

**50** YEARS  
OF FLOW

 **Flow**

**Waterjet Solutions**

**World Leader in Waterjet**





# 50 Years in Waterjet

Over the past five decades, we've witnessed the evolution of Flow waterjet technology and its profound impact on shaping the world through water. Committed to leading waterjet innovation, we strive to deliver solutions that go beyond your expectations. While the last 50 years have been remarkable, we firmly believe, the best is yet to come.



## Flow is Waterjet

*From invention to perfection, we are the world leader in waterjet.*

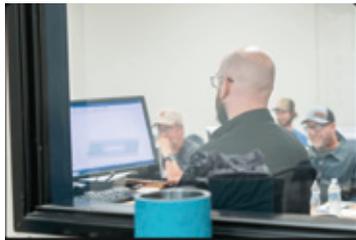
Flow's roots date back to the early 1970s, when former research and development scientists from Boeing founded Flow Research. The first technology commercialized by Flow Research was the use of an UHP waterjet as an industrial cutting tool.

Soon after invented, patented, and perfected the world's first abrasive waterjet system. Since 1974, Flow has delivered over 15,000 waterjet and abrasive waterjet systems to customers in more than 100 countries.



## Vision

Our vision is to push the boundaries of material processing by harnessing the power of ultrahigh-pressure waterjet technology.



## Mission

Our mission is to be the leading global solutions provider of the most advanced waterjet cutting technology across the widest range of applications and industries. We accomplish this by keeping customers at the forefront of everything we do and by creating a work culture that fosters innovation, collaboration, and respectfulness.

## Values

### Health & Safety

We are uncompromising in our commitment to the health and safety of our employees, subcontractors, and customers. Safety is everyone's responsibility.

### Our People

We believe our people are our greatest assets and provide them with global opportunities for growth and development.

### Customers

Our customers, like our people, are the core of our business. We value these relationships above all.

### Solutions

We push the limits of advanced technology to deliver innovative solutions that improve our customers' operations.

### Quality

We drive for high standards in our services, products, and project management methodologies. We go above and beyond our customers' expectations.

### Flexibility

We pride ourselves on being nimble and flexible while remaining easy to do business with. We are entrepreneurial.

### Sustainability

We conduct ourselves in a socially responsible manner that respects all human rights and protects our environment.

# Waterjet Dictionary

Waterjet terms might seem unusual if you are new to the technology.

Review waterjet technology definitions (from the everyday to the obscure), so you can feel confident in your waterjet know how. Expand your waterjet knowledge with the waterjet dictionary.

## Abrasive Waterjet

The abrasive waterjet stream accelerates abrasive particles and those particles, not the water, erode the material. The abrasive waterjet is much more powerful than a pure waterjet and is capable of cutting hard materials such as metals, glass, stone, and composites: none of which can be cut with a pure waterjet.

## Cutting Head

A waterjet cutting head is where the water pressure is converted to water velocity when the water passes through the jewel orifice. In abrasive waterjet cutting, the cutting head also includes the mixing chamber and mixing tube. Sometimes you will hear of the cutting head also including the on/off valve. This valve resides just above the orifice and utilizes some type of poppet and seat configuration to allow the operator or the CNC controller to start and stop the waterjet stream.

## Dynamic Waterjet

Dynamic Waterjet® is patented Flow technology that improves cut speed by 2 to 4 times allowing, simultaneously, for far better finished part tolerance.

## Garnet Abrasive

Garnet abrasive is used on 99% of all waterjet machines due to its cutting capability, consistency, cost, cutting head wear rate, and non-hazardous characteristics. The size of the garnet abrasive typically used today for waterjet cutting ranges from 50 mesh to 220 mesh, with the most common being 80 mesh. The higher the mesh number, the finer the grain size.

## Pure Waterjet

Pure waterjet is the original water cutting method. The largest uses for pure waterjet cutting are disposable diapers, tissue paper, and automotive interiors. In the cases of tissue paper and disposable diapers the waterjet process creates less moisture on the material than touching or breathing on it.

## Ultrahigh-pressure (UHP)

The waterjet industry has different definitions for differences in pressure levels. Ultrahigh-pressure is between 40,000 psi (276 Mpa) to 94,000 psi (648 Mpa). For waterjet cutting, most pumps operate between 55-60,000 psi (379-412 MPa).

## Control System

On a motion system, the control system takes the part program, speeds, and jet on/off commands and turns it into language that the electrical system can understand. Typically, a CNC (computer numerical control) control system, a PC-based control system, or a hybrid of both is used.

## Direct Drive Pump

Rotary direct drive pumps are used on over 20% of waterjet systems installed worldwide. Unlike intensifier-based pumps, the direct drive rotary pump has no hydraulic pump. Sometimes called a triplex pump, the electric motor rotates a crank with three pistons to generate the ultrahigh-pressure water.

## Dynamic XD

Dynamic XD® is patented Flow technology where the automatic articulation of the cutting head impingement angle is used not only for flat part cutting, but also for bevel and 3D cutting.

## Intensifier Pump

The linear intensifier pump is the original, and most common, technology used in waterjet cutting. Intensifier pumps use the "intensification principle" to pressurize water. The "intensification principle", or ratio, uses the difference in biscuit/plunger area to intensify, or increase the pressure. Hydraulic oil is pressurized and the low-pressure oil pushes against a biscuit, which has a face area 20 times greater than the face of the high-pressure plunger that pushes against the water.

## Taper

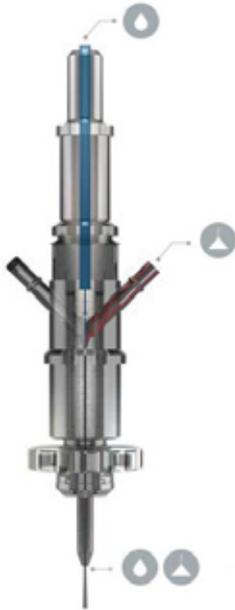
Taper in waterjet cutting is pertaining to non-straight kerf walls. Kerf taper is most common in abrasive waterjet cutting, as opposed to pure waterjet cutting. When cutting material, the top of the cut is often wider than the bottom of the cut, yielding a V-shaped taper. Slow down cut speed to minimize taper.

## Waterjet Cutting

Extremely easy to set up and operate, waterjet cutting technology is a cold-cutting process that can quickly produce small or large batches of parts, even for difficult projects. Pure waterjet cuts materials that can be cut with a knife, and the abrasive waterjet can cut anything harder.

# How Waterjet Works

Waterjet technology is a cold cutting process which cuts by using supersonic water, or water and abrasive, to erode material. Because of this, waterjets are unlimited in what they can cut.



## Pure Waterjet

Pure waterjet cuts soft materials like gasket, foam, plastic, paper, disposable diapers, insulation, cement board, automotive interiors, carpet, and food.

## Abrasive Waterjet

Abrasive waterjet is similar to a pure waterjet, except that after the pure waterjet is created, garnet abrasive is pulled into the head via a venturi vacuum, mixed with the water, and then the resulting abrasive waterjet stream can cut hard materials like metal, ceramic, stone, glass, and composite.

# Components of Waterjet

A waterjet is more than just pressurized water and sand. The shape cutting system is comprised of:

## The Ultrahigh-Pressure System

includes the pump, cutting head, and plumbing



## The Machine

includes the X, Y, Z-axis, cutting head wrist axis, and material support catcher

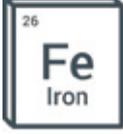
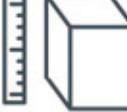
## The Control System

includes the programming software, operation or interface, drive motors, and position and velocity feedback system

# Comparative Cutting

Virtually any material, virtually shape. Waterjet can cut it.  
Cut any solid material including stone, tile, glass, metal, foam, rubber, plastic, and food.

## Unmatched Versatility.

|   |  |  |   |  |
|---|--|--|---|--|
| <br>Metals         | <br>Composites        | <br>Stone & Tile    | <br>Foods             | <br>Glass           |
| <br>Paper Products | <br>Stacked Materials | <br>Thick Materials | <br>Precision Cutting | <br>Beveled Cutting |

## Say Yes to process Improvements

**Increase efficiency** of your production process with the **speed, edge finish, and accuracy** of Flow Waterjet, from rough cuts to finely detailed finished parts.



### Cut Any Material

From modern metals to highly engineered materials



### Cold Cutting Process

No heat or stress when cutting



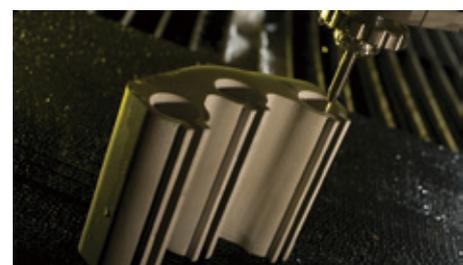
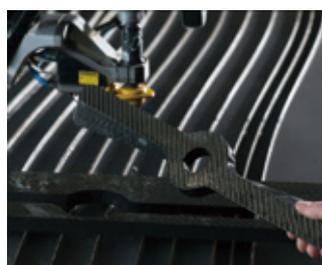
### Satin Smooth Edge

No secondary finishing required



### Minimal Kerf

Highly accurate, intricate cutting



# Explore Waterjet Systems

At Flow, we manufacture the entire waterjet system, including the pump, cutting head, XY table, and software. This means we've got a seamlessly integrated configuration specifically for your cutting and business needs.

|       | Mach 150 | Mach 200 | Mach 200c<br>Mach 200s | Mach 300 | Mach 500 | Mach 700 | EchoJet |
|-------|----------|----------|------------------------|----------|----------|----------|---------|
| 1313  | ●        | ●        | ●                      |          |          |          | ●       |
| 2015  |          |          |                        | ●        |          |          |         |
| 2020  |          |          |                        |          | ●        |          |         |
| 3015  |          |          |                        | ●        |          |          |         |
| 3020  | ●        | ●        | ●                      |          | ●        |          |         |
| 3060  |          |          |                        |          | ●        |          |         |
| 4020  | ●        | ●        | ●                      |          | ●        |          |         |
| 4080  |          |          |                        |          | ●        | ●        |         |
| 40150 |          |          |                        |          |          | ●        |         |
| 40240 |          |          |                        |          |          | ●        |         |
| 5080  |          |          |                        |          |          | ●        |         |
| 50240 |          |          |                        |          |          | ●        |         |
| 7320  |          | ●        |                        |          |          |          |         |



# Mach 150 :

## BEGIN BOLDLY

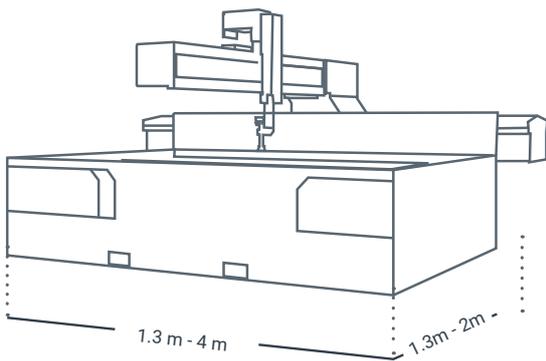
### Specifications & Configurations

|                            |             |
|----------------------------|-------------|
| Linear Positional Accuracy | ± .076 mm   |
| Rapid Traverse Maximum     | 10.16 m/min |
| Repeatability              | ± .025 mm   |
| Ballbar Circularity        | ± .1 mm     |
| Z-Axis Travel              | 203 mm      |

Accuracy specifications per 3 ft/1 m of travel in factory-controlled setting unless otherwise noted.

### Work Envelope

|               |               |
|---------------|---------------|
| Mach 150 1313 | 1.3 m x 1.3 m |
| Mach 150 3020 | 3.05 m x 2 m  |
| Mach 150 4020 | 4 m x 2 m     |



### Available configuration with Mach 150

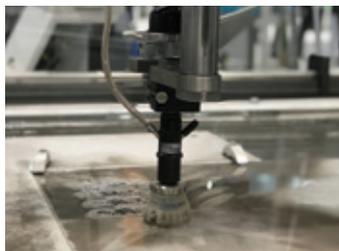
| Cutting Head            | UHP Pump       | Options                          |
|-------------------------|----------------|----------------------------------|
| Pure Waterjet           | • HyPlex Prime | • UltraPierce™ Vacuum Assist     |
| Standard Waterjet       | • MotoJet      | • PASER CF900                    |
| Pivot+ Waterjet         | MotoJet X      | • ProXtract™                     |
| Dynamic Waterjet        | HyperJet       | Abrasive Removal System          |
| Dynamic Waterjet XD     |                | Closed Loop Water Filtration     |
| Secondary Z-Axis        |                | Closed Loop Chiller              |
| Dual Bridge             |                | Spray Containment Shields        |
| Spreader Bar (only PWJ) | •              | Safety Light Curtains            |
|                         |                | Rotary Indexer                   |
|                         |                | Pneumatic Drilling Head          |
|                         |                | Compass™ 5 Axis Contour Follower |
|                         |                | Dynamic Contour Follower™        |

### Key Features



#### FLEXIBLE & VERSATILE

Multiple configurations and options - easily adaptable to evolving needs.



#### COMPLETE SYSTEM INTEGRATION

Meticulously engineered for seamless connection with all waterjet components at one access point.



#### MODERN, ROBUST CONSTRUCTION

Elite technology, components, and all-steel construction for state-of-the-art performance.

# Mach 200 :

## VALUE+ PERFORMANCE

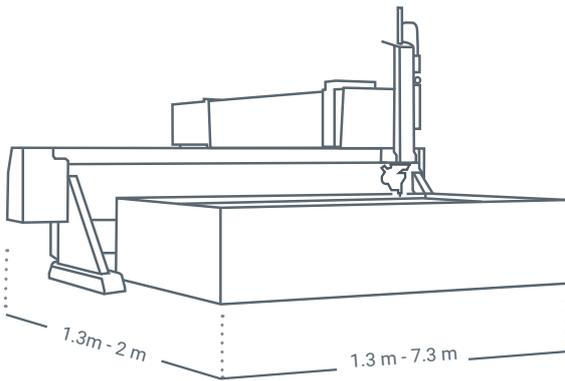
### Specifications & Configurations

|                            |             |
|----------------------------|-------------|
| Linear Positional Accuracy | ± .064 mm   |
| Rapid Traverse Maximum     | 10.16 m/min |
| Acceleration               | 0.05 g      |
| Repeatability              | ± .025 mm   |
| Ballbar Circularity        | ± .095 mm   |
| Z-Axis Travel              | 203 mm      |

Accuracy specifications per 3 ft/1 m of travel in factory-controlled setting unless otherwise noted.

### Work Envelope

|               |               |
|---------------|---------------|
| Mach 200 1313 | 1.3 m × 1.3 m |
| Mach 200 3020 | 3.05 m × 2 m  |
| Mach 200 4020 | 4 m × 2 m     |
| Mach 200 7320 | 7.3 m × 2 m   |



### Available configuration with Mach 200

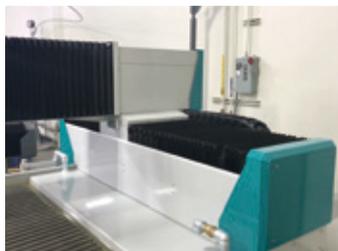
| Cutting Head        | UHP Pump       | Options                          |
|---------------------|----------------|----------------------------------|
| Pure Waterjet       | • HyPlex Prime | • UltraPierce™ Vacuum Assist     |
| Standard Waterjet   | • MotoJet      | • PASER CF900                    |
| Pivot+ Waterjet     | • MotoJet X    | • ProXtract™                     |
| Dynamic Waterjet    | HyperJet       | Abrasive Removal System          |
| Dynamic Waterjet XD |                | Closed Loop Water Filtration     |
| Secondary Z-Axis    |                | Closed Loop Chiller              |
| Dual Bridge         |                | Spray Containment Shields        |
| Spreader Bar        |                | Safety Light Curtains            |
|                     |                | Rotary Indexer                   |
|                     |                | Pneumatic Drilling Head          |
|                     |                | Compass™ 5 Axis Contour Follower |
|                     |                | Pivot+ Height Sensor             |

### Key Features



#### Pivot+ Bevel Cutting

With Pivot+ Waterjet the Mach 200 allows you to confidently take on more advanced waterjet applications. The compact cutting head uses a simplified, low-profile, design to deliver 5-axis cutting with taper control.



#### PROGRESSIVE TECHNOLOGY

Advanced ball-screw drive systems and proven technology throughout.



#### Designed for Flexibility

The Mach 200 is a flexible and practical waterjet solution. With 3-sided access for easy loading and unloading of materials, the system is specifically engineered to deliver.

# Mach 200c :

## UNIQUELY FLEXIBLE

### Specifications & Configurations

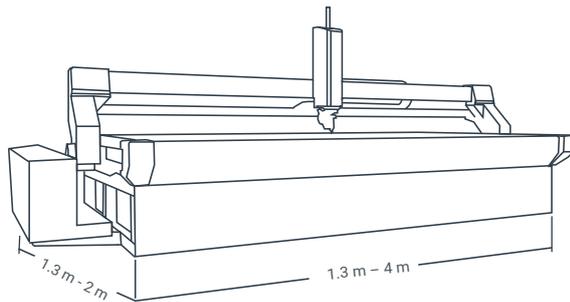
|                            |            |
|----------------------------|------------|
| Linear Positional Accuracy | ± .064 mm  |
| Rapid Traverse Maximum     | 12.7 m/min |
| Repeatability              | ± .025 mm  |
| Ballbar Circularity        | ± .095 mm  |
| Z-Axis Travel              | 203 mm     |

Accuracy specifications per 3 ft/1 m of travel in factory-controlled setting unless otherwise noted.



### Work Envelope

|                |               |
|----------------|---------------|
| Mach 200c 1313 | 1.3 m x 1.3 m |
| Mach 200c 3020 | 3.05 m x 2 m  |
| Mach 200c 4020 | 4 m x 2 m     |



### Available configuration with Mach 200c

| Cutting Head            | UHP Pump       | Options                          |
|-------------------------|----------------|----------------------------------|
| Pure Waterjet           | • HyPlex Prime | • UltraPierce™ Vacuum Assist     |
| Standard Waterjet       | • MotoJet      | • PASER CF900                    |
| Pivot+ Waterjet         | • MotoJet X    | • ProXtract™                     |
| Dynamic Waterjet        | • HyperJet     | Abrasive Removal System          |
| Dynamic Waterjet XD     |                | Closed Loop Water Filtration     |
| Secondary Z-Axis        |                | Closed Loop Chiller              |
| Dual Bridge             |                | Spray Containment Shields        |
| Spreader Bar (only PWJ) |                | Safety Light Curtains            |
|                         |                | Rotary Indexer                   |
|                         |                | Pneumatic Drilling Head          |
|                         |                | Compass™ 5 Axis Contour Follower |
|                         |                | Dynamic Contour Follower™        |

### Key Features



#### Full Work Envelope Usage

The unique canted bridge is designed differently than any other standard open gantry solutions, allowing for full work envelope usage.



#### Always Sharp, No Blades

Pure waterjets cut any material a knife can cut, but are always sharp, never dull, and have no blades to change out - ultimately saving on cost per part compared to traditional solutions.



#### Beveling & 5-axis Capabilities

The Pivot+ Waterjet is a compact cutting head that uses a simplified, low-profile design to deliver 5-axis and bevel cutting capabilities with taper control.

# Mach 200s:

## PURE SPEED

### Specifications & Configurations

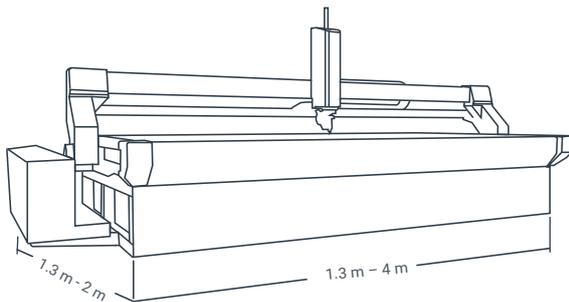
|                            |             |
|----------------------------|-------------|
| Linear Positional Accuracy | ± .076 mm   |
| Rapid Traverse Maximum     | 10.16 m/min |
| Repeatability              | ± .025 mm   |
| Ballbar Circularity        | ± .1 mm     |
| Z-Axis Travel              | 203 mm      |

Accuracy specifications per 3 ft/1 m of travel in factory-controlled setting unless otherwise noted.



### Work Envelope

|                |               |
|----------------|---------------|
| Mach 200s 1313 | 1.3 m x 1.3 m |
| Mach 200s 3020 | 3.05 m x 2 m  |
| Mach 200s 4020 | 4 m x 2 m     |



### Available configuration with Mach 200s

| Cutting Head        | UHP Pump       | Options                          |
|---------------------|----------------|----------------------------------|
| Pure Waterjet       | • HyPlex Prime | • UltraPierce™ Vacuum Assist     |
| Standard Waterjet   | MotoJet        | • PASER CF900                    |
| Pivot+ Waterjet     | MitoJet X      | • ProXtract™                     |
| Dynamic Waterjet    | HyperJet       | Abrasive Removal System          |
| Dynamic Waterjet XD |                | Closed Loop Water Filtration     |
| Secondary Z-Axis    |                | Closed Loop Chiller •            |
| Dual Bridge         |                | Spray Containment Shields •      |
| Spreader Bar        |                | Safety Light Curtains            |
|                     |                | Rotary Indexer                   |
|                     |                | Pneumatic Drilling Head          |
|                     |                | Compass™ 5 Axis Contour Follower |
|                     |                | Dynamic Contour Follower™        |

### Key Features



#### Fast Cutting, Fast ROI

With the Mach 200s, you can utilize super-fast speed that will revolutionize your production output. It is available at an entry-level price point that drives rapid ROI for fabricators and production teams alike.



#### Always Sharp, No Blades

Pure waterjets cut any material a knife can cut, but are always sharp, never dull, and have no blades to change out - ultimately saving on cost per part compared to traditional solutions.



#### Maximize Through Put

The Mach 200s proudly showcases advanced high-speed motors and drives, complemented by the flexibility of adding multiple cutting heads (up to 4 at the same time), effectively maximizing production volumes.

# Mach 300 : MOVE FORWARD

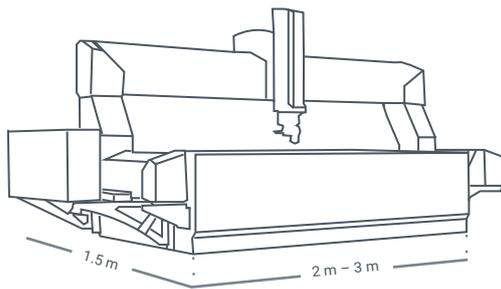
## Specifications & Configurations

|                            |            |
|----------------------------|------------|
| Linear Positional Accuracy | ± .038 mm  |
| Rapid Traverse Maximum     | 11.9 m/min |
| Acceleration               | 0.075 g    |
| Repeatability              | ± 0.025 mm |
| Ballbar Circularity        | ± 0.076 mm |
| Z-Axis Travel              | 305 mm     |

Accuracy specifications per 3 ft/1 m of travel in factory-controlled setting unless otherwise noted.

## Work Envelope

|               |             |
|---------------|-------------|
| Mach 300 2015 | 2 m x 1.5 m |
| Mach 300 3015 | 3 m x 1.5 m |



## Available configuration with Mach 300

| Cutting Head        | UHP Pump       | Options                          |
|---------------------|----------------|----------------------------------|
| Pure Waterjet       | • HyPlex Prime | • UltraPierce™ Vacuum Assist     |
| Standard Waterjet   | • MotoJet      | • PASER CF900                    |
| Pivot+ Waterjet     | MotoJet X      | • ProXtract™                     |
| Dynamic Waterjet    | • HyperJet     | • Abrasive Removal System        |
| Dynamic Waterjet XD |                | Closed Loop Water Filtration     |
| Secondary Z-Axis    |                | Closed Loop Chiller              |
| Dual Bridge         |                | Spray Containment Shields        |
| Spreader Bar        |                | Safety Light Curtains            |
|                     |                | Rotary Indexer                   |
|                     |                | Pneumatic Drilling Head          |
|                     |                | Compass™ 5 Axis Contour Follower |
|                     |                | Dynamic Contour Follower™        |

## Key Features



### Productivity Made Easy

The Mach 300 handles high production needs with ease. Dynamic Waterjet® brings the Mach 300 to the next level for efficient and accurate cut parts. With small footprint options and a quick installation, Mach 300 makes waterjet easy.



### Purpose-Built for Value

The Mach 300 is purpose-built and value focused, bringing a new kind of ROI to the waterjet world. Advanced Flow technology and all-in-one steel construction create a robust foundation for cutting performance.



### Roll-Around Operator Station

Take your operator station with you as you work, giving you the flexibility to move freely about your waterjet.

# Mach 500 :

## THE WORKHORSE OF WATERJET

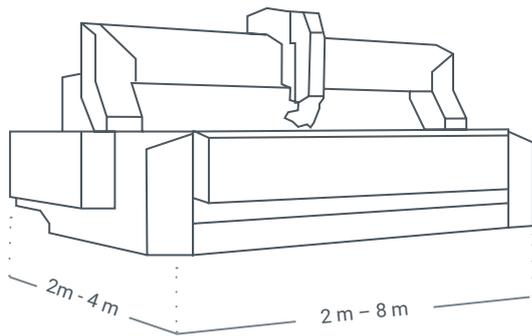
### Specifications & Configurations

|                            |                |
|----------------------------|----------------|
| Linear Positional Accuracy | ± .025 mm      |
| Rapid Traverse Maximum     | 17.8 m/min     |
| Acceleration               | 0.1 g          |
| Repeatability              | ± .020 mm      |
| Ballbar Circularity        | ± .0635 mm     |
| Z-Axis Travel              | 305 mm, 610 mm |

Accuracy specifications per 3 ft/1 m of travel in factory-controlled setting unless otherwise noted.

### Work Envelope

|               |              |
|---------------|--------------|
| Mach 500 2020 | 2 m x 2 m    |
| Mach 500 3020 | 3.05 m x 2 m |
| Mach 500 3060 | 3.05 m x 6 m |
| Mach 500 4020 | 4 m x 2 m    |
| Mach 500 4080 | 4 m x 8 m    |



### Available configuration with Mach 500

| Cutting Head        | UHP Pump       | Options                            |
|---------------------|----------------|------------------------------------|
| Pure Waterjet       | • HyPlex Prime | • UltraPierce™ Vacuum Assist       |
| Standard Waterjet   | • MotoJet      | • PASER CF900                      |
| Pivot+ Waterjet     | MotoJet X      | • ProXtract™                       |
| Dynamic Waterjet    | • HyperJet     | • Abrasive Removal System          |
| Dynamic Waterjet XD | •              | • Closed Loop Water Filtration     |
| Secondary Z-Axis    | •              | • Closed Loop Chiller              |
| Dual Bridge         | •              | • Spray Containment Shields        |
| Dual Head           | •              | • Safety Light Curtains            |
|                     |                | • Rotary Indexer                   |
|                     |                | • Pneumatic Drilling Head          |
|                     |                | • Compass™ 5 Axis Contour Follower |
|                     |                | • Dynamic Contour Follower™        |

### Key Features



#### Modern Architecture

Driven by extensive research and customer feedback, the Mach 500 is the fastest, quickest, most accurate waterjet by design. Designed with the operator in mind, the system is built for production. No other waterjet is quite like this.



#### Unmatched Accuracy

With the modern architecture, precision motion, and Flow's leading ultrahigh-pressure technology at the core, the Mach 500 is unmatched in speed and accuracy. Paired with Dynamic XD and compass, there is no waterjet that can compare.



#### Solid Foundation

The ultrahigh-pressure pump technology, machine control, cutting heads, industry-leading software, and advanced wrist articulation pioneered by Flow are the foundation of the Mach 500.

# Mach 700 :

## THINK BIG

### Specifications & Configurations

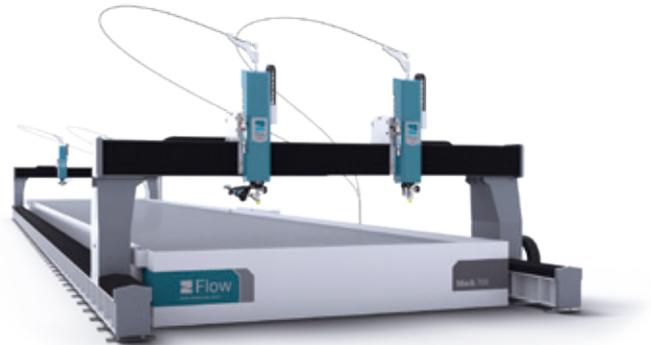
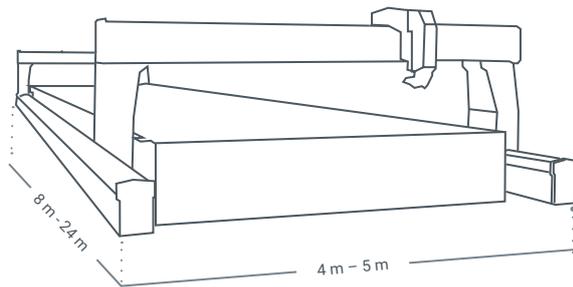
|                            |                |
|----------------------------|----------------|
| Linear Positional Accuracy | ± 0.038 mm     |
| Rapid Traverse Maximum     | 36 m/min       |
| Acceleration               | 0.1 g          |
| Repeatability              | ± 0.03 mm      |
| Ballbar Circularity        | ± 0.064 mm     |
| Z-Axis Travel              | 305 mm, 610 mm |

Accuracy specifications per 3 ft/1 m of travel in factory-controlled setting unless otherwise noted.

### Work Envelope

|                |            |
|----------------|------------|
| Mach 700 4080  | 4 m × 8 m  |
| Mach 700 40150 | 4 m × 15 m |
| Mach 700 40240 | 4 m × 24 m |
| Mach 700 5080  | 5 m × 8 m  |
| Mach 700 50240 | 5 m × 24 m |

Required layout dimension for installation : X = +1~2 m, Y = + 2~3m



### Available configuration with Mach 700

| Cutting Head        | UHP Pump       | Options                          |
|---------------------|----------------|----------------------------------|
| Pure Waterjet       | • HyPlex Prime | • UltraPierce™ Vacuum Assist     |
| Standard Waterjet   | • MotoJet      | • PASER CF900                    |
| Pivot+ Waterjet     | MotoJet X      | • ProXtract™                     |
| Dynamic Waterjet    | • HyperJet     | • Abrasive Removal System        |
| Dynamic Waterjet XD | •              | Closed Loop Water Filtration     |
| Secondary Z-Axis    | •              | Closed Loop Chiller              |
| Dual Bridge         | •              | Spray Containment Shields        |
| Dual Head           | •              | Safety Light Curtains            |
|                     |                | Rotary Indexer                   |
|                     |                | Pneumatic Drilling Head          |
|                     |                | Compass™ 5 Axis Contour Follower |
|                     |                | Dynamic Contour Follower™        |

### Key Features



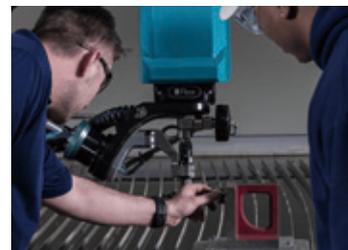
#### Sized for Production

The Mach 700 excels in demanding, heavy industry environments. Cut large parts and heavy materials with ease, load and unload efficiently, add an additional gantry and multiple cutting heads to drive production to new levels.



#### Engineered Tough

The Mach 700 is engineered for strength and speed, built with all-steel construction to handle heavy duty use 24/7. Engineered to order, the Mach 700 will integrate directly into your current production.



#### Big Support

With the Mach 700 you are guaranteed a total solution: complete with service, software, and cutting edge technology. Flow delivers more productivity and reliability with service solutions for parts, training, and preventative maintenance.

# EchoJet :

## COMPACT INNOVATION

### Specifications & Configurations

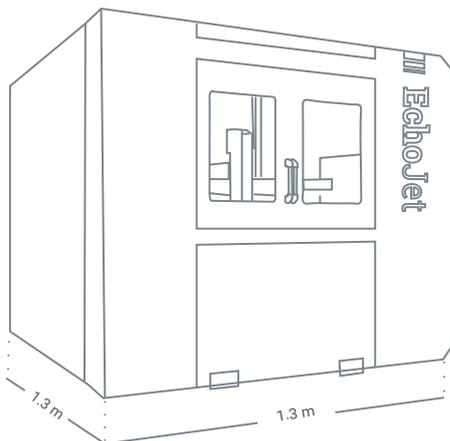
|                            |            |
|----------------------------|------------|
| Linear Positional Accuracy | ± .064 mm  |
| Rapid Traverse Maximum     | 12.7 m/min |
| Repeatability              | ± .025 mm  |
| Z-Axis Travel              | 203 mm     |

Accuracy specifications per 317.5 m of travel in factory-controlled setting unless otherwise noted.

### Work Envelope

|              |               |
|--------------|---------------|
| EchoJet 1313 | 1.3 m x 1.3 m |
|--------------|---------------|

Required layout dimension for installation : X = +1~2 m, Y = + 2~3m



### Available configuration with EchoJet

| Cutting Head        | UHP Pump       | Options                          |
|---------------------|----------------|----------------------------------|
| Pure Waterjet       | • HyPlex Prime | • UltraPierce™ Vacuum Assist     |
| Standard Waterjet   | • MotoJet      | • PASER CF900                    |
| Pivot+ Waterjet     | • MotoJet X    | • ProXtract™                     |
| Dynamic Waterjet    | • HyperJet     | Abrasive Removal System          |
| Dynamic Waterjet XD |                | Closed Loop Water Filtration     |
| Secondary Z-Axis    |                | Closed Loop Chiller              |
| Dual Bridge         |                | Spray Containment Shields        |
| Dual Head           |                | Safety Light Curtains            |
|                     |                | Rotary Indexer                   |
|                     |                | Pneumatic Drilling Head          |
|                     |                | Compass™ 5 Axis Contour Follower |
|                     |                | Dynamic Contour Follower™        |

### Key Features



#### Fully Integrated Enclosure

The EchoJet's unique enclosed design sets it apart in the world of waterjet. Intentionally engineered to reduce noise and mess with integrated side drip trays to contain spray and a work light for added visibility.



#### Compact Design

A compact design with built-in forklift pockets means the EchoJet takes up minimal floor space and is easy to install and move. Perfect if you're limited on valuable floor space.



#### Consistently Accurate Cutting

Designed with precision and reliability in mind, the EchoJet is equipped with quick and accurate motions, and dependable repeatability. This makes it a popular choice for fabrication shops, R&B labs, and more.

# NanoJet :

## BE PRECISE

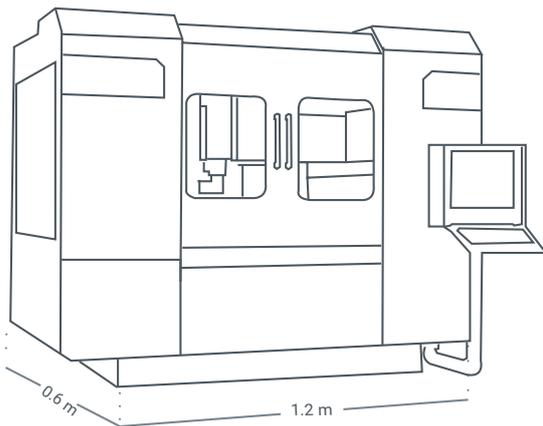
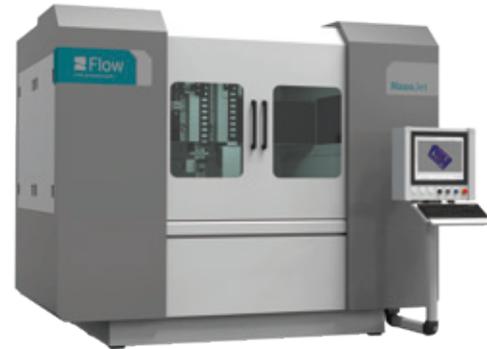
### Specifications & Configurations

|                            |                 |
|----------------------------|-----------------|
| Linear Positional Accuracy | ± 0.02 mm/0.3 m |
| Rapid Traverse Maximum     | up to 15m/min   |
| Acceleration               | 0.1 g           |
| Repeatability              | ± 0.01 mm       |
| Z-AXIS TRAVEL              | 150 mm          |

Accuracy specifications per 3000 mm of travel in factory-controlled setting unless otherwise noted.

### Work Envelope

|         |               |
|---------|---------------|
| Nanojet | 1.2 m x 0.6 m |
|---------|---------------|



### + Available configuration with NanoJet

| Cutting Head        | UHP Pump       | Options                          |
|---------------------|----------------|----------------------------------|
| Pure Waterjet       | • HyPlex Prime | • UltraPierce™ Vacuum Assist     |
| Standard Waterjet   | • MotoJet      | • PASER CF900                    |
| Pivot+ Waterjet     | MotoJet X      | • ProXtract™                     |
| Dynamic Waterjet    | • HyperJet     | • Abrasive Removal System        |
| Dynamic Waterjet XD |                | Closed Loop Water Filtration     |
| Secondary Z-Axis    | •              | Closed Loop Chiller              |
| Dual Bridge         |                | Spray Containment Shields        |
| Dual Head           |                | Safety Light Curtains            |
|                     |                | Rotary Indexer                   |
|                     |                | Pneumatic Drilling Head          |
|                     |                | Compass™ 5 Axis Contour Follower |
|                     |                | Dynamic Contour Follower™        |

### ∞ Key Features



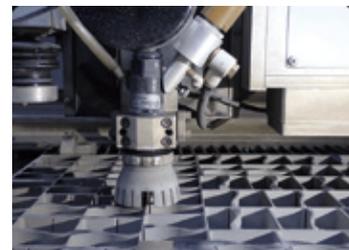
#### Groundbreaking in Design

Our NanoJet is a fully enclosed, all-in-one solution that provides precise, clean, and quiet cutting. NanoJet easily integrates into high output operations utilizing minimal floor space.



#### Accurate, Reliable Cutting

Designed for both highly precise cutting and fast overall part production in a single solution, the NanoJet is made for cutting highly engineered materials where precision and complex geometrics are needed.



#### Rapid Total Part Processing

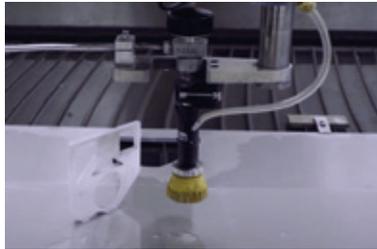
Equipped for quick and precise motions, the NanoJet provides maximum uptime, reliability, and predictability. An optional linear motion drive is available for extreme speeds.

# Cutting Head

The waterjet cutting head is where the pressurized water exits the machine and is focused into a thin, powerful stream that can cut through a variety of materials.

## Standard Waterjet

Easily cut virtually any material



In standard waterjet cutting, the stream remains perpendicular to the material being cut at all times. The supersonic stream accelerates abrasive particles and erodes the material. It is capable of cutting hard materials such as metals, glass, stone, and composites. Using standard parameters, this cutting head can cut materials with hardness up to and slightly beyond aluminum oxide ceramic (often called alumina, AD 99.9) and over 10 inches thick.



### Easy Setup

One jet setup for nearly all abrasive jet jobs.



### Stacking

Increase productivity by stacking sheet material.



### Versatility

Quickly switch to either abrasive or pure water cutting.

## Pivot+™ Waterjet

Durable, Compact & Streamlined bevel cutting



Add a new dimension to your waterjet bevel cutting capabilities and open the door to fresh opportunities with Pivot+™ Waterjet. Get multi-axis, taper compensation cutting with accuracy and flexibility. Designed by the same engineers who developed Dynamic Waterjet® XD (the world's premier 5-axis cutting solution), Pivot+ is a robust, compact cutting head.



### Multi-Axis Cutting

Pivot+ is a robust, multi-axis cutting solution with taper compensation.



### Compact Design

Designed by Flow cutting technology experts, the compact design delivers maximum cutting area.



### High Speed Motion

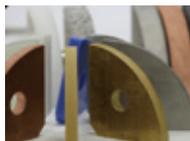
Exceptional throughput with high-speed wrist motion. Pivot+ offers fast set up and calibration to get you into production fast.

## Dynamic Waterjet®

Produces more accurate parts, at significantly higher cutting speeds



All waterjets exhibit stream lag and taper when cutting through material. Our patented Dynamic Waterjet® with Active Tolerance Control™ compensates for these inherent errors. Dynamic Waterjet produces more accurate parts at significantly higher cut speeds than parts cut with a standard waterjet. Utilizing advanced mathematical cutting models, SmartStream™ technology controls an articulated wrist to automatically tilt, compensating for the stream lag and taper.



### Productivity

Cut parts 2 to 4x faster than conventional flat stock waterjet cutting machines. In addition, achieve consistent tolerance layer to layer with true part stacking ability.



### Quality

Gives you the ability to cut parts faster and more accurately than with a standard non-Dynamic waterjet.



### Easy to Program

5-axis head articulations all occur behind the scenes automatically. No special Training or waterjet cut part knowledge is required to gain the benefits of the technology.

## Dynamic Waterjet® XD

Faster, more accurate bevel & 3D cutting



Dynamic Waterjet XD introduces the first high-precision 3D cutting technology of its kind by integrating 3D functionality with Dynamic Waterjet - giving you the ultimate in accuracy, speed, and flexibility.



### Active Tolerance Control

Automatically compensates for part cutting errors of stream lag and taper that are inherent in all waterjet cutting. Powered by mathematical models, Dynamic Waterjet cuts parts faster and more accurately than with a standard, non-Dynamic waterjet.



### Accurate Bevel, 3D cutting

Brings the speed and accuracy of Dynamic Waterjet, (compensating for stream lag and taper) to bevel and 3D part cutting.



### Rapid Lift and Drop

To avoid clamps and pre-cut areas while minimizing cycle time impact.

# Accessories

Flexibly adapted with Mach-series waterjet by purpose, Make better cutting, running, producing performance.



## UltraPierce™ Vacuum Assist *w/all Mach-series*

It improves the quality of the finished product by smoothly piercing the brittle material which can cause cracks or chips such as stone and glass.



## ProXtract™ *w/all Mach-series*

Adsorption and magnet system make it possible to take out workpieces from the processing bed lightly and easily. Minimizing the moving line saves unloading time and reduces the risk of injury from the sharp edges of the workpiece.



## Spray Containment Shields *w/all Mach x00-series*

High pressure water injected during piercing or machining strikes the surface of the material or slots. To prevent spraying in all directions, keeping the environment clean and supporting safe operation.



## Rotary Indexer *w/Custom Mach Series*

For the housing, hole machining, etc., the rotary table including the jig & fixture is added to the 3-axis driving section. The rotary axis is constructed separately from the table.



## Compass™ 5 Axis Contour Follower *w/Dynamic Waterjet XD*

Geometry sensing and collision detection solutions enable the most accurate contour tracking. Productivity can be improved by automatically adjusting the deviation of the material and the tool center point without mapping in advance.



## PASER CF900 *w/all Mach-series*

Continuous abrasive delivery with the PASER CF900 abrasive delivery system, you'll never worry about running out of abrasive in the middle of a job.



## Safety Light Curtains *w/Mach x00-series*

Protects three sides of the work area for a safe working environment. It consists of a transceiver and two mirrors. Upon activation, a "safety chain" is formed around the catcher tank to send an emergency stop command to the control system and to stop the machine operation and supply of high pressure water to the cutting head.



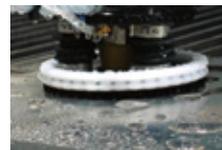
## Abrasive Removal System *w/all Mach-series*

It is designed to continuously collect spent abrasives accumulated in catcher tank and improves productivity by eliminating downtime of manual abrasive removal.



## Pneumatic Drilling Head *w/Custom Mach-series*

High-frequency spindle-type auto tool change drill enables flexible and stable drilling for piercing of composite materials.



## Dynamic Contour Follower™ *w/Standard & Dynamic Waterjet*

Automatic setting and tracking of standoff distance between nozzle and cut material for more efficient and accurate part cutting.

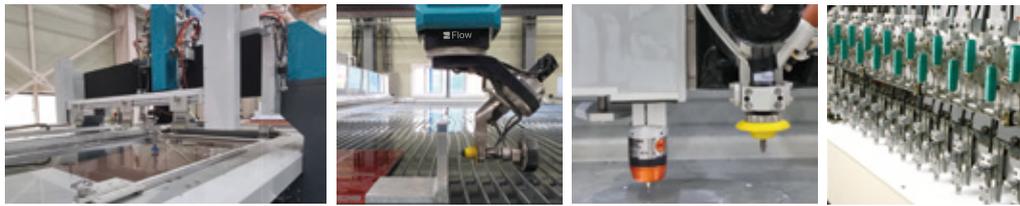
# Advanced Solutions

Proven waterjet solutions from the world's most experienced applications engineering team. In addition to our state-of-the-art Mach Series, we provide complete waterjet solutions that can be customized and developed to match your specific needs.

## “Engineer To Order” Procedure

Test/application consulting → Process analysis, simulation → Design/development/production → Jig/Fixturing & tooling(TBD) → System integration, trial running → Operation training → Installation → Long-term customer support

## Custom Mach Series Solutions



Should you need customization around our Mach Series product line to really match your application, we are proud to work with you to develop a solution that will efficiently cover your requirements.

## Multi-Axis Hybrid & Waterjet Solutions



6-axis robotic solutions for industrial abrasive and pure waterjet cutting, waterjet stripping applications and developed automated solutions used in production.

## Waterjet Stripping for Semiconductor components



Robotic UHP systems efficiently remove all types of materials including thermal barrier coatings, resins, adhesives, rubbers and more. Waterjet stripping is an eco-friendly process that does not use chemicals and does not alter/remove the base material.

# Waterjet Cutting Cell System

Select from a wide range of waterjet cutting cell configurations, such as A-Frame (wall mount), overhead gantry, rotating wall or simple floor mount cells.

Depending on your production demands, each of these cells can be supplied with single, dual, triple or quad robot configurations.

And if your demands are greater overhead gantries can be configured with up to six robots, paired with a complete UHP plumbing package – from pump to nozzle – sized to meet your production’s cutting requirements.



|                                       |  |                                   |
|---------------------------------------|--|-----------------------------------|
| Composite structures                  | Automotive carpets                         | Trimming of automotive headliners |
| Automotive door panels                | Fiberglass heavy truck exterior components | Glass food jars (food industry)   |
| Rubber shoes soles (general industry) | Boats, recreational vehicles               | Hot tubs                          |

*And more ...*

## FLOOR MOUNT PEDESTAL

Considered one of the simplest and most cost-effective cell configurations, this cell can support single, dual or even triple robots for your production.

**FIXTURE: Varies**  
**ROBOT: Fanuc M20iA/20**

## OVERHEAD GANTRY

In a high production environment, process flow and cycle time are critical. The robotic gantry waterjet cutting cell has the features and versatility to meet those demanding requirements. The 4-post gantry is accessible from 1 of 2 sides, and can be combined with an upper mezzanine option so you can minimize your valuable footprint thereby maximizing the return on your investment. This configuration can accommodate between 1 and 6 robots overhead.

*When combined with a vacuum cyclone unit for part fixture clamping, manual load and unload is exceptionally quick and clean for your operators.*

**FIXTURE: 36" X 60"**  
**WALL MOUNT: Varies**  
**ROBOT: Fanuc M20iA/20**

## ROTATING WALL

In a high paced, high production environment, process flow and cycle time are critical. The robotic rotating wall waterjet cutting cell has the features and versatility to meet those demanding requirements. The RW (rotating wall) solution offers single side access which allows waterjet trimming inside the cutting cell while the operator is able to unload and load part from the outside. This configuration can accommodate between 1 and 4 robots.

*When combined with a vacuum cyclone unit for part fixture clamping, manual load and unload is exceptionally quick and clean for your operators.*

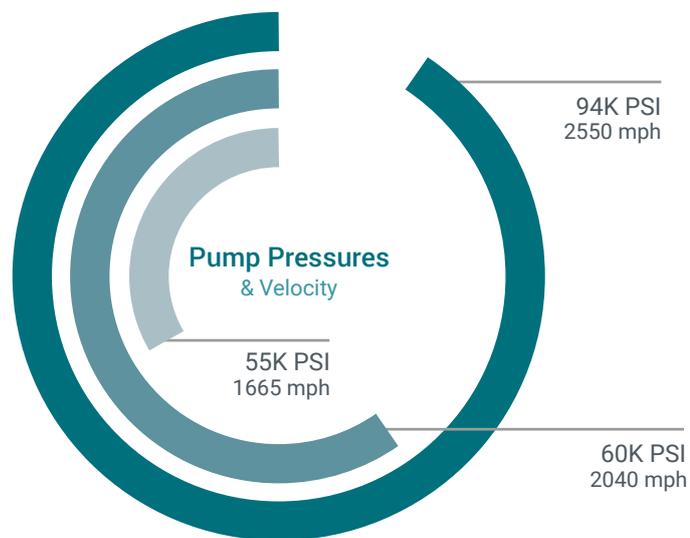
**FIXTURE: 36" X 60"**  
**WALL MOUNT: Varies**  
**ROBOT: Fanuc M20iA/20**

# The heart of your waterjet : UHP Pump

## Industry Leading Pump Technology from Flow

**PRESSURE = PRODUCTIVITY**

The pump is the heart of your waterjet. Higher pressure delivers faster cutting and lower cost per part.  
Get the fastest velocity jet stream with our Flow HyperJet® pump.



## There are two types of pumps used today in waterjet cutting : Direct Drive Pumps & Intensifier Pumps

### When to Use a Direct Drive

- Are you planning to operate only a portion of the day or a small number of shifts per week?
- Simpler, energy and space efficient
- Lower capital expense

HyPlex Prime  
Direct Drive Pump



### When to Use an Intensifier Pump

#### 60,000 psi

- Ability to swap in rebuilt intensifier without stopping production
- Simplified and less frequent maintenance
- Better suited to applications with significant on/off cycles

#### 94,000 psi

- Faster cutting, more parts per day
- Lower operating costs due to decreased abrasive use
- All the benefits of 60k

HyperJet® 94i-d  
Intensifier Pump

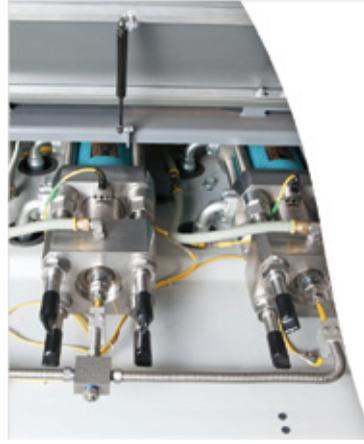


# Flow Ultra High Pressure Pump



## Benefits to Direct Drive

- Electrically efficient
- Compact in size
- Less expensive
- No additional cooling water needed



## Benefits to Intensifiers

- Improved maintenance Intervals
- Better suited to applications with many on/off cycles
- Faster, simpler rebuilds
- Fewer failures and downtimes
- Not limited to 60ksi, pressures up to 94k

| Flow     | Model            | HyplexPrime  | MotoJet     | MotoJet X   | HyperJet    |
|----------|------------------|--------------|-------------|-------------|-------------|
| Type     | Power Generation | Direct Drive | Intensifier | Intensifier | Intensifier |
| Pressure | 60,000           | ●            | ●           | ●           |             |
|          | 94,000           |              |             |             | ●           |
| HP       | 30 / 22kw        | ●            | ●           | ●           | ●           |
|          | 50 / 37kw        | ●            | ●           | ●           | ●           |
|          | 100 / 75kw       |              |             |             | ●           |
| Table    | Mach150          | ●            | ●           | ●           |             |
|          | Mach200          | ●            | ●           | ●           |             |
|          | Mach200c         | ●            | ●           | ●           |             |
|          | Mach300          | ●            | ●           | ●           | ●           |
|          | Mach500          | ●            | ●           | ●           | ●           |
|          | Mach700          | ●            | ●           | ●           | ●           |
|          | EchoJet          | ●            | ●           | ●           | ●           |
|          | NanoJet          | ●            | ●           | ●           | ●           |

# ***HYPLEX PRIME***

**Direct Drive** | 60,000 psi *w/all Mach-series*

The HyPlex® Prime pump represents the next generation of energy efficient, direct drive ultrahigh-pressure waterjet pumps.

## **General Specifications**

|                        |                 |
|------------------------|-----------------|
| Horsepower             | 30/50 hp        |
| Orifice Size           | .30/.38 mm      |
| Flow Rate              | 3.17/5.07 l/min |
| Max Generated Pressure | 4,150 bar       |
| Max Operating Pressure | 3,800 bar       |



### **Next Generation Seal Technology**

Utilizes the next generation of seal technology from Flow's 94,000 psi HyperPressure™ pumps.



### **Patented PAC-V™ Technology**

The PAC-V pressure control automatically adjusts water overflow when the jet turns off or when the operator changes orifice size reducing complexity of running an ultrahigh-pressure direct drive pump.



### **Modular Pump Design**

Allows for a wide variety of options such as dual-pressure control. The HyPlex Prime is mounted on its own purpose-built skid for mobility, vibration isolation, and ease of service.

# MOTOJET

## Intensifier | 60,000 psi *w/all Mach-series*

The MotoJet intensifier pump sets the industry standard for waterjet and abrasive waterjet cutting application.

### General Specifications

|                        |                 |
|------------------------|-----------------|
| Horsepower             | 30/50 hp        |
| Orifice Size           | .254/.356 mm    |
| Flow Rate              | 2.35/3.44 l/min |
| Max Generated Pressure | 4,480 bar       |
| Max Operating Pressure | 4,150 bar       |



#### Fully Electronic Dual Pressure Control

Pressure setting and control is integrated into the machine operator station, greatly enhancing operator convenience. Designed for applications where a low-pressure pierce may be necessary before a higher pressure cutting operation, the dual pressure control provides a simple way to switch between two output pressures.



#### Maintenance-Free Attenuator

With the largest pressure-shock attenuator available (124 cubic inch or 2.02 liter), Flow pumps deliver consistent water pressure every day. No maintenance is required.



#### User-Friendly Pump Enclosure

The pump enclosure is visually and functionally integrated into the machine tool system and features convenient, user-friendly designs: air assisted lifting top, removable side panels for full maintenance accessibility, handle-integrated status light, interior work light, and sound deadening materials.



#### Cooling Water Flow

Thermostatically controlled valve regulates cooling water flow while minimizing water usage. This enhances pump performance and optimizes inlet water usage.

# MOTOJET X

## Long-Life Intensifier | 60,000 psi *w/all Mach-series*

The MotoJet X intensifier pump is the next generation of pump designs. It has been engineered to maximize uptime, minimize maintenance, and outlast and outperform the rest.

### General Specifications

|                        |                 |
|------------------------|-----------------|
| Horsepower             | 30/50 hp        |
| Orifice Size           | .254/.356 mm    |
| Flow Rate              | 2.35/3.44 l/min |
| Max Generated Pressure | 4,480 bar       |
| Max Operating Pressure | 4,150 bar       |



### Longest-Life Solution

The MotoJet X establishes a new standard for the life of waterjet intensifiers. Go longer between maintenance intervals and see maximized uptime and production.



### Validated Design

The MotoJet X has been rigorously tested and has proven pump life — all built by the same engineers who developed the HyperJet, our highest performing pump.



### User-Friendly Pump Enclosure

The pump enclosure is visually and functionally integrated into the machine tool system and features convenient, user-friendly designs: air assisted lifting top, removable side panels for full maintenance accessibility, handle-integrated status light, interior work light, and sound deadening materials.

# HYPERJET

Intensifier | 94,000 psi *w/M300~700, EchoJet & NanoJet*

The HyperJet® intensifier pump is the most advanced and robust high-pressure system available. With 94K HyperPressure Technology, you will cut faster and increase production all while reducing costs.

## General Specifications

|                        |                      |
|------------------------|----------------------|
| Horsepower             | 30/50/100 hp         |
| Orifice Size           | .178/.254 mm         |
| Flow Rate              | 1.67/2.76/5.53 l/min |
| Max Generated Pressure | 6,500 bar            |
| Max Operating Pressure | 6,000 bar            |



### Dual Pressure Control

Designed for applications where a low pressure pierce may be necessary before a higher pressure cutting operation, the dual pressure control provides a simple way to switch between two output pressures.



### Fully Electronic Pressure Control

Pressure setting and control is integrated into the machine operator station, greatly enhancing operator convenience.



### Built-In Safety

Automatic high-pressure bleed-down valve relieves system water pressure to 0 psi [0 bar] within one second of shutting down the pump. When the pump is powered down or the emergency stop is activated, solenoid valves automatically shut off both the filtered water and pump cooling water. This option overrides automatic cooling water flow control and maximizes water savings.



### Durable Pump Design

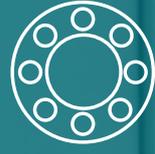
The durable pump design features full intelligent controls, monitoring, and communication ability with an additional control panel at the pump for easy maintenance and diagnostics.



Design without limits



Program efficiently



Cut the best part

# Flow Waterjet Software

*The Magic Behind the Machine.*

## Your part, fast and simple.

50+ years of know-how ensures seamless integration of software and machine. Get the easiest programming and the best part.

Enter your material type, thickness, and desired edge finish, and Flow software does the rest. Our patented algorithms and cutting models are the most advanced in the world, saving you hours of programming and setup time on every job.



# FlowMaster<sup>®</sup> w/Pure, Standard and Dynamic Waterjet

## SOFTWARE SUITE

The FlowMaster, Simple Yet Powerful, software suite combines everything you need to design and cut your 2D waterjet parts.



### FlowCut<sup>®</sup>

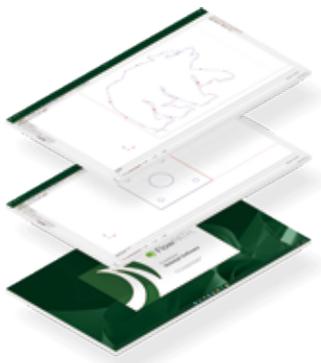
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FlowCut is the machine tool controller, and it is smarter and easier-to-use than any other machine control software.

FlowCut knows Waterjet: *No knowledge of CNC or waterjet cutting required.*

1. Open your ORD file
2. Select material type and thickness from a huge list
3. Run the machine to cut your part

- + Effortless Importing
- + Fully Integrated
- + Waterjet Expertise
- + Software Features & Requirements



### FlowPath<sup>®</sup>

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FlowPath takes the guesswork out of making high quality parts regardless of operator skill level; *No G-code required.*

1. Import your 2D file or create your own design
2. Examine the drawing to detect any geometry errors
3. Select the geometry and auto path, the system automatically creates lead in, lead outs, and traverse lines
4. Many other waterjet specific features available at the touch of an icon
5. Save the ORD and send the file to the machine, FlowCut does the rest

- + Intuitive Interface
- + Optimize Your Process
- + Waterjet Knowledge Built In
- + Software Features & Requirements



### FlowNest<sup>®</sup>

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FlowNest is a simple, 2D geometric nesting module that allows parts to fit inside scrap areas of other parts – allowing the most efficient use of material. Maximize your material with FlowNest.

1. Import your standard DXF or Flow specific ORD part files
2. Select part quantity, degree of rotation angle, and priority
3. Choose sheet size, which can be a standard sheet size or a remnant
4. The system will automatically nest your parts

- + Efficiency Gains
- + Software Features & Requirements
- + Optimize your Process

# FlowXpert® w/Pivot+ Waterjet and Dynamic Waterjet XD

## SOFTWARE SUITE

The FlowXpert software suite gives you all the tools you need for both 2D and 3D modeling and pathing. Equipped with FlowXpert Infinity, FlowCut, and FlowNest, the FlowXpert Software Suite.



### FlowXpert® Infinity

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More than just waterjet software. FlowXpert Infinity is a complete CAD package that includes both full 2D and 3D drawing and part-pathing and is capable of powering your entire shop.

*Included smart features:*

1. Auto pathing
2. Repair tools
3. 3D tool path previews
4. Vectorize most CAD, JPG, and PNG file types
5. Real-time software updates

- + All-in-One Solution
- + Smart, Practical, and Efficient
- + Software Features & Requirements



### FlowCut®

---

FlowCut is the machine tool controller, and it is smarter and easier-to-use than any other machine control software.

FlowCut knows Waterjet: *No knowledge of CNC or waterjet cutting required.*

1. Open your ORD file
2. Select material type and thickness from a huge list
3. Run the machine to cut your part

- + Effortless Importing
- + Waterjet Expertise
- + Fully Integrated
- + Software Features & Requirements



### FlowNest®

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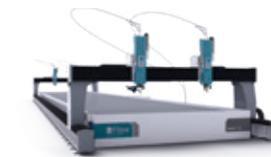
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4. The system will automatically nest your parts

- + Efficiency Gains
- + Optimize your Process
- + Software Features & Requirements

# Compare Machines See all Mach Series systems side-by-side.

|                           | <br><b>Mach 150</b>   | <br><b>Mach 200</b>  | <br><b>Mach 200c</b>  | <br><b>Mach 300</b>  |
|---------------------------|--|---|---|---|
| <b>Max.Rapid Traverse</b> | 400 in/min<br>10.16 m/min  | 400 in/min<br>10.16 m/min   | 500 in/min<br>12.7 m/min  | 472 in/min<br>11.9 m/min  |
| <b>Linear Accuracy</b>    | ± .003 in<br>± .076 mm   | ± .0025 in<br>± .064 mm   | ± .0025 in<br>± .064 mm   | ± .0015 in<br>± .038 mm   |
| <b>Work Envelope</b>      | <p>Mach 1 00 1313 : 4'-3" × 4'-3"<br/> Mach 100 3020 : 10' × 6'-6"<br/> Mach 100 4020 : 13'-1" × 6'-6"</p> <p>Mach 100 1313 : 1.3 m × 1.3 m<br/> Mach 100 3020 : 3.05 m × 2 m<br/> Mach 100 4020 : 4 m × 2 m</p> | <p>Mach 200 1313 : 4'-3" × 4'-3"<br/> Mach 200 3020 : 10' × 6'-5"<br/> Mach 200 4020 : 13'-1" × 6'-5"<br/> Mach 200 7320 : 24' × 6'-5"</p> <p>Mach 200 1313 : 1.3 m × 1.3 m<br/> Mach 200 3020 : 3.05 m × 2 m<br/> Mach 200 4020 : 4 m × 2 m<br/> Mach 200 7320 : 7.3 m × 2 m</p> | <p>Mach 200c 1313 : 4'-3" × 4'-3"<br/> Mach 200c 3020 : 10' × 6'-6"<br/> Mach 200c 4020 : 13'-1" × 6'-6"</p> <p>Mach 200c 1313 : 1.3 m × 1.3 m<br/> Mach 200c 3020 : 3.05 m × 2 m<br/> Mach 200c 4020 : 4 m × 2 m</p> | <p>Mach 300 2015 : 6'-6" × 5'<br/> Mach 300 3015 : 10' × 5'</p> <p>Mach 300 2015 : 2 m × 1.5 m<br/> Mach 300 3015 : 3 m × 1.5 m</p>   |
| <b>Repeatability</b>      | ± .001 in<br>± .025 mm   | ± .001 in<br>± .025 mm  | ± .001 in<br>± .025 mm  | ± .001 in<br>± .025 mm  |
| <b>Cutting Heads</b>      | Pure Waterjet<br><br>Standard Abrasive Waterjet  | Pure Waterjet<br><br>Standard Abrasive Waterjet<br><br>Pivot+ Waterjet  | Pure Waterjet<br><br>Standard Abrasive Waterjet<br><br>Pivot+ Waterjet<br><br>Dynamic Waterjet  | Pure Waterjet<br><br>Standard Abrasive Waterjet<br><br>Dynamic Waterjet   |
| <b>Secondary Z-Axis</b>   | Not Available  | Not Available   | Not Available   | Not Available   |
| <b>Z Travel</b>           | 8 in<br>203 mm   | 8 in<br>203 mm  | 8 in<br>203 mm  | 12 in<br>305 mm   |
| <b>Pumps</b>              | <p>Hyplex Prime<br/>60,000 psi [4,150 bar]<br/>30 hp, 50 hp</p> <p>MotoJet<br/>60,000 psi [4,150 bar]<br/>30 hp, 50 hp</p> <p>MotoJet X<br/>60,000 psi [4,150 bar]<br/>30 hp, 50 hp</p>                          | <p>Hyplex Prime<br/>60,000 psi [4,150 bar]<br/>30 hp, 50 hp</p> <p>MotoJet<br/>60,000 psi [4,150 bar]<br/>30 hp, 50 hp</p> <p>MotoJet X<br/>60,000 psi [4,150 bar]<br/>30 hp, 50 hp</p>   | <p>Hyplex Prime<br/>60,000 psi [4,150 bar]<br/>30 hp, 50 hp</p> <p>MotoJet<br/>60,000 psi [4,150 bar]<br/>30 hp, 50 hp</p> <p>MotoJet X<br/>60,000 psi [4,150 bar]<br/>30 hp, 50 hp</p>                               | <p>Hyplex Prime<br/>60,000 psi [4,150 bar]<br/>30 hp, 50 hp</p> <p>MotoJet<br/>60,000 psi [4,150 bar]<br/>30 hp, 50 hp</p> <p>MotoJet X<br/>60,000 psi [4,150 bar]<br/>30 hp, 50 hp</p> <p>HyperJet<br/>94,000 psi [6,500 bar]<br/>30 hp, 50 hp, 100 hp</p> |
| <b>Contorl</b>            | Roll-Around Operator Station   | Touch screen<br><br>Roll-Around Operator Station  | Touch screen<br><br>Roll-Around Operator Station  | Touch screen<br><br>Roll-Around Operator Station  |
| <b>Software Options</b>   | FlowXpert Infinity<br><br>FlowMaster   | FlowXpert Infinity<br><br>FlowMaster  | FlowXpert Infinity<br><br>FlowMaster  | FlowXpert Infinity<br><br>FlowMaster  |

|                           | <br>Mach 500  | <br>Mach 700   | <br>EchoJet   | <br>NanoJet  |
|---------------------------|--|---|---|---|
| <b>Max.Rapid Traverse</b> | 700 in/min<br>17.8 m/min   | 1,417 in/min<br>36 m/min  | 500 in/min<br>12.7 m/min  | up to 590 in/min<br>up to 15m/min   |
| <b>Linear Accuracy</b>    | ± .001 in<br>± .025 mm   | ± .0015 in<br>± .038 mm   | ± .0025 in<br>± .064 mm   | ± .0008 in/1 ft<br>± .02 mm/0.3 m   |
| <b>Work Envelope</b>      | Mach 500 2020 : 6'-6" × 6'-6"<br>Mach 500 3020 : 10'-0" × 6'-6"<br>Mach 500 3060 : 10'-0" × 20'-0"<br>Mach 500 4020 : 13'-1" × 6'-6"<br>Mach 500 4080 : 13'-1" × 26'-0"<br><br>Mach 500 2020 : 2 m × 2 m<br>Mach 500 3020 : 3.05 m × 2 m<br>Mach 500 3060 : 3.05 m × 6 m<br>Mach 500 4020 : 4 m × 2 m<br>Mach 500 4080 : 4 m × 8 m | Mach 700 4080 : 13'-1" × 26'-2"<br>Mach 700 40150 : 13'-1" × 49'-2"<br>Mach 700 40240 : 13'-1" × 78'-9"<br>Mach 700 5080 : 16'-4" × 26'-2"<br>Mach 700 50240 : 16'-4" × 78'-9"<br><br>Mach 700 4080 : 4 m × 8 m<br>Mach 700 40150 : 4 m × 15 m<br>Mach 700 40240 : 4 m × 24 m<br>Mach 700 5080 : 5 m × 8 m<br>Mach 700 50240 : 5 m × 24 m | 4'-3" × 4'-3"<br><br>1.3 m × 1.3 m  | 4' × 2'<br><br>1.2 m × 0.6 m  |
| <b>Repeatability</b>      | ± .0008 in<br>± .020 mm  | ± .001 in<br>± .03 mm   | ± .001 in<br>± .025 mm  | ± .0004 in<br>± .01 mm  |
| <b>Cutting Heads</b>      | Pure Waterjet<br>Standard Abrasive Waterjet<br>Dynamic Waterjet<br>Dynamic Waterjet XD   | Pure Waterjet<br>Standard Abrasive Waterjet<br>Dynamic Waterjet<br>Dynamic Waterjet XD  | Pure Waterjet<br>Standard Abrasive Waterjet<br>Pivot+ Waterjet<br>Dynamic Waterjet  | Pure Waterjet<br>Standard Abrasive Waterjet   |
| <b>Secondary Z-Axis</b>   | Pure Waterjet<br>Standard Abrasive Waterjet<br>Programmable Z-axis   | Pure Waterjet<br>Standard Abrasive Waterjet<br>Programmable Z-axis  | Not Available   | Pure Waterjet Standard Abrasive Waterjet Programmable Z-axis  |
| <b>Z Travel</b>           | 12 in, 24 in<br>305 mm, 610 mm   | 12 in, 24 in<br>305 mm, 610 mm  | 8 in<br>203 mm  | 6 in<br>150 mm  |
| <b>Pumps</b>              | Hyplex Prime<br>60,000 psi [4,150 bar]<br>30 hp, 50 hp<br><br>MotoJet / X<br>60,000 psi [4,150 bar]<br>30 hp, 50 hp<br><br>HyperJet<br>94,000 psi [6,500 bar]<br>30 hp, 50 hp, 100 hp  | Hyplex Prime<br>60,000 psi [4,150 bar]<br>30 hp, 50 hp<br><br>MotoJet / X<br>60,000 psi [4,150 bar]<br>30 hp, 50 hp<br><br>HyperJet<br>94,000 psi [6,500 bar]<br>30 hp, 50 hp, 100 hp   | Hyplex Prime<br>60,000 psi [4,150 bar]<br>30 hp, 50 hp<br><br>MotoJet / X<br>60,000 psi [4,150 bar]<br>30 hp, 50 hp<br><br>HyperJet<br>94,000 psi [6,500 bar]<br>30 hp, 50 hp, 100 hp | Hyplex Prime<br>60,000 psi [4,150 bar]<br>30 hp, 50 hp<br><br>MotoJet / X<br>60,000 psi [4,150 bar]<br>30 hp, 50 hp<br><br>HyperJet<br>94,000 psi [6,500 bar]<br>30 hp, 50 hp, 100 hp |
| <b>Control</b>            | Touch screen<br>Roll-Around Operator Station   | Touch screen<br>Roll-Around Operator Station  | Attached Operator Station (standard)<br>Roll-Around Operator Station (optional)   | Attached Operator Station   |
| <b>Software Options</b>   | FlowXpert Infinity<br>FlowMaster   | FlowXpert Infinity<br>FlowMaster  | FlowXpert Infinity<br>FlowMaster  | Engineered to Order   |