

# waterjet

Waterjet cutting systems





CMS is part of SCM Group, a technological world leader in processing a wide range of materials: wood, plastic, glass, stone, metal and composites. The Group companies, operating throughout the world, are reliable partners of leading manufacturing industries in various market sectors, including the furniture, construction, automotive, aerospace, ship-building and plastic processing industries. SCM Group coordinates, supports and develops a system of industrial excellence in 3 large highly specialized production centres employing more than 4,000 workers and operating in all 5 continents. SCM Group: the most advanced skills and know-how in the fields of industrial machinery and components.

C.M.S. SpA manufactures machinery and systems for the machining of composite materials, carbon fibre, aluminium, light alloys, plastic, glass, stone and metals. It was established in 1969 by Mr Pietro Aceti with the aim of offering customized and state-of-the-art solutions, based on the in-depth understanding of the customer's production needs. Significant technological innovations, originating from substantial investments in research and development and take-overs of premium companies, have enabled constant growth in the various sectors of reference.



advanced materials technology

**CMS Advanced Materials Technology** is a leader in the field of numerically controlled machining centres for the working of advanced materials: composites, carbon fibre, aluminium and light alloys. Substantial investments in research and development have allowed the brand to always be on the cutting-edge, with machines that ensure best-in-class performance in terms of accuracy, speed of execution and reliability and that meet the needs of customers operating in the most demanding sectors. Since the early 2000's, **CMS Advanced Materials Technology** has established itself as a technology partner in areas of excellence such as aerospace, aviation, automotive, race boating, Formula 1 and the most advanced railway industry.

**scmgroup** | industrial machinery  
and components

**Cms** | your  
technology  
partner



# waterjet

APPLICATIONS	4-5
WATERJET MACHINES FOR COMPOSITES, ALUMINUM AND LIGHT ALLOYS PROCESSING	6-7
TECNOCUT SMARTLINE - PROLINE - AQUATEC TECHNOLOGICAL BENEFITS	8-13
AWJ WATERJET MACHINE CONFIGURATION STANDARD/OPTIONALS	14-17
TECNOCUT SMARTLINE - PROLINE - AQUATEC STANDARD ACCESSORIES / OPTIONALS	18-27
PRESSURE INTENSIFIERS	28-33
EASYJET DDX SOFTWARE	34-35
OVERALL DIMENSIONS AND TECHNICAL DATA	36-41
CMS CONNECT / ACTIVE	42-43
THE GROUP	44-45
THE RANGE	46-47





# APPLICATIONS



aerospace | industrial | construction | utilities



bicycles | transport | automotive | wind turbines

**Unparalleled.**  
**New.**  
**Innovative.**  
**Quality.**  
**Ultra.**  
**Effective solutions.**

The **UNIQUE** waterjet cutting machines.

Waterjet cutting systems

# WATERJET MACHINES FOR COMPOSITE, ALUMINUM AND LIGHT ALLOYS PROCESSING

**TECNOCUT SMARTLINE**  
The Smart solution for high volume  
production thanks to the multi-head  
configurations



**TECNOCUT PROLINE**  
The highest technologically advanced solution  
for the most demanding applications



**TECNOCUT AQUATEC**  
The strongest modular solution on the  
market for processing large shapes



# TECNOCUT SMARTLINE

## TECHNOLOGICAL BENEFITS

### 3 AND 5-AXES WATERJET CUTTING SYSTEM

Tecnocut Smartline has been designed to redefine the industry's standards of excellence by improving operating efficiency, while simultaneously maintaining CMS' renowned reputation for construction quality and unparalleled work. Ideal for cutting composite materials and light alloys, it has all the safety and performance features typically found on CMS waterjet machines, enclosed in a new innovative and compact design. These features guarantee excellent finishing with a high level of accuracy with excellent productivity.

- Vast configurability of the work areas (single area or swing cycle).
- Excellent productivity, thanks to a maximum cutting speed of 50 m/ min and 3 m/s<sup>2</sup> of acceleration, with the option of fitting up to 5 cutting heads.
- The movement of the X-Y-Z axes occurs with the pinion on tempered and ground racks.
- The heat sealed bellows guarantee ideal protection to the racks and sliding guides on the X axis against dust and water and processing water. For the Y axis, protection is guaranteed by a sheet metal labyrinth structure.
- The carpentry structure undergoes a rust-proofing treatment using sandblasting and ceramic painting to guarantee greater duration against corrosion.
- Tank arranged for dredging system to remove used abrasive material.
- Control software integrated into the control that allows the operator to optimize cutting parameters by reducing waste to a minimum. The setting times for the cut on complex shapes is dramatically reduced without compromising the finishing quality and precision.



### KEY BUYER BENEFITS

- + Maximum loading ergonomics, the monolithic compact and open frame structure simplifies the loading and unloading of processed pieces.
- + The high-pressure spray of water allows you to easily cut very thick pieces, create holes and complex shapes and reduce the scrap from nesting on a flat sheet thanks also to the manual and automatic interaxis multi-head configurations
- + The waterjet technology offers a unique tool, that requires no complex set-ups for the support of pieces. Furthermore, the 5-axis version allows you to make high precision 3D cuts and repetitions.
- + The waterjet cut is a cleaning process that does not generate dust or airborne residue. The collection tank is compatible with the Evo4 dredging system to remove used abrasive, which reduces the cost of maintenance by 90%.



Console on a mobile trolley with standard 21.5" touch screen.



Control panel integrated into the base of the tank to reduce bulk on the ground.



Photo-electric barriers: protection of work area with photocell devices.

# TECNOCUT PROLINE

## TECHNOLOGICAL BENEFITS

### HYDRO-ABRASIVE WATERJET CUTTING MACHINING CENTERS

Tecnocut Proline was conceived and designed to meet the needs of the aeronautic, automotive, mold and design industry, guaranteeing the processing of medium-large size components in composite material and light alloys. Its compact dimensions mean it can easily slot into any production environment, while simultaneously dealing with a vast volume of work. A genuine machining center, designed with specific solutions for waterjet technology to the extent that it guarantees superior technological performance.

- Precisions suited to the strictest applications (aerospace, motorsport, automotive, design, etc).
- The gantry structure with extremely solid fixed strut can guarantee maximum precision over the years, thanks to tempered and ground racks and spiral pinions combined with reducers with a high precision level.
- Compact bulk: the newly designed structure allows for the integration of the abrasive material motor and pressure intensifier normally installed on the ground.
- Stainless steel base arranged for the removal of used abrasive material by dredging, rotating axes for processing pipes and automatic water level
- The racks and sliding guides on the axes are protected by CMS' revolutionary "Powder-Free" system that is an engineering masterpiece of an impenetrable labyrinth of casings that guarantee full protection against water and dust.



### KEY BUYER BENEFITS

- + The monolithic structure with protection hatches of the work area and adjustment of the water level allow noise and water/abrasive material reverberations to be reduced when cutting.
- + The high-pressure spray of water allows you to easily cut very thick pieces, create holes and complex shapes and reduce the scrap from nestings on a flat sheet thanks also to the manual and automatic interaxis multi-head configurations
- + The waterjet technology offers a unique tool, that requires no complex set-ups for the support of pieces. Furthermore, the 5-axes version allows for 3D cutting with high precision and repetitions.
- + No dust or airborne residue is generated with the waterjet cut. The collection tank is compatible with the Evo4 dredging system to remove used abrasive, which reduces the cost of maintenance by 90%.



Remote pushbutton pad to control up to 6 axes that allow you to operate close to the cutting surface and set multi-origins.



21.5" industrial PC Panel on the machine with touch display and HMI CMS Active interface.



Front and rear hatch with pneumatic movement to better protect the cutting area and reduce the dispersion of water and abrasive material.





# TECNOCUT AQUATEC

## TECHNOLOGICAL BENEFITS

### 3 AND 5-AXES HYDRO-ABRASIVE WATERJET CUTTING SYSTEM

Tecnocut Aquatec is a waterjet system with an advanced, high performing and versatile hydro-abrasive head, capable of meeting the most varied production demands in different fields of application, guaranteeing highly precise cuts.

Aquatec was designed along the lines of CMS philosophy: the machine is the result of experience acquired in the automotive, aerospace, naval and design sectors. The structure and technical solutions adopted, together with the selected components, ensure a high level of finishing, high processing speeds, reliability, structural rigidity, flexibility of use and excellent productivity.

- Excellent configurability designed ad hoc around real customer demands.
- Mobile gantry load-bearing structure on very thick separate steel shoulders, rests on tracks anchored to the ground, ensuring maximum structural rigidity. This solution guarantees the best finishing even on more complex, difficult processes.
- The movement, including that of the cutting head, is done on tempered and ground racks activated with brushless motors.
- The steel casing system and teflon polyurethane bellows, guarantee protection to the moving parts against water and dust from the processing.
- Thanks to its structure that leaves 2 or 4 sides free on the worktable, sheet loading/unloading is easier in addition to inspection of the processing material, as well as allowing for the installation of specific equipment to move the pieces.



### KEY BUYER BENEFITS

- + The waterjet cutting parts do not require additional re-processing and do not create thermally deformed areas, reducing the cycle times and waiting times throughout the production process.
- + The waterjet technology offers a unique tool, that requires no complex setups for the support of pieces. Furthermore, the 5-axes version allows for 3D cutting with high precision and repetitions.
- + The structure with wide rail and modular shoulders allows for configurations with plenty of space around the tank to simplify loading and unloading.
- + The waterjet cut is a clean process that does not generate dust or airborne residue. The collection tank is compatible with the Evo4 dredging system to remove used abrasive, which reduces the cost of maintenance by 90%.



Console on a mobile trolley with 21.5" touch screen.



Remote pushbutton pad to control up to 6 axes that allow you to operate close to the cutting surface and set multi-origins.



Maximum configuration flexibility thanks to the modular structure.



# WATERJET MACHINE CONFIGURATION

## STANDARD

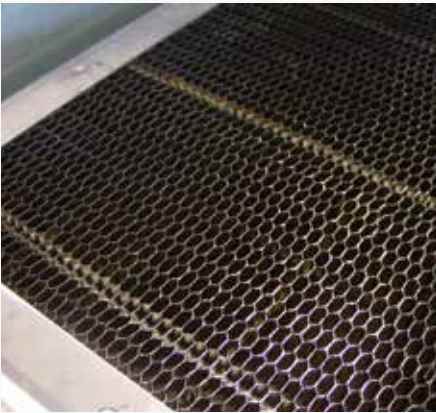
### WORKING TABLES



Standard Grid (std)



Anti-reflective surface (opt)



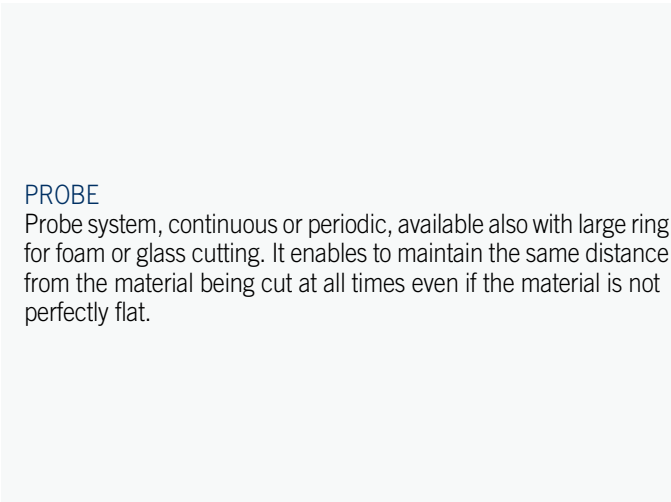
Stainless steel honeycomb table (Option)



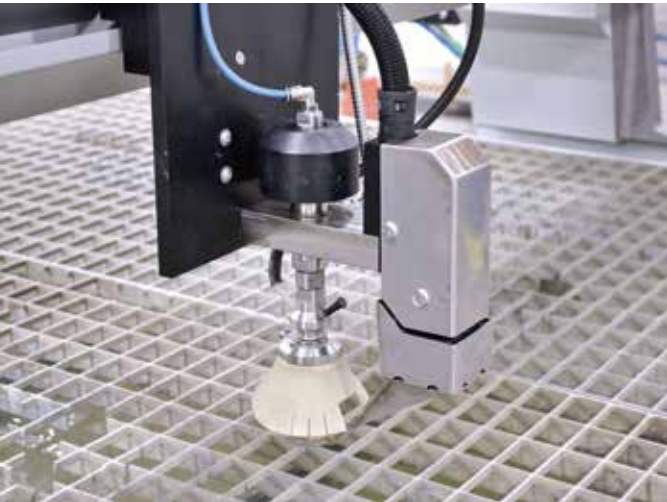
**3-AXIS HEAD**  
The cutting head has been designed to achieve high performance when cutting. The components of the cutting head like the opening, wear insert and focusing device are perfectly aligned and auto-centered to guarantee fast replacement. The end part of the head can be changed for pure or hydro-abrasive waterjet cutting and provide maximum performance in both applications.



**ELECTRONIC HOPPER**  
Electronic hopper that automatically controls the abrasive flow. If the abrasive flow is interrupted for any reason, the system will automatically stop cutting to prevent damage and scraped materials. In addition, a vacuum sensor connected to the mixing chamber constantly detects the abrasive amount and flow, providing complete real-time information on the state of wear of the cutting head.



**PROBE**  
Probe system, continuous or periodic, available also with large ring for foam or glass cutting. It enables to maintain the same distance from the material being cut at all times even if the material is not perfectly flat.



**LUBRICATION**  
Forced injection CNC controlled automatic lubrication of the main axes X, Y and Z numerically controlled at pre-set intervals, without manual intervention and without machine down time. The presence of sensors allows for the pressure to be controlled and the tank's minimum level to be noted.



# WATERJET MACHINE CONFIGURATION

## OPTIONALS

### JD5AX



JD5ax's features open up new cutting opportunities on a wide range of materials, maximizing the operational flexibility of the 5-axis Waterjet CMS systems and ensuring very high standards of accuracy and quality of pieces obtained by an abrasive waterjet. With the innovative JD5ax head it's possible to get lower value of conicity, ensuring high finishing quality and size tolerance. JD5ax is made of an infinite rotation axis (C), an entirely new feature, and a tilting axis (B) up to  $\pm 62^\circ$ , all designed and produced by the CMS engineers.

#### SPECIFICATIONS

- Compact design
- Cutting from  $0^\circ$  to  $62^\circ$
- Automatic taper compensation (JDC)
- Patented abrasive injection
- New touch probe with incorporated anticollision detection
- Infinite HP joint rotation
- Compatible with the latest orifices
- Reduced mechanic components subjected to fatigue
- Monitoring of cutting components wear
- Direct drive servomotors

#### BENEFITS

- Infinite rotation for nesting cut without breakpoints
- High positioning accuracy
- High mechanical strength
- High cutting speeds and accelerations
- Taper compensation up to  $60^\circ$  tilt angle
- 3D machining
- Possibility to carry out countersinking and chamfering for ready-to-weld profiles
- Easy maintenance

#### ACQUISITION OF THE CUTTING POINT OF ORIGIN: CROSS LASER

Cross laser pointer to simplify the setting of one or more points of origin of work commencement on the sheet positioned on the cutting table.



#### DREDGING SYSTEM

Dredging system for "no maintenance" abrasive removal. The removal system inside the tank is protected both by baskets for collecting scraps and by a metal cage. The tank is ready to install a dredge system for the abrasive removal.



#### AUTOMATIC HOSE REEL

Air and water sprayer kit to clean table and material after the cut. (option only for tecnocut smartline).





# TECNOCUT SMARTLINE

## OPTIONALS

### CLEANING SYSTEM OF THE CUT PIECE

Cleaning system for the work area which reduces the chances of scratches on the cut piece. It also enables the feeler to detect correctly the thickness of the material.



### MANUAL CUTTING HEAD CARRIAGE

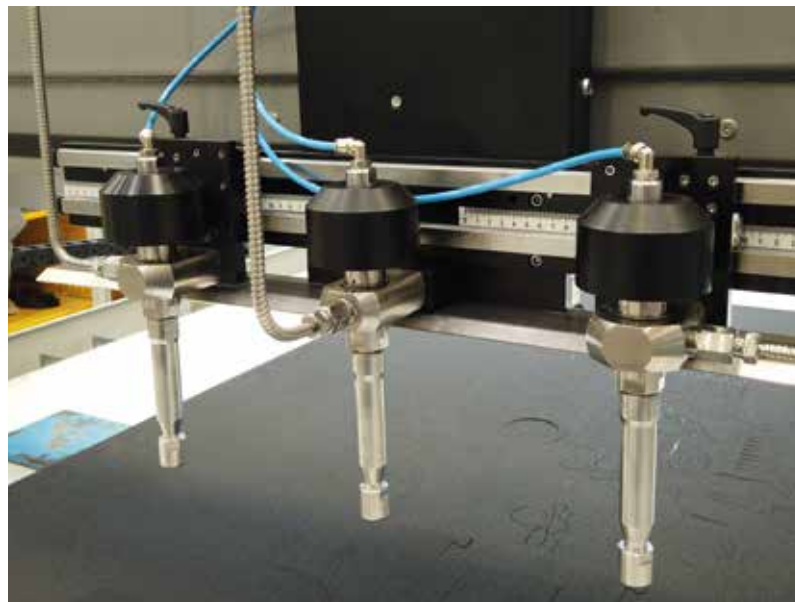
Working unit with 3 axis cutting heads on a spread bar, with manual distance adjustment to increase the productivity on flat panels.

The unit can be easily adjusted thanks to:

- Sliding on double linear guide and ball bearings
- Rapid lock/release system
- Millimetric ruler for accurate positioning

Available with maximum distance of 340 mm and 500 mm, while the minimum distance of 85 mm is always guaranteed.

Available in automatic/motorized interaxis version.



### DRILLING UNIT

Pneumatic unit controlled by NC with maximum rotation of 25,000 rpm (free speed) to deal with composite and multilayered materials, that easily delaminate when piercing with a high-pressure water jet. The high rotations allow for a reduction in drilling times without damaging the material, by optimizing the cutting cycle in combination with the processing strategies that can be set using our software.



Division barriers with photocell and specific enclosures in combination with management software of the work area in 2 zones (front and rear) to use the system in swing cycle.



Air conditioning system of the machine's electrical cabinet to keep internal temperature between 35°C and 40°C.



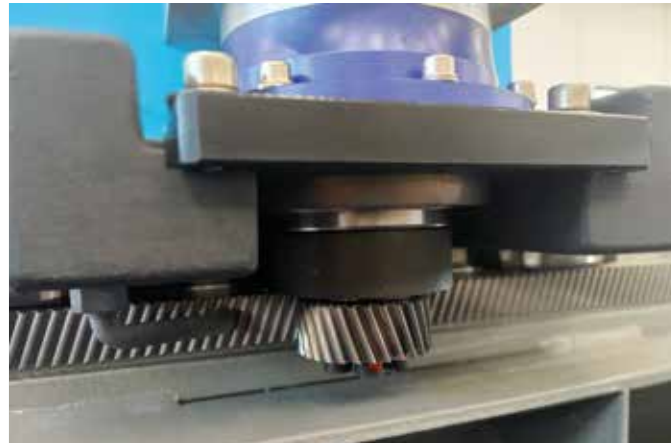
# TECNOCUT PROLINE

## STANDARD ACCESSORIES



### INTENSIFIER ON REMOVABLE CART

In the innovative base structure can accommodate up to two high pressure 4150 bar and 6200 bar electric actuators which dramatically reduces installation times and loss of pressure typical of high-pressure traces located on the ground. The cart can be fully removed and fitted with internal lighting to make it easier to carry out maintenance work on the high-pressure circuit. Furthermore, the presence of a control panel with touch display allows for fast and instant on-board diagnostics.



### HELICAL RACK AND PINIONS

The X and Y axes have tempered and ground racks and helical pinions to guarantee high dynamic performance while maintaining high precision positioning standards and repeatability. In combination with the absolute encoders, they allow the machine to start up without the need to reset axes and to restore the axes from the last cutting position.

### PRESSURIZED ABRASIVE FEEDING SYSTEM 330 KG

Pressurized abrasive feeding system with two 330 kg double-stage tanks. The structure anchored to the base eliminates positioning and installation problems guaranteeing a constant and stable feeding of abrasive garnet into the electronic mini hopper. The double-stage configuration allows for the main tank to be filled while the machine is processing.



# TECNOCUT PROLINE

## OPTIONALS



### DRILLING UNIT

Numeric Control pneumatic unit with maximum rotation of 25,000 rpm (when empty) to also deal with more critical applications on composite and multi-layered materials, that easily split into layers when drilling with a high-pressure water jet. The other rotations allow for a reduction in drilling times without damaging the material, by optimizing the cutting cycle in combination with the processing strategies that can be set using software.

### WATER LEVEL

There is an automatic water level adjustment system inside the base. Using compressed air, the water level in the tank can be increased to 50 mm so a submerged cut can be made on the material loaded on the cutting surface, guaranteeing a reduction in noise and water dispersion into the work area. A sensor fitted inside the base ensures accurate positioning of the water level above the surface of the piece without operator intervention.



### ABRASIVE STORAGE UP TO 2000 KG

For higher production volumes, CMS has a motor for storing up to 2000kg of abrasive material. It has a dual tank (the first one for loading, the second pressurized) with level detection sensors. Thanks to this solution, it is also possible to deal with longer processings without worrying about having to continually top up on abrasive material.



# TECNOCUT PROLINE

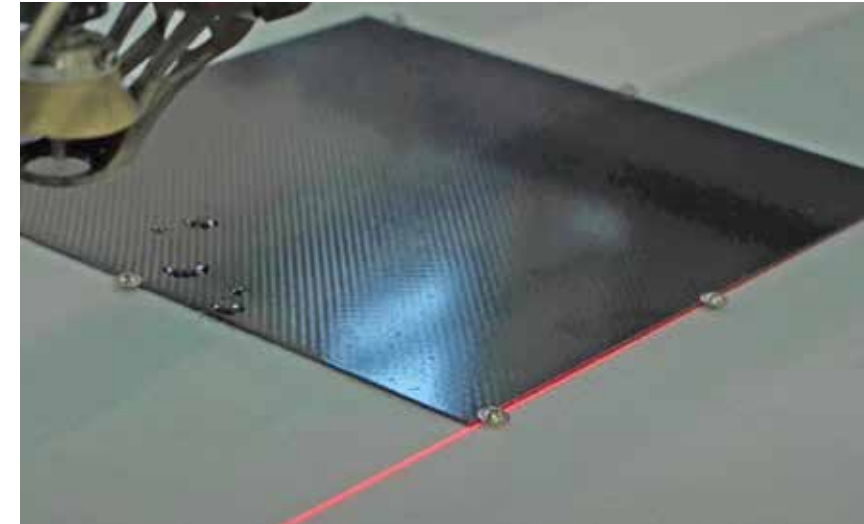
## OPTIONALS



### AUTOMATIC TCP DETECTION

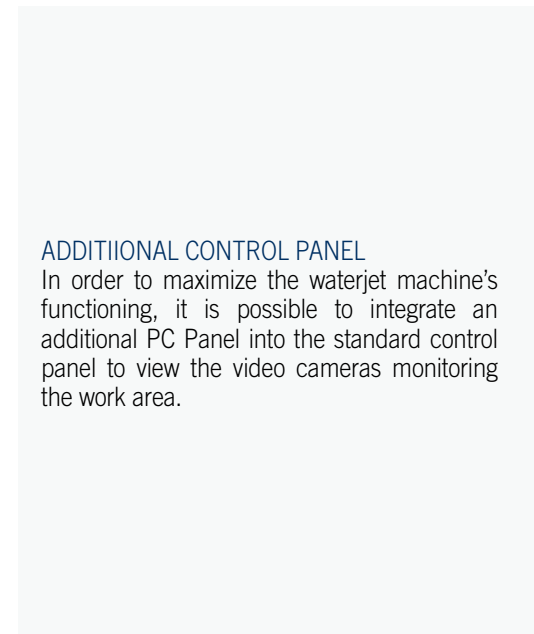
Automatic cutting head alignment laser detection system with regard to the C axis and B axis rotation center for the purpose of:

- compensating the misalignment of the cutting head in the event of a strong collision
- calculating the XY positions on the focusing device precisely before performing processings with particular requirements of narrow tolerances. The device is housed on a tray hidden in the base that can be automatically removed on a guide with ball runner blocks to guarantee reliable and accurate measurements.



### ALIGNMENT LASER PROJECTOR

Optional device to project a laser line onto the work surface that helps the operator to position and align the material before cutting.



### ADDITIONAL CONTROL PANEL

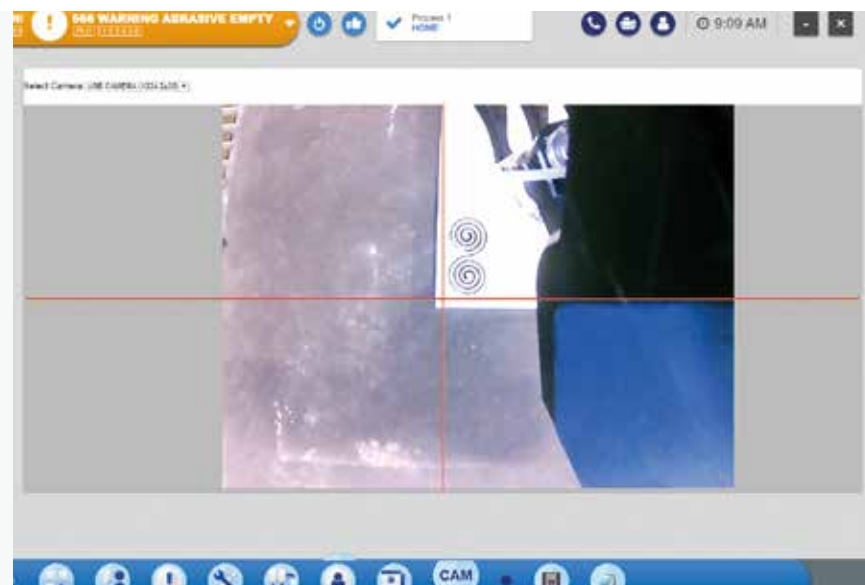
In order to maximize the waterjet machine's functioning, it is possible to integrate an additional PC Panel into the standard control panel to view the video cameras monitoring the work area.



### CAMERA

Innovative digital system to search for and acquire the cutting point of origin on the material loaded onto the worktable, using a camera positioned inside the operating unit capable of framing the work area around the cutting head.

The device makes the set up and preparation of the cutting process faster directly from the touch control panel on the machine, keeping the machine safe in the presence of an automatic hatch and in the case of front protection photocells.



### SURFACE WASHING SYSTEM

The purpose of the washing system is to automatically remove the abrasive garnet settled on the surface when cutting. A washing cycle is planned after processing so that the abrasive garnet does not interfere with the handling and sheet securing operations.

The area affected by the washing can be manually divided up into zones, excluding the calibrated nozzles singularly.



# TECNOCUT AQUATEC

## OPTIONALS

### CLEANING SYSTEM

Cleaning system for the work area which reduces the chances of scratches on the cut piece. It also enables the feeler to detect correctly the thickness of the material.

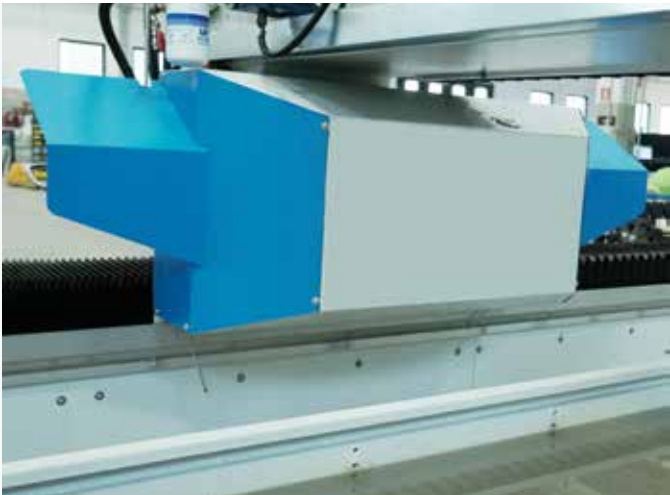


### WORKTABLE CLEANING SYSTEM

Worktable cleaning system equipped with pump removes the possible material debris left on the sheet during the cut. A washing cycle at the end of the cut cleans completely the work area before loading/unloading the material.

### ELECTRIC INTENSIFIER ONBOARD THE CROSSBEAM

Positioning of the Greenjet actuator and high-pressure circuit directly onboard the X-axis crossbeam. The solution avoids losing about 2 bar per meter of high-pressure pipe interfacing between the intensifier on the floor and the cutting head. The solution also enables reducing the installation layout of the system.



### DRILLING UNIT

CNC controlled pneumatic drilling unit for Z axis. It can be adjusted on the Z axis (from 0 to 30 mm) to house different drilling points. The drilling unit can be installed on the version with one or two Z axes.



### AUTOMATIC WATER LEVEL

Built-in water level in the tail of the tank, with pump for automatic adjustment (maximum 45 mm) of the water level for submerged cutting, eliminating the noise generated by the ultrasonic waterjet and keeping the working environment clean.



# TECNOCUT AQUATEC

## OPTIONALS



Pressurized abrasive feeding system with 330 kg capacity equipped with two tanks: one with a 330 kg capacity and another – pressurized – to supply the cutting head (electronic hopper). It is also available as a 2-stage abrasive feeding system with a 2000 kg capacity to complete long cutting jobs without interruptions due to a lack of abrasive.



### ACCESS THE LOADING PLATFORM

Possibility of rotating the tank by 90° by extending the Y-axis base travel runway modules to provide greater access space around the worktable and facilitate the loading and unloading of the material.

Alternatively, it is possible to configure the machine with a crossbeam up to 6 meters cutting envelope, guaranteeing a large front loading and unloading area, simplifying material handling with forklift trucks or crane.

### HIGH-PRECISION PACKAGE

X- and Y-axis transmission with rack and pinion helical gearboxes characterized by a higher accuracy class with respect to the standard gearboxes, to ensure strict positioning tolerances and repeatability.



Double tank solution for pendular working.





# PRESSURE INTENSIFIERS



## TECNOCUT JETPOWER EVO

The hydraulic multiplier with the highest level of reliability and robustness thanks to the parallel cylinder configuration



## TECNOCUT GREENJET EVO

The innovative electric pump with low consumption and maintenance costs to maximize productivity under any working condition

# TECNOCUT JETPOWER EVO

## HIGH-PRESSURE INTENSIFIER

### PRESSURE INTENSIFIER ENTIRELY MADE BY CMS

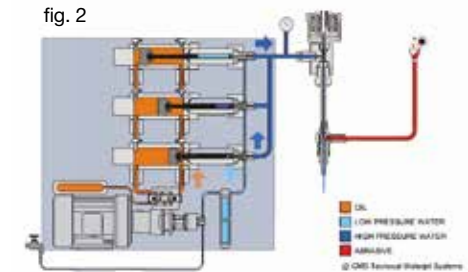
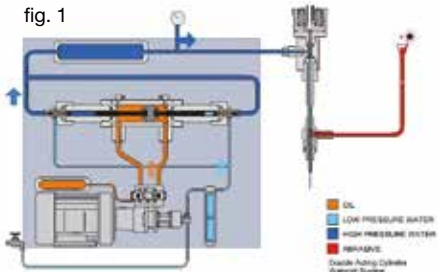
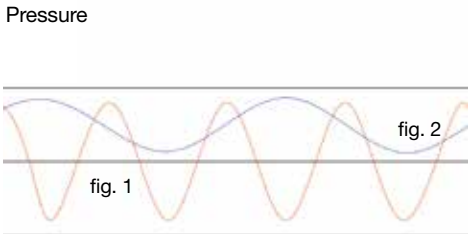
CMS brought about a new concept in ultrahigh pressure intensifiers, enhanced by technological solutions designed to satisfy the needs of the most demanding users. This new technology is based on an intensifier equipped with several pressure multipliers independent, parallel and electronically synchronized. This innovative solution results in an ever-constant pressure avoiding any drops typical of traditional opposed cylinder intensifiers.

### KEY BUYER BENEFITS

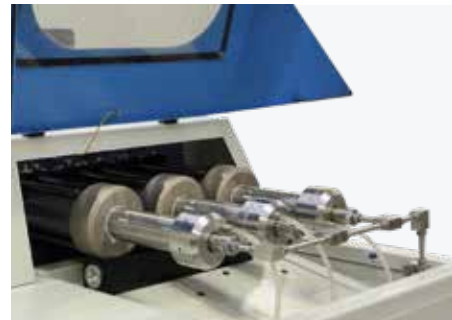
- + Hydraulic intensifier with 2 or 3 independent and electronically synchronized parallel cylinders to guarantee a constant signal of output pressure without the use of an attenuator.
- + The technology with 3 independent cylinders allows the bypass of a single cylinder that needs maintenance, while the machine is working, avoiding unnecessary downtime.
- + The parallel cylinders architecture is designed for a low cycle frequency that reduces the high pressure components' wear and consequently the maintenance costs.
- + Reduction of oil consumption and operating costs: Water flow rate up to 5 l/min to satisfy a wide range of cutting applications, adapting the oil consumption thanks to an independent variable flow pump for the hydraulic circuit.

fig. 1 Traditional opposing-cylinders intensifier

fig. 2 CMS parallel cylinders intensifier



Software-based electronic control of cutting pressure



Pressure multipliers



Hydraulic unit



Oil/air heat exchanger

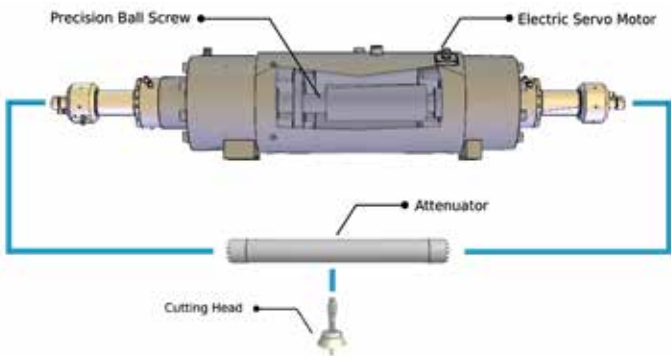


# TECNOCUT GREENJET EVO

## ELECTRIC PRESSURE INTENSIFIER

### THE HIGHEST LEVEL OF EFFICIENCY WITH MAXIMUM SAVING

Tecnocut Greenjet Evo is the revolutionary high performance electric pump; thanks to an extremely efficient servomotor torque, the pressure signal is extremely high, eliminating the hydraulic control unit and reducing its components by 80% compared to a more traditional hydraulic intensifier. Tecnocut Greenjet Evo has been designed with the use of an electric driver actuator and two opposing high pressure cylinders. The electric driver technical solution guarantees an extremely steady pressure signal, a pressurisation cycle monitoring and an operating efficiency that is at least 30% higher compared to the hydraulic intensifiers.



Double-acting pressure multipliers, electrically driven, manufactured with materials highly resistant against mechanical stress and corrosion.

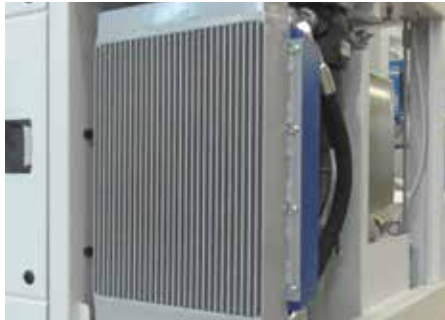


### KEY BUYER BENEFITS

- + Electric pump actuated by a brushless servomotor capable of generating a constant pressure signal with an efficiency greater than 35% compared to traditional hydraulic intensifiers.
- + Reduced environmental impact: The electric actuator generates the high pressure without the hydraulic components with the advantage to avoid the disposal of the exhausted oil typically 200 liters every 2000 h.
- + Less than 81% of hydraulic and mechanic components and 73% less intensifying cycle than a direct drive pump, with consequently less maintenance costs and machine downtime.
- + 33% less power consumption than a traditional hydraulic intensifier thanks to precise power control of the motor when required and setting down near to zero when the cutting head is closed.



Servomotor

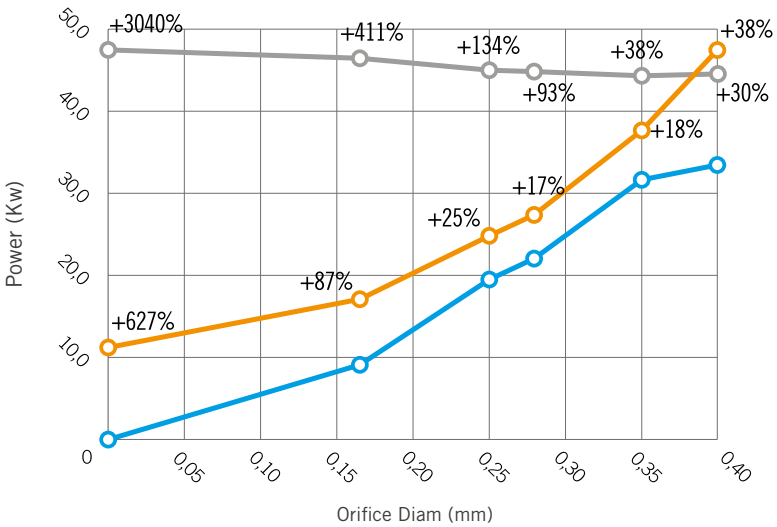


Air/Oil heat exchanger (std)



TOUCH CONTROL 17" for remote diagnostics, power check, cycle numbers and pressure electronic management (only on Tecnocut Greenjet Evo stand alone version)

### 4139 BAR INTENSIFIER CONSUMPTION: ELECTRIC VS HYDRAULIC





# EASYJET DDX SOFTWARE

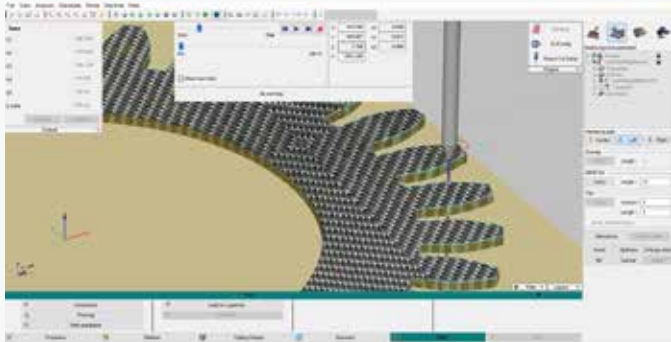
Easyjet is a complete CAD/CAM suite for all-round management of every aspect of the 3 and 5-axis waterjet machining, that eliminates purchasing costs, maintenance and training of further third-party software products.

### THE GENERAL FUNCTIONS INCLUDE:

- Graphic management of the zoom and shift tools
- 3D and photo-realistic rendering of the project
- Functions to measure the profile and analysis of the individual entities
- Functions to delete and reset the most recent operations
- Option to configure the parameters database online to share it with numerous software stations
- Automatic e-mail management to request assistance
- Hydraulic pump with varying flows.
- Python Module and Scl included to customise software and interface with other systems

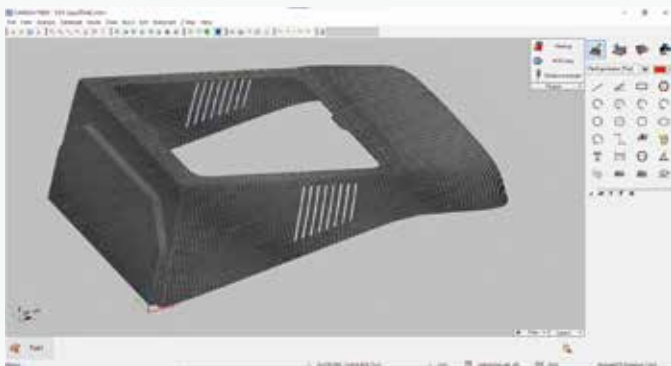
### THE CAD FUNCTIONS INCLUDE:

- Free drawing of geometrical entities like arches, lines, polylines, rectangles, squares, ellipses, circles, regular polygons, radii, clippings, nurbs, etc..
- Advanced surface drawing (loft, swept, polimesh, gordon) curve grid surface drawing
- PNT importing
- Definition of the surface using a point file elaborated by a laser scan
- Interactive change of surfaces, even complex ones, to insert chamfers, trimmings, insertion of sloping sides etc
- Definition of construction tables
- Associating different colours to each tool path
- Change and elaboration of projects (shearing, extension, sub-division, union, interpolation, duplicate, symmetrical, rotation, deletion, etc..)
- Importing DXF, ISO, IGES, STEP, PARASOLID, 3DM and STL files
- Dimensioning

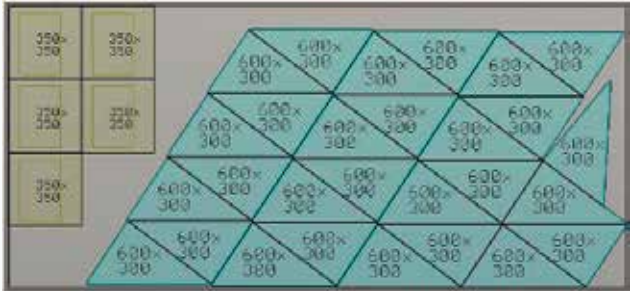


### THE CAM FUNCTIONS INCLUDE:

- Automatic generating of cutting paths with WaterJet head
- Automatic generation of input and output paths, boring included with interactive graphic change (optional)
- Continuous automatic management of the feeling cycles, at the start of the profile or the sole detection of the plate thickness
- Interpolated 5-axis control + 1
- Estimating project times and costs.
- Production of the ISO program optimised for the CNC
- Cutting management in common with the different algorithms to optimise the tool path
- Cutting with semi-automatic technology in the space.
- Automatic and/or custom-designed optimisation of the machining sequence to reduce cycle times.
- Automatic and/or manual management of the micro-joints and bridges.
- Cam-Auto module to automatically and intelligently create machining technology



In addition, the Easyjet software has powerful, fast multiple nesting algorithms in the work area, even with entities that differ from one another, with the possibility of graphically changing the arrangement of the objects and defining customised points of origin.



The JDE plug-in is included in the package to manage the cutting technologies archived in a complete materials database. The machine program is automatically generated on the basis of the selection of the cutting quality required out of 5 options (Q1, Q2, Q3, Q4 and Q5) that establish the speed advancement and acceleration settings in the internal/external corners. The ISO program can then be transferred to the machine using the local network or via USB drive.

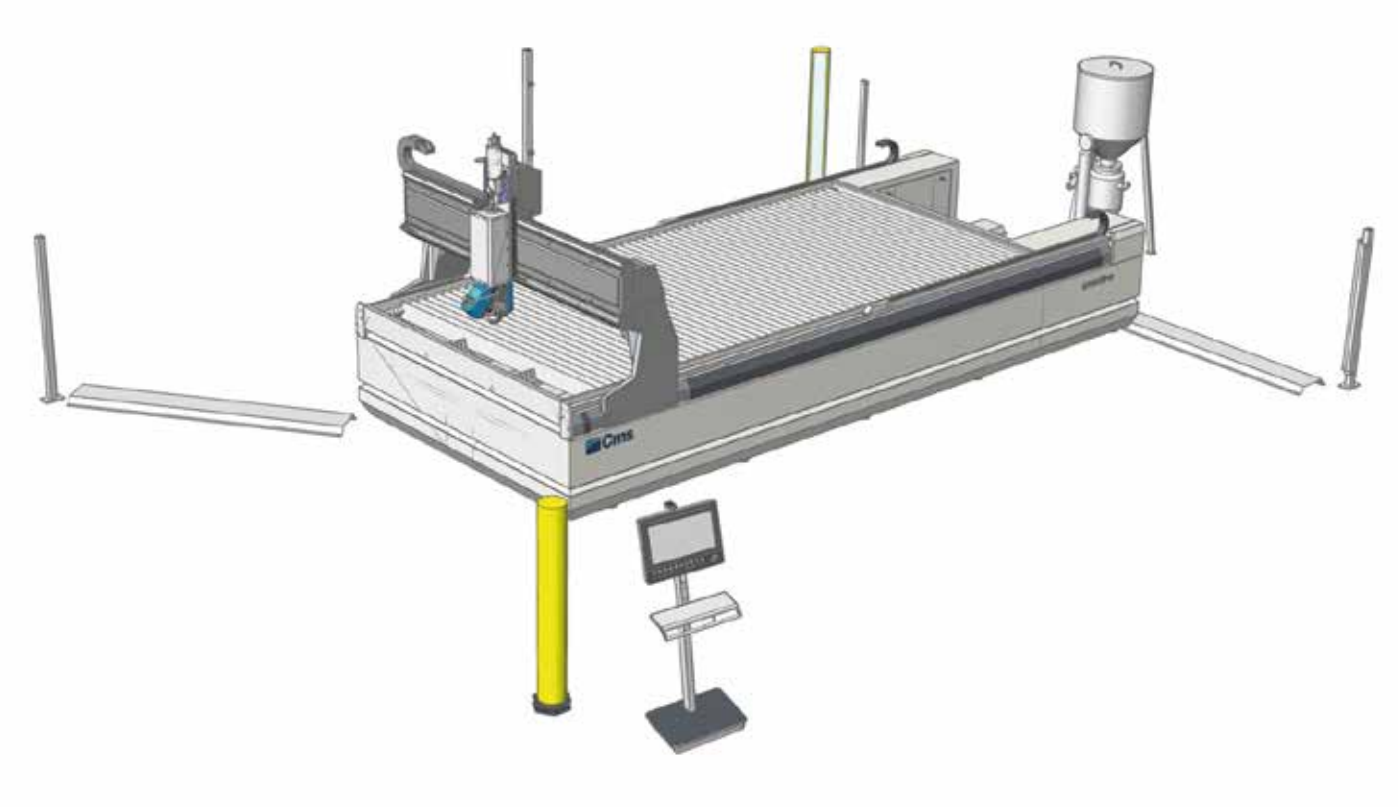
The correct setting of the machining parameters can be checked in advance thanks to the 3D simulation of the machining process using a 3D graphic model of the CNC that reproduces the table, handling axes, tool and pieces arranged on the table.





TECNOCUT SMARTLINE

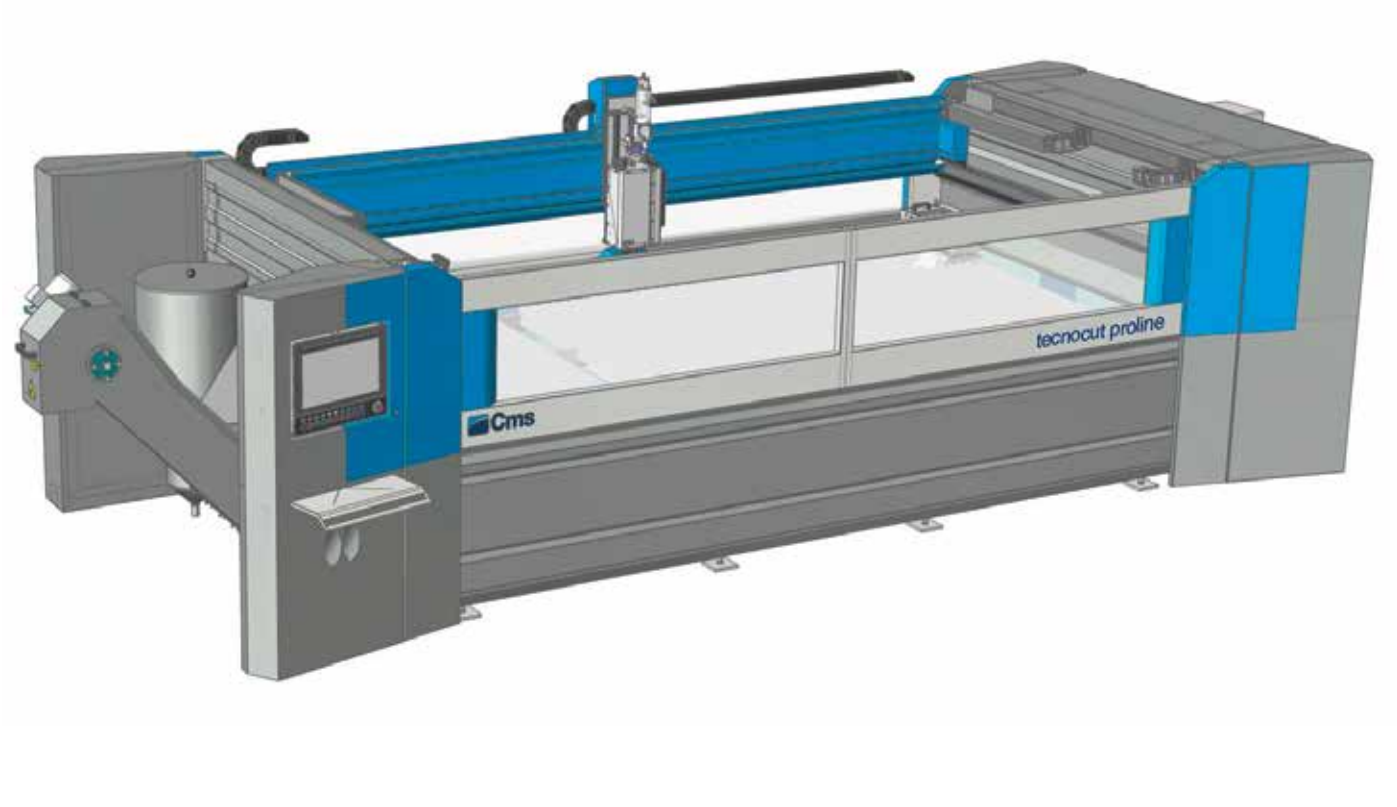
OVERALL DIMENSIONS AND TECHNICAL DATA



TECNOCUT SMARTLINE: TECHNICAL DATA			
MODEL	2030	2040	2060
X AXIS	3000 mm	4000 mm	6000 mm
Y AXIS	2000 mm	2000 mm	2000 mm
Z AXIS	250 mm (150 mm with 5-axis head)	250 mm (150 mm with 5-axis head)	250 mm (150 mm with 5-axis head)
B AXIS	+/- 60°	+/- 60°	+/- 60°
RAPID SPEED	50 m/min	50 m/min	50 m/min
ACCELERATION	3 m/s2	3 m/s2	3 m/s2
SUPPORT PLANE	3379 x 2080 mm	4150 x 2080 mm	6610 x 2080 mm
OVERALL DIMENSIONS WITH LIGHT BARRIERS	4520 x 4500 mm	7400 x 4500 mm	11500 x 4500 mm

TECNOCUT PROLINE

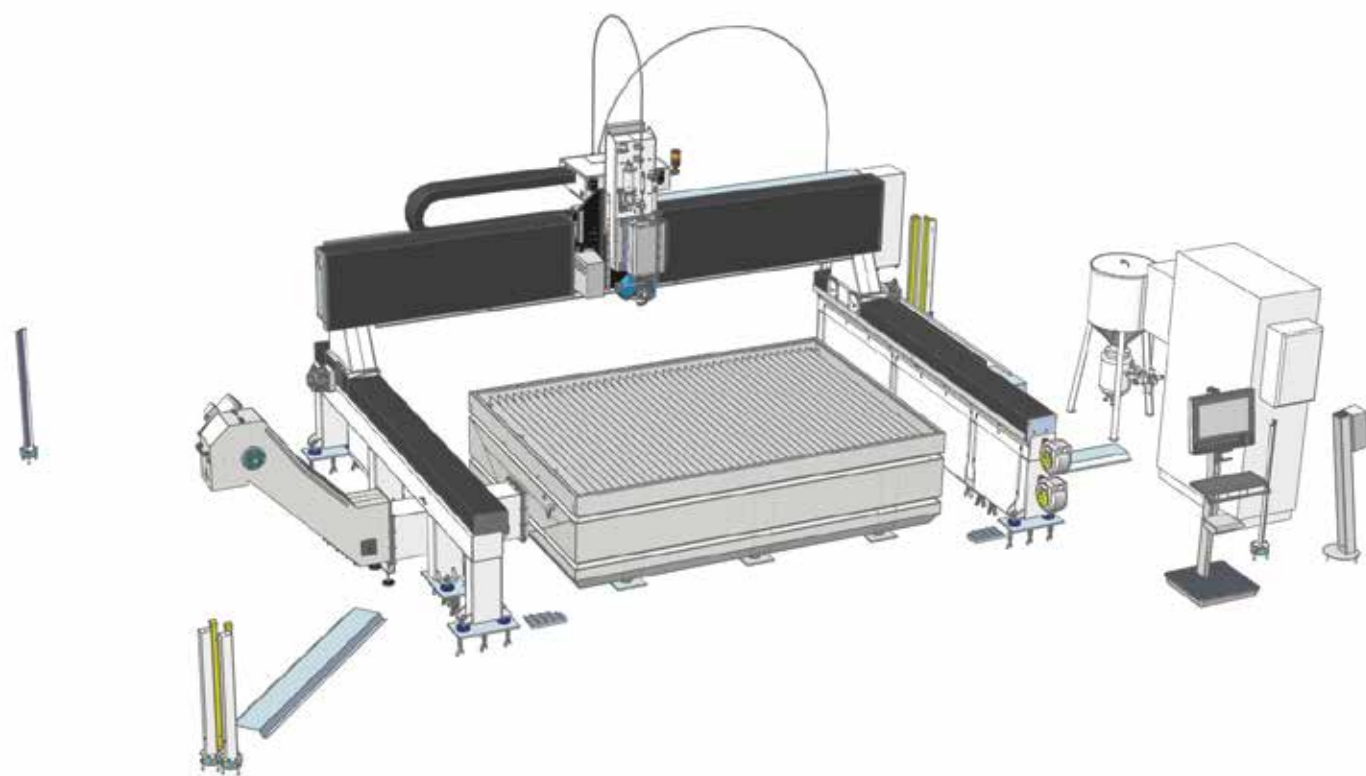
OVERALL DIMENSIONS AND TECHNICAL DATA



TECNOCUT PROLINE: TECHNICAL DATA		
MODEL	1730	2040
X AXIS	3250 mm	4250 mm
Y AXIS	1700 mm	2000 mm
Z AXIS	300 mm (200 mm with 5-axis head)	300 mm (200 mm with 5-axis head)
B AXIS	+/- 60°	+/- 60°
RAPID SPEED	40 m/min	40 m/min
ACCELERATION	1 m/s2	1 m/s2
SUPPORT PLANE	3379 x 2080 mm	4150 x 2080 mm
OVERALL DIMENSIONS WITH LIGHT BARRIERS	4520 x 4500 mm	7400 x 4500 mm

# TECNOCUT AQUATEC

## OVERALL DIMENSIONS AND TECHNICAL DATA



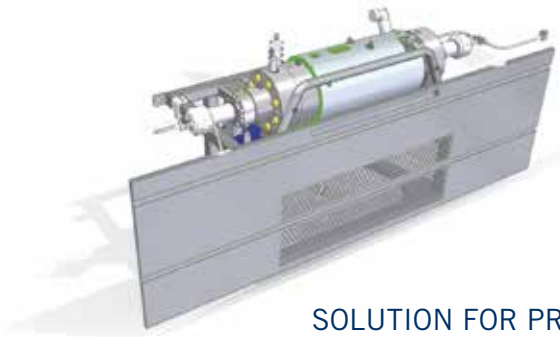
TECNOCUT AQUATEC: TECHNICAL DATA				
MODEL	2030	2040	2060	3060
X AXIS	3800 mm	4000 mm	6000 mm	6000 mm
Y AXIS	2650 mm	2000 mm	2000 mm	3000 mm
Z AXIS	650 mm	650 mm	650 mm	650 mm
B AXIS	+/- 60°	+/- 60°	+/- 60°	+/- 60°
RAPID SPEED	54 m/min	54 m/min	54 m/min	54 m/min
ACCELERATION	2 m/s2	2 m/s2	2 m/s2	2 m/s2
SUPPORT PLANE	3210 x 2195 mm	4210 x 2195 mm	6210 x 2195 mm	6210 x 3195 mm
OVERALL DIMENSIONS WITH LIGHT BARRIERS	5765 x 7830 mm	5765 x 7830 mm	5765 x 12850 mm	5765 x 12850 mm

# PRESSURE INTENSIFIERS

## TECHNICAL DATA



TECNOCUT JETPOWER EVO: TECHNICAL DATA		
MODELLO	JETPOWER EVO 30 HP	JETPOWER EVO 60 HP
POTENZA	22,5 kW	45 kW
MOLTIPLICATORI	2	3
PRESSIONE MAX DI FUNZIONAMENTO	4150 bar	4150 bar
PORTATA D'ACQUA MAX	2,5 L/min	5 L/min
DIAMETRO MAX ORIFIZIO	0,28 mm	0,40 mm
TENSIONE	400V +/- 5% 50-60 Hz (Diverse tensioni e frequenze su richiesta)	



SOLUTION FOR PROLINE

TECNOCUT GREENJET EVO: TECHNICAL DATA		
MODEL	GREENJET 4139 SA	GREENJET 6200 SA
POWER	34 kW	34 kW
MULTIPLIERS	2	2
MAX FLOW PRESSURE	4139 bar	6200 bar
MAX WATER PRESSURE	5 L/min	2,61 L/min
MAX ORIFICES DIAMETER	0,4 mm	0,28 mm
VOLTAGE	400V +/- 5% 50-60 Hz (Different voltages and frequencies on request)	



# CMS connect the IoT platform perfectly integrated with the latest-generation CMS machines

CMS Connect is able to offer customised micro services through the use of IoT Apps that support the daily activities of industry operators - improving the availability and use of machines or systems. The platform displays, analyses and monitors all data from connected machines. The data collected by the machines in real time become useful information increase machine productivity, reduce operating and maintenance costs and cut energy costs.



# CMS active a revolutionary interaction with your CMS machine

Cms active is our new interface. The same operator can easily control different machines as the CMS Active interfaces maintain the same look&feel, icons and iteration approach.



## APPLICATIONS

**SMART MACHINE:** Section designed for the continuous monitoring of machine operation, with information on:

**Status:** machine status overviews. The representations provided allow machine availability to be checked - to identify possible bottlenecks in the production flow.

**Monitoring:** instantaneous, live display of the operation of the machine and its components, of currently running programs and potentiometers;

**Production:** list of machine programs run within a given timeframe with best time and average running time;

**Alarms:** active and historical warnings.

### SMART MAINTENANCE

This section provides a first approach to predictive maintenance by sending notifications when machine components indicate a potentially critical state associated with reaching a certain threshold. In this way, it is possible to take action and schedule maintenance services, without any downtime.

### SMART MANAGEMENT

Section designed for KPI presentation for all the machines connected to the platform. The indicators provided assess of the availability, productivity and

efficiency of the machine and the quality of the product.

### MAXIMISED SECURITY

CMS Connect uses the standard OPC-UA communication protocol, which guarantees the encryption of data at Edge interface level. CMS Connect's Cloud and DataLake levels meet all state-of-the-art cyber-security requirements. Customer data are encrypted and authenticated to ensure total protection of sensitive information.

## ADVANTAGES

- ✓ Optimisation of production performance
- ✓ Diagnostics to support components warranty optimisation
- ✓ Productivity increase and downtime reduction
- ✓ Improvement of quality control
- ✓ Maintenance costs down

### EASY OF USE

The new interface has been specially developed and optimized to be immediately used via touch screen. Graphics and icons have been redesigned for user-friendly and comfortable navigation.

### ADVANCED ORGANIZATION OF PRODUCTION

CMS Active enables configuring different users with different roles and responsibilities according to the operation mode of the machining center (e.g.: operator, maintenance man, administrator, ...).

It is also possible to define the work shifts on the machining center and then survey activities, productivity and events that have occurred in each shift.

### ABSOLUTE QUALITY OF THE FINISHED WORKPIECE

With CMS Active the quality of the finished workpiece is no longer jeopardized by worn-out tools. The new Tool Life Determination system of CMS Active sends warning messages when the tool life is running out and recommends its replacement at the most appropriate time.

### TOOL SET-UP? NO PROBLEM!

CMS Active guides the operator during the tool magazine set-up phase, also allowing for the programs to be run.

# CMS ADVANCED MATERIALS TECHNOLOGY RANGE OF MACHINES

## MONOBLOC CNC MACHINING CENTERS FOR VERTICAL MILLING



**ARES**



**ANTARES**



**ANTARES K**



**VM 30**



**ETHOS K**

## GANTRY CNC MACHINING CENTERS FOR LARGE-SIZE WORK AREAS



**MX5**



**POSEIDON**



**ETHOS**



**CONCEPT**

## HYBRID SYSTEM FOR ADDITIVE MANUFACTURING AND MILLING



**KREATOR ARES**

## MONOBLOC CNC MACHINING CENTERS FOR HORIZONTAL MILLING



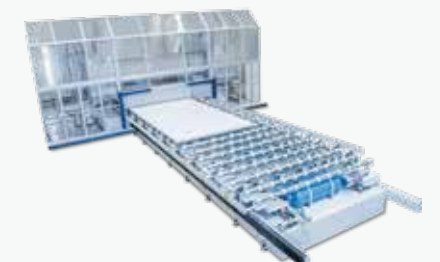
**IKON**

# FOR COMPOSITE MATERIALS, ALUMINUM AND METAL PROCESSING

## FIXED AND MOBILE BRIDGE CNC MACHINING CENTERS



**FXB**



**AVANT**

## CNC MACHINING CENTER FOR THE EYEWEAR INDUSTRY



**MONOFAST**

## WIND BLADE WORKING SYSTEMS



**EOS**

## CNC MACHINING CENTERS FOR GUNSTOCKS PROCESSING



**MULTILATHE**



**MONOFAST**



**KARAT**

## WATERJET CUTTING SYSTEMS



**TECNOCUT PROLINE**



**TECNOCUT SMARTLINE**





**C.M.S. SPA**

via A. Locatelli, 123 - 24019 Zogno (BG) - IT

Tel. +39 0345 64111

[info@cms.it](mailto:info@cms.it)

[cms.it](http://cms.it)

a company of **scm**  **group**