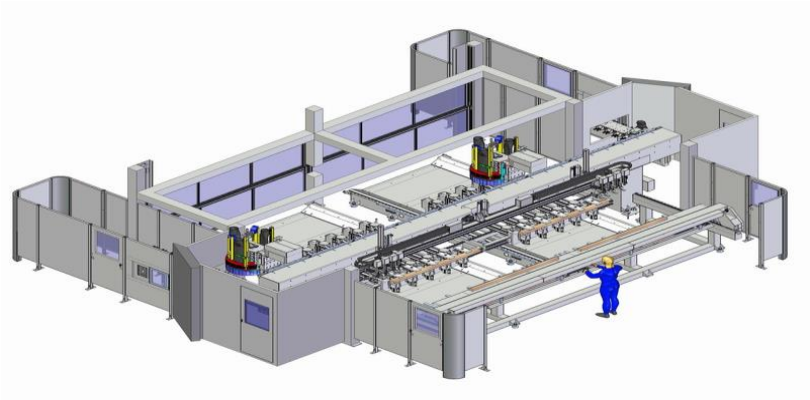
Offer number 2011/02

OFFER FOR DOOR PRODUCTION LINE
CMS PRO EVOLUTION TWIN 60



The actual appearance may differ from the one presented in the offer

An innovative technological solution combining work in line mode and in machining center mode.

AXIS STRUCTURE AND MOVEMENT

STRUCTURE WITH A FIXED BRIDGE

The base is made of high-thickness, electro-weldable and stabilized steel for maximum rigidity and strength.
A Z-axis trolley moves on a stationary bridge and performs vertical movement.

Perpendicular movement to the X-axis of the bridge is performed by two slides containing locking clamps and movable suction cups and handles.

The carriage feed is carried out on guides with a large cross-section. The guides are hardened and rectified.

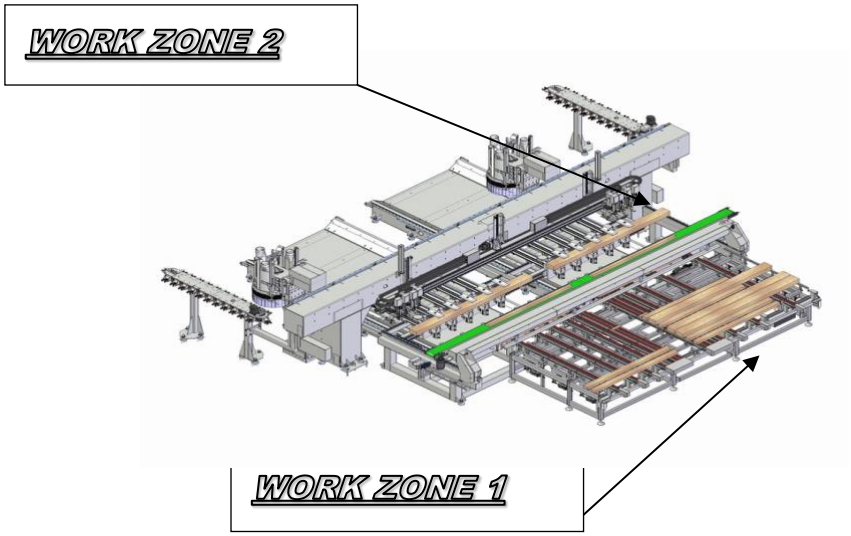
The feed on the X and Y axes is based on a system of gears and gears. This solution allows you to reach high speeds over long distances without causing vibrations that could prematurely cause wear and tear of all mechanisms.

The feed of the Z-axis is based on a worm screw system.

Movement along the Z-axis of the operating unit is assisted by pneumatic cylinders that balance the weight of the components. In addition, the automatic brake blocks the movement of the trolley in the event of an unexpected lack of electrical voltage.

Axis range	Positioning speed	Acceleration (S3)
X = 2960 mm (table)	100 m/min.	4.2 m/s²
Y1 = 4800 mm **+ tool change**	100 m/min	3.2 m/s²
Z1 = 510 mm **(PR5)**	30 m/min.	3.5 m/s²
B1 = +/- 180° **(PR5)**	6,000 °/min	500 °/s²

C1 = +/- 320° **(PR5)**	10,800°/min	500 °/s²
Two axes of element positioning system.		



WORK ZONE NO. 1.

Work zone number 1 is designed for machining simple workpieces. This is where the line mode of operation takes place, ensuring high productivity and quality. The components are machined as follows.

- Profiling. Preparing the elements for later assembly.
- Machining after automatic re-basing on the chucks.

WORK ZONE NO. 2.

Machining center mode work zone. All kinds of special production elements are processed here.

WORK ZONE NO. 1 - DESCRIPTION

Notes on simple machining components

1. They must be planned according to the dimensions and thickness
2. Straight elements must be at least 2 mm longer than the final ones on each side.

Tolerance, Finish Level

1. There should be no tears on the elements
2. All parts should be perpendicular
3. Machining Tolerance +/-0.1mm
4. Drilling tolerance +/-0.15mm

Chuck Requirements

Straight parts up to 2500 mm long are machined in pairs using 5+5 number of torches.

Simple workpieces longer than 2500 mm are machined individually. Maximum length 6000 mm.

6 positioning axes are used to hold the components. They optimize the distance between

Minimum length	190 mm
Maximum length (external)	6000 mm
Minimum thickness	22 mm
Maximum thickness	**120 mm**
Minimum width	40 mm
Maximum width	250 mm

each other to achieve the greatest possible rigidity of the system.

CHARGING

Charging is carried out on special structures with a reference point.

Components up to 2500 mm in length are loaded in pairs. The longer ones are charged individually. The longest – 6000 mm

The dimensions of the elements are checked during loading.

The thickness and width are checked by a system of pressure rollers. The system accepts thickness tolerances from 0 to 1 mm, width from 0 to 2 mm. The length is checked thanks to a laser system that accepts a tolerance of 0 to 5 mm. The operator can change the tolerance according to his needs.

If the operator loads elements that do not correspond to the programmed ones, an alarm will appear on the desktop screen. At this point, charging stops. The processing of components that are already in the work area is not stopped.

UNLOADING

Unloading is carried out through a repositioning system. Components up to 2500 mm in length are discharged in pairs, longer ones up to 6000 mm are discharged individually.

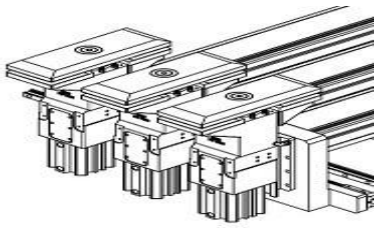
REPOSITIONING SYSTEM

The system design is mounted on the rear of the machine bridge, guaranteeing high rigidity and accuracy.

The system is equipped with pneumatic handles that are numerically controlled. They automatically adapt to the length of the elements. They have a dual function:

1. Lifting the workpieces from the handles and automatically moving them to the unloading area.
2. Swap pages for machining on the chucks, allowing processes to be carried out from all sides.

CHUCK MODULES



10 modules. Each equipped with a pressure device and double support plates.

Each module consists of a trolley with a handle. The chuck is controlled by an independent axis, which allows the chuck to be positioned depending on the dimensions of the workpiece and the planned machining.

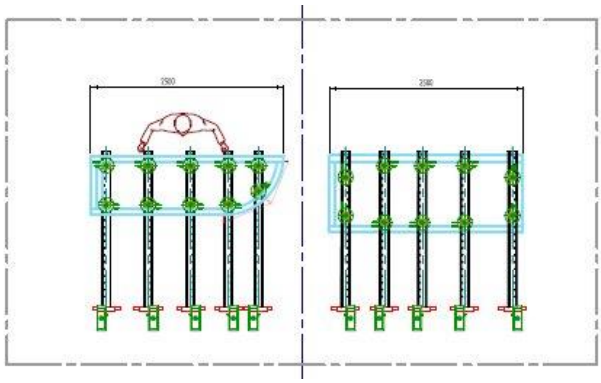
The modules move across the X1 and X2 axes, taking the component from the loading area for processing.

The components are locked by pneumatic cylinders (the power of the handles is controlled by proportional valves depending on the type of material)

Grip Strength	**Maximum**	2720 N
	Minimum	910 N
Chuck pressure	**Maximum**	6 bar
	Minimum	2 bar

A membrane on each device prevents the surface of the workpiece from being deformed. Each module is equipped with a blowing device.

WORK ZONE NO. 2 – DESCRIPTION



6000x1600 mm

The table consists of 10 movable bottom brackets, on which handles or suction cups are attached, depending on the production. Maximum 3 suction cups or bottom brackets.

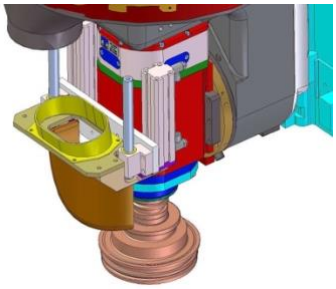
Each handle/suction cup is moved by an independent axis. It provides automatic localization regarding the length of the component.

Table equipment:

1. 10 rails for lowering heavy workpieces
2. 1 +1 side reference cylinder mounted on the outside of the beam. The cylinders are managed by the code M. H=130 mm
3. 10 retractable reference cylinders at the front. H=130 mm
4. 20 handles
5. 20 suction cups

2 MACHINING UNITS

Universal PR5 head with automatic tool change



With 2 rotary axes, 4° and 5° axis, managed by CN, which allow inclination in all directions of space. The axis movement is carried out by motors connected to high-precision reducers with a clearance recovery system.
The head is equipped with a special electro-spindle with bearings designed for high rotational speeds and automatic tool change with HSK 63 E connection.
A static frequency transducer continuously adjusts the speed and direction of rotation of the electrospindle. The electro-spindle is cooled by a liquid control unit that maintains a constant coolant temperature.

Power	13 kW at 7100 rpm
Max. number of revolutions	17500 rpm
Cooling	Liquid
Connection	HSK63 E

Attention!! Possibility of using generators.

The unit is equipped with a pneumatic deflector, adjustable in three positions to help with chip extraction. In addition, the head is equipped with a lashing flange.

TOOL MAGAZINES

1.Chain magazines magazine for 24 positions

The magazine is completely covered to avoid dust/sawdust buildup.
Diameter max. Tools set in stations: 190 mm
Diameter max. tools placed in the magazine: 350 mm (leaving 2 adjacent stations free).
Maximum length outside the ETS40 gripper: 230 mm (302 mm from the spindle nose).
Maximum weight of a single tool: 10 kg (maximum total weight in magazine: 168 kg).

Note: Changing tools in the magazine is done using the key selector located in the electrical cabinet.
The rotation of the chain is activated by pressing the required number of positions on a special keypad, i.e. by inserting the illuminated button to turn on the rotation. Rotation can only take place with the magazine access door closed.

2.16-position rotating magazine.

NUMERICAL CONTROL

OSAI 510i numerical control
- CPU 850 Mhz
- RAM 32 MB
- Ethernet input
- 40 MB for the program
- Mechatrolink Digital Protocol
- "DYNAMIC TOOL CONTROL" software to display and check the rotational speed and current consumption of the electro-spindle in machining for each tool used.
- DOS Realtime Interface
- TCP
- Multiprocess

15" TFT OPERATION AND VIDEO PANEL FOR PC INTEGRATED INTO THE CABIN:

IPanel based on PC Office allows the operator to communicate with numerical control for its programming and management, in addition to installing software of any kind on the hard drive.

PC Compaq HP DC 7700 (or better configuration available during the machining center preparation phase)

- **Processor:** Intel® Celeron® 430 1.8 GHz (FSB 800 MHz), 512 KB L2 cache;
- **Memory:** 1Gb DDR2-Dynch DRAM; upgradeable to 8 GB
- **Hard Drive**: 80GB SATA 7,200 rpm
- **Graphic card**: ATI Radeon™ 3100 (with DirectX® 10)
- **DVD - Rom**
- **Integrated Sound card**
- **Net card:** NIC Gigabit Ethernet Broadcom NetXtreme
- **Expansion slot:** 1 PCI low profile, 2 PCI-Express x1 low profile and 1 PCI-Express x 16 low profile
- **Keyboard**: HP PS2 Standard
- **Mouse**: PS/2 2 Buttons Optical Scroll mouse;
- **External I/O port**: 6 USB 2.0, 1 serial, 2 PS/2, 1RJ-45, 1 VGA
- **Modem:** 56K V9

- **Operating System**: Windows XP OEM
- Interface: Parallel Port 1,Serial Port 2, PS/2 Keyboard 1, PS/2 Mouse 1, VGA 1.

Metric Setting System

Portable keyboard containing: (equipped with a 10 m long cable)
- Warning button
- Safety button
- A membrane-based keypad containing:
- Start button
- Program reset button
- Mode selection button: Automatic – Half lock – Manual
  and a status LED
- Resolution selection button: x0.01- x0.1- x1
  and a status LED
- Grow button (+)
- Decrease button (-)
- Speed button
- 4 function buttons: F1-F2-F3-F4

- Axis selector switch (X,Y,Z,4,5,6)
- Feed override switch (0 - 120%)
- Teach-in button

REMOTE DIAGNOSIS (TELESERVICE)

It allows you to display the status of the machine from the PC and possibly remove the causes of irregularities in the machine remotely.
The package allows the technician to perform signal diagnostics, check and modify the configuration status, parameters and programs of the machine on-line, and to perform data backup operations, enabling remote technical interventions.
Connection requires access to the Internet, via the company network or via a telephone line or a modem located on the machine's PC.

ELECTRICAL CABINET

A separate electrical cabinet, protected against dust, it houses all the main electronic and electrical parts controlling the machine. Security class IP 54. An air conditioning unit capable of limiting the internal temperature to 35°.

Electrical cabinet placed near a stationary table.

1 light indicator with three LEDs for visual inspection of machine status
(yellow = machine running, green = machine stopped/end of cycle, red = machine alarm).

ELECTRICAL CHARACTERISTICS:
supply voltage: 400 Volts +10 / -15% 50/60 Hz

To exclude the risk of electric shock to the machine operator, all CMS machines have **a neutral connection**.

In the case of either **TN-C** or **TN-S** type networks with a supply voltage of 400V +10 % /-15% -50+60Hz +/-1%, the machine can be connected to the mains without additional protection.
If the network is other than TN-C or TN-S, the customer should provide a transformer to provide the required conditions.

For possible protection of other (not mandatory for the machining center), the CMS recommends the use of a type A selection device or, preferably type B, with a varied current regulated by 0.3 A, in the electrical cabinet there are devices that can generate a constant component of the fault current.

ASSISTIVE DEVICES

Vacuum system

Number of pumps	2 pcs
The scope of each	100 m3/h
Power	3.3 kW
Suction zones	2 **(one for each table)**

COMPRESSED AIR SYSTEM

The system is equipped with a group of filters, a pressure regulator, a lubrication device and a minimum pressure indicator.

Pressure	6 bar

CENTRAL LUBRICATION

Centralized automatic device with reinforced grease injection for trolley guides with pressure control and signaling of the minimum level in the tank.

MACHINE COLOR

CMS standard colour (RAL 7035 light grey).

BARCODE READER

Placed in the loading area. It is used to identify the components to be processed.

SAFETY

The machining center is enclosed inside the fence, which allows for the reduction of processing dust and noise emission. The fence has a door to access the maintenance/tool exchange and windows that allow you to see the work area.

The perimeter fence around the whole device is made of modulated and lacquered sheet metal structure and a door with a lock.
The machine has keyboards located outside the fence with Safety, Start, Stop functions.

CE COMPLIANT MACHINE

The machine complies with the main safety requirements provided for in the CE declaration of conformity according to:
Directive 98/37/CEE as modified by Directive 98/79/CEE
Directive 89/336/CEE as modified by Directive 92/31/CEE and 93/68/CEE
Directive 2006/95/EC

Documentation
Manuals for use to be prepared in the following languages: Polish
1 Installation, Use and Maintenance Manual on CD, in English
CN Manual - Programming + Use (on CD) in Polish
Drawings and tables of electrical diagrams.

CN commands in English
Windows XP operating system

ACCESSORIES

Standard equipment
1 Set of standard wrenches for machine maintenance

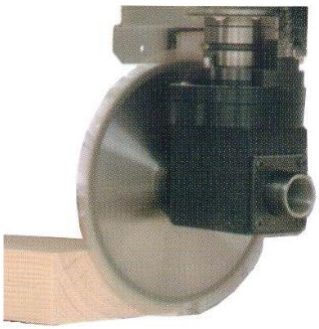
2 pcs control pedal to start the positioning cycle of the element in the loading area, after manual loading of the component.

1 telecamera placed inside the work area with the displayed image on CN video. Allows you to preview the processing

Balluff device with **2 readout heads** **(one for each operating unit)**

48 pcs. Balluff chips for HSK63E tool holders (chuck not included)
To edit/configure the data of each tool, a table is prepared, displayed on a monitor located in the electrical cabinet, in which the technician (with the access password) performs the configuration or editing of the values of the tools present in the machine (max. fig. 256).
Editing the table can also be done from the office.

N.1 (Aggregate) Single output angular gearbox, HSK63 mount, mounted on an electro-spindle with automatic tool change.
This unit is used for milling, drilling, saw cutting, which require horizontal machining axis.
Saw outlet **with a diameter of max. 300 mm.**



Rotation speed	8400 rpm
Connection	HSK63F
Quantity	1

N.1 (Aggregate) Angular gearbox with 4 vertical outputs 90° spacing, HSK63/F mounting, superimposed on the electro-spindle with automatic tool change (pin holes). Possible overlay of the RR rotary device on the operating unit allows the program to be permanently oriented 360° to the XY table, using CN control axis.
APPLICATIONS: This equipment is used to perform horizontal drilling with variable orientation on an XY table.

with gear the

Maximum rotational speed = 12,000 rpm.
Transmission Binding=1/1.43
Tool holders: Right-hand swivel, ER25 attachment for Ø max 16 mm chucks
Tools: Length max. 70 mm

SERVICES

Training in CMS lasting 5 working days, for two people, concerning:
- Explanation of programming in machine languages and writing programs typical of CN.
- Visualization of the operating elements of the machine with a description of their capabilities.
- Explanation of the operating modes of the numerical control machine.

Detailed tests in CMS/ and at the Client's site:
A detailed test including the machining of 1 type of wooden door of customer production will be carried out at the CMS plant in Zogno (Italy) before the machine is shipped.

Templates and drawings in electronic format must be provided to the CMS
The method and objectives (cycle time) of the tests will be set out in the "**Order Confirmation Attachment** " document.

- The work program is carried out by CMS in cooperation with Logico;
- Raw elements are provided by the customer.

Installation
Installation carried out by specialized technicians of Italcomma Sp. z o.o. and CMS at the Client's plant

Installation includes:
- Electrical connection to the grid
- Machine leveling
- Adjustments to the machine necessary to ensure proper operation

It is up to the customer to prepare the following devices on board the machine:
- Electrical connection
- Compressed air
- Extraction (if necessary)
- Hydraulic device (if necessary)

Commissioning

Commissioning carried out by 1 specialized CMS technician lasting 8 working days at the customer's site

The launch includes:
- showing all the main functions of the machine and the included accessories
- assistance in the correct use of the machine
- Assistance in the use of machine applications
- Repeat acceptance tests

The customer is obliged to guarantee the presence of his operator during the entire installation and commissioning phase of the machine.

Excluded from delivery
Electrical, hydraulic, pneumatic, masonry works and accessories for the installation and proper operation of the machine, possible tools and wearing materials.
Means of loading and unloading, means of transport and labour.
Everything that is not listed in this offer.