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ISO 9001



ISO 14001



AGENT



AF-510 SERIES

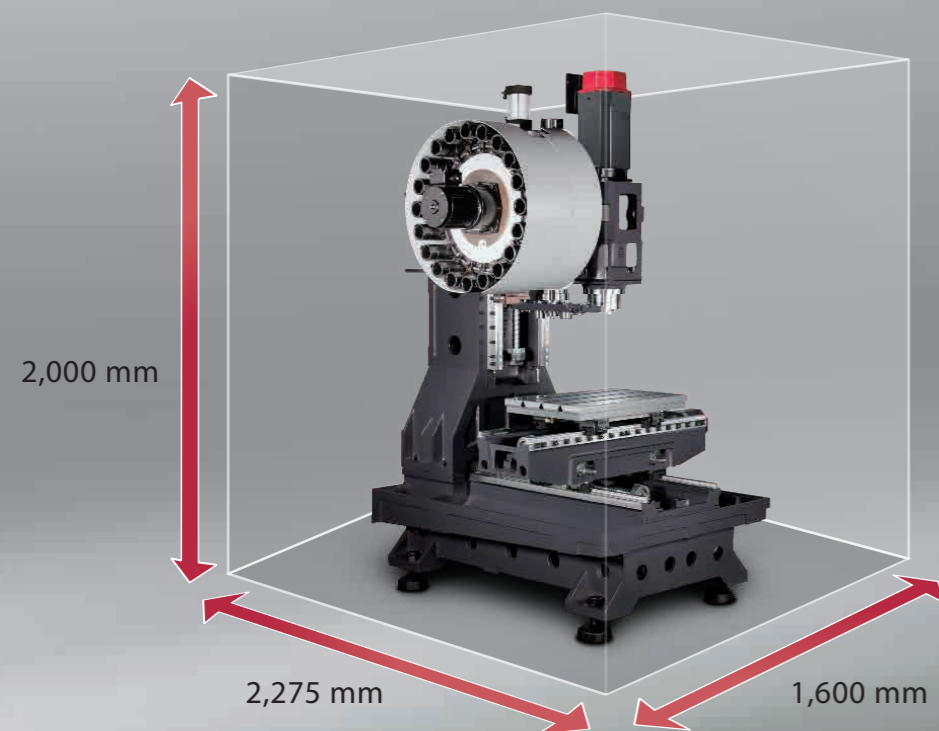
High Speed Vertical Machining Center

AF-510 *Series*

High Speed Vertical Machining Center

AWEA utilizes its mature vertical machining centers techniques to present you with the new AF-510 series which is specialized on producing auto parts and electronic parts. Besides its high precision machining ability, with the efficient drilling and tapping function, it also can achieve high productivity which meets your various needs for today and tomorrow.

- High speed direct-driven spindle with maximum speed of 20,000 rpm. The spindle and motor are all given a balancing test in-house to ensure optimal machining performance.
- 3 axes uses roller type linear guideways to provide maximum feedrate up to 50 m/min. and with great control and movement.
- High performance arm type magazine with synchronous unclamping type tools changer provides fast and steady tool change capability.



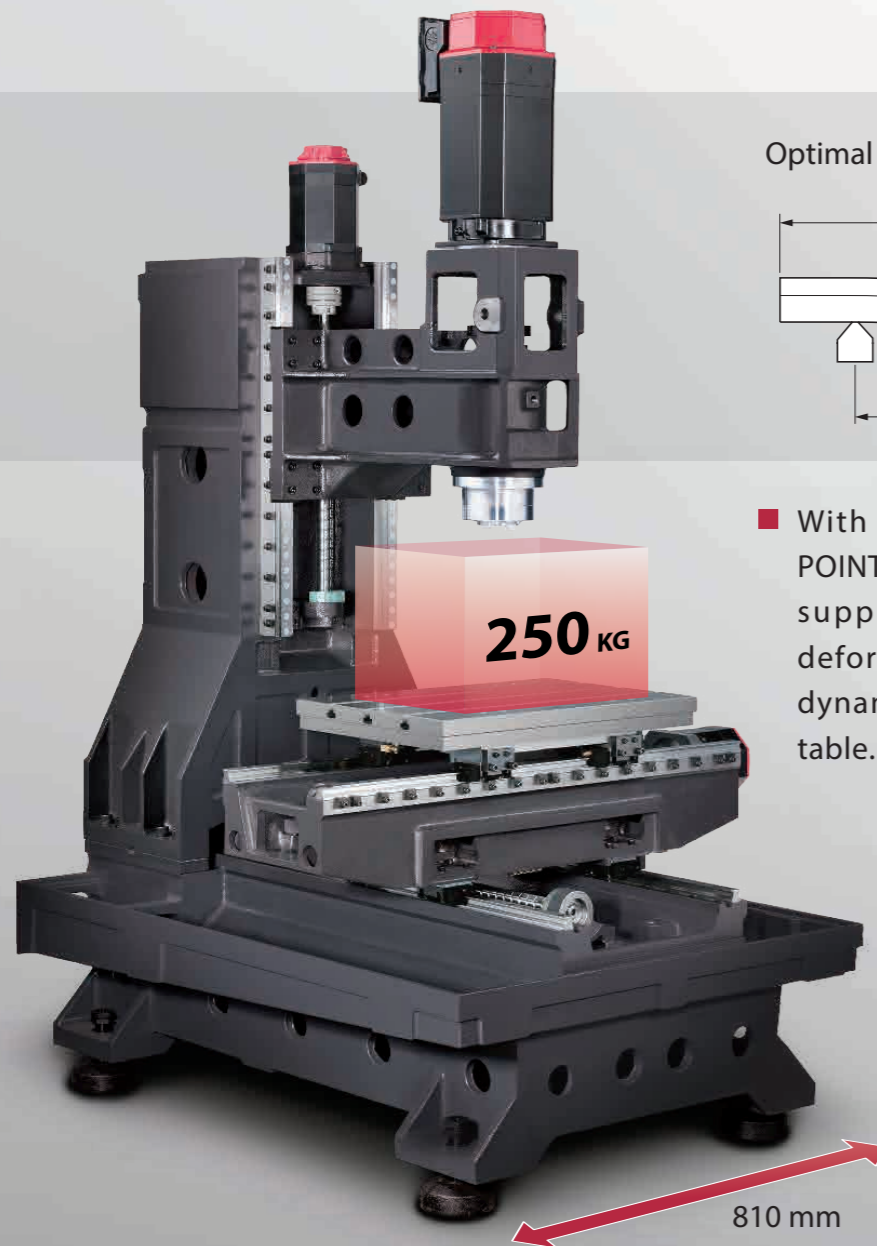
- The compact machine size takes less floor space which gives the factory more space usage.



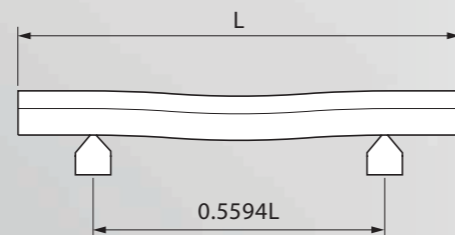
AF-510 Series

High Speed Vertical Machining Center

- The Finite Element Method (FEM) provides optimal machine designing and light-weighted structure advantages while ensuring high machine rigidity.
- The one-piece MEEHANITE casting bed and Y-shaped column provides a solid support to ensure ultimate dynamic accuracy.
- The contact surface of the column and bed are all hand scraped to ensure precision assembly, strong structure and balanced load.



Optimal positions – BESSEL POINTS

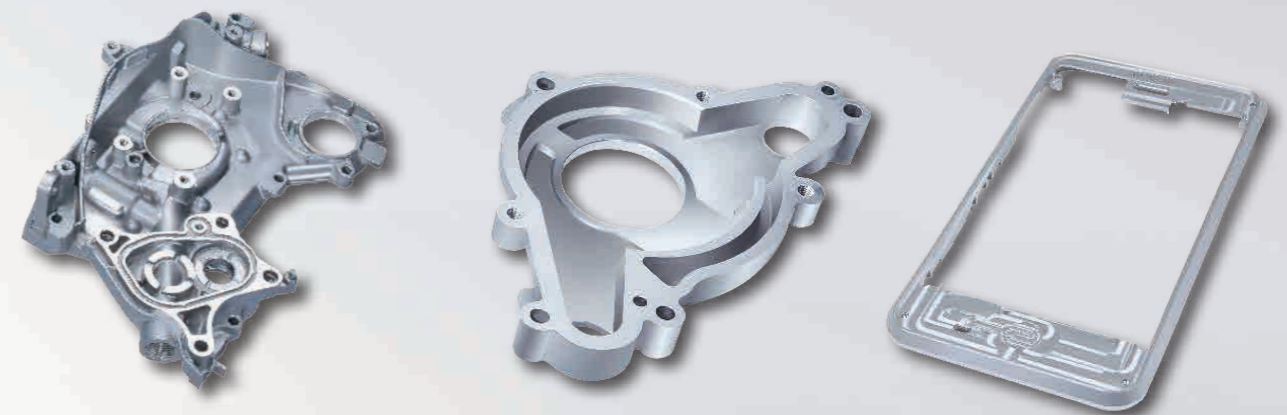


- With the concept of the BESSEL POINTS, The Y-axis saddle are firmly supported to ensure minimum deformation which increases the dynamic accuracy of the working table.



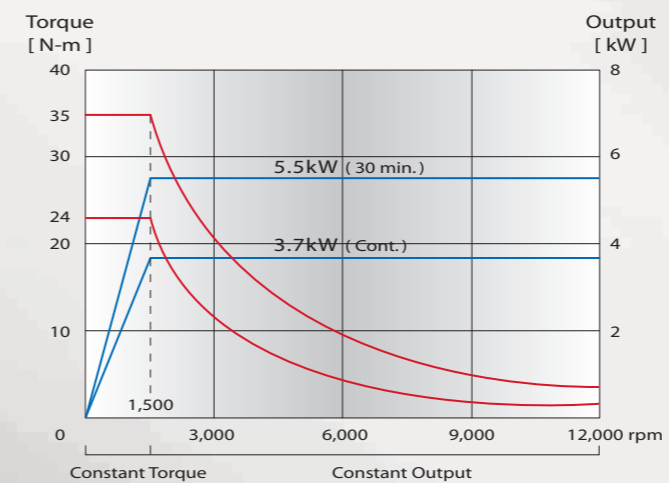
High Performance Spindle

- The direct-driven system efficiently blocks the heat that are generated from the motor which reduces thermal deformation while increasing working accuracy during long hours.
- The high precision beveled ball bearings adopted with optimal span and two-support points design increases rigidity and durability for the spindle.
- The motors and spindles use high rigidity coupling to reduce vibration caused by the lateral force from the spindle which ensures working stability and accuracy.

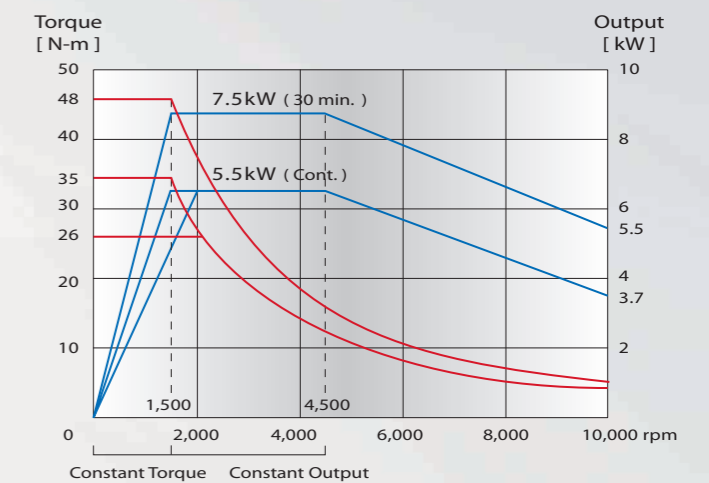


- BT30 spindle offers 12,000 / 15,000 / 20,000 rpm
BT40 spindle offers 10,000 / 12,000 / 15,000 rpm to meet various working requirements.

12,000 rpm Direct-driven Spindle (BT30)



10,000 rpm Direct-driven Spindle (BT40)



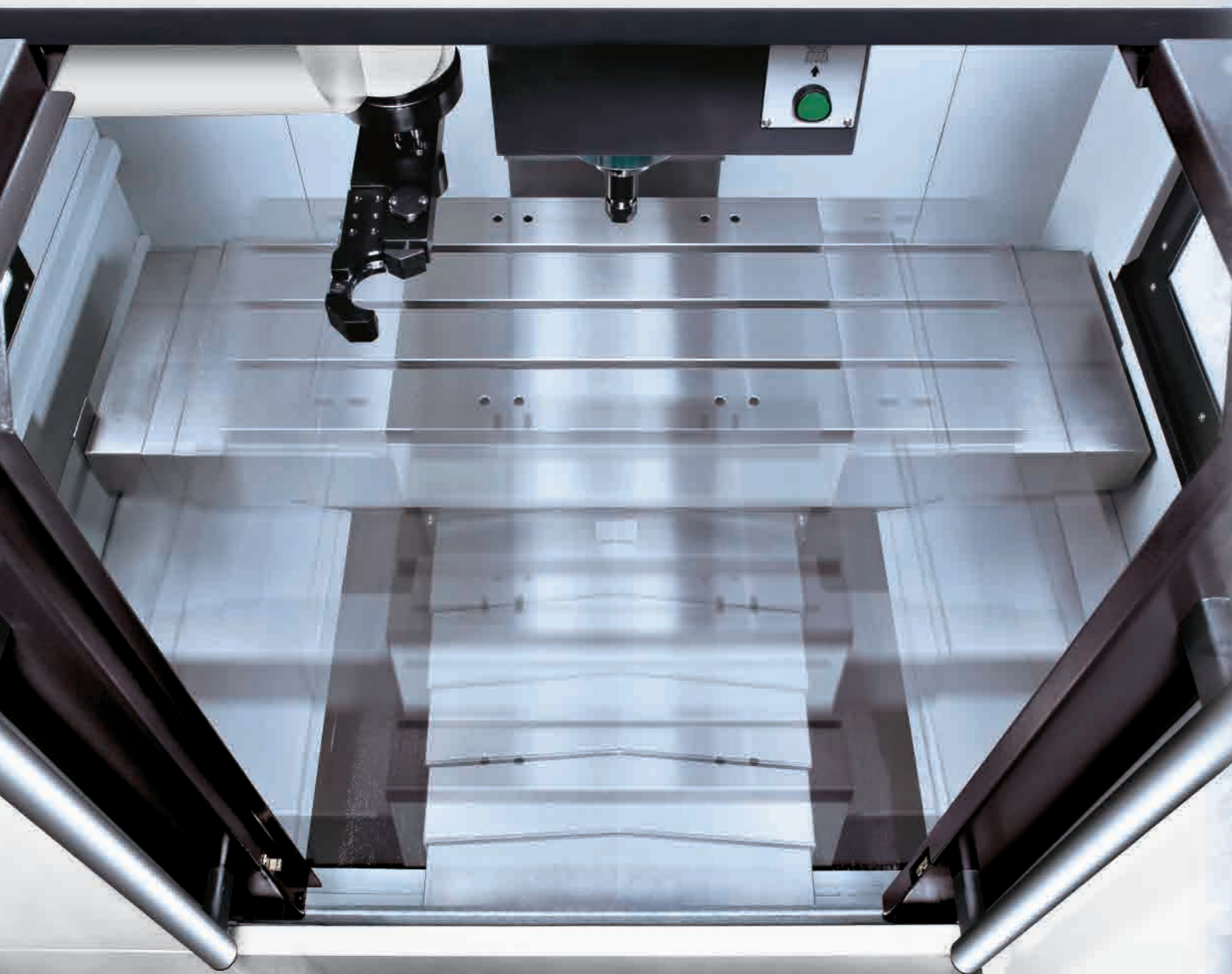
High Speed ATC System



1 Sec.

T-T (Opt.)

- Full series is equipped with standard 20-tool ATC system and synchronous unclamping type tool changer to fulfill the needs for stability and speed.
- The tool changer can calculate the shortest tool change path to reduce tool change time and increase working efficiency.
- T-T : 1.3 seconds ; Fastest tool change time can reach to 1 second (Opt.).



High Axial Feed Rate System

60 m/min.
(Opt.)

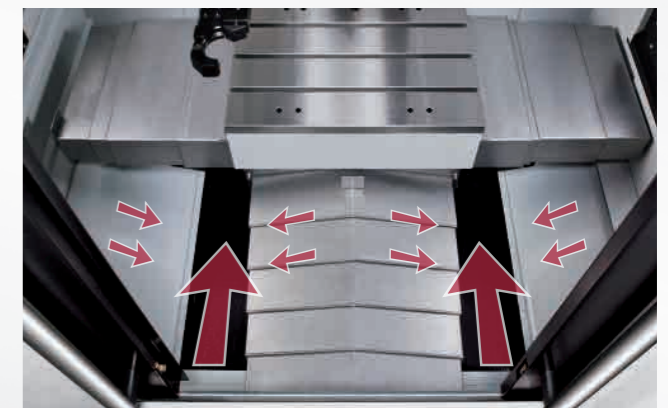
- 3-axes feeding system use absolute servo direct-driven motor to provide powerful thrust and fast acceleration and deceleration. This can efficiently lower motor load and reduce heat while ensuring maximum performance and accuracy.
- The motor mount and casting are of one-piece design which can distribute the cutting stress evenly and increase axial overall rigidity.
- 3-axes fastest feed rate can reach up to 50 m/min. Feed rate of 60 m/min. is also available (Opt.).

High Efficiency Chip Disposal System

- The high pressure water jet chip removal system can quickly remove the chips out of the working zone. Then the large hatchback chip trough transports the chips to the chip collector at the back of the machine.

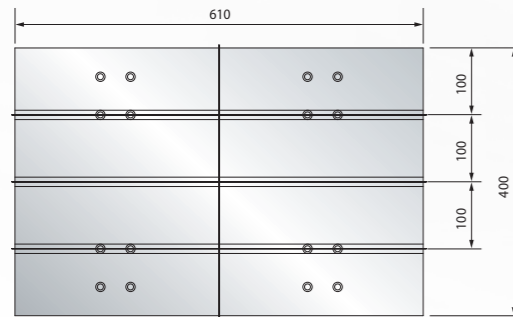
The chip collector and cooling liquid tank are detachable which is easy to maintain.

- The chips flush coolant system is also available (Opt.) which effectively removes chips and keeps the working zone clean.

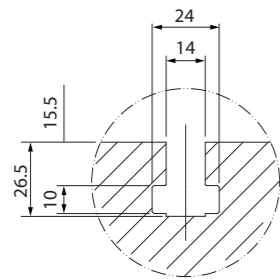


Dimensions

Table Dimensions



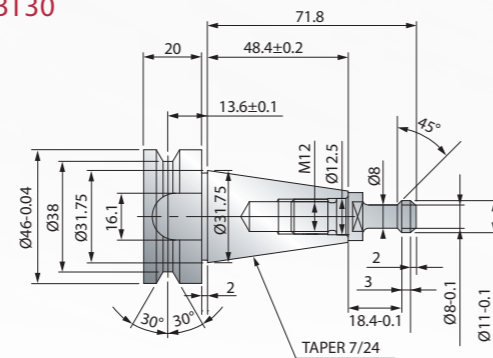
T-slot Dimensions



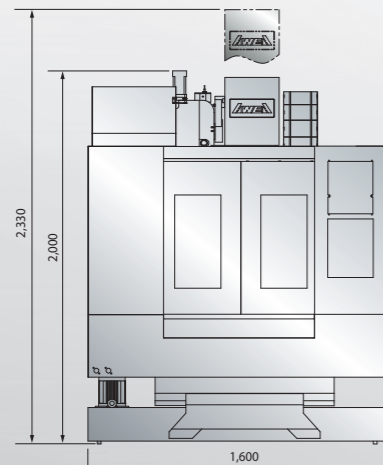
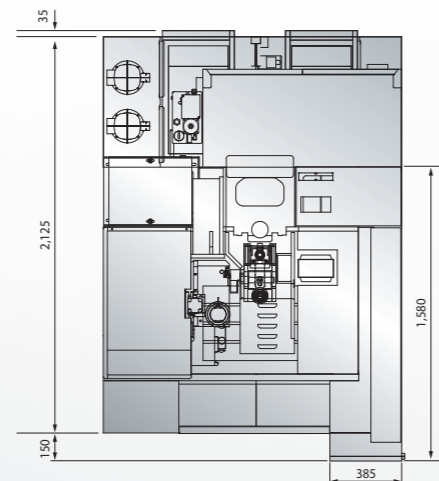
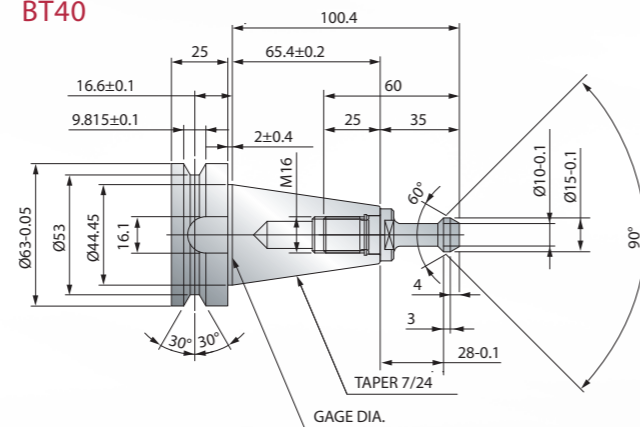
Machine Dimensions

Tool Shank and Pull Stud Dimensions

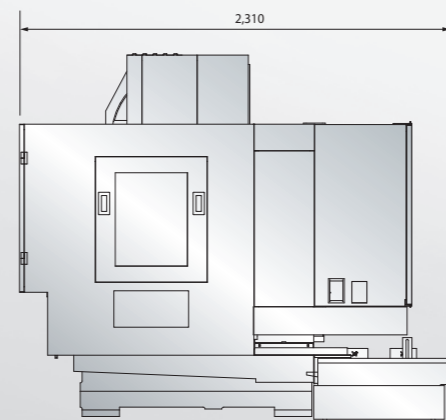
BT30



BT40



(Unit: mm)



AF-510

Specifications

X-axis travel	mm	510
Y-axis travel	mm	400
Z-axis travel	mm	330
Distance from spindle nose to table top	mm	100 ~ 430
Distance from spindle nose to column	mm	473

Working Table

Table size (X x Y)	mm	610 x 400
Table load capacity	kg	250

Spindle

Spindle taper		BT30	BT40
Spindle motor (cont. / 30 min.)	kW	3.7 / 5.5	5.5 / 7.5
Spindle speed	rpm	12,000	10,000

Feed Rate

X / Y / Z axes rapid feed rate	m/min.	50 (60 Opt.)
Cutting feed rate	m/min.	20

Tool Magazine

Tool magazine capacity	T	20
Max. tool diameter / adj. pocket empty	mm	Ø 69 / Ø 135
Max. tool length (from gauge line)	mm	200
Max. tool weight	kg	4

Accuracy

Positioning accuracy (JIS B 6338)	mm	± 0.003 / 300
Positioning accuracy (VDI 3441)	mm	P ≤ 0.01
Repeatability (JIS B 6338)	mm	± 0.002
Repeatability (VDI 3441)	mm	Ps ≤ 0.008

General

Control system		FANUC Oi-MD / MITSUBISHI M-70
Power requirement	kVA	15
Pneumatic pressure requirement	kg/cm ²	6
Coolant tank capacity (pump)	liter (HP)	160 (1)
Machine weight	kg	2,000
Machine dimensions (L x W x H)	mm	1,600 x 2,310 x 2,330

Specifications are subject to change without notice.

Standard Accessories

- Spindle air curtain
- Centralized automatic lubricating system
- Fully enclosed splash guard
- Coolant equipment system (Pump & tank)
- Spindle circular coolant (BT40)
- Foundation bolt kit
- Heat exchanger for electrical cabinet
- Alarm light
- Air gun
- Automatic power off system
- Tool box

Optional Accessories

- Spindle :
 - 12,000 / 15,000 rpm BT40 direct driven spindle
 - 15,000 / 20,000 rpm BT30 direct-driven spindle
- Screw type chip conveyer
- Caterpillar type chip conveyor and bucket
- Spindle cooling system
- Coolant through spindle (Form A)
- Chips flush coolant system
- Oil skimmer
- The 4th axis interface