

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.

CMS 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.



CMS Glass Technology is a leader in the field of curved and flat glass working with technologically advanced solutions such as numerically controlled machining centres, cutting benches and water-jet cutting systems. Thanks to the tradition and experience of the historic brands Brembana and Tecnocut, today **CMS Glass Technology** is an absolute protagonist in this sector for the manufacturing of innovative solutions dedicated to architecture and interior decoration.

waterjet

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| APPLICATIONS | 4-5 |
| EASYLINE - SMARTLINE - PROLINE - AQUATEC TECHNOLOGICAL BENEFITS | 6-15 |
| WATERJET MACHINE CONFIGURATION STANDARD/OPTIONALS | 16-19 |
| EASYLINE - SMARTLINE - PROLINE - AQUATEC STANDARD ACCESSORIES / OPTIONALS | 20-29 |
| PRESSURE INTENSIFIERS | 30-37 |
| EASYJET DDX SOFTWARE | 38-39 |
| OVERALL DIMENSIONS AND TECHNICAL DATA | 40-45 |
| CMS CONNECT / ACTIVE | 46-47 |
| THE GROUP | 48-49 |
| THE RANGE | 50-51 |



APPLICATIONS



refrigerating display cabinets | bathroom and kitchen tops | interior furnishing | yacht portholes



windshields and automobile windows | facades and windows | staircases | safety glass

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

The **UNIQUE** waterjet cutting machines.

Waterjet cutting systems

WATERJET MACHINES FOR GLASS PROCESSING



EASYLINE

The agile, versatile solution to access the world of waterjet cutting



SMARTLINE

The Smart solution for large amounts of production volumes with high standards of excellence



PROLINE

The technologically most advanced solution for more complex applications



AQUATEC

The most robust modular solution on the market for machining large shapes

EASYLINE

TECHNOLOGICAL BENEFITS

3- AND 5-AXIS WATER JET CUTTING SYSTEM

Easyline is a high-performance, versatile, modular water jet cutting system - either pure or hydroabrasive - which can be employed in a number of application fields for the most diverse production demands.

- The cantilever structure, with a separate tank, allows an easy access to the worktable. Loading and removing material is quick and easy.
- All axes' motions are carried out through hardened and ground rack and pinion.
- The thermowelded bellows provide complete protection of the guides and the rack from water and dust.
- The steel structure undergoes an anti-rust treatment through sandblasting and ceramic painting, which results in a higher resistance against corrosion.
- The tank is set up for the installation of a dredge system for the abrasive removal

KEY BUYER BENEFITS

- + Easy operation: the cantilever structure with separate catch tank offers easy access on 3 sides to load and unload the material.
- + Easy maintenance: The tank with special anti-rust ceramic painting is designed to fit the new Evo4 chain dredge for exhausted abrasive removal even later after installation, with 91% less maintenance costs.
- + Easy sealing: The heat-sealed bellows provide complete protection of linear guides and racks from dust and water during the cutting, guaranteeing long lifetime without affecting the cutting quality.
- + The versatility of waterjet to cut a wide range of materials, with custom solutions to increase th productivity up to 55%, like single or double tank pendulum cycle or the multiple cutting heads configuration.



Console on a mobile trolley with 21.5" touch screen (optional)



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



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

SMARTLINE

TECHNOLOGICAL BENEFITS

3- AND 5-AXIS WATER JET CUTTING SYSTEM

Smartline is designed to redefine industry standards of excellence by improving operating efficiency, while maintaining CMS' renowned reputation for unparalleled construction and working quality. It includes all the safety and performance features typical of CMS Waterjet machines, in a brand new, innovative, and compact design.

- The open frame structure with electric gantry and linear guides integrated in a sturdy tank allows an easy access to the worktable. Loading and removing material is quick and easy.
- All axes' motions are carried out through hardened and ground rack and pinion.
- The thermowelded bellows provide complete protection of the guides and the rack of x-axis from water and dust. On Y-axis, instead, the protection is guaranteed by a set of sheet metal panels.
- The steel structure undergoes an anti-rust treatment through sandblasting and ceramic painting, which results in a higher resistance against corrosion.
- The tank is set up for the installation of a chain system for the exhausted removal



KEY BUYER BENEFITS

- + Excellent access to the cutting area, the cantilever structure with separate catch tank offers easy access on 3 sides to load and unload the material.
- + The catch tank with special anti rust ceramic painting is designed to fit the new Evo 4 chain dredge for exhausted abrasive removal even later after installation with 91% less maintenance costs.
- + Rapid speed up to 50 m/ min and acceleration up to 3 m/s² top notch performance in the category to get maximum productivity with 3 and 5 axis configuration.
- + High price/performance ratio for a cutting solution configurable to satisfy every application needs based on customer s investment plan.



Console on a mobile trolley with 21.5" touch screen (optional)



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



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



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

PROLINE

TECHNOLOGICAL BENEFITS

HYDRO-ABRASIVE WATERJET CUTTING SYSTEM

A genuine machining center, conceived and designed with advanced technical solutions for the waterjet cutting technology, in order to achieve unmatched performance.

Proline is built around a stainless-steel frame ready for integration with the “dredge”, a fully automated and maintenance free abrasive removal system, an automatic water level control and rotating axes for pipes processing. This innovative, easy configurable concept has not only the abrasive bulk hopper installed on-board, but also the electric servodriven high-pressure pump is integrated with the machine frame, a big saving in terms of overall layout.

The gantry structure can guarantee maximum reliability over the years, thanks to tempered and ground racks and spiral pinions combined with gearbox that have a backlash of less than 1 arcmin.

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.

- more versatile: endless standard arrangements to adapt to new production requirements
- faster: NC and digital drivers to speed up the programming of the machine and its accessories
- more compact: all the accessories are built into the base structure for fast and easy installation
- simpler: reduced installation times and re-commissioning

KEY BUYER BENEFITS

- + 35% of layout with respect to previous models, thanks to the integration of the abrasive bulk hopper and high-pressure pump
- + It can be fitted with up to 2 electric and servo-driven pumps, 4150 or 6200 bar available pressure, with the aim to achieve the highest throughput and cutting versatility also when working especially hard or thick materials
- + Machine is ready for easy integration with optional such as the chain dredge system, the rotary option and the water level control for submerged cutting, to accommodate specific applications and the most demanding production requirements.
- + ± 0.035 mm of positioning accuracy and ± 0.025 mm of repeatability to guarantee cutting quality and accuracy



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

AQUATEC

TECHNOLOGICAL BENEFITS

3- AND 5-AXIS HYDRO-ABRASIVE WATERJET CUTTING SYSTEM

Aquatec is an advanced, versatile, high-performance abrasive waterjet cutting system, able to accommodate the most diverse production demands in different application fields, delivering highly accurate cuts. The machine consists of a mobile bridge moving along separate high-thickness steel supports, fastened to the floor and providing outstanding structural rigidity. This structure delivers high performances even by the most demanding tasks.

- The motions - including the one of the cutting head - are carried out by high precision tempered ground rack, driven by brushless motors.
- Steel guards and the polyurethane bellows protect all motion components from water and powders.
- Loading and unloading the material is fast and simple thanks to 2 or 4 open sides, as well as checking the cutting process. Moreover it allows to possibly install additional equipment to handle the material.



KEY BUYER BENEFITS

- + Unmatched cutting performance: the open frame structure with electric gantry on two separate thick supports on a basement anchored to the floor offer high rigidity even with rapid speed up to 54 m/ min e acceleration up to 2 m/s².
- + The most compact solution on the market with infinite rotation 33% less cutting cycle avoiding to recover the revolutions of the C axis to align internal wires and tubes.
- + Access of worktop from 4 sides: excellent access to the cutting area, the large gantry and modular frame allow configurations with wide space around the catch tank for easy loading and unloading operations.
- + High flexibility to maximize the productivity: the modular structure of frame and catch tank offer high flexibility for most demanding customers looking for large format heavy duty cutting solutions.



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

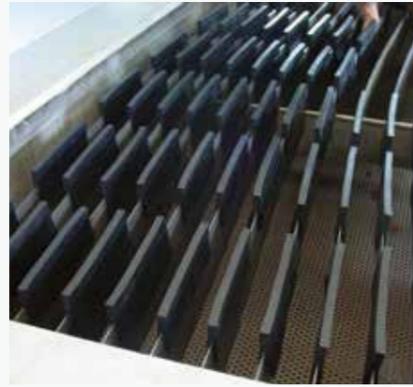
WORKING TABLES



Standard Grid (std)



Anti-reflective surface (opt)



Anti-reflective table for glass (opt)



3-AXIS CUTTING 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 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 scrape materials. In addition, a vacuum sensor connect to the mixing chamber constantly detect 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 +/- 62°, all designed and produced by the CMS engineers.

SPECIFICATIONS

- Compact design
- Cutting from 0° to 62°
- 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° tilt angle
- 3D machining
- Possibility to carry out countersinking and chamfering for ready-to-weld profiles
- Easy maintenance

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.



CROSS LASER

Cross Laser device for setting one or multiple starting point on the sheet positioned on the cutting table.



AUTOMATIC HOSE REEL

Air and water sprayer kit to clean table and material after the cut.

EASYLINE

OPTIONALS



Additional Z axis to increase cycle productivity while cutting with two 3-axis heads; The X-axis stroke is reduced to 1490 mm to get a minimum distance of 510 mm (opt).

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.



Solution with double tank for pendular working.

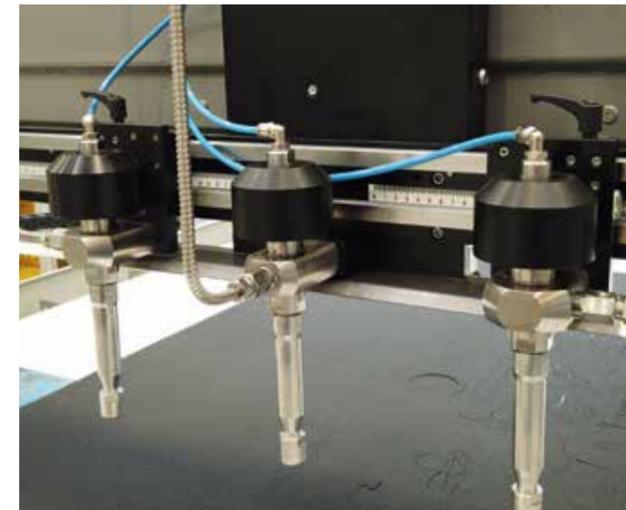
Air conditioning system of the machine's electrical cabinet to keep internal temperature between 35°C and 40°C.



SMARTLINE

OPTIONALS

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.



MULTI-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.



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

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.

PROLINE

OPTIONALS

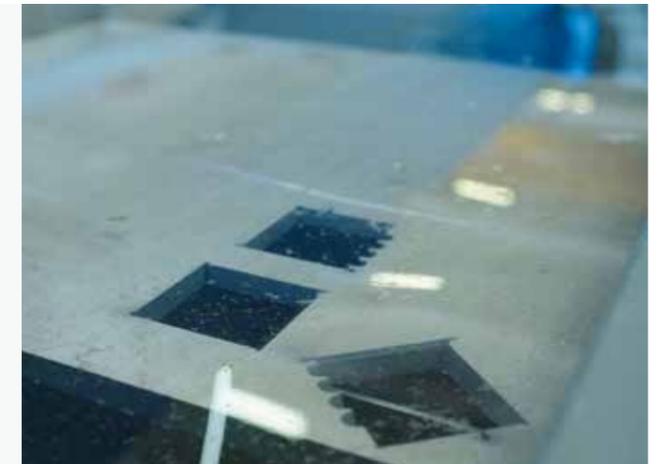


PRESSURIZED ABRASIVE FEEDING SYSTEM 330 KG

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.

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 MATERIAL 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 possible to top up the abrasive material while the machine is processing.

PROLINE OPTIONALS



AUTOMATIC TCP DETECTION

- Automatic laser detection system of the cutting head alignment with respect to the rotation center of the C axis and B axis with the aim of:
- compensating the misalignment of the cutting head in the event of a collision
 - accurately calculating the XY positions of the focusing device before carrying out processing work with particularly strict tolerance requirements. The device is incorporated into the base and installed on a pop-up tray
 - load the same ISO program on several 5-axis machines



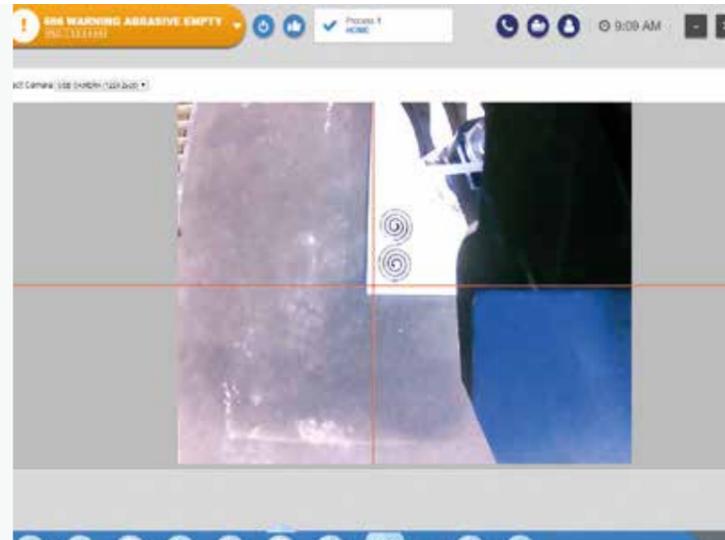
ALIGNMENT LASER PROJECTOR
Optional device to project a laser line onto the work surface that helps the operator to position and align the material before cutting.

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 FOR ORIGIN ACQUISITION

The innovative system featuring a camera built into the Z axis, allows the work area to be framed and acquire one or more origins on the material to cut. This allows the operator to perform all the cutting preparation and programming operations without ever moving from the control panel.



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.

AQUATEC

OPTIONALS

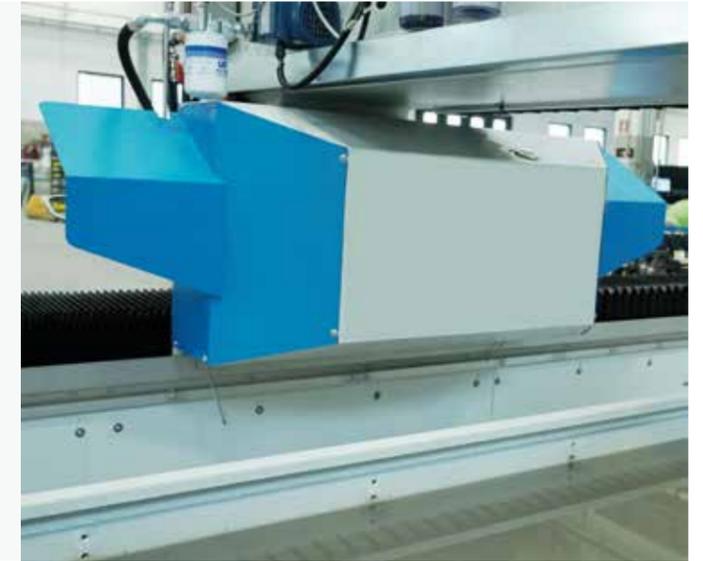
AREA CLEANING DEVICE

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.



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.



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.



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.

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.



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 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.



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

Double tank solution for pendular working.



PRESSURE MULTIPLIERS



EASYPUMP

The multiplier with parallel cylinders ideal for those interested in the world of waterjet



JETPOWER EVO

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



GREENJET EVO

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

EASYPUMP

HIGH-PRESSURE INTENSIFIER

PRESSURE INTENSIFIER ENTIRELY MADE BY CMS

CMS has developed a new concept of high-pressure intensifiers: two or three parallel, independent and electronically synchronized pressure multipliers, which deliver a constant pressure while eliminating the need of an attenuator, a typical feature of old, traditional 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 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 reduce the High pressure components wear and consequently the maintenance costs.
- + Sealed cover with soundproof panels to guarantee High noise reduction while the intensifier is working.

fig. 1 Traditional opposing-cylinders intensifier

Pressure

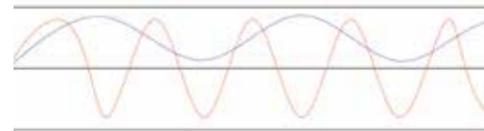
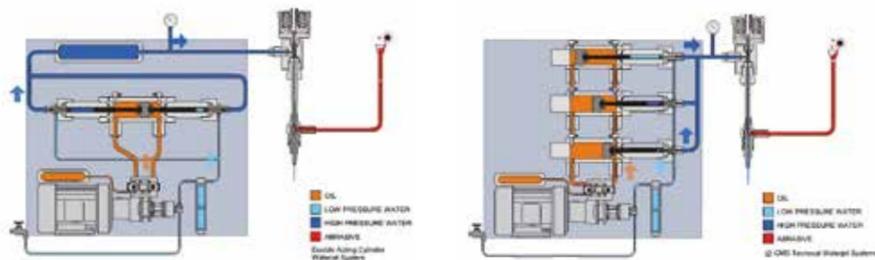


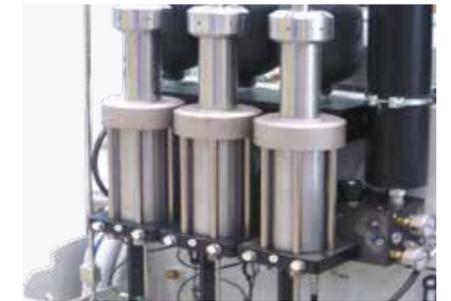
fig. 2 CMS parallel cylinders intensifier



Nitrogen accumulator for managing the hydraulic cylinders return circuit



Pressure check and functioning of the intensifier managed directly from the console



Pressure multipliers



Gear hydraulic pump



"Noiseless" system

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 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 everconstant pressure avoiding any drops typical of traditional opposecylinder intensifiers.

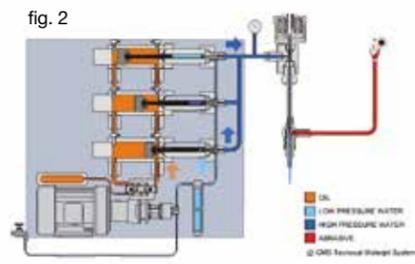
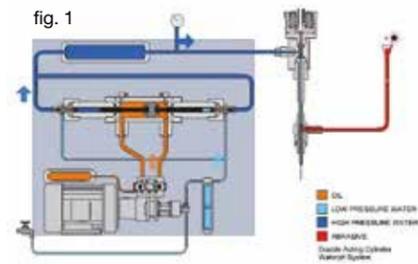
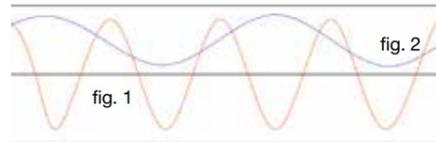
KEY BUYER BENEFITS

- + Hydraulic intensifier with 2 or 3 independent and electronically synchronized parallel cylinders to guarantee a constant signal of output pressure without the use of 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 reduce 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 hydraulic circuit.

fig. 1 Traditional opposing-cylinders intensifier

fig. 2 CMS parallel cylinders intensifier

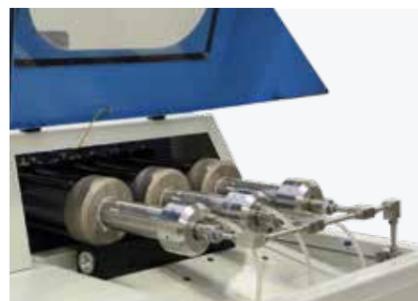
Pressure



Hydraulic unit



Software-based electronic control of cutting pressure



Pressure multipliers



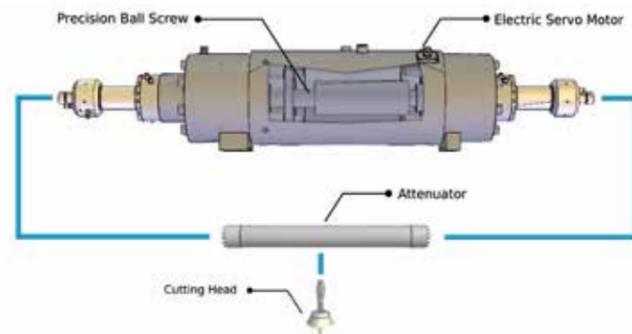
Oil/air heat exchanger

GREENJET EVO

TECHNOLOGISCHE VORTEILE

THE HIGHEST LEVEL OF EFFICIENCY WITH MAXIMUM SAVING

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. 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 generate 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.



CONTROL PANEL

Near the electric pressure intensifiers it's available a 4.3" touch panel to set the running parameters during service operations and hydraulic and high pressure diagnostic.



HEAT EXCHANGER

Air/oil heat exchanger for working environments with a temperature up to 30°C. The solution allows for the consumption of water typical of water/oil cooling systems to be reduced, keeping noise levels down while operating.



SERVOMOTOR

The high pressure is generated by the movement of a recirculating screw driven by a female screw directly keyed on a direct drive torque motor controlled by an inverter for less wear and greater performance.

EASYJET DDX SOFTWARE

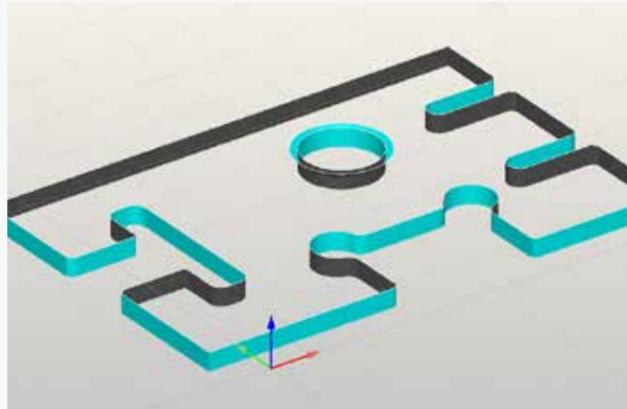
Easyjet is a complete CAD/CAM suite for all-round management of every aspect of the 3 and 5-axis waterjet machining, that eliminates purchasing costs, maintenance and training of further third-party software products.

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 on-line 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

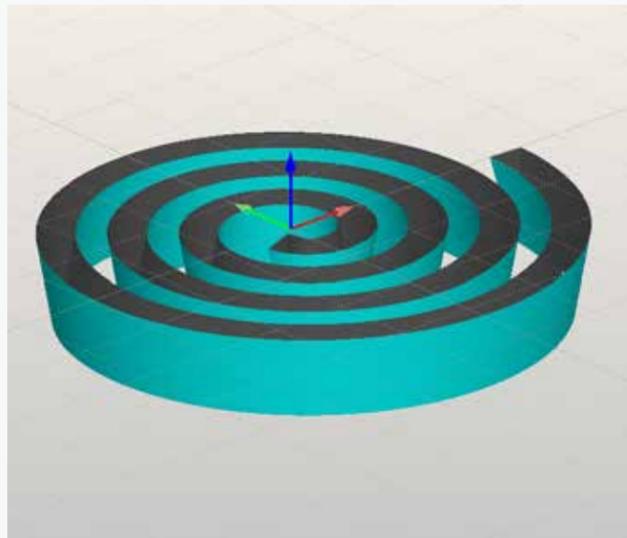
THE CAD FUNCTIONS INCLUDE:

- 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

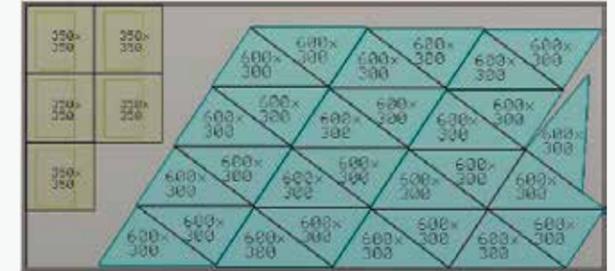


THE CAM FUNCTIONS INCLUDE:

- 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
- Projection cutting management, adhesion and development for pipe machining.
- 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.



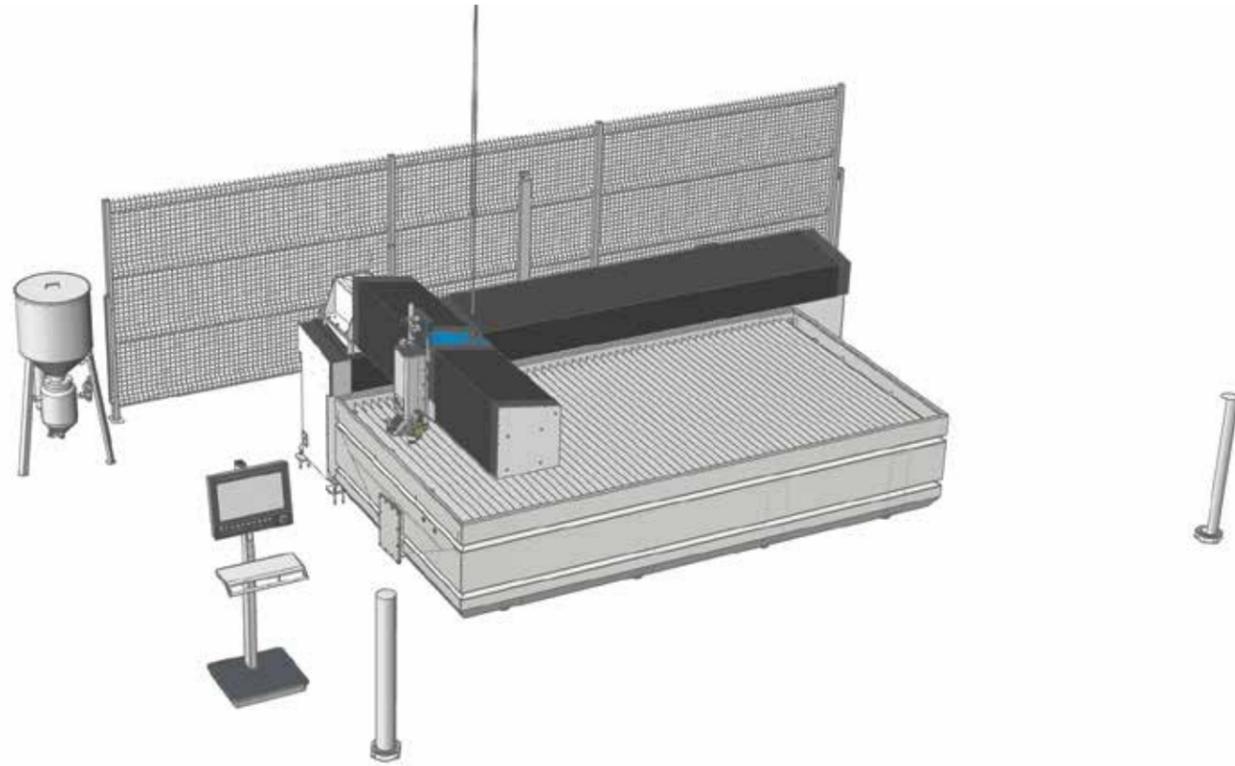
The JDE plug-in is included in the package to manage the cutting technologies archived in a complete materials database. The machine program is automatically generated on the basis of the selection of the cutting quality required out of 5 options (Q1, Q2, Q3, Q4 and Q5) that establish the speed advancement 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



EASYLINE

TECHNICAL DATA

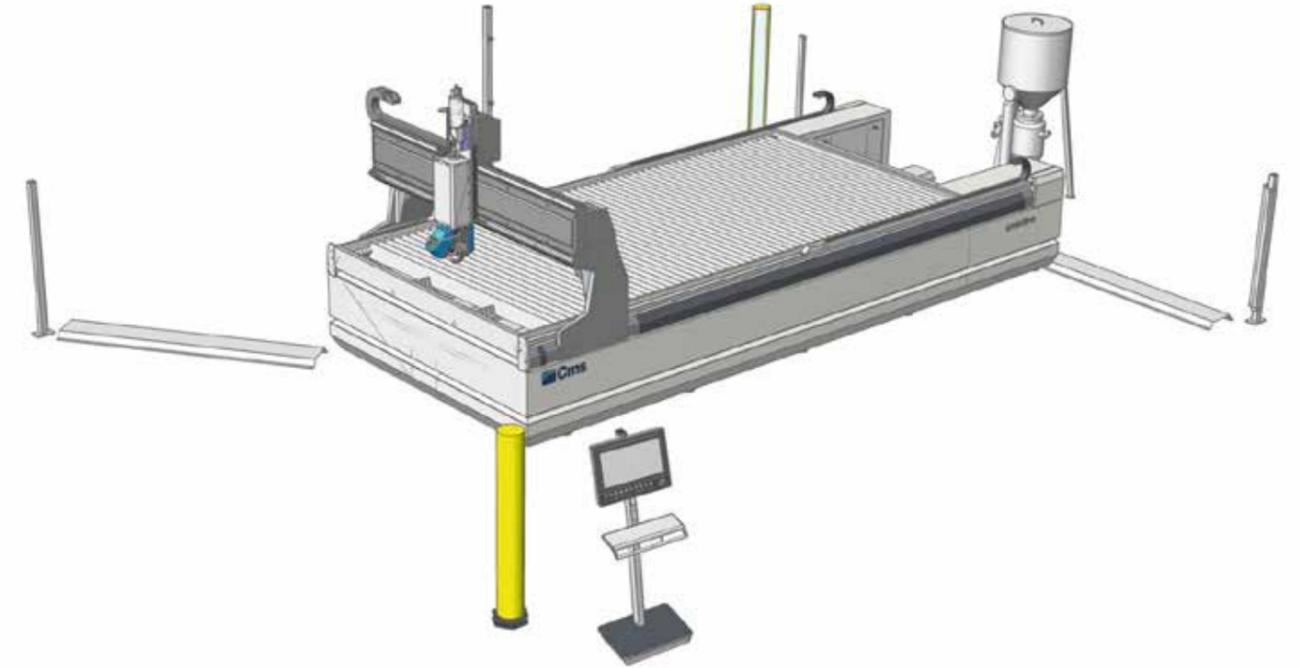


EASYLINE: TECHNICAL DATA

| MODEL | 1010 | 2020 | 2040 | 2060 |
|--|--|--|--|--|
| X AXIS | 1000 mm | 2000 mm | 4000 mm | 6000 mm |
| Y AXIS | 1000 mm | 2000 mm | 2000 mm | 2000 mm |
| Z AXIS | 220 mm (150 mm with 5-axis head) |
| B AXIS | +/- 60° | +/- 60° | +/- 60° | +/- 60° |
| SUPPORT PLANE | 1210 x 1225 mm | 2210 x 2225 mm | 4210 x 2225 mm | 6210 x 2225 mm |
| OVERALL DIMENSIONS WITH LIGHT BARRIERS | 4680 x 4174 mm | 5680 x 5174 mm | 5680 x 7208 mm | 5680 x 9242 mm |

SMARTLINE

TECHNICAL DATA



SMARTLINE: TECHNICAL DATA

| MODEL | 2040 |
|--|-------------------------------------|
| X AXIS | 4000 mm |
| Y AXIS | 2000 mm |
| Z AXIS | 250 mm (150 mm with 5-axis head) |
| B AXIS | +/- 60° |
| SUPPORT PLANE | 4150 x 2080 mm |
| OVERALL DIMENSIONS WITH LIGHT BARRIERS | 5595 x 7400 mm |

PROLINE

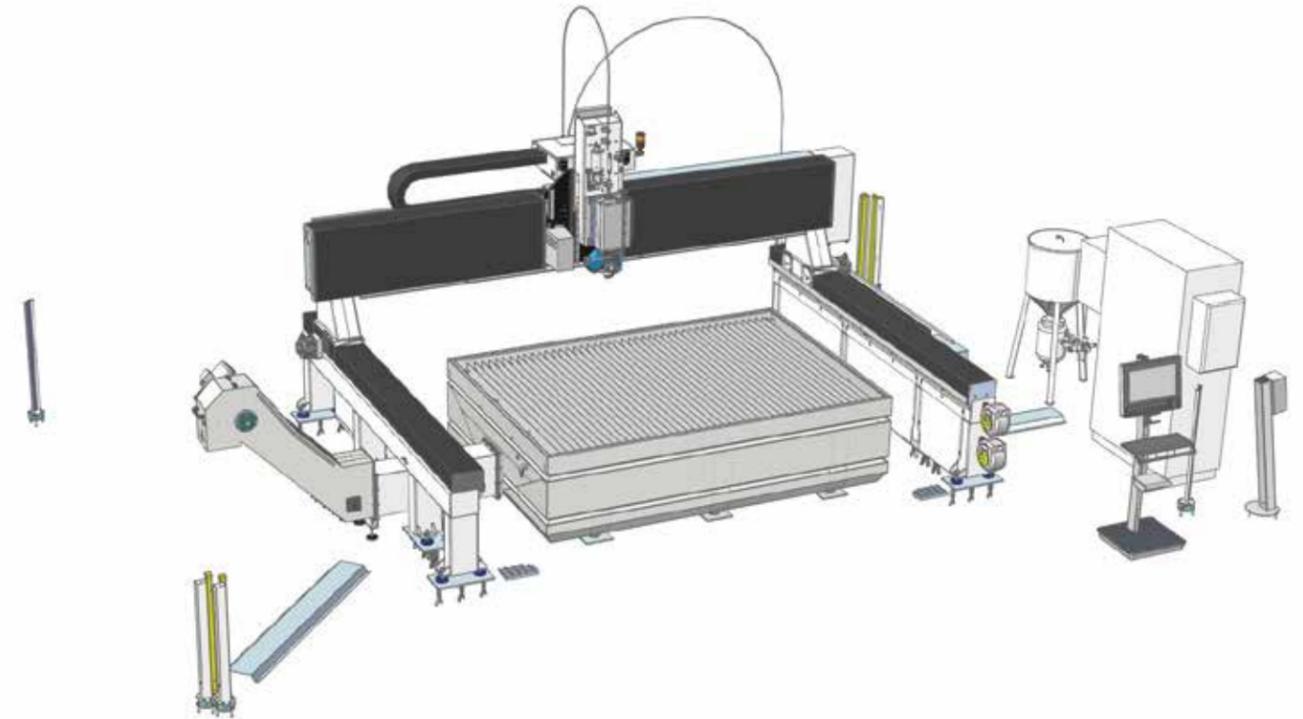
TECHNICAL DATA



| PROLINE: TECHNICAL DATA | | |
|-----------------------------|------------------------|------------------------|
| MODEL | 1730 | 2040 |
| X AXIS STROKE (1 HEAD) | 3250 mm | 4250 mm |
| Y AXIS STROKE | 1700 mm | 2000 mm |
| Z AXIS STROKE (3-AXIS HEAD) | 300 mm | 300 mm |
| Z AXIS STROKE (5-AXIS HEAD) | 200 mm | 200 mm |
| C AXIS (5 AXIS ONLY) | Infinite | Infinite |
| B AXIS (5 AXIS ONLY) | ± 62° | ± 62° |
| XY AXIS RAPID SPEED | 40000 mm/min | 40000 mm/min |
| WORKTABLE SIZE XY | 3820 x 1920 mm | 4820 x 2220 mm |
| WORKTABLE LOAD CAPACITY | 1000 kg/m ² | 1000 kg/m ² |
| POSITION ACCURACY | ± 0,035 mm | ± 0,035 mm |
| POSITION REPEATABILITY | ± 0,025 mm | ± 0,025 mm |
| INSTALLED POWER | 6 kW | 6 kW |
| FOOTPRINT LXPXH | 6930 x 3180 x 3900 mm | 7290 x 3480 x 3900 mm |
| WEIGHT MAX (EMPTY) | 6500 kg | 8000 kg |

AQUATEC

TECHNICAL DATA



| AQUATEC: TECHNICAL DATA | | | | | |
|-------------------------|---|---|---|-------------|-----------------------|
| MODEL* | 2030 | 2040 | 6030 | RAPIDS | ACCELERATION |
| X AXIS | 3800 mm | 4020 mm | 3000 mm | 54 m/min | 2 m/s ² |
| Y AXIS | 2650 mm | 2650 mm | 6650 mm | 54 m/min | 2 m/s ² |
| Z AXIS | 650 mm | 650 mm | 650 mm | 12,6 m/min | 1 m/s ² |
| B AXIS | ± 60° | ± 60° | ± 60° | 17200 °/min | 1450 °/s ² |
| C AXIS | infinite | infinite | infinite | 13400 °/min | 850 °/s ² |
| WORKABLE AREA | 2000 x 3000 mm | 2000 x 4000 mm | 6000 x 3000 mm | | |
| OVERALL DIMENSIONS | 5886 x 4039 mm in without light barriers | 5886 x 4039 mm in without light barriers | 8195 x 6832 mm in without light barriers | | |

*Standard configuration available up to 60120
Dynamic precision (3-axis)
Repeatability of "ps" positioning

PRESSURE INTENSIFIERS

TECHNICAL DATA



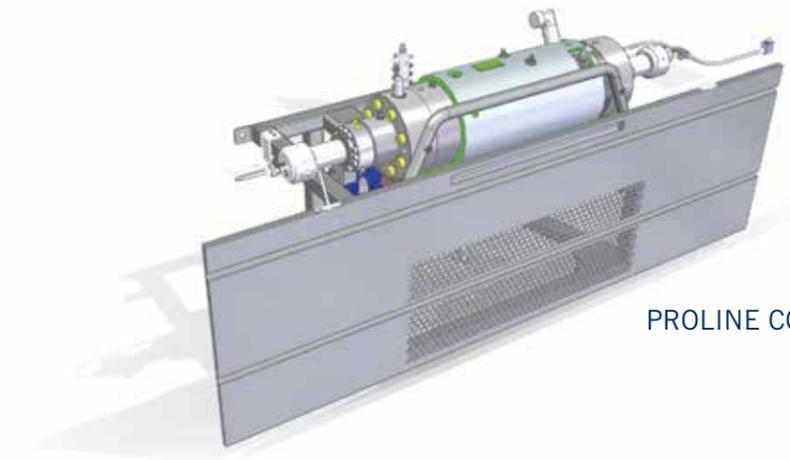
EASYPUMP: TECHNICAL DATA

| MODEL | EASYPUMP 30 HP | EASYPUMP 60 HP |
|-----------------------|--|----------------|
| POWER | 22,5 kW | 45 kW |
| MULTIPLIERS | 2 | 3 |
| MAX FLOW PRESSURE | 4150 bar | 4150 bar |
| MAX WATER PRESSURE | 2,5 L/min | 5,0 L/min |
| MAX ORIFICES DIAMETER | 0,28 mm | 0,40 mm |
| VOLTAGE | 400V +/- 5% 50-60 Hz (Different voltages and frequencies on request) | |



JETPOWER EVO: TECHNICAL DATA

| MODEL | JETPOWER EVO 30 HP | JETPOWER EVO 60 HP |
|-----------------------|--|--------------------|
| POWER | 22,5 kW | 45 kW |
| MULTIPLIERS | 2 | 3 |
| MAX FLOW PRESSURE | 4150 bar | 4150 bar |
| MAX WATER PRESSURE | 2,5 L/min | 5 L/min |
| MAX ORIFICES DIAMETER | 0,28 mm | 0,40 mm |
| VOLTAGE | 400V +/- 5% 50-60 Hz (Different voltages and frequencies on request) | |



PROLINE CONFIGURATION

GREENJET EVO: TECHNICAL DATA

| MODEL | GREENJET 4139 | GREENJET 6200 | GREENJET 4139 SA | GREENJET 6200 SA |
|-----------------------|--|---------------|------------------|------------------|
| POWER | 34 kW | 34 kW | 34 kW | 34 kW |
| MULTIPLIERS | 2 | 2 | 2 | 2 |
| MAX FLOW PRESSURE | 4139 bar | 6200 bar | 4139 bar | 6200 bar |
| MAX WATER PRESSURE | 5 L/min | 2,61 L/min | 5 L/min | 2,61 L/min |
| MAX ORIFICES DIAMETER | 0,4 mm | 0,28 mm | 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 especially 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.



THE MOST ADVANCED SKILLS AND KNOW-HOW IN THE FIELDS OF MACHINERY AND INDUSTRIAL COMPONENTS

“A technological world leader in processing a wide variety of materials: wood, plastic, glass, stone, metal and composites. The Group companies, operating throughout the world, are reliable partners of leading companies 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.”

INDUSTRIAL MACHINERY

Standalone machines, integrated systems and services dedicated to the processing of a wide range of materials.



Woodworking technologies



Technologies for advanced materials, plastic, stone, glass and metals processing



INDUSTRIAL PARTS

Technological components for Group and third party machines and plants and for the mechanical industry



Electrospindle and technological components



Electrical panels



Metalworking and mechanical machining



Cast Iron

SCM GROUP IN BRIEF

+700
Million/Euro
in consolidated
turnover

+4.000
people
in Italy and abroad

3 main
production
centres

A presence on **5**
continents
that is direct and
widespread

7%
of turnover
invested in
R&D

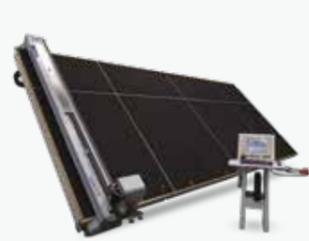
THE RANGE OF CMS GLASS TECHNOLOGY

FOR GLASS PROCESSING

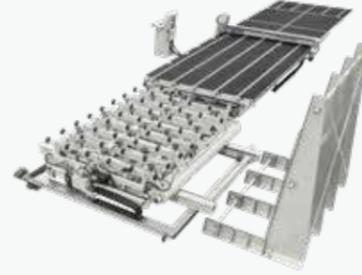
CUTTING TABLES AND CUTTING LINES



AGIL TR



RUNNER



RUNNER LINE

HORIZONTAL MACHINING CENTERS



GEA



SPEED



MAXIMA

VERTICAL MACHINING CENTERS



YPSOS



VERTEC MILL



YPSOS + VERTEC MILL

SEAMING MACHINES



AURA

LOADING SYSTEMS



KART

COMPLETE WATERJET CUTTING SYSTEMS



EASYLINE



SMARTLINE



PROLINE



AQUATEC



EASYPUMP



JET POWER EVO



GREENJET EVO



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