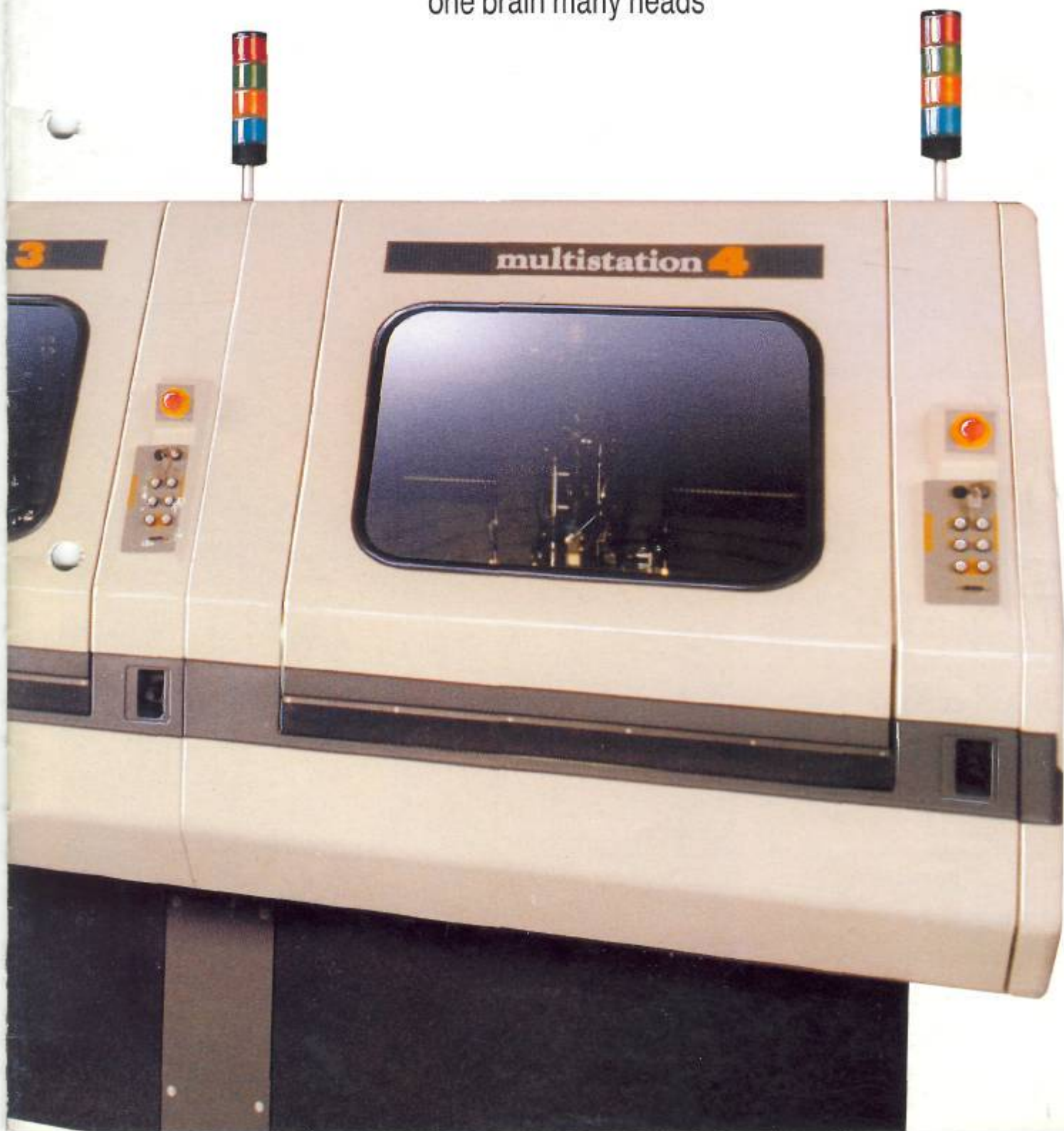
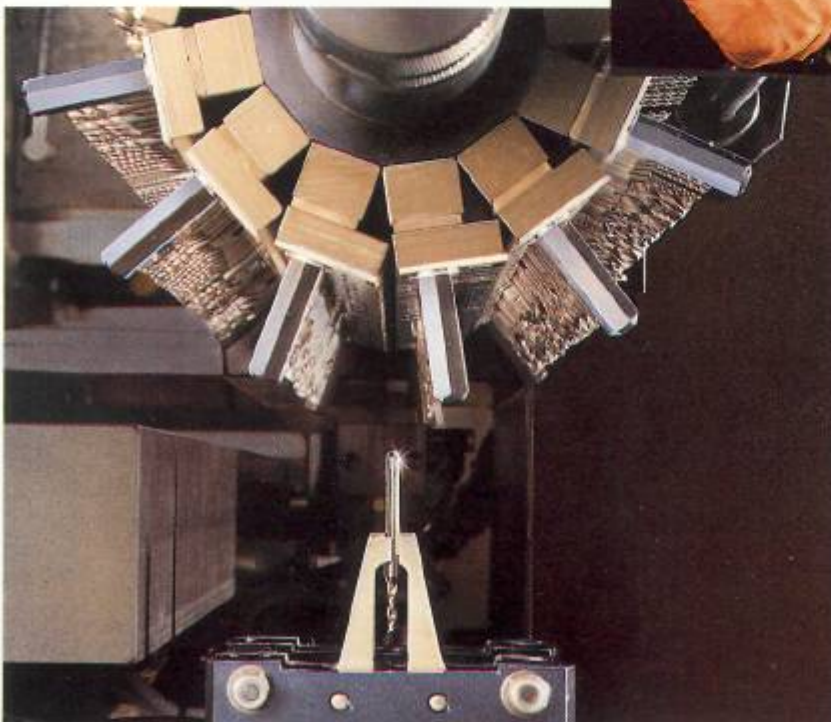
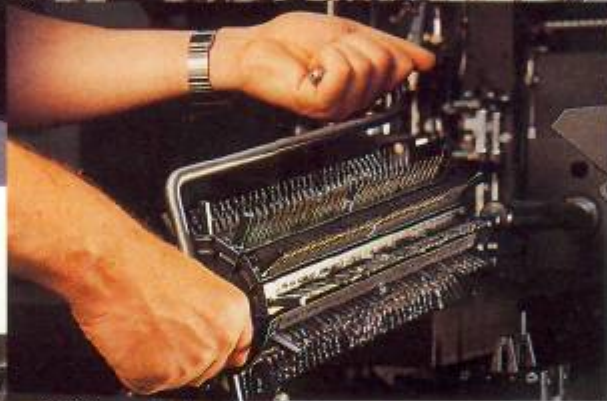


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one brain many heads





Collarless tool management system

It is based on an innovative rotary tool magazine design allowing for elimination of the plastic ring on the tools.

The tool magazine holds up to 360 tools (utilizing twelve (12) "30 pack clip bars") on a rotary drum.

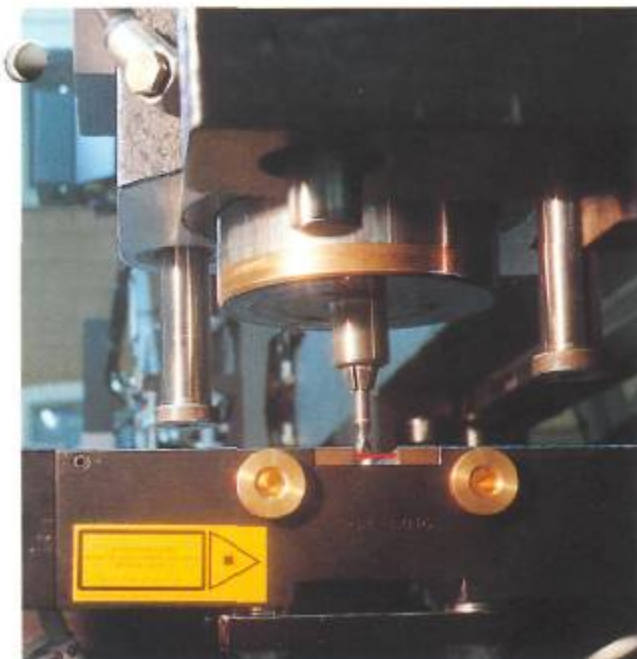
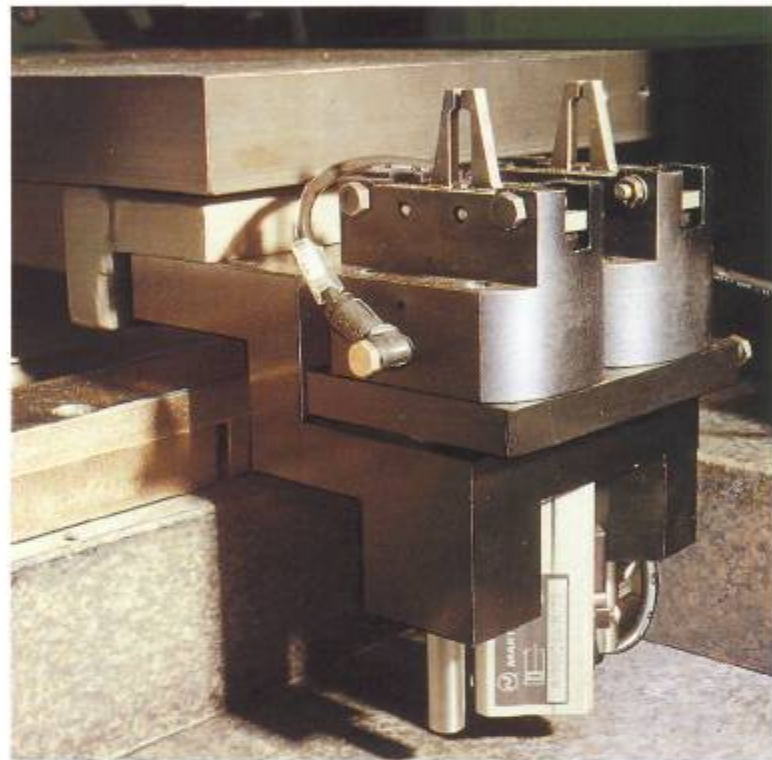
System benefits are:

- Elimination of ring rotating mass which contributes to increase the run-out.
- Reduction in tool handling that could cause drill breakage or chips.
- Reduction of cost due to elimination of rings and the associated set-up time.



Tool change gripper

Two locking grippers provide tool handling between the magazine and spindle. The tool change sequence is managed directly by routines on the CNC unit and by sensors within the tool change mechanism.



Laser station

The laser station has three distinct functions

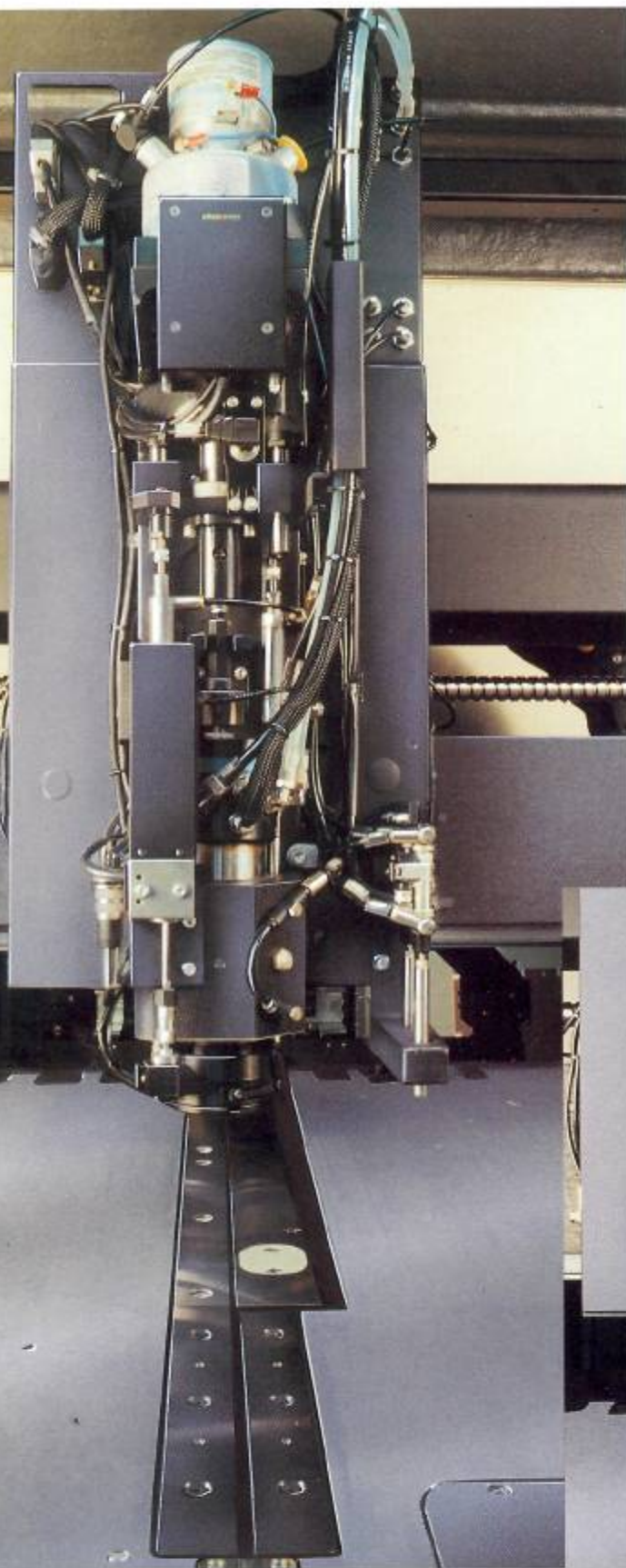
- 1 - Measures and controls the precise setting of tool height (length).
 - 2 - Measures the dynamic run out of the tool in the spindle.
 - 3 - Verifies tool diameter in the spindle. If a tool fails the diameter check the machine will automatically pick up the next tool of the same diameter, if any.
- The operator is then warned of the problem without interrupting the machine's operation.

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The reasons are:

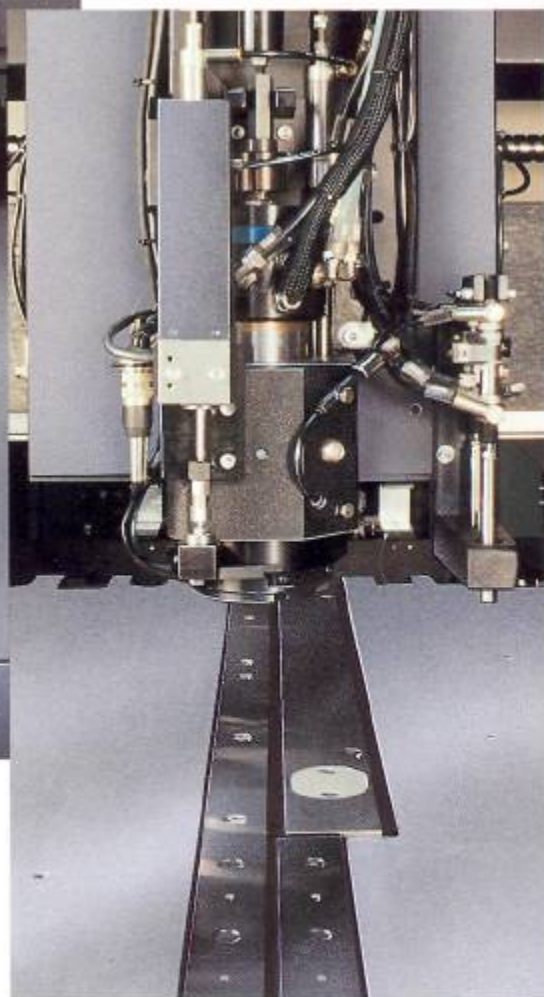
- high axes speed acceleration
- totally independent drilling units
- fast individual loading/unloading system on each unit.
- the loading/unloading time does not depend on the number of units.
- fast tool change.



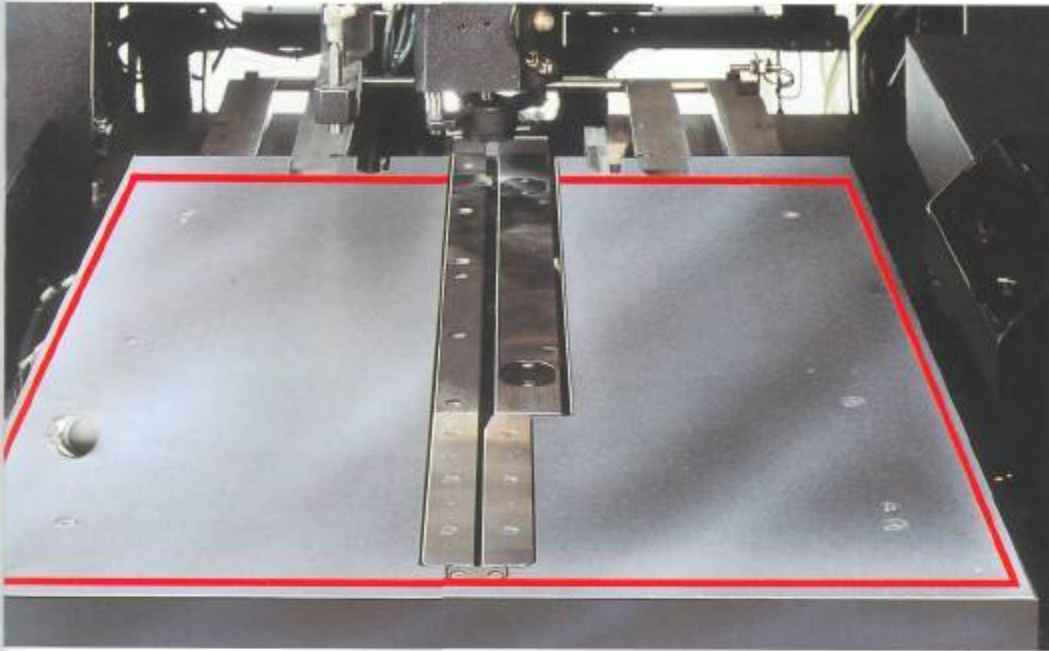


Drilling station

The high speed spindle and the application of advanced technology give the drilling unit stability and accuracy. **Depth controlled drilling** is possible with the use of a linear optical scale on the Z axis.



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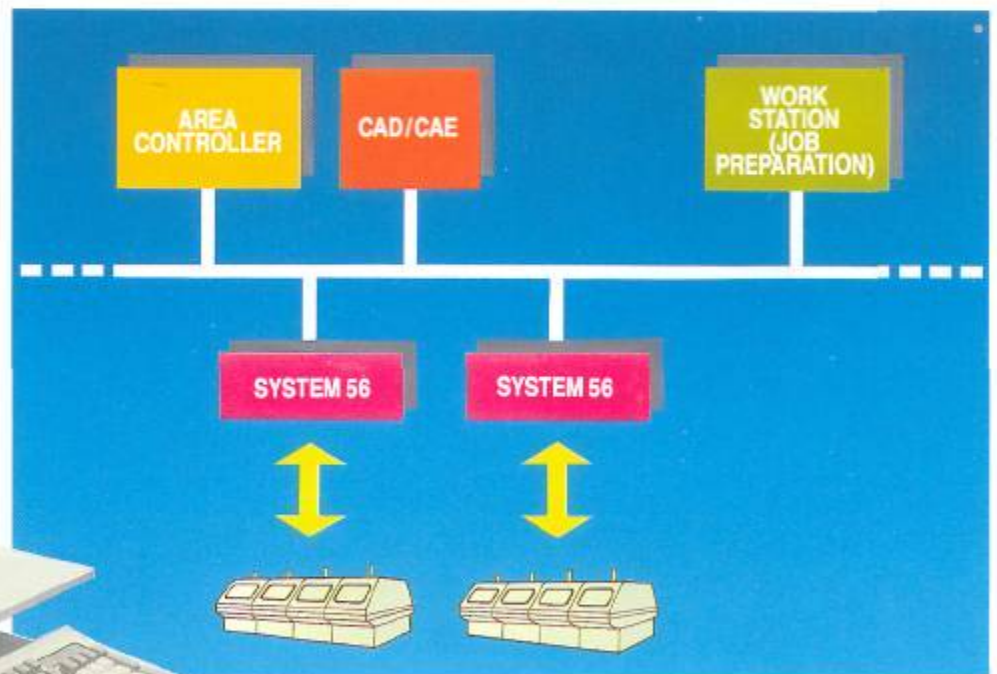


Working area

The large dimensions of the working area allow oversized panels to be drilled.

Control system

The modules are independently controlled by a Sieb&Meyer CNC 44.00 and managed by one central unit CNC 56.00 which allows management of the several modules totally independently.



DNC system

Every manufacturing cell can be integrated to a DNC connected via Ethernet to CAD and/or Host Computer.

Automatic loader/unloader

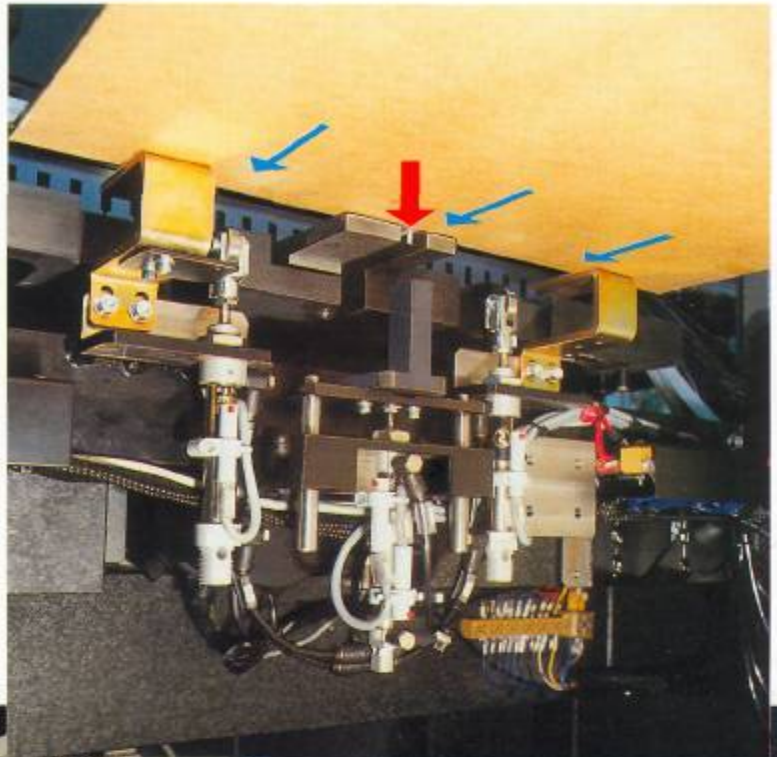
Each unit is equipped with an **independent loader/unloader**. The trolley with pivoting wheels contains 16 stacks and can be used for the handling of the stacks inside the factory.

A pantograph lift is directly controlled by the CNC and lifts the trolley to the loading position level.

The Y axis movement is used to load and unload the stacks.

The working table is equipped with a reference bushing and a cursor to grant accurate and repeatable positioning of the stack.

Special sensors are located in the loading area to control the sequence of the loading/unloading cycle.



Technical specifications:

• Transversal X axis run	580 mm (22.83 in.)
• Longitudinal Y axis run	700 mm (27.55 in.)
• Vertical Z axis run	19 mm (0.75 in.)
• Table dimensions	540x745 mm (21.3x29.3 in.)
• Drilling area	535x700 mm (21.00x27.55 in.)
• Number of independent stations	1 to 32
• Positioning accuracy	±0.003 mm (±0.00011 in.) [†]
• Repeatability accuracy	±0.002 mm (+0.0008 in.) [*]
• Optical scales resolution	0.001 mm (0.00004 in.)
• X Y axes positioning speed	24m/min (945 in./min)
• Z axis positioning speed	20m/min(787in./min)
• Axes acceleration	5m/sec ² (197 in./sec ²)
• Drilling accuracy	+ 0.018 mm (±0.0007 in.)
• Drilling electrospeed	WW1201-110 krpm
• Cycles per minute	430**
• Axes movement system	Servomotors+ball recirculating screws
• Sliding system	Fully air bearing
• Number of tools per module	up to 359 plus 1 dummy tool
• Tool change time	19sec.
• Number of stacks per trolley	16
• Complete loading/unloading operation time	29sec.
• Control on each module	CNC 44.00 Sieb&Meyer
• System manager	CNC 56.00 Sieb&Meyer
• Electric infeed	380 V - 50 Hz
• Electric consumption for the first module	2.7 kW
• Electric consumption for each additional unit	2 kW
• Working air pressure	7bar(102 psi)
• Pneumatic consumption for each module	450 NI/min (17 CFM)
• Noise level	<75dB
• Overall size (2 stations)	2890x3000x2100 mm (113.8x118.1x82.7 in.)
• Overall size for each additional unit	1170x3000x2100 mm (46.1x118.1x82.7 in.)
• Total weight (2 stations)	3200 kg (6700 lb)
• Total weight for each additional unit	1500 kg (3150 lb)
[*] According to N.M.T.B.A (American specification)	Data are not binding
^{**} 2.54 mm (0.1 in.) step (X-Y axes) and 2.54 mm (0.1 in.) Z axis run	Pluritec reserve the right to change without notice

