

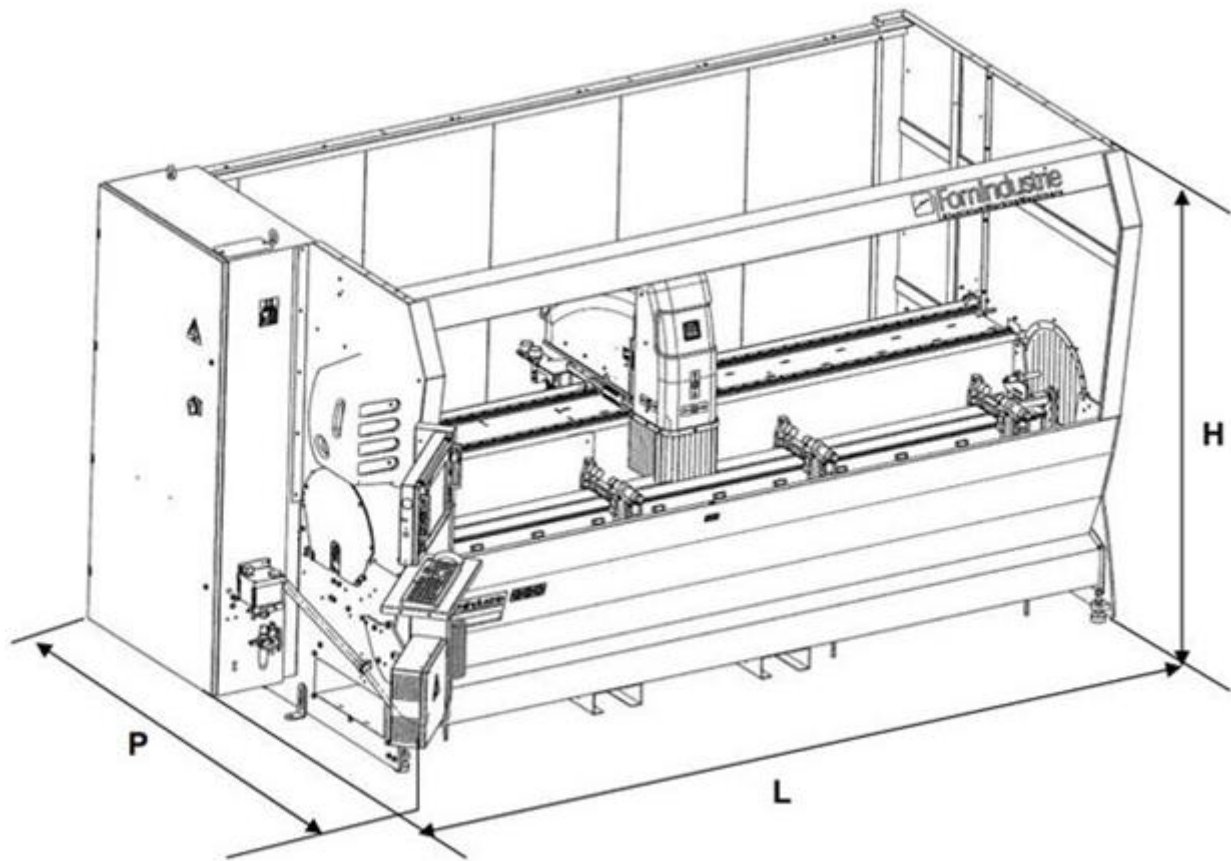
# MODUS

CNC Machining centre with 3 controlled axes and worktable with positioning 0°/90°/180° plus angular positioning control of the worktable (optional) on all angles (from 0° to 180°)



CE

Overall dimensions and weight



Version	L (mm)	P (mm)	H (mm)	Kg
MODUS	4300	2110	2065	2000

Power supply	Total power installed	Air consumption for work cycle	Working pressure
3F - 380÷415 V - 50 Hz	3,5 kW	64 NL/cycle	7 bar

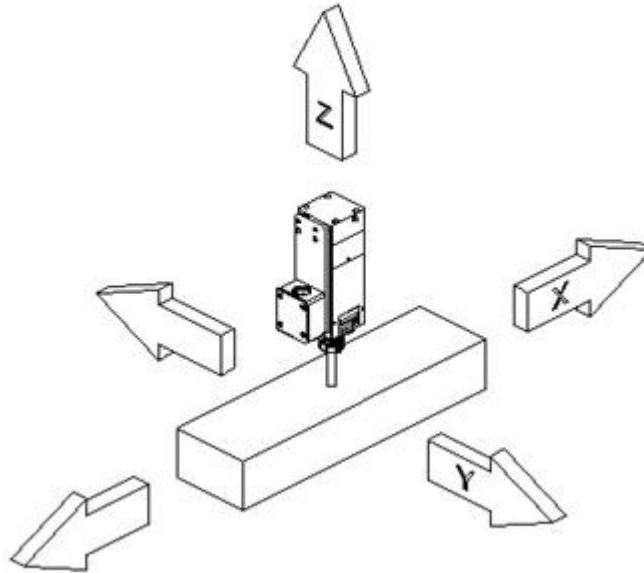


## Technical specifications:

- Guard with receding frontal door with pneumatic opening
- CNC controlled interpolating X, Y, and Z
- Touch screen console 15" complete with PC
- Axes sliding X,Y,Z on linear guides with high precision
- X axis movement with high pressure reducer
- Y and Z axes movement with drive with ground recirculating ball-screw
- Pneumatic rotation of the work table 0° to 90 to 180°
- Work table height 850 mm
- Pneumatic vices (No. 4) that translate along the work table with quick positioning (without use of keys or accessories) of the vice pads (PATENTED)
- Dual working pressure with safety valves for piece clamping vices
- Clamps positioning readout on the work table by CN
- AUTOMATIC tool change ISO 30 cone with cone tool-holder (6 tools)
- Automatic update of machining parameters when the tool diameter and/or length are modified
- Milling capacity: X= 2.985 mm, Y= 250 mm, Z= 120 mm
- Spindle speed: 1000/12000 rpm, 3 kW
- Minimum quantity lubrication (MQL) with pure oil
- Set-up for central greasing for recirculating ball-screws and linear guides
- The profile being machined can be greater than the X milling depth (2.985 mm) alternatively using the pneumatic stops on the left and the right of the machine
- LH and RH profile pneumatic stop
- Working pressure: 7 bar
- Work cycle air consumption: 64 NL
- Chip bin
- Set up for fumes extraction
- Max tool height (spindle end projection) 130 mm
- Max tool height 45°-135° and intermediates angles (spindle end projection) 95 mm (on request)

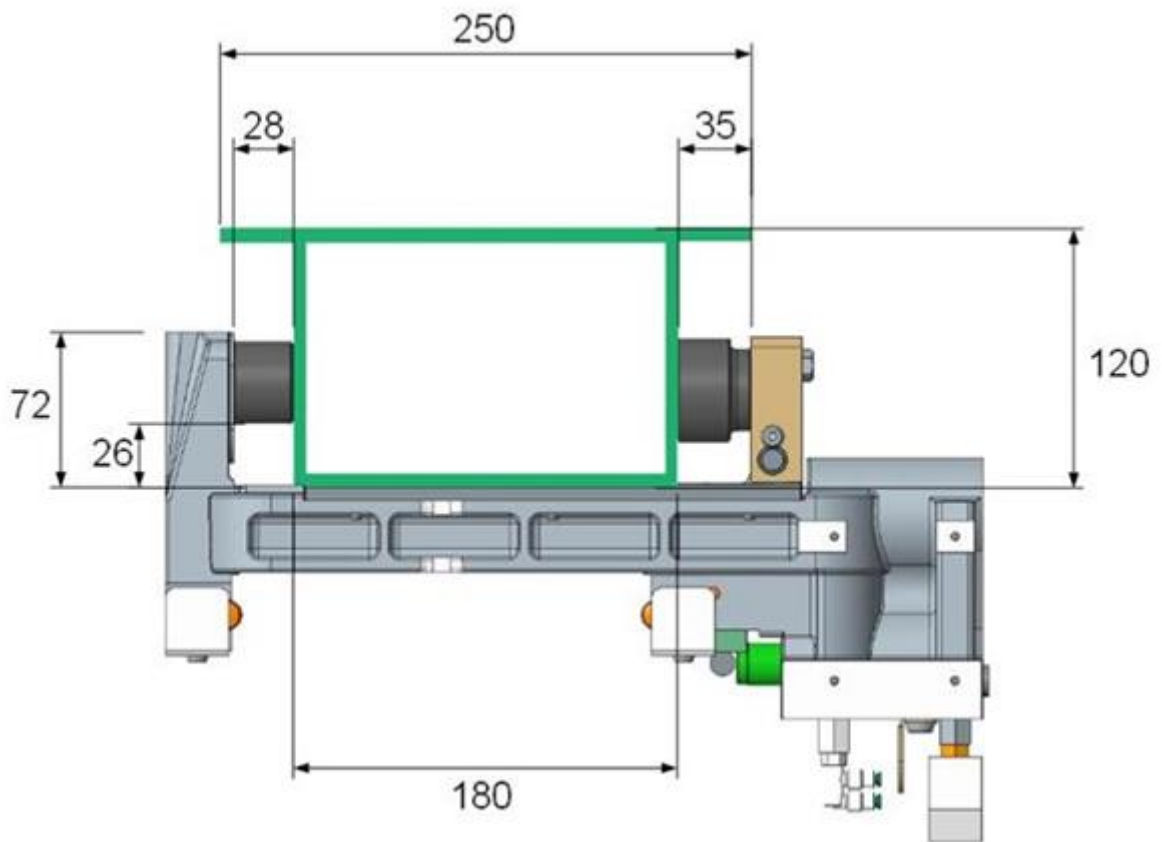
Profile maximum sizes machinable

AXES CHARACTERISTICS

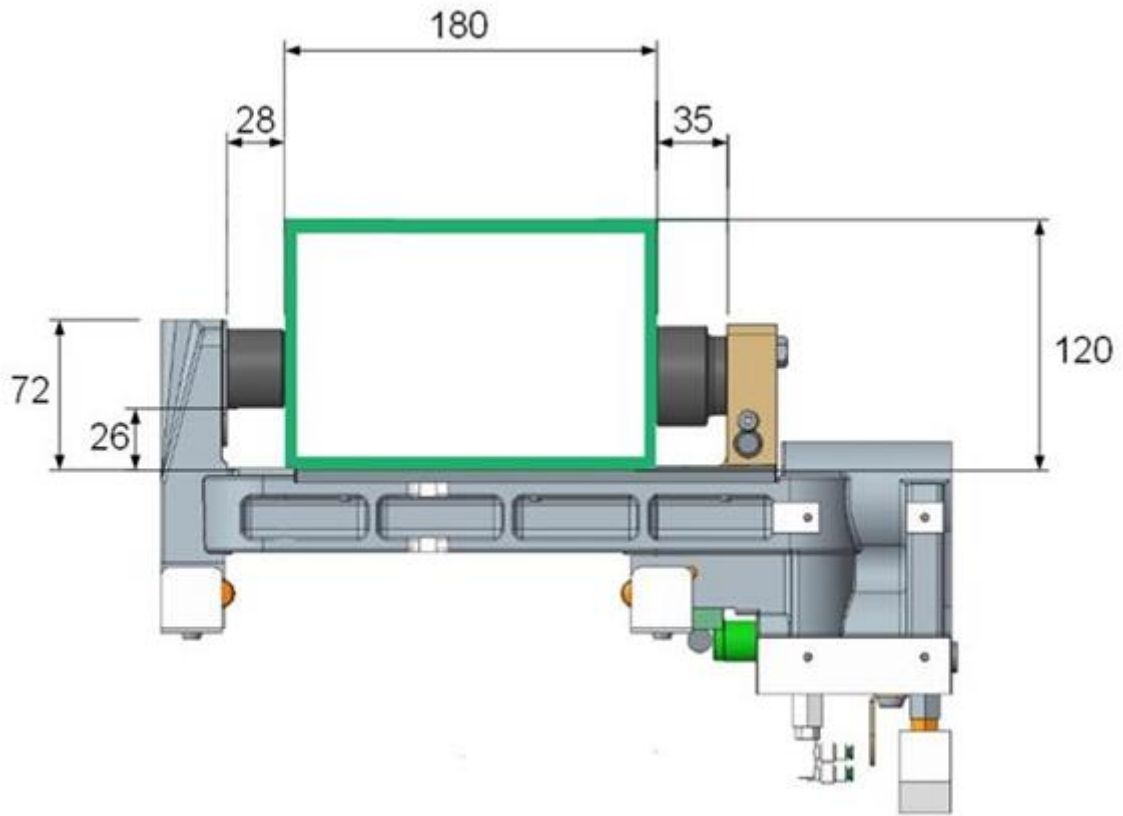


	X AXIS	Y AXIS	Z AXIS
TRAVEL mm	3005	355	214
SPEED m/min	30	13	11
TOOL REPLACEMENT TIME CHIP/CHIP 15 s			
DISTANCE BETWEEN THE PNEUMATIC STOPS mm 2960			

### Working capacity



Maximum workable profile on three faces with cone + tool with 110 mm spindle end projection and work table 90°



Maximum workable profile on three faces with cone + tool with 110 mm spindle end projection and work table rotation 0°/ 90°/180°

## Control console



### Technical specifications:

Touch monitor 15" LED backlighting  
Touch screen monitor  
Standard mouse and keyboard housed in a retractable compartment

#### PC comprising of :

Solid state hard disk  
2 Net interfaces  
USB ports  
3-year international "on site" warranty for commercial PC

#### Software installed:

Windows 10 operative system  
FOMCAM  
FST MI for managing the working lists and blocks of manual control and service on line – assistance.

#### Some of the main functions of the software:

Parametric programming  
Machining optimizations  
Dynamic display of the machining operations  
Graphic display of the working area

## Graphic interface FOMCAM

Graphic interface based on the Windows operating system for planning the machining operations and the pieces which automatically generates the CNC program that can be executed by the machining centre.



Program features:

CAD 2D graphic representation of inserted bars and the machinings
Guided introduction of the main machinings (hole, pocket, linear milling, cylindrical hole)
Parametric machining management
Simplified management of machining process sequence
Automatic calculation of optimal vice positioning
Tool archive management
Tools and profiles archive that can be extended and managed by user
Management of machining prestored in archive (macro)
Module for the graphic designing in 3D



## Standard configuration:

- Pneumatic rotation of the work table 0° to 90 to 180°
- Servo-ventilated three-phase spindle motor 3kW Regulation of spindle rpm by numerical control – inverter (1000/12000 rpm)
- 6 position tool magazine. (ISO 30)
- No.4 pneumatic vices with manual positioning
- LH and RH receding pneumatic stop
- Minimum quantity lubrication (MQL) with pure oil
- Greasing gun
- Chip bin
- Guard with receding frontal door with pneumatic opening
- Set up for fumes extraction
- Electronic equipment "Power E-Box"
- Adjustable console with PC, Touch screen 15" keyboard and mouse
- Software licence for FOMCAM program
- FOMCAM training course (FOM premises)

## Technical specifications:

Axes travel			
X axis	Longitudinal travel	mm	3005
Y axis	Transversal travel	mm	355
Z axis	Vertical travel	mm	214
Axes movement			
X axis		m/min	30
Y axis		m./1'	13
Z axis		m./1'	11
Tool replacement time		s	15
Distance between the pneumatic stops		mm	2960
Electrospindle			
Cone		ISO 30	DIN 69871
Max power		kW	3 (S6)*
Maximum rotation speed		rpm	12.000
* Sequence of identical operating cycles, each cycle comprises an operative time lapse with constant load and an operating time lapse with no load			
Tool magazine			
Tool replacement time		s	15
Possible number of tools		No. tools	6
Maximum tool weight		Kg.	2
Maximum tool length		mm	130
Maximum tool diameter		mm	20
Max tool diameter milling cutter		mm	75

## Protection and safety devices

The CNC machining centre bears the CE symbol in compliance with the content of Directive 2006/42/CE (Machine Directive). The design and construction of the machining centre complies with the safety regulations in force in the European Union and in the main industrialised countries (USA, Canada, etc). In particular, for the European Union market the following legal provisions are complied with: Directive 2006/42/CE (Machine Directive), Directive 2006/95/CE (LVD) and Directive 2004/108/CE (EMC). The machining centre is also equipped with special safety devices designed to comply with the relevant product standards and the regulations on health and safety in the workplace:

Semi-integral casing around the work area with a vertically opening pneumatic mobile guard in transparent polycarbonate.

Pneumatic locking valves on the cylinders of the mobile guard: the guard will not move if there is no compressed air present.

No. 2 mobile guard closed micros (enabled at Program Start)

Pneumatic vice non-return valves (one for each vice) to prevent the vices from opening if there is no compressed air in the circuit.

### Perimeter casing with vertically opening pneumatic door



### On request, integral soundproofing kit (PR-27543)



The electrical system has been engineered in compliance with the provisions contained in European Union directives 2006/95/CE (LVD), 2004/108/CE (EMC) and conforming to the applicable standards governing the safety of electrical systems (EN 60204-1, EN 61000-6-2 and EN 61000-6-4). Special care has been given to the provision of emergency cables and to the system for activating and resetting them. If any faults occur, the operator is alerted by light signals and messages on the monitor. In the event of faults or breakdown, the protection devices inside the panel are designed to prevent injury to persons and/or damage to the machining centre itself.

If for any reason the interaction between the CNC machining centre and the environment in which it is installed contravenes any of the above mentioned conditions, it will be essential to agree with the purchaser a comprehensive solution for achieving the necessary safety conditions so that the purchaser can make the area designated for installing the machining centre suitable and safe.

## Optional:

- Additional charge for special power supply with transformer
- Additional charge for electrical version UL-CSA
- Additional charge for electric cabinet cooling
- Additional charge for EAC (Eurasian Conformity) certification
- Pneumatic vice with manual positioning (max. no.2 clamps)
- Additional charge for transforming the standard clamps into motorized clamps with independent positioning
- Powered pneumatic vice with independent positioning
- kit for Tapping cycle.
- External stop with tunnel
- Additional charge for CNC work table rotation for machining at intermediate angles
- Lubrocooling with recycling of cooling liquid in tank (advisable for iron materials)
- Flowdrill
- Machine handling by container
- Integral soundproofing
- Equipment for machine handling with bridge crane
- Software licence for office FOMCAM program
- Supplementary office licence for "FOMCAM" program
- Software licence FST MI program for office, for the machining lists management
- SOLID PLUS software licence (3+1 or 4 axis CNC machining centres)
- SOLID PLUS additional software licence (3+1 or 4 axis CNC machining centres)
- Module for the insertion of geometries 'defined by the user' and import of drawings in DXF format for FOM CAM
- Module for the graphic designing in 3D for FOMCAM
- Wireless bar-code reader + data import software for data in accordance to FOM protocol (ZP712762)
- Software for the importation of datas for CNC by means of FOM protocol (included in PR-29529 or PR204551)
- Software licence for "Clock", module for times calculation for FOM CAM
- Software licence for "Wizard", module for FOMCAM
- TOOL SET ALUMINIUM TYPE 1:
  - N° 1 hole drill bit HSS single flute  $\varnothing 3$  L=61 mm
  - N° 1 hole drill bit HSS single flute  $\varnothing 6/12$  L=100 mm
  - N° 1 MD single flute milling cutter  $\varnothing 10$  covered L=72 mm
  - N° 1 MD single flute milling cutter  $\varnothing 6$  covered L=60 mm
  - N° 4 collet holder with ring nut ER 20 H=50 mm
  - N° 1 collet  $\varnothing 2/3$  ER 20
  - N° 1 collet  $\varnothing 5/6$  ER 20
  - N° 1 collet  $\varnothing 9/10$  ER 20
  - N° 1 collet  $\varnothing 11/12$  ER 20
- TOOL SET IRON TYPE 1:
  - N° 1 MD single flute milling cutter  $\varnothing 6$  L=56 mm
  - N° 1 MD single flute milling cutter  $\varnothing 8$  L=67 mm
  - N° 2 collet holder with ring nut ER 20 H=50 mm
  - N° 1 collet  $\varnothing 5/6$  ER 20
  - N° 1 collet  $\varnothing 7/8$  ER 20
  - ISO 30 cone with milling cutter  $\varnothing 75$  mm thickness 6 mm
  - ISO 30 ER 20 H 50 collet holder
  - ISO 30 ER 20 H 70 collet holder
  - Collet  $\varnothing 2/3$  ER 20
  - Collet  $\varnothing 4/5$  ER 20
  - Collet  $\varnothing 5/6$  ER 20
  - Collet  $\varnothing 7/8$  ER 20
  - Collet  $\varnothing 9/10$  ER 20
  - Collet  $\varnothing 11/12$  ER 20