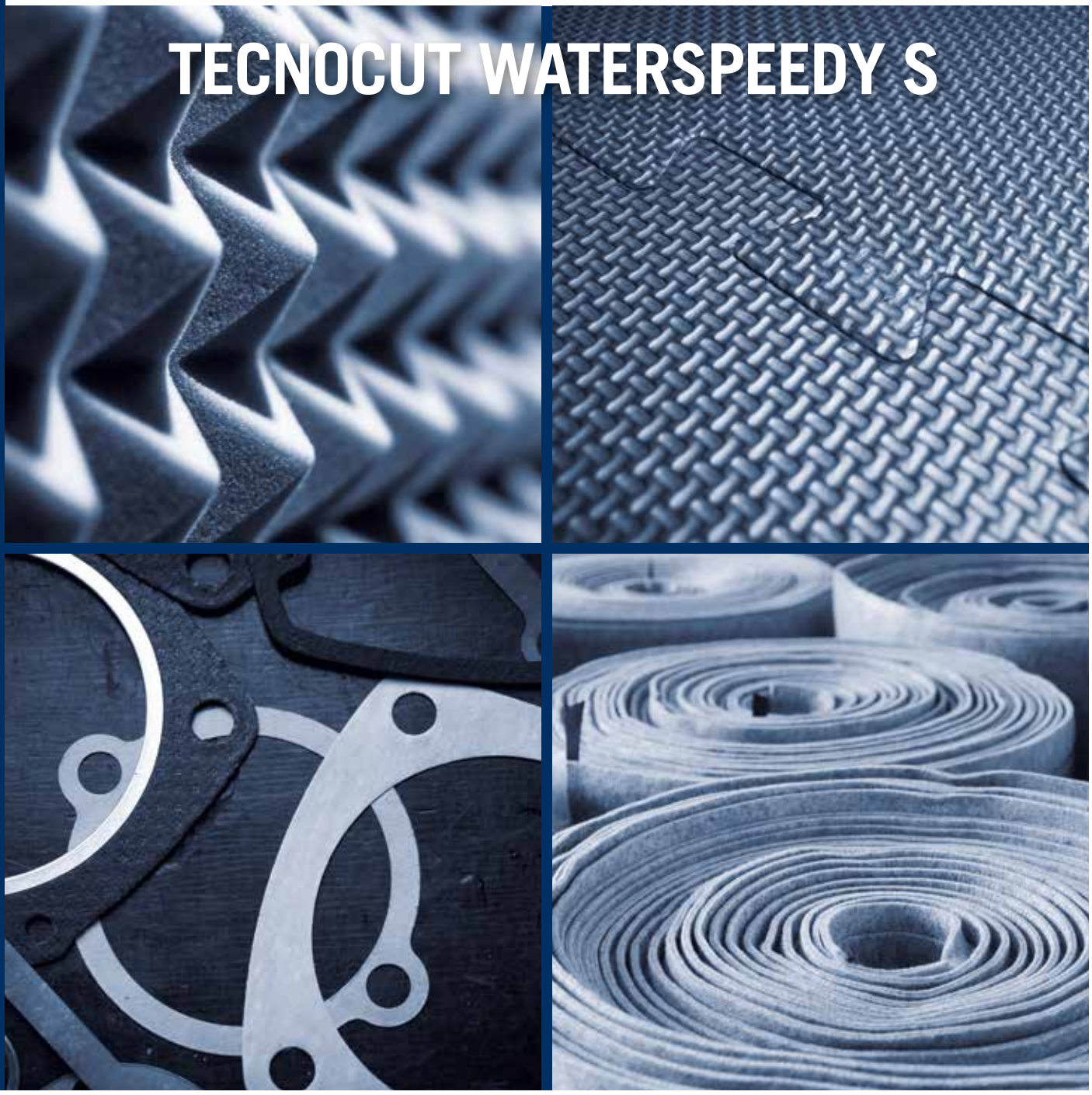
WATERJET

tecnocut waterspeedy s

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 waterspeedy s

APPLICATIONS *4-5*

TECNOCUT WATERSPEEDY S
TECHNOLOGICAL BENEFITS *6-11*

TECNOCUT JETPOWER EVO
HIGH-PRESSURE INTENSIFIER *12-13*

TECNOCUT GREENJET EVO
ELECTRIC INTENSIFIER *14-15*

SOFTWARE *16-17*

TECHNICAL DATA *18-19*

CMS CONNECT *20*

CMS ACTIVE *21*

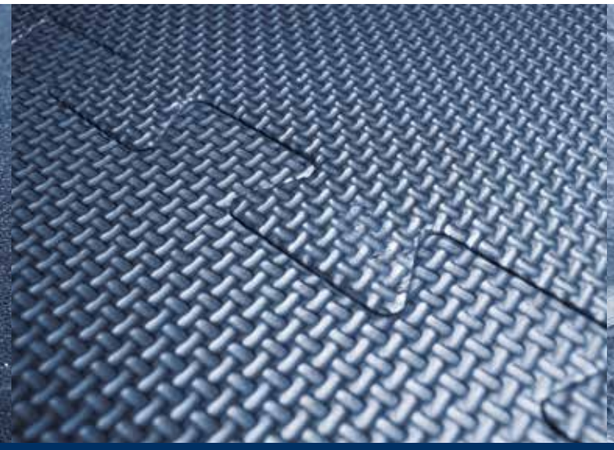
THE RANGE *22-23*



a company of scm group

APPLICATIONS






duct ventilation | acoustic insulation | furniture upholstery | foam carpets | thermal insulation





sealing gaskets | storage box protection | automotive noise and vibration protection






TECNOCUT WATERSPEEDY S

TECHNOLOGICAL BENEFITS

Tecnocut Waterspeedy S is a system suitable for soft materials cutting as plastic, foams, rubbers, composites, multilayer materials, gaskets and technical materials. Its extremely high dynamic, together with the possibility to work with several cutting heads and its automatic pallet change system, assures very high productivity and competitive costs when compared to conventional systems. Tecnocut Waterspeedy S is the result of a careful design for the satisfaction of customer's requirements and it tends to reach the highest safety standards.

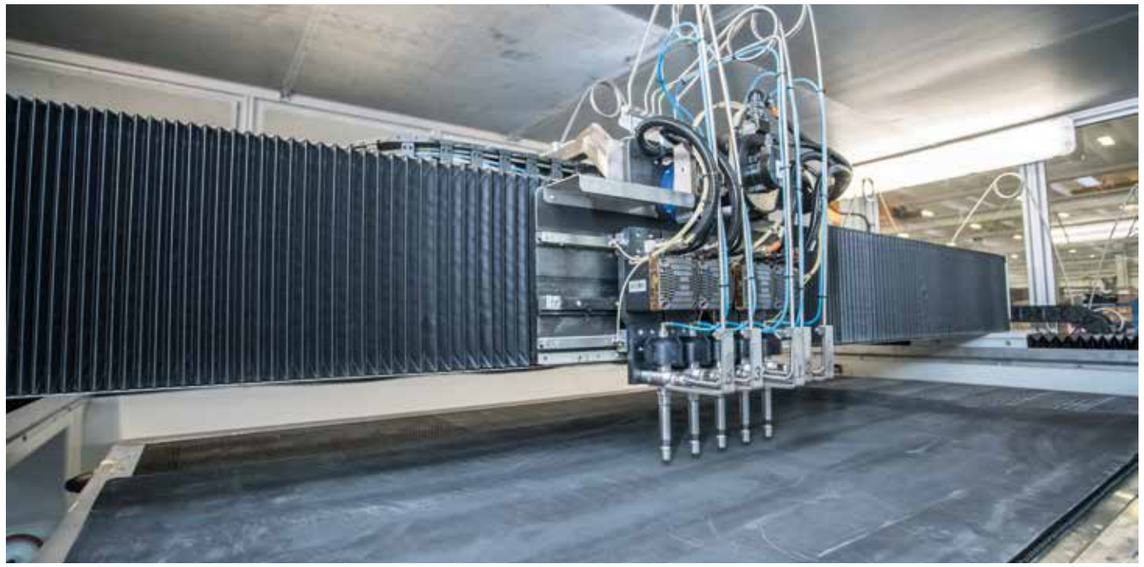
KEY BUYER BENEFITS

+ Shorter programming and contouring times: The avoidance of repositioning and extensive capabilities of the CX5 working unit allow for a 15% reduction in cutting and programming times.
+ **Shorter programming and contouring times:** The avoidance of repositioning and extensive capabilities of the CX5 working unit allow for a 15% reduction in cutting and programming times.
+ **Soundproof cabin for cutting area protection, to prevent any contact with** moving parts and dust and moisture leakage during cutting.
+ Soundproof cabin for cutting area protection, to prevent any contact with **moving parts and dust and moisture leakage during cutting. scarico.** Entrambi i pallets sono costituiti da un piano a nido d'ape in acciaio inossidabile.

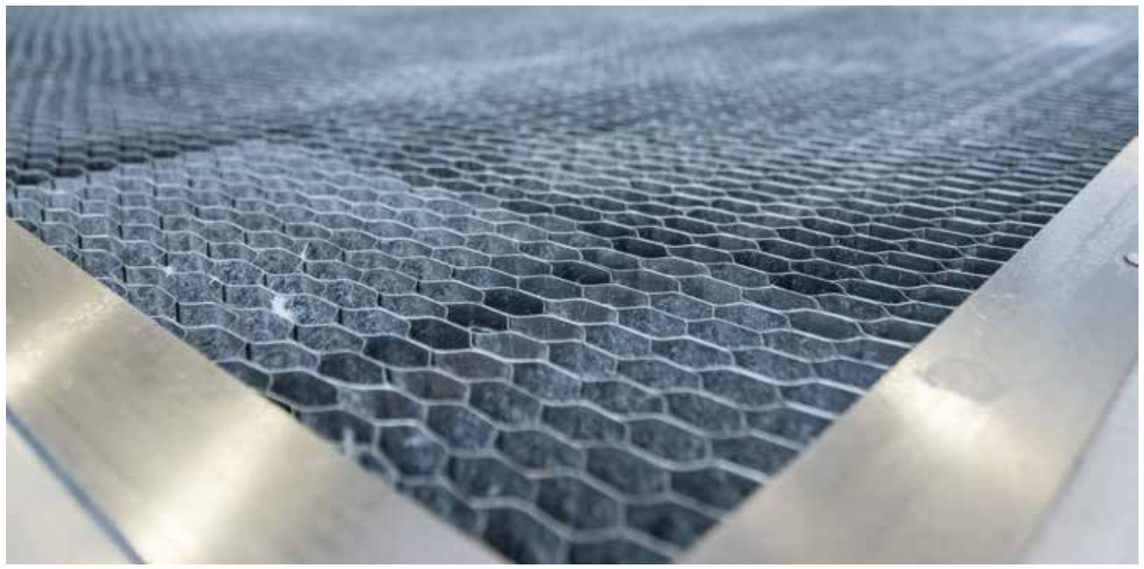


TECNOCUT WATERSPEEDY S

TECHNOLOGICAL BENEFITS



MOTION
High precision and performance helical racks and pinions.



WORKTABLE
Honeycomb stainless steel grid for plastic materials cutting.
Optional: stainless steel net conveyor to cut roll material.



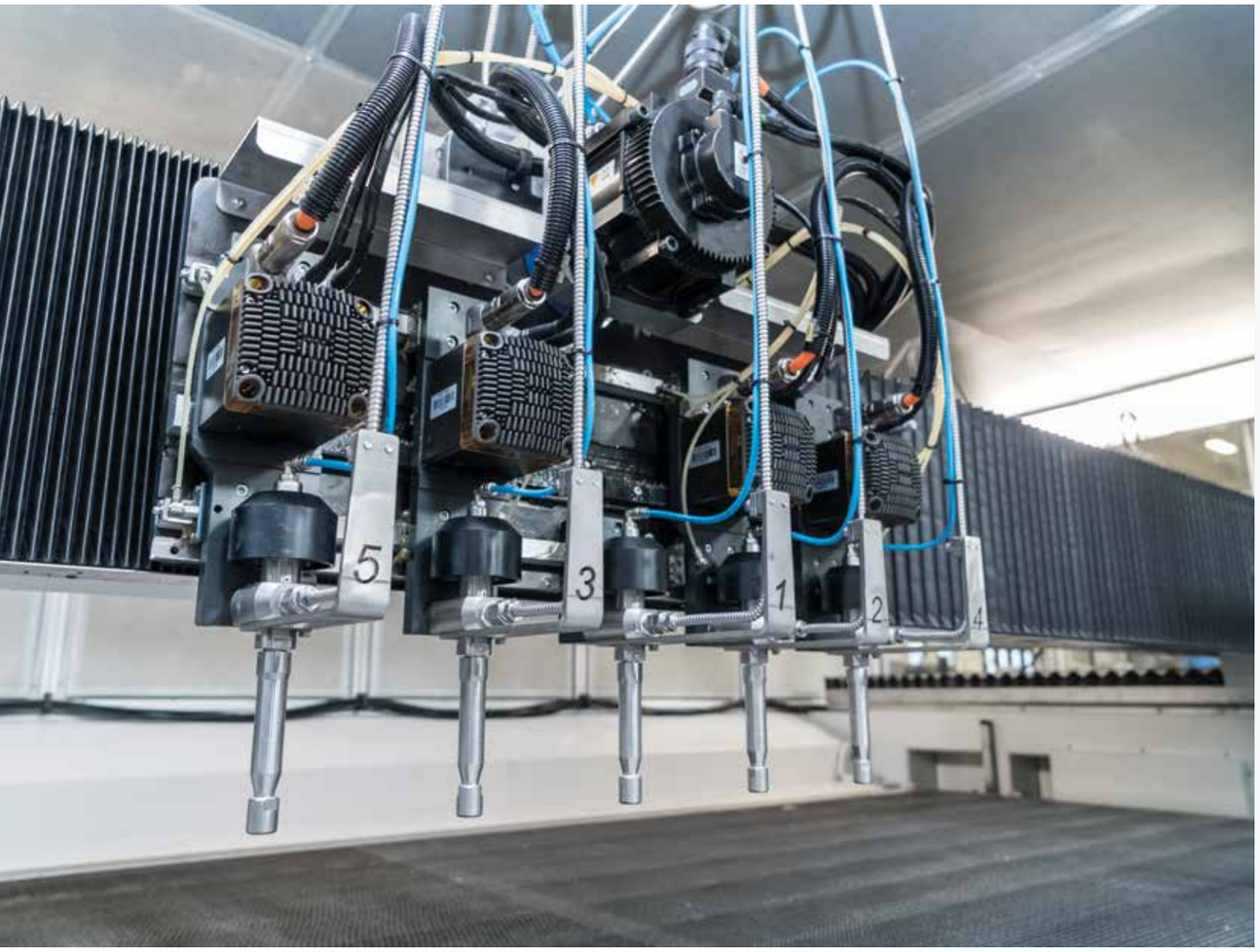




AUTOMATIC PALLET CHANGE SYSTEM
Separated loading and unloading zones with automatic servomotor driven pallet shuttle.

TECNOCUT WATERSPEEDY S

TECHNOLOGICAL BENEFITS



MULTIPLE HEADS
Additonal pure waterjet cutting heads composed of trolleys with 3 or 5 heads with automatic distance adjustment to get high performances during the cutting process. Distance between heads is CNC controlled.
Optional: double carriage for the highest productivity.

TECHNICAL DETAILS HEAD DISTANCE				
	NR. 3 3-AXIS HEADS		NR. 5 3-AXIS HEADS	
	STANDARD CARRIAGE	LARGE CARRIAGE	STANDARD CARRIAGE	LARGE CARRIAGE
Minimum distance	85	100	85	100
Maximum distance	340	800	170	400

STEAM SUCTION
Suction system for steam discharge with HEPA 99.997% absolute filter, positioned on the side of the machine.





AUTOMATIC TANK CLEANING SYSTEM
A set of nozzles inside the tank wash away the cutting debris to the external waste water filtering system.

WASTE WATER FILTERING SYSTEM
An automatic system leads scraps on the rear side of the machine where a paper filter with a collection tank cleans discharge water.





SIDE DOORS TO CLEAN THE TANK

TECNOCUT JETPOWER EVO

HIGH-PRESSURE INTENSIFIER

PRESSURE INTENSIFIER ENTIRELY MADE BY CMS

CMS brought about a new concept in ultrahigh pressure intensifiers, enriched with technological contents especially designed to satisfy the needs of the most demanding users. The new technological concept foresees several pressure multipliers for the intensifier: independent, parallel and electronically-synchronized. This innovative solution made it possible to obtain an ever-constant pressure levels, avoiding any pressure drops typical of traditional opposed-cylinder 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 **cons quently 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

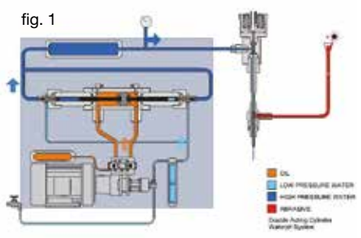
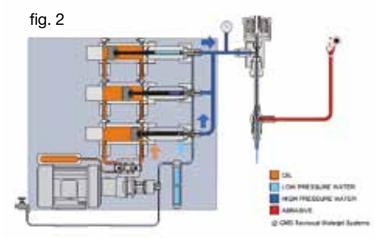


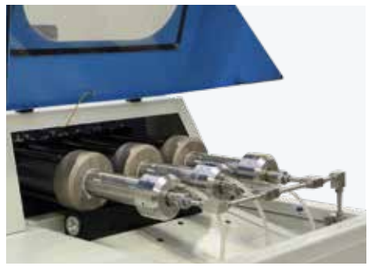
fig. 2







Software-based electronic control of cutting pressure



Pressure multipliers



Hydraulic unit



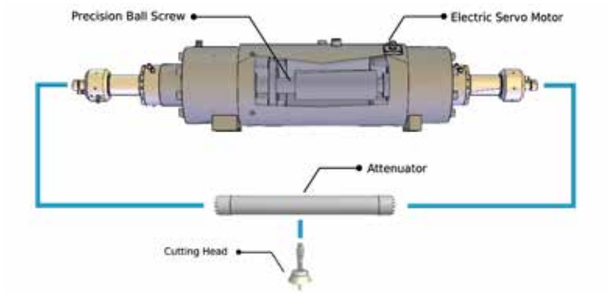
Oil/air heat exchanger

TECNOCUT GREENJET EVO

ELECTRIC PRESSURE INTENSIFIER

THE HIGHEST EFFICIENCY, THE LOWEST COSUMPTION

Tecnocut Greenjet Evo is a groundbreaking, highly efficient electric pump. A top-performance torque servomotor supplies a very high pressure level while removing the hydraulic unit and up to 80% of components compared to a traditional hydraulic intensifier. Tecnocut Greenjet Evo is equipped with one electrically driven actuator and a pair of opposed-piston high-pressure cylinders. Such a structure - electrically driven - delivers an extremely constant pressure level, a monitoring of the pressurization cycle and an efficiency at least 30% higher than 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.



Servo-motor

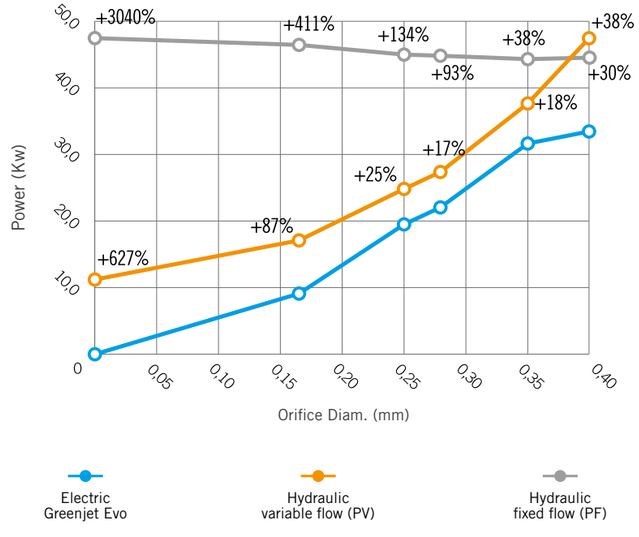


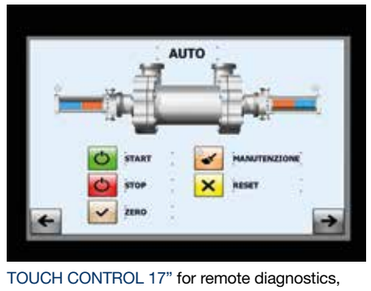
Air/oil heat exchanger (std)



Integrated boost water supplier (std)

4139 BAR INTENSIFIER CONSUMPTION: ELECTRIC VS HYDRAULIC





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

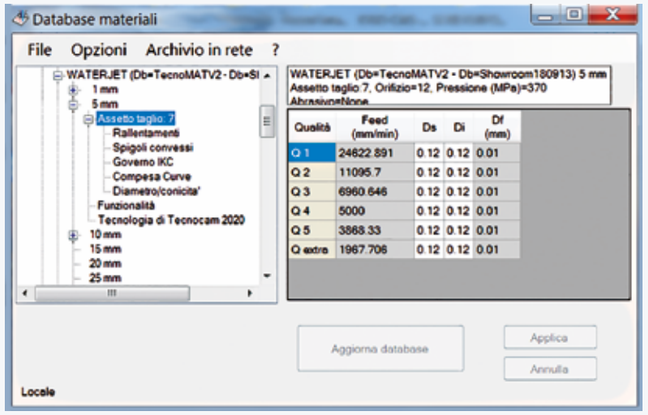
SOFTWARE

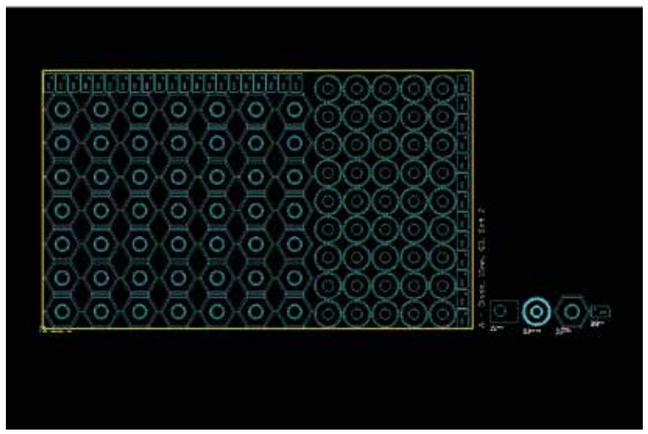
EASY TO USE AND EFFICIENT SOFTWARE

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 and 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.





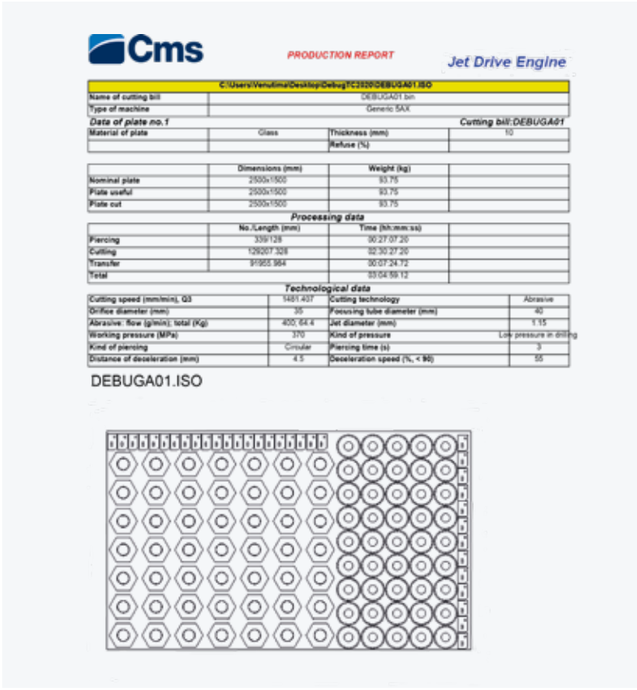
OPTIMIZATION OF SLABS (NESTING FUNCTION)

The advanced nesting algorithm is able to optimize the use of the material, while managing different sheet sizes and scraps.

TC2020™

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 PRODUCTION REPORT Jet Drive Engine

C:\Users\Venulima\Desktop\Debug\TC2020\DEBUGA01.ISO

Name of cutting bill	DEBUGA01.bin		
Type of machine	Generic 5AX		
Data of plate no.1			*Cutting bill:DEBUGA01*
Material of plate	Glass	Thickness (mm)	10
		Refuse (%)	

	Dimensions (mm)	Weight (kg)	
Nominal plate	2500x1500	93.75	
Plate useful	2500x1500	93.75	
Plate cut	2500x1500	93.75	

Processing data

	No./Length (mm)	Time (hh:mm:ss)	
Piercing	339/128	00:27:07.20	
Cutting	129207.328	02:30:27.20	
Transfer	91955.984	00:07:24.72	
Total		03:04:59.12	

Technological data

Cutting speed (mm/min), Q3	1481.407	Cutting technology	Abrasive
Orifice diameter (mm)	35	Focusing tube diameter (mm)	40
Abrasive: flow (g/min); total (Kg)	400; 64.4	Jet diameter (mm)	1.15
Working pressure (MPa)	370	Kind of pressure	Low pressure in drilling
Kind of piercing	Circular	Piercing time (s)	3
Distance of deceleration (mm)	4.5	Deceleration speed (%, < 90)	55

DEBUGA01.ISO



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-axis with advanced features like the common cutting.

TECNOCUT WATERSPEEDY S

OVERALL DIMENSIONS AND TECHNICAL DATA



TECNOCUT WATERSPEEDY S 1630: TECHNICAL DATA	
X AXIS	3000 mm / 118 in
Y AXIS	1600 mm / 63 in
Z AXIS	200 mm / 8 in
WORKTABLE	1630 x 3080 mm / 64x121 in
OVERALL DIMENSIONS	10150 x 4910 x 2800 mm / 400 x 193 x 110 in

- Support plane max capacity: 150 kg/mq
- Max speed: 2755.9 ipm
- PC panel with 21" LCD monitor, keyboard, mouse and manual control device
- External port for USB key interface
- Connection to the computer network: RJ45 10/100 Mb connector

PRESSURE INTENSIFIERS

TECHNICAL DATA



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 WATER PRESSURE	4150 bar / 60000 psi	4150 bar / 60000 psi
MAX WATER PRESSURE	2,5 L/min / 0,66 gpm	5 L/min / 1,32 gpm
MAX DIAMETER ORIFICES	0,28 mm / 0,011 in	0,40 mm / 0,016 in
VOLTAGE	400V +/- 5% 50-60 Hz (Different voltages and frequencies on request)	



TECNOCUT GREENJET EVO: TECHNICAL DATA				
MODEL	**TECNOCUT GREENJET 4139**	**TECNOCUT GREENJET 6200**	**TECNOCUT GREENJET 4139 SA**	**TECNOCUT GREENJET 6200 SA**
POWER	34 kW / 45 HP	34 kW / 45 HP	34 kW / 45 HP	34 kW / 45 HP
MULTIPLIERS	2	2	2	2
MAX WATER PRESSURE	4139 bar / 60000 psi	6200 bar / 90000 psi	4139 bar / 60000 psi	6200 bar / 90000 psi
MAX WATER PRESSURE	5 L/min / 1,32 gpm	2,61 L/min / 0,32 gpm	5 L/min / 1,32 gpm	2,61 L/min / 0,32 gpm
MAX ORIFICES DIAMETER	0,4 mm / 0,016 in	0,28 mm / 0,011 in	0,4 mm / 0,016 in	0,28 mm / 0,011 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 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 ser- vices, 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. 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

- ✓ 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 centre (e.g.: operator, maintainance man, administrator, ...).

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

ABSOLUTE QUALITY OF THE FINISHED WORKPIECE

With CMS aActive 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.

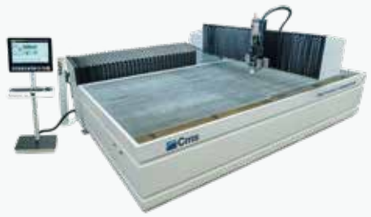
THE RANGE OF CMS METAL TECHNOLOGY

FOR METAL AND TECHNICAL ARTICLES PROCESSING

WATERJET CUTTING MACHINES



TECNOCUT SMARTLINE



TECNOCUT EASYLINE



TECNOCUT MILESTONE S



TECNOCUT 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

TCWATER-0121E

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

Cms your technology partner

C.M.S. SPA
via A. Locatelli, 123 - 24019 Zogno (BG) - IT
Tel. +39 0345 64111
info@cms.it
cms.it

a company of scmgroup