



► **ML-15**
Mill-Turn Machining Center

maxmill



Mill-Turn Machining Center ML15

Target Market ►►

The multi-tasking ML-15 is equipped with turning and tilting axes, which enable turning and milling processes through one-time chucking. The original turning A, turning B, milling A, milling B, even the multi-angle of 5 face machining can also be integrated into 2 processes by the ML-15.

Advantage ►►

- 1. Benefit** Maximize per unit production capacity.
- 2. Precision** More accurate material preparation can be achieved with less material preparation on one machine.
- 3. Save money** The improvement of production yield rate, and reduces processing failure lost.
- 4. Save time** Reduce handling time between machines.



Processing Requirements All In ML15

- Most of the machining failures result from inaccurate part positioning and chucking failure between different machine processes. The integrated Mill-Turn eliminates such failures and improves the yield rate significantly.

- Reduce the chucking time, and reduce the labor cost for temporary storage of materials between machines.

- The machine can be transported to a higher floor by an elevator with 5 tons loading capacity. The moving column design and one-piece massive base, with minimum moving mass ratio makes it easier to install the machine on a foundation free floor.

Improve the
yield rate



Reduce
labor cost



Multi-floor
factory



Reduce
workpiece
post processing



Reduce
workpiece
processing stops



Maximize
production
capacity



- One-time chucking with multiple processes (milling, turning, side boring, end milling to multi-angle drilling) reduce the handling time between different machines.

- The integrated Mill-Turn can make the perfect inner and outer cylindrical surface without 2nd manual chamfering process.

- Minimum equipment investment, minimum floor space, minimum semi-finished temporary storage space, minimum loading and unloading working hours.



Features



- Ergonomic swiveling operation panel for easy operation. Wide front door for easy loading/unloading. Side door for more convenient tool center point calibration.
- Arm type ATC magazine features high speed tool change with random tool selection. The moving mass ratio of machine, allows maximum tools magazine as an option and without affecting its high speed machining performance.



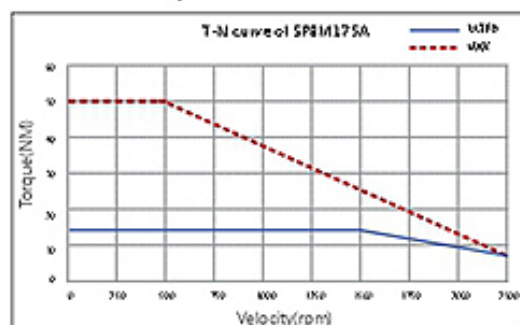
- Hydraulic clamping chuck is available in 5" / 6" with air blast and airseal detection.
- Patented tool holder system, the tool exchange is highly accurate, and the type of tool can be detected to avoid unnecessary operation errors. A variety of tools are available as option.

Total Solutions

Maxmill is proficient at offering total solutions tailored to maximize your product value.



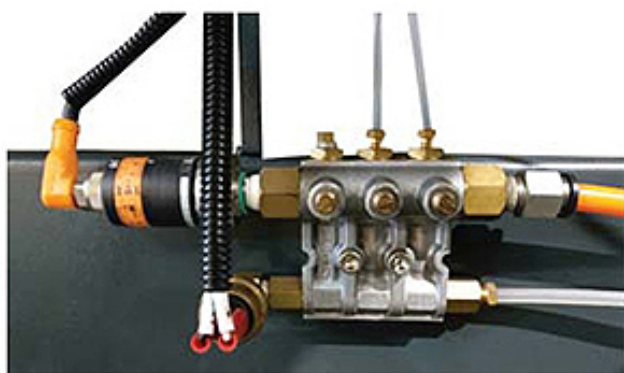
Spindle motor power and torque chart



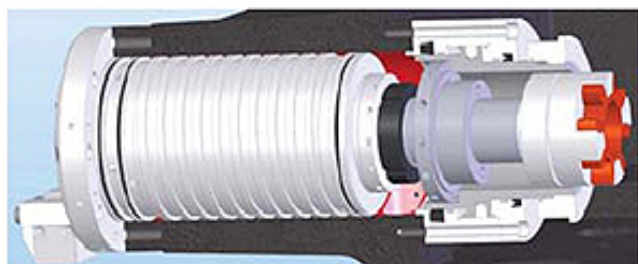
Patented Design



- Permanent magnet built-in electric CS2 spindle features high accuracy, high response and backlash free.



- CS2 axis is with oil and air lubrication, through continuous supply of oil and air, the bearings are continuously replenished in clean lubricating oil, and continuous positive air pressure, completely avoiding cutting fluid and chips entering the bearings.



- Coolant through tool tip (CTS-Opt.) chill the tool efficiently and remove the chips, completely preventing any scratch on the part surface.



- Chip shower.

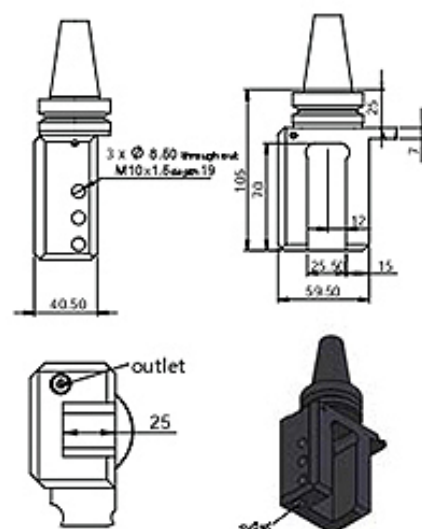
- Separation design between direct driven spindle and tool clamp/unclamp cylinder that minimize the spindle replacing time.

Workpiece

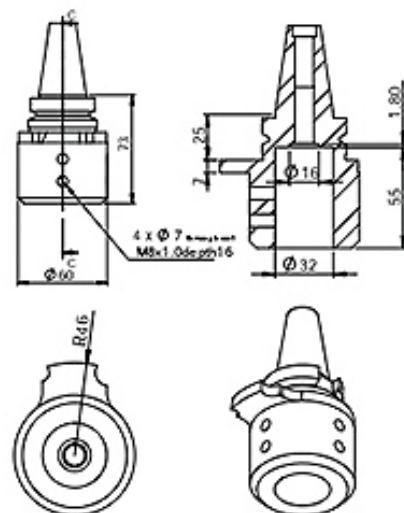
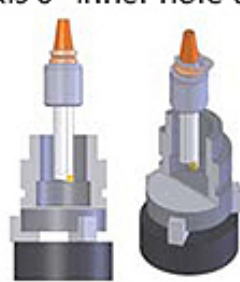


Holdings and dimensional drawing

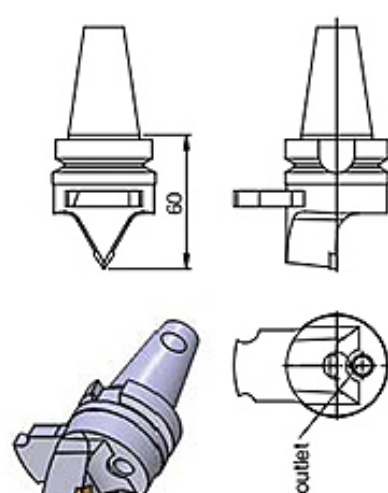
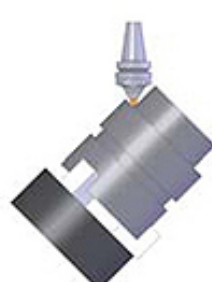
1. O.D. turning tool holder
(A axis 90° turning)



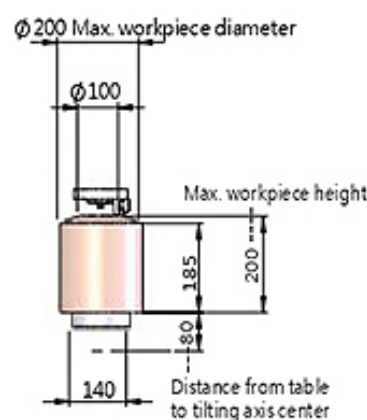
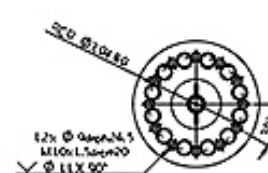
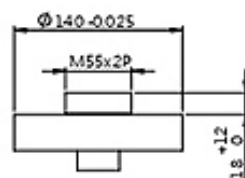
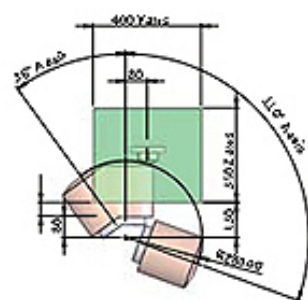
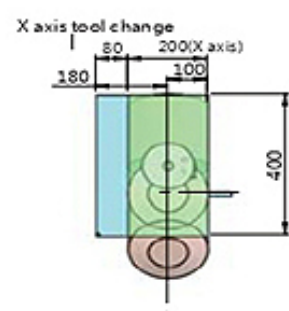
2. I.D. tool holder
(A axis 0° inner hole turning)



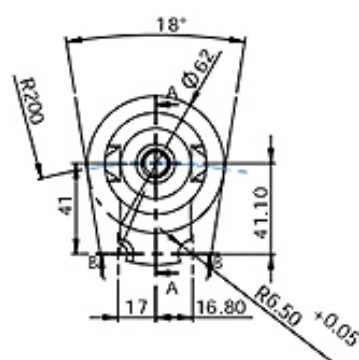
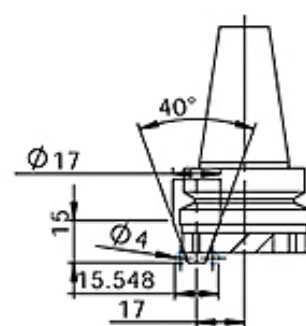
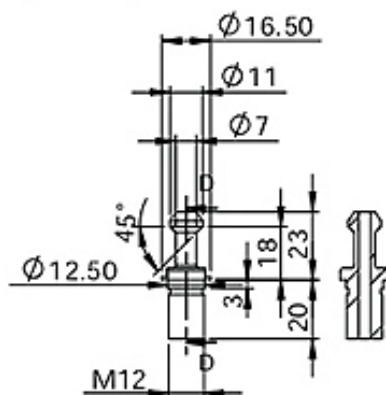
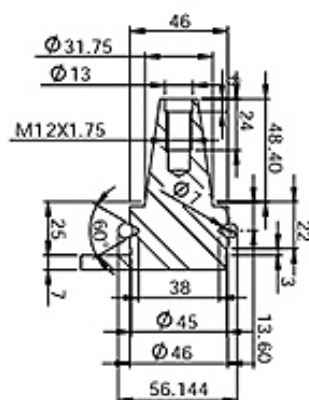
3. 45° rough turning tool



Machining envelope



Specification of tool holder and pull stud (BT-30)



ML-15 Specification:

Model		Unit	ML-15
Travel	X x Y x Z axis	mm (inch)	200+80 x 400 x350 (7.87+3.14 x 15.74 x 13.77)
	A axis	deg.	-36~110
	CS2 axis	deg.	∞
	CS1 axis	deg.	Fixed
Spindle	Speed	rpm	CS1:12,000, CS2:2,500
	Transmission	-	CS1: Direct Drive, CS2: Built-in
	Spindle taper	-	BT30
	Clamping format	-	CS1: Disc spring broach CS2: Hydraulic clamping chuck
	Max. spindle torque	nm	50
Feedrate	X/Y/Z axis rapid traverse (linear guide ways)	m/min	60 / 60 / 60
	Max. cutting feedrate	m/min	20
Work range of tilting table	Table Diameter	mm (inch)	150 (5.9)
	Max. workpiece diameter	mm (inch)	200 (7.87)
	Max. workpiece height	mm (inch)	200 (7.87)
	Distance from spindle nose to table	mm (inch)	50 (1.96)
	Distance from spindle nose to tilting axis center	mm (inch)	130 (5.11)
	Distance from table to tilting axis center	mm (inch)	80 (3.14)
	Distance from tilting axis center to spindle center	mm (inch)	120~280 (4.72~11)
	Distance from table to floor	mm (inch)	950 (39.37)
	Max. table loading capacity	kg	50
Tool magazine	Tool storage capacity	pcs	20 arm (opt.60) Turning tool (Max capacity:10T)
	ATC type	type	BT30
	Max. tool length	mm (inch)	200 (7.87)
	Max. tool diameter	mm (inch)	80 (3.14)
	Max. tool weight	kg	3
Dimension	Machine weight	kg	4,500 (std.)
	Power consumption	kva	15
	Floor space (L x W x H)	mm (inch)	3,160 x 2,000 x 2,500 (124.4 x 78.74 x 98.42)
	Container loading capacity	-	1x40'HQ (3sets)

Standard Accessories :

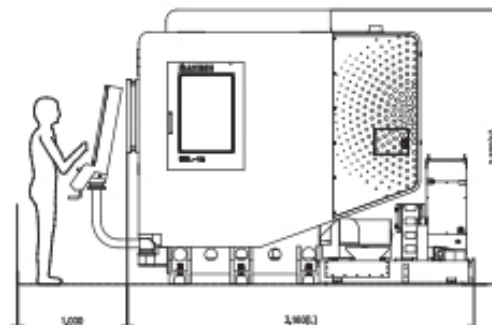
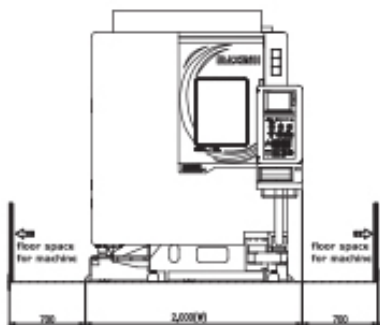
- LED head light
- Inner LED lamp
- Coolant gun
- CS1 / CS2 axis oil cooler
- A axis / CS2 axis hydraulic brake
- 3 axes lubrication
- Side working door
- High speed and high accuracy
- Auto power off
- 3 axes roller type liner guide ways
- 3 axes ball screw cooling system
- CS2 axis rotary encoders
- CS2 bearing oil mist lubrication
- Remote hand wheel
- Transformer (Depending on demands)
- Side coolant nozzle
- Spindle ring coolant
- Air gun
- 20T ATC
- Cutting air blast system
- CS1 / CS2 axis air curtain
- Chip collector
- Full guard
- Tool box
- Z axes servo motor with brake
- Ergonomic operating interface

Optional Accessories :

- 3 axes linear scales
- Coolant through spindle (CTS)
- CS2 axis hydraulic clamping chuck
- Manual clamping chuck
- Tilting (A) axis angle encoder
- CS1 spindle speed 15,000 / 20,000rpm
- Link type chip conveyor
- Scrap type chip conveyor
- Oil mist collector
- Oil skimmer
- Auto tool length measuring system
- 30T ATC
- 40 / 60T ATC (servo)
- Workpiece measuring system
- Chip shower
- O.D. turning tool holder
- I.D. turning tool holder
- 45° rough turning tool
- Air-conditioner for electrical cabinet

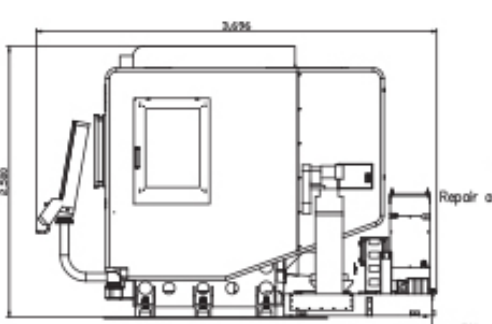
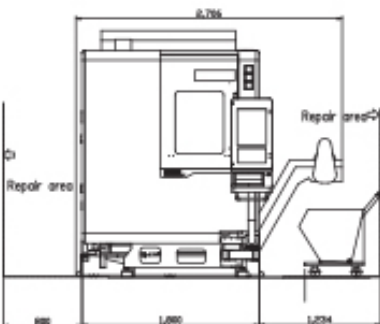
Floor space (Standard)

Unit: mm



Floor space (Machine with Link type chip conveyor)

Unit: mm





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Since 1960

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All specification are subject to change without prior notice.