

Technical data

UltraSpeed
6000
CNC 3000

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

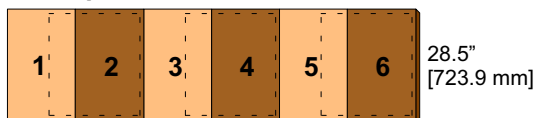
Machines models

Workpiece formats

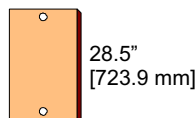
Standard:

On request:

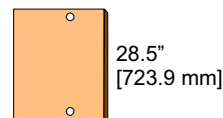
UltraSpeed 6000-6



6 x 18.0" [6 x 457.2 mm]
3 x 24.0" [3 x 609.6 mm]

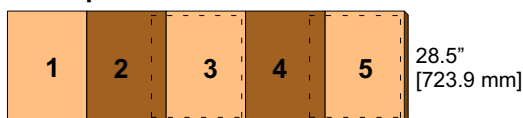


18.0" [457.2 mm]

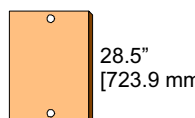


24.0" [609.6 mm]

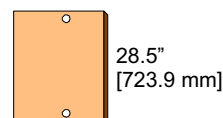
UltraSpeed 6000-5



5 x 21.0" [5 x 533.4 mm]
2 x 24.0" [2 x 609.6 mm]

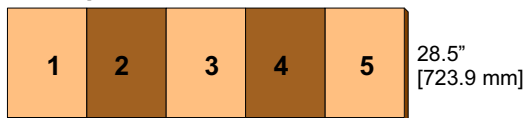


21.0" [533.4 mm]

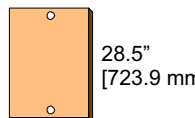


24.0" [609.6 mm]

UltraSpeed 6000-5 DUAL

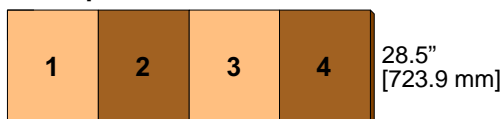


5 x 21.0" [5 x 533.4 mm]

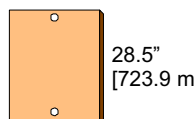


21.0" [533.4 mm]

UltraSpeed 6000-4

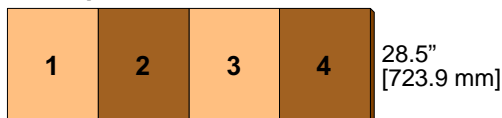


4 x 24.0" [4 x 609.6 mm]

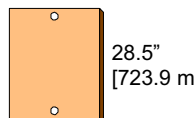


24.0" [609.6 mm]

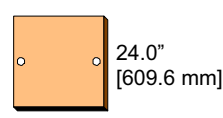
UltraSpeed 6000-4 DUAL



4 x 24.0" [4 x 609.6 mm]



24.0" [609.6 mm]



24.0" [609.6 mm]

Clamping in Y direction

Clamping in X direction

Workpiece clamping devices

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

Option:

UltraSpeed D

special toolings 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.

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 [1968" min⁻¹]
 in routing: 50 m min⁻¹ [1968" min⁻¹]
 limited by the tool and the spindle.
 Acceleration according to the weight of the equipment:
 8 m/s² \approx 0.81 g to 12 m/s² \approx 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 [6.98"] 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 [1968" min⁻¹]
 in routing: 50 m min⁻¹ [1968" min⁻¹]
 limited by the tool and the spindle.
 Acceleration according to the weight of the equipment:
 7 m/s² \approx 0.71 g to 12 m/s² \approx 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 \approx 4.1 g
 Drive water cooled brushless AC motor and digital servo control.

LZ unit.
 Concept driving system for each spindle.
 Useful travel depending on the length of the tool:
 standard 20.32 mm [.8"]
 Speed max. 30 m min⁻¹ [1181" min⁻¹]
 Acceleration max. 40 m/s² \approx 4.1 g
 Drive water cooled linear motor and digital servo control.

Air consumption per LZ unit: 12 NI min⁻¹

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	[.012" - .25"]
HF80	0.1 mm - 6.35 mm	[.004" - .25"]
HF125	0.1 mm - 6.35 mm	[.004" - .25"]
HF180 (LZ unit)	0.1 mm - 3.17 mm	[.004" - .125"]

Routing capacity		
MF40 (UZ unit)	0.8 mm - 3.17 mm	[.031" - .125"]
HF80	0.8 mm - 2.40 mm	[.031" - .94"]
HF125	0.8 mm - 2.40 mm	[.031" - .94"]

Air consumption per spindle

MF40 (UZ unit)	approx. 30 NI min ⁻¹
HF80	approx. 100 NI min ⁻¹
HF125	approx. 70 NI min ⁻¹
HF180 (LZ unit)	approx. 122 NI 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	$\pm 0,005$ mm	[± 0.00020 "]
repetition accuracy	$\pm 0,002$ mm	[± 0.00008 "]
machining accuracy		
in drilling	$\pm 0,020$ mm	[± 0.00078 "]
in routing	$\pm 0,050$ mm	[± 0.00197 "]
Z accuracy in depth		
in drilling	$\pm 0,15$ mm	[± 0.006 "]
drilling of blind hole	$\pm 0,01$ mm	[± 0.0004 "]
in routing	$\pm 0,05$ mm	[± 0.002 "]

POSALUX 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 NI min ⁻¹
		per spindle: 15 NI min ⁻¹
	additional flow:	
	per LZ unit:	see Z axis, LZ unit.
	per spindle:	see Spindles.

Environment

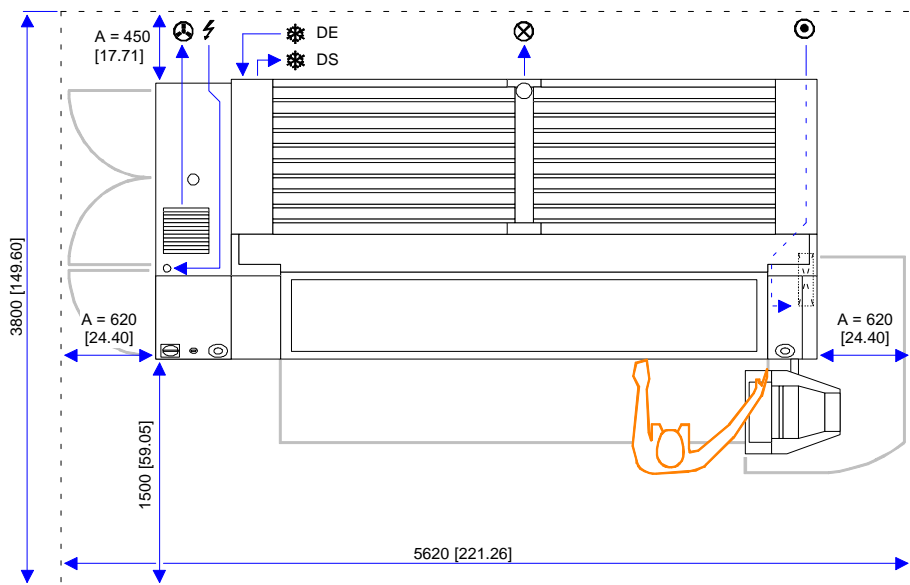
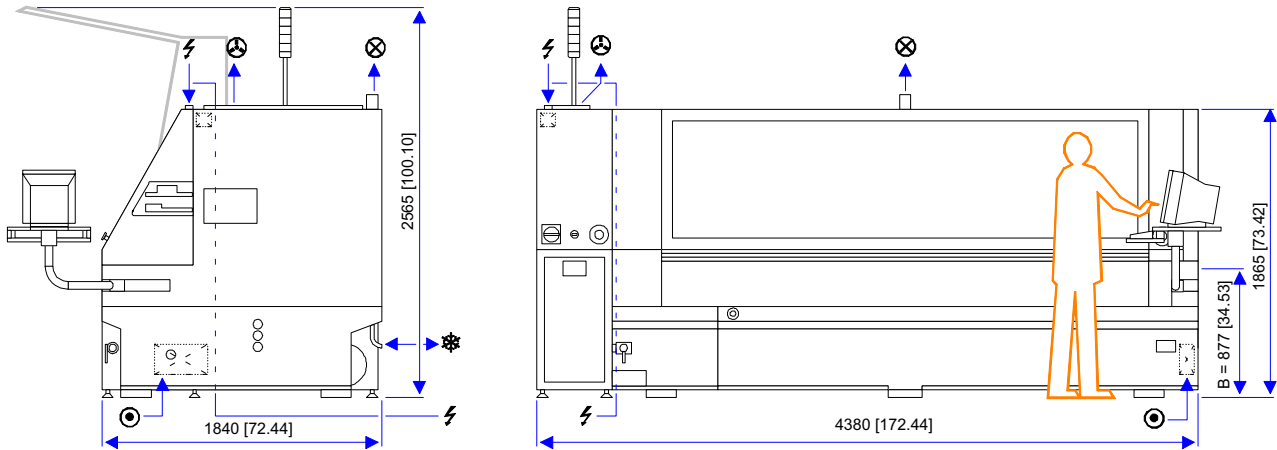
Mass	approx. 8'250 kg	[18'208 lb]
Distributed load on the floor	approx. 10'000 N/m ²	[209 lb/sq ft]
Localized load (3 support points on the floor)	max. 920'000 N/m ²	[19'210 lb/sq ft]
Machines dimension		
height, closed door	1865 mm	[73.42"]
height, opened door	2565 mm	[100.10"]
width	4380 mm	[172.44"]
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



1:50
 mm [.....]

Subject to alterations.
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