



**WMC®** | WATERJET MACHINING CENTER



## WMC® | Waterjet Machining Center

The competitive advantage in waterjet cutting is gained through high productivity and low cost per part. That is why Flow developed the WMC – a flexible waterjet machining centre for economic manufacturing of large or small series production to meet a variety of customer needs.



### Modular design for maximum flexibility

The modular design of the WMC offers a wide range of customer features and configuration options; for easy operation, all major system components as well as the high-pressure pump are integrated and controlled from one station. A combination of ultra high-pressure, fast traverse and contour speeds ensure extremely fast cycle times. In addition to abrasive-jet cutting, the highly productive cutting of soft materials with the pure waterjet is possible whilst maintaining quality and high precision.



Features	WMC conventional	WMC Dynamic Waterjet
Z-axis	pneumatic	motorized
Z-axis travel	250 mm	200 mm
Windows-based control	FlowMaster	FlowMaster
Roll-around control cabinet	•	•
Number of PASER ECL Plus cutting heads	max. 4	max. 2
Number of PASER Mach4 cutting heads (used in combination with HyperPressure)	–	max. 2
Pure water conversion kit for PASER cutting head	+	+
UltraPierce vacuum assist system	+	+
Height sensor - Touch Down	•	•
Height sensor - Dynamic Contour Follower	–	+
Anti-collision sensor (used in combination with Dynamic Contour Follower)	–	+
Intensifier pump (HyperPressure) HyperJet S or HyperJet D	–	o
Intensifier pump (4,150 bar) 50iS-60 or 100iD-60	o	o
Direct drive pump HyPlex 30 or HyPlex 50	o	o
Cooling system (recommended for intensifier pumps only)	+	+
Catcher tank, stainless steel - with water level control	•	•
Abrasive removal system	+	+
Laser pointer	+	+
Clamping system	+	+

• = standard  
o = alternative  
+ = optional  
– = not available

Subject to change.

**Available sizes (work envelope):**

**X-axis (bridge):** 3 m or 4 m  
**Y-axis (base):** 2 m, 3 m, 4 m or 6 m.  
 Other sizes available on request

**Z-axis travel:**

Dynamic Waterjet technology:  
 up to 200 mm, motorized axis  
 Conventional technology:  
 up to 250 mm, pneumatic-actuated axis

**Speeds:**

Maximum rapid traverse speed 35 m/min  
 Maximum contour speed 25 m/min

**Accuracies**

(per linear axis at 20°C +/- 2°C):  
 Linear accuracy: +/- 0.05/500 mm  
 Linear positioning accuracy: +/- 0.08 mm  
 Repeatability: +/- 0.025 mm  
 Data according to ISO 230-2 and applicable NMTBA specifications

**High-pressure pump:**

HyPlex (3,800 bar)  
 Intensifier (4,150 bar)  
 HyperJet intensifier (6,000 bar)



## Benefits

- Maximum productivity due to high cutting speeds
- Continuous operating pressure up to 6,000 bar thanks to HyperPressure technology
- Highly accurate, taper free parts of various materials using Dynamic Waterjet technology
- Optimum abrasive consumption for low operating costs
- Ergonomic design for easy machine operation
- Single Point support with fast response times due to Flow's own worldwide service network



### HyperPressure technology: cutting with 6,000 bar

Cutting with a continuous operating pressure of 6,000 bar opens new possibilities and results in a measurable increase in productivity for Flow users. 45 percent more pressure compared to traditional systems means: Higher cutting speed, lower cost per part, improved competitiveness.

### Dynamic Waterjet® with Active Tolerance Control

To increase the part accuracy, the WMC can be provided with the patented Dynamic Waterjet technology with Active Tolerance Control; this technology compensates for typical taper and jet backlash that occur during waterjet cutting. Even at high speeds it is possible to produce close tolerance parts with sharp internal corners.



### FlowMaster® control system

The FlowMaster Windows-based machine control is intuitively designed and easy to learn. All parameters necessary for cutting different materials and material thicknesses are available in a technology database. Standard drawing formats (.DXF, .IGES, etc.) can easily be imported and processed in minutes. With the integrated CAD module, drawings and finished programmes can be prepared directly in FlowMaster.

## Optional accessories

Thanks to its modular design, the WMC can be tailored to suit specific requirements with a range of options such as vacuum assist system, laser pointer or height sensor.

Constant industry developments and extensive research engineering guarantee that you will always be a cut above the rest with a Flow machine.

### Laser pointer – easy alignment and positioning

The laser pointer reduces workpiece setting times. A clearly visible laser cross-hair is positioned at the workpiece corner. At the push of a button, the cutting head automatically moves to this position; this is then set as the workpiece datum.



### Hole piercing assistance UltraPierce

The patented Flow UltraPierce vacuum assist system has been designed for efficiently piercing sensitive or brittle materials such as glass, ceramics, stone and composites directly with the waterjet, thus avoiding material chipping or delamination. No mechanical pre-drilling is necessary.



### Height sensor – Dynamic Contour Follower

This electronically controlled height sensor ensures a constant distance between the cutting nozzle and material surface, thus enabling easy cutting of warped material. An optional anti-collision system is also available.



### WaterVeyor abrasive removal system

For effective and easy abrasive removal, the catcher tank can be equipped with the WaterVeyor abrasive removal system. The used abrasive is continuously removed from the catcher tank based on the "Venturi" principle. The abrasive is collected for dumping and the water returned to the catcher tank.



### Cooling system – for optimum pump performance

The hydraulic oil used in the intensifier pumps requires cooling to ensure a constant and correct temperature. The use of a water-air cooler with closed loop cooling system noticeably reduces cooling water consumption.



### Clamping system for easy fixing

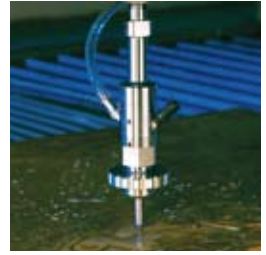
Flow offers a clamping system for quick and easy workpiece fixing and variable mounting on the catcher tank. The system is suitable for thick and thin materials.

## Unique cutting systems

The name PASER® stands for an abrasive waterjet cutting system that is capable of cutting virtually all hard materials such as stone, metal or glass with high cutting edge quality.

### PASER ECL *Plus* cutting head

The PASER ECL *Plus* system transforms the pressurized water into a high velocity focused stream of water (waterjet). The abrasive garnet is entrained into the stream of water in the exact quantity required for cutting.



### PASER Mach4 cutting head

The PASER Mach4 cutting head with its unique diamond orifice, which has been specially designed for HyperPressure technology, ensures that a water pressure of 6,000 bar is available for maximum cutting performance. The new Mach4 on/off valve operates more quickly thus reducing cycle times and lowering costs.



## Ultra high-pressure pumps

The heart of a waterjet cutting system is the high-pressure pump. Flow is the only manufacturer worldwide, offering both direct drive as well as intensifier pumps in different sizes. Together with our customers, we select the best pump type to suit their specific requirements and applications.

### Intensifier pumps

With classic intensifier technology, 210 bar oil pressure can be converted to a water pressure of up to 6,000 bar. The patented Flow intensifier and extra large attenuator offer unique pressure stability, jet quality and reliability.



### HyperJet S and HyperJet D

Our innovative HyperJet S and HyperJet D 6,000 bar pumps using HyperPressure technology generate up to 45 percent more pressure than traditional intensifier pumps and set new standards in terms of cutting speed and efficiency.



### 50iS-60 and 100iD-60

Featuring the 50iS-60 or 100iD-60 intensifier pump and a continuous operating pressure of up to 4,150 bar, the WMC is capable of cutting virtually any material and contour more efficiently than other machines.

### HyPlex direct drive pumps

HyPlex pumps are the cost-effective alternative for high-pressure generation up to 3,800 bar. The direct drive of three plungers ensures a water flow rate that is about 30 percent higher than an intensifier pump with the same power rating. Depending on the particular requirements, our HyPlex pumps are available in two sizes.



Pump	Power	Flow rate	Continuous operating pressure	Voltage
HyperJet S intensifier	37 kW/50 hp	2.46 l/min	up to 6,000 bar	3 AC 400 V, 50 KVA
HyperJet D intensifier	75 kW/100 hp	4.92 l/min	up to 6,000 bar	3 AC 400 V, 100 KVA
50iS-60 intensifier	37 kW/50 hp	3.8 l/min	up to 4,150 bar	3 AC 400 V, 50 KVA
100iD-60 intensifier	75 kW/100 hp	7.6 l/min	up to 4,150 bar	3 AC 400 V, 100 KVA
HyPlex 30 direct drive pump	22 kW/30 hp	3.1 l/min	adjustable up to 3,800 bar	3 AC 400 V, 50 KVA
HyPlex 50 direct drive pump	37 kW/50 hp	4.7 l/min	adjustable up to 3,800 bar	3 AC 400 V, 100 KVA



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