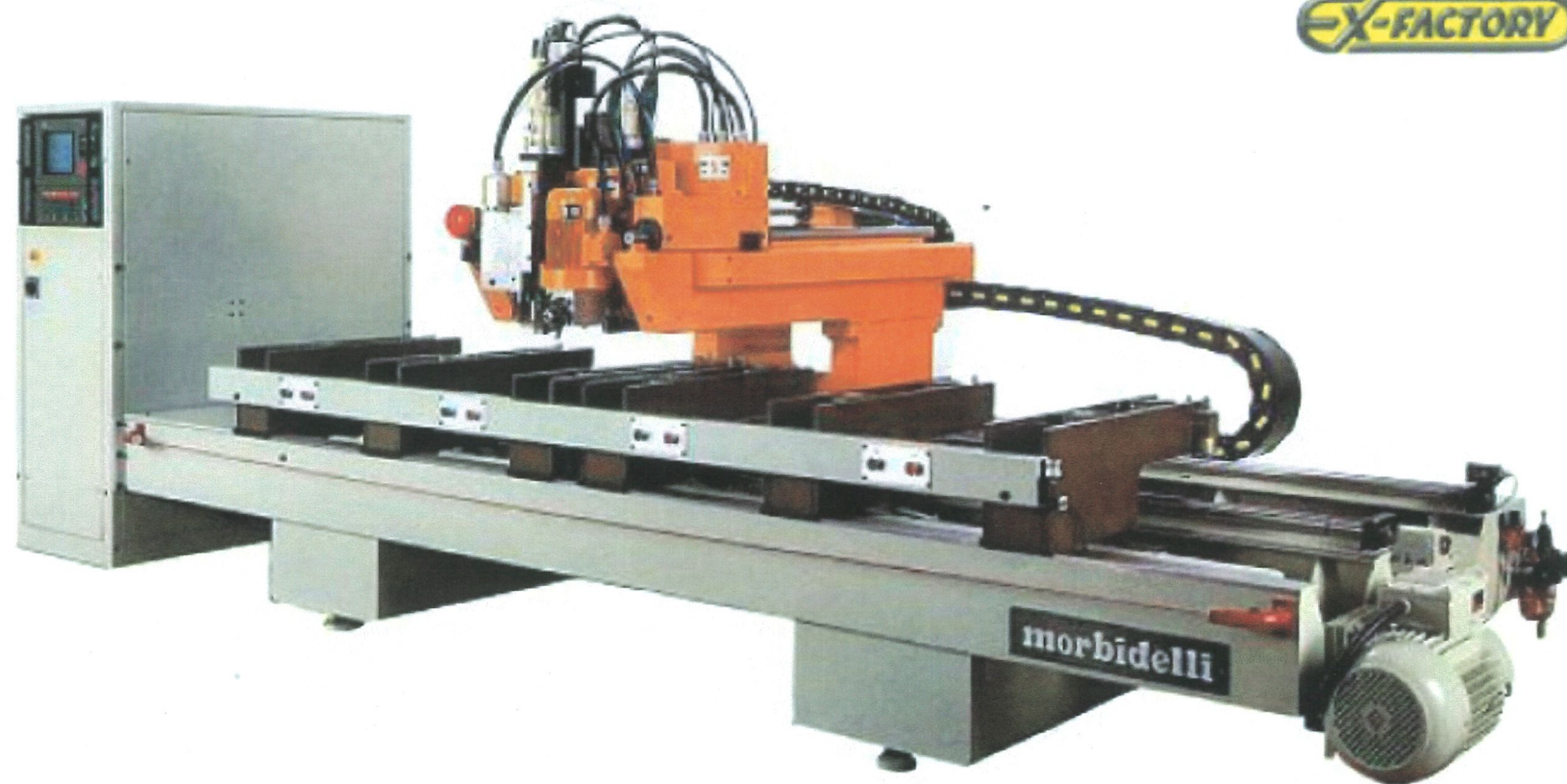


MORBIDELLI U15

X-FACTORY



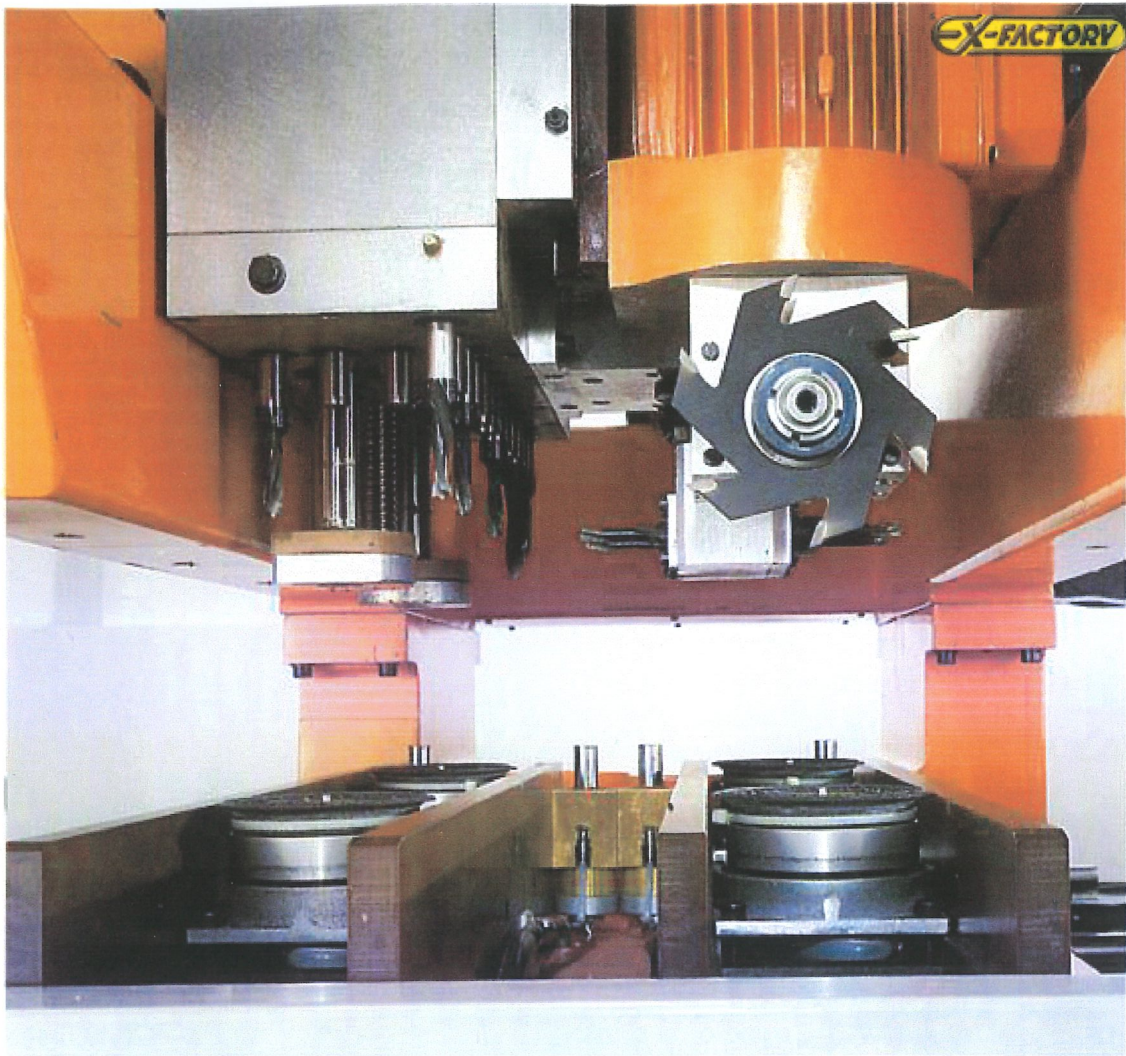
The new production technologies have a trend to eliminate stocks, therefore the many pieces of furniture are to be manufactured on work orders or in small series and made ready on a "flexible working centre" allowing all workpieces to be processed. The **UNIVERSAL 15** complies with these technologies since it is capable of carrying out vertical and horizontal drillings, as well as straight and circular millings thanks to the interpolated movement of two axes. The electronic equipment is made up of a micro processor central unit to run 3 numerical X-Y-Z axes and of the many ON/OFF controls, of an alphanumeric keyboard for data entry and recall, graphic display on a video screen and storage on a 152 K Byte RAM memory for a quick program running and on a magnetic tape as a bulk memory. It is preset for RS232 serial connection. For the operator there is a high-level interface with function keys and controlled editor. Programs can be made in the office, as well as the list of the already stored programs, so that the operator is enabled to carry out workings on a workpiece without taking care of recalling the programs continuously. By this way more programs can be collected and others can be set up in many combinations. Data transmission from the office to the **UNIVERSAL 15** machine may occur in two ways, as follows:



- 1- by means of RS232 serial connection between the P.C. and the **UNIVERSAL 15** machine,
- 2- by connecting the P.C. with a magnetic tape recorder type RM01 allowing programs and processing lists to be stored; the magnetic cassette stored in the office can be read from the **UNIVERSAL 15** machine and, in such a way, be ready for working.



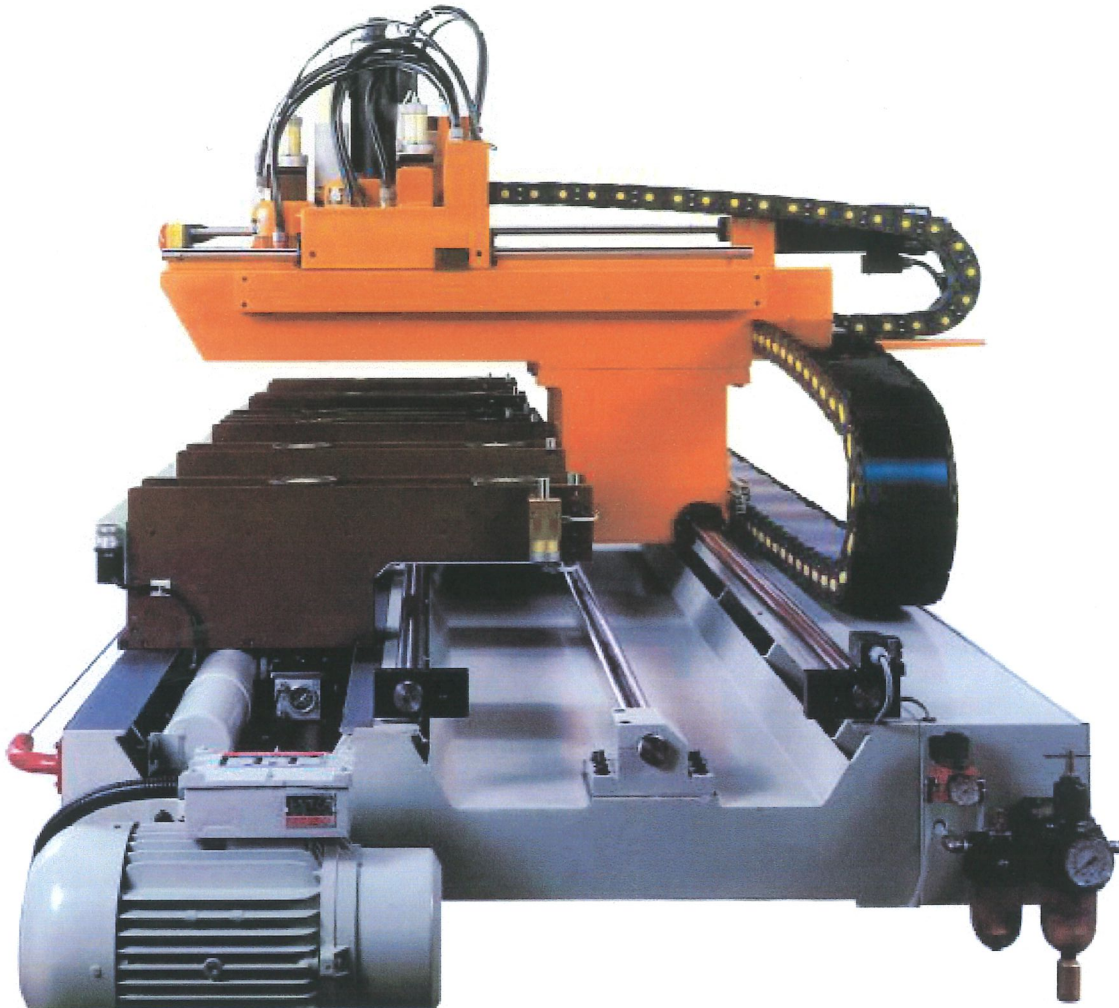
It is a newly engineered boring machine equipped with a fully open working area heavy in structure; in fact it consists in one single piece having honey-comb-shaped ribs. Furthermore, it affords a high accuracy and quality of workings, especially when grooving. The displacement of the working head along the X-Y-Z axes is achieved on hardened and grinded round-section guides and driven by d.c. motors and precision ball screws. The Z axis is equipped with a pneumatic device to balance the weights. The panel supports are adjustable in accordance with the drilling requirements. Each support is equipped with two \varnothing 115 mm vacuum cups each mounted on a proportional pneumatic cylinder allowing a bent panel, too to be hold-down and to be lowered down to the working plate. Each of these vacuum cups is kept out of work whenever the panel is not hold-down completely. Rectangular vacuum cups are available to hold down listels of min. 50 mm. The working table may be equipped with the double central zero setting device allowing two identical right-hand or left-hand panels to be positioned. It can be lowered under the working table if a panels is fed into the machine and requires more than half a machine space. All interlocking cables on the working unit on the X-Y axes are contained in big-sized cables holding chains. The panel reference stop may be disappearable in type with pneumatic control, not to cause any obstacle to the workings on the panel edge. The working plate may be subdivided into 4 independent areas, so that up to 4 different panels can be worked. The dust extraction system is made up by fully winding suction hoods that can be easily removed so to have access to the tools.



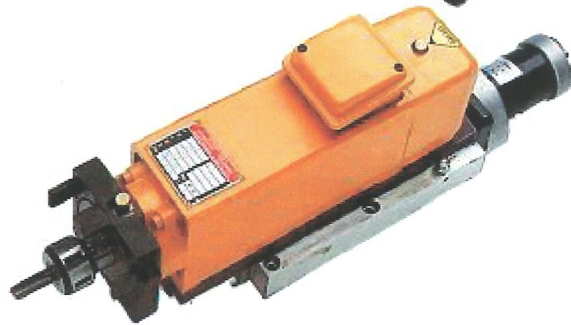
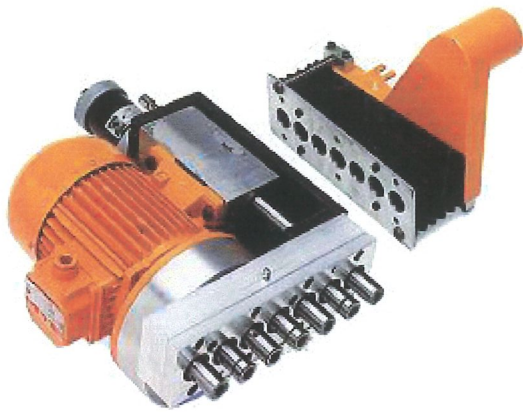
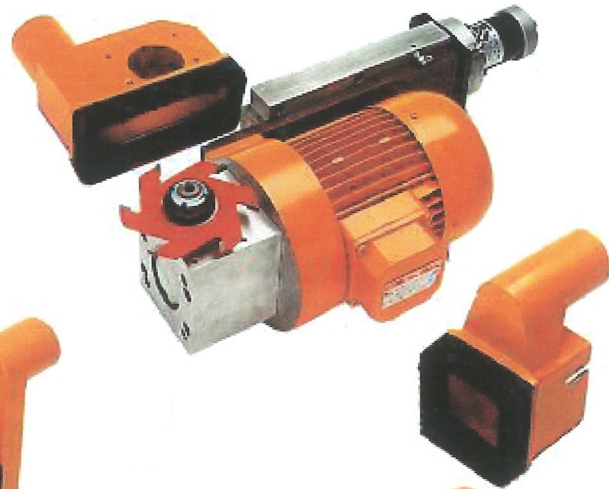
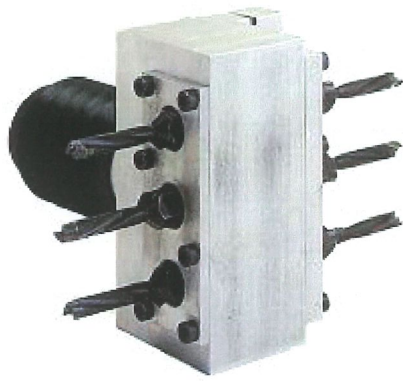
The working units are:

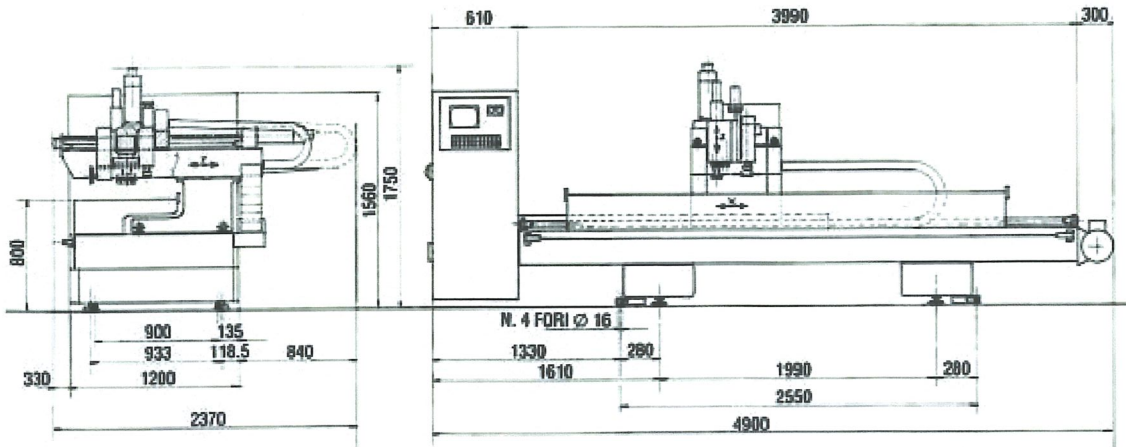



- Grooving unit with vertical axis for cylinder centre bits to be mounted on a min. 4 mm to a max. 16 mm diam. collet. The motor rotation speed equals 12000 and/or 18000 R.p.M. The motor is driven by a frequency changer.
- Grooving unit with horizontal axis for 120 mm diam. disk saw blades at 6000 R.p.M. on the X or Y axis.
- Horizontal drilling head with 6 spindles spaced at 32 mm centres, i.e. 3 spindles on each side, on the X axis.
- Horizontal drilling head with 3 spindles spaced at 32 mm centres on the Y axis.
- Vertical drilling head with 7 spindles spaced at 32 mm centres on the X axis and lined up to spindle No. 10.



X-FACTORY





TECHNICAL DATA		
<i>Working table dimensions for vertical drilling only</i>	<i>M/m</i>	3120x700
<i>Dimensions of working table with grooving units and vertical drilling</i>	<i>m/m</i>	2880x700
<i>Spindle rotation motor</i>	<i>HP</i>	3
<i>Spindle rotation speed</i>	<i>RpM</i>	3000
<i>D.C. motor for X-axis control</i>	<i>Nm.</i>	7
<i>D.C. motor for Y-Z axes control</i>	<i>Nm.</i>	4,4
<i>Displacement speed of X-Y axes</i>	<i>mt a/ 1'</i>	40
<i>Displacement speed of the Z-axis</i>	<i>mt a/ 1'</i>	18
<i>12/ 18000 RpM cylinder cutter motor</i>	<i>HP</i>	2,5 ÷ 3,5
<i>12/ 18000 RpM frequency changer</i>	<i>KW</i>	4
<i>Motor for Ø 120 disk saw blade at 600 RpM</i>	<i>HP</i>	1,5
<i>Max. dimensions of cylinder cutter</i>	<i>Ø</i>	20x30
<i>Panel hold-down vacuum device</i>	<i>m³ x h</i>	30
<i>Dimensions of vacuum cups</i>	<i>m/m</i>	Ø 115
<i>Machine operating pressure</i>	<i>Atm.</i>	6
<i>Compressed air consumption</i>	<i>NL/min.</i>	600
<i>Dust extraction for drilling head</i>	<i>Ø 80</i>	m³ x h = 450
<i>Dust extraction for each optional unit</i>	<i>Ø 60</i>	m³ x h = 250
<i>Suction air speed</i>	<i>mt/sec.</i>	25
<i>Installed electric power of basic machine</i>	<i>KW</i>	7
<i>Installed electric power for grooving units</i>	<i>KW</i>	4
<i>Installed electric power for 7-spindle drilling head</i>	<i>KW</i>	1,1
<i>Machine weight</i>	<i>Kg.</i>	2600
<i>Weight of seaworthy packing case</i>	<i>Kg.</i>	820
<i>Overall dimensions</i>	<i>m/m</i>	5000x2300x1750