



VBSERIES

Vertical Machining Center

FEELER VB SERIES

Choose from the smallest to the largest model that meets your various demands for today's production. No matter which one you select, you get the same FEELER tradition of quality and excellence.

VB-1100A



VB-1300A



VB-1650A



VB-1900A



Leadership through Performance! Feeler VB Series VMC Leads the Way to Your Competitive Edge!



VB-1400A



VB-2200A



RUGGED CONSTRUCTION GUARANTEES LIFETIME RIGIDITY AND STABILITY

- ▶ The machine structure and major parts are manufactured from Meehanite cast iron for outstanding material stability, thereby assuring long-term, deformation-free performance.
- ▶ The entire machine construction is subjected to ANSYS and NASTRAN Finite Element Analysis to achieve optimum rigidity and stability.
- ▶ Heavy duty construction throughout, combined with extra stable base, supported by 8-16 foundation bolts.
- ▶ Box ways on X, Y, Z axis.

TELESCOPIC COVERS

* Full guards on all axis prevent the axis from any damage caused by chips and coolant, ensuring consistent operational accuracy and long working life-span.



Finned Bellows Covers



Y Axis Rear Side Telescopic Cover



Telescopic Cover



Coolant Flushing



Chip Screws
(Only for VB-1400/1650)



HEAVY CUTTING

Every machine must pass a heavy duty cutting test and 48 hours continuous running without an alarm. Accuracy of spindle balancing is $\pm 0.002\text{mm}$.



6 SQUARE WAYS ON BASE for Model VB-2200A

* The specially designed 6 square ways on base make the machine excellent for heavy loading up to 3,000 kg.

* Extra wide square ways are hardened, precision ground, and coated with Turcite-B for outstanding wear resistance.

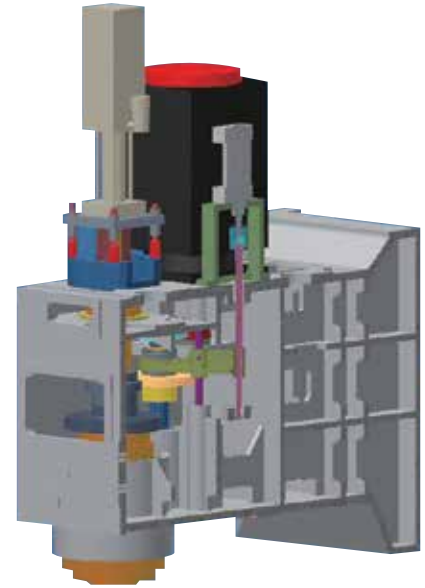
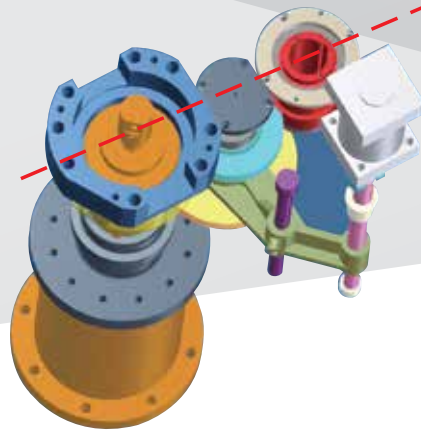
4 SQUARE WAYS ON BASE for Models VB-1100A, 1300A, 1400A, 1650A and 1900A



The X-axis travel of the table is fully supported by 4 square ways for heavy loading capability and for rigid and stable support.

GEAR DRIVE TRANSMISSION

Outstanding Features, Displaying Extraordinary Performance

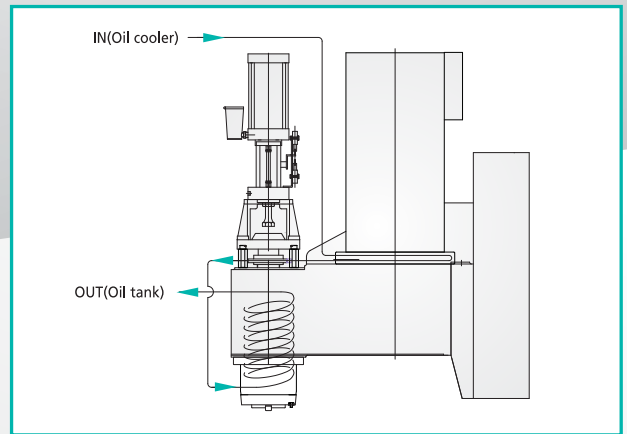


Large machining size
Low speed for heavy cutting;
high speed for finish accurate cutting

Spindle Features:

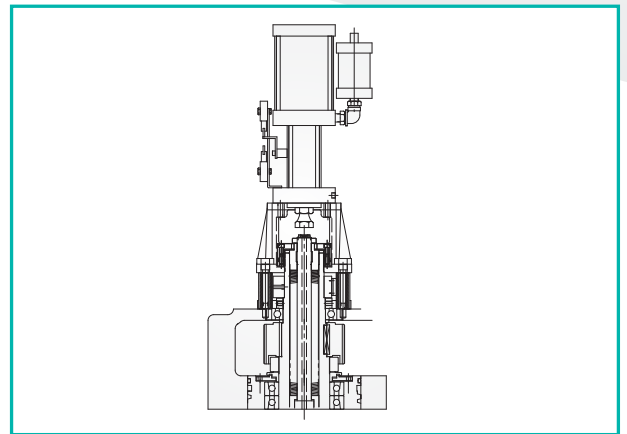
- The headstock features box-structure with inner ribs enforcement, upgrades rigidity and stability for heavy duty cutting.
- Short spindle nose increases rigidity, which reduces overhanging distance and increases cutting capabilities.
- Parallel axial centerline deployment, reinforces machining accuracy.
- Direct transmission between motor and gear that delivers optimum power to the spindle.
- Coolant Through Spindle with floating unclamp mechanism eliminates bearing's axial loading, thus increase spindle durability and accuracy.





SPINDLE COOLING DEVICE

The oil from the spindle cooling unit is particularly circulated around the spindle cartridge and spindle motor to maintain optimum running temperature to eliminate thermal expansion, and to prolong bearing life.



FLOATING CUSHION DEVICE ON SPINDLE

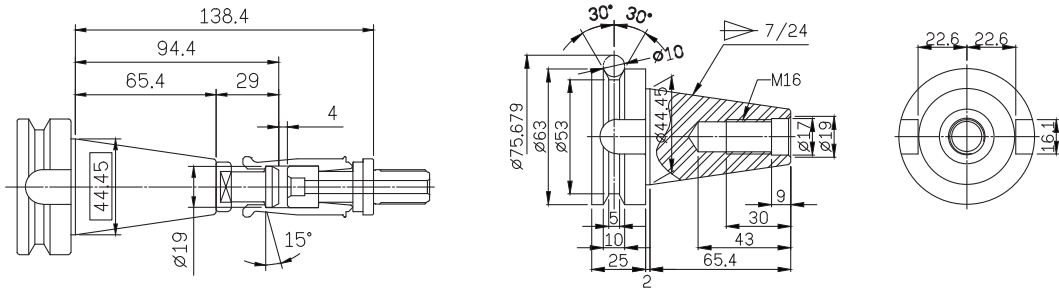
While unclamping the tool, the floating cushion device eliminates any pressure exerted on spindle bearing while ensuring longer service life.

Spindle Output Comparison Chart - VB1900A/2200A

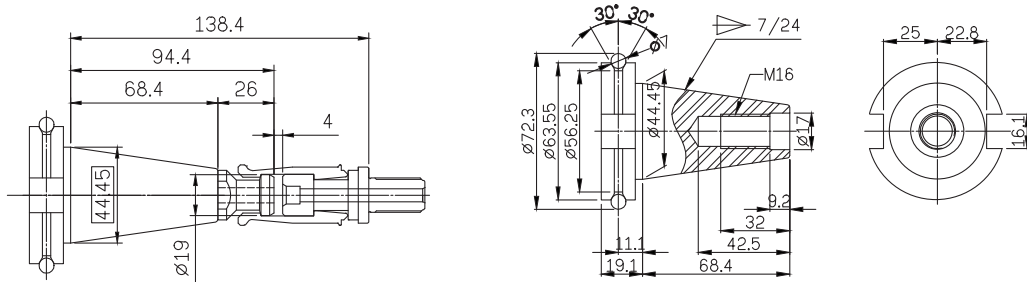
TYPE	GEAR HEAD (Gear Direct Engage)	ZF-GEARBOX	BELY TYPE
SPEED	6000 rpm	6000 rpm	6000 rpm
POWER	α 18/7000i(Std)	α 18/7000i(Opt)	α P30/6000i(Std)
TORQUE	619.74 N-m	560 N-m	441.5 N-m

TOOLING SHANK DIMENSIONS

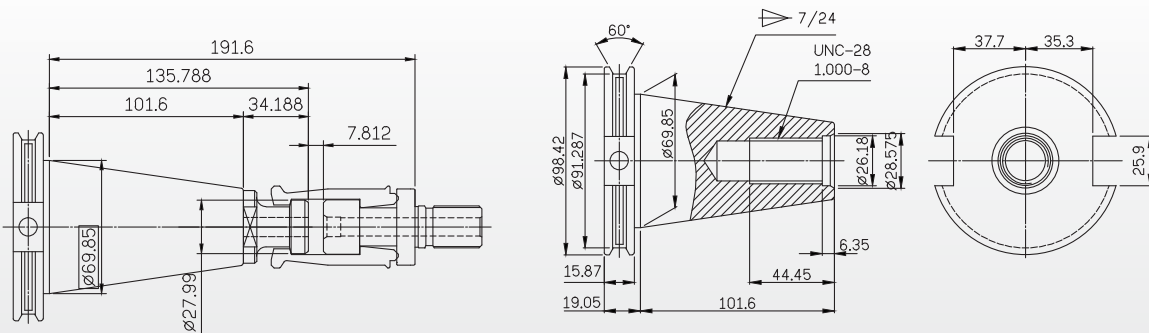
#40 MAS 403 BT-40 · JIS B 6339 BT40 SHANK+JIS B6339 P40 PULL STUDS



#40 ANSI/ ASME B5 50 · JIS B 6339 BT 40 SHANK+ DIN 69872 PULL STUDS

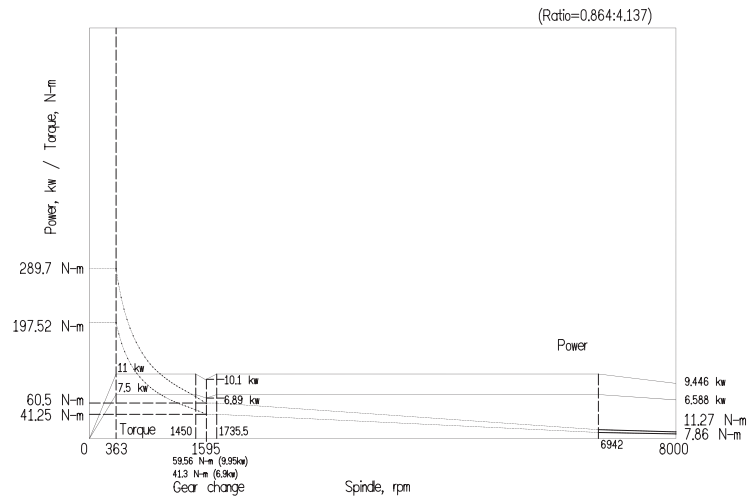


#50 ASME B5.50-1994 SHANK

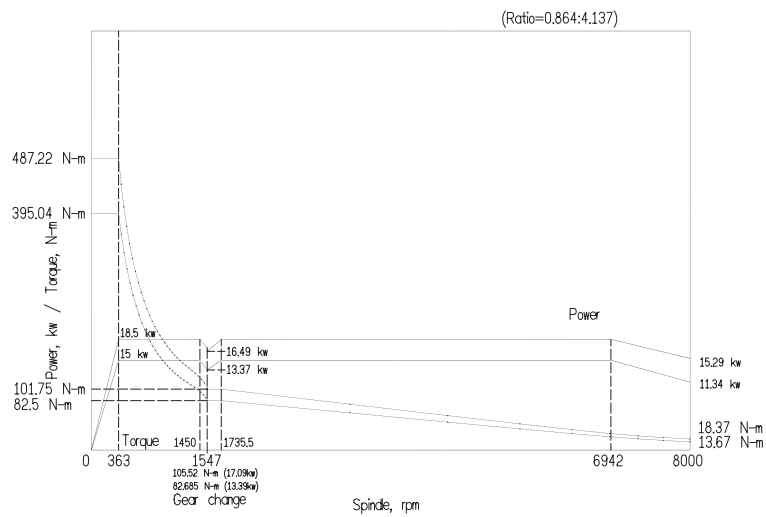


SPINDLE SPEED & POWER OUTPUT DIAGRAM

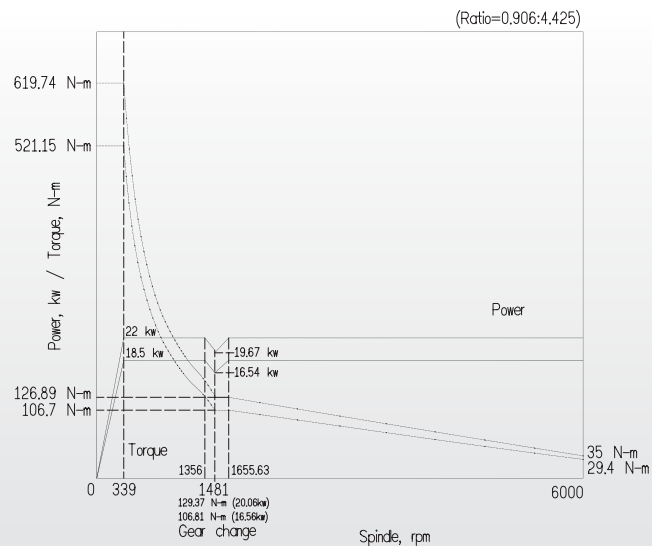
FANUC α 8/8000i(7000rpm) for Gear and Spindle 8000rpm



FANUC α 15/7000i for Gear and Spindle 8000rpm



FANUC α 18/7000i for Gear and Spindle 6000rpm

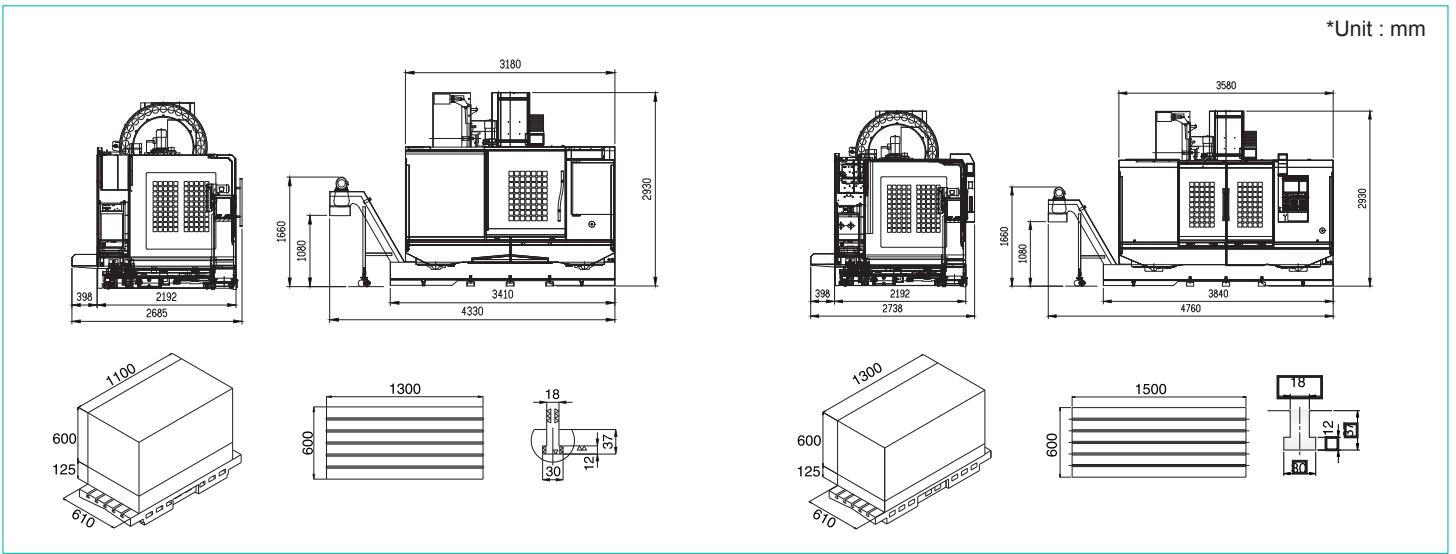


MACHINE DIMENSIONS, TABLE DIMENSIONS & WORKING CAPACITY

■ VB-1100A

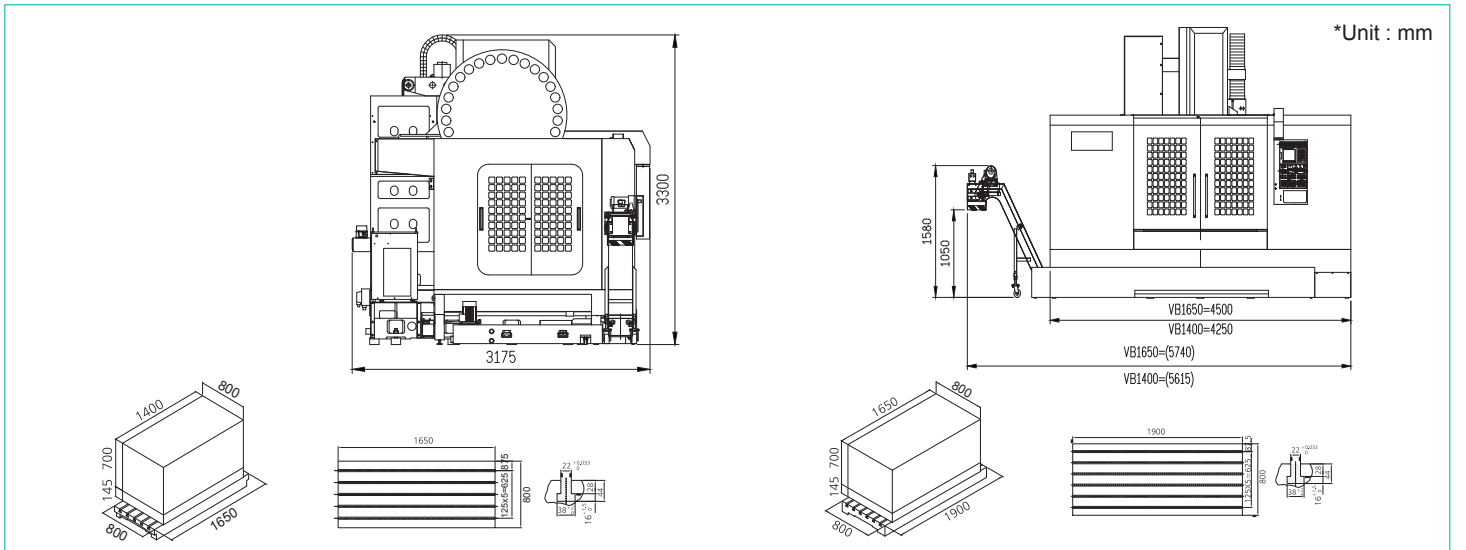
■ VB-1300A

*Unit : mm



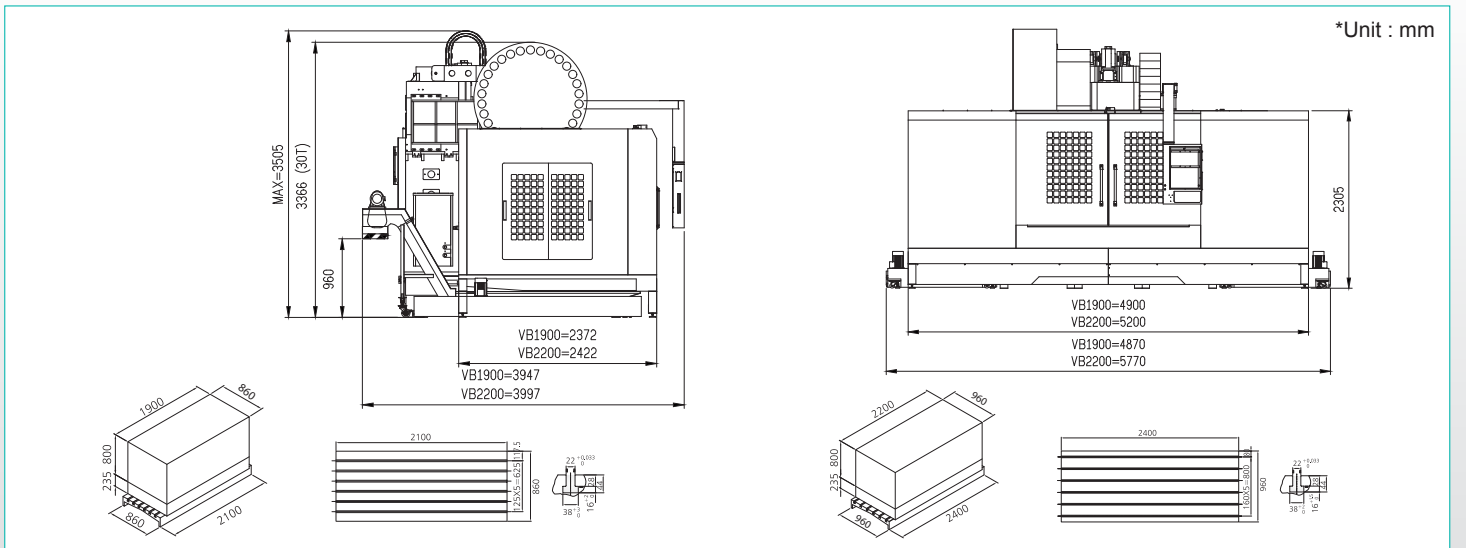
■ VB-1400A / 1650A

*Unit : mm



■ VB-1900A / 2200A

*Unit : mm



Machine Specifications

MODEL	UNIT	VB-1100	VB-1300	VB-1400	VB-1650	VB-1900	VB-2200
TRAVEL							
X-Axis • Boxways	inches (mm)	43.3" (1,100)	51.2" (1,300)	55.1" (1,400)	65" (1,650)	74.8" (1,900)	86.6" (2,200)
Y-Axis • Boxways	inches (mm)	24" (610)		31.5" (800)		33.9" (860)	37.8" (960)
Z-Axis • Boxways	inches (mm)	23.6" (600)		27.6" (700)		31.5" (800)	
Spindle Nose to Table Surface	inches (mm)	4.9" ~ 28.5" (125~725)		5.7" ~ 33.3" (145~845)		9.3" ~ 40.7" (235~1,035)	
Spindle Center to Column Surface	inches (mm)	26" (660)		33.5" (850)		37.4" (950)	41.3" (1,050)
TABLE							
Table Dimensions	inches (mm)	51.2" x 23.6" (1,300 x 600)	59.1" x 23.6" (1,500 x 600)	65" x 31.5" (1,650 x 800)	74.8" x 31.5" (1,900 x 800)	82.7" x 33.9" (2,100 x 860)	94.5" x 37.8" (2,400 x 960)
Maximum Load	lbs. (kg)	2,860 (1,300)	2,860 (1,300)	3,307 (1,500)	3,960 (1,800)	4,840 (2,200)	5,940 (2,700)
SPINDLE							
Spindle Speed	rpm	8000				6,000	
Spindle Taper (BIG-PLUS)	BT/CA	40	50	40	50	50	
Spindle Power	HP	40 Taper: 15HP • 50 Taper: 25HP				30HP	
FEEDRATE							
X-Axis Rapid Traverse	inches (m)/min	1,181" (30)		787" (20)		591" (15)	
Y-Axis Rapid Traverse	inches (m)/min	1,181" (30)		787" (20)		591" (15)	
Z-Axis Rapid Traverse	inches (m)/min	945" (24)		709" (18)		472" (12)	
ATC							
Tool Changer	-	Dual Swing Arm Type					
Maximum Number of Tools	-	30				30 • 40 optional	
Pull Stud	-	40 Taper: JIS B 6339 • 50 Taper: JIS B 6339-50P			JIS B 6339-50P		
Maximum Tool Weight	lbs. (kg)	17.6 (8)		33 (15)			
Maximum Tool Length	inches (mm)	11.8" (300)		11.8" (300)			
Maximum Tool Diameter	inches (mm)	3.1" (80)		3.9" (100)			
Maximum Tool Dia. - No Adjacent Tool	inches (mm)	5.9" (150)		7.9" (200)			
Tool Changing Time - Tool to Tool	sec	40 Taper: 1.9 sec. • 50 Taper: 3.5 sec.				3.5	
DIMENSIONS/WEIGHT/CAPACITIES							
Floor Space ~ with chip conveyor	inches (mm)	170" x 106" (4,330 x 2,685)	187" x 108" (4,760 x 2,738)	221" x 125" (5,615 x 3,175)	226" x 125" (5,740 x 3,175)	193" x 155" (4,900 x 3,947)	224" x 157" (5,700 x 3,997)
Weight	lbs. (kg)	16,500 (7,500)	17,600 (8,000)	26,400 (12,000)	28,600 (13,000)	41,800 (19,000)	48,400 (22,000)
Maximum Machine Height	inches (mm)	115.4" (2,930)	115.4" (2,930)	130" (3,300)	130" (3,300)	138" (3,505)	
Coolant Tank Capacity	gal. (liters)	110 (416)					
Power Capacity	KVA	25	25	30	30	35	35
CONTROL							
Fanuc	-	Oi-MF					

* Specifications subject to change without notice.

VB Standard Equipment

- Fanuc Oi-MF control
- Two year warranty
- Two stage Feeler gearbox
- Chip conveyor & dual chip augers (VB-900/1100/1300/1400/1650)
- Dual chip conveyor & chip auger (VB-1900/2200)
- Prepared for coolant through spindle (does not include pump)
- Spindle oil cooler
- 4th axis preparation (does not include drives or motors)
- Extra set of 8 M-functions
- Auto power off

- AICC - 40 block look ahead
- Double anchor pretensioned ballscrews
- Automatic lubrication system
- Enclosed splash guard
- Dust-proof electrical cabinet
- Rigid tapping
- 3-color signal light
- Coolant flushing system
- Coolant flushing gun
- Spindle ring coolant nozzles
- Spindle coolant nozzle
- Safety interlock package

VB Options

- Heidenhain linear scales on 3 axes (factory)
- 40 tool chain type ATC ~ VB-1900/2200 only (factory)
- Coolant through systems
- Touch probe in-process measurement
- Tool length measurement and broken tool detection
- Expanded memory
- Mist collectors
- Fire suppression
- Rotary tables
- Tooling and workholding packages
- Automation packages
- Methods turnkey solutions



FFG Headquarter



Technology Center

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