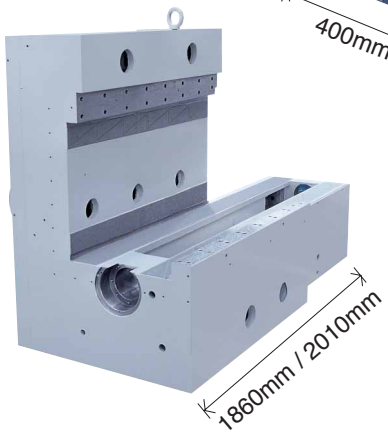
Final geometric accuracy test report is delivered together with the machine.



Ram

8-faces with 4 ground way and 4 gib way for a high milling performance and geometric accuracy during critical maximum Y cross travel.





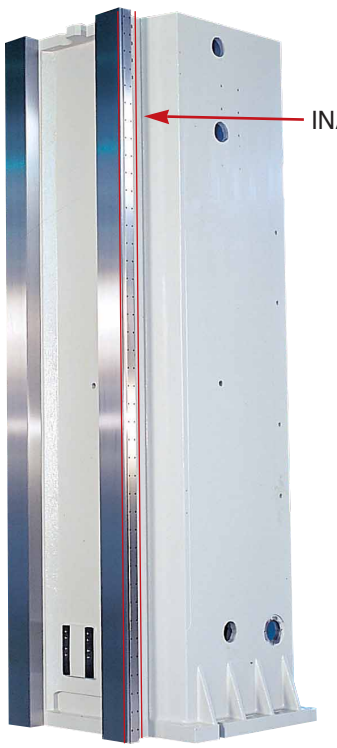
Saddle for cross movement

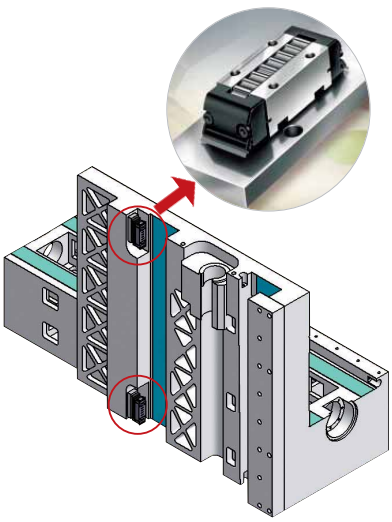
Saddle with 1860mm / 2010mm guide way length, which is long enough to prevent "ram drooping", guarantees geometric accuracy during critical maximum Y cross travel.

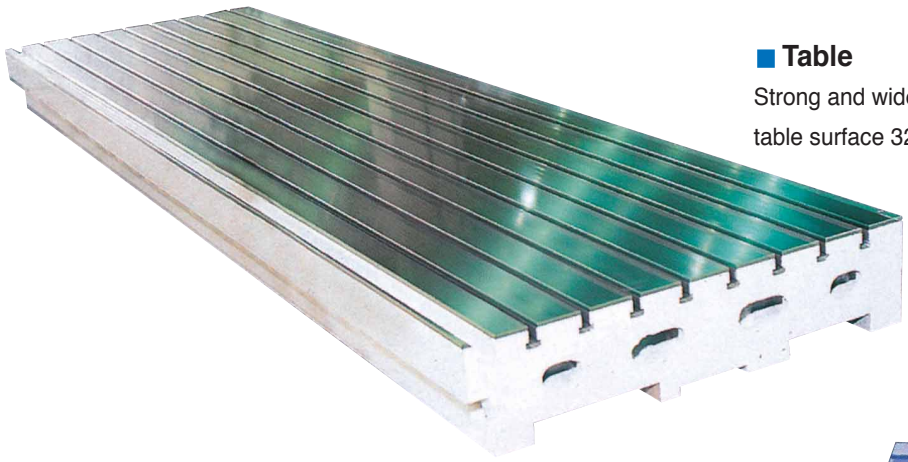
Saddle for vertical movement

Saddle with 3 turcite guide way and 1gib way in combination with 2 INA roller shoes reduces "stick-slip" and reaches to the "damping effect" for the smooth vertical movement.

Furthermore, it prevents saddle deviation during critical maximum Y cross travel.



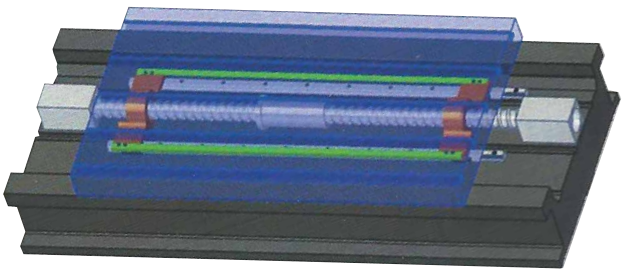




Table

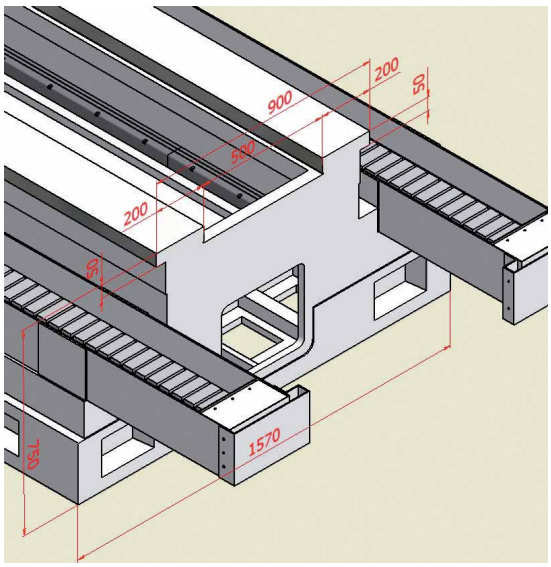
Strong and wider table with

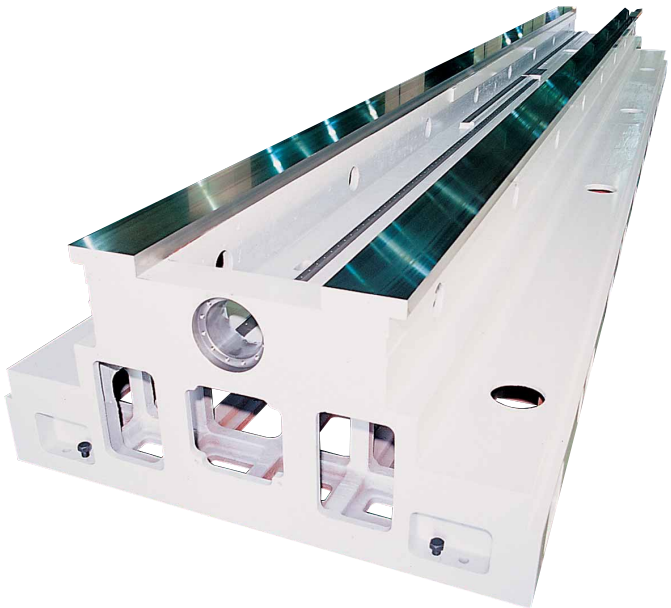
table surface 3200 / 4200 / 5200 ×1150 / 1300mm, 8 / 10 T-slot



LM-Ball screw support system for X4000 and 5000mm

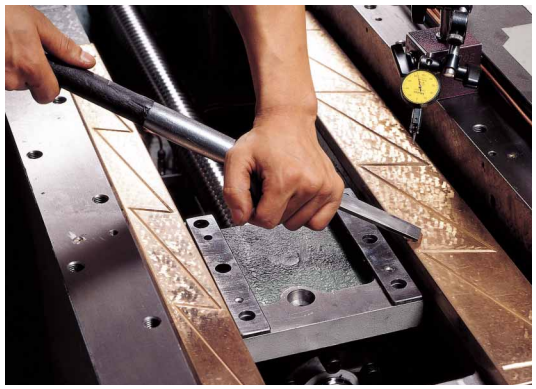
LM Ball screw support system reduces ball screw vibration and enables smooth movement of table and heavy work piece without stick-slip





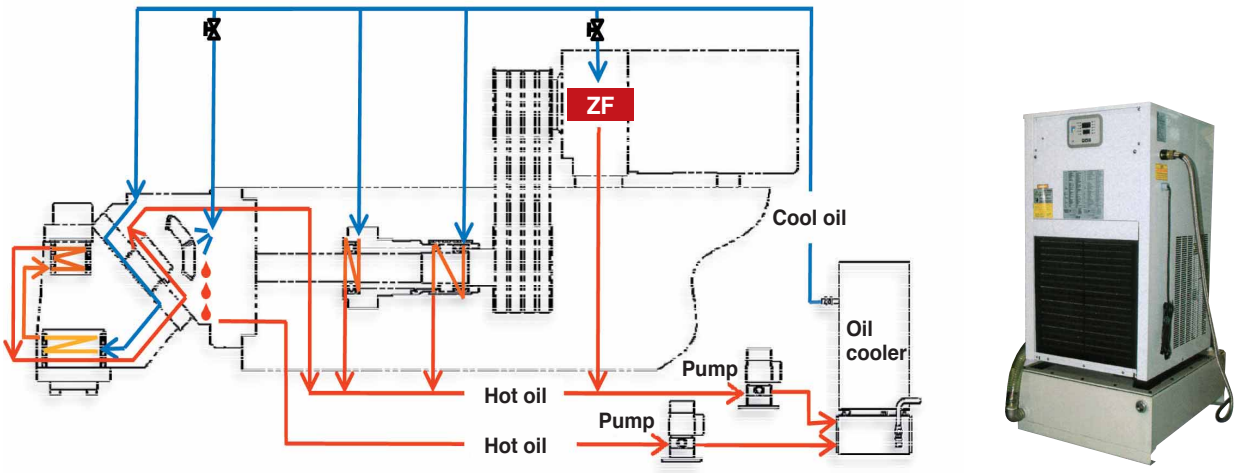
Bed

Strong 2-fold bed guide way (each 200mm) after heat treatment guarantees high accuracy during longitudinal X axis movement.



Hand Scrapping

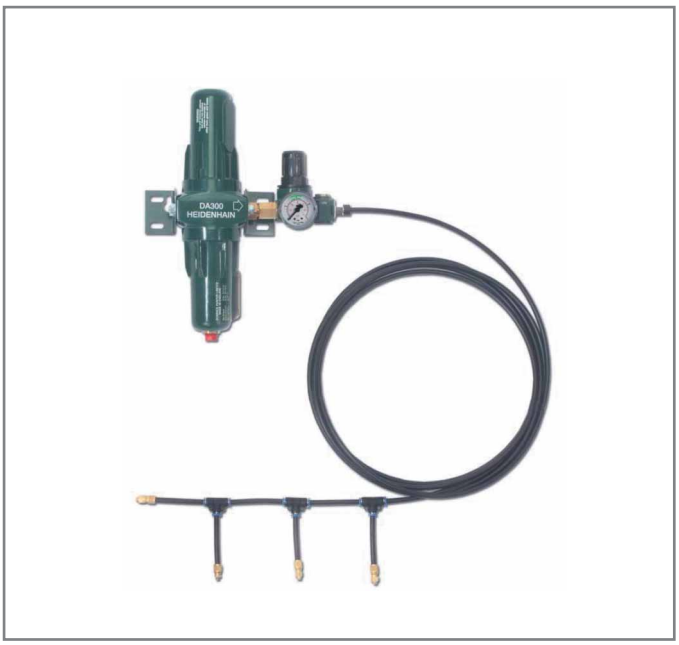
The accuracy of U1350/U1500 is guaranteed by the craft man's art of scrapping measured in micron.



Oil cooling

Head and ZF gear box is cooled by oil cooler.

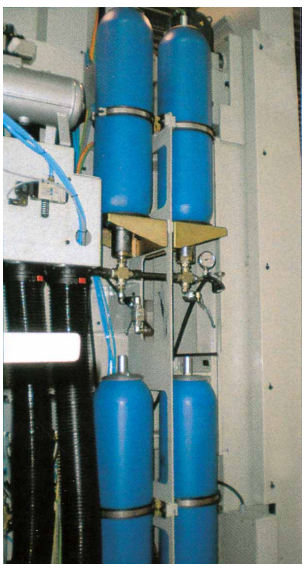
Hot oil inside the upper head (90°) and ZF gear box is delivered quickly to the oil cooler through 2 (two) pumps on the ram.



Heidenhain DA300

Heidenhain DA300 enables to supply the clean air to 3 axis Heidenhain linear scale.

It protects Heidenhain linear scale from dust, small chips and coolant water.



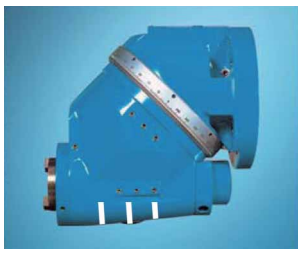
Hydraulic Balance

Hydraulic balance with Nitogen gas accumulator guarantees smooth movement and high accuracy of vertical Z axis

Option

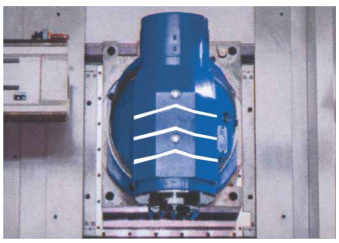
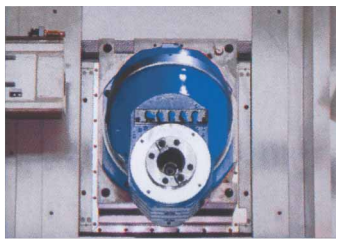
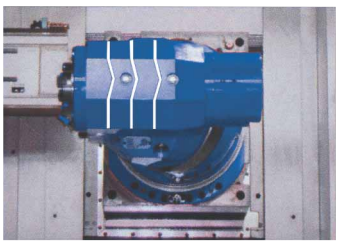
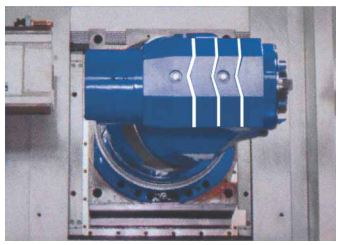
A2 Head (Automatic 2 positioning, Vertical / Horizontal)

- ISO50 DIN69871
- Hydraulic tool clamp / unclamp
- 4000 spindle rpm with cooling the head (2 step : 0~1000, 1001~4000)

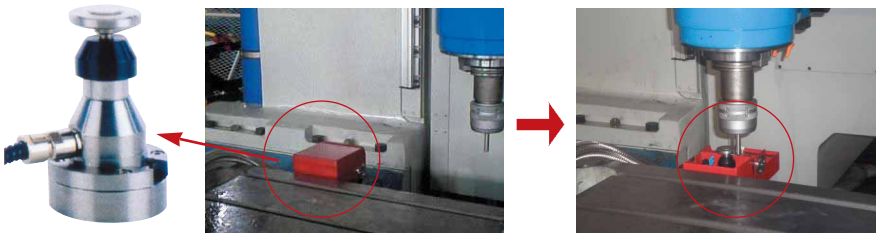



A4 Head (Automatic 2.5° ×2.5°)
A4 Head (Automatic 2.5° ×1°)

- ISO50 DIN69871
- Hydraulic tool clamp / unclamp
- 4000 spindle rpm with cooling the head (2 step : 0~1000, 1001~4000)

Tool touch probe HEIDENHAIN TT140 with air operated cover



Option

Tool touch probe HEIDENHAIN TT140

with cable connection for tool length and radius compensation with stationary or rotating spindle

Work piece touch probe HEIDENHAIN TS220

for releasing a trigger signal to the iTNC 530 control through cable

Work piece touch probe HEIDENHAIN TS640

for releasing a trigger signal to the iTNC 530 control as an infrared light signal

Work piece touch probe RENISHAW RMP 60

with radio signal transmission

BED TYPE MILLING CENTER

U1350 / U1500

Option

■ Coolant through Spindle

1. CTS - Cartridge filter

- 16 bar coolant through spindle
  9 bar coolant through nozzle
- Tank volume 500 ℓ
- Dual cartridge filter (20㎛) to switch over when one filter is dirty

2. CTS - Paper filter

- 16 / 30 bar coolant through spindle
  9 bar coolant through nozzle
- 2 (two) Tanks : 1 (one) dirty tank volume 500 ℓ
  1 (one) clean tank 1200 ℓ
- Paper band filtering (10㎛) system with drive and paper transport unit

■ Direct Horizontal Spindle Head

: 2 step gear change

■ Sub. Angle Table

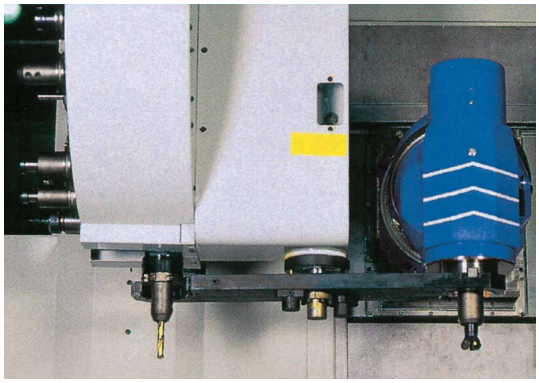
1300(H) ×1100 ×625mm

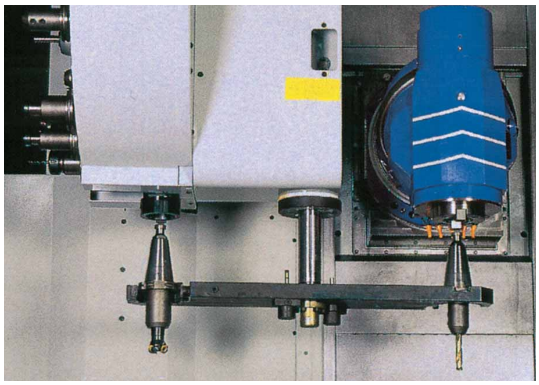
■ Chip conveyor

Wider link type chip conveyor performs :QUICK EXTRACTION" of chips and coolant water to the bucket and tank.

Front / Rear Lift up chip conveyor

Side Lift up chip conveyor





24 Tools Vertical ATC

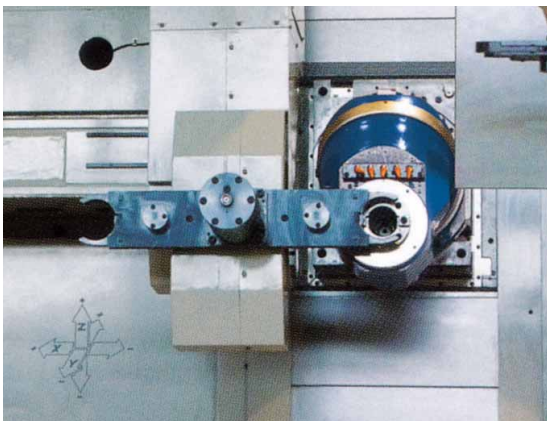
Cam and cam follower automatic tool changer driven by geared motor

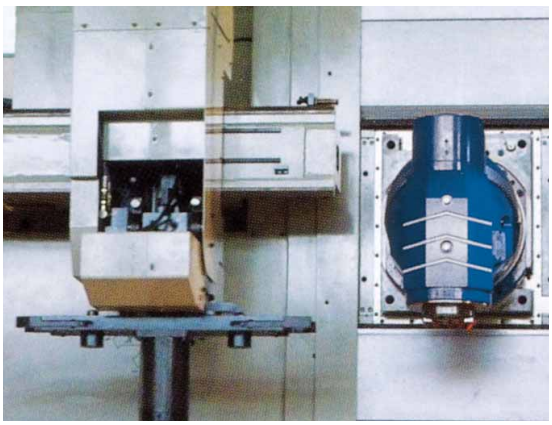
Max. tool weight	kg	20
Max. tool length	mm	350
Max. tool diameter Ø		
- when adjacent tool present	mm	110
- when adjacent tool absent	mm	200

30 / 40 / 50 / 60 Tools Vertical / Horizontal ATC

Chain type tool magazine driven by servo motor.
Carriage and gripper is operated by hydraulic system.

Max. tool weight	kg	25
Max. tool length	mm	350
Max. tool diameter Ø		
- when adjacent tool present	mm	125
- when adjacent tool absent	mm	250





U1350 / U1500

KIHEUNG Foundry

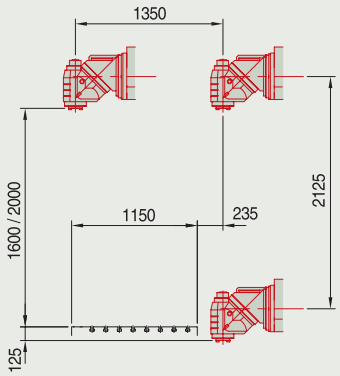
The material used for KIHEUNG's all major and critical parts, such as base, column, saddle, table, ram and head is made by KIHEUNG Foundry.

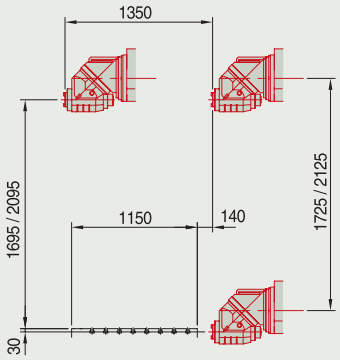
High-Quality Cast iron

KIHEUNG cast iron has the advantage both thick and thin parts have the same properties after cooling.

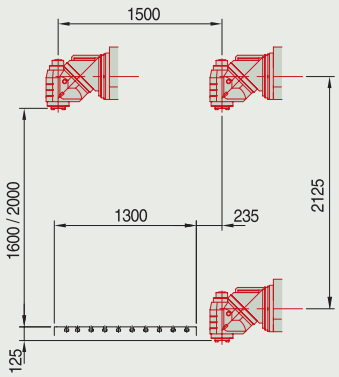
KIHEUNG's techniques through control of the casting process permits the production of reliable, high quality material with no defects such as shrinkage cavities, coarse crystal structure and keep on maintaining accuracy for a ling time.

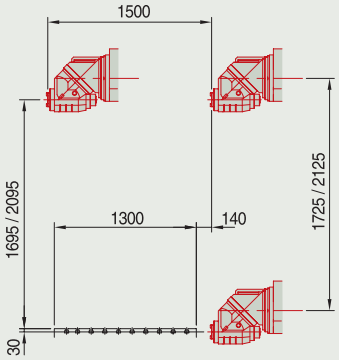
U1350
A4 Head



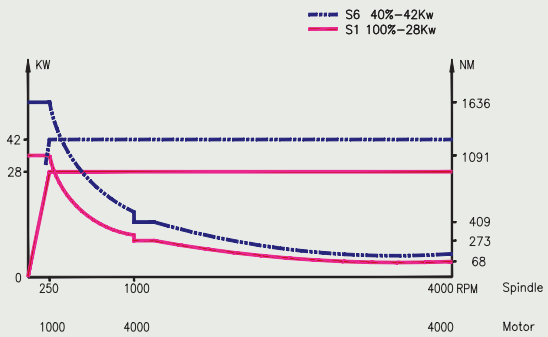


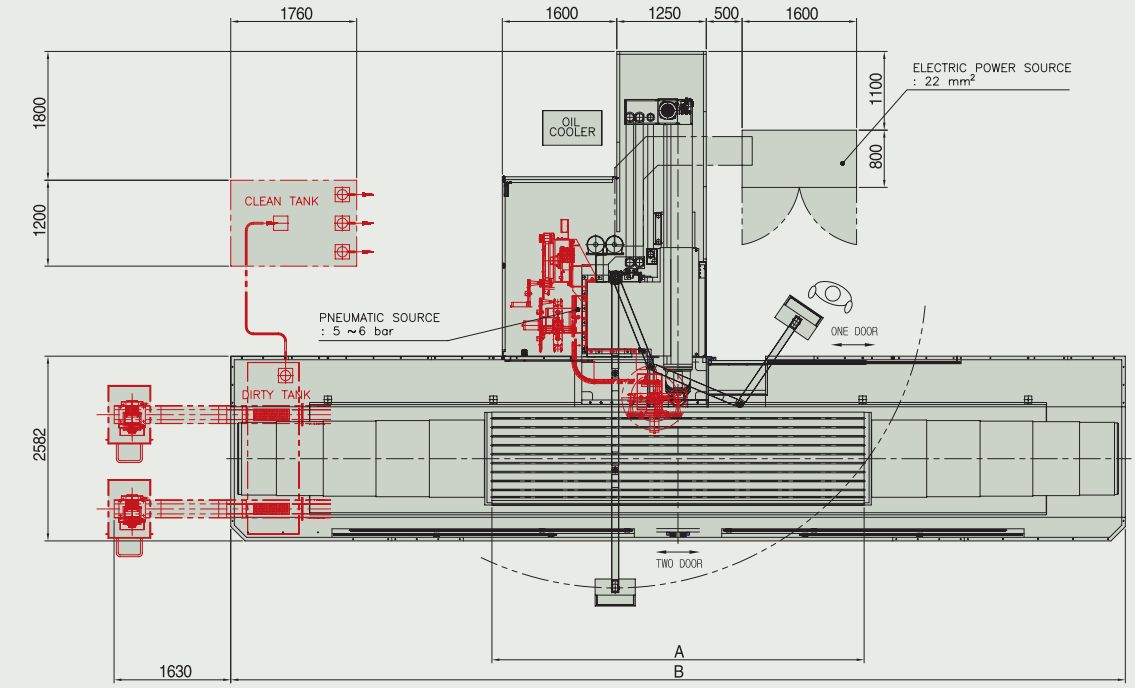
U1500
A4 Head

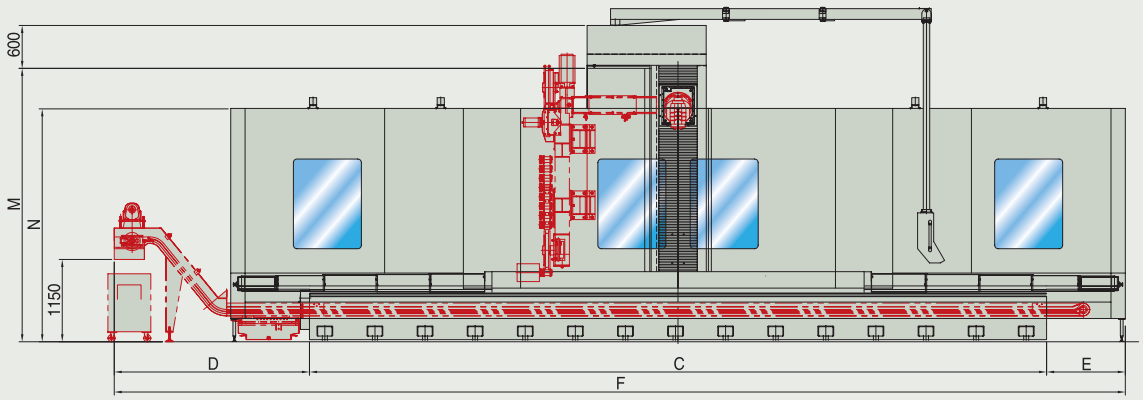


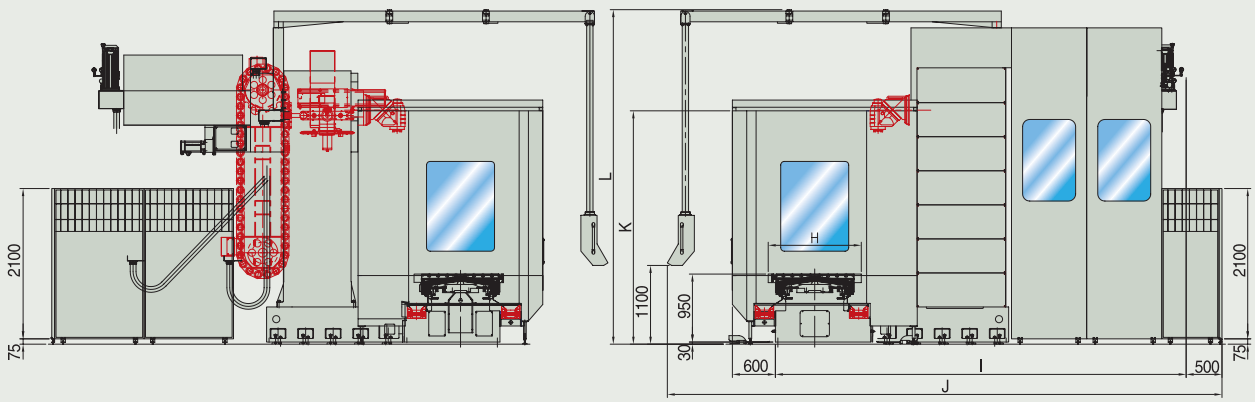


Spindle Motor









	A	B	C	D	E	F
X STROKE						
3000 mm	3200	8500	6300	2730	1100	10130
4000 mm	4200	10500	8300	2730	1100	12130
5000 mm	5200	12500	10300	2730	1100	14130

H	I	J
Y STROKE 1350/1500		
1150 / 1300	5340 / 5740	7350 / 7750

K	L	M	N
Z STROKE 1600/2000			
3255	4275 / 4675	3420 / 3820	3255

Two DOOR	One DOOR
3000	1400
4000	
5000	