

Waterjet Accuracy, Speed & Flexibility

BENEFITS

- Cut parts 25-400% faster than conventional flat stock waterjet cutting machines
- Improve cut part tolerances and geometry at significantly higher speeds
- Virtually eliminate taper; taper is < 1 degree in straight-line geometry
- Reduce part cost
- True part stacking ability with consistent tolerance layer to layer
- No secondary finishing required
- Cut a variety of materials, such as metal, stone, glass, and composites
- Easy to program; no specialized training or knowledge required
- Cut parts using virtually any CAD file, or scan a drawing directly into FlowMaster[®] software



A Breakthrough Waterjet Cutting Process

Dynamic Waterjet with Active Tolerance Control produces more accurate parts at significantly higher cutting speeds than parts cut with a conventional waterjet. This patented system utilizes an advanced motion system that incorporates unique mathematical cutting models, which control a small, articulated wrist that is attached to the cutting head. The wrist allows the cutting head to tilt in any direction, compensating for the stream lag and taper experienced with conventional waterjet cutting machines.

Stream lag and taper are a natural, but undesirable, result of cutting with a beam-type cutter such as a waterjet. The faster parts are cut, the greater the stream lag. Stream lag causes part geometry errors. In addition, as cut speed is increased through a given material, the waterjet beam produces ever-increasing taper. Conventional waterjets must slow down in order to reduce or eliminate finished-part tolerance errors caused by stream lag and taper. Now, with Dynamic Waterjet, these limitations are overcome.

FlowMaster Software

User-friendly FlowMaster, Flow's intelligent, Windows[®]-based waterjet control system, makes the Dynamic Waterjet extremely simple to operate. All mathematical calculations take place behind the scenes, triggering the appropriate motion commands to all five axes at lightning speed. The user simply enters the basic cutting parameters, such as material type and thickness, cut speed, and desired edge quality, and FlowMaster does the rest.

FlowMaster dynamically controls the position of the cutting head. It knows the amount of tilt and rotation required at numerous incremental points along a cutting path. For example, at high speeds outside corners require increased tilt to prevent coning. FlowMaster knows the optimal cutting speed to keep parts within tolerance and taper-free. The faster the cutting speed, the more tilt that is required. In most cases the ability to tilt the cutting head allows for a faster cutting speed. Because of this, Dynamic Waterjet produces superior part features at higher speeds than those resulting from conventional waterjet cutting.



Specifications

- Available on both the WMC™ 2 and Integrated Flying Bridge machines, or as a retrofit kit for existing machines
- Powerful, predictive mathematical cutting models
- FlowMaster software with Dynamic Waterjet module
- 5-axis kinematics with articulated A/B wrist
- Highly-efficient PASER® ECL Plus cutting head
- High-precision, quick-clamp Paser ECL Plus mount for instant access to cutting head to change components, while also providing extremely precise tool center point location
- When paired with Flow's patented DuraFlow™ diamond orifices and ECL Premium mixing tubes, productivity is maximized with the longest average life of any cutting components in the industry
- FastAct on/off valve is lightweight, small, and exceptionally fast for increased productivity
- Touchdown height sensor establishes proper standoff height between mixing tube tip and target material
- Integrated abrasive waterjet spray shield

Opening Up Markets for Manufacturers

Dynamic Waterjet is ideal for existing users of flat stock cutting technology or applications that were previously too inaccurate, slow, or expensive to cut using conventional abrasive waterjet technology. This revolutionary new technology opens up markets to current waterjet users, such as tool and die, precision aerospace, component manufacturing, and high-quality stone inlay.

Dynamic Waterjet Produces High-Quality Parts at High Speed

Conventional waterjets are capable of producing quality parts at low speed. Dynamic Waterjet is capable of producing higher quality parts at high speed. When operated at low speed, Dynamic Waterjet will produce even better edge quality and part geometry than conventional waterjet. The parts below were cut out of 1 inch aluminum.

Dynamic Waterjet Part

Cycle Time: 6'27"

Accuracy (per side): 0.0015"



Conventional Waterjet Part

Cycle Time: 21'23"

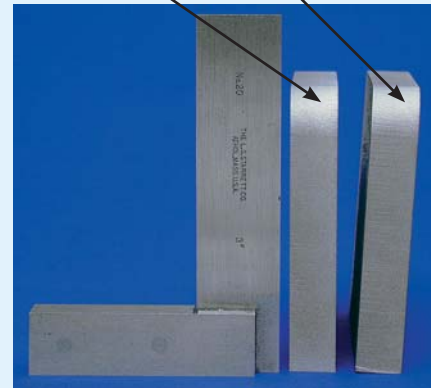
Accuracy (per side): 0.005"



Dynamic Waterjet Part

Conventional Waterjet Part

Showing Taper



INNOVATION | EXPERTISE | COMMITMENT

Get It All with Flow

For over three decades, Flow has set the standard for excellence in waterjet technology. We are the only waterjet company in the world that offers total solutions and support from a single source, both before and after your waterjet system is installed. We learn your business requirements. We help you select and implement the right solution. We train your staff and we are there for you for the entire lifecycle of our products.

When you partner with Flow, you get more than a product:

Our **INNOVATION** ensures that you will always have the latest and highest quality technology.

Our **EXPERTISE** ensures that you will always have the right technology for your individual business needs.

Our **COMMITMENT** to customer service ensures that you will always receive the support you need to stay productive.

For your complimentary needs analysis or a product demonstration, please call one of our waterjet experts at **1-800-446-3569**.

We look forward to partnering with you in your success.

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