



MULTISTATION EVOLUTION

DRILLING SERIES



**HIGH SPEED MODULAR
MICRODRILLING STATION**

ALL LINEAR MOTORS

MULTISTATION EVOLUTION

The latest Pluritec® modular unit for drilling/routing.

Each station is an independent machine able to perform different jobs with a different spindle.
Add units when you need.

Run the system unattended with automatic panel loading/unloading.

Use camera for vision assisted drilling and routing.

Perform depth controlled vias using contact, linear scale or mapping.

Rout thick aluminium and copper with special spindle and mist cooling system.

Choose your tool configuration from 140 to 1290.



- Speed
- Flexibility
- Accuracy

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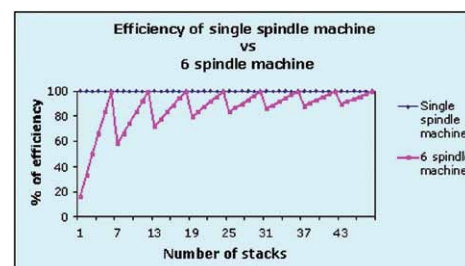
Modularity

The modular design allows you to expand from a single to multiple modules. Each module can have a different configuration, thus creating independent cells for drilling and routing. Each module can be equipped with its own automatic loading unloading system.



Flexibility

Thanks to its flexibility single head machines are the most efficient solution for prototype quickturn and medium run production.



Linear motors

X, Y and Z axes are driven by very fast linear motors. No maintenance required.



Spindles

Drilling from 180,000 to 250,000+ rpm.
Routing from 5,000 to 125,000 rpm.
Synchronous or asynchronous version are available.
The head assembly design can accept a variety of manufacturers spindles, allowing easy future upgrade.

Working area

Standard working area :
630 x 765 mm (24.80" x 30.12").
Large version:
630 x 914 mm (24,80" x 36,00")



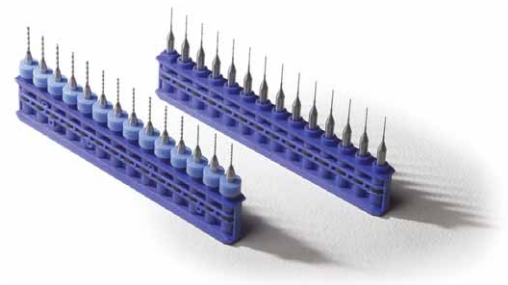
Automatic bushing exchange

The special "swinging" pressure foot provides automatic bushing exchange. This system permits higher accuracy in microdrilling due to the smaller bushing diameter creating a better "vacuum flow" for chip evacuation.



Tool magazine

Cassette (140 tools) , drum (860) or belt (1290) collared or collarless. Using Pluritec strip (14 positions) Eurostrip (11 positions). The tool magazine choice is flexible enough to meet all demands.



Independent tool change management

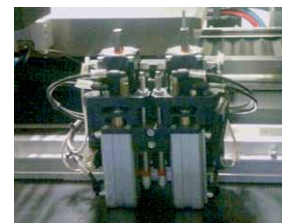
The belt system allows you to change or update tool library while continuing drilling and routing process.

Again, another productivity advancement from Pluritec.



Independent double gripper

Reduces tool change time and increases productivity. This feature allows you to always have "Next Tool" ready for instant use.



Laser station

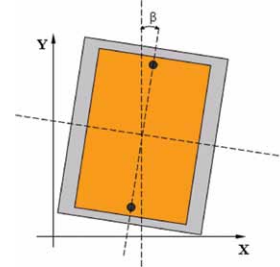
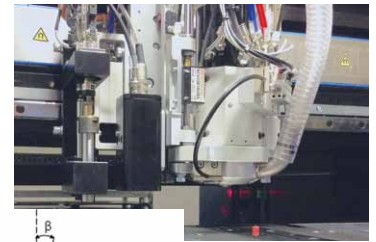
The laser device checks: drill bit height, diameter and run-out during every tool change operation.



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CCD camera

The vision system automatically aligns the panel eliminating any error due to the tooling plate positioning. In addition it allows you to drill holes related to the position of specific targets and to rout patterns related to the position of specified references.



Contact Drilling

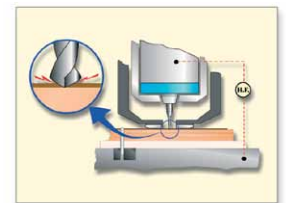
The Contact Drilling system allows both, broken bit detection and controlled depth drilling.

BROKEN BIT DETECTION

Thanks to the "contact drilling" system, any breakage/chipping of small diameter drill bits can be detected in real time.

DEPTH CONTROL DRILLING

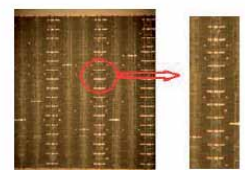
The system grants very high accuracy ± 10 micron ($\pm 0.00040''$) in depth controlled vias.



Flip drilling

The "Flip drilling" system is used in case of very small trough holes and thick multilayer panels. In this case the drill bit flute length of small tools does not allow the drilling of trough holes.

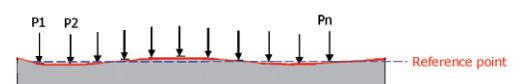
To assure perfect alignment of both top and bottom drill hole process. The vision system measures both top and bottom targets to insure perfect hole alignment.



Mapping

The "Mapping" enables you to measure panel surface and work table to build a 3-D interpolated thickness map.

Learned 3-D map, can now be used to execute precise depth of drilling/routing with controlled parameters based on top, bottom and/or percentage of panel thickness.



Thick Aluminum - Copper Routing

Pluritec's dedicated ball bearing spindle and misting system allows you complete control on heavy metal drilling and routing.

The capability of high torque and low RPM's (5,000 - 60,000) allows you to work with a wide range of substrates, slots, heat dissipators and large holes easily

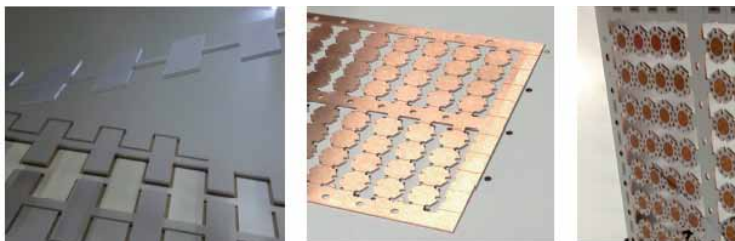


Myst Tool Cooling System

A specially equipped pressure foot with a high pressure inlet, allows a very cold "mist" (no alcohol) on the tool during operation.

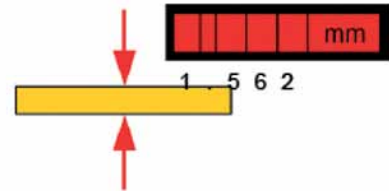
Residual mist is removed by the machine vacuum system and the board remains completely dry.

Precision mist control and large reservoir allows for long production cycles. This system grants longer tool life, better finishing quality, higher stack up ratio and faster routing speed.



Panel thickness measuring

This option is able to measure panel thickness. If the measured value is out of tolerance, the panel is rejected.



Control unit - Easy to use

MULTISTATION EVO is equipped with Windows based Pluritec "PCB Controller", capable of managing up to 32 axes.

Pluritecs Controller ensures total compatibility with Sieb&Meyer and Excellon programming languages.

User friendly interface integrates drilling, routing, vision and statistical reporting capabilities.



User interface available in any language



Integrated vision system

Drilling program graphic representation

AUTOMATION

Each module can be equipped with an independent loading/unloading system with 20 positions. Each stack can have a different part program.



Bar code

Bar code reader can automatically read and download drilling programs. This in conjunction with automatic loading unloading ensures high flexibility to run different jobs unmanned.



TECHNICAL FEATURES	MULTISTATION EVOLUTION
Tooling type	Sliding bar and self centering "V" block
Tooling pin size	3.175 mm (0.125") - Other sizes available on request
X-Y axis positioning speed	60 m/min (2362"/min)
X-Y axis acceleration	1.5 g
Z - axis positioning speed	30 m/min (1181"/min)
Z axis acceleration	3.5 g
Z axis vertical run	40 mm (1.5748")
Positioning accuracy*	0.005 mm (0.0002")
Repeatability accuracy*	0.004 mm (0.00015")
Drilling accuracy**	± 0.015 mm (± 0.0006")
DRILLING UNIT	
Air bearing spindles	Drilling: 180 krpm (standard) - 200 - 250 krpm (option) Routing: 80 krpm (standard) - 125 krpm (option)
Drilling accuracy	Controlled depth accuracy: ±0.015 mm (±0.00059")
Broken bit detection	Contact drilling system
Drilling diameters	0.10–6.35 mm (0.00394"-0.250")
TOOL CHANGE	
Number of tools available	140 collarless (standard) or collared bits
Gripper	1 gripper (standard) - double gripper (option)
Laser station	For drill bit height, diameter and dynamic run-out measuring
CONTROL UNIT	
CNC type	Pluritec® PCB Control
Operating system	Windows Embedded
Monitor	17" LCD colour monitor
CPU	Intel Pentium Dual Core 1.8GHz
Hard disk	130 GByte minimum
RAM	2GByte minimum
Miscellaneous	Ethernet interface, USB ports, mouse and keyboard
GENERAL SPECIFICATIONS	
Electrical power supply	400 V 50 Hz 3 phase – different power supply on request
Power requirements	1st module 7.3 kVA Each extra module 2.6 kVA
Compressed air pressure	7 bar (102 PSI)
Air consumption	140 NI/min (4.9 CFM)
Noise level	< 75 dB
Total weight, 1st module	3400 kg (7450 lb)
Total weight, each extra module	3200 kg (7050 lb)

* According to ISO 230/2
 ** According to PLURITEC standards
 Data is not binding. Pluritec® reserves the right to change the present information without notice



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