

ZelPrint

Manual Fine-Pitch Stencil Printer

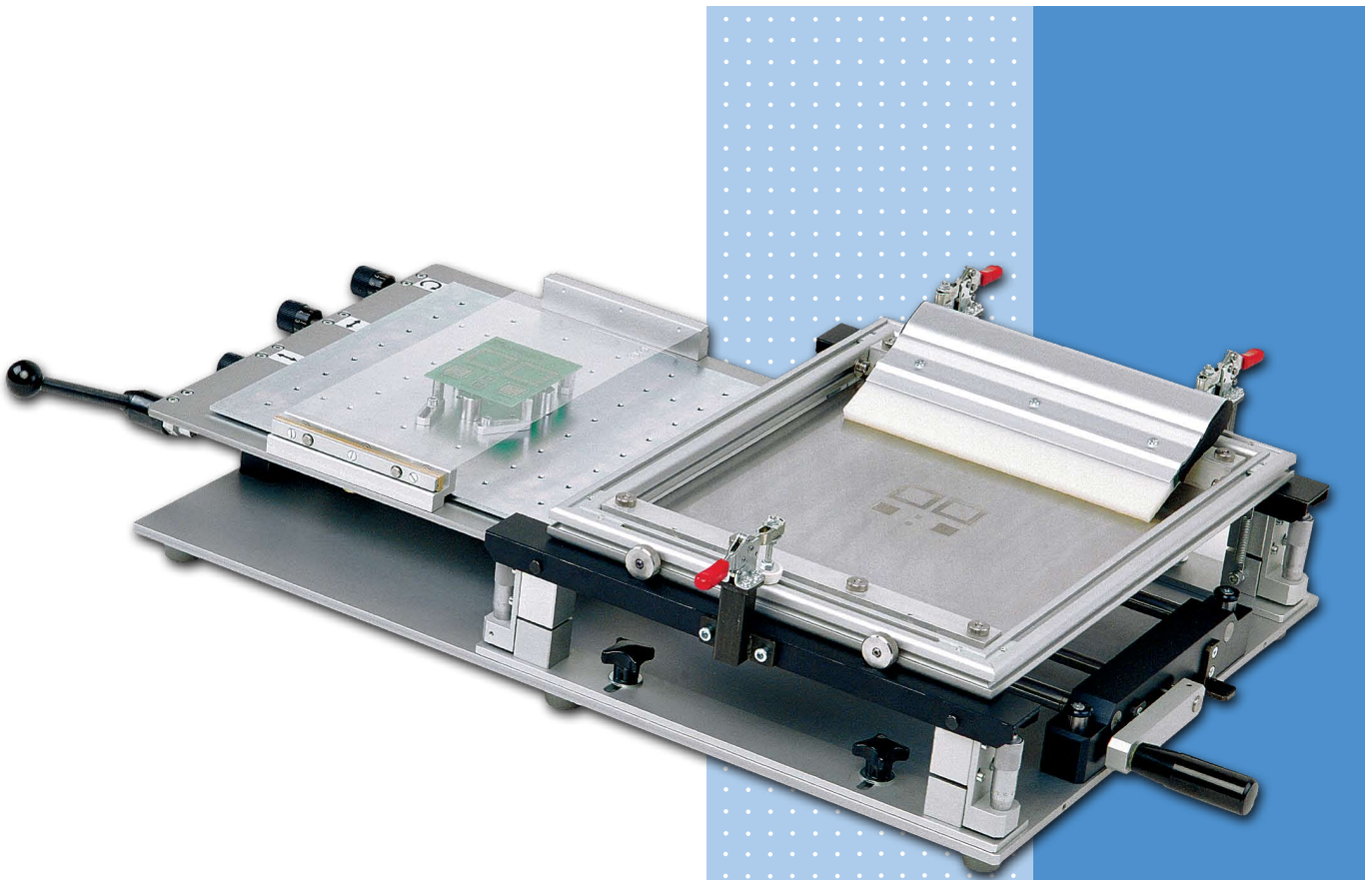
SMT Printer For Most Complex Tasks In Rapid Prototyping

General Description

The LPKF ZelPrint LT300 is a precision manual stencil printer. This tabletop model can be utilized for both prototypes and small batches of fine pitch SMT boards. Precise vertical separation between stencil and circuit board is guaranteed to meet the specifications of contact printing. This unique solution allows printing of 0.3mm (12mil) pitch (ultra-fine-pitch area).

Main Specification

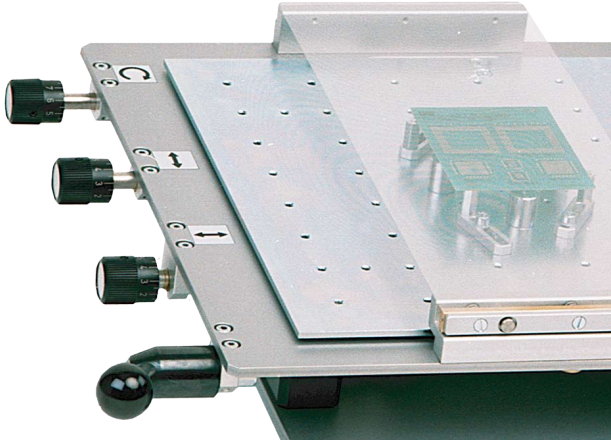
- On-contact fine-pitch printing
- Parallel stencil separation
- Screen printing
- Printing of populated double-sided boards
- Compatible with various stencil frames
- Test print screen included



Fine-pitch printing

The precise three-dimensional adjustment of the stencil with micrometer screws (X, Y, theta and clearance) is vital for superior printing results. High positioning accuracy and specially designed lever for speed controlled parallel separation makes ultra-fine-pitch printing possible.

Additionally to fine-pitch printing also screen printing is applicable. A gap between PCB and screen can be exactly adjusted with micrometer screws.



PCB Clamping

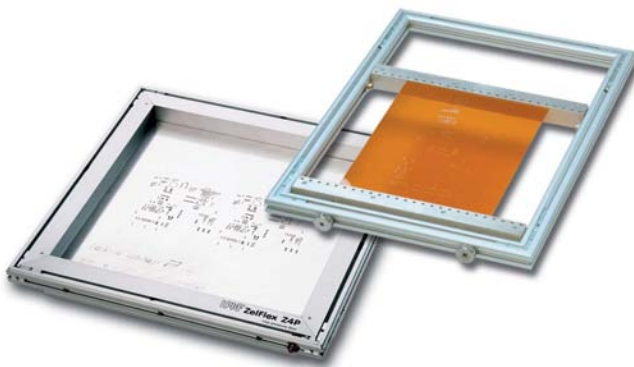
The ZelPrint LT300 has freely adjustable, high clearance PCB nesting pins that allow printing of boards that are already populated on the other side.

Frames are easily mounted on adjustable holders. This enables fast clamping of ZelFlex as well as other frames.

For fast set up of new print job ZelPrint LT300 is equipped with polymer test print screen.

Plastic Stencil for Rapid Prototyping

The ability to use milled polymer stencils (limited to 0.625 mm [25 mil] pitch) reduces costs and increases efficiency in the production of circuit board prototypes.



Double-sided tensioning frame

Plastic or metal stencils can be inserted into double-sided LPKF ZelFlex ZR frame. Fast exchange and patented stretching system of ZelFlex ZR frames ensures optimal tensioning and easy handling.

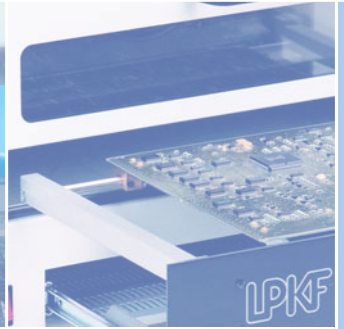
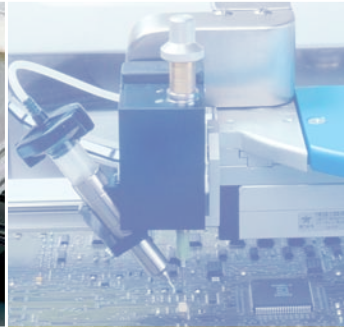
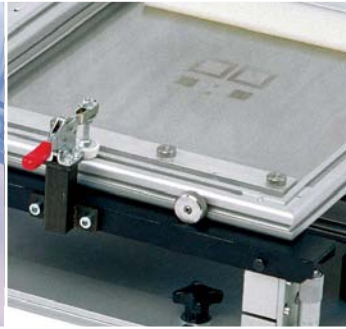
Four-sided pneumatic tensioning frame

For batch production also pneumatics four-sided quick-change LPKF ZelFlex Z4P frame is available. This frame uses a patented design with a pneumatic tensioning system enabling equal tension over the entire stencil.

Technical data	
Frame dimensions	width up to 430mm (16.92"); length adjustable from 420mm to 520mm (16.54" x 20.47"), height adjustable from 20 to 40mm (0.78" x 1.57")
Maximum printing area	300 x 300mm (11,8" x 11,8")
Print stroke	Manual
Print table adjustment	X and Y ± 10 mm (0.4"/400 mil); $\varnothing \pm 5^\circ$
Max. PCB thickness	5mm (0,2"), optionally more
Squeegee type	Rubber (optionally metal)
Accuracy (machine)	$\pm 0,025$ mm (0,98 mil)
Accuracy (printing)	$\pm 0,04$ mm (1.57 mil)
Double side printing	max. height of components 15 mm (0.59")
Dimensions (W x L x H)	740 x 530 x 180mm (29,1" x 20,9" x 7,1")
Weight	30kg (66 lb)
Ambient conditions	Temperature: 20 -35°C Humidity: 30-95%

ZelFlex Frames for LPKF ZelPrint LT300	Type	Print Area (mm)	Foil Size (mm)	Squeegee max.
ZelFlex ZR 362 x 480	2-sided mechanic	250 x 310	up to 312 x 370	260 mm
ZelFlex ZR 406 x 508	2-sided mechanic	300 x 350	up to 358 x 428	300 mm
Zel Flex Z4P 406 x 508	4-sided pneumatic	280 x 350	387 x 489	280 mm

Inhouse Rapid PCB & SMT Prototyping



ProtoMat

ZelPrint

ZelPlace

ZelFlow

A fast and environment friendly printed circuit board production is realized with the LPKF ProtoMat. A standard CAD design is transferred into machine data. Insulation tracks and areas are milled while holes with various dimensions are drilled. Also different shapes can be cut out. Multilayer PCB production is supported. Polymer SMT stencils can be made using the LPKF ProtoMat.

The first and very important step in the SMT assembly process is the applying of solder paste. With the LPKF ZelPrint fine-pitch boards are printed. The utilization of vertical separation and slow snap-off enable extraordinary printing results. Double-sided boards with one side already assembled can also be printed. Milled polymer stencils are stretched into ZelFlex frame. Many different frames are easily clamped onto the LPKF ZelPrint.

The next step is the placing of various SMD components onto already paste-printed PCB. LPKF ZelPlace Pick & Place device with a precise manipulator assists the operator in placing different SMT components, from small chips to large QFPs. For additional help axes can be blocked and fine tuning can be utilized. SMT solder pastes and other media are dispensed with LPKF ZelPlace.

For a successful conclusion of the SMT assembly process the components should be soldered. The LPKF ZelFlow oven with a large working area and processor controlled temperature/time profiles is perfect for SMT reflow soldering, curing adhesives and hardening of the through-plating conductive paste. ZelFlow oven is also available with an inert gas connection.

Inhouse rapid prototyping will increase your flexibility, strengthen independence from suppliers, and shorten your time to market. LPKF is the only company with a complete process solution: from a single-sided board to the multilayer PCB, assembled with the most complex SMT components. All products are designed and manufactured by LPKF.

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