





# DEK NeoHorizon 03iX

## Content

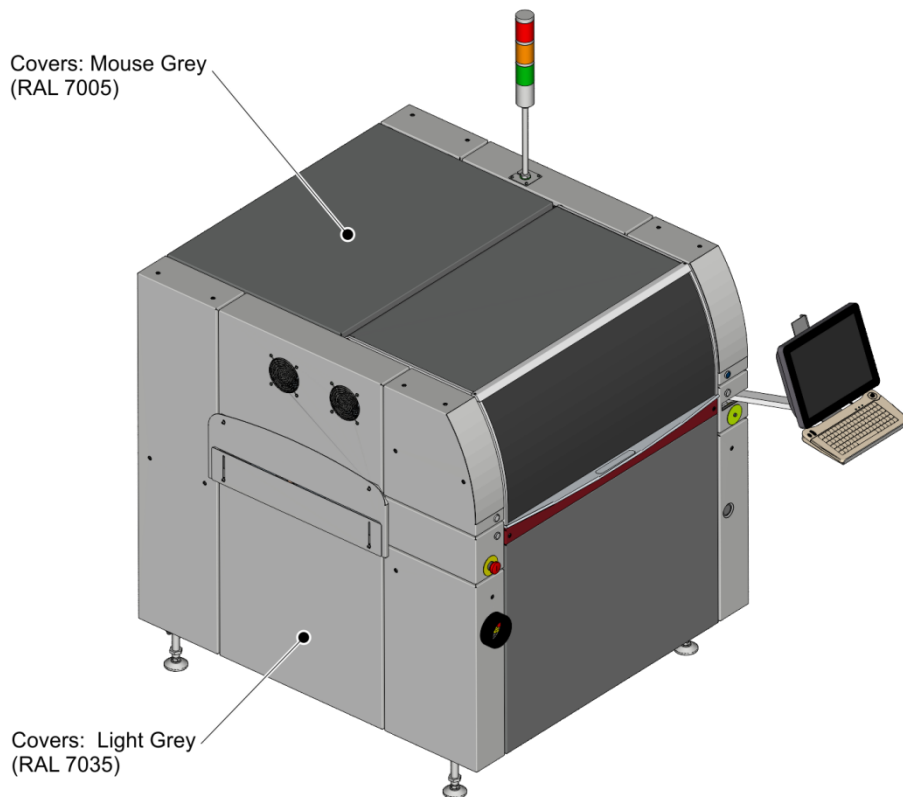
<b>Overview of technical data</b>	<b>4</b>
Maximum values	4
<b>DEK NeoHorizon 03iX</b>	<b>5</b>
Machine description	5
Machine standard configuration	6
Standard Configuration	6
Machine Alignment Capability	6
Transport System	7
Process Parameter	7
Vision	8
Standard C Chase	8
Operating Environment	8
Services	8
Shipping Information	9
Certification	9
Machine productivity options	10
Process	10
Handling & Cleaner Options	10
Software & Communications	10
Transport	11
Vision & Verification	11
Data Capture	11
Machine footprint	12
Machine footprint Back to Back	13
<b>Notes</b>	<b>14</b>
<b>Notes</b>	<b>15</b>

# Overview of technical data

## Maximum values

Machine Alignment Capability	> 2.0 C <sub>mk</sub> @ +/- 12.5µm, (±6 Sigma)
System Alignment Capability	> 2.0 C <sub>mk</sub> @ +/- 20µm, (±6 Sigma)
Wet Print Capability	> 2.0 C <sub>pk</sub> @ +/- 25µm, (±6 Sigma)
Core Cycle Time	8 secs + process
Operating System	Windows 7 Standard embedded
Squeegee Pressure Mechanism	Software controlled, motorised with closed loop feedback
Under Stencil Cleaning	Interchangeable Under Stencil (IUSC) cleaner, fully programmable with wet/dry/vacuum wipe with external solvent tank.

### Machine colours for DEK NeoHorizon 03iX



# DEK NeoHorizon 03iX

## Machine description

### **DEK NeoHorizon iX platform – More reliability and efficiency for future-proof printing**

The DEK NeoHorizon iX shines with more than new design. It's modular interior is much improved and highly reliable.

Whether in high-mix contract manufacturing or high-volume applications with high throughput requirements – the DEK NeoHorizon iX is the right printing platform.

### **Benchmark for accuracy**

The DEK NeoHorizon iX platform is based on an exceptionally stable frame design. With its torsional rigidity and high intrinsic resonance frequency, the machine's frame provides the foundation for longevity and long-lasting accuracy. With its advanced controllers and bus systems, the DEK NeoHorizon 03iX achieves a system alignment capability of  $\pm 20\mu\text{m}$  @ 2 Cmk (6 Sigma).

The frame provides lots of space and the bus system a wide range of interfaces for basic components like

precision drives, digital camera modules and high precision guides and slides, as well as for many productivity-enhancing options: the DEK Productivity Tools.

### **State-of-the-art software: DEK Instinctiv**

With its touchscreen, keyboard and trackball operation, graphical interfaces, multiple languages and integrated video-based help, the DEK Instinctiv software supports the easy, quick and error-free operation of the NeoHorizon iX printer.

With ISCAN (Intelligent Scalable Area Network), the new configuration can be scanned with just a few clicks and additional performance is available. And thanks to its interfaces, the DEK NeoHorizon can fine-tune its printing process based on data imported from modern SPI systems.

### **The right configuration for every job**

High-speed production, high-mix runs of small lots, pin-in-paste, ultra-fine apertures for super-

small components, stepped stencils, PCBs with unusual substrates, many different paste types – no matter what the production requirements are and what processes are being used: the DEK NeoHorizon iX platform always accommodates the right configuration for the printing process.

### **B2B setup: Flexible on two tracks**

The DEK NeoHorizon Back-to-Back setup makes for a uniquely flexible dual-track solution. Both units remain separately controllable, can be split up again at any time and use the full-size printing area.

### **Faster cleaning, more throughput**

The DEK NeoHorizon 03iX offers two models of automatic understencil cleaning: the new IUSC as standard or the award-winning and much improved DEK Cyclone high-speed cleaning system as an option.

# DEK NeoHorizon 03iX

## Machine standard configuration

Standard Configuration	Specification
Machine Alignment Capability	> 2.0 C <sub>mk</sub> @ +/- 12.5µm, (±6 Sigma)
System Alignment Capability	> 2.0 C <sub>mk</sub> @ +/- 20µm, (±6 Sigma)
Wet Print Capability	> 2.0 C <sub>pk</sub> @ +/- 25µm, (±6 Sigma)
Core Cycle Time	8 secs + process
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 7 Standard embedded
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 <sup>2</sup>
Camera Positioning	Rotary motors and encoders with 4 micron resolution
Squeegee Pressure Mechanism	Software controlled, motorised with closed loop feedback
Stencil Positioning	Semi-Auto-Load incorporating squeegee drip tray
Stencil Alignment	Motorised via actuators X, Y, and Theta
Under Stencil Cleaning	Interchangeable Under Stencil (IUSC) cleaner, fully programmable with wet/dry/vacuum wipe with external solvent tank. Specify length (300mm, 400mm, 520mm)
Vacuum Assist for Under Stencil Cleaning	On board vacuum unit 25 litres/sec airflow
Squeegee	Clamped double trailing edge squeegee (1 set included)
Machine Interface	Upline and downline FMI included
Connectivity	RJ-45LAN (networking) and USB2/3 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.

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

# DEK NeoHorizon 03iX

## Machine standard configuration

<b>Transport System</b>	<b>Specification</b>
Type	Single piece with 3mm round transport belts, front rail fixed
ESD Compatibility	Transport belts and guides with surface resistivity between $10^6$ and $10^{11}$ 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	Over the top clamps
Substrate Handling Features	Soft rail lift/land Board clamp regulator
Substrate Underside Clearance	Programmable 3mm to 42mm

<b>Process Parameter</b>	<b>Specification</b>
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

# DEK NeoHorizon 03iX

## Machine standard configuration

<b>Vision</b>	<b>Specification</b>
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

<b>Standard C Chase</b>	<b>Specification</b>
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

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

<b>Services</b>	<b>Specification</b>
Voltage	100 Volts to 240 Volts $\pm$ 10%. Single phase 50/60 Hz
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 $\leq$ 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



# DEK NeoHorizon 03iX

## Machine standard configuration

<b>Shipping Information</b>	<b>Specification</b>
Approximate Weight	850kg boxed (dependent upon configured options selected with machine) 690kg unboxed (dependent upon configured options selected with machine)
Approximate Dimensions	2080mm x 1500mm x 1590mm High (81.9" x 59" x 62.6") Boxed

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

# DEK NeoHorizon 03iX

## Machine productivity options

<b>Process</b>	<b>Specification</b>
Print Method	Paste Dispenser Paste Roll Height Monitor (aPRHM) ProFlow® ATx Stinger
Printing Environment Control	Contact PM
Recommended Stencil Frame	VectorGuard
Adjustable Width Stencil Mount (AWSM)	Frame variants – Fully adjustable to accommodate frame sizes in the range of 381mm to 736mm (15" to 29") by 38mm height. Image position: Centre/Front/Custom
Under Stencil Cleaning	Cyclone high speed cleaner, fully programmable with wet/dry/vacuum wipe with external solvent tank Cyclone Duo. Specify length (300mm, 400mm, 460mm, 515mm)
Vacuum Assist for Under Stencil Cleaning	On board vacuum unit 35 litres/second airflow On board venturi vacuum unit
Stencil Positioning	Automatic loading incorporating squeegee drip tray
Temperature/Humidity Sensor	Monitoring of the process environment
<b>Handling &amp; Cleaner Options</b>	
Substrate Handling Size (maximum)	620mm (X) x 508.5mm (Y) – Long Board Option
Under Stencil Cleaning	Blue large board cleaner (580mm)
<b>Software &amp; Communications</b>	
Substrate Handling	Flexible boards Selective print pass through Singulation
Software & Communications	GEM on TCP/IP
Statistical Process Control	On board, reported via operator interface (QC-CALC)

# DEK NeoHorizon 03iX

## Machine productivity options

<b>Transport</b>	<b>Specification</b>
Substrate Support	Vacuum tooling capability Vacuum tooling sensor Vacuum cupes Grid-Lok® tooling
Substrate Transport	Single piece conveyor with flat belts (heavy boards) Remote board stop (for use with heavy board option) Dual Speed Motor* (to be released)
Substrate Fixture	All Purpose Clamping (APC) system* Snuggers (edge clamping) Foil-less clamps

\* Can only be used with Modular rail system

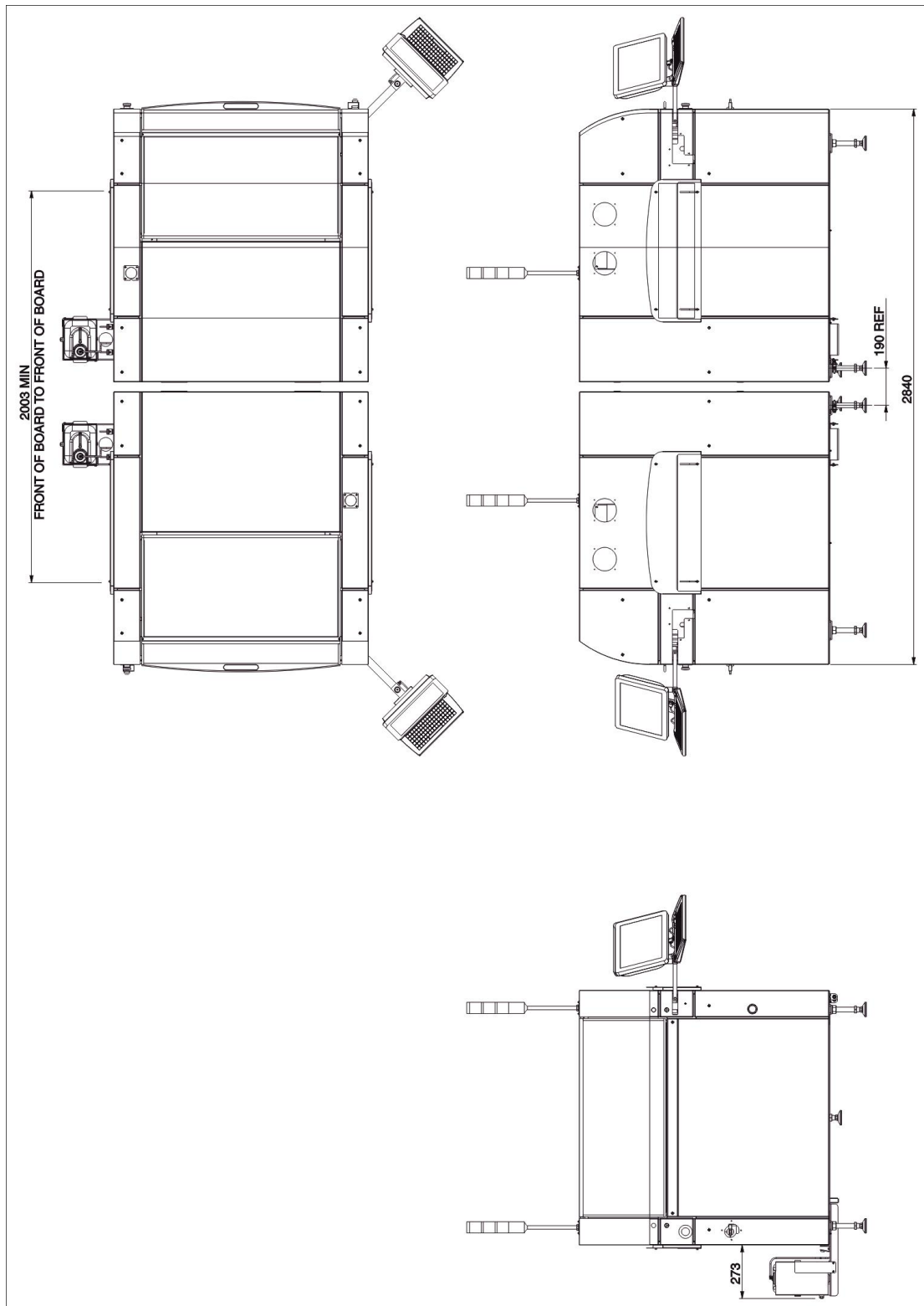
<b>Vision &amp; Verification</b>	<b>Specification</b>
HawkEye® 750 Paste on Pad Verification	Enabled
HawkEye® 1700 Paste on Pad Verification	Enabled (camera included)
HawkEye	HawkEye® Bridging (requires HawkEye® 1700 camera)
2Di Inspection	Basic stencil and board Advanced stencil and board

<b>Data Capture</b>	<b>Specification</b>
Product Data Capture	Verification & Traceability ProDEK closed loop



# DEK NeoHorizon 03iX

## Machine footprint Back to Back



## Notes

# Notes

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Order no. A10011-ASM-T52-EN/Part No. 222849 Issue 2  
Printed by ASM Assembly Systems Weymouth Ltd

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