

SMART-t

World-Class
Bridge-Type 3 - 5 Axis
Vertical Machining Centers

CINCINNATI MACHINES

World-Class
Bridge-Type 3+5 Axis
Vertical Machining Centers

SMART-t Series

INNOVATIVE
VERSATILITY, TECHNOLOGY,
RIGIDITY, SIMPLICITY,
QUALITY, PRODUCTIVITY



3-Axis
5-Axis
Auto
Head
Change



Manual
or
Auto
Index
of
Tilt
or
Swivel

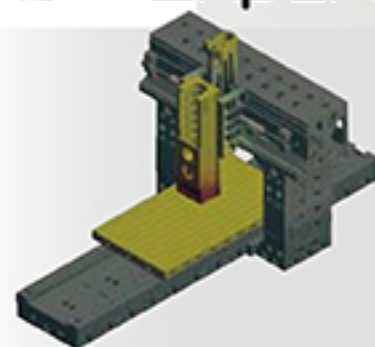


CINCINNATI MACHINES

We know it is imperative to always start with good meehanite casting that have been optimized for maximum weight to rigidity ratios, and then seasoned via cutting edge methods to provide solid, fast, chatter-free cuts.

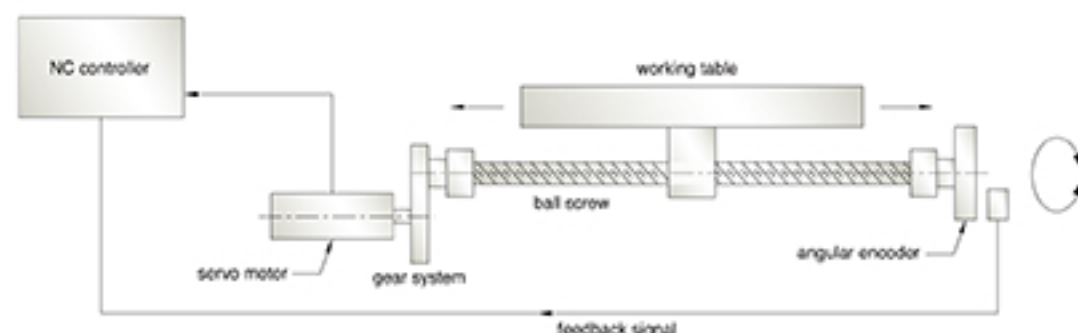
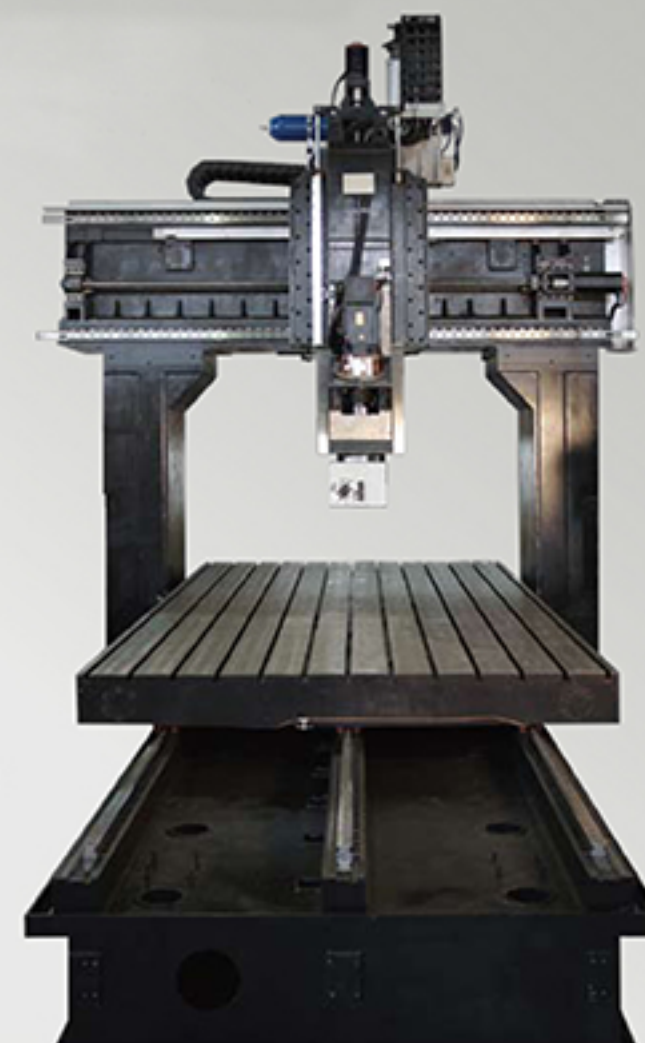
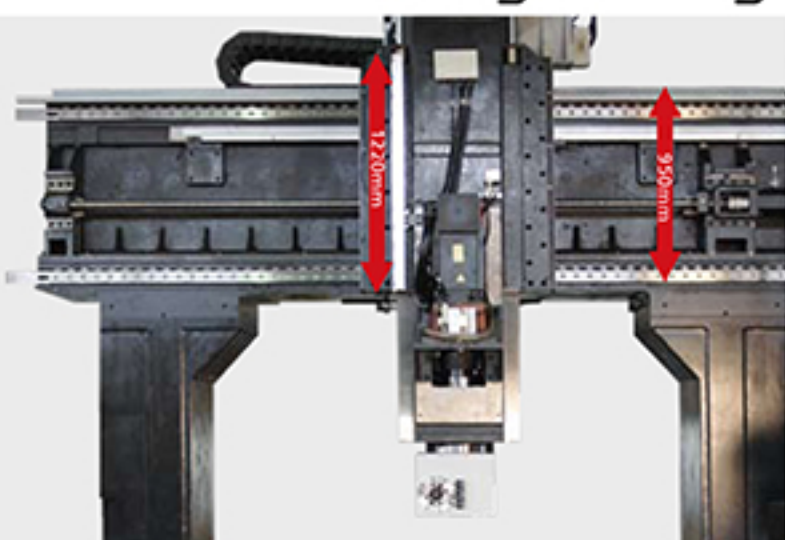
RIGIDITY

CAD + Expertise

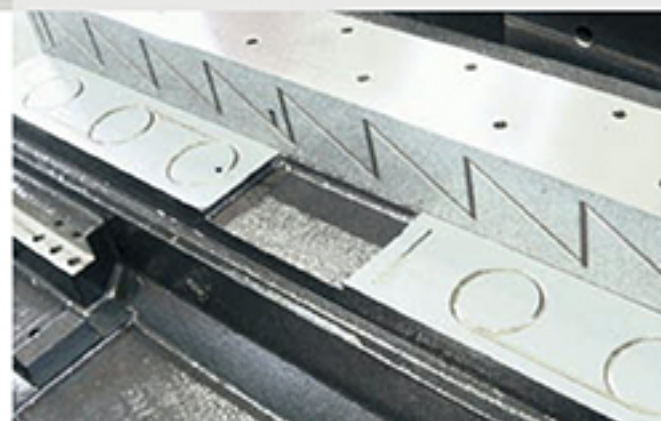


= Excellence

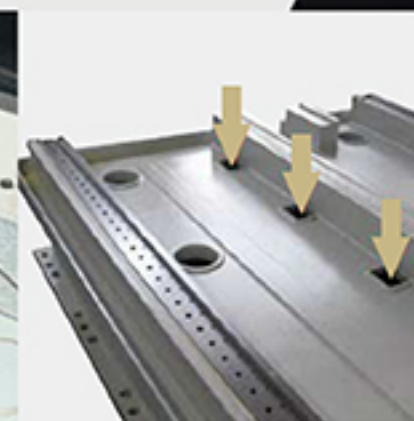
Extra-Wide Castings Throughout



Closed-loop control eliminates the total displacement error caused by mechanism movement and ball screw deformation. (Where applicable)

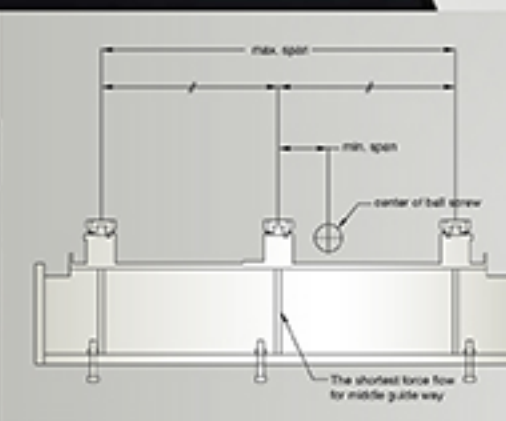


Z-axis adopts box way structure with Turcite-B material.



Base center line is directly supported by foundation rib and bolts, which provides sufficient supporting and rigidity, ensuring movement straightness of working table.

The larger models actually feature 3 bed ways



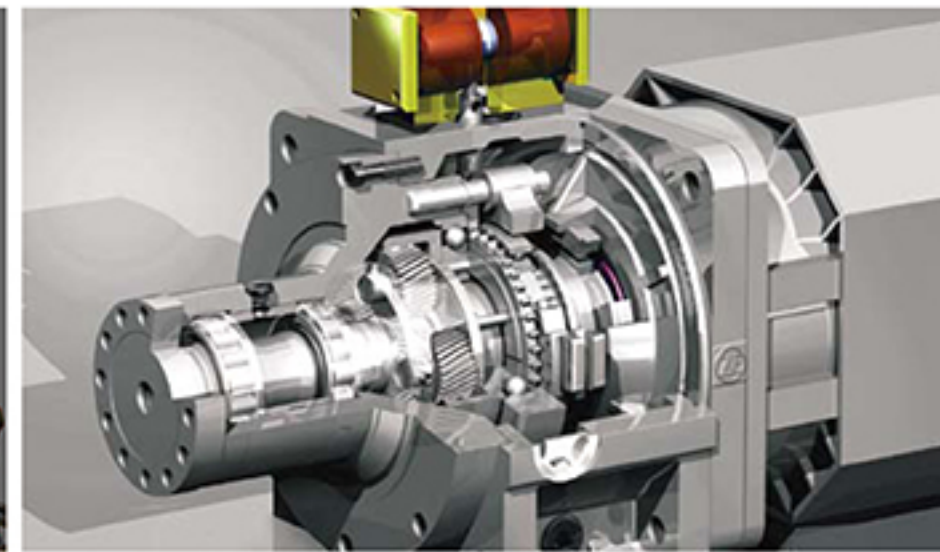
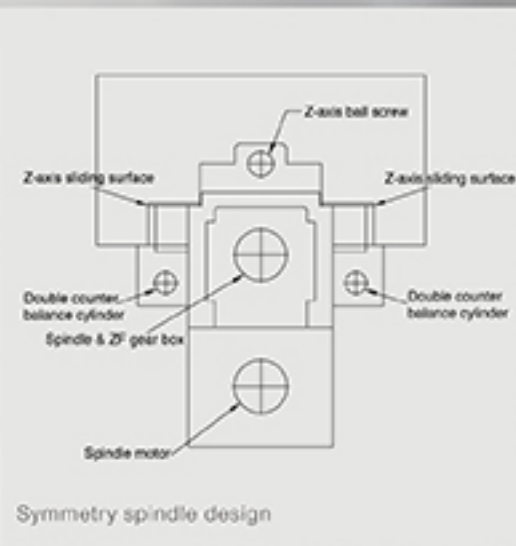
SMART-t

SMART-t

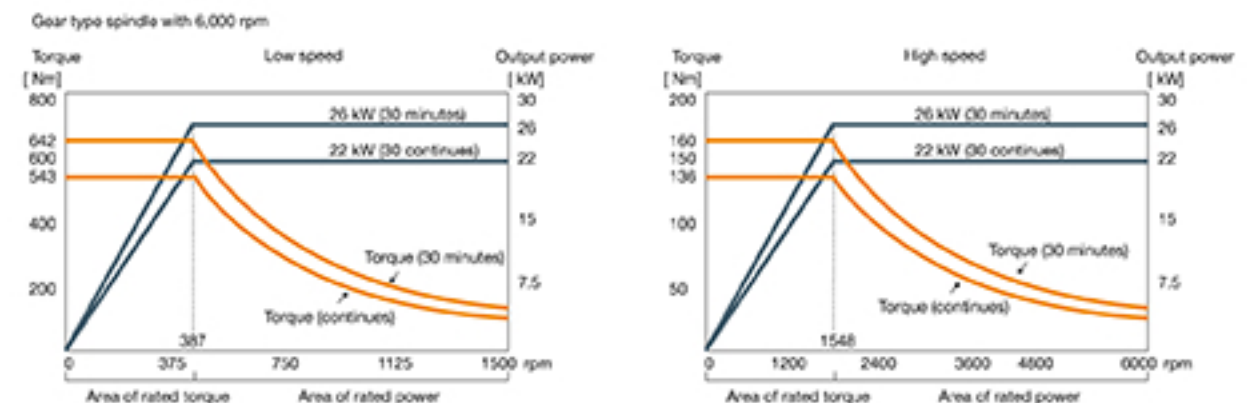
CINCINNATI MACHINES

Provides all the technology
to put that spindle to work

- *Thermally Controlled Spindle
- *German ZF 2-Range Gearbox
- *High-Torque Spindle Drive and Motor
- *Symmetrical Spindle Placement Design
- *Hard Box Ways on Z-Axis
- *Closed loop Dual Cylinder Counter Balanced Ram
- *Supremely Stable Rock Solid Meehanite Castings



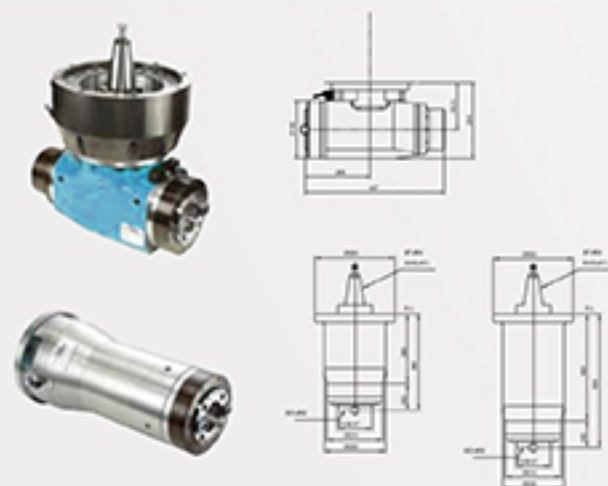
Wide range of available
spindle speeds and
configurations
to 24,000 rpm



FANUC α 22, spindle speed 6,000rpm (std.), 22/26kW, gear box

WIDE VARIETY OF MILLING CAPABILITIES TO COVER VIRTUALLY ANY APPLICATIONS

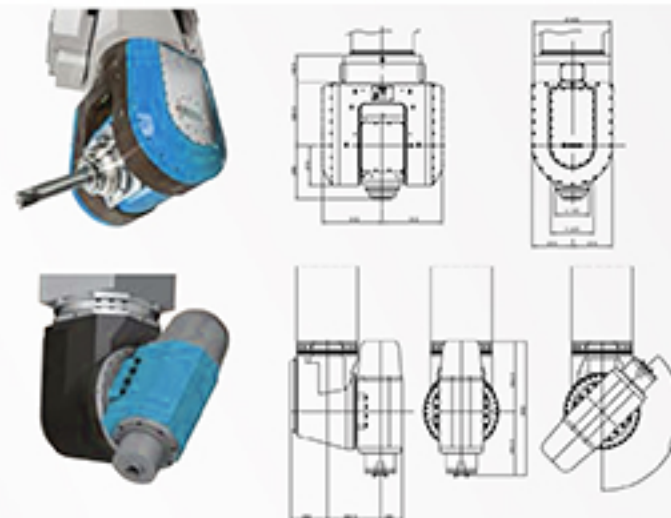
Manual Change Milling Attachments



90° Angular head	
Max. power	38 kW
Max. speed	3,500 rpm
Spindle taper	BT50
Tool clamping	Auto
Axis indexing	Auto at C-axis

Extension head	
Max. speed	3,500 rpm
Extended distance	360/500 mm
Spindle taper	BT50
Tool clamping	Auto
Axis indexing	Not available

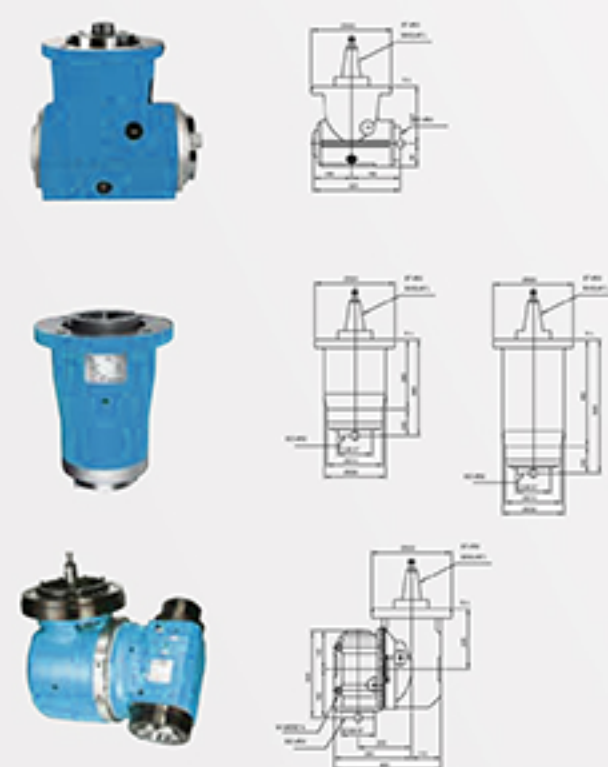
Self-Contained Permanent Milling Spindles



2-axis head (Continuous motion)	
Spindle taper	HSK 63A/HSK 100A
Spindle speed	24,000 18,000rpm/ 12,000rpm
Max. swivel/rotation speed	B=30 C=30
Swing/Rotation angle	B= ± 105° C= ± 200°

Auto swivel precision head (B/C-axis auto indexing)	
Spindle taper	BT50
Spindle speed	10,000 rpm
Indexing	B=1° fixed indexing(opt. 0.1° 0.01°) C=1° fixed indexing(opt. 0.1° 0.01°)

Auto Change Milling Attachments



90° Angular head	
Tool clamping	Auto clamping
Head clamping	Auto clamping
Indexing	C=5° fixed indexing
Max. torque	660 Nm(opt. 1,500 Nm)
Max. speed	3,500 rpm

Extension head	
Max. speed	2,000 rpm
Extended distance	360/500 mm
Spindle taper	BT50
Tool clamping	Manual

Swivel head	
Max. speed	2,000 rpm
Spindle taper	BT50
Tool clamping	Manual
Axis indexing	Manual at A/C-axis

Permanent Milling Spindles



Unchangeable attachment heads	
Five-face precision milling head	Clamping
Tool clamping	Auto clamping
Indexing	C=5° fixed indexing
Max. torque	660 Nm
Max. speed	3,500 rpm

Swivel head (B-axis continuous indexing, 4-axis continuous/5-axis continuous)	
Spindle taper	BT50
Spindle speed	3,000 rpm
Max. torque	1,000 Nm
Max. swing angle	B= ± 110°

Auto high torque swivel head (B/C-axis auto indexing)	
Max. torque	1,000 Nm
Indexing	B=2.5° C=2.5°
Max. speed	3,000 rpm

SMART-t

Innovation, Technology,
Rigidity, Simplicity,
Productivity

Auto Head-Changer

Horizontal/Vertical
Tool Changer

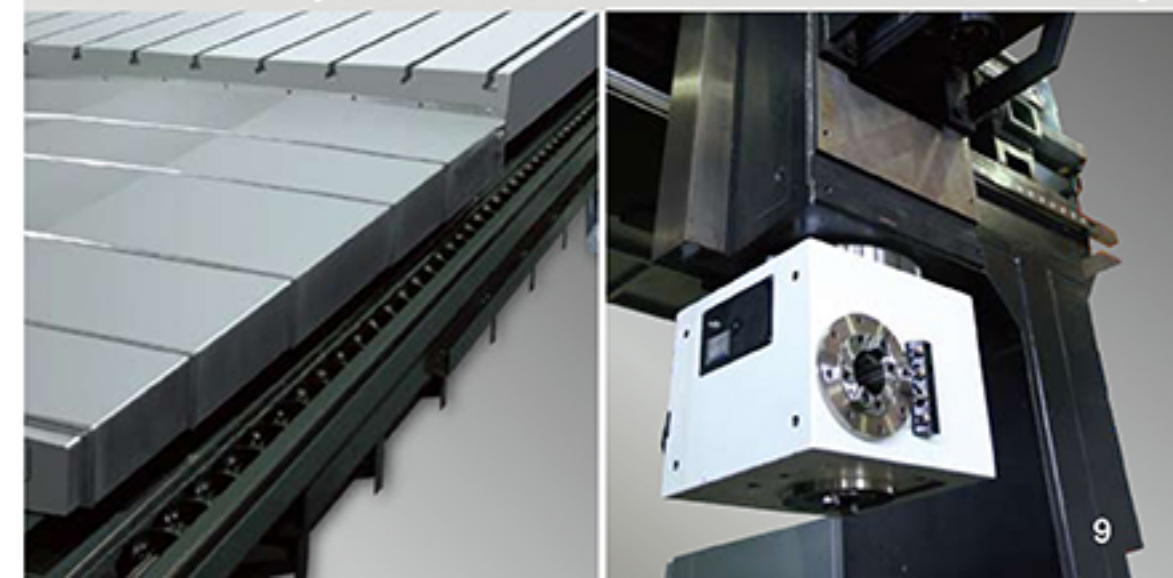


Vertical Tool Changer

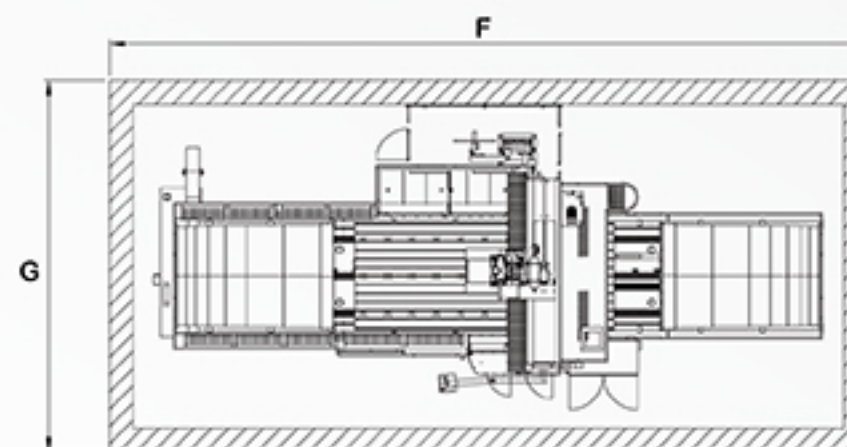
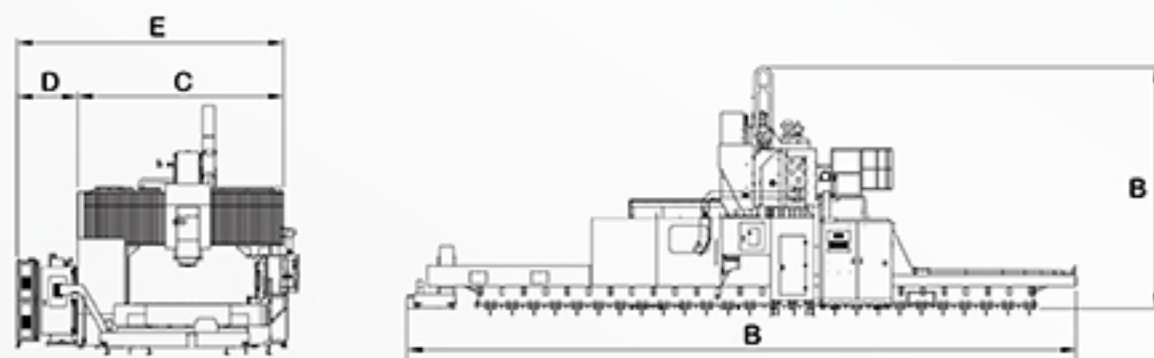
Versatility

Metal Way Covers

Combo Hor/Vert 90° 5-Sided Milling

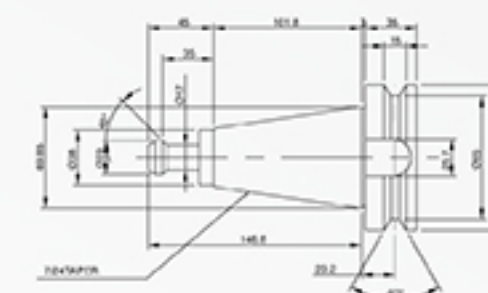


SMART-t
Can probably handle your job

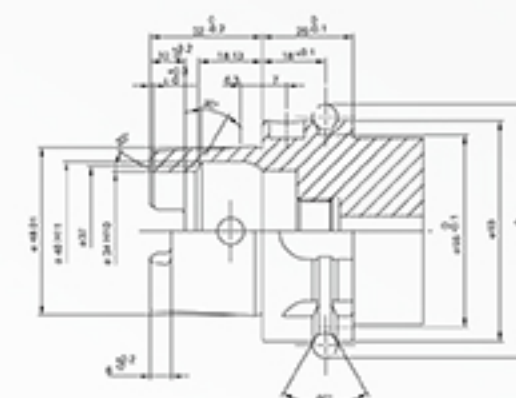
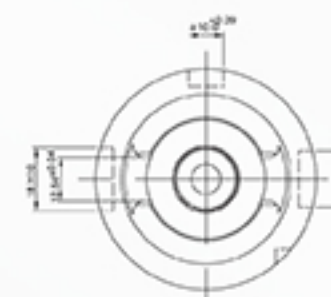


TOOL SHANK

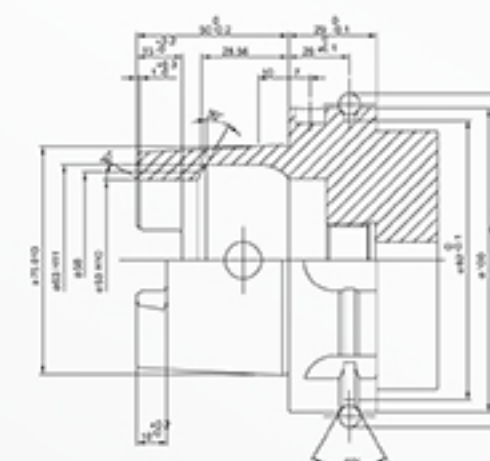
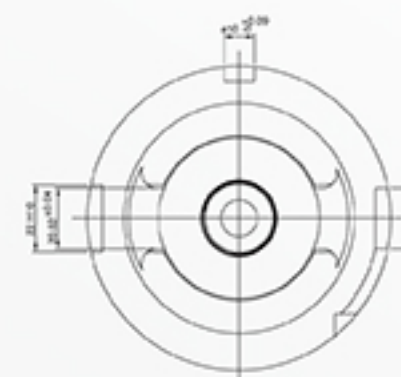
Tool shank / BT50



Tool shank / HSK-63A (DIN69893)



Tool shank / HSK-100A (DIN69893)



Model	A	B	C	D	E	F	G
1622	6280	4400	4080	570	4650	8280	6650
1632	8280					10280	
1642	10280					12280	
2122	6280		4580		5150	8280	7150
2132	8280					10280	
2142	10280					12280	
2152	12280					14280	
2332	9325		5585		4270	5660	11540
2342	11325	13540					
2352	13325	55540					
2842	11325	4770		1300	6160	13540	8600
2852	13325					15540	
2862	15325					17540	
3352	13325	5270			6660	15540	9100
3362	15325					17540	
3372	17325					19540	

Unit:mm

MODEL	UNIT	1622	1632	1642	2122	2132	2142	2152	2332	2342	2352	2842	2852	2862	3352	3362	3372
TABLE																	
Table Size	mm	2000x1400	3000x1400	4000x1400	2000x1800	3000x1800	4000x1800	5000x1800	3000x2000	4000x2000	5000x2000	4000x2500	5000x2500	6000x2500	5000x3000	6000x3000	7000x3000
T-Slots	mm	22							23			28					
Maximum load	ton	6	9	10	8	10	12	15	12	14	16	17.5	20	22.5	25.5	28.5	31.5
TRAVEL																	
X-Axis	mm	2200	3200	4200	2200	3200	4200	5200	3200	4200	5200	4200	5200	6200	5200	6200	7200
Y-Axis	mm	1600			2100				2200 (2600 for 5 face machining)			2700 (3400 for 5 face machining)			3200 (3900 for 5 face machining)		
Z-Axis	mm	800							1000								
SPINDLE																	
Motor	kW	15/18.5							22/26								
Speed	rpm								6000								
Taper									#50								
DISTANCES																	
Between two columns	mm	1600			2100				2300			2800			3300		
From spindle nose to table	mm	200-1000							200-1200			200-1200					
FEEDRATE																	
XYZ rapid traverse	m/min	12/12/10							12/12/12								
Resolution	mm/min								0.001								
Cutting feedrate	mm/min								10-6,000								
ATC																	
Tool magazine capacity	pcs								32								
Max. tool (D x L)	mm								Ø125 x 350 (Ø200 without adjacent tool)								
Max. tool weight	kg								18								
Accuracy																	
Positioning (JIS B 6336) ⚙	mm								±0.0125 (+/- 0.00049") (full travel)								
Repeatability (JIS B 6336) ⚙	mm								±0.003 (+/- 0.00011") (full travel)								
Ball bar circularity	μm								0.02 / Ø300 (0.0007"/12" Diameter)								
Others																	
Power supply	kVA								50								
Air pressure	kg/cm²								7								
Controller	—								FANUC 0i-MD								
Estimated net weight	ton	23	27	32	27	29.5	35	38.5	32.3	37.3	41.8	40.5	45.3	50	48	53	57

Ⓢ Without linear scale

All specifications are subject to change without prior notice.

STANDARD FEATURES AND EQUIPMENT

- *Fanuc 0i-MD 3-Axis CNC
- *Ethernet Data Server Port
- *Automatic Tool Changer
- *Operator Remote Manual Pulse Generator
- *Automatic Spindle Air Blast
- *Automatic Central Lubrication System
- *Twin Screw-Type Chip Conveyors
- *Elevator Chip Collection with Chip Cart
- *Auto Emergency Power-Down
- *Leveling Pads and Screws

STANDARD FEATURES AND EQUIPMENT

- *Fanuc 31i/32iB, Siemens, Heidenhain CNC
- *XYZ Linear Scale Feedback
- *Extended Z-Axis Range to 63"
- *Laser or Touch Tool and/or Part Probe
- *40/60/90/120 Horizontal and/or Vertical Tool Changer
- *Variety of Milling and Milling Head Capacity
- *Manual or Automatic Head Changer
- *5-Sided or 5-Axis Simultaneous Contouring Capability
- *Variety of Guarding, including Partial & Full Enclosure