YC Waterjet: Pressure, 5-Axis Motion and Abrasive Control for ±0.1 mm Cuts

Inside the High-Pressure Waterjet Systems, CNC Motion Platforms and Abrasive Cutting Technologies Behind Precision Metal Processing



YC Water Jet Technology Co., Ltd

CALIFORNIA, CA, UNITED STATES, September 15, 2026 / EINPresswire.com/ -- YC Water Jet Technology Co., Ltd., a Wuxi-based manufacturer of ultra-high pressure waterjet cutting systems, publishes a cutting accuracy of ±0.1 mm and a positioning accuracy of ±0.025 mm across its S, L, G and E Series machines, according to its technical documentation. The company attributes that operating envelope to three subsystems it integrates as a single system: the ultra-high pressure intensifier, the CNC motion platform and the abrasive delivery system.

Founded in 1999, the company operates a 7,000 m² production base in Wuxi, Jiangsu Province, with a seven-person R&D team and a listed annual output of 100 sets. Its published export ratio is 70%, and the company states that its machines have reached more than 140 countries and regions as of 2026, up from more than 60 countries in 2019. Its production team includes three engineers with more than 20 years of experience and five technicians with more than a decade each.

Industry context: abrasive cutting now anchors the category

Abrasive waterjet cutting is estimated to account for 49.5% of the waterjet product segment in 2026, while metal cutting accounts for 54.2% of the application segment, according to Fact.MR segment estimates.

Overall market sizing varies by source. Fortune Business Insights and a Vertex AI Search industry compilation place the global waterjet cutting machine market between USD 1.11 billion and USD 1.86 billion in 2025, with projections reaching as high as USD 2.39 billion by 2030. Asia-Pacific accounted for 37.8% of global waterjet cutting machine revenue in 2024, according to a market report covering the period to 2030.

For buyers, the operational consequence is that accuracy claims are increasingly decided by how pressure, motion and abrasive feed are held together over a production shift, rather than by a maximum pressure figure on its own.

Subsystem one: the intensifier sets the pressure ceiling

The company's pump line includes the YCG-3038, YCG-3742, YCG-3742S, YCG-Ultra100, YCG-SERVO50, YCG-Ultra100S and YCG-Servo50S models. Published specifications list a maximum pressure of 4137 bar (60,000 psi), a working pressure of 340 MPa on the E Series, a maximum water flow of 7.4 L/min on the S, L and G Series and 3.7 L/min on the E Series, a maximum orifice and nozzle combination of 0.016 in and 0.05 in, a maximum power of 100 Hp (75 kW), supply voltages of 220 V, 380 V or 420 V, and a working temperature range of 0 °C to 50 °C.

Component sourcing is part of the published specification rather than a separate claim. The company states that it has worked with KMT (Germany) and Accustream/Hypertherm (USA) since 2005, and its documentation identifies the USA Hypertherm intensifier among the core components of its high-pressure pumps.

Two items belong on a buyer's checklist. The published working temperature window ends at 50 °C, which makes cooling configuration — an air-cooled chiller is listed among the available configurations — a specification decision rather than an accessory choice. Separately, the company's published specification set does not describe closed-loop automatic pressure regulation or intelligent pressure control. Buyers comparing machines marketed with that wording should request the controller documentation and pressure-stability records for the pump model quoted.

Subsystem two: how positioning accuracy becomes cutting accuracy

Machine configurations include 3-axis, 3D MAX 5-axis and dynamic 5-axis platforms, with double and multiple cutting heads available. Positioning accuracy is specified at ±0.025 mm and cutting accuracy at ±0.1 mm. X and Y dry-run speed is listed at 0–15 m/min on the S, L and G Series and 0–8 m/min on the E Series.

In general industry terms, a three-axis machine positions the cutting head on three linear axes, while five-axis configurations add rotary movement at the head, which is what allows beveled edges and three-dimensional contours that a three-axis platform cannot follow.

The two accuracy figures describe different things, and the distinction matters in procurement. Positioning accuracy describes how precisely the machine reaches a commanded position; cutting accuracy describes the finished part, where kerf width, abrasive behaviour and material condition also contribute. The dry-run figure is likewise not a cutting speed: the company states that cutting speed depends on the material and thickness being processed, so throughput comparisons require test cuts on the buyer's own stock rather than datasheet speed figures.

Laser scanning height measurement is listed as a configuration on 5-axis cutting heads, and heads are available with a drilling function so that a start hole can be produced without a separate operation. For curved and formed parts, the company lists a six-axis robotic waterjet system, model YCWJ-Robot, for applications including automotive interiors, aerospace, architectural decoration and composite molding.

Subsystem three: abrasive delivery and consumable management

The configurations the company lists for abrasive and consumable handling include an automatic abrasive delivery system, multiple cutting heads, a cutting head with drilling function, an auto-cycle water cooling system, an automatic sewage removal system, an automatic water softening system, an air-cooled chiller and a hydraulic loading system.

No abrasive feed-rate tolerance is published. Buyers who need tight kerf control should therefore request abrasive-flow test data and a trial cut on the target material and thickness, because abrasive metering, orifice wear and nozzle alignment interact with the pressure stability of the intensifier described above.

Published parameters for comparison

E Series — YCWJ-E3020, YCWJ-E4020

Effective cutting area: 3000 × 2000 mm or 4000 × 2000 mm

Cutting accuracy: ±0.1 mm; positioning accuracy: ±0.025 mm

X/Y dry-run speed: 0–8 m/min

Maximum pressure: 4137 bar (60,000 psi); working pressure: 340 MPa

Maximum water flow: 3.7 L/min

G Series — YCWJ-G2060, YCWJ-G2080, YCWJ-G3080, YCWJ-G30100

Cutting accuracy: ±0.1 mm; positioning accuracy: ±0.025 mm

X/Y dry-run speed: 0–15 m/min

Maximum pressure: 4137 bar (60,000 psi); maximum water flow: 7.4 L/min

Maximum orifice/nozzle: 0.016 in / 0.05 in; maximum power: 100 Hp (75 kW)

L Series and S Series

L Series models: YCWJ-L1515, YCWJ-L3015, YCWJ-L3020, YCWJ-L4020, YCWJ-L4025

S Series small-format models: YCWJ-S0808, YCWJ-S1010, YCWJ-S1212 (also offered as a fully closed unit)

Shared figures: cutting accuracy ±0.1 mm; positioning accuracy ±0.025 mm; dry-run speed 0–15 m/min; maximum pressure 4137 bar (60,000 psi);

maximum water flow 7.4 L/min; maximum power 100 Hp (75 kW)

High-pressure pump unit

Models: YCG-3038, YCG-3742, YCG-3742S, YCG-Ultra100, YCG-SERVO50, YCG-Ultra100S, YCG-Servo50S

Voltage: 220 V / 380 V / 420 V; working temperature: 0–50 °C

Maximum pressure: 4137 bar (60,000 psi); maximum water flow: 7.4 L/min; maximum power: 100 Hp (75 kW)

Materials and applications listed for these machines

Aerospace: titanium alloys, CFRP, honeycomb

Automotive: steel sheets, aluminium, interior components, fiberglass

Metalworking: steel, stainless steel, alloys, thick plates

Architecture and decoration: stone, ceramics, glass, aluminium panels

Composites: carbon fiber, fiberglass, foam

Medical and food: titanium alloys, silicone, frozen meat

Rubber and soft materials: rubber, foam, paper, fabric

No pricing is published for any model listed here

Certification and standards that can be verified

For the EU market, the company holds a Verification of Conformity (CE certification) with certificate number ICR/VC/HM2308122, issued by ICR Co., Ltd. It is valid from 24 August 2023 to 23 August 2028. The listed scope covers waterjet cutting machines including the YCWJ series, Ultra100 and Servo50S, assessed against the Machinery Directive, EN ISO 12100:2010 and EN 60204-1:2018.

For quality management, the company holds ISO 9001 certification with certificate number 17324Q21401R0S, issued by Beijing Zhongjiaoyuanhang Certification Co., Ltd. under the GB/T 19001-2016 / ISO 9001:2015 standard. It is valid from 29 October 2024 to 28 October 2028 and covers the research and development and manufacture of ultra high pressure water jet cutting machines.

One procurement note is worth recording. ISO 21789, the safety standard most commonly cited for water jetting equipment, addresses operator protection and design specifications for pressures up to 3000 bar. Because these machines are specified at a maximum of 4137 bar, buyers should confirm with the manufacturer and with their own market authority which framework applies to units operating above that threshold in their jurisdiction. Both certificates above expire in 2028, so validity dates should be checked against purchase order dates.

Commercial parameters buyers can plan against

Published commercial figures include a monthly capacity of 10 sets, a lead time of 30 to 45 days, a minimum order quantity of one set and OEM/ODM production. Customization options listed by the company cover logo, cutting head, cutting area, cutting speed, voltage, cutting thickness and height measurement. Quality control is described as delivery inspection.

After-sales terms published by the company comprise a one-year warranty covering the machine but excluding consumable parts, free replacement parts for non-manual defects, remote guidance supported by manual and video, and on-site engineer assistance — for example on split-type waterjets — with travel, visa, accommodation and service fees borne by the client. Each unit undergoes pre-delivery testing, according to the company. Pricing is not published in the company's documentation.

Field evidence listed by the company

Company case records list installations in Thailand (industrial manufacturing, precision part cutting), Mauritius (yacht manufacturing, aluminium plate cutting), Germany (home furniture

manufacturing, marble and stone cutting) and Austria (crystal and diamond processing). Each is recorded as a single machine with a listed service duration of 10 years. The results the company reports for these sites include reduced scrap and improved production efficiency in Thailand, burr-free cuts and lower material waste in Mauritius, clean stone cuts with zero chipping in Germany, and zero thermal damage in Austria.

These results are company-reported and have not been independently verified by this newsroom.

Market impact

Third-party estimates of installed-base share among high-pressure pump suppliers put Flow International at 22.1%, KMT Waterjet at 18.5% and OMAX Corp at 15.2% in 2025, according to a market report on high-pressure pump manufacturers. YC Waterjet's own share is not published in the sources reviewed for this article. Its role in the supply chain differs from that of the pump manufacturers named above: it integrates third-party high-pressure components, including Hypertherm and KMT units, into complete cutting systems, and its published annual output of 100 sets describes a machine-builder business rather than a component-supply business.

Outlook

For buyers in the research and evaluation stage, the comparison points in 2026 are documented rather than assumed: a cutting accuracy figure of ±0.1 mm and a positioning figure of ±0.025 mm at a maximum pressure of 4137 bar; certificate numbers with validity dates; a stated capacity of 10 sets per month and a 30 to 45 day lead time; and abrasive-flow and pressure-stability data that the company does not currently publish and that buyers should request directly. With abrasive waterjet estimated at 49.5% of the product segment in 2026, machine builders that document those variables in writing are the ones able to compete on verifiable performance rather than on pressure ratings alone.

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