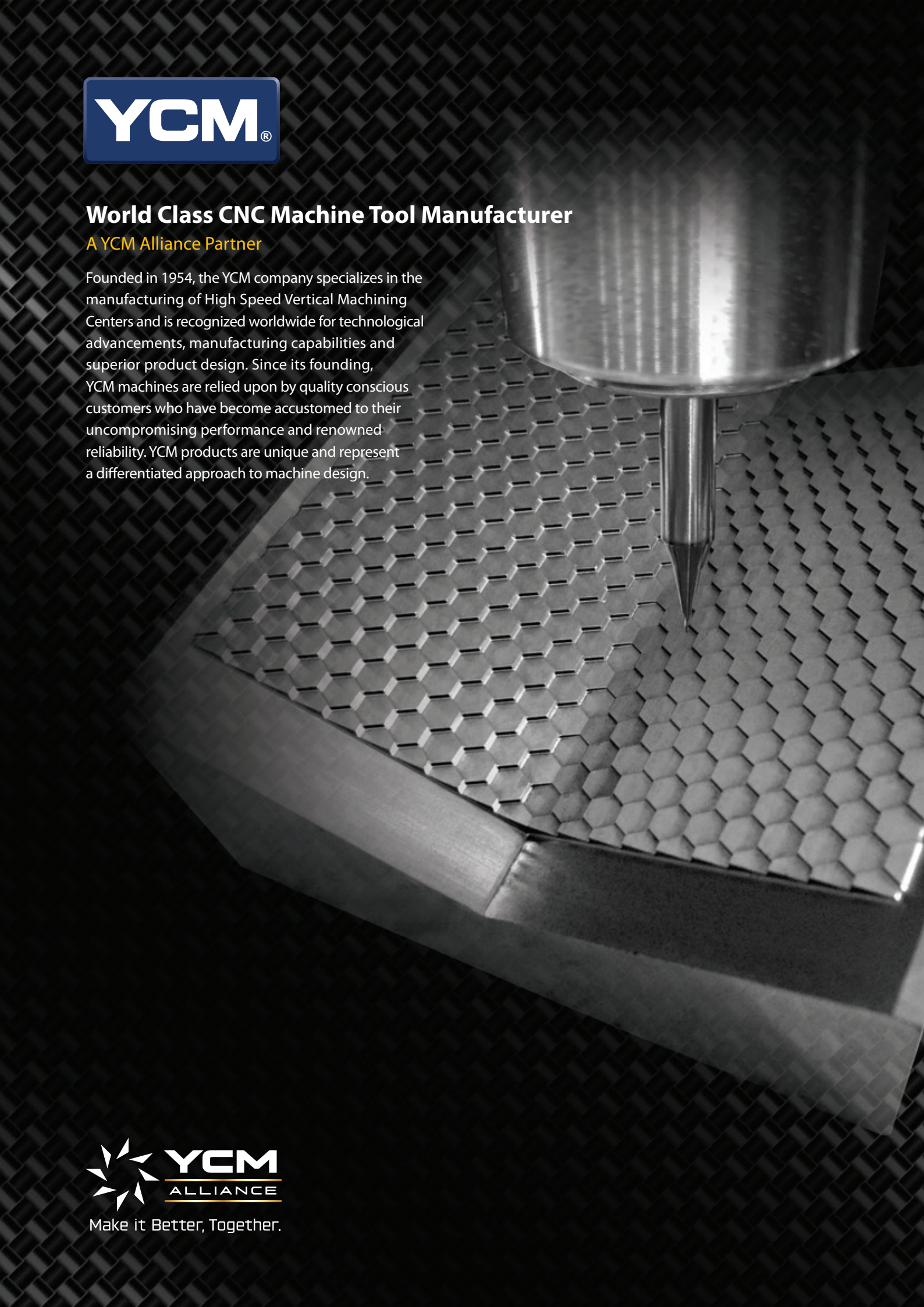
B Series

[International NFP Series]

High Precision 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, Reliability

The B series vertical machining centers deliver high-calibre precision machining providing superb cutting ability with reduced vibration. The B series is built with a box shaped double column structure which ensures the highest level of stability during high-speed movement. Every machine is built and handcrafted for rigidity, thermal stability, and repeatability. The B series produces consistent high-quality results from the first part to the 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 Challenging Demands

The B series is designed to provide superior accuracy, precision, and performance and is intended but not limited to die-mold applications.

Make it Better, Together

State of the Art Foundry

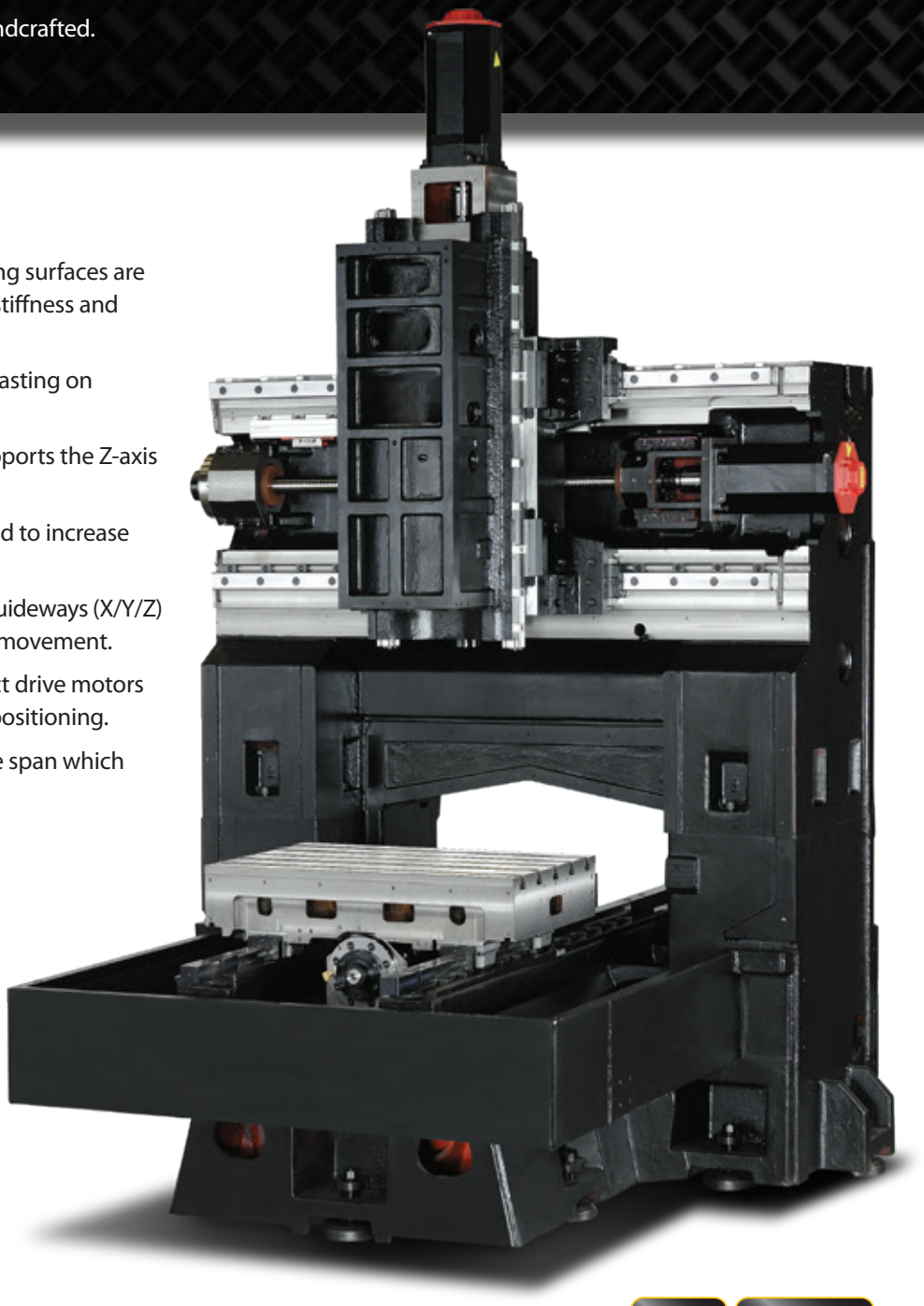
YCM Machine Tools are Built From the Ground Up

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.

Robust Structural Design

- Meehanite® components and mating surfaces are hand scraped providing optimum stiffness and vibration dampening.
- One-piece double column bridge casting on single base casting.
- Saddle casting is wide and fully supports the Z-axis head in any machining direction.
- Rigid Z-axis head casting is designed to increase stiffness and reduce vibration.
- Highly rigid roller type blocks and guideways (X/Y/Z) ensure fast, smooth, accurate axial movement.
- Pre-tensioned ball screws and direct drive motors achieve high torque and accurate positioning.
- Y-axis linear guideways have a wide span which provides greater support.
- Temperature contolled (X/Y/Z):
  - Front and rear bearing seat
  - Motor mounting seat
  - Ball screw nut
- Linear glass scales (X/Y/Z).



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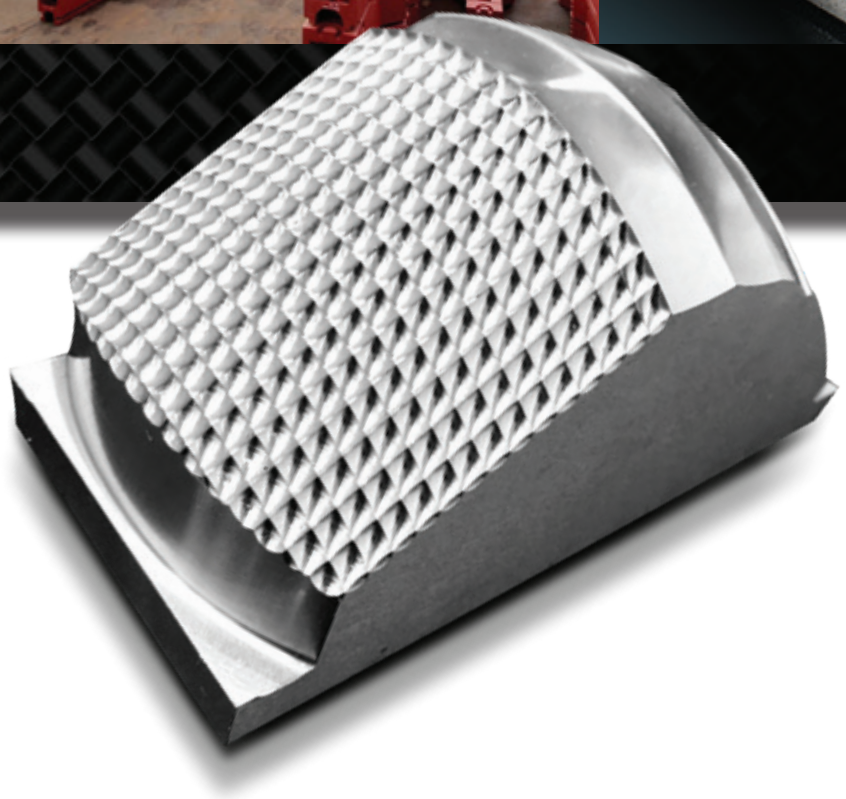
MEEHANITE
FEM Finite Element Analysis



Built-in Motorized Spindle

Designed and Built by YCM

- 24,000 RPM spindle with HSK A63 taper.
- Temperature controlled spindle center/stator/bearing.
- Micro oil-air lubrication system minimizes thermal deformation and prolongs spindle life.
- Spindle Thermal Compensation (STC).
- Dynamic balancing, low vibration, and thermal control provides ultimate cutting rigidity.
- Maximized cutting performance, extended tool life, excellent surface finishes.

YCM MXP-300FC+

FANUC 32i+ Platform

Communication Interface	Excellent Vision Quality	User-Friendly Deisgn
■ RJ45 Ethernet ■ USB ■ Compact Flash Card	15" 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 600 blocks of look-ahead for pre-calculating the machining program.
- Block processing time 0.4 ms 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 Memory and File Organization

- 4MB 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.

B7G (Graphite Package Option)

Dust proof features:

- Way covers (X/Y/Z)
- Roller blocks and guiderails
- Ball-screws
- 30,000 rpm spindle (HSK E40) with grease lubrication system
- Isolated ATC
- Air blow nozzles directed to large vacuum opening

B7DM

SPINDLE

Speed	24,000 rpm
Power / Torque	30 hp (22.5 kW) / 37.7 ft-lb (51.2 Nm)
Taper	HSK A63

TRAVEL

Axis (X / Y / Z)	26" (660 mm) / 20.1" (510 mm) / 15.8" (400 mm)
Distance between spindle nose & table top	5.9" – 21.7" (150 – 550 mm)

TABLE

Table Size	31.5" x 20.1" (800 x 510 mm)
No. T-slots x Size x Pitch	5 x 0.71" x 3.94" (5 x 18 mm x 100 mm)
Max. Load on Table	1,102 lb (500 kg)

FEEDRATE

Rapid Feedrate X / Y / Z	787 / 787 / 787 ipm (20 / 20 / 20 m/min.)
Cutting Feedrate	0.04 – 787 ipm (1-20,000 m/min)

ACCURACY

Positioning w/Linear Scales (X / Y / Z)	0.00027" / 0.00027" / 0.00027" (0.007 mm / 0.007 mm / 0.007 mm)
Repeatability w/Linear Scales (X / Y / Z)	0.00019" / 0.00019" / 0.00019" (0.005 mm / 0.005 mm / 0.005 mm)

ATC

Tool Magazine Capacity	24T
Max. Tool Weight	13.2 lb (6 kg)
Max. Tool Dimensions	ø3" x 9.8" (ø76 x 250 mm) w/o adjacent tools ø4.9" x 9.8" (ø125 x 250 mm)

GENERAL

Pneumatic Supplier	80 psi (5.5 bar)
Power Consumption	220V, 192 amps
Machine Weight	17,637 lb (8,000 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.

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www.YCMAlliance.com