



Phantomatic M4 F

CNC machining centres

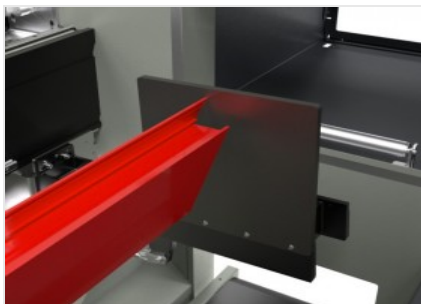


CNC machining centre, with 4 controlled axes; the spindle has an automatic tool slewing system that allows processing on 3 sides of the workpiece. Designed for machining bars or parts made of aluminium, PVC, light alloys in general or steel up to 2 mm. A removable front loading bench, mounted on wheels to facilitate movement, allows you to load already assembled frames into the machine and carry out processing on 4 sides. It is provided with a manual tool magazine with 9 places and a 4 places automatic tool magazine on the left side of the cabin. Optionally a second automatic tool magazine with 4 places can be added at the right side of the cabin. The workpiece or frame is positioned by a pneumatic stop positioned at the left side of the machine, and is blocked by 4 strong clamps that are positioned by the slider on the X axis. Adding a second optional stop on the right side, the machine may perform extended machining of bars up to twice the work capacity. All CNC axes are absolute and do not require resetting upon restarting the machine. Moreover it is equipped with a movable work plane for easier workpiece loading/unloading; this also allows considerable increase in the machinable section.



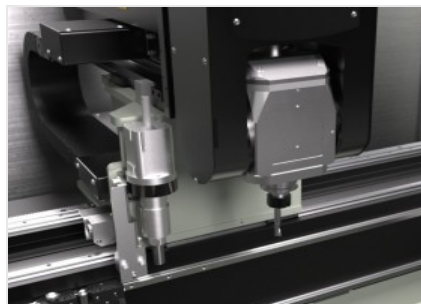
Operator interface

The new control version with suspended interface allows the operator to look at the monitor from any position, as it can be rotated around the vertical axis. The operator interface has a 15" touch screen display with all USB connections necessary to interface with a remote PC and NC. It has a push-button panel, mouse and keyboard. It is also set up for the connection of a barcode reader and remote push-button panel. It is equipped with a front USB socket for data transfer.



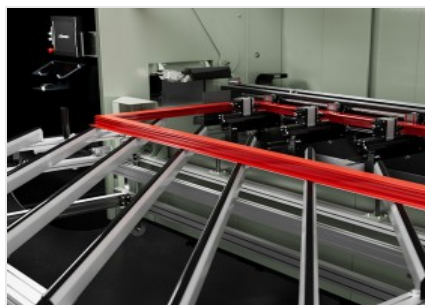
Pneumatic stops

The machine is equipped with strong stops allowing bar reference. One is positioned on the left side (standard) and the other on the right side (optional). Each stop is activated by a pneumatic cylinder, it is retractable type and is automatically selected by the machine software according to the machining to be performed.



Electrospindle - M -

The 4 kW electrospindle in S1 can reach 20,000 rpm. The electrospindle movement along A axis performs 0° to 180° rotation, allowing to work on 3 sides of the profile with no need to reposition it. It can be used on profiles made of aluminium, PVC and light wood and can process extruded steel that is 2 mm thick.



Loading bench

The peculiar characteristic of this model is the possibility to attach a loading bench to the front part of the machine. This device allows you to load already assembled squares and machine all 4 sides, ensuring perfect alignment and support. A pneumatic system allows lifting the frame upon insertion into the machine, to easily position the profile to be machined on the vice table.



Vices

The machine software can calculate the correct positioning measure for each vice unit, according to the length of the workpiece and to the type of machining to be performed. The automatic positioner allows picking all vice units and moving them by means of the gantry. This operation is performed at the highest speed and with great precision and spares longer time and collision risks, so that the machine can also be easily used by less experienced operators. The mobile work table facilitates the piece loading/unloading operation and significantly increases the machinable section.



Automatic tool magazine (Optional)

The standard version of the machine is equipped with two tool magazines. The fold-away manual tool magazine can house 9 toolholder cones. It is located on board the machine for easy access by the operator. Inside the cabin, on the left-hand side, there is an automatic tool magazine that can accommodate 4 toolholders with their respective tools, which can be configured to suit the requirements of the operator.

**PHANTOMATIC M4 F / CNC MACHINING CENTRES****AXIS STROKES**

X AXIS (longitudinal) (mm)	3.000
Y AXIS (transversal) (mm)	274
Z AXIS (vertical) (mm)	390
A AXIS (electrospindle rotation)	-90° ÷ +90°

POSITIONING SPEED

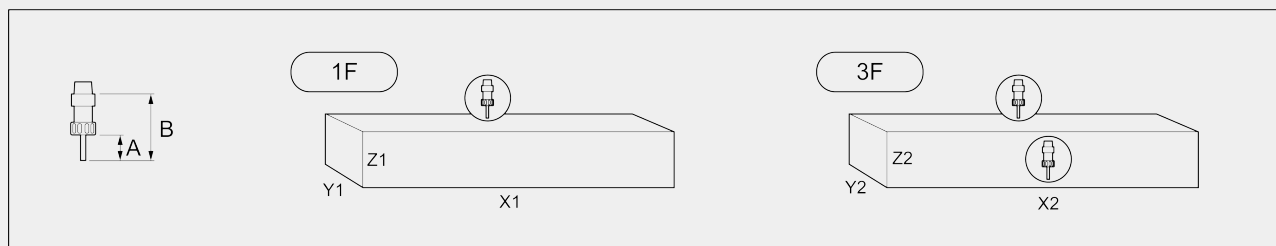
X AXIS (longitudinal) (m/min)	56
Y AXIS (transversal) (m/min)	22
Z AXIS (vertical) (m/min)	22
A AXIS (electrospindle rotation) (°/min)	6.600

ELECTROSPINDLE

Maximum power in S1 (kW)	4,0
Maximum speed (rpm)	20.000
Toolholder cone	HSK-50F
Automatic tool holder coupling	●
Liquid cooling	●
Automatic tool rotation	-90° ÷ +90°

TOOL MAGAZINE

Maximum number of tools in manual magazine	9
Automatic tool magazine with 4 places (left)	●
Secondary automatic tool magazine with 4 places (right)	○
Maximum dimension of the tools that can be loaded into the magazine (mm)	Ø=80 ; L=150


WORK AREA
1F = 1 face machining
5F = 5 faces machining


	A	B	X1	Y1	Z1	X2	Y2	Z2
PHANTOMATIC M4 F	45	102	2.815	230	210	2.815	170	210
Machining within the work capacity with left automatic tool magazine	45	102	2.815	230	210	2.815	170	210
Machining within the work capacity with left and right automatic tool magazine	45	102	2.630	230	210	2.630	170	210
Extended machining with left automatic tool magazine	45	102	5.630	230	165(*)	5.630	170	165(*)
Extended machining with left and right automatic tool magazine	45	102	5.260	230	165(*)	5.260	170	165(*)

Dimensions in mm

(*) with max.admissible length tools (B = 150 mm) charged into the automatic magazine the Z value decreases to 130 mm

TAPPING CAPACITY (with Tap On Aluminium And Through Hole)

With compensator

M5

With helical interpolation


PROFILE POSITIONING

Workpiece reference LEFT stop with pneumatic movement

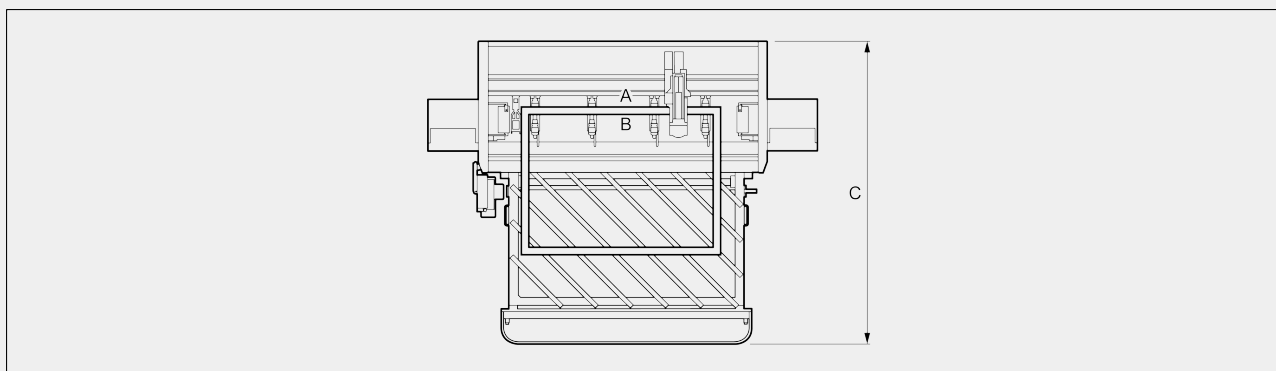


Workpiece reference RIGHT stop with pneumatic movement for extended machining



**LOADING BENCH**

Total dimension C: machine + loading bench (mm)	3.870
Pneumatic lifting	●
Removable bench	●
Swivel wheels	●
Maximum external dimension A of the loadable frame (mm)	2.700
Minimum internal dimension B of the loadable frame (mm)	400
Maximum profile thickness (mm)	100

LAYOUT**WORKPIECE LOCKING**

Number of pneumatic vices	4
Automatic vice positioning through X axis	●

SAFETY DEVICES AND PROTECTIONS

Machine integral protection booth	●
Side tunnels	○

Included ● Available ○