

*ECOM,
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CNC VERTICAL
MACHINING CENTER

VL · VLB

— SERIES —

ECOM
東剛精機



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ECOM
東剛精機



Mission and Vision

- P. Perpetuity
- R. Reliable
- I. Innovation
- D. Dedication
- E. Expertise

Founded in 1976

ECOM specializes in machine tool manufacturing. ECOM machine tools have been recognized worldwide for superior precision, outstanding rigidity, and exceptional reliability. ECOM product covers CNC Vertical Machining Center, Horizontal Machining Center, Tapping Center, and Bridge Type Machining Center. Today there are more than 30 different models in production, fulfilling the industry's diverse requirements. With over 40 years of machine tool manufacturing experience, ECOM has built a solid foundation in the field of machinery.

In 2006, ECOM established a manufacturing plant in Zhangzhou, Fujian Province of China. The manufacturing area covers an area of 45,000 square meters. ECOM manages the entire manufacturing process under rigorous quality control over the machining/grinding facility, heat-treating, painting, assembly plant, and packaging warehouse.

*ECOM,
YOU CAN RELY ON*

*A Complete
Quality Inspection*

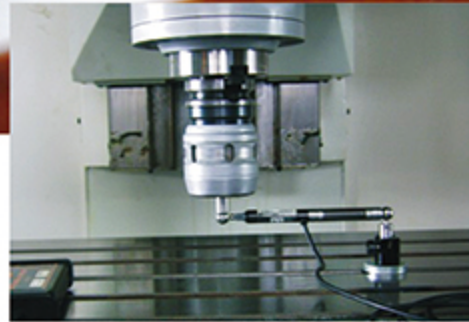
Coordinate Measuring Testing

As manufacturing becomes more refined and parts are made more complex, the need for accurate and precise measurement technologies becomes increasingly mandatory. Every ECOM machine performs a test cut of a workpiece then analyzed by our in-house Coordinate Measuring Machine.



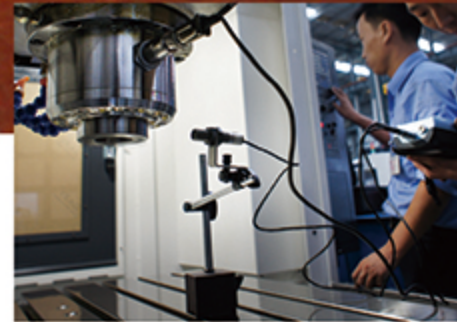
Laser Calibration

- * Increase machine accuracy and repeatability
- * Reduce scrap, rework and part inspection costs
- * Reduce catastrophic breakdowns
- * Increase equipment life



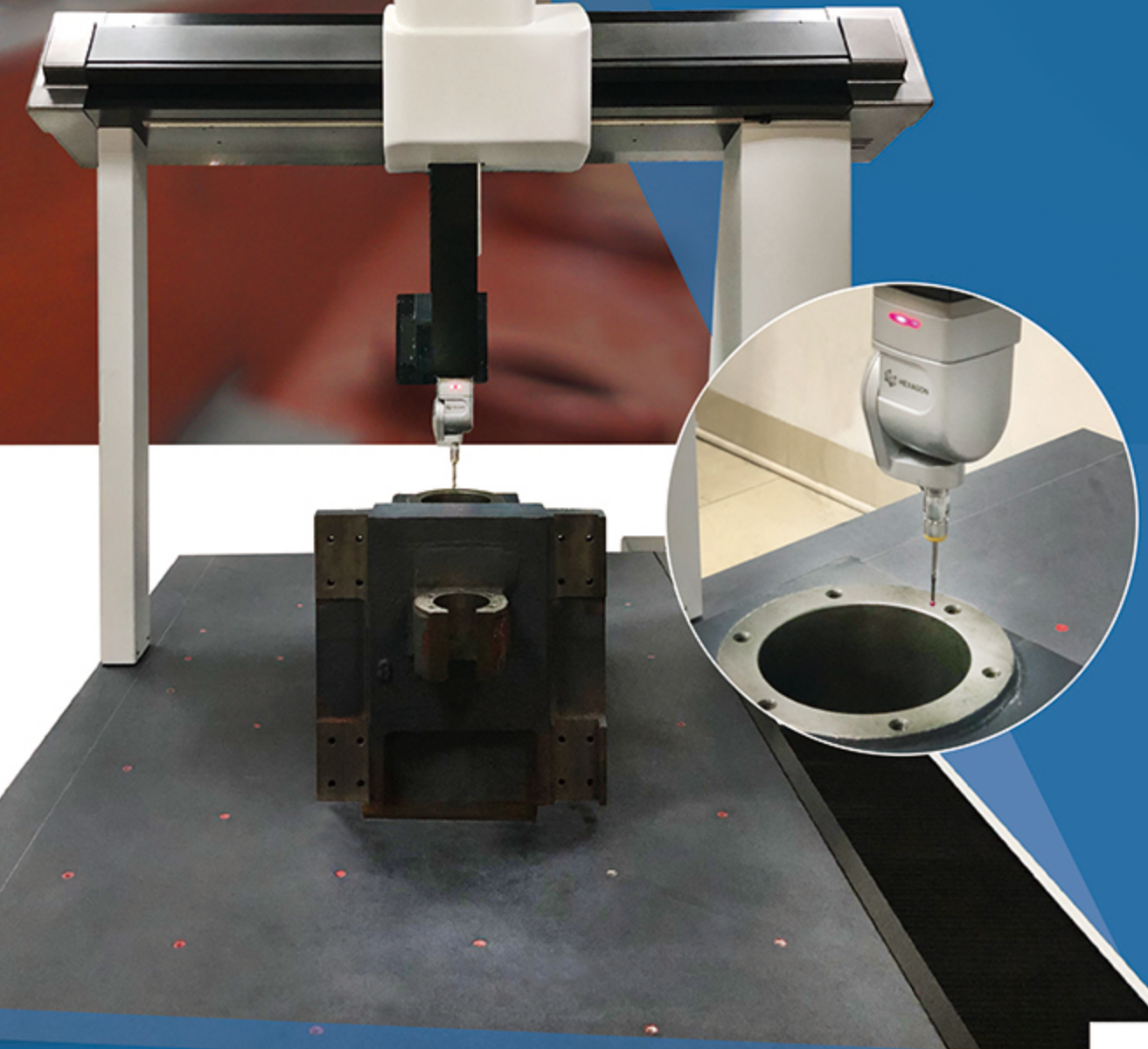
Ballbar Analysis

Ballbar analysis is performed on every ECOM machine to determine the machine's mechanical and servo performance. It quantified and reduced or eliminated, resulting in better accuracy in circular interpolation.



Spindle Vibration Analysis

Every spindle goes through a precision vibration analysis and takes faulty equipment offline before a hazardous condition occurs. As a result, fewer unexpected spindle failures, helping to prevent production stoppages that cut into the bottom line.





VL-6i 8i 10i New Generation Compact Machining Center.

The VL- 6i / 8i / 10i are fully digital, high- quality machine tools, designed to achieve maximum capacity and performance in the OEM, Job Shop, Aerospace, Automotive energy, and other demanding markets.

Multi-Angle Control Panel

The multi-angle control panel allows the operator to adjust the screen angle base on the operator's preferences.

Operator Working Bench

A removable operator workbench/seat is a standard feature on VL-8i VL-10i.





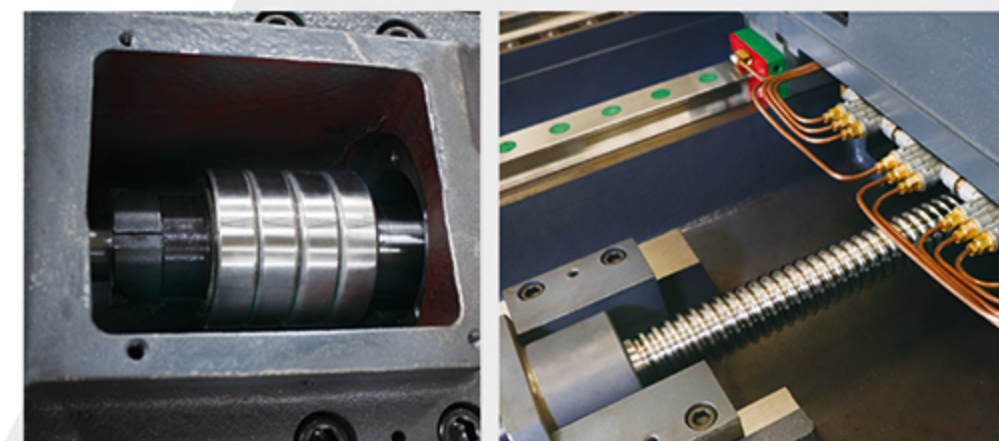
VL-12i 14i 16i

Excellent Features

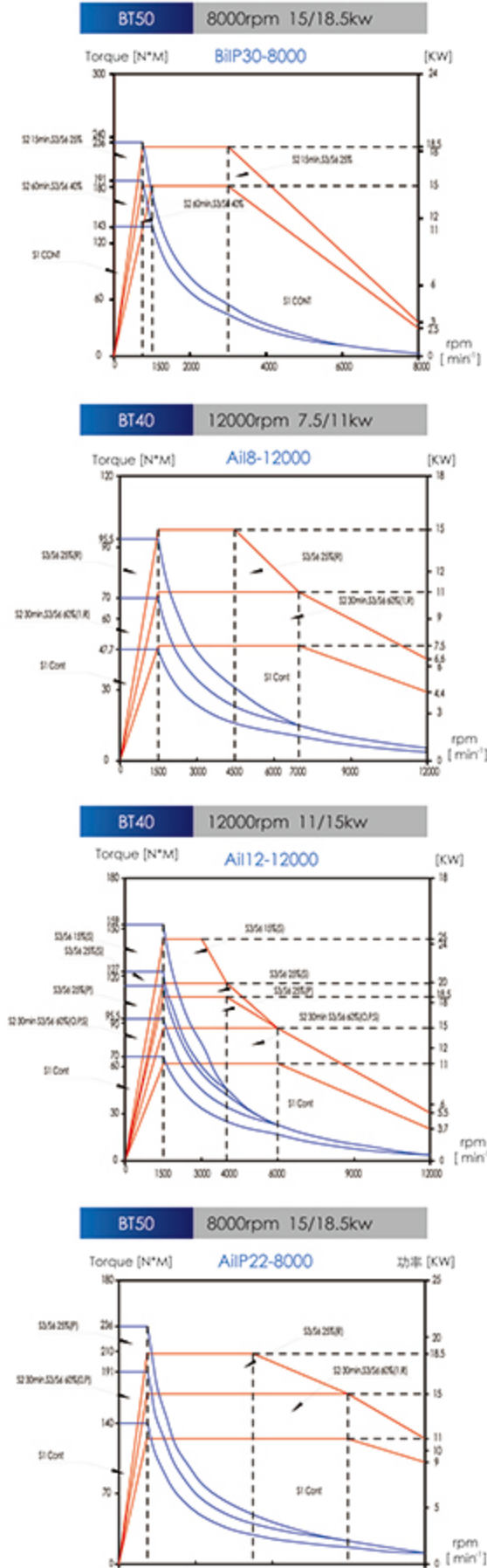
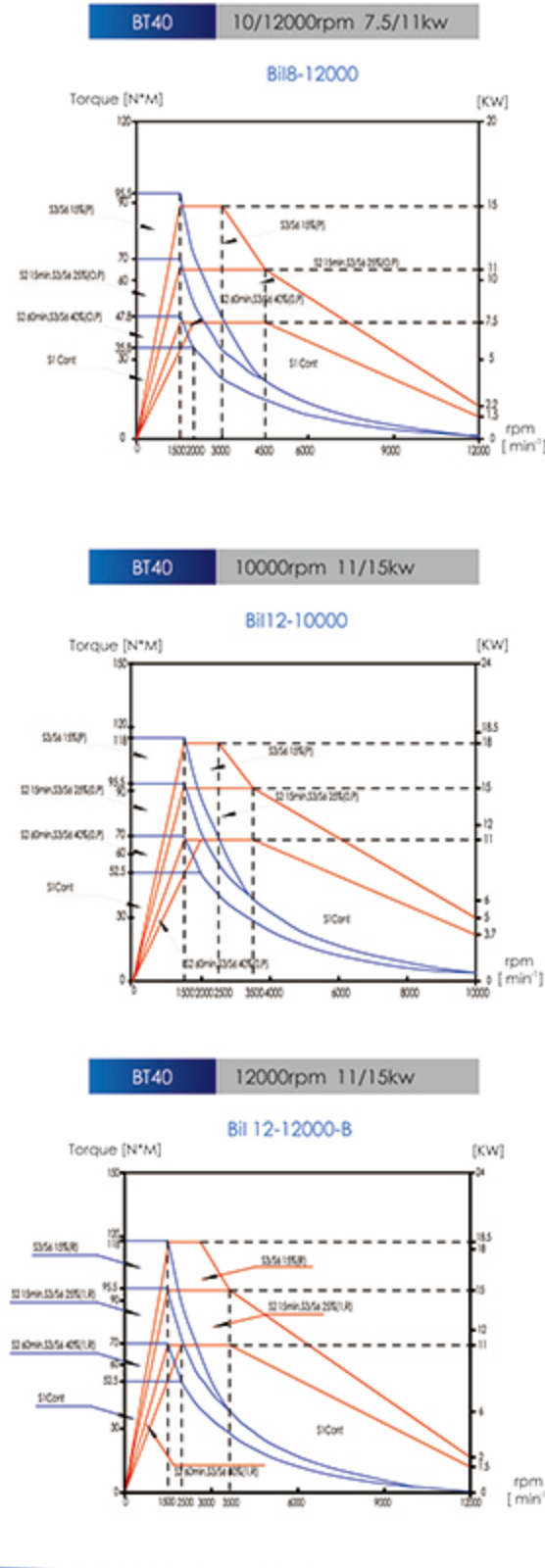
Built for the highest industry standards, the ECOM VL-12i/14i/16i Machining Center meets and exceeds the demanding metal cutting market. Ideal for those looking for increased capacity, processing efficiency, and better all-around performance.

The 3-axis pre-loaded C3 class high precision ballscrews all has been well pre-extension, and directly coupled to A/C servo motors. It significantly eliminates backlash and ensures the highest rigidity.

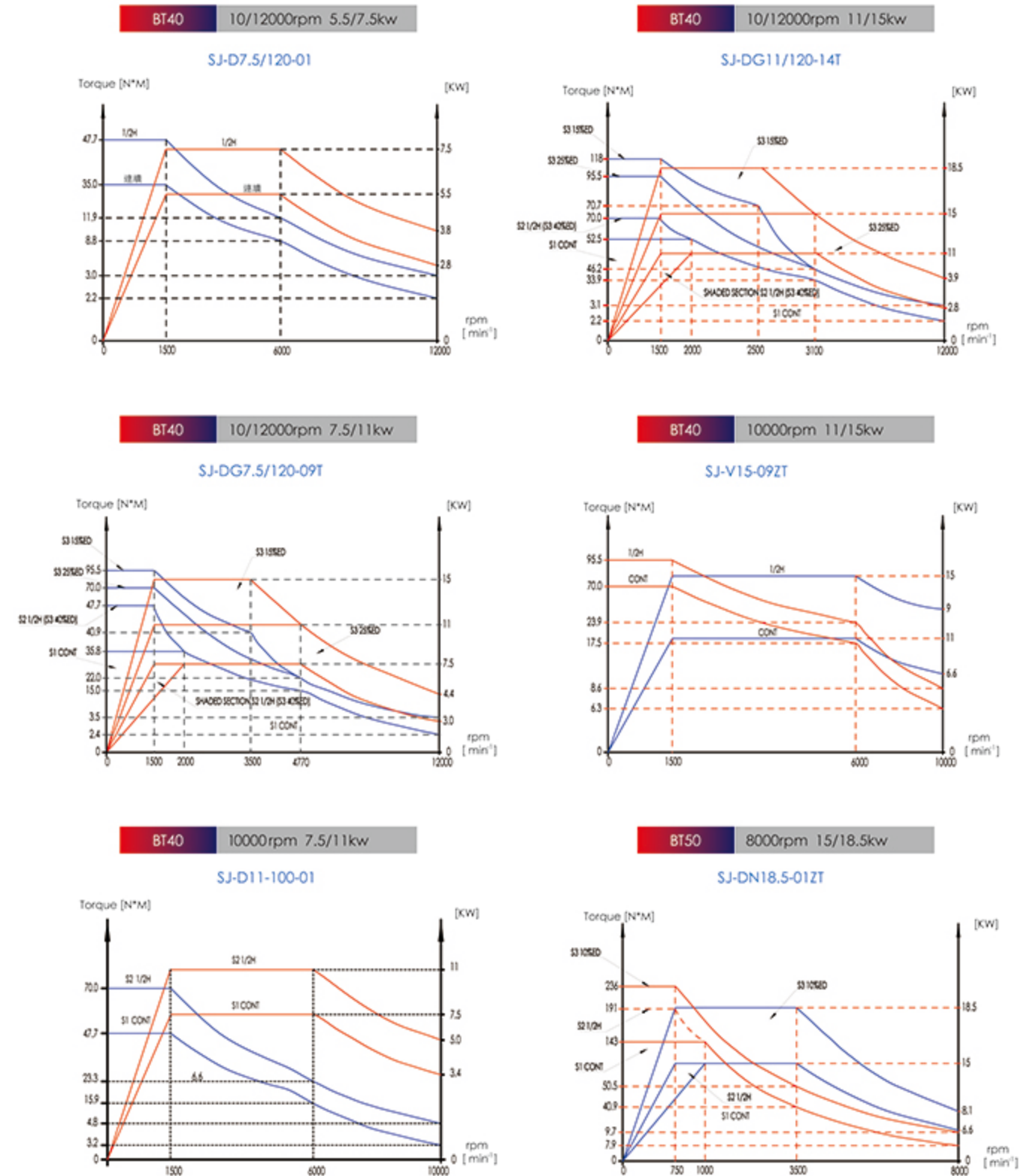
The VL-i model comes with all high-performance roller linear guideways for all 3-axis. It provides fast & accurate rapid feed and greatly enhanced moving accuracy.



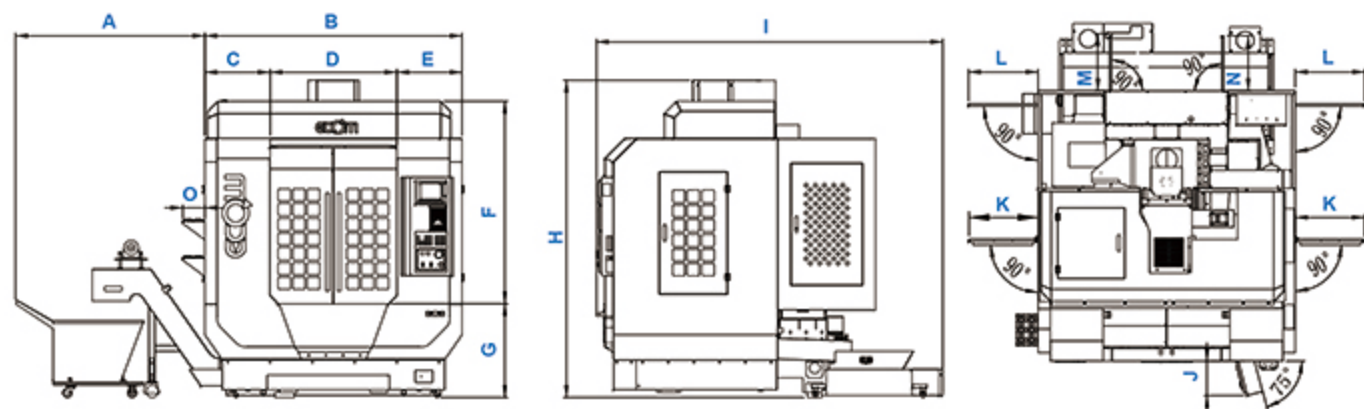
Spindle Output Diagrams [FANUC]



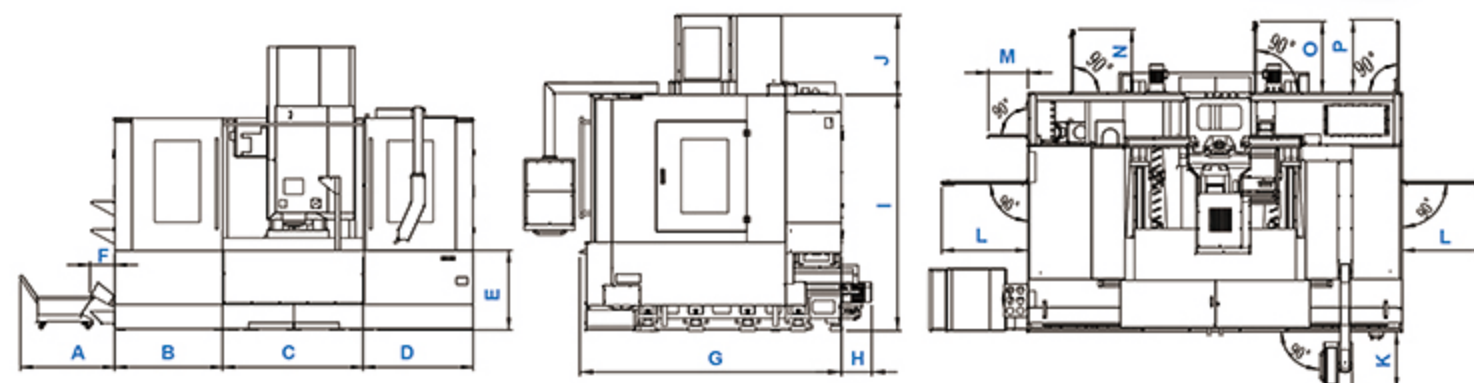
Spindle Output Diagrams [Mitsubishi]



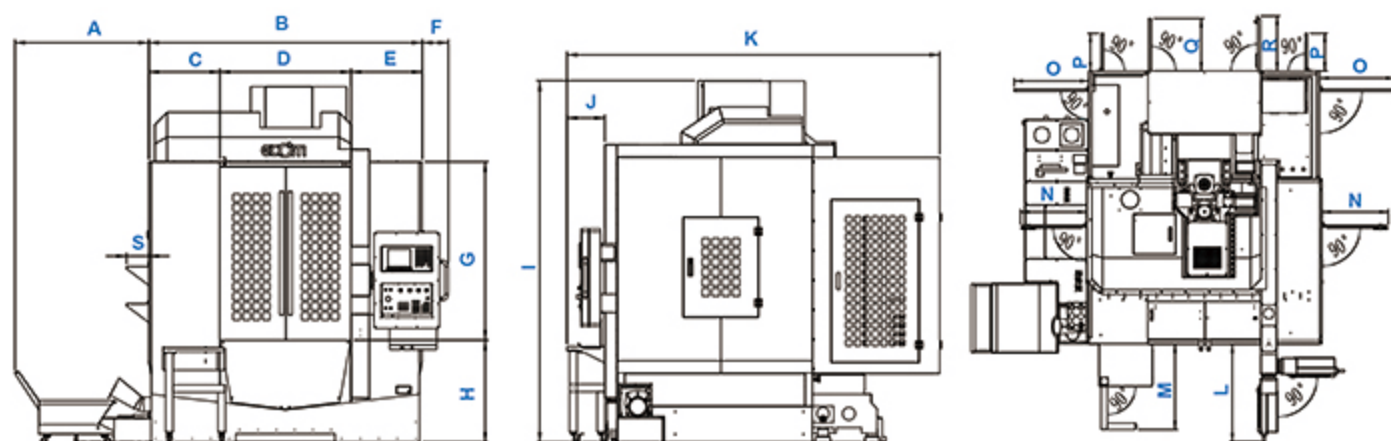
Machine Dimensions



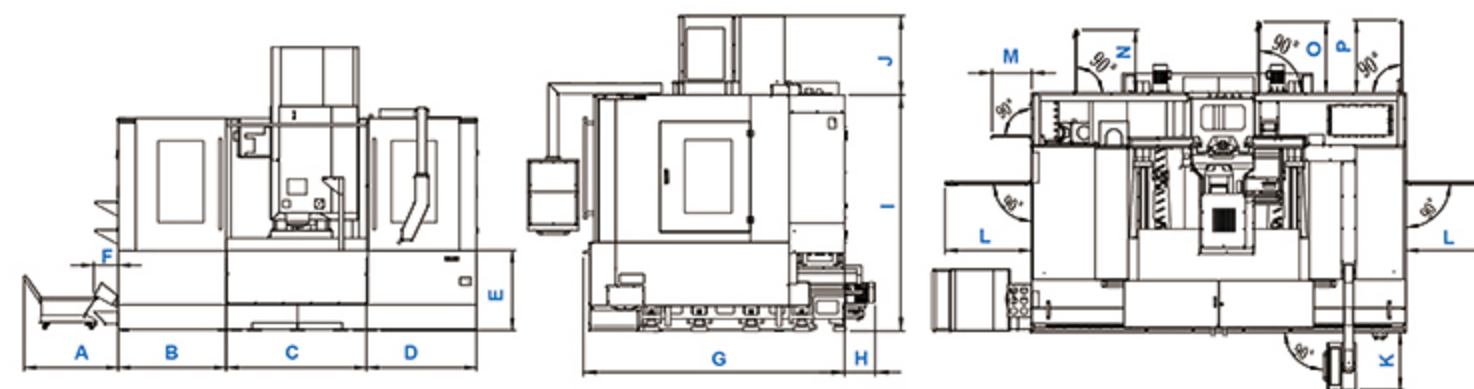
MODELS	Unit	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
VL-6i	mm	1550	2100	535	1030	535	1650	765	2590	2825	280	560	565	465	450	180



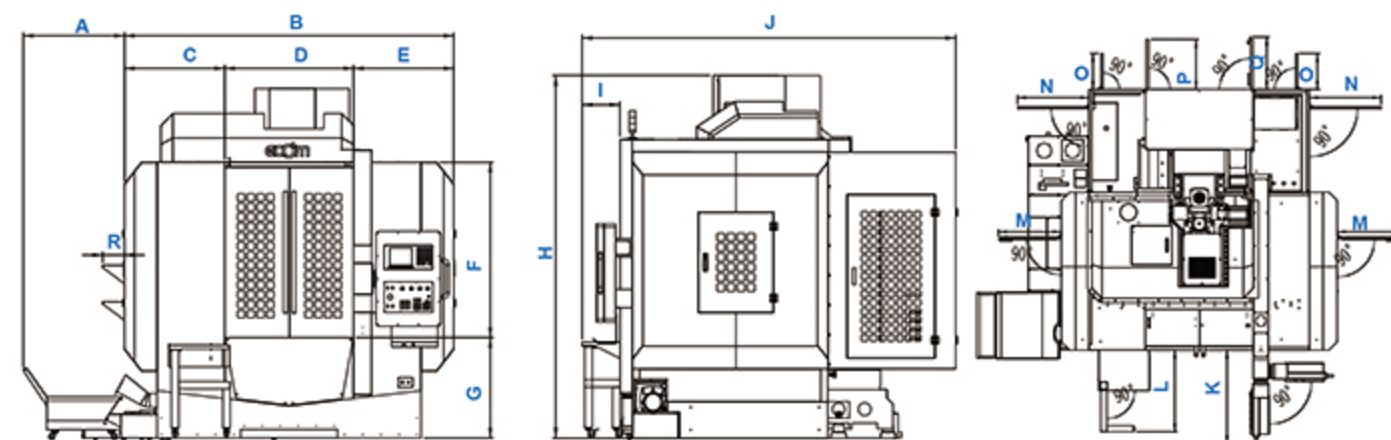
MODELS	Unit	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
VL-12i	mm	965	820	1300	850	885	275	2595	195	2345	785	615	915	420	655	625	650



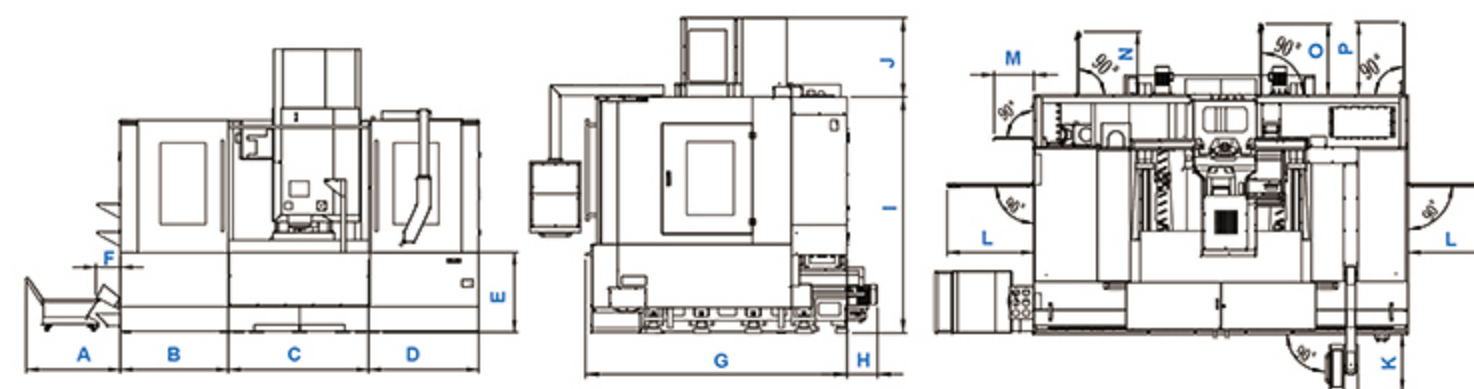
MODELS	Unit	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
VL-8i	mm	1080	2210	575	1060	575	220	1445	825	2875	300	2965	920	800	620	700	350	490	515	180



MODELS	Unit	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
VL-14i	mm	1050	925	1495	950	880	275	2595	300	2340	785	615	915	420	665	750	770



MODELS	Unit	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
VL-10i	mm	830	2710	825	1060	825	1445	825	2875	300	2965	920	800	620	700	350	490	515	180



MODELS	Unit	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
VL-16i	mm	1050	1190	1550	1215	880	275	2595	300	2340	785	615	915	420	665	750	770

SPECIFICATIONS (VL-i Series ; XYZ Linear Guide Way)

Models	VL - 6i		VL - 8i		VL - 10i		VL - 12i				VL - 14i				VL - 16i			
Travel																		
X - Axis Travel	600mm		800mm		1000mm		1200mm		1200mm		1400mm		1400mm		1600mm		1600mm	
Y - Axis Travel	450mm		600mm		600mm		750mm		750mm		750mm		750mm		750mm		750mm	
Z - Axis Travel	500mm		560mm		560mm		700mm		650mm		700mm		650mm		700mm		650mm	
Spindle Center To Z - Rail	500mm		650mm		650mm		830mm		830mm		830mm		830mm		830mm		830mm	
Spindle Nose To Table	130-630mm		150-710mm		150-710mm		120-820mm		120-770mm		120-820mm		120-770mm		120-820mm		120-770mm	
X Axis Linear Guildway (blocks)	RGH30 X 2 (4)		RGH35 X 2 (4)		RGH35 X 2 (6)		RGH45 X 2 (6)				RGH45 X 2 (6)				RGH45 X 2 (6)			
Y Axis Linear Guildway (blocks)	RGH30 X 2 (4)		RGH45 X 2 (4)		RGH45 X 2 (4)		RGH45 X 4 (8)				RGH45 X 4 (8)				RGH45 X 4 (8)			
Z Axis Linear Guildway (blocks)	RGH30 X 2 (4)		RGH45 X 2 (6)		RGH45 X 2 (6)		RGH45 X 2 (6)				RGH45 X 2 (6)				RGH45 X 2 (6)			
Table																		
Table Size	750 X 420mm		1050 X 600mm		1120 X 600mm		1300 X 750mm				1500 X 750mm				1700 X 750mm			
T - Slot (number*width*pitch)	3 X 14mm X 100mm		5 X 18mm X 100mm		5 X 18mm X 100mm		5 X 18mm X 150mm				5 X 18mm X 150mm				5 X 18mm X 150mm			
Maximum Table Load	400kg		800kg		800kg		1200kg				1200kg				1500kg			
Spindle																		
Spindle Taper	BT-40		BT-40		BT-40		BT-40		BT-50		BT-40		BT-50		BT-40		BT-50	
Spindle RPM	10000 rpm		10000 rpm		10000 rpm		10000 rpm		8000 rpm		10000 rpm		8000 rpm		10000 rpm		8000 rpm	
Type Of Driving	Belt type		Belt type		Belt type		Belt type		Belt type		Belt type		Belt type		Belt type		Belt type	
Feed Rate																		
X, Y Axis Rapid Feed Rate	36m/min		36m/min		36m/min		30m/min		30m/min		30m/min		30m/min		24m/min		24m/min	
Z Axis Rapid Feed Rate	36m/min		36m/min		36m/min		30m/min		30m/min		30m/min		30m/min		24m/min		24m/min	
X, Y, Z Max.Cutting Feed Rate	10m/min		10m/min		10m/min		10m/min		10m/min		10m/min		10m/min		10m/min		10m/min	
Automatic tool changer																		
Arm Type (Tool to Tool)	24T (3sec)		24T (3sec)		24T (3sec)		24T (3sec)		24T (4.5sec)		24T (3sec)		24T (4.5sec)		24T (3sec)		24T (4.5sec)	
Max. Tool Diameter*Length (with neighbor)	Φ150X300mm (Φ78X300mm)		Φ150X300mm (Φ78X300mm)		Φ150X300mm (Φ78X300mm)		Φ150X300mm (Φ78X300mm)		Φ220X350mm (Φ110X350mm)		Φ150X300mm (Φ78X300mm)		Φ220X350mm (Φ110X350mm)		Φ150X300mm (Φ78X300mm)		Φ220X350mm (Φ110X350mm)	
Max. Tool Weight	8 kg		8 kg		8 kg		8 kg		15 kg		8 kg		15 kg		8 kg		15 kg	
Motors																		
	Mitsubishi	Fanuc	Mitsubishi	Fanuc	Mitsubishi	Fanuc	Mitsubishi	Fanuc	Mitsubishi	Fanuc	Mitsubishi	Fanuc	Mitsubishi	Fanuc	Mitsubishi	Fanuc	Mitsubishi	Fanuc
Spindle Motor (RATED / MAX)	5.5/7.5kw	7.5/11kw	7.5 /11kw	7.5 /11kw	7.5/11kw	11/15kw	11/15kw	11/15kw	15/18.5kw	15/18.5kw	11/15kw	11/15kw	15/18.5kw	15/18.5kw	11/15kw	11/15kw	15/18.5kw	15/18.5kw
X, Y Axis Servo Motor	1.5 kw	1.8 kw	2.0 kw	1.8 kw	2.0 kw	3.0 kw	3.0 kw	3.0 kw	3.0 kw	3.0 kw	3.0 kw	3.0 kw	3.0 kw	3.0 kw	4.5 kw	3.0 kw	4.5 kw	3.0 kw
Z Axis Servo Motor	3.0kw BS	3.0kw BS	3.0kw BS	3.0kw BS	3.0kw BS	3.0kw BS	3.0kw BS	3.0kw BS	4.5kw BS	3.0kw BS	3.0kw BS	3.0kw BS	3.0kw BS	4.5kw BS	3.0kw BS	4.5kw BS	3.0kw BS	3.0kw BS
Machine Accuracy																		
Positioning Accuracy (JIS)	± 0.005mm / 300mm		± 0.005mm / 300mm		± 0.005mm / 300mm		± 0.005mm / 300mm				± 0.005mm / 300mm				± 0.005mm / 300mm			
Repeat Positioning Accuracy (JIS)	± 0.003mm		± 0.003mm		± 0.003mm		± 0.003mm				± 0.003mm				± 0.003mm			
Other																		
Approximate Weight	4200 kg		6500 kg		7000 kg		9500 kg		10000 kg		10000 kg		10500 kg		10500 kg		11000 kg	
Floor Space Measurement	2100X 2800X 2330mm		2650 X 2960X 2850mm		2850X 2960X 2850mm		4100X 2900X 3000mm				4500X 2900X 3000mm				5000 X 2900 X 3000mm			

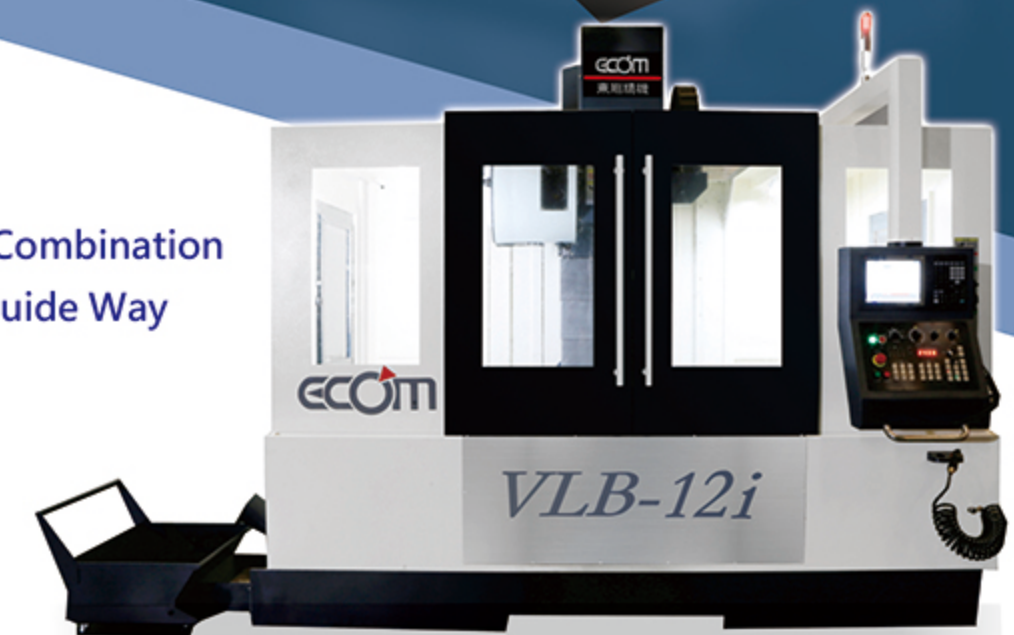
Standard Accessories & Options

● Standard ▲ Option — Not Available

Models	VL-6i	VL-8i	VL-10i	VL-12i	VL-14i	VL-16i
BT-40 Belt Type Spindle 10000 RPM	●	●	●	●	●	●
BT-40 Direct Type Spindle 12000 RPM	▲	▲	▲	▲	▲	▲
BT-40 Direct Type Spindle 15000 RPM	▲	▲	▲	▲	▲	▲
BT-40 Built-in Type Spindle 18000 RPM	▲	▲	▲	▲	▲	▲
BT-50 Belt Type Spindle 8000 RPM	—	—	—	▲	▲	▲
BT-50 Gear Type Spindle 6000/8000 RPM	—	—	—	▲	▲	▲
Spindle coolant system	●	●	●	●	●	●
Chip flush	●	●	●	●	●	●
High pressure water & air gun	●	●	●	●	●	●
Spindle air blast	●	●	●	●	●	●
Work lamp	●	●	●	●	●	●
Three color alarm light	●	●	●	●	●	●
Auto power off	●	●	●	●	●	●
Auto lubrication system	●	●	●	●	●	●
Rigid tapping (built-in spindle excluded)	●	●	●	●	●	●
RS232 interface	●	●	●	●	●	●
CF card interface	●	●	●	●	●	●
MPG	●	●	●	●	●	●
Heat exchanger for electrical cabinet	●	●	●	●	●	●
Full splash guard	●	●	●	●	●	●
System operation and procedures manual	●	●	●	●	●	●
Machine manual	●	●	●	●	●	●
Leveling bolts & blocks	●	●	●	●	●	●
Tool box & Tool	●	●	●	●	●	●
Geneva Type ATC (16T)	▲	▲	▲	▲	▲	▲
Arm type ATC (24T)	▲	▲	▲	▲	▲	▲
Arm type ATC (30T)	▲	▲	▲	▲	▲	▲
Column raised: 100mm/150mm/200mm	▲	—	—	—	—	—
Column raised: 200mm/250mm/300mm	—	▲	▲	▲	▲	▲
4th Axis (Ø125/170/210)	▲	▲	▲	▲	▲	▲
4th Axis (Ø320)	—	—	—	▲	▲	▲
Tool & Workpiece probe	▲	▲	▲	▲	▲	▲
Electrical cabinet A/C unit	▲	▲	▲	▲	▲	▲
Coolant through spindle (20Bar/ 30Bar/ 50Bar)	▲	▲	▲	▲	▲	▲
Three axis optical scale (HEIDENHAIN)	▲	▲	▲	▲	▲	▲
Z-axis Nitrogen counter balance	—	—	▲	●	●	●
Spindle coolant nozzles	▲	▲	▲	▲	▲	▲
Double Screw chip flush	—	—	—	—	●	●
Screw type Chip Conveyor with Cart	—	▲	▲	●	●	●
Chain type Chip Conveyor with Cart	▲	▲	▲	▲	▲	▲

VLB Series

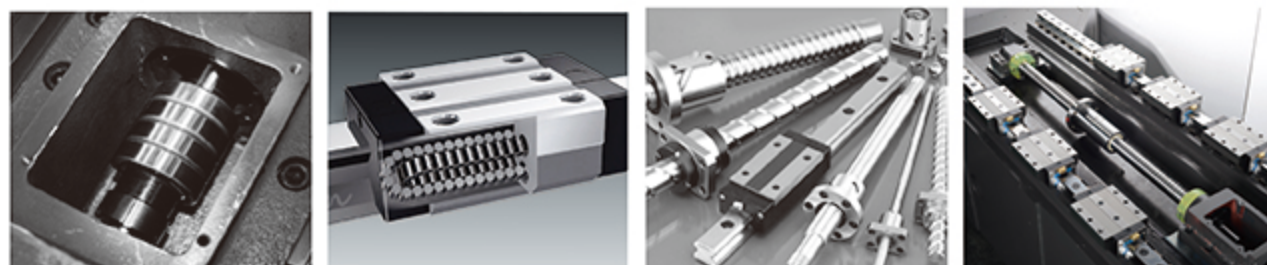
The Ultimate Combination
of XY Linear Guide Way
& Z Box Way



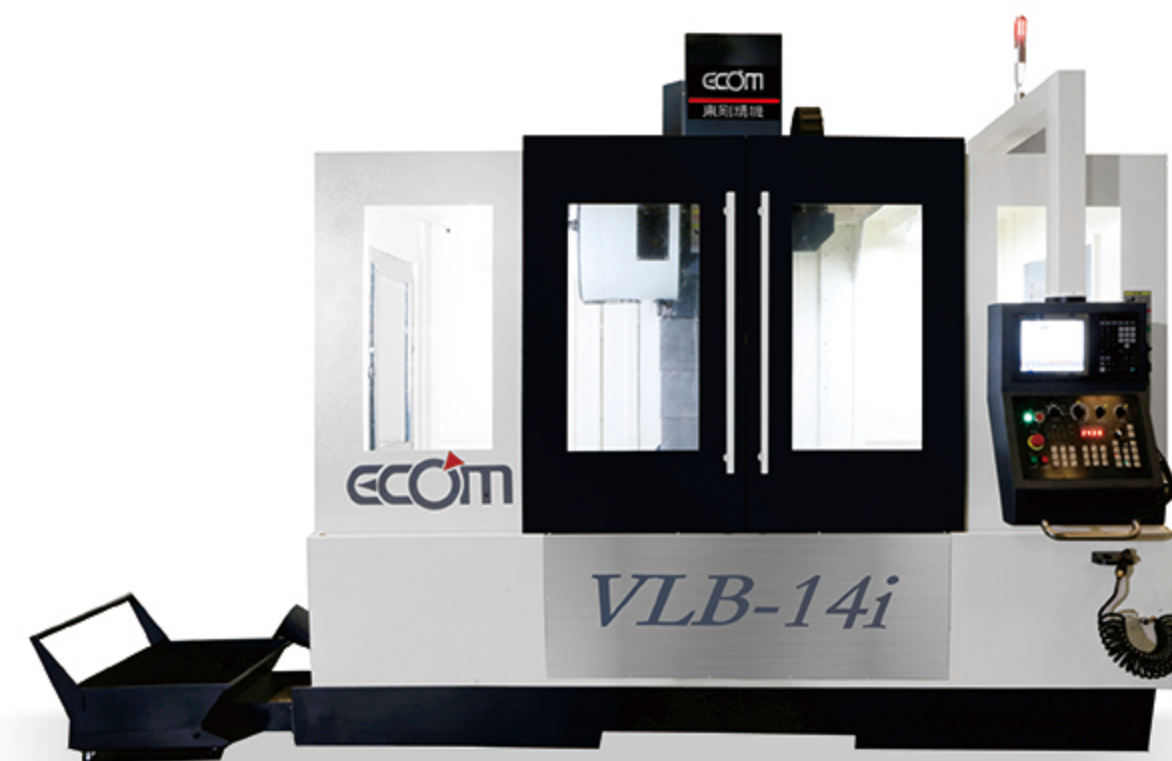


For casting description

ECOM casting is Finite Element Method (FEM) analyzed. The FEM process is to avoid displacements, stresses, and strains in a casting structure under a set of loads.

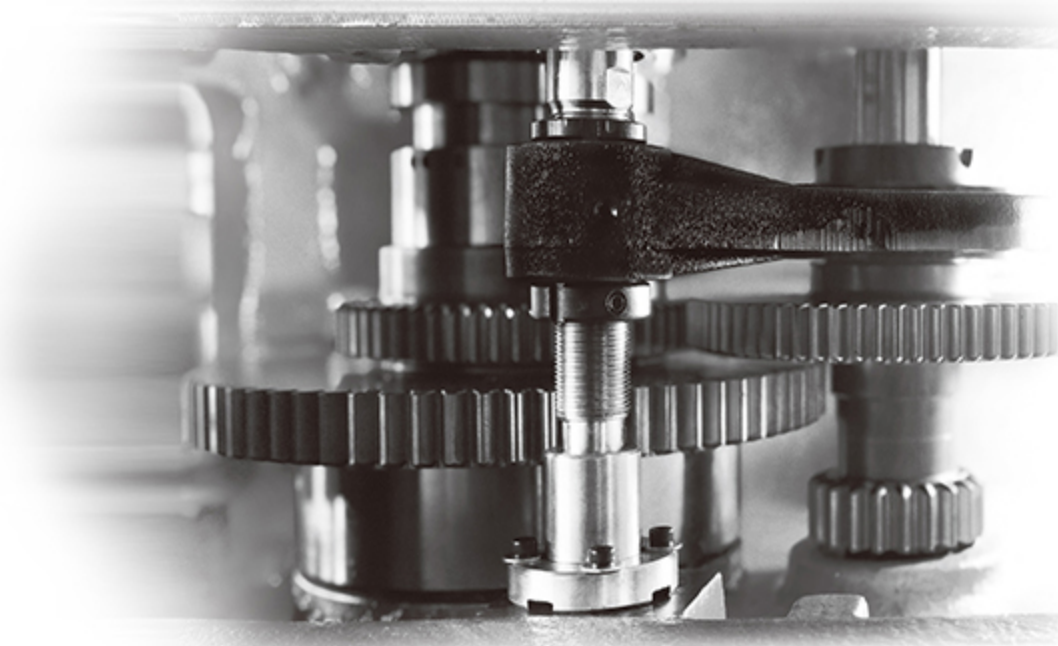
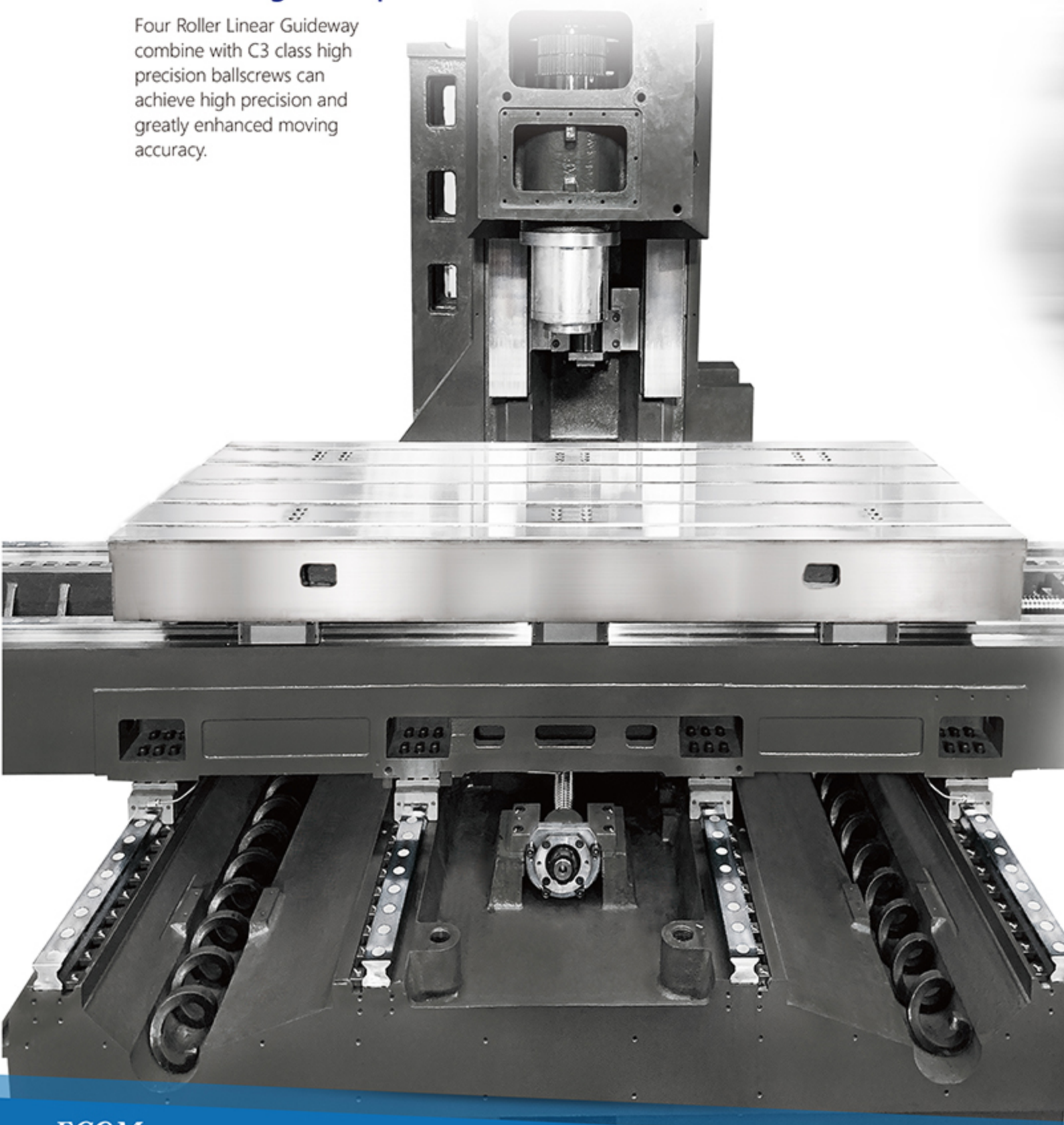


- For machine description:
The XY pre-loaded C3 class high precision ballscrews all has been well pre-extension, and directly coupled to A/C servo motors.
- It significantly eliminates backlash and ensures the highest rigidity.
- The Z is box way design provides "Heavy-Duty" cutting combine with the precision of the XY roller linear guideway.
(Option with gear head spindle)



VLB casting description

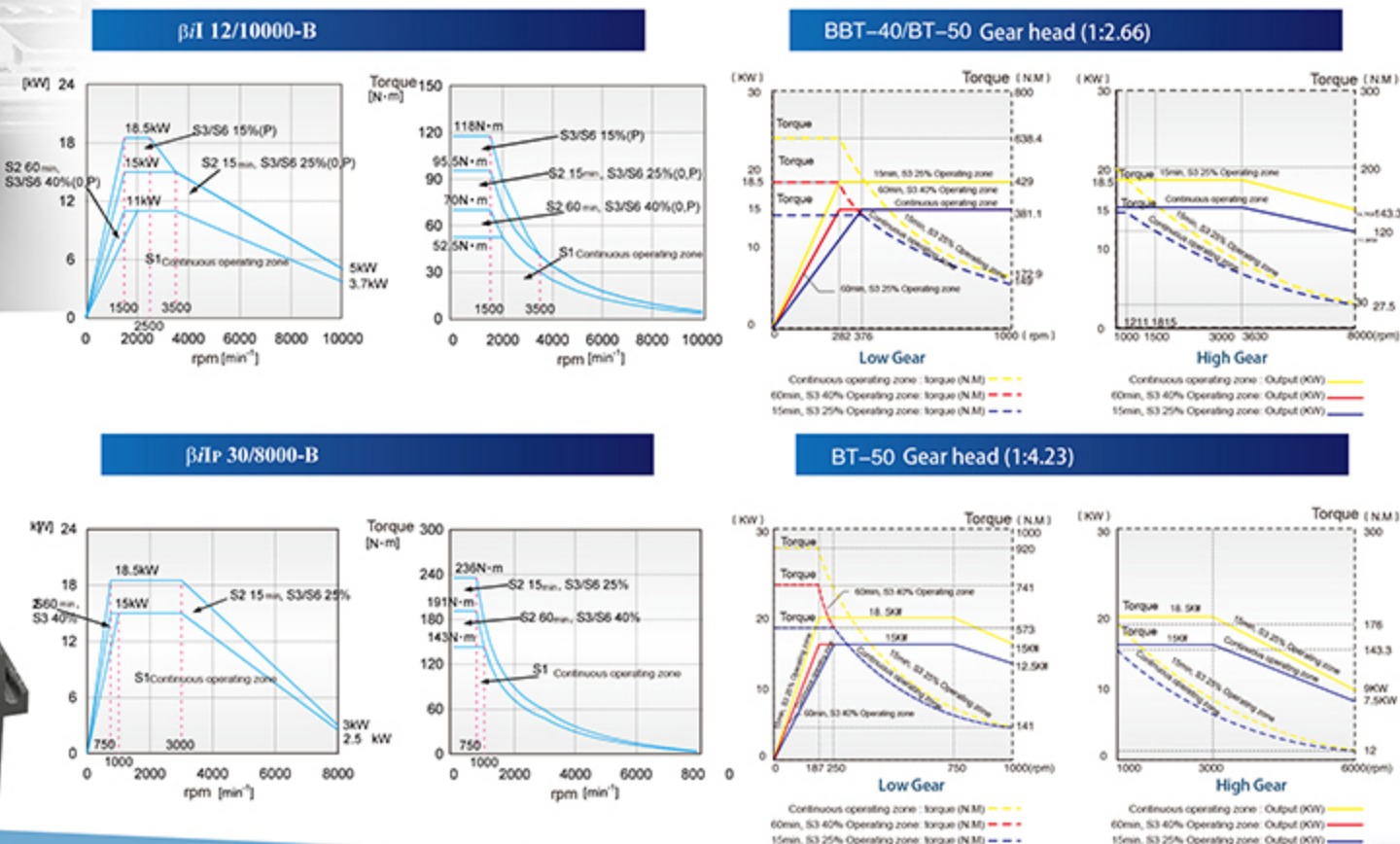
Four Roller Linear Guideway combine with C3 class high precision ballscrews can achieve high precision and greatly enhanced moving accuracy.



Gear Head description

Gear Head Spindle provides two speeds of High-Low torque. The two stages of transmissions are suitable for heavy cutting at low-speed. The gears are produced by chrome molybdenum alloy steel with heat treatment and precision grinding process.

Spindle Output Diagrams [FANUC]



SPECIFICATIONS
(VLB Series ; XY Linear Guide Way & Z Box Way)

Models	VLB-10i				VLB-12i				VLB-14i				VLB-16i					
Travel																		
X - Axis Travel	1000mm				1200mm				1400mm				1600mm					
Y - Axis Travel	600mm				750mm				750mm				750mm					
Z - Axis Travel	560mm				650mm				650mm				650mm					
Spindle Center To Z - Rail	650mm				830mm				830mm				830mm					
Spindle Nose To Table	150-710mm				120-770mm				120-770mm				120-770mm					
X Axis Linear Guildway (blocks)	RGH35 X 2 (6)				RGH45 X 2 (6)				RGH45 X 2 (6)				RGH45 X 2 (6)					
Y Axis Linear Guildway (blocks)	RGH45 X 2 (4)				RGH45 X 4 (8)				RGH45 X 4 (8)				RGH45 X 4 (8)					
Z Axis Guildway	Box Way				Box Way				Box Way				Box Way					
Table																		
Table Size	1120 X 600mm				1300 X 750mm				1500 X 750mm				1700 X 750mm					
T - Slot (number*width*pitch)	5 X 18mm X 100mm				5 X 18mm X 150mm				5 X 18mm X 150mm				5 X 18mm X 150mm					
Maximum Table Load	800kg				1200kg				1500kg				1500kg					
Spindle																		
Spindle Taper	BT-40	BBT-40	BT-50	BT-50	BT-50	BT-50	BT-50	BT-50	BT-50	BT-50	BT-50	BT-50	BT-50	BT-50	BT-50	BT-50	BT-50	BT-50
Spindle RPM	10000 rpm	8000 rpm	6000 rpm	8000 rpm	6000 rpm	8000 rpm	6000 rpm	8000 rpm	6000 rpm	8000 rpm	6000 rpm	8000 rpm	6000 rpm	8000 rpm	6000 rpm	8000 rpm	6000 rpm	
Type Of Driving	Belt type	Gear type	Gear type	Belt type(OP: Direct type)	Gear type	Belt type(OP: Direct type)	Gear type	Belt type(OP: Direct type)	Gear type	Belt type(OP: Direct type)	Gear type	Belt type(OP: Direct type)	Gear type	Belt type(OP: Direct type)	Gear type	Belt type(OP: Direct type)	Gear type	
Feed Rate																		
X, Y Axis Rapid Feed Rate	36m/min	36m/min	36m/min	30m/min	30m/min	30m/min	30m/min	30m/min	30m/min	24m/min	24m/min	24m/min	24m/min	24m/min	24m/min	24m/min	24m/min	
Z Axis Rapid Feed Rate	20m/min	20m/min	20m/min	20m/min	20m/min	20m/min	20m/min	20m/min	20m/min	20m/min	20m/min	20m/min	20m/min	20m/min	20m/min	20m/min	20m/min	
X, Y, Z Max.Cutting Feed Rate	10m/min	10m/min	10m/min	10m/min	10m/min	10m/min	10m/min	10m/min	10m/min	10m/min	10m/min	10m/min	10m/min	10m/min	10m/min	10m/min	10m/min	
Automatic tool changer																		
Arm Type (Tool to Tool)	24T (3sec)	24T (3sec)	No ATC	24T (4.5sec)	24T (4.5sec)	24T (4.5sec)	24T (4.5sec)	24T (4.5sec)	24T (4.5sec)	24T (4.5sec)	24T (4.5sec)	24T (4.5sec)	24T (4.5sec)	24T (4.5sec)	24T (4.5sec)	24T (4.5sec)	24T (4.5sec)	
Max. Tool Diameter*Length (with neighbor)	φ150X300mm (φ78X300mm)	φ150X300mm (φ78X300mm)	---	φ220X350mm (φ110X350mm)	φ220X350mm (φ110X350mm)	φ220X350mm (φ110X350mm)	φ220X350mm (φ110X350mm)	φ220X350mm (φ110X350mm)	φ220X350mm (φ110X350mm)	φ220X350mm (φ110X350mm)	φ220X350mm (φ110X350mm)	φ220X350mm (φ110X350mm)	φ220X350mm (φ110X350mm)	φ220X350mm (φ110X350mm)	φ220X350mm (φ110X350mm)	φ220X350mm (φ110X350mm)	φ220X350mm (φ110X350mm)	
Max. Tool Weight	8 kg	8 kg	---	15 kg	15 kg	15 kg	15 kg	15 kg	15 kg	15 kg	15 kg	15 kg	15 kg	15 kg	15 kg	15 kg	15 kg	
Motors	Mitsubishi	Fanuc	Mitsubishi	Fanuc	Mitsubishi	Fanuc	Mitsubishi	Fanuc	Mitsubishi	Fanuc	Mitsubishi	Fanuc	Mitsubishi	Fanuc	Mitsubishi	Fanuc	Mitsubishi	Fanuc
Spindle Motor (RATED / MAX)	7.5 / 11kw	11 / 15kw	15 / 18.5kw	15 / 18.5kw	15 / 18.5kw	15 / 18.5kw	15 / 18.5kw	15 / 18.5kw	15 / 18.5kw	15 / 18.5kw	15 / 18.5kw	15 / 18.5kw	15 / 18.5kw	15 / 18.5kw	15 / 18.5kw	15 / 18.5kw	15 / 18.5kw	15 / 18.5kw
X, Y Axis Servo Motor	2.0 kw	3.0 kw	2.0 kw	3.0 kw	2.0 kw	2.0 kw	3.0 kw	3.0 kw	3.0 kw	3.0 kw	3.0 kw	3.0 kw	3.0 kw	3.0 kw	4.5 kw	3.0 kw	4.5 kw	3.0 kw
Z Axis Servo Motor	3.0kwBS	3.0kwBS	3.0kwBS	3.0kwBS	3.0kwBS	3.0kwBS	4.5kwBS	3.0kwBS	4.5kwBS	3.0kwBS	4.5kwBS	3.0kwBS	4.5kwBS	3.0kwBS	4.5kwBS	3.0kwBS	4.5kwBS	3.0kwBS
Machine Accuracy																		
Positioning Accuracy (JIS)	± 0.005mm / 300mm				± 0.005mm / 300mm				± 0.005mm / 300mm				± 0.005mm / 300mm					
Repeat Positioning Accuracy (JIS)	± 0.003mm				± 0.003mm				± 0.003mm				± 0.003mm					
Other																		
Approximate Weight	7000 kg	7200 kg	7600 kg	10000 kg	10500 kg	10500 kg	11000 kg	11000 kg	11000 kg	11000 kg	11000 kg	11000 kg	11000 kg	11000 kg	11500 kg	11500 kg	11500 kg	
Floor Space Measurement	2850 X 2960 X 2850mm				4100 X 2900 X 3000mm				4500 X 2900 X 3000mm				5000 X 2900 X 3000mm					

Standard Accessories

- FANUC Oi-MF "PLUS" 10.4"LCD
- Spindle coolant system
- Heat exchanger for electrical cabinet
- Chip flush/Back chip flush
- Z-axis Nitrogen counter balance (VLB-10i excluded)
- Auto lubrication system
- Auto power off/Rigid tapping
- Work lamp / Alarm light
- Screw type chip conveyor with cart (VLB-10i excluded)
- RS232 interface
- CF card interface
- MPG
- High pressured coolant & air gun
- Leveling bolts & blocks
- Tool box & Tool
- Full splash guard
- System operation and procedures manual
- Machine manual

Optional Accessories

- Mitsubishi Controller
- Siemens Controller
- Spindle coolant nozzles
- Arm type ATC 24T (30 optional)
- Column raised(200mm /300mm)
- Chain type chip conveyor with cart
- Z-axis Pneumatic counter balance
- 4th Axis (Ø170/210/255/320)
- Tool & Workpiece probe
- Screw type chip conveyor with cart (VLB-10i)
- Coolant through spindle (20Bar/ 30Bar/ 50Bar)
- Electrical cabinet A/C unit
- Three axis optical scale (HEIDENHAIN)
- Direct-Driven spindle (10000/12000/15000 rpm)