DEK *Horizon 03iX*

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 (11 secs with HTC option)
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
Stencil Positioning	Manual width screen depth adjuster
Stencil Alignment	Motorised via actuators X, Y, and Theta
Squeegee	Clamped double trailing edge squeegee (1 set included)
Machine Interface	Upline and downline FMI included
Connectivity	RJ-45LAN (networking) and USB2 interface available
Tri Colour Beacon	Programmable with audible alarm
Documentation	Hard copy manuals comprising: Operator, Installation, Electrical Drawings. On board technical manuals and tutorials supporting operator functions. DVD 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.

* For print area up to 600mm long please contact the Product Manager

Technical Specifications

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Machine Standard Configuration

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	ProFlow® 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

DEK *Horizon 03iX*

Machine Standard Configuration

Chase	Specification
Screen Frame Size (maximum)	736mm x 736mm (29” x 29”)
Screen Frame Thickness	25mm to 38mm (1” to 1.5”)
Image Position	Front Centre Custom

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	810kg boxed (dependent upon configured options selected with machine) 660kg 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
ETL	UL6101A-1 1st Edition 2002 CAN/CSA – C22.2 No. 1010.1-92
Acoustic Noise Level	Less than 70dB 2003/1/EC

Machine Productivity Options

Process	Specification
Print Method	Paste Dispenser Paste roll height monitor ProActiv* ProFlow® ATx ProFlow® Tx Stinger
Printing Environment Control	Temperature – Temperature Control Module (TCM)
Stencil Frame	VectorGuard®
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
Under Stencil Cleaning	Blue Under Screen Cleaner, fully programmable with wet/dry/vacuum wipe with external solvent tank Cyclone high speed cleaner, fully programmable with wet/dry/vacuum wipe with external solvent tank
Vacuum Assist for Under Stencil Cleaning	On board vacuum unit 35 litres/second airflow On board vacuum unit 25 litres/second airflow On board venture vacuum unit
Stencil Positioning	Automatic loading incorporating squeegee drip tray Semi automatic loading incorporating squeegee drip tray Semi automatic loading
Temperature / Humidity Sensor	Monitoring of the process environment

* Need to remove drip tray when using ProActiv
** Minimum screen width limited to 381mm (15”) with 300mm USC and 250mm board clamps

Handling & Cleaner Options	Specification
Substrate Handling Size (maximum)	620mm (X) x 508.5mm (Y) – Long Board Option
Under Stencil Cleaning	Blue large board cleaner (580mm)

Software & Communications	Specification
Substrate Handling	Flexible boards Selective print pass through Singulation Virtual Panel Tooling (VPT)
Software & Communications	GEM on TCP/IP
Statistical Process Control	On board, reported via operator interface (QC-CALC)
Time To Go (TTG) Capability	Consumable warnings via level gauges for fabric, solvent, paste

Transport	Specification
Substrate Support	Vacuum tooling capability Vacuum tooling sensor Vacuum cups Grid-Lok® Tooling
Substrate Transport	Single piece conveyor with flat belts (heavy boards) Heavy pallet rails High Throughput Conveyor (HTC) with round belts Rapid Transport Conveyors (RTC) Remote board stop (for use with heavy board option)
Substrate Fixture	Over Top Snuggers (OTS) Snuggers (edge clamping) Foil-less clamps

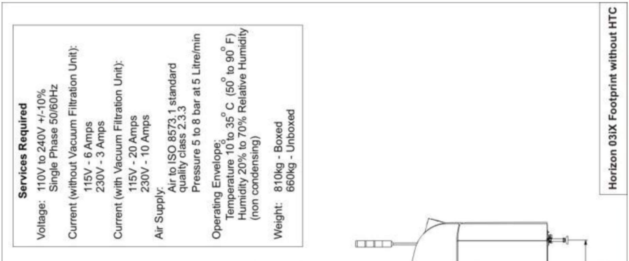
Vision	Specification
HawkEye® 750 Functionality	Enabled
HawkEye® 1700 Functionality	Enabled (camera included)
HawkEye®	HawkEye® Bridging
2Di Inspection	Basic stencil and board Advanced stencil and board

Data Capture	Specification
Product Data Capture	Verification & Traceability ProDEK closed loop

Technical Specifications

DEK *Horizon 03iX*

Machine Footprint without HTC


Services Required

Voltage: 110V to 240V +/-10%
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

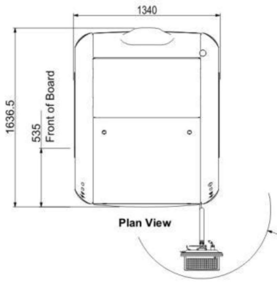
Air Supply:
Air to ISO 8573.1 standard
quality class 2.3.3
Pressure 5 to 8 bar at 5 Litre/min

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

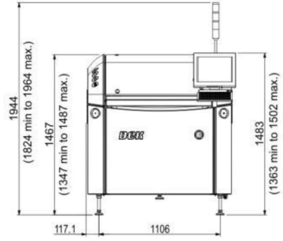
Weight: 810kg - Boxed
660kg - Unboxed

Technical Specifications

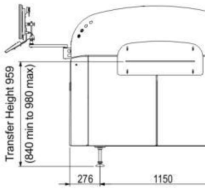
DEK *Horizon 03iX*
Machine Footprint with HTC



Plan View



Front View



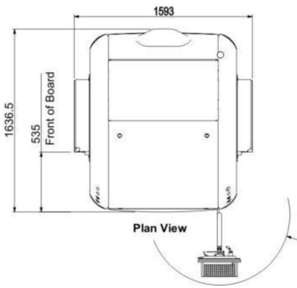
Side View (Right)

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



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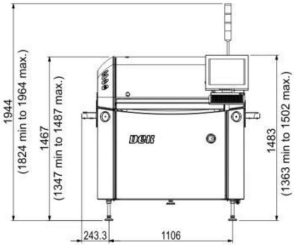
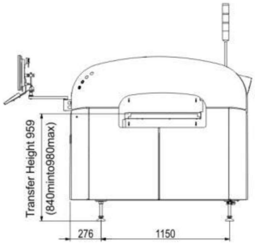


Front View



Side View (Right)

Horizon 03iX Footprint with HTC