Technical Specifications

Horizon 8

Machine Standard Configuration

Standard Configuration	Specification
Machine Alignment Capability	>2 Cpk @ +/- 12.5μm, 6 Sigma *
Process Alignment Capability	>2 Cpk @ +/- 25μm, 6 Sigma *
Core Cycle Time	12 secs
Maximum Print Area	510mm (X) x 508.5mm (Y)
Printer Construction	One piece optimised welded frame
ISCAN™ Machine Control	Motion control using CAN BUS network
Operating System	Windows XP
Operator Interface	Colour TFT touch screen display, keyboard and trackball with DEK Instinctiv™ software. Machine mountable on either left or right hand side.
Camera	HawkEye® 750 digital camera, using IEEE 1394 interface. Multi channel. LED lighting. FOV 11.3mm x 8.7mm. Inspection window 26mm^2
Camera Positioning	Rotary motors and encoders with 4 micron resolution
Squeegee Pressure Mechanism	Software controlled, motorised, with closed loop feedback
Adjustable Stencil Mount (ASM)	Frame variants – Fully adjustable to accommodate frame sizes in the range of 305mm to 736mm (12″ ** to 29″) by 38mm height Image position: centre, front, custom
Stencil Positioning	Manual with screen depth adjuster
Stencil Alignment	Motorised via actuators X, Y, and Theta
Under Stencil Cleaning	Blue Under Stencil cleaner, fully programmable with wet/dry/vacuum wipe with external solvent tank
Vacuum Assist for Under Stencil Cleaning	On board venturi vacuum unit
Squeegee	Clamped double training edge squeegee (1 set included)
Tooling Deviation Monitor	Verification of tooling setup via squeegee pressure feedback
Machine Interface	Upline and downline FMI included
Connectivity	RJ-45LAN (networking) and USB2 interface available
Tri Colour Beacon	Programmable with audible alarm
Temperature/Humidity Sensor	Monitoring of the process environment
Documentation	Hard copy manuals comprising: Operator, Installation, Electrical Drawings. On board technical manuals and tutorials supporting operator functions. CD containing manuals and tutorials.

* DEK's machine accuracy and repeatability qualification is certified by 3rd party and undertaken using production environment process variables. Print Speeds, Print Pressures, Rising Table and Camera Movements are included in the process capability figure.

** Minimum screen width limited to 381mm (15″) with 300mm USC and 250mm board clamps

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Transport System	Specification
Type	Single piece with 3mm round transport belts, front rail fixed
ESD Compatibility	Black transport belts and guides with surface resistivity of greater than 10^6 ohms
Width Adjustment	Programmable motorized rear rail
Transport Direction	Left to right Right to left Left to left Right to right
Substrate Handling Size (minimum)	50mm (X) x 40.5mm (Y)
Substrate Handling Size (maximum)	510mm (X) x 508.5mm (Y)
Substrate Thickness	0.2mm to 6mm
Substrate Weight (maximum)	1kg
Substrate Warpage	Up to 7mm including substrate thickness
Substrate Fixture	Patented over the top clamps
Substrate Handling Features	Soft rail lift / land Board clamp regulator
Substrate Underside Clearance	Programmable 3mm to 42mm

Process Parameters	Specification
Print Pressure	0kg to 20kg
Print Speed	2mm/sec to 300mm/sec
Print Gap	0mm to 6mm
Substrate Separation	Speed: 0.1mm/sec to 20mm/sec Distance: 0mm to 20mm
Print Modes	Print / Print Print / Flood Flood / Print Adhesive
Paste Knead	Programmable: number; period; on demand

Vision	Specification
Vision System	Cognex
Fiducial Recognition	Automatic fiducial teach and find incorporating 0.1mm fiducial capture
Fiducials	2 or 3
Fiducial Types	Synthetic fiducial library or unique pattern recognition
Fiducial Size	0.1mm to 3mm
Fiducial Locations	Anywhere on substrate
Fiducial Error Recovery	Auto lighting adjustment Auto fiducial search
Camera Lighting	Software controlled programmable LED lighting

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Operating Environment	Specification
Temperature	10° to 35° C (50° to 95° F)
Humidity	30% to 70% relative humidity (non condensing)

Services	Specification
Voltage	100 Volts to 240 Volts +/- 10%. Single phase 50/60Hz
Maximum Current at 115V	20 Amps with vacuum pump 6 Amps without vacuum pump
Maximum Current at 230V	10 Amps with vacuum pump 3 Amps without vacuum pump
Over Current Protection	An external circuit breaker ≤ 25 Amps is required to be fitted in line with the machine supply
Air Supply	To ISO 8573.1 Standard Quality Class 2.3.3 Pressure 5 bar to 8 bar General usage 5 litres/minute at 5 bar to 8 bar Maximum usage 226 litres/minute at 6 bar

Shipping Information	Specification
Approximate Weight	790kg boxed (dependent upon configured options selected with machine) 630kg unboxed (dependent upon configured options selected with machine)
Approximate Dimensions	2060mm x 1500mm x 1570mm (81.1" x 59" x 61.8")

Certification	Specification
CE	98/37/EC 89/336/EEC 73/23/EEC Subsequent amendments
Acoustic Noise Level	Less than 70dB 2003/1/EC

Machine Performance Upgrade

Process	Specification
Print Method	Paste roll height monitor
Stencil Frame	VectorGuard®
Stencil Positioning	Semi automatic loading incorporating squeegee drip tray *

* Need to remove drip tray when using ProActiv

Transport	Specification
Substrate Support	Vacuum tooling capability Vacuum tooling sensor Vacuum cups Grid-Lok® Tooling
Substrate Fixture	Foil-less clamps 250mm over the top clamps

Technical Specifications

Machine Performance Upgrade

Vision	Specification
HawkEye® 750 Functionality	Enabled

Other	Specification
Cycle Time Improvement	12 seconds to 10 seconds
MMI	Left hand side

Technical Specifications

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Machine Footprint

Services Required

Voltage: 110V or 240V
Single Phase 50/60Hz

Current (without Vacuum Filtration Unit):
115V - 6 Amps
230V - 3 Amps

Current (with Vacuum Filtration Unit):
115V - 20 Amps
230V - 10 Amps

Air Supply:
Air to ISO 8573.1
standard quality class 2.3.3
Pressure 5 to 8 bar at 5 Litre/min
Maximum usage 226 litres/minute at 6 bar

Operating Envelope:
Temperature 10 to 35° C (50° to 90° F)
Humidity 20% to 70% Relative Humidity
(non condensing)

Weight: 810kg - Boxed
660kg - Unboxed

CAUTION - OVER CURRENT PROTECTION

Magnetic/thermal over current protectors protect the machines internal wiring and components from over heating/fire during fault conditions. DEK require additional machine supply protection with the fitment of an external circuit breaker and conforming to national/federal regulations, table below refers.

Voltage	Value of circuit breaker (without Internal Vac Unit)	Value of circuit breaker (with Internal Vac Unit)
115V	10 Amp	25 Amp
230V	4/6 Amp	13/16 Amp

Note:
Board transfer height 840 to 980 mm
Screen load height 925 to 1065 mm

R630 Max. from pivot point

1150

277.5

Transfer height 960
(840 min. to 980 max.)

1358
(1191 min. to 1421 max.)

1106

1350

535
Front of board

1637

1470
(1350 min. to 1490 max.)

122

1944
(1824 min. to 1964 max.)

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