

# U1250N

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, 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 (20,000m<sup>2</sup>) established in Daejeon, Korea
- 1996** CE certificate from TUV, 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** KiHEUNG German established  
Developed fixed bed column travel boring and milling center, RiGiTRAX
- 2009** Awarded 20 million dollar export prize from Korea government
- 2010** Developed column travel boring and milling center, WiNGTRAX  
New ultra-modern foundry with double induction furnaces on 15,000m<sup>2</sup> established
- 2012** Developed Orthogonal Head (2.5°x2.5°, 1°x1°)
- 2014** Developed Continuous universal head
- 2015** Developed Linear guide type U1050N and U1250N, and traveling milling machine TRAX
- 2016** Developed Universal Head K5, K6 and T4 with the spindle rpm 5000/6000
- 2017** Developed Universal Head S5 and S6 (0.001°x0.001°)





# BED TYPE MILLING CENTER U1250N



U1250N Video



Machine Specification		U1250N
TABLE	Surface	3200 / 4200 / 5200 × 1100mm
	T-slots	No.8 × 22mm
	Distance between T-slots	125mm
	Max. permissible load	12000 / 14000 / 16000kg
TRAVEL	Longitudinal travel	3000 / 4000 / 5000mm
	Cross travel	1250mm
	Vertical travel	1600 / 2000mm
FEED	Axis feed rate	8000mm/min
	Rapid feed rate	16000mm/min
SPINDLE	Taper	50mm/min
	Speed	4000 rpm, 2 steps(0~1000, 1001~4000)
MOTOR	Spindle drive motor	28 / 42 kw
	Feed drive motor	X:50, Y:27, Z:27 Nm
WEIGHT	Approx. machine net weight	29 / 32 / 33 ton

The contents of the catalogue are subject to change without prior notice.



### ■ Hand Scrapping

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



### ■ Universal Head

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



### ■ 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.

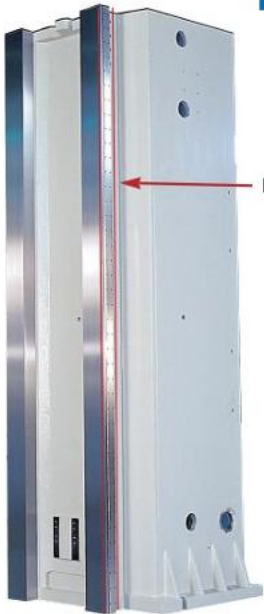
Furthermore, all the chips and coolant water can be protected perfectly and conveyed to the chip reservoir and coolant tank effectively.



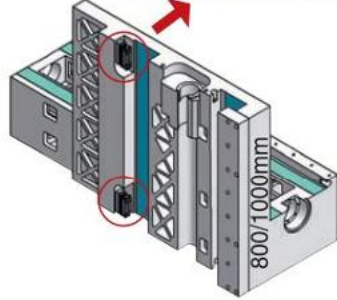


### ■ INA Roller shoes and INA Steel way

INA Roller shoes on the saddle and INA Steel way on the column guarantee the long life geometric accuracy

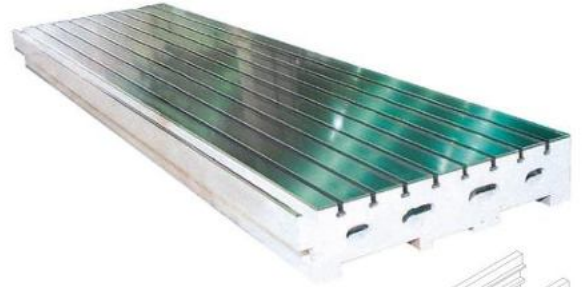


INA steel



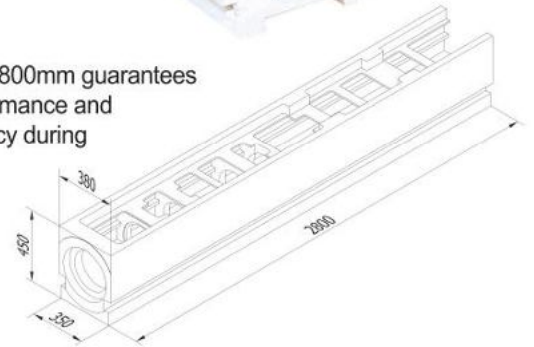
### ■ Table

Strong and long table with table surface 3200/4200/5200 X 1100mm, 8 T-slots



### ■ Ram

Strong ram with 2800mm guarantees high milling performance and geometric accuracy during critical maximum Y cross travel



### ■ 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



### ■ Hydraulic Balance

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

### ■ M Head (Manual positioning)

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



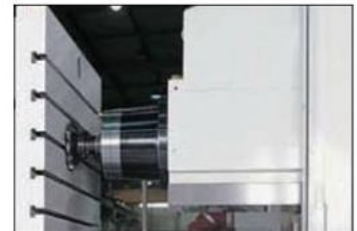
### ■ Vertical Head (Manual positioning)

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



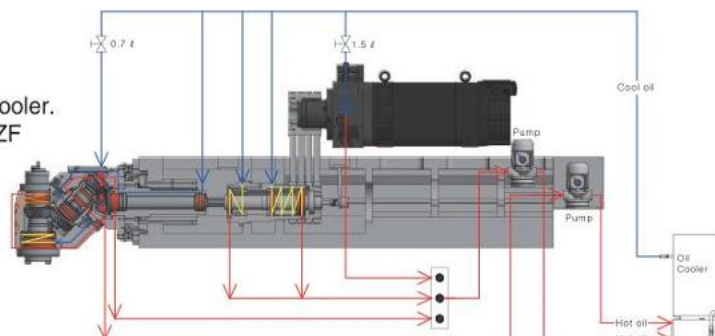
### ■ Horizontal Head

- ISO50 DIN69871
- 6000 spindle rpm with cooling the head (2 step: 0~1500, 1501~6000)



### ■ Head 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.



# Option

## ■ Vertical Head (Automatic 2.5°, 1°)

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



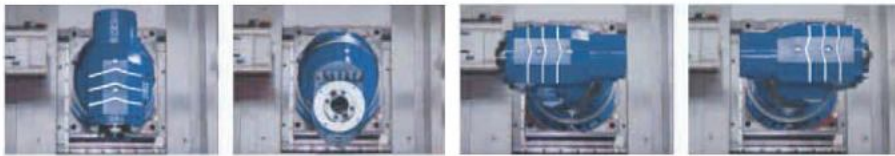
## ■ A2 Head (Automatic 2 positioning, Vertical / Horizontal)

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



## ■ A4 Head (Automatic 2.5° × 2.5° / 2.5° × 1°)

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



## ■ K5 Head

- Automatic indexing (2.5°x2.5°, 2.5°x1°, 1°x1°)
- ISO50, DIN69871
- Hydraulic tool clamp/unclamp
- 5000 spindle rpm with cooling the head including the spiral bevel gear with oil (2 step : 0~1000, 1001~5000)



## ■ T4 Head

- Automatic indexing (2.5°x2.5°, 2.5°x1°, 1°x1°)
- ISO50, DIN69871
- Hydraulic tool clamp/unclamp
- 4500 spindle rpm with cooling the head including the spiral bevel gear with oil (2 step : 0~1000, 1001~4500)



## ■ Coolant through Spindle

### 1. Dual cartridge filter

- 16 bar (20ℓ / min) coolant through spindle (Adjustable 5~16 bar)
  - 9 bar coolant through nozzle (Adjustable 0~9 bar)
  - 2 tank (500ℓ + 700ℓ )
- Dual cartridge filter (20μm) to switch over when one filter is dirty.



### 2. Paper filter

- 16, 30, 50 bar (20ℓ , 25ℓ , 25ℓ / min) coolant through spindle (Adjustable 5~16, 30, 50 bar)
- 9 bar coolant through nozzle (Adjustable 0~9 bar)
- 2 tank (500ℓ + 700ℓ , 1000ℓ )
- Paper band filtering (20μm) system with drive and paper transport unit



## Heidenhain probes

### HEIDENHAIN TT160

- Tool touch probe
- Signal transmission : Cable



### HEIDENHAIN TS260

- Work piece touch probe
- Signal transmission : Cable



### HEIDENHAIN SE 660 / TT460 / TS 460

- TT460 : Tool touch probe
- TS460 : Work piece touch probe
- SE660 : Receiver
- Signal transmission : Radio / Infrared



## Work piece touch probe RENISHAW RMP 60

with radio signal transmission







### ■ 24 Tools Vertical ATC

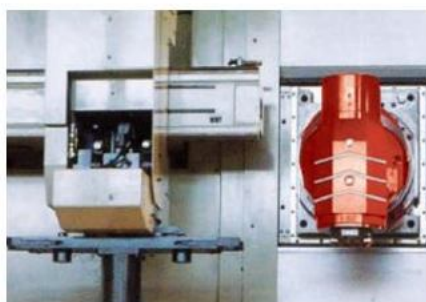
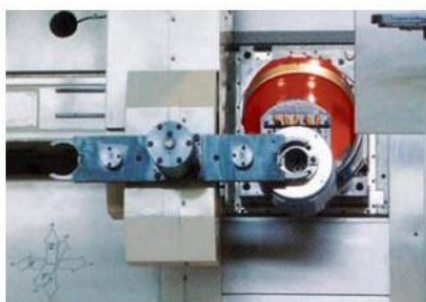
Cam and cam follower automatic tool changer driven by geared motor

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 Horizontal, 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



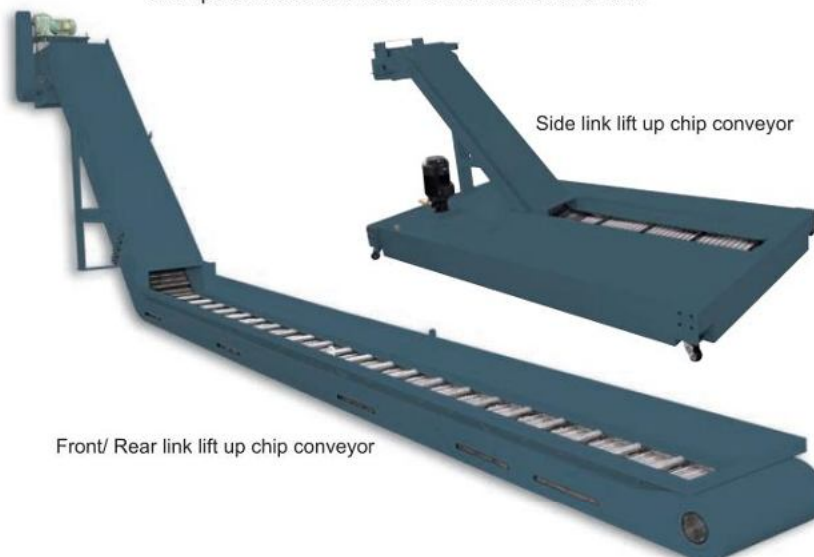
### ■ Sub. Angle Table

1300(H)×1100(W)mm



### ■ Chip Conveyor

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

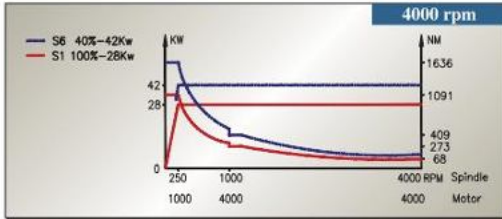


Side link lift up chip conveyor

Front/ Rear link lift up chip conveyor



## SPINDLE MOTOR



## STANDARD

- Heidenhain iTNC530 BF150, HSCI, Software option1
- Heidenhain or Siemens spindle motor 28/42 kW
- Heidenhain or Siemens AC servo motor
- Heidenhain linear scale
- Heidenhain electronic hand wheel HR410
- Heidenhain DA400
- ZF gear box, 2 step (1~1000, 1001~4000 rpm)
- 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 potentation meter on the operator panel
- Link lift up chip conveyor at rear
- Oil cooler for cooling the head and ZF gear box
- 2(two) sliding doors in front and 1(one) sliding door at rear for CE norm
- Telescopic chip cover for X, multi cover for Z axis
- Preparation of TS260 work piece touch probe
- Automatic power off with M function
- Air thru spindle, Air blow, Spindle air blast during automatic tool change

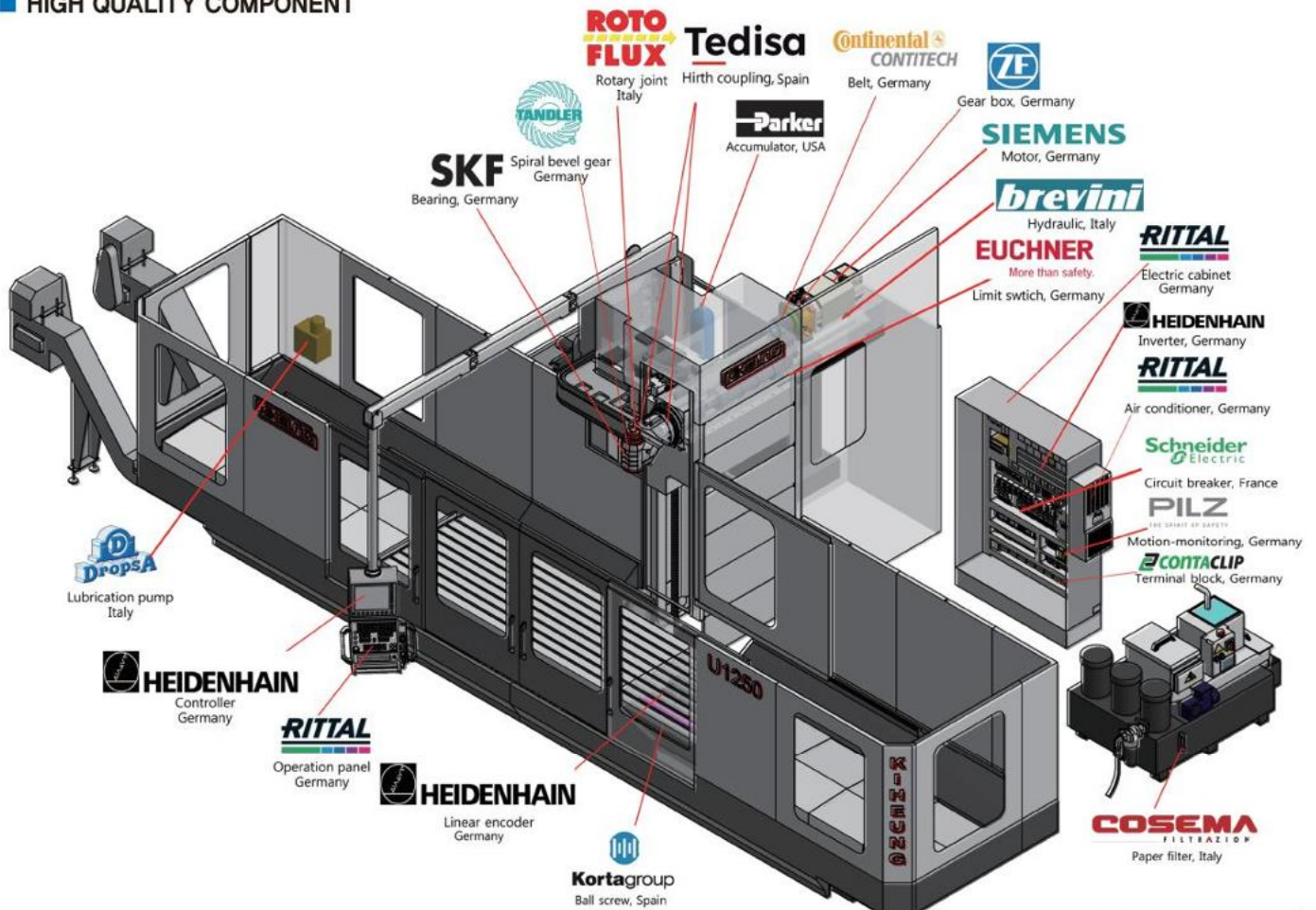
## OPTION

- Other CNC
- Vertical travel 2000mm
- One T-slot 22H7 in front of the table
- Sub Angle table 1300(H)x1100x625mm
- High pressure coolant through tool
- CTS (Coolant through spindle)
- Coolant washing gun with separate pump
- Vertical tool changer, 24 tools
- Horizontal tool changer 30/40/50/60 tools
- Vertical/Horizontal tool changer 30/40/50/60 tools
- Link lift up chip conveyor in front of the bed
- Side link lift up chip conveyor
- Vertical head (2.5", 1")
- A2 Head (Automatic 2 positioning, Vertical/Horizontal)
- A4 Head (2.5" x 2.5", 2.5" x 1")
- Preparation of the continuous 4th axis
- Heidenhain Tool Touch Probe TT160 + Air operator cover
- Heidenhain Work Piece Touch Probe TS260
- Heidenhain Tool Touch Probe TT460 (wireless)
- Heidenhain Work Piece Touch Probe TS460 (wireless)
- Renishaw Work Piece Touch Probe RMP60 (radio signal transmission)
- Electronic handwheel HR520
- Electronic hand wheel HR550 FS (Wireless)
- Air conditioner for electric cabinet
- One additional foot switch at the rear of the bed
- Rotary table



- Option for Heidenhain  
Software option2  
DCM collision  
DXF converter + Smart CNC with mouse pad  
Adaptive Feed Control (AFC)  
Cycle 290, interpolation (turning)

## HIGH QUALITY COMPONENT



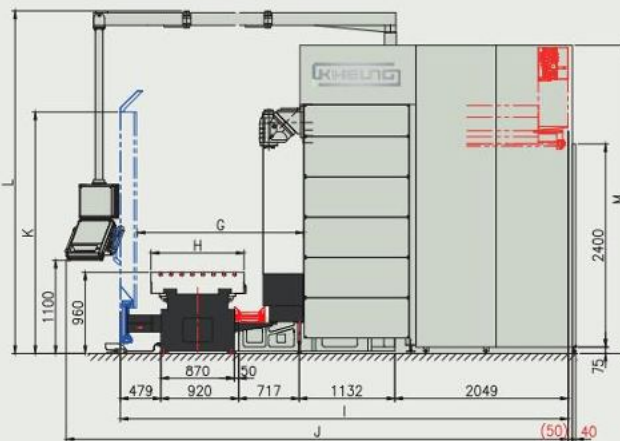
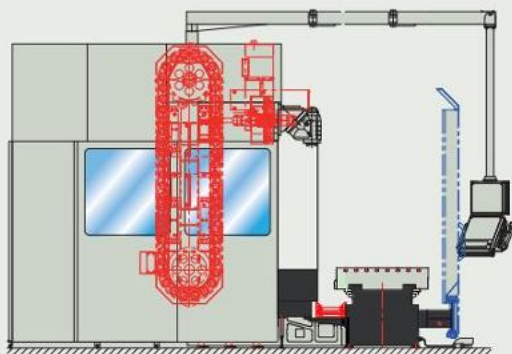
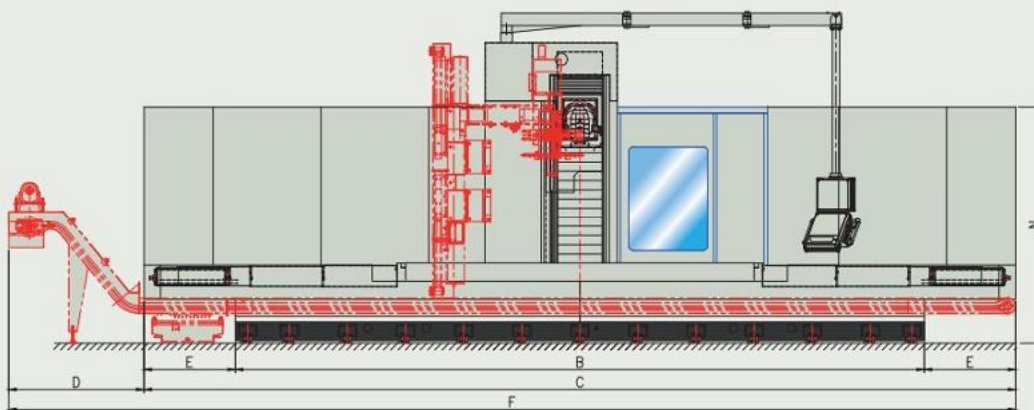
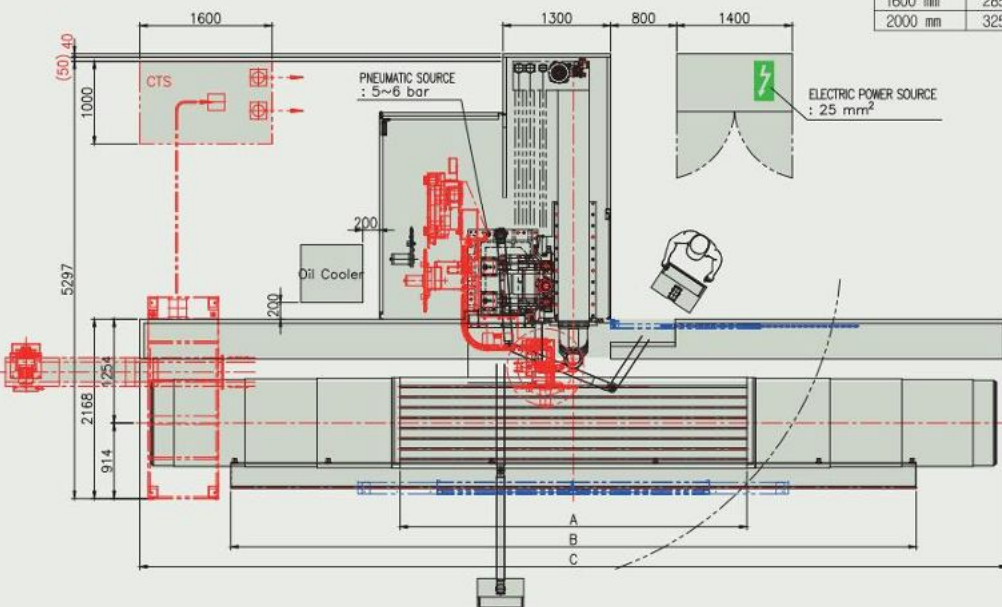
**U1250N without complete enclosure**

X STROKE	A	B	C	D	E	F
3000 mm	3200	6300	8500	1630	1100	10130
4000 mm	4200	8300	10500			12130
5000 mm	5200	10300	12500			14130

Y STROKE	G	H	I	J
1250 mm	1985	1100	5297	5940

Z STROKE	K	L	M	N
1600 mm	2850	3950	3640	2850
2000 mm	3250	4350	4040	3250

X STROKE	Two door	One door
3000 mm	3200	1200
4000 mm	4200	
5000 mm	5200	





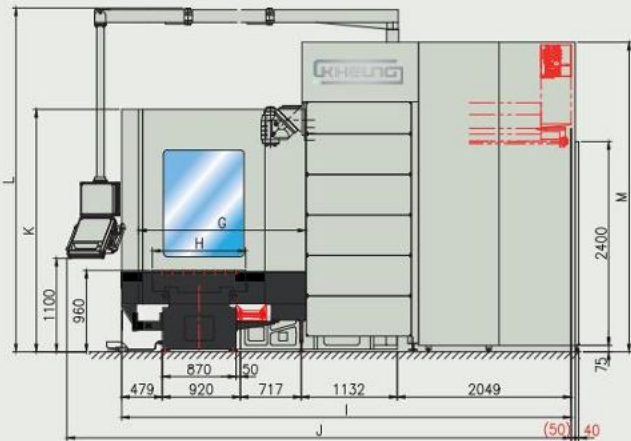
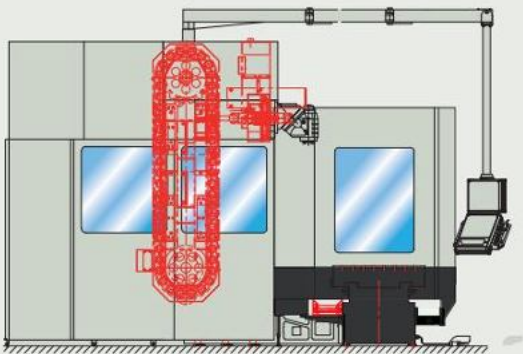
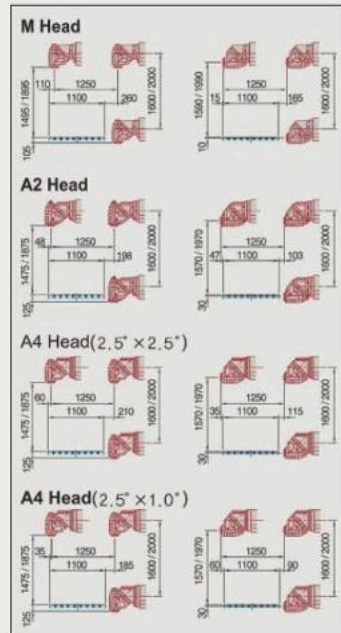
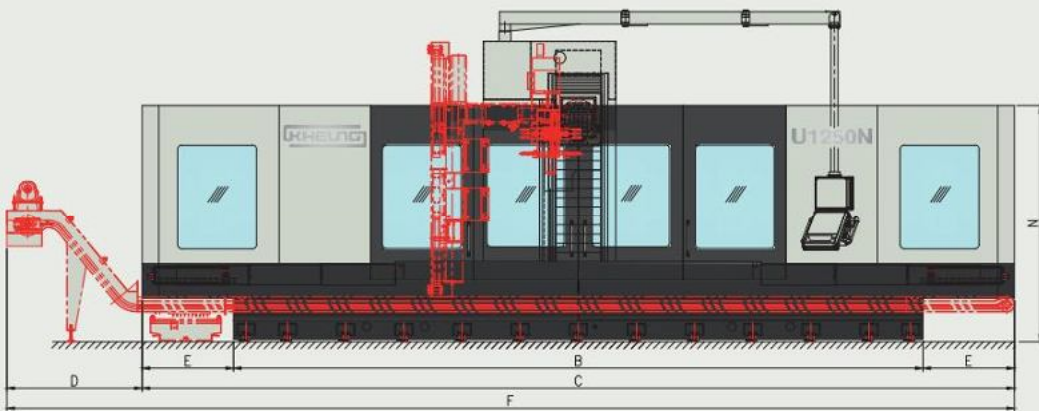
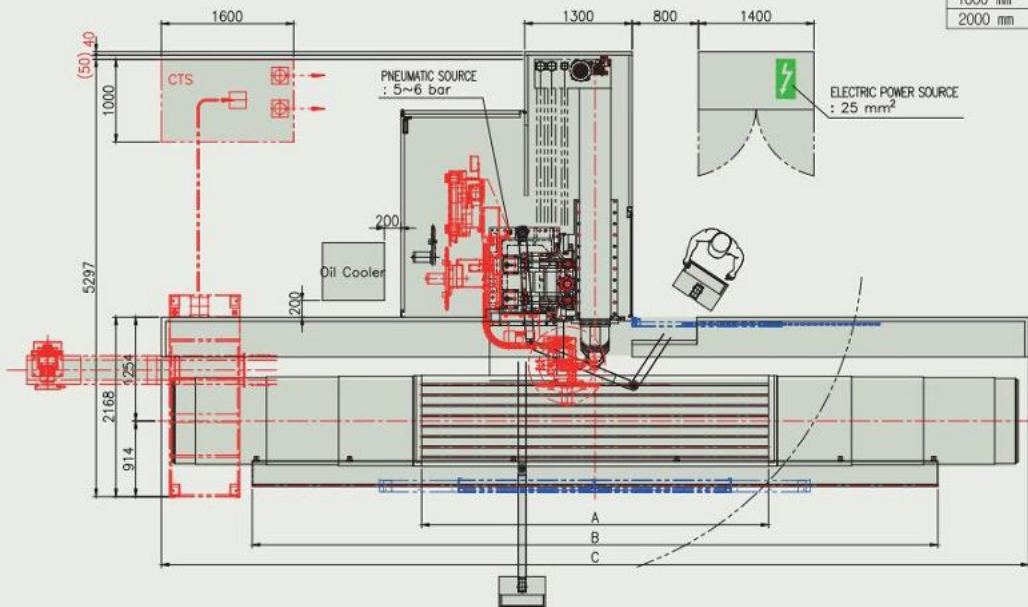
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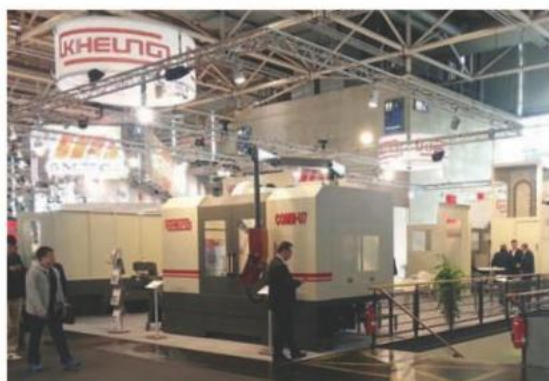
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X STROKE	Two door	One door
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4000 mm	4200	
5000 mm	5200	







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