



# *Phantomatic* **M4 L**

CNC machining centres

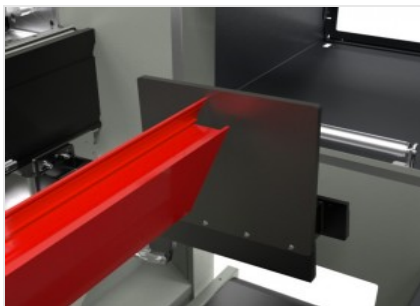


CNC machining centre with 4 controlled axes and automatic tool rotation enabling machining on 3 sides of the workpiece. Designed for machining bars or workpieces made of aluminium, PVC, light wood in general and steel up to 2 mm thick. It has a manual 9-station tool magazine and an automatic 4-station tool magazine located on the left side of the safety guard. An optional a second automatic 4-station tool magazine can be installed on the right side of the safety guard. The profile is positioned by a pneumatic stop on the left side. It is blocked by 4 sturdy clamps which are positioned automatically with axis X. The installation of a second pneumatic stop (optional) on the right side allows oversize machining of bars whose length is double compared to the work field. All CNC axes are absolute and do not require resetting upon machine restart. It also has a mobile work surface that facilitates the piece loading/unloading operation and significantly increases the workable section.



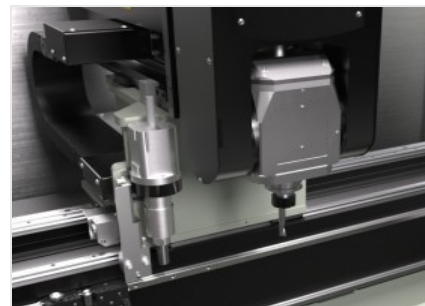
### Operator interface

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.



### 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.



### High-performance industrial human-machine interface PC (Optional)

The high-performance industrial PC significantly improves the computing power of the operating system and the speed of the application software installed. This device allows to achieve a reduction in machine set-up time and manage the most complex cycles without slowdowns.

**PHANTOMATIC M4 L / 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**

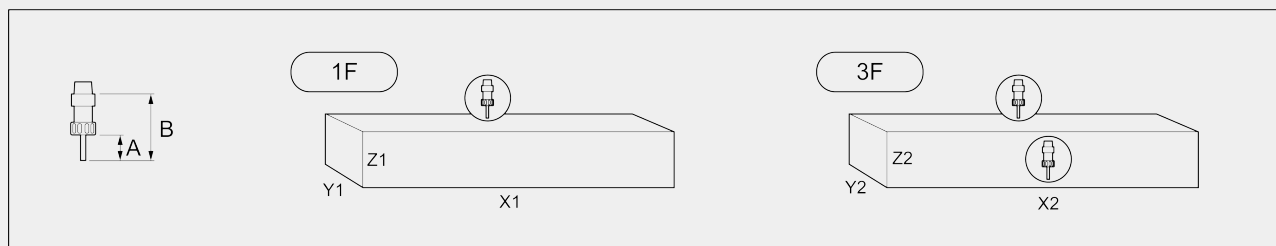
X AXIS (longitudinal) (m/min)	56
Y AXIS (transversal) (m/min)	22
Z AXIS (vertical) (m/min)	22
A AXIS (electrospindle rotation) (°/min)	6.600

**ELECTROSPINDLE**

Maximum power in S1 (kW)	4
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
<b>PHANTOMATIC M4 L</b>	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	○

**WORKPIECE LOCKING**

Number of vices	4
Automatic vice positioning through X axis	●

**SAFETY DEVICES AND PROTECTIONS**

Machine integral protection booth	●
Side tunnels	○

Included ● Available ○