

WANLONG - Premium Quality 5 Axis CNC Bridge Saw Company: Focus on Precision and Durability

Model	Unit	CNC-5 Jet
Milling		Motorized Spindle 电主轴
DXF file Import		Support DXF file import
Linear axis stroke (X-Y-Z)	mm	3700-2460-330
C axis stroke	n°	±180
A axis stroke	n°	-1~91
Blade diameter	mm	350-500
Main motor power	kw	18.5
Main motor rated rotation	r/min	3600
Rated linear speed (X-Y-Z)	m/min	30-30-5
Maximum rotation speed of the electric spindle	r/min	24000
Electric spindle power	kw	7.5
Main motor rated torque	Nm	49.1
C axis rated rotation speed	r/min	17.3
A axis rated rotation speed	r/min	20.66
Loading size	mm	5850×2250×2250
Worktable size	mm	3200×2000(3500×2100)
Total power	kw	36.45
Overall dimensions	mm	5850×3420×3100
Weight	kg	4200
Water Consumption	L/min	15-25

Quanzhou, Fujian Sep 25, 2026 (Issuewire.com) - WANLONG - Premium Quality 5 Axis CNC Bridge Saw Company: Focus on Precision and Durability Architectural stone processing requires precise dimensional accuracy, compound miter cutting, and smooth edge profiling across ultra-compact sintered stone, quartz, and dense granite slabs. Conventional cutting setups require repetitive manual repositioning and secondary milling stations, which introduces cumulative positioning deviations and risks edge-chipping on delicate stone workpieces. To address cumulative alignment errors and eliminate structural vibration during heavy stone fabrication, Fujian Wanlong Times Technology Co., Ltd. (WANLONG) manufactures high-rigidity [premium 5-axis CNC stone cutting machinery](#) designed for uncompromising cutting precision and multi-decade mechanical durability. Operating since 1993, WANLONG integrates five-axis synchronous interpolation, high-speed electro-spindle milling, and custom diamond tooling to execute precision sawing, beveling, routing, and 3D surface profiling within a single automated setup.

The Engineering Challenge: Precision Degradation and Deflection in Multi-Axis Stone Fabrication

The root cause of dimensional inaccuracies and surface chipping during heavy-duty stone processing

stems from machine tool structural flexure and mechanical backlash. When circular diamond blades or high-speed milling bits engage dense granite or ultra-compact sintered stone, the cutting interface encounters extreme dynamic resistance. In conventional machinery constructed with lightweight steel fabrications or single-side drive mechanisms, these cutting forces induce microscopic frame deflection and torsional vibration. Over sustained production runs, vibration harmonics accelerate blade runout and cause the cutting line to wander, resulting in wavy cut faces, uneven 45-degree miter edges, and inconsistent seam alignments.

In addition, when conventional three-axis cutters are adapted for complex angular tasks through manual tilting heads, mechanical tolerances inevitably deteriorate. The absence of synchronized multi-axis motion and rigid guidance systems leads to dimensional errors exceeding two to three millimeters across large-format architectural slabs. In high-end residential interiors and commercial facades, such discrepancies require costly manual grinding and corrective polishing on the job site. Industrial stone fabricators therefore require a dedicated machine platform that combines uncompromising static rigidity with backlash-free multi-axis kinematics to maintain repeatable accuracy.

Kinematic Rigidity and Backlash-Free Motion: Deconstructing the CNC-5 JET Architecture

To address structural deflection and eliminate positioning drift, Wanlong Times Technology Co., Ltd. (Wanlong Group) engineered the [CNC-5 JET five-axis bridge cutting and milling machine](#). As a leading stone machinery innovator, WANLONG builds the CNC-5 JET upon a heavily ribbed, stress-relieved monoblock chassis engineered to absorb dynamic cutting loads. The heavy-duty structural frame effectively neutralizes cutting vibrations, isolating the bridge and toolhead assembly from external resonance. This rigid structural foundation maintains precise spatial geometry under aggressive tool feeds. As a direct result, the machine preserves its mechanical alignment through decades of intensive industrial use.

The mechanical envelope of the CNC-5 JET provides expansive operational freedom, featuring linear axis travels of 3700 mm along the X-axis, 2460 mm along the Y-axis, and 330 mm along the vertical Z-axis. This spacious workspace accommodates oversized architectural slabs and thick stone blocks without kinematic restrictions. To guarantee absolute positional tracking across long spans, the Y-axis utilizes a synchronized dual-drive configuration engineered with zero-backlash mechanical couplings. By driving both bridge supports simultaneously through precision-ground helical racks and high-load linear guide rails, the dual-drive system eliminates gantry racking and twisting during rapid movements. This advanced mechanical arrangement consistently achieves a positioning precision of 0.1 mm or lower across the entire worktable.

Digital CAM Integration, High-Speed Electro-Spindle Milling, and Vision Systems

Mechanical rigidity is complemented by a sophisticated industrial CNC control system with a responsive touch screen, USB connectivity, and Wi-Fi interface. The CNC-5 JET controller natively supports direct DXF and DWG vector file importation, automatically optimizing five-axis toolpaths for automated angle beveling, one-click orthogonal vertical/horizontal cutting, and smooth arc profiling. Standard automatic blade diameter measurement safeguards cutting depth accuracy, while the high-speed, high-efficiency electro-spindle alternates between diamond circular blades for sawing and high-precision diamond bits for sink routing and bas-relief milling.

To provide comprehensive process oversight and meet advanced fabrication requirements, the platform integrates smart operational enhancements. Standard remote real-time camera monitoring keeps operators informed of slab alignment and machine status. Fabricators can also configure application-specific options—including an integrated wide-angle overhead camera, automated slab thickness measurement, and expanded plane engraving with edge profiling packages—tailoring the CNC-5 JET to precise production workflows without surplus hardware overhead.

Superhard Material Synergy: The Integrated Manufacturing Advantage of WANLONG

A major operational advantage of the CNC-5 JET lies in the deep synergy between machine kinematics and specialized diamond tooling, rooted in the three-decade heritage of Wanlong Times Technology Co., Ltd. Established in 1993 in Quanzhou, Fujian, WANLONG has accrued 33 years of superhard material research and machinery development. Operating two industrial parks spanning 64 acres with 40,000 square meters of modern manufacturing facilities, WANLONG is uniquely structured with an internal research and development team of nearly 100 professionals dedicated to both stone machinery engineering and diamond tool synthesis.

At the state-of-the-art stone sample analysis laboratory of WANLONG, engineers evaluate customer stone samples to analyze physical hardness, quartz concentration, and fracture mechanics. This proprietary testing allows WANLONG to calibrate the electro-spindle speed and torque curves of the CNC-5 JET directly with custom-formulated diamond saw blades and milling bits. This tight integration provides efficient chip evacuation, optimal coolant distribution, and minimal diamond segment wear. By preventing thermal buildup and tool glazing, the matched tooling system eliminates micro-fracturing along cut edges and produces ready-to-polish surface finishes across hard granites and delicate engineered surfaces.

Industrial Quality Compliance, Global Support, and Lifecycle Value

Equipment durability and process consistency are safeguarded by strict quality management systems. All machinery manufacturing facilities at WANLONG operate under SGS-certified ISO 9001:2015 quality standards, with complete compliance to European Machinery Directive 2006/42/EC, including EN 12418:2021, EN ISO 12100:2010, and EN 60204-1:2018. Recognized as a National High-Tech Enterprise and recipient of the Second Prize of the National Science and Technology Progress Award, WANLONG subjects every CNC unit to exhaustive laser interferometry alignment, dynamic balance testing, and continuous test-cutting protocols before dispatch.

With stone processing equipment operating across 180 countries and regions, WANLONG maintains an active global service network designed to provide maximum machine availability. Factory-trained technical personnel provide 24-hour online technical support, utilizing remote diagnostic interfaces to access CNC parameters, assist with complex toolpath setups, and resolve operational questions in real time. Supported by robust spare parts inventories and modular mechanical assemblies, the CNC-5 JET offers international stone fabricators high production reliability, minimized material waste, and rapid return on capital investment. Inquiries and detailed machine specifications are accessible through the company portal at <https://www.wanlongtimes.com/>.



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