



248 TECHNICAL

SPECIFICATION:

Print /Board Parameters

Print Area (w x d)	432mm x 405mm (17in x 15.9in) max
Max. Boardsize (w x d)	450mm x 500mm (17.5in x 19.5in) max
Boardsize Vacuum Tooling	440mm long x 440mm wide
Boardsize Auto Edge Clamp Tooling	380mm long x 330mm wide
Board and Tooling Thickness Range	20mm to 40mm (0.8in to 1.6in) max
Max Board & Tooling Weight	5 kg (2.27lbs)
Machine Accuracy (achievable)	±25µm
Machine Repeatability	±10µm
Machine Capability (achievable)	0.3mm pitch QFP 0402 chip packages using vision alignment
Board Feed Direction	Left-to-right
Board Registration	Fixed pins to suit board, edge clamp tooling, customised tooling
Vision Alignment Tools	DEKalign 4
Machine Interface	Stand Alone
Work Table Height	820mm min, 1060mm max
Work Table	X/Y adjustment + 10mm, radial adjustment +2° about any X/Y position
Tooling	Adjustable magnetic type, 19mm underside clearance. Dedicated tooling available. Edge clamp tooling, 1mm minimum board thickness

Services

Power Supply	220v or 110v single phase
Power Consumption	Less than 1 kW
Air Supply	Min pressure 5 bar (75 psi) clean and dry
Vacuum Supply	Internal Vacuum ejector

Shipping Information

Approximate Weight	450kg
Approximate Dimensions	1630mm (W) x 1310mm (D) x 1340mm (H) nominal
	64in (W) x 51in (D) x 52in (H) nominal

Screen Frame

Size	508mm x 508mm (20in x 20in) internal
Screen Clamping	Mechanical locking mechanism

Operator Interface

Operational Modes	Double squeegee, print/print, print/flood, flood/print
Operator Interface	Machine: easy-touch LCD control console with backlight. Vision: Trackball mouse operated
Language Options	Software - English, German, French Manuals - English only

Process Parameters

Print Speed	10-70mm (0.4-2.7in)/sec. Standard independent forward and reverse speed settings in 1mm (0.04)/sec. increments
Print Stroke	Maximum 440mm. Squeegee 1 or 2 deposits
Print Gap	0-23.5mm in 0.1mm increments
Squeegee Pressure	0-15kg (0-33lb.) Manual Dial control in 0.1kg increments
Squeegee Delay	0-10 seconds in 0.5 second intervals
Table In Delay	0-10 seconds in 0.5 second increments
Squeegee Hop-Over	10-50mm in 2mm increments
Hop-over Delay	0-10 seconds in 0.5 second intervals
Separation Speed	10-100% of descent speed in 1% intervals
Alignment Rate	0-20 in 1 cycle increments
Inspection Mode	Frequency 0-100 boards in 1 cycle increment
Menu Storage	30 (Alphanumeric)
Menu/Edit Protection	Board filename - 12 characters maximum Key Switch Activated

Squeegee Options

Squeegees	Bonded polyurethane trailing edge double squeegee, clamped metal trailing edge, clamped single diamond
Flood Blade	Available to suit specified squeegee width
Paste Deflectors	Included with squeegees

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248

• Flexible, entry level screen printer

The 248 is an entry level unit developed for customers requiring a flexible, semi-automatic machine with high precision and high yield capabilities.

The 248 uses precision design and technology to achieve a high level of screen printing accuracy. For fine pitch applications, the DEKalign 4 vision system allows 248 users to check board alignment for accuracy prior to printing, enabling fine pitch printing to be achieved regardless of errors in PCB dimensions. In addition, an align/inspect mode is programmable via the machine menu function, allowing the operator to select board frequency. DEKalign 4 is available as an option or a retrofit package.

The casting and machine tool bearings used in the 248 ensure accuracy and repeatability for demanding fine pitch applications. Features include: micro controlled set-up and operation; motorised squeegee drive; programmable PCB/stencil separation; and a double squeegee with single pressure setting and independent control of front and rear blades.

• Ease of Operation

Operation control is menu-driven via a backlit LCD touch-sensitive control panel. This includes a full range of diagnostic functions.

Set-up is fast and simple, with the facility to store up to 30 programs for rapid recall.

• Tooling

Squeegee supports and PCB registration, which uses fixed pins that locate in holes provided in the PCB along with the magnetic pin board, are supplied as standard with every machine.

Magnetic vacuum cups hold the board in place to ensure separation from the stencil after printing.

For boards without tooling pin locations, edge clamp tooling can be provided. Using 3 fixed and 2 pneumatically-operated registration pins, these grip the edge of the board (1mm minimum board thickness) giving repeatable registration.



Dedicated tooling for special applications can also be offered following consultation with our application team.

• DEKalign 4

DEKalign 4 uses Windows NT with icons and a mouse pointer-based operator interface to provide an intuitive and easy-to-use system for the alignment of PCBs. It shows images from two monochrome cameras on a single high resolution display complete with transparent coloured overlays of a trained pad or fiducial.

The live video can be clearly seen through the overlay, which colours the image. The colour of the overlay signifies whether or not the board is aligned and ready for printing. Red indicates mis-alignment, whilst green or blue indicates that the board is correctly aligned, thus providing a greater level of process control and higher yields.

On the 248 this interface takes the form of a standard single PC monitor and hand held track-ball mouse.

• New Camera Alignment

A pneumatically operated 'Single Point Release Button' reduces set-up time. For more accurate positioning, the linear bearing system ensures smooth, robust motion when aligning the cameras to the PCB or mylar.

DEKalign 4 has improved the handling of HASL boards, and is a system that can be easily extended as new vision enhancement packages are developed.

The system makes use of 'off-the-shelf' components, thereby enabling local sourcing of spare parts.

• Build Quality and Performance

To document machine-specific performance, SPC data is collected and supplied with every machine.

DEK's ISO 9001 certification is an indication of the company's total commitment to quality, as is our adherence to maintaining CE approval at each stage of the 248 build program.

• Process and Operator Training

DEK has developed machine operation, preventative maintenance and process control courses using Performance Based Equipment Training (PBET) - a range of techniques that make all training courses highly focused.

These courses are designed to enable customers to achieve effective and efficient utilisation of their DEK 248 screen printer.

Training may take place either at a local DEK Training Centre or, alternatively, at the customer's own site.

