

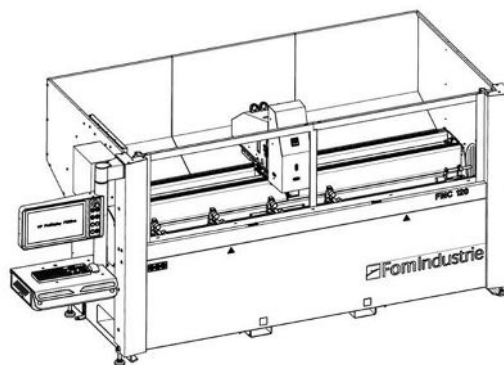


FMC 120

A CNC Machining centre with 3 controlled axis and worktable with pneumatic positioning at 0°/90°/180°

The FMC 120 machining centre has been designed to carry out drilling and milling operations on aluminium or steel profiles (max thickness 3mm).

Overall Dimensions & Weight



	L (mm)	P (mm)	H (mm)	Kg
FMC 120	3600	1700	1800	1400
Power supply	Total power installed	Air consumption for work cycle	Working pressure	
3F - 380÷415 V - 50 Hz	3,5 kW	43 NL/cycle	7 bar	



Technical Characteristics

Structure

It consists of a machine bed and an upright sized to guarantee great stability and precision during machining operations. The conformation of the machine bed allows machining waste to be collected easily.

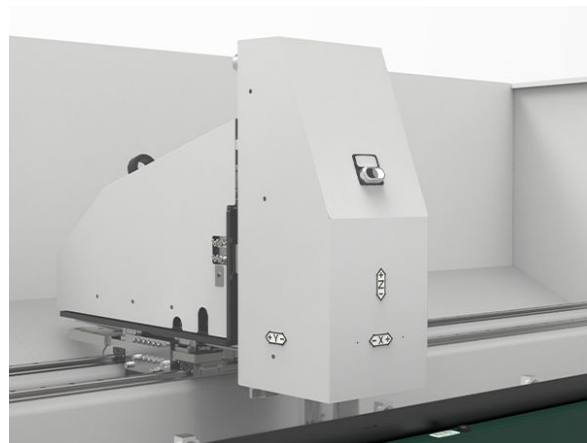
Axes movement

The independent axes are controlled by servomotors by means of a high precision, milled recirculating ball screw and preloaded lead screw for the Z axis (vertical) and the Y axis (transversal).

Sliding of the X, Y, Z axes is along high precision linear guides. Movement of the X, Y and Z axes is interpolated.

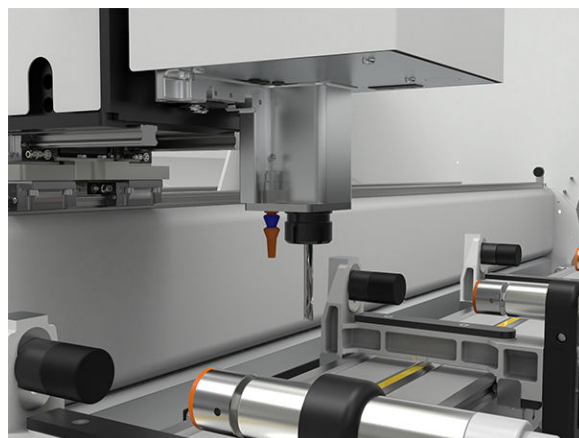
Machining head

This allows machining on 3 sides of the profile and on the 2 ends with the aid of milling disks and blades.



Electrospindle

The air cooled 3kW ISO 30 spindle motor provides power and reliability in every working condition. The rigid tapping function can be activated on request. Motor speed adjustable from 1,000 to 15,000 rpm.





Tools lubrication

Minimum lubrication required. The lubricant used is pure oil or, in addition to this if requested, emulsion with a dedicated tank (mist type lubricating coolant).

Tool magazine

The standard manual tool magazine has 6 locations. On request, FMC 120 can be equipped with an automatic 5 location tool magazine positioned on the rotating beam.



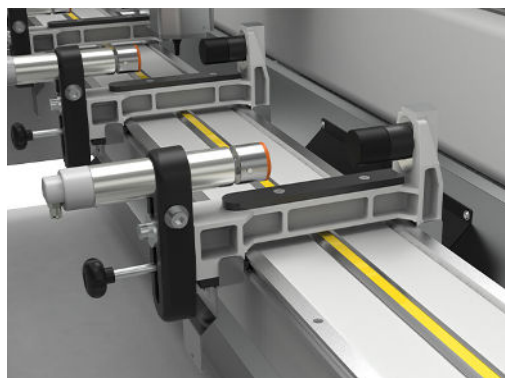
Lubrication of mechanical components

A gun is supplied to carry out manual greasing.

Work area organisation

Vices

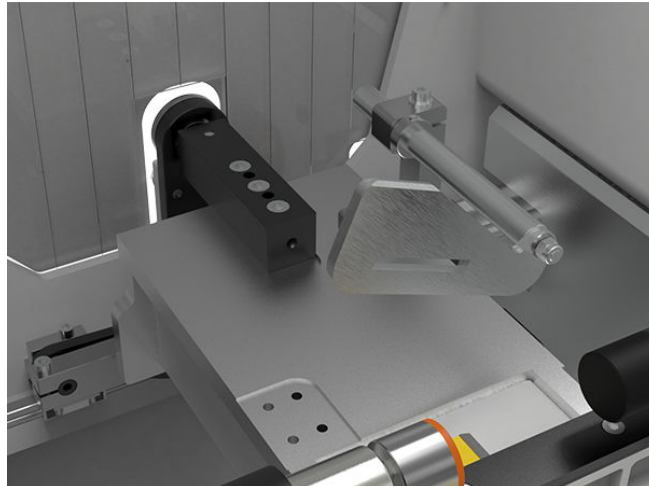
Supplied as standard with four cast aluminium pneumatic vices with dual working pressure (low and high) with manual longitudinal positioning. Their small size reduces the need to reposition the vices and ensures firm locking very close to the machining point. Vertical and transversal adjustment of the presser is quick and does not require the use of tools. Vices with manual positioning and automatic locking of the longitudinal position are also available.



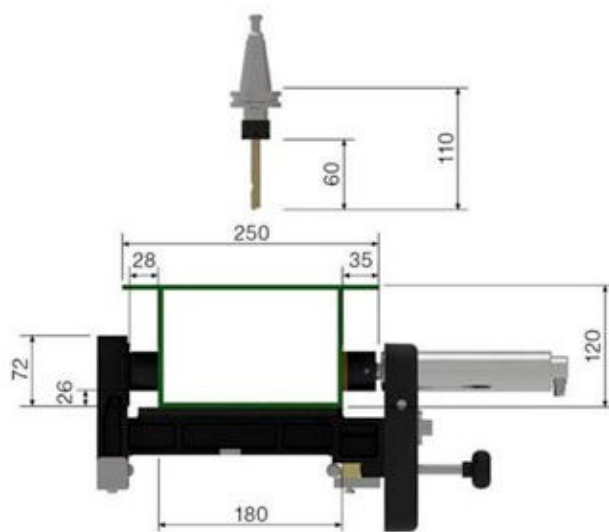


Stops

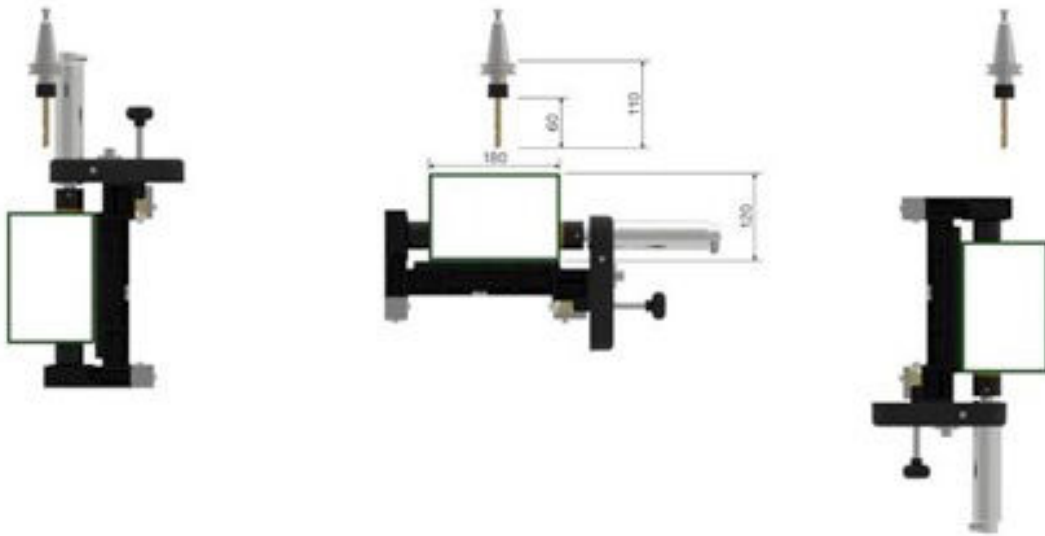
Comprises two manual stops: one on the right side and one on the left side of the beam, also used for two-phase machining of profiles that are longer than the CNC stroke.



Working Capacity



Maximum profile machinable on three surfaces with tool protruding 110mm from the spindle nose.



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

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 ADIR C 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 FMC 120 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.

Comprises two manual stops: one on the right side and one on the left side of the beam, also used for two-phase machining of profiles that are longer than the CNC stroke.





Control console

Attached to the protection cabin and used to execute commands and run programs. 21.5" display



PC comprising of:

128 GB SSD

Gigabit RJ45 network Interface

8 GB RAM

Windows 10 operative system

USB ports

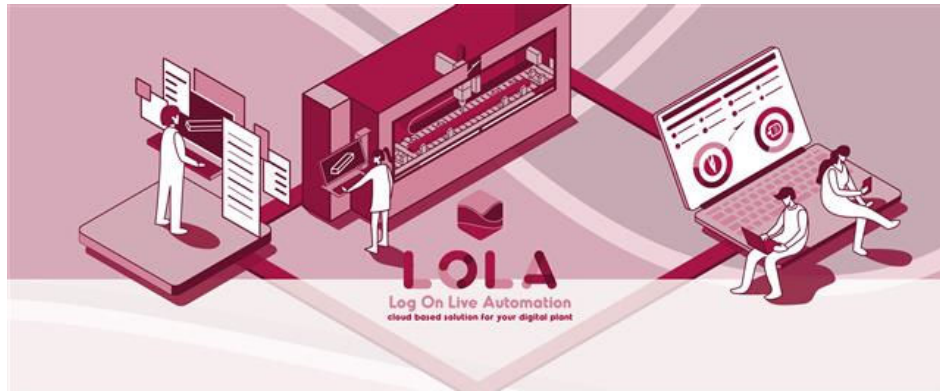
3-year international "on site" warranty

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.



LOLA



LOLA is the cloud based IoT platform created by Fom Industrie for Industry 4.0, with the aim of monitoring and increasing productivity and efficiency.

The LOLA web application can be accessed via browser (Safari, Chrome), on a PC or mobile device.

LOLA receives data from the FOM Industrie machine tool, via internet connection, and generates statistics that can be consulted by the end user, regarding:

- productivity
- efficiency
- diagnostics
- scheduled, periodic and predictive maintenance
- alarms, push notifications and predictive warning

Characteristics

- Developed in responsive technology, which adapts the graphic layout to the device being used.
- Plant Manager for grouped display of your machines and alarms, based on factory or manufacturing department
- Timezone/DayTimeSavingLight Management
- LOLA application users (unlimited, until expiry of the license) with two privilege levels, to define criteria for hierarchical content visibility.
- Various machines can be associated with a single operator, or several operators can be associated with various machines.
- LOLA is now available in 5 languages: Italian, English, French, Spanish, German
- LOLA allows control of the following with a single glance:
 - machine status and efficiency
 - machining statistics
 - diagnostics for key machine components (e.g. electrospindles, tools, sensors..)
 - alarms and warnings log for the individual machine or the factory (*for FOM LOLA compliant machines)
- push notifications for periodic and predictive maintenance events. Log of operations confirmed in LOLA.



The data indicate every time a key component is coming to the end of its lifecycle, so that it is possible to plan the replacement operation with the FOM service department or independently, thus minimising machine stoppages.

Export of data for integration with MES systems

With the additional Lola Exporter license it is possible to export the data collected by LOLA in CSV format locally, allowing subsequent integration with the most common MES systems

FOMCAM Graphic Interface

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

Display of the workpiece and machining operations in a CAD 3D environment
Profile cross-section display in DXF format
3D display of tool archive
Machining optimizations
Dynamic display of the machining operations
Graphic display of the working area
Simplified management of machining process sequence
Display of technical features of pieces and tools
Graphic user interface
Parametric machining management
Creation of repeated machining operations
Automatic calculation of optimal vice positioning
Machining lists management
Graphic interface for numeric control management
Module for rigid tapping and chase tapping (on request)
Flow drilling management (on request)
Module for insertion of "user defined" geometries by importing the shape of the machining operation from DXF format files, for FST CAM 4 (on request)
Wireless bar-code reader + data import software in accordance to FOM protocol (on request)



Remote Assistance

Used to check the machine data, the user programmes, the input/output signals and system variables in real time, providing a rapid solution to problems and a drastic reduction in machine stoppage. Thanks to remote assistance it is also possible to install updated software versions. The machining centre is enabled for this type of service. The duration of the service is limited to the machining centre warranty period.

Maintenance equipment

The following are supplied with the machining centre:

Tool holder locking device for insertion/removal of tools

Set of wrenches

Turnkey System

FOM INDUSTRIE not only offers its Clients a machine tool, but also a "turnkey" productive system to solve all of the problems involved in production. The company's experience is at the client's disposition to optimise the relationship between machining centre performance and the technological machining requirements, the service relies on:

A CAD-CAM system for creating a project which provides for piece design, automatic creation of the program and simulation of the machining operations

A vast archive of projects created for companies operating in important industrial sectors (automotive, railways, naval, furniture, transport, aeronautic, textile)

Facilitated contacts with the most important and qualified suppliers of tools and equipment

Documentation

Every machining centre comes with a printed copy of the following documentation: User and maintenance manual, complete with electric and pneumatic diagrams; Control unit user's manual. The manuals are available in Italian and English

Standard Configuration

- Servo-ventilated three-phase spindle motor 3 kW Regulation of spindle rpm by numerical control – inverter (1000/15000 rpm)
- 6 position tool-holder for manual change with pneumatic locking (ISO 30)
- Pneumatic rotation of the work table 0° to 90 to 180°
- Mobile control console with PC, 21,5" touch screen monitor
- No.4 pneumatic vices with manual positioning and double pressure with safety valves
- MANUALLY ADJUSTABLE Profile reference stops on right and left of work table
- Minimum quantity lubrication (MQL) with pure oil
- Greasing gun
- Chip bin
- Parametric guard on 3 sides and front receding guard
- Licence for FST CAM 4 program
- Collective FST CAM 4 training course at FOM Industrie (excluding transfer costs)



Technical specifications:

Working area with direct tool L=100 spindle end			
Axis X	top face only	mm	2675
Axes Y and Z	for machining on 3 faces of profile	mm	180 x 120
Axes travel			
X axis	Longitudinal travel	mm	2715
Y axis	Transversal travel	mm	355
Z axis	Vertical travel	mm	224
X Axis	Milling capacity	mm	2675
Y Axis	Milling capacity	mm	250
Z Axis	Milling capacity	mm	120
Pneumatic rotation of the work table			From 0° to 90° to +180°
Distance between stops		mm	2600
Work table height		mm	850
Profile positioning and locking			
Vices with manual longitudinal positioning		No.	4 supplied as standard
Max number of vices		n.	6
Transformation of standard vices into vices with pneumatic locking of the longitudinal position			optional
Additional vice with manual longitudinal positioning			optional (max 2)
Additional vice with manual longitudinal positioning and pneumatic locking of the longitudinal position			optional (max 2)
Fixed and manually tilted stop		No.	2 standard
Machining of oversized profiles			supplied as standard
Protective tunnel			optional
Electrospindle			
Max power		kW	3 (S6)*
Max rotation speed		rpm	15000
Tool coupling			ISO 30
Cooling			Air
SW Module for rigid tapping			optional
* Sequence of identical operating cycles. Each cycle is made up of an operating time at constant load and an operating time with no load.			
Lubrication of mechanical components			
Centralised manual lubrication of straight guide slide blocks and recirculating ball screw lead screws			supplied as standard
Tool magazine			
Manual tool change and tool magazine (6 locations)			supplied as standard
Automatic tool change and tool magazine (5 locations)			optional
Maximum blade diameter in the magazine (horizontal)		mm	75
Maximum tool length in the magazine		mm	130
Tool lubrication			
Minimum quantity lubrication			standard
Lubrocooling with use of water-oil + dedicated tank			optional
Chips, waste and fumes removal			
Chip and waste collection in base			standard
Control and software			
Processor			Intel i7
21,5" screen			standard
USB ports			1 console + 2 in the PC
SSD			128 GB
Memory			8 GB

