



IFB | INTEGRATED FLYING BRIDGE



IFB | Integrated Flying Bridge

With more than 2,000 systems installed worldwide, the IFB is the most popular waterjet cutting system in the industry. The compact design – the PC control, ultra high-pressure pump and waterjet components are integrated into the machine to save space – enables easy loading and unloading from three sides for optimum flexibility.

Precision and productivity

Whether for stone, glass, metal and composites or soft materials such as gasket, rubber or leather – Flow customers appreciate the versatility and rugged design of this machine. The stiff cantilever design and precision ball screw drive system designed specially for the IFB, guarantee maximum cutting performance and high quality cut parts.

This precision machine tool can be equipped with HyperPressure technology, Dynamic Waterjet® technology or a second conventional cutting head, making the IFB a true waterjet all-rounder. Flow standard accessories such as abrasive removal system, height sensor or vacuum assist system make the IFB an even more versatile machine tool.



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

Subject to change.

Features	IFB Dynamic Waterjet	IFB conventional	IFB-ST Dynamic Waterjet*	IFB-ST conventional*
Z-axis	servo-motor driven	motorized	servo-motor driven	motorized
Z-axis travel	200 mm	200 mm	200 mm	200 mm
Windows-based control	FlowMaster	FlowMaster	FlowMaster	FlowMaster
Roll-around control cabinet	•	•	•	•
Number of cutting heads PASER ECL Plus	max. 1	max. 2	max. 1	max. 1
Cutting beam for dual head operation	–	+	–	–
Number of PASER Mach4 cutting heads (used in combination with HyperPressure)	max. 1	max. 1	–	–
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	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 (only recommended for intensifier pump)	+	+	–	–
Catcher tank, stainless steel - with water level control	•	•	–	–
Catcher tank, stainless steel - w/o water level control	–	–	+	+
Catcher tank, mild steel painted - w/o water level control	–	–	•	•
Abrasive removal system	+	+	–	–
Dual or triple loading zone (available for work envelope 7.2 x 2 m)	+	+	–	–
Laser pointer	+	+	+	+
Clamping system	+	+	+	+

* only available with work envelope 3.6 x 2 m

Available sizes (work envelope):

Dynamic Waterjet technology:

7.2 x 2 m; 3.6 x 2 m; 2.4 x 1.2 m and 1.2 x 1.2 m *

Conventional waterjet technology:

7.2 x 2 m; 3.6 x 2 m; 2.5 x 1.25 m and 1.2 x 1.2 m *

* Size 1.2 x 1.2 m not available with HyperPressure technology

Z-axis travel:

Up to 200 mm, motorized axis

Speeds:

Maximum traversing speed 12.5 m/min
Maximum contour speed 7.6 m/min

Accuracies:

(per linear axis at 20°C +/- 2°C):
Linear positioning accuracy: +/- 0.08 mm
Repeatability: +/- 0.05 mm

High-pressure pump:

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



Benefits

- Compact, ergonomic design for ease of operation
- 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 and different material thickness using Dynamic Waterjet technology
- Short setting times, minimum programming and preparation time
- Rugged design
- Easy loading and unloading from three sides
- Single Point support with fast response times due to Flow's own worldwide service network

6,000 bar HyperPressure technology

Our innovative HyperJet pumps allow Flow customers to work with a continuous operating pressure of 6,000 bar. This means an up to 50 percent higher cutting speed and up to 30 percent reduced cost per part – irrespective of the material or material thickness!

Dynamic Waterjet with Active Tolerance Control

The IFB is available with the patented Dynamic Waterjet technology with Active Tolerance Control. This advanced technology compensates for 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. Customers are able to produce parts that are faster, better and cheaper.



FlowMaster® intelligent control system

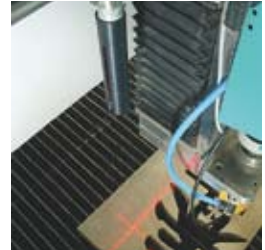
The FlowMaster Windows-based machine control is intuitively designed and easy to learn. All parameters necessary for cutting different materials and material thicknesses are available in a technology database. Standard drawing formats (.DXF, .IGES, etc.) can easily be imported and processed in minutes.

Optional accessories

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

Under the name PASER®, Flow has developed an abrasivejet 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 optimum 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 and jet quality.



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 IFB 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 the 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

The high-pressure pump is integrated into the machine frame.



INNOVATION | EXPERTISE | COMMITMENT

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