Technical data

**UltraSpeed 6000 - LZ**
**CNC 3000**

High performance automatic machine for drilling and routing of printed circuits boards

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**UltraSpeed**

Machine fitted with individual Z axis per spindle and a spindle per station, supplied by a chain driven tool magazine.

**UltraSpeed D**

Machine fitted with individual Z axis per spindle and two spindle per station (DUAL), for the simultaneous machining of two identical images (STEP & REPEAT), offset along the X axis, supplied by a chain driven tool magazine.

**UltraSpeed C**

Machine fitted with individual Z axis per spindle and a spindle per station, supplied by a tool magazine with removable cassette.

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### Machine models

<table>
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<th>UltraSpeed</th>
<th>6000-6</th>
<th>6000-6 D</th>
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<td>2</td>
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<td>4</td>
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<tr>
<td>6 x 21.00”</td>
<td>[6 x 533.4 mm]</td>
<td>28.5” [723.9 mm]</td>
<td>21.00” [533.4 mm]</td>
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### Workpiece formats

Without vertical clamping: 21.00” [533.4 mm]

With vertical clamping: 28.5” [723.9 mm]

### Workpiece fixing devices

- Standard: 2-point clamping element, with pneumatically controlled prism and slot.
- Multi-diameter clamping technique: 3.0 mm [.118"] to 6.35 mm [.25”]
- Double contact claw for CONTACT DRILL device.

### Option

- Vertical clamping device.
- Reference system for multilayers.
- Table without workpiece fixing device.

### UltraSpeed D

Option: X- / Y- clamping system: according to the pattern, the workpiece can be clamped in the X- or Y- direction.

X = with pneumatic slot clamping.

Y = between distance of pins on request.

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### X axis

- Spindle carrier unit.
- Use travel according to types and formats:
  - 548 mm [21.57"] to 646 mm [25.43”]
- Speed:
  - in drilling: 50 m min⁻¹ [1968” min⁻¹]
  - in routing: 50 m min⁻¹ [1968” min⁻¹]
- Acceleration:
  - according to the mass of the equipment: 8 m/s² ≈ 0.81 g to 12 m/s² ≈ 1.22 g
- Drive:
  - liquid cooled linear motor and digital servo control.

### Y axis

- Machine table.
- Useful travel:
  - Y 28.5” format: 742 mm [29.21”]
- Speed:
  - in drilling: 50 m min⁻¹ [1968” min⁻¹]
  - in routing: 50 m min⁻¹ [1968” min⁻¹]
- Acceleration:
  - according to the mass of the equipment:
    - max. 40 m/s² ≈ 4.1 g
- Drive:
  - liquid cooled linear motor and digital servo control.

### Z axis

- LZ unit.
- Concept:
  - XZ driving system for each spindle.
- Working stroke:
  - limited by the aspiration opening of pressure pad, max.: 12.00 mm [.472”]
- Speed:
  - max. 30 m min⁻¹ [1181” min⁻¹]
- Acceleration:
  - max. 40 m/s² ≈ 4.1 g
- Drive:
  - liquid cooled linear motor and digital servo control.
- Air consumption:
  - per LZ unit: 12 Nl min⁻¹

### Spindles

- Rotation speed:
  - HF125: 15 to 125
  - HF180: 20 to 180
- Drilling capacity, maximum:
  - HF125: 6.35 mm [.25”]
  - HF180: 6.35 mm [.25”]
- Routing capacity, maximum:
  - HF125: 2.40 mm [.94”]
- Air consumption per spindle, approx.:
  - HF125: 70 Nl min⁻¹
  - HF180: 122 Nl min⁻¹
Tools management for UltraSpeed 6000

Capacity: chain of 6,000 tools per machine

Tool supply: in EUROMAGAZINES, no dwell time (no production interruption).

Tool change: 1 tool changer per spindle for ringed tools or tools without ring.

Time of the tool change, including the measurement of the diameter and the length: approx. XX seconds, to 80 kr min⁻¹.

Tools management for UltraSpeed 6000 C

Capacity: 1 x or 2 x 110 tools per spindle

Tool supply: by removable cassettes (preparation out of machine):
- grooved plate for EUROMAGAZINE.
- for tools without ring implies the use of the DL tool measuring station.

Time of the tool change, including the measurement of the diameter and the length: approx. 27 seconds, to 80 kr min⁻¹.

Measuring and monitoring of the tool

DL tool measuring station:
- diameter measuring and length monitoring by optical barrier.

Tool break monitoring in real time:
- by CONTACT DRILL device.

Access to the machining area:
- door opening on operator's request.

Machine with chain tool-magazine:
- door movements associated with tool-magazine are pneumatically controlled.

Machine with cassette tool-magazine:
- door movements are performed manually by the operator.

Quality assurance

X / Y positioning accuracy: ±0.005 mm [±.00020”]

repetition accuracy: ±0.002 mm [±.00008”]

machinging accuracy:
in drilling: ±0.020 mm [±.00078”]
in routing: ±0.050 mm [±.00197”]

Z accuracy in depth:
in drilling: ±0.15 mm [±.006”]
in routing: ±0.05 mm [±.002”]

drilling of blind hole: ±0.01 mm [±.0004”]

POSAUX CNC 3000 control:
- industrial PC equipped with a machine controller to supervise:
  - the man-machine interface (colour touch screen, connection to outside world through network).
  - the axes control through field bus.
  - the inputs / outputs through field bus.
  - Galvanic Insulation with the machine.

Energy sources

Voltage: 3 x 400 V~ ±10% + Neutral + GND

Frequency: 50 or 60 Hz

Installing power:
- 50 Hz: UltraSpeed 6000-6 18.5 kVA 22.0 kVA
- 60 Hz: UltraSpeed 6000-6 30.0 kVA 33.5 kVA
- UltraSpeed 6000-5 xxx xxx
- UltraSpeed 6000-5 D 26.5 kVA 30.0 kVA

Air pressure:
- min. 6.5 bar max. 10 bar

Air consumption:
- UltraSpeed 6000-6 850 Nl min⁻¹
- UltraSpeed 6000-6 D 1732 Nl min⁻¹
- UltraSpeed 6000-5 708 Nl min⁻¹
- UltraSpeed 6000-5 D 1444 Nl min⁻¹

Environment

Mass:
- approx. 8'250 kg [18'208 lb]

Distributed load on the floor:
- approx. 10'000 N/m² [209 lb/sq ft]

Localized load (3 support points on the floor):
- max. 920'000 N/m² [19'210 lb/sq ft]

Machine dimensions:
- height, closed door: 1865 mm [73.42”]
- height, opened door: 2565 mm [100.10”]
- width: 4380 mm [172.44”]
- front-to-back: 1840 mm [72.44”]

Automatic loading:
- concept leaving to the operator free access to the front of the machine.
  - Individual loader on 9 or 18 floors.
  - Down Time Eliminator loader.
Installation layout of the UltraSpeed 6000 machine

A = Minimum distances for maintenance work
B = Level of machine table from floor

Subject to alterations.
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