Technical data

High performance automatic machine for drilling and routing of printed circuit boards
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.

### Machines models

#### UltraSpeed 6000-6

- **Dimensions:** 6 x 18.0" [6 x 457.2 mm]
- **Spindle Spacing:** 3 x 24.0" [3 x 609.6 mm]
- **Spindle Locations:** 1, 2, 3', 4, 5', 6
- **Y-Axis Step:** 28.5" [723.9 mm]

#### UltraSpeed 6000-5

- **Dimensions:** 5 x 21.0" [5 x 533.4 mm]
- **Spindle Spacing:** 2 x 24.0" [2 x 609.6 mm]
- **Spindle Locations:** 1, 2, 3, 4, 5
- **Y-Axis Step:** 28.5" [723.9 mm]

#### UltraSpeed 6000-5 DUAL

- **Dimensions:** 5 x 21.0" [5 x 533.4 mm]
- **Spindle Spacing:** 2 x 24.0" [2 x 609.6 mm]
- **Spindle Locations:** 1, 2, 3, 4, 5
- **Y-Axis Step:** 28.5" [723.9 mm]

#### UltraSpeed 6000-4

- **Dimensions:** 4 x 24.0" [4 x 609.6 mm]
- **Spindle Locations:** 1, 2, 3, 4
- **Y-Axis Step:** 28.5" [723.9 mm]

#### UltraSpeed 6000-4 DUAL

- **Dimensions:** 4 x 24.0" [4 x 609.6 mm]
- **Spindle Locations:** 1, 2, 3, 4
- **Y-Axis Step:** 28.5" [723.9 mm]
- **Clamping Options:** Clamping in Y direction, Clamping in X direction

### Workpiece formats

<table>
<thead>
<tr>
<th>Standard</th>
<th>On request</th>
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<tbody>
<tr>
<td>18.0&quot; [457.2 mm]</td>
<td>24.0&quot; [609.6 mm]</td>
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### Workpiece clamping devices

- **Standard:** 2-point system with pneumatic controlled V-bloc and slot clamping.
- **Option 1:** with vertical clamping claws.
- **Multi-diameter clamping technique:** 3.0 mm [118"] to 6.35 mm [25"]
- **Other diameter available on request.**

- **Option 2:** UltraSpeed D
- **Special tools for multilayers.**
- **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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UltraSpeed 6000  
posalux
**X axis**
spindle carrier unit.
Useful travel according to types and formats:
572 mm [22.52"] to 622 mm [24.48"]
Speed in drilling: 50 m min⁻¹ [1668 min⁻¹]
in routing: 50 m min⁻¹ [1668 min⁻¹]
limited by the tool and the spindle.
Acceleration according to the weight of the equipment:
8 m/s² ≈ 0.81 g to 12 m/s² ≈ 1.22 g
Drive water cooled linear motor and digital servo control.
Spindle distance between XL and XR
according to types and formats:
UZ unit min. 170 mm [6.70"] to max. 488 mm [19.21”]
LZ unit
min. 143 mm [5.63”]
max. 431 mm [16.97"] to 515 mm [20.28”]
UltraSpeed 6000-5 D requires the LZ units.

**Y axis**
machine table.
Useful travel Y 28.5” format 742 mm [29.21”]
Y 30.0” format 890 mm [35.03”]
Speed in drilling: 50 m min⁻¹ [1668 min⁻¹]
in routing: 50 m min⁻¹ [1668 min⁻¹]
limited by the tool and the spindle.
Acceleration according to the weight of the equipment:
7 m/s² ≈ 0.71 g to 12 m/s² ≈ 1.22 g
Drive water cooled linear motor and digital servo control.

**Z axis**
UZ unit.
Concept driving system for each spindle.
Useful travel 0.0 mm to 12.0 mm [0.0 to .472”]
Speed max. 30 m min⁻¹ [1181” min⁻¹]
Acceleration max. 40 m/s² ≈ 4.1 g
Drive water cooled brushless AC motor and digital servo control.

**Spindles**
Rotation speed kr min⁻¹
MF40 (UZ unit) 3 - 40
HF80 15 - 80
HF125 15 - 125
HF180 (LZ unit) 30 - 180

Drilling capacity
MF40 (UZ unit) 0.3 mm - 6.35 mm [0.012” - .25”]
HF80 0.1 mm - 6.35 mm [0.004” - .25”]
HF125 0.1 mm - 6.35 mm [0.004” - .25”]
HF180 (LZ unit) 0.1 mm - 3.17 mm [0.004” - .125”]

Routing capacity
MF40 (UZ unit) 0.8 mm - 3.17 mm [.031” - .125”]
HF80 0.8 mm - 2.40 mm [.031” - .094”]
HF125 0.8 mm - 2.40 mm [.031” - .094”]

Air consumption per spindle
MF40 (UZ unit) approx. 30 Nl min⁻¹
HF80 approx. 100 Nl min⁻¹
HF125 approx. 70 Nl min⁻¹
HF180 (LZ unit) approx. 122 Nl min⁻¹

Tools management for UltraSpeed 6000
Capacity 6'000 tools per machine
Tool supply in EUROMAGAZINES, no dwell time, (no production interruption).
Tool change double tool changers for each spindle with or without distance ring on tools.

Time of the tool change including the measurement of the diameter and the length
approx. 25 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.
- or plate with tools rows.
Tool change by single changer system per spindle
- for ringed tools.
- 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 laser reflector (UZ unit)
- by CONTACT DRILL device.

**Quality assurance**
X / Y positioning accuracy ±0.005 mm [±.0002”]
repetition accuracy ±0.002 mm [±.00008”]
machining accuracy in drilling ±0.020 mm [±.0009”]
in routing ±0.050 mm [±.0019”]
Z accuracy in depth in drilling ±0.15 mm [±.006”]
drilling of blind hole ±0.01 mm [±.0004”]
in routing ±.05 mm [±.002”]

**POSLALUX CNC 3000 control**
industrial PC equipped with a machine controller to supervising:
- 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+ Neutral + GND
Frequency 50 or 60 Hz
Installing power 20 kVA
Air pressure min. 6.5 bar max. 10 bar
Air consumption machine: general: 50 Nl min⁻¹
per spindle: 15 Nl min⁻¹
additional flow: per LZ unit: see Z axis, LZ unit.
per spindle: see Spindles.

**Environment**
Mass approx. 8’250 kg [18’208 lb]
Distributed load on the floor approx. 10’000 Nm² [209 lbs/sq ft]
Localized load (3 support points on the floor) max. 920’000 Nm² [19’210 lbs/sq ft]
Machines dimension 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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