

High Accurate VMC640 Vertical Machining Center Cnc Milling Machine

Our Product Introduction

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Basic Information

- Place of Origin: China
- Brand Name: Luyoung
- Certification: CE
- Model Number: VMC640
- Minimum Order Quantity: 1/SET
- Price: USD180000-USD30000
- Packaging Details: non-fumigation wooden box
- Delivery Time: 45 working days
- Payment Terms: L/C, T/T
- Supply Ability: 100sets



Product Specification

- Worktable Size: 1000x600
- Spindle Taper: BT40
- Spindle Speed: 8000-12000rpm
- ATC: 16 Magazine
- Highlight: **VMC640 vertical CNC milling machine, high accuracy CNC machining center, vertical milling machine with warranty**



More Images



Product Description

Core Characteristics of the VMC640 Machining Center

The VMC640 is a very classic and versatile **Vertical Machining Center (VMC)**. Its model is typically interpreted as: VMC (Vertical Machining Center), 640 (generally refers to an X-axis travel of 600mm and a Y-axis travel of 400mm, though some manufacturers may define it as 700mm or 800mm; '640' is a common generic model name).

It is a workhorse for machining small to medium-sized parts and is extremely widely used in industries such as mold & die, precision parts, automotive, aerospace, and 3C.

Core Features of the VMC640 Machining Center

I. Structural Layout and Rigidity Characteristics

C-Frame Structure

This is the most common structure for vertical machining centers. The spindle head moves along the column (Z-axis), offering good rigidity and easy accessibility for operation.

Base components like the bed, column, and table are typically made of **high-strength cast iron** and undergo **artificial aging treatment** to effectively relieve internal stresses, ensuring long-term stability and accuracy retention.

High-Rigidity Guideway System

Mainstream configurations use **linear guideways from Taiwanese/Japanese brands** to achieve high-speed movement and low friction.

Some models emphasizing heavy-duty cutting capability may opt for **box ways** or a **combination of linear guides and hard ways** to balance rigidity and speed.

Precision Ball Screws

The three axes are usually driven by **precision-grade ball screws** with **pre-stretching at both ends** to minimize the impact of thermal expansion on accuracy.

The screws are **directly coupled to the servo motors** via couplings, ensuring high transmission efficiency and fast response.

II. Performance and Configuration Characteristics

Spindle System

Speed Range: Typically equipped with a **8,000 - 12,000 rpm** servo spindle, capable of handling most materials from steel and cast iron to aluminum alloys.

Drive Method: Powered by a high-power **AC servo spindle motor** via a synchronous belt or gear drive, providing good low-speed torque and high-speed power.

Core Components: Utilizes **high-speed, high-precision spindle bearings from Taiwanese/Japanese brands** and is equipped with an **oil cooler** for forced spindle cooling, effectively controlling thermal deformation and ensuring stability for high-precision machining.

Tool Magazine System

This is one of the signature features of the VMC640. The most common types are **disc-type (umbrella) magazines** or **carousel-type (arm-type) magazines**, with a capacity typically of **16, 20, or 24 tools**.

Tool Change Method:

Disc-type: Simple structure, low failure rate, but relatively slower tool change speed (usually 7-10 seconds).

Carousel-type: Faster tool change speed (usually 2-3 seconds), higher efficiency, and the mainstream choice for modern machining.

CNC System

Commonly equipped with mainstream domestic and international CNC systems, such as:

Japan's Fanuc: Extremely high stability, dominant in the market.

Germany's Siemens: Powerful functions, particularly advantageous for complex surfaces and 5-axis programming.

China's GSK, HNC, etc.: High cost-effectiveness and good localized service.

Axis Travel and Table

Typical Travel: XYZ $\approx$ 600*400*500 mm (varies by manufacturer).

Table: Usually a T-slot table, sized to match the travels, with strong load-bearing capacity.

III. Technical Advantages and Application Characteristics

High Precision and High Stability

Through quality manufacturing and assembly, coupled with laser interferometer error compensation, it typically achieves

positioning accuracy within $\pm 0.005\text{mm}$ and repeatability within $\pm 0.003\text{mm}$.
Fully enclosed guards prevent coolant and chip splash, ensuring a safe and clean working environment.

Wide Machining Adaptability

Capable of performing various operations like **milling, drilling, tapping, boring, and contouring**, allowing for multi-side machining in a single setup.

High Cost-Effectiveness and Low Maintenance Cost

Specification data

As a mature model, the VMC640 has a large market presence, readily available spare parts, relatively low maintenance costs, and offers high overall value.



Specification of vertical machining center				
Item	VMC640	VMC850	vmc855	V M C 1 0 6 0
Size of worktable(length×width)mm	800*300	1000×500	1000*550	1 3 0 0 × 6 0 0
T slot (mm)	5-18x100	5-18x100	5-18x90	5 - 1 8 × 1 0 0

Max loading weight on worktable(KG)	400	600	600	1000
X-Axis travel(mm)	600	800	800	1000
Y-Axis travel(mm)	400	500	500	600
Z-Axis travel(mm)	450	500	500	600
Distance between spindle nose and table(mm)	105-550	105-605	120-620	1000-700
Distance between spindle center and column(mm)	450	550	540	667
Spindle taper	BT40	BT40	BT40	BT40
Max. spindle speed(rpm)	8000/10000/12000			
Spindle motor power(Kw)	5.5KW	7.5/11kw	7.5/11kw	11.5kw
Rapid feeding speed: X,Y,Z axis m/min	16/16/16 (24/24/24 liner guideway)			
Fast cutting speed m /min	10m/min			
Positional accuracy	±0.005 mm			
Repeat positional accuracy	±0.003 mm			
Auto Tool changer type	16/24arm type auto tool changer			
Air pressure	0.6 Mpa			
Machine weight	4000KG	5500KG	5800KG	7500KG

The VMC640 Machining Center can be considered the "All-Rounder" and "Backbone" in the field of vertical machining centers. It may not be the absolute best in any single performance metric, but it strikes an excellent balance between **precision, speed, rigidity, price, and stability.**

For most small and medium-sized manufacturing enterprises, the VMC640 is a "workhorse for ROI," capable of covering over 80% of their machining needs. Whether for producing single-piece/small-batch molds or medium-batch production parts, it can reliably get the job done.



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