

# ML SERIES

High Rigidity Vertical Machining Center



**AWEA**®

THE ULTIMATE MACHINING POWER

**ML** Series 1365

# High Rigidity Vertical Machining Center

With the advanced R&D technology and strict quality control, ML series is specially made for heavy cutting machining needs, which have rigid and stable machine structure for extensive application. ML series offers excellent performance with affordable price.

- With Gear spindle design, ML series provides high torque machining capability.
- Z-axis is equipped with box ways which is especially suitable for heavy cutting.
- X/Y axes adopt high rigidity roller type linear guide way with low abrasion ability completely improves rigidity and control of machine.
- Highly efficient 24T arm type magazine design provides fast and reliable tool change system.
- The ML series adopts chain type chip conveyor as standard with high pressure chips flush coolant system, which provide the optimal chip removal capability.



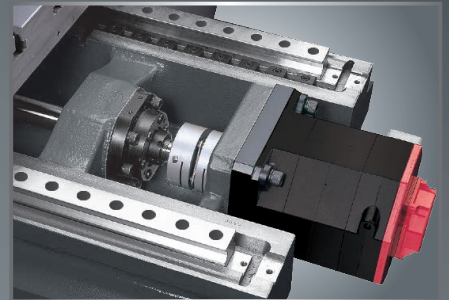
ML-1365  
( X : 1300 / Y : 650 / Z : 610 mm )

# High Precision Axial Feeding System

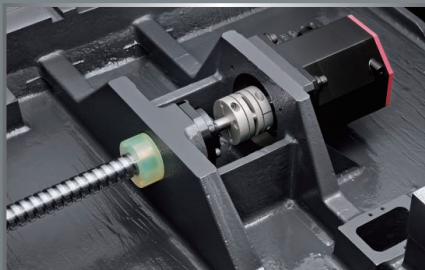
- 3 axes are driven by FANUC series absolute AC direct drive servo motor, which provides powerful thrust and fast acceleration and deceleration movement. It can greatly decrease motor load, and lower thermal expansion effects to minimum, while ensuring optimal performance and precision.
- The high precision 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 allow 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



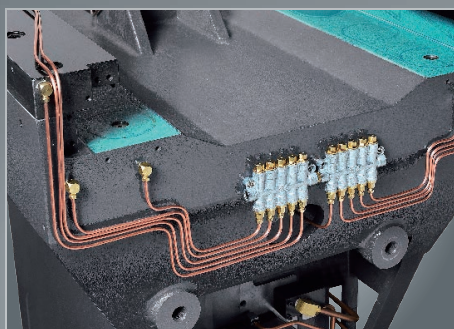
▶ Direct drive servo motor



▶ One-piece motor mount

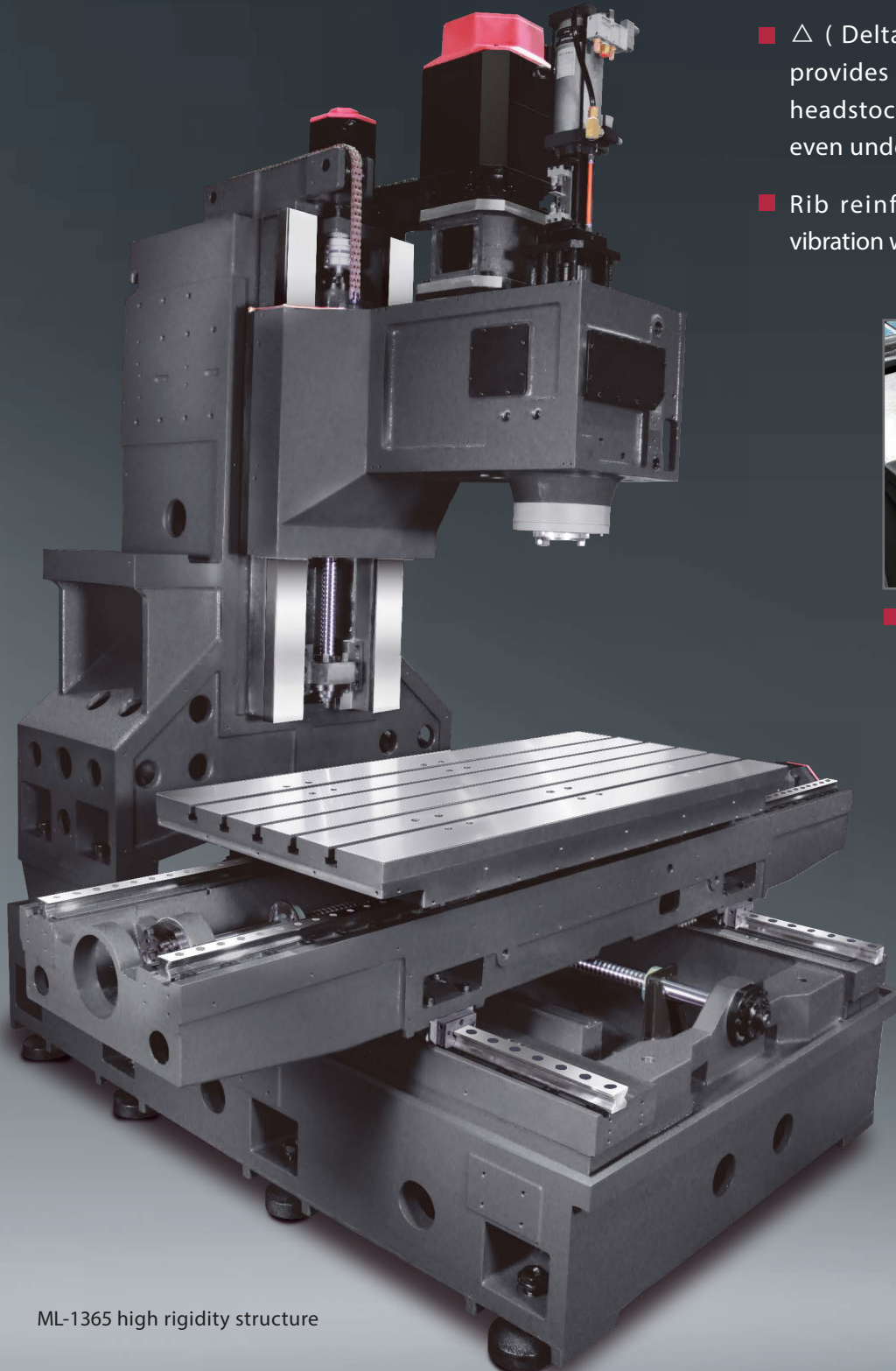


▶ One-piece bearing box



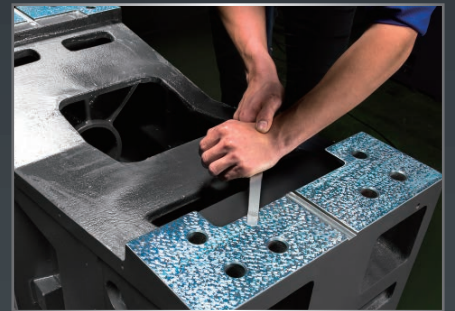
Copper piping auto lubrication system delivers metered amounts of lubrication to the slide ways, ball screws, and vital components with ensured reliability.

# High Rigidity Structure



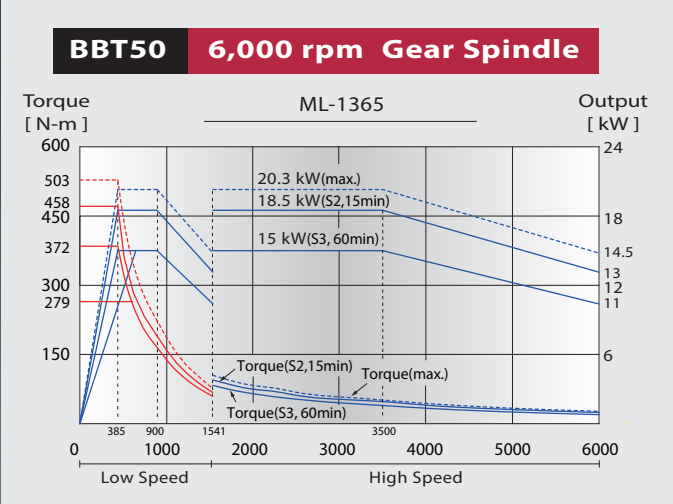
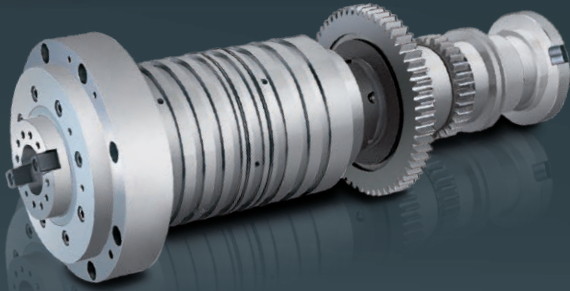
ML-1365 high rigidity structure

- The Finite Element Method ( FEM ) provides optimal machine design and light-weight structure advantage while ensuring high rigidity of machine.
- $\Delta$  ( 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.



- The column and bed are all precisely hand scraped to ensure optimal assembly precision, structural strength, and balanced load.

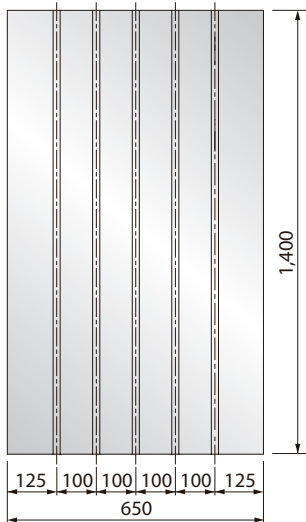
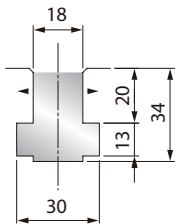
# High Performance Spindle System



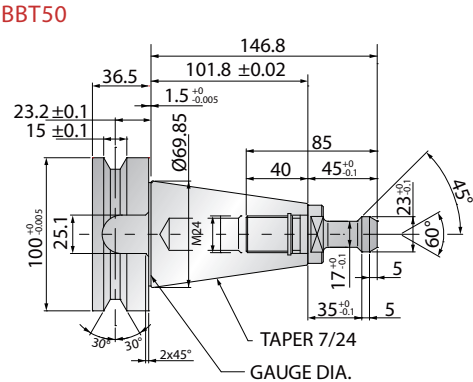
- Gear spindle combines with High-Low 2 steps gear box design to provide large torque output.
- High hardness Nickel-molybdenum-chromium alloy gear mechanism with auto lubrication and cooling system ensures the performance and lifetime of gear transmission box.

Table Dimensions

T-slot Dimensions

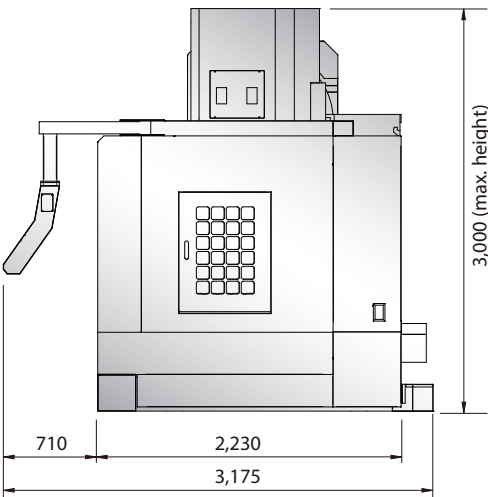
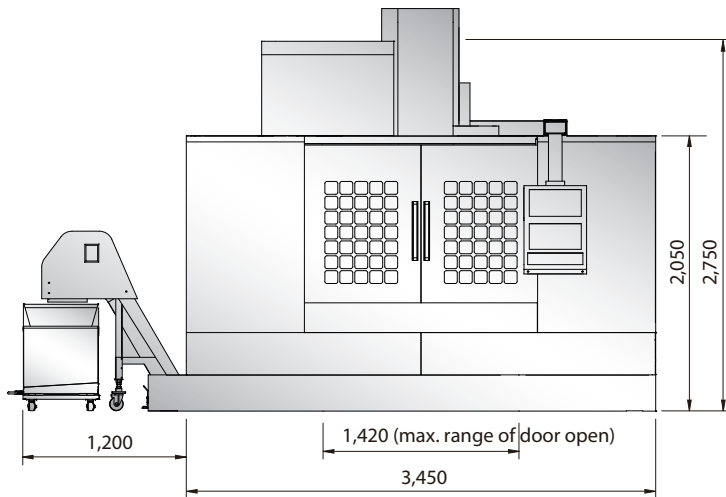


Tool Shank and Pull Stud Dimensions



( Unit : mm )

Machine Dimensions



ML-1365		
SPECIFICATIONS		
X-axis travel	mm	1,300
Y-axis travel	mm	650
Z-axis travel	mm	610
Dist. from spindle center to column	mm	710
Dist. from spindle nose to table center	mm	125 ~ 735
WORKING TABLE		
Table size ( X direction )	mm	1,400
Table size ( Y direction )	mm	650
Table load capacity	kg	1,000
SPINDLE		
Spindle taper		BBT50
Spindle motor (S3,60min / S2,15min / max.)	kW	15 / 18.5 / 20.3
Spindle speed	rpm	Gear 6,000
FEED RATE		
X/Y/Z axis rapids feed rate	m/min	36 / 36 / 24
Cutting feed rate	m/min	1 - 10
TOOL MAGAZINE		
Tool magazine capacity	T	24
Max. tool length	mm	300
Max. tool weight	kg	15
Max. tool diameter / adj. pocket empty	mm	Ø 105 / Ø 200
ACCURACY		
Positioning accuracy ( JIS B 6338 )	mm	± 0.01 / Full Travel
Positioning accuracy ( VDI 3441 )	mm	P ≤ 0.012
Repeatability ( JIS B 6338 )	mm	± 0.002
Repeatability ( VDI 3441 )	mm	Ps ≤ 0.007
GENERAL		
Control system		FANUC 0i- MF
Pneumatic pressure requirement	kg/cm <sup>2</sup>	6
Power requirement	kVA	30
Coolant tank capacity	liter	460
Machine weight	kg	8,600

## Standard Accessories

- Spindle air curtain
- Coolant nozzle around spindle
- Spindle cooling system
- Gravity axis anti-drop function
- Chips flush coolant system
- Chain type chip conveyor
- Coolant system with pump and tank
- Centralized auto. lubricating system
- Transformer
- Fully enclosed splash guard w/ roof
- Alarm light
- Heat exchanger for electrical cabinet
- Oil skimmer
- Automatic power-off system
- Air /water gun system
- Leveling bolts & pads
- Tool kits

## Optional Accessories

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

Specifications are subject to change without notice.

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ISO9 001 ISO 14001



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