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ISO9001



ISO 14001



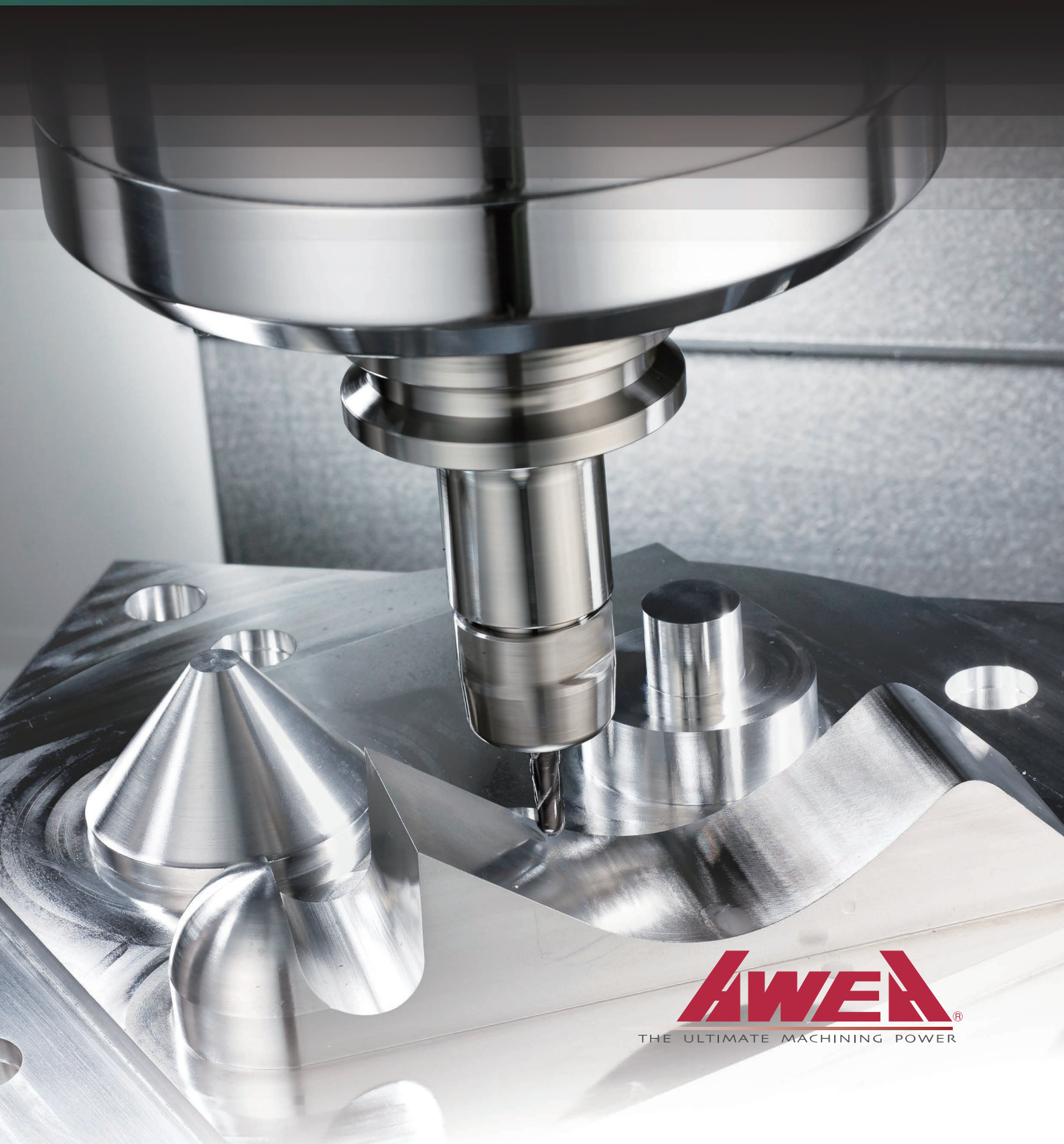
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AF SERIES

High Performance Vertical Machining Center



AWEA®

THE ULTIMATE MACHINING POWER



High Performance Vertical Machining Center

Introducing AWEA with over 30 years manufacturing abilities and advanced technology skills, the AF series. This series is based on high rigidity structure and three axes high precision linear guide way design with fast arm type ATC and chip conveying system. It is to provide you with fast, strong, stable machining performance. AF series is broadly used in high precision machine parts manufacturers, which can easily meet your demands of today and tomorrow.



AF-1000
(X : 1,020 / Y : 550 / Z : 635 mm)

AF Series 650 / 1000 / 1250

High Performance Vertical Machining Center

Staying with AWEA's innovative technology, the AF series is specially designed for high precision parts and mold machining industry. It offers excellent cost performance with the high speed and high efficiency machining capacity.

- High speed and high performance direct-drive spindle design provide the high speed contouring control and most efficient machining capacity.
- X, Y, Z axes are all adopted with super-rigidity roller type linear guide ways design to provide optimal control and rigidity.
- Highly efficiency 24T arm type magazine design provides fast and reliable tool change system.
- The rotary control panel and spacious operating area provide an ergonomic working environment.

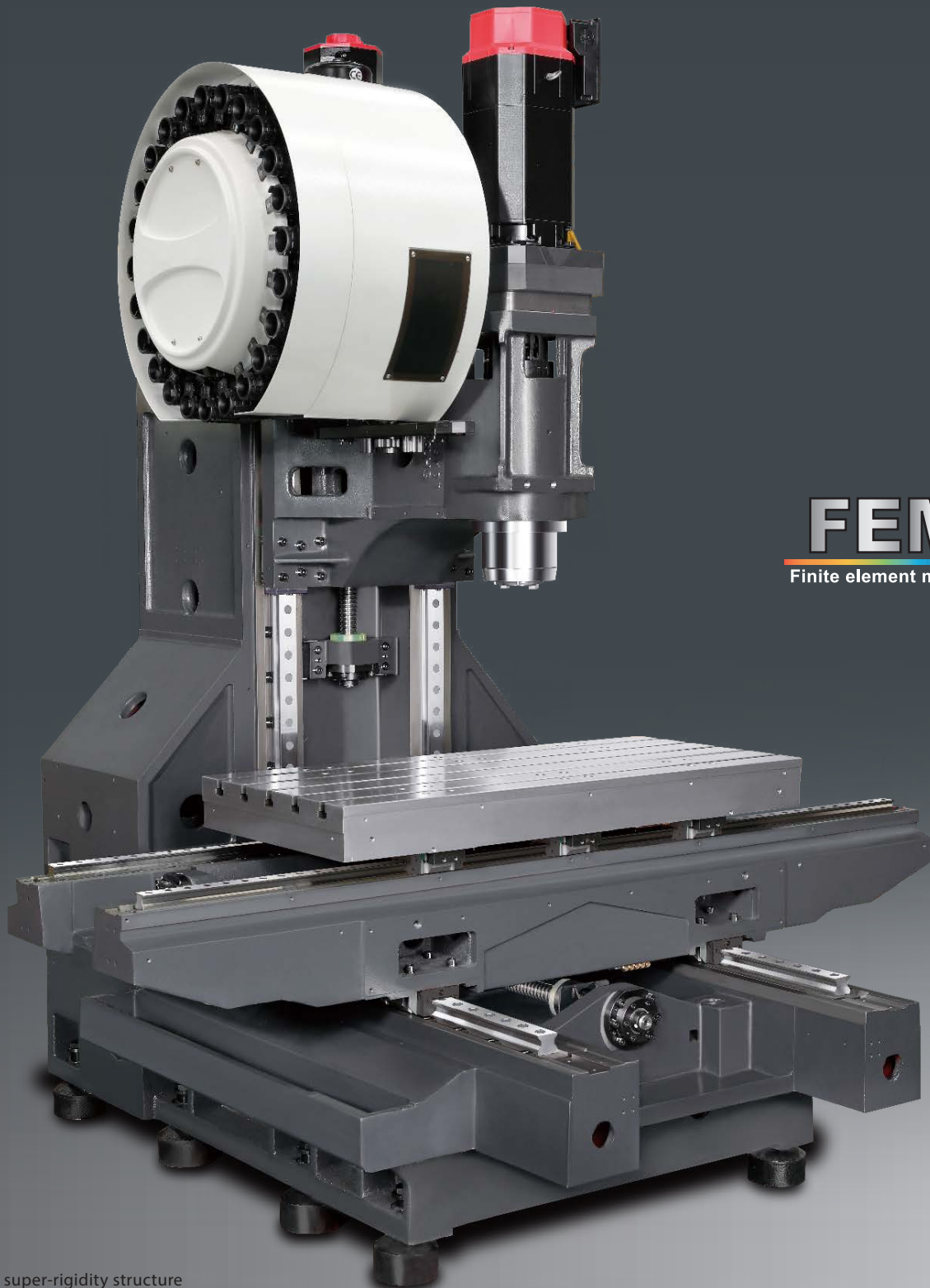


AF-1250
(X : 1,250 / Y : 620 / Z : 620 mm)



AF *Series* 650 / 1000 / 1250

High Performance Vertical Machining Center

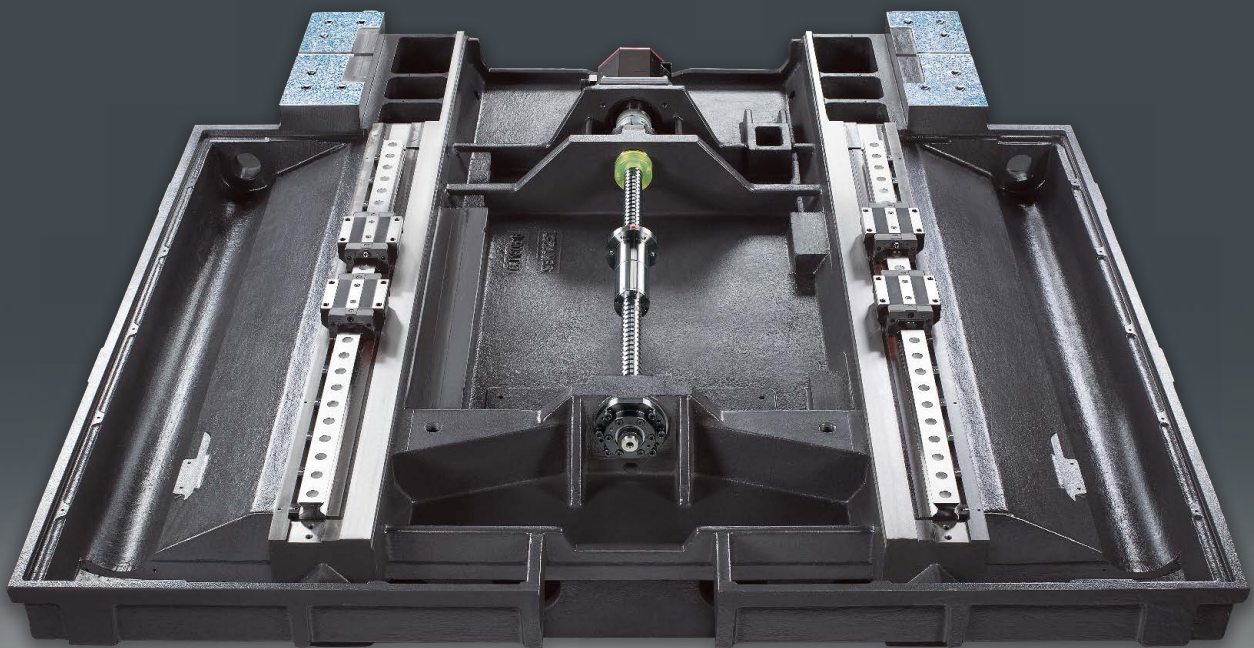
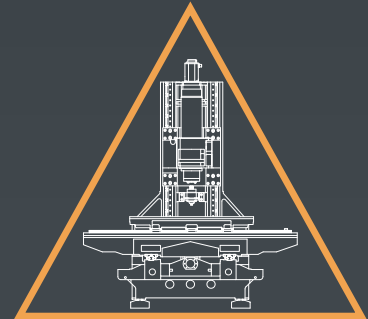


FEM
Finite element method

AF-1000 super-rigidity structure

High Rigidity Structure

- The Finite Element Method (FEM) provides optimal machine design and light-weight structure advantage while ensuring high rigidity of machine.
- Δ (Delta) Wide span column structure provides optimal machining rigidity. The headstock retains stability and accuracy even under high speed traveling.
- Rib reinforced working table retracts vibration while increasing machining stability.



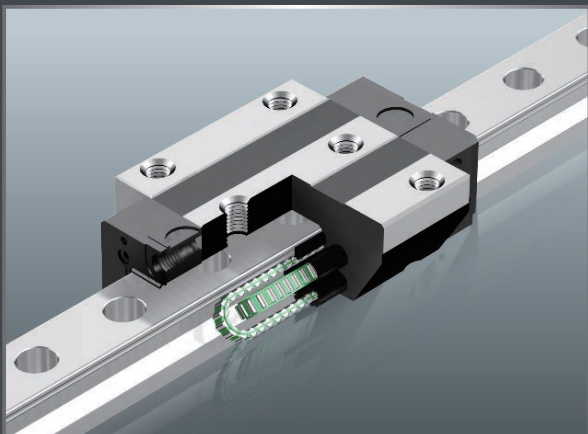
AF-1250 high rigidity bed

- The one-piece casting bed and wide span design provide solid support to ensure ultimate dynamic accuracy.
- The column and bed are all precisely hand scraped to ensure optimal assembly precision, structural strength, and balanced load.

AF *Series* 650 / 1000 / 1250

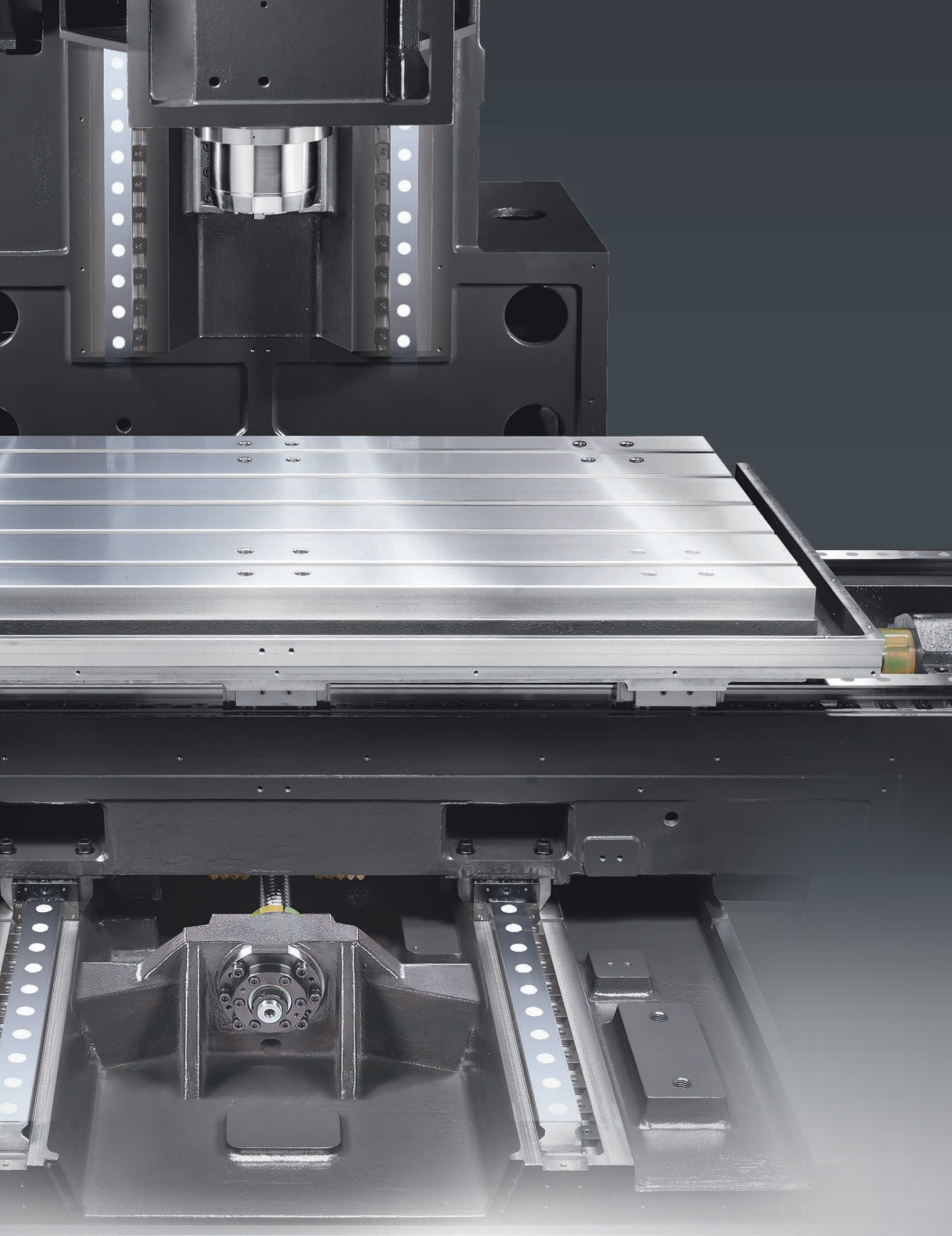
High Performance Vertical Machining Center

High rigidity roller type linear guide way which combines heavy cutting ability from ground box way and fast movement with low abrasion ability from linear guide way completely improves rigidity and control of machine.



■ Roller type linear guide way

FEM
Finite element method

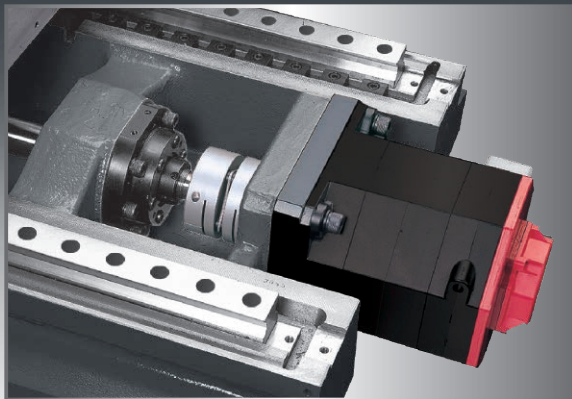


High Precision Axial Feeding System

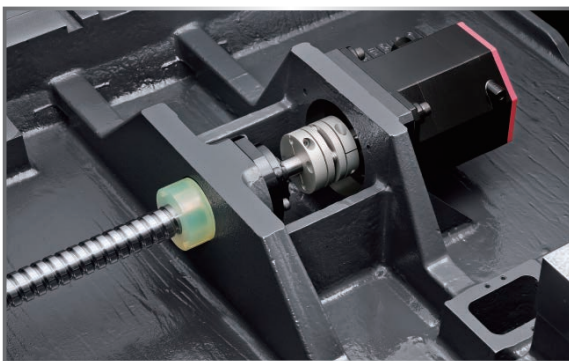
- 3 axes are driven by FANUC series absolute AC direct drive servo motor, which provides powerful thrust and fast acceleration and deceleration movement. It can greatly decrease motor load, and lower thermal expansion effects to minimum, while ensuring optimal performance and precision.
- The high precision twin rotating nut ball screws provide outstanding heavy-duty cutting and ensure precision and long life span.
- The one-piece ball screw motor mount and bearing box allows the cutting pressure to evenly distribute across the casting body, which increases the axial system overall rigidity and prevents the ball screw from deformation.



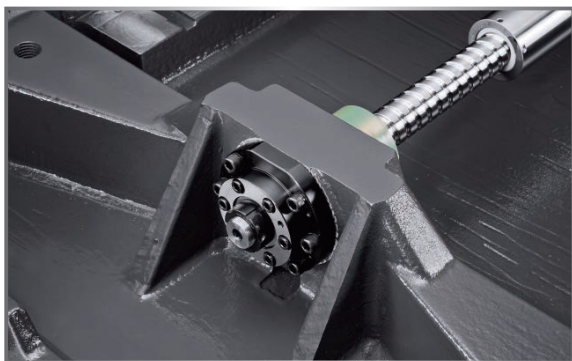
Twin rotating nut ball screw



Direct drive servo motor



One-piece motor mount

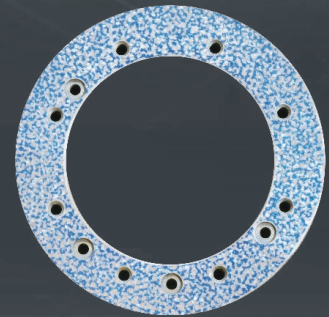


One-piece bearing box

High Performance Spindle System

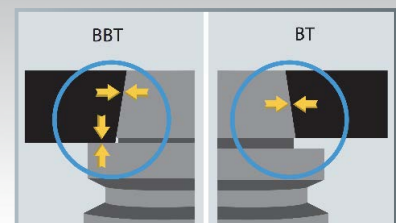


- Direct-drive spindle efficiently separates the heat generated from the motor, which reduces deformation, therefore increasing machining accuracy.
- Floating type hydraulic tool release device eliminates pressure on the spindle bearing when releasing a tool.
- The contact surfaces between headstock and spindle are all precisely hand scraped to ensure optimal performance and precision.

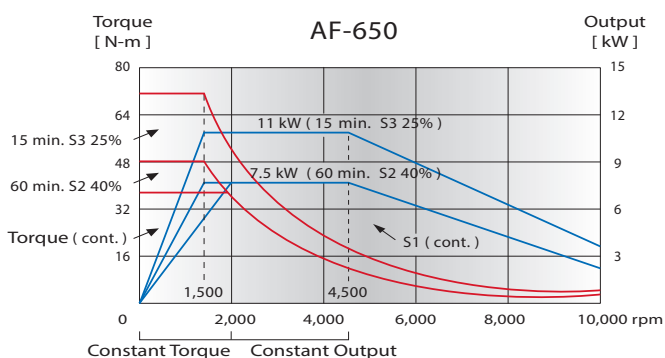


- The contact surfaces of spindle head is precisely hand scraped.

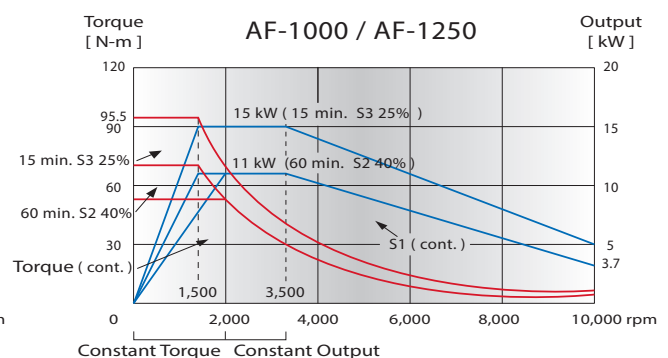
The BBT Dual Contact Spindle ensures both taper and face of the tool holder and spindle are securely coupled to maintain high speed cutting rigidity.



10,000 rpm Direct-drive Spindle



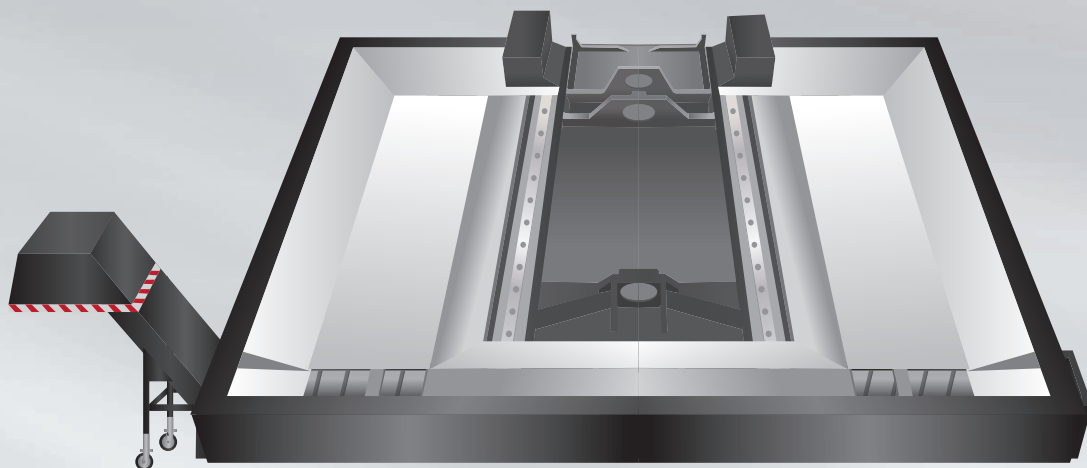
10,000 rpm Direct-drive Spindle





High Efficiency Chip Disposal System

- The AF series adopts chain type chip conveyor as standard with high pressure chips flush coolant system, which provide the optimal chip removal capability. (AF-1000/AF-1250)



► Chain type chip conveyor



High Speed ATC System

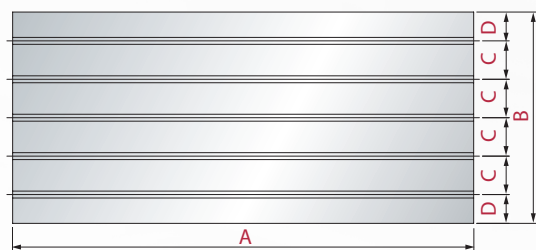
- All series are standard with 24T arm type ATC system which can easily fulfill various types of processing needs.
- Standard shortcut tool change function can shorten tool change time and increase working efficiency.



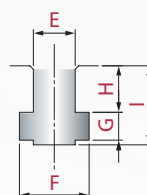
► 24T Disc type tool magazine

Dimensions

Table Dimensions



T-slot Dimensions

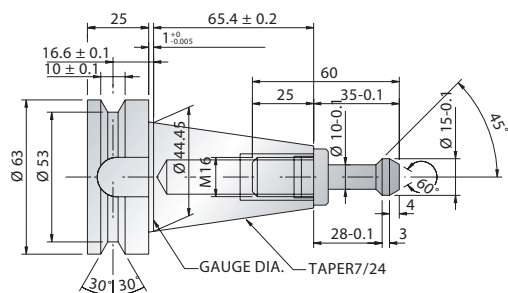


Models	No. of T-slot
AF-650	4
AF-1000	5
AF-1250	5

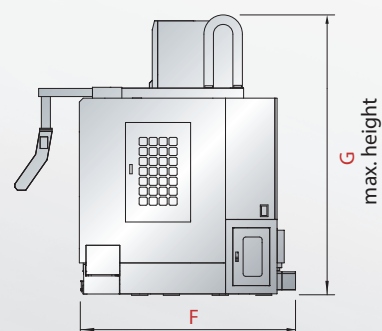
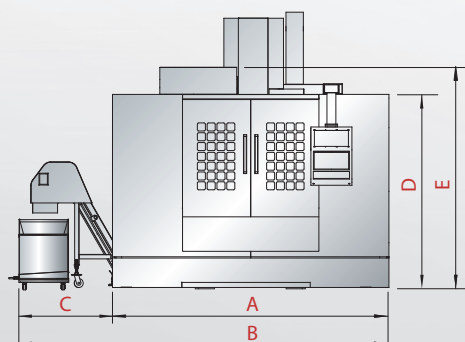
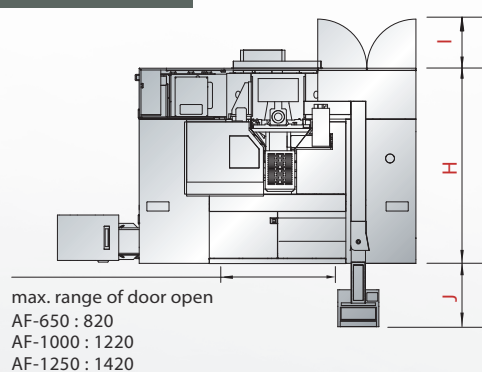
Models	A	B	C	D	E	F	G	H	I
AF-650	750	510	100	105	14	24	10	15	25.5
AF-1000	1,200	550	100	75	18	30	12	20	34
AF-1250	1,350	620	100	110	18	30	12	24	37.5

Tool Shank and Pull Stud Dimensions

BBT40



Machine Dimensions



Models	A	B	C	D	E	F	G	H	I	J
AF-650	2,100	--	--	1,950	2,250	2,750	2,850	2,700	550	--
AF-1000	3,100	4,150	1,050	2,180	2,490	2,430	3,100	2,190	550	710
AF-1250	3,400	4,450	1,050	2,310	2,700	2,540	3,210	2,240	550	710

		AF-650	AF-1000	AF-1250
SPECIFICATIONS				
X-axis travel	mm	650	1,020	1,250
Y-axis travel	mm	510	550	620
Z-axis travel	mm	510	635	620
Distance from spindle center to column	mm	600	610	790
Distance from spindle nose to table center	mm	100 ~ 610	100 ~ 735	100 ~ 720
WORKING TABLE				
Table size (X direction)	mm	750	1,200	1,350
Table size (Y direction)	mm	510	550	620
Table load capacity	kg	500	700	1,000
SPINDLE				
Spindle taper		BBT40		
Spindle motor (cont. / 15 min.)	kW	7.5 / 11	11 / 15	
Spindle speed	rpm	Direct-drive 10,000		
FEED RATE				
X / Y axes rapid feed rate	m/min.	36		48
Z-axis rapids feed rate	m/min.	24		32
Cutting feed rate	m/min.	1 - 10		
TOOL MAGAZINE				
Tool magazine capacity	T	24		
Max. tool length	mm	300		
Max. tool weight	kg	7		
Max. tool diameter / adj. pocket empty	mm	Ø 78 / Ø 150		
ACCURACY				
Positioning accuracy (JIS B 6338)	mm	± 0.01 / Full travel		
Positioning accuracy (VDI 3441)	mm	P ≤ 0.01		
Repeatability (JIS B 6338)	mm	± 0.002		
Repeatability (VDI 3441)	mm	Ps ≤ 0.007		
GENERAL				
Control system		FANUC 0i- MF		
Pneumatic pressure requirement	kg/cm²	6		
Power requirement	kVA	20	30	30
Coolant tank capacity	liter	320	400	460
Machine weight	kg	4,200	7,000	8,000

Specifications are subject to change without notice.

Standard Accessories

- AICC function /
Machining condition select
- Spindle air curtain
- Spindle cooling system
- Gravity axis anti-drop function
- Coolant nozzle around spindle
- Chips flush coolant system
- Chain type chip conveyor
(AF-1000/AF-1250)
- Coolant system with pump and tank

- Transformer
- Fully enclosed splash guard w/ roof
- Alarm light
- Heat exchanger for electrical cabinet
- Oil skimmer
- Automatic power-off system
- Air /water gun system
- Centralized automatic lubricating system
- Leveling bolts & pads
- Tool kits

Optional Accessories

- Coolant through spindle
- X / Y / Z axes optical linear scale
- CNC rotary table
- Coolant through the tool adapter
- Auto. tool length measurement
- Auto. work-piece measurement
- AC cooler for electrical cabinet