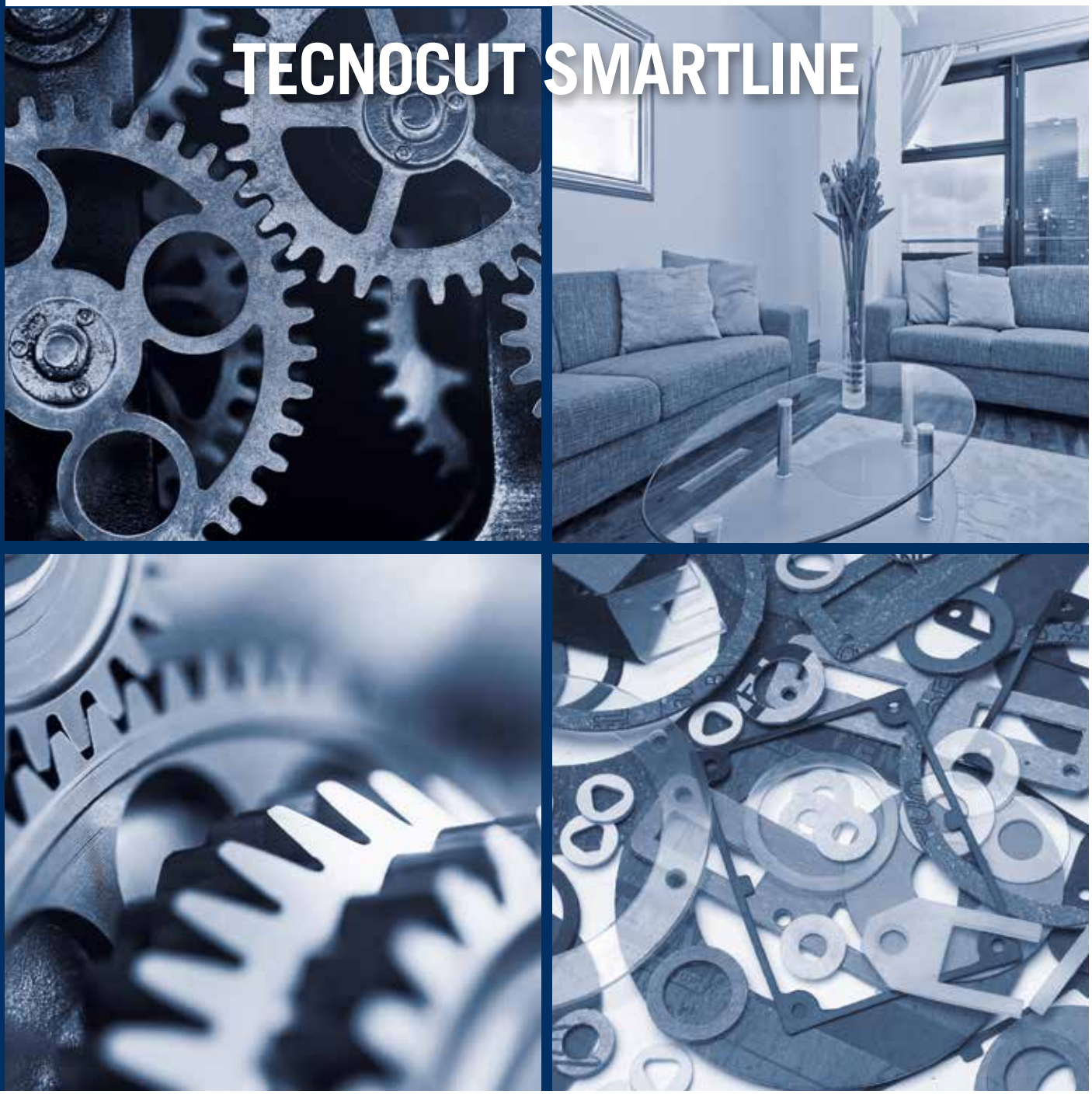
METAL - STONE - GLASS

tecnocut smartline

Waterjet cutting machine



Cms

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 metal technology

CMS Metal Technology is the brand dedicated to the production of metalworking machines and technical articles offering a wide range of complete water-jet cutting systems, pressure intensifiers and dry or wet deburring and satin finishing machines. Since the 90's, thanks to the acquisition of Tecnocut and constant internal developments, **CMS Metal Technology** has been able to gain high international prestige, boasting more than 1,500 installations worldwide. CMS Metal Technology is the reliable partner of leading industries in various sectors such as automotive, aerospace, machining, furniture and industrial architecture.

scm group
Industrial Machinery and Components

Cms your technology partner



tecnocut smartline

APPLICATIONS *4-5*

TECNOCUT SMARTLINE
TECHNOLOGICAL BENEFITS *6-7*

STANDARD ACCESSORIES *8-11*

TECNOCUT EASYPUMP
HIGH-PRESSURE INTENSIFIER *12-13*

TECNOCUT JETPOWER EVO
HIGH-PRESSURE INTENSIFIER *14-15*

SOFTWARE *16-17*

TECHNICAL DATA *18-19*

CMS CONNECT *20*

CMS ACTIVE *21*

THE RANGE *22-23*



a company of scm group

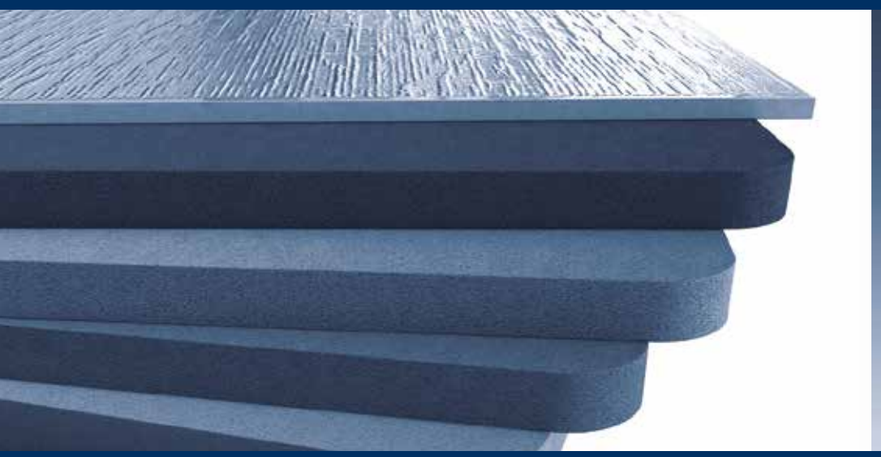
APPLICATIONS







inlyas and mosaics | aeronautics | gaskets | workshop machining







foam material | facades and windows | furnishing







TECNOCUT SMARTLINE

TECHNOLOGICAL BENEFITS

3- AND 5-AXIS WATER JET CUTTING SYSTEM

Tecnocut Smartline is designed to redefine industry standards of excellence by improving operating efficiency, while maintaning 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 cantylever 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.**
+ **R**apid speed up to 50 m/ min and acceleration up to 3 m/s 2 **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: Mobile control panel with laptop Full HD



Photoelectric barriers: protection of the working area by light barriers

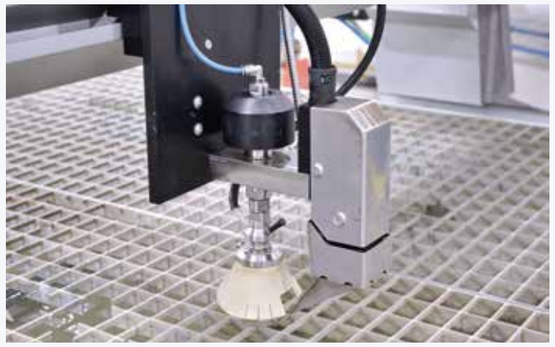
STANDARD ACCESSORIES

Electronic hopper that automatically controls the abrasive flow. If the abrasive flow is interrupted for chock, the system will automatically stop cutting to prevent damage and scrape material.



Bellows for X-axis and labyrinth panels on the Y-axis to protect the linear guides and racks from water, dust and abrasive.





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



Integrated electric cabinet in the tank frame for a reduced layout footprint

Aluminum cast uprights for electro welded steel bridge designed with reinforcement ribs to erase the vibrations during cutting and guarantee high performance.



Automatic lubrication of all axes

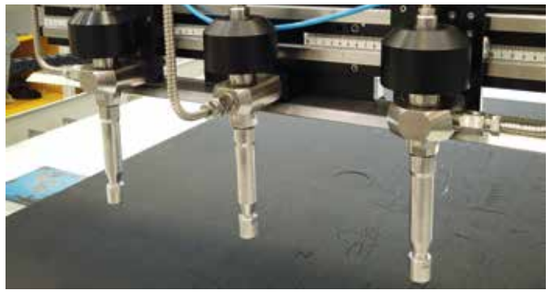


OPTIONS



powered by JDC

5-axis cutting head with JDC technology - Jet Drive Compensation - Effective head management to carry out inclined cuts and check cut conicity.



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.



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.

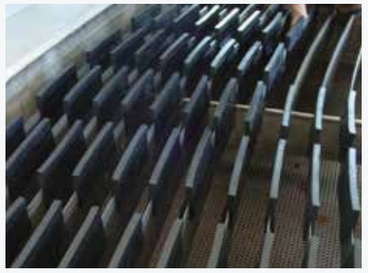


Cross Laser device for setting one or multiple starting point on the sheet positioned on the cutting table.



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

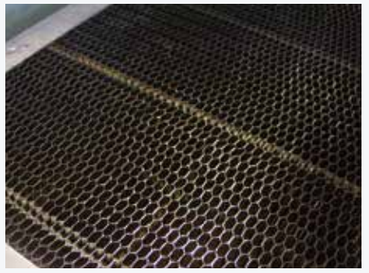
WORK TABLES INTENDED FOR DIFFERENT CUTTING APPLICATIONS



Anti-reflective table for glass



Anti-reflective surface



Honeycomb grid



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

21,5" touch screen control panel on mobile trolley.





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.

TECNOCUT EASYPUMP

HIGH-PRESSURE INTENSIFIER

PRESSURE INTENSIFIER FULLY 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.

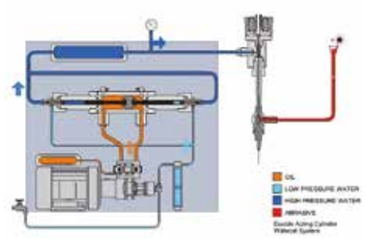
KEY BUYER BENEFITS

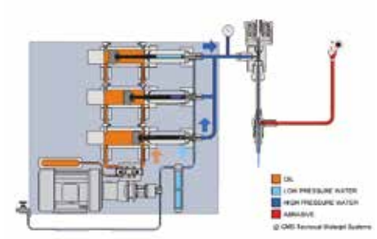
+ Hydraulic intensifier with 2 or 3 independent and electronically syncronized parallel cylinders to guarantee a constant **signal of output pressure without the use of attenuator.**
+ The technology with **3 independent cylinders** allows the bypass of a single cylinder that needs maintenance, while 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

fig. 2 CMS parallel cylinders intensifier







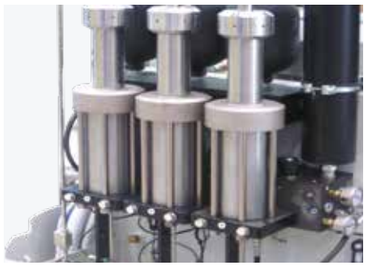




Nitrogen accumulator for managing the hydraulic cylinders return circuit



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



Pressure multipliers



Gear hydraulic pump



"Noiseless" system

TECNOCUT JETPOWER EVO

HIGH-PRESSURE INTENSIFIER

PRESSURE INTENSIFIER ENTIRELY MADE BY CMS

CMS brought about a new concept in ultrahigh pressure intensifiers, enhaced 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 syncronized 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

fig. 1

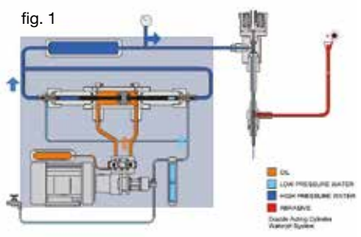
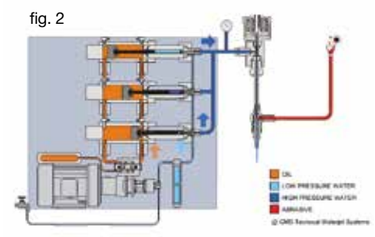


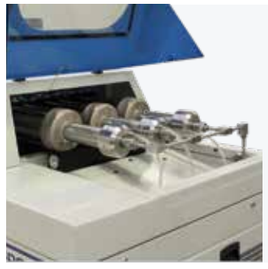
fig. 2







Software-based electronic control of cutting pressure



Pressure multipliers



Hydraulic unit



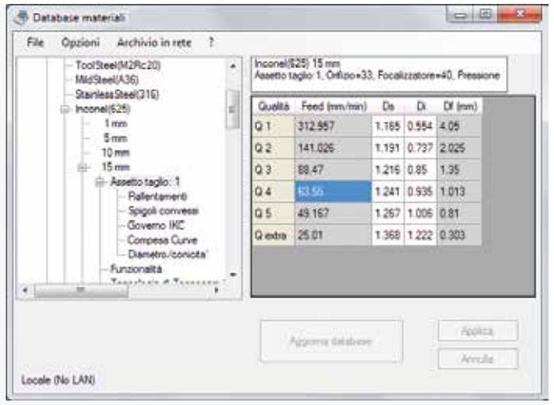
Oil/air heat exchanger

SOFTWARE

TC2020™

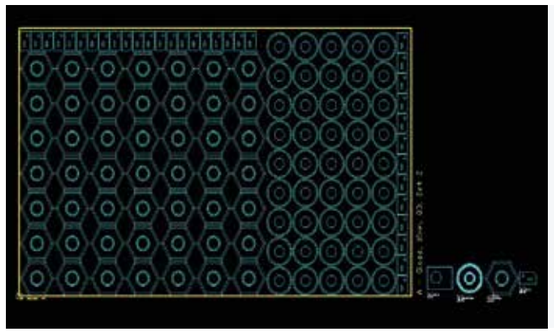
EASY TO USE AND EFFICIENT SOFTWARE
TC2020 is a CAM software which allows to fully manage a waterjet cutting system. Developed in Windows® environment, it originates and grows out of CMS wide experience in this industry. TC2020 is suited to work with most design software packages available on the market.

MATERIALS DATABASE
The software package is completed by a database containing the most commonly used technological parameters in waterjet cutting. It can also be customized to address specific requirements. The technical characteristics of any profiles that make up the imported shapes can be changed, in order to optimize the cutting sequence and machining.

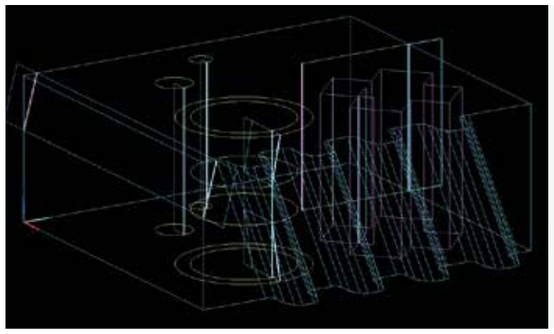


ISO PROGRAM CREATION
Starting from a drawing and the cutting parameters employed, TC2020 is able to create - by means of a specific module (JDE) - an ISO code for 3- and 5-axis machines, managing the varying dimension of the water jet along the cutting line as well as its deformation during the cut (due to speed, material and thickness).



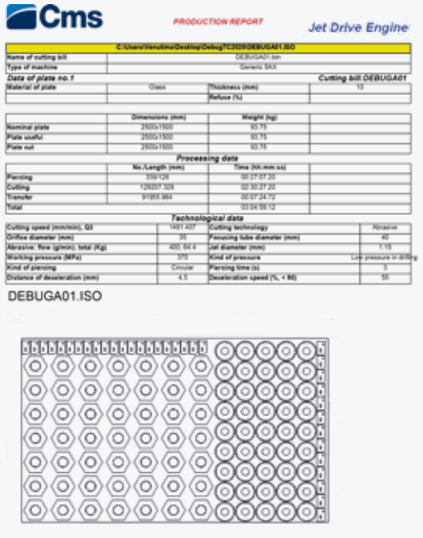


OPTIMIZATION OF SLABS (NESTING FUNCTION)
The advanced nesting algorithm is able to optimize the use of the material, while managing different sheet sizes and scraps.

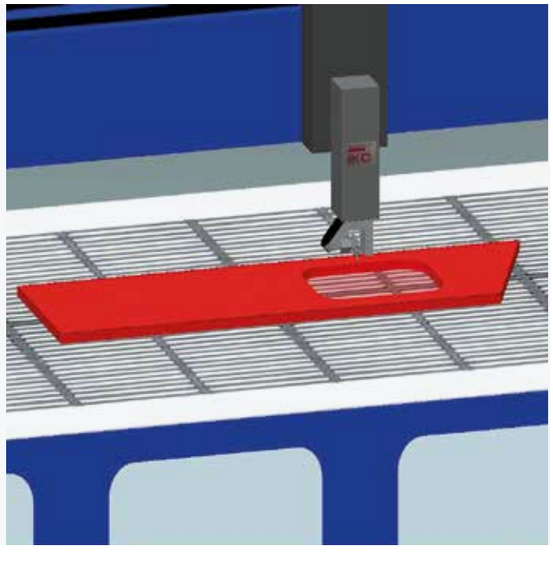


TC2020 3D AND SPECIAL MACHINES
The TC2020 3D optional module is a solid shape design software which enables to create 3D shapes easily and intuitively, by acquiring the upper and lower profiles or the desired conicity, to be used for TC2020 software functions. It also manages multi-head cutting by selecting the higher number of heads and related distance between centres, in order to minimize cutting times and maximize slab exploitation. It is also preset for the generation of ISO programs dedicated to 3- and 5-axis tube machining.

MANAGEMENT OF CUTTING LISTS AND ESTIMATES
The cutting list management is supervised by a user-friendly interface that provides information on the positioning data by means of a graphic view of the slab, on the cutting parameters and a production report, divided into cutting and material costs. After generating the ISO, the cutting path accuracy can be checked by reproducing the cuttting machine CNC.

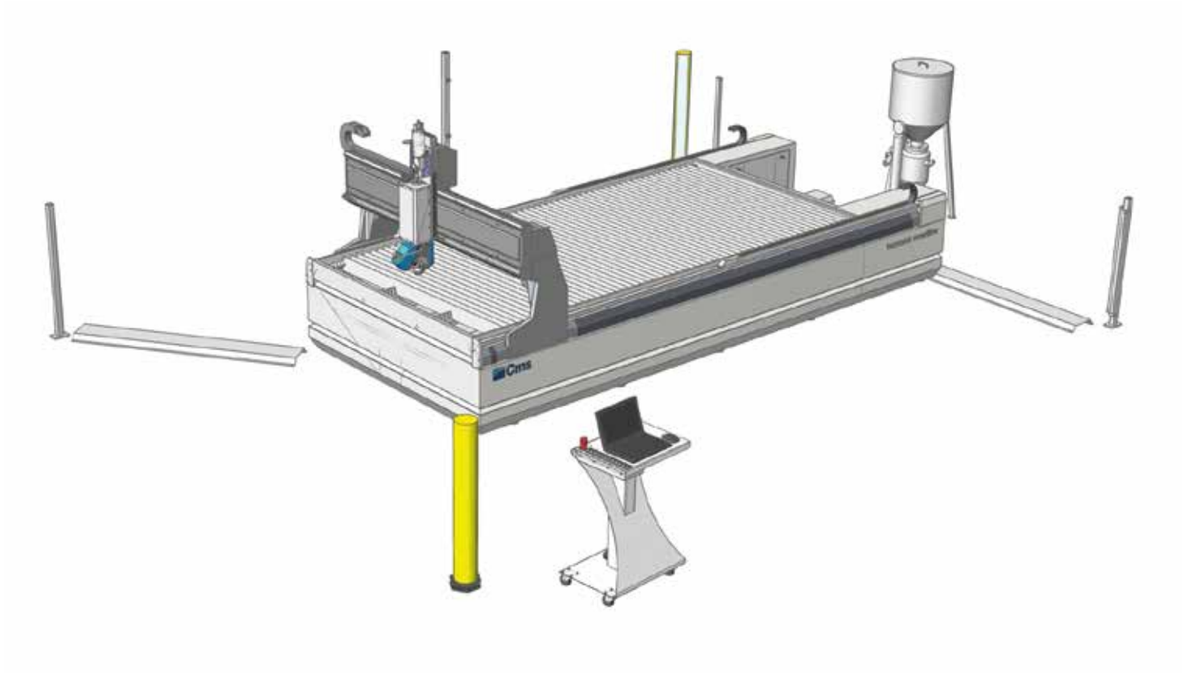


CMS machines can be equipped with software applications other than TC2020, e.g. EASYJET, a CAD/CAM software for programming cutting operations, installed also on CMS Stone Technology machining centres and bridge sawing machines.



TECNOCUT SMARTLINE

OVERALL DIMENSIONS AND TECHNICAL DATA



TECNOCUT SMARTLINE: TECHNICAL DATA	
MODEL	**2040**
X AXIS	4000 mm / 157 in
Y AXIS	2000 mm / 79 in
Z AXIS	250 mm / 9.8 in (150 mm / 5.9 in with 5-axis head)
B AXIS	+/- 60°
BED SIZE	4150 x 2080 mm / 163x81 in
OVERALL DIMENSIONS WITH LIGHT BARRIERS	5595 x 7400 mm / 220x291 in

HIGH PRESSURE INTENSIFIERS

TECHNICAL DATA



TECNOCUT EASYPUMP: TECHNICAL DATA		
MODEL	**TECNOCUT EASYPUMP 30 HP**	**TECNOCUT EASYPUMP 60 HP**
POWER	22,5 kW / 30 HP	45 kW / 60 HP
CYLINDERS	2	3
MAX PRESSURE	4150 bar / 60.000 psi	4150 bar / 60.000 psi
MAX WATER FLOW RATE	2,5 L/min / 0.66 gpm	5,0 L/min / 1.32 gpm
MAX, DIAM. ORIFICES	0,28 mm / 0.011 in	0,40 mm / 0.015 in
VOLTAGE	400V +/- 5% 50-60 Hz (Different voltages and frequencies on request)	



TECNOCUT JETPOWER EVO: TECHNICAL DATA		
MODEL	**TECNOCUT JETPOWER EVO 30 HP**	**TECNOCUT JETPOWER EVO 60 HP**
POWER	22,5 kW / 30 HP	45 kW / 60 HP
MULTIPLIERS	2	3
MAX PRESSURE	4150 bar / 60.000 psi	4150 bar / 60.000 psi
MAX WATER FLOW RATE	2,5 L/min / 0.66 gpm	5 L/min / 1.32 gpm
MAX DIAM. ORIFICES	0,28 mm / 0.011 in	0,40 mm / 0.015 in
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 to 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.



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 down-time.

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-theart cyber-security requirements. Customer data are encrypted and authenticated to ensure total protection of sensitive information.

ADVANTAGES

- ✓ Ottimizzazione delle performance produttive
- ✓ Diagnostica a supporto dell'ottimizzazione della garanzia dei componenti
- ✓ Aumento della produttività e riduzione dei fermi macchina
- ✓ Miglioramento del controllo della qualità
- ✓ Riduzione dei costi di manutenzione

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, maintainance 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.

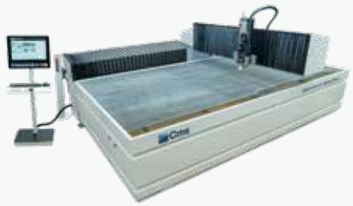
THE RANGE OF CMS METAL TECHNOLOGY

FOR METAL AND TECHNICAL ARTICLES PROCESSING

WATERJET CUTTING MACHINES



TECNOCUT SMARTLINE



TECNOCUT EASYLINE



TECNOCUT MILESTONE S



TECNOCUT IDROLINE S



TECNOCUT PROLINE



TECNOCUT AQUATEC



TECNOCUT WATERSPEEDY S

PRESSURE INTENSIFIERS



TECNOCUT EASYPUMP



TECNOCUT JETPOWER EVO



TECNOCUT GREENJET EVO

DRY DEBURRING-FINISHING MACHINES



DMC M950



DMC EUROSYSTEM



DMC METALSYSTEM

WET DEBURRING-FINISHING MACHINES



DMC M950 WET



DMC TOP METAL

TCSMART-0121E

Technical data are not binding and may be changed by CMS without prior notice.

Cms | your technology partner

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