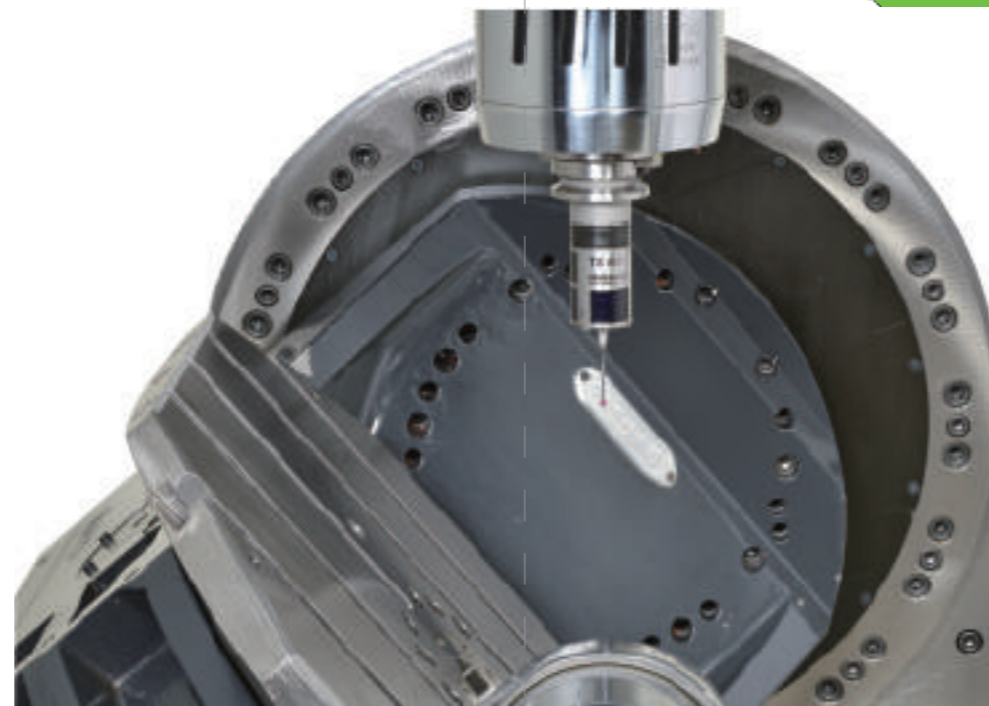




# Simultaneous

## FOCUS SEIKI CORP

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5 Axes Moving Column  
Ram Type Machining Center



# 5 AXES Simultaneous Machining Center

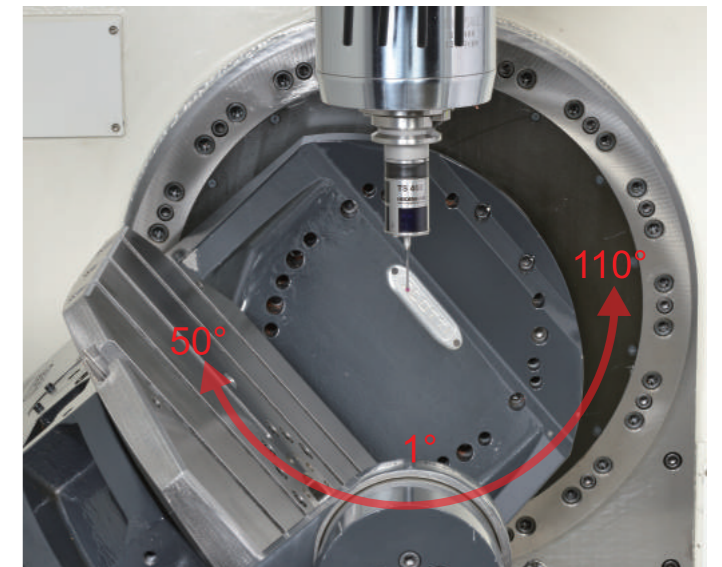
## Europe Design High Speed Machining

The Focaseiki FUV Series 5 Axes Machine is an advanced, multi-tasking European design and technology for producing complicated parts at high speed, With 5-axis configuration , complex machining can be accomplished in one step.



ine dramatically reduces machining time,  
ng you to stay competitive.

Europe style ergonomic state of  
the art design operating box, 360°  
rotation and any angle can be fixed.  
Convenient, modern.

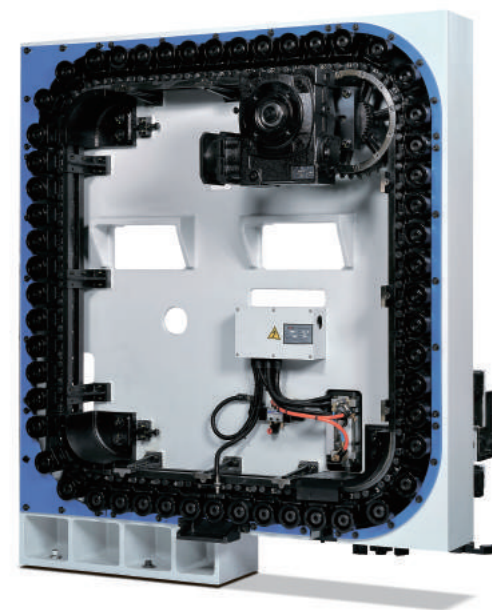


Assuring high accuracy in simultaneous  
machining of 5 axes and positioning at any angle .

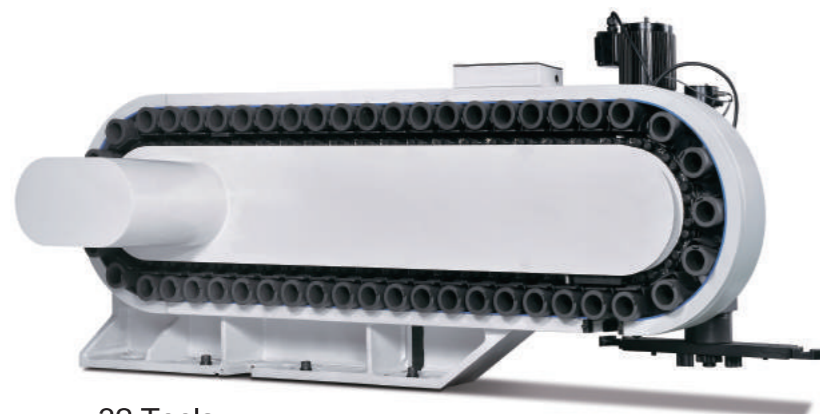
### Rotating/Tilting Axis (B/C-axis)

The high rigidity NC controlled rotating/tilting rotary  
table is equipped with linear encoders, ensuring excellent  
accuracy when performing complicated machining.

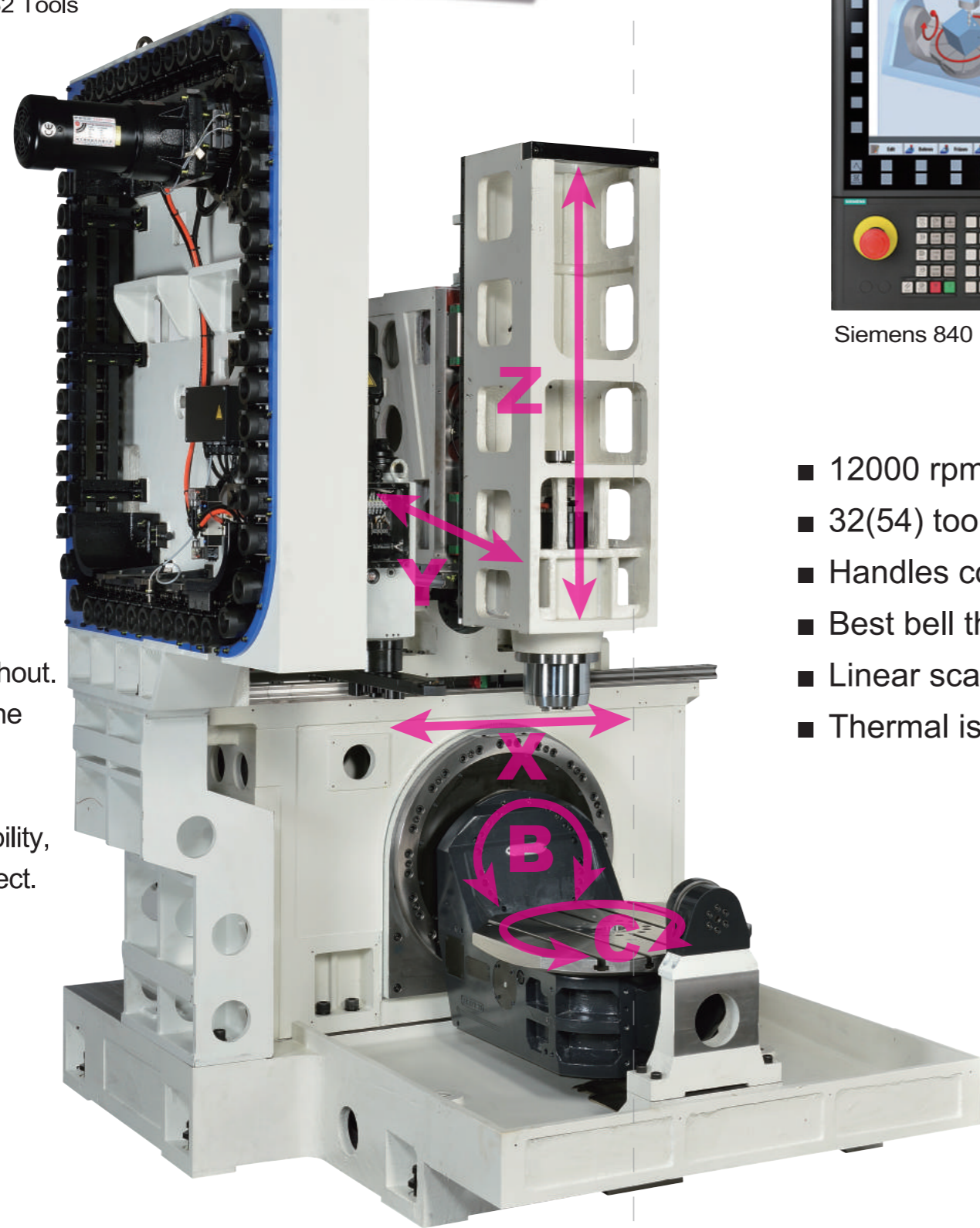




54 Tools



32 Tools



The FUV-650 is rigidly constructed throughout. The rigid base provides solid support for the rotating / tilting rotary table (B/C-Axis). This combined with a cross slide design and ensures machine structure's high stability, and reliable accuracy you've come to expect.

- 5 axes simultaneous control
- The advanced control will dramatically increase machining accuracy , efficiency and safety during machining

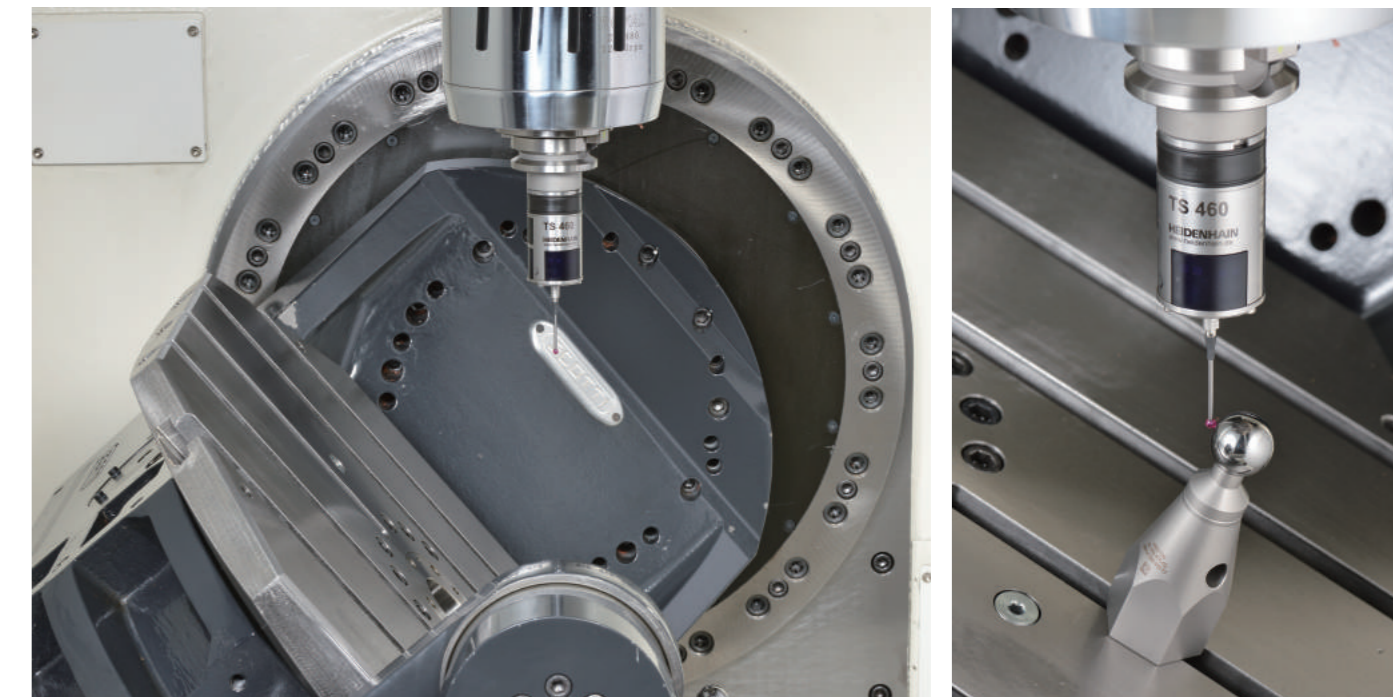


Siemens 840 D SL



Heidenhain iTNC-640

- 12000 rpm direct-drive spindle
- 32(54) tool magazine
- Handles complicated machining with ease
- Best bell theorem structural design
- Linear scales / encoders on 5 axes
- Thermal isolation design compensation kit.

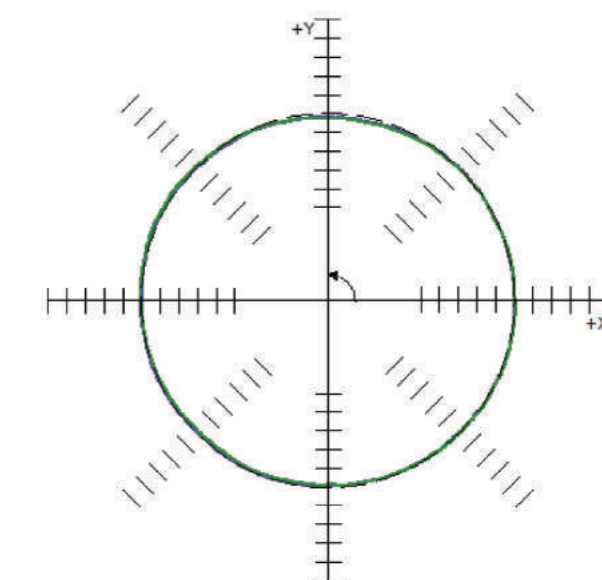


(Optional)

### Kinematics Calibrating Device

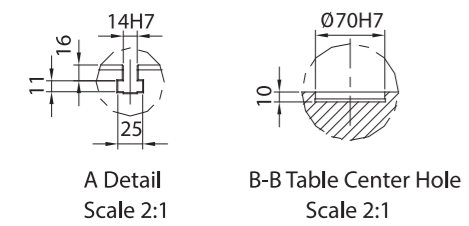
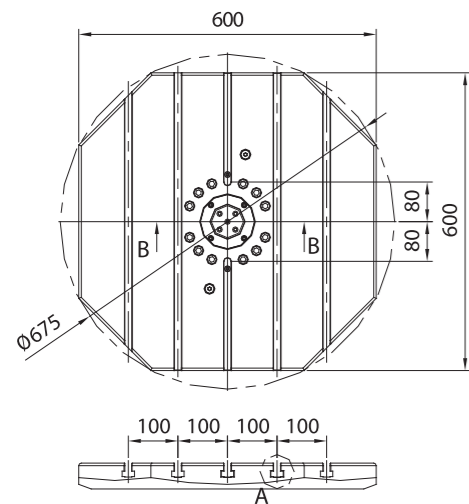
The device employs a Heidenhain TS-460 high precision probe. Standard measuring ball and measuring software for accurately inspecting the table center. The measured values is then input into the control system to ensure the accuracy of the table center.

Dynamic ASME B5.54	
Non roundness	4.2µm
Maximum deviation	2.1µm 155.47651°
Minimum deviation	-2.1µm 90.72483°
Test parameters	
Radius	150.0000mm
Sample rate	52.632Hz
Feedrate	2000.0mm/min
Run sequence	CW CCW
Plane under test	XY
Test position	
Start angle	0°
End angle	360°
Overshoot angle	180°
Centre offset X	0.6µm
Centre offset Y	-2.3µm
Calculated feedrate	1996.8mm/min

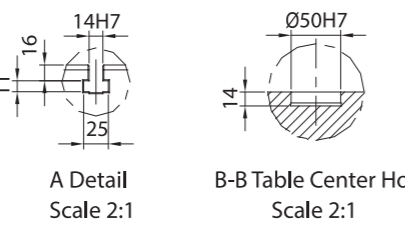
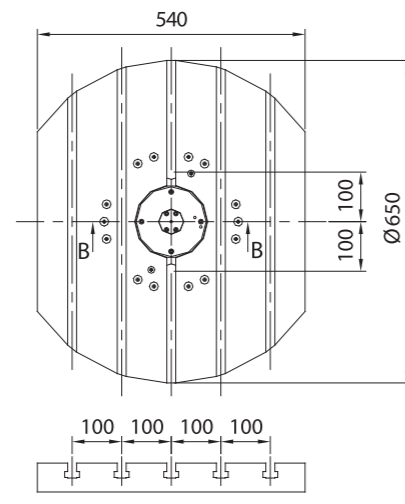


10.0µm/div

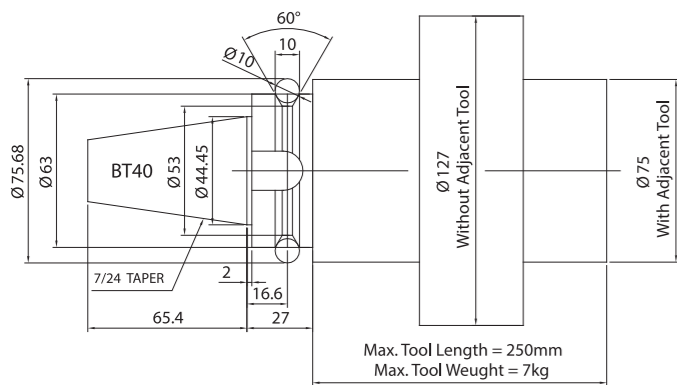
### Tilting Rotary Table (For FUV-650) (Worm Gear Transmission)



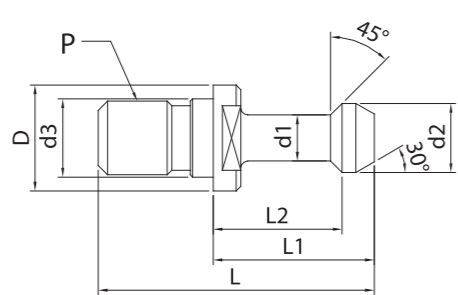
### Tilting Rotary Table (For FUV-650) (DDM)



### Tool Shank

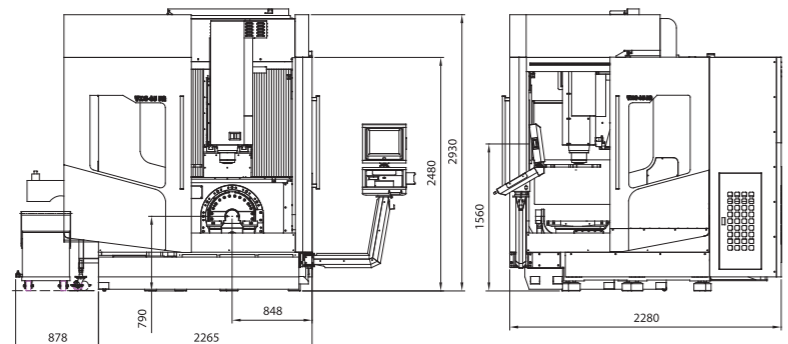
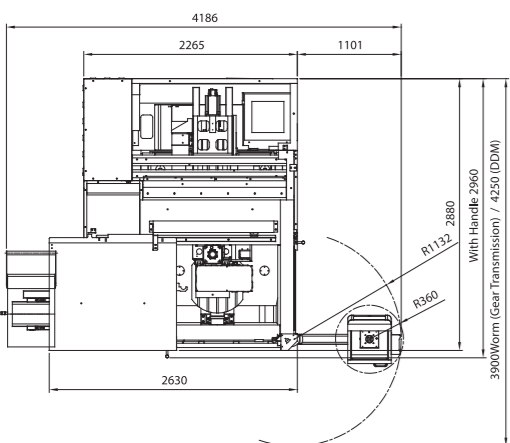


### Pull Stud



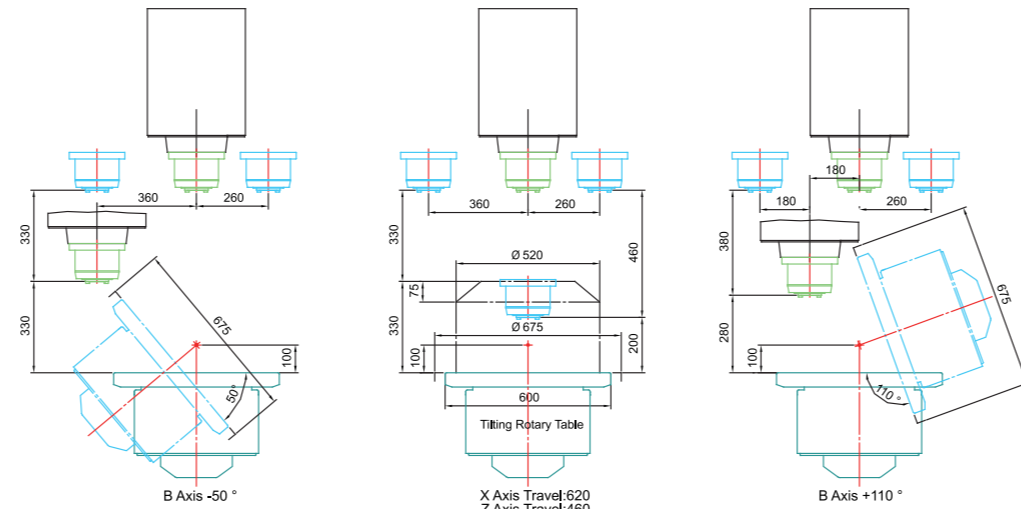
MODEL	D	d1	d2	d3	L	L1	L2	P
BT40	23	10	15	17	60	35	28	M16*2.0

### Dimensions

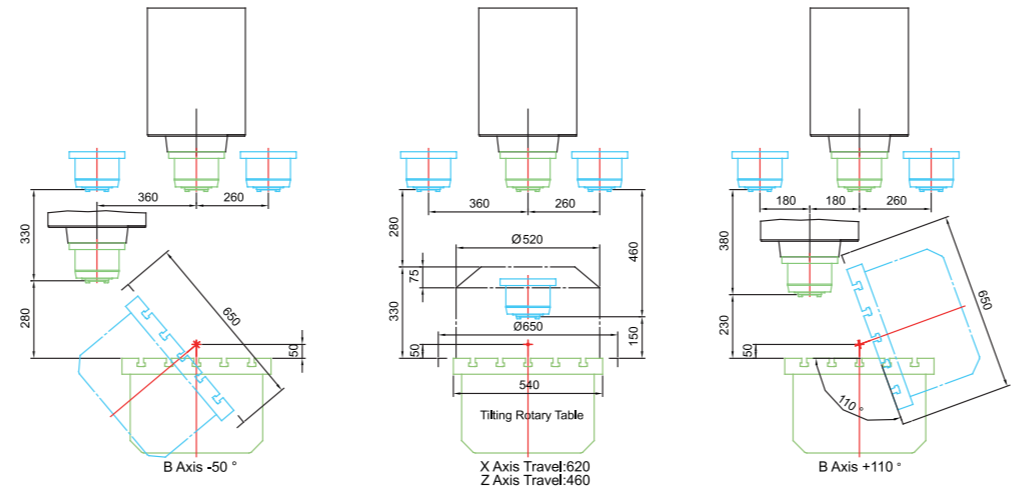


### Working Area (For FUV-650)

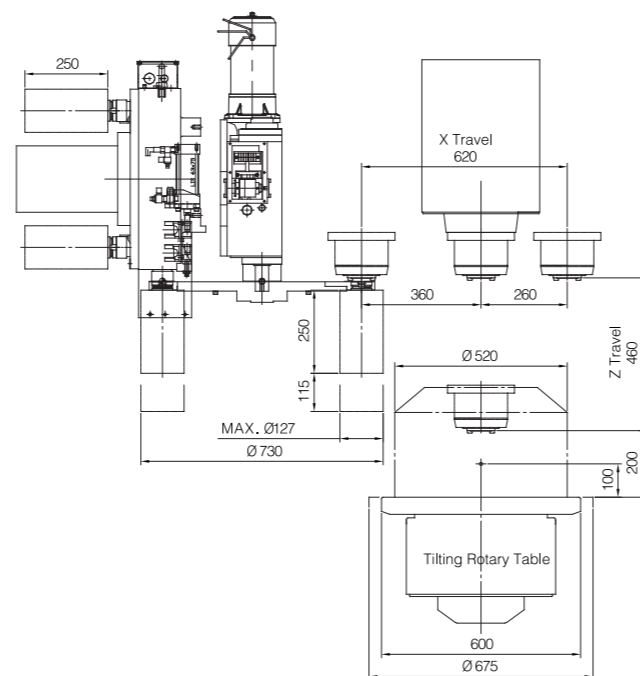
#### Tilting Rotary Table (Worm Gear Transmission)



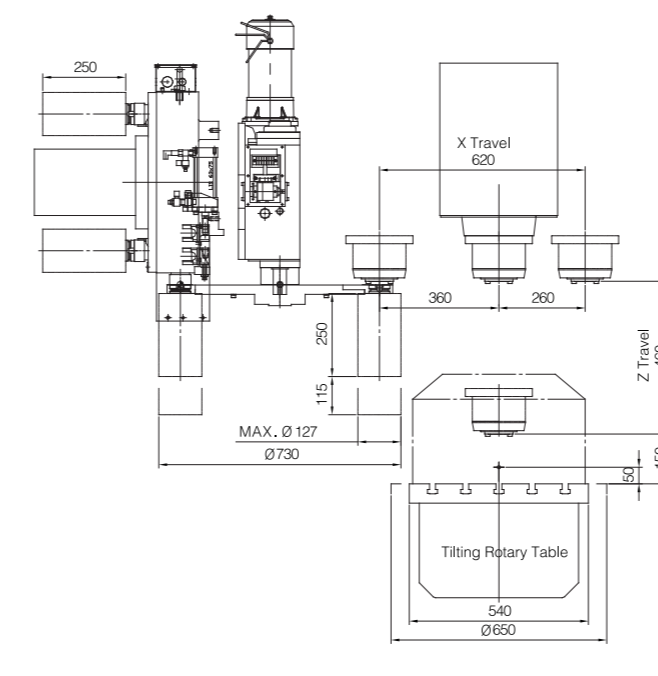
#### Tilting Rotary Table(DDM)



#### Tilting Rotary Table(Worm Gear Transmission)(For FUV-650)



#### Tilting Rotary Table(DDM) (For FUV-650)



### Machine Specification

	650	720
<b>Spindle</b>		
Spindle transmission	Direct	Direct
Spindle taper	ISO 40	ISO 40
Spindle r.p.m	12000	12000
<b>Travel</b>		
X/Y/Z (mm)	620/520/460	720/600/520
B Axis tilting range	-50°~+110°	-50°~+110°
C Axis rotating range	360°	360°
Spindle nose to table surface (mm)	200-660 (150-610)	150-670
<b>ATC</b>		
Tool magazine capacity(T)	32(54)	32(54)
Tool Shank	ISO 40	ISO 40
Max. tool length (mm)	250	250
Max. tool diameter (mm)	Ø 75/ 127 (32 tools)	Ø 75 / 127 (32 tools)
<b>Rapid Speed</b>		
X/Y/Z axis (mm/min)	48	48
B/C axis (rpm)	12.5/25(110/170)	110/170
Cutting federate M/min	20	20
<b>B/C AXIS</b>		
Table size (0.D/1.D)mm	Ø650	Ø720
Center hole size (mm)	Ø70H7x10 (Φ50H7x14)	Ø50H7x14
T-Slot number/pitch (mm)	5x100x14	5x100x14
Max. table load (kgs)	300	300
<b>Others</b>		
Machine Dimension (mm)	4200mm x 4250mm x 3000mm	4300mm x 4250mm x 3060mm
Machine Weight	10000 kgs	11000 kgs
Coolant tank capacity (L)	210	210
Pneumatic supply(kg/cm2)	6	6

- We reserve the right to modify the design and specification without notice in advance. Above specifications are for reference only. Correct specifications are based on actual machine.
- Description in ( ) are optional accessories.

#### Accessories

##### Standard :

- Spindle speed 12000rpm
- Oil chiller
- Chip conveyor
- A.T.C 32T
- Heat exchanger
- 3 Axes linear scales
- B/C axis encoder
- Heidenhain iTNC 640
- M30
- Coolant Gun
- Air Gun
- Chip conveyor

##### Optional :

- C.T.S
- Laser tool length measurement
- Work piece measurement
- CE
- Transformer
- Air conditioner
- Spin window
- Kinematics calibrator device
- Oil mist collector