

WORLD  
VIEW



# Author X5

Numerically controlled machining centres



 **MORBIDELLI**

# Author X5

Numerically controlled  
machining centres

The answer  
to change.....

- **Highly efficient production using the 5 controlled axes**
- **An 11 kW spindle** with HSK taper. **Power unit** able to carry out all operations which in the past could only be managed with a large number of units and additional ones
- **Flexible machining** on all 5 faces of a workpiece with the possibility of automatically changing the tools needed each time from the 12-location magazine
- **All panel boring requirements satisfied** with the head equipped with 12 independent vertical spindles and 6/8 horizontal spindles
- **Worktable with "tubeless" suction cups** which can be positioned anywhere along the support
- **No problems at all with the operator interface** with dedicated numeric control and a personal computer with a Windows system

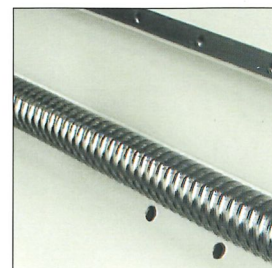


**MORBIDELLI**



Author  
**X5**

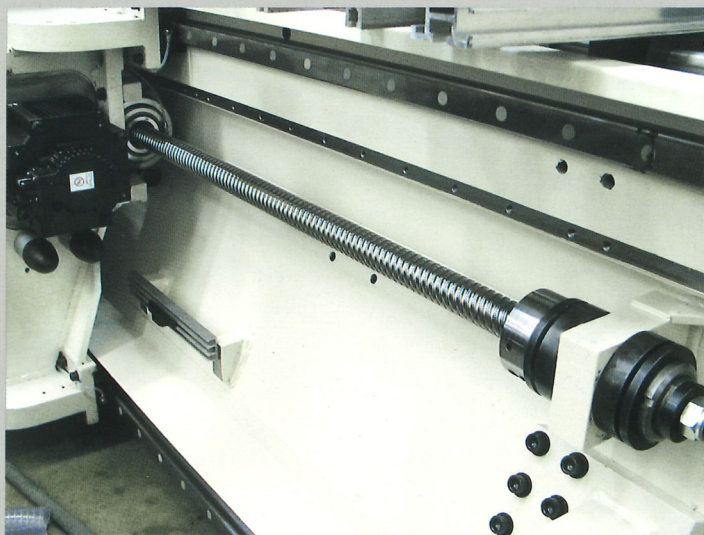
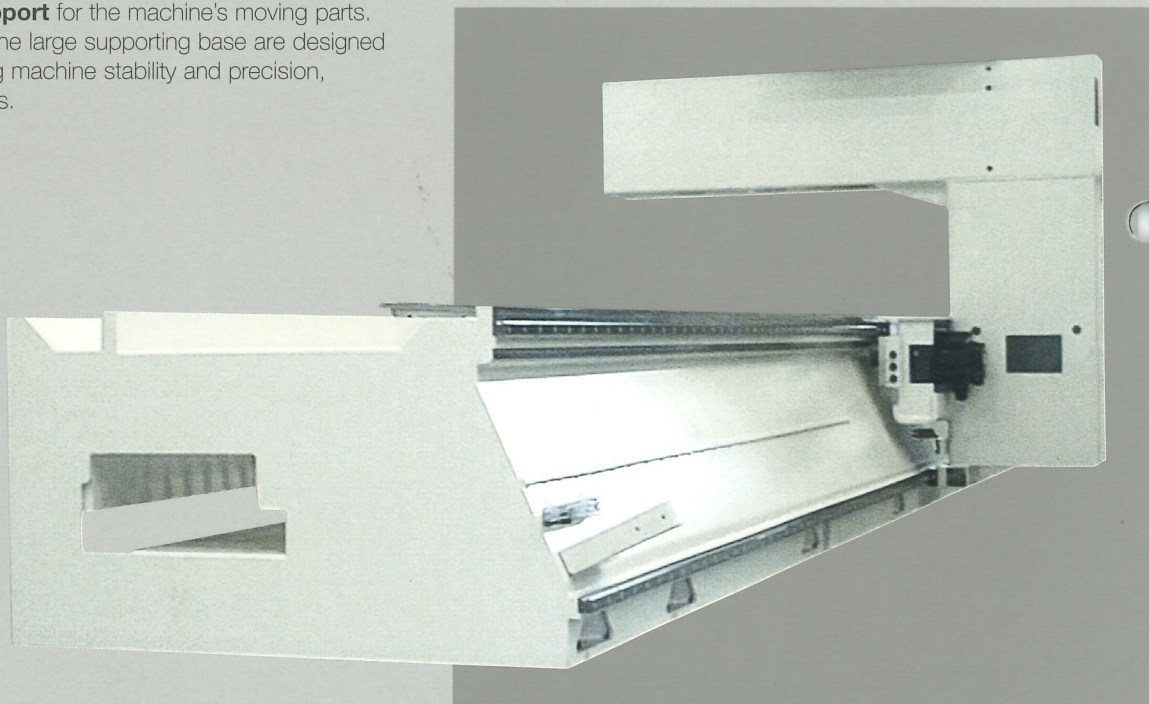
If you want superior balance and strength.....



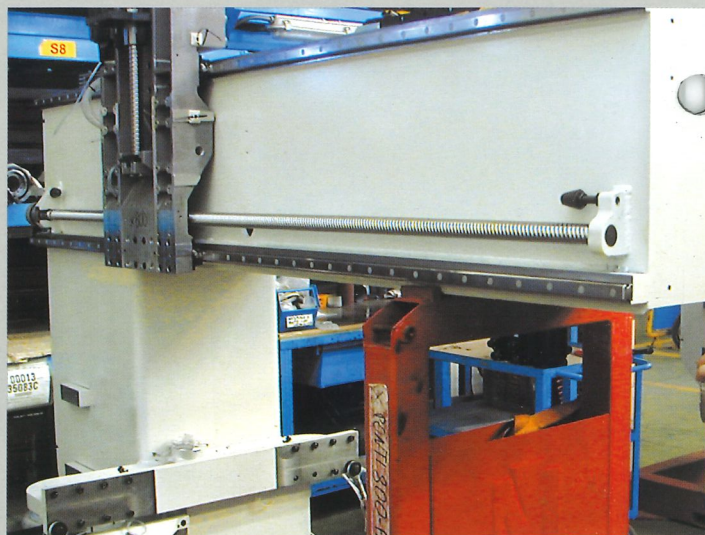
The structure is designed to guarantee maximum strength and to balance dynamic loads, giving high precision machining, both for boring and routing.

The self-supporting steel base with a triangular cross-section is **a solid and balanced support** for the machine's moving parts. The strengthening ribs and the large supporting base are designed and built to guarantee lasting machine stability and precision, under any working conditions.

The mobile machining unit consists of a **single-piece unit with one beam**. Its parts are **electric arc-welded**, for maximum torsional rigidity year after year.

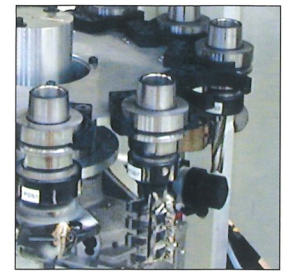


X, Y and Z axis movements are driven by Brushless motors on recirculating ball screws, allowing **acceleration and deceleration of up to 5 m/sec<sup>2</sup>** with absolute positioning precision.



The mobile units run on ground prism guides, offset relative to their vertical axis to allow equal balancing of loads during machining.

If you're looking  
for 360° flexibility.....



**X5 is a compact 5-axis routing unit with 11 kW of power. It is liquid cooled and has a boring head with 11/12 independent vertical spindles and, 4 horizontal spindles on the X-axis and 2/4 horizontal spindles on the Y-axis.**

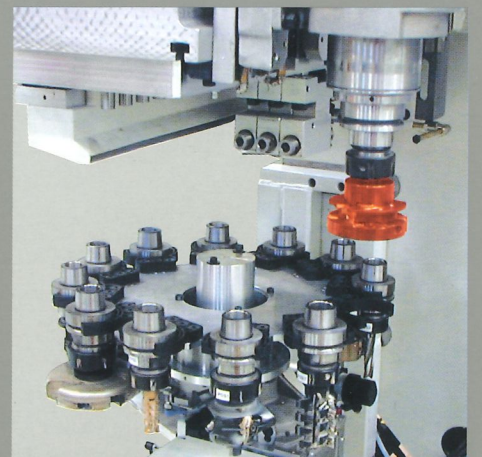
**The main advantages** of the universal routing unit are the possibility of machining at a minimum distance of 35 mm from the worktable (unique in its category) and always keeping the unit's centre of rotation at the tip of the tool used.

**All of this gives a compact copy-router unit and exceptional performance in terms of power and working areas.**

This flexibility exceeds the current configurations of conventional machining centres and opens up new possibilities for furniture manufacturers who need to rapidly adapt to meet customer requirements.

X5 further reduces machining times, compared with conventional solutions, and avoids unnecessary tool changes, there being no need to use dedicated units for special machining.

**The X5 unit can rotate  $\pm 640^\circ$  in the X/Y plane and  $\pm 270^\circ$  in space** to allow boring, cutting and routing up to  $10^\circ$  below the workpiece orthogonal plane.



**If you're using a very large number of tools, the Tool Room with 12 tools, fitted directly on the mobile upright on the X-axis, always makes what you need available for machining with different profiles.**

If you're looking for fast,  
flexible worktable preparation.....

All different panel hold-down requirements are satisfied  
with the worktable options in the Morbidelli range:

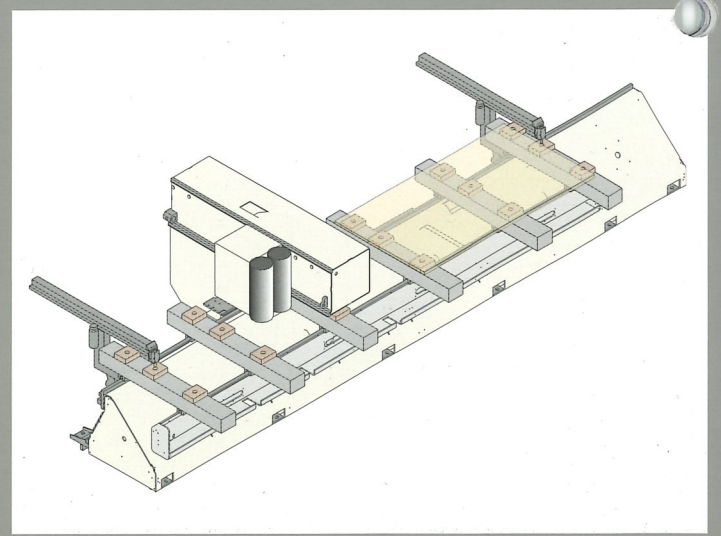
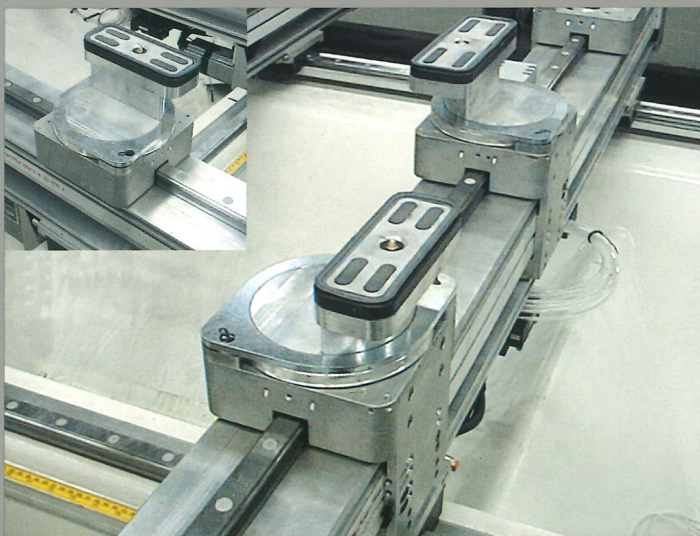
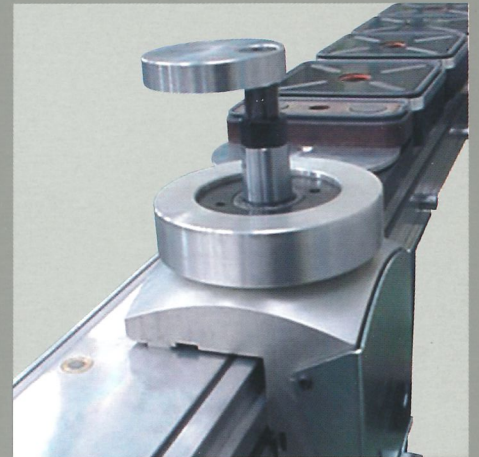
**Worktable with multi-function  
suction cups.**

These suction cups can operate both  
at the worktable level and 25 mm above it,  
in both cases allowing tilting along  
the Z-axis so as to hold down even panels  
that aren't completely flat. Passing from  
the lowered position to the raised position  
is fast and easy thanks to an ergonomically  
located device.

**Quick Set Up worktable.**

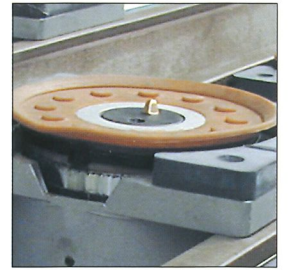
This type of table has aluminium supports  
without any tubes and pneumatic  
connections, which could obstruct  
suction cup positioning.  
The suction cups, of different sizes  
and heights, can be released from  
the individual supports and can be managed  
relative to the panel dimensions so as to  
concentrate the vacuum only where it's  
needed, increasing workpiece  
hold-down efficiency.

**Dedicated systems**, available  
with a high capacity compressed air system  
for holding down special workpieces  
such as frames, uprights, etc.



**FAT (Full Automatic Table)**, a table with completely automated  
supports and suction cups which can move into position  
for the specific machining required within seconds.

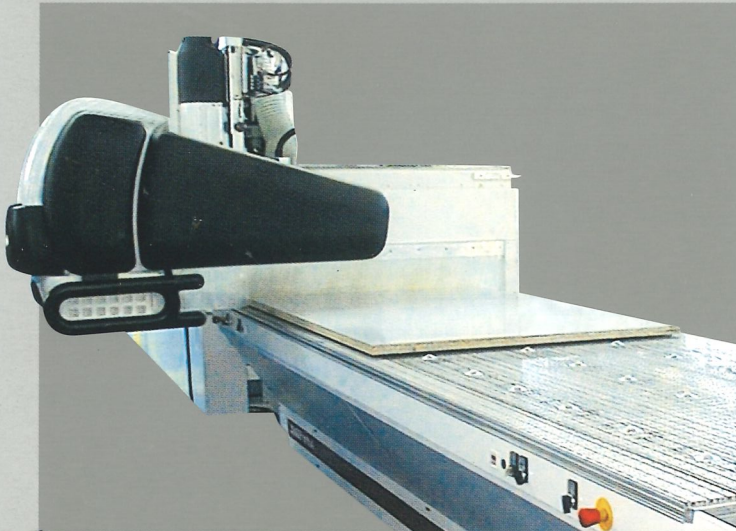
**FET (Fast Electronic Table)**, a solution which allows you to set up  
half a machine worktable while machining is being performed  
on the other side. Therefore, the times for this operation are masked  
by the machining cycle, which is never interrupted.



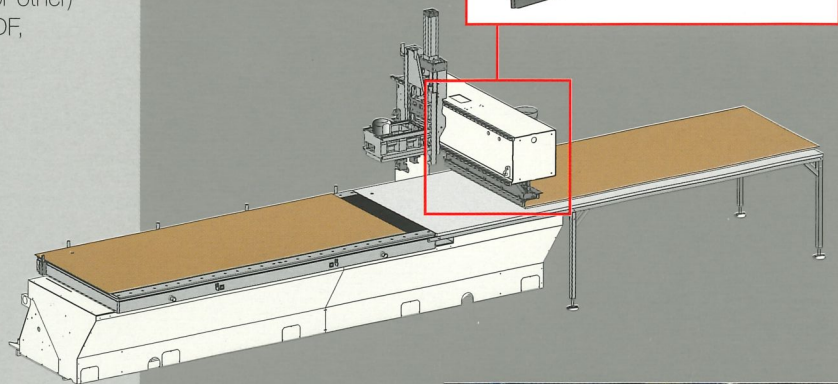
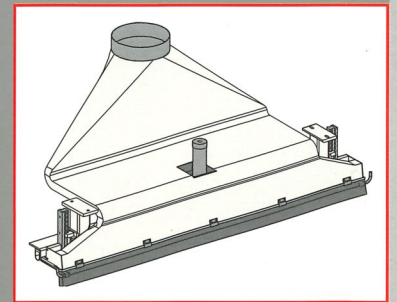
Nesting  
Based  
Manufacturing

ADVANTAGES

- **Reduction of the rejected materials.**
- **Drastic lowering of the "Time to Market"** due to the possibility to work on a single work order.
- **Production of single pieces considerably shorter.**
- **Increase of quality of the finished product** because of the less manipulation of pieces and thanks to the use of only a single machine.
- **Reduction of the stock of work in progress parts;** you produce only what it is sold.
- An almost completely automated solution and, so, with **reduction of labour use.**
- Reduction of machinery which intervene in the production run with consequent **reduction of investments in equipment and of the impact of fixed costs.**



The aluminium working table with vacuum locking allows a "nesting" processing and the production of all the pieces for a specific manufacture article (kitchen, wardrobe, desk or other) by optimising the use of one or more material papers as MDF, chipboard, multiplayer and so on.



**The side pusher is designed for an easy and automatic handling of finished pieces out of the machine.**

This device is directly mounted on mobile beam and **it pushes the finished pieces on a support surface** on the right end of the machine. **It also cleans and clears the working area** for next processing, **thanks to a suction device.** **The operator can arrange the finished pieces without losing time,** while the machine continues its working schedule.



If you want a simple,  
immediately programmable numeric control.....

Morbidelli machining centres are equipped with an innovative numeric control,  
with a **Personal Computer** as the interface.



This solution guarantees the operator an **incomparable level of user-friendliness** and **comfort, making work much easier.**

Morbidelli software operates in a **Windows environment** for **simple, effective programming.**

The software design takes into account programmer requirements, to cater for both expert operators and machining centre first time users.

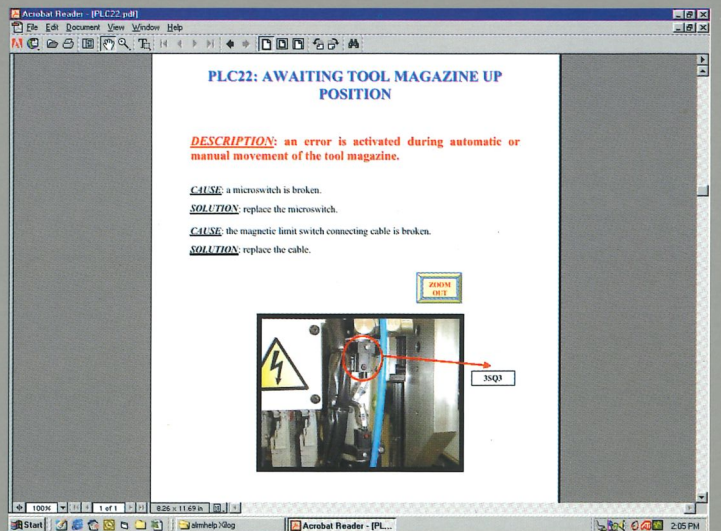
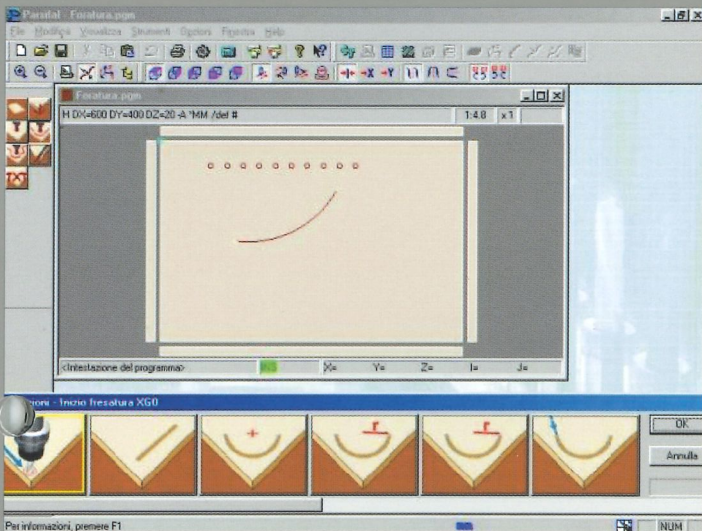
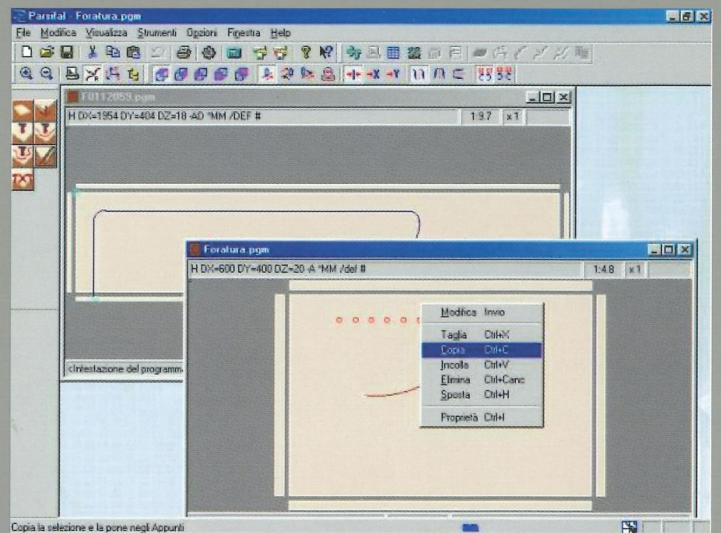
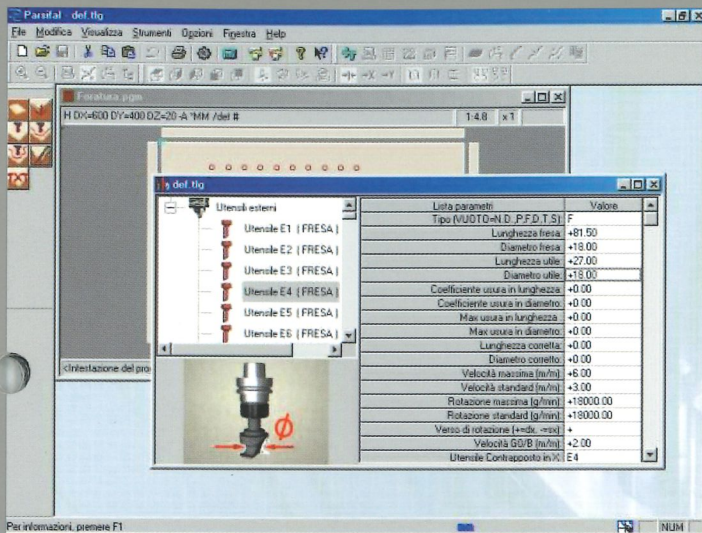
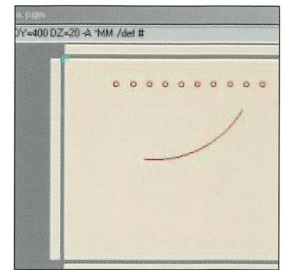
The **graphical aids** allow intuitive programming, without extensive computer skills. Yet even those with more confidence will find something familiar in it, not requiring extra effort to take in new systems and will immediately be able to appreciate its great potential.



Remote control device to manage the main functions of the machine.

#### Main hardware features

- Intel processor (2.0 GHz or above);
- 15" colour monitor;
- Keyboard and mouse;
- 40 Gb (or above) hard disk;
- 3"1/2 floppy disk drive (1,44 Mb);
- CD ROM (48x);
- 128 Mb RAM memory (or above);
- 2 serial ports, 1 parallel port, 1 USB port (to connect to any type of peripheral: bar code reader, modem, printer, scanner etc...);
- Network card (opt.), sound card.



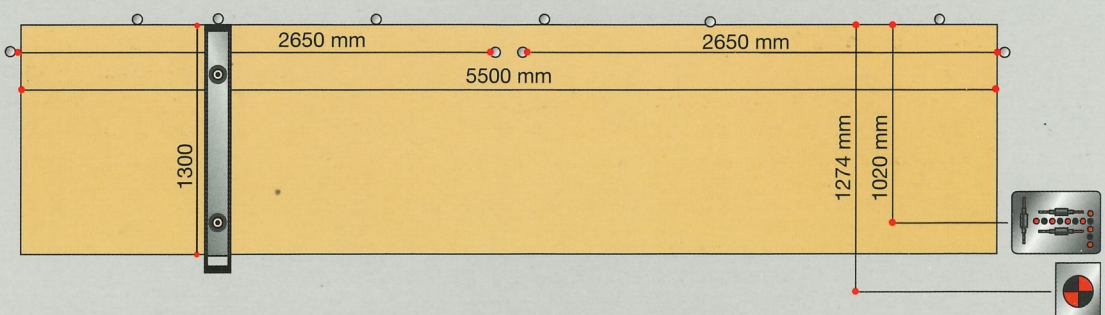
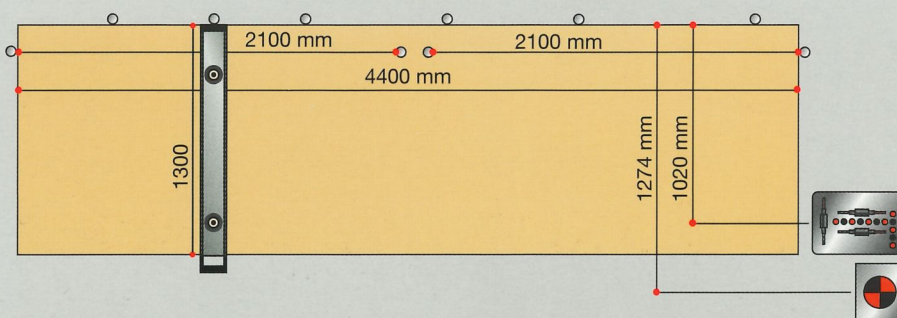
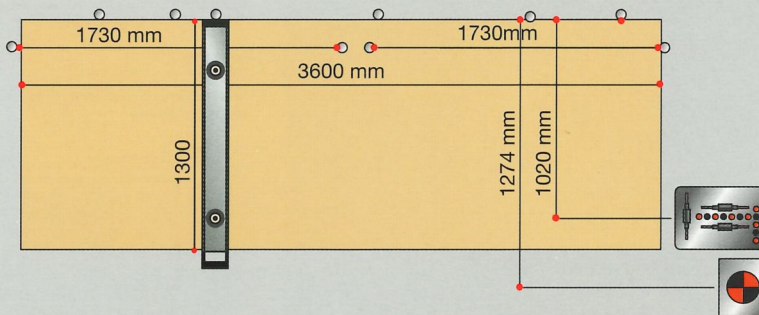
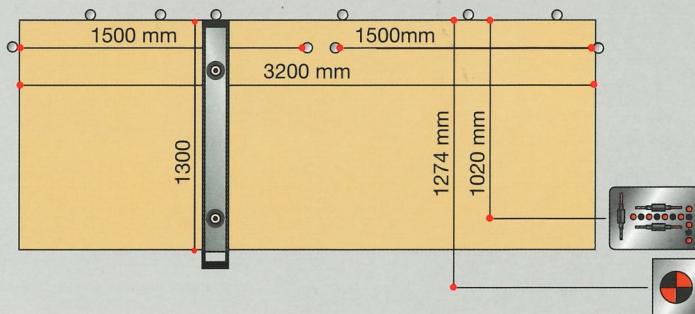
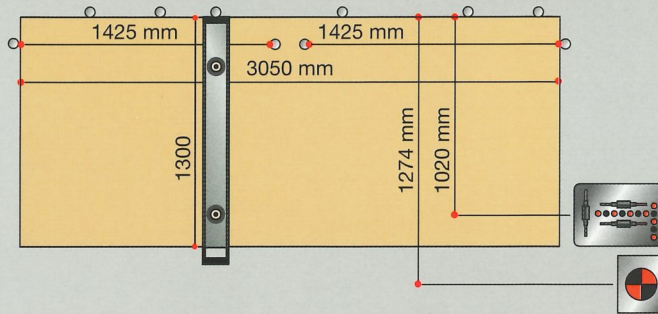
### Main software features

- Windows operating system with functions such as: copy, paste, edit, clear, properties, curtain menu, right click on the mouse for quick menu, multiple opening of windows etc.
- Equipping management with **tool visualisation** and with graphic supports to avoid the possibility of data input errors;
- **Immediate and direct uploads** of **DXF** format files;
- **Optimised dynamic drilling; graphic and syntactic aids** or drilling and milling operations to speed up data input operations;
- **Graphic visualisation of the manufactured piece** to allow for a quick and efficient check of the programme results;
- **Parametric programming**, to automatically update the programme when the size of the manufactured piece change, thus avoiding having to write a new programme;
- **Macro creation in a few minutes**, by using parametric programming;
- **Creation of programme blocks** that can be inserted inside other programmes;
- **Self diagnosis and warning of any errors** or possible failures through alarm messages in the user's language that aid quick understanding;
- **Graphic aids for the positioning of work supports** to avoid collisions with the tools in cases of passing drilling and/or milling to eliminate the empirical trials directly on the machine;
- Execution of programmes through bar codes.



# Work area

1274 mm		
1020 mm		

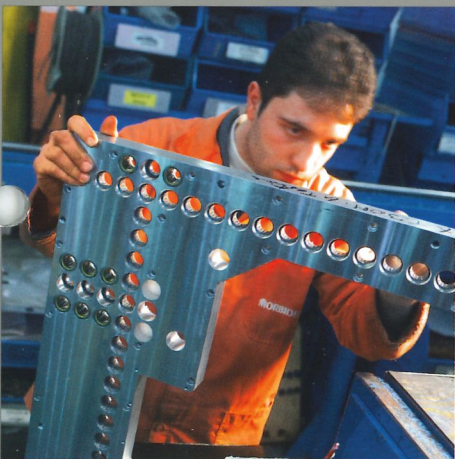


MORBIDELLI:  
a guarantee of quality,  
reliability and professionalism  
since 1959.

**MORBIDELLI**



Morbidelli has always been synonymous with constant commitment to supply **unique products** of their kind throughout the world. Those who choose Morbidelli do so for the **reliability** and **safety** aspects of its machines, for the **quality of the materials** used, for the **technology** which is always the latest available, for the well structured network of **after-sales service centres** and for the **professional approach** of its employees. Morbidelli means **success is guaranteed**.



If you believe in an innovative  
and practical CE safety system.....



#### Safety mats

This solution has three sensitive mats at the front of the machine. The mats are fitted with sensors which stop the machining cycle when the operator enters the machine operating range. This so-called "active" safety system **prevents any contact** between the machine moving parts and the operator.

#### Bumpers

This system has bumpers fitted around the mobile upright, with sensors which immediately stop the machine if there is any contact with obstacles.

**Operator safety is always safeguarded**, since any contact is dampened by the absorbent material used to make the bumpers and by the machine stopping immediately within just a few centimetres.

The advantages of this system are:

- **machine use at its maximum production capacity**, without unwanted interruptions in the production cycle;
- possibility of **pendulum machining on larger panels**, with the same X-axis machining range, compared with the solution with mats.

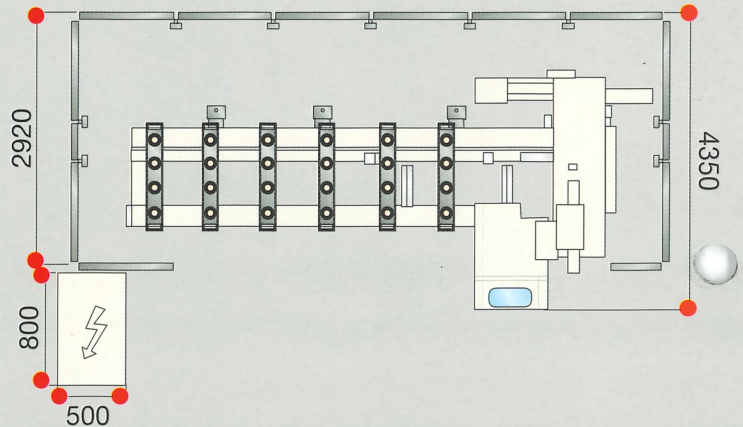
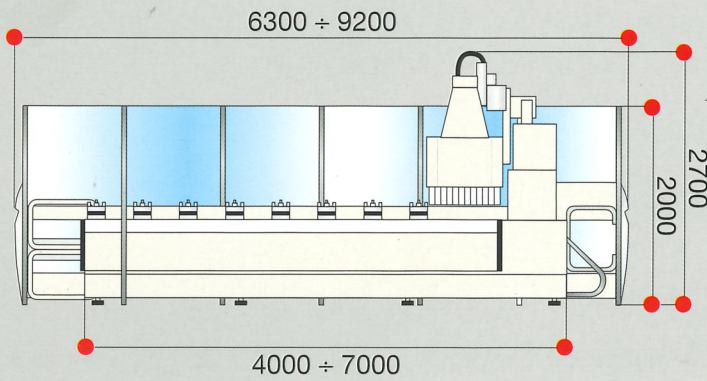


Movement speed in X	m/min 50/80
Movement speed in Y	m/min 40
Movement speed in Z	m/min 22,5
Tools available on Rapid	12
Tools available on the Tool Room	Kw 7,5/11
Electro spindle motor power	mm 220
Disc saw unit power	rpm 4500/6000
N° vertical spindles	12/18
N° horizontal spindles	6/8

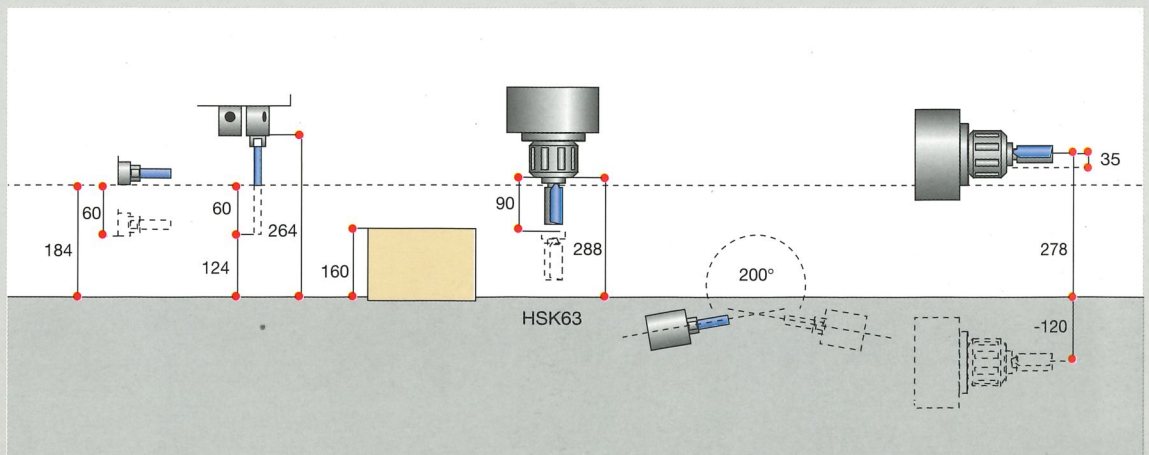
Intake air consumption	5600 m³/h
Centralised extractor outlet diameter	mm 300
Installed power	20 Kw
Weight	Kg 4500 ÷ 6000

In this catalogue, machines are shown with options. The firm reserves the right to modify technical specifications without prior notice, provided that such modifications do not affect safety as per E.C. certification.

Work area in X	mm 3050	mm 3200	mm 3660	mm 4400	mm 5500
Work area in Y - drilling	mm 1020	mm 1020	mm 1020	mm 1020	mm 1020
Work area in Y - routing	mm 1274	mm 1274	mm 1274	mm 1274	mm 1274
Panel passage	mm 160	mm 160	mm 160	mm 160	mm 160
X axis stroke	mm 3300	mm 3785	mm 4183	mm 4895	mm 6082
Y axis stroke	mm 1465	mm 1465	mm 1465	mm 1465	mm 1465
Z axis stroke	mm 400	mm 400	mm 400	mm 400	mm 400



## Z axis stroke



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