



GLASS TECHNOLOGY



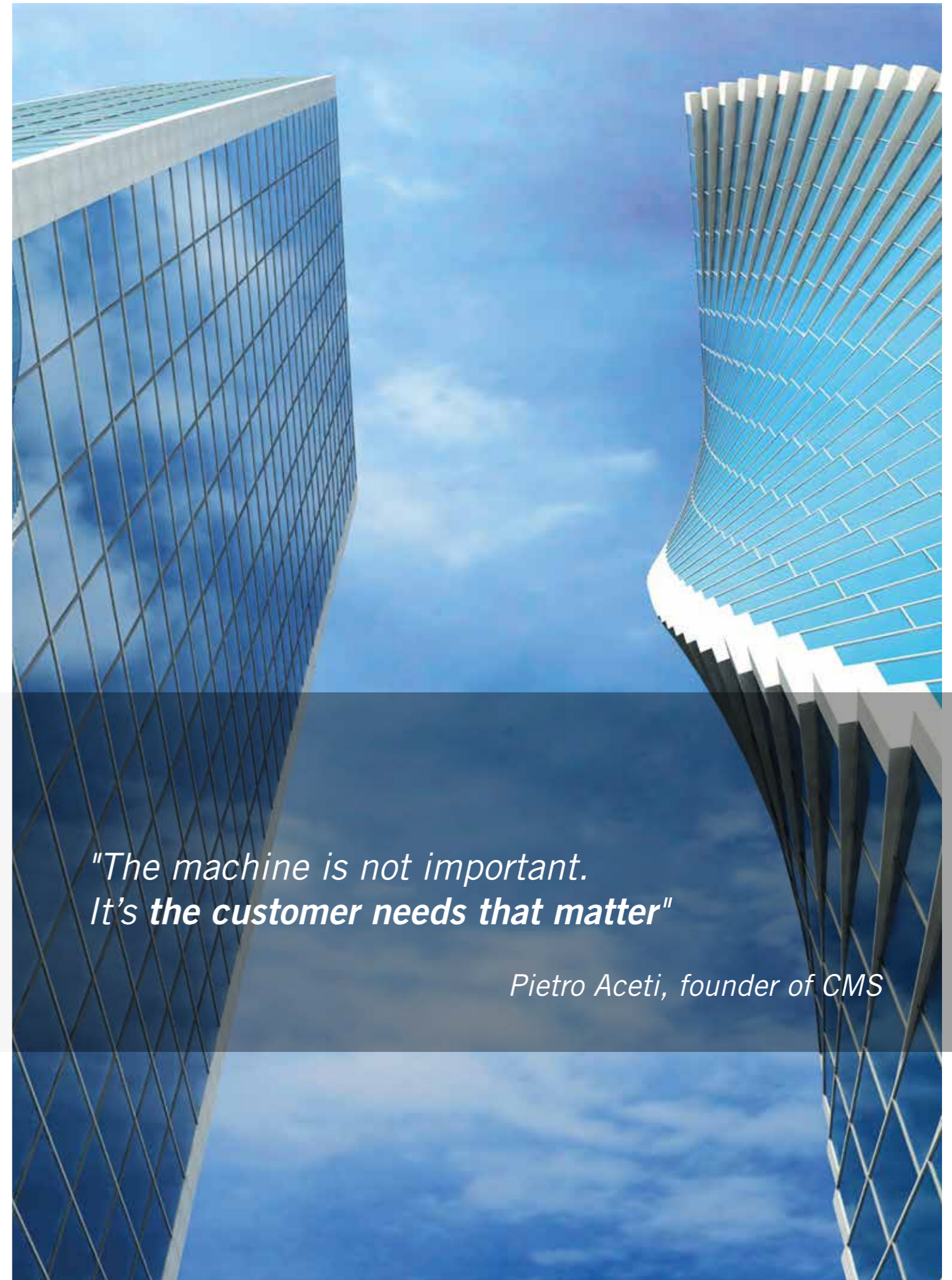
HIGH PERFORMANCE CNC MACHINES AND UNIQUE INTEGRATED LINES FOR GLASS PROCESSING

CMS Glass Technology is an industry leader in the field of **curved** and **flat glass working**, with technologically advanced solutions such as numerically controlled machining centers, cutting tables, and water-jet cutting systems.

Credited to the tradition and experience, today **CMS Glass Technology** is an absolute protagonist in this division for the manufacturing of innovative solutions dedicated to **architecture** and **interior decoration**.

*"The machine is not important.
It's the customer needs that matter"*

Pietro Aceti, founder of CMS





1969

CMS is established. CMS is the acronym for **Costruzione Macchine Speciali (Special Machines Manufacturing)**. The company introduces itself to the market as a manufacturer of traditional machine tools, powered by mechanical, pneumatic or hydraulic systems.

1995

CMS intensifies its investments in research and development to enter the **glass processing machinery** sector as a leader.

1996

The **first horizontal work center** with the CMS brand appears for glass processing.

2005

CMS joins the **vertical machine** market, too, with the production of the first machining center of this type.

FOR CMS, THE FUTURE IS THE DESTINATION OF A CONTINUOUS JOURNEY WHICH BEGAN IN 1969. IT IS BASED ON TWO FUNDAMENTAL ELEMENTS: IN-DEPTH UNDERSTANDING OF THE CUSTOMER'S NEEDS AND HIGH LEVEL OF SPECIALIZATION, TO PROVIDE UNIQUE ADDED VALUE TO THE CUSTOMER'S MANUFACTURING PROCESSES.

2015

SCM Group, that had already bought 51% of CMS in 2002, buys the company completely. **CMS thus becomes a full member of the Group** that guarantees solidity and an extensive international network.

2017

CMS **doubles its production capacity** with the opening of a **new production center, PLANT Z**, located in Zogno (Bergamo).

2020

The **new technology center** is inaugurated in Zogno (Bergamo).

2021

CMS acquires **GFP**, a Veneto-based company specialized in the production of **cutting benches** and **automatic seaming machines for glass processing**.

AUTOMOTIVE



SAILING



CONSTRUCTION



AEROSPACE



UNIQUE SOLUTIONS FOR ANY NEED

CMS GLASS Technology works with companies and research centers operating in sectors where efficiency, versatility and high-quality performance are indispensable requirements. CMS Glass Technology machines make it easier to respond continuously to the needs of increasingly complex processes in extremely demanding sectors, such as **automotive, aerospace, architecture, furnishing, construction and many others.**

FURNISHING



CMS GLASS TECHNOLOGIES

Highly specialized **numerically controlled machining centers, cutting tables and waterjet cutting systems**, especially designed for glass processing. Its wide range of machines ensures CMS Glass Technology the possibility to meet the needs of all of its customers.

GLASS PROCESSING TECHNOLOGIES

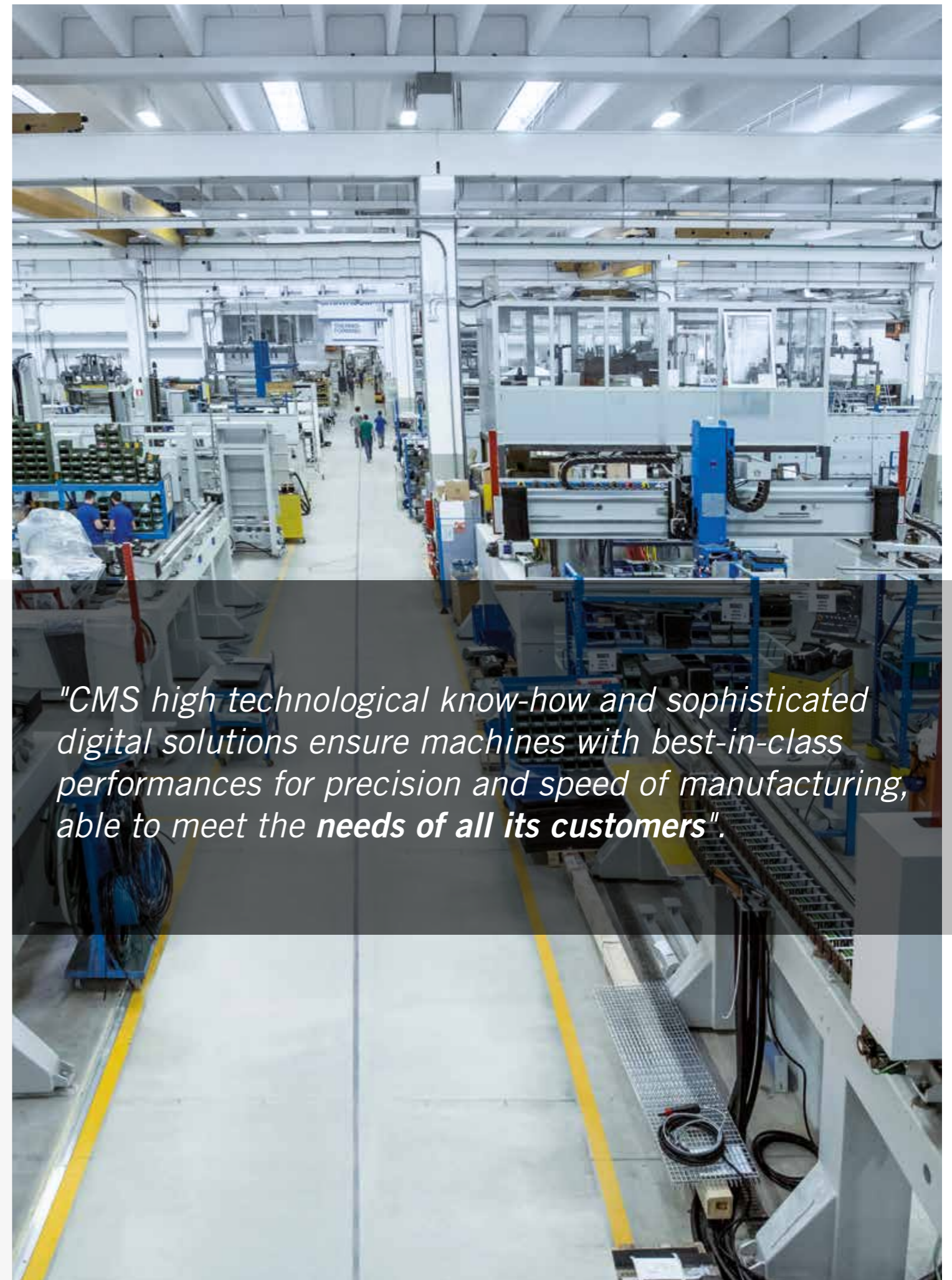
- A. HORIZONTAL MACHINING CENTERS
- B. VERTICAL MACHINING CENTERS
- C. CUTTING TABLES AND CUTTING LINES
- D. COMPLETE WATERJET CUTTING SYSTEMS
- E. AUTOMATED LINES AND LOADING SYSTEMS

CMS DIGITAL SYSTEMS

CMS accompanies its customers through the whole production process, combining **machines with software solutions** and digital services, with a constant attention to **performance improvement** in order to optimize the company productivity. CMS software solutions are developed to allow their integrability with the company pre-existing software, in order to **optimize the machine use** and the whole process.

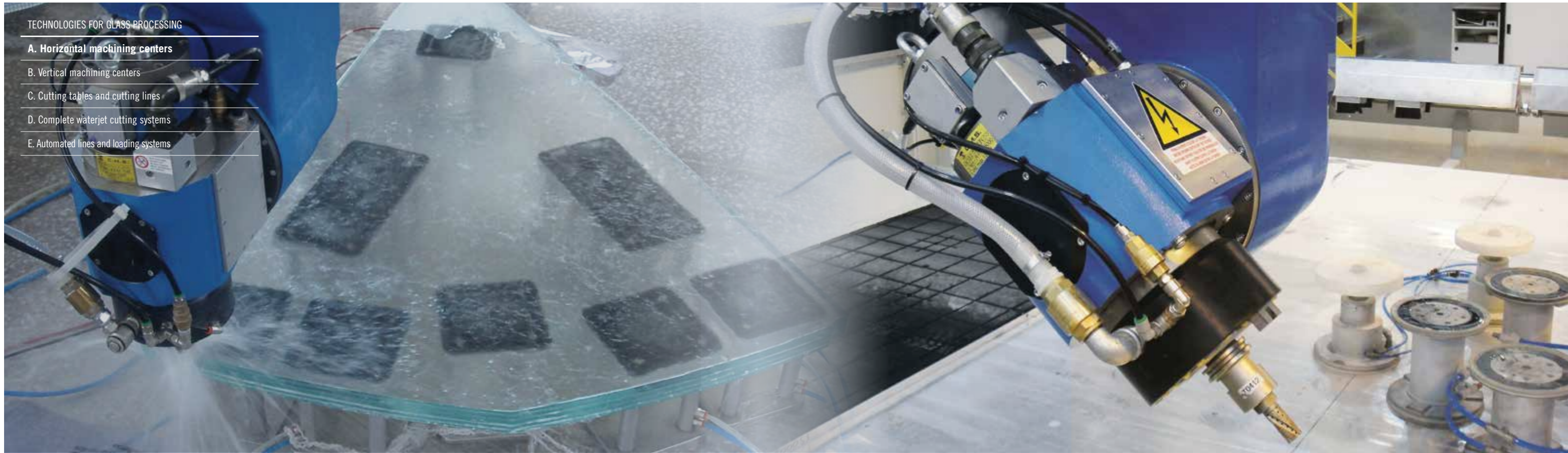
DIGITAL SOLUTIONS

- 1. CMS CONNECT
- 2. CMS ACTIVE



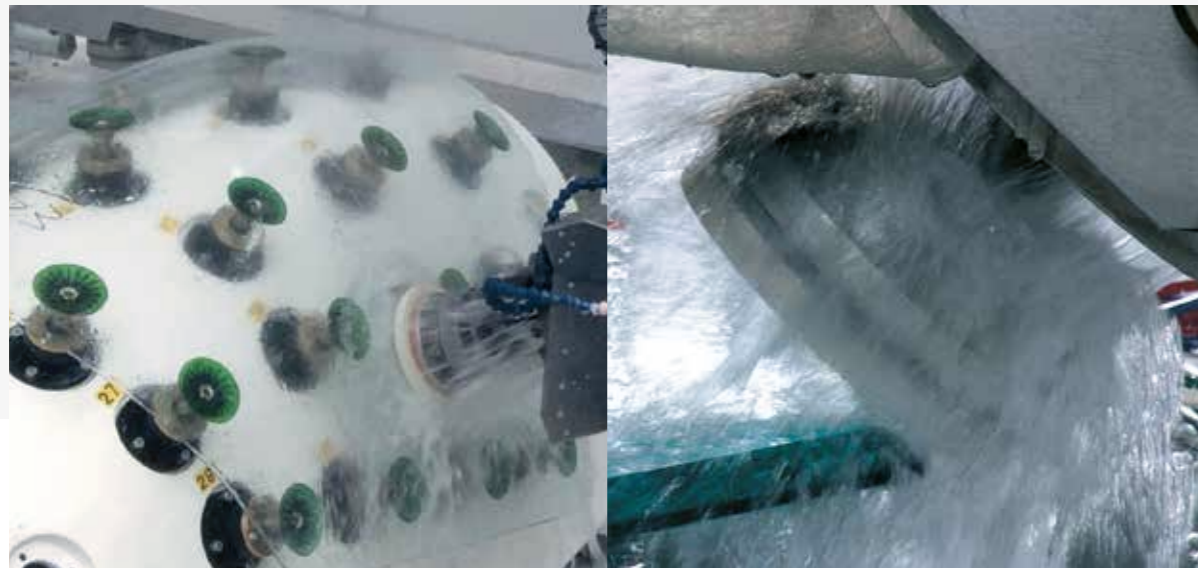
"CMS high technological know-how and sophisticated digital solutions ensure machines with best-in-class performances for precision and speed of manufacturing, able to meet the needs of all its customers".

- A. Horizontal machining centers
- B. Vertical machining centers
- C. Cutting tables and cutting lines
- D. Complete waterjet cutting systems
- E. Automated lines and loading systems



A. HORIZONTAL MACHINING CENTERS

Three, four and five axis machining centers for **flat glass processing**, both thin and of great thickness, **laminated glass**, **strengthened glass** and **curved glass**. The advanced design of its structures, result of CMS Glass Technology's continuous investments in research and development, and the sophisticated technological solutions adopted provide **sturdiness, precision over time, speed and flexibility**, to guarantee **an exceptional level of finish and incomparable accuracy**. These machines perform all types of edge grinding and polishing, filleting, milling, disc cutting, drilling, contouring, engraving, writing, variable angle beveling and special machining. Their sturdiness makes them ideal for all types of glass processing.



EASE OF LOADING

Thanks to the automatic doors, to the heights of the worktables and to the shorter distances of the worktables from the operators' stations, the machines **can be loaded and unloaded in a totally automatic way with a loader**, which also means total working safety for the operator.

MAGAZINES WITHOUT LIMITS

The **wide modularity of the magazines** allows the tables to be adapted to every need. The magazines can be installed at the rear, at the side or even under the beam for a **tool change in less than 10 seconds**.

TWO WORKING ZONES

Some of these machines can be configured to work in **pendulum mode** in total safety for the operator. This **eliminates loading and unloading times**.



B. VERTICAL MACHINING CENTERS

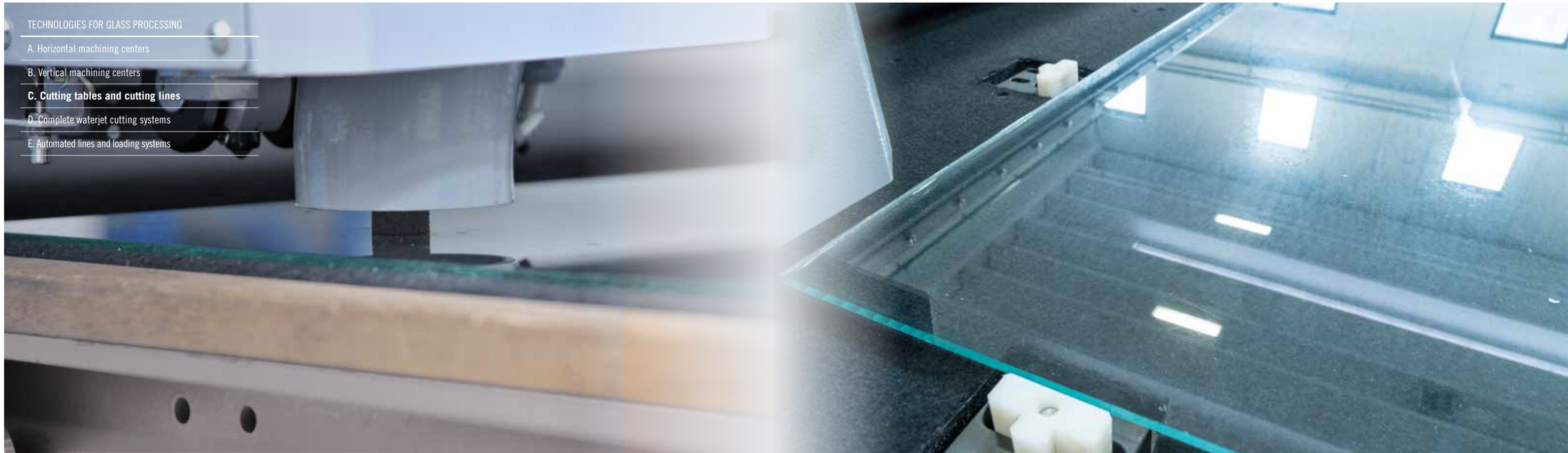
Over 20 years of glass processing experience has put CMS in the position to offer a **comprehensive range of vertical machines to cater to the needs of all customers**. These machines provide accuracy and quality, accompanied by the classic benefits of productivity and versatility vertical processing offers. They perform **filleting, polished and industrial grinding, milling and coaxial drilling** operations and can be used as a stand-alone machine, in line with a milling drill, or within a double glazing line. CMS Glass Technology's range also includes CNC vertical drills for **drilling, countersinking, milling and notching on monolithic, laminated and low-e glass**.



EVERYTHING UNDER CONTROL
CMS experts have created a SCADA (Supervisory Control And Data Acquisition) software that allows to **monitor and supervise all the main components** of the machine thanks to specific overviews.

FOCUS ON WHAT'S ESSENTIAL — CMS WILL DO THE REST!
The machines can be equipped with a **fully automated wheel and drill truing system**. Thanks to the machine software, it is possible to set after how many processed material meters/holes the grinding wheels and core bits must undergo truing. The wear of the tools is continuously monitored and the best moment to start the truing cycle is automatically chosen.

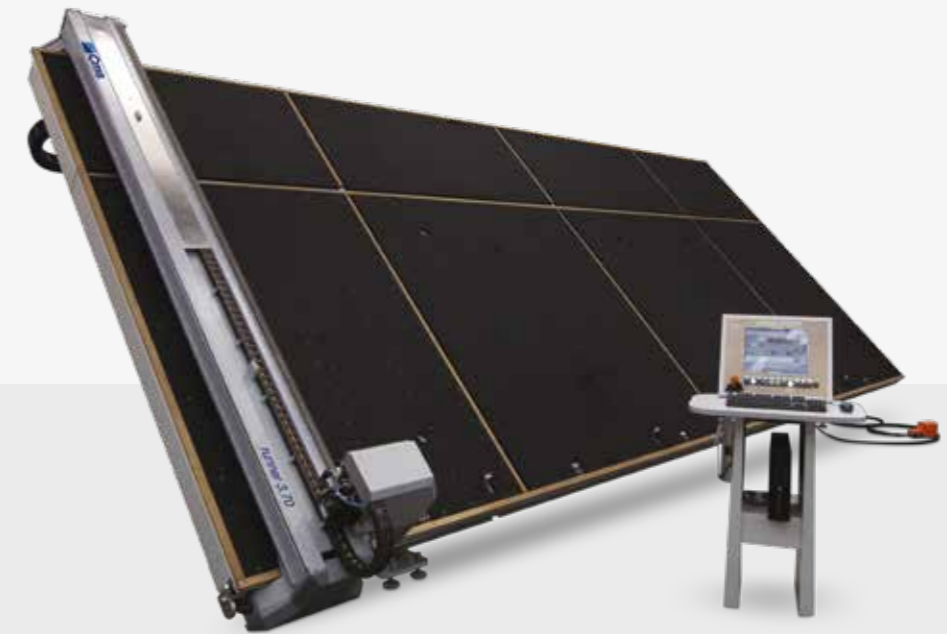
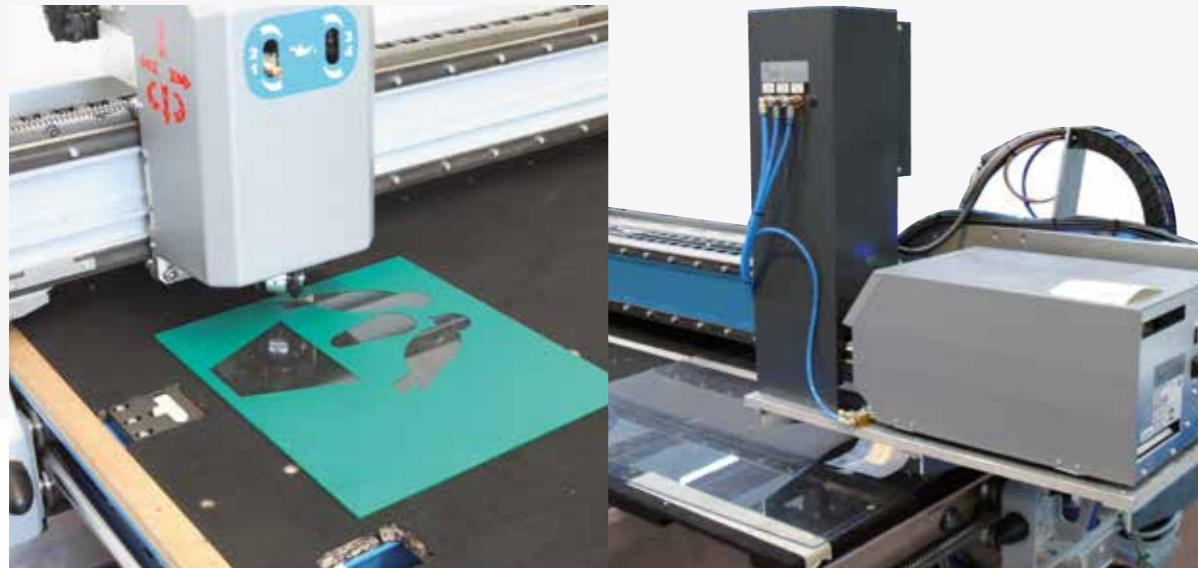
HOW TO GET THE MOST OUT OF A POLISHED GRINDING?
It is possible to equip this machine with a **fully automated second spindle**, capable of carrying out **filleting and rough or polished wire grinding**. The second head allows the automatic tool change in presence of at least one rotary magazine.



C. CUTTING TABLES AND CUTTING LINES

CMS Glass Technology cutting tables and lines are the **ideal solution for cutting flat monolithic and laminated, shaped or straight glass**. This range is characterized by NC synchronized brushless motors with features that reduce positioning errors due to mechanical elasticity. The structure of these machines allows an easy loading/unloading of the biggest glass sheets. In-line cutting, with loading, cutting and breakout, guarantees much higher productivity as it avoids downtime due to the loading and unloading phases typical of tilting cutting tables.

The latest generation of machines stands out for **the high quality and precision of the shaped cutting of the glass, from minimum to heavy thicknesses**.



HIGH CUTTING SPEED

Cylindrical guides with integrated rack, ground and tempered, allow **cutting speeds up to 160 m/min**.

NO SET-UP TIME

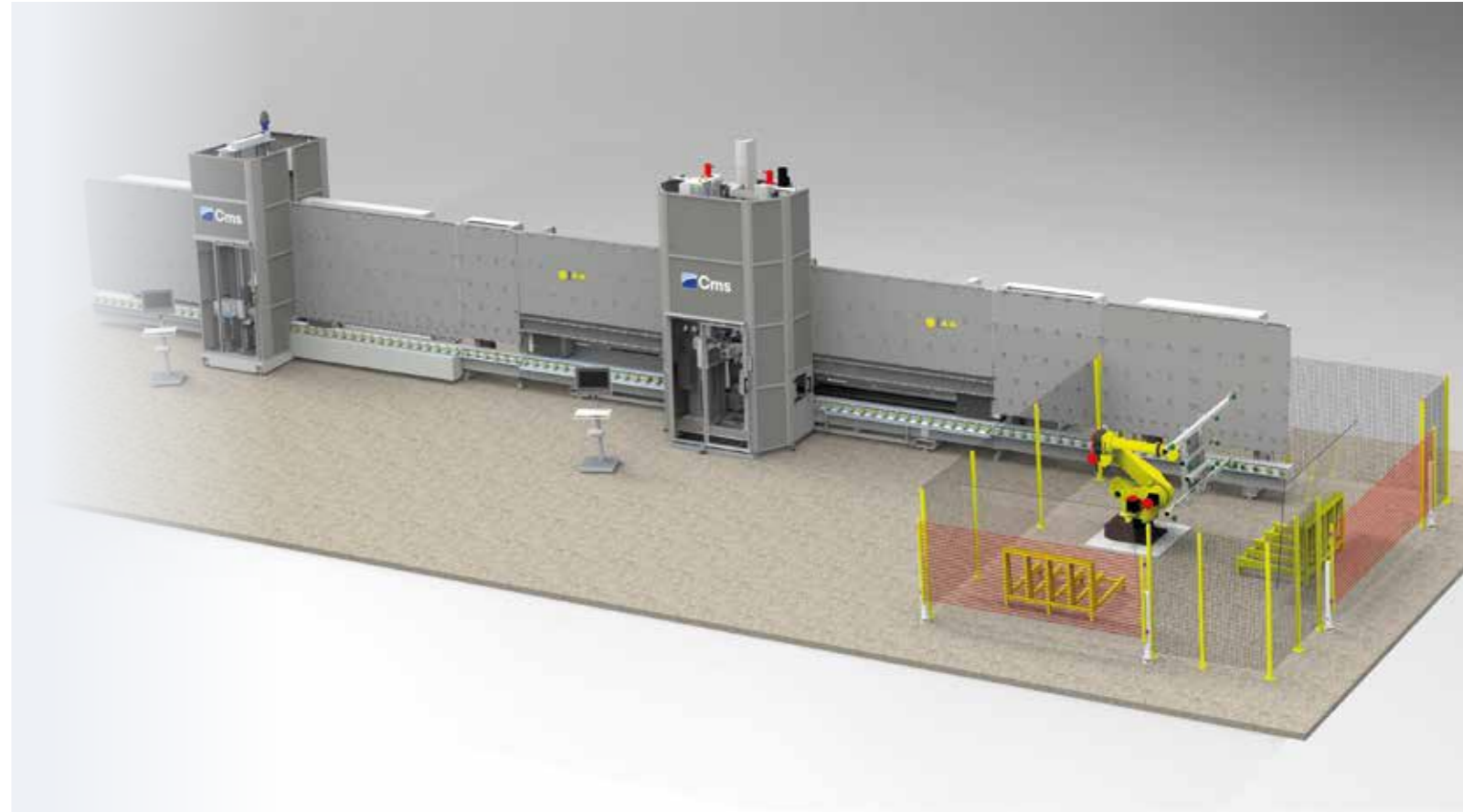
Thanks to the **patented four-head system for the automatic management of the cutting of different thicknesses**, no manual operation is required. Each head has a specific wheel for each thickness, guaranteeing zero downtime when changing the plate.

GLASSWARE MANAGEMENT

CMS Glass Technology cutting lines manage the printing of bar codes to track the cut pieces, integrating with the glass management system. The printing is **totally integrated** in the cutting process, avoiding possible errors by the operator and leading to **time savings of over 31%**.

TECHNOLOGIES FOR GLASS PROCESSING

- A. Horizontal machining centers
- B. Vertical machining centers
- C. Cutting tables and cutting lines
- D. Complete waterjet cutting systems**
- E. Automated lines and loading systems



D. COMPLETE WATERJET CUTTING SYSTEMS

CMS Glass Technology offers a wide range of **complete systems for waterjet cutting and pressure intensifiers**. Thanks to CMS Tecnocut's considerable **expertise** in this technology, the machines offered represent the perfect solution for a wide range of applications. These solutions combine **the cutting power of the high-pressure water jet with the reliability of sturdy, modular structures, with large worktables** able to ensure positioning accuracy and repeatability at the top of the category.



INFINITE OPPORTUNITIES: UP TO 33% CYCLE TIME SAVINGS

Infinitely rotating cutting heads provide a 33% reduction of the cutting cycle time, eliminating the need to recover C-axis revolutions to align cables and pipes.

INCREASED PRODUCTIVITY

Ad hoc solutions, such as the **pendulum cycle and the configuration of up to 4 independent 3-axis heads**, allow **productivity to be increased by up to 75%**.

LOADING ERGONOMICS: SMART OPERATION

Maximum loading ergonomics, compact monolithic structures and open frames to simplify the loading and unloading of machined parts.

E. AUTOMATED LINES AND LOADING SYSTEMS

CMS is your **all-round automation partner**, and OFFERS complete solutions from design to delivery of the finished production line.

- **Integration with all CMS machine types**
- **Turnkey solutions**
- **Integration with possible peripheral devices** connected to the process
- **Custom-made solutions** optimized for your process



Automatic line for glass grinding and washing with loading and unloading through a robot, plus paper stretching system to separate the sheets on a pallet.

CMS Glass Technology offers a **wide range of loaders and unloaders for the automatic handling of glass sheets**. All these systems are easily integrated in any straight-line grinding machine, machining center (vertical or horizontal) and double-sided grinding machine.



CMS

Digital Systems

CMS DIGITAL SYSTEMS

Smart software and digital services to improve the productivity of the companies working in the advanced materials sector.

CMS accompanies its customers through the whole production process, combining machines with software solutions and digital services, with a constant attention to performance improvement in order to optimize the company productivity.

CMS software solutions are developed to allow their integrability with the company pre-existing software, in order to optimize the machine use and the whole process.



CMS



1. CMS CONNECT IS THE IOT PLATFORM PERFECTLY INTEGRATED WITH THE LATEST-GENERATION CMS MACHINES

CMS Connect is able to offer customized 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. Real-time data collected by the machines become useful information to **increase machine productivity, reduce operational and maintenance costs and cut energy costs.**

SMART MACHINE: continuous monitoring of machine operation, with information on:

STATUS: machine status overview. It allows to check the machine availability, in order to identify potential bottlenecks in the production flow;

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

PRODUCTION: list of machine programs run within a given time frame 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 the machine components report a potentially critical state associated with reaching a certain threshold. This way, it will be possible to intervene and schedule maintenance interventions without stopping the production.

SMART MANAGEMENT

Section dedicated to KPI presentation for all the machines connected to the platform.

The indicators provided assess the availability, productivity and efficiency of the machine and the product quality.

MAXIMUM SECURITY

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

ADVANTAGES

- Optimization of production performances
- Diagnostics to support the optimization of component warranty
- Productivity increase and downtime reduction
- Improvement of quality control
- Maintenance costs cut down

2. CMS ACTIVE A REVOLUTIONARY INTERACTION WITH YOUR CMS MACHINE

CMS Active is our new interface. The operator can easily manage different machines, as the CMS Active interface software maintain the same look&feel, icons and interaction approach.

EASE OF USE

The new interface has been especially designed and optimized to be immediately used via touch screen. Graphics and icons have been redesigned for an easy and comfortable navigation.

ADVANCED ORGANIZATION OF PRODUCTION

CMS Active allows to configure different users with different roles and responsibilities according to the use of the machine (e.g.: operator, maintenance man, administrator...).

It is also possible to define the work shifts on the machine 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 EXPERTISE IN INDUSTRIAL MACHINES AND COMPONENTS

World leader in the field of technologies for the processing of a wide range of materials: wood, plastic, glass, stone, metal and composite materials. The Group companies around the world are reliable partners of well-known companies working in several product sectors: from the furniture, construction, automotive industry

to aerospace, boating and plastic materials processing. SCM Group coordinates, supports and develops a system of industrial excellence, organized in 3 highly specialized production centers, with 4,000 employees and a direct presence in 5 continents.

INDUSTRIAL MACHINES

Standalone machines, integrated systems and services designed for processing a wide range of materials.



Technologies for wood processing



Technologies for composites, carbon fiber, aluminum, light alloys, plastic, glass, stone and metal processing



INDUSTRIAL COMPONENTS

Technological components for machines and systems of the Group, third parties and for the mechanical industry.



Electrospindles and technological components



Electrical panels



Carpentry and mechanical machining



Iron castings

SCM GROUP IN A NUTSHELL

+700
Million/EUR
of consolidated turnover

+4000
employees
in Italy and abroad

3 main
production
centers

5 continents
with direct and
widespread presence

7%
of turnover
invested in R&D



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