jD Series

[International NDC Series]

Double Column Vertical Machining Center

YCM®

World Class CNC Machine Tool Manufacturer

A YCM Alliance Partner

Founded in 1954, the YCM company specializes in the manufacturing of High Speed Vertical Machining Centers and is recognized worldwide for technological advancements, manufacturing capabilities and superior product design. Since its founding, YCM machines are relied upon by quality conscious customers who have become accustomed to their uncompromising performance and renowned reliability. YCM products are unique and represent a differentiated approach to machine design.

YCM ALLIANCE

Make it Better, Together.

Quality, Precision, Speed, and Reliability

The JD Series double column vertical machining centers deliver top-end quality and excellent value. Every machine tool is built and handcrafted for rigidity, thermal stability, and repeatability. The JD Series produces high-quality results from the first part to tha last.

Rigid Design

During the design process, Finite Element Analysis (FEM) is used to ensure the best placement of mass and rib structures to provide constant stability under the intensive load of heavy-duty cutting. Direct drive servo motors deliver fast, accurate, and repeatable cutting. Each axial AC servo motor is equipped with absolute positioning encoders combined with a rigid body construction providing a combination of uncompromising precision and stiffness.

Spindle by YCM

The spindle is the critical union between the machine, cutting tool, and workpiece. YCM designs, manufactures and tests every spindle to perfection to ensure optimum performance and longevity. YCM IDD spindles have a proven history and are known as legendary for their reliability.

Designed for Versatility

The jD Series is designed with versatility in mind. This platform is ideal for General Parts machining across a wide spectrum of industries including Aerospace, Automotive, Energy, and more.

Make it Better, Together

jD

State of the Art Foundry

YCM Machine Tools are Built From the Ground Up

Unlike many machine tool manufacturers that purchase components and merely assemble them, YCM is a true machine tool builder. This commitment to quality begins at the YCM foundry where the heart of every machine – the base, is perfectly cast resulting in a rigid Meehanite® casting. All mating surfaces are then hand scraped by expert craftsmen. This establishes a quality base which is precise, rigid, and very stable. This build process is inherent with every YCM machine tool produced.

- Castings are poured at the YCM factory.
- Advanced Karl Fischer moisture and pH metering.
- Spectrum analysis to ensure consistent quality.
- Annealing and aging process to relieve casting stress.
- All mating surfaces are handcrafted.

Highly Rigid Structural Design

- All castings designed with strategically located rib support using FEM analysis.
- One piece double column bridge casting or three piece which includes two columns and one bridge casting based on machine model.
- One piece base casting.
- Wide span saddle casting fully supports the Z-axis head in any machining direction.
- Y-axis linear guideways have a wide span which provides greater support.
- Rigid Z-axis head casting is designed to avoid overhang, increase stiffness, and reduce vibration.
- Dual chip augers with conveyors provide efficient chip removal.

YCM ALLIANCE
Make it Better, Together.

MEEHANITE FEM Finite Element Analysis

Table and Drives

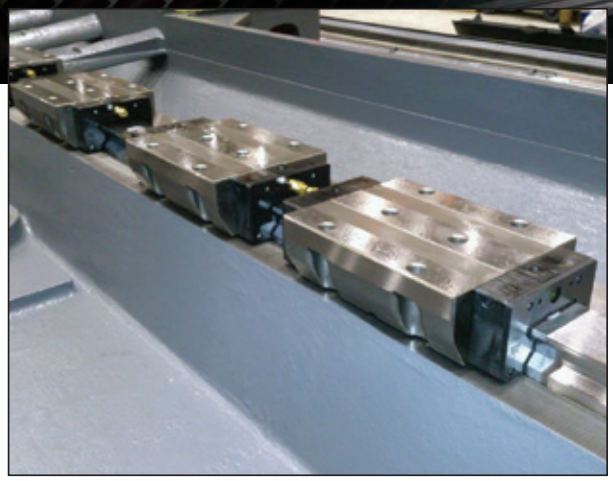
- The worktable is precisely machined to ensure accurate part machining.
- High load capacity.
- Direct drive motors reduce backlash and ensure axial accuracy (gear drive X-axis).
- Double anchored ball screws and high performance servo motors.

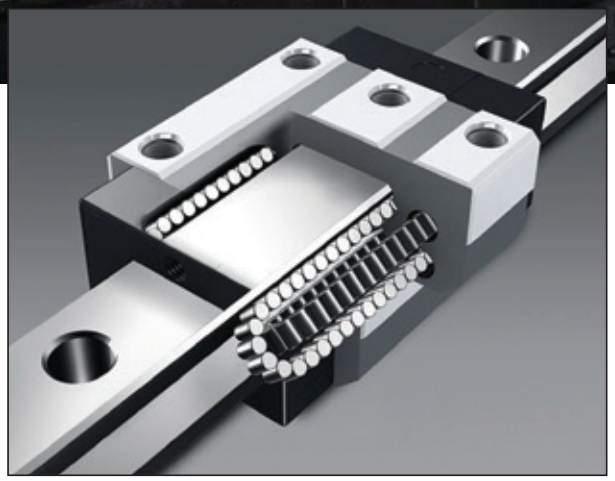
YCM ALLIANCE
Make it Better, Together.

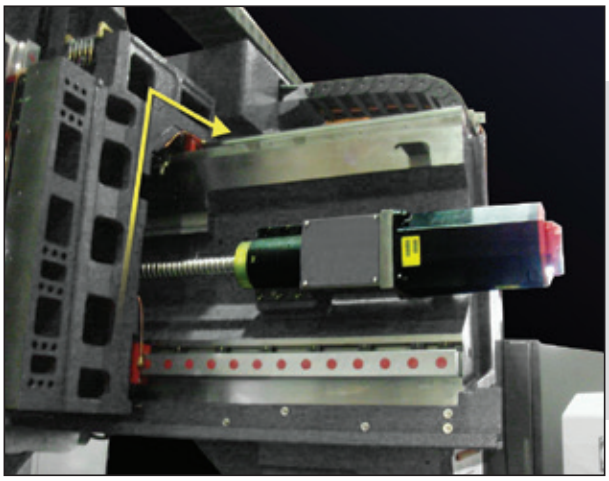
MEEHANITE
FEM Finite Element Analysis

Highly-Rigid Linear Motion Guideways

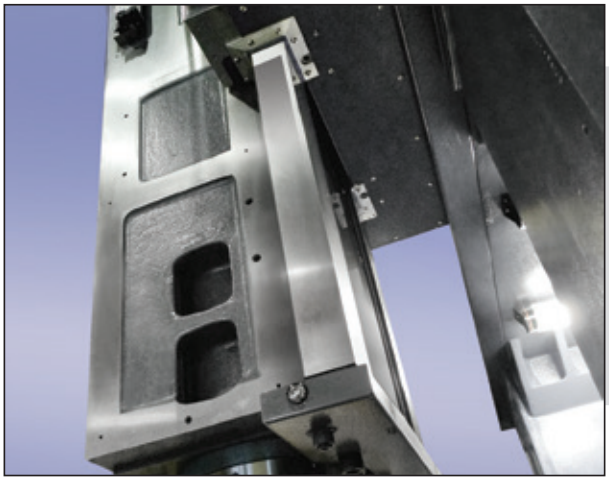
- Linear X/Y-axis and box guideway Z-axis.
- Roller type blocks and guiderails.
- Fast, smooth, accurate.
- High load capacity.



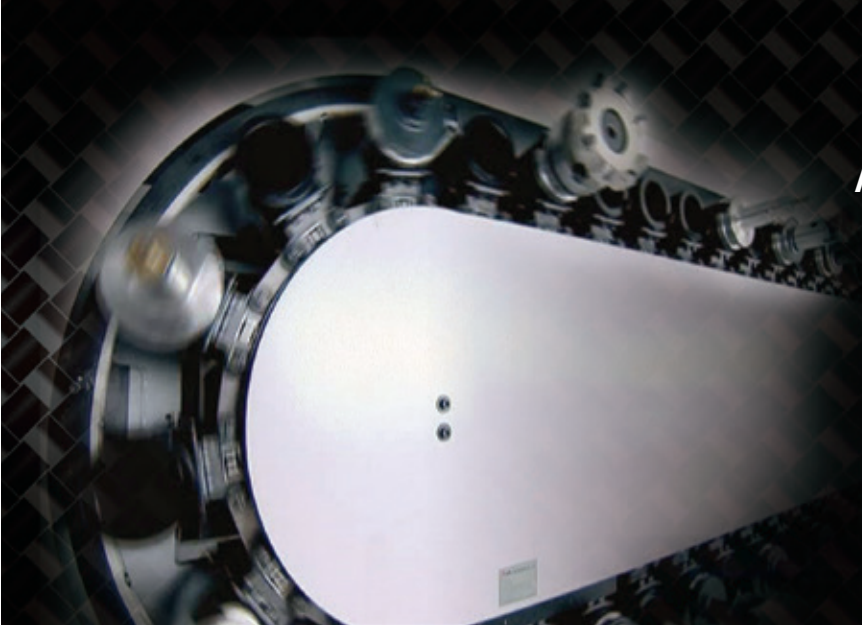




Horizontal and vertical support of the headstock.



Hardened and ground box guideway on Z-axis.



Automatic Tool Change System

- Independently mounted tool changer is designed to minimize vibration during tool change.
- 40 / 60 station tool magazine (standard, depending on machine model).
- 60 / 120 station tool magazine (optional, depending on machine model).

IDD Plus Spindle

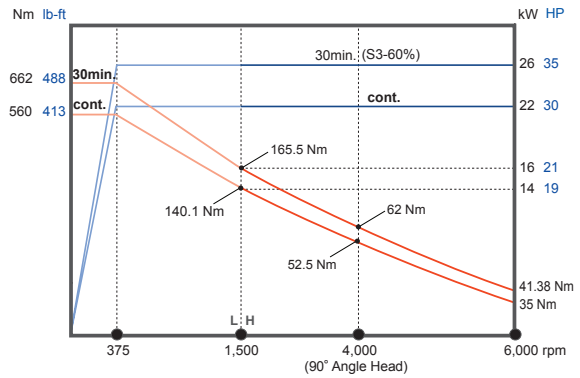
Designed and Built by YCM

- The YCM spindle is a proven design offering legendary reliability at all ranges of speed.
- Ceramic bearings and cooling system reduce the effect of spindle thermal growth and provides axial and radial rigidity.
- Low spindle vibration and less heat result in better finishes.
- Optimum machining efficiency, accuracy, and extended tool life can be achieved during heavier cutting and apping applications.

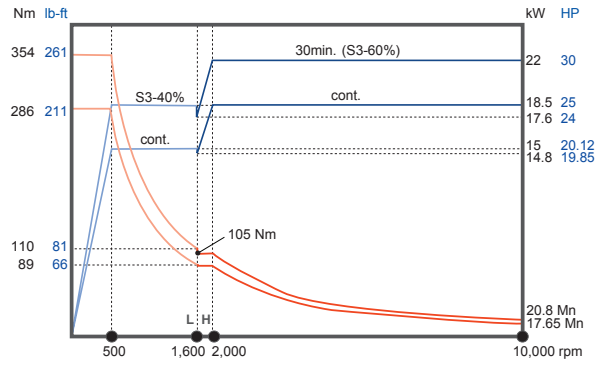
FANUC

POWER TORQUE

6,000 rpm (Gear Box) STANDARD



10,000 rpm (IDD) OPTIONAL



YCM MXP-200FB+

FANUC 0iMF+ Platform

Communication Interface	Excellent Vision Quality	User-Friendly Deisgn
■ RJ45 Ethernet ■ USB ■ Compact Flash Card	10.4" LCD Display	Integrated Keyboard (QWERTY)

Fine Surface Finish Technology	■ AICC II+, high precision and high accuracy AI contour control. ■ Smooth tolerance control+. ■ Machining quality level adjustment function.
Fast Cycle Time Technology	■ Maximum 400 blocks of look-ahead for pre-calculating the machining program. ■ Block processing time 1ms for achieving high-speed machining requirement. ■ Smart rigid tapping function combined with spindle capability for high-speed machining.* *Note: Applicable to vertical machining centers with IDD spindle and built-in motorized spindle.
Program Dynamic Simulation	■ Manual Guide i features dynamic simulation of machining programs with full-screen display.
Upgraded Setting and Programming Application	■ 2MB program storage size. ■ Built-in memory card for easy program editing. ■ Directory filing structure with organized file management. ■ 400 pairs of tool offset, 1,000 registrable programs, 48 pairs of workpiece coordinate system, 256 pairs of tool life management.

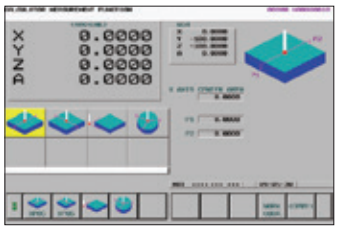
i-OPERATION Plus II

Exclusive Software from YCM

Pre-Machining

Intelligent Tool Data Management

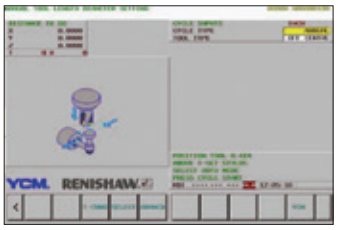
Comprehensive tool data management function allows operators to monitor & manage all positions in tool magazine.



Workpiece Coordinate Calculation

Conversational window provides convenient and fast setup of workpiece coordinates.

RENISHAW GUI System
(Conversational Graphic Operating Interface)

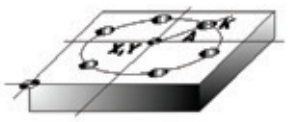


Tool Measurement & Measurement Calibration

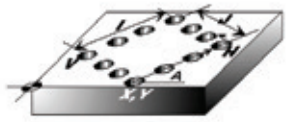
Workpiece Measurement
(Applicable to certain models)

This function may vary on TCV and NH/H series machine. For more details, please contact YCM sales representatives.

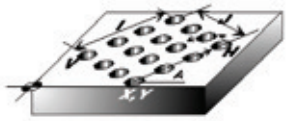
Program Editing



Circular Hole Pattern
(G120 P1) Function



Rectangular Hole Pattern
(G120 P4) Function

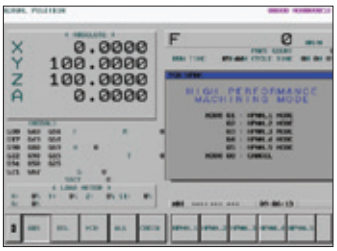


Grid Hole Pattern
(G120 P5) Function

i•PATTERN

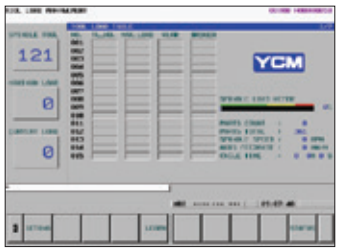
(1) 15 sets of machining cycle program
(2) Saving programming time and memory time
(3) Graphic interface & conversational command input

Machining



M300 High Performance Machining Mode

With 5 sets of parameter settings, it's easy to optimize a suitable range of machining.



Tool Load Management

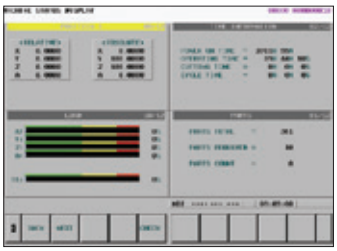
Instant tool load monitoring with alarm function.

This function may vary on TCV and NH/H series machine. For more details, please contact YCM sales representatives.

Tool Life Managementt

Indicating tool status of each group with tool life alarm.

This function may vary on TCV and NH/H series machine. For more details, please contact YCM sales representatives.



Multi-Display Function

Four simultaneous status display that can be configured.

Smart Control Panel

i•PANEL

Easy to set up and operate important functions.

This function may vary on TCV and NH/H series machine. For more details, please contact YCM sales representatives.

Intelligent Counter

Instantly providing users with periodic maintenance notifications and work-piece counter management.

Note: Above functions may vary from model to model.

SPINDLE	JD216	JD316
Speed	6,000 rpm / 10,000 rpm (optional)	6,000 rpm / 10,000 rpm (optional)
Power	35 hp (26 kW) / 30 hp (22 kW) (optional)	35 hp (26 kW) / 30 hp (22 kW) (optional)
Taper	Dual Contact CAT-50 / BBT-50	Dual Contact CAT-50 / BBT-50
TRAVEL		
Axis (X / Y / Z)	86.61" (2,200 mm) / 62.99" (1,600 mm) / 30" (762 mm)	125.98" (3,200 mm) / 62.99" (1,600 mm) / 30" (762 mm)
Distance between spindle nose & table top	7.87"–37.87" (200–962 mm)	7.87"–37.87" (200–962 mm)
TABLE		
Table Size	78.74" x 59.06" (2,000 x 1,500 mm)	118.11" x 59.06" (3,000 x 1,500 mm)
No. T-slots x Size x Pitch	8 x 0.87" x 7.09" (8 x 22 x 180mm)	8 x 0.87" x 7.09" (8 x 22 x 180 mm)
Max. Load on Table	17,637 lb (8,000 kg)	22,046 lb (10,000 kg)
FEEDRATE		
Rapid Feedrate X / Y / Z	787 / 787 / 591 ipm (20 / 20 / 15 m/mm)	787 / 787 / 591 ipm (20 / 20 / 15 m/mm)
Cutting Feedrate	0.04–394 ipm (1-10,000 mm/min)	0.04–394 ipm (1-10,000 mm/min)
ACCURACY YCM (Temperature Controlled Environment)		
Positioning (X / Y / Z) A	0.0006" / 0.0006" / 0.0004" (0.015 mm / 0.015 mm / 0.010 mm)	0.0008" / 0.0006" / 0.0004" (0.020 mm / 0.015 mm / 0.010 mm)
Repeatability (X / Y / Z) R	0.0004" / 0.0004" / 0.0003" (0.010 mm / 0.010 mm / 0.007 mm)	0.0006" / 0.0004" / 0.0003" (0.015 mm / 0.010 mm / 0.007 mm)
ATC		
Tool Magazine Capacity	40T / 60T (optional)	40T / 60T (optional)
Max. Tool Weight	44 lb (20 kg)	44 lb (20 kg)
Max. Tool Dimensions	ø4.92" x 13.78" (ø125 x 350 mm)	ø4.92" x 13.78" (ø125 x 350 mm)
	w/o adjacent tools ø9.45" x 13.78" (ø240 x 350 mm)	w/o adjacent tools ø9.45" x 13.78" (ø240 x 350 mm)
GENERAL		
Pneumatic Supplier	90 psi at 6.2 bar	90 psi at 6.2 bar
Power Consumption	220V / 220 amps	220V / 220 amps
Machine Weight	50,706 lb (23,000 kg)	57,320 lb (26,000 kg)

Note: The manufacturer reserves the right to modify the design, specifications, mechanisms, etc. to improve the performance of the machine without notice. All specifications shown above are for reference.

SPINDLE	JD322	JD422
Speed	6,000 rpm / 10,000 rpm (optional)	6,000 rpm / 10,000 rpm (optional)
Power	35 hp (26 kW) / 30 hp (22 kW) (optional)	35 hp (26 kW) / 30 hp (22 kW) (optional)
Taper	Dual Contact CAT-50 / BBT-50	Dual Contact CAT-50 / BBT-50
TRAVEL		
Axis (X / Y / Z)	125.98" (3,200 mm) / 86.61" (2,200 mm) / 30" (762 mm)	165.35" (4,200 mm) / 86.61" (2,200 mm) / 30" (762 mm)
Distance between spindle nose & table top	7.87"–37.87" (200–962 mm)	7.87"–37.87" (200–962 mm)
TABLE		
Table Size	118.11" x 70.87" (3,000 x 1,800 mm)	157.48" x 70.87" (4,000 x 1,800 mm)
No. T-slots x Size x Pitch	9 x 1.102" x 7.09" (9 x 28 x 200 mm)	9 x 1.102" x 7.09" (9 x 28 x 200 mm)
Max. Load on Table	26,455 lb (12,000 kg)	33,069 lb (15,000 kg)
FEEDRATE		
Rapid Feedrate X / Y / Z	591 / 787 / 591 ipm (15 / 20 / 15 m/min)	591 / 787 / 591 ipm (15 / 20 / 15 m/mm)
Cutting Feedrate	0.04–394 ipm (1–10,000 mm/min.)	0.04–394 ipm (1–10,000 mm/min.)
ACCURACY YCM (Temperature Controlled Environment)		
Positioning (X / Y / Z) A	0.0008" / 0.0006" / 0.0004" (0.020 mm / 0.015 mm / 0.010mm)	0.0010 / 0.0006" / 0.0004" (0.025 mm / 0.015 mm / 0.010mm)
Repeatability (X / Y / Z) R	0.0006" / 0.0004" / 0.0003" (0.015 mm / 0.010 mm / 0.007mm)	0.0008" / 0.0004" / 0.0003" (0.020 mm / 0.010 mm / 0.007mm)
ATC		
Tool Magazine Capacity	60T (optional 120T)	60T (optional 120T)
Max. Tool Weight	44 lb (20 kg)	44 lb (20 kg)
Max. Tool Dimensions	ø4.92" x 13.78" (ø125 x 350 mm) w/o adjacent tools ø9.45" x 13.78" (ø240 x 350 mm)	ø4.92" x 13.78" (ø125 x 350 mm) w/o adjacent tools ø9.45" x 13.78" (ø240 x 350 mm)
GENERAL		
Pneumatic Supplier	90 psi at 6.2 bar	90 psi at 6.2 bar
Power Consumption	220V / 230 amps	220V / 230 amps
Machine Weight	73,854 lb (33,500 kg)	80,468 lb (36,500 kg)

Note: The manufacturer reserves the right to modify the design, specifications, mechanisms, etc. to improve the performance of the machine without notice.
All specifications shown above are for reference.

Make it Better, Together

www.YCMAlliance.com